

Vol Libre

**FREE FLIGHT
FREIFLUG**

**ANDRÉ
SWANDEL**



THOUERS

FRANCE

CHAMPIONNATS

DU MONDE

WESTMEISTERSCHAFT

ABC

BOOK

EVENT

1987

PLAN



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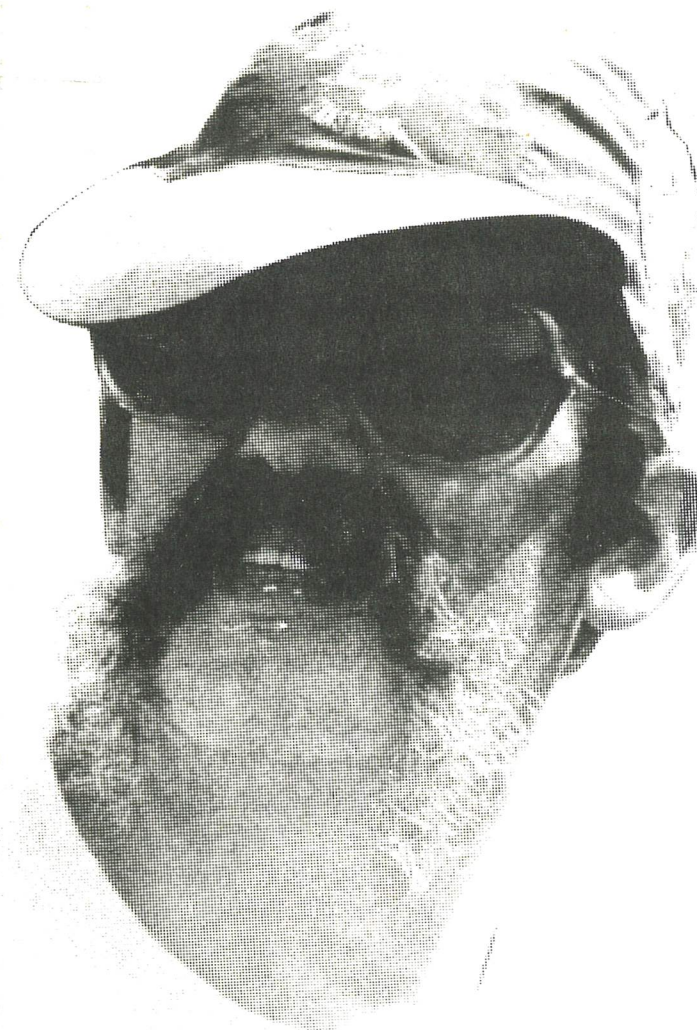


Photo - JEAN. BOOS. -

AVANT PROPOS VORWORT FOREWORD

La réalisation d'un recueil de plans, des modèles utilisés aux Championnats du monde, par les modélistes à travers le monde, est un travail de longue haleine, où il importe de se montrer tenace et persévérant.

En effet les adeptes du VOL LIBRE ne sont souvent pas en possession d'un plan trois vues de leurs modèles et encore moins de croquis de détails. Cela tente à prouver qu'ils agissent surtout empiriquement pour progresser ne consentant à reporter sur un plan que le produit final réussi. Par ailleurs chaque participant ayant droit à quatre modèles, il n'est pas possible de reproduire tous les modèles et le plan proposé n'est pas forcément celui du dernier né ou du meilleur. Les plans remis sont souvent de mauvaise qualité ou incomplets à des échelles les plus diverses tout comme les unités de longueur. Cette compilation n'est donc pas le reflet fidèle du "nec plus ultra", en dernier ressort, mais plutôt l'image de la force tranquille du VOL LIBRE sur les dernières années.

Pour avoir un caractère homogène sur l'ensemble, j'ai redessiné une grande partie des plans, tout en ajoutant à tous une note spécifique VOL LIBRE. La part consacrée aux modélistes eux-mêmes est relativement réduite et celle consacrée aux images s'efforce de montrer les trois champions sortants, quelques constructions particulières, des modélistes en "action" et des vues des cérémonies de ces Championnats du monde fort réussis.

André SCHANDEL

Es ist nicht leicht ein Planbuch der Freiflug W.M. heraus zu geben! Dies obwohl mit der Ausschreibung und vor der W.M. in VOL LIBRE das Unternehmen schon angesagt war. Die Teilnehmer hatten oft keine Zeit sich mit Zeichnungen von den Modellen zu befassen! Es zeigt sich hier daß Freiflieger "pragmatisch und empirisch" vorgehen um weiter zu kommen und erst den Endprodukt "verzeichnen". Zu dem kommt noch, daß abgegebene Pläne schlecht verwendbar sind zum direkten Druck, daß manche sehr mager oder in niedriger Skala gezeichnet sind. Dies alles verursachte ziemlich viele Arbeitsstunden für den Herausgeber. Andererseits sind nicht alle eingesetzten Modelle -vier- hier dargestellt und vielleicht sind es auch nicht die Besten und die Letzten, aber immerhin vermitteln sie ein Gesamtbild und ein Durchschnitt über die vergangenen Freiflugjahre. Dies ist von einer W.M. zur anderen durchaus sichtbar, obwohl es keine "Revolution" gibt. Ausser Plänen gibt es noch einige Bilder von Teilnehmern in "action" von ganz neu gestalteten Modellen -Bauart- und von den Zeremonien im Umfeld der W.M.

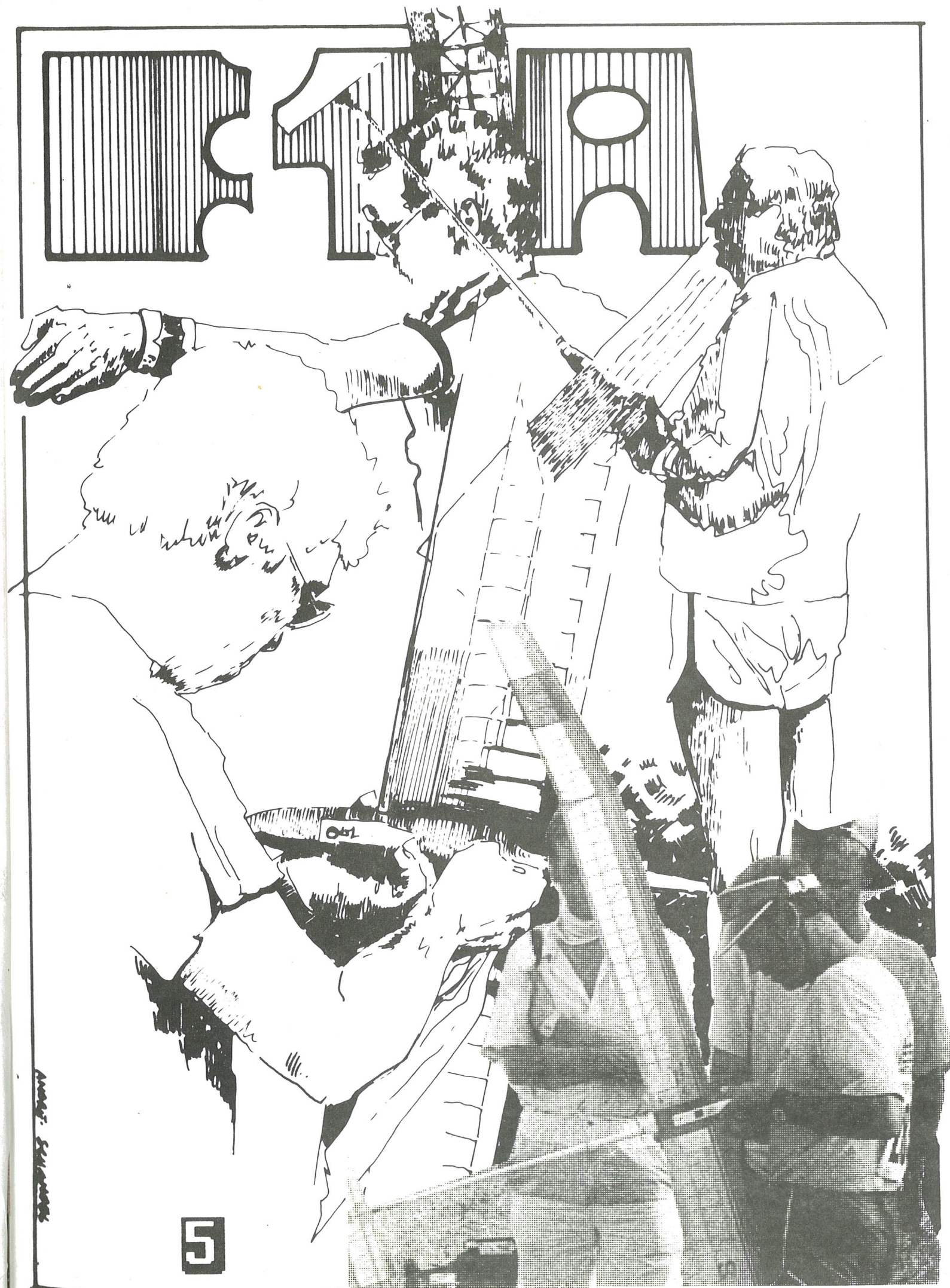
in Deutsch

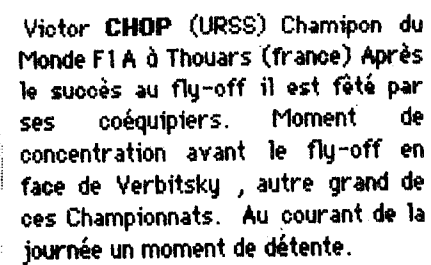
ENGLISH

A BIG JOB REALLY TO CARRY OUT A COMPILATION OF ALL THOSE MODELS USED BY THE MODELLERS WORLDWIDE FOR THAT, YOU HAVE TO BE BOTH TENACIOUS AND PERSEVERING

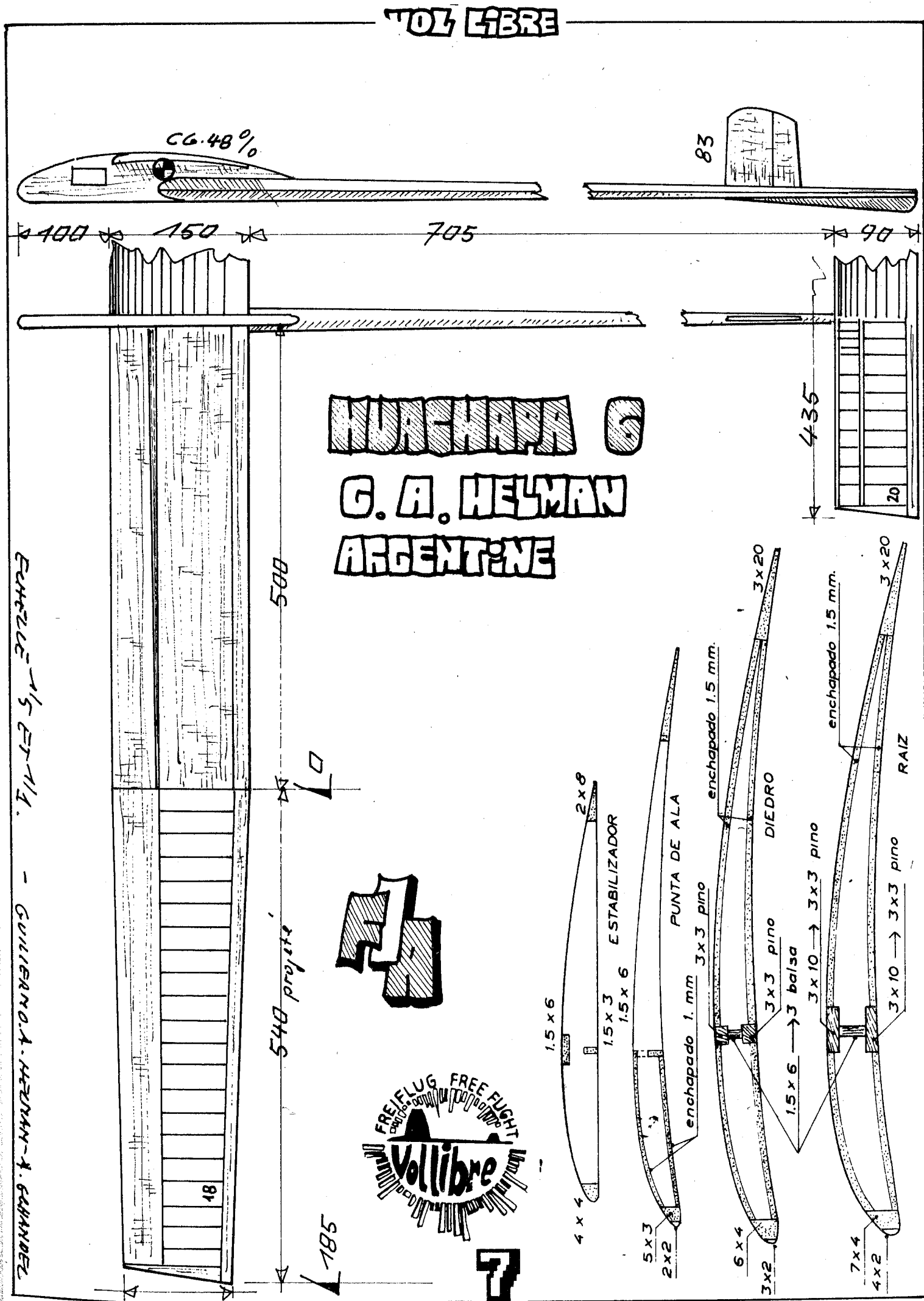
AS A MATTER OF FACT, THE FREE FLIGHT BUFFS, AS OFTEN AS NOT, ARE NOT ABLE TO SHOW OFF THREE VIEWS DRAWINGS OF THEIR MODELS, EVEN LESSER DETAIL SKETCHES - IT SUGGESTS THAT THEY ARE PROCEEDING STEP BY STEP, BEING RELUCTANT TO DELIVER ANY DRAWING UNLESS IT WERE THE SUCCESSFUL "END OF THE LINE" - ON THE OTHER HAND IT IS NOT POSSIBLE TO PROVIDE THE READER WITH ANY OF THE FOUR MODELS THE CONTESTANT IS ALLOWED TO MAKE USE OF. FURTHERMORE, THE PROPOSED PLANS DO NOT FORCEDLY REFER TO THE BEST, OR THE LATTER MODEL EITHER - AT LAST, THE PLANS ARE OFTEN OF BAD QUALITY, INCOMPLETE, ODDLY SCALED, AND USING DIFFERENT MEASURING SYSTEMS TOO - SO THE PRESENT PLANBOOK COULD NOT BE THE MOST ACCURATE ACCOUNT OF THE "STATE OF ART" YOU CAN DREAM OF, BUT RATHER SAY, A SORT OF "H.I. LEVEL ROUTINE" STORY IN THE LATTER YEARS.

IN ORDER TO OBTAIN A HOMOGENEOUS PRESENTATION, I HAD TO RE-DRAWN MOST OF THE PLANS - THE PART DEVOTED TO THE MODELLERS THEMSELVES IS COMPARATIVELY REDUCED TO A MINIMUM - THE PICTURES FOCUS ON THE THREE WORLD CHAMPIONS; ON PARTICULAR BUILDING TECHNIQUES; ON "IN ACTION" SHOTS AND, TO END ALL THAT, A PICTORIAL SURVEY OF THOSE VERY SUCCESSFUL WORLD CHAMPIONSHIPS



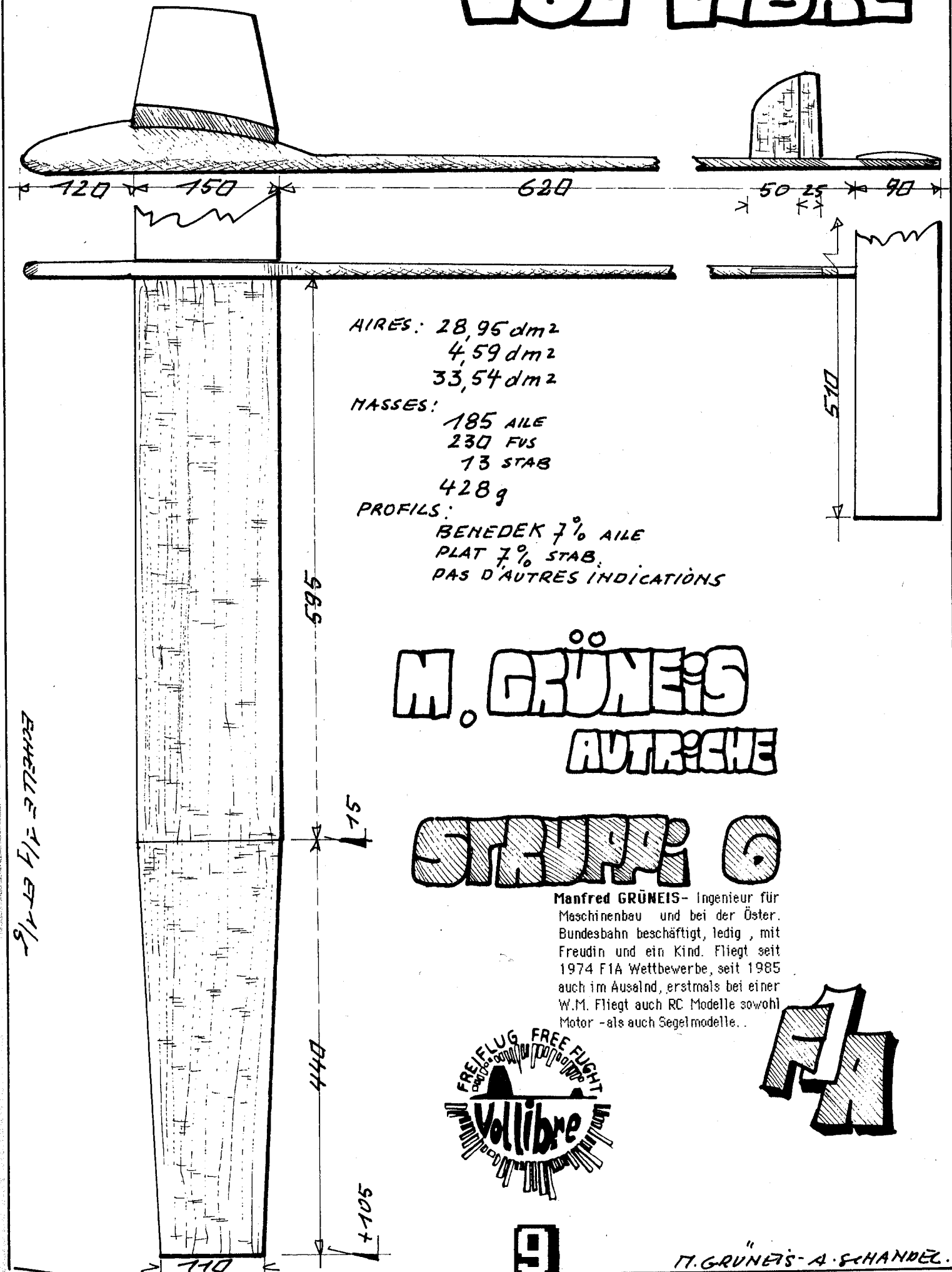
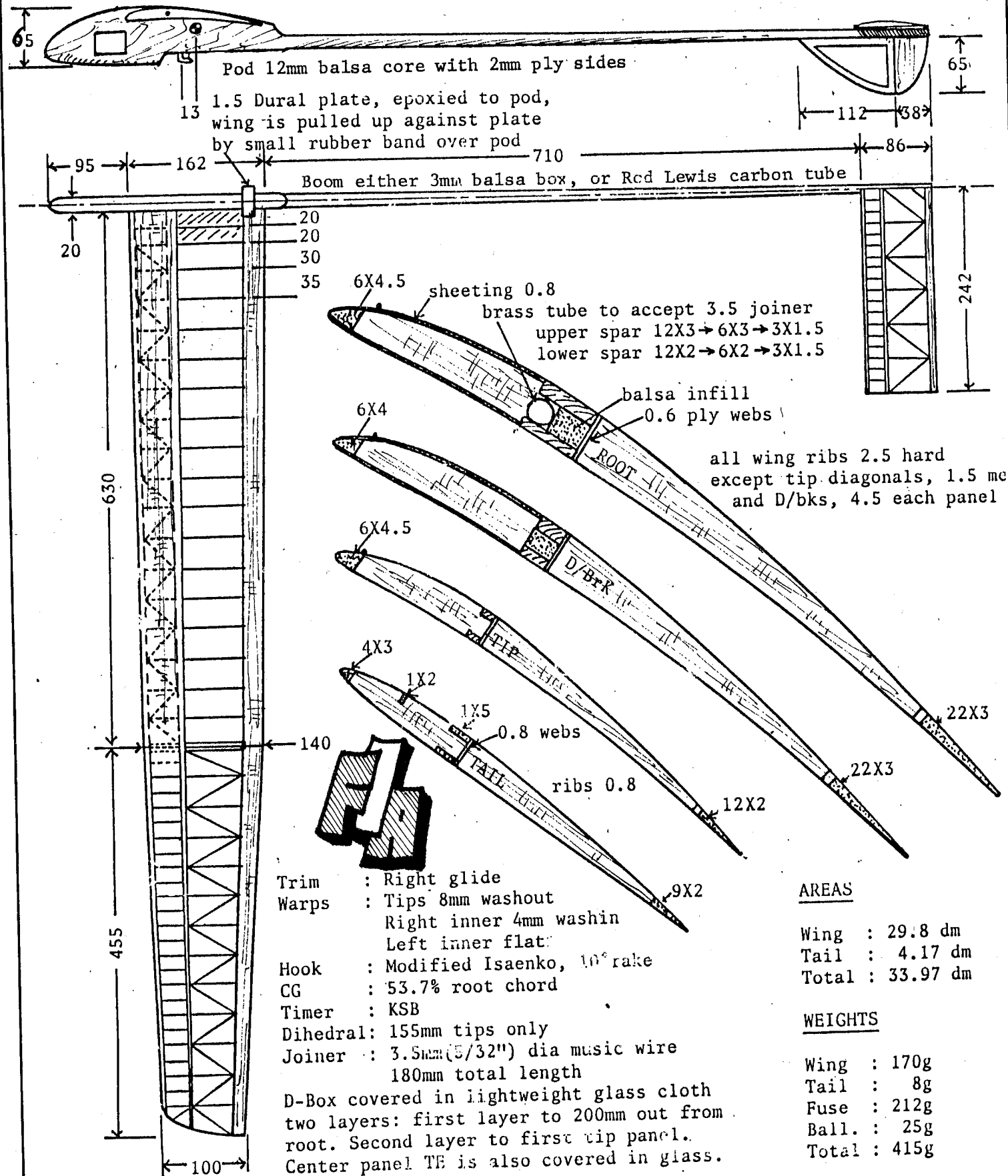


ENCLOSURE - 5 BT 114. - GUILBERNO A. HERMAN - A. GABANDER



ESPRIT F1A

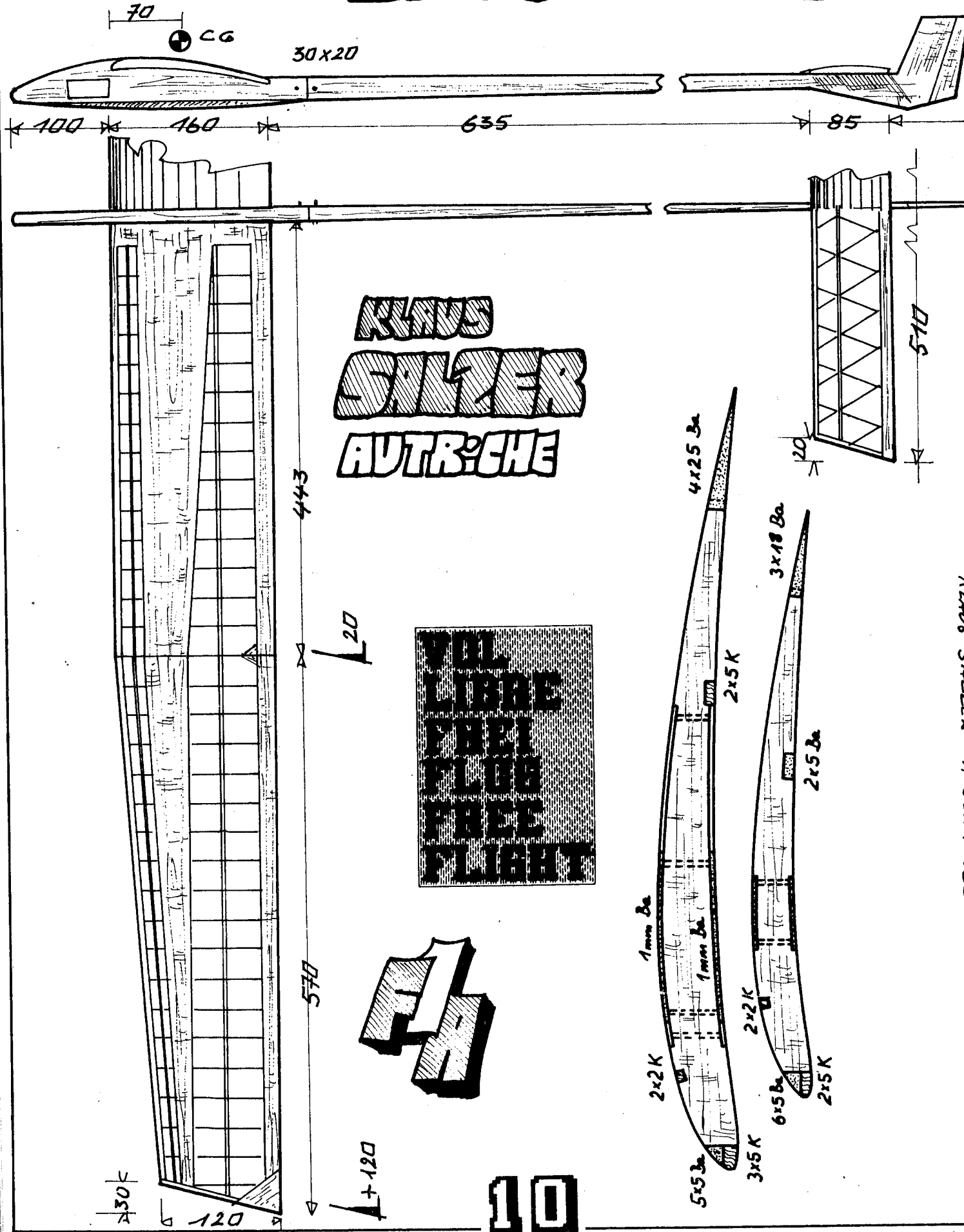
all dimensions in mm.



ECHELLE 1/5 ET 1/4.

VOL LIBRE

LOVEBIRD 4 1/2



KLAUS
SILVER
AUTRICHE

VOL
LIBRE
FLIGHT

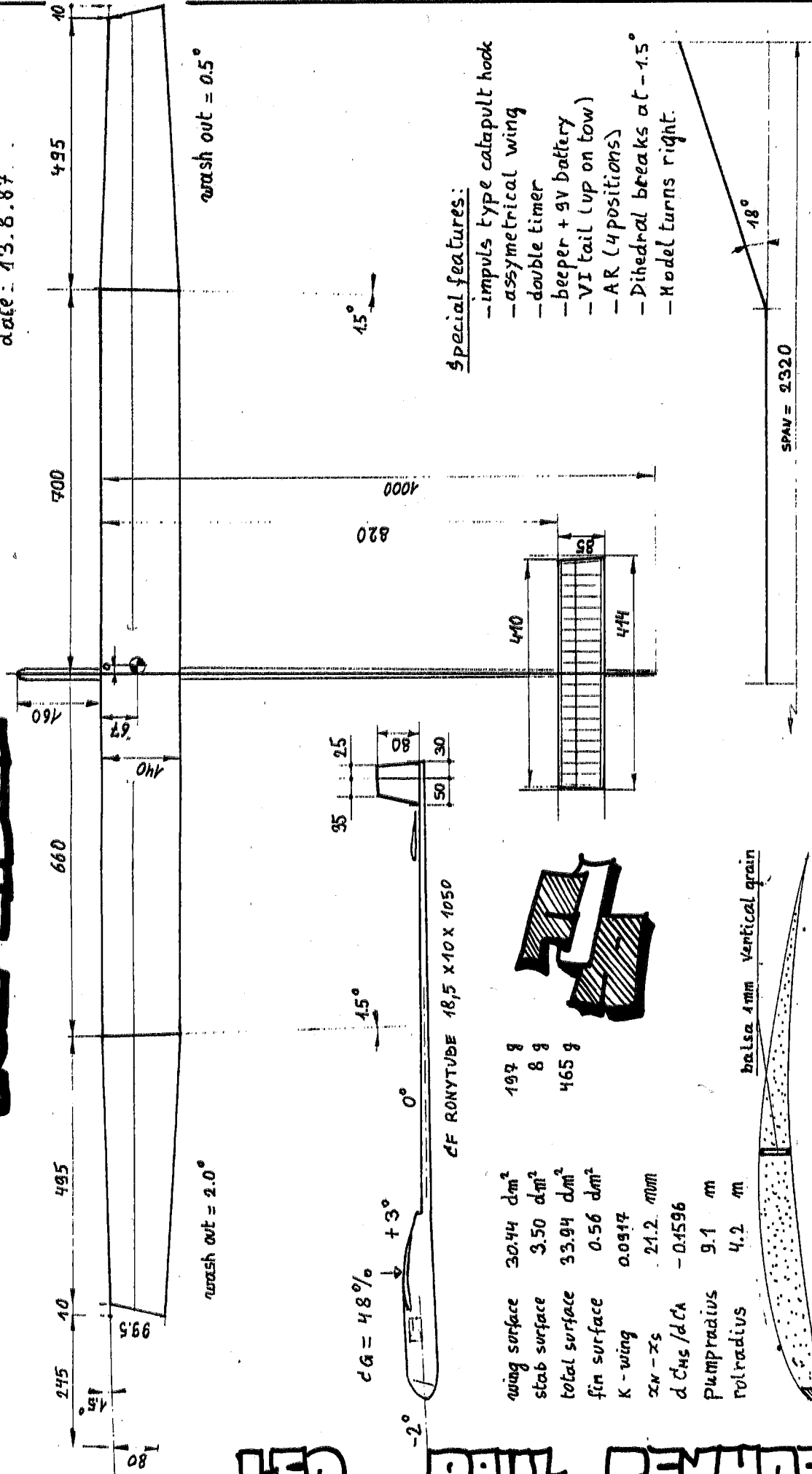
4 1/2

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KLAUS SILVER - AUTRICHE

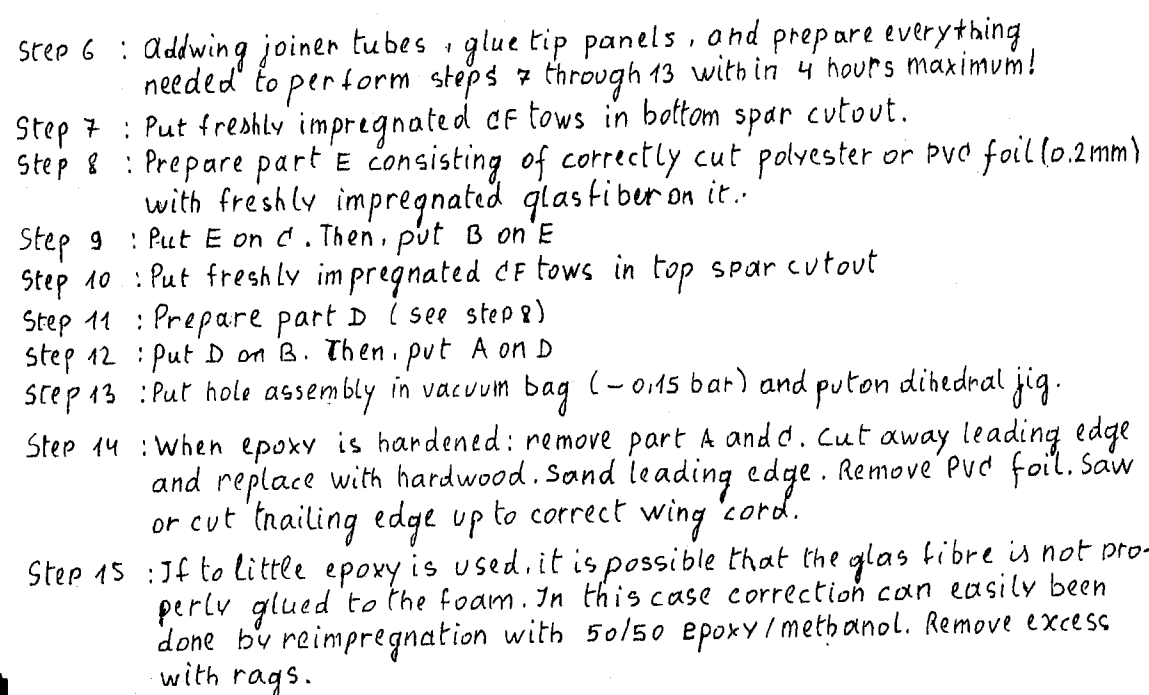
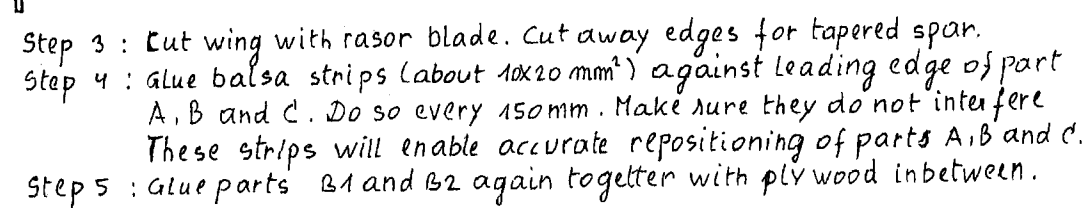
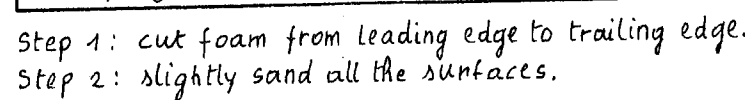
VOL LIBRE

MODEL NR. 105
date: 13.8.87



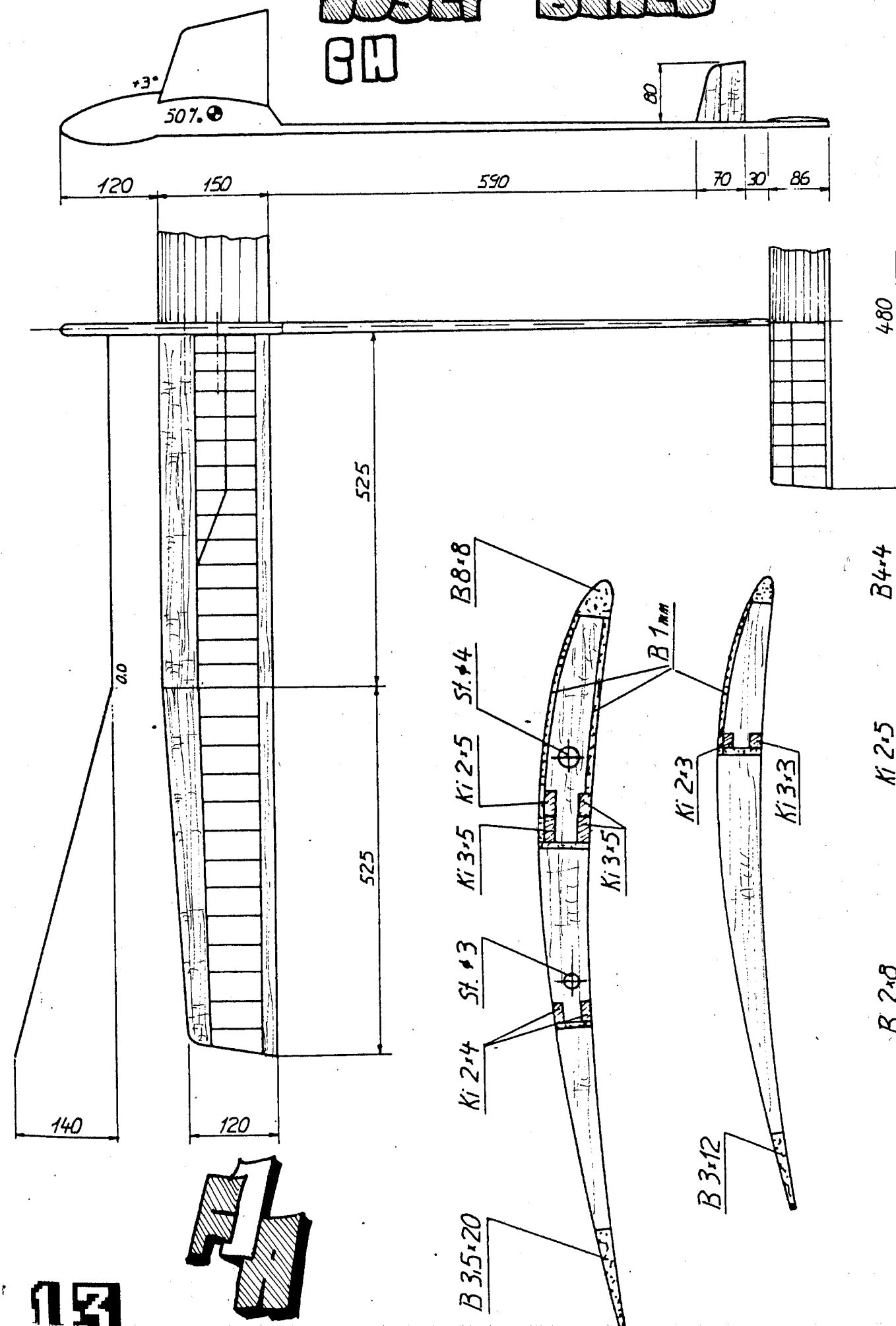
LEO, PAUL REMINDERS 11

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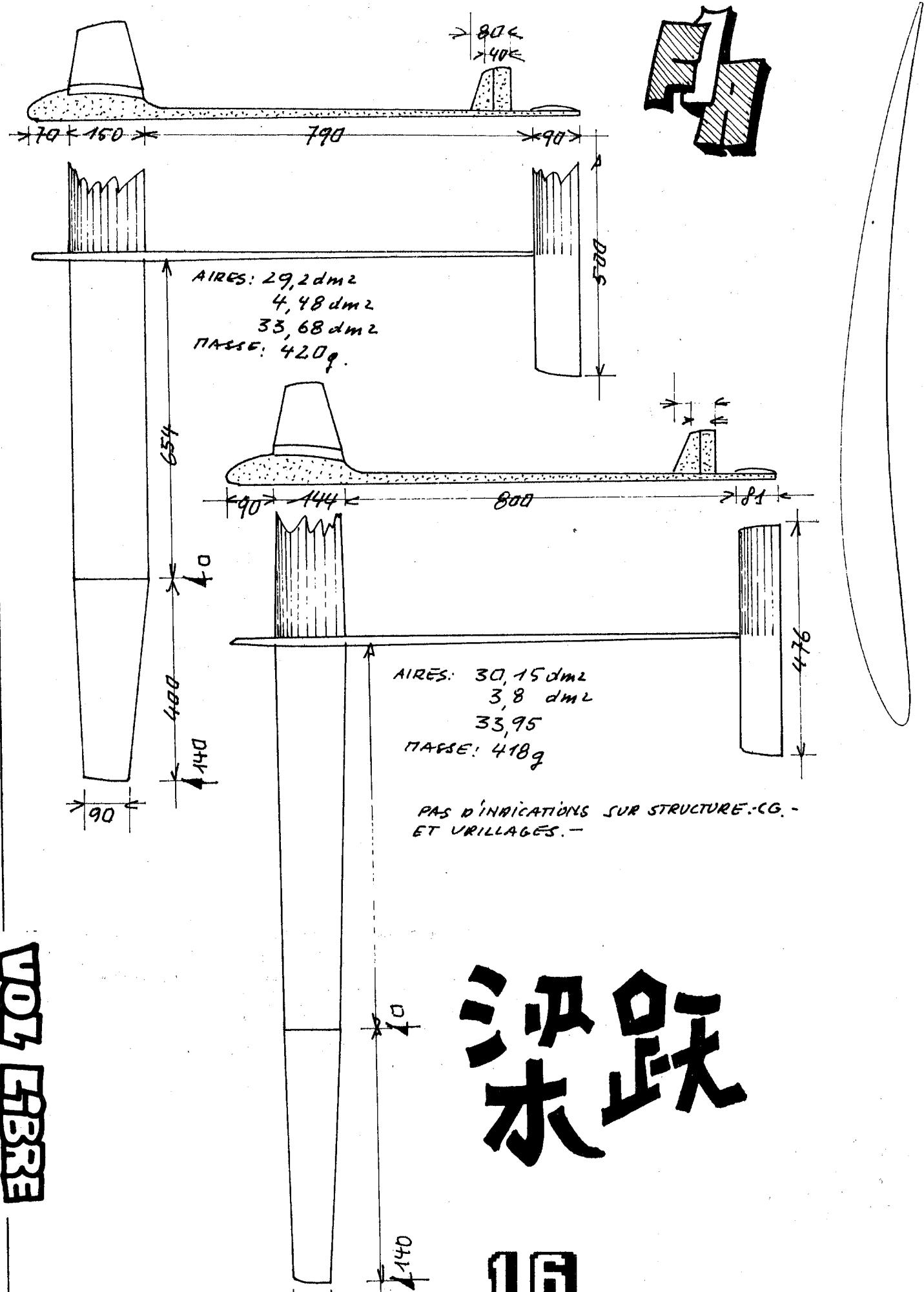
VOL FIBRE

VOL LIBRE



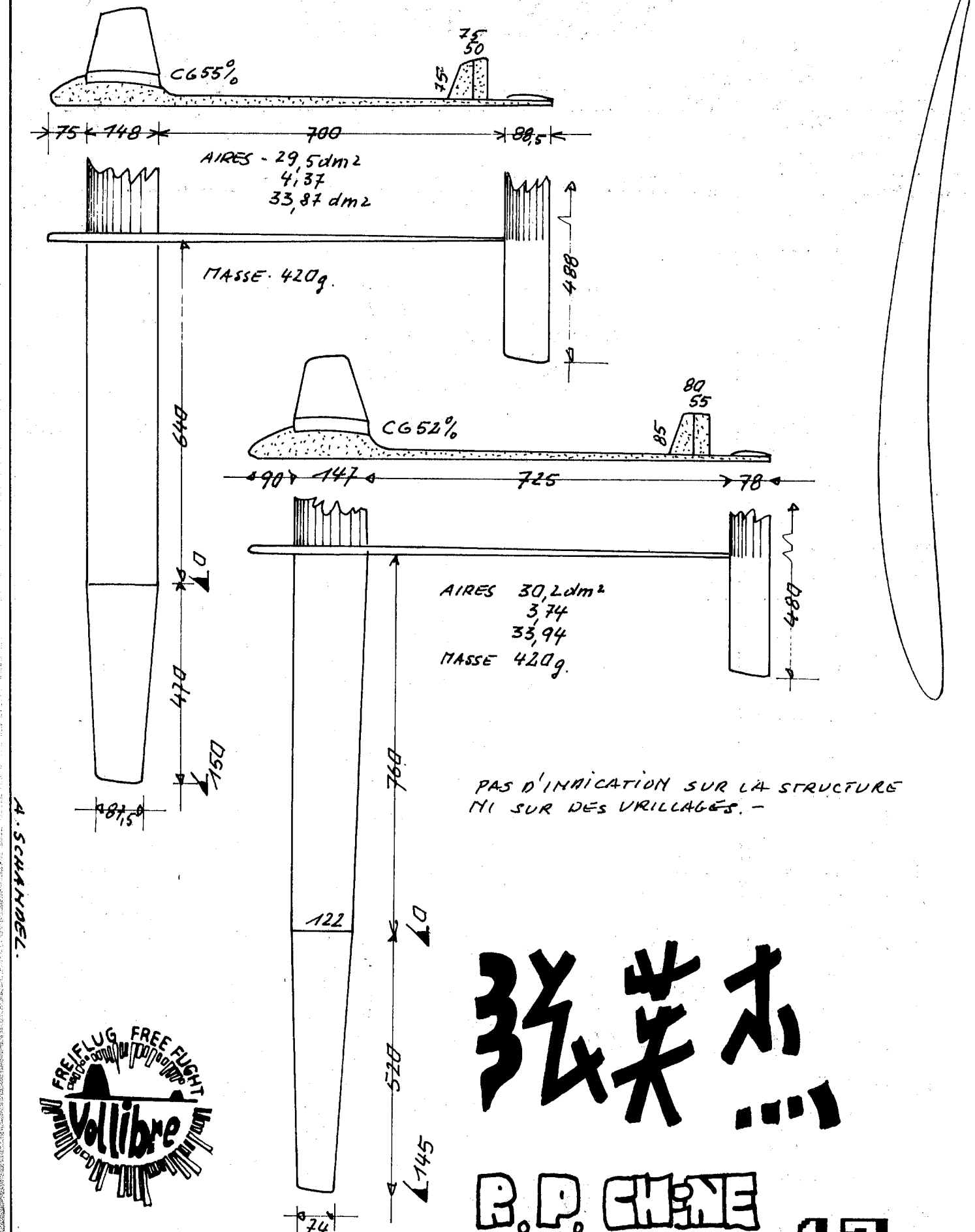
ROSEY
GW

SENES



梁跃

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张英杰

R.P. CHINE

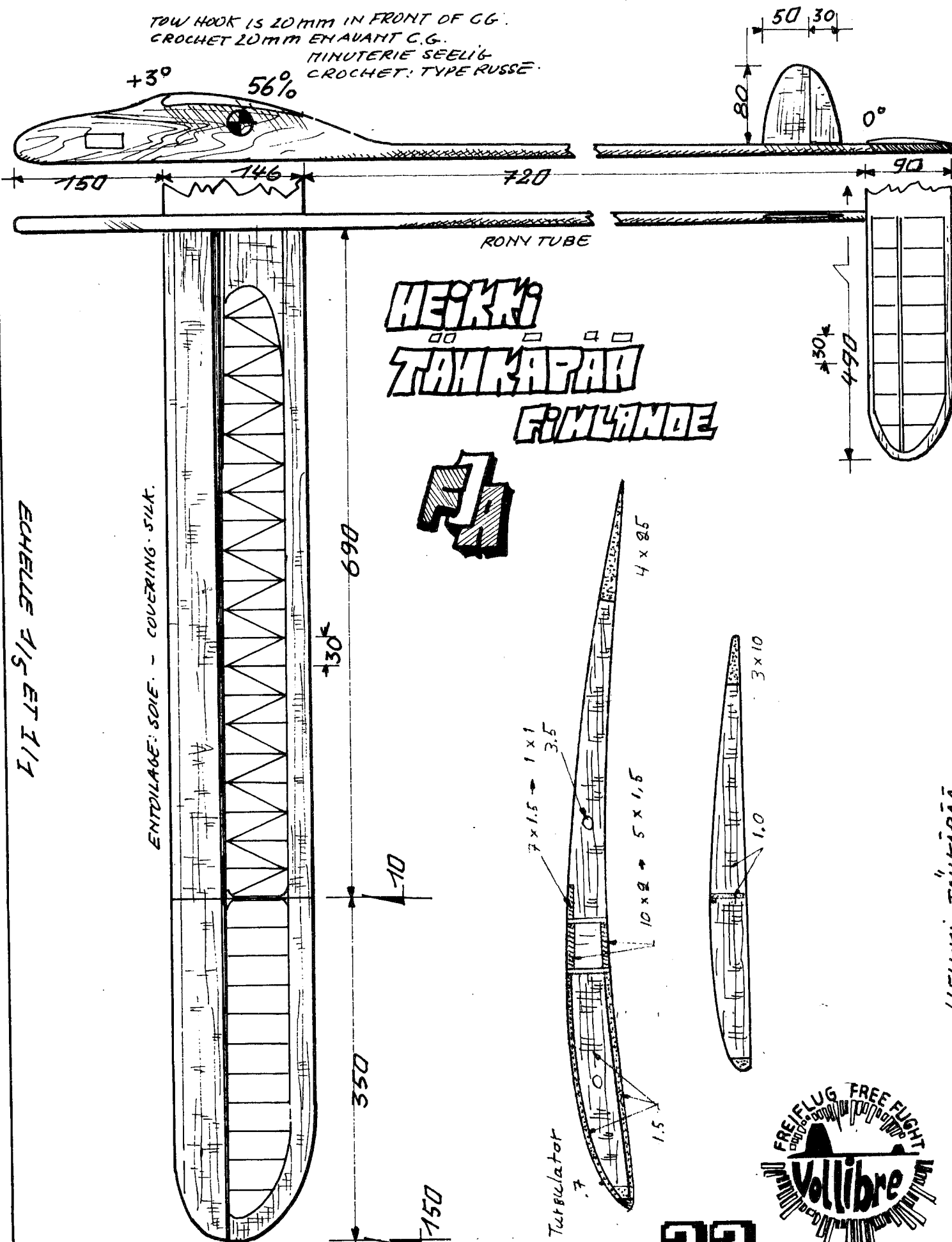
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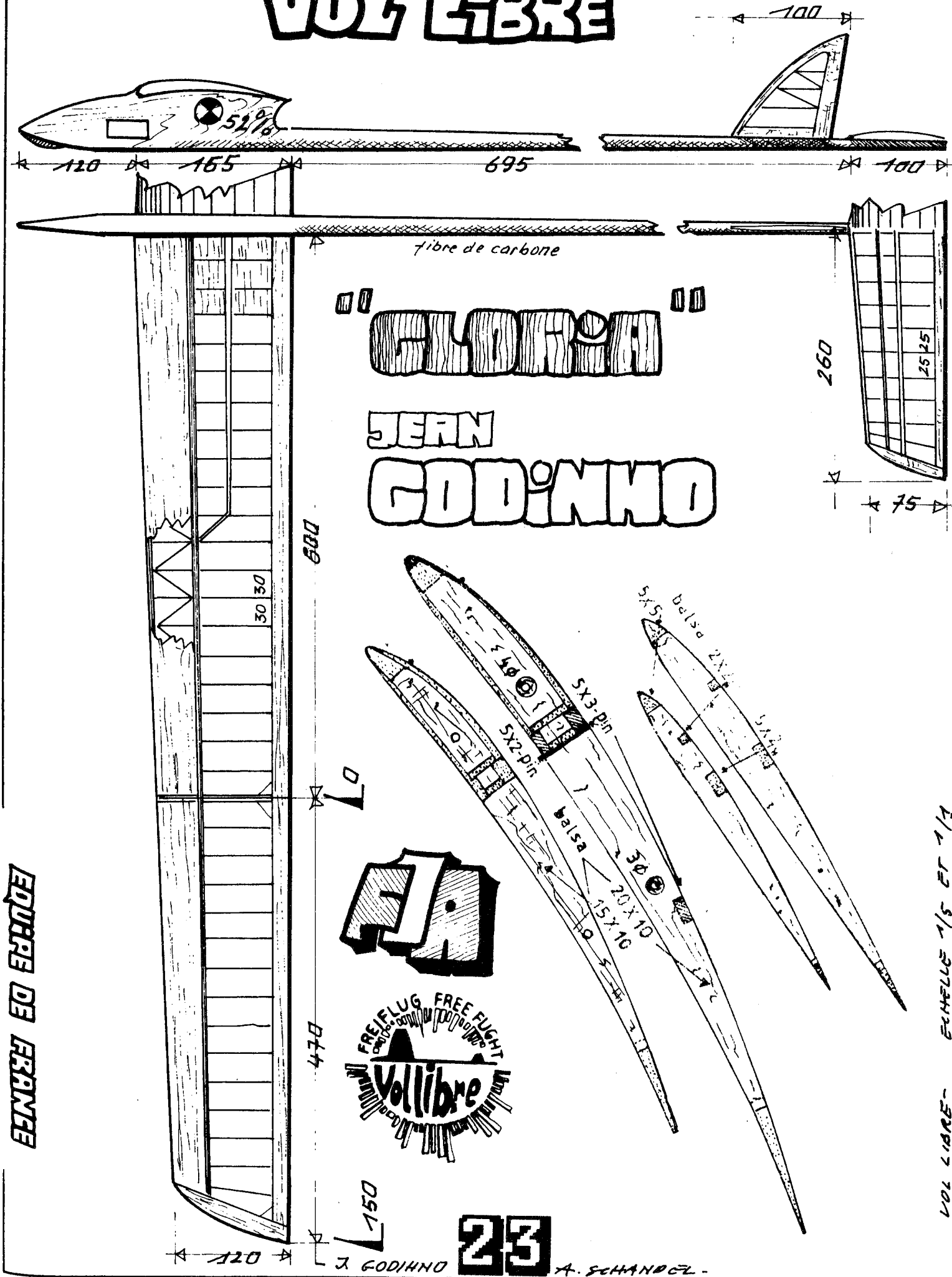
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TOW HOOK IS 20 MM IN FRONT OF C.G.
CROCHET 20 MM EN AVANT C.G.
MINUTERIE SEELIG
CROCHET: TYPE RUSSSE.



