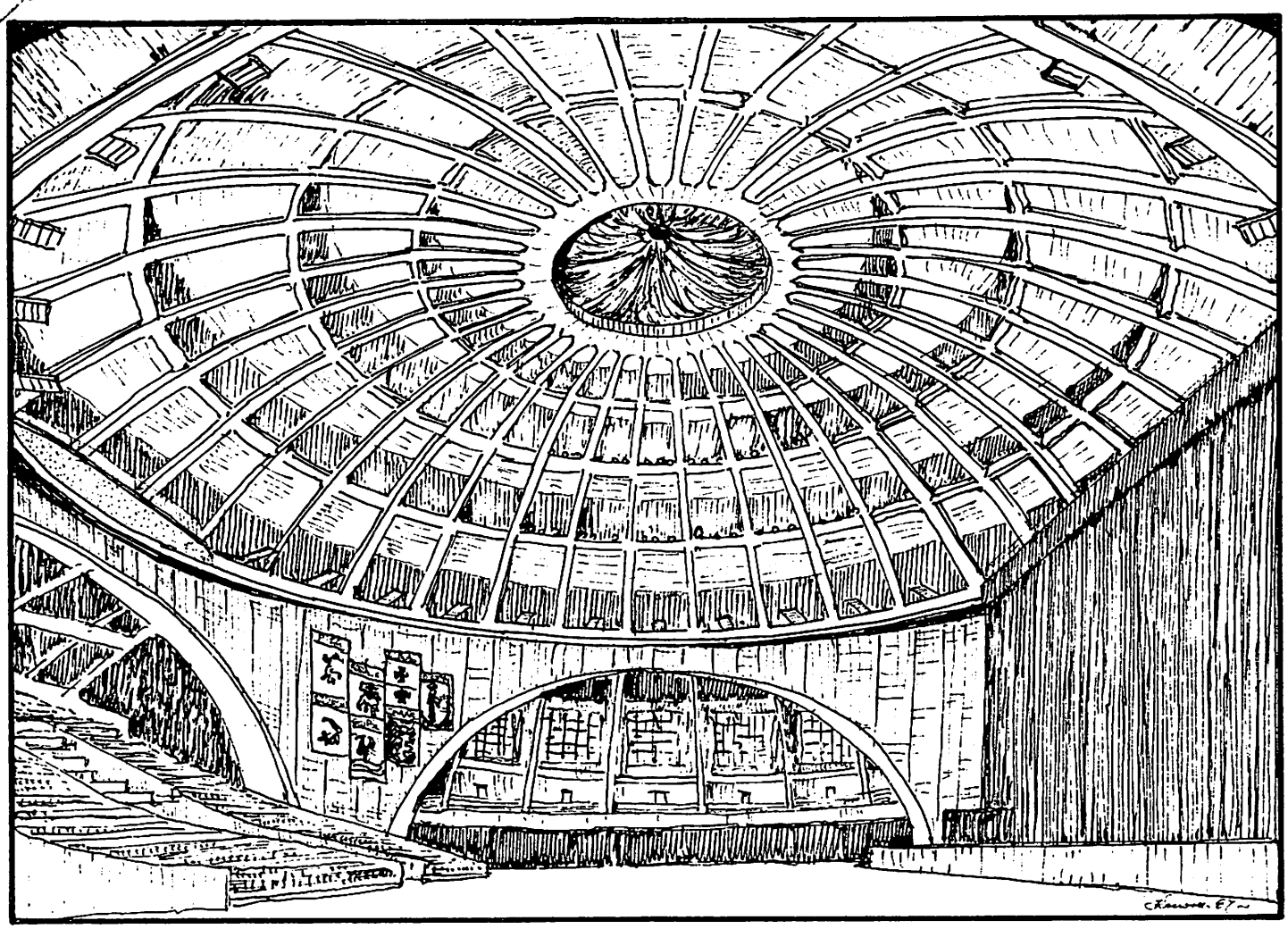


INDOOR NEWS 1/87

Dear friends,

Well, this is the tenth issue .....

We have many artists amongst us, one of them being Jerzy Kaczorek of Wroclaw, Poland. He has made beautiful model drawings for many newsletters and magazines and this time he has done a magnificient art-work of the interior of the "HALA LUDOWA" which you can admire just above. It is the coming site for the first ever European Indoor Champs at the end of August.

I wonder how many of you know where DENMARK is on the map!? Denmark is a small but beautiful country "on top" of West Germany. 42.000 square kilometres and 5.000.000 inhabitants. The main parts are Jutland, Funen and Zealand. The capital, Copenhagen, is placed on the latter. The country is rather flat, the highest point being 170 meters in the middle of Jutland. Except for the three main parts there are hundreds of small islands. The climate is cold in vinter and sometimes hot in summer. There are no dangerous animals or hazards of nature. The Danes sell meat, furniture and medical/industrial know-how ... and other things ....

Ellund is a village 900 metres from the German/Danish border in Germany, there are about 700 "citizens" and I'm the only indoor flyer here! I work as a teacher at a Danish school ... in Germany!!

EDITOR ETC., ETC...

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

Phone: 04608-6899

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

Scandinavia	45,- Dkr.
Europe	50,- Dkr.
Airmail outside Europe	8,- US $

ARSTREDSTWA F1D EUROPY 1987

WROCŁAW ○ HALA LUDOWA ○ POLSKA ○ WROCŁAW

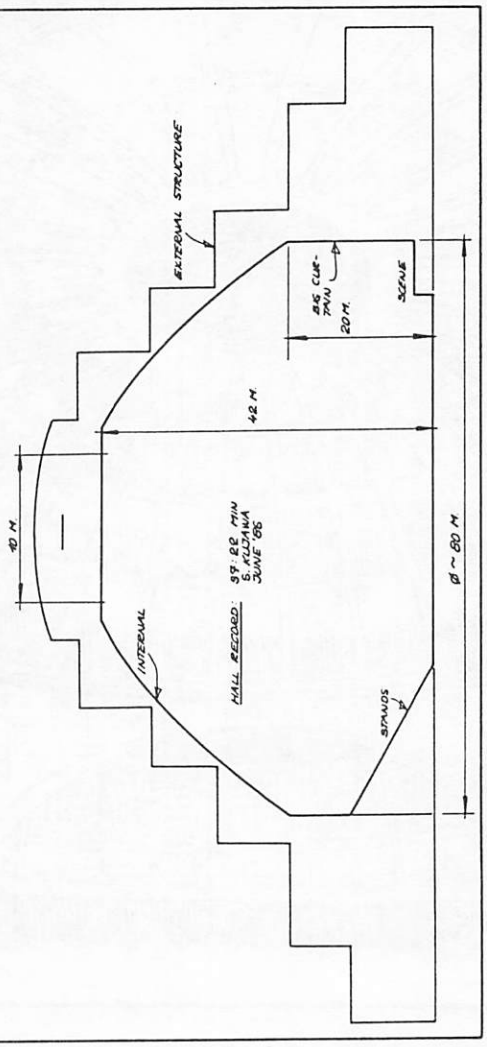
AEROKLUB POLSKIEJ RZECZYPOSPOLITEJ LUDOWEJ

UL. KRAKOWSKIE PRZEDMIEŚCIE 55, CO. 071 WARSZAWA, TEL. 262021, TELEX 812709 AERO/PL

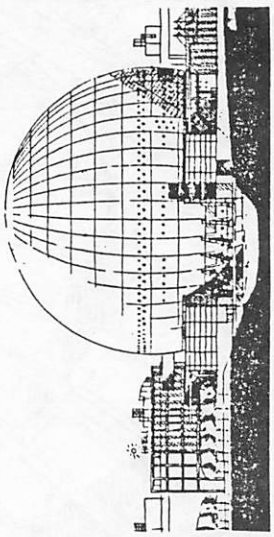
DE FIA EUROPEAN INDOOR MODELS CHAMPIONSHIPS ○ 23-29 AUGUST '87

FOR the INDOOR NEWS the drawing by JERZY KACZOREK

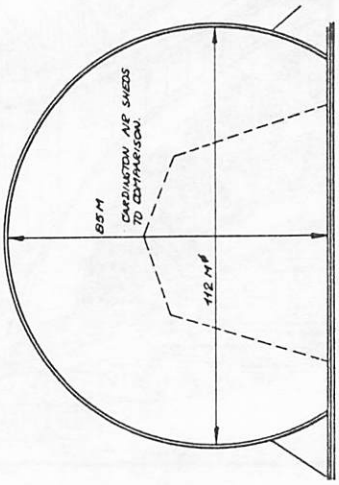
"HALA LUDOWA", WROCŁAW, POLAND

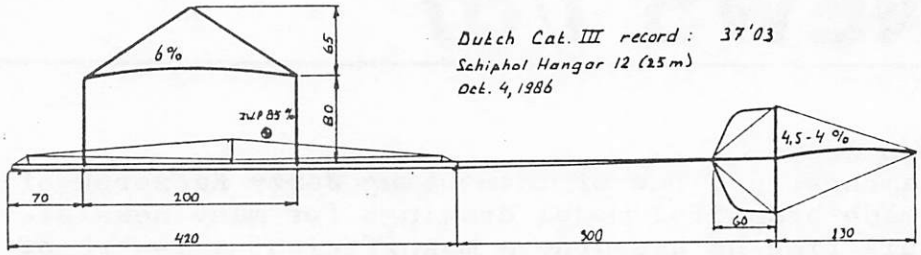


A COMING VENUE FOR AN INDOOR WORLD CHAMPS ???



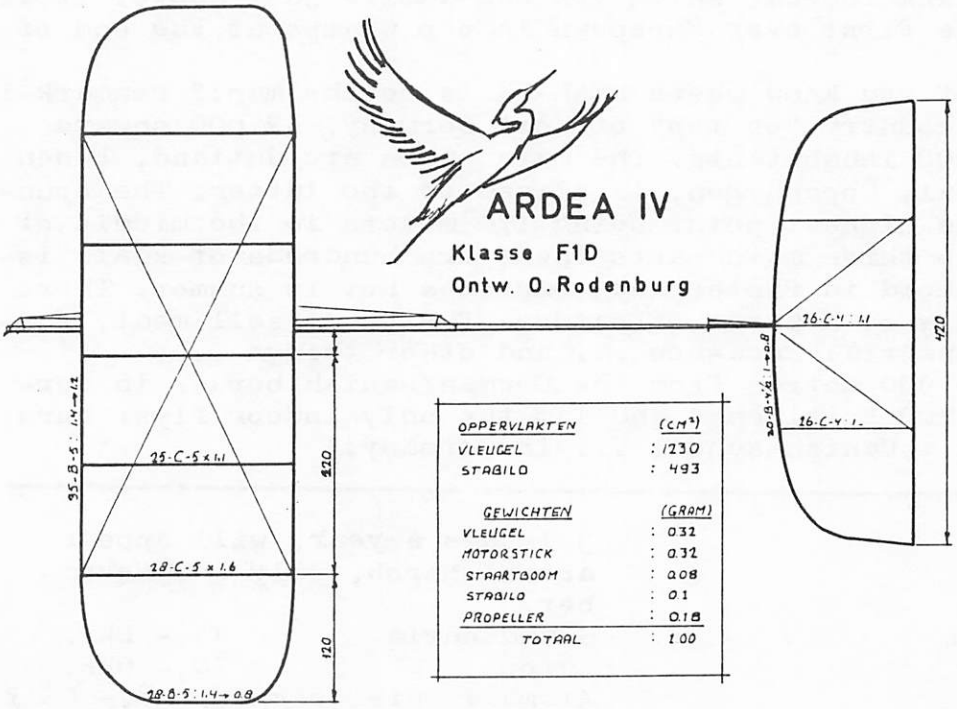
THE "SUPER BUBBLE" OF STOCKHOLM!





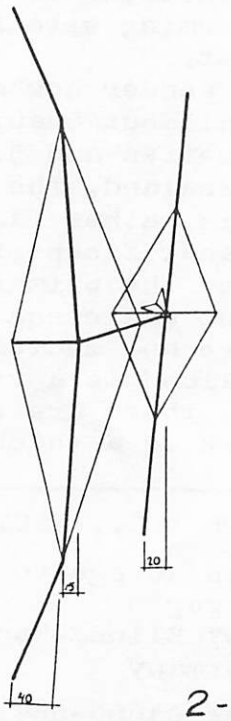
Dutch Cat. III record: 37'03
Schiphol Hangar 12 (25m)
Oct. 4, 1986

Propeller:	560 x 940
Motor:	1,2 gram, 420 mm, 1,43 g/m
Max. turns:	1750
Max. torque:	40 gcm
Back-off:	125
Launch torque:	18 gcm
Turns left:	375
Mean rpm:	33,7 !



OPPERVLAKTEN	(CM²)
VLEUGEL	: 1230
STABILO	: 493

GEWICHTEN	(GRAM)
VLEUGEL	: 0.32
MOTORSTICK	: 0.32
STAARTBOOM	: 0.08
STABILO	: 0.1
PROPELLER	: 0.18
TOTAAL	: 1.00



2-1/87

HOLLAND: By Thedo André

Dutch Cat. III record by Otto Rodenburg.

Within two years after Otto Rodenburg started microfilm modelling he made the first 30 min. flight at the Schipol Hangar (which is 25 m high). Other fliers barely did 27 min. at that time. He continuosly improved, regularly turning in 33 min. Having exceeded 35 min. in practise a couple of times he set a Dutch cat. III record of 34:15 in March 1986. Until now only three flights of 30 min. have been made by other people: Vogler 32, Liem 32 and André 30!
So it was with ever growing admiration that I watched his next record attempt developing on Oct. 4, 86 at Schipol Hangar 12. Conditions were relatively hot, 26° C at floor level. Mild turbulence near the floor caused the model to stall a few times. It started climbing at a lowish 40 RPM. After 15 min. it reached a maximum height of barely 20 meters, well below the rafters. Cruise RPM was only 35. A very, very slow let-down followed and at a height of about 8 m the prop RPM dropped below 30! Finally the model landed after a record time of 37:03!

With still 375 turns left the mean RPM was 33.7! This encouraged a second attempt, but after a well judged cruise below the ceiling, Otto had to steer the model, unhappily damaging the propeller. So we're still wondering where would be the limit!

By the Way, it is a pity that the FAI does only recognise Open Class records. As far as I know Cezar Banks 39:28 at West Baden is the worlds best F1D cat. III flight.

Newcomers, F1D-Beginner etc.

I would like to use this occasion to react on the F1D-beginner plans you published in the last IN, especially the Swiss one. It is a beautiful and clever design but it must be clear that it does not fit into the purpose for which the F1D-Beginner rules were defined. I am not sure whether or not beginners are discouraged of taking up indoor flying when they see this sort of complicated models, but their chance of winning a contest is strongly reduced and that is certainly not encouraging. A fixed model design, (e.g. Moustique) competition might be a solution if it were not for the lack of newcomers and thus lack of entries for that competition.
I therefore favour a melting together of F1D-Beginner rules with Penny Plane rules. Especially a maximum mtorstick length might be beneficial, as well as a ban on BORON.
I know that the problem of promoting indoor is too complicated to be solved by rules making. We do need a sort of philosophy on indoor promotion in order to use or develope the available tools to its best effect. I consider this of much more importance than the current discussion about F1D rules.
Such a philosophy might contain the following topics:

1. Prerequisite is a suitable, easy to reach, regularly accessible flying site.

2. Of equal importance is the willingness of more experienced indoor modellers to share their knowledge with newcomers.

3. Newcomers as well as experienced flyers must be aware of the fact that they fly in the first place for the fun of it, be it flying for the competitive element or for other personal goals. They must also realise that they are doing this while enjoying the company of other people. We all need these social contacts more often than we realise ourselves. This fly for fun kind of attitude might result in the following:

- Newcomers are less likely discouraged by other peoples great performance.
- Experienced modelers will not likely search for exquisite and complicated ways to improve the performance of models that apply to rules which were aimed at beginners.

