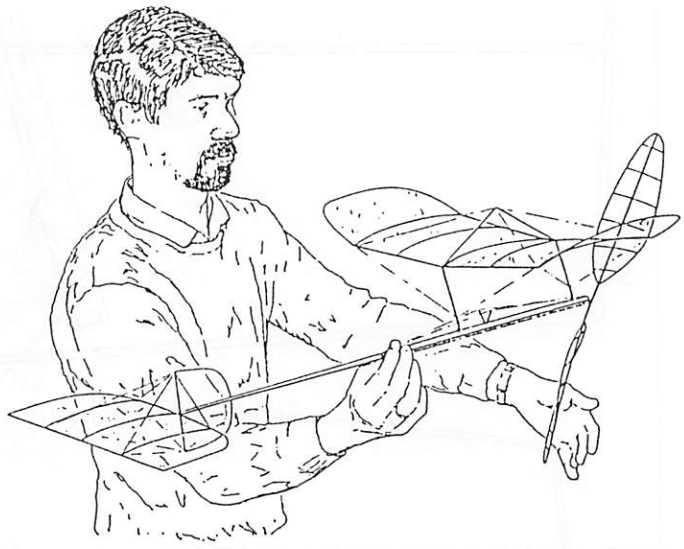
Indoor News



Issue 30,31 February 1995

DIARY

1 Jan-31 March	**Living Room Stick Postal International.** Mike Colling, 403 Mossy Lea Road, Wrightington, Wigan, Lancs., England, WN6 9SB, Tel. 0257 452624.
24-25 June Orleans France	**International Competition Orleans,** F1D, F1D-B, F1L (EZB), J. Delcroix, 7 rue de Foncemagne, 45000 Orleans, France, Tel. +33 3863 4957.
18-20 Aug Maastricht Netherlands	**Interscale '95,** F4D, F4E, F4F and Pistachio, T. Schippers, P.O.Box 2060, 6201CD Maastricht, Netherlands, Tel. +31.(0)79.212195.
26Sep/1 Oct Slanic Romania	**European Championships F1D,** Federatia Romana de Modelism, M. Zanciu, V. Conta 16, Sec 2, Bucarest 70139, Romania, Tel. +40 1 2100161, fax +40 1 2110160
2/3 Oct Slanic Romania	**Euroindoor F1D Open International,** Federatia Romana de Modelism, see above.

No Liège International

Contrary to the announcement in the last issue there will be no International Indoor Competition in Liège (Belgium) this year. According to Fernand van Hauwaert some financial problems are the reason for this. The next "International Indoor" is scheduled for 1996.

Begin with a Moustique!

On the following pages you will find a building instruction for the Moustique. The Moustique is a F1D-Beginner model designed by Dieter Siebenmann. The model has proved itself as an excellent introductory model to indoor flying. We have used it in Holland with great success. It is built during the yearly summer camp, at two-day courses and at several clubs, where it often is the first model a beginner builds. A beginner can not build the model without help from a more experienced modeler. But when the preparations of the instructor are adequate then success is guaranteed.

The version as presented here is somewhat sturdier than the original. The spar sizes are slightly larger. We use a heavier type of mylar which is easier to handle. This way a first Moustique comes out at ±4 gram, but it can still do about 5 minutes in a gym hall. The 6,8 g/m^2 clear mylar is available from Mike Woodhouse, 12 Marston Lane, Eaton, Norwich, Norfolk, NR4 6LZ, England. The cost is £5.00 for 10 metres x 0.315 metres wide. Also available aluminised. Overseas readers please ask for postage quotation.

You are encouraged to copy the article for your own magazine or newsletter. Introduce it in the beginner program of your club. Maybe you will have as many junior entries in your championships as we have had over the past years!

COLOPHON

Indoor News is published at least four times a year and covers all types of indoor models, from peanuts to microfilm. Texts can be sent in Dutch, English, German and French (I can read the latter two, but not write them). Please type your texts on 12,5 cm width. Texts can be sent on floppy disk (3½ or 5¼) in Wordperfect or ASCII format.

I can make the drawings, if you are no draftsman. I prefer payment of subscriptions per eight issues. Paying by Eurocheque, Postal Money Order or sending bank notes is free of handling charges to the recipient. Please add NLG 6,50 for handling charges when paying by Eurogiro or NLG 20,00 with foreign checks. The Eurogiro account number is 4406860.

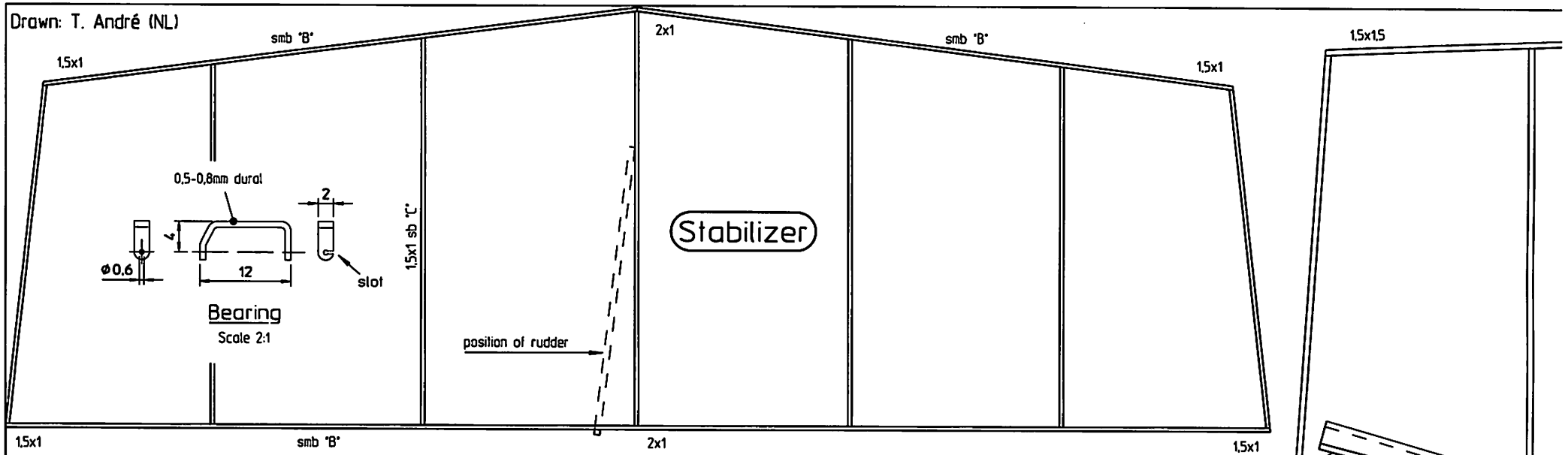
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The Netherlands

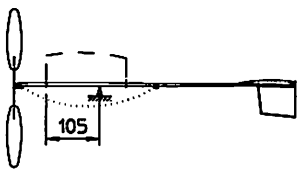
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Drawn: T. André (NL)



Rubber motor:
loop 40cm long,
section 1 x 2-3mm

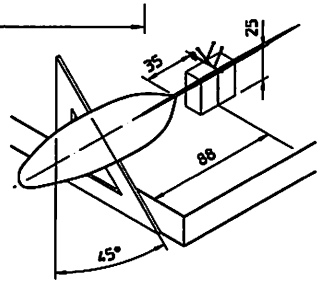


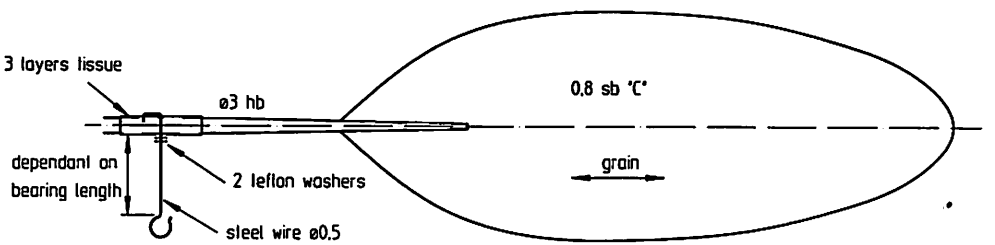
Adjust centre of gravity without wing. Then mark position of wing tubes and glue in place.

Attach struts such that left wing gets 6mm positive warp (leading edge up)

News Indoor

Balsa:	Spec. weight
sb = soft balsa	0,06 - 0,12 g/cm3
mb = middlehard balsa	0,12 - 0,18 g/cm3
hb = hard balsa	0,18 - 0,24 g/cm3
"C" = quarter grain	

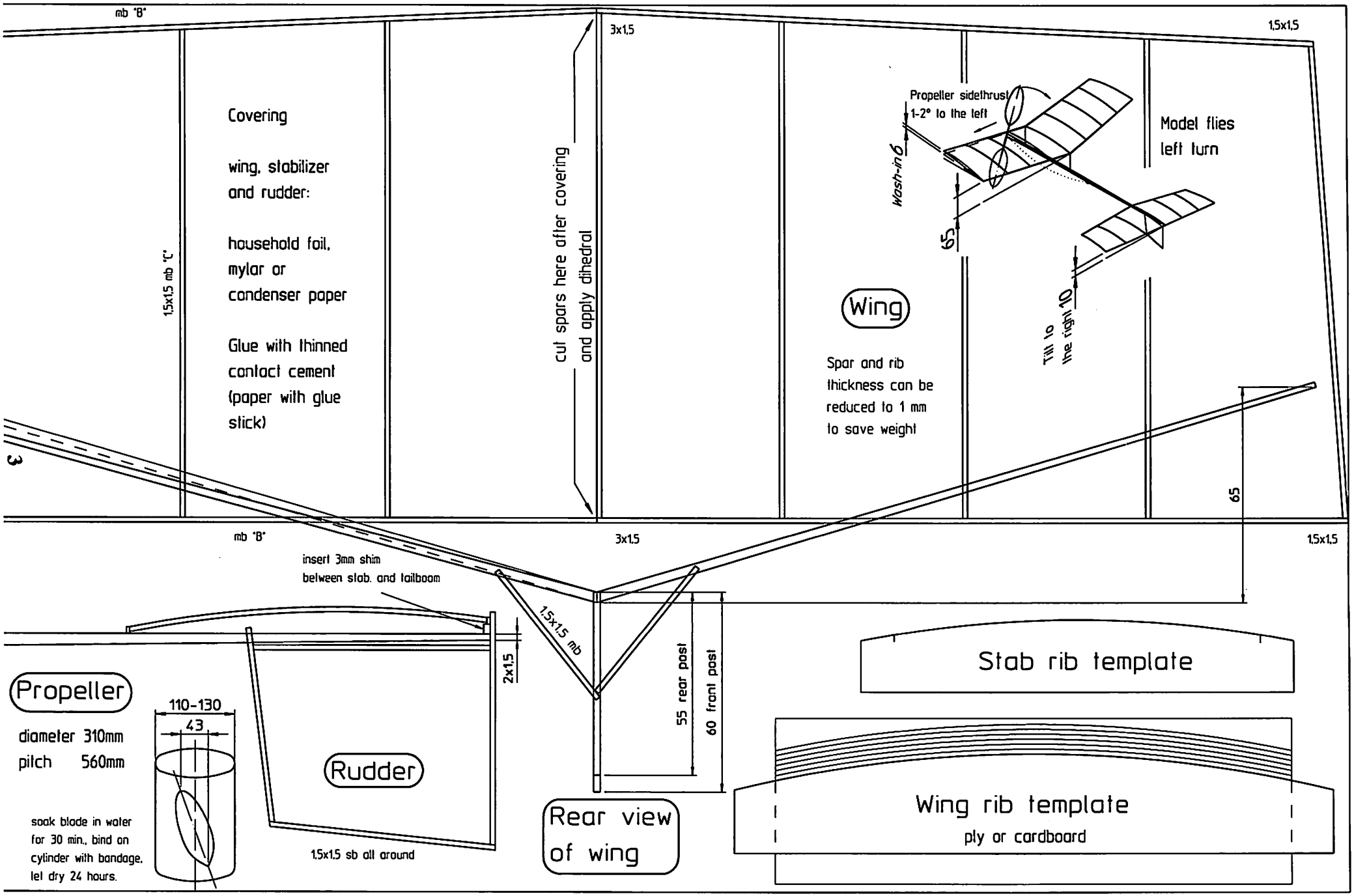




Le Moustique

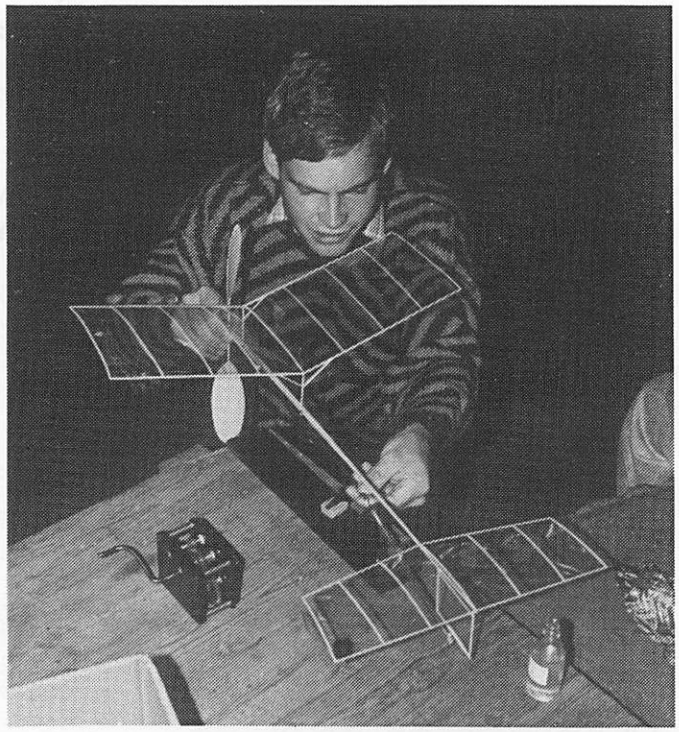
F1D-Beginner model
design: Dieter Siebenmann (SWI)
wing span 460mm
min. weight 3.0gr

enlarge 1,48x


mb "B"
3x1.5
1.5x1.5
Covering
wing, stabilizer and rudder:
household foil, mylar or condenser paper
Glue with thinned contact cement (paper with glue stick)
1.5x1.5 mb "C"
cut spars here after covering and apply dihedral
Propeller sidethrust 1-2° to the left
Wash-in 6
65
Till to the right 10
Model flies left turn
Wing
Spar and rib thickness can be reduced to 1 mm to save weight
3
65
mb "B"
3x1.5
1.5x1.5
insert 3mm shim between stab. and tailboom
1.5x1.5 mb
2x1.5
55 rear post
60 front post
Propeller
diameter 310mm
pitch 560mm
soak blade in water for 30 min., bind on cylinder with bandage, let dry 24 hours.
110-130
43
Rudder
1.5x1.5 sb all around
Rear view of wing
Stab rib template
Wing rib template
ply or cardboard

Begin with a Moustique!

Design: Dieter Siebenmann (SWI)
Building instruction:
Ebele Schouwstra and Thedo André (NL)

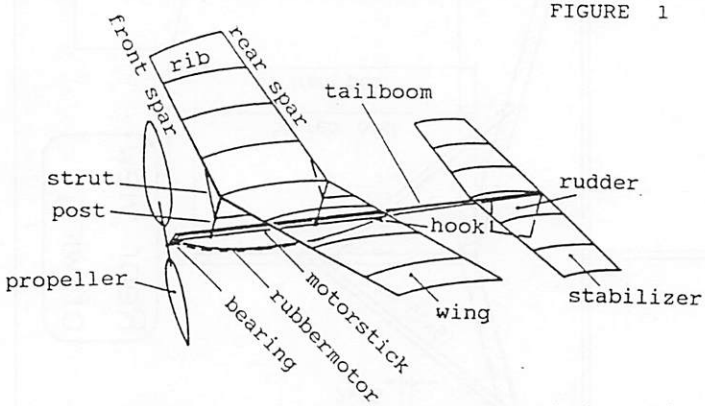


Choosing a Moustique as your first indoor model is a very good way to start. It is a fairly simple model, it will teach you all the basic techniques an indoor modeler needs and you can already fly it in competitions. It will do two to three minute flights in a gym hall. At competitions flights of more than six minutes are not uncommon. Though we tried to make this building instruction as clear and complete as we could, it will be likely that you will encounter some problems. If something is not clear or when you do not succeed in making something, then do not hesitate to ask an indoor flyer for help. They are very friendly people and will certainly help you. After all, they have been beginners too!

Preparation

When this is your first model airplane you will probably have to learn some new words and terms. Figure 1 shows the main parts of an indoor model. On the

FIGURE 1



drawing there will be more new words. Enlarge the drawing on a copy machine 1,41x.

We need a building board from soft board (in which you can easily stick pins in) of 22x60cm. Tape the plan onto the building board and cover it with clear household foil. This will prevent glue from sticking to the plan. Ensure that everything is flat and wrinkle-free. We need some other accessories. Cut straight strips from a sheet of 2mm balsa of the following dimensions: 10x250mm (4 each), 10x50mm (2 each) and 10x16mm (16 each). Glue four layers of 2mm on top of each other and construct the assembly block of figure 2. Try

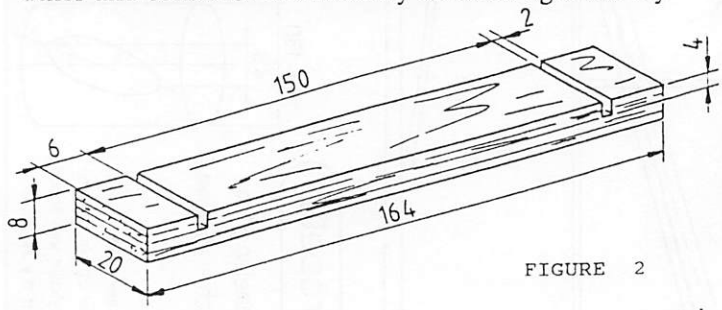
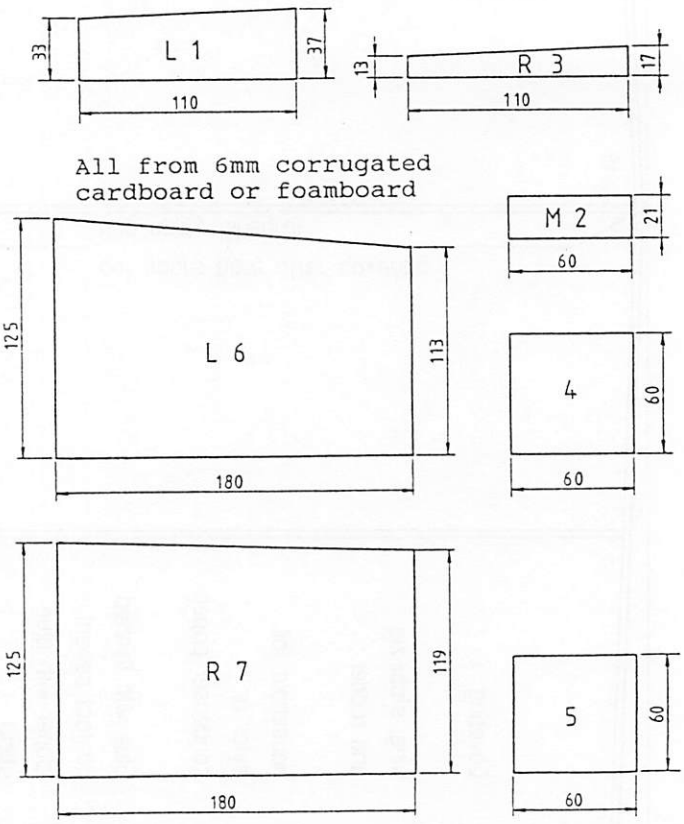


FIGURE 2

to get the sides and grooves as square as possible. Figure 3 shows several jigs which you can make from

FIGURE 3

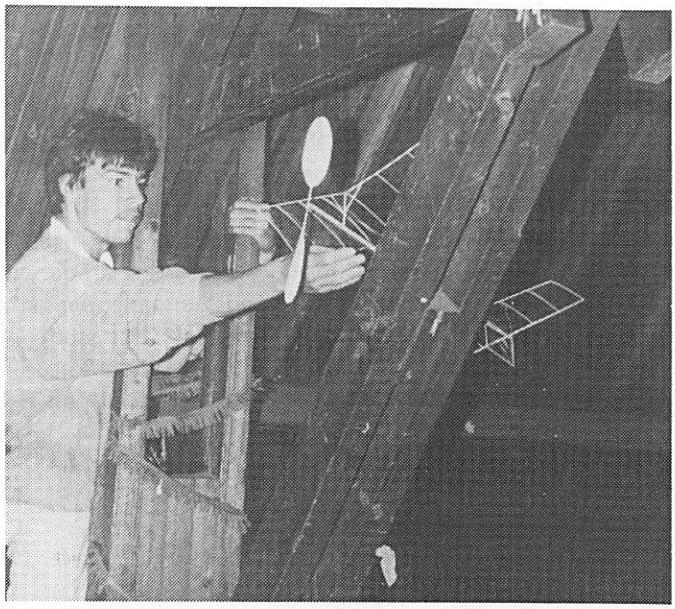


±6mm thick corrugated cardboard or foam board. As before: cut them as square as you can. Next we make the wing and stabilizer rib templates from thin ply or cardboard (see plan). Finish the curved sides as smooth as possible.