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VOL LIBRE



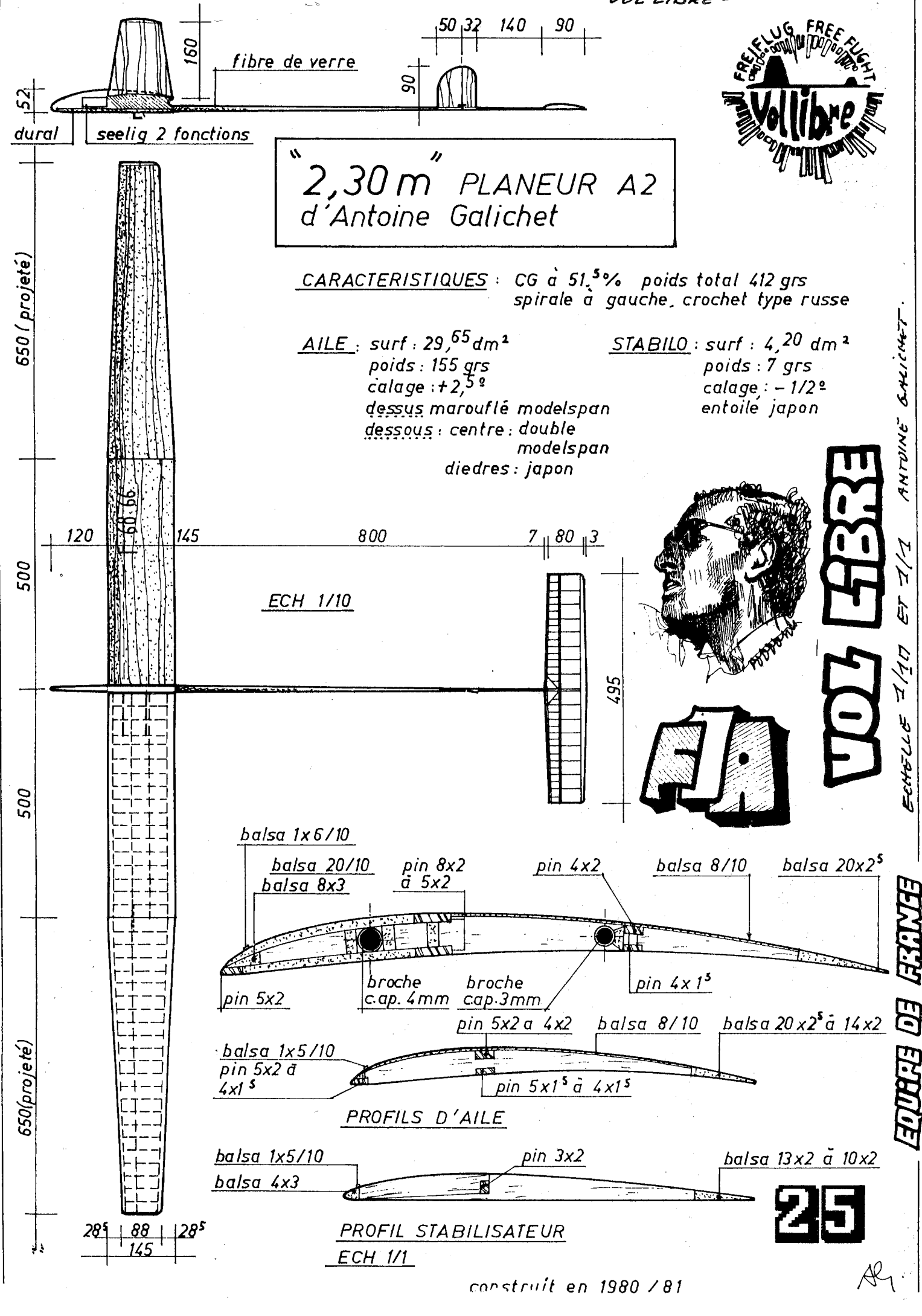
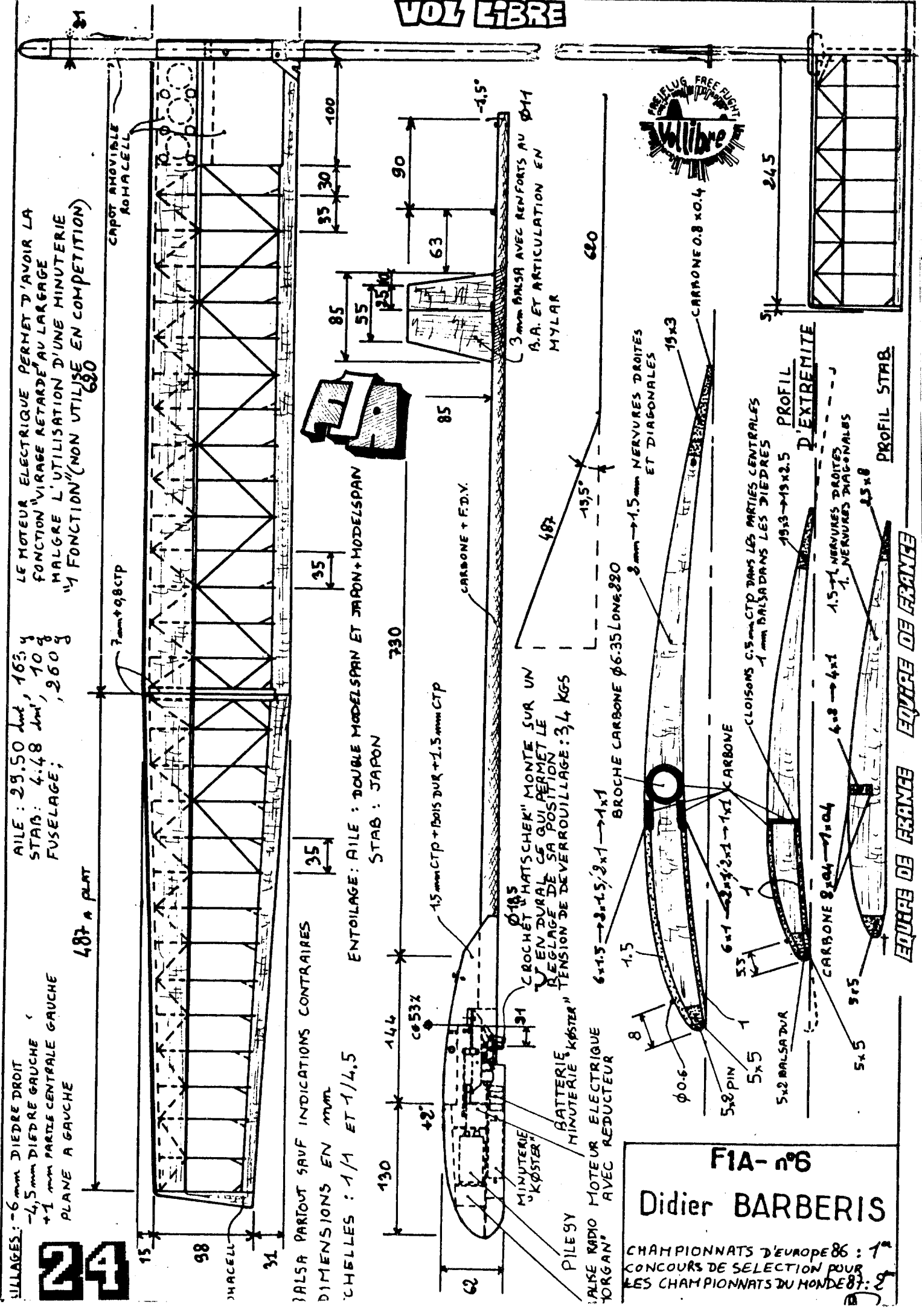
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ECHELLE 1/5 ET 1/1

ENTDILAGE: SOIE - COVERING: SILK.

EQUIPE DE FRANCE

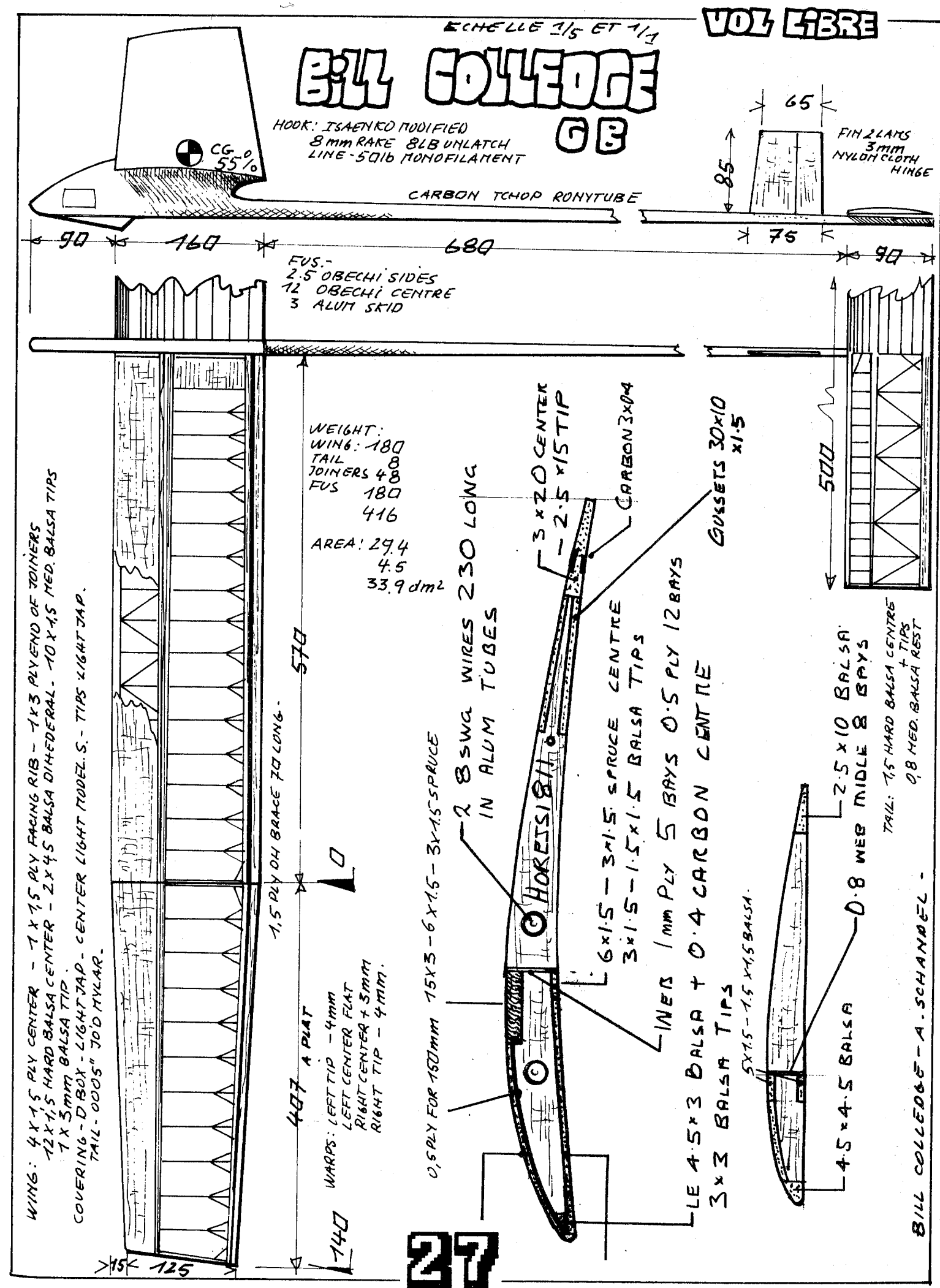
VOL LIBRE - ECHELLE 1/5 ET 1/1



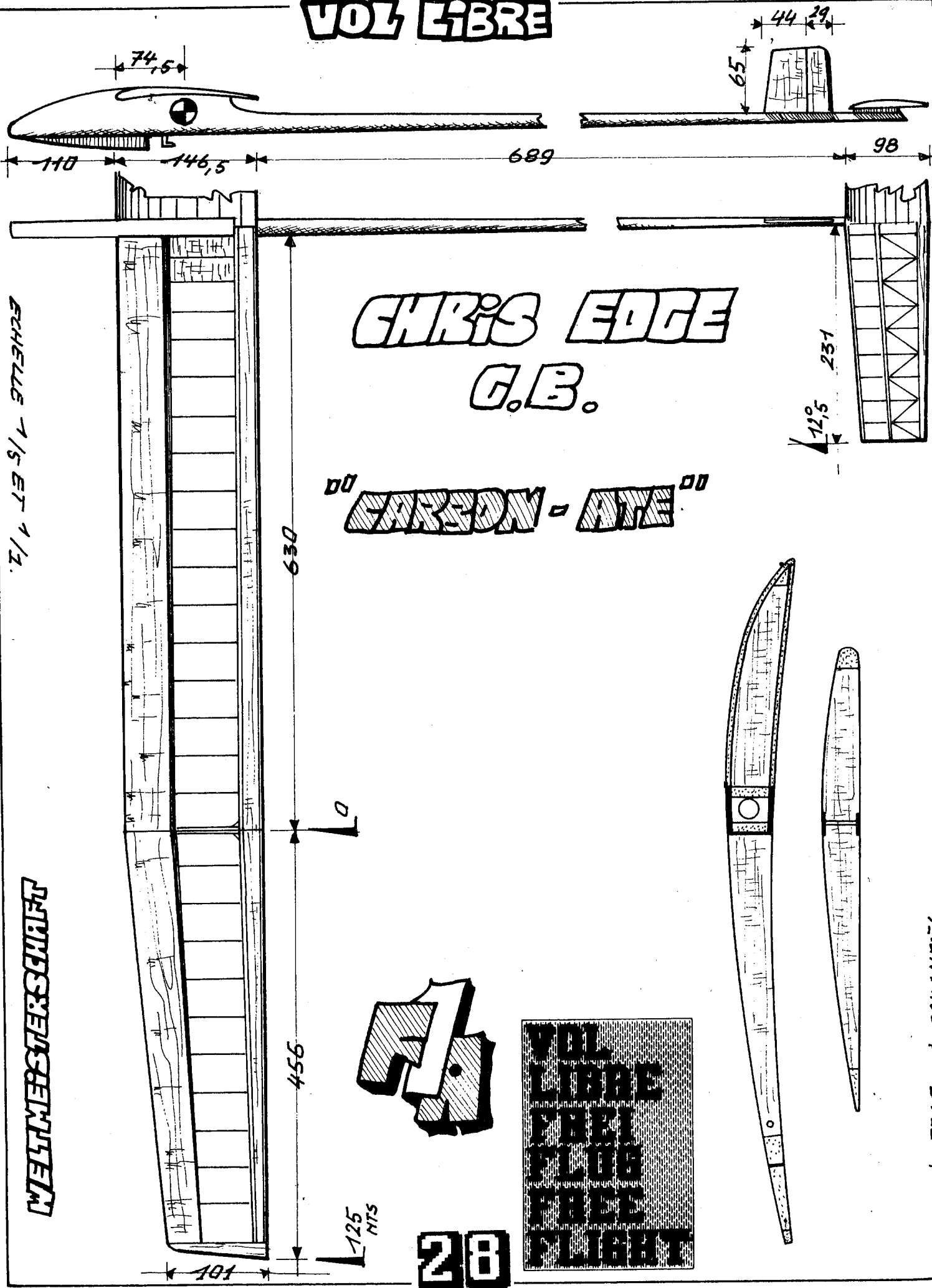
Un concurrent Chinois, ils ne sont pas facile à reconnaître pour nous, en F1A avec un modèle classique et de finition parfaite. L'Américain Jim Bradley avec un modèle tout aussi classique à sous dérive, ce qui n'est cependant plus tellement courant. Randy Veiler (USA) modèle à dièdre central



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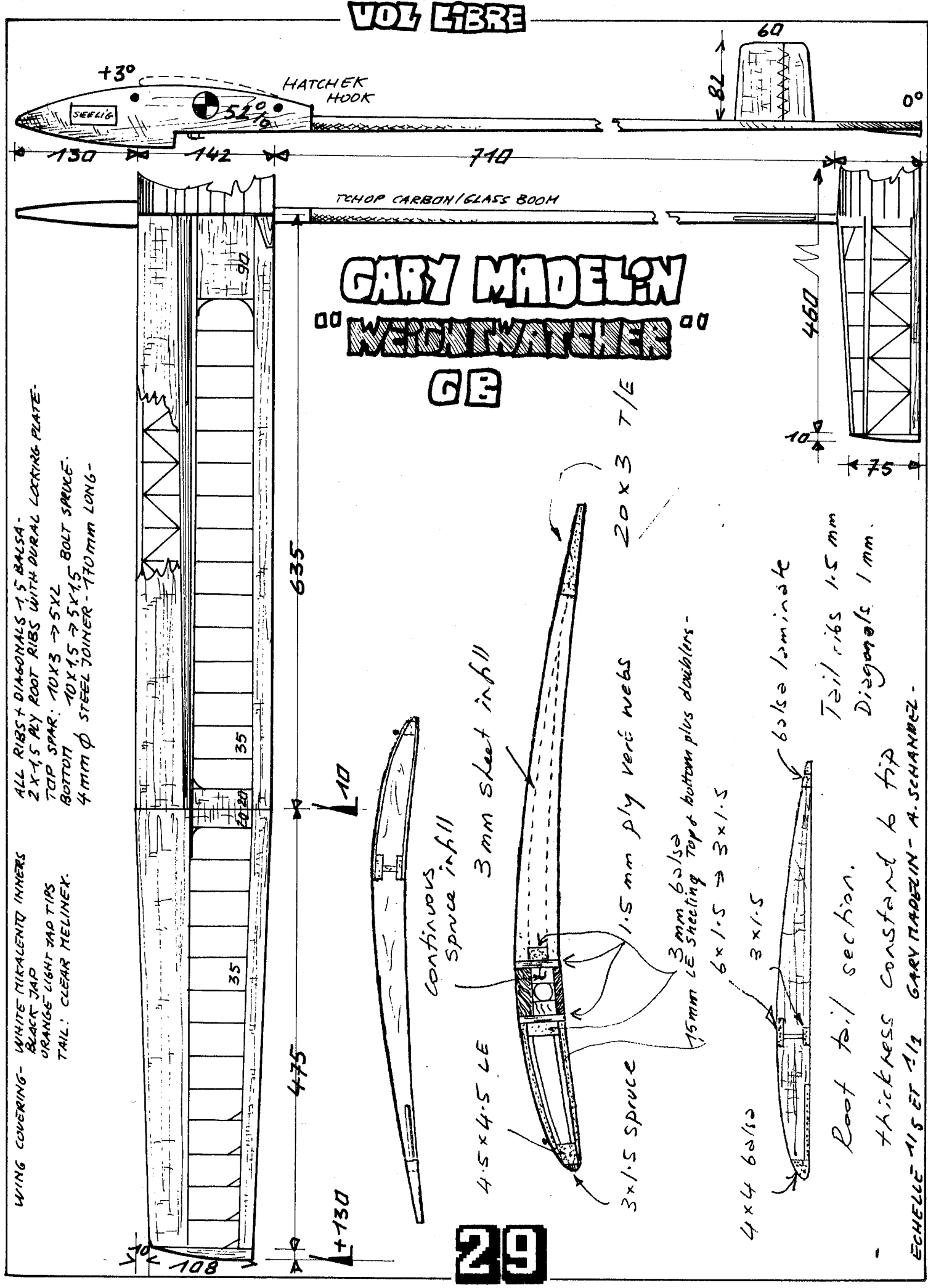


VOL LIBRE



CHRIS EDGE - A. SCHANDEL -

VOL LIBRE



WING COVERING - WHITE MICALENTO INNERS
BLACK TAP
ORANGE LIGHT TAP TIPS
TAIL: CLEAR MELINEX.

ALL RIBS + DIAGONALS 1.5 Balsa.
2 x 1.5 ply root ribs with dural locking plate.
TOP SPAR: 10x3 → 5x1
BOTTOM 10x1.5 → 5x1.5 BOLT SPRUCE.
4mm Ø STEEL JOINER - 170mm LONG -

HATCHER HOOK

TCHOP CARBON/GLASS BOOM

continuous spruce infill

4.5 x 4.5 LE

3mm sheet infill

3x1.5 spruce

1.5mm ply veré webs

3mm balsa
15mm LE sheeting top & bottom plus doublers -

6x1.5 → 3x1.5

4x4 balsa

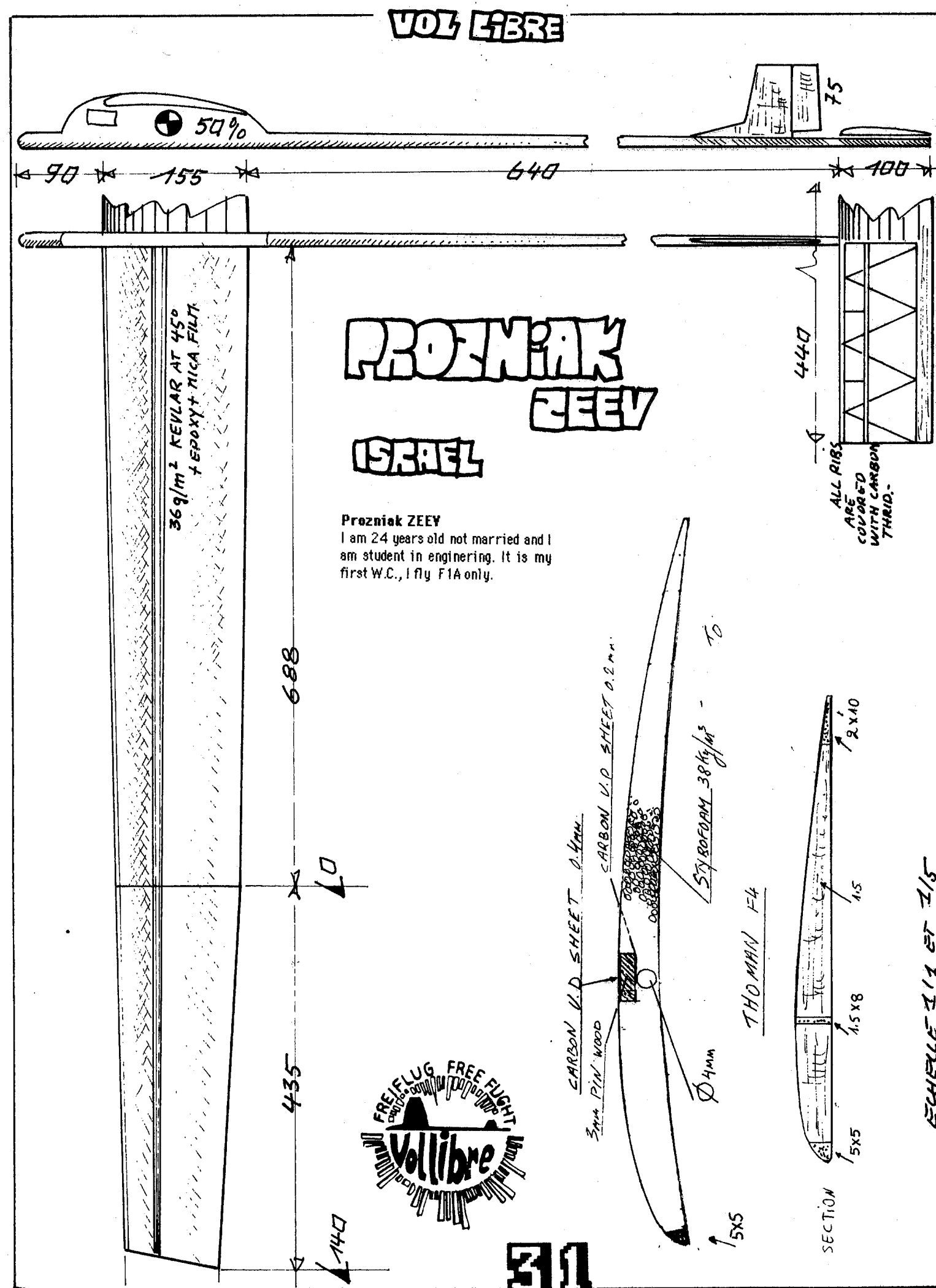
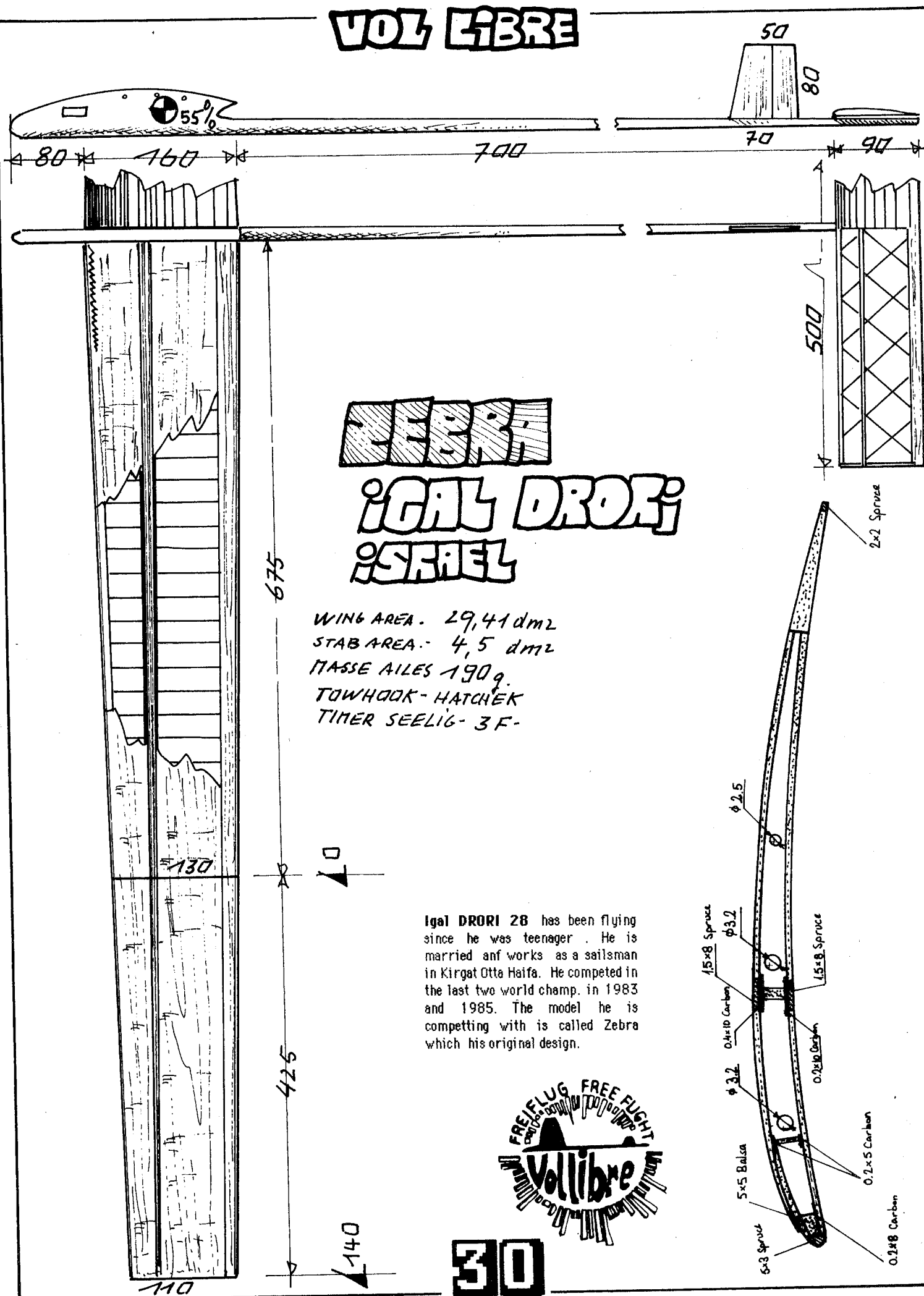
3x1.5

balsa laminate

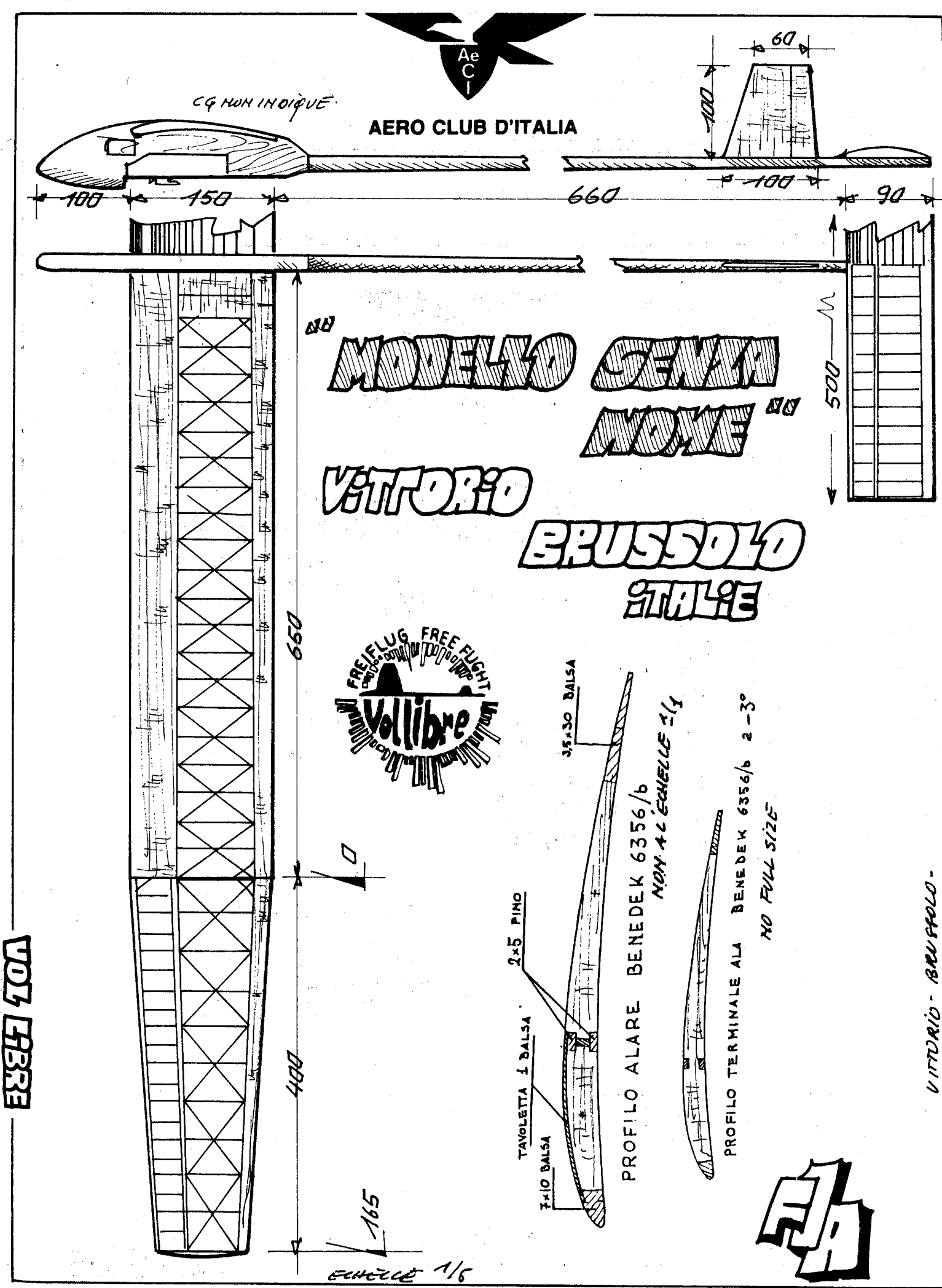
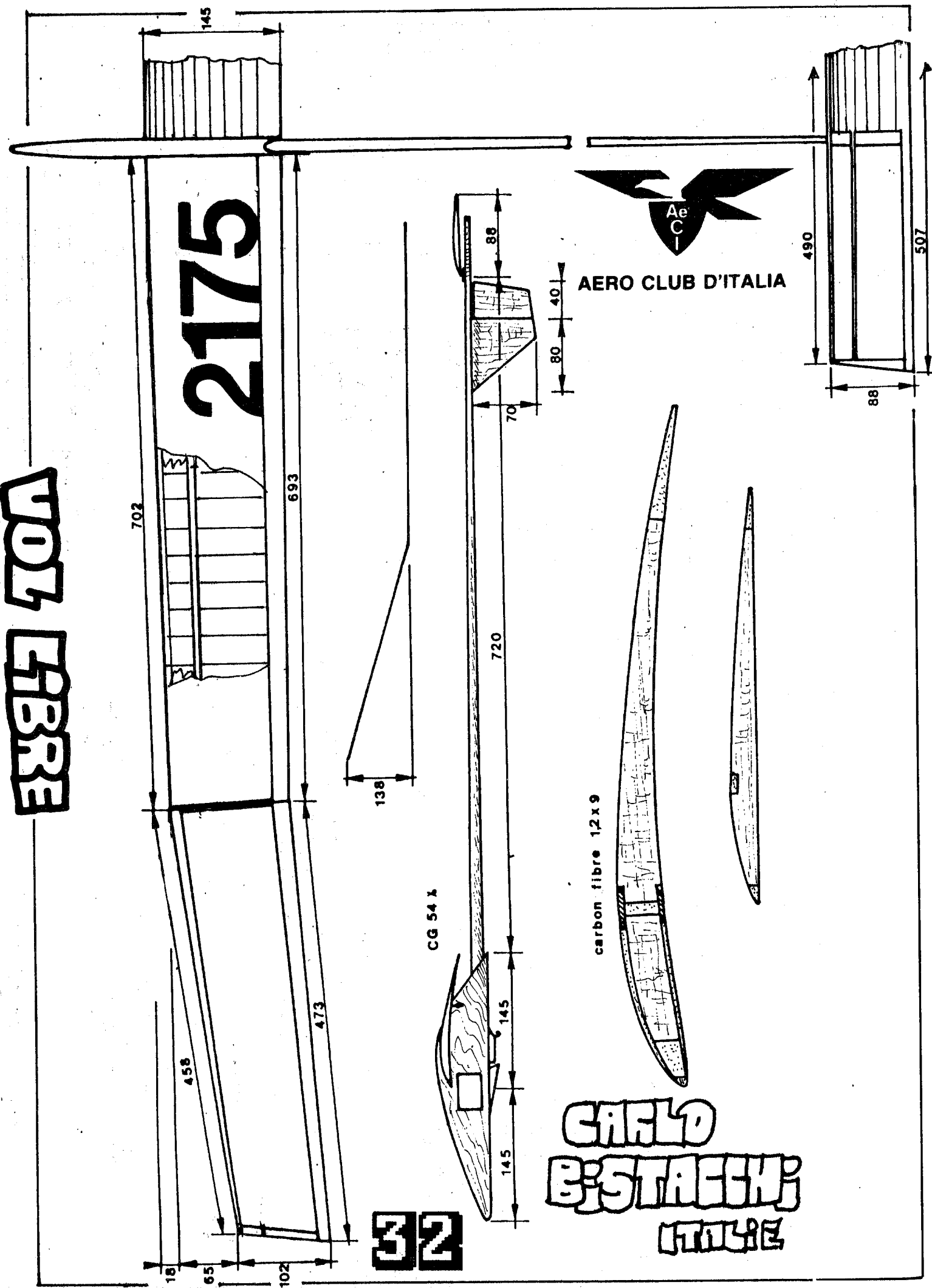
Root tail section.

Tail ribs 1.5mm
Diagonals 1mm.

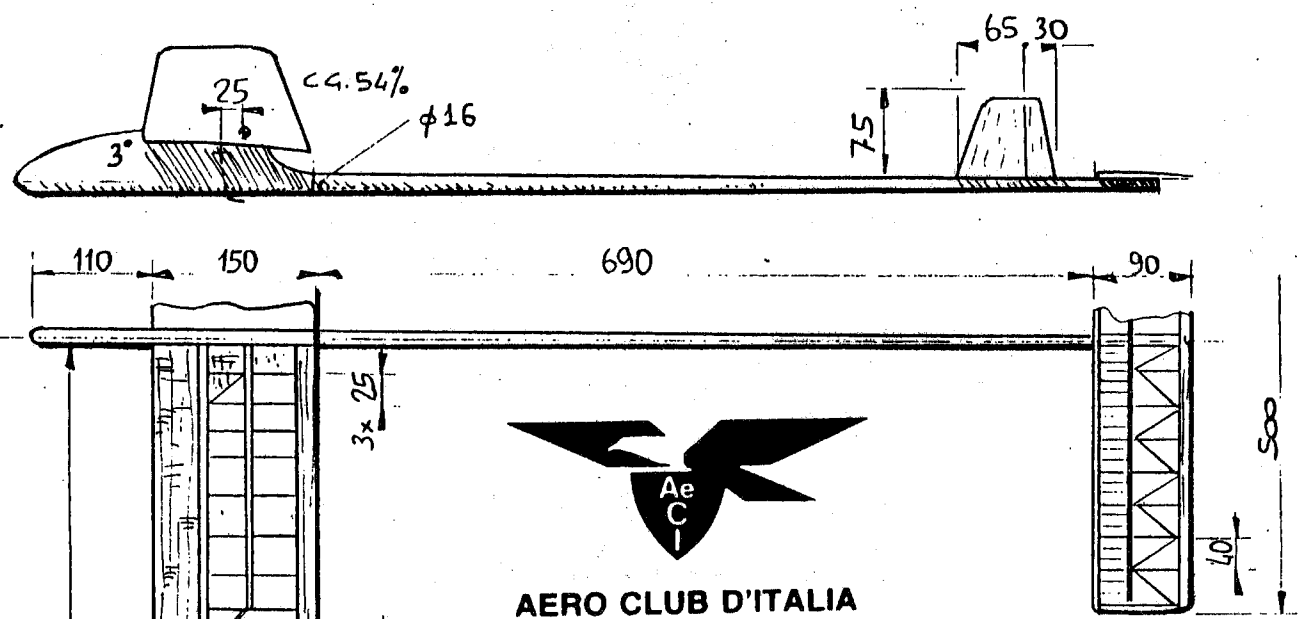
thickness constant to tip
ECHELLE 1/5 ET 1/2 GARY MADELIN - A. SCHANDEL -



VOL FIBRE



VITTORIO - BRUSSOLO -

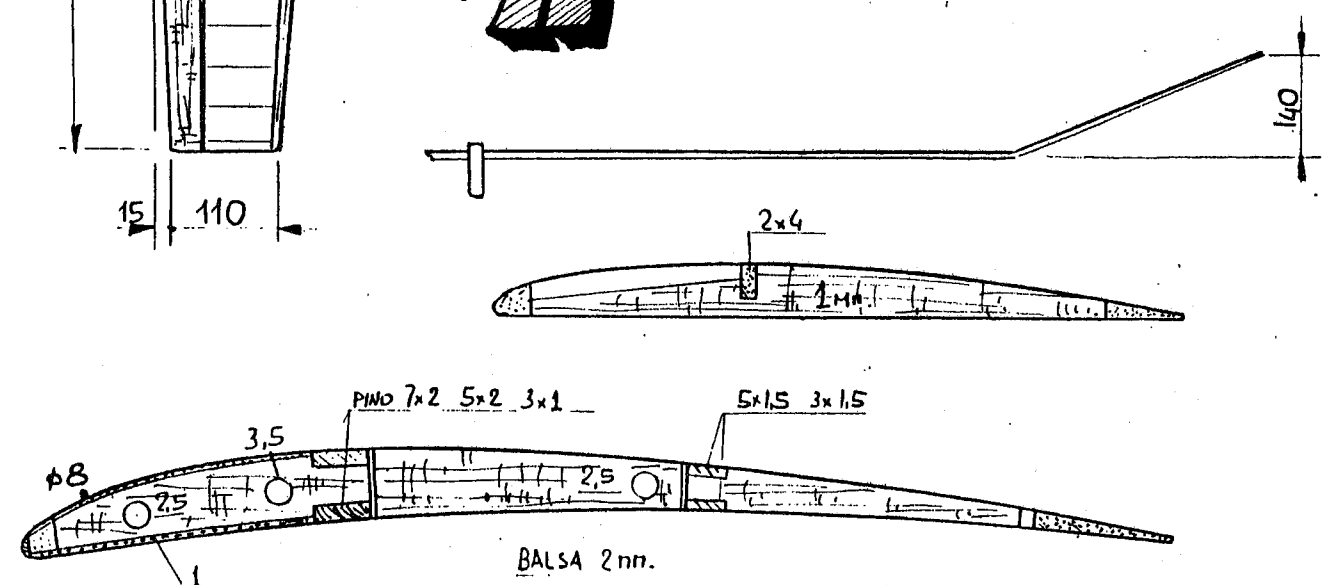
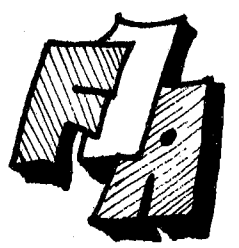


AERO CLUB D'ITALIA

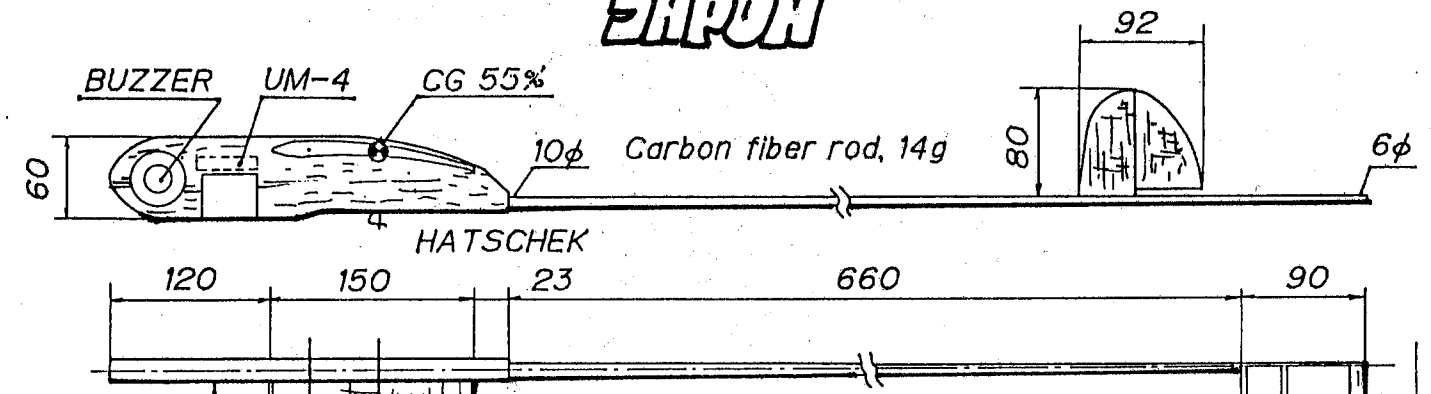
ROBERTO CAL

CHAMPION D'ITALIE 1986

PESO ALA 180 g
 PESO CODA 9 g
 PESO TOTALE 420 g

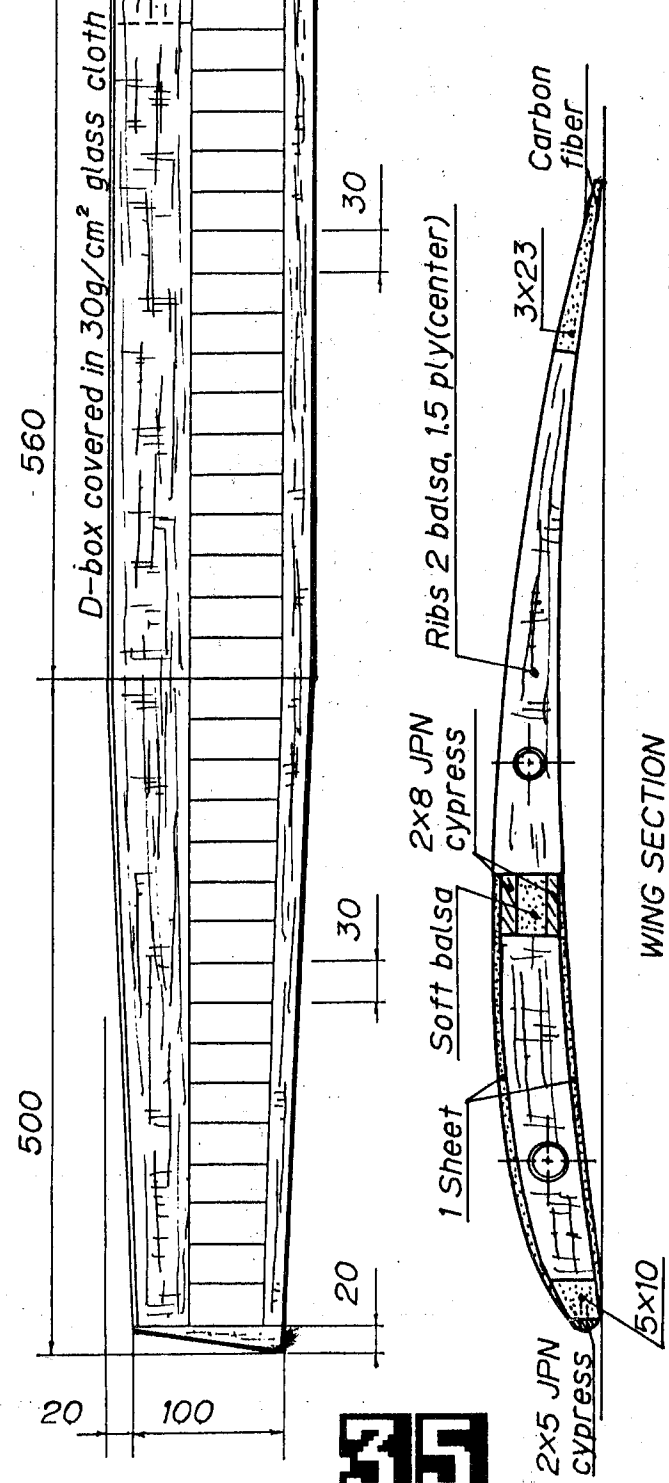


YASUO YOSHIOKA JAPON



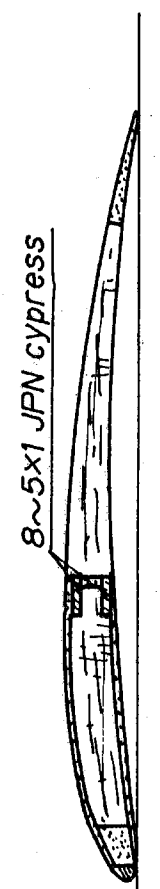
Wing covered Tengujo (lightweight Japanese tissue) on sunny side and plus silk on rear side

Dihedral : Center panel flat
 Tips 130 mm

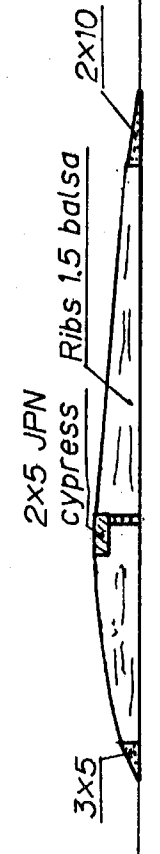


Wing : 190
 Joiner : 21
 Tail : 9
 Fuselage : 200
 Total : 420g

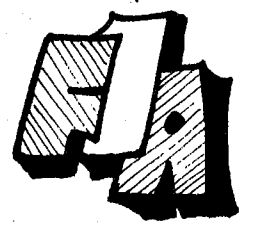
Covered Ganpi (light weight Japanese tissue)