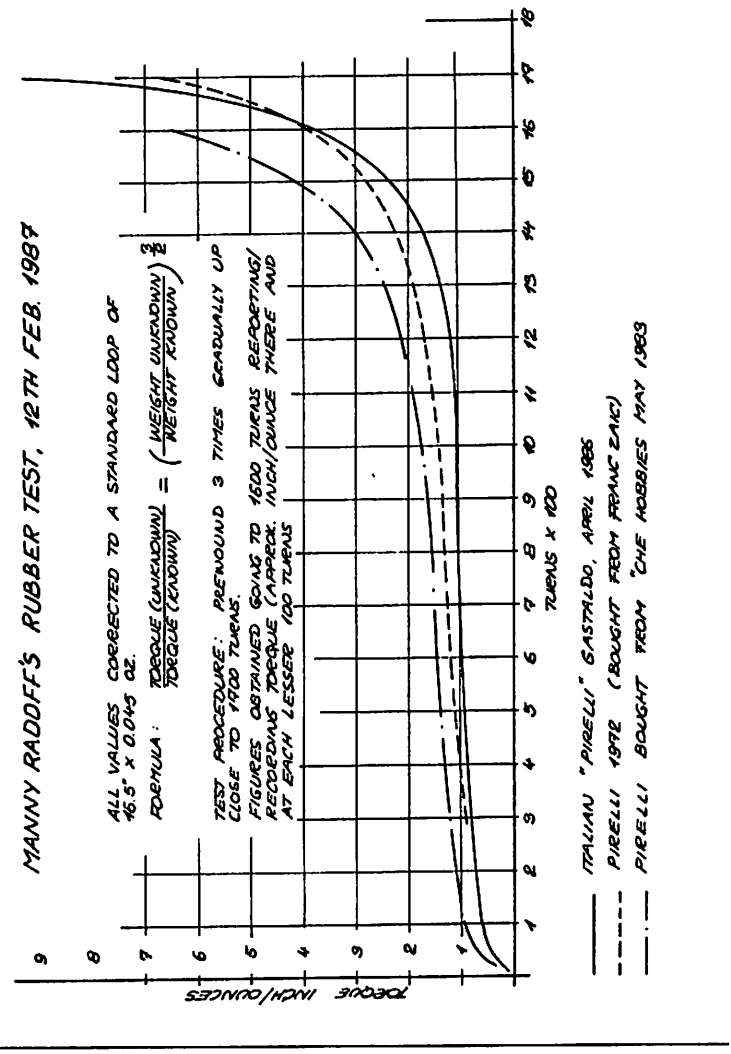
4. Rules must be set up and applied/interpreted accordingly to a predefined purpose and a specific group of modelers. Within this purpose they must maximise the freedom of design and creativity and each class must contain stimulus or possibility to take up a more complicated class.
An example for Penny Plane and EZB might look like:

- Penny Plane (F1D-Beginner): sturdy, uncomplicated, easy to trim and handle type of model, aimed at the lesser gifted or experienced modeler, with only slightly limited freedom of aerodynamic design/layout and construction techniques. There must be ample room for experimenting - and thus for learning.

- EZB: An in-between class with the possiblity (not the purpose) to learn the basic techniques for F1D models, with the emphasis more on flying and trimming skill than on construction techniques.

Behind this reasoning lies the thought that someone who flies a F1D-Beginner model has to be considered as a MODELER, not as a beginner of whom we expect that he has to graduate to EZB and then to F1D. We only fly for the fun of it. So I prefer the name Penny Plane instead of F1D-Beginner. The way we define the purpose of the class influences our attitude towards things like whether or not allowing microfilm covering, bracing, boron, flare props etc.

These are only rudimentary thoughts on promoting indoor. In every country the problem is handled in a different way with varying results. I'm sure that we can learn a lot more from each other. May be we need an International Indoor Board to investigate the situation worldwide and clean up some confusion that now exists. .....



Bernard Hunt, UK, does 24:48 with a modified version of his TANDEM-2 EZB model:

.... by stiffening the tailboom and lengthening the motorstick from 12" to 14.5", and increasing the motorweight from 1.2 gram to 1.5.
The wing, prop and tail were unchanged. The effect of the longer motorstick is to move the CG back to 210% (yes, 3.3" behind the wing TE!) and the extra stiffness of the stick/boom allows the model to be suffiently stable despite the extreme rearward CG.

3-1/87

Características de los "Modelos de Interiores" de las Categorías que se Disputan en el Concurso Nacional de Aeromodelismo.

ARGENTINA

FID - Modelos de Interiores FAI

Envergadura máxima	650 mm
Peso mínimo del modelo sin el motor elástico	1 gr

Seis vuelos; clasifican los dos mejores.

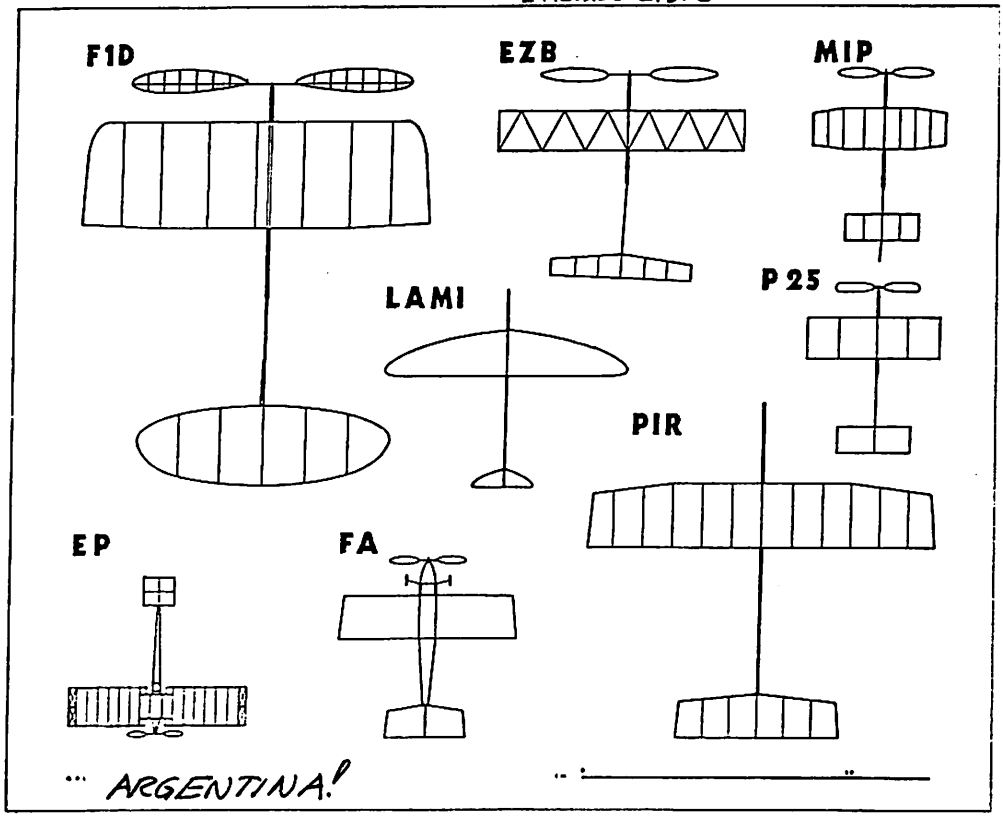
EZB - "EASY B"

Los modelos deben ser del tipo monoplano,

Envergadura máxima	457,2 mm
Cuerda máxima	76,2 mm
Area máxima del estabilizador	50 %
Peso mínimo del modelo sin el motor elástico	15 gr

Todos los componentes del modelo deben ser sólidos, se permiten soportes, riostras o tensores de madera.

Entelado Libre *



Palas de la hélice de chapa. * EZB

Cinco vuelos; clasifican los dos mejores.

FA - Fórmula Argentina

Alas: Envergadura máxima	330	mm
Cuerda proyectada máxima	80	mm
Fuselaje: Longitud máxima	330	mm
Cuaderna maestra mínima	30 x 40 x 60	mm
Estabilizador: Envergadura máxima	150	mm
Cuerda máxima	60	mm
Tren de aterrizaje obligatorio	2 ruedas	
Hélice diámetro máximo	150	mm
Peso mínimo del modelo sin el motor elástico	10	gr

Todo competidor puede presentar hasta tres modelos y clasificarlos.
Evaluación estática.
Cinco vuelos; clasifican los dos mejores.

PIR - Planeadores de Interiores Remolcados

Envergadura máxima	650 mm

Entelado en papel japonés o similar.
Cinco vuelos; clasifican los tres mejores.

MIP - Modelos de Interiores Promocional

Envergadura máxima	250 mm
Peso mínimo del modelo sin el motor elástico	1 gr

Palas de la hélice de chapa.
Cinco vuelos; clasifican los dos mejores.

P-25 - Principiantes 25

Medidas máximas: Envergadura	250 mm
Cuerda media	76 mm
Diámetro hélice	160 mm
Varilla fuselaje	160 mm
Peso mínimo del modelo sin el motor elástico	2 gr

Hélice de palas planas, espesor mínimo 0,8 mm o comercial de plástico.
Cinco vuelos; clasifican los tres mejores.

EP - Escala "Penaut"

Envergadura máxima	330 mm

Subcategorías:

1 **Pioneros:** Aviones civiles desde el comienzo de la aviación hasta el año 1915 inclusive.
2 **Aviones civiles:** Usados desde el año 1916.
3 **Aviones militares:** Usados hasta el año 1929 inclusive.
4 **Aviones militares:** Diseñados expresamente para este fin a partir del año 1930.
5 **Aviones complejos:** Diseños no ortodoxos: autogiros, alas volantes, hidroaviones, "canard", tándem, triplanos, etc.
6 **Ultralivianos:** Aeronaves ultralivianas usadas a partir del año 1960.

Evaluación estática.
Cinco vuelos; clasifican los dos mejores.

LAMI - Planeadores Lanzados a Mano de Interiores

Modelos de características libres.
Cinco vuelos; clasifican los dos mejores.

Estimado amigo aeromodelista, hasta aquí las características de todos los "Modelos de Interiores" en las categorías que se disputan en las Concursos Nacionales de Aeromodelismo; sugerimos que, para evitarse problemas, lea con detenimiento los reglamentos vigentes.

Cee Zee Bee

Design Because a canard has a very quick recovery from flight path disturbances it makes an ideal configuration for low ceiling models. It recovers within 30 to 50 cm..

Design features • Canard post is adjustable for ease of trimming. It should be glued after the trim is established. The post on the original has not been changed since the correct flying trim was established and it has not given any trouble after a hard bump with the ceiling since it is locked in place with the glue.
• Boom section: A T- section was chosen to make the boom fairly rigid, since rigidity and lightness are essential with the canard configuration.
• Motor location: Because the canard control surface is very sensitive to incidence changes, problems were encountered with motors located under the motorstick. Under high torque the stick would bend, reducing the incidence on the canard; causing the model to dive into the floor. My thinking at the time was that if the stick bent up the worst that would happen would be a stall which is not that serious with acanard. To my surprise the model just powered through the stall and climbed for the roof.

Duration To date, with the prototype weighing 1.25-1.5 grams the best time has been 9min. 48 secs. with a very stable flight pattern. The current prop is not very good since it was a reject from another model. I felt it was good enough for the prototype even though it is very coarse pitch. I am sure that with the model built to weight(1 gram or less) and a good prop the model will be very competitive in its class.

If anyone has comments on the design or builds one I would like to hear from you, my address is;

Garry Hunter,
236 Vaughan Road,
Apt. No. 105,
Toronto, Ontario,
Canada M6C 2M7.

DENMARK:

Taulov indoor meeting 15th Feb. 1987.

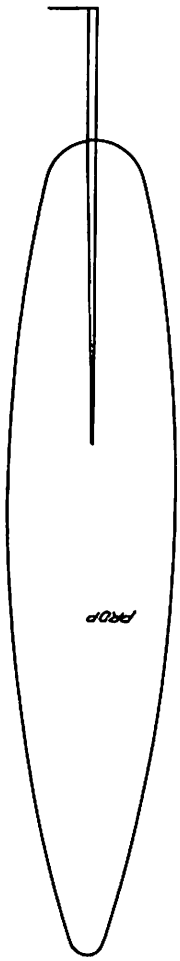
This was a very well attended event with plenty of young blood in the low-ceiling hall. Especially IHLG and the special Danish P-15 class were well supported. 17 in IHLG and 18 in P-15, impressive! The P-15 is looking like an EZB, span is max. 15", and a commercial plastic prop/bearing must be used. It is a "one model design" class which attracts these youngsters, and some well built models will do over two minutes, but avarage is about 80 secs. The model is easily built during an evenings building session in the club.

Most use "standard rubber", 1/16" FAI rubber and very long motors are "in".

The model itself weighs about 1.5 grams without the plastic prop/bearing, but the latter about 3.3 grams!! So if you put on a sturdy EZB prop you will have a much better flying machine. We are thinking of introducing a new (?-:!!!) class for the beginners - the P-15 with wood prop.

See another page for a drawing of the P-15 model.

4-1/87



WING:
SPARS .030x.060 TAPERED TO .030x.030 FROM BRAKE TO TIP.
RIBS .030x.030
RAISE TIPS 2 1/4
OFFSET WING SO INBOARD WING IS 1 1/4 LONGER
WING POSTS ARE 1/16 x 1/16 x 3/4 LONG IN PAPER TUBES.

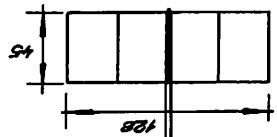
CANARD:
SPARS .030x.030
RIBS .030x.030
RAISE TIPS 1 1/4
ADJUSTABLE POST 1/16 x 1/16 x 1/2 LONG IN PAPER TUBE.

BOOM:
T-SECTION IS MADE FROM 2 PCS. .125 x.030
OVERLAP ON STICK 1/16 (SEE DRAWING)

STICK:
3/16 x1/8
TAPER 3" FROM EACH END TO 1/8 x 1/8
NO THRUST ADJUSTMENTS

PROP:
14 x 22.5 PITCH x1"
SPAR IS 1/16 x 1/16. TAPER TIPS 2 1/4" TO .030 x.030
BLADES ARE .010 THICK

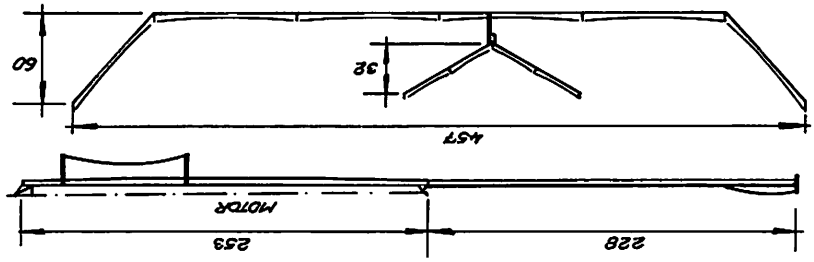
TRIM:
C.G. IS 1 1/4" IN FRONT OF FRONT WING POST WITHOUT
WING OR RUBBER MOUNTED
OFFSET WING 1 1/4 TO LEFT (FROM REAR) IF USING A PUSHER
PROP. REVERSE IF USING STANDARD PROP.
SET WING TO 0 INC.
RAISE LEADING EDGE OF CANARD 1/8" TO START
WILL CIRCLE RIGHT WITH PUSHER PROP. LEFT WITH REG. PROP.