Two types of glue

We need two different kinds of glue. For joining wooden parts we use cellulose glue (like UHU-Hart). This glue has to be thinned down about 30% with thinner or acetone. The most handy way to apply the glue is by means of a syringe (needle size ±0,5mm). Stick a piece of wire in the needle to prevent it from clogging up. Indentify the wire with a piece of brightly coloured tape so that you find it quickly in the usual mess on your working table!

The other glue we need is contact cement for adhering the covering to the wing and tail frames. This glue also has to be diluted, ratio glue-thinner 1:2. Usually only thinners of the same brand as the glue will work successfully.



Required materials

For wing spars and wing ribs we need a sheet of 1,5mm middlehard balsa (weight of a 10x100cm sheet 18-27 gram). For tailplane and rudder 1mm is needed, weight of a sheet 10-18 gram. For the fuselage lighter balsa is required: a 4mm sheet of 40-50 gram or a 10x10x1000mm strip of 10-15 gram. In all cases the grain has to straight and regular. For the propellerblades we need a soft sheet of 1mm balsa, preferably quarter grain. This type of grain has more bending stiffness in a direction square to the grain. It is recognizable from its speckled look. We further need a piece of ϕ0,4 or 0,5mm steel wire for the propeller shaft and rear motorhook, a piece of 0,5-0,8mm hard aluminium (f.i. from a beer can) for the propeller bearing (bearings are also commercially available) and a piece of ϕ2mm I.D. aluminium or plastic tubing for the wing sockets. Wing socket tubes can be made yourselves. This is done by rolling a piece of tissue paper over a piece of ϕ2mm O.D. wire, f.i. a drill end, and impregnating this with cement or dope (three windings is sufficient). Pull off the tube before it begins sticking to the wire! For the wing covering we could use lightweight tissue, but only if we cannot obtain one of the many types of lightweight plastic foils that are available. These are called mylar, ultrafilm, microlite, polymicro and the like, and come in weights ranging from 7 to 1,25 grams/m^2. We further need teflon washers for the propeller bearing and of course rubber to fly on. Addresses of some suppliers are given at the end of the article.

Building wing and tail frames

We start by cutting the ribs and spars. For cutting we preferably use a razor blade. A thicker blade will distort the tiny strips we cut. Cover the other side of the blade that is not used for cutting with a piece of tape or break the blade overlength into two pieces. The ribs are cut in 1,5mm wide strips along the rib template. Make several extra for reserve. The spars are cut along a steel ruler. Cut them 10 to 20mm overlength. Note that the spars of the left wing are longer than of the right one!

We start by building the stabilizer. Rub the edges of the four longest assembly strips with a candle wax. This prevents glue from sticking to it. Pin the strips on the building board along the **outside** of the stabilizer outline (figure 4). Do not cut the strips to length. We need

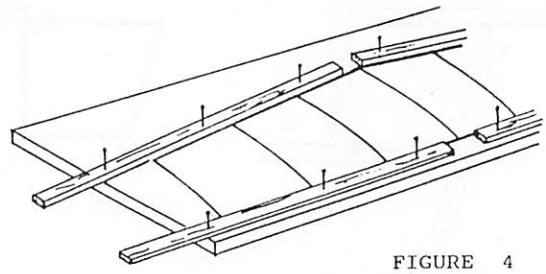


FIGURE 4

them for the wing also. Position the stabilizer spars along the strips and clamp them against it with the small 10x16mm pieces of balsa (figure 5). The spars rest on the building board with their small side, with the thin

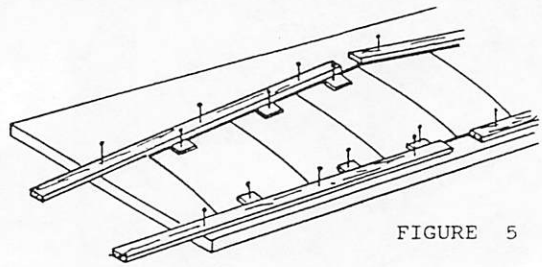


FIGURE 5

tapered ends towards the tip of the stabilizer. Never stick a pin through the spar!

The spars have to be glued together in the middle. Glueing is **always** done in the following manner, called "double glueing". Coat each surface with a thin layer of glue, wait a few seconds, apply glue to one of the surfaces and then join the pieces. This gives the strongest bonds. So for glueing the spars we have to remove them from the building board (setting them up was a useful exercise). Coat the end of one spar and replace it between the clamps, coat the end of the other spar, wait a few seconds, coat again, replace and press the spar against the other and reposition the clamps.

Take one of the ribs and hold it in its position over the plan. Carefully mark both ends to the correct length and cut off. The rib should fit in between the spars such that it is not under any bending stress, but still stays upright in position. Now prepare the next rib. If you cut one too short accidentally, do not worry. It can be used at a

position closer towards the tip. When all ribs fit accurately they can be glued. Again: doubly glued. Avoid big blobs of glue.

Leave the stabilizer to dry for half an hour, remove the clamping blocks and carefully lift the frame from the board. If it is stuck to the building board at some place, then loosen it by running a pin underneath. Cut off the extending ends of the spars. Inspect every glue joint closely. Add glue when necessary and remove excess glue with a razor blade. A careful and experienced builder will seldomly have to do this!

The rudder is assembled in the same way as the stabilizer. Position the strips on the board, cut to length, remove, glue and reapply. Note that one end of the sticks is not cut off (figure 6).

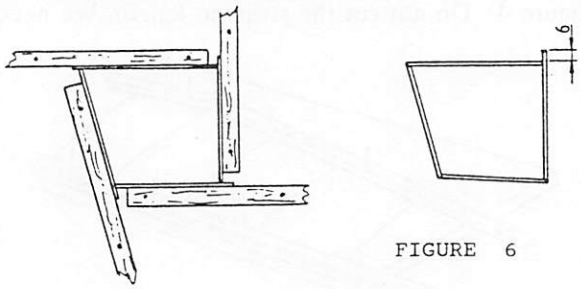
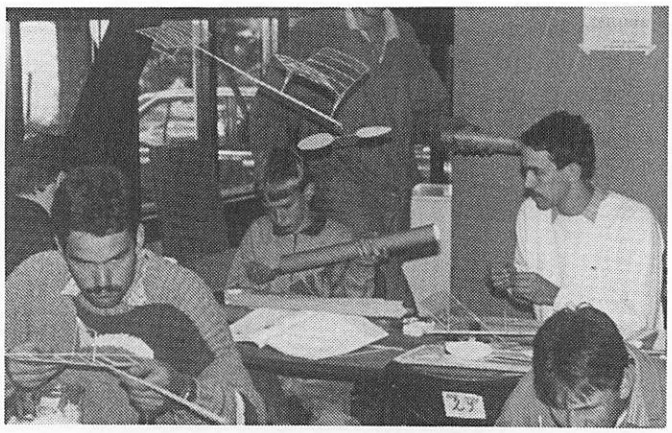


FIGURE 6



The procedure for building the wing is the same as for the stabilizer. Again note the correct position of the spars. The left wing is intentionally longer than the right wing. The middle rib is glued just left of the center line. You may have noted that the wing tips will be raised to a V-shape. We will do this after covering the wing. So the wing halves are joined in the middle temporarily.

Fuselage

The wood for the fuselage has to be of very good quality. Straight grain and no weak, hard or brittle spots. The motorstick can be tapered towards the ends from 6x4 to 5x3 mm to save some weight. Do the sanding in one direction only. A to-and-fro movement may easily break your carefully selected piece of wood.

For joining the motorstick and tailboom we need the large assembly block. Put cellotape over one of the small sides. Do not fold over the unsticked part, it may be cutted off (figure 7). Pin the block on the building

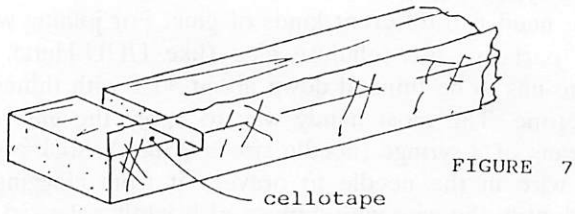


FIGURE 7

board along the top side of the fuselage at the stick-to-boom joint. Position motorstick and tailboom on the plan and check whether the joining faces fit accurately (figure 8). Take time to make this fit as good as you

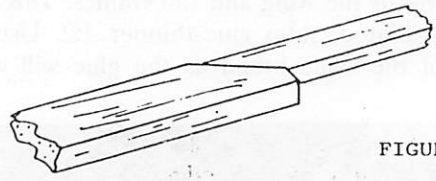


FIGURE 8

can. This joint is a vital one! Glue the pieces together (doubly glued!) and clamp them between the small balsa blocks.

When the glue has dried remove the fuselage from the building board and lay it upside down. Prick a hole with a pin between the motorstick and the tailboom along the glue joint for the rear motor hook. Put glue onto the hook and insert it into the hole. Lay a half knot in a piece of thread, slide the knot over the hook, pull tight and glue each end of the thread downwards along the sides of the motorstick (figure 9). Add a couple of

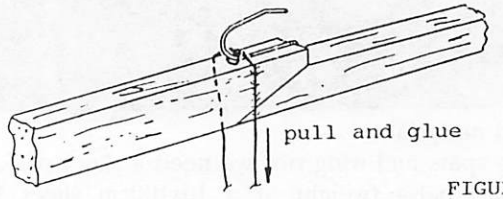


FIGURE 9

winds after drying, put on extra glue and cut the ends off after drying.

The propeller bearing is tack-glued with cellulose glue. With a piece of wire we adjust the bearing such that it is positioned with 1 to 2° of side-thrust to the left. That is to the **right** when viewed from the bottom as in figure 10! Let the glue dry thoroughly. It is then secured with

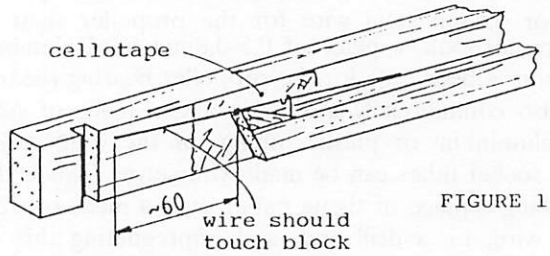


FIGURE 10

thread in the same manner as the rear hook, add several extra winds at the front and the rear of the bearing and glue with a generous amount of glue. You can also use instant glue or epoxy for this purpose. The last thing to add is the little vertical piece of balsa at the end of the tailboom. This piece raises the trailing edge of the stabilizer a little. Practice has shown that the tailboom usually tends to droop downwards instead of upwards. The wing sockets are added later.

Propeller

The propellerspar is sanded from middlehard balsa, 12cm long and tapered from ϕ3 to ϕ2mm towards the ends. The center section is reinforced with a few windings of tissue paper glued onto it. Next the propellerhook is bent and glued squarely in the spar. First bend the rounded hook end, prick a hole fore and aft through the tissue with a pin, push the hook through and bend the end squarely twice. Pull the hook backwards so that the rearward bent wire end sticks into the spar. Check alignment carefully and secure the hook with glue on the front and rear side.

The outline of the propellerblades is transfered to the balsa with carbon paper. It is perhaps better to make a cardboard or ply template of the blade shape and cut the blades along this template. This assures that both blades will be of the same shape. The blade can be sanded thinner towards the edges. Forming the blades into the correct pitch and camber is done in a simple way. For this we need a cilindrical shape, f.i. a paint tin, with a diameter of ±12cm. The blades are wetted in warm water for half an hour. They are then strapped to the cilinder with bandage under an angle as indicated on the plan. By putting both blades on top of each other they will get exactly the same twist. Be sure you have got the direction of the angle right, the propeller will turn to the right (when viewed in flying direction). Let dry thoroughly, a day in the open or 15 minutes in an oven (be careful, lowest temperature setting and leave the lid open).

The blades have to be glued to the spar in the correct angle. For this we make a simple jig as in figure 11.

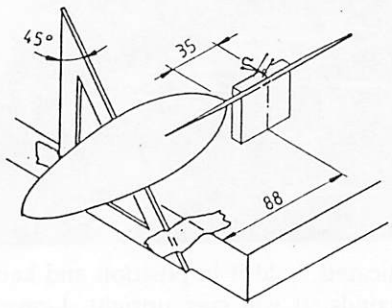


FIGURE 11

There is no need to cut a groove in the blade. You can glue it to the rear of the spar. Use a non-shrinking glue such as PVA or cellulose glue with some drops of castor oil in it. If you decide to make a groove then take care that the blade fits without distortion. On the other hand avoid any gaps. These take up too much glue which can lead to distortion of the blade. The last thing to do is to slide two teflon washers over the hook and finished is your propeller!

Covering

On an indoor model only the top side of the surfaces is covered. We start with the stabilizer and practice the procedure before we use any glue. Clean up your work table and spread out a sheet of newspaper. Onto this we lay the sheet of covering material. It can be spread easily by gently blowing it downwards. Pick up the stabilizer in the middle with one hand, curved side downwards, hold it about 2cm above the foil, check that there is at least 2cm of excess foil all around and drop the frame. It is of great importance that this procedure goes succesfully at the first try. Because we will use contact cement there is no second try! Practice until you feel confident.

Now for the wet run! Lay the stabilizer - curved side upwards - onto **another** sheet of newspaper. A glue drop on the covering newspaper sheet will lead to disaster! We can apply the glue with a little stick with a piece of velvet (figure 12). You can also use fine brush.

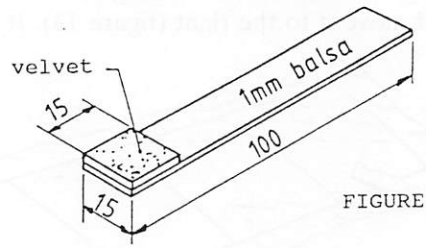
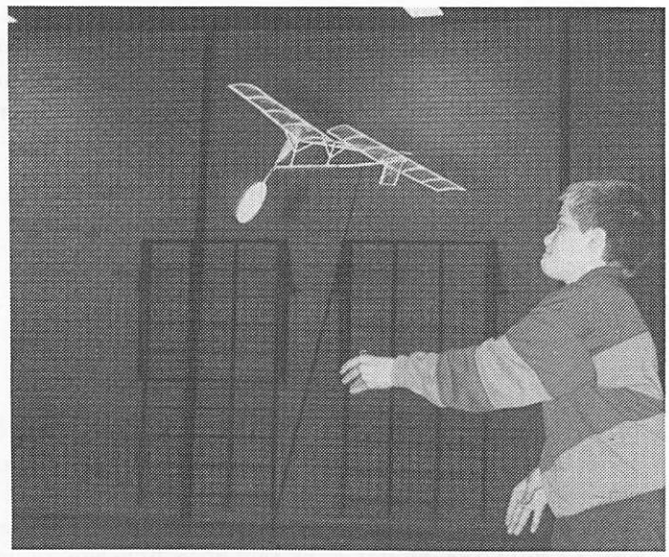


FIGURE 12

It is better to have the glue thinned down a bit too much than too little. You can always apply a second layer of glue. The glue is applied only to the top side of the spars and the end ribs. It is not really necessary to do the ribs as well. The glue may hardly be visible, but it should feel tacky when you touch it. If in doubt add a second run. Pick up the frame, turn it over, hold in position over the foil, check that there is excess foil all around, lower the frame and drop it from ±2cm height. Press the middle of the spar nearest to you down onto the film. Press down the left end of this spar, then the right end. Be sure to make vertical movements only. Tap the spar downwards at some places in between. Now press down the middle of the other spar and its ends. Because of the curvature of the ribs the fixed spar will lift a little from the board and the ribs will bend, but the structure is sufficiently flexible to do this without risk of breakage. Now the frame is fixed and there is no danger anymore of shifting. Next go all around the outline cm by cm and press down firmly.



With a bit of experience this method will result in relatively little wrinkling. Do not bother about wrinkles, they hardly have any effect on performance. When you use paper as a covering material these wrinkles are even beneficial. Changes in humidity will less likely cause

warping of the structure. Never dope a paper covered indoor model! Instead of contact cement you can also use thinned white glue or a glue stick (like Pritt). The wing and rudder are covered in the same way as the stabilizer.

Removing the excess foil

Take a new sharp razor blade. Lay the stabilizer on the building board, curved side upwards, with one spar just outside the edge of the board. Take one corner of the foil between thumb and forefinger, insert the razor blade and move it to the right (figure 13). It is as if you

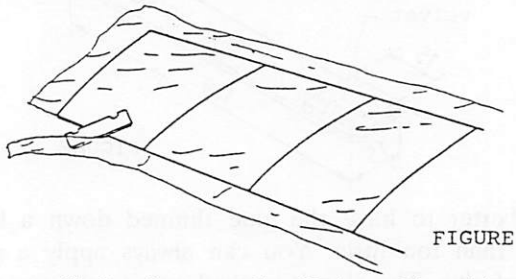


FIGURE 13

try to pull the framework off the table with your left hand and are resisting that with the knife. Go all along the outline of wing, stabilizer and rudder. Take care not to cut into the wood. Do not bother too much when you cannot remove the foil close enough to the spar.

Mounting the stabilizer

Assemble the cardboard jigs L1, M2 and R3 on the working table as in figure 14. The big assembly block is

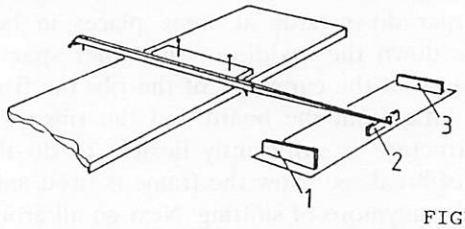


FIGURE 14

pinned to the building board. Place the fuselage against the block and clamp it between the little balsa blocks. Check that the fuselage is aligned squarely with regard to the stabilizer. If the end of the tailboom does not touch jig 2 put something under the jigs to raise them. Place the stabilizer in position (figure 15). When all is

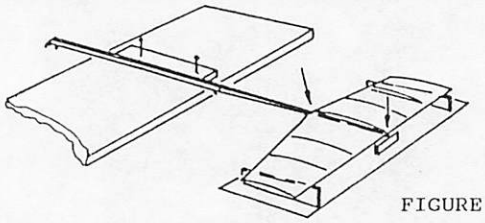


FIGURE 15

properly aligned glue the stabilizer at the indicated spots. Let it dry for at least 15 minutes. From now on you will have to handle your model with extra care: a sudden movement can easily lead to damage. The best way to hold the model is at the nose between thumb and forefinger.

Mounting the rudder

Lay the fuselage with stabilizer upside down. Hold the rudder in its correct position. Note that that the rear is offset to the left 8mm (figure 16). Put glue on the

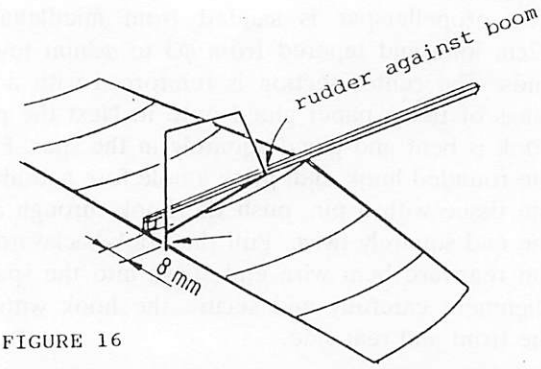


FIGURE 16



rudder as indicated, hold it in position and keep it there for a few seconds. It will stay upright. Leave it to dry further.

Tying the rubbermotor

First we exercise in making a half-knot (figure 17). Take both ends of the rubber (1), cross the ends (2), pass one end underneath the other (3) and pull lightly (4).