TIP SECTION



TAIL SECTION



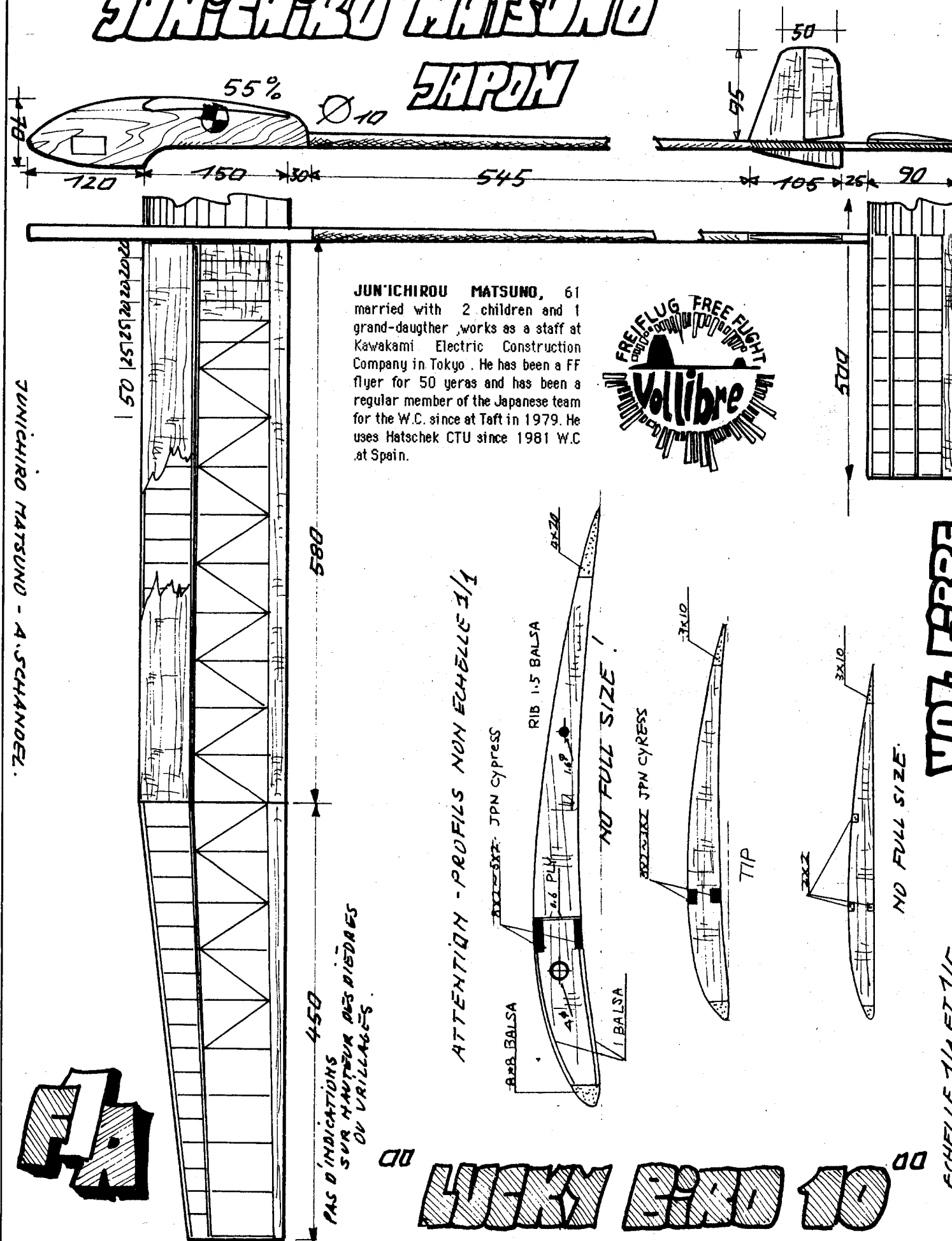
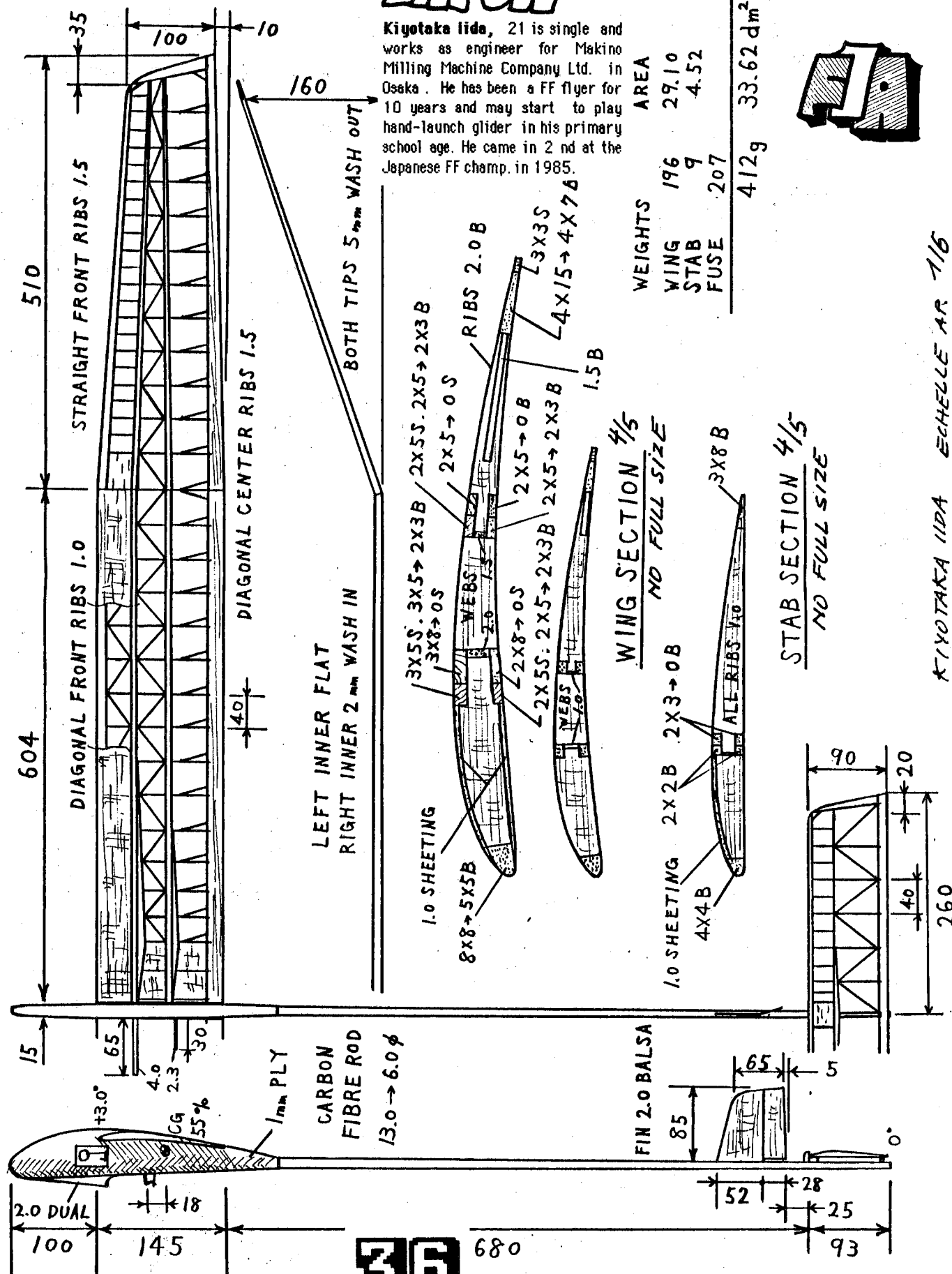
KIKOTAKA IIAN
JAPON

Kiyotaka Iida, 21 is single and works as engineer for Makino Milling Machine Company Ltd. in Osaka. He has been a FF flyer for 10 years and may start to play hand-launch glider in his primary school age. He came in 2nd at the Japanese FF champ. in 1985.

WEIGHTS	AREA
WING 196	29.10
STAB 9	4.52
FUSE 207	
	412g
	33.62 dm ²



KIYOTAKA IIDA ECHELLE AR 115



JUN'ICHIROU MATSUNO, 61 married with 2 children and 1 grand-daughter, works as a staff at Kawakami Electric Construction Company in Tokyo. He has been a FF flyer for 50 yeras and has been a regular member of the Japanese team for the W.C. since at Taft in 1979. He uses Hatschek CTU since 1981 W.C. at Spain.



ATTENTION - PROFILS NON ÉCHÉLONNÉS

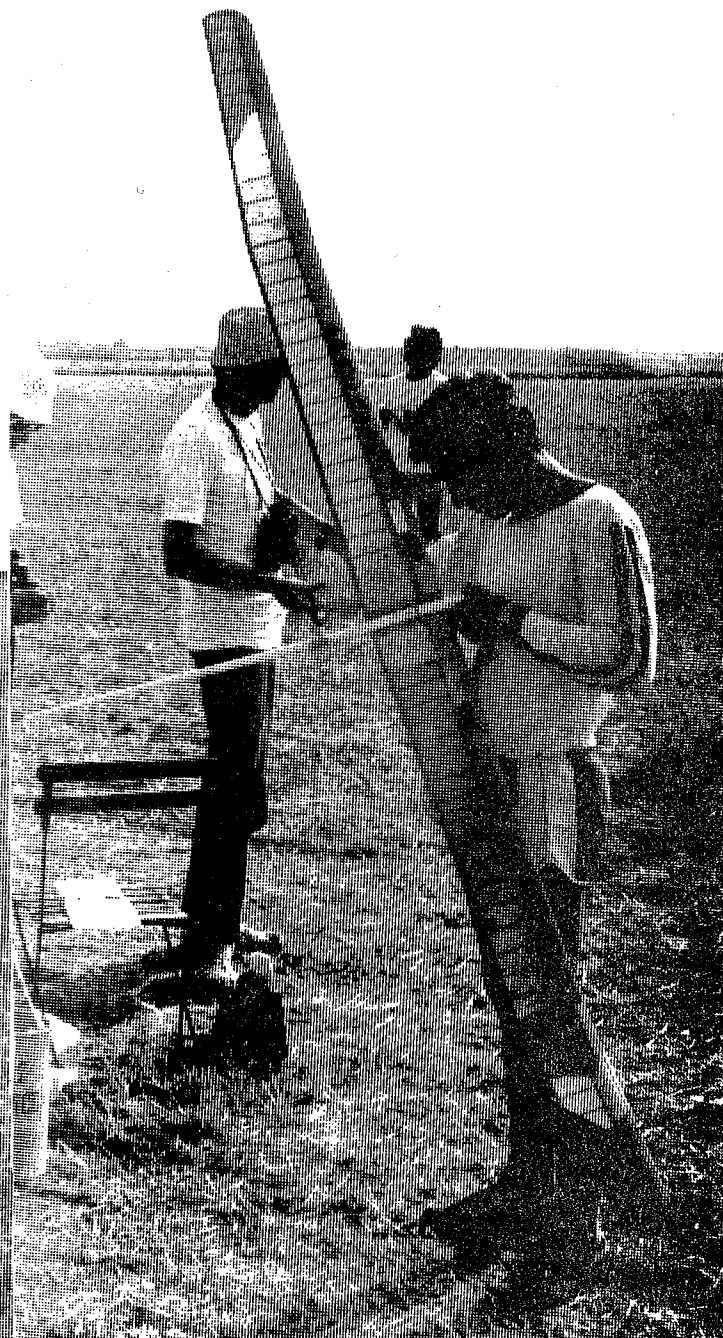
450
PAS D'INDICATIONS
SUR HAUTEUR DES MONTAGNES
OU VILLAGES

LUCKY END 10

NO FULL SIZE.

ECHELLE 1/1 ET 1/5

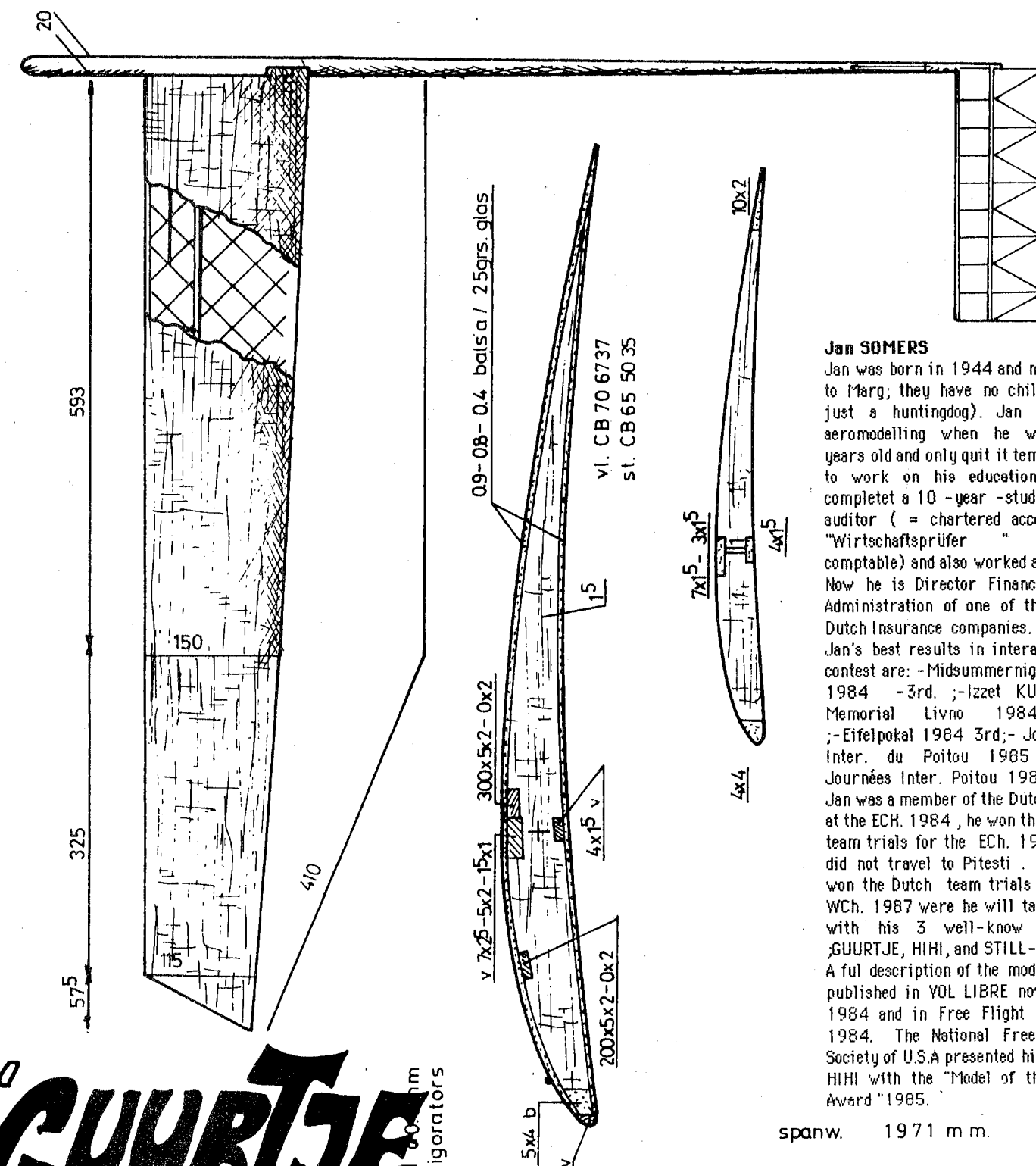
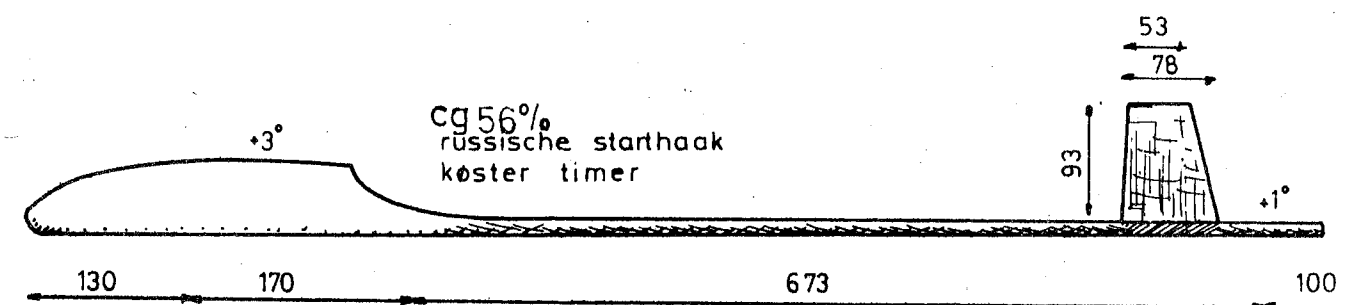
Stamov et Makarov, deux concurrents URSS, qui n'ont pas tout à fait tenu les promesses, on peut cependant penser que l'équipe de l'URSS malgré sa contre performance collective est intrinsèquement parmi les meilleures sinon la meilleure, à remarquer la perfection dans les constructions avec une forte percée d'éléments de constructions en matériaux nouveaux. Une image sur la ligne de départ avec un aide inconnu semblant perplexe.



Photos: JEAN BOOS -

VOL LIBRE

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Jan SOMERS

Jan was born in 1944 and married to Marg; they have no children (just a huntingdog). Jan started aeromodeling when he was 13 years old and only quit it temporarily to work on his education. He completed a 10-year study to be auditor (= chartered accountant "Wirtschaftsprüfer" expert comptable) and also worked as such. Now he is Director Finance and Administration of one of the big Dutch Insurance companies.

Jan's best results in international contest are: -Midsummernight Cup 1984 -3rd. -Izzet KURTALIC Memorial Livno 1984 1st. -Eifelpokal 1984 3rd. -Journées Inter. du Poitou 1985 1st. -Journées Inter. Poitou 1986 3rd. Jan was a member of the Dutch team at the ECH. 1984, he won the Dutch team trials for the ECH. 1986 but did not travel to Pitesti. He also won the Dutch team trials for the WCh. 1987 where he will take part with his 3 well-know models: GUURTJE, HIHI, and STILL-THERE. A full description of the models was published in VOL LIBRE november 1984 and in Free Flight october 1984. The National Free Flight Society of U.S.A presented his model HIHI with the "Model of the Year Award" 1985.

spanw. 1971 mm.

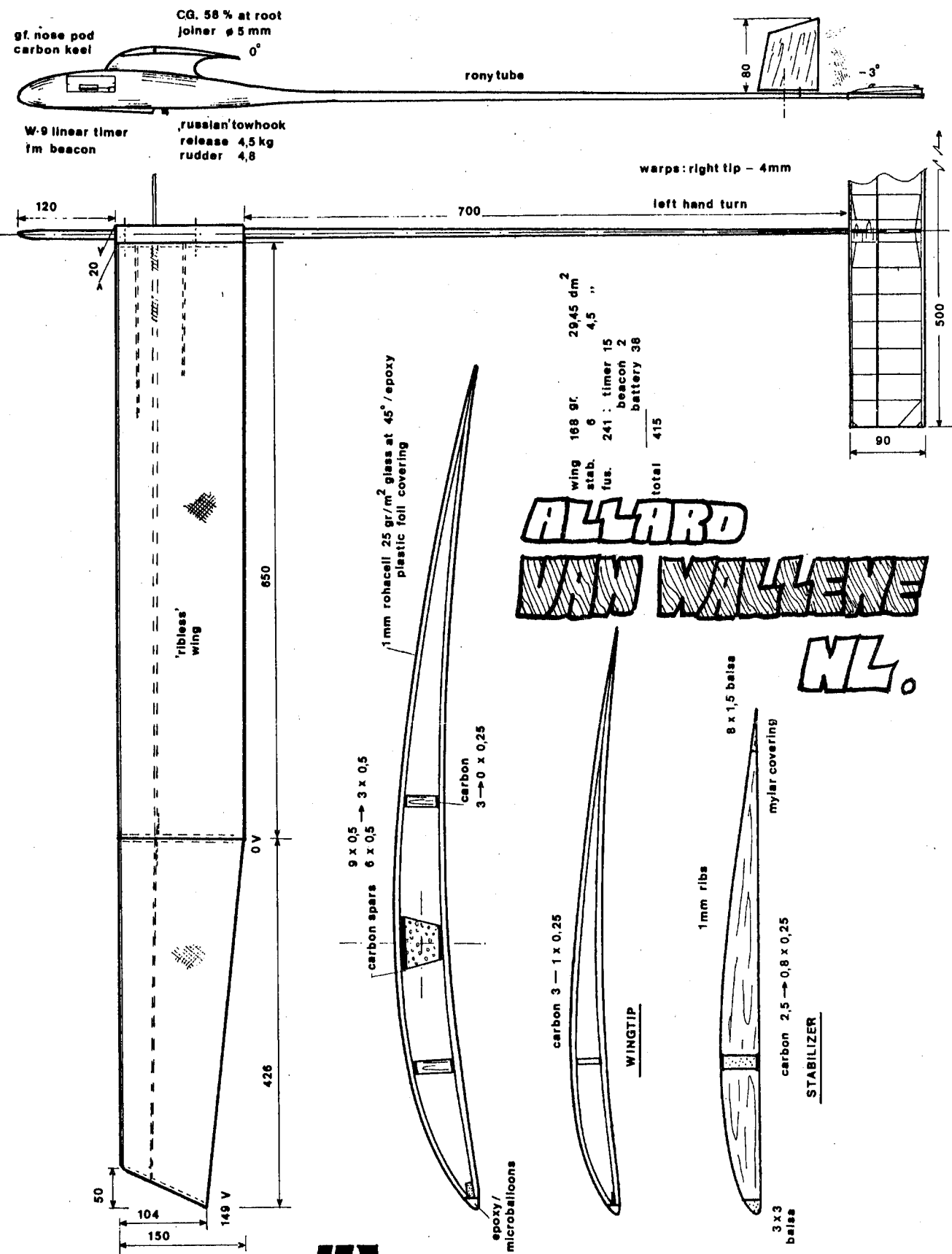
Jan Somers / Cenny Breeman

GUURTJE

turb. draad 0.05 mm
plus 5 invigorators

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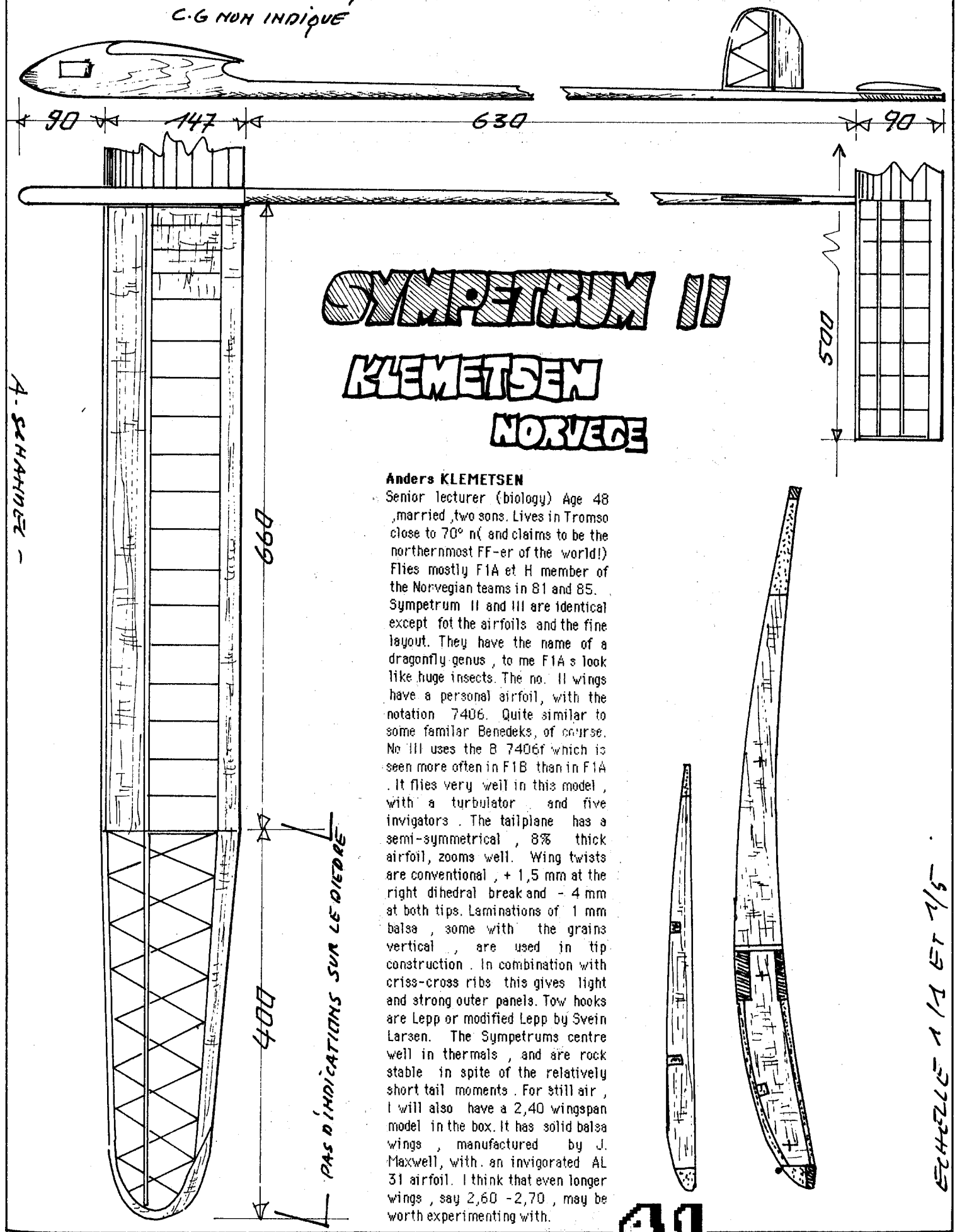


ALLARD
VAN WALLEVELD
NL.

AI
BRID

40

AI



SYMPETRUM II
KLEMETSEN
NORVEGE

Anders KLEMETSEN
Senior lecturer (biology) Age 48
married two sons. Lives in Tromso close to 70° n (and claims to be the northernmost FF-er of the world!)
Flies mostly F1A et H member of the Norwegian teams in 81 and 85.
Sympetrum II and III are identical except for the airfoils and the fine layout. They have the name of a dragonfly genus, to me F1A's look like huge insects. The no. II wings have a personal airfoil, with the notation 7406. Quite similar to some familiar Benedeks, of course. No III uses the B 7406f which is seen more often in F1B than in F1A. It flies very well in this model, with a turbulator and five invigators. The tailplane has a semi-symmetrical, 8% thick airfoil, zooms well. Wing twists are conventional, + 1,5 mm at the right dihedral break and - 4 mm at both tips. Laminations of 1 mm balsa, some with the grains vertical, are used in tip construction. In combination with criss-cross ribs this gives light and strong outer panels. Tow hooks are Lepp or modified Lepp by Svein Larsen. The Sympetrum's centre well in thermals, and are rock stable in spite of the relatively short tail moments. For still air, I will also have a 2,40 wingspan model in the box. It has solid balsa wings, manufactured by J. Maxwell, with an invigorated AL 31 airfoil. I think that even longer wings, say 2,60 - 2,70, may be worth experimenting with.

41

SCHEZLE 1/11 ET 1/5

HERBERT
GEMMAT
RFA

HS
87

FREIFLUG FREE FLIGHT
Vollibre

46

4x1 KOHLE - CARBONE

0,70

5x5B

1 B

2,5x10 B

1,4x0,8 KOHLE CARBONE

6x4 B

50%

120

170

680

90

500

580

475

140

115

PAS D'INDICATIONS SUR LE FUSELAGE -
OHNE ANGABEN ÜBER RUMPF.

130 150 650 90

500

ZAGO 15
U. SCHMELTER
R.F.A.

675

350

FLA

47

VIRAGE A' GAUCHE - LINKS KURVE.
DIENRE GAUCHE + 1mm - L. OHR
DIENRE DROIT - 1mm R. OHR

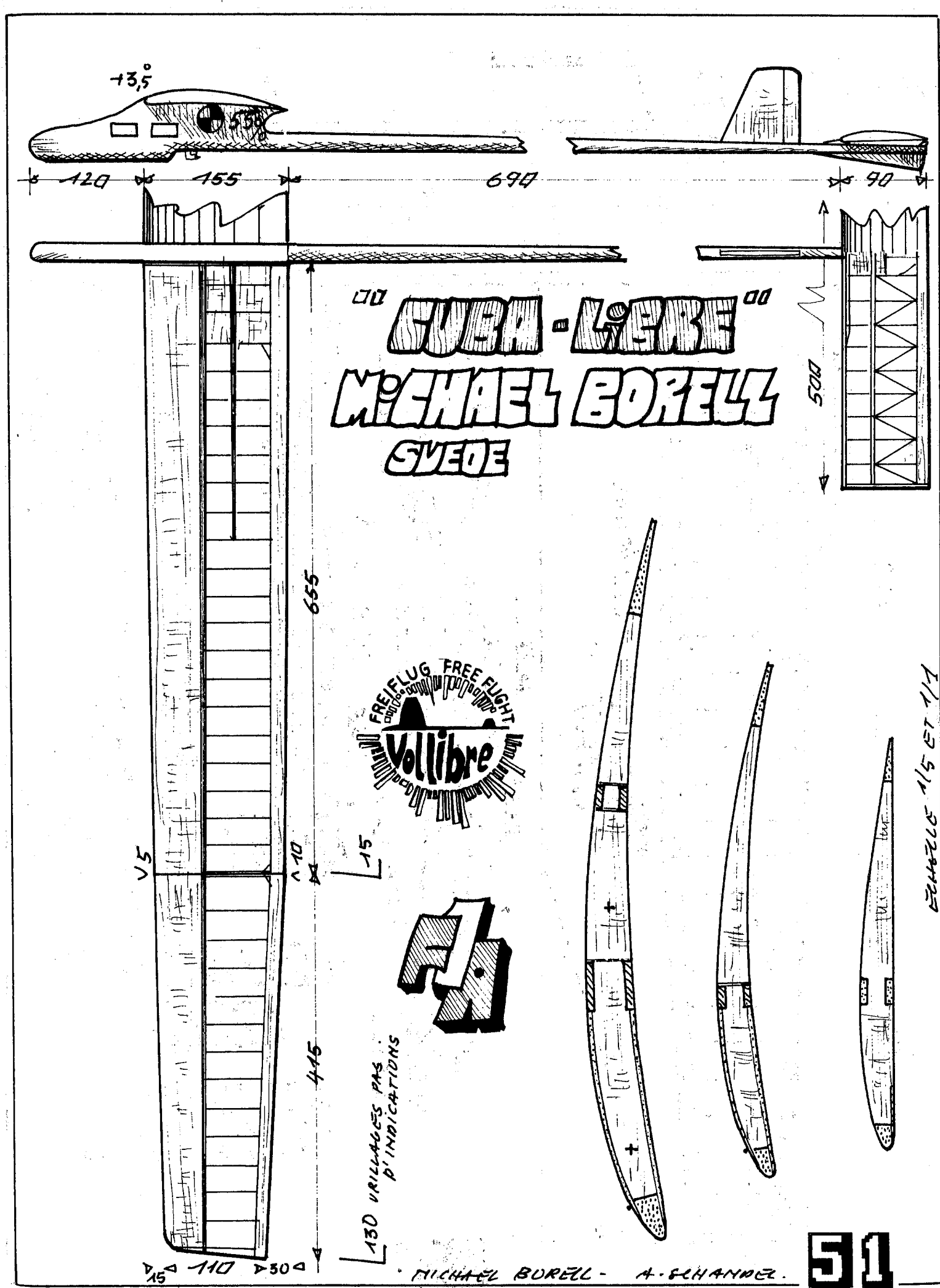
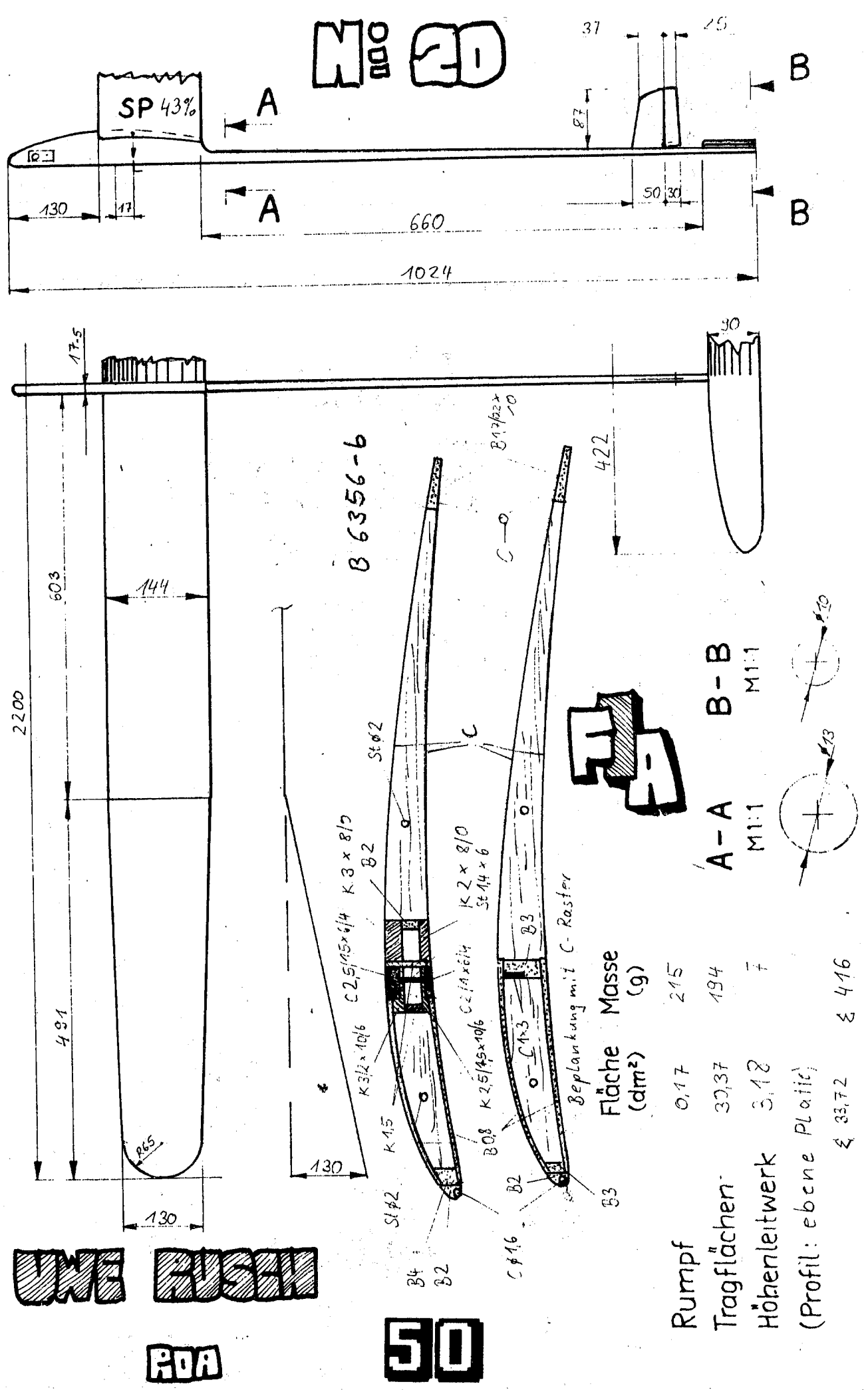
FREI FLUG FREE FLIGHT
Vollibre

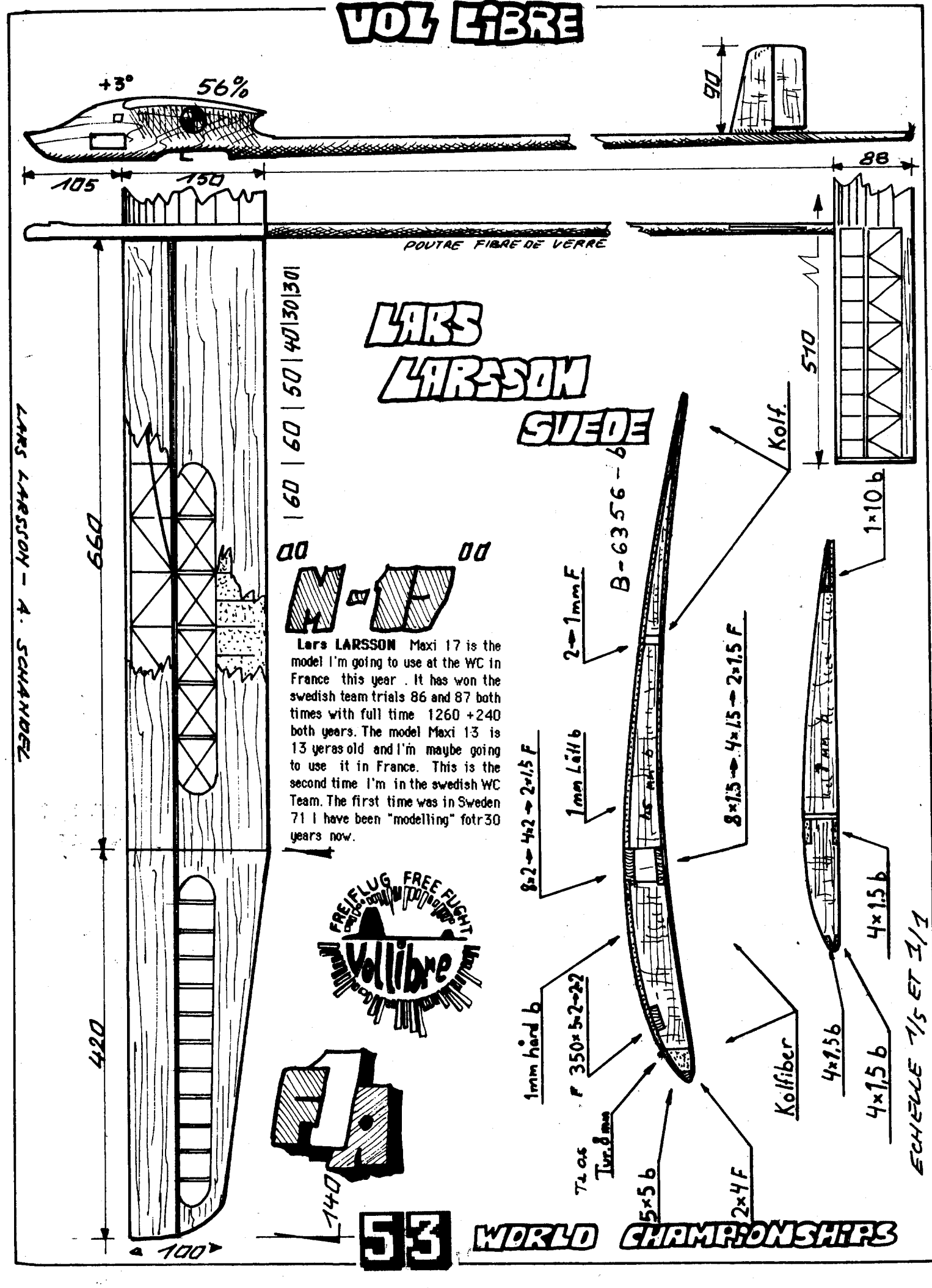
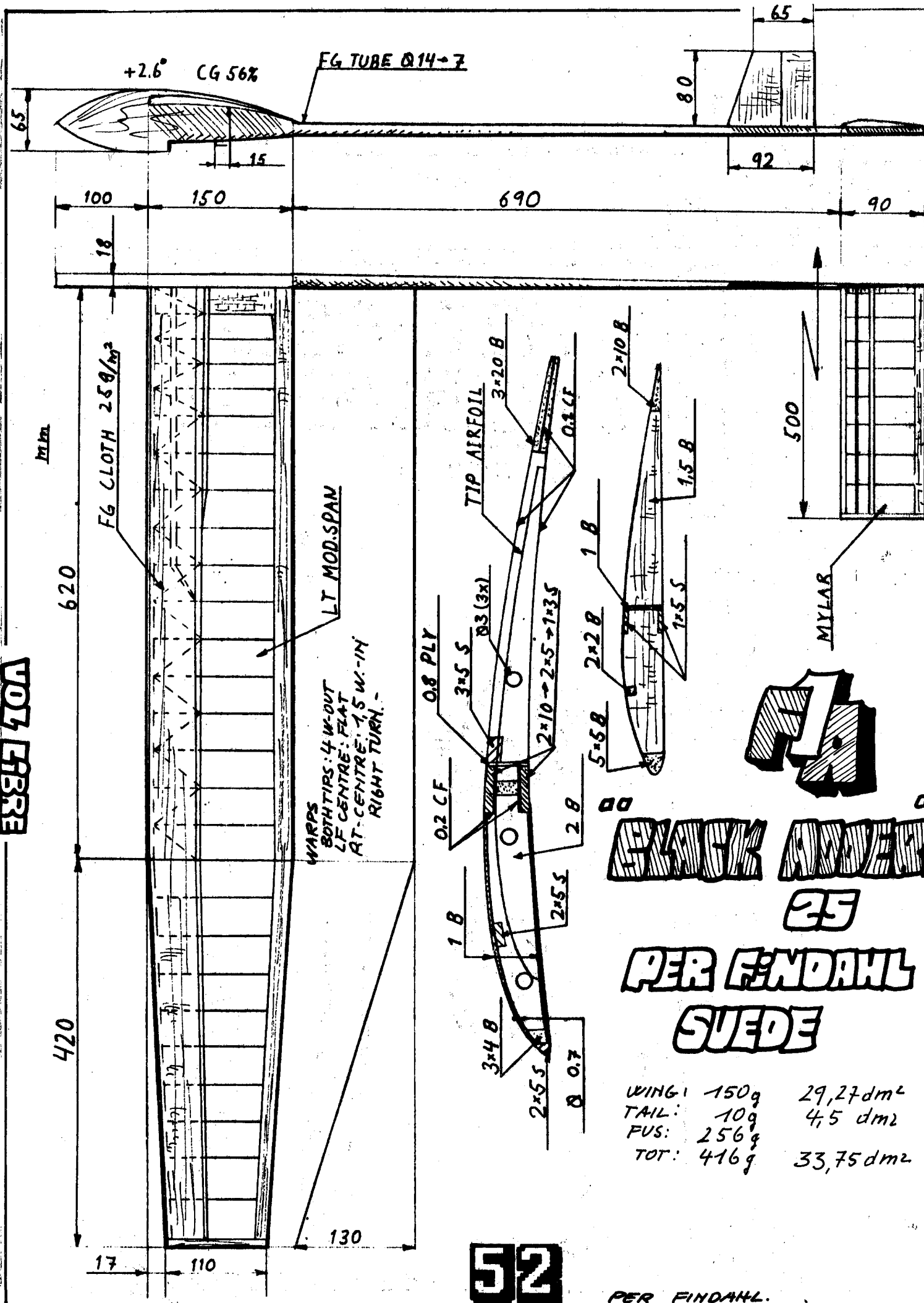
Ki 2x7 → 2x4 → 1x3
Kohlefaser Ki 4x1.5

Ki 5x2

Ba 3x16 Ki 2x2

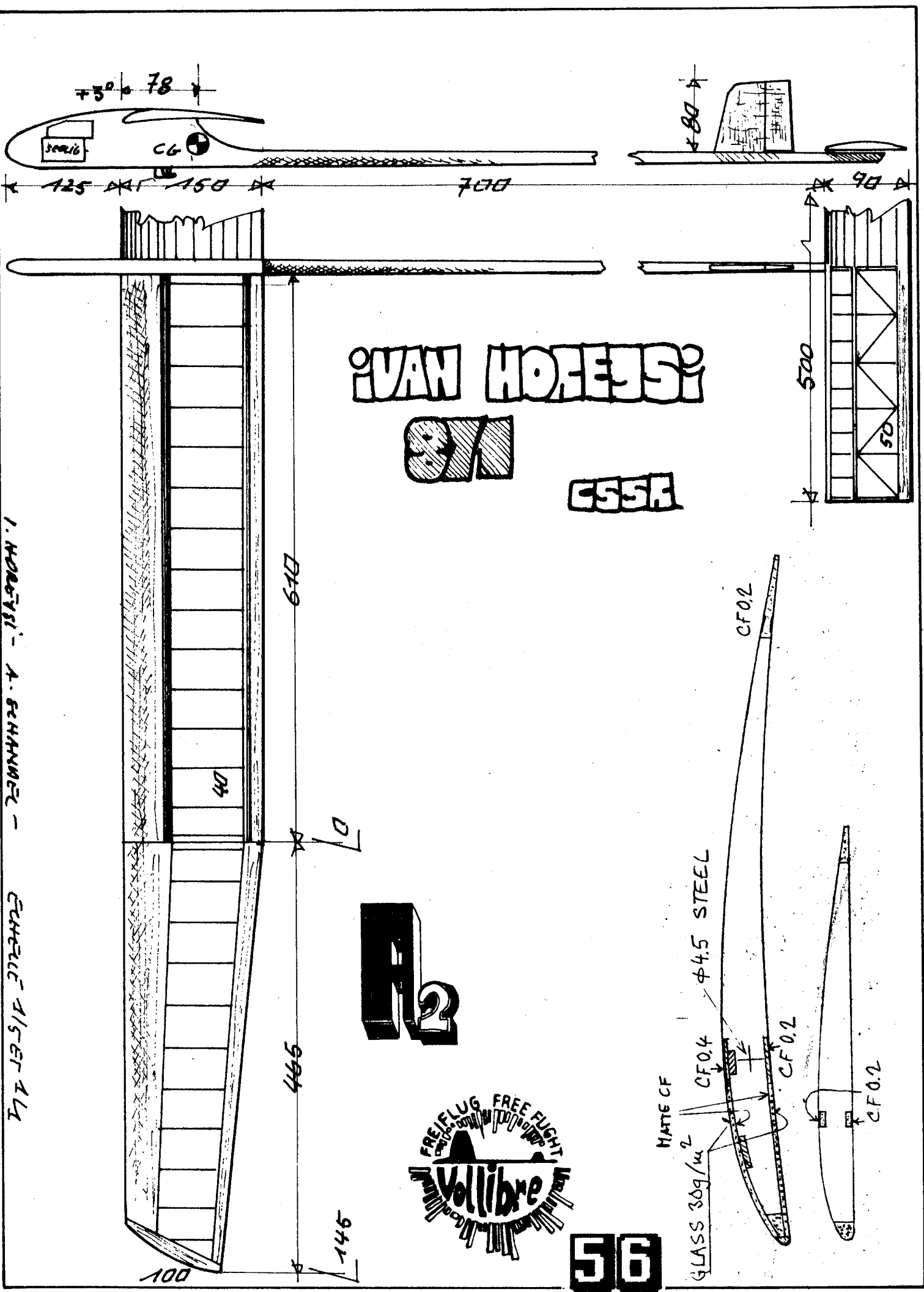
Sp 0.8mm
30 1mm X 2 Ba 2x5 → 1.3 Ba 1mm Ba 10x2