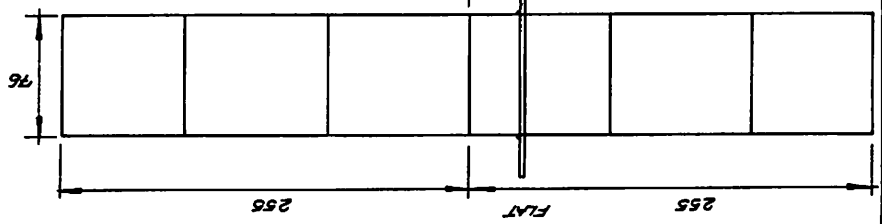
T-TAIL BOOM SECTION

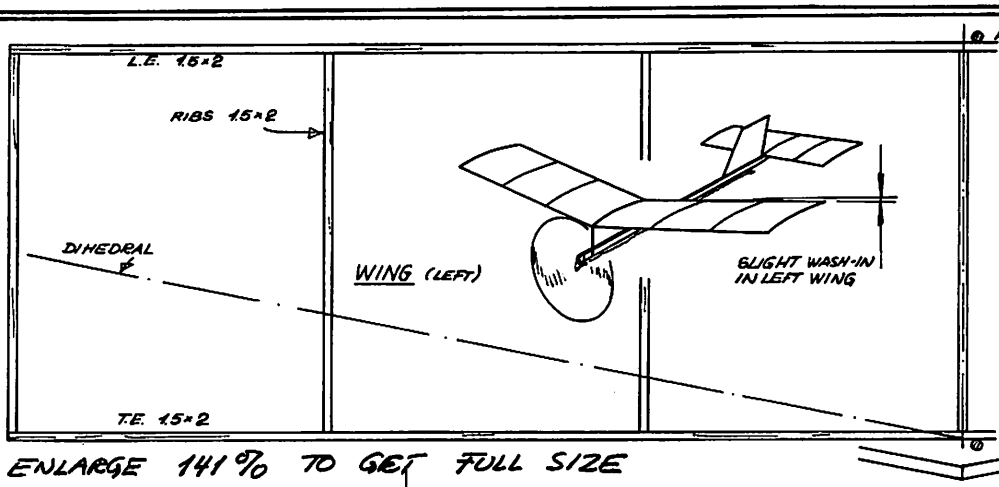
C. E. Z. B.
CAN ARD EZ-B
DESIGNED & DRAWN BY: GARRY HUNTER | DATE: OCT. 1986

J.K. AEROGRAPHICS 1987

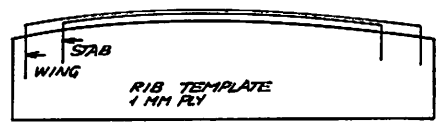


WING POSTS 20 LONG

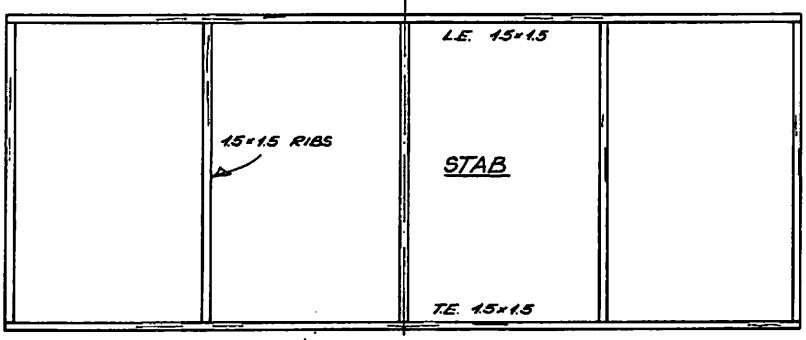




WING, STAB & FIN BUILT AROUND CARDBOARD TEMPLATES

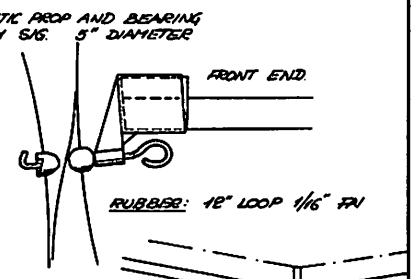


ENLARGE 141% TO GET FULL SIZE

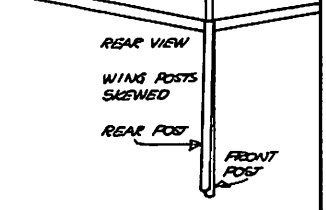


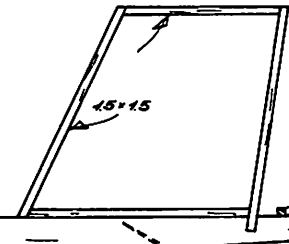
COVERING:
CONDENSER PAPER OR TISSUE

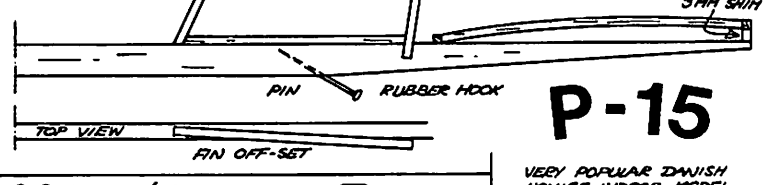
BEST TIME @ 2:30 MIN.

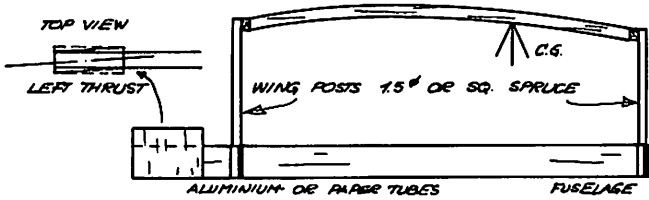


RUBBER: 18" LOOP 1/16" FN







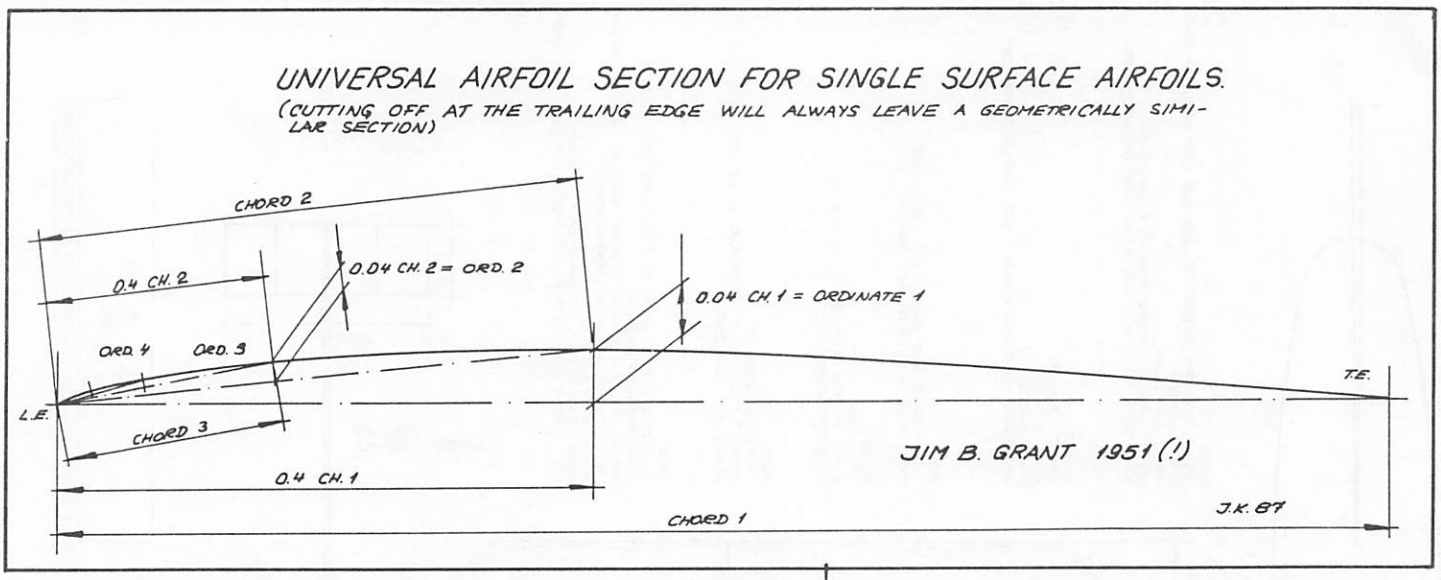


P-15

VERY POPULAR DANISH NOVICE INDOOR MODEL BY ERIK KNUDSEN, DK

J.K. AEROGRAPHICS 1989

5-1/87



UNIVERSAL AIRFOIL SECTION, by Jim B. Grant, USA

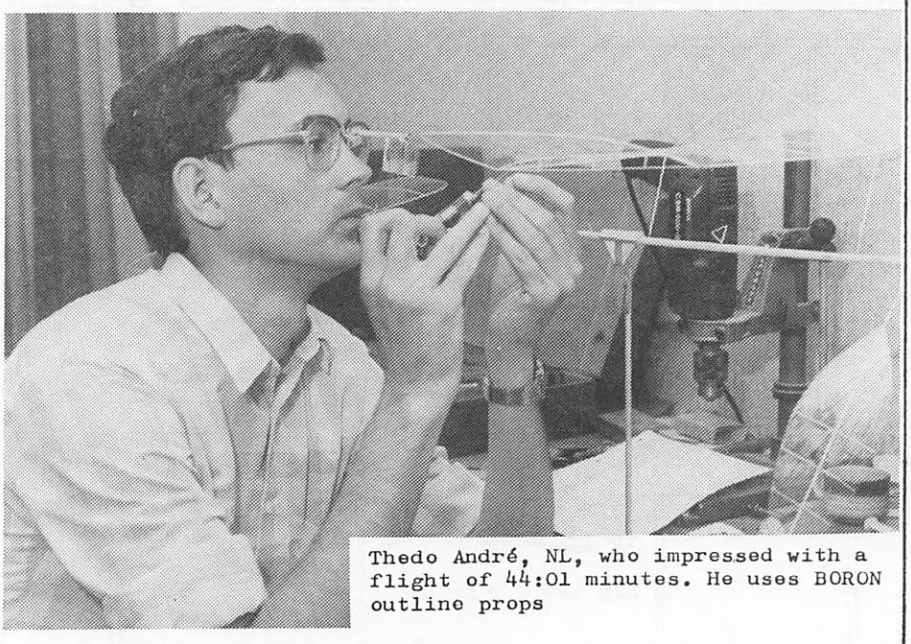
The construction of this airfoil curve follows a systematic sequence or progression of geometric events which create a curve of uniformly decreasing radii from the trailing edge to the leading edge. The airfoil section thus created has the useful characteristic of producing geometrically similar sections no matter where it is trimmed off at the trailing edge. This is very handy for tapered, elliptical, parabolic wing plan forms. There is a infinitesimal error at the leading edge, but it is so small that it is practically insignificant.

Step one:

Erect a perpendicular at the 40% chord (any point between 35 and 40% works satisfactorily). Mark off the ordinate height to whatever airfoil height percent is desired (the curve illustrated uses 4%). This ordinate point locates the "trailing edge" of chord 2.

Step 2, 3, 4, ad infinitum: Repeat the procedure used in step one on each succeeding chord.

To create a rib template simply follow this lay-out procedure on sheet alloy. After scribing the curve, cut and file to the scribed line.



Thedo André, NL, who impressed with a flight of 44:01 minutes. He uses BORON outline props

NATIONAL FREE FLIGHT SOCIETY

UNITED STATES INDOOR CHAMPIONSHIPS

EAST TENNESSEE STATE UNIVERSITY

MINI-DOME

JOHNSON CITY, TENNESSEE

JUNE 5, 6, 7, 1987 (FRI/ SAT/ SUN)

CEILING HEIGHT- AN IMPRESSIVE 122 FEET!

FOOTBALL FIELD SIZE ARENA FLOOR AREA!

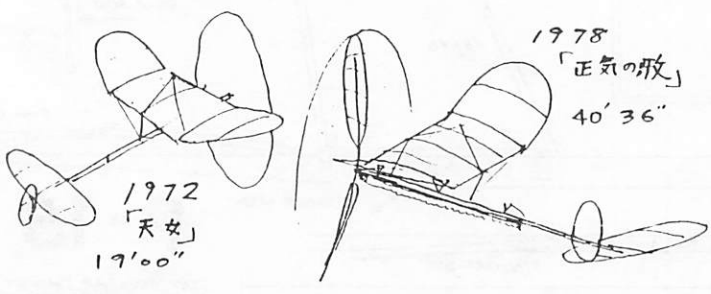
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Brookfield, WI 53005
(414) 782-6256