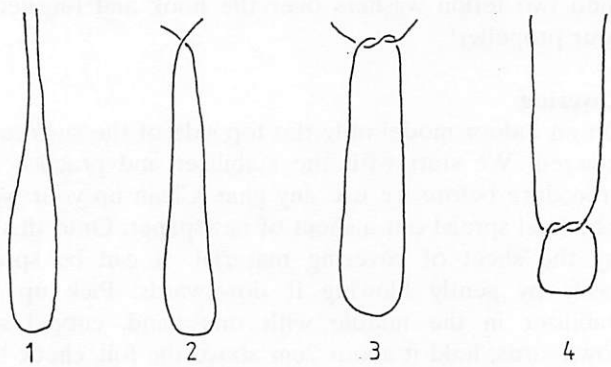


FIGURE 17

Now we make a complete motor (figure 18):

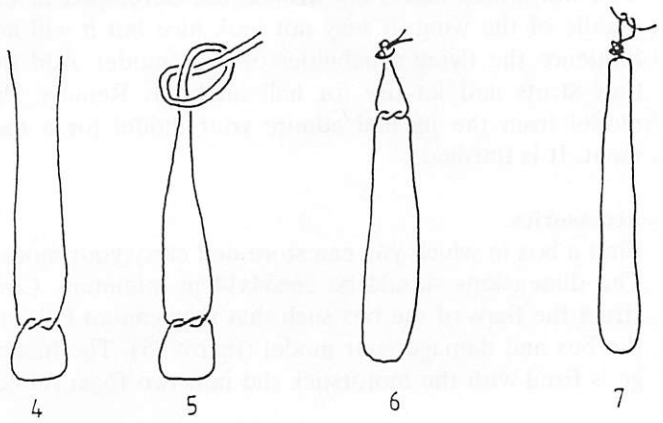
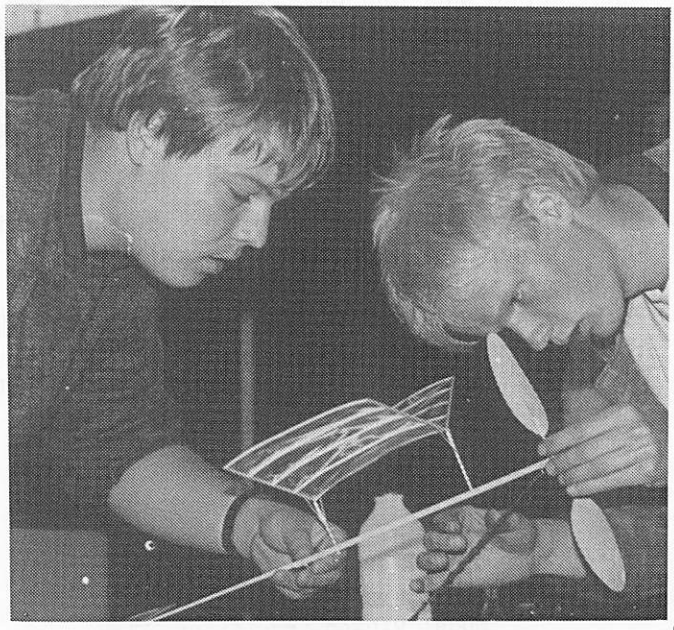


FIGURE 18

- Take a piece of rubber. A suitable size of rubbermotor for this model is a loop of 35cm length and a cross section of 1x2 to 3 mm.
- Slide two small O-rings over the strand and slide them towards the middle. These rings can be cut from ϕ3mm hard plastic tubing.
- Make a half-knot and slide it halfway downwards (4).
- Lay the ends on top of each other and tie a double knot (5). Do not yet pull the knot tight.
- Wet the rubber at the knot (f.i. with saliva). The moisture serves as a lubricant and prevents tearing of the rubber. Pull the knot tight and try to move the knot towards the end to within ±1cm. Pull it really tight!
- Now move the earlier made half-knot towards the double knot and pull tight (6). Remoisture if necessary.
- Slide one of the rings towards the knot and leave the other at the middle of the strand. Cut off the loose ends of rubber to about 5mm of the knot. The rubbermotor is ready.

It is possible that the knot gets loose when you tied it too loosely. When the motor is lubricated (later more about that) then remove the lubricant as far as possible, tie again with the same type knot but now an extra half-knot is put on top of that (7). This knot usually holds. If not then a small drop of instant glue between the loose ends will help.



Balancing

The wing posts are cut from relatively hard balsa. The ends are sanded round such that they fit precisely in the wing sockets. The fit must be such that no real force is required to insert them, but on the other hand they may not slide too easily. The front post is 60mm long, the rear 55mm.

The exact position of the sockets on the fuselage is determined as follows: hook the propeller into the bearing. Slide one of the rings of the rubbermotor over the propellerhook and the other ring over the rear hook. Support the motorstick with a little stick en shift the fuselage till it balances horizontally (figure 19).

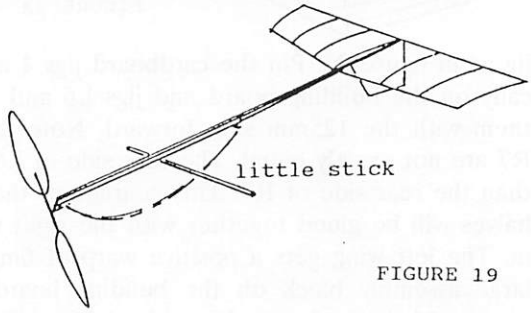


FIGURE 19

Mark this position on the motorstick with a fine pencil. Set other marks at 105mm forward and 45mm aft of this mark. These indicate the positions of the front and rear wing post.

Take the building board with the big assembly block and pin it down as indicated in figure 20. Lay the fuselage

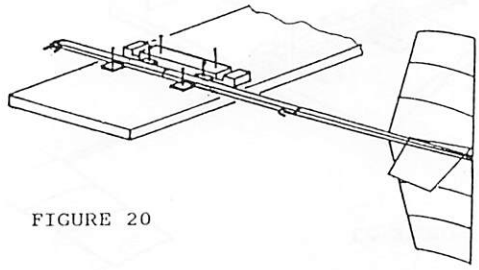


FIGURE 20

parallel to but not against the block. Leave about 1,5cm between so that the fuselage can be clamped with the little blocks. The lengthwise position should be such that the front and rear wing post marks align with the grooves in the assembly block. Slide a socket over each of the wing posts and lay them in the grooves (figure 21).

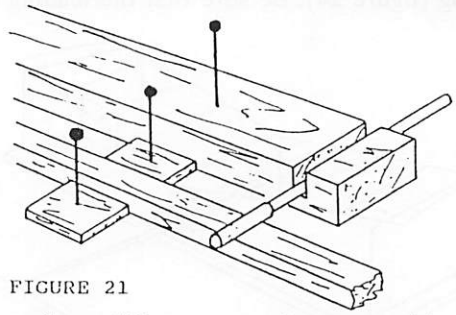


FIGURE 21

Let the sockets stick out over the motorstick equally at both sides. View the posts along the fuselage direction to be sure that they are aligned in the same plane. Glue the sockets to the motorstick sparely. Do not let any glue get onto the posts themselves! Let dry for 15 minutes. Add an extra layer of glue. Only after every-

thing has dried completely you can pull out the posts from the sockets.

Dihedral

The next step is to make dihedral in the wing and mount it to the wing posts. For this we have to set up a

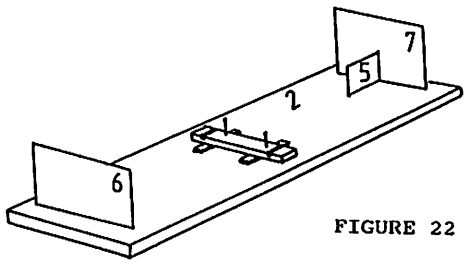


FIGURE 22

jig as in figure 22. Pin the cardboard jigs 4 and 5 vertically on the building board and jigs L6 and R7 against them with the 125mm side forward. Note that L6 and R7 are not exactly equal. The rear side of L6 is shorter than the rear side of R7. This guarantees that the wing halves will be glued together with the right warps built in. The left wing gets a positive warp of 6mm. Pin the large assembly block on the building board with two pieces of balsa underneath to raise it about 2mm.

Insert the longest wing post in the front wing socket and the shortest in the rear socket. Clamp the fuselage against the assembly block as in figure 23. The tail of

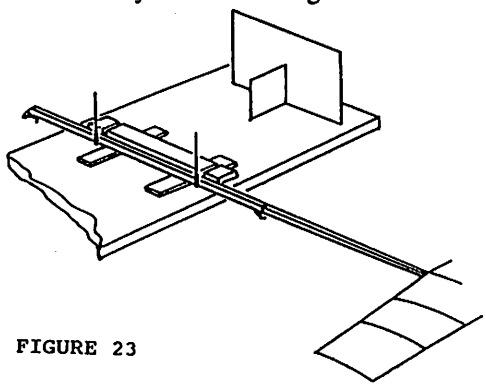


FIGURE 23

the model will stick out beside the table, so be careful not to hit it or the building board accidentally. Take the wing and lay it upside down. Make a half cut where you joined the wing spars. Gently break the joint further till you get the required dihedral amount. Handle the wing with care to prevent tearing of the covering and lay it on the jig (figure 24). Be sure that the leading edge is

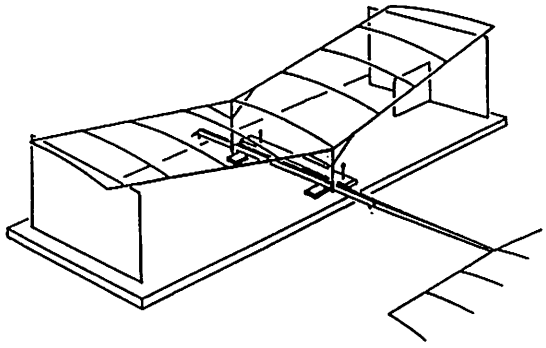


FIGURE 24

forward. The left wing is longer than the right. Position the wing break on top of or just between the wing posts and glue firmly.

You will notice that a big wrinkle has developed in the middle of the wing. It may not look nice but it will not influence the flying capabilities of your model. Add the four struts and let dry for half an hour. Remove the model from the jig and admire your model for a moment. It is finished!

Accessories

Find a box in which you can store and carry your model. The dimensions should be 56x34x14cm minimum. Construct the flaps of the box such that they cannot fall into the box and damage your model (figure 25). The fuselage is fixed with the motorstick slid into two foam rubber

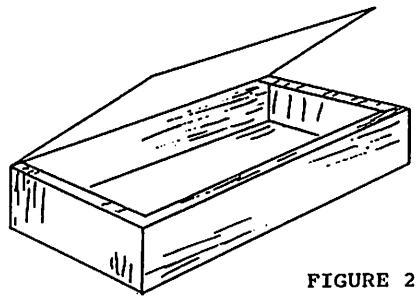


FIGURE 25

blocks. Cut a slit in each block and glue to the bottom of the box. The wing is mounted in the same way as it is fixed to the fuselage. Glue wing socket tubes to a piece of balsa and glue this in the box. Also in this case the sockets have to be aligned properly to prevent warps from developing in the wing.

For winding the rubber motor we need a winder with a gear ratio of about 1:10. You can make one yourselves from an old hand drill, alarm-clock or Meccano gears. They are also commercially available.

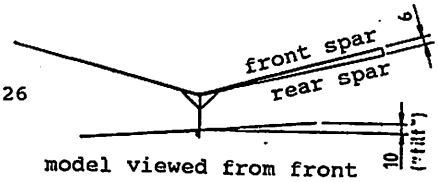
Flying

For our first trim flight we need a draft-free space with a floor space of 10x10m minimum (a gym hall, cantinc, hangar, church). Because an indoor model allways flies powered by its propeller and not as a glider we will trim it directly as a powered airplane. Remember that the safest way to hold your model is at the nose between thumb and forefinger. This way you also hold the propeller. Force yourself to slow down, make gentle movements. When you run with the model in your hand all that will be left is the motorstick and remnants of wing and tail will flutter behind you.

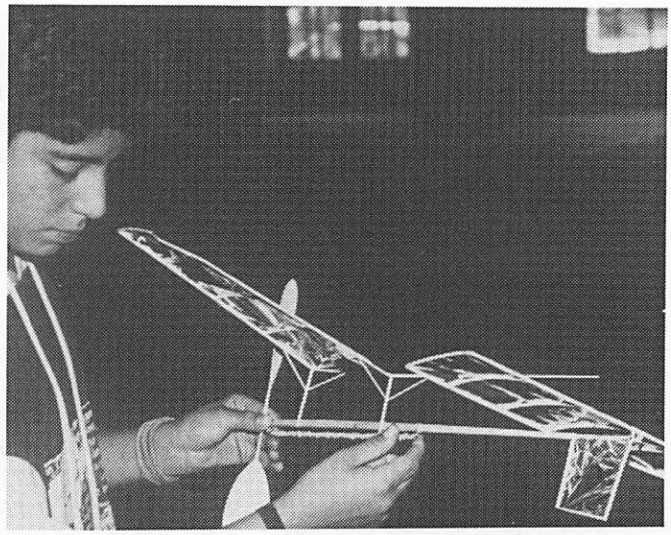
Insert the propeller into the bearing and attach the rubber motor (knot at the rear!). Check that:

1. the longest wing post sits in the front socket.
2. the underside of each wing post is exactly equal with the underside of the socket.
3. the left wing has the correct positive warp and the right wing is flat (figure 26).

FIGURE 26



4. the stabilizer is flat.
5. the stabilizer is tilted to the right (figure 26).
6. the rudder is flat.
Small deviations are acceptable.



Take the model at the nose with your left hand and turn the propeller with your right hand 200 turns to the right. Now switch over the model such that you hold it with your left hand from the front at the bearing also keeping the propeller from rotating. Take the model with your right hand at the motorstick under the wing and release the propeller. Let the propeller turn for a few seconds and release the model with a gentle movement. Do not throw it! The model will turn to the left if everything is right. Do not panic when it hits the wall. Just let it happen and pick it up when it has slid down. Also when it risks to collide with a person say to him to stand still, freeze and let the model hit and slide down. The model flies so slowly and is so flexible that hardly any damage will result.

The model should not dive nor climb. When it tries to climb you will notice that it looses velocity, stalls and dives to pick up speed again (figure 27). When it stalls



stalling FIGURE 27

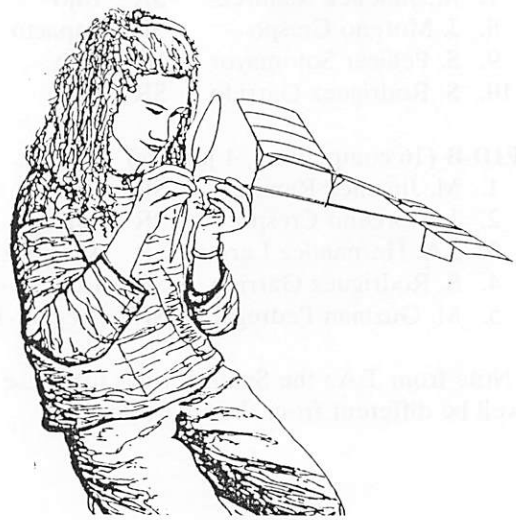
the front wing post has to be lowered in the socket. Do this in small steps of ±1mm. When it dives the rear post has to be lowered. When the model flies a neat and level left turn you can increase the number of turns. From now on we do not do this by hand any more as you can easily damage your model. We use the winder. The motor now always has to be lubricated with castor oil or another type of lubricant. Only then will the motor unwind smoothly and have a longer life. Hold the model between thumb and forefinger at the front so that you also hold the propeller. The rubber is hooked up at the propeller (knot at the rear!). Ask a friend to wind ±500 turns in the motor. Take of the motor from the winder grabbing it firmly just before the O-ring and hook it up to the rear hook. The winding is best done by stretching the rubber about 4 times its original length. In this position wind in about half the number of turns. The other turns are wound while gradually approaching the model till it matches the length of the motorstick. With this procedure, which can be refined a lot, you will get much more turns in the motor and it will last longer!

When the model flies level cut off the end of the wing post that extends below the wing socket. This ensures that you will allways mount the wing onto the fuselage with the correct incidence angle. Allways slide the wing posts into the sockets till they are aligned with the underside of the sockets.

You can now further increase turns till the model approaches the ceiling. When the ceiling is flat and smooth you can even allow it to hit the ceiling. When your winding technique has become optimum you can get up to 1600 turns into the motor. In large halls times of almost 10 minutes can be flown! But in a gym hall flights 5 minutes are very well possible. It is all a matter of clever experimenting with longer, shorter, thicker or thinner rubber, a larger propeller, more pitch, other blade shape or whatever design change you can think of!

How to continue?
That depends on you. Building or flying this model may not have been as satisfying as you expected or you have had some bad luck. We do not think that that is too bad. You have tried something and gained new experience. But you also may have become curious to what this model really can, and that is quite a bit. It requires further experimenting with rubber sizes. A lot can be told about winding technique. There are many, many other more challenging designs. Remember this: when you fail at something, or have something to ask, call or write one of the other indoor fliers. They will be glad to help you!

List of suppliers
Indoor Model Supply, Box 5311, Salem, OR 97304, U.S.A..
Micro-X, Box 1063, Lorain OH 44055, U.S.A..
SAMS Models, The Chapel, Sandon, Buntingford, Herts SG9 0QJ, England.
F1D Indoor Supplies, John Tipper, 23 Green Lane, Chichester, West Sussex, PO19 4NS, England.



Spanish Indoor Championships 1994

Toledo - December 3-4, 1994

Report by Santiago Rodriguez Garrido (SP)

This year we had only two contests: in class F1D and F1D-B. The latter is an initiation category for newcomers to the indoor community. In fact I flew with a Living Room Stick model. There were prices for seniors, juniors and kids. The latter received a kit of an indoor model presented by the president of our National Federation of Air Sports (F.E.N.D.A.).

Attendance was large, in a very good hall of 8 metres ceiling height, which is normally used for basketball and handball competitions. Inside temperature was 8°C average and the outside temperature was very low, but sunny. We had to switch off the heating because enormous convection currents were created! The best news is that it seems that everybody is getting more involved in indoor flying, taking it more seriously and as a full-time and sole category. Surprisingly the youngs are doing very well, see the result list!

After the contest, but before the prize-giving, an exhibition was arranged of other indoor categories, like hand launch gliders, ornithopters, peanut models and even electric round-the-pole flying. The R.T.P. demonstration by mr. Luis Font, from Alicante, was fantastic. He even showed three models running a team-race. Also remarkable was the show of mr. Juan Moreno and his Peanuts. It is a pity that we did not run a competition for this class this year. My "Rex" monoplane was almost ready!

And that's all for this year. I hope the next competition will see the presence of other foreign modelers, just for teaching purposes. We apologize that the invitation for the meeting was issued so late.

F1D (26 competitors, 12 juniors)

1.	F. Jimenez Gamez	SR	Las Palmas	602
2.	D. Lopez Parra	JR	Las Palmas	510
3.	C. Perez Sanchez	SR	Casa Barajos	466
4.	L.A. Parra Alamo	SR	Las Palmas	427
5.	M. Jimenez Martinez	JR	Las Palmas	421
6.	F. Heredia Manas	JR	Las Palmas	396
7.	M. Jimenez Ramirez	SR	Tajo	380
8.	J. Moreno Crespo	SR	Impacto	350
9.	S. Pellicer Sotomayor	JR	Tajo	348
10.	S. Rodriguez Garrido	SR	Tajo	336

F1D-B (16 competitors, 4 juniors)

1.	M. Jimenez Ramirez	SR	Tajo	334
2.	J. Moreeno Crespo	SR	Impacto	227
3.	J.A. Hernandez Lerma	SR	Aranjuez	217
4.	S. Rodriguez Garrido	SR	Tajo	210
5.	M. Guzman Pedregal	SR	Breguet-19	200

(Note from T.A.: the Spanish rules for these classes may well be different from the FAI rules)

Dutch Indoor Championships 1994

Sainte Formule (15 competitors)
Utrecht - March 6, 1994
9 m ceiling, best 2 from 5 (one R.O.G.)