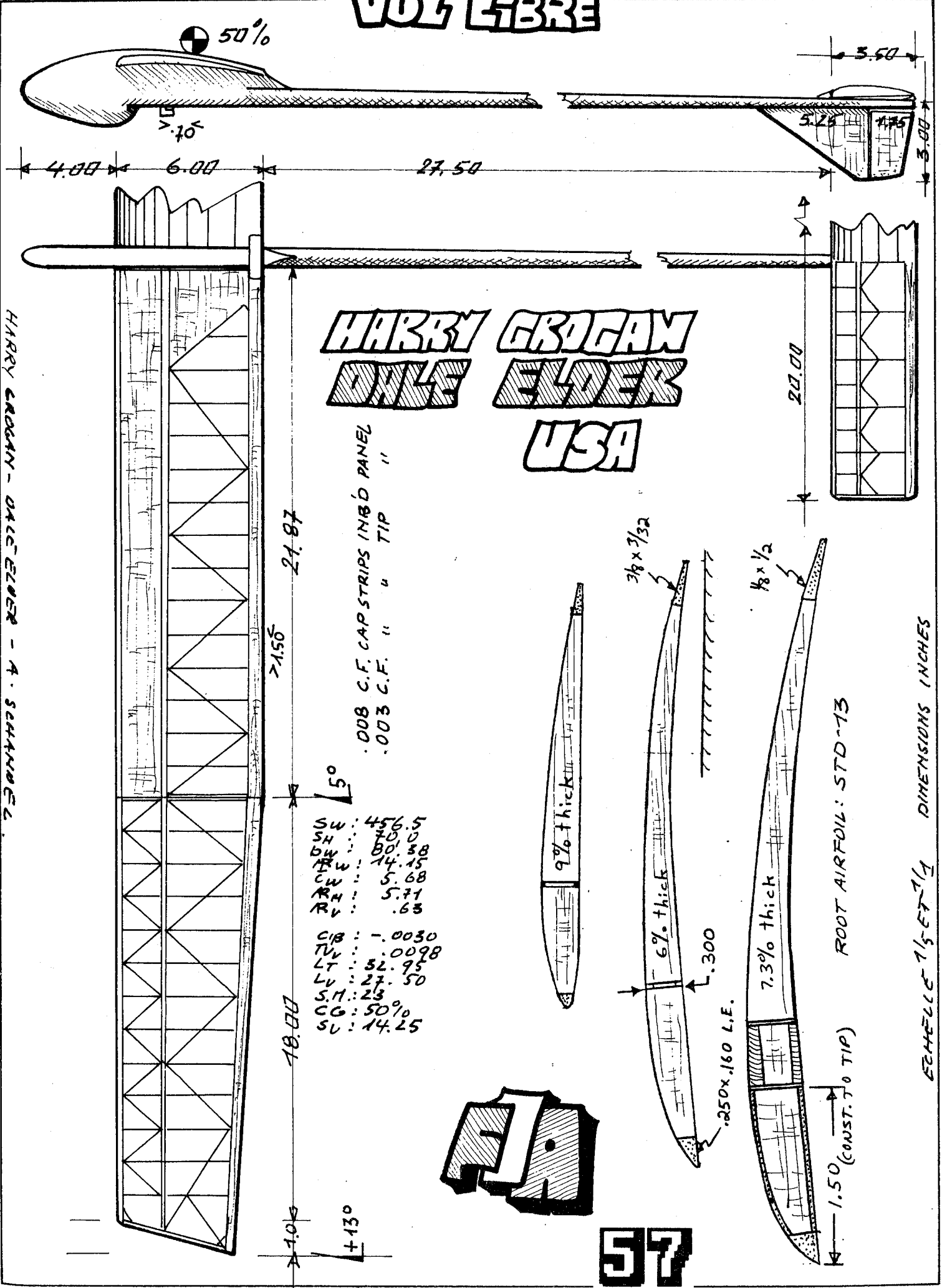


I. HOFENSI - A. SCHANDEL -

SCHULE 1/5 ET 1/1



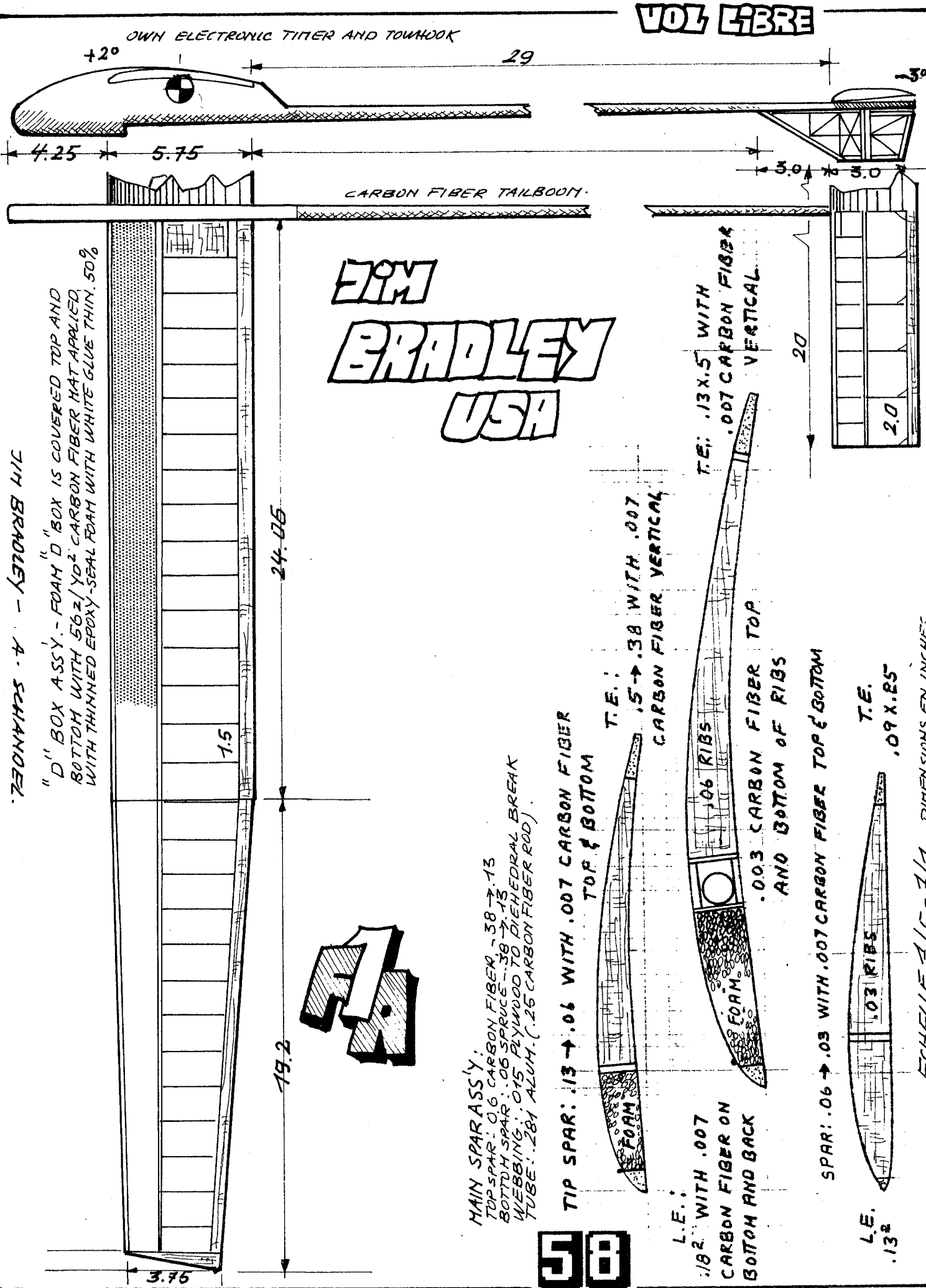
VOL LIBRE



SCHULE 1/5 ET 1/1 DIMENSIONS INCHES

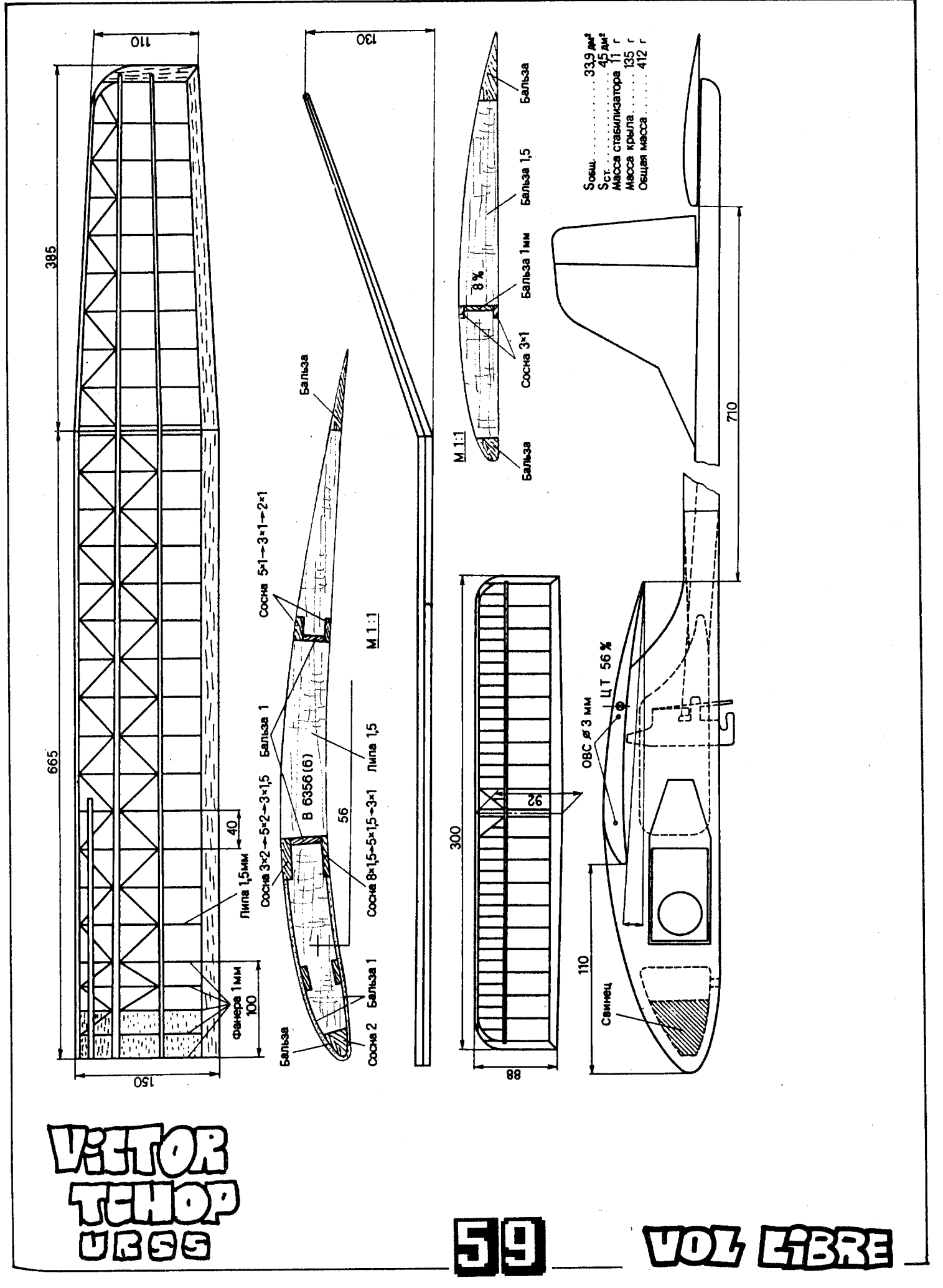
7111 BRADLEY - A. SCHANDER.

"D" BOX ASSY. - FOAM "D" BOX IS COVERED TOP AND BOTTOM WITH 562/YD² CARBON FIBER MAT APPLIED, WITH THINNED EPOXY-SEAL FOAM WITH WHITE GLUE THIN. 50%



VOL LIBRE

ECHELLE 1/5 - 1/1. DIMENSIONS EN INCHES



VICTOR
TEHOP
URSS

59

VOL LIBRE

VOL LIBRE

JAVIER H. ABAD, 35 years old married, 4 years old daughter, approach controller at Tenerife Airport since 1974. Aeromodelling since 1965, flying F1A and F1C as a junior and F1A since 1969. Spanish junior champ in 1972 and several times senior champ. 1980 at Marigny 6° in fly-off- 1982 team Manager at the Euro Champs.- 84 runner-up spanish champs.- 85 spanish champ.-85 World Champs, 34° in Fly-off;-86 runner-up at the spanish champs.Introduced circle-tow in Sapin since 1974, after 6 month stay in U.K. Present time member of the CIAM F/F subcommittee.

Javier H.Abad -C/25 de Julio,12;-38004 SANTA CRUZ DE TENERIFE SPAIN.

Rod LEWIS

Rod is 44, a Manifesting Supervisor with N.Z. Couriers and has been aeromodelling since boyhood and presently flies most F.F. classes with F1A as favorite. He is married to Carole, who regularly supports him on the flying field, and they have two teenage children. After living for ten years in Papua New Guinea, the family circumnavigated on a 40' sailing ketch designed and built by Rod and Carole. He is the present N.Z. record holder in F1A, the N.Z. Champion and Champ oof Champs. Also collected the 1984 Australian F.F. Champ. title when across ther for the last Trans Tasman Trophy event. He is currently editor oof F.FoNZ New Z and a member of the committee of the Roskill Modellers club where he is very keen to encourage more young people into the sport. Other interest at the moment are psychokinesis, morphogenesis cats he is entangled in renovating an old villa. Also fascinated by recent advances in Man -powered flight and would love ti build a machine.

Rod's gliders are self-designed but based on Steffen Jensen's "Frojax" and a airfoil influenced by Matt Gewain's "Pacer" series.

Heikki TAHKAPAA

39, I am married, 2 children, living in Turku, been a modeller for 27 years. I have won Finlands Champs 4 times Nordic Champ in 1973, third place in Taft WC team. I am going to take 4 glider to the W.C. in France and probably I will use there the one shown in

the enclosed drawing. I have built this model i, 12978 for the Taft WC and have used it in Taft Burgos and Livnos W.Ch. and placed 5, 16, and 10 in those WC.

The modell is typical allweather model and if does not have a very high performance. However it is easy to handel, driving circular towing and it's very reliable After this model I have built 5 F1A glider and this one is still one of my best.

Michael BORELL

Age 36-Profession Process Engineer;-family Wife + 1 child.

I have been building and flying free-flight models since 1963. Most of the time gliders but also some power model. Nowadays I concentrate on F1A. This will be the 4th W.Ch. forme? Best result 18 th in Burgos 1981. In 1971 i flew proxy for Australia (Allan Coppok) 25 th in WC 1969.

On of my models is called "Cuba Libre" It was designed in 1981. The design is influenced by Ivan HOREJSI "732" from 1975. The wing is built up as a D box. The wing profile is somewhat modified compared with the original. This design is supposed to have good prestanda but still able to fly in windy conditions. Cuba Libre has been built by 3 other club-members and has proved to be able for what it was meant for. Michael BORELL-Higgervägen 7;-S-696 03 AMMEBERG Sweden.

Per FINDHAL

18 years old. I'm studying to be an engineer. I'm not married and have no children. I started modelflying when I was 9 years old. Since then I have participated in many competitions in Sweden, 4 NM, 2 EM and 1 WC (84,85,86) Last EM we came on the 3rd place in F1B competition. My main class is F1A. Nr.25 is probably the best model I ever have built. I + helped me to get into the WCh. team this year.

Per FINDHAL Fagerstavägen 27;-778 00 Norberg Sweden.

Gary MADELIN

35 years old, married with one young son. I am a surveyor and work for a London based building Contractor. I have been interest in aeromodelling since an early age and have flown FF contest models since 1970. I have represented Great Britain on two Euro. ch. teams -in W. Germany 1978 where I placed 3rd and Romania in 1986 where I placed 7th. I was also reserve team member for the 1973 and 1975 W.Ch. and was British F1A Champ. in 1977 and 1978.

Bill COLLEDGE

35 yeras old, married with one daughter. Engineer with Jaquer Cars. I have been building models since I was about 12, mostly control line when I was younger, followed by a three year spell of flying radio, and finally progressing to free flight in 1981. I have concentrated on flying F.A.I. glider but also enjoy flying Coupe d'Hiver. I have been moderately successful flying in British contests but the W.C. will be my first flying trip abroad. Oter interests include food, music, camping and cycling.

YASUO YOSHIOKA 52 married with a daughter, has been only 12 yeras in F.F. He is a professor in Musashi Institute oof Technology, Tohyo and he teaches the strength of materials but his models were sometimes broken by his over zooming. He also enjoys classic music, audio engineering and mountain climbing etc..His happy time is making a model with listening to Bach, but he is in difficulty that dust of balsa wood invade in his CD player? Asuka, the name of his glider, is an elegant expression of "flying bird" in Japanese and is also the name of his daughter.

LUCIEN BRAIRE

51 ans- chef de fabrication de matériel médical. Champion de France F1C en 1962-81-83-84-85. Aux CH d'Europe en 1978-82-84; aux CH. du Monde en 1963-65-69-81-85 et 87;

Didier BARBERIS

30 ans, Ingénieur de Recherches à l'ONERA. Champion de France en F1A en 1983. Membre de l'équipe de France 1984. Champion d'Europe en 1986 à Pitești, 3ème par équipe. S'intéresse à toute chose concernant l'aéronautique.

ANTOINE GALICHET

47 ans - marié deux enfants- au PAM depuis 1957. Sélectionné aux Ch. de France des 1958. Pratique toutes les catégories VOL LIBRE avec plus ou moins de bonheur: planeur, wake, moto, CH, jetex etc. Pratique également le Vol Circulaire et le RC (sélectionné une fois dans cette catégorie aux Ch. de France). Champion de France en formule libre en 1969, champion de France en F1A en 1973. Sélectionné aux CH. d'Europe en 1974- 27ème aux CH. du Monde de 1981- 3ème par équipe aux CH. d'Europe de 1986- 1er au concours inter. du Poitou 1981.

JEAN GODINHO

40 ans artisan, pratique l'aéromodélisme depuis l'âge de 11 ans, où il a débuté par le vol circulaire. Passionné d'aviation il aime aussi la photographie et le patinage -3ème par équipe aux Ch. d'Europe 1986.

LOUIS DUPUIS

55 ans- Professeur de mathématique et sciences physiques à Châtelleraut. A commencé le modèle réduit à 12 ans. Début de la compétition à 30 ans. Club actuel: Vol Libre Moncontourais. Concours inter. CH 1er à Hailon 75 et Bern 83 et 85. Wake: 2ème au premier Poitou plusieurs fois 2ème à Marigny. Champion de France: 68 en Monotype, en 76 et 79. Wake: 82 et 86 en CH. 7 fois en équipe de France wake. 11ème CH. du monde à Göteborg 1971- Plovdiv en 1975, Burgos en 1981 (10ème et 1er par équipe) 87 Thoury. Ch. d'Europe 80 Mostar (4ème et 1er par équipe) 82 Zülrich- 84 Livno (8ème et 1er par équipe). Egalement passionné par tout ce qui concerne la montagne, se contente de la pratiquer en randonnée.

PHILIPPE LEPAGE

Commerçant à Paris. Pratique avec bonheur le F1B. A été 1er, 2ème et 3ème à Marigny. Premier aux Journées Internationales du Poitou en 1984-85-et 86. Championnats du monde 1985 Livno 9ème, championnats de France 1986 -3ème. Sélection Ch. du Monde 87-3ème.

J. CLAUDE CHENEAU

43 ans, professeur de lycée technique; Champion de France F1B en 1974 et en 1980. Champion de France CH en 1985. Champion d'Europe F1B par équipe en 1980 et 1984. 10ème aux CH. d'Europe 1986. Pratique également le tennis, la planche à voile, l'aviation.

DENIS FERRER

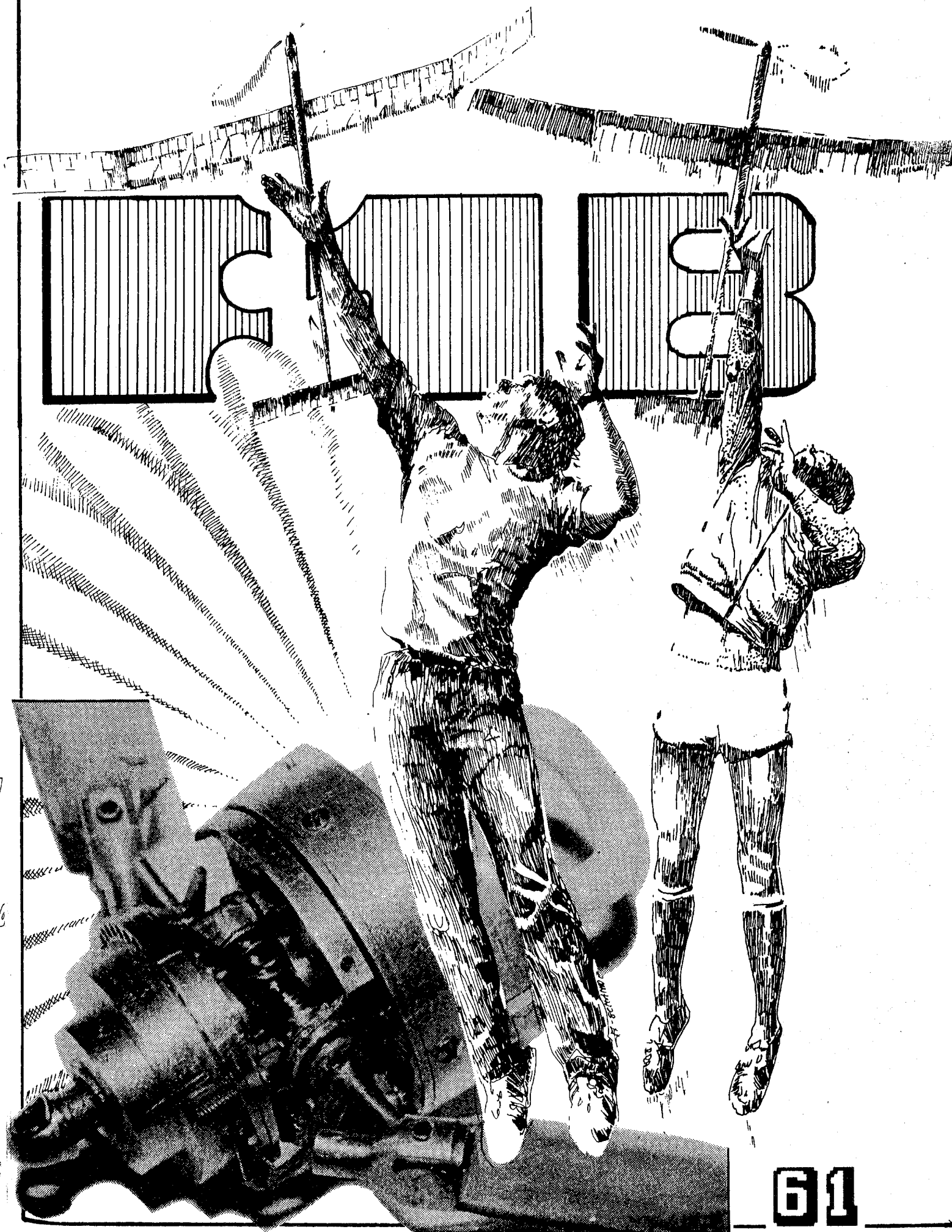
Employé à l'Aéropostale de Toulouse. Pratique en dehors de F1C le planeur fédéral et le A1 1er prix d'Aéromodélisme en Algérie 1961. A été en 1973-76-79-82-84-85-86 ou bien 2ème ou 3ème en F1C aux Ch. de France. 1er à Marigny en 1974 et 2ème en 1976. A Alicante et Lerida 2ème en 73-1er en 75 et 76- 2ème en 77 et 1er en 80. Au Poitou 2ème en 1982 et 3ème en 1984.

3ème par équipe aux Ch d'Europe en 1974. Championnats du Monde: 1979 Taft (USA) 7ème et 1er par équipe. 12 sélections pour les Ch du monde ou d'Europe. Europe 1974-76-78-80-82-84. Du Monde 1975-79-81-83-85-87.

ALAIN ROUX

-37 ans - employé de la SNCF, spécialiste du motomodel. Champion de France en 1977 et 1978. 5 fois en équipe de France. Aime le football et la ski.

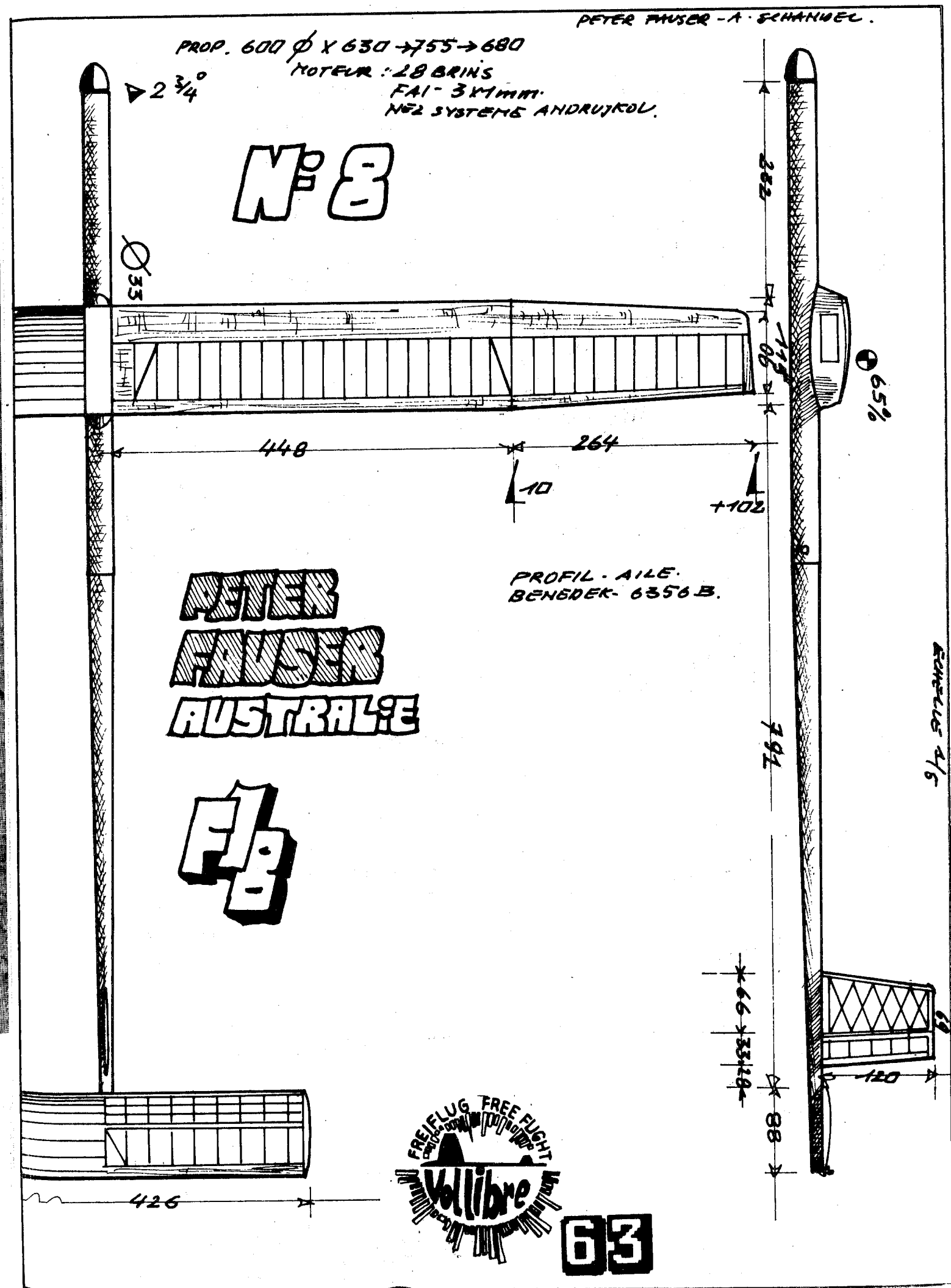
André SCHANDEL - 1987



Deux vedettes russes : Stefanchuk dans une attitude classique de l'effort au moment du lancer. Noter l'impulsion au sol, terre soulevée, et les regards admiratifs de deux concurrents danois Kristense, et Jorgensen; Alexandre Andrujov, observant avec une extrême attention les modèles évoluant au dessus de sa tête. Le modèle A 26 est utilisé par lui depuis plusieurs années.



Photos. JEAN. BOOS. -

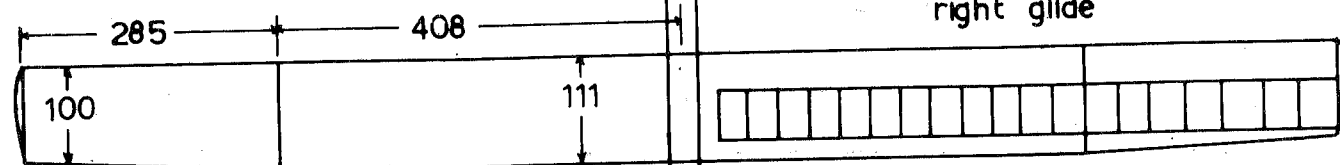


Washout: 2mm both tips
Flat centre section

2° RIGHT THRUST
1° DOWN THRUST

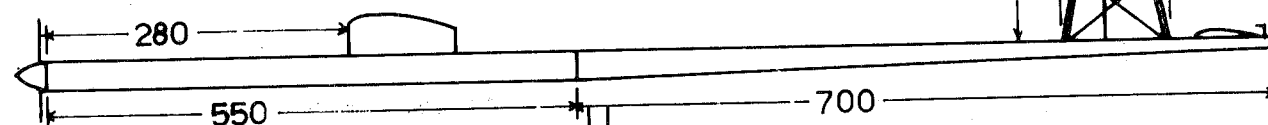
Schwartzbach blades
605mm dia.
30° pitch at 200mm rad.

28 strands 1/8" FAI or Champion
right climb
right glide



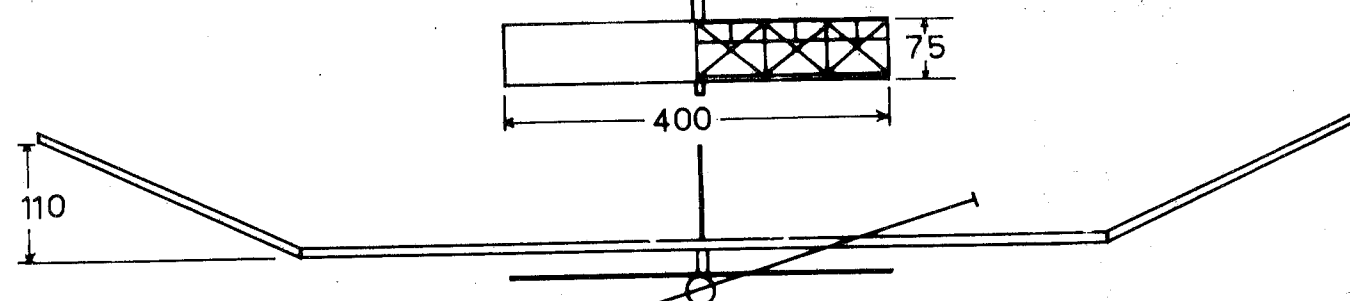
Montreal stop

Two piece
fuselage

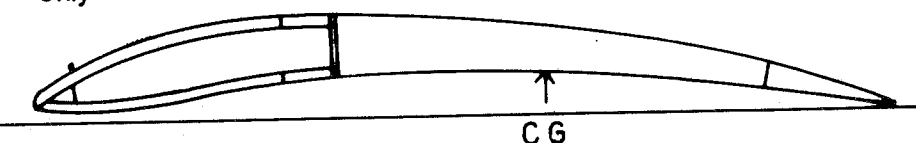


VIT 4sec -2mm
Auto rudder
all moving
4 sec -2mm
prop stop -0.5mm

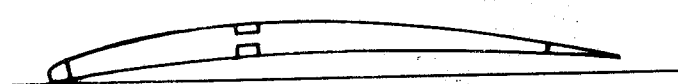
DACELO
P. Smith
Australia



Spruce spars
centre section
only



Datum parallel to
fuselage top



Full size wing & t.p. sections

All dimensions mm

Weights gms

wing	76
t.p.	8
fuse.	80
prop	44
total	208

Areas sq dm

wing	15.4
t.p.	3.0
total	18.4

64 VOL LIBRE

□□

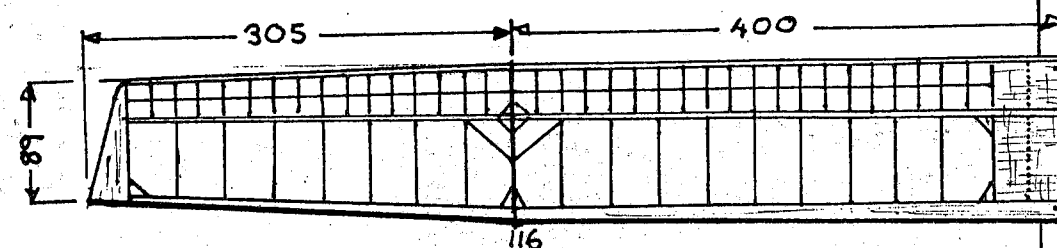
VOL LIBRE

5° L

3° D

ELACK
ODG

610 x 720



160

33

GARY
ODGERS
AUSTRALIE

26 str. FAI 1/8 - LR PATTERN
4mm WASHOUT EACH TIP
WING - 15.35 dm²
TAIL 3.42 dm²
TOTAL AREA 18.77 dm²

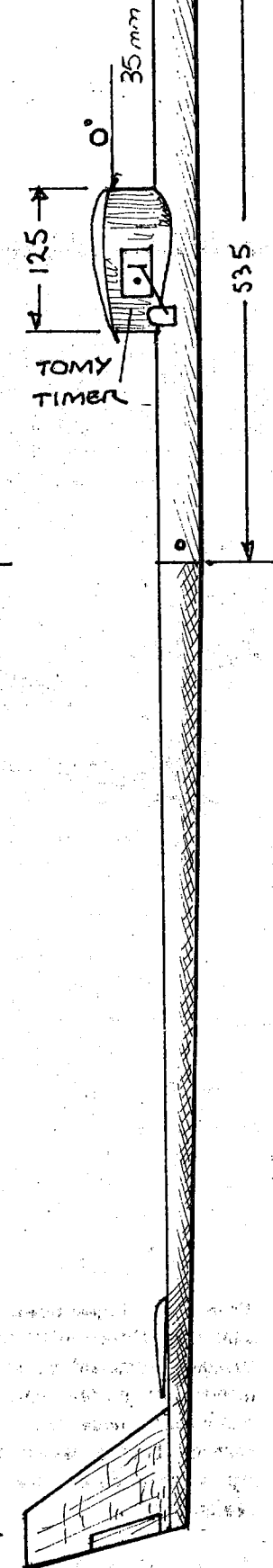
WEIGHTS

WING	56.0
TAIL	5.5
PROP	34.0
BOOM	25.0
MOTOR	56.0
TUBE	4.0
OTHERS	4.0
BALLAST	15.0
TOTAL	195.5

AB

GARY ODGERS.

65



TOMY
TIMER



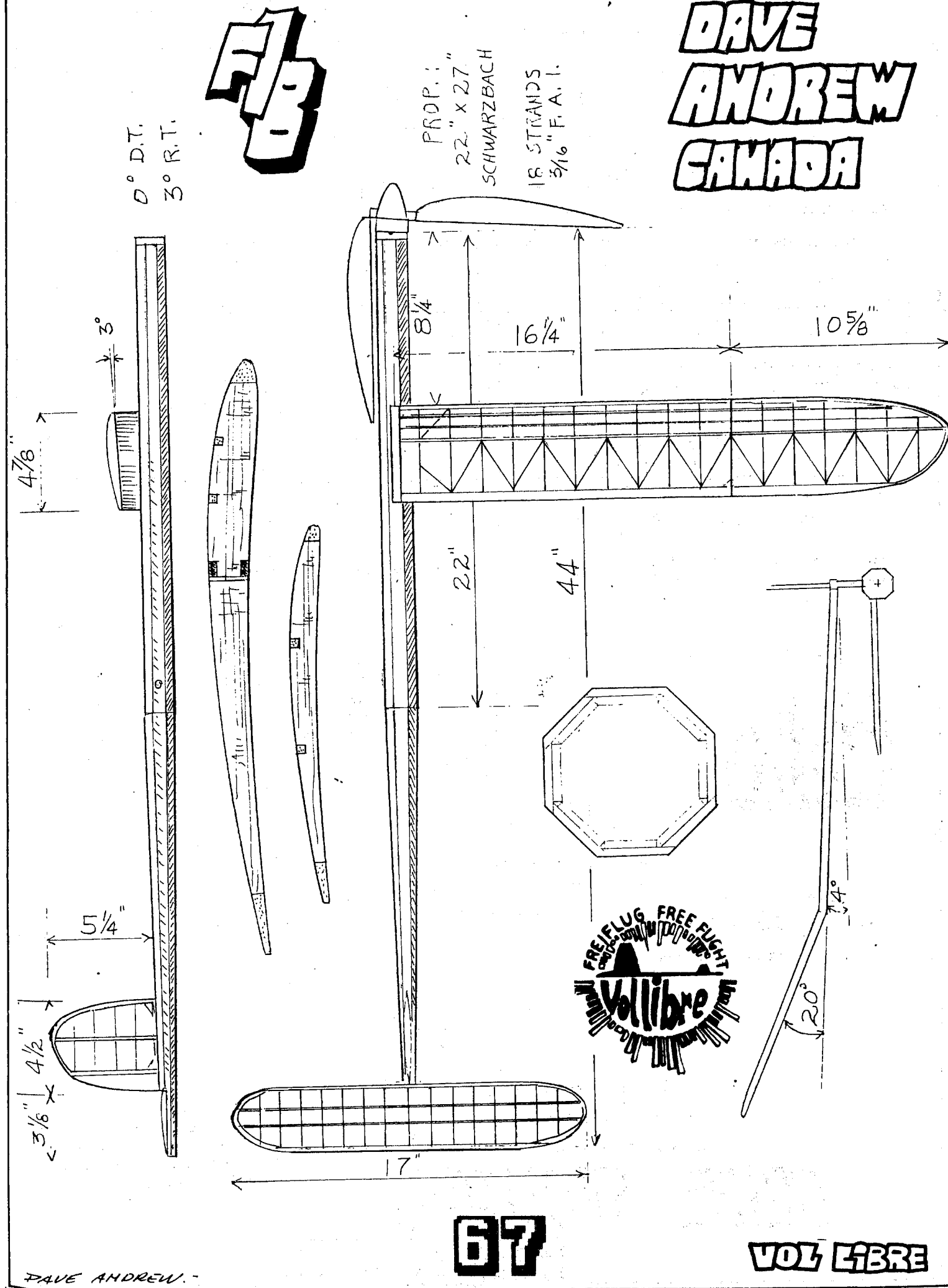
Francois Tapernoux (Suisse)
dans une attitude d'attente, avec un
visage, semblant venir d'un autre
monde, un modèle entièrement en
matériaux nouveaux, kevlar,
carbone, bras de levier important,
lignes très pures une très belle
réalisation.

Photo: TEAM BOOS.

66

Images
vol Libre

VOL LIBRE



1987.8	设计	吕济发	比例	M 1:10	F I B
Date	Designer	Lu Jifa	Scale		
Team	队 别	中华人民共和国航空模型队 Aeromodel Team of the Peoples Republic of China			

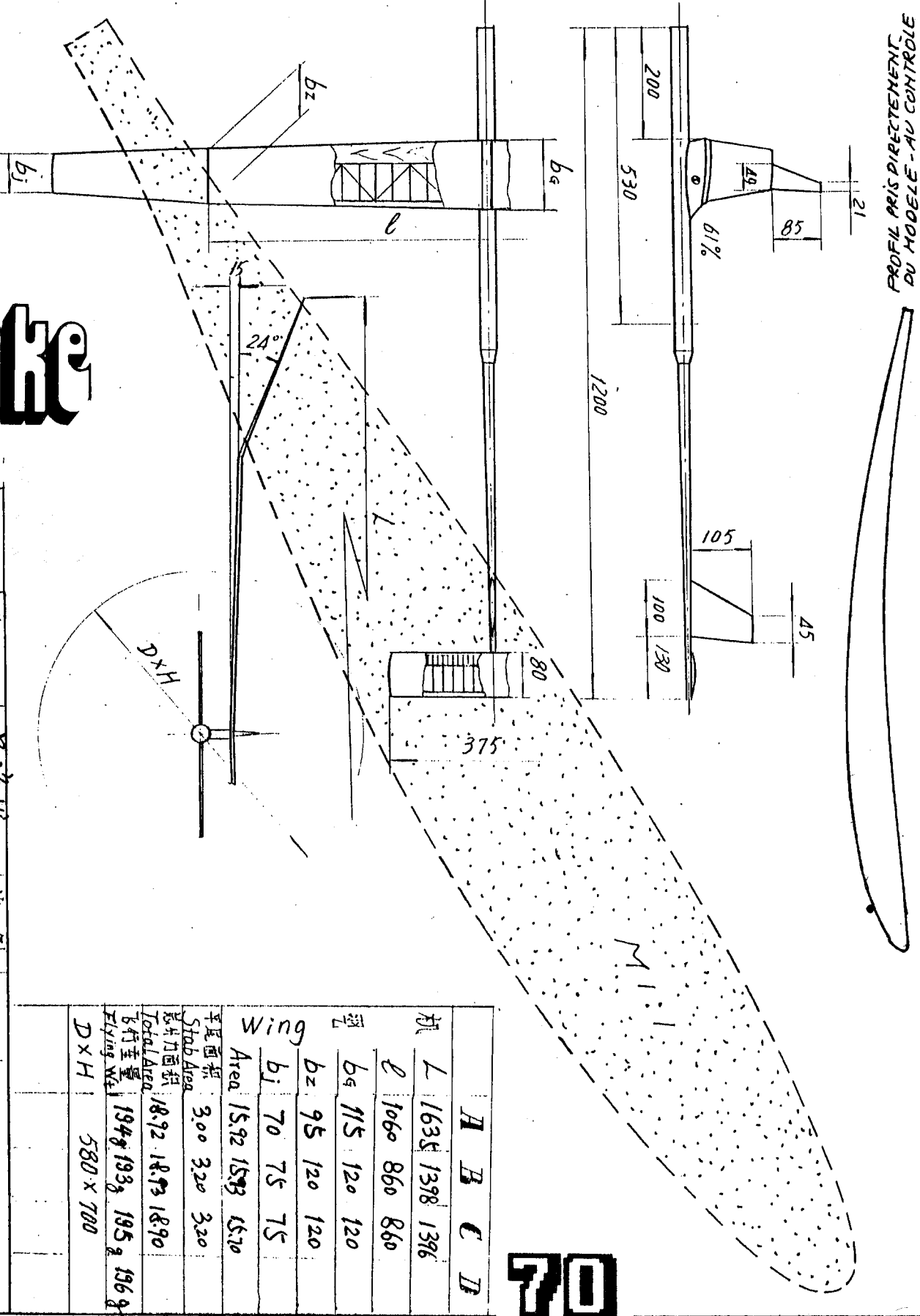
Wake

LI JIFA

VOL LIBRE

CHINE

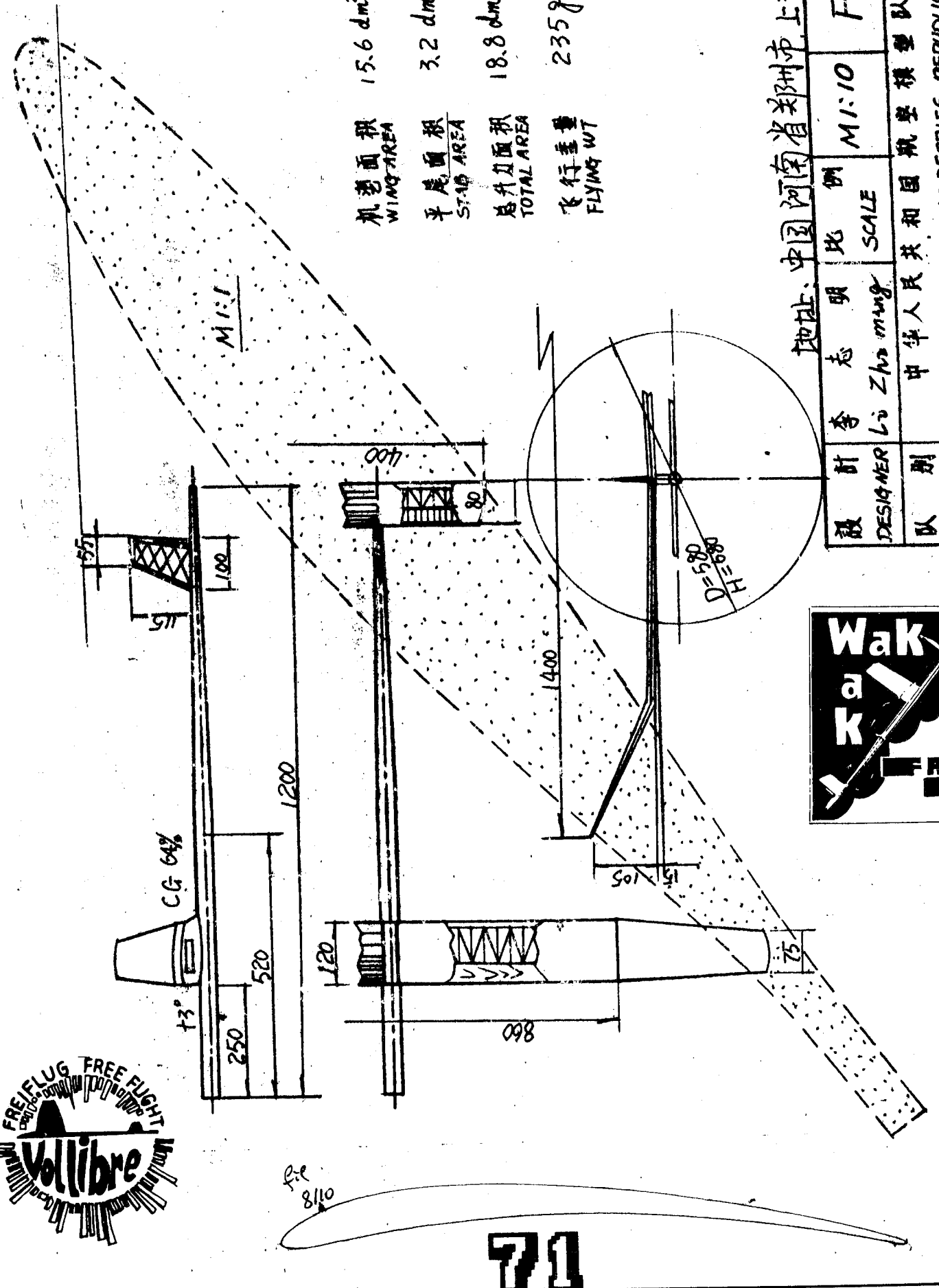
LI JIFA



70

LI ZHANG

CHINE



机翼面积 15.6 dm²
WING AREA
平尾面积 3.2 dm²
STAB AREA
总升力面积 18.8 dm²
TOTAL AREA
飞行重量 235 g
FLYING WT



71

设计	李志明	比例	M 1:10	F I B
DESIGNER	Li Zhiming	SCALE		
队 别	中华人民共和国航空模型队 AEROMODEL TEAM OF THE PEOPLES REPUBLIC OF CHINA			
TEAM				

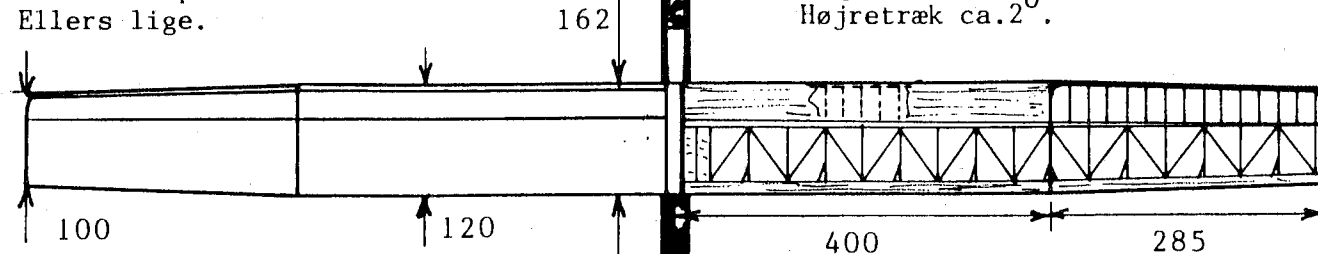
地址: 中国河南省郑州市上街区航校



VOL LIBRE

Venstre tip 3 mm washout.
Ellers lige.

HELICE PERSONNELLE
Propel 600x700 selvkonstr.
Højretræk ca. 2°.



V-form: øresamling 25, tip 120.

Vægt:

forkrop	48,5	g	PORTE ECHEVEAU
bagkrop	14,7	g	POUTRE
timer	19,0	g	MINUTERIE
vinger	47,5	g	AILE
haleplan	3,9	g	STABICO 808
propel	45,4	g	HELICE
ballast	12,0	g	LEST
i alt	191,0	g	

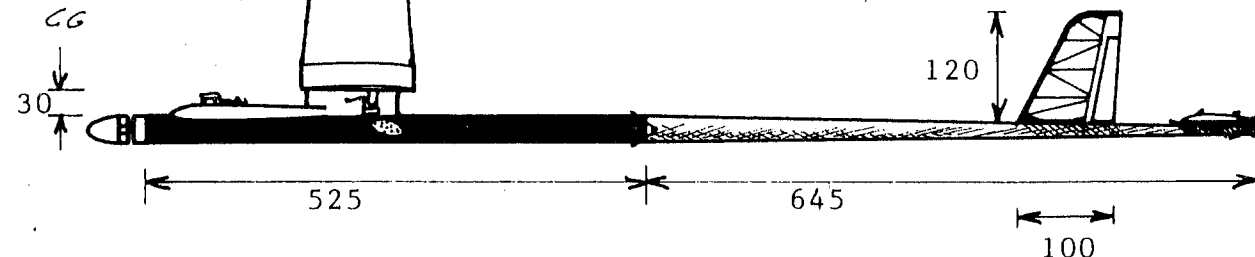
J.B. KRISTENSEN

DE

Sideror: svagt venstre 3 sek
neutral i resten af stig
svagt højre i glid.

Haleplan : ca 0° i 4 sek.
-2° derefter.
après

AILE
Vinge: +1°
TP ca 67 %.



Forkrop 30 mm diameter kulfiberrør. Bagkrop 0.8 mm balsa/glasfiber.
PORTE ECHEVEAU FIBRE DE CARBONE POUTRE Balsa + TISSU F.D.V.