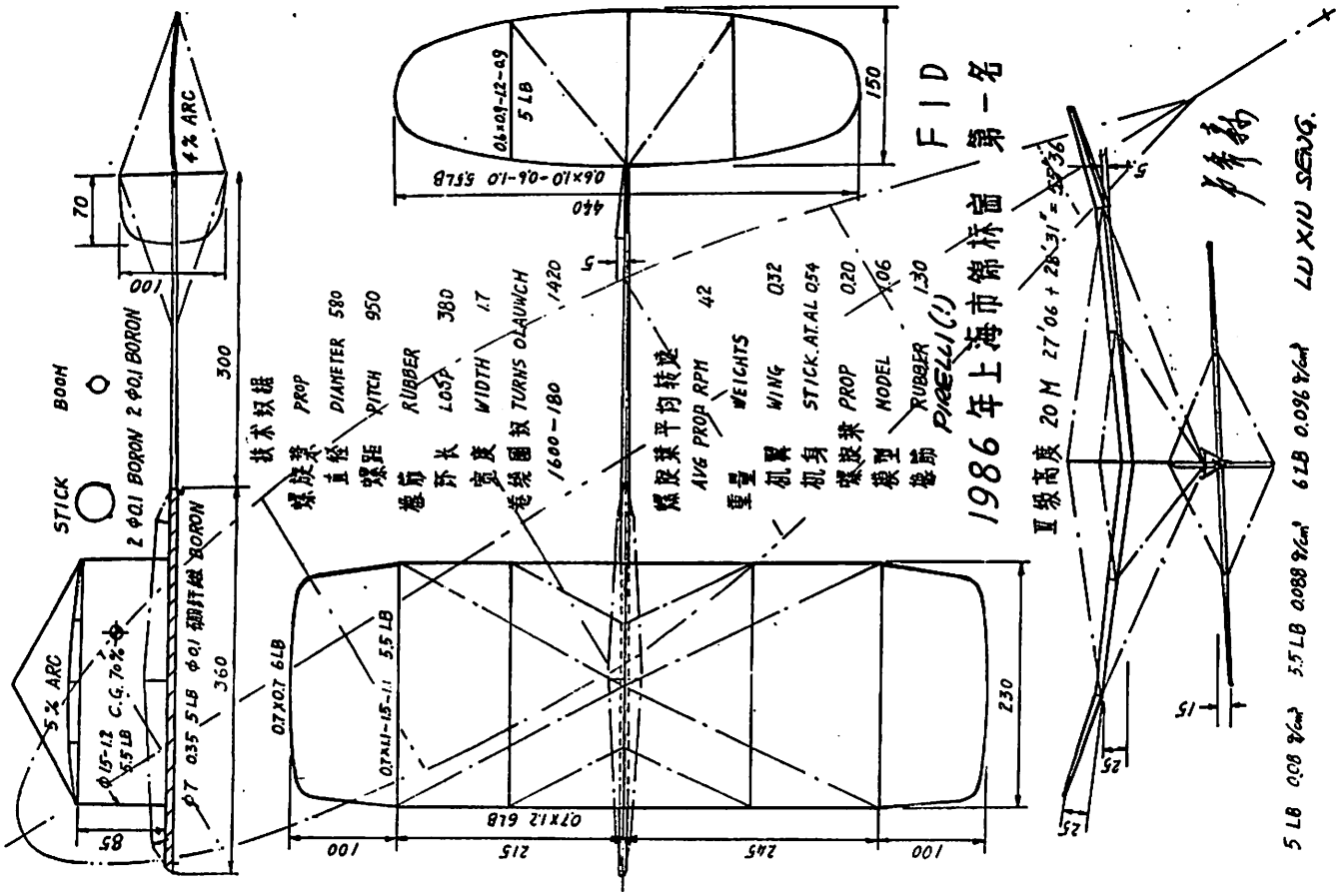
NONAKA, JPN

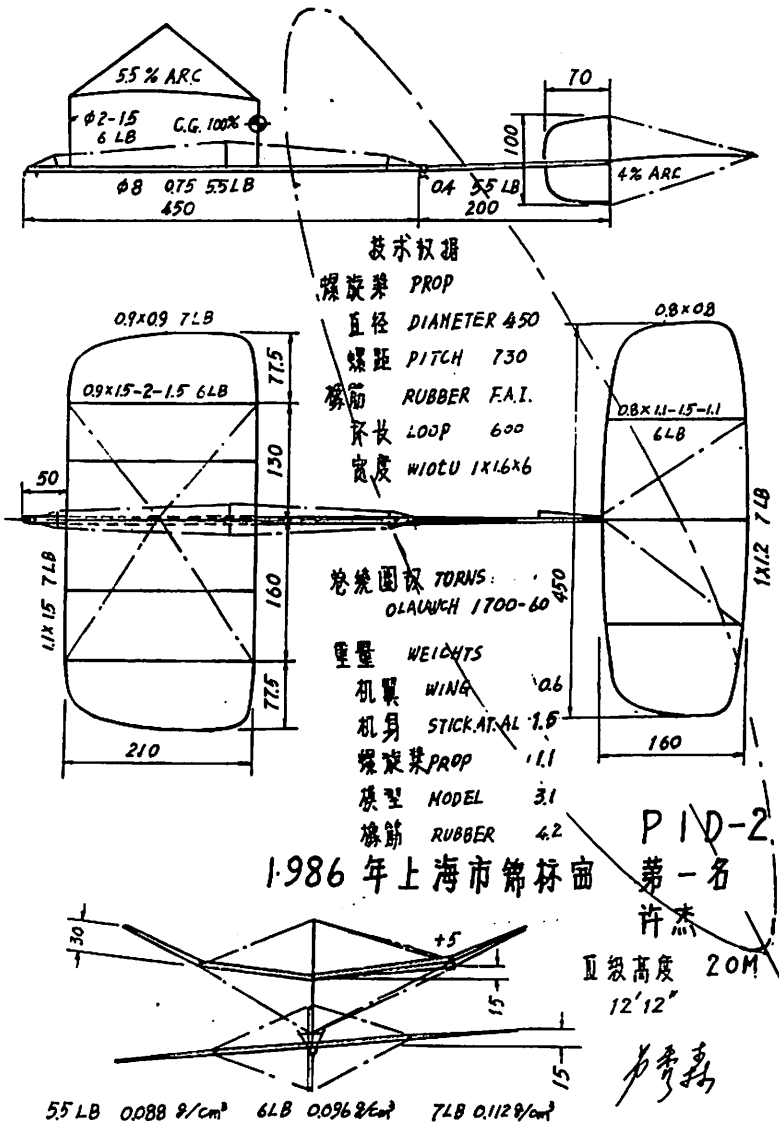
CUTTING BORON FILAMENT - SAFETY IDEA

This safety idea comes from "Hot Rod" magazine via Jim Clem. Using side cutters to cut wire, Boron or similar materials causes the cut-off pieces to fly. To prevent the cut pieces from flying: tape the cutter handles together and then fill the well of the cutters with silicone sealer. After it cures, take a single-edge razor blade and split the silicone down the center. Now when you use the cutters the silicone holds the little pieces until the handles are released.

FROM INAV JAN 1987

6-1/87





CHINA (from Lu Xiu Seng):

Lu improved the Chinese F1D record in last August in the Shanghai Athletic hall (20.5 m) from 25:35 to 28:31. He used Pirelli (!) rubber for all his good flights.

The Chinese also fly a sort of F1D-Beginner, but with free covering and rubber weight. The best time so far is 12:12.

Lu Xiu Seng's microfilm solution:

For 200 ml (millitres portion)

Nitrate dope	200 ml
Plasticizer	10 ml
amylacetate	50-100 ml

The plasticizer:

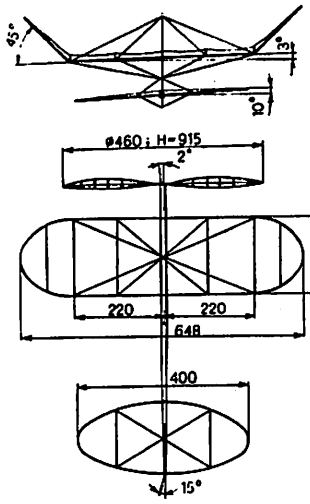
Amylacetate	50 ml
DOP	10 ml
TCP	40 ml

DOP = dioxybutyl phtalate
TCP = tricresyl phosphate

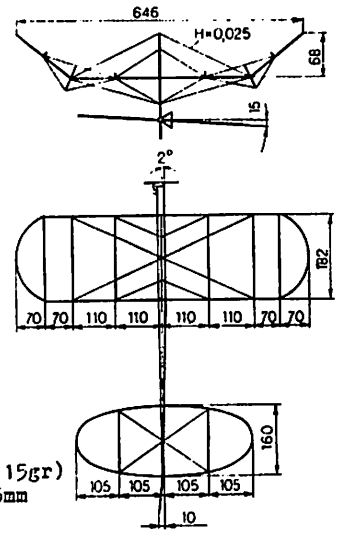
If the film breaks easily, add plasticizer (but don't go beyond 15:1). If too sticky decrease plasticizer.
Less plasticizer will make lifting easier, more thinner will make film thinnest.
Keep the film in a safe place for drying for at least 20 days.

(one difficulty is to get the right nitrate dope. ED.'s note.)

7-1/87



Courtesy Frank Seja, BRD

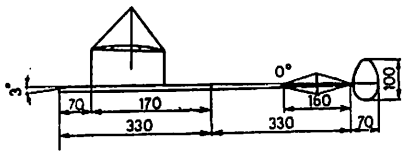


F-1-Д

Weight:
Wing 0,33 gr
Fuselage o,525gr
Prop o,155gr
Total 1,01 gr
Rubbermotor(weight 1,15gr)
1300 turns,length 325mm

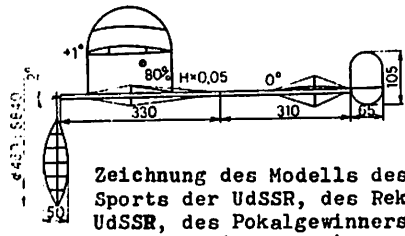
Масса.
Крыла.....330 мг
Фюзеляжа.....525 мг
Винта.....155 мг
Общая.....1010 мг

Резиномотор(масса 1,15г) накручивается 1300 оборотов, длина 325 мм.



Zeichnung des Modells der Meister des Sports der UdSSR M.AGJEJEW, A.KRASNOW I.MOKSCHANZJEW (Pensa)

Чертеж модели мастеров спорта СССР М. Агеева, А. Краснова, И. Мокшанцева (г. Пенза).

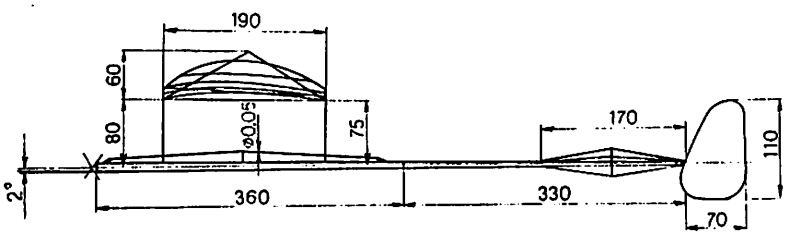


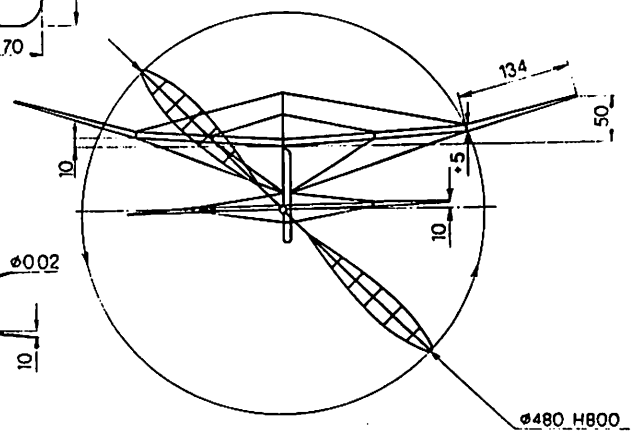
Zeichnung des Modells des Meisters des Sports der UdSSR, des Rekordhalters der UdSSR, des Pokalgewinners der UdSSR U.NUMMJER (Estonien)

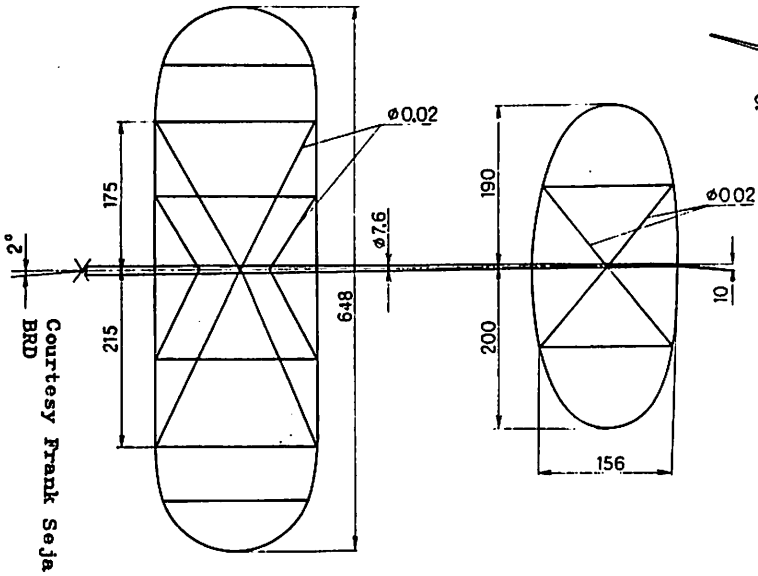
Чертеж модели мастера спорта СССР, рекордсмена СССР, победителя Кубка СССР У. Нуммерта (Эстония).

RUSSIAN F1D MODELS FROM THE BOOK: "AWIAMODELNIJ SPORT" 1985 (MOSKOW)

F-1-Д







Courtesy Frank Seja BRD

Zeichnung des Modells des Meisters des Sports der UdSSR, des Rekordhalters der UdSSR, des zweimaligen Pokalgewinners der UdSSR, W.DWINSKI (Perm)

Чертеж модели мастера спорта СССР, рекордсмена СССР, двукратного победителя Кубка СССР В. Двинских (г. Пермь).

8-1/87

ADVENTURES AT CARDINGTON

By Maestro Jim Richmond.

"If it was easy, it would not be fun."
I have often said this in reference to model flying and really believe the elements of difficulty and uncertainty are the factors that produce those eventful exciting flights that keep us attracted to this activity.

Well, the "elements" at the Cardington Indoor World Champs certainly provided plenty of challenge. As Cezar Banks said, "it was cold, windy, rainy, and the weather was bad outside, too."

The cold drizzly weather of England was quite a change from the summer heat of Indiana and I promptly came down with a bad cold and had to take care to keep the nose drips off the planes!! One thing I noticed was that being sick does reduce the pressure of competition.

Hey guys - this was really fun! And it really was. Actually I regard it as being perhaps the best world champs we ever had. This was due to the greatest ever participation (17 countries), the terrific organizing job done by Laurie Barr, and the close proximity of the living quarters, restaurant and flying site which gave ample opportunity to rub elbows with the best indoor fliers in the world.

Laurie Barr picked us up at the airport, gave us a tour of his place of business (he is the only guy I know who makes a good living building scale model planes), bought us lunch, and took us to Cardington along with Larry Calliau and the Romanian team.

My planes arrived undamaged, so there was time to do a little sight-seeing and shopping before getting down to business. This time we flew in the south hangar which was said to be "tighter" than the north one we had used previously, but it had numerous small buildings and pieces of large equipment inside. The roof looked like it had been worked over with a shotgun and I wondered how tight it really was.

We were able to do some flying the day prior to official test day which was fortunate because I had not settled on my flight combination prior to arrival. On test day I flew with half motors and did 19 min. with the V.D. prop and 21½ min. with a flexible 20" standard prop using an 18" motor stick. I was satisfied that I had it, but Popa shook my confidence that evening at dinner when he said he had no faith in the results of half motors tests.

Even so, next day in Round one, the same plane easily cleared 41 min using a full motor. I knew I would need more than this to win, but it was a good first flight. Banks and Randolph were the only other fliers to exceed 40 min this round and it was clearly evident that my own countrymen were going to be my strongest competition.

Bernard Hunt and Dave Pymm of England had similar designs which were the most unusual of any being flown. They had very large stabs, long motor sticks, small 18" props, and long heavy motors into which more than 3000 were wound. The planes were an outgrowth of their EZB development work and performed surprisingly well with both exceeding 41 minutes.

Hunt gave me cause for alarm during the 1st round when he launched one of these heavyweights directly under my descending plane. "Don't worry" he said, "mine is going up and yours is coming down". Sure enough, they did miss, but my heart missed a few beats in the process.

Round 2 was a bummer for the Americans with none of us doing much more than 34 min. My flight drifted to the side and my balloon exploded when it hit a rusty girder. Cezar came to the rescue with another balloon which I used to steer the plane back to center. Another balloon was prepared as the plane dirfback to the side again but the line tangled and the plane went into the side structure at about 35 feet. The rigger came to the rescue driving a lift truck with an elevator platform which enabled me to retrieve the plane undamaged.

Examnination revealed that a knot had climbed over the prop hook and was rubbing on the bearing which accounted for the rather early descent. I also corrected a slight bind of the prop shaft in the bearing.

Round 3 had the best air of the competition and produced 9 flights exceeding 40 min. All of the US team's flights were near 40 min, and mine landed at almost 46 min. which was the longest of the day and put me in the lead.

The next day was cold and bleak with hurricane Charlie being predicted for noon arrival. Once again the temperature was about 50°F which is about the same as the Romanian Salt mine and we took plenty of heavy clothing and blankets to the hangar. Once again George Honda persuaded Ohta of the Japanese team to give us a ride to the hangar in the team's black Mercedes, so we arrived in style and had lots of help with our gear.

The Romanian team had a shock when they arrived. They had left their planes out on their stands overnight as is their custom in the salt mines, but now they found them destroyed, perhaps by the pigeons looking for food. Not surprisingly, they were unable to improve upon their first day results.

Cezar was the first American in the air. None of the US team members wanted to fly first since the early air is usually not very good, but Cezar generously volunteered to do so on both days. As it turned out, the early air was very good, especially on the 2nd day and Cezar was only able to improve these two first flights by one second with his 3rd round flight.