1.	David Lentink	JR	2'26	2'44[s]	**5'10**
2.	Jeroen Wackers	JR	2'20[s]	2'30	**4'50**
3.	Gert Brendel	SR	2'34[s]	1'54	**4'28**
4.	Niels Brendel	SR	2'09[s]	2'00	**4'09**
5.	Jo Aarts	SR	1'43[s]	1'54[s]	**3'37**

F1D Beginner (18 competitors, 8 juniors)
Enschede - December 30, 1994
9 m ceiling, best 2 from 6

1.	Jeroen Wackers	JR	9'48	11'32	**21'20**
2.	David Lentink	SR	10'31	9'32	**20'03**
3.	Maarten Blasse	SR	7'15	8'04	**15'19**
4.	Suzanne v.Egmond	SR	7'57	6'57	**14'54**
5.	Ivo Kreetz	JR	6'09	6'17	**12'26**
6.	Gerrit de Kruyff	SR	5'54	6'13	**12'07**
7.	Durk Steenhuizen	JR	6'08	5'40	**11'48**
8.	Raymond Struik	SR	5'21	5'39	**11'00**
9.	Jurgen Maassen	SR	5'24	5'23	**10'47**
10.	Marian ter Horst	JR	5'17	5'11	**10'28**

LRS Postal

Mike Colling has announced that due to pressure of work this years Living Room Stick Postal International will be the last one that he will organise.

Dictionary

Kai Halsas (FIN) has compiled a dictionary (english, french, german) for indoor flying. We will include two pages of the dictionary with each of the following issues of Indoor News. The fourth column of the dictionary is intentionally left blank so that you can fill-in your specific language. Corrections and additions are most welcome and can be sent to the editor or to Kai Halsas, Viherkallionkuja 7A1, SF-02710 Espoo 71, Finland.

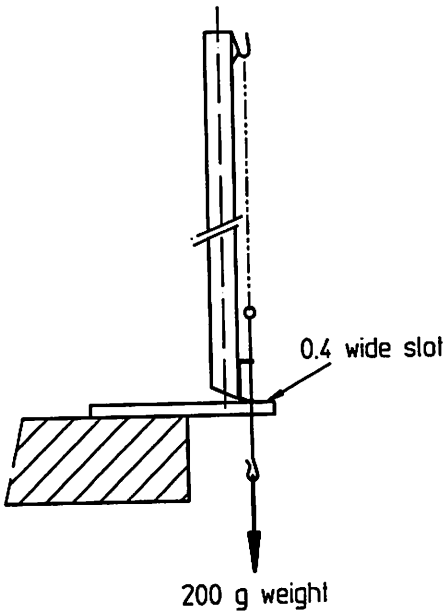
TESTING MOTORSTICKS

by Thedo André (NL)

There were 7 entries in Microfilm at this years Flémalle contest, five of them being newcomers! They all flew versions of Bernard Hunt's No Bracing design and they all had problems with too weak motor sticks. Either the stick broke under high torque (a problem to be expected on your

first really lightweight structure), or the wing twisted with the motor-induced stick twist and tucked under. Here is a simple and safe way to test your motorstick on bending and torsional stiffness. Perform the test before adding the tailboom.

The bending test is done by supporting the motorstick on the bearing vertically and hanging a weight of 150 gram min. on the rear hook, see sketch.



Hold your hand under the weight so that you can quickly lift it when the stick bends too much or something starts cracking. This is also a safe way to check boron reinforced motorsticks. The boron should be stuck to the motorstick continuously, a loose section as small as 10 mm can cause disaster! I repeat this test everytime before I leave for a flying session where I expect to use high launch torque. I have gone to a 250 gram weight, but 150 suffices for most ceiling heights. I always pre-stress the stick bracing so that the stick bends about 1,5mm downwards in the middle.

When the stick is OK in bending attach a fully wound motor and observe the twist. 10° is maximum. Insert dummy posts in the wing sockets to facilitate estimating the twist. In particular for the Hunt design the section between the wing posts is the most important and should be as rigid as you can achieve.

Don't be hesitant about trying bracing on a wing. It is not as difficult as it seems. But it helps to keep your wing flat under flight loads and saves you a lot of trouble. I use primary bracing only on low ceiling models. Use four separate pieces of wire instead of a single one that goes all around. This is much easier to attach and to get the right warps in. Correcting warps in a later stage will also be easier.

NEWS FROM PRAG

Bruno Wächter (GER) found some interesting news in Modelár Nr. 7,8 and 9 and translated it for Indoor News:

In May last year a new Aeromodelling Club was founded in Prag (Czechia). This new club is for free flight, RC (Fly for Fun) and Vintage, but specialises in Indoor! They will make hard to obtain indoor materials available for the Chechian modelers and they will also organize indoor competitions in Prag and around.

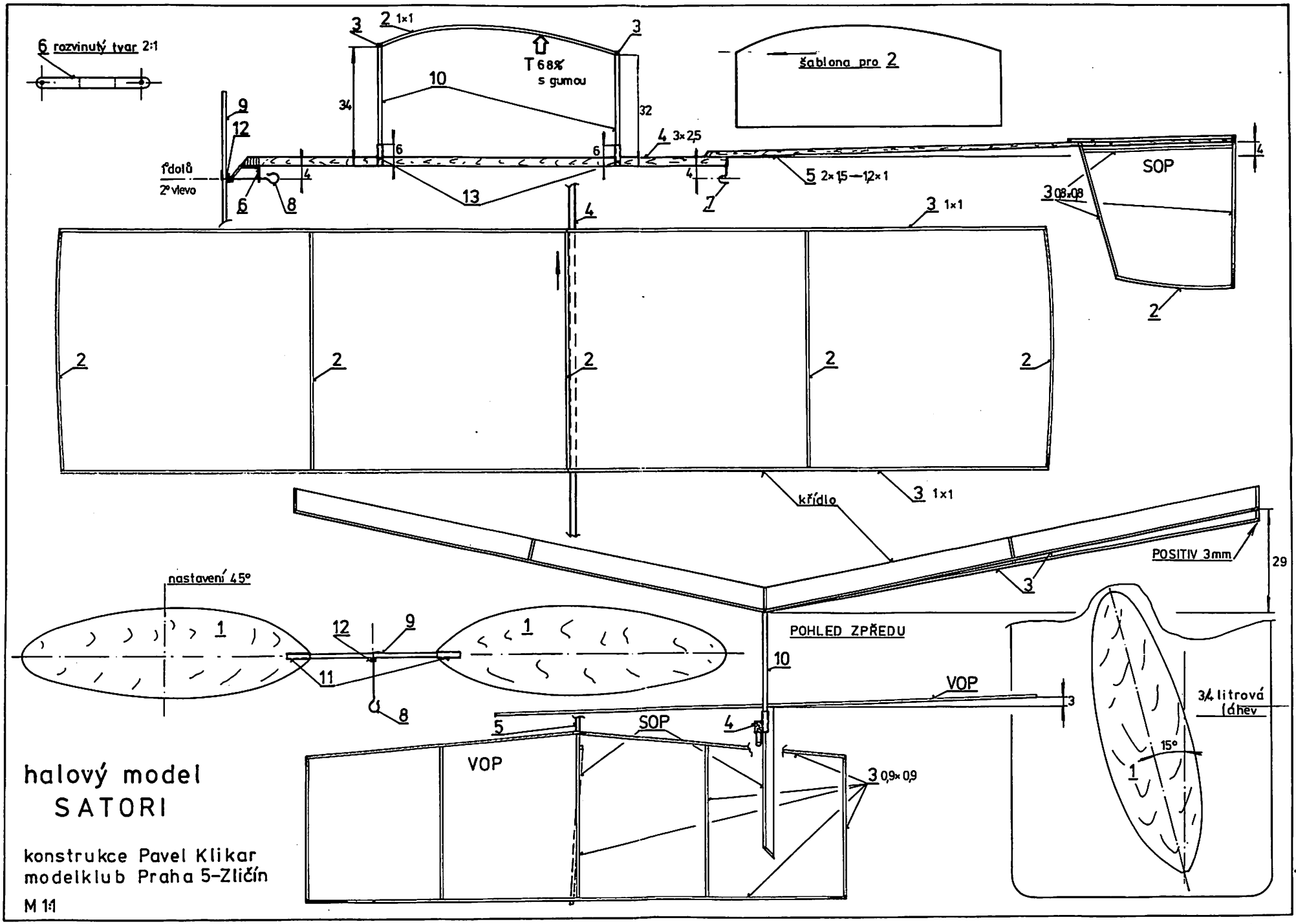
They have already found some promising halls in Prag. For example a huge hall that was previously used as a mausoleum for the first communist presidents and the atrium of a former trade fair complex, which measures 30x80m and is 20m high! Both halls are very suitable for indoor flying. When they can come to an agreement with the owners there may well be an international indoor competition in Prag in the near future! One of the founders of the club, apart from mr. Jiri Kalina, is Pavel Klikar. He is a well-known musician and musical scientist in Prag. He directs the Prag Syncopate Orchestra and often he lets indoor models fly on the sounds of his orchestra!

With the foundation of the new club they also introduced a new class, of which Pavel Klikar was the main initiator. In past years the most popular class in Czechia has been a type of Penny Plane class. But this class has got over-developed, the models began to look ugly and were difficult to build, while the flight times were nothing exceptional. That is why a new class was developed, lighter and smaller and as with LRS and EZB all the important parameters were fixed by the rules. The class lies between LRS and EZB:

Max. wing span:	280mm (11")
Max. wing chord:	70mm (2 3/4")
Max. length over all:	305mm (12")
Max. prop.diam.:	203mm (8")
Max. length betw. hooks:	127mm (5")
Max. tail area:	35% wing area
Fuselage and propeller:	solid balsa

No bracing or struts.
Covering: free
Min. weight (without rubber): 0,89g
(1 new Heller coin)
Best time: 8min36sec (Pavel Klikar)

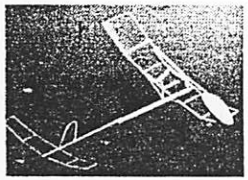
If you want to know more about this new club you can write to: mr. J. Kalina, Tasovská 365, CR-15500 Praha 5, Czechia, Tel. + 23016537.



halový model SATORI

konstrukce Pavel Klikar
modelklub Praha 5-Zličín

M 1:1



444 Henryton So
Laurel, MD 20724
301-498-0790
December 23,1994

TO : Team Captains, Japan vs USA Easy B Contest
FROM : Tom Vallee
SUBJECT : Final Contest Report

Gentlemen,

The long awaited envelope from Japan has arrived! The first place team is the Japan - Kawasaki A team led by Satoshi Kinoshita. Mr. Kinoshita was also the top individual flyer with time of 20:04. This is simply outstanding time and has to be considered an unofficial world record.

The top Japanese flyers were very good, finishing 1,2, and 3 in the individual standings to support a well deserved first place team triumph. Second was Ryizi Masaki with 17:11. Contest organizer Shigeyoshi Nonaka came in third with an impressive 16:42. Those of us new to Easy B should compare these times to the AMA Easy B Cat. I record of 17:15 to rate them. These are simply outstanding times!

The top American teams were quite respectable, finishing second, third, and fourth in the contest. Bob Randolph's California Flyers won a very respectable second place. The fight for third place team honors was very close. Jesse Shepherd's Great Plains / Southwest team edged the Goddard flyers for third place by just 16 seconds.

The top American flyers were quite respectable. Stan Chilton, 16:31 finished fourth. Bob DeShields, 16:10 and Dan Belieff, 1549 finished 5th and 6th in the contest. These are good times. It took a fine state of the art finish by the Japanese flyers to beat them.

The Easy B Postal was hard fought with good flying on both sides. It was good contest. I have enjoyed flying in this friendly competition with the best Japanese flyers. It has been a good struggle! We hope to fly with you again in the next Easy B Postal Contest in 1996.

On behalf of the American flyers, I would like to congratulate Mr. Nonaka and all the Japanese flyers for a fine individual and team performance in the contest. Well done gentlemen! We look forward to flying with you in the F1d contest in 1995.

Best regards,

Tom

Thomas Vallee

JAPAN - UNITED STATES
EASY B POSTAL CONTEST - 1994
INDIVIDUAL STANDING

		1	2	3	4	5	BEST	RANK
SATOSHI KINOSHITA	JAPAN	20:04	19:34	18:06	—	—	20:04	1
RYIZI MASAKI	JAPAN	15:32	14:33	16:44	17:11	16:18	17:11	2
SHIGEYOSHI NONAKA	JAPAN	14:10	15:51	16:03	16:42	—	16:42	3
STAN CHILTON	USA	16.31	16:09	—	—	—	16:31	4
BOB DE SHIELDS	USA	06:15	14:08	04:40	16:10	15:43	16:10	5
DAN BELIEFF	USA	00:44	03:49	14:44	15:30	15:49	15:49	6
BOB GIBBS	USA	14:26	01:47	06:51	14:24	15:36	15:36	7
STEVE BROWN	USA	13:59	13:34	12:36	11:31	15:13	15:13	8
TOM VALLEE	USA	12:42	15:02	13:02	13:19	13:58	15:02	9
DICK HARDCASTLE	USA	11:32	13:39	12:45	01:31	14:42	14:42	10
MASATOSHI MISAWA	JAPAN	14:42	—	02:31	—	—	14:42	11
LARRY LOUCKA	USA	13:32	14:23	—	—	—	14:23	12
NOBURU OMATA	JAPAN	13:28	11:26	13:35	13:03	14:11	14:11	13
LARRY MZIK	USA	11:34	11:09	13:40	—	—	13:40	14
BUD TENNY	USA	13:04	11:03	07:34	—	—	13:04	15
LARRY COSLICK	USA	12:56	12:43	03:33	04:07	04:35	12:56	16
JIM CLEM	USA	12:29	09:39	11:18	—	—	12:29	17
SYOJI KANEKO	JAPAN	07:02	11:54	12:26	12:25	12:01	12:26	18
KAZUMA HARA	JAPAN	10:25	11:38	12:20	11:29	11:40	12:20	19
BILL MARTIN	USA	11:44	08:37	07:37	10:52	12:10	12:10	20
YASUTAKA KANAKA	JAPAN	—	09:34	09:34	01:06	12:09	12:09	21
BOB PLATT	USA	10:50	10:56	11:49	09:27	—	11:49	22
DAVE ROBELELEN	USA	11:40	10:50	10:56	11:49	—	11:49	23
MARK VANCIL	USA	11:12	11:38	—	—	—	11:38	24
HISAO TAMURA	JAPAN	10:27	05:11	11:03	05:47	09:46	11:03	25
RAY WEISMAN	USA	00:07	02:44	05:57	10:57	10:56	10:57	26
SEIZO TAMAI	JAPAN	07:08	10:54	06:12	10:45	06:59	10:54	27
HIROSI KURIHARA	JAPAN	10:47	04:38	10:18	—	—	10:47	28
ZUITI FUZIWARA	JAPAN	09:39	10:43	07:00	09:54	09:44	10:43	29
KAZUMASA KOMURA	JAPAN	05:37	09:36	08:24	09:39	10:04	10:04	30
ABRAM VAN DOVER	USA	09:30	08:58	09:59	—	—	09:59	31
MIKE PAIRANG	USA	09:58	06:02	—	—	—	09:58	32
OSAMU HAYASHI	JAPAN	09:02	01:16	07:26	—	09:45	09:45	33
JOHN DIEBOLT	USA	08:10	09:42	09:33	08:28	—	09:42	34
SADAYOSI TOMITA	JAPAN	07:38	07:57	09:28	08:58	08:51	09:28	35
YOITI IKEDA	JAPAN	02:46	09:19	05:12	02:12	—	09:19	36
TAKASHI TEREO	JAPAN	04:15	07:27	06:50	07:06	09:06	09:06	37
MASAHIRO YAMANASI	JAPAN	08:48	07:58	08:50	—	—	08:50	38
VERNON HACKER	USA	08:13	08:42	06:40	—	—	08:42	39
WALT COLLINS	USA	07:37	07:33	07:49	07:50	08:24	08:24	40
SUSUMU SHIBATA	JAPAN	06:55	06:40	07:18	03:12	08:22	08:22	41
SHIROSHI KOIKE	JAPAN	06:25	06:17	07:57	05:55	07:46	07:57	42
JIM LYNCH	USA	07:39	06:30	—	—	—	07:39	43
TOSHIKAZU SUZUKI	JAPAN	03:03	06:07	03:16	06:44	07:28	07:28	44
HERB ROBBINS	USA	04:42	04:58	06:18	—	—	06:18	45
STU BENNETT	USA	05:13	06:01	05:57	05:51	05:26	06:01	46
JON VANCIL	USA	05:38	—	—	—	—	05:38	47
PAUL ROBELEN	USA	02:30	01:50	—	—	—	02:30	48

1994 EZ—B USA Rules
日米対抗通信競技チーム成績
JAPAN-U.S.A POSTAL CONTEST team Standing

1 川崎Aチーム KAWASAKI-A-team

木下 哲 KINOSHITA	間崎 隆次 MAZAKI	三沢 正敏 MISAWA	ToTal 合計
20' 04"	17' 11"	14' 42"	51' 57"

2 West Coast Flyers

Bob De Shielde	Bob Gibbs	Steve Brown	合計
16' 10"	15' 36"	15' 13"	46' 59"

3 Greet Plains/Southwest

Stan Chilton	Bud Tenny	Jim Clem	合計
16' 31"	13' 04"	12' 29"	42' 04"

4 Goddard Flyers

Dan Belieff	Tom Vallee	Ray Weisman	合計
15' 49"	15' 02"	10' 57"	41' 48"

5 St, Louis Flyers

Dick Hardcastle	Larry Cosllck	Bill Martin	合計
14' 42"	12' 56"	12' 10"	39' 48"

6 東京チーム TOKYO-team

野中 繁吉 NONAKA	小俣 昇 OHMATA	山梨 雅弘 YAMANASHI	合計
16' 42"	14' 11"	08' 50"	39' 43"

7 Cleveland Clowns

Larry Loncka	Larry Mzik	Vernon Hacker	合計
14' 23"	13' 40"	08' 42"	36' 45"

8 川崎Bチーム KAWASAKI-B-team

金子 昌司 KANEKO	田中 泰孝 TANAKA	小村 和正 KOMURA	合計
12' 26"	12' 09"	10' 04"	34' 39"

9 東京新宿グループ SHINJUKU-group

原 一馬 HARA	田村 久雄 TAMURA	栗原 弘 KURIHARA	合計
12' 20"	11' 03"	10' 47"	34' 10"

10 Brainbusters A

Dave Robelen	Abram Van Dover	John Diebolt	合計
11' 49"	09' 59"	09' 42"	31' 30"

11 川崎麻生グループ ASOH-group

玉井 清造 TAMAI	富田 定佳 TOMITA	池田 洋一 IKEDA	合計
10' 54"	09' 28"	09' 19"	29' 41"

12 江戸川グループ EDGAWA-group

林 修 HAYASHI	寺尾 孝 TERAO	藤原 瑞吉 FUZIWARA	合計
09' 45"	09' 06"	10' 43"	29' 34"

13 Memphis Indoor Modelalrs

Mark Vancil	Jim Lynch	Jon Vancil	合計
11' 38"	07' 39"	05' 38"	24' 55"

14 いわきグループ IWAKI-group

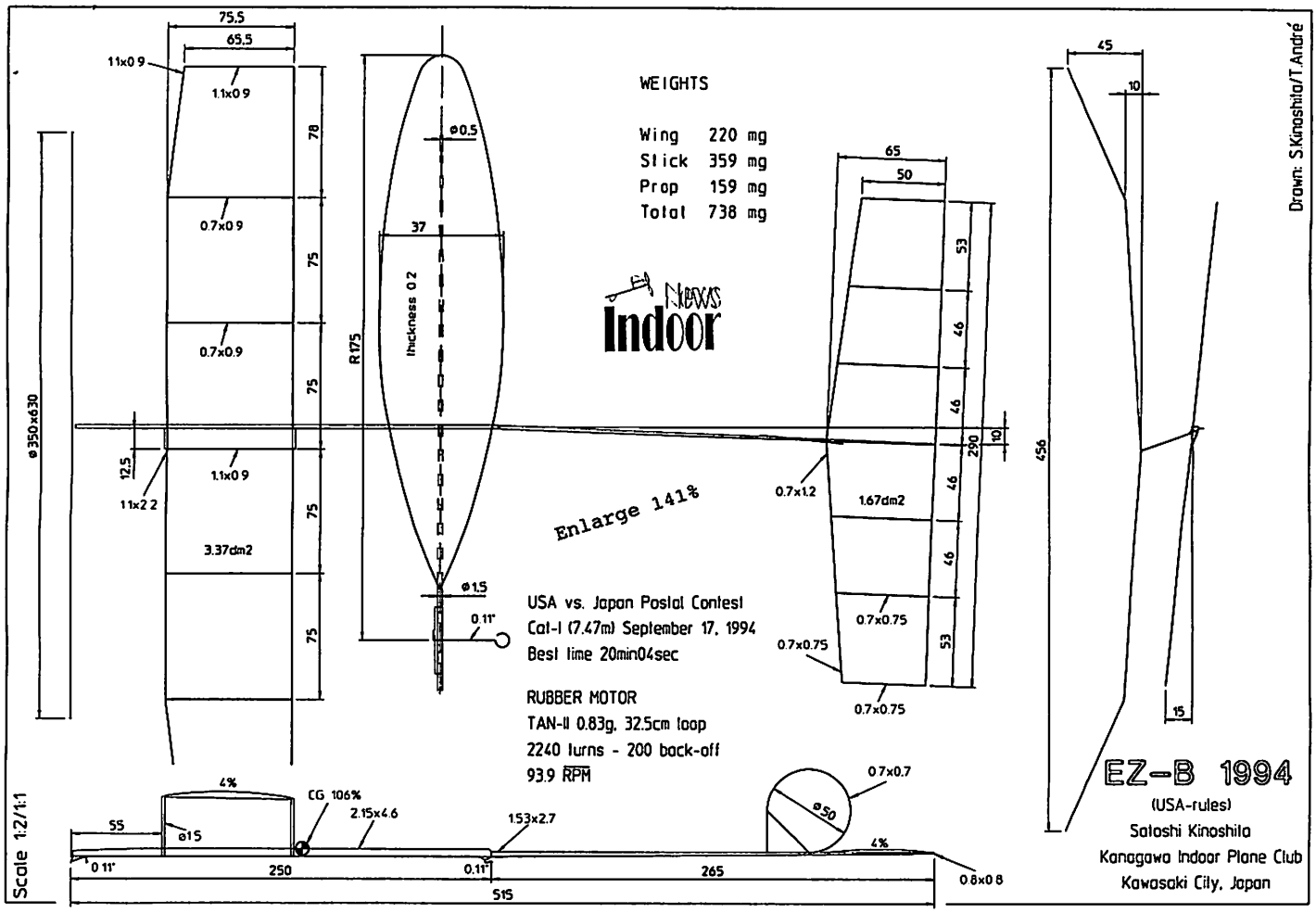
柴田 進 SHIBATA	小池 広 KOIKE	鈴木 利一 SUZUKI	合計
08' 22"	07' 57"	07' 28"	23' 47"