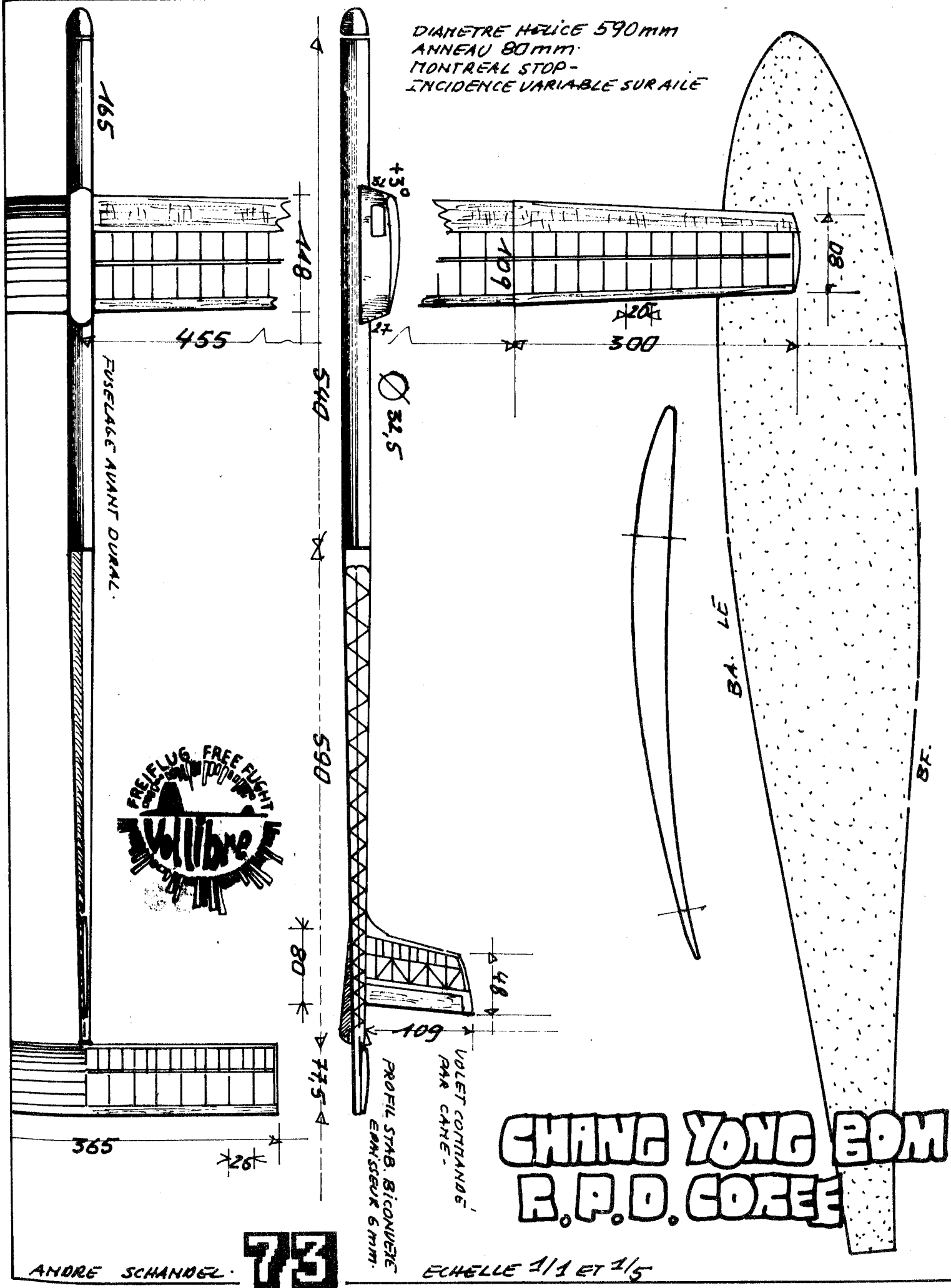
0.8 let balsa
2x8 -> 2x5 -> 2x3 fyr
1 1/2 x 5 lind -> 1 1/2 x 3 balsa

Vingeprofil : JBK 7/9-85-101
AILE

Haleplansprofil : Gö 795
STAB

72

JBK apr/86



VOL LIBRE

IVAN TAYLOR

"EUROSTYLE" is the desing I flew at Livno in 1985 and is a development of the eslier French influenced wakefield. The propeller remain the Korean, I have get to find a better one! The solid wing is very stable and this lack of movement in hot or wet conditions gives added confidence with trim settings, the polystyrene has similar properties.

I am 40 yeras old, married with a 4 1/2 yeras old daughter. I have been building aeroplanes fer 30 yeras. Painting is my other hobby. This will be my third W.C. (1983/85/81) and it is 10 years since my first international. -The Pierre Trébod where I finished 3 rd in F1B.

Peter SMITH

40, married to Carole, two children, Jodie and Kerry. Started modelling in the mid 60s in Western Australia initially concentrating on control lin being twice National Champion in aerobatics. Dabbled in free flight which became the main interest after moving to Canberra (ie from the west coast to the east coast of Australia) in 1970. Took up F1B almost by accident when two F1B fuselages wrerbuilt for existing F1H wings and tailplanes to give something to fly on an otherwise free day during the 1971/72 Australian Nats. Managed second place with these model s which were also used to top the 1976 TransTasman contest against N.Z. The same basic design was used to top the 1980 Trans Tasman and the 1985/86 Australian Nats. The present design continues this theme but includes VIT and a three position all moving rudder to better match the torque curve of the originally used Pirelli. Also fly radio controlled (instructor in local club) and occasionally contro line models.

Peter SMITH
3 Brewster Place DUFFY ACT
2611 Australia.

ITZHAK BEN ITZHAK

The model "ALBATROSS I" was designed and constructed in 1980. It was one of my models in all international events since 1981. With time the model was improved and now I'm fluing the third version, but don't get it wrong I haven't built three models. I just employ "TRANSPLANTATION TECHNIQUE" (the original nose block is still part oof th model)

Some boering biography:
My first name is Itzhak but everyl knows me by my nick name Itzik. My last name is Ben-ITZHAK (and I have no middle name). I'm 35 yeras old and I'm building models since 1963. Best results: 1 st W.C. Taft CA, USA 1979;- 7 th W.C. Burgos Spain 1981;- 6 th E.C. Zümpich W.Germany 1982 and few wins in Israel.

Ole TORGENSEN

Age 53;- married to Marit and have two daughters (both have left the house) ;- Mechanical engineer working in the automotive part industry. Was building models in my younger yeras ,won my first norwegian champs in 1952 (A long time ago !!!!!)Stardet aeromodelling again in 1969 flying F1B and F1A. Won F1B Nordic Champ's in 1976. Several Norwegian champ's in F1A and F1B I am doing some coaching in track and field athletics.

Ossi KILPELAINEN

Age 43 ,bachelor. Product development engineer at the Ahlstrom Savonlinna Engineering Works. Made models from the age of 6 , first contests in CL the n in all FF categories, mostly F1B. 7 times Finnish CH. twice CH. of the nordic Countries (FIN ,DEN,NOR,SWE.), 7 th at Goulburn WCh. ,5 th at Pitesti ECh. Some 2 nd and 3th placings in the Finish and Nordic CH.s in F1A and F1C. -25 years chairman of his club Salko and 10 years the FF committee of the Aviation Association of Finland. FF Editor of "Lennoikki" the finnish model aviation magazin.

DAG EDUARD LARSEN

All my 4 models at the W.C was standard swedish "TILKA" with no auto functions , just a Graupner timer . I have been flying F F. since 74/75, but building models since 65/66. I have always been flying F1A, but start with F1B at autumn 85. I am beginner in tjis game.

Born 3 okt. 1957 ;- married with Liu KARI and no children. I am educated as a master oainter , but bow I am working as manager for my familys coulor shop.

I am born and are living in Tynset , a small town with 25 000 people , placed 300 km north of Oslo. Tynset are one of north europa's coldest place , and the recoerd are just below - 50° c. In Norway wa are flying all our F.F. competitions on frozen lakes during the winther. Our first competition last winther wase held in - 27° c. It's "fun" flying wakefield under these conditions (come and thry) . In default of big enough summer fields , we must fly during the winther. I also have some oteher hobbies bessides F.F. I am playing Football for Tynset in the 4 div League . I also have a privat pilot licence since 80 , glider licence since 74 (Flying in ST. Girons France at IACE Meeting 75) and hang glider licen,ce since 77. I have my own hang glider , and are a co-owner in a Piper Carokee for using my privat pilot licence.

Dag eduard LARSEN- Vinkelveien 3
;-N 2500 TYNST NORGE.

GARY ODGERS

29;-Single;-Glaze technician in Ceramics Industry , 7 years building and flying, 5 years in rubber (4 years in F1B) ;- 1984 A.F.F.S champs 2st;- 1984 Victorian State Champs 1 st;- also in 1985 and 1987;- 1985/6 Naztionals 3 rd;-1985 Trans-Tasman Trials 1 st;- 1986 A.F.F.S champs 1 st.

I fly rather simpel models using a L/R trim ste-up (I am left handed and find it easier to launch and fly left) . I am taking 4 wakes and 1 Coupe, 2 wakes BLACK DOG and SHADOXFAK are L/R ,and the other 2 MAD DOG and FOXY LADY use A/R for a L/L pattern . My props are stronly based on Bob Whites design and airfoils developed around the GARD 6509. MY N°1 model is BLACK DOG and it is the simplest of my models , being designed built and flown in 2 1/2 weeks after loosing a model at the Nat's only one month before going to New Zealand for the Trans Tasman Challenge cup . My other modelling interst are OPEN RUBBER ,F/F scale and I am becoming interested in Power flying.

Gary ODGERS-39 Station ST.
BELGRAVE VICTORIA - AUSTRALIA.

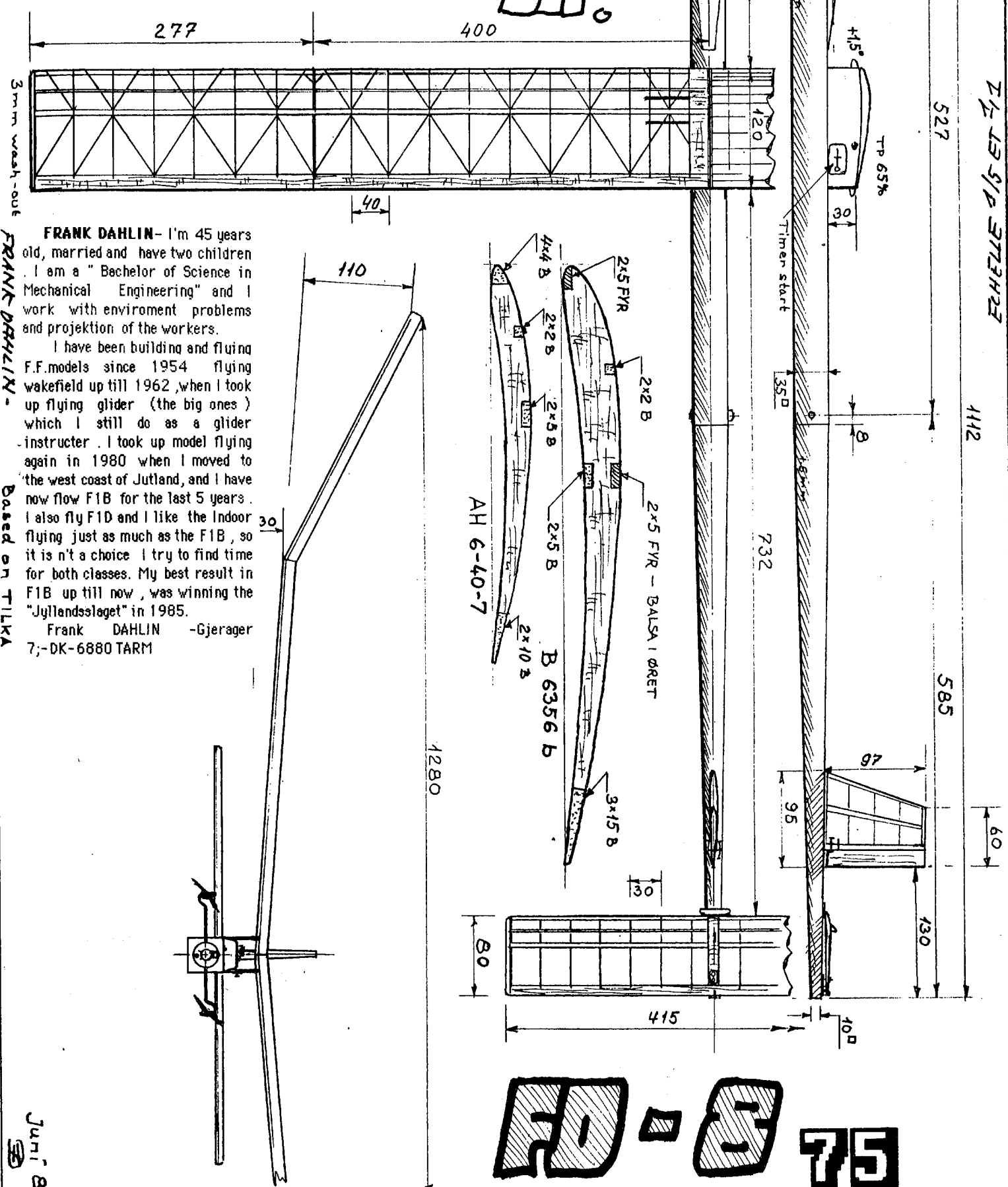
74

NOTES



VOL LIBRE

FRANK DAHLIN



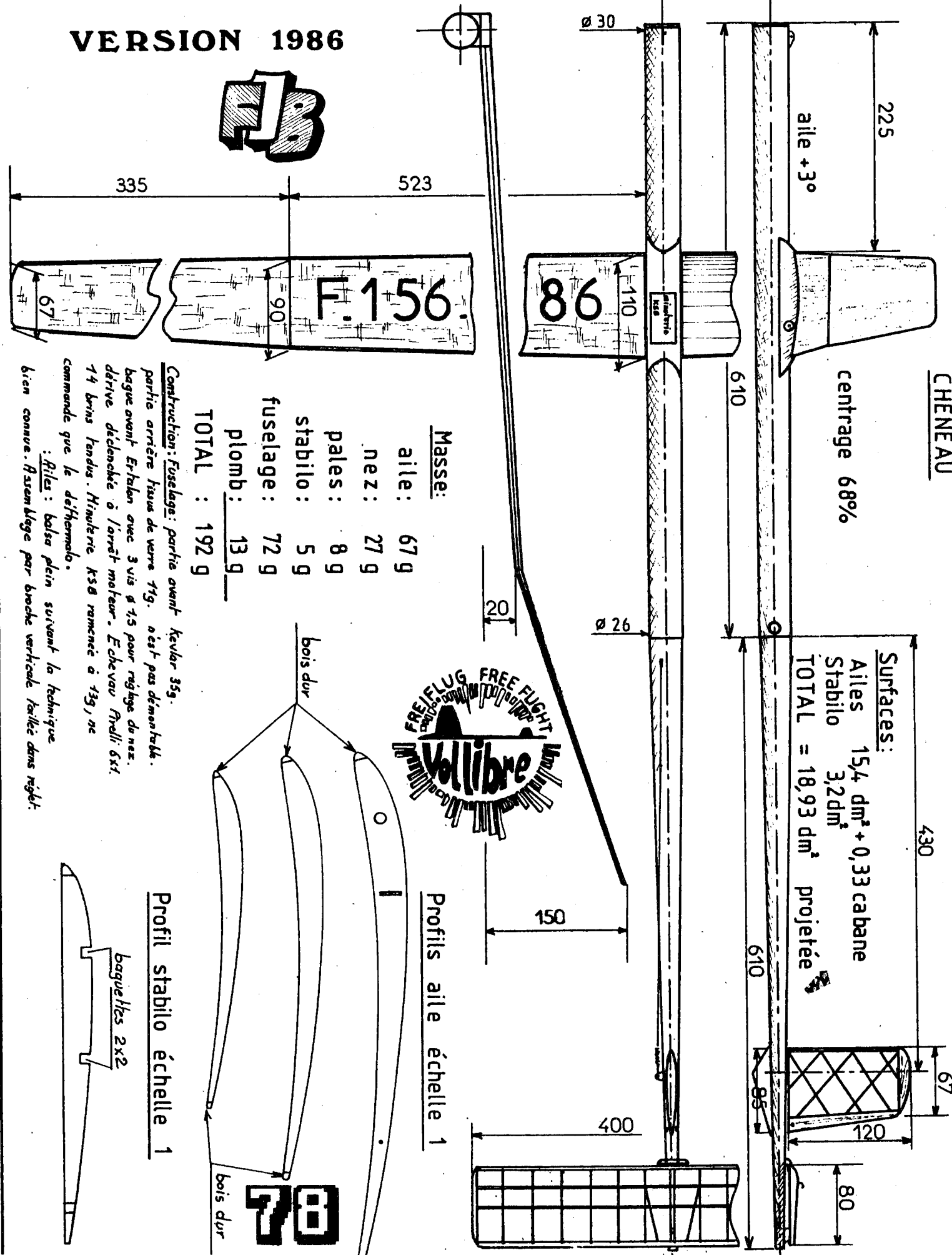
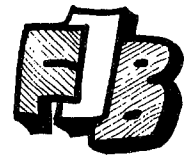
FRANK DAHLIN - I'm 45 years old, married and have two children . I am a " Bachelor of Science in Mechanical Engineering" and I work with enviroment problems and projektion of the workers.
I have been building and fluing F.F.models since 1954 flying wakefield up till 1962, when I took up flying glider (the big ones) which I still do as a glider instructor . I took up model flying again in 1980 when I moved to the west coast of Jutland, and I have now flown F1B for the last 5 years . I also fly F1D and I like the Indoor flying just as much as the F1B, so it is n't a choice I try to find time for both classes. My best result in F1B up till now , was winning the "Jyllandslaget" in 1985.
Frank DAHLIN -Gjerager
7;-DK-6880 TARM

June 87

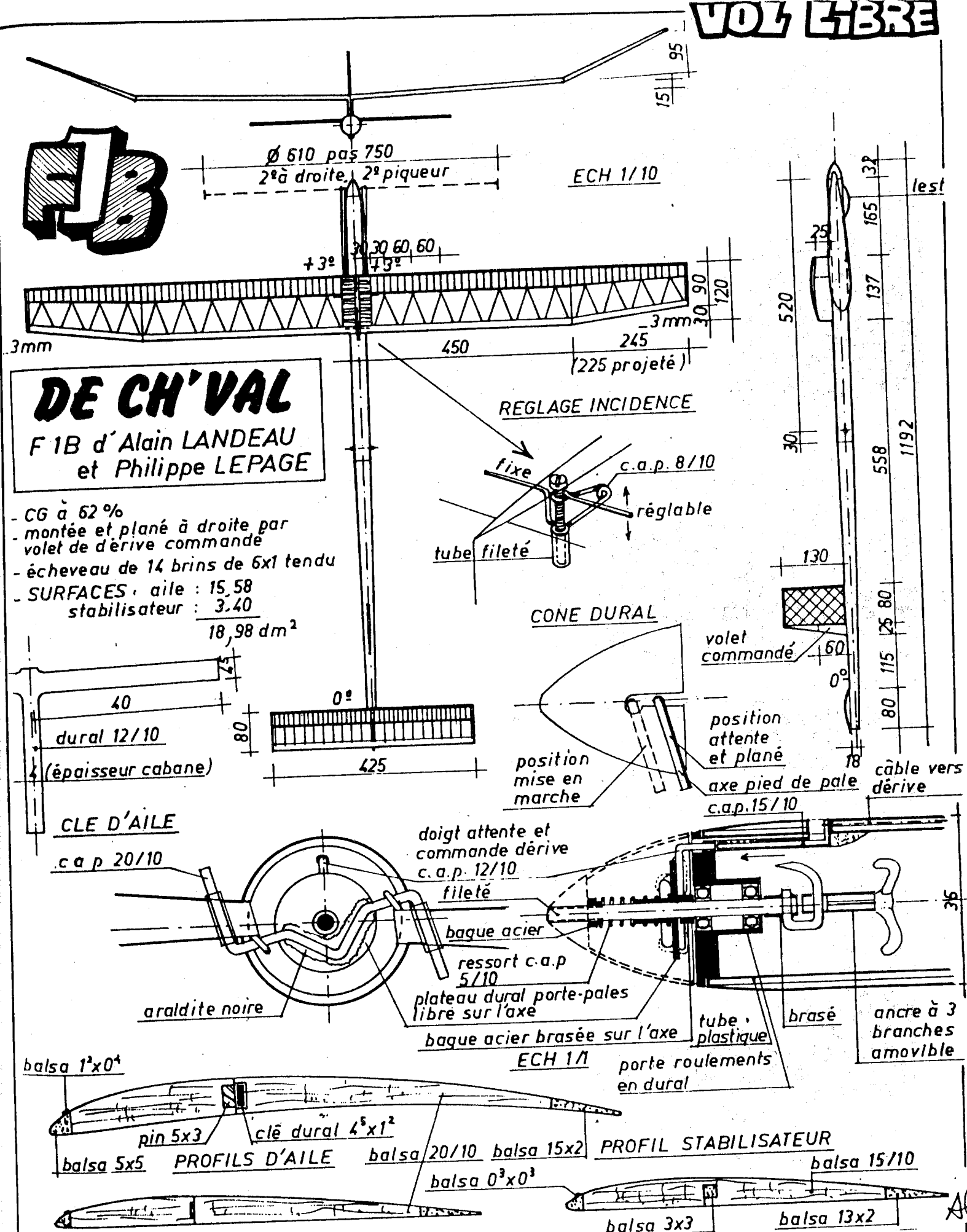
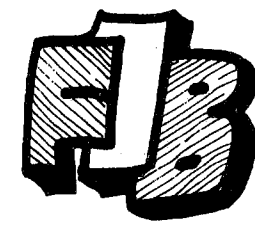
75

CHENEAU Jean-Claude

VERSION 1986



VOL LIBRE



VOL LIBRE

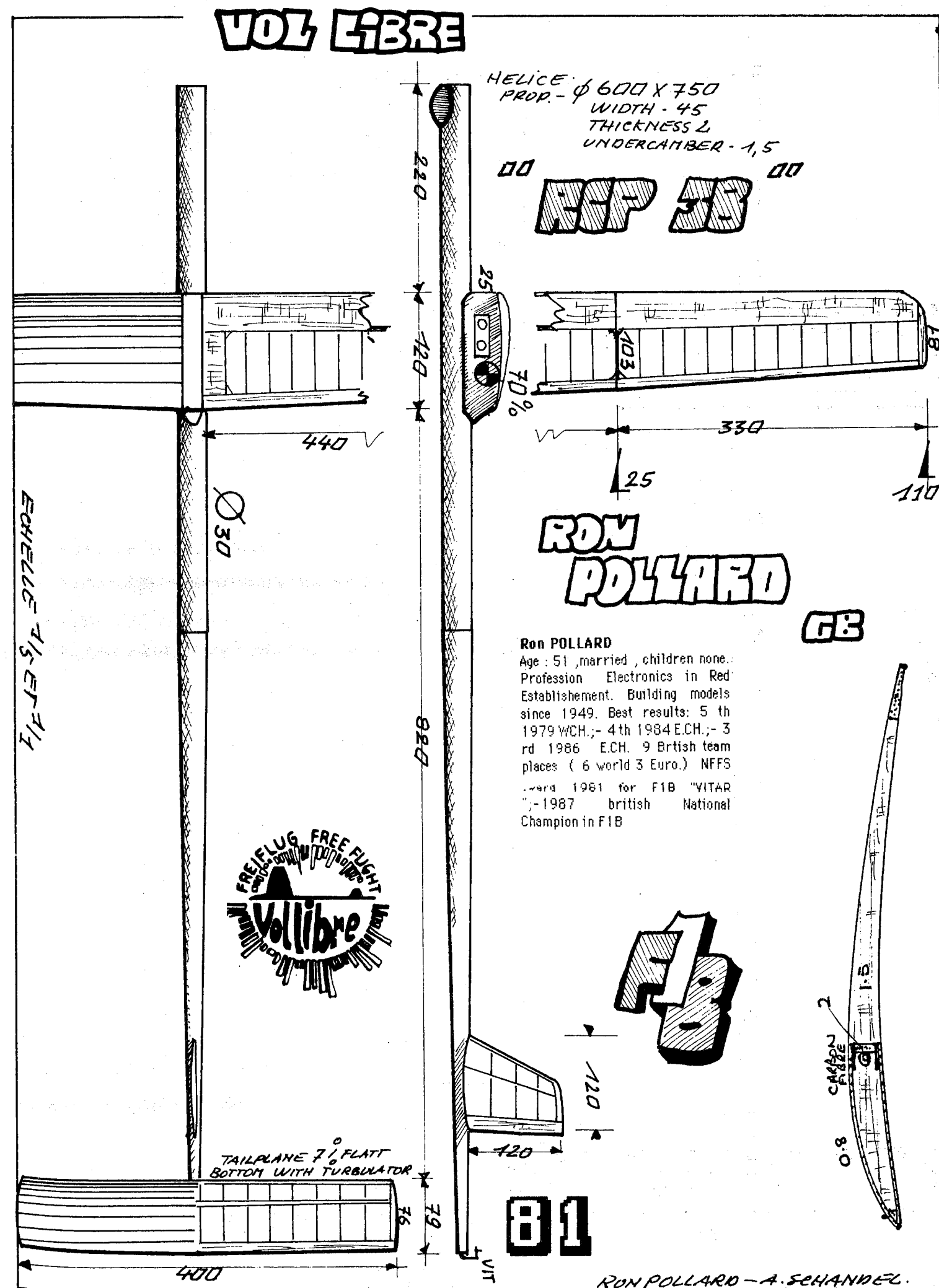


Photo: JEAN BOOS.

Page 80

Pietro Zoppelli, un modèle des plus classiques, un des équipiers d'Italie à la moyenne d'âge relativement élevée en F1B.

80



VOL LIBRE

HELICE:
PROP. - $\phi 600 \times 750$
WIDTH - 45
THICKNESS 2
UNDERCAMBER - 1,5

REF 53

Technical drawing of a tapered rectangular plate. The top view shows a tapered shape with a width of 103 at the left end and a width of 81 at the right end. The side view shows a tapered shape with a height of 25 at the left end and a height of 110 at the right end. The length of the plate is 330. The drawing includes a wavy line on the left end of the side view, indicating a break or a specific finish.

RON POLLARD

GE

• Ron POLLARD

Age: 51, married, children none.
Profession Electronics in Red
Establishment. Building models
since 1949. Best results: 5 th
1979 WCH.; - 4th 1984 E.C.H.; - 3
rd 1986 E.C.H. 9 British team
places (6 world 3 Euro.) NFFS
award 1961 for FIB "VITAR
";-1987 british National
Champion in FIB

The logo is a circular emblem. The top half features the words 'FREIFLUG' on the left and 'FREE FLIGHT' on the right, separated by a small graphic of a bird in flight. The bottom half features the word 'Vollbre' in a large, stylized font, with the letters 'V' and 'b' being significantly larger and more decorative than the others. The entire logo is set against a background of stylized sun rays.

TAILPLANE 7⁰/₁₀ FLATT
BOTTOM WITH TURBULATOR

81

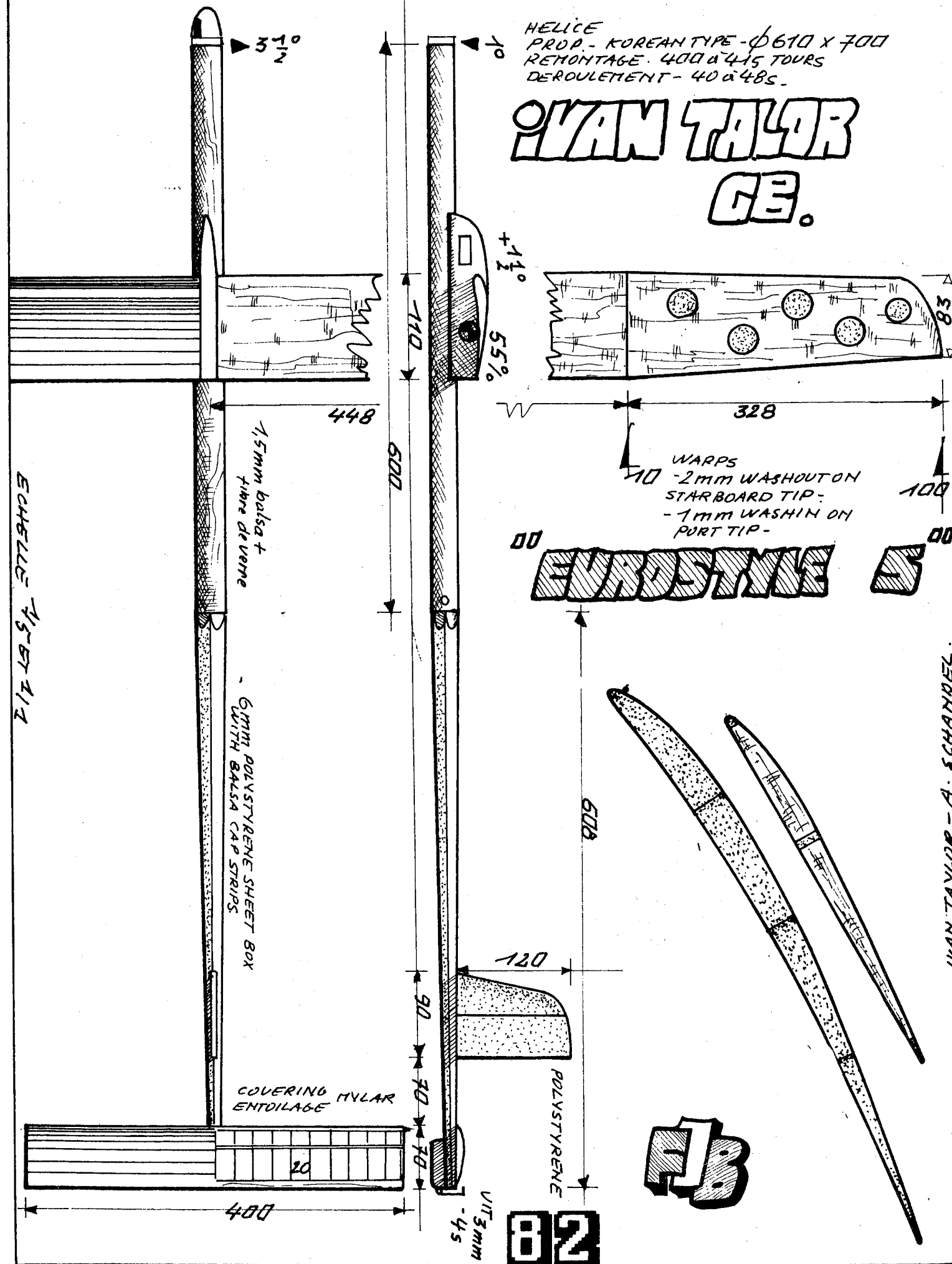
RON POLLARD - A. SCHANDEL.

VOL LIBRE

HELICE
PROP. - KOREAN TYPE - $\phi 610 \times 700$
REMONTAGE - 400 à 415 TOURS
DEROULEMENT - 40 à 48s.

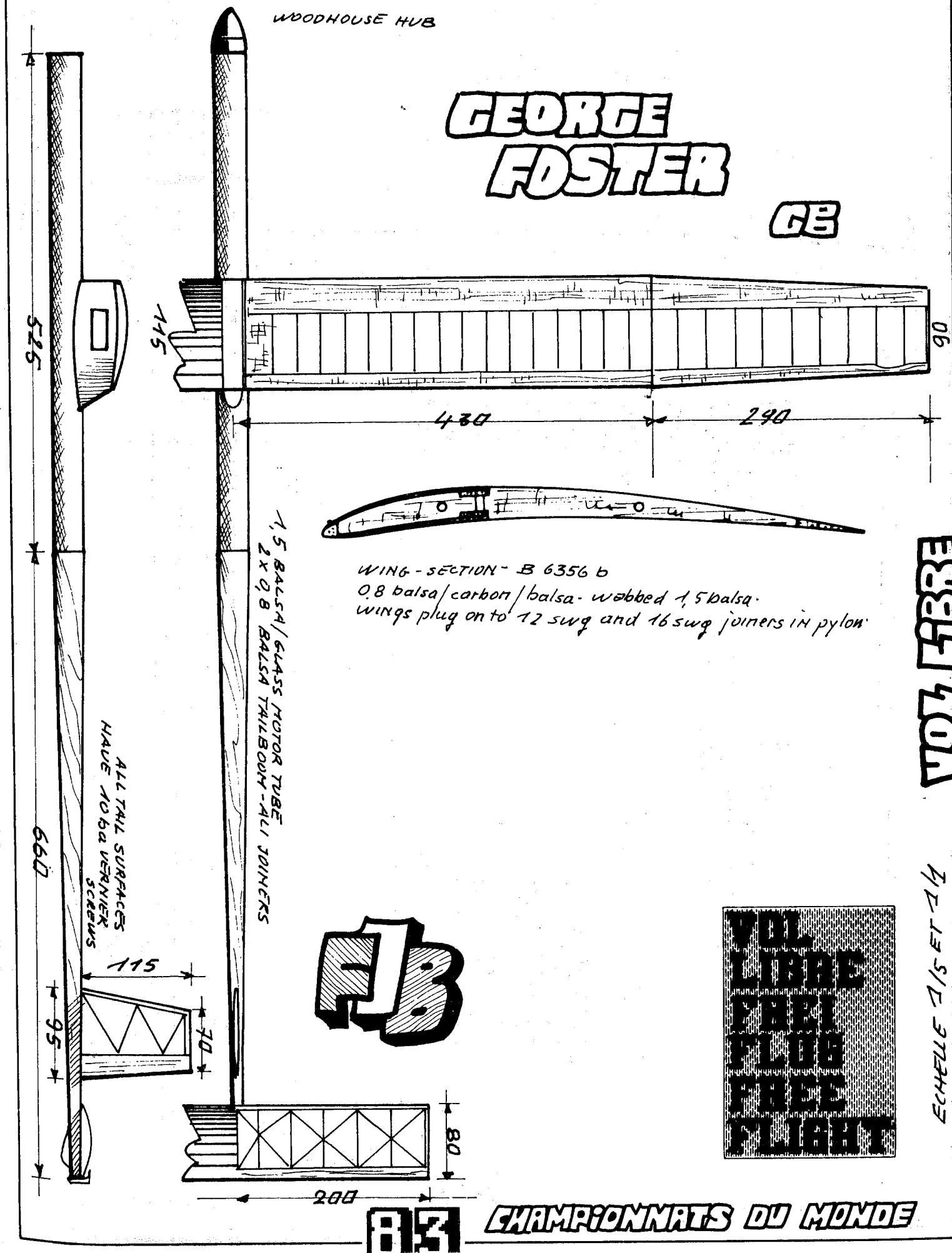
**IVAN TAYLOR
GE.**

ECHELLE 1/5 ET 1/4



GEORGE FOSTER - A. SCHANDEL

**GEORGE
FOSTER
GE**



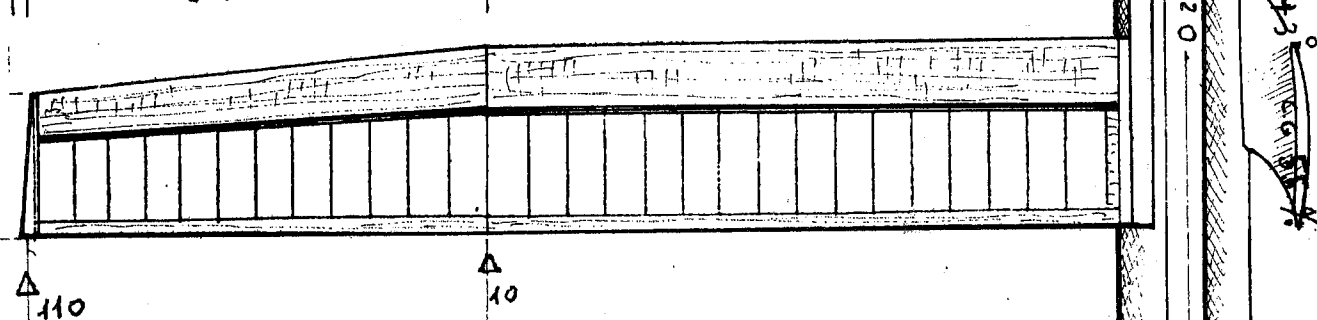
ECHELLE 1/5 ET 1/4

1/5 ET 1/4



AERO CLUB D'ITALIA

6 298 420



110

10

WAK
ITALIE

ELICA 60x70 MOZZO R 120
CENTRAGGIO
0,4 s. Partenza elica
4,5 s. i.v. + deriva a destra
28 s. L'ala destra calata 1/2° e della sinistra
ritorna alla posizione di planata
Safite e planata a destra

Carbonio
Balsa



84

ECHELLE 1/5 ET 1/1

VOZ LIBRE

FICHERA ISIDORO NINO - ITALIA

ELICA:
φ 570
PASSO 680..

MATASSA:
16 FILI 1x6
20 FILI 1x5
GIRI: 320 ÷ 350
SCARICA: 30" ÷ 32"

SUPERFICE ALA
15.19 dm²
SUPERFICE TIM. ORIZ.
3.57 dm²

239

124.8

662

126

84

126

84

126

84

126

84

126

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126

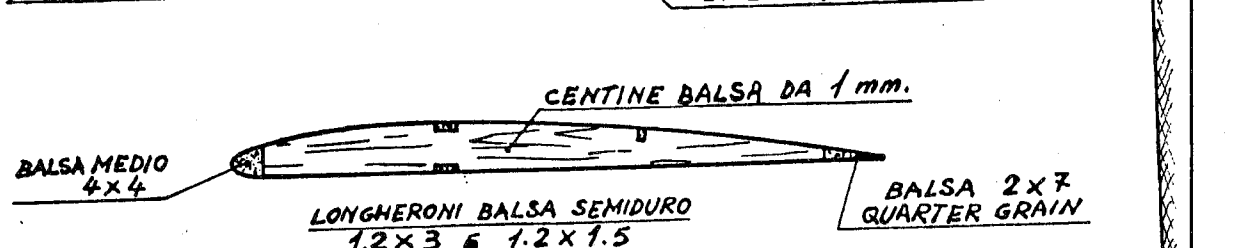
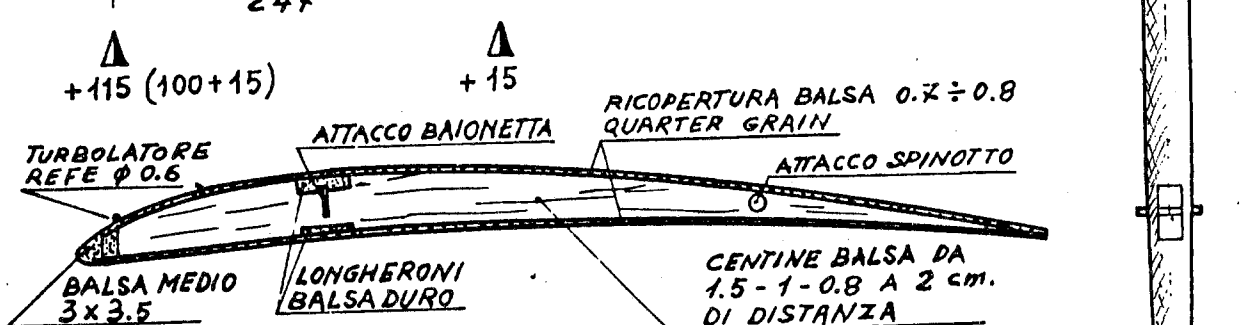
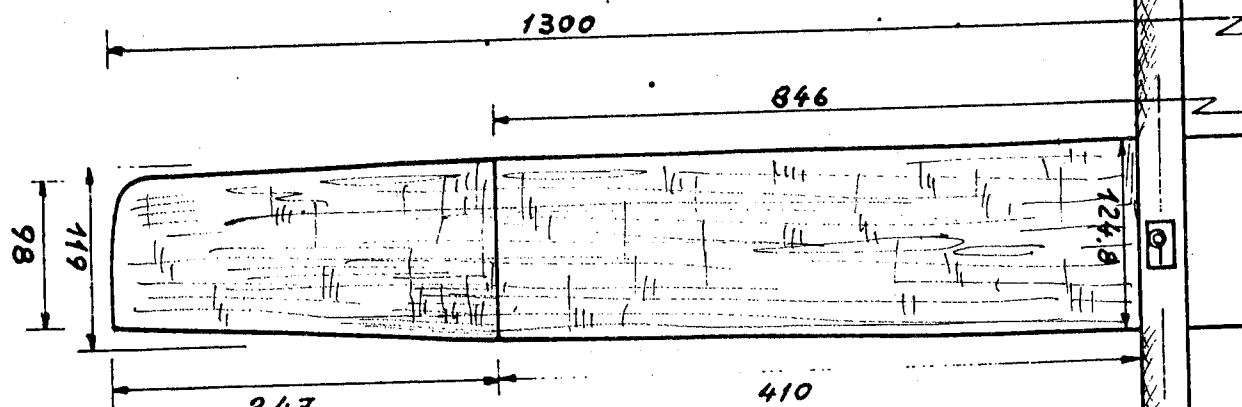
84

126

84

126

84

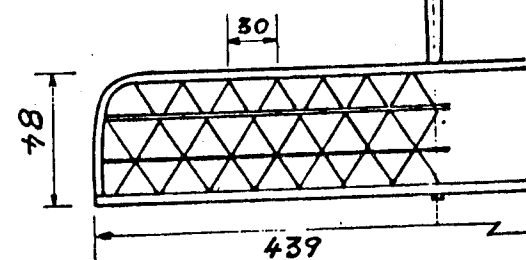


PESI	gr.	
FUSOLIERA	77.0	
SEMIALI	54.5	
BAIONETTE	2.5	
T. ORIZZONTALE	5.4	
T. VERTICALE	35.3	
ELICA	11.4	
AUTOSCATTO		
TOTALE	193.2	

PALMARIO		
GORIZIA	1981	10
ZAGABRIA	1982	20
ZAGABRIA	1983	20
REGGIO EMILIA	1984	10
FERRARA	1984	10
CAMPIONATO ITAL.	1984	20
MANIAGO	1985	10
LONATE POZZOLO	1985	20
CAMPIONATO ITAL.	1985	10
ORENTANO	1986	20
LEGNANO	1986	30
REGGIO EMILIA	1986	20
GORIZIA	1986	20
MANIAGO	1986	30
COPPA ITALIA	1986	10
SIENA	1987	10



AERO CLUB D'ITALIA

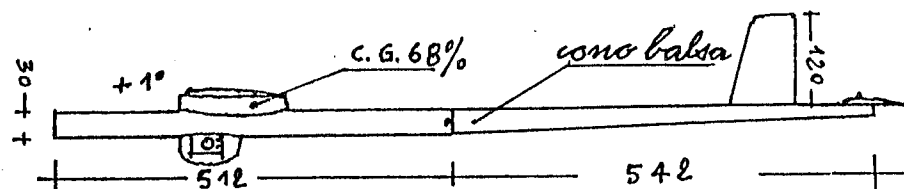


85
SCALA 1/5 - MISURE IN mm.

VOZ LIBRE

PIETRO ZOPPELLI

ITALIE



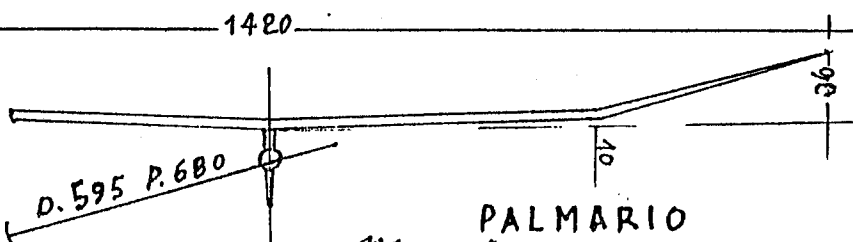
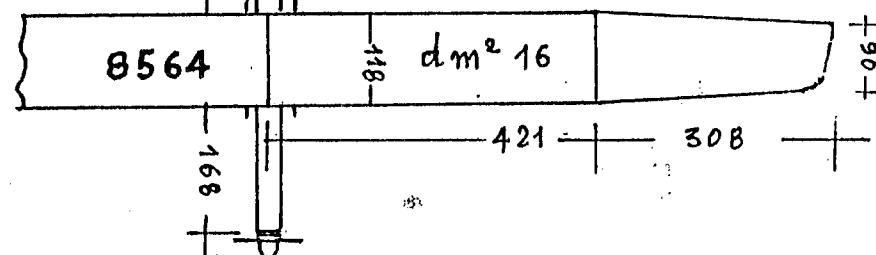
400
dm² 2.92

wake

matassa 30 FAI 1x3
scarica 30"÷32"
6"incidenza variabile
e deriva
auto-scatto 2 funzioni



AERO CLUB D'ITALIA



PALMARIO
1° Maniago 84
3° Reggio Emilia 84
1° Lonate Pozzolo 84
1° Reggio Emilia 85
1° Orbetano 86
5° Maniago 86
1° Reggio Emilia 86
1° Maniago 87

VOL LIBRE

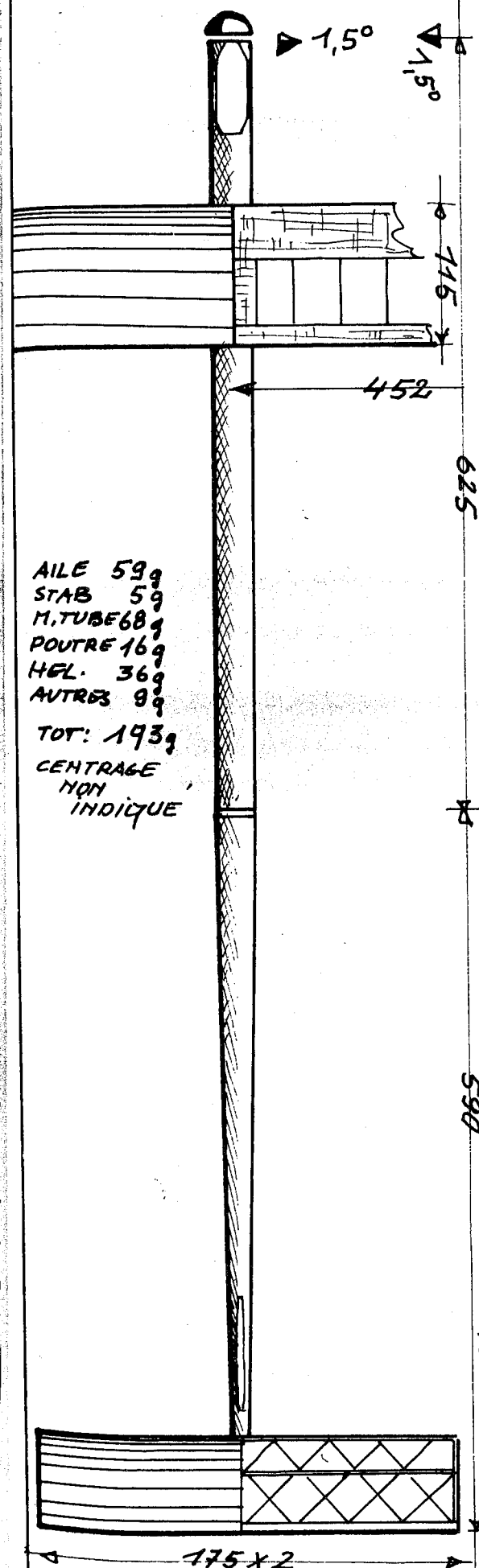
86

SCALA 1:10

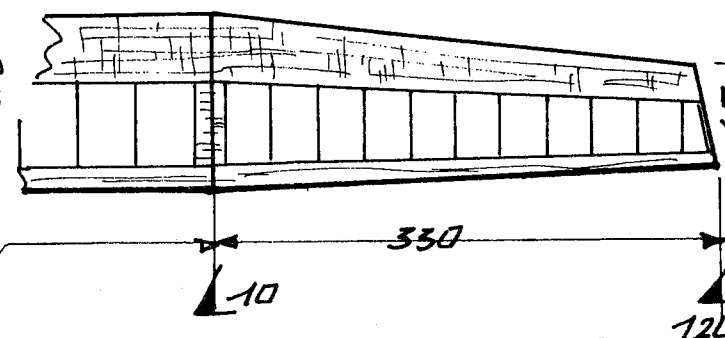
59.5 X 68

VOL LIBRE

HELICE-PROP -
VAN LEUVEN - 600 X 750

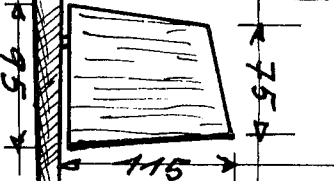
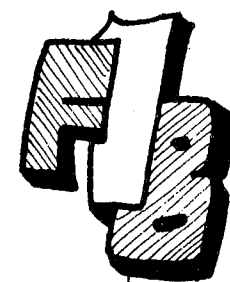


AILE 59g
STAB 59g
M.TUBE 68g
POUTRE 16g
HEL. 36g
AUTRES 9g
TOT: 193g
CENTRAGE
NON
INDIQUE



AFREMOSHIP

Dan MAZOR 25 years old, Student of Aeronautics, Technion, Israel Institute of technology, Haifa. He has been a aeromodeling and F.Flighter for the last 13 years. Last 8 years specialises on FIB. 4 times national Champ. This is the third time he is a member of the Israeli team, this time as no. 1 in FIB. His FIB model is his own design. The principal points of his concept is keeping the model as simple as possible, emphasizing the strength of the structure and the light weight. This was achieved by using carbon fiber sheets and fiberglass used by vacuum machine. This model uses VIT.