Cezar's flight was all-out as is his usual style and it was very eventful. As the plane drifted to the South side at the roof he hit the girder with his balloon causing it to explode and the plane hung and dropped free twice before he could get another balloon on it to steer it free. The rusty girders are plane eaters and fortunate performances such as this were very rare. At this point, Cezar was in first place ahead of me by 26 seconds.
About this time, hurricane Charlie arrived on schedule with lots of wind and rain. All of us Americans had been flying at the West end of the hangar near the big doors which was the place touted by Laurie Barr as being the site of Riekes winning flight in 1962. But now the water was dripping in this area as well as the opposite end and along the sides of the hangar. Only the center area remained relatively dry.

Randolph was next up and his timers recorded 46 min before the prop-stop time reduced it to 43:17. That's a lot of steering made necessary by the detoriating conditions. A great flight. I saw another plane get sucked into the girders on the South side of the building and wondered if I had waited too long to get started. My 4th round flight made a similar pattern and at 17 min it was at the top and heading into the South side at the junction of the eves at about 130 ft. I was trying to get a balloon on it from between the side buildings among debris and spectators and managed to smash a wing.

The drift was getting crazy going first to the North side at low level, then to the South side higher up and more slowly toward the East end.

As I was preparing for my 5th round flight I noticed Ron Higg's plane cruising at about 30 ft. over the officials' table. Half of its film was hanging in shreds due to the water bombardment and yet it continued to fly rather respectably with its remaning film while dragging the water logged shreds around. Not a very encouraging sight.

I packed 2370 turns into the motor but let off 80 turns partly in deference to my wife who was urging me to "do a safe 42 minutes".

I launched at the West end of the center section near the officials' table and over the spectators. The plane rode out of the low level turbulence well but rapidly drifted toward the North side and toward the smoke stack of an incinerator. It looked as though it might clear, but Laurie Barr said "its going to be direct hit". Sure enough, the drift carried it into the smoke stack and it caught the right wing and

prop at about 30 ft. (This all happened during the ½ of the first circle). Fortunately, the plane slid off of the smooth tin pipe and it continued on its way.

As the plane gained altitude, the Northerly drift subsided and then it started moving back toward the center. At 7 minutes into the flight the plane was perfectly centered at 80 ft. and I was wondering if it was going to get high enough for it appeared to be fighting a down draft. But then, as it continued its southerly drift, the air seemed to improve and it had climbed to about 130 ft. as it arrived at the south side of the building 17 min. into the flight.

There it was up at the top in accelerating side drift where I had smashed my 4th round flight. I was dancing among the burned mattresses (the hangar was being used for UL type fire tests) between the side buildings, knowing that I had to get the line on it this time around or it would be too late. I was so keyed up that everything was happening in slow motion and I carefully positioned the balloon for the catch. Then, above the noise of the hurricane on the tin roof and the people in the hangar, I heard my wife yell from the end of the hangar "higher". It's hard to judge the hight of a balloon when you are standing directly under it, but she could see it very well from her position. Bouncing balloons on these girders had proven to be a dangerous practise and I wanted to stay clear of them but I immediately let out more line and safely caught the plane.

I started to lead the plane out of there when the line slipped off the prop. At least the circle had improved and it was safe to let the model come around for another catch. Steering is not one of my strong points and my yellow line was almost invisible under my yellow balloon, but this time I snagged the prop well and led the plane back out to center.

I appreciated the sound of applause as I let the model fly free of the line. After 10 min. it had drifted to the south side again and I noticed that the altitude was still the same as the last "side trip". The steer back out to center was starting to seem almost routine by now. Another round of applause. The plane had been working its way down stream toward the the east end of the building as it progressed, and now the drift was south easterly instead as most south as before. Also, as the plane approached the southeast corner of the center area the southerly drift finally abated and it appeared that the water dripping in this area would not be a problem. Even so, each circle was carefully evaluated relative to the liquid bombardment. Now the plane was drifting back toward center and over some metal shelves in the eastern zone. I climbed the shelves to locate the position of the waterfall I could hear on them and to my horror saw that the plane was flying right through it! Even though I was now at the 40 min. mark and only a minute away from winning, I snagged the prop with the balloon line and got it out of there.

This time when I released the plane it was heading down at a slight angle. The low torque of the nearly expended motor could hardly keep the prop running fast enogh and it kept trying to "tuck under". Good thing the wing wasn't very close to the prop (due to the 18" motor stick). After a few more seconds of this, the normal cruise resumed, but those seconds seemed like minutes. No applause for this steer (ha)

Now the drift was toward the north side and one more steer was required to get back to the clear area. The plane was heaving and wallowing in the ground turbulence before it finally landed with almost all of the turns expended. The timers had over 50 min. on their watches before the prop stop time reduced it to 47:44. Remarkable that the longest 65 cm F1D flight ever made would be accomplished in such unfavorable conditions. Former world champ Bud Romak said "that was the damnest flight I have ever seen, and I have been flying these things for 25 years."

Few other decent flights were made during the last two rounds. Cezar's 3:58 was the longest one made by the US team. I was very glad I didn't have to fly in the last round but I admired those who made the effort. Many had their planes sheltered under umbrellas in an effort to keep the mist off of them and few of the flights lasted more than a few minutes.

The hangars at Cardington proved once more that they are one of the most outstanding of the world's flying sites. I'm looking forward to the next time they will challenge us to make the longest flight of all.

CONTEST CALENDER 1987:

Internationals:

6-7 June	Butterfly Meeting, Nijmegen, Holland Contact Edmund Liem, Egelstr. 17, NL-6531 PH Nijmegen
13-14 July	Orleans Contact Michel Piller, 51 B^{d} Marie Stuart, F-45000 Orleans.
21-23 August	Flemalle Contact F. Van Hauwaert, 1 Grand Place b 52, B-4110 Flemalle
25-30 August	European Indoor Champs, Wroclaw, PL. Contact your local aeroclub/assoc.

Cardington:

7 May	FLY-ROD, 2 grams EZB
14 June	All classes, index
4-5 July	Team Trials and British Nats
27 July	All classes, index
23 August	All classes, index
28-30 August	Team Trials
13 September	Open date.

All these Cardington dates are provisional.

Denmark:

9-10 May	Danish Nationals, Flensburg Contact Jorgen Korsgaard, all indoor friends are welcome.

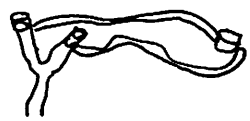
West Germany:

25-26 July	German Champs, Dortmund. Contact Alfred Klinck, Kurt Schumacher-Allee 239, D-6630 Saarlois.

F1D PLAN BOOK: SOLD OUT

I'm happy to say that my project F1D Plan Book was a success, there are no more copies left .... But no reprinting is planned as it will too expensive.

Anyway .... thanks for your support!



ELASTIC STORIES .....

Samples of the Italian Gastaldo "Pirelli" rubber strips have been sent to rubber testers all over the World. Manny Radoff and Boyd Felstead are disappointed over the way this rubber behaves ... too low cruise torque and making side knots ("whiskers") when coming in.

A more positive reaction from Richard Blackam, "Needless to say I have not had the time to check out the Italian rubber, but the reports I have heard are that (1) the first batch (dec. 85) was poor at about 2500 ft.lb. but improving with age and (2) the second batch was much better (April 86). Remember that Pirelli itself produced some pretty poor rubber at times and this Gastaldo fellow is still learning about it. Just be thankful that someone is doing something about it. Even FAI rubber is becoming very poor in energy storage due to some manufacturing problems...."

Lu Xiu Seng of Shanghai sent the editor some 1 x 2 mm Chinese rubber together with instruction in reheating the rubber 1-3 hours at 120° C!! A quick deformation test showed it was not better than soft Pirelli. I'm awaiting a larger bacth soon.

But please note that Lu himself uses Pirelli and FAI at the Shanghai contest !!!!

10-1/87

Richard V. Ganslen on stick making ....

I'm sending you some illustrations of the method Stan Chilton and I use for making straight motor sticks with relative ease. You can call it the "Chilton-Ganslen Method", but we don't know if it is entirely original.

The motor stick blank, overwide, is overlapped in wrapping on a glass tube using the thinnest of silk span-paper ... the wood, of course, is soaked as usual. After I roll the paper and wood on the form I often roll the glass rod on a smooth rug floor which tightens the paper. Not a necessary step.

A piece of hard board is part of the jig. In the center of the board we put two or more small pieces of sponge rubber (sold here in shoe stores) as a base for supporting the ends of the rod, but PRIMARILLY to produce friction so that the glass rod and motor stick do not move. Now, two pieces of scrap wood, 25 mm or more in width, about 13-14 mm thick and in length according to the stick, are now laid parallel to the glass rod and taped or held in place with a rubber band or two. The thickness of the wood should be such that a substantial groove exists between the wooden stick so that a knife (created from a piece of razor blade) will slide smoothly the length of the motorstick. Despite the presence of the rubber bands or masking tape it is helpful to hold the two parallel wooden rails tight against the motor stick form when cutting the future seam for the motor stick. This is only precautionary!

Once everything is held down snugly one merely strokes the knife the length of the motor stick, running in the groove, to cut a perfectly straight seam. The razor blade protrudes from your sledgelike knife just far enough to cut through the paper layers and the wood.

An alternative cutting technique is to lay a steel ruler along the rails and hold this perfectly straight (or masking tape it in position) and cut the seam. I prefer to make the little knives sanded to fit the groove perfectly.

Orientation of the glass tube with the wrapped wood is of course important when you make the cut. One must be careful when extracting the various layers of paper from the wood after it is removed from the form. Your cut stick should come out about the circumference.

SPECIAL NOTES:

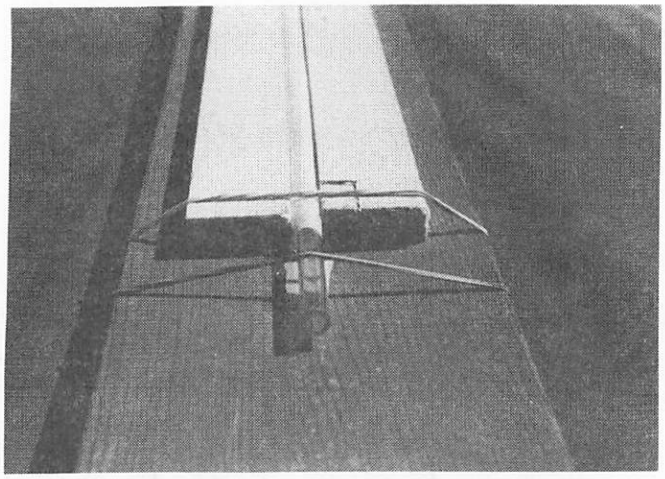
I spray and bake my glass rods with teflon so that the motor stick is again wrapped around the rod and glued without a danger of sticking to the rod. If the seam is now glued together on the rod it must come out straight.

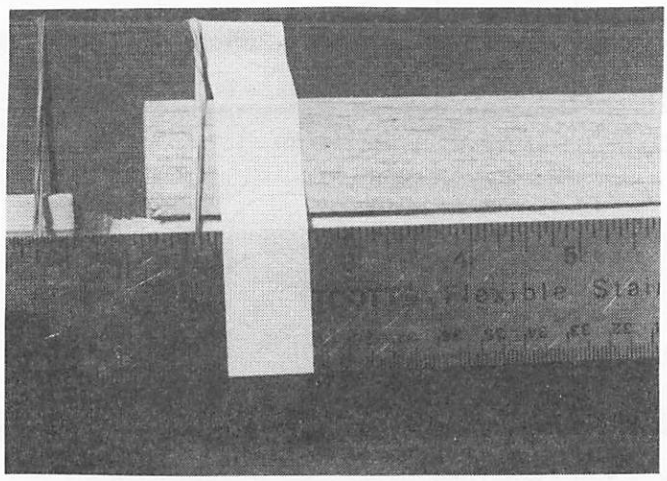
Chilton obtains HEAT SHRINKABLE TEFLON to slide over the glass rod of about 5 mm in diameter or 5.5 which again brings the rod dia. close to 6.35 mm. With mild heat the teflon tightens up beautifully. Teflon cannot be simply sprayed on a glass rod, it must be baked in place.

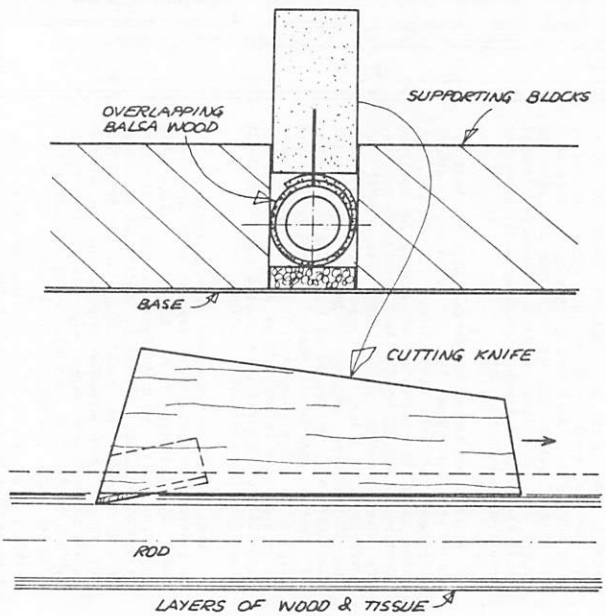
To further insure that the motor stick will slide on and off my form I spray the tube with a silicone spray and wipe it off dry. Large cans are quite cheap. Don't get the silicone on anything you wish to glue ... it is very difficult to get off of any former or jig once you get it in the wrong place.

We consider this method a good way to get straight seams even if the wood is wrapped crookedly on the glass tube. Of course we all plasticize the glue used to put the seams together.

The motor stick remains on the form until the boron braces have been glued in place.







Sweden: 25-OERES MODEL

This class started in 1970 in Sweden exactly as an American Penny-Plane but was changed somewhat over the years. Now the specification is:

Max span 500 mm
Max wing chord 150 mm
Max distance between rubbe hooks 250 mm
Min. weight without rubber 3.00 gram

No biplanes, no VP/VD props, solid stick and boom and NO microfilm covering.
No restriction on fuselage length

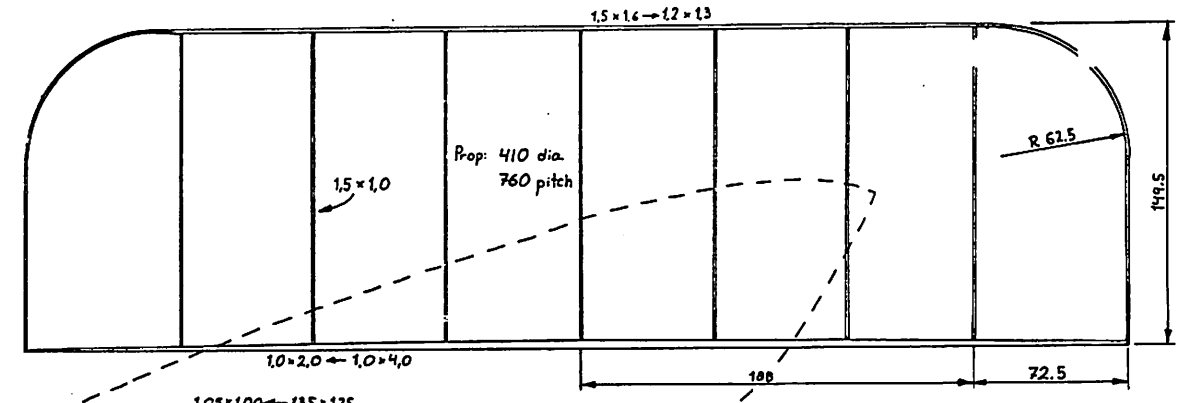
Sven Pontan who has supplied these notes won a contest 17th Jan with his 25oeres doing 7:55 and 8:10. .... He thinks that the Penny Planes, the F1D-Beginner and this Swedish class can fly together in the same event as the specifications are nearly the same.