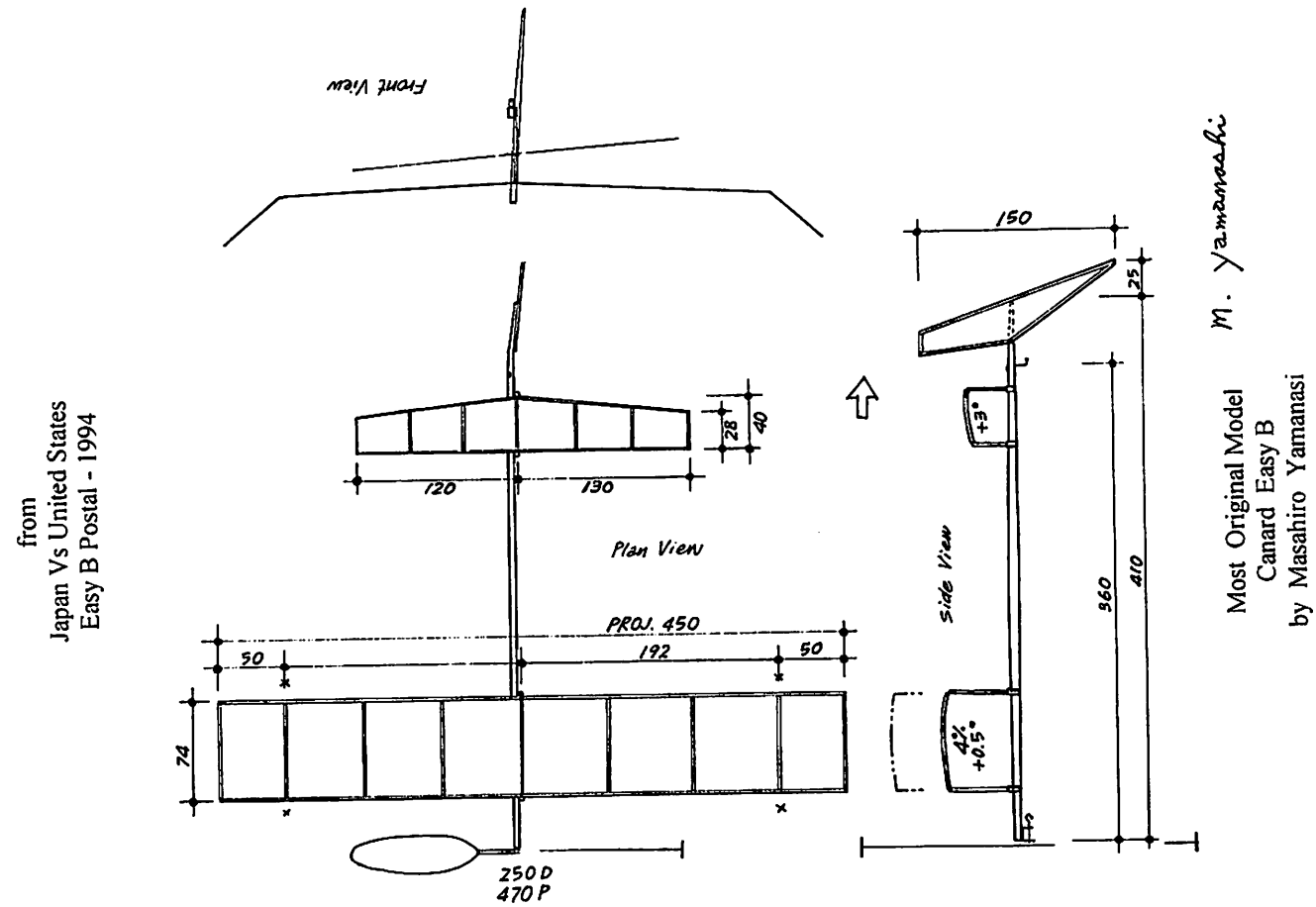
15 Brainbusters B

Bob Platt	Walt Coilins	Paul Robelen	合計
11' 49"	08' 24"	02' 30"	22' 43"

16 Oakland Cloud Dusters

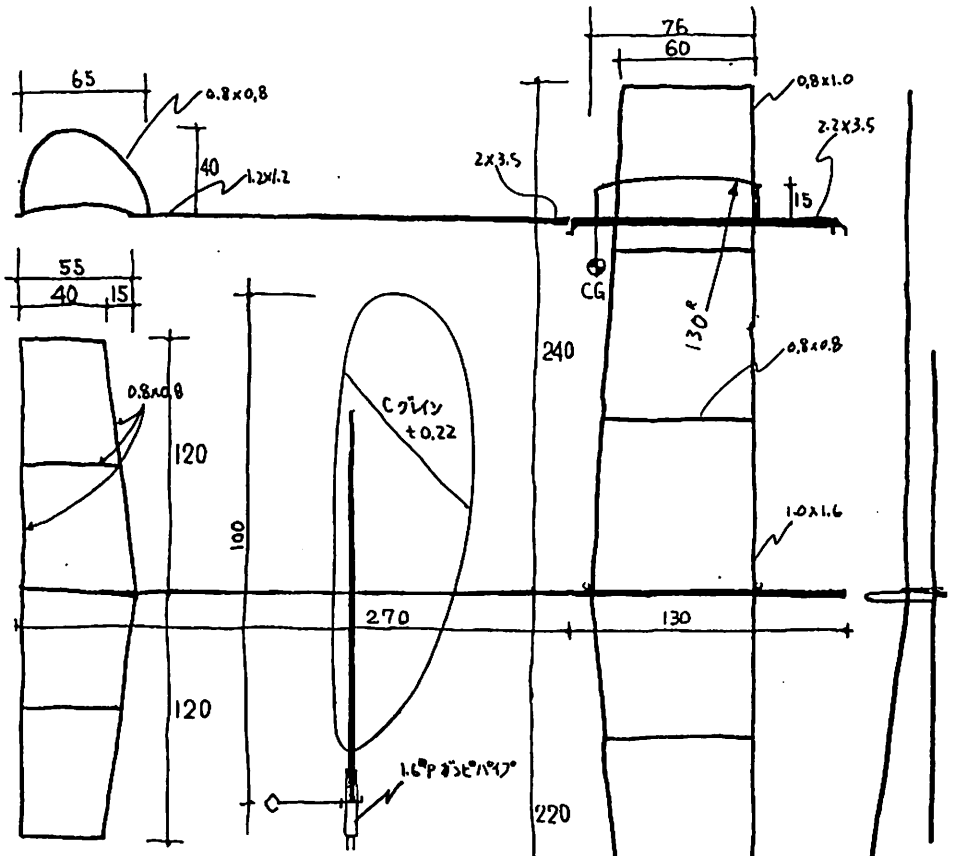
Mike Pairang	Herb Robbins	Stu Bennett	合計
09' 58"	06' 18"	06' 01"	22' 17"





from
Japan Vs United States
Easy B Postal - 1994

Most Original Model
Canard Easy B
by Masahiro Yamanasi



プロペラ P:360 D:200

EZ-B 実験機

W 胴体.尾翼.テール : 0.403g
主翼 : 0.212g
プロペラ : 0.102g
合計 : 0.717g

飛ばす速度 ±0.7m/sec(MAX)

TAN II 3ゴム	巻数		水没
330ループ/φ0.143	2.700	10分43	水元 93.8.21
250ループ/φ0.167	1.800	7分55	ﾀﾏｶﾄ 93.9.15

Fujiwara Zuikichi
藤原瑞吉 93.10.25

実験機 EZ-B

94.8.8 藤原瑞吉

A．設計目的

小径のプロペラと少量のゴムで、可能な限りゆっくり飛ばし、室内機の本質を研究する為の実験機。

B、設計条件

1. ＥＺ－Ｂの規定内　2. プロペラＤ≦20cm　3. 重量約 0.7g(胴体尾翼テール0.4g 主翼0.2gペラ0.1g)　4. フック間隔13cm　5. 機長約40cm　6. 滞空時間 7分以上

C、基本設計　（単位cm）

1、主翼

b:翼巾　Cr:翼中央弦長　Ct:翼端弦長　Cm:空力平均翼弦長　S:翼面積　A:アクベスト比

$S = b \times \frac{Cr+Ct}{2} = 46 \times \frac{7.6+6}{2} = 312.8cm^2$　　$Cm = \frac{Cr+Ct}{2} = \frac{7.6+6}{2} = 6.8cm$

$A = \frac{b}{Cm} = \frac{46}{6.8} = 6.75$　（翼型はNACA A=1.0 M.LINE カンバー5.5%円弧）

2、水平尾翼

lh:水平尾翼のモーメントアーム（重心CGから水平尾翼の空力平均翼弦長の後30%までの長さ）　Vh:水平尾翼容積（テールボリュム）　Sh:水平尾翼面積（水平尾翼の空力平均翼弦長×水平尾翼巾）

$Sh = \frac{5.5+4}{2} \times 24 = 114cm^2$　　$Sh \geq S \times 50\% \rightarrow 312.8 \times 0.5 = 156.4cm^2$

$Vh = \frac{Sh \times lh}{S \times Cm} = \frac{114 \times 26.12}{312.8 \times 6.8} = 1.399$

$lh = \frac{Vh \times S \times Cm}{Sh} = \frac{1.4 \times 312.8 \times 6.8}{114} = 26.12cm$

3、垂直尾翼

Sv: 垂直尾翼面積（Sh≧30%）

Sv≧Sh×0.3＝114×0.3＝ 38cm²　→＝23cm²（デザイン上）

4、主翼と重心CG位置

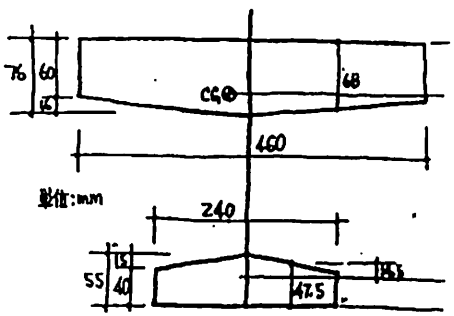
h:主翼平均前縁から重心までの長さ（Cmの90% をCGとする）

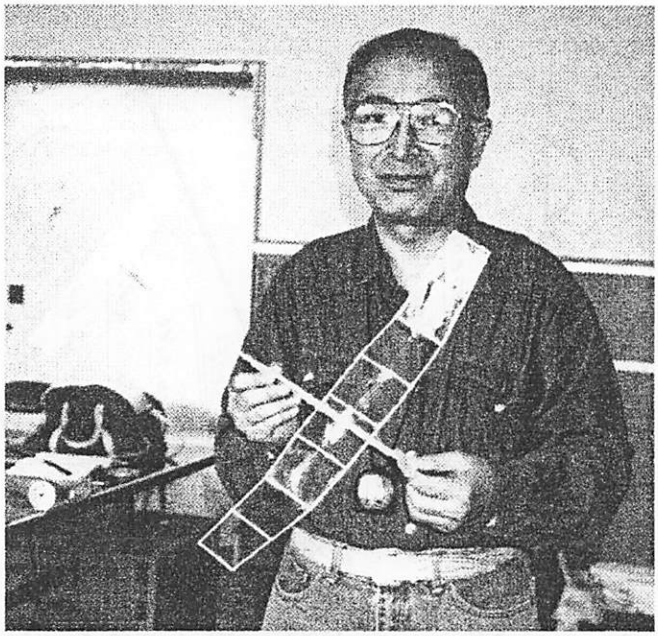
h＝Cm×0.9＝6.8×0.9＝ 6.12cm

（式で求めると h/Cm(%)＝16+36×Vh＝16+36×1.399＝ 66.361%）

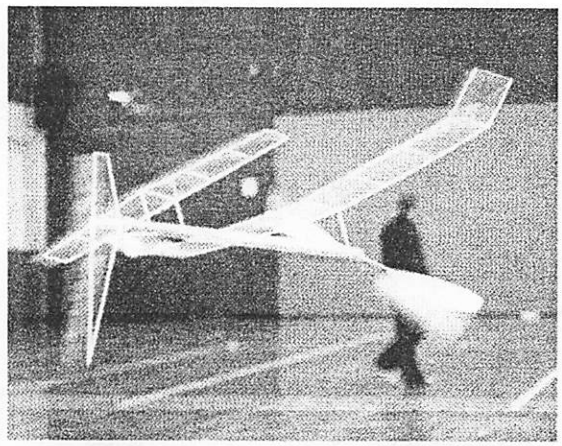
5、翼面荷重　W/S

$W/S = \frac{機体重量Wg}{翼面積\ S} = \frac{0.7}{312.8} = 0.223 g/cm^2$

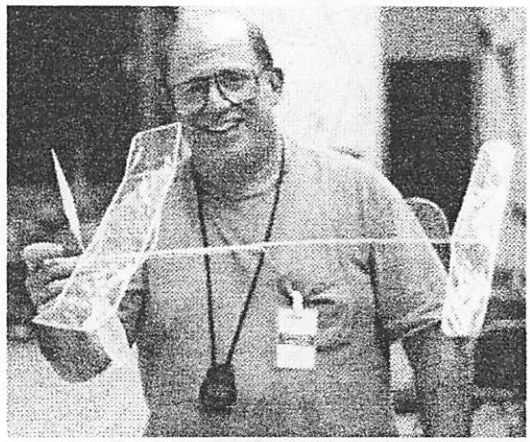




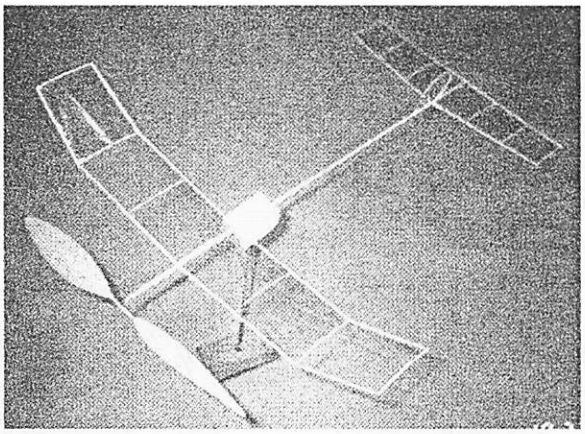
Seizo Tami - Kawasaki Aso.



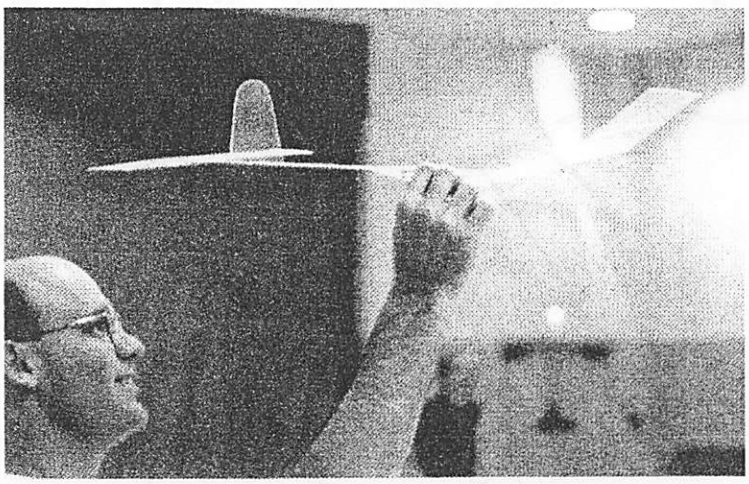
Most Original model
Canard Easy B By
Masahiro Yamanasi



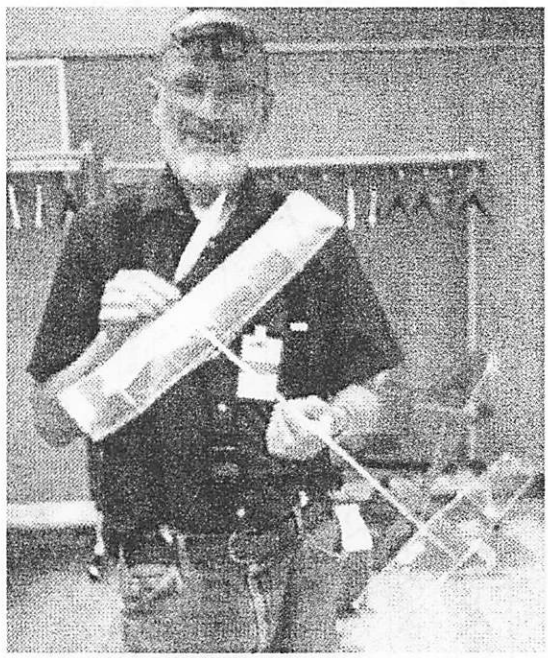
Ray Weisman
Goddard Flyers



The Winning Model
Satoshi Kinoshita EZB



Mark Vancil
Memphis Modelairs



Tom Vallee
Goddard Flyers

LA RATEPENATE

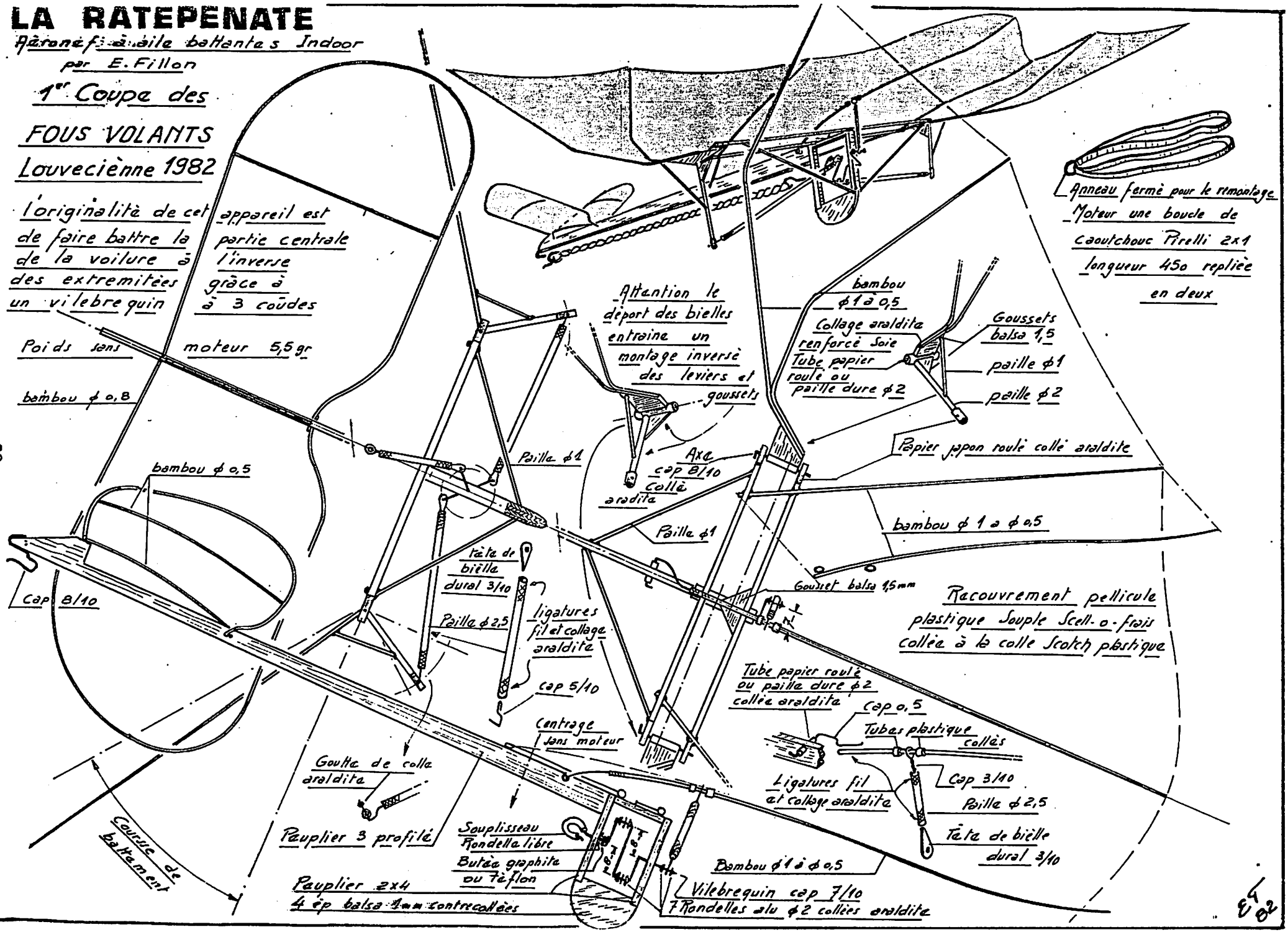
Aéronef à ailes battantes Indoor

par E. Fillon

1er Coupe des FOUS VOLANTS Louvecienne 1982

l'originalité de cet appareil est de faire battre la partie centrale de la voiture à l'inverse des extremitées grâce à un vilebrequin à 3 coudes