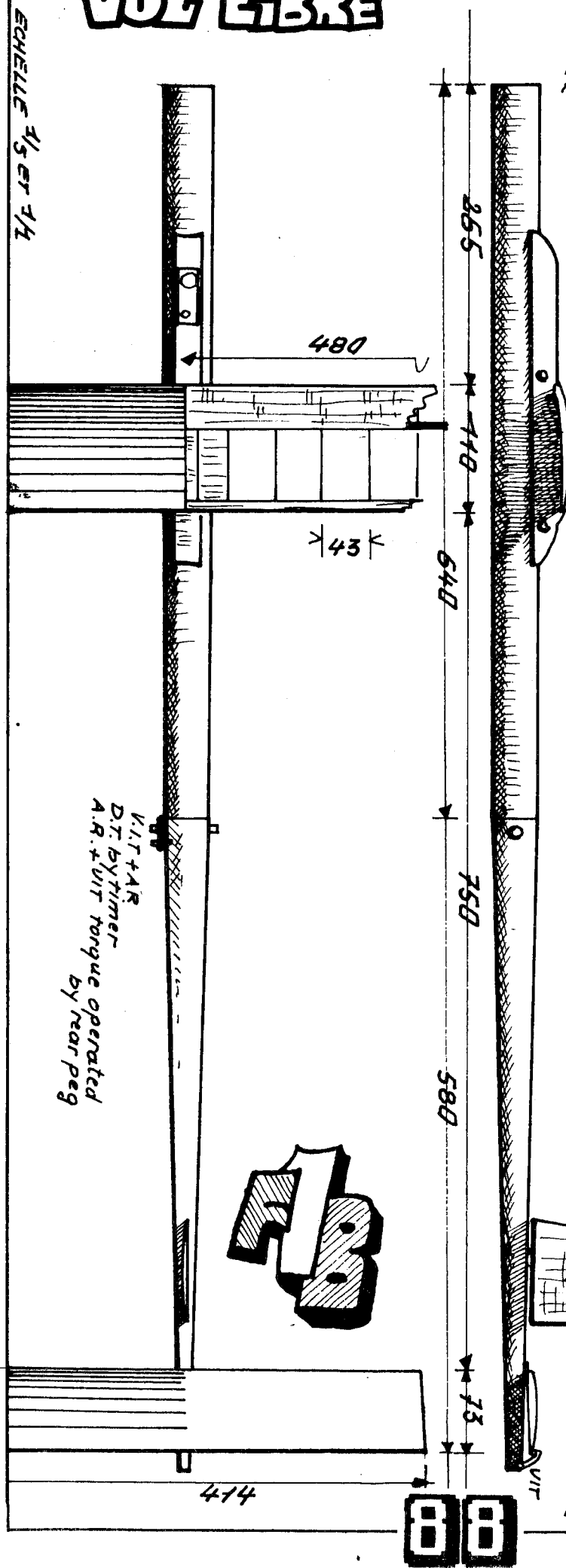
87

MAZOR DAN

ESCHERLE 1/11 ET 1/15 - MAZOR DAN -

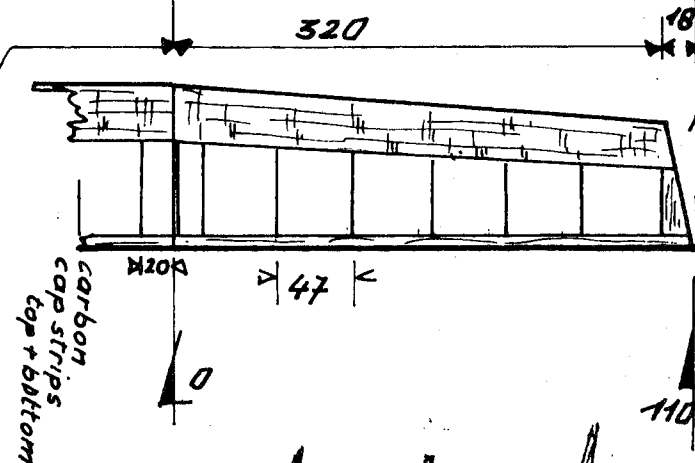
VOL LIBRE

ECHELLE 1/5 ET 1/4

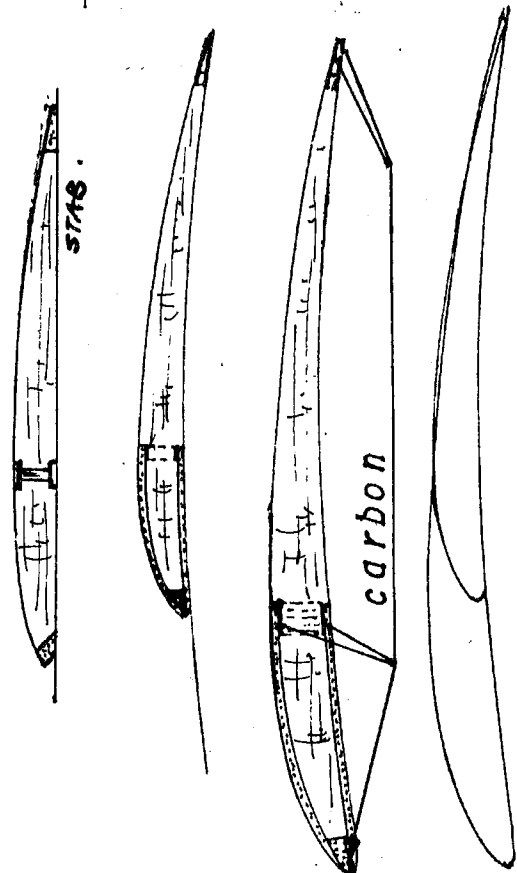


HELICE 600x750
PROP.

**IZHAK
BEN IZHAK
ISRAEL**



carbon
cap strips
top + bottom



carbon

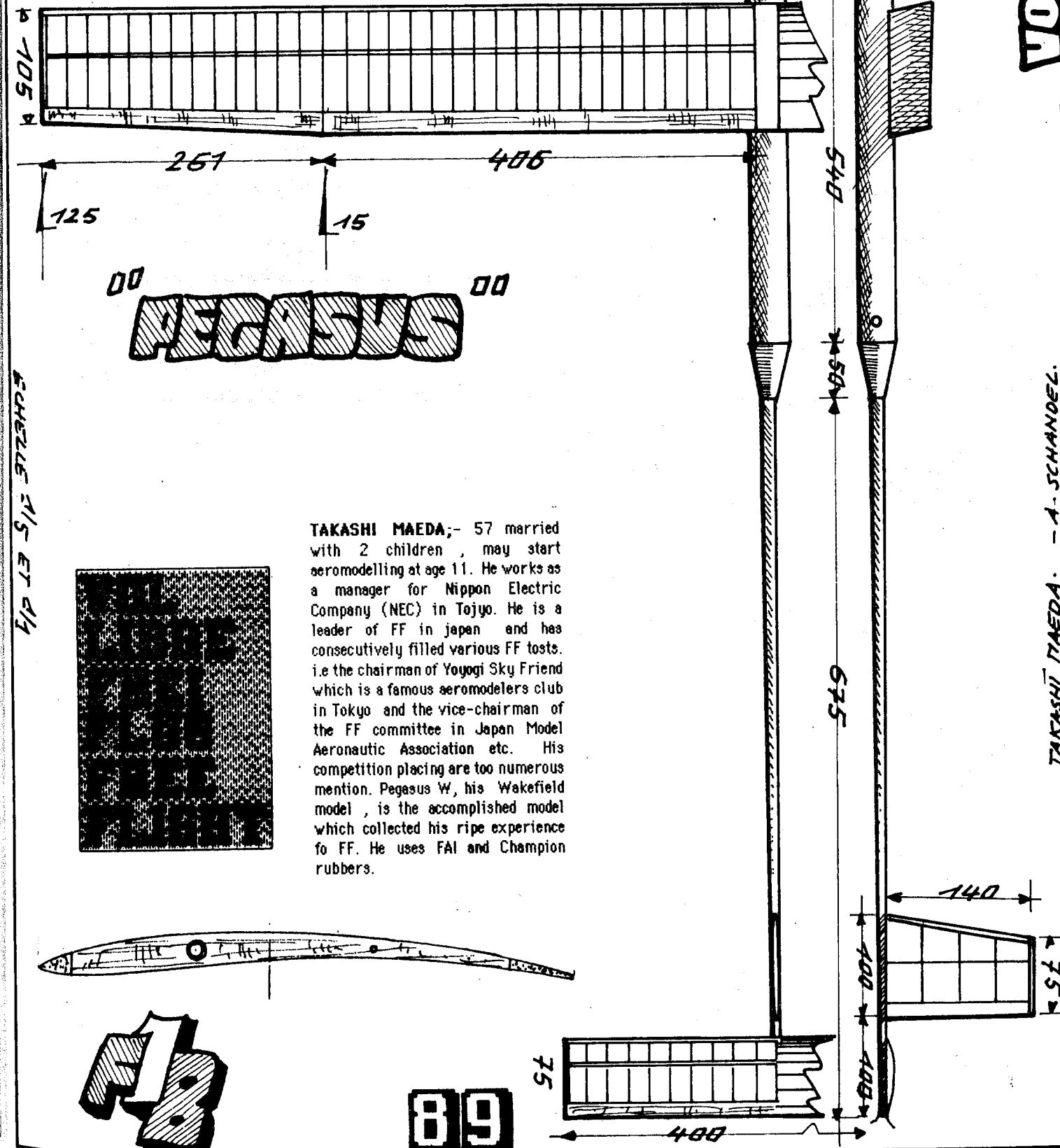
CHAMPIONNATS DU MONDE F1ABC

ECHELLE 1/5 ET 1/4

IZHAK BEN IZHAK - A. SCHANDEL

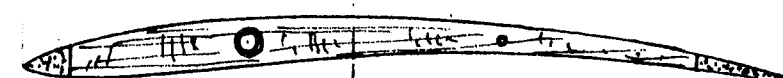
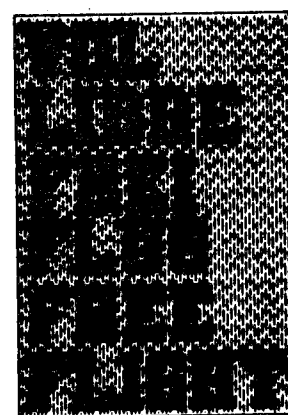
HELICE 600x720
PROPELLER

**TAKASHI
MAEDA
JAPON**



PEGASUS

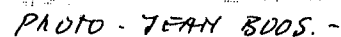
TAKASHI MAEDA, - 57 married with 2 children, may start aeromodelling at age 11. He works as a manager for Nippon Electric Company (NEC) in Tokyo. He is a leader of FF in Japan and has consecutively filled various FF posts. i.e. the chairman of Yoyogi Sky Friend which is a famous aeromodellers club in Tokyo and the vice-chairman of the FF committee in Japan Model Aeronautic Association etc. His competition placing are too numerous mention. Pegasus W, his Wakefield model, is the accomplished model which collected his ripe experience for FF. He uses FAI and Champion rubbers.



89

VOL LIBRE

TAKASHI MAEDA - A. SCHANDEL

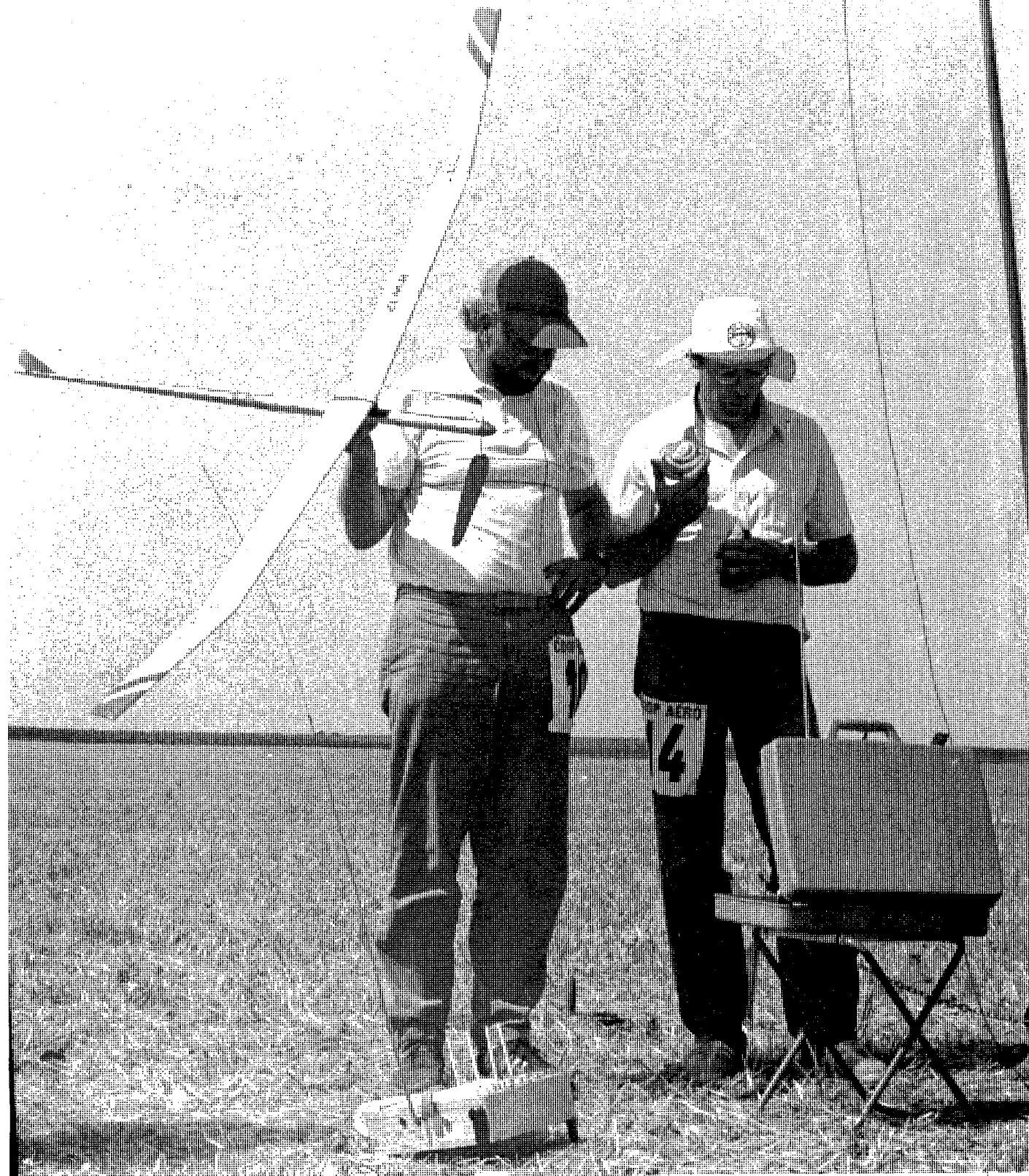


R. Schlesinger RFA avec un modèle sortant du classique. Ailes eu styropore en carbone. Stabilo surélevé, un des rares ssinon le seul dans cette catégorie. Un ensemble performant et réalisé dans une des voies nouvelles

90

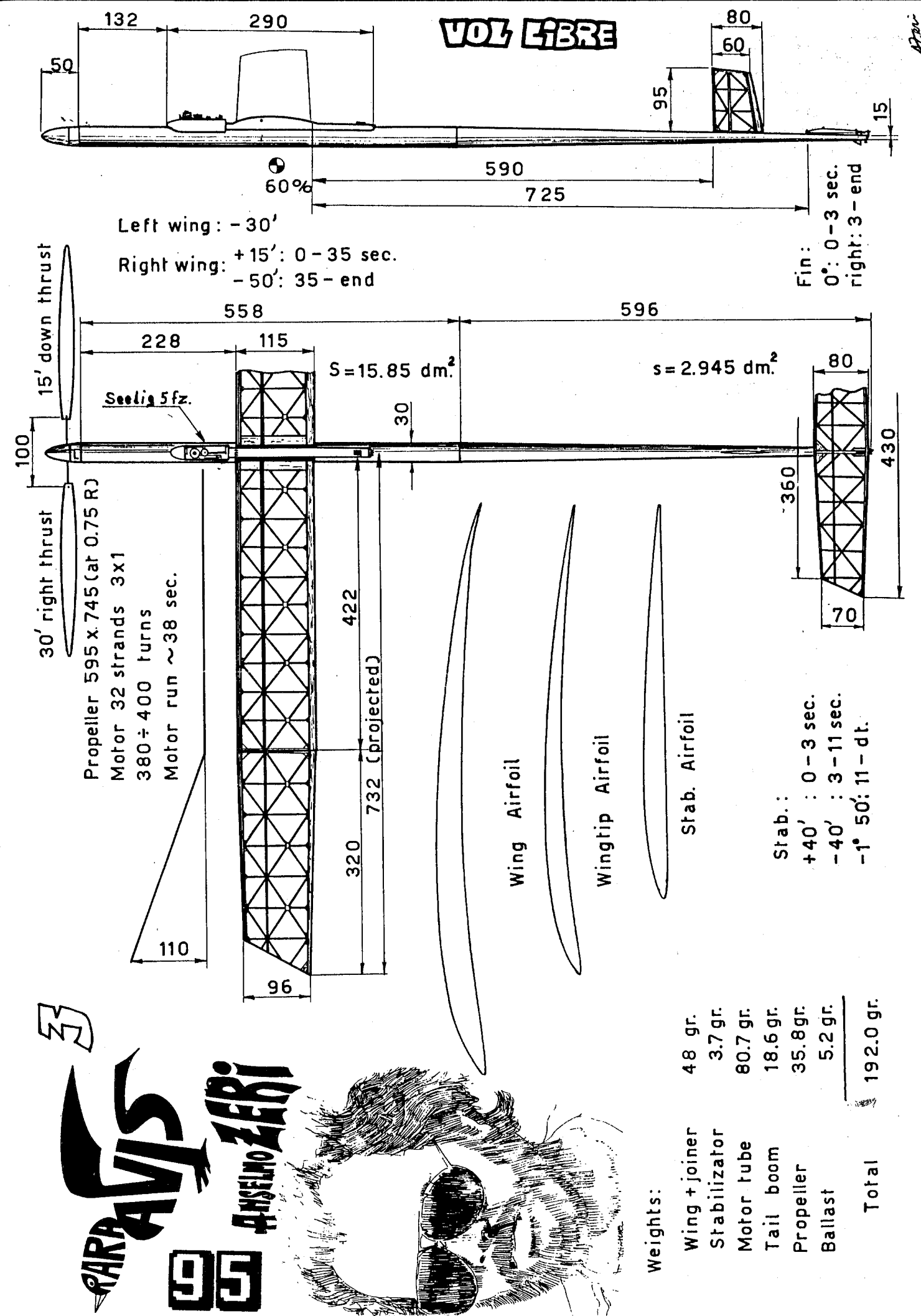


93



Deux anciens Champions du Monde du passé **Lothar Döring** (1981 et 83) **Reiner Hofstöss** (1985) tous deux RFA et utilisant les fameux Espadas. Ici devant la valise magique. Lothar tenant une partie de son petit déjeuner en main, Reiner son dernier né Espada 87 en kevlar

Photo. TEAM BOOS.



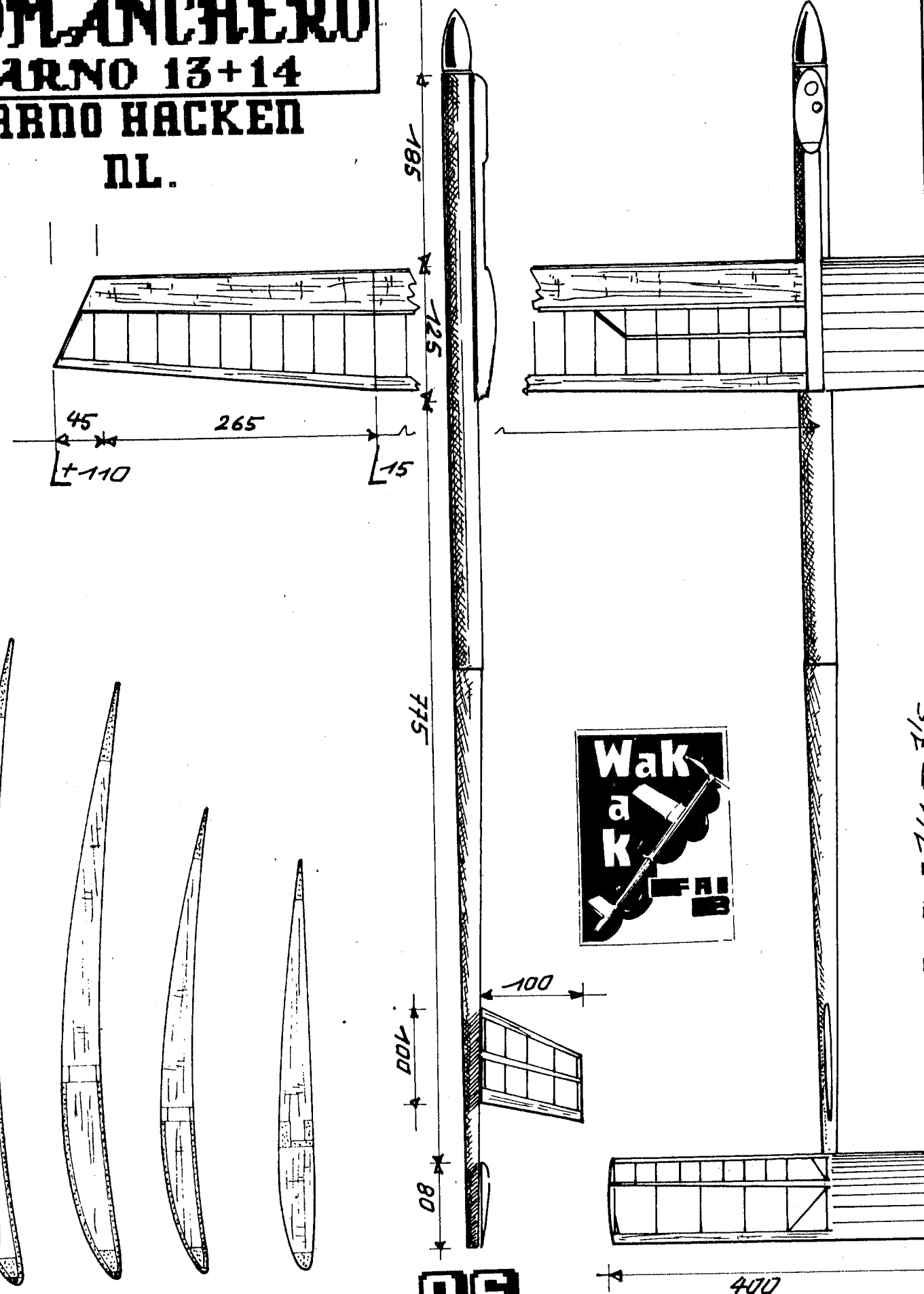
COMANCHERO

ARNO 13+14

ARNO HACKEN

PL.

VOL LIBRE

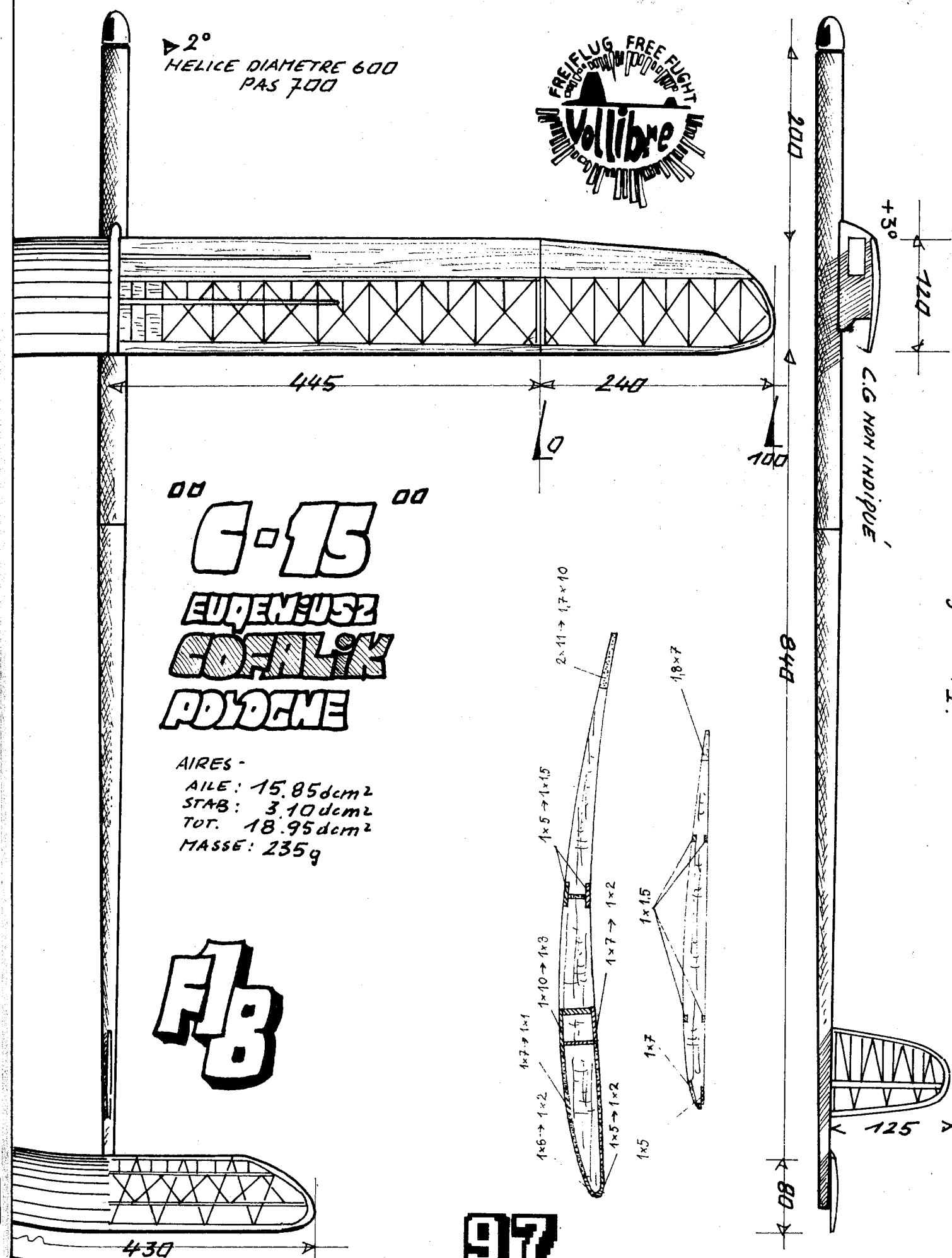


ARNO HACKEN - A. SCHANDEL

96

A. SCHANDEL - E. COFALIK

2°
HELICE DIAMETRE 600
PAS 700



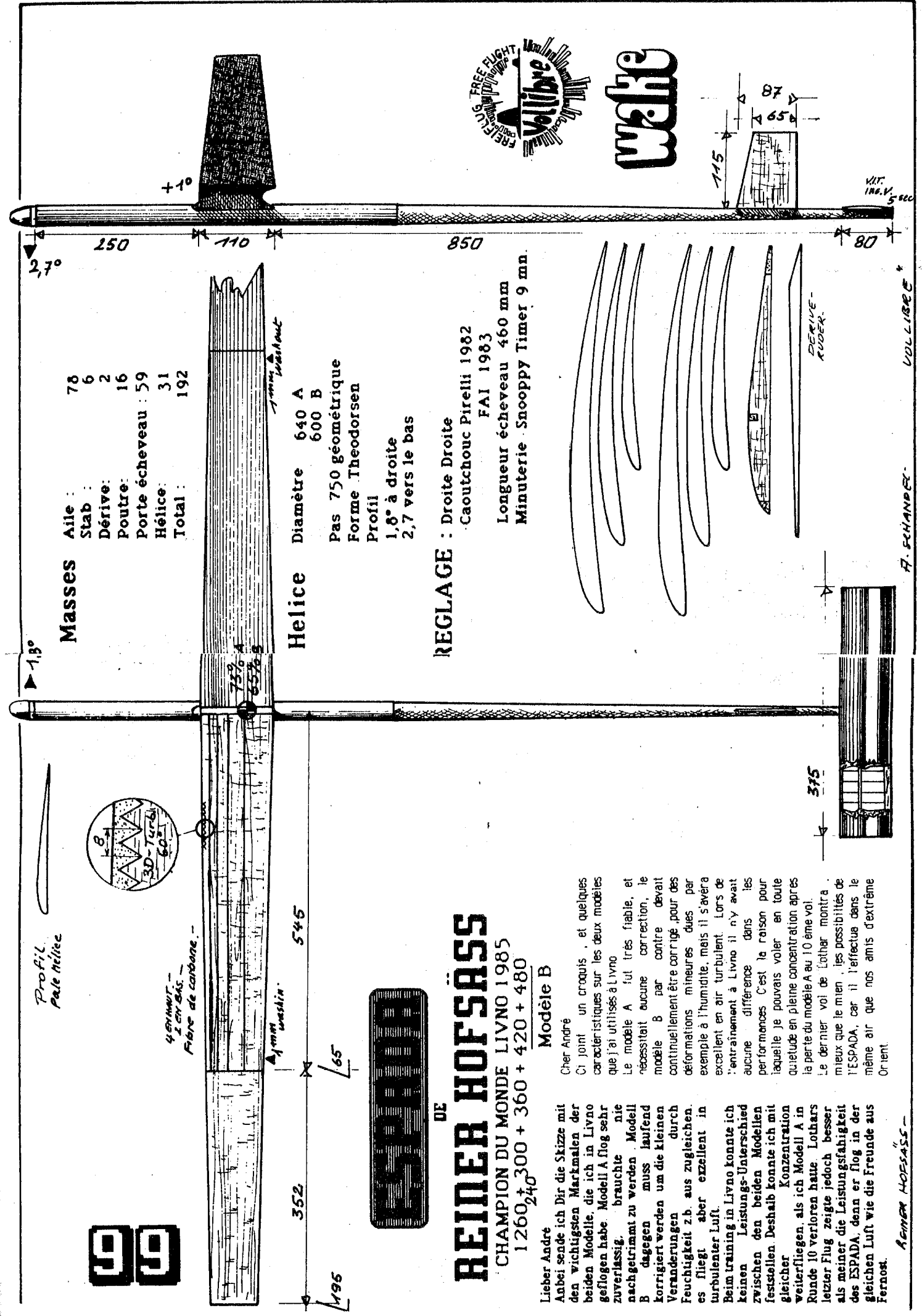
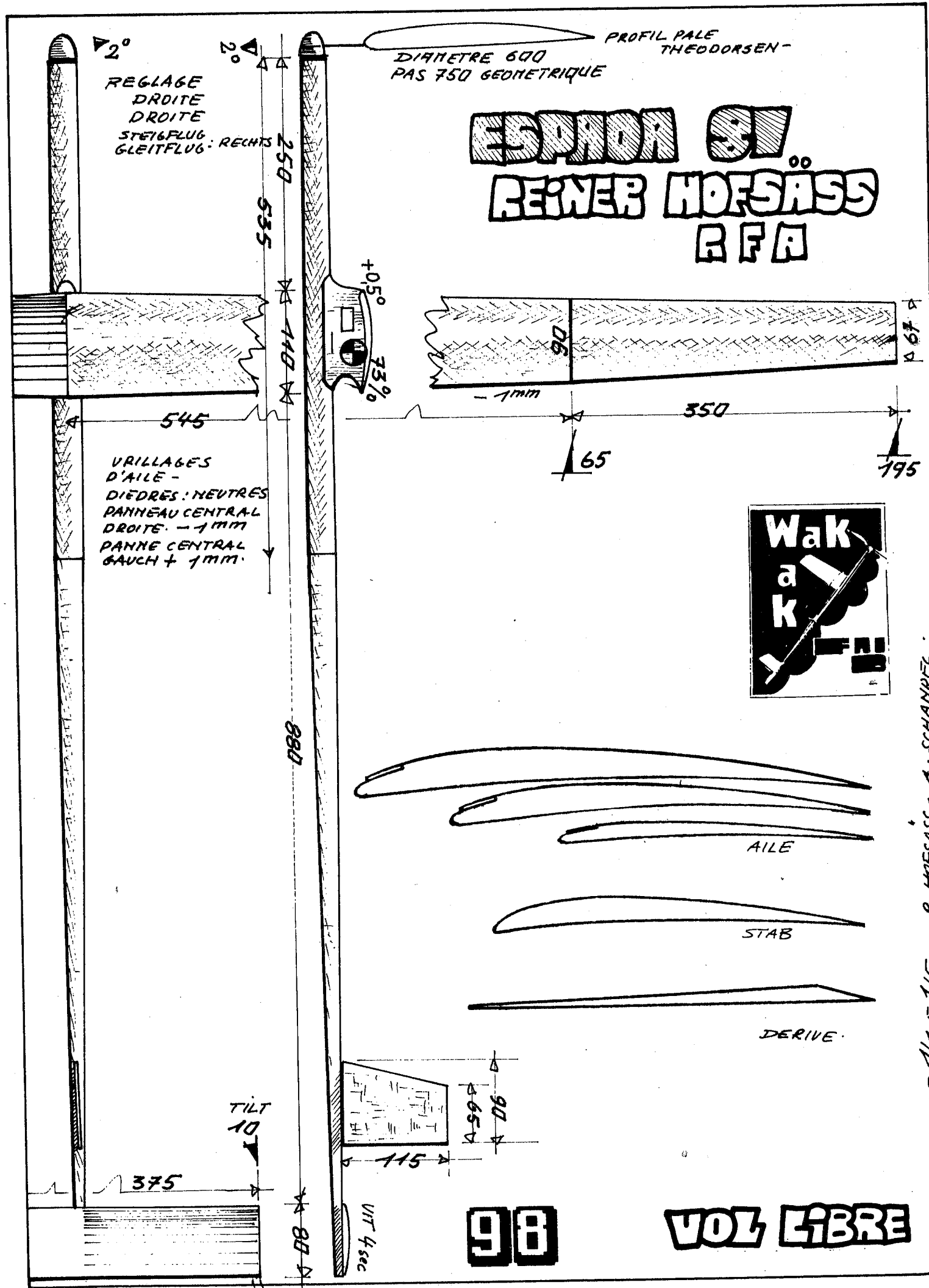
G-15
EUGENEUSZ
COFALIK
PODYCME

AILES -
AILE: 15.85dcm²
STAB: 3.10dcm²
TOT. 18.95dcm²
MASSE: 235g

FLB

ECHELLE 4/5 ET 1/1.

97



Masses

Aile :	78
Stab :	6
Dérive :	2
Poutre :	16
Porte écheveau :	59
Hélice :	31
Total :	192

Helice

Diamètre 640 A
600 B

Pas 750 géométrique
Forme Theodorsen
Profil
1,8° à droite
2,7° vers le bas

REGLAGE : Droite Droite
Caoutchouc Pirelli 1982
FAI 1983
Longueur écheveau 460 mm
Minuterie Snoopy Timer 9 mn

REINER HOFSSÄSS
CHAMPION DU MONDE LIVNO 1985
1 260 + 300 + 360 + 420 + 480

Lieber André

Anbei sende ich Dir die Skizze mit den wichtigsten Markmalen der beiden Modelle, die ich in Livno geflogen habe. Modell A flog sehr zuverlässig, brauchte nie nachgetrimmt zu werden. Modell B dagegen muss laufend korrigiert werden um die kleinen Veränderungen durch Feuchtigkeit z.B. auszugleichen. es fliegt aber exzellent in turbulenter Luft.

Beim training in Livno konnte ich keinen Leistungs-Unterschied zwischen den beiden Modellen feststellen. Deshalb konnte ich mit gleicher Konzentration weiterfliegen, als ich Modell A in Runde 10 verloren hatte. Lothars letzter Flug zeigte jedoch besser als meiner die Leistungsfähigkeit des ESPADA, denn er flog in der gleichen Luft wie die Freunde aus Fernost.

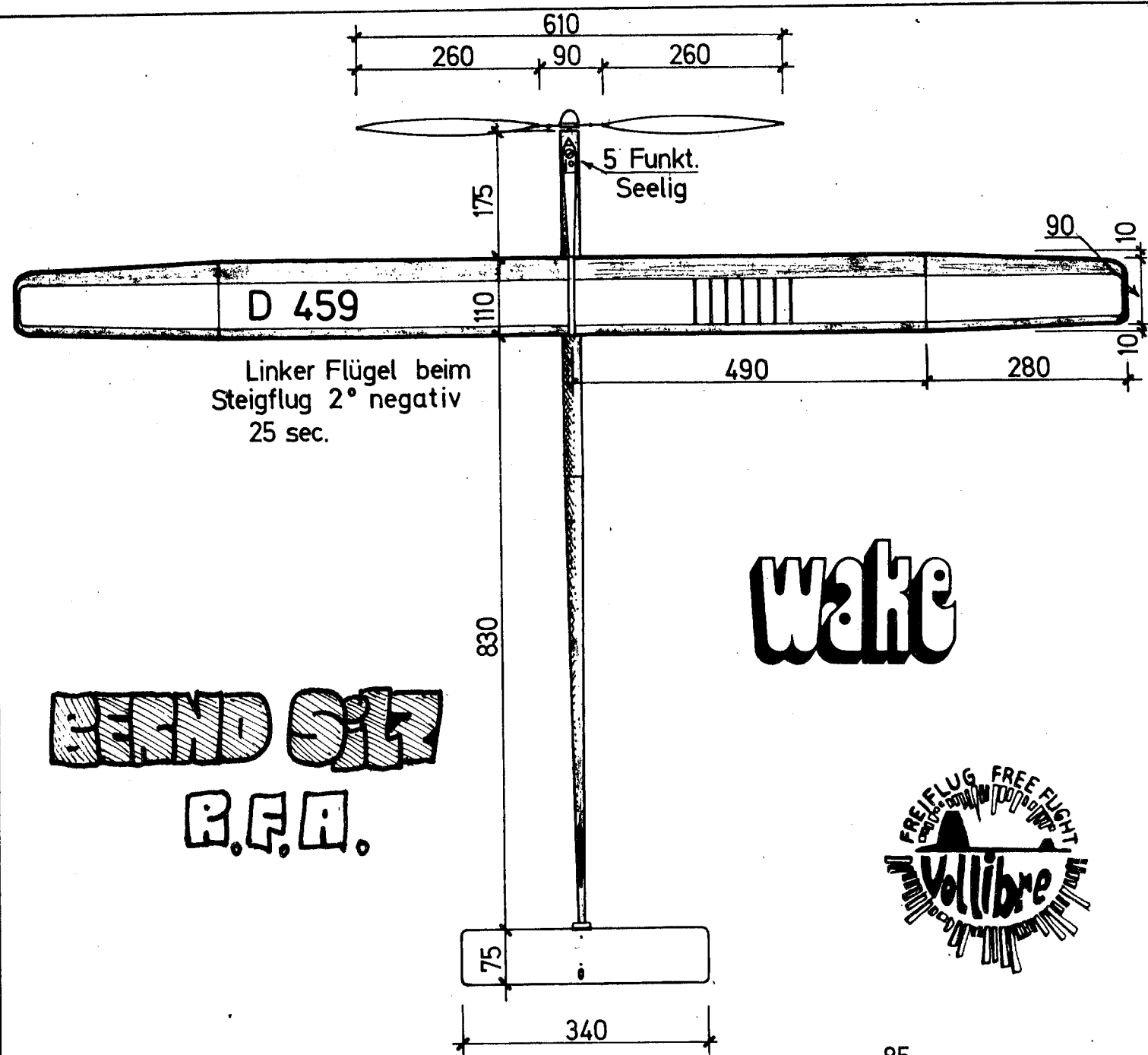
Cher André

Ci joint un croquis, et quelques caractéristiques sur les deux modèles que j'ai utilisés à Livno.

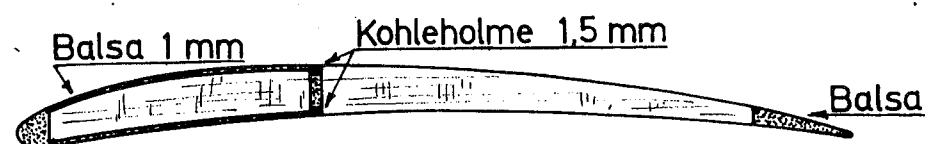
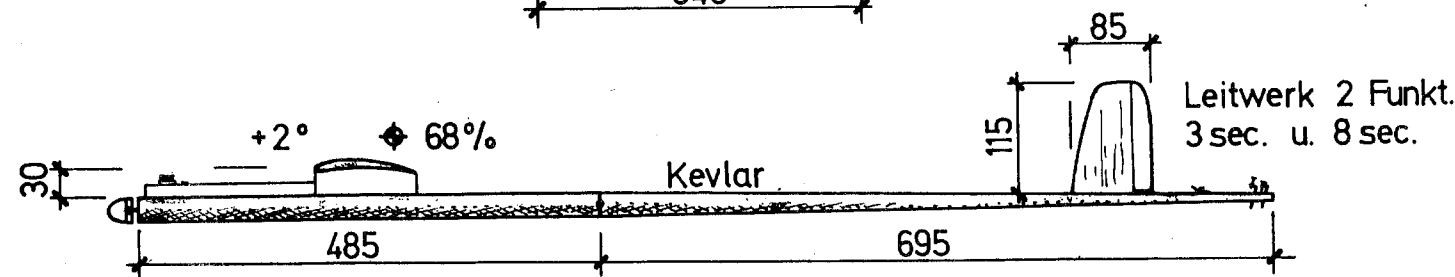
Le modèle A fut très fiable, et nécessitait aucune correction, le modèle B par contre devait continuellement être corrigé pour des déformations mineures dues par exemple à l'humidité, mais il s'avéra excellent en air turbulent. Lors de l'entraînement à Livno il n'y avait aucune différence dans les performances. C'est la raison pour laquelle je pouvais voler en toute quiétude en pleine concentration après la perte du modèle A au 10^{ème} vol.

Le dernier vol de Lothar montra mieux que le mien, les possibilités de l'ESPADA, car il l'effectua dans le même air que nos amis d'extrême Orient.

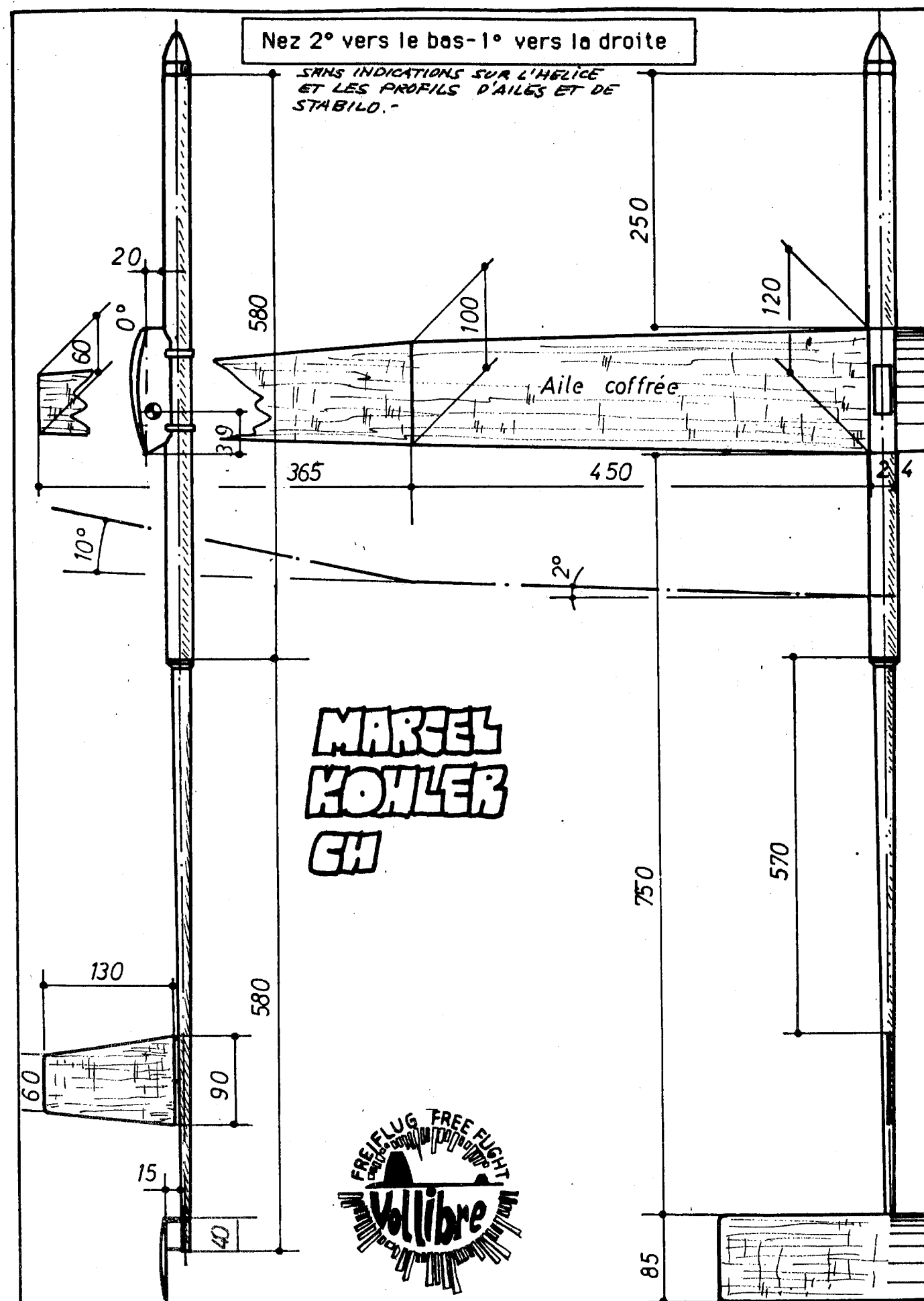
REINER HOFSSÄSS



REINO SIZ
R.F.A.



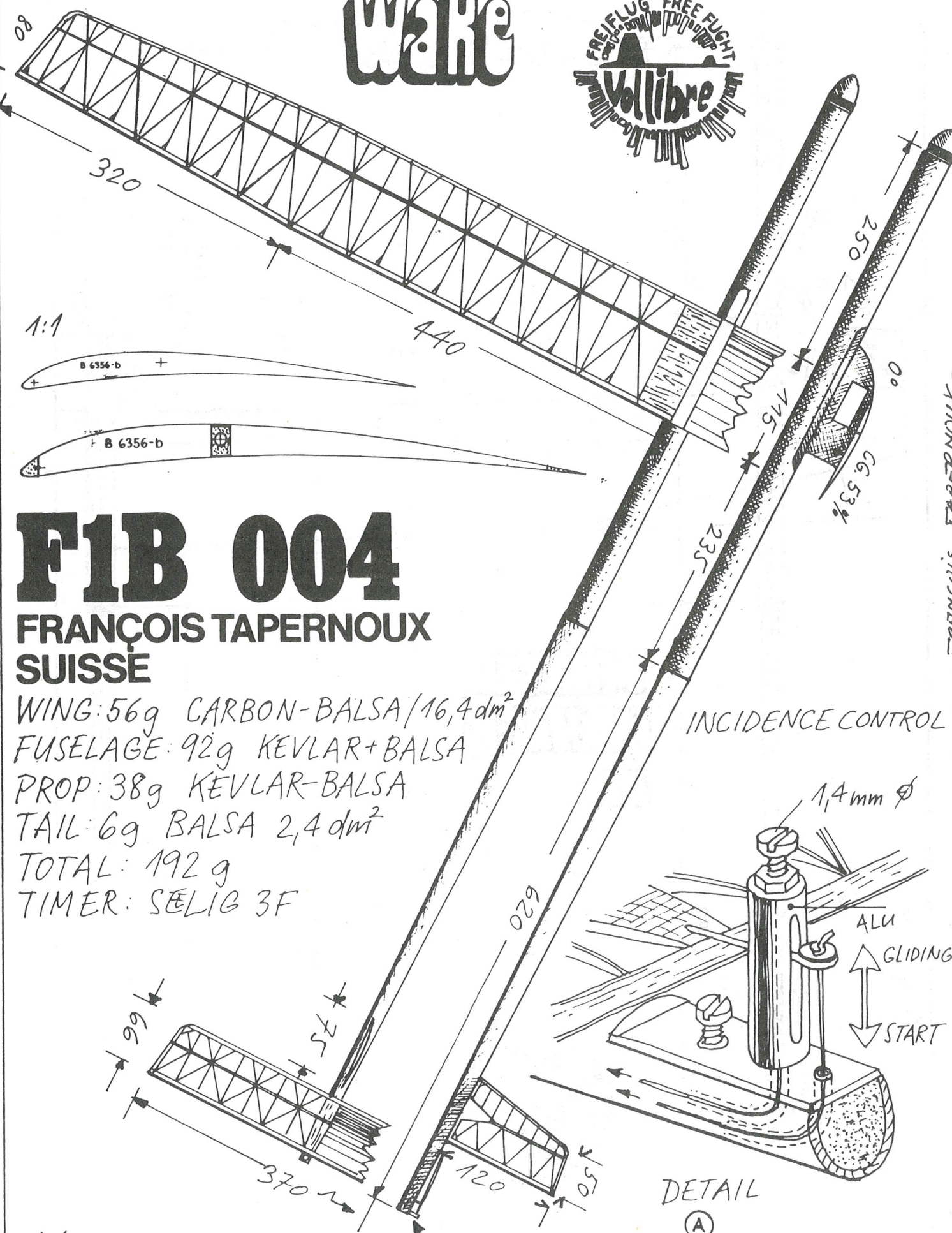
100



MAK W 10 Marcel Kohler

101 340

Wake

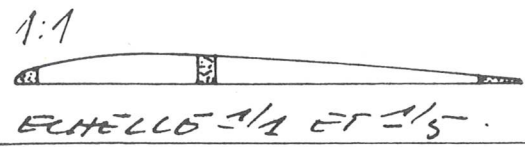


F1B 004

FRANÇOIS TAPERNOUX

SUISSE

WING: 56g CARBON-BALSA / 16,4 dm²
 FUSELAGE: 92g KEVLAR+BALSA
 PROP: 38g KEVLAR-BALSA
 TAIL: 6g BALSA 2,4 dm²
 TOTAL: 192g
 TIMER: SELIG 3F



Cher André, Merci beaucoup pour la édition VOL LIBRE, très terrible.....J'ai tant de plaisir à lire votre revue. De plus j'ai l'occasion de lire en Anglais et en Allemand, ce qui m'aide à ne pas trop oublier ces deux langues.....Merci pour la part de rêve que m'apporte la lecture de VOL LIBRE.. Vol libre est toujours le meilleur.....VOL LIBRE semble faire un tabac, surtout sur le plan international. Je trouve très motivant de lire toutes ces contributions en autant de langues différentes.....Bravo pour votre revue et toutes mes félicitations pour les efforts que vous déployez en faveur du Vol Libre.....J'ai tant de plaisir à lire V.L. que je ne puis que vous en remercier. Quel plaisir

ABONNEMENT 6 NUMEROS 114 F
SUBSCRIPTION 6 ISSUES DM 36
18 DOLLARS

à -an -to : André SCHANDEL, 16 chemin de Beulenwoerth
 67 000 STRASBOURG ROBERTSAU - FRANCE
 CCP 1190 08 5 STRASBOURG Tél: 88 31 30 25

NOM- NAME :
 PRENOM -VORNAME :
 ADRESSE :
 Tél:

...vert de "pub" votre publication... moi un lien important qui me donne l'envie et l'impatience de recommencer.... Tous vos numéros représentent une véritable encyclopédie des réalisations actuelles et aussi du passé.....De toute façon, il ya 50 ans que je prends des revues aéromodélistes et je n'ai jamais trouvé une qui puisse rivaliser avec VOL LIBRE pour la discipline qui nous passionne.....J'espère que vous allez continuer le bon travail de publier ce magazine qui est le meilleur qui traite le sujet "Vol Libre".... A la lecture de votre revue, je constate qu'elle est appréciée partout dans le monde et je vous en félicite.....