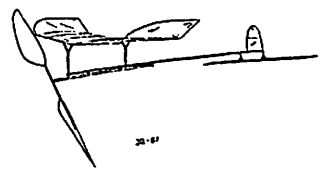
Swedish F1D Champs 1986.

Held on 1st November 1986.

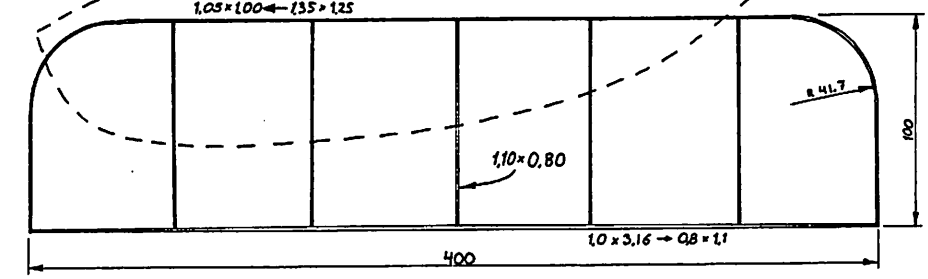
1.	Peter Comet	27:26	(2 flights)
2.	Sven Pontan	26:42	"
3.	Lars Lindén	23:46	"
4.	Sven-Olov Lindén	19:12	"
5.	Christian Edlund	13:47	"

Jonas Romblad is a talented, young Swede who makes beautiful drawings, this we see his "25-oeres", Swedish Penny-Plane.





The following parts are reinforced with carbon fibre :
Stab and Wing LE and TE
Motorstick, Bodystick and Tailboom

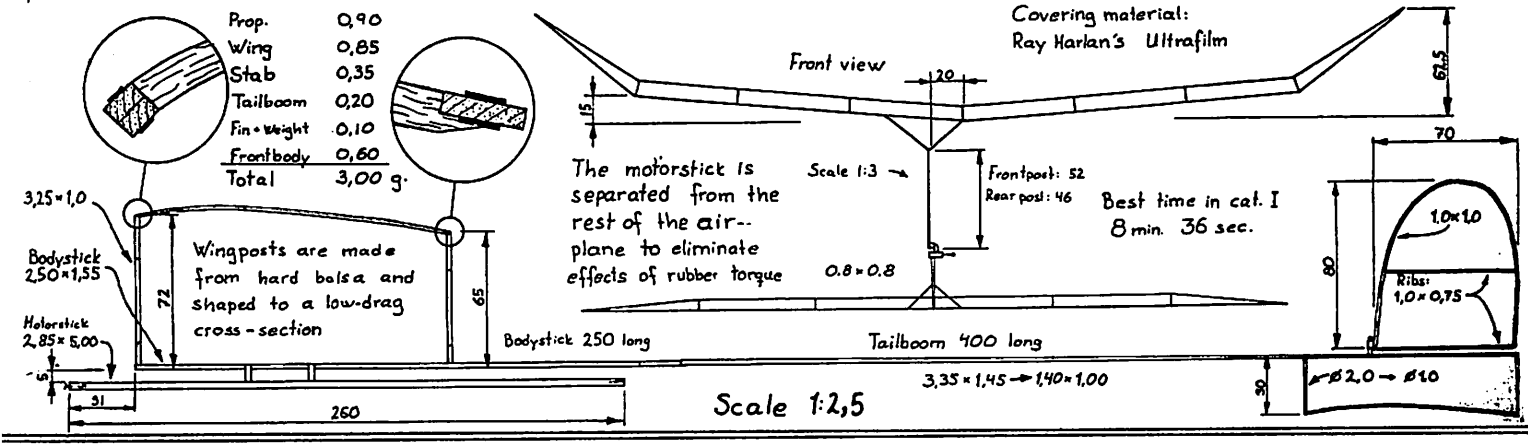


Spirit of Stockholm

Jonas Romblad

All papertubes are 2,0 mm dia.

Wing, stab and fin airfoil: B 640 5 %



CONDENSER PAPER TECHNIQUE

FROM NFFS DIGEST WITH THANKS

USING CONDENSER PAPER
BY
Chuck Markos

Recently many modelers have asked me about covering with condenser paper. The following comes from a combination of information learned from other modelers, from magazines, and from my own experience.

Condenser paper is used in the manufacturer of paper condensers, or capacitors as an insulator. It is quite impermeable to air and water which makes both a good electrical insulator and a covering material for indoor models. The most important property is the weight of the paper. On my wake-shift balance regular grade condenser paper weighs 320 mg per 100 sq. in. "Ultra" condenser paper weighs 270 mg per 100 sq. in. and is presently quite rare and expensive. Micro-X has a limited supply at $10.00 per 3 sheets. As a basis for comparison, microfilm weighs approximately 50 mg per 100 sq. in. and 0.1 mil mylar is 200 mg per 100 sq. in. I use these bastard units of mg/in² as they are the ones with which I find most meaning so please excuse. As a result of the paper's impermeability, the technique of doping the frame followed by brushing thinner through the covering will not work for adhesion.

Control of shrinkage and resulting structure warps can be controlled by a number of techniques. I have had good luck with crumpling the paper into a very small ball and then carefully unfolding it to leave an "alligator skin" which over the years absorbs this shrinkage without transfer of undue pressure to the framework. More recently, I have conditioned the paper by water spraying the condenser paper held between silkspan laid on a rough towel. A towel is then placed over these layers and this "sandwich" is pressed dry with a hot iron. Allow the conditioned paper to air dry before use to remove all traces of excess water.

For indoor scale models, the raw paper can be attached to a large frame with dope, water shrunk, and color doped with a fine spray before use. A secondary frame is used to transfer the covering to wing or tail surface so that reasonably taut covering results without requiring further shrinking. Plan your framework to reduce compound curves to a minimum for a better looking job. This method tends to produce a covering that will further tauten as to passes through damp and dry seasons. Maximum scale/workmanship points will come after one year if punctures are absent.

To attach condenser paper to the model with a minimum of weight added from the adhesive seems to be the major problem for most of us. For scale models and also when I intend to shrink the covering on the model, dope is used as an adhesive.

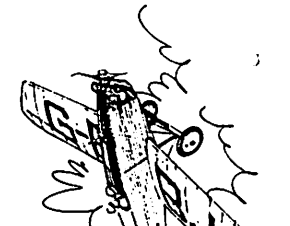
A good non-tautening dope may also be used for covering propellers. I have also used very thin contact cement. Toluene is used as a thinner as it is slow to loosen glue joints but it is not commonly available. A commercial condenser paper cement is probably common shelac which is thinned with methanol (wood alcohol) and will not warp the structure or loosen glue joints. Much weight is usually added with these solvent based adhesives. You must be careful with over-age shelac because it will not harden. Additionally they do not have much "tack" and must be applied while the structure and paper are in close contact otherwise several applications of highly thinned cement will be needed resulting in excess weight.

Water based adhesives probably give the best results when used properly. To avoid warps adhere only small sections at a time. For example, you might cover the perimeter of a wing by applying adhesive to a 1/2" length, skip a one-inch section, and adhere another 1/2" length etc. until the covering is in place. When dry, go back and finish the skipped-over sections. Smaller and lighter structures will of course call for smaller lengths of adhesive and larger gaps. Presently, I build paper stick wings glued down to a bracing jig, then cover and brace before cutting away. Propellers are also built and covered on a pitched jig - more about propellers in an article to follow.

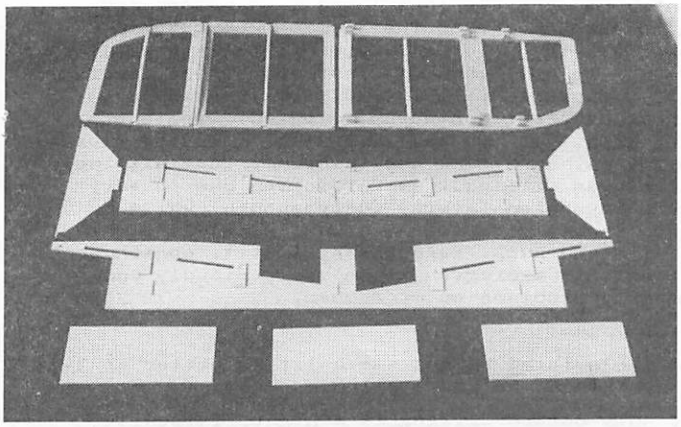
What types of adhesives are acceptable? My suggestion is that you experiment with scraps of balsa and condenser paper to find an acceptable solution. Saliva is commonly used, the sticky part is probably mucus. The solid content of my saliva in one experiment was about 3%. This can vary from day to day and probably from minute to minute. Lepage's muscilage paper glue (with the rupper applicator top) is about 65% solids so that a 20:1 dilution puts you in the ball park. It works.

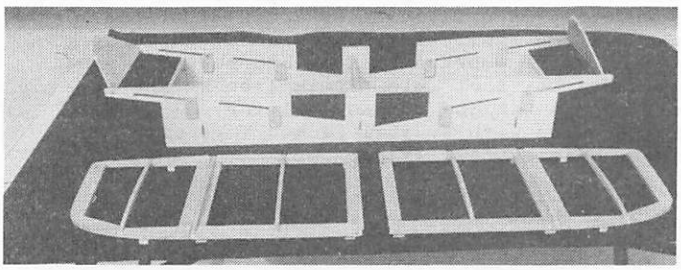
Titebond glue leaves about 50% residue on evaporation and can be diluted 15:1 to give a 3% solution. My own choice is more exotic. I am a chemist with access to a stockroom of materials foreign to the rest of the population. Experiments indicated that a chemical named hydroxypropylmethylcellulose (HPMC) as a one-percent water solution gave the desired adhesion. HPMC is manufactured by Dow Chemical Co. and is used as a thickening agent for foods preparation, a small amount can make water so viscous that it will not pour. However, at the 1% concentration water is still quite fluid. My unrealized hope in using HPMC was to adjust the viscosity so that the solution would not soak into the wood adding unnecessary weight. Other suggestions for adhesive agents are Knox unflavored gelatin, cornstarch, wallpaper paste, or egg white. The test for adhesion that I use requires that the paper can be removed from the frame (after drying) without tearing. If it tears, your adhesive is too concentrated.

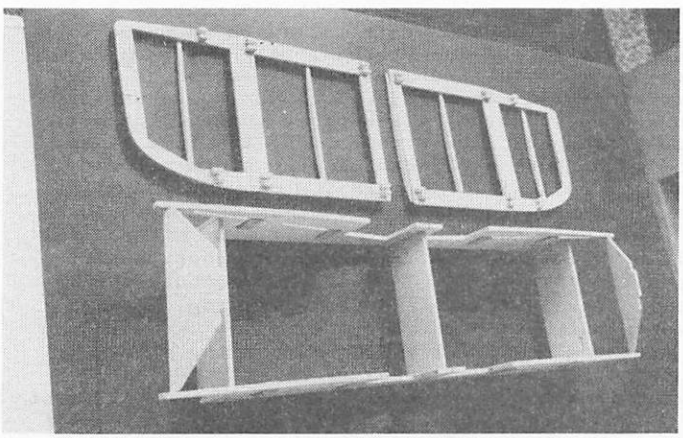
To trim excess paper use a fresh carbon steel double edge razor blade broken to furnish a sharp point for getting started. Slice when cutting parallel to the grain. I use a sawing motion for cutting cross-grain. Keep your non-blade-holding hand close to your work and discard dull blades.

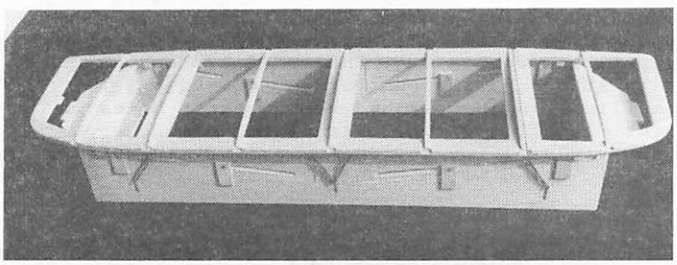


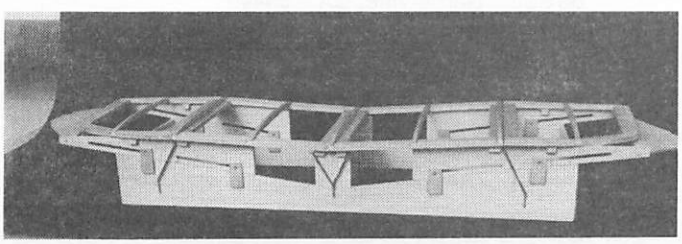
12-1/87

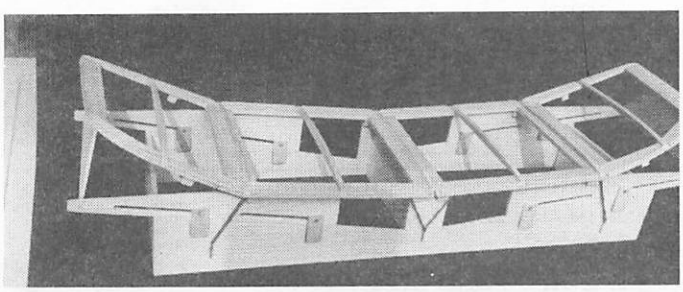












A FANCY JIG TO DO IT ALL ON.....

At Cardington the editor was shown a complex jig built by Sylwester Kujawa of Poland. He builds, covers and braces on all the same. The pics show how.

Klaus Nottelmann of Germany sent the pictures. Perhaps this is the FORMULA-ONE in the jigging world!

FROM THE EDITOR .....

To make such a newsletter like this takes a lot of time which, to be honest, could be used for building models .... but nevertheless I do like it. It's a very nice feeling to have 125 or more friends all over the world, getting letters from them and answering them. (my stamp collection is growing very fast!)

But this time at dead-line my material drawer is nearly exhausted, so I must ask for kindly contributions ....

By the way, when you type your contribution, please, use a line length of max. 125 mm or 5 in. Then I don't have to re-type it to make it fit in a two-column page ...

As for drawings pencil lines are OK ... I like inking ...!

WANTED:

Hints and tips for beginners
Flying experience with FAI or Champion rubber
Practical and theoretical prop articles
Spiral wound sticks
How you promote indoor in your area
Dwgs of models and building steps
Personal contest reports

RUMOURS:

.... Say that the Americans will be interested in running the next - 1988 - indoor world champs - if the MINI-DOME, Johnson City in Tennesee is a good site. It will tested out at the United States Indoor Championships in June.

CSSR:

The Waleks - Leopold and Vaclav - (father and son) told me that their national team for the coming European Indoor Champs will be selected at a contest in the "Z-Hall" on 24-25th July. Interested people are some wellknown names : Jiráský, Kalina, Rybecký, Kunes and the Waleks. Good to see that those "old boys" have not forgotten the sport .....

Dutch Team for EIC:

At a contest at the Schipol hangar the following team was selected:

Otto Rodenburg
Edmund Liem
Thedo André
Team Manager will probably be Brian Clifton

OBS! OBS!

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13-1/87

Robert R. Randolph, Lt.Col., USAF (ret.)

Extracts from a comprehensive essay on Randolph's trip to Cardington:

He calls it "ALL YOU WANTED TO KNOW ABOUT MY FLYING AT CARDINGTON, BUT WERE AFRAID TO ASK" .....!

.....