Poids sans moteur 5,5 gr



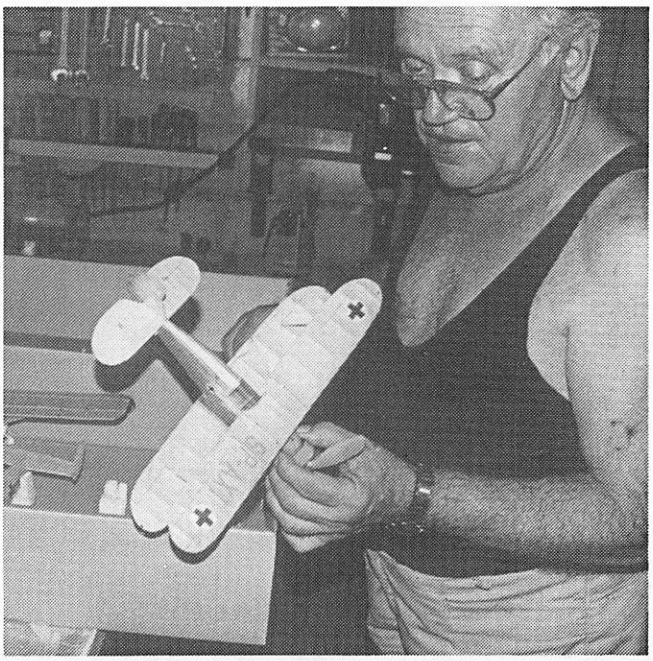
Anneau fermé pour le remontage Moteur une boucle de caoutchouc Pirelli 2x1 longueur 45o repliée en deux

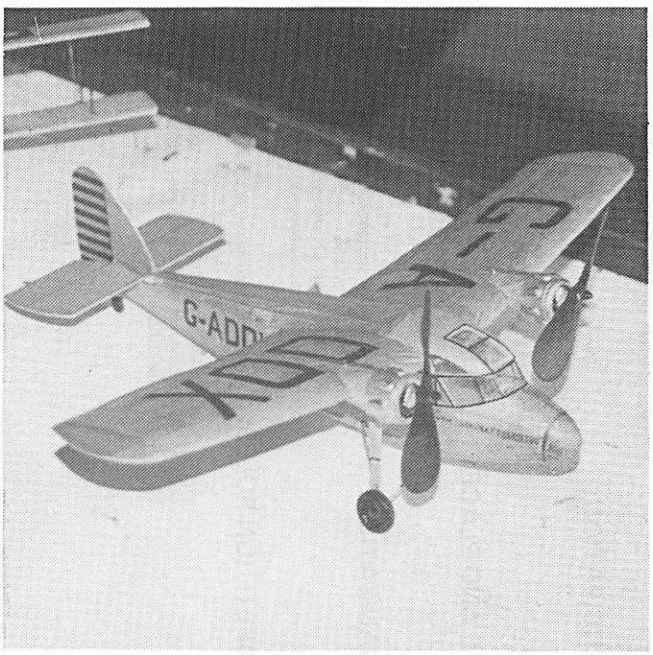
E 82

VISITING EMMANUEL FILLON

By Daniel Bizet (FRA)

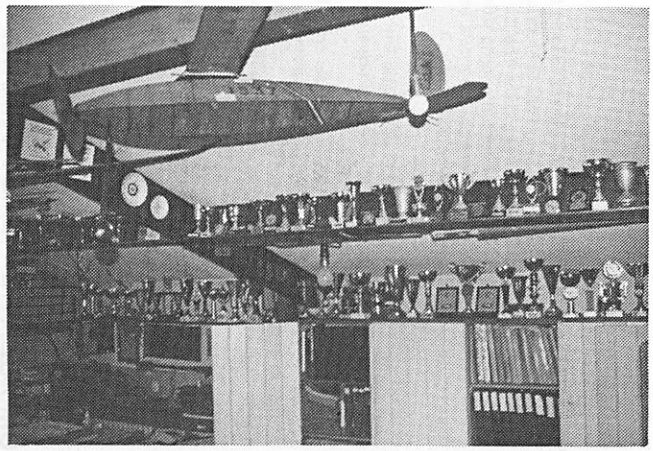
This summer two of my young club members and myself had the pleasure to spend two days at Emmanual Fillon's house in St. Raphaël. He showed us box after box full of the most wonderful Peanuts, all perfectly built and decorated. We browsed through some of his documentation, plans, 3-views and magazines. He explained us how to make your own winding tubes from Kraftpaper (packing paper), dope and paint; how to paint the intricate "lozenge" camouflage pattern on the Albatross (see photo); making foam Peanut fuselages; a weighing balance with 5/1000 gram accuracy..... He was very kind and told us so many tricks, if I only could remember 1 out of 10! It was a dream!

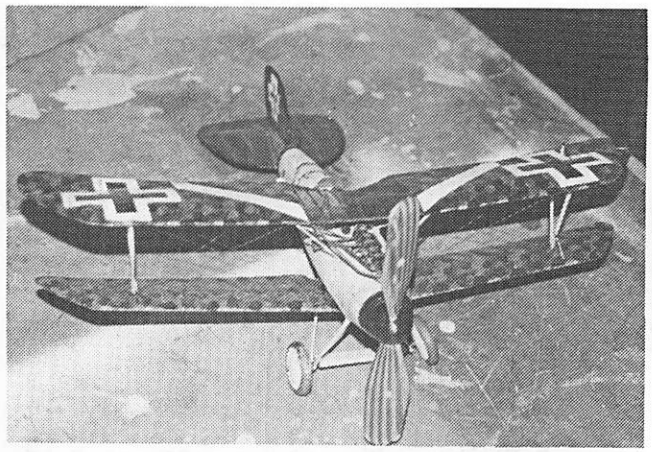


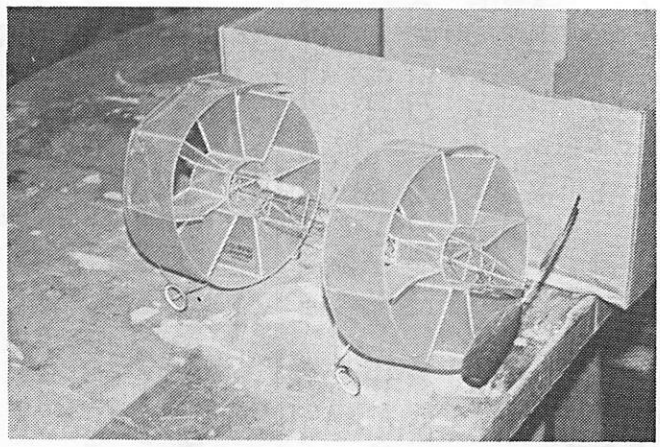


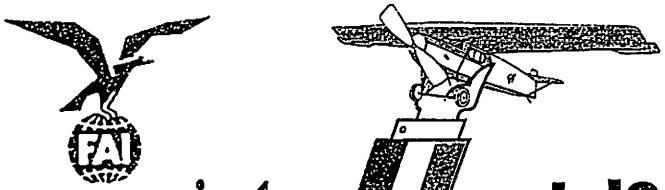
He has such widespread knowledge, about photography, Peanuts of course, gliders, Coupe d'Hiver, control line, radio control, electronics..., and he still has lots of ideas about solving the typical modelers problems- what a genius! The pictures give only some idea of his craftmanship and talent.

(Fillon sells many Peanut plans, mainly of French airplanes of the thirties. All plans are of extraordinary quality. His address is: E. Fillon, 60 rue du Bocage, 83700 Saint Raphaël, France).











interscale'95

18-19-20 AUG. MAASTRICHT-NEDERLAND

PRE-WORLD CUP FOR INDOOR FREE FLIGHT SCALE MODELS - EURO-CITY MAASTRICHT

Organizing Committee and Maastrichtse Luchtvaartclub

INFORMATION BULLETIN NR. 1

Short Version

INVITATION: This first information bulletin has to be recognized as an invitation to compete in the 1995 Interscale Pre World Cup for Indoor Free Flight Scale Models to be held in Euro-City Maastricht - The Netherlands.
This bulletin has been sent to all National Aeroclubs of the Fédération Aéronautique Internationale (FAI) and various individual aeromodellers all over the world.

PARTICIPATION: Every interested aeromodeller has the right to compete. Participation is possible in the categories F4D - F4E - F4F and "Pistachio".
Participation with proxy-flying is also possible.

DATE AND PLACE: The event will take place: August 18th, 19th and 20th, 1995 in the municipality of MAASTRICHT - "DOUSBERG PARC" SPORTS CENTER.

ORGANIZATION: Under the authority of the Royal Netherlands Aeronautical Association - Aeromodelling Section, Interscale 1995 will be organized by the Interscale 1995 Organizing Committee, in cooperation with the Maastrichtse Luchtvaartclub:

COMPETITION RULES: As far as possible, according to the rules of the FAI Sporting Code General Section, the Provisional Rules of the 1993 Supplement to the FAI Sporting Code, Section 4a, 4b, 4c and 4d Aeromodels and applicable amendments agreed upon by the CIAM or CIAM-Bureau.

Address:
1995 Interscale Organizing Committee
P.O. Box 2060
6201 CD Maastricht

Tel.: Mr. T. Schippers, Chairman
00 + 31.(0)79.212195

Bankaccount:
Postbank no. 2323969
attn. Interscale 1995

ACCOMMODATION: The general lodging for all competitors and officials will be the Dousberg Parc Sports Hotel and Camping. The hotel is situated near the flying halls. The Camping is situated at approximately 1 kilometer from the flying site.
Hotel, camping and meals fees are detailed in the Information Bulletin Nr. 1

FEES:

D.fl. 50,-- Basic Entry fee for all senior (18 years or older) participants.

D.fl. 10,-- Basic Entry fee for all junior (under 18 years) participants.

The fee includes participation package and the right to compete in all catagories and fun-events.

All flying fun-events are free of charge.

The reception after the official opening ceremony is also free of charge.

ENTRY APPLICATION:
&
ACCOMMODATION RESERVATIONS:

The entry application and accommodation reservations will be accepted only if:
- made on the entry application form
- accompanied by the entry and accommodations fees
- sent to the correct address, and
- received before the closing date.

The entry application form and the accommodation reservation form, together with the fees shall be received no later thant the 1st of March 1995.

ADDRESSES: All enquiries concerning this event should be addressed to:
1995 Interscale Organizing Committee
P.O.Box 2060
6201 CD Maastricht
The Netherlands

Tel: Mr. T. Schippers, Chairman Organizing Committee
00 + 31.(0)79.212195

INFORMATION: ***If you are interested to compete in the 1995 Interscale event please ask us to sent a full detailed Information Bulletin nr. 1.***

The second information bulletin, together with the reservation confirmation, will be sent to everyone whose entry application has been received bij the organizer.

ANNEX 2 INTERSCALE 1995 - PROGRAMME

FRIDAY 18TH

15.00 Registration and Practice - 17.00 Hrs.
18.00 Official opening by the Mayor of Maastricht
18.30 Reception for all competitors and officials
19.30 Youth Fun Contest Scale and Semi-Scale - Hall 1
19.30 Training/Trimming Fascilities - Hall 2

SATURDAY 19TH

HALL 1	HALL 2
08.30 - 09.00 Competitor's briefing	08.30 - 09.00 Competitor's briefing
09.00 - 10.00 F4E trimming	09.00 - 10.00
10.00 - 12.00 F4E flights 1 & 2	10.00 - 11.00 F4F trimming
12.00 - 12.30 Fun Contest	11.00 - 13.00 F4F
	13.00 - 13.30 Lunch
12.30 - 13.30 F4E trimming	13.30 - 14.30 F4F trimming
13.30 - 16.30 F4E flights 3 & 4	14.30 - 16.30 F4F
16.30 - 17.00 Fun Contest	

18.30 Dinner

21.00 Social Event - Maastricht Culinair

SUNDAY 20TH

HALL 1	HALL 2
08.30 - 09.00 Competitor's briefing	08.30 - 09.00 Competitor's briefing
09.00 - 10.00 F4D trimming	09.00 - 10.00
10.00 - 12.00 F4D flights 1 & 2	10.00 - 11.00 Pistachio trimming
12.00 - 12.30 Fun Contest	11.00 - 13.00 Pistachio
	13.00 - 13.30 Lunch
12.30 - 13.30 F4D trimming	13.30 - 14.30 Pistachio trimming
13.30 - 16.30 F4D flights 3 & 4	14.30 - 16.30 Pistachio
16.30 - 17.00 Fun Contest	

17.30 - 18.00 Closing Ceremonies
19.00 - Cocktailparty
19.30 - Banquet

MONDAY 21TH Farewell after Breakfast

FEES:

ENTRY FEE:

D.fl. 50,-- Basic Entry fee for all senior (18 years or older) participants.

D.fl. 10,-- Basic Entry fee for all junior (under 18 years) participants.
The fee includes participation package and the right to compete in all catagories and fun-events.

All flying fun-events are free of charge.

HOTEL:

D.fl. 150,-- Hotel (single) room at Dousberg Parc per night/per person, including breakfast.

D.fl. 180,-- Hotel room with 2 beds at Dousberg Parc per night, including breakfast.

D.fl. 240,-- Hotel room with 3 beds at Dousberg Parc per night, including breakfast.

D.fl. 280,-- Hotel room with 4 beds at Dousberg Parc per night, including breakfast.

CAMPING:

D.fl. 6,25	Per person per night - adults
D.fl. 4,75	Per person per night - children
D.fl. 7,--	Tent, Caravan per night
D.fl. 5,--	Small tent per night
D.fl. 9,50	Camper per night
D.fl. 4,--	Car per night
D.fl. 4,--	Electric point of junction per night
D.fl. 1,25	Tourist tax per person per night
D.fl. 25,--	Reservation tax

MEALS:

D.fl. 12,50 Breakfast at Dousberg Parc Restaurant per day/per person - special service for Camping Guests.

D.fl. 27,50 Dinner at Dousberg Parc Restaurant per day/per person. Saturday 19th.

D.fl. 60,-- Closing Banquet per person. Sunday 20th.

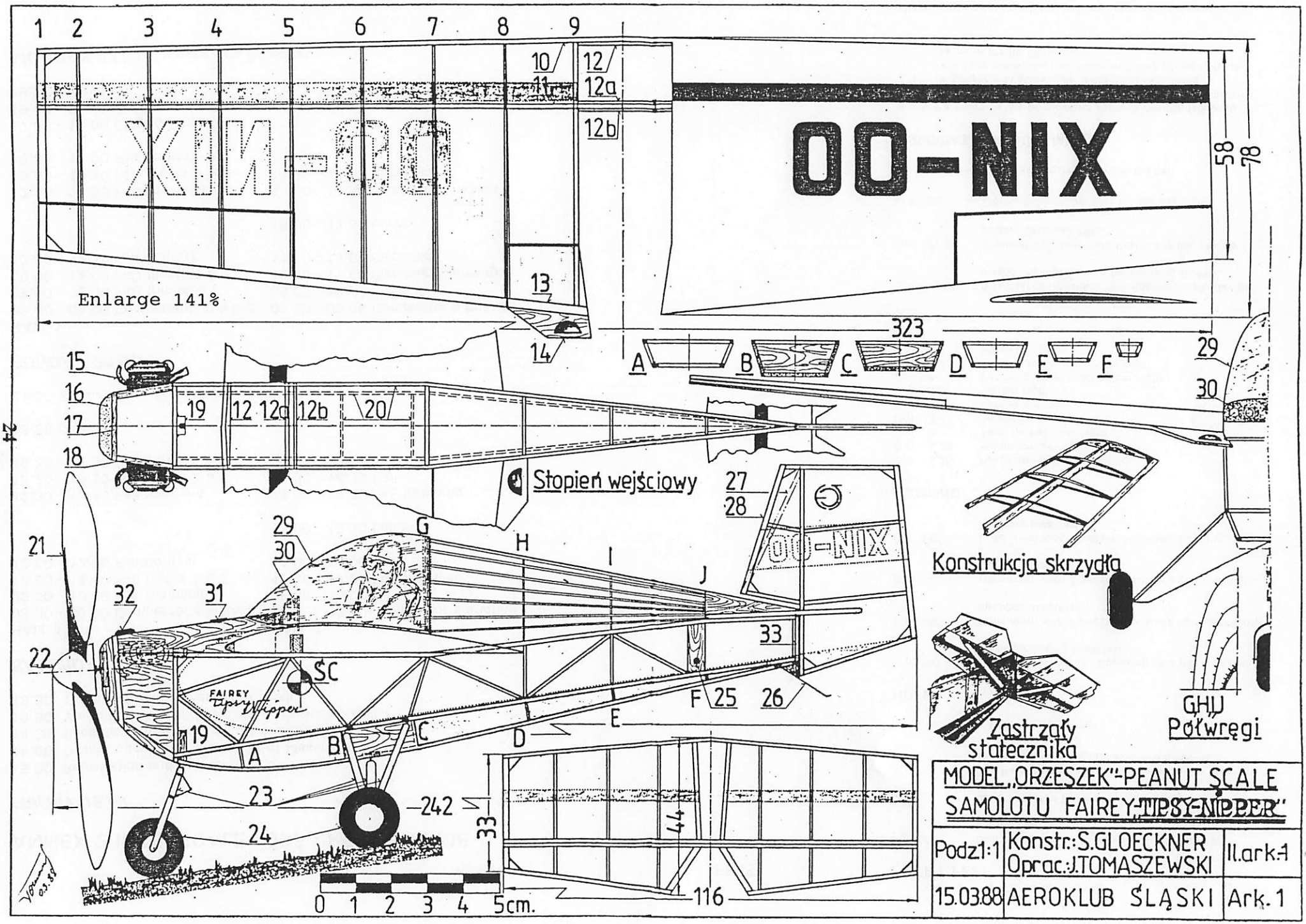
Small lunches and snacks can be ordered in the bar.