Bei dieser Gelegenheit möchte ich mich ganz herzlich für die vielen Vol Libre's bedankenEs ist wirklich die beste Modellflieger-Zeitschrift die ich kenne.....Ich möchte Ihnen meine herzlichsten Gratulationen übermitteln, für die Arbeit die Sie leisten um den "Geist" Freiflug weiterhin zu erhalten, er hat es nötig.....Zuerst darf ich Ihnen persönlich und der Zeitschrift "VOL

LIBRE", viel Erfolg wünschen. VOL LIBRE gehört zu den interessantesten und informativsten auf diesem Gebiet. Ganz besonders gefällt mir die Gestaltung.....Wieder einmal habe ich eine VOL

LIBRE erhalten und wie immer bin ich begeistert. Es ist ein hervorragendes Blatt, und in Sachen Freiflug ist nichts annähernd so erhaltbar.....Es ist Euch, und leichter er macht weiter darf ich mich für immer noch der SCHRIFT der ist eine Welt für die Sprache der wieder in mir ich kann Ihnen vielen schönen ins Haus hat ein so aus Kunst und Freiflug, das er ganzen mich wieder vielen schönen Stunden die uns diese Freiflug-Zeitschrift schenkt, für mich ist "VOL LIBRE" immer noch die beste der Welt!

I like your variety of FAI plans and some indoor too. Details of the "Gadgets" captivates my interest.....May I take this opportunity to commend you for the outstanding work you do on the "VOL LIBRE" publication. May it continue to flourish. Dedicated people like you are an inspiration to us all.....Thank you for all the work the time, and the sheer genius you put into VOL LIBRE. It is much appreciated... May I congratulate you on the fine work you are doing with VOL LIBRE. In my opinion it is the finest and most comprehensive publication of its kind in the world. Keep up the excellents work!.....Thank you for another yera of VOL LIBRE. You really must put a great deal of work into it -its allways fascinating and inspiring to read.....VOL LIBRE is the best in the world.....

VOL LIBRE

VOL LIBRE

PALES: ORIG.
D. SIEBENTMANN
MEZ: ORIG -
F. GAENSLI
DEROULEMENT:
40s.
REGLAGE: D-D.
PAS D'IV -
PAS DE VIRAGE,
COMMANDE

TVRG. TRIO

4 - 1mm - 0mm.

**UREAN
THOMAS**

FILE ENTIEREMENT
COFFRE

Б. И.

PIPATRELLO

AIRES: 16,55 dm² AILE.
STAB: 2,25 dm²
MASSES: AILE 64g
STAB 3,6g
TOTALE: 198g.

RECOURVRE.
MYLAR ANG

THOMAS UKBAN - A. SCHANNÉC

104

$\frac{1}{5} \text{ } \frac{1}{5} \text{ } \frac{1}{5}$

LENNART HANSSON - A. SCHANDEL.

**LENNART
HANSSON
SUEDE**

tube all 0,3

 $+$

1

10

Propeller
HELICE ϕ 600 mm

aucun village
no warps.

rad.	corde pale	pas.
20	23,6	709
30	35,0	716
40	43,6	716
50	48,0	716
60	50,0	716
70	48,8	709
80	44,6	698
90	35,0	691
95	26,4	689
100	-	687

poutre-balsaille fil croise + japon

120

1
2
3

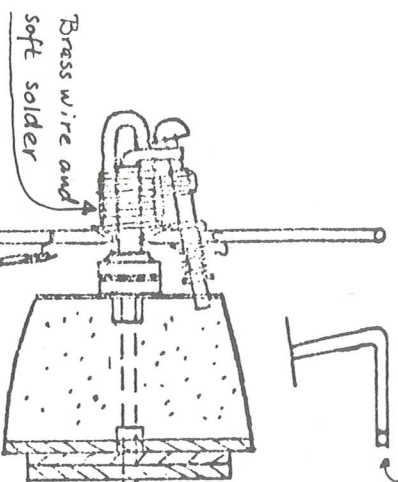
405

105

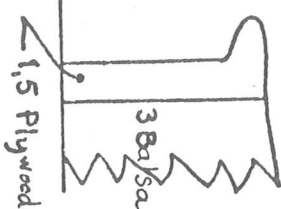
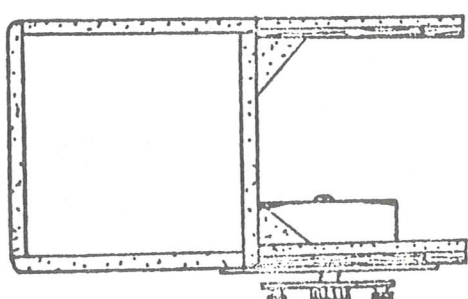
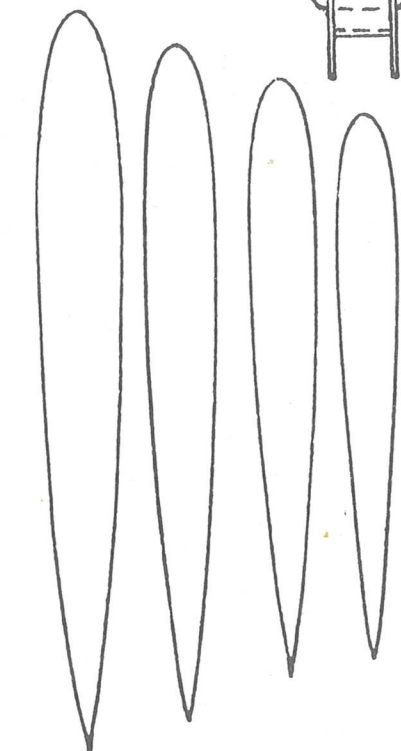
Lennart HANSSON
I have been a modelflyer since 1938, first contest 8. June 1938. I was Swedish Winter Champion 1967 and 68, Summe Champ 1970. My best international placing is the 10 th in the 1967 W.C. in Czechoslovakia, 5 maxes and 169. I am also regular contest director of several national contests among them six Nationals. In this organisation work my wife Berit take a very good part, handling all figures in the result scores. We have a son Anders, who also a Wakefield-flyer, just now not so active with models because of working as journalist and with his hands full of two little childrens, a boy and a girl. Berit and I are in the golden middle age, born in 1927, and with all of the enthusiasm for this fine sport safe and sound.
Lennart Hansson, -Sjögårdsgatan 15;- 214 65 MALMÖ SW EDEN.

EXPERIENCE

EC14737 1/5 ET 1/1

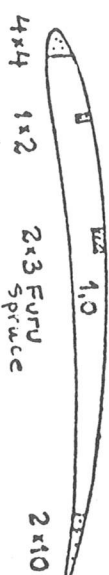
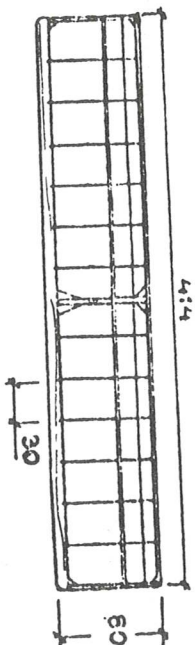
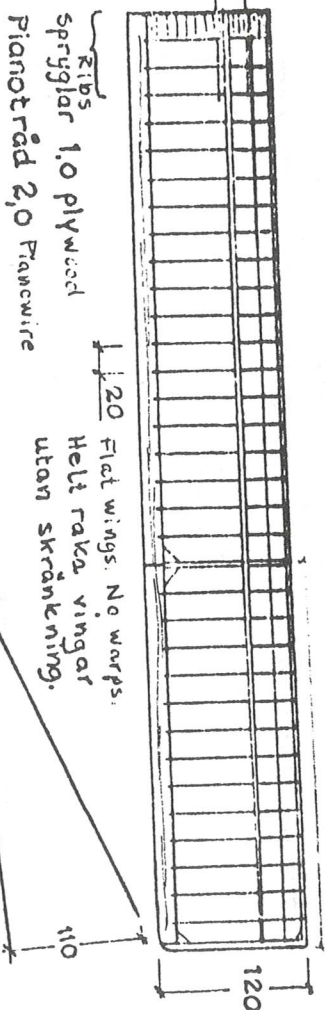
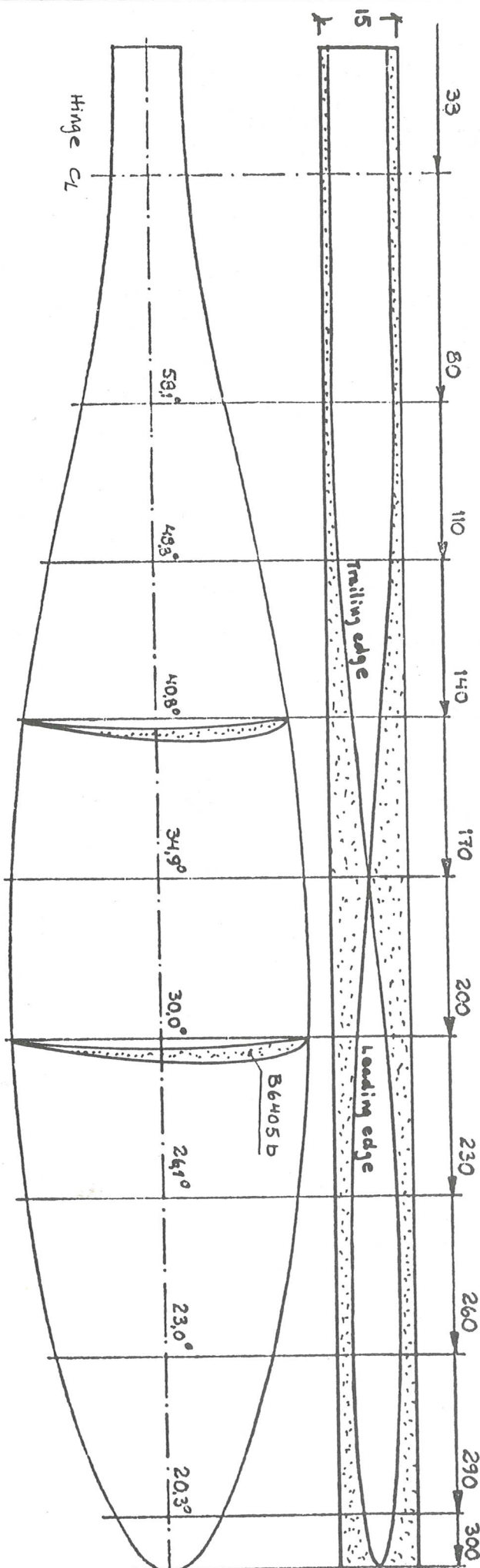


Sewing-machine bobbin
Symaskins bobbin
av stal

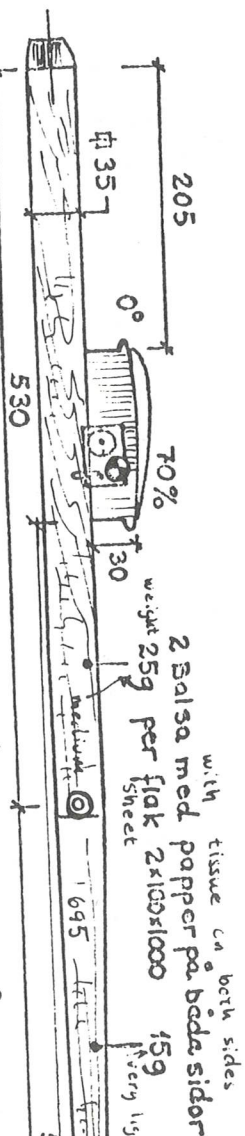
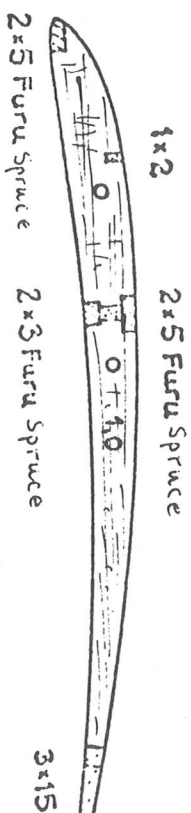


TILKA 6406b

Kg	0	1,25	2,5	5	7,5	10	15	20	30	40	50	60	70	80	90	100
Y8u	0,65	2,50	3,50	5,00	6,10	6,90	7,95	8,60	9,20	9,20	8,65	7,90	6,60	5,00	3,10	0,80
Yur	0,65	0	0	0,10	0,20	0,55	1,20	1,65	2,45	3,35	3,55	3,35	2,90	2,10	1,10	0



Fin 11% symmetric
Fena 11% symmetric.
0,8 Balsa på sprygjar.
around ribs



Vikter: kropp 52 g
timer 20 g
prop. 46 g
vingewing 66 g
stab. 8 g
Total 192 g

Rudder 40° left
Roder 40° vänster.
vänsterkurv.
left turn
-4,5°

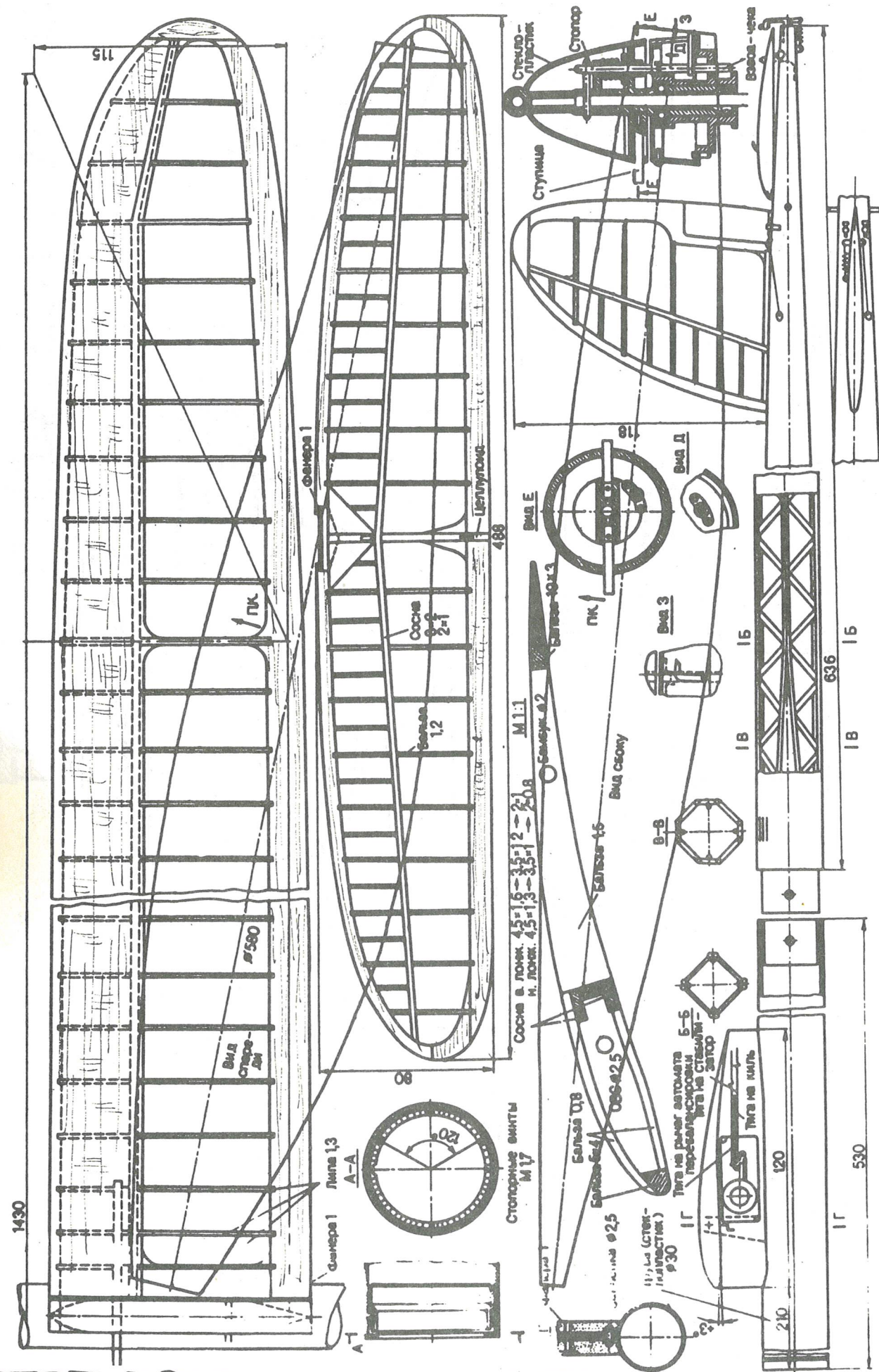
Autoslab -2°
6-9 sec.



Prop: Diam 600
Stign 720
Motor: 16 str 6x1 320 varv.
18 str 6x1 280 varv

Vitor: Vinge 15,6 dm²
Stab 3,3
Tot 18,9 dm²

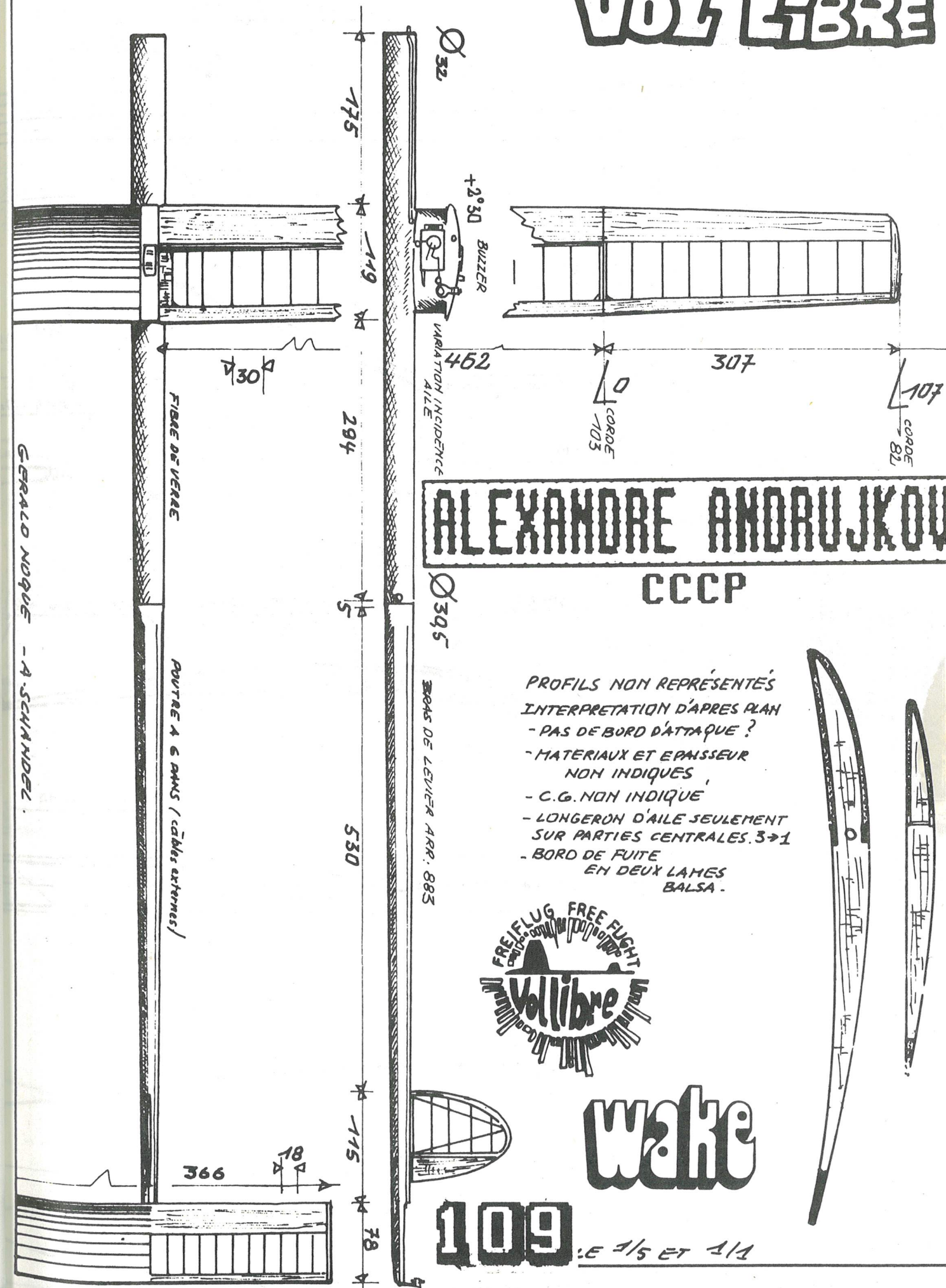
Balsa if not stated
otherwise.








STREETWALK



ALEXANDRE ANDRUIKOV

СССР

PROFILS NON REPRÉSENTÉS
INTERPRÉTATION D'APRÈS PLAN

- PAS DE BORD D'ATTAQUE ?
- MATÉRIAUX ET ÉPAISSEUR
NON INDICÉS
- C.G. NON INDICÉ
- LONGERON D'AILE SEULEMENT
SUR PARTIES CENTRALES. 3 → 1
- BORD DE FUITE
EN DEUX LAMES
BALSA.

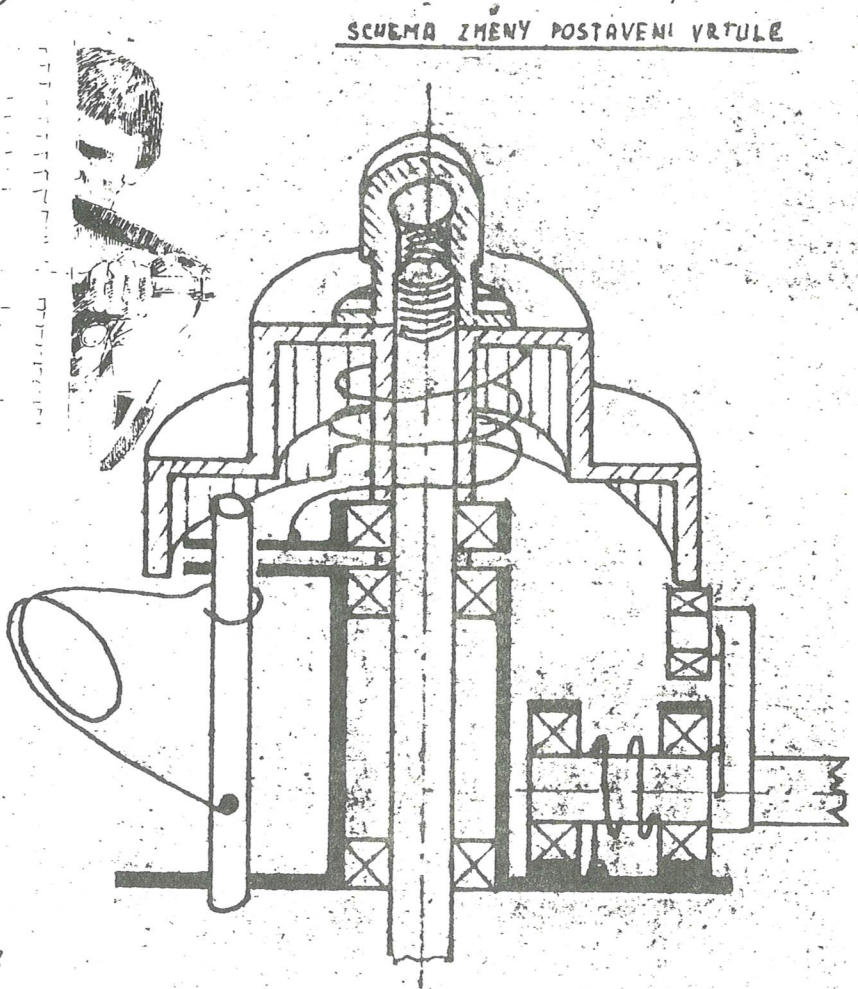
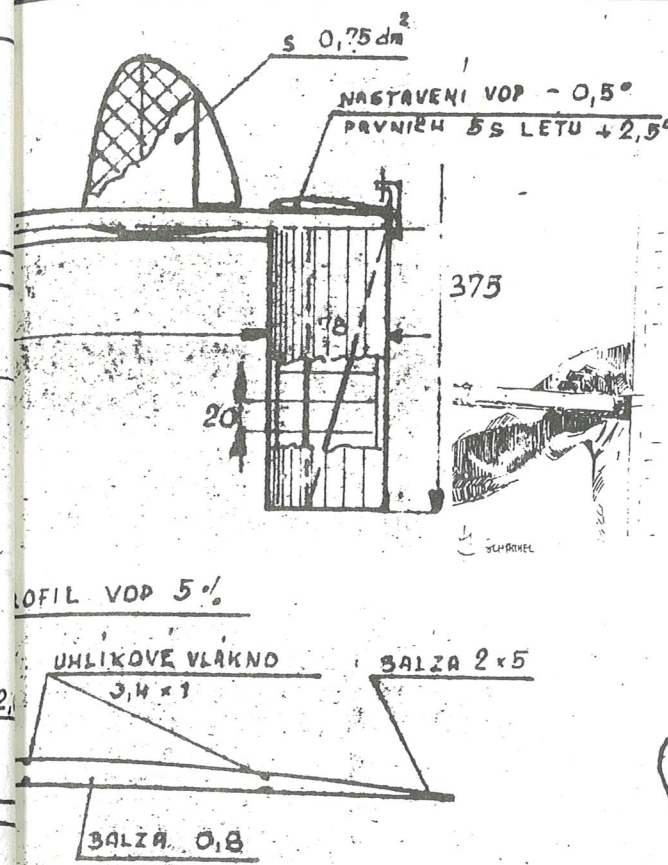
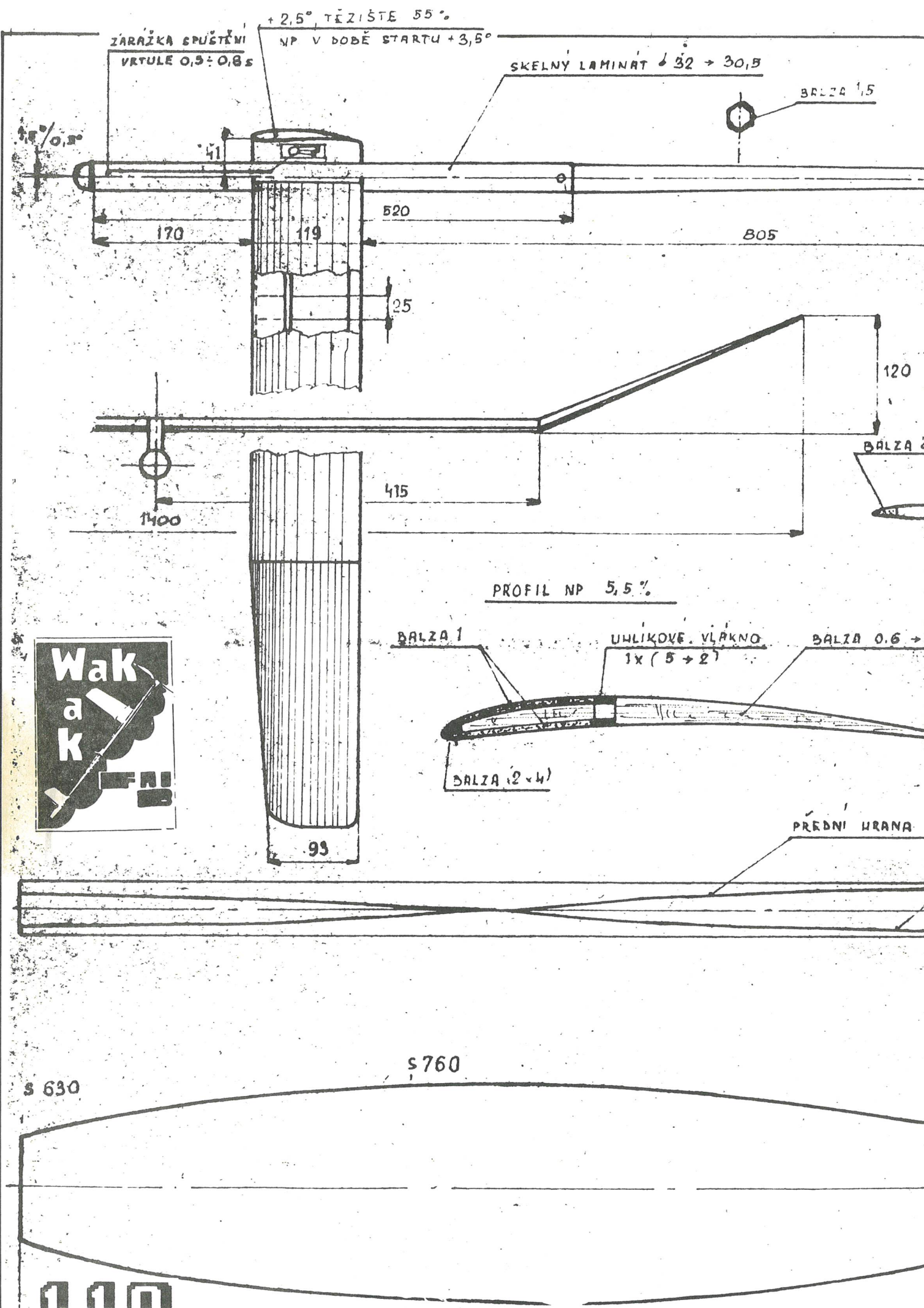


wake

109

$$E \approx 1/5 \text{ ET } 1/1$$

VOL FIBRE

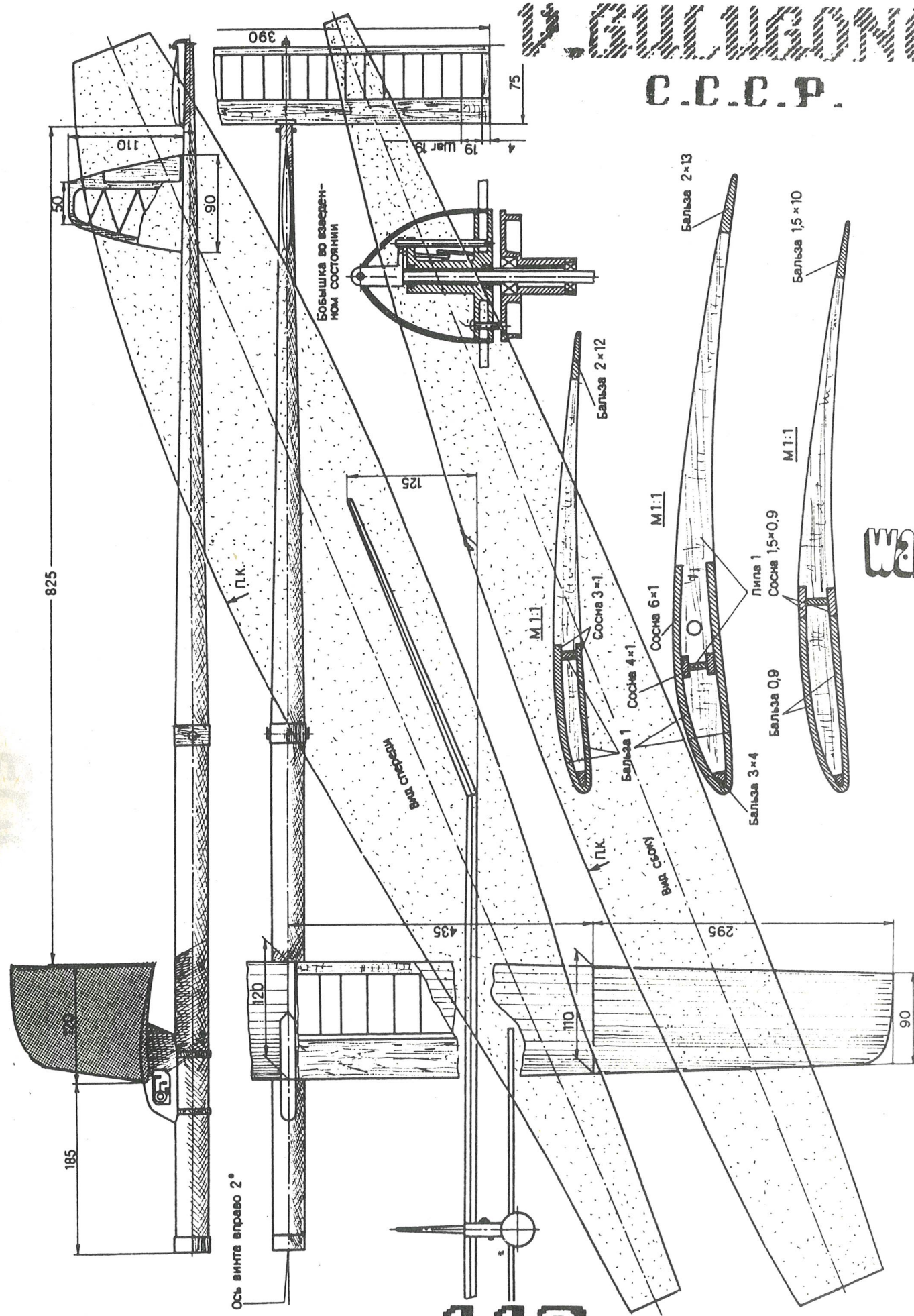


MOTOR NA GUMU
 DOBA ROZTAČENÍ 30 - 38 s
 34 - 36 NITÍ "PIRELLI" 1x 3, 1981 ROK

<u>CELKOVE</u>	
NP	53 gr
VOP	3
VRTULE	52
TRUP PRÁDEK	52
TRUP ZÁDEK	16
ČASOVAC	14

<u>POVEL ČASOVAČE</u>	
ROZTAŽENÍ VRTULĚ	0,3 - 0,8 s
VOP	
SOP	5 s
DOBA MOT. LETU	32 s
CELKOVÁ DOBA LETU	3 min, 2 s

ALEXANDR ANDRUKOV
A.A. 21 URS



Чертеж модели мастера спорта СССР международного класса, чемпиона СССР, призера международных соревнований, члена сборной команды СССР Ю. Гулюгонова (Украина).

white	weiß
red	rot
bottom	unten
top	oben

Gewichte:

Flügel	57,7
Rumpf	78,1
Leitwerk	12,2
Kopf+Prop	35,8
vorderer Gummihaken	5,5
hintere Gummiaufhäng	2,0
Gesamt	191,3

geschnitzter Balsa-Prop
25.5 Ø x 32 PITCH

BOB WHITE

0,010" Turbulator
auf Holm-Mitte

-1/20 RIBS

11/22/17

11

$$1/20 \times 25 = 1.2$$

STAB AIRFOIL

Flächen:
Flügel
Leitwerk
Gesamt

15,37 dm²
3,12 dm²
18,49 dm²

Kohlefaser-Rohr Ø 1,30"
rot angemalt

NO. 22 F1B

BY BOB WHITE, S.C.A.T.

1.60

- CIS TURB.

5817 21/1-

1/16 x 1/4 SPRUCE
(Balsa Tip)

SP8M 9/1/1-

WING AIRFOIL

1 inch	=	25,4 mm
1/4	=	6,4
1/8	=	3,2
1/16	=	1,6

CHAMPION DU MONDE 1987



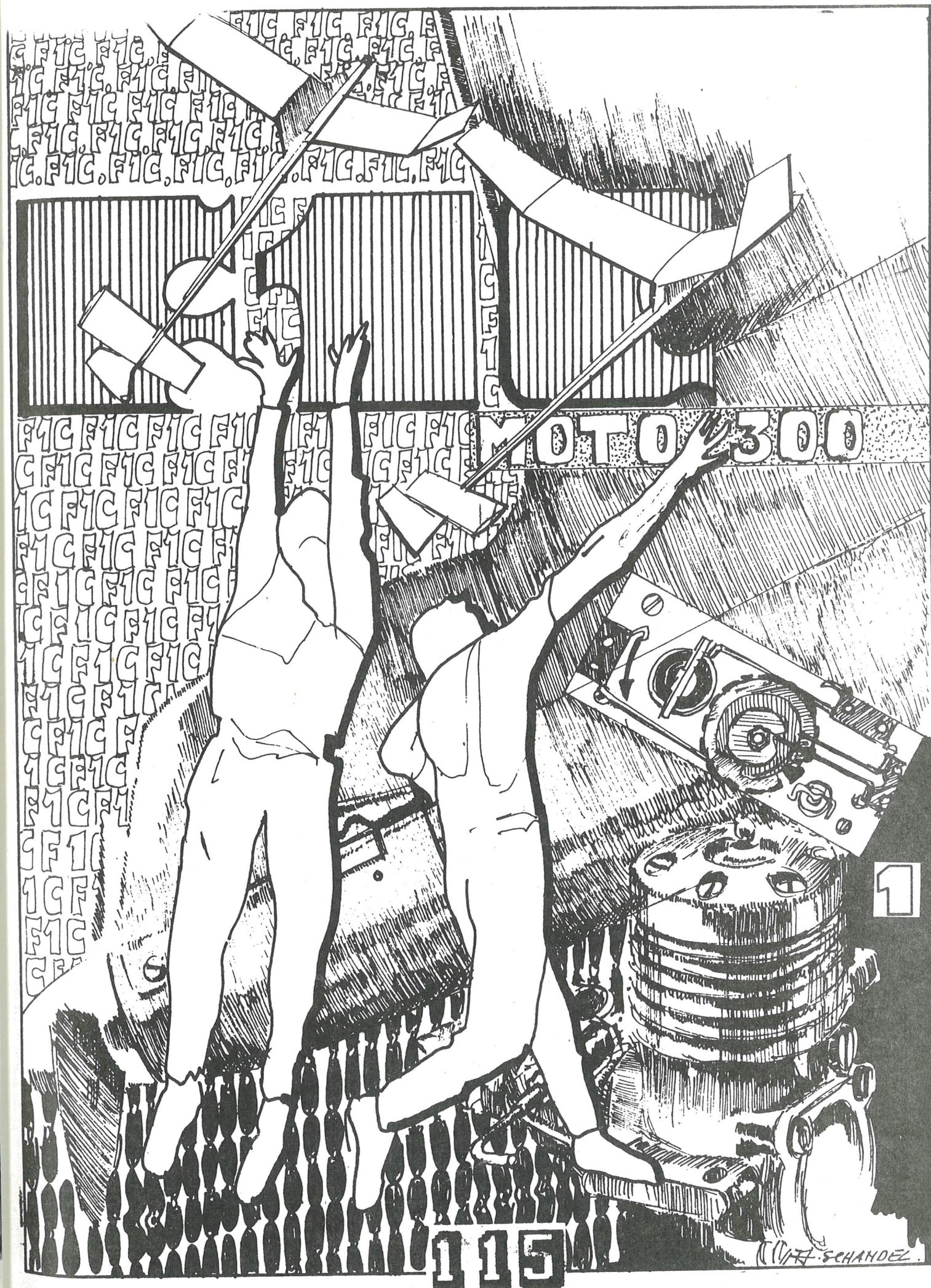
Bob WHITE Champion du Monde F1B 1987. Dans une position d'attente assez dubitative; recevant les premières félicitations de W. Ghio après son succès, moment d'émotion!

114

VOI LIBRE

1987

MEASURE 003



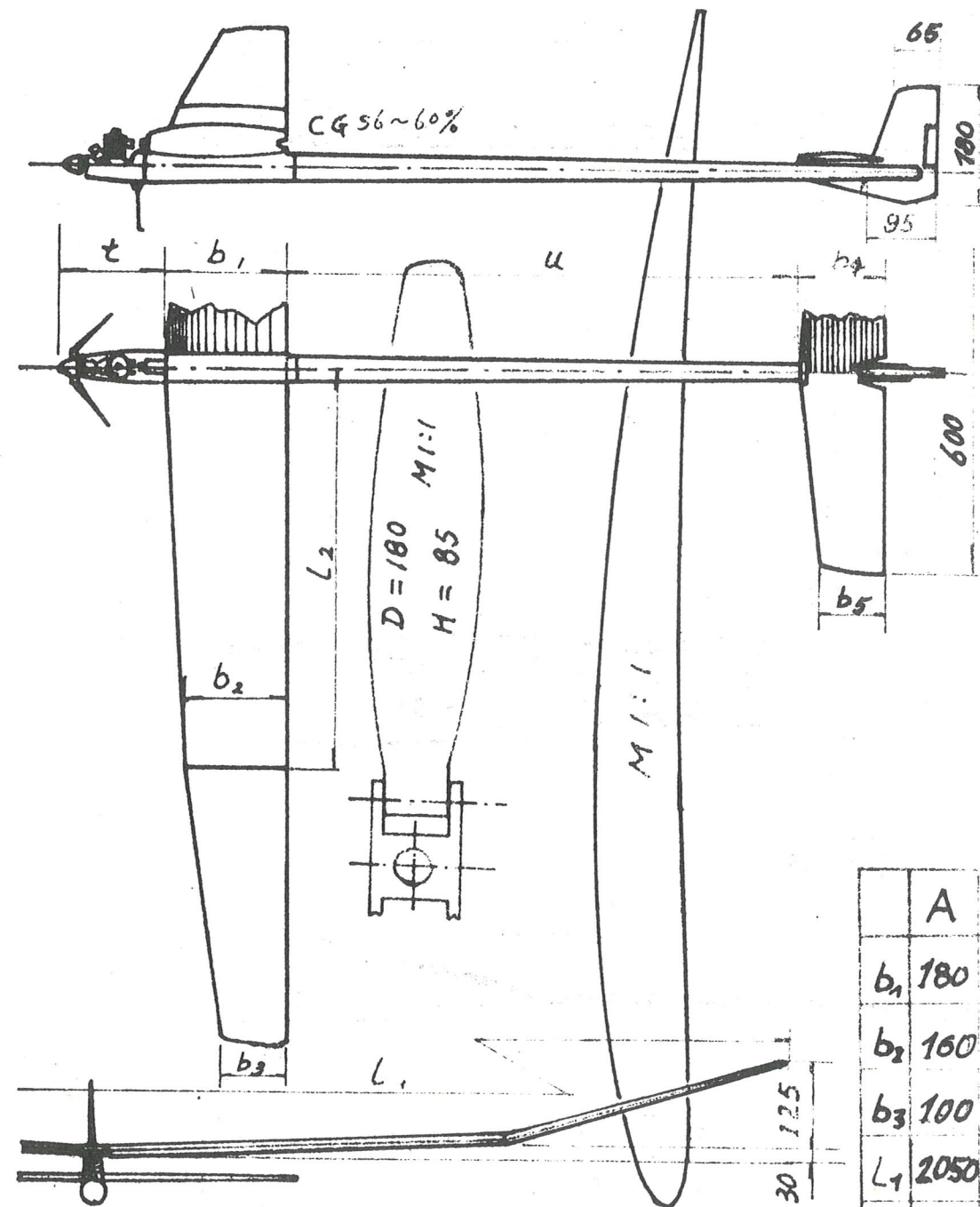
115



VOZ LIBRE

WANG XIAN
CHINE

VOZ LIBRE
VOZ LIBRE



	A	B	C	D
b ₁	180	175	180	180
b ₂	160	155	160	160
b ₃	100	95	100	100
L ₁	2050	2120	2030	2030
L ₂	612	625	600	600
b ₄	115	115	125	125
b ₅	90	90	95	95
t	135	135	150	150
u	790	790	765	765

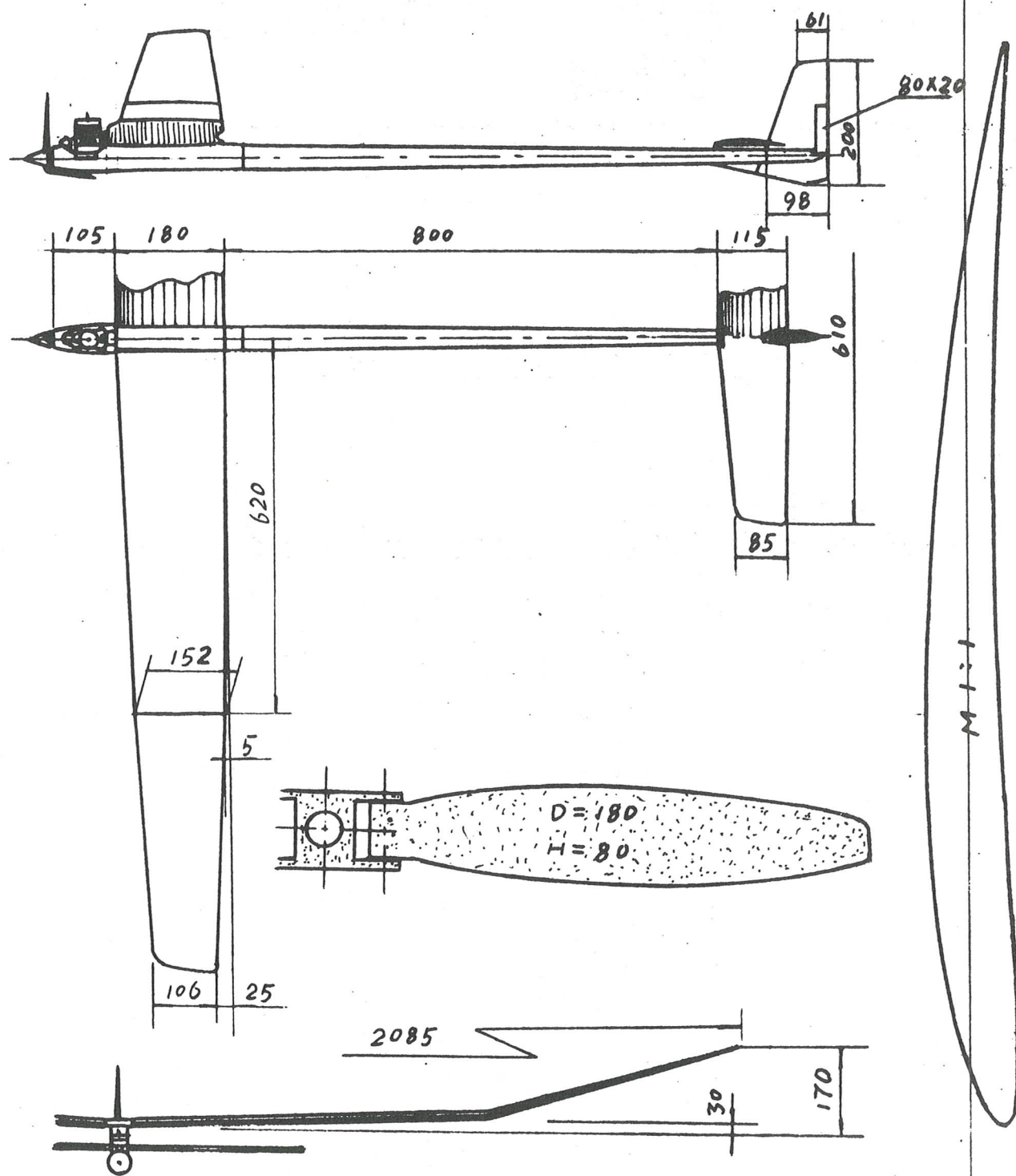
Page 116

Kim Koster, le petit grand frère du petit grand Thomas Koster. Un modèle construit en concert avec son frère, tout en matériaux nouveaux et muni d'une radio pour déthermalo et arrêt moteur. Nouveauté...controversée...