The plan and preparation:

.... Back from the team trials I put to paper a very detailed plan of development and testing which was designed to result in six new superior models, each well tested and ready. During the year long period of preparation, I put in an enormous amount of man-hours building and testing. According to my flight records I made 543 test flights! This was possible because I am fully retired and I wanted to be well prepared. While my indoor modeling and soaring activities keep me "young at heart", the old 63 year old body is already slowing down and someday when the hands start to shake - I'll be all done.

I put in so much time getting ready that even though I love indoor, I began almost to hate it. Regardless, I did end up with six good models. These ships have improved cruise and "float" and seem to handle turbulance better than my prior designs.

.....

Test flights:

The next day I made eight test flights using 1/4 and 1/2 test motors on two of my models. Results for my first ship were terrific indicating full motor flight times of 41:40, 45:44 and 44:30. My second ship required more wing incedence and was about trimmed out when it had a collision with a German model damaging my stab and the tail boom.

The following day after nine test flights with the repaired model, I hooked up a full motor and got a respectable 41:20 climbing to about 130 feet. The hangar ceiling is 156 feet. I then checked out a third model making four flights on 1/4 motors. Best time 10:30 (42:00 equivalent).

That evening I cut rubber, made up motors and broke them in. Things were looking good. I was amazed that although the temperatures at Cardington were quite low, my ships were flying well on "California" power.

.....

The contest:

.... The 41:40 achieved was high time for round 1. Now these numbers may not mean much to others, but they made me very excited. I knew that all I had to do now was to use the same motor and back off less and launch at a torque setting of 37 or 38 to get the additional 25-30 feet of height and the model would get 4 or 5 more minutes (46-47) Victory seemed within my grasp and it felt wonderful!

Things started to become unglued during round 2 when my motor broke that I had used before and I had to use a new one. The replacement motor showed all the power of a wound shoe lace getting my model to only about 85 feet and a disappointing 34:17. Meanwhile flight conditions continued to improve and four contestants logged flights over 40 minutes, but my 34:17 was high among the American flyers. Hunt (UK) had warned me that altitude control was difficult at Cardington due to very strong inversion layers. Oddly enough, while my first flights were too low, Hunt's models climbed too high and hung. Regardless, I still continued to consider Cardington to be user friendly and blamed my problems on my rubber.

.....

Randolph's third flight was a little better at 39:36 but he thought he had a climb problem....

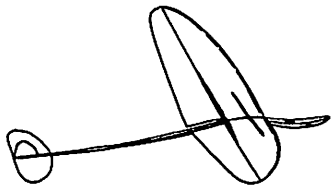
.... just before calling it a night, I recalled something that might logically explain why my models suddenly were flying like a ton of bricks. It was all the fault of my buddy and team manager, Bud Romak. I remembered that he had pasted a decal on my model box that said "Romak Iron Works" advertising his Oakland Company! Having solved my flying problem with typical Yankee ingenuity and logic, I quickly fell asleep ....

.....

On day two ...

.... According to RIWR (Romak Iron Works Representative), I was to fly first. Round 4 started with a bang. Fully wound using my "44:20" rubber, I was trying to find a clear path to launch when the ship literally exploded in my hands. Only the prop escaped destruction since my hand protected it - but everything else was scrape. I think the clever British had anticipated this because three large 8 x 10 feet trash bins were nearby! By the time I was ready with model no.2, the pending storm hit and rain started to fall through the many holes in the roof. I elected to fly in the other end of the hangar where were fewer holes. This flight started out badly by climbing only to perhaps 90 feet. Romak pegged the altitude at 75 feet, but we both agree that it was plenty low and disappointing. As time passed slowly, it became apparent that the ship was cruising beautifully and was holding its altitude. Drift was bad however, and I had to steer it away from the sides 8 or 9 times. On one of these the balloon line caught on the ship and I thought I had "bought the farm". Usually when this happens you either break a wing or the model gets more tangled requiring reeling down. Luckily, and with some fancy footwork I kept the ship moving forward and finally flying on its own. The model clocked 45:08 but with steering time subtracted, netted 43:17. What a flight. Raindrops had bombed three holes in the stab microfilm without structural damage proving the visdom of my choice to use very thin film.

.....



North of England, Low Ceiling Indoor Contests:
Via and by John O'Donnell.

These events followed the well established pattern of recent years - similar size sports halls both sides of the Pennires, the same four events & consistent rules throughout.

Support was miserable - with but a limited number of "regulars" in attendance. Entries hardly reached double figures at "best". Scores were high, with the same few names dominating the results.

Perusal of the results needs to be done with some knowledge of the rules: 13" IHLG, half motor for EZB, and a penalty scheme for those who win in Peanut Duration.

Something must change if these meetings are to continue, a wider clientale being needed to pay for the hall hire. Maybe new classes are needed - to force everyone to start again and provide an "opening" for newcomers.

Some ideas are "in the mill" ....

Indoor/Model Supply
Box 39 Garberville, CA 95440

	Wigan 23 Nov 86		Slaithwaite 14 Dec 86		Slaithwaite 11 Jan	
Scale						
1.	A. Crompton		J. O'Donnell		A. Crompton	
2.	D. Wolstenholme		D. Horsefield		D. Horsefield	
3.	J. O'Donnell		R. Boor		J. O'Donnell	
	9 entries		6 entries		5 entries	
PND						
1.	H. Tubbs	5:27	D. Morley	3:09	J. O'Donnell	3:23
2.	G. Davitt	5:24	J. O'Donnell	2:59	B. Hunt	2:52
3.	D. Morley	5:04	B. Hunt	2:55	W. Murray	2:39
	9 entries		10 entries		11 entries	
IHLG						
1.	R. Bailey	62.1	G. Davitt	61.7	G. Davitt	61.4
2.	G. Davitt	60.5	W. Murray	56.7	W. Murray	58.0
3.	W. Murray	54.6	D. Morley	50.6	B. Kenny	52.9
	8 entries		6 entries		6 entries	
EZB						
1.	B. Hunt	16:51	B. Hunt	16:16	G. Davitt	15:18
2.	G. Davitt	14:22	D. Morley	15:05	B. Hunt	14:50
3.	R. Bailey	14:17	G. Davitt	14:21	D. Morley	14:17
	10 entries		11 entries		8 entries	

"Brown Ale" index fly-off:

1..	J. O'Donnell	PND 115.7 %
2.	B. Sinclair	Scale 108.3 %
3.	D. Horsefield	" 100 %
4.	D. Davitt	IHLG 91.6 %
5.	A. Crompton	scale 91.6 %

14-1/87

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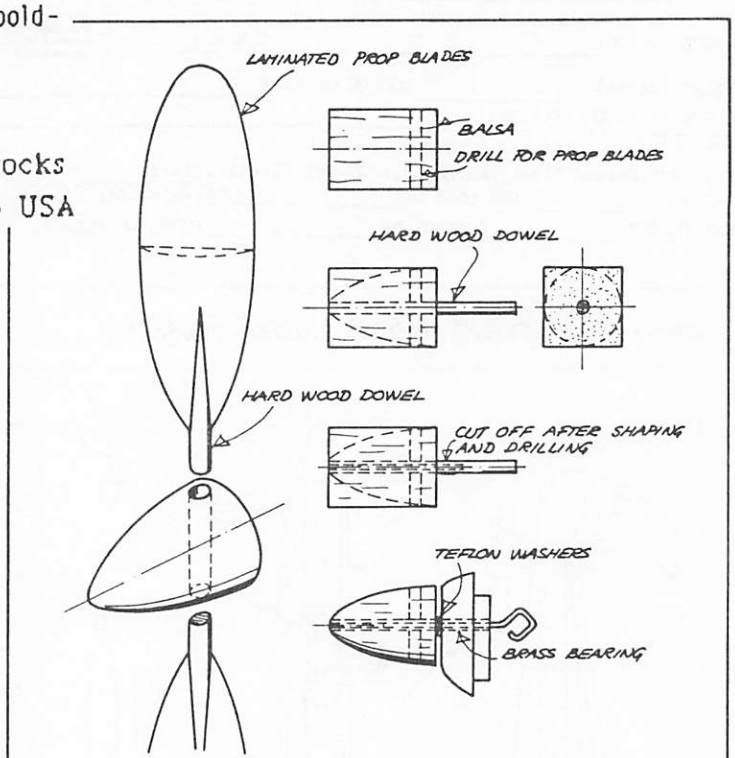
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A PEANUT PROP/SPINNER
J.K. 87

PEANUT POWERS

Next Peanut Scale Proxy contest is August, 1987. For complete information and rules contact:

Shoichi Uchida
3-24 Asanaka
Ogaki-shi
503
JAPAN

Contest Dates:
13-14-15 AUGUST

Model deadline:
July 30

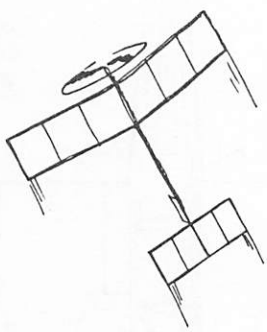
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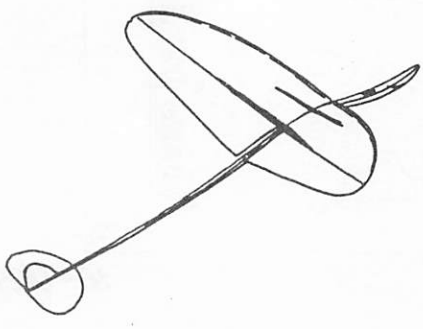
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Free Flight, (USPS 12977000), the National Free Flight Society Digest, is published monthly except combined issues of June-July and August-September, at 707 2nd Street, Davis, CA 95616. Membership fee is $.50 per year. Subscription rate is $14.50 for open members for one year, $26.00 for two years. Junior member 14-18 years of age subscription rate is $7.00 for one year, $12.50 for two years. Subscriptions are not available without membership. Second-class postage paid at Davis, CA.



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F1D State Champs, Storey Hall, RMIT - December 6th, 1986

	1	2	3	4	5	6	Best 2	Place
S. O'Connor	3.35	5.30	7.22	10.47	.20	9.53	20.40	3
R. Blackam	22.00	25.18		27.35			52.53	1
M. Forster	10.05	11.49	9.02	15.05	19.55	20.17	40.12	2
J. Fullarton	5.30	6.48	6.03	6.58	6.22	7.42	14.40	4
O. Halliday(Jnr)	2.28	1.57	3.13	5.21	3.10	4.30	9.51	5

15-1/87

EVERYONE INVITED ◦ R.S.V.P.

So you think the Olympics was big? Wait till we fly the 4TH World Pistachio Proxy Inter-Gnats.... MAY 16 & 17 1987

Pistachio Scale models are like peanuts, only smaller. They are a bit harder to build and trim. You have to use tweezers sometimes. The tiny bit of rubber power is hard to get. Try a golf ball, or the inside of shock cord (Bungee) if you can't cut down on your rubber. .030" to .050 size and 3 inch propellers or a bit bigger.

There are many plusses: Cheap to build, cheap to mail, durable in the slam-bang world of postal services, small enough to trim in your own home, little time expended, lots of fun.

We will provide trophies, and publish a list of all who enter so we can see where our flying friends come from, and their addresses. Also you will be informed of the complete meet results, even if you are last. We realise that there are a limited number of people who are interested in this sort of thing, but at least we will all get to know each other. PISTACHIOS FOREVER: SIC SEMPER PISTACHIOS.

There is a great temtation to build unusual aircraft- canards, triplanes, autogyros,etc. What can you lose? A few evenings work. 3-views, and maybe a photo are the only documentation needed.

WE ARE SENDING THIS ISSUE OF HANGAR PILOT TO ALL THE KNOWN MODEL AIRPLANE PUBLICATIONS IN THE WORLD; plus many club newsletters. We hope that this will truly be an internation al event. PLEASE COPY THIS INVITATION if you are a n ewsletter editor. If you know of some obscure publication that has not gotten the word, PLEASE SEND US THE ADDRESS. Bill Hannan has given us a list, but it is not complete...HELP,please.

For any more information write to HANGAR PILOT. Meanwhile, get building and testing. CLASS I - UNDER 2 GM. CLASS II 2-3 GM. CLASS III OVER 3GM. RIDOTTO: SMALLEST MODEL TO FLY 30 SEC

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SOURCE OF DOCUMENTATION: _____

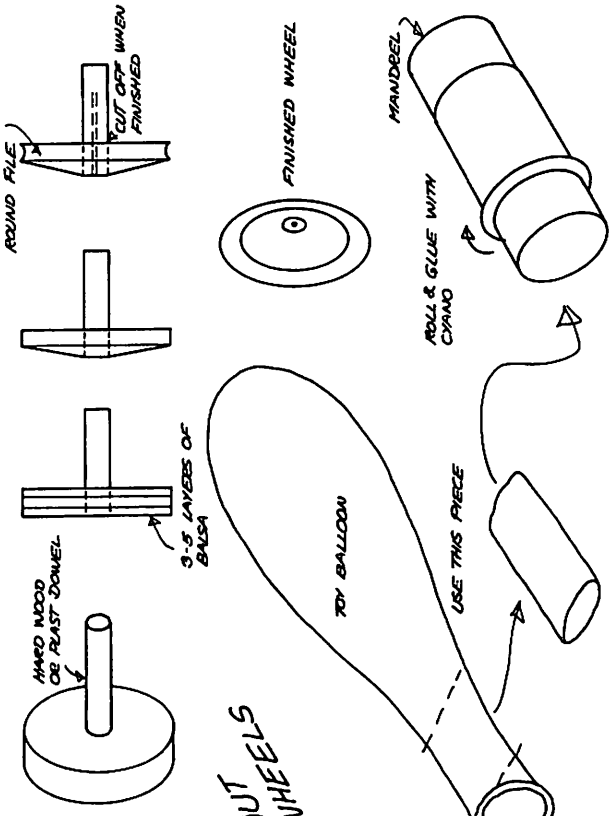
PROP SIZE: _____ X _____ X _____

TYPE PROP: Carved block, laminated, bent wood, plastic, other _____

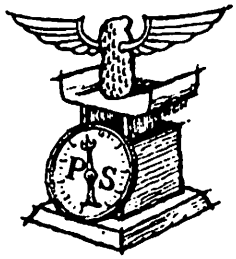
POWER: _____ INCH LOOP OF _____ (SIZE) Rubber Compan_____