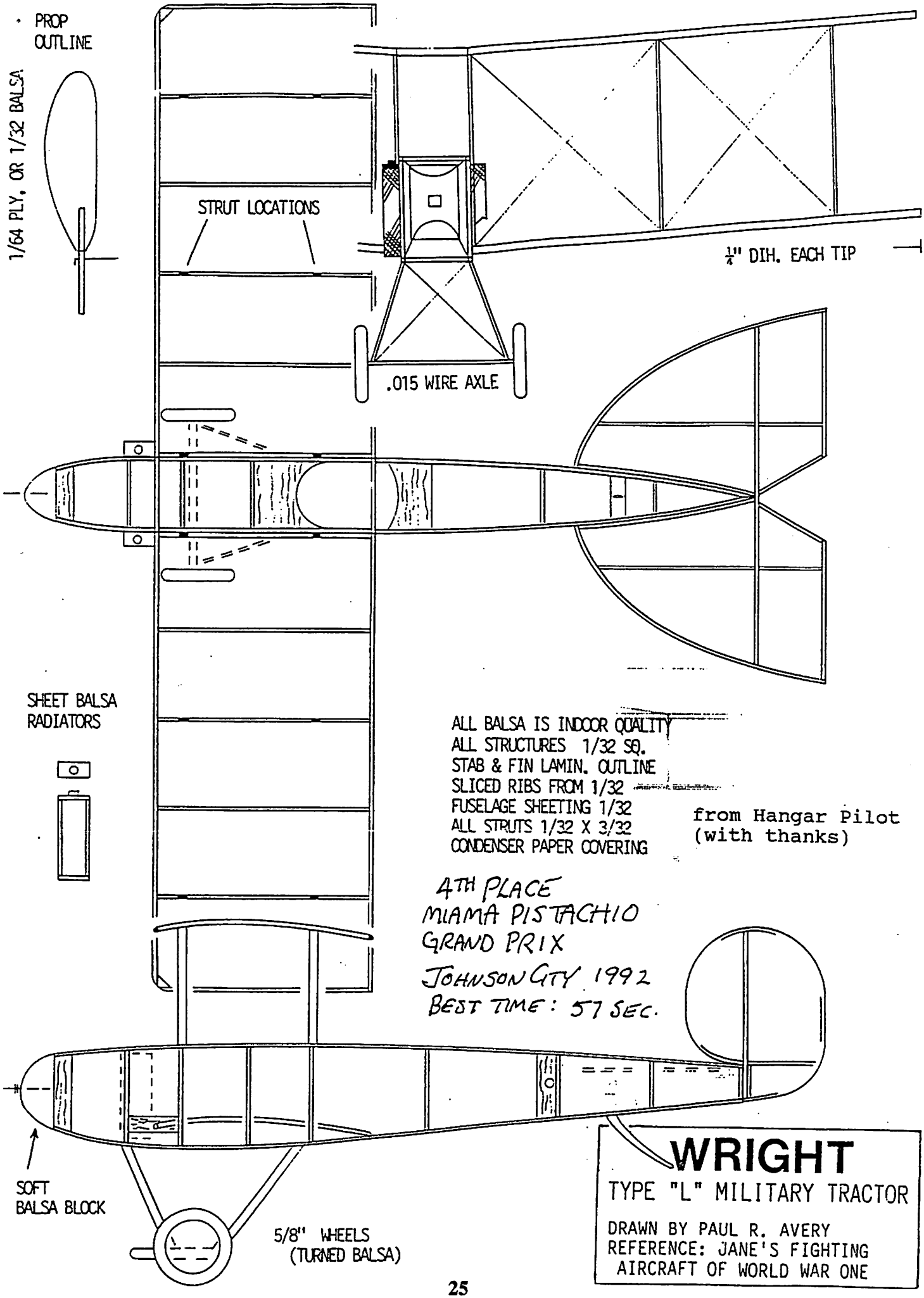
ASSOCIATED PROGRAMMES:

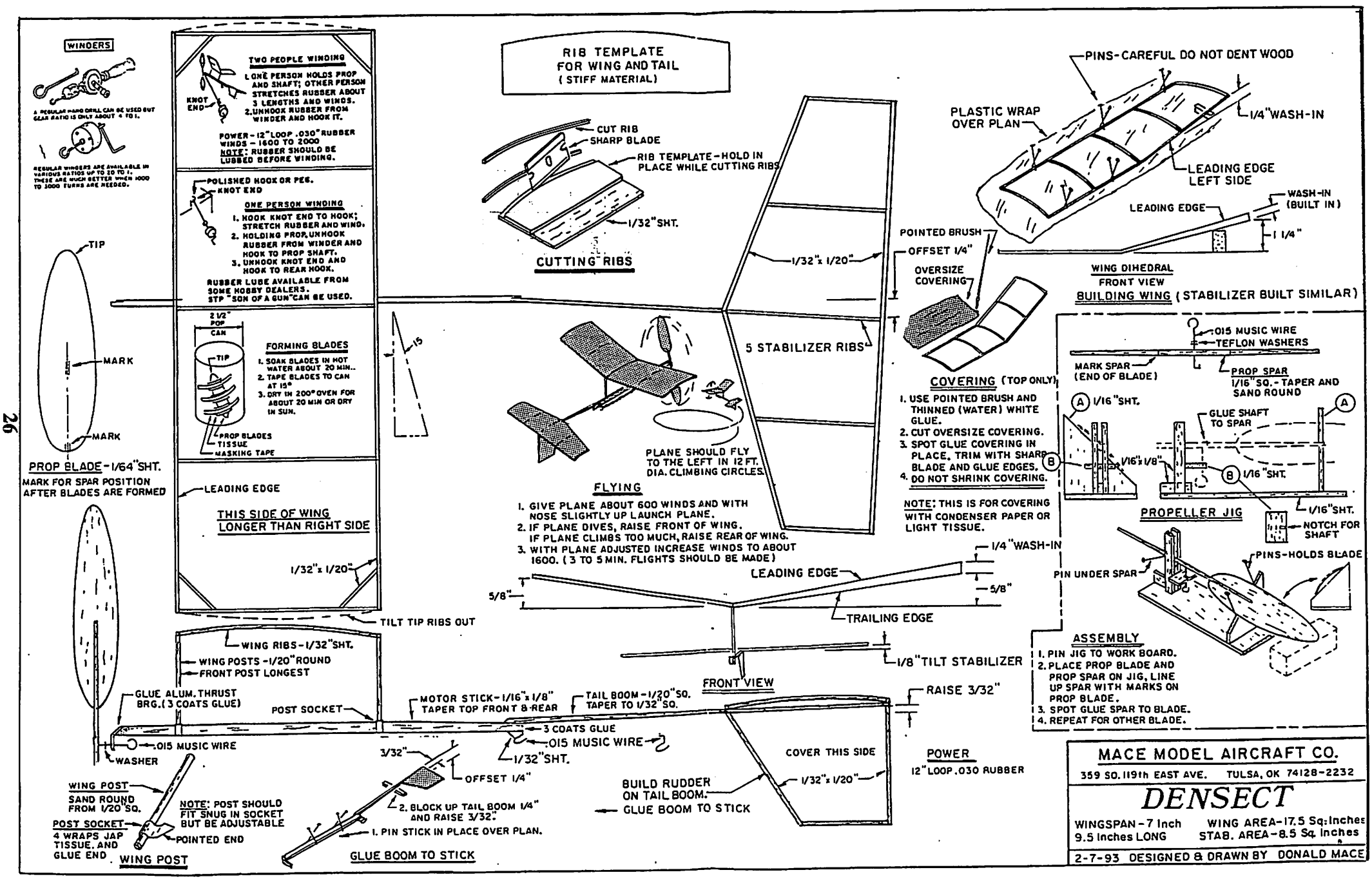
A ladies programme will be provided and includes the following items:
- A guided visit of the old down town city of Maastricht
- Shopping in Maastricht, a fabulous experience
- A boat trip on the river Maas with visit of the famous caves of the St. Pietersberg.

D.fl. 25,-- per person.

The reception after the official opening ceremony is free of charge.


1 2 3 4 5 6 7 8 9
10/11
12/12a
12b
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12 12a 12b
20
ХИ-00
Enlarge 141%
00-NIX
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A B C D E F
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00-NIX
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FAIREY Tipsy Nipper
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242
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116
0 1 2 3 4 5cm.
Konstrukcja skrzydła
Zastrzały statecznika
GHIJ
Półwręgi
MODEL „ORZESZEK"-PEANUT SCALE
SAMOLOTU FAIREY TIPSY-NIPPER"
Podz1:1
Konstr.:S.GLOECKNER
Oprac.:J.TOMASZEWSKI
II.ark.1
15.03.88
AEROKLUB ŚLĄSKI
Ark. 1


PROP OUTLINE
1/64 PLY, OR 1/32 BALSA
STRUT LOCATIONS
1/4" DIH. EACH TIP
.015 WIRE AXLE
SHEET BALSA RADIATORS
ALL BALSA IS INDOOR QUALITY
ALL STRUCTURES 1/32 SQ.
STAB & FIN LAMIN. OUTLINE
SLICED RIBS FROM 1/32
FUSELAGE SHEETING 1/32
ALL STRUTS 1/32 X 3/32
CONDENSER PAPER COVERING
from Hangar Pilot
(with thanks)
4TH PLACE
MIAMA PISTACHIO
GRAND PRIX
JOHNSON CITY 1992
BEST TIME: 57 SEC.
SOFT BALSA BLOCK
5/8" WHEELS (TURNED BALSA)
WRIGHT
TYPE "L" MILITARY TRACTOR
DRAWN BY PAUL R. AVERY
REFERENCE: JANE'S FIGHTING AIRCRAFT OF WORLD WAR ONE



MACE MODEL AIRCRAFT CO.
359 SO. 119th EAST AVE. TULSA, OK 74128-2232

DENSECT

WINGSPAN - 7 Inch
9.5 Inches LONG
WING AREA - 17.5 Sq. Inches
STAB. AREA - 8.5 Sq. Inches

2-7-93 DESIGNED & DRAWN BY DONALD MACE

INDOOR LOGBOOK

by Thomas Merkt (D)

(translation from IN19)

When I started my career as an indoor flyer, each contest was a real stress for me, even when I flew only one class. But for others it apparently was only a children's play. A partly cause for this was that I built a new model for every contest, which of course was completed just on the evening before. There evidently was no need for this, as an indoor model (except for a microfilm model) lasts for at least 1-2 years without loosing any performance or deterioration.

But when I no longer had so much time for building new models, the contests still stayed stressy, as it always was a riddle to me which rubbermotor would be the best to use. I began to write down the best flight time and model class onto the rubber motor bag, which was already a big improvement. I subsequently learned to use the benefits of a torquemeter, but this added new factors to be found out every time again.

I struggled on till someone advised me to start keeping a logbook and gave me a sample form to use. It took some time before I got used to it, but then it became a big enlightenment and from contest to contest the flights became more constant.

Using a logbook is quite easy. Before all a torquemeter can not be missed. You start by filling in the first lines: model and contest data. Contest data are: hall height, weather and temperature, these have great influence on flight time. Next you note the propeller data: type (f.i. number), diameter, pitch and weight. The same applies to the rubber. "Loop" tells whether a full length or f.i. half length motor is used. Motor strength is given in g/m, that is: one weighs 1 metre of the rubber to be used. If you think that that is to much trouble for you, than you can also measure the width in mm, or if you want, you can use both methods.

The data can be repeated in quotes downwards when they do not change. What will certainly change for each successive flight, are the following columns. The character N stands for turns and Q for torque. At Nm the maximum number of turns is noted and at Qm the maximum torque at this number of turns. Then you backoff turns to the desired launch torque Qs and note the launch turns at Ns. After the flight the motor is again connected to the torque meter and unwound. Of course you now count the remaining turns Nr. Try to achieve about 100 turns, otherwise the motor has to be shortened or lenghtened. From the remaining turns and the launch turns you can compute the factor Nr/Ns. This is not a highly important factor. Of much more importance is the RPM (turns per minute) value to be noted in the next to last column. The remaining turns Nr are subtracted from the launch turns Ns and devided by the flight endurance. For an indoor model one of course tries to achieve a low value of RPM. In the last column any remarks can be added like incidents during the flight, model damage or motor breakage.

When you, from now on, keep up your log book at every contest, you can compare your contests wonderfully and deduct any possible improvements.

Model/Type	Wing: Chord: cm Weight: g Wing span: cm	Centre of gravity: %	Place: Hall: m
Class:	Fuselage: Length: cm Weight: g Length betw. hooks: cm Max. torque: gcm		Weather: Temperature: °C

		Propeller				Motor				Turns						Time		
Date	Round	Type	ø	Pitch	Weight	Loop	Length	Weight	g/m	Nm	Ns	Qm	Qs	Nr	Nr/Ns	min. sec.	RPM	Remarks
	1																	
	2																	
	3																	
	4																	
	5																	
	6																	
	Training																	

Thedo Andre
Meijhorst 35-43
NL - 6537 JD Nijmegen
The Netherlands

December 16, 1994

Thedo:

I hope this letter finds you in good health. We have had many changes here in our home life, the biggest is a new address. If you would be so kind to adjust your mailing labels to the following:

Gary W. Underwood
24 Kennebec Ct
Bordentown NJ 08505
USA

Phone 609 324-9004
Fax 609 324-9005

In addition, it would be a great help if you could publish this address change in the next issue of Indoor News.

Our flying season at Lakehurst Hangar #1 is finally over. A total of 60 flying sessions were held resulting in several new national records (see attached 1994 High Times Sheet). All in all, the U.S. Navy has progressed with a very aggressive schedule to improve the base. New roads, buildings, and civilian contracts are only some of the achievements to date. The long range goal is to have a facility that will satisfy military assignments and attract more civilian companies.

Hangar # 1 has seen more than 1 million dollars worth of improvements. The majority of this has been to house a Technical College that is Aviation related. The East Coast Indoor Modelers sees this a tremendous plus, as the College seems interested to support our Indoor Free Flight efforts. 1995 is projected to be an even more successful year than ever before. If all approvals occur, modelers should expect a schedule that begins mid April and continues thru mid November. Flying sessions are every weekend with:

A 3 day Memorial day event in May
A 4 day Pete Andrews Contest in July
A 4 day Labor Day contest in September

Membership to the East Coast Indoor Modelers will remain at the same $40 membership in 1995.

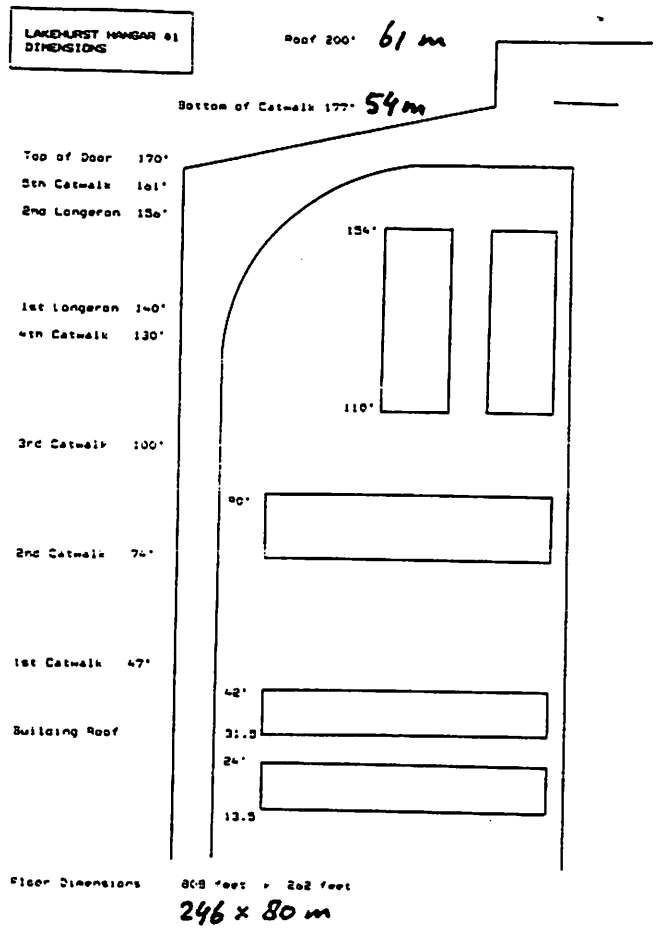
Membership inquiries may be sent to our new address:

East Coast Indoor Modelers
24 Kennebec Ct
Bordentown NJ 08505
USA

Ph 609 324-9004
Fax 609 324-9005

We appreciate all your efforts in producing a tremendous newsletter, many thanks!!!!!!!

Best of luck in the new year,



EAST COAST INDOOR MODELERS
1994 EVENT HIGH TIME LIST
HANGAR 1 LAKEHURST NEW JERSEY

FID	45:09	Gary Underwood
Intermediate Stick	34:30	Stan Chilton
Easy B	25:08	Walt Van Gorder
Penny Plane	19:17(R)	Tony D'alessandro
FIL	19:05	Doug Barber
Limited Penny Plane	17:03(R)	Tom Green
35 Centemeter	20:28	Walt Eggert
Manhattan	15:01(R)	Jim Grant
Mini Stick	13:31(R)	Bob Eberle
Ornithopter	12:40	Joe Krush
No Cal Scale	6:17	John Ganser
Bostonian	5:18	Tom Sanders
Helicopter	3:27	Rob Eberle
Std Catapult Glider	1:54(R)	Earl Von Bueren
Unlim Catapult Glider	1:44(R)	Earl Von Bueren
HL Glider	1:26	Rob Eberle

(R) Denotes National Record

Best of the HANGAR PILOT
Plans/3-views/Fotos/How-To
23 Years of Indoor MIAMA
THE HANGAR PILOT
Vol 4&5
1991-1993
ADD $3 AIRMAIL
$14 the pair
ppd USA
Cash,Check, MO
VOL 1: 1971-78
Vol 2: 1979-86
Vol 3: 1987-90
ALL 3 for $20 ppd USA
Dave Linstrum
1109 36th Ave W
Bradenton FL
34205
FREEBEE PLAN DEAL!! Order all 3 get a FREE 3 sheet PnutPlan Reynard RSV 18/26
1995 Scale Flyer Calendar
12+2 Planes Worth Modeling !!!!!!
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ONLY $4 if you order either of the above Best of Hangar Pilot deals!
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A PICTORIAL HISTORY OF NAS LAKEHURST

William Althoff



LAKEHURST. The name has vivid associations for those familiar with the history of airships. It was here that the U.S. Navy established its center of lighter-than-air (LTA) aeronautics. Naval aviators who believed in airships labored to make them a vital part of the fleet. Lakehurst's story is of these men and their machines, naval politics and prejudice, moments of success and costly tragedy. Superficially, it is a story of failure — the airships are gone and the men that flew them are largely forgotten. But is was not always so...

The village of Lakehurst was founded in 1841 and remained for decades a small railroad town isolated within New Jersey's Pine Barrens. The railroad defined the character of the small community. By the turn of the century, however, Lakehurst had achieved some celebrity as a health resort.

The association of Lakehurst with the military did not begin until World War One. A new American company, the Eddystone Ammunition Corporation, a subsidiary of The Baldwin Locomotive Works, assumed a contract in 1915 for the production of shells for the Imperial Russian Government. A proving ground was established north of Lakehurst village by the company that same year. The United States entered the war in April 1917; a few months later the U.S. Army acquired the proving ground area and developed the site as an Experimental Ground for gas warfare. A training camp for the Chemical Warfare Service, Camp Kendrick, was built near the proving ground in 1918 on land that would soon become part of the naval air station. These facilities enjoyed a brief but busy career. The Armistice was signed in November 1918 and the Lakehurst Proving Grounds was offered for sale after being used briefly to muster out returning troops.

In 1919, the U.S. Navy entered the Lakehurst story. On 16 May 1919, Acting Secretary of the Navy Franklin D. Roosevelt authorized the purchase of 1700 acres of this property "for use as a dirigible field". Design work for a hangar to house two rigid airships was begun by the Navy and construction work commenced on the site in September 1919. A proposed layout for a new air station to service rigid airships also began at this time. The huge hangar, known as Hangar No. 1, was completed in the summer of 1921 and the station itself commissioned on 28 June 1921. Original complement: 17 officers and 230 enlisted men.

The British rigid airship R-38 (American ZR-2), then undergoing flight trials in England, was intended to be the new station's first tenant. But this ship failed structurally in August 1921 before delivery to the United States. Naval Air Station (NAS), Lakehurst was not destined to witness its first flight of a rigid airship until USS SHENANDOAH (ZR-1) flew here in September 1923. SHENANDOAH was assembled in Hangar One and was intended to establish an airship building industry in this country. The Navy was interested in developing rigid airships as long-range aerial scouts for the fleet. The smaller non-rigid airships or blimps were intended for training and for anti-submarine work. The first blimp was delivered to NAS Lakehurst in May 1924. The prototype SHENANDOAH dominated the Lakehurst scene between 1923 and 1925 until she was destroyed in severe turbulence over Ohio in September 1925. Valuable operating and training experience also was acquired with the USS LOS ANGELES (ZR-3), a German-built airship delivered to Lakehurst in October 1924 as war compensation. This ship would ultimately log 331 flights and 4181 hours aloft before she was decommissioned for reasons of economy in June 1932. LOS ANGELES survived another seven years as a grounded test vehicle until late 1939 when she was dismantled in Hangar No. 1. No other rigid airship, not even the famous GRAF ZEPPELIN (LZ-127), enjoyed a longer career.

Experience accumulated with SHENANDOAH and LOS ANGELES enhanced the operations of the USS AKRON (ZRS-4) and USS MACON (ZRS-5), large fleet-type rigid airships designed expressly for strategic scouting work with the U.S. fleet. These sister ships carried airplanes for fighter protection and for scouting. NAS Lakehurst was homeport for AKRON between October 1931, when she was delivered to the station, and April 1933 when AKRON was lost off Barnegat Light with a heavy loss of life. The AKRON tragedy shook public confidence in the rigid airship and undermined the fragile political and military support which the airship enjoyed. The crash was the beginning of the end for the rigid airship in the United States, militarily as well as commercially. Since MACON's homeport was Moffett Field, California she remained at Lakehurst only four months in 1933 to complete her official trials. After she departed for California on 12 October 1933, NAS Lakehurst never again handled a commissioned rigid airship of the U.S. Navy. An era of naval aviation had already ended at Lakehurst. MACON was lost off California in February 1935 and for many influential elements both in and out of the Navy, her loss was the last straw. Efforts by the airship community notwithstanding, MACON proved to be the Navy's last rigid airship. After her loss airship activity was reduced to a minimum and NAS Lakehurst, now almost a forgotten air station, was relegated to flying a handful of obsolete blimps. The LTA program was forced to concentrate its efforts on the non-rigid airship.

Nonetheless, in 1936, Lakehurst again was in the headlines. The commercial flights of HINDENBURG (LZ-129) were pioneering, along with GRAF ZEPPELIN, the first transatlantic air service. HINDENBURG arrived at Lakehurst on 9 May, 1936, the first of 10 scheduled round trips to North America that year. The station was the western terminus for these flights, making Lakehurst one of the world's first international airports. The flying public of the 1930's liked the quiet, comfort and dependability of both Zeppelins. GRAF ZEPPELIN had already visited NAS Lakehurst four times, beginning in 1928, during a celebrated career involving more that one million miles between 1928-1937, including a round-the-world flight which began and ended at Lakehurst. By the 1937 transatlantic season, German commercial success had revived American interest in rigid airships. Unfortunately, the HINDENBURG tragedy here at Lakehurst smashed this hopeful picture. Thirty-six people lost their lives in the fire on 6 May 1937, among them the first fatalities in German commercial airship history. Contrary to misconception, the HINDENBURG disaster did not end the era of the large airship. The coming of World War Two, the economic collapse of Germany and the accelerated development of the airplane during the war were instrumental in ending rigid airship development.

As the situation in Europe deteriorated in the late 1930's and despite official indifference in Washington, training activity at Lakehurst intensified—using what few airships were available. The Navy's deliberate indecision on airship matters had cost valuable time in the latter 1930's: the penalties would become painfully evident in 1940-42 with the Battle of the Atlantic. Belatedly, airship unpreparedness for the coming war was recognized; the "10,000 Plane Program" legislation of June 1940 contained authorization for 48 non-rigid airships. War plan activity continued to intensify throughout 1941 and expansion of the station was authorized. But on December 7th NAS Lakehurst had only 10 airships of all types on hand, and two airplanes. Barely 100 airship pilots were available. When word of the Pearl Harbor attack was received, wartime security was immediately imposed — and NAS Lakehurst went to war.

A huge increase in airships and personnel was urgently required and a revived training program was established almost overnight. Lakehurst became the main operational, overhaul and training base for airship activities on the East Coast. Hangars No. 2 and No. 3 were completed in 1942; the two wooden hangars, No. 5 and No. 6, were completed in 1943 along with many new facilities to accommodate increased Navy, Marine and civilian personnel. In addition to expansion here at Lakehurst, eight new LTA stations were established in coastal sections of Massachusetts, North Carolina, Georgia, Florida, Louisiana, Texas, California and Oregon. Bases also were established in the Caribbean, and as far away as Brazil and Gibraltar. By mid 1944 and the peak of activity nearly 150 patrol and training airships had been delivered to the Navy. The famous K-type blimp was the workhorse of the wartime program. At the dawn of 1945 the Navy had 141 airships on hand — the high-water mark of the U.S. airship program and the largest airship fleet ever constructed. All squadrons destined for service in the North Atlantic, South America and Europe were commissioned and fitted out at Lakehurst and delivered through the station. Lakehurst's own patrol squadron, Airship Squadron Twelve (ZP-12), was equipped with eight K-type airships and flew a total of 5261 flights by the end of the war. U.S. Navy airships escorted some 89,000 ships without the loss of a single vessel to enemy submarine attack.

The Navy's LTA organization was reduced quickly after the war. All airship wings were decommissioned and squadrons reduced from 15 to only two. By August 1947, all LTA squadrons on the West Coast had been disestablished. Navy lighter-than-air would survive the war for 16 difficult years, with most activities centered at NAS Lakehurst.

Fleet Airship Wing One was recommissioned at NAS Lakehurst in January 1949 and remained in operational and administrative control of postwar airship squadrons until the end of the program. New airships of advanced design were introduced: the ZPG-2 was intended for antisubmarine warfare (ASW) patrols of 2-3 days duration; the ZPG-2W and ZPG-3W were designed for all-weather airborne warning (AEW) missions. The postwar peak was reached in mid-1957, with a total of 44 airships operating from seven stations. Twenty-six airships and five squadrons were operational. In addition to the basic ASW and AEW missions, activities included research and development, training and one experimental unit. Despite significant progress in this period the naval establishment remained largely unimpressed with the airship's contribution to national defense. Severe force reductions began in 1957 which successively eliminated important bases from normal operations. The number of operational ships was also cut back. By 1959, all lighter-than-air activity in the U.S. Navy was confined to NAS Lakehurst and only 13 airships remained operational. Airship training also was discontinued in 1959. It was now but a short step to the termination of all LTA activities in the Navy.

In March 1961 the public became aware that the Navy was considering the abandonment of its airship program. Local and state officials lobbied hard to preserve the program since the air station was the then largest in Ocean County. Despite these and other efforts both in and outside the Navy the official announcement was made on 26 June 1961: The Navy would abandon its historic 40 years of airship operations at Lakehurst. Fleet Airship Wing One and the two remaining squadrons, ZP-1 and ZP-3, would be decommissioned on 31 October; the Overhaul and Repair (O & R) Department would prepare the active airships for war reserve storage before the Department itself was inactivated by 30 November. All but two airships were deflated, preserved and stored in late 1961; two ships remained in flying status through fiscal 1962 for research and development projects. The final flight of a U.S. Navy airship took place at NAS Lakehurst on 31 August 1962. By 30 November these ships also were in storage. In December 1962, however, authority was granted to remove and strike all airships from the Navy's inventory. This unhappy work was completed by early 1964.

Various commands and tenant activities have continued to be active here since the termination of LTA. In March 1977, Naval Air Station, Lakehurst was disestablished. This facility is now known as the Naval Air Engineering Center (NAEC), Lakehurst, New Jersey.

FORTY MINUTE CLUB

January 1, 1995

NAME	COUNTRY	TIME	1*	2*	YEAR	SITE
RANDOLPH, BOB	USA	55:06	X		1993	SANTA ANA
ASLETT, BERNARD	ENGLAND	52:22	X		1983	CARDINGTON
RICHMOND, JIM	USA	52:14	X		1979	AKRON
KOWALSKI, DICK	USA	50:41	X		1976	AKRON
ROMAK, BUD	USA	49:35		X	1991	LAKEHURST
BANKS, CEZAR	USA	49:00		X	1991	LAKEHURST
BROWN, STEVE	USA	48:37		X	1993	AKRON
RICHMOND, JIM	USA	47:44		X	1986	CARDINGTON
BARR, LAURIE	ENGLAND	47:28		X	1982	CARDINGTON
HARLAN, RAY	USA	47:13	X	X	1980	AKRON
DOIG, RICHARD	USA	46:24		X	1983	AKRON
CHILTON, STAN	USA	46:10	X		1994	AKRON
RODEMSKY, ERV	USA	45:50	X		1974	SANTA ANA
RIEKE, K. H.	W. GERMANY	45:40	X		1962	CARDINGTON
HUNT, BERNARD	ENGLAND	45:40		X	1992	CARDINGTON
RANDOLPH, BOB	USA	45:35		X	1993	AKRON
REDLIN, CARL	USA	45:17	X		1962	CARDINGTON
ANDREWS, PETE	USA	44:59		X	1979	AKRON
MATHER, CLARENCE	USA	44:44	X		1974	SANTA ANA
BUTTY, RENE	SWITZERLAND	44:44		X	1990	LAKEHURST
ASLETT, BERNARD	ENGLAND	44:37		X	1985	CARDINGTON
HULBERT, BILL	USA	44:27	X	X	1994	AKRON
HACKLINGER, MAX	W. GERMANY	44:20		X	1961	CARDINGTON
DOIG, RICHARD	USA	44:06		X	1991	LAKEHURST
NORE, PENTTI	FINLAND	44:01		X	1986	CARDINGTON
ANDRE, THEDO	NETHERLANDS	44:01		X	1986	CARDINGTON
GIBBS, BOB	USA	43:43		X	1993	AKRON
KOPECKY, ERNIE	USA	43:42	X		1963	SANTA ANA
ORSOVAI, DEZSO	HUNGARY	43:37		X	1986	CARDINGTON
KUJAWA, SYLWESTER	POLAND	43:35		X	1992	WROCLAW
CUMMINGS, FRANK	USA	43:28	X		1963	SANTA ANA
REE, ANDRAS	HUNGARY	43:27		X	1992	DEBRECEN
ATWOOD, BILL	USA	43:17	X		1963	SANTA ANA
PLOTZKE, RON	USA	42:53	X		1969	LAKEHURST
UNDERWOOD, GARY	USA	42:53		X	1994	LAKEHURST
FOSTER, JOE	USA	42:44		X	1987	SANTA ANA
DE BATTY, BOB	USA	42:42		X	1994	SANTA ANA
LOUCKA, LARRY	USA	42:34		X	1991	AKRON
SIEBENMANN, DIETER	SWITZERLAND	42:33		X	1986	CARDINGTON
CAILLAU, LARRY	USA	42:29		X	1985	AKRON
DOMINA, DAN	USA	42:25		X	1979	AKRON
CANNIZZO, SAL	USA	42:20		X	1983	LAKEHURST
PYMM, DAVE	ENGLAND	42:03		X	1986	CARDINGTON
ROMAK, BUD	USA	42:01	X		1965	MOFFETT NAS
OBARSKI, DICK	USA	41:30		X	1981	AKRON
FINCH, TOM	USA	41:27	X		1963	SANTA ANA
SLUSARCZYK, DON	USA	41:25		X	1990	AKRON
CHAMPINE, BOB	USA	41:23	X		1963	SANTA ANA
RODEMSKY, ERV	USA	41:23		X	1979	AKRON
STOLL, ED	USA	41:21	X		1963	SANTA ANA
MANGALEA, CORNELIU	ROMANIA	41:15		X	1994	SLANIC-PRAHOVA
HOFFMAN, EARL	USA	41:13		X	1987	SANTA ANA
MATHER, CLARENCE	USA	40:54		X	1974	SANTA ANA
DRAPER, RON	ENGLAND	40:44	X		1962	CARDINGTON
BILGRI, JOE	USA	40:37	X		1965	SANTA ANA
NONAKA, S.	JAPAN	40:36		X	1978	CARDINGTON
STEVENS, DARRYL	USA	40:35		X	1986	SANTA ANA
BAILEY, BOB	ENGLAND	40:25		X	1987	CARDINGTON
POPA, AUREL	ROMANIA	40:21		X	1994	SLANIC-PRAHOVA
GITLOW, LEW	USA	40:15		X	1987	SANTA ANA
MCGILLIVRAY, JACK	CANADA	40:14		X	1988	JOHNSON CITY
KALINA, JIRI	CZECH	40:11		X	1975	CARDINGTON
RODENBURG, OTTO	NETHERLANDS	40:11		X	1986	CARDINGTON
TRIOLO, JOHN	USA	40:06	X		1974	LAKEHURST

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

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

For additions, corrections, etc. send details to: BOB GIBBS 22870 Springmist Drive, Moreno Valley, CA 92557 USA

DOME HOURS 8:00 10:00 12:00 1:00 2:30 5:00 5:15 10:00

WED.
5/31
8:00am
to 11:00pm

LIGHT / HEAVY PRACTICE UNDER 1.5 GRAM
P-24 MASS LAUNCH
LIGHT / HEAVY PRACTICE
FID, HAND LAUNCHED STICK
35 CM, CABIN ROG

7:30 11:30 1:00 2:00 5:30 6:00 11:00

THURS
6/1
7am to
12pm

H.L. GLIDER
STD. CAT. GLIDER
UNLIMITED CAT. GLD
UNLIMITED RUB SPD.
INT. STK. HELICOPTER ORNITHOPTER
NO LAUNCH *
INT. STICK HELICOPTER ORNITHOPTER
FID,H.L. STICK
PRO 20, AUTOGYRO

7:30 11:30 1:00 1:45 5:15 6:30

FRI
6/2
7am to
6pm

FAC. SCALE
BOSTONION
PISTACHO
F.A.C. HIGH WING
PENNYPLANE MANHATTAN
*
PENNYPLANE MANHATTAN
BANQUET

BOSTONION MASS LAUNCH 11:30

7:30 11:30 1:30 2:15 5:15

SAT
6/3
7am to
6pm

FAC. GOLDEN AGE
COCONUT SCALE
NO-CAL SCALE
PEANUT SCALE
F.R.O.G.
LTD. PP
*
LTD.PP

COCONUT SCALE MASS LAUNCH 11:30

7:30 11:30 12:00 2:00 2:45 5:45

SUN
6/4
7am to
6:30pm

MINI- STICK
KIT PLAN
AMA SCALE
EZB
*
EZB

MINI STICK MASS LAUNCH 11:45

* Retrivial starts with last plane down.

1995 U.S.I.C.

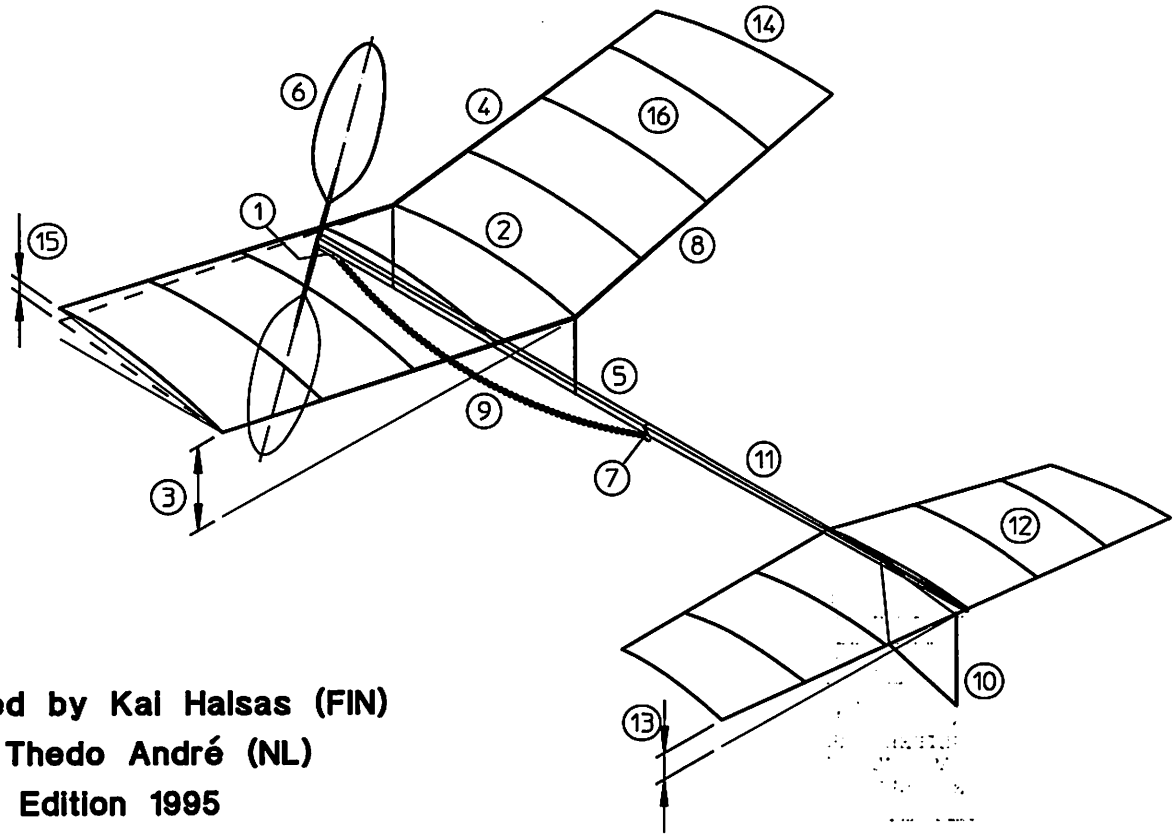
USIC GRAND CHAMPION

HLG,STD CAT GLIDER
H L STK, FID, EZB
INT STK, ROG CABIN
P NUT SCALE, AMA SCALE
PP, LPP, BOSTONIAN
MANHATTAN

1995 ENTRY FORMS, Send large, self addressed, stamped envelope to, USIC, 444 Bryan, St. Louis, MO. 63122

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DICTIONARY INDOOR FLYING
DICTIONAIRE VOL d'INTERIEURE
WÖRTERVERZEICHNIS SAALFLUG



Edited by Kai Halsas (FIN)
and Thedo André (NL)
First Edition 1995

	ENGLISH	FRANÇAIS	DEUTSCH
1	Bearing	Butée avant	Lager
2	Center rib	Nervure centre	Mittelrippe
3	Dihedral	Dièdre	V-Form
4	Front spar	Longeron avant	Vordere Holm
5	Motorstick	Fuselage avant	Motorträger
6	Propeller	Helice	Luftschraube
7	Rear hook	Crochet	Haken
8	Rear spar	Longeron arrière	Hintere Holm
9	Rubber motor	Moteur caoutchouc	Gummimotor
10	Rudder	Derive	Seitenleitwerk
11	Tailboom	Poutre arrière	Leitwerksträger
12	Tailplane	Stabilo	Höhenleitwerk
13	Tilt	Tilt	Kippung
14	Tip rib	Nervure extérieure	Aussenrippe
15	Wash-in	Vrillage (pos.)	Verwindung (pos.)
16	Wing	Aile	Flügel

An INDOOR **News** Supplement

ENGLISH	FRANÇAIS	DEUTSCH
A		
Adjustment	Ajustement	Abstellung
Aileron	Aileron	Querruder
Airflow	Écoulement	Strömung
Airfoil	Profil	Profil
Airplane	Avion	Flugzeug
Airscrew	Hélice	Luftschraube
Altitude	Altitude	Höhe
Aluminium plate	Tôle aluminium	Aluminium Blech
Angle	Angle	Winkel
Angle of attack	Angle d'attaque	Einfallwinkel
Angle of incidence	Angle de calage	Einstellwinkel
Anhedral	Dièdre (neg.)	V-Form (neg.)
Area	Aire, Surface	Inhalt
Aspect ratio	Allongement	Streckung
Attack	Attaque	Einfall
Auto rudder	Volet commandé	Gesteuertes Seitenleitwerk
Axis	Axe	Achse
B		
Back	Arrière	Hinter
Balance	Equilibre	Gleichgewicht
Ball bearing	Roulement à billes	Kugellager
Balsa, hard	Balsa, dur	Balsa, hart
-"- , light	-"- , léger	-"- , leicht
-"- , medium	-"- , moyen	-"- , mittelhart
Bellcrank	Palonnier	Hebel
Bearing	Butée avant	Lager
Biplane	Biplan	Doppeldecker
Bind	Ligaturer	Binden
Blade	Lame pâle	Blatt
Boom (tail)	Poutre arrière	Leitwerksträger
Bottom surface	Intrados	Unterseite
Brace	Renfort	Versterkung
Bracing	Haubannage	Verspannung
Brass	Laiton	Messing
Building board	Chantier	Bau-unterlage
Bulkhead	Couple	Spant
C		
Cd	Cx	Cw
Cl	Cz	Ca
Cl/Cd	Finesse	Ca/Cw
Cabane	Cabane	Spannturm
Camber	Courbure	Wölbung
Cambered	Cambré	Gewölbt