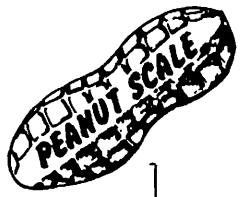
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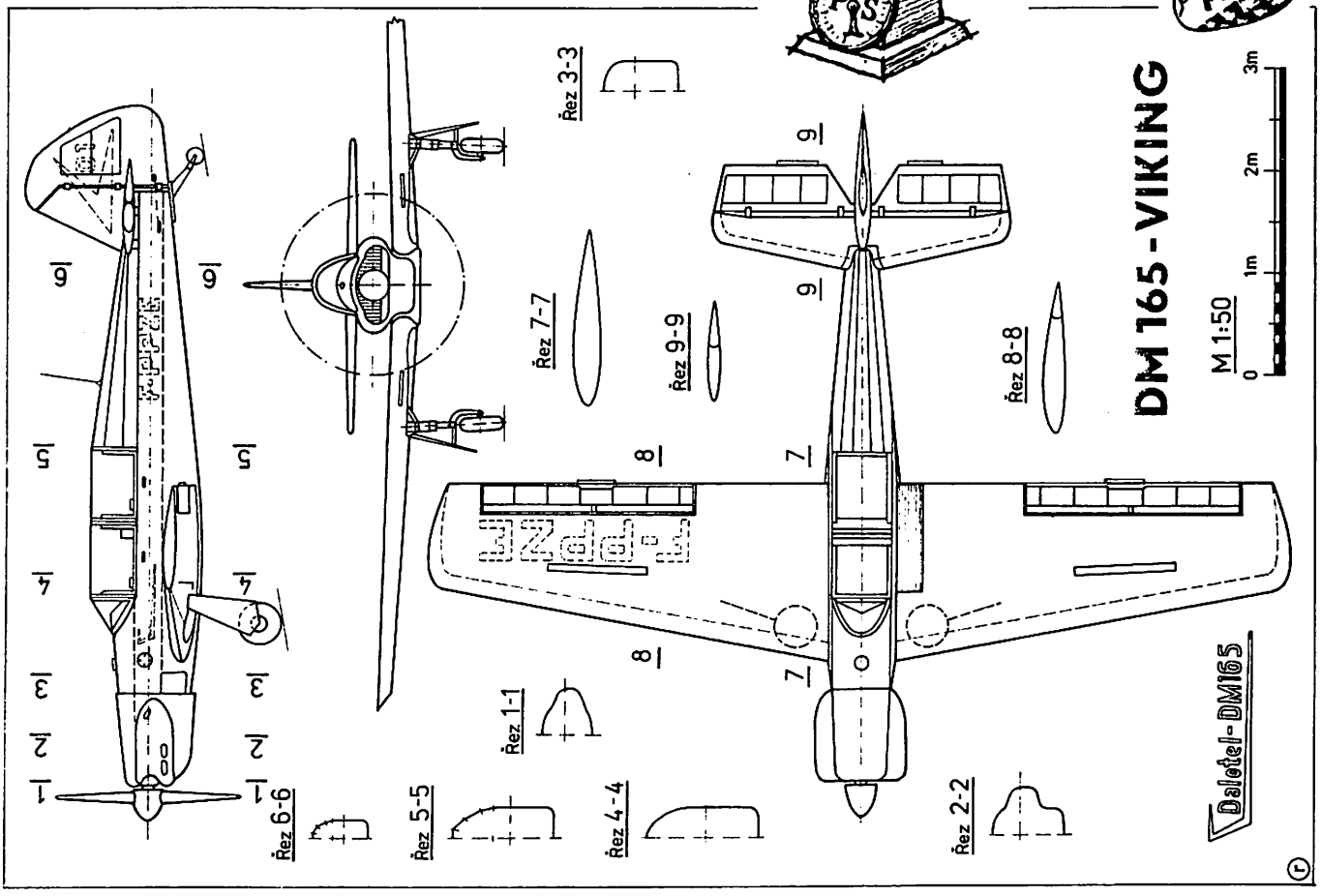


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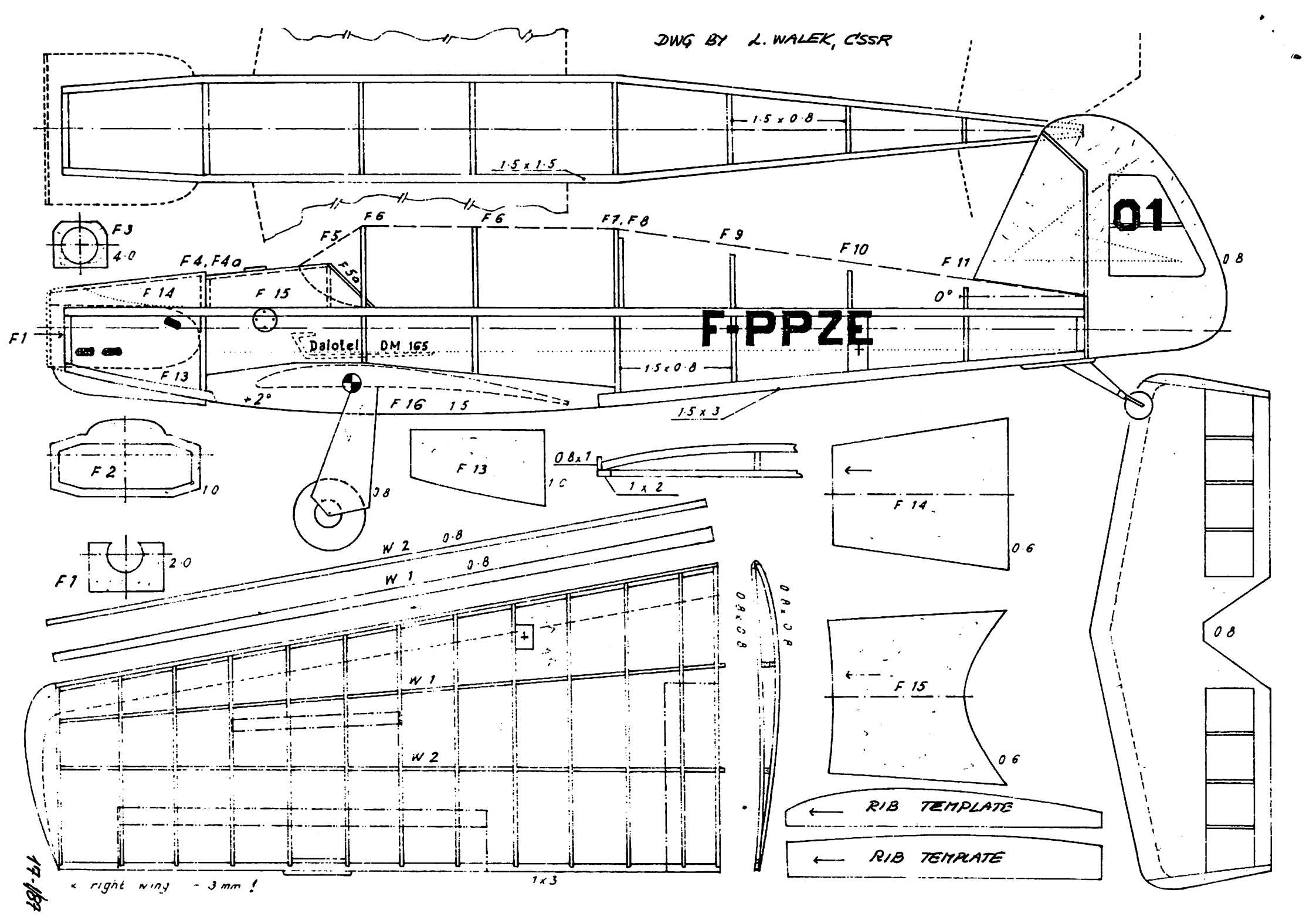




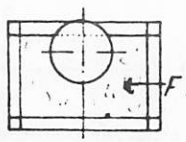
FROM "MODELAR" 4/86 WITH THANKS.

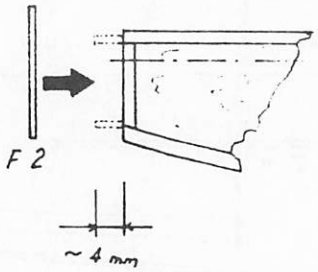


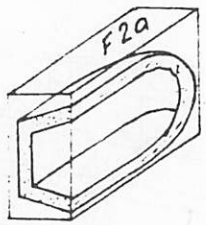
16-1/87

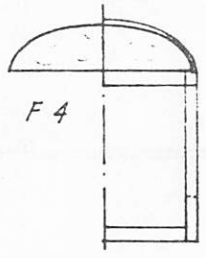

DWG BY L. WALEK, CSSR
01
F-PPZE
Dalotel DM 165
F1
F2
F3
F4, F4a
F5
F5a
F6
F6
F7, F8
F9
F10
F11
F13
F14
F15
F16
1.5 x 0.8
1.5 x 1.5
1.5 x 3
0.8 x 1
1 x 2
W 1
W 2
0.8
1 x 3
RIB TEMPLATE
RIB TEMPLATE
0°
+2°
* right wing - 3 mm !
17-1bp

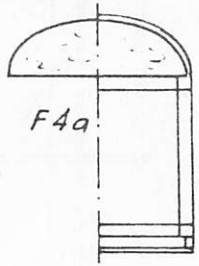
F4 - F5a, F7 - F11 ... 0,8
F6 laminated 2x 0,6x 1,5

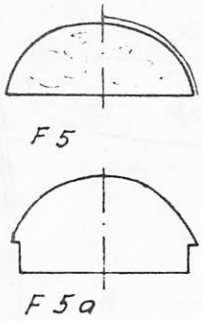


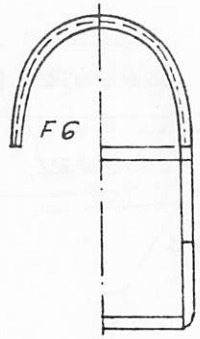


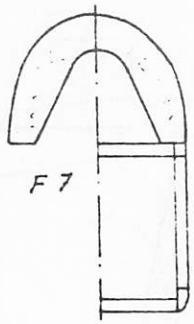


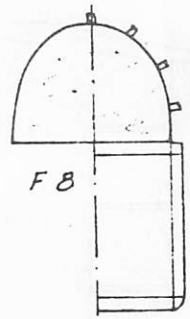


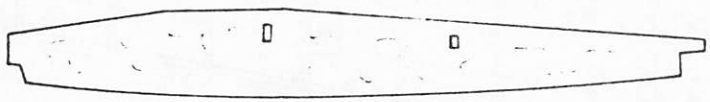


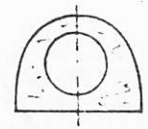






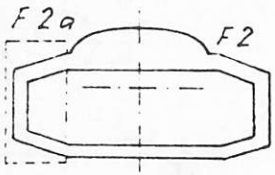


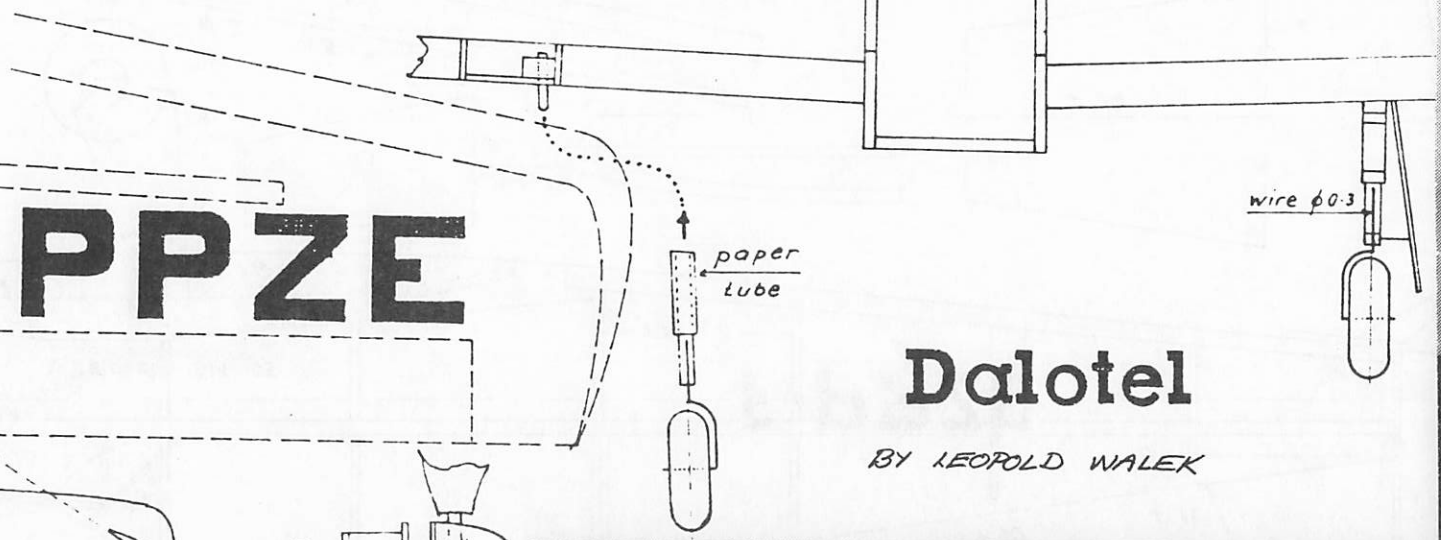








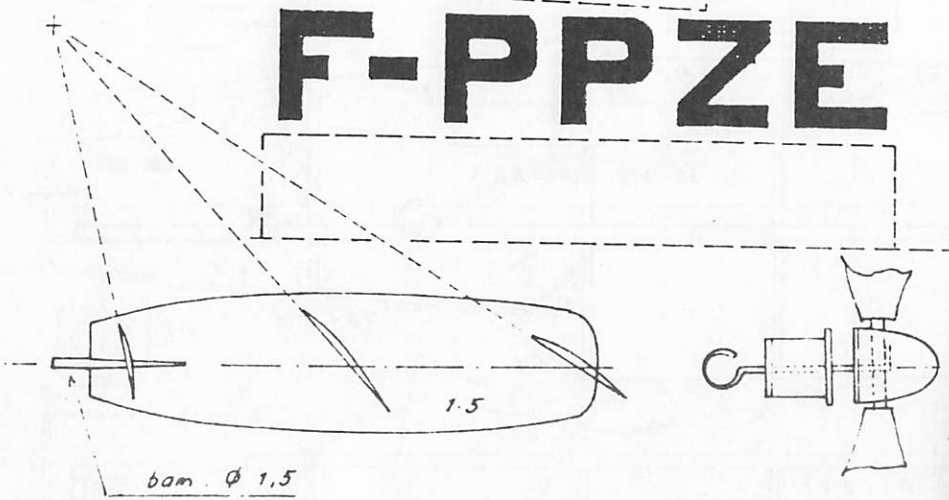


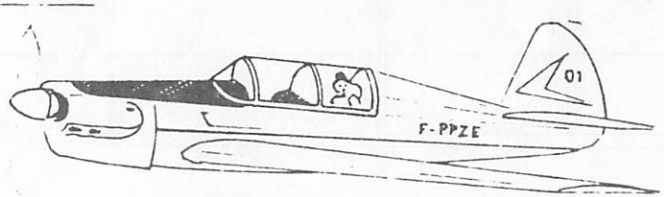


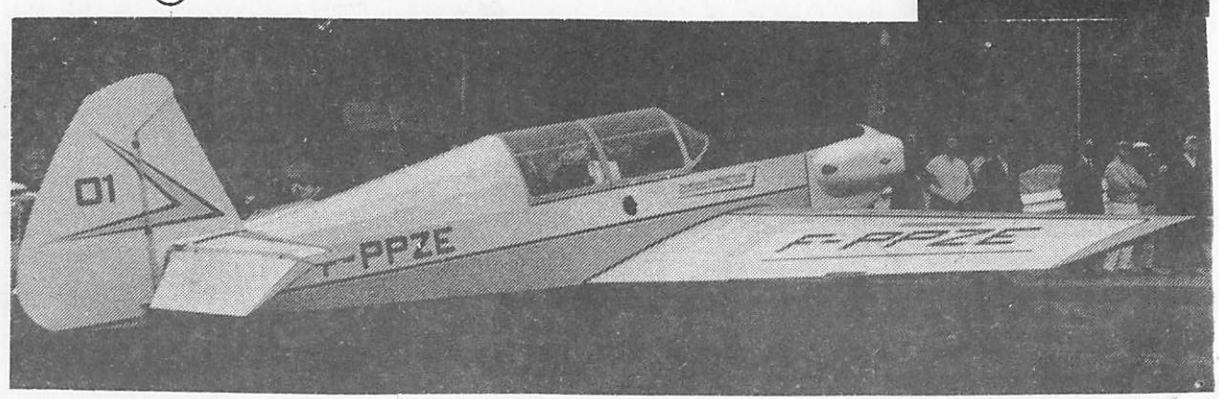
F-PPZE

Dalotel

BY LEOPOLD WALEK







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