116

设计 王显 比例 M1:10
Designer Wang Xian Scale
队别 中华人民共和国航空模型队
Team Aeromodel Team of the People's Republic of China

117



机翼面积 31.5 dm²

WING AREA

平尾面积 6.1 dm²

STAB AREA

发动机 NELSON 15

ENGINE

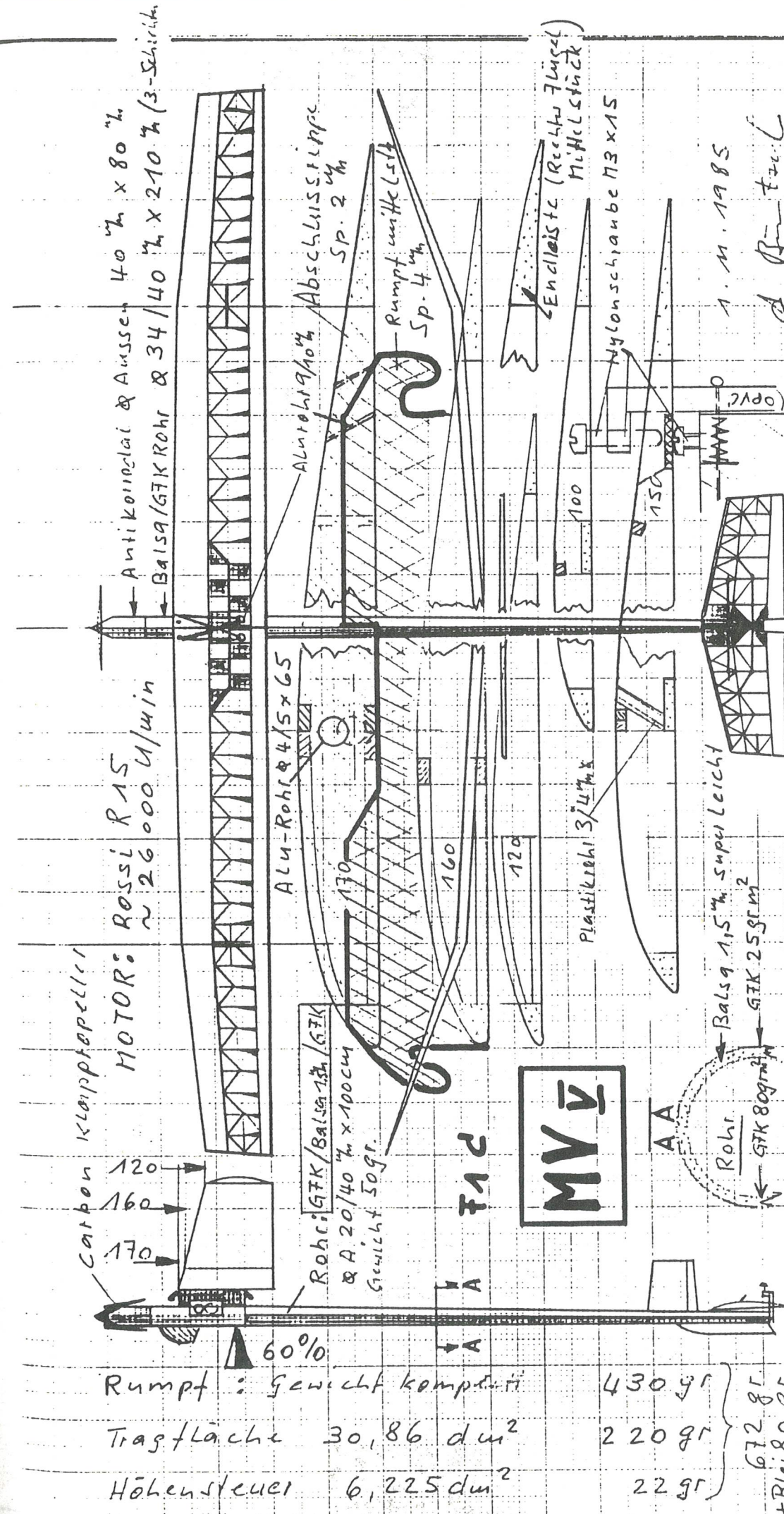
飞行重量 760g

FLYING WT



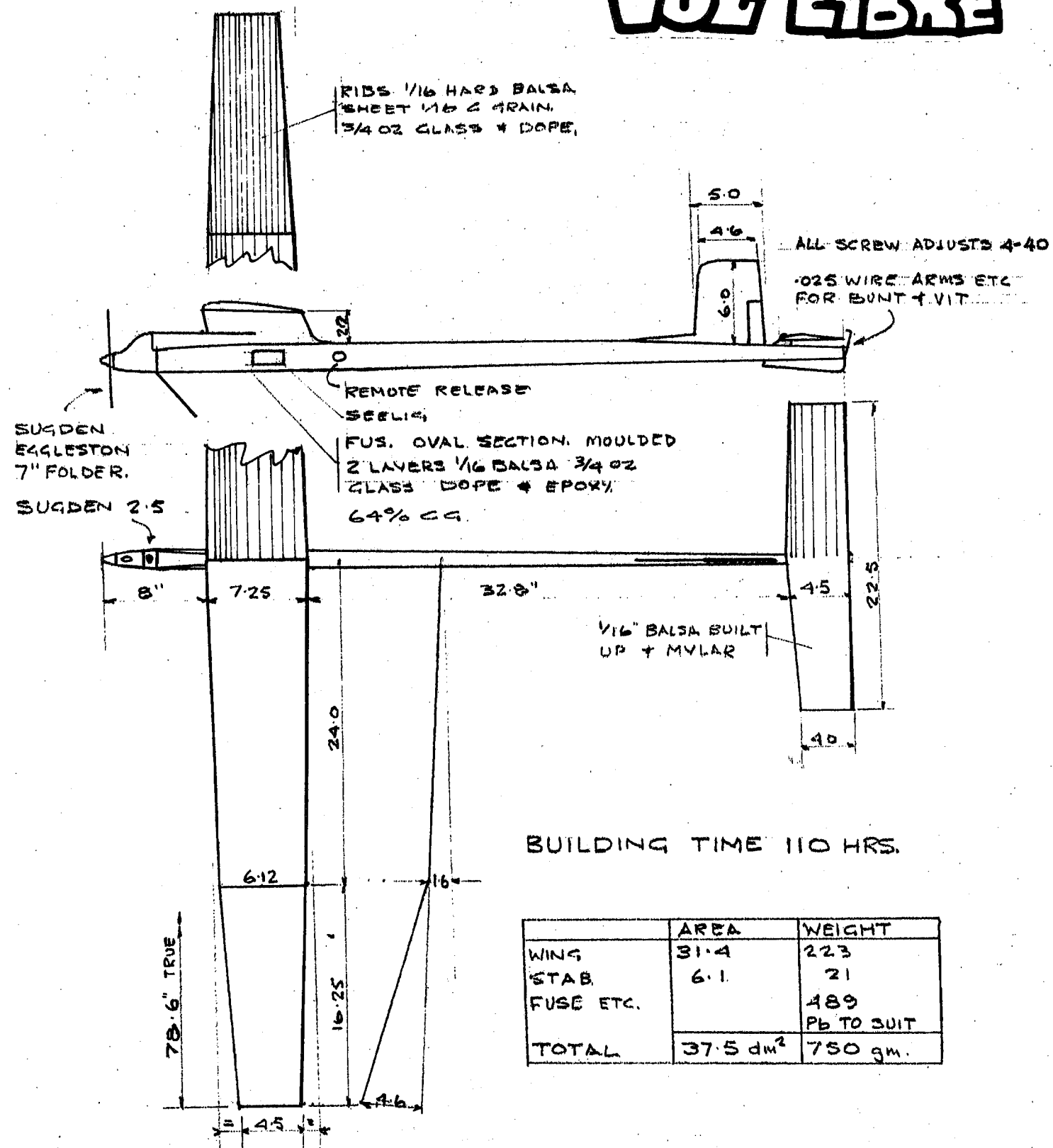
118

设计 Designer	孙树良 Sun Shu Liang	比例 Scale	M1:10	FIC
队名 Team	中华人民共和国航空模型队 Aeromodel Team of the People's Republic of China			



Rumpf : Gewicht komplett	430 gr
Tragfläche	30,86 dm²
Höhensteuer	6,225 dm²
	220 gr
	22 gr
	672 gr
	+ Blei 80 gr

VOL LIBRE



Dave SUGDEN - Canada

Ex aero engineer; almost 30 years ago ! now dentist. Married , 2 children both university. still! Have been a modeller for almost 50 years ! Recent 1 st place results:-1986 Toronto International, 1985 Max Max Taffi ; 1981 Pierre Trébo

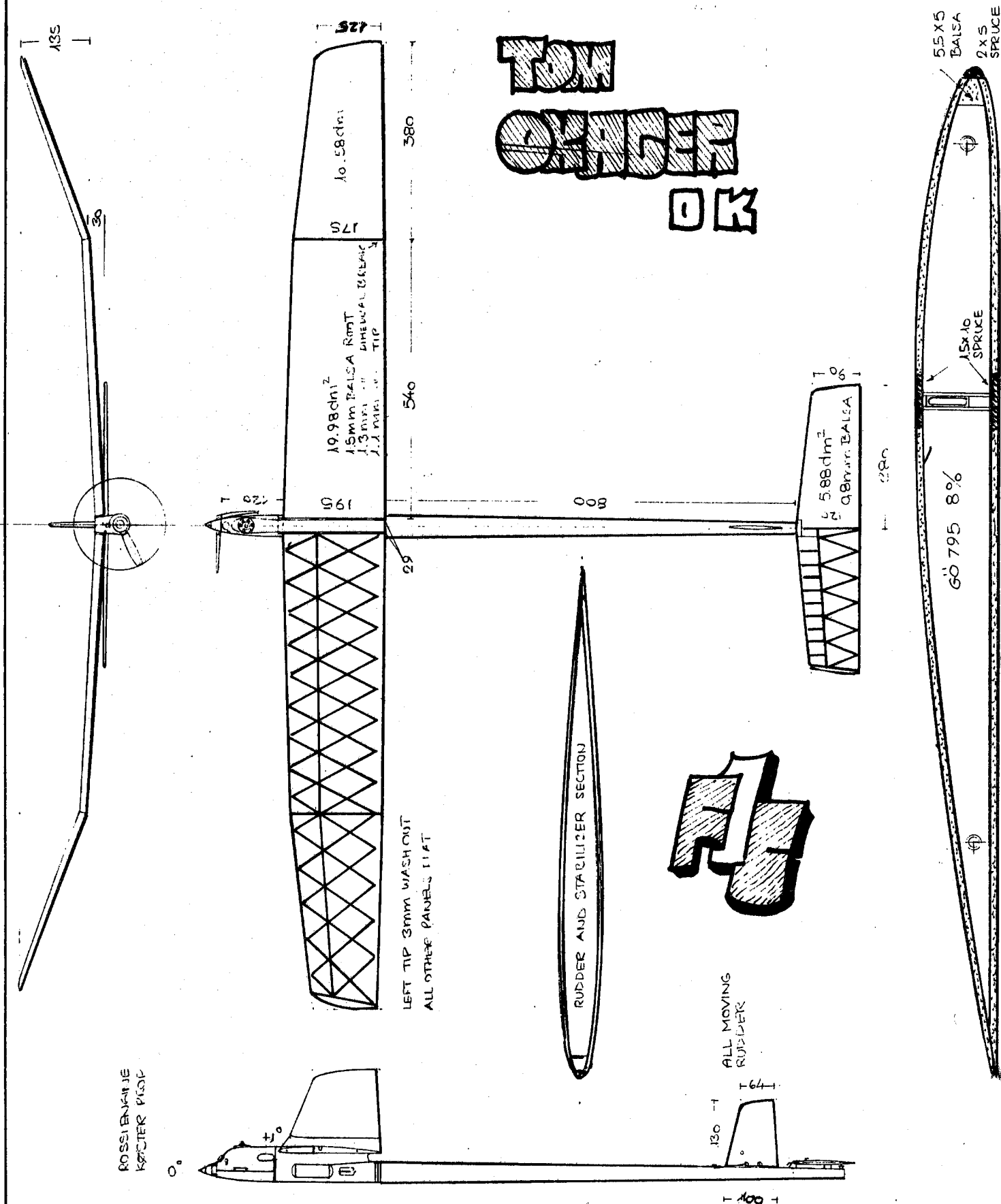
France ; 1980 Sierra Cup
Sacramento. My model is not
sensitive to change in power
propeller or weather conditions.
Almost invariably any flight
problem has been due to my poor
flying technique. Over the years
construction has been simplified to
reduce building time so that I can
devote probably half of my space
time , which is limited, to engine
contruction.

**DAVE SUGDEN
CANADA**

120

VOL LIBRE

**TOM
CHINGER
OK**



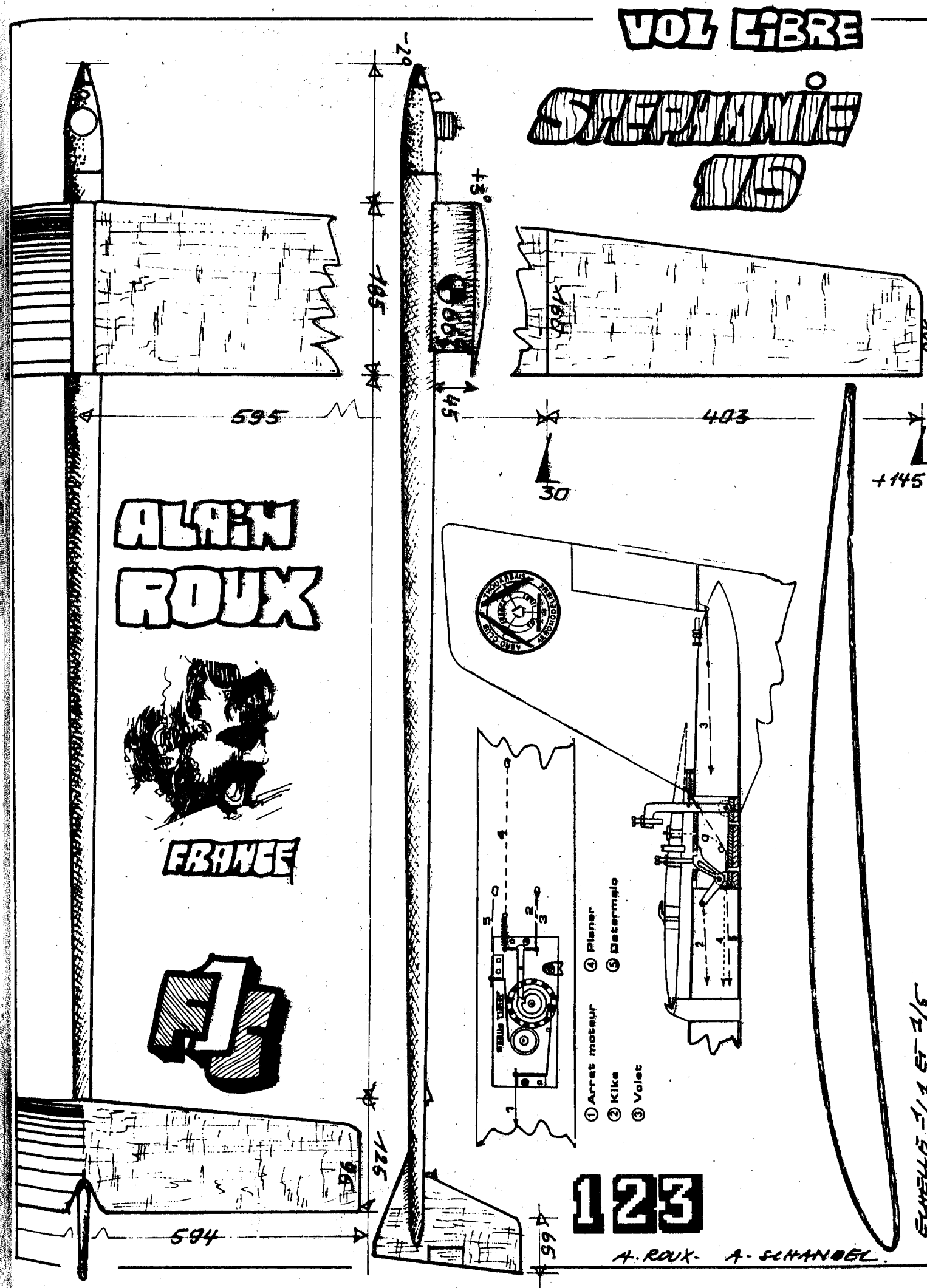
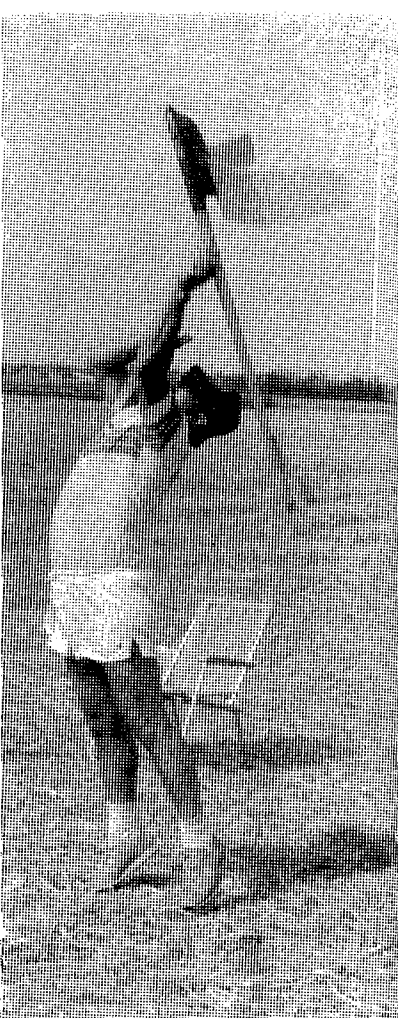
121



Tom Oxager (DK) avec un modèle de la même conception et famille que les frères Koster. **R. Truppe** (Autriche) homme d'allure aussi puissante que le modèle....**G. Szengeller** (Hongrie) avec un modèle d'une grande élégance tout comme sa moustache



122



11-11-11

4. ROUX. 4. SCHANDEL

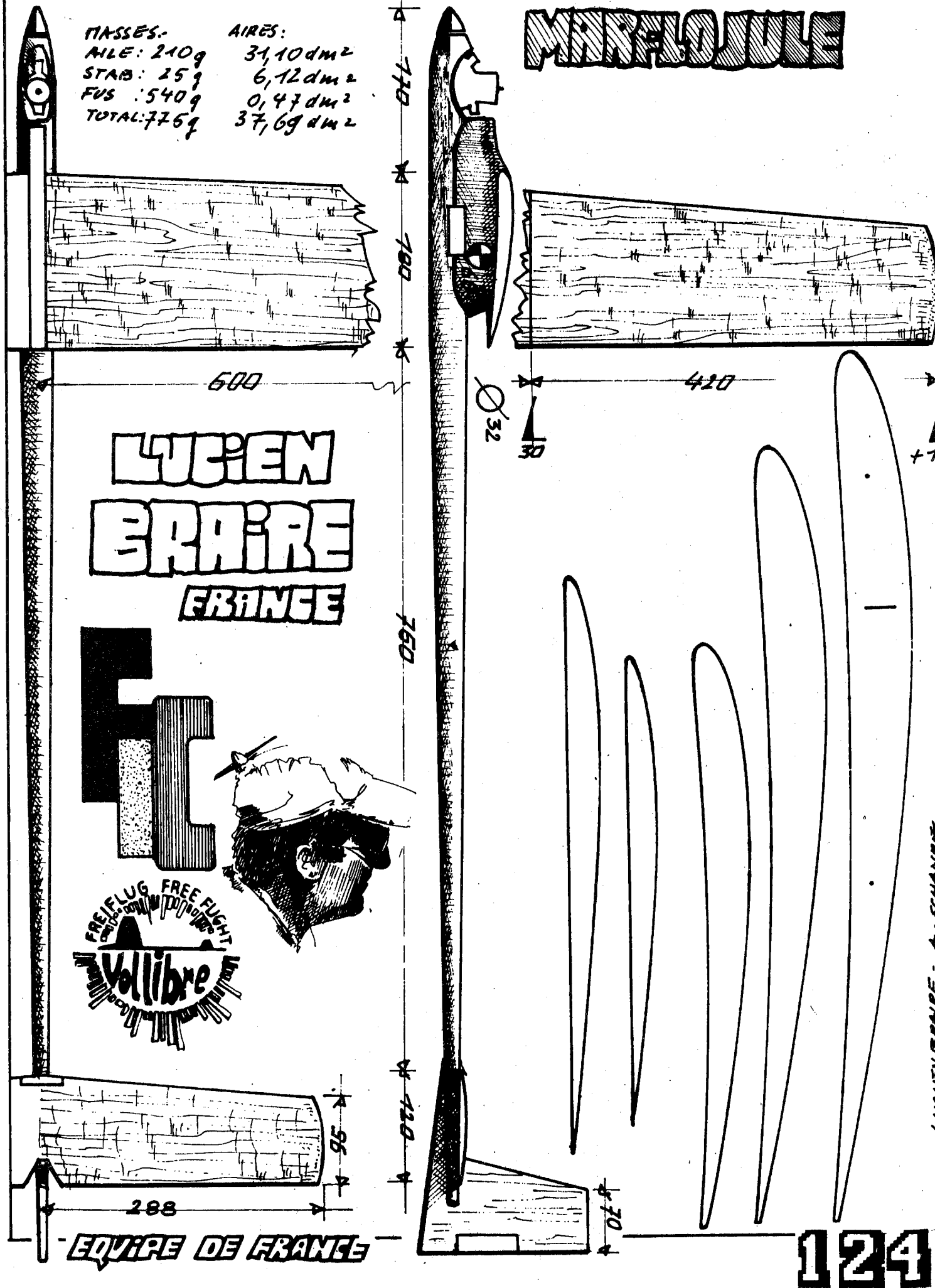
VOL LIBRE ECHELLE 1/5 ET 1/1

MASSSES:
 AILE: 210g
 STAB: 25g
 FUS: 540g
 TOTAL: 775g

AIRES:
 31,10 dm²
 6,12 dm²
 0,47 dm²
 37,69 dm²

VOL LIBRE

MARLOUJULE



**LUCIEN
 BRAIRE
 FRANCE**



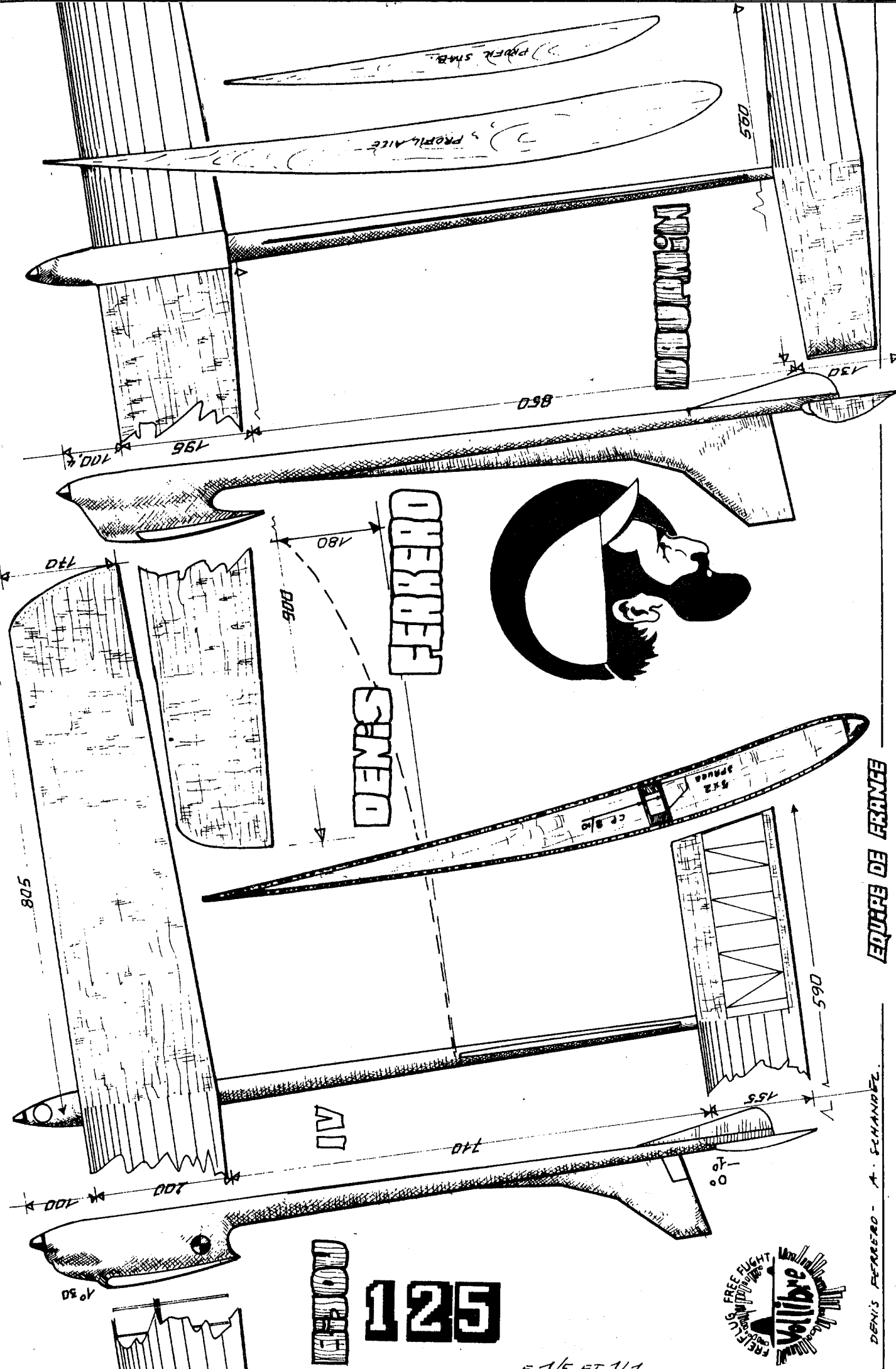
EQUIPE DE FRANCE

124

VOL LIBRE

VOL LIBRE

LUCIEN BRAIRE - A. SCHANDEL



**DENIS
 FERRERO**



FRANCE

125



EQUIPE DE FRANCE

DENIS FERRERO - A. SCHANDEL

F 1/5 ET 1/1

126

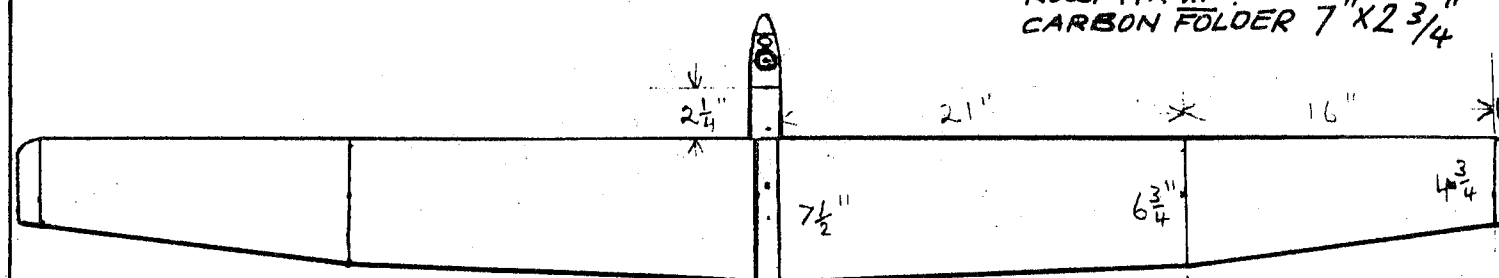


127



ROGER BAGGOTT

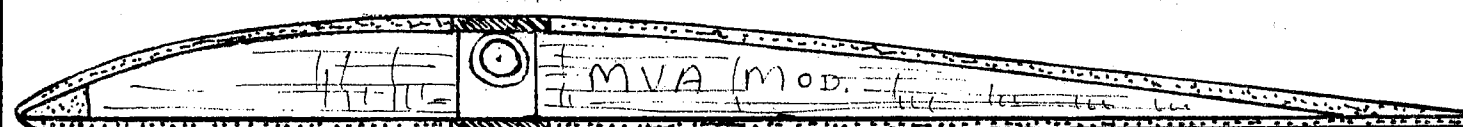
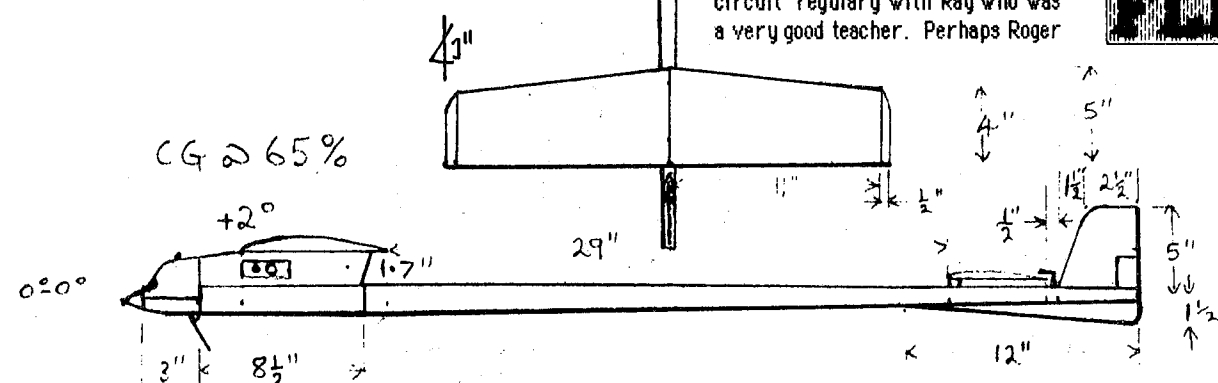
ROSSI MK III
CARBON FOLDER 7" X 2 3/4"



Roger BAGOTT 43 year old
Managing Director of a Steel
Stockholding and Processing Centre
is married and has a 14 year old
daughter.

He has been aeromodeller for over 30 years and always F.F. He became interested in competition flying during his last years at school and managed to attend competitions by various means, such as aboard the Club coach, in a friend's car and even by bicycle - on occasional! On leaving school he met Ray MONKS and joined the Birmingham Club. He travelled around the competition circuit regularly with Ray who was a very good teacher. Perhaps Roger

FUSELAGE: 1 5/8" DIA-ALUM.TUBE
MACHINED PART - SCREWED ON
BOOM - FOIL/CARBON/BALSA/GLASS-



SPARS SPRUCE - $\frac{1}{2} \times \frac{1}{16} \rightarrow \frac{1}{2} \times \frac{1}{16}$

GLASS COVERED INNER PANNELS
JAP TISSUE ON TIPS & TAIL -

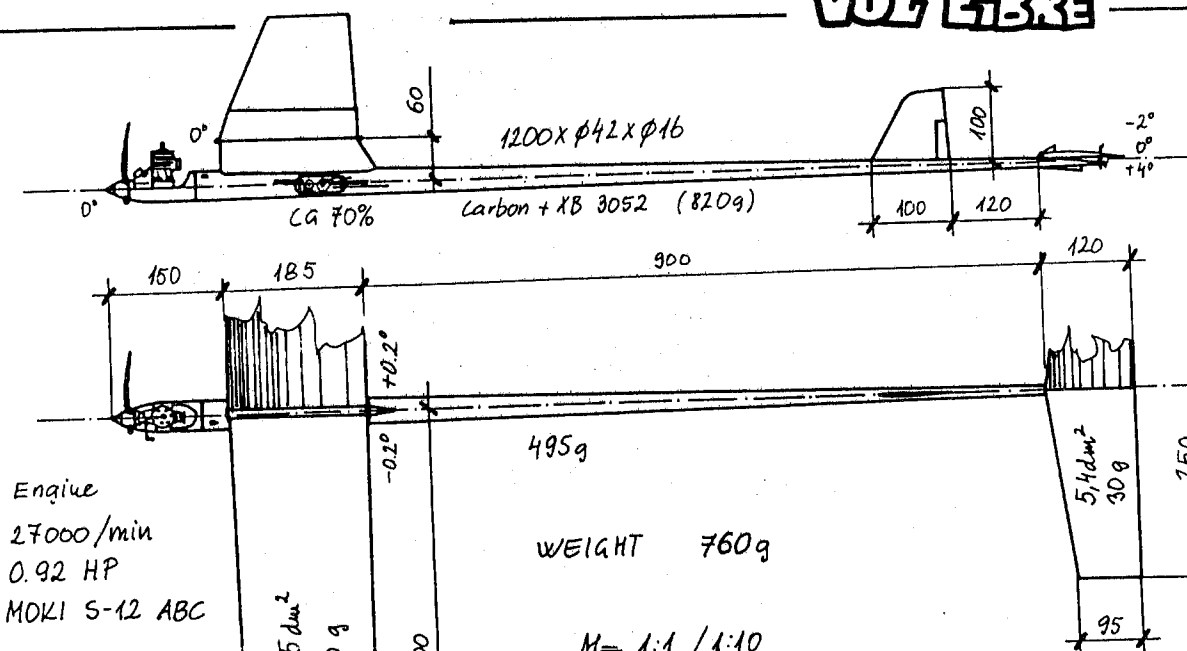
JOINER 5mm DIA: EJECTOR PINS IN $\frac{1}{4}$ " O/D ALUM. TUBE

was not a very good pupil but he was keen. Eventually, around the early seventies, Roger was placing in Open Power and FIC quite regularly at National level but due to a continuing run of minor disasters and excuses did not make British Team until 1978 for the E.C. Further disaster and excuses on an annual basis kept him from follow-up until the E.C. in Rumania in 1986. Is this "third time lucky"?

VOL LIBRE

128

VOL LIBRE

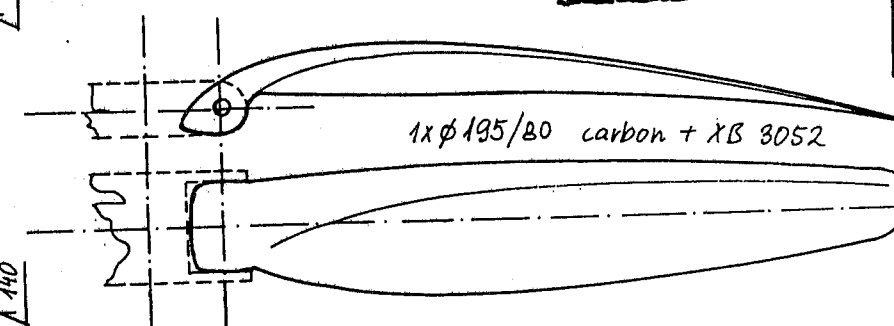
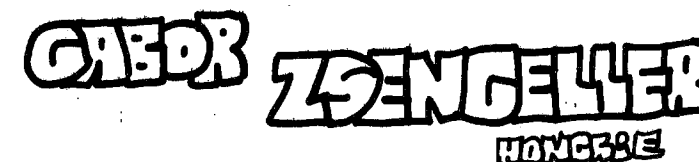


Engine
27000/min
0.92 HP
MDK1 S-12 ABC

WEIGHT 760g

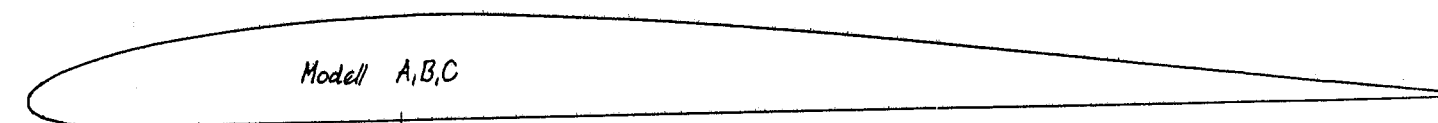
$$M = 1:1 / 1:10$$


LEINO
835

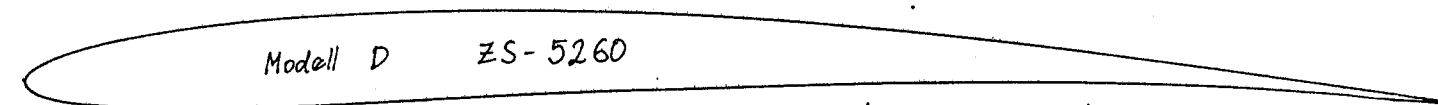


Tail sect

2 x 0.6 mm balsa + 25g/m² glasscloth + XB 3052

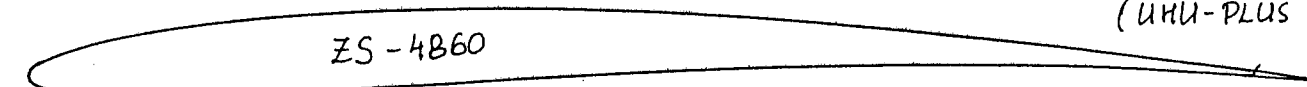


2x 1mm balsa + 40g/m² glasscloth + XB 3052

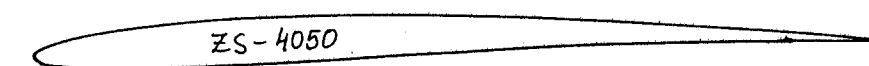


Modell D ZS-5260

2x1mm balsa + 0.33 duraluminium
(UHU-PLUS + methanol)



ZS-4860



ZS-4050

WING ROOT: $0.8 \times 12 > 0.8 \times 5 > 0.5 \times 1$ carbon + XB 3052

129

VOL LIBRE

HELICE: 76 X 178
PROP:
MOTEUR - ROSSI 15-26 500 RPM.

SYLVANO L'ISTRATTO

14 TR BALSA 8009 MUS
GLASS EBOX - CLASS 2790/m²

AIRES: 31.38 dm²
 AILE: 9.92 dm²
 TOTAL: 38.30 dm²
 MASSES:
 AILE: 200 g
 STAB: 24 g
 FUS: 542 g
 TOT: 766 g

FOR CORRECT WING SECTIONS SEE
SHORE ST. GENEEF 28 DIAGRAM

8x8 Balsa
8x4 Poplar

PREFACE

0.8 TK PLUS AS WIN'G

PANHEAD CONTR. C + 0.3
DIEDRS G. - 1.6°

ECHELLE 1/5 ET 1/4 SILVANO LUSTRATI - A. SCHANDEL

POUR LE - INTÉRIEUR -

POUR RE. - INTERIEUR - BUREAU: 005
- BALSAS (SANDWICH) 15/100 - TISSU FLOUTEXDY. 42g/m²

INCIDENCES

- MONTEE + 0,50
- TRANSITION - +2,40
- PLANE - -2,70

133

VOL LIBRE

GIORGIO VENUTI

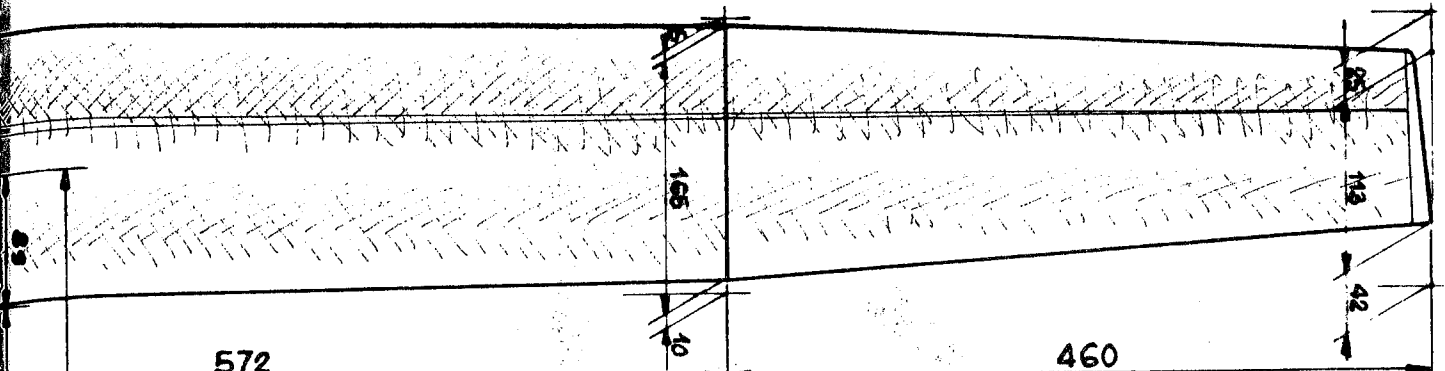
NACRA 4409

TISSU FIBRE DE VERRE + EPOXY
20 g/m²

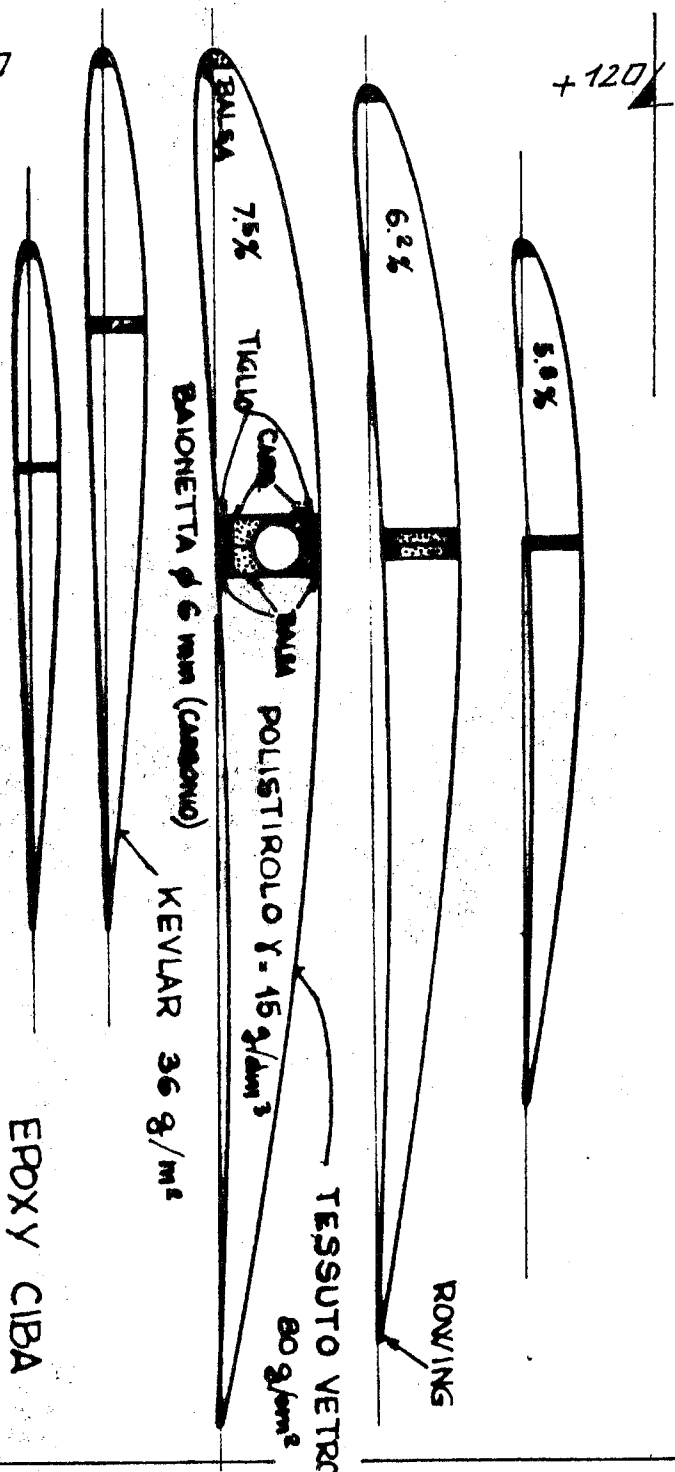
POLISTIROLO
15g/dm³

CARBONE

GIORGIO VENUTI ITALIE



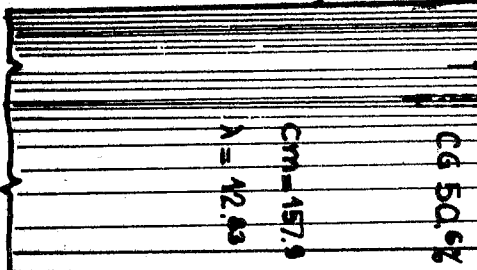
LAVORAZIONE ALA E STAB. SOTTOVUOTO (20-25 mm Hg) XB 3052
A TEMPERATURA DI ~ 40°C (6+7 ore)



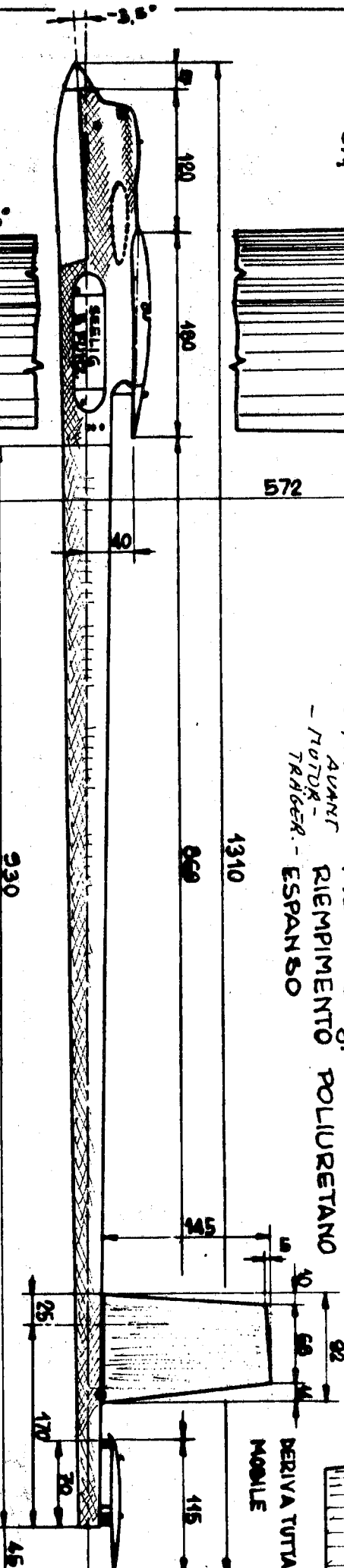
SUP. ALA	31.99 dm²	185 g
SUP. STAB	5.45 dm²	21 g
FUSOLIERA		549 g
TOTALE	37.44 dm²	755 g

135

MOTORE ROSSI IN
ELICA MONOPALA
φ 209 x 85 CM.B.
PERSONALE
26.700 g/1'



TRAVE CODA: SANDWICH DURAL 0.03 mm int.
- POUTRE: Balsa 1- mm
- LENTUVEKSTRABER CARBOVETRO 125 g/m² est.
MUSONE: CARBOVETRO 125 g/m²
- PARTIE + VETRO 80 g/m² interno
- AVANT RIEMPIMENTO POLIURETANO
- MOTOR - TRIGGER - ESPANSO



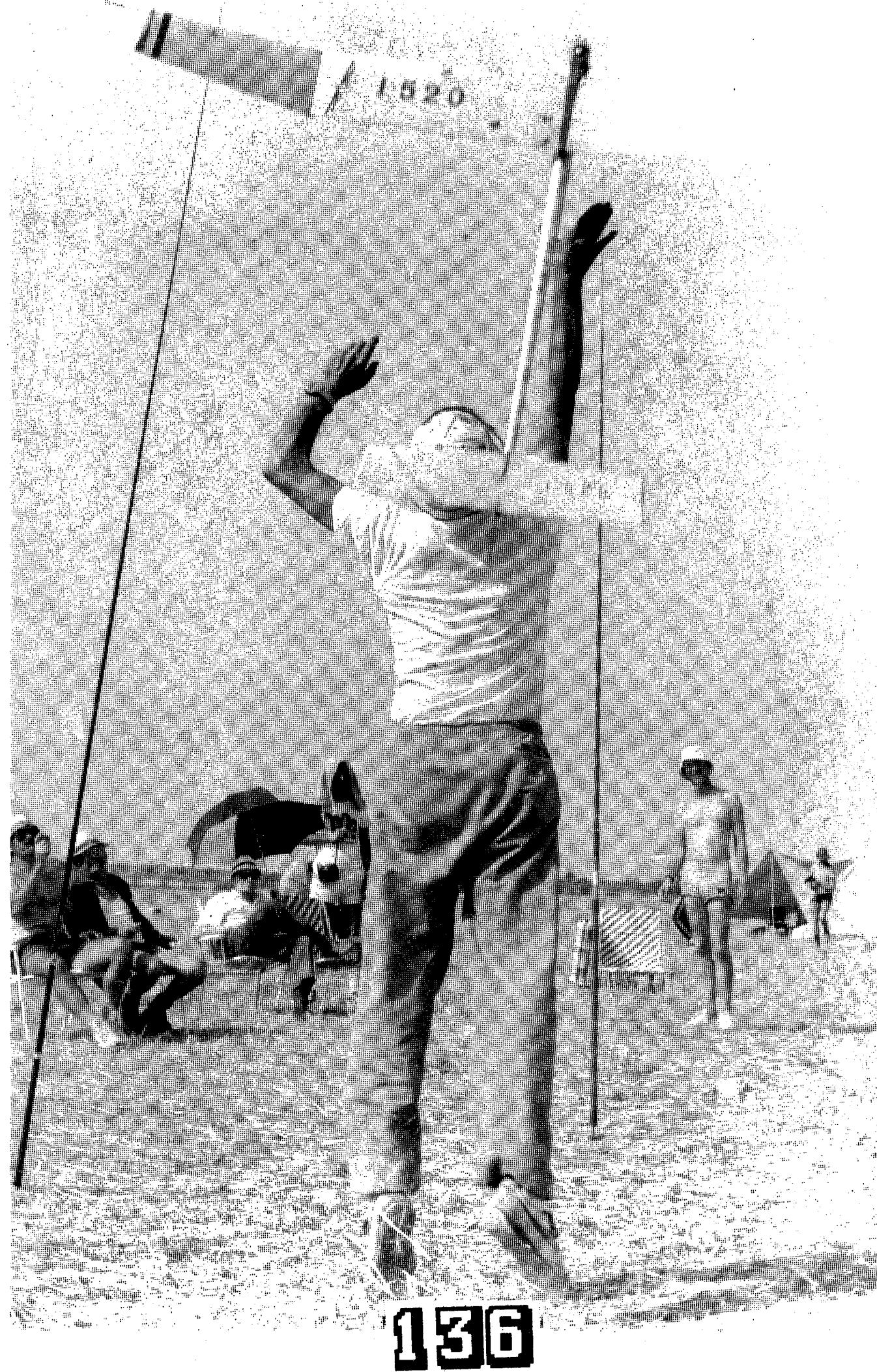
DERIVA TUTTA
MOBILE

134

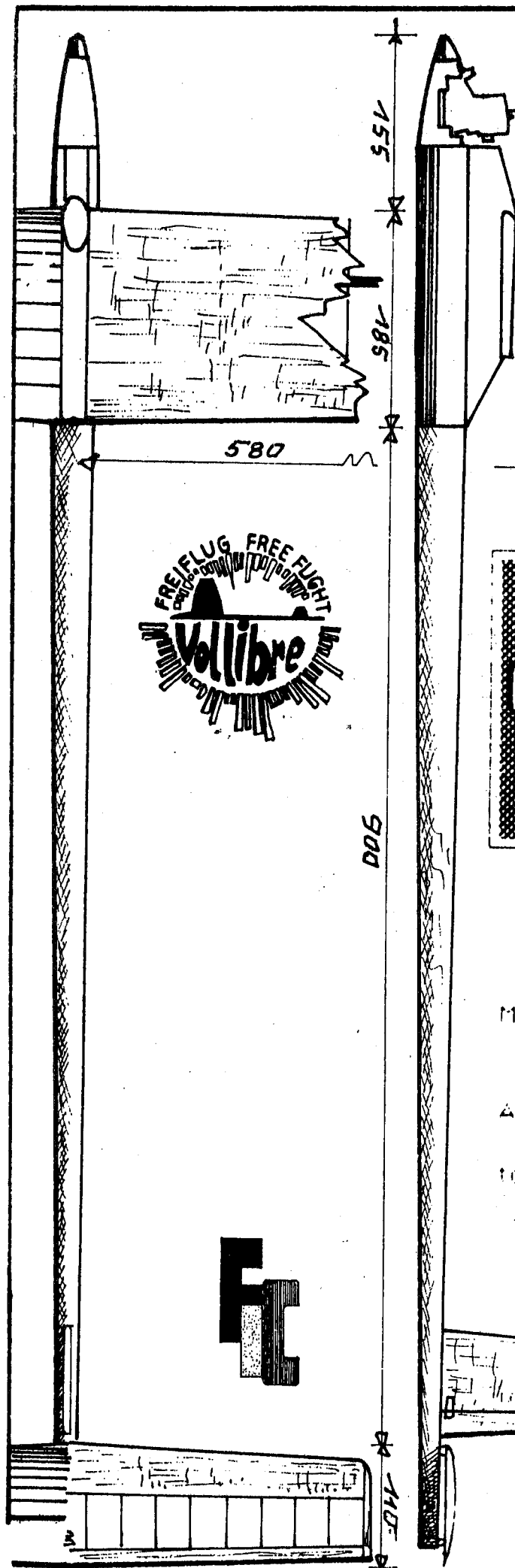
VOL 3



VOL 3



VOL LIBRE



J. Z.
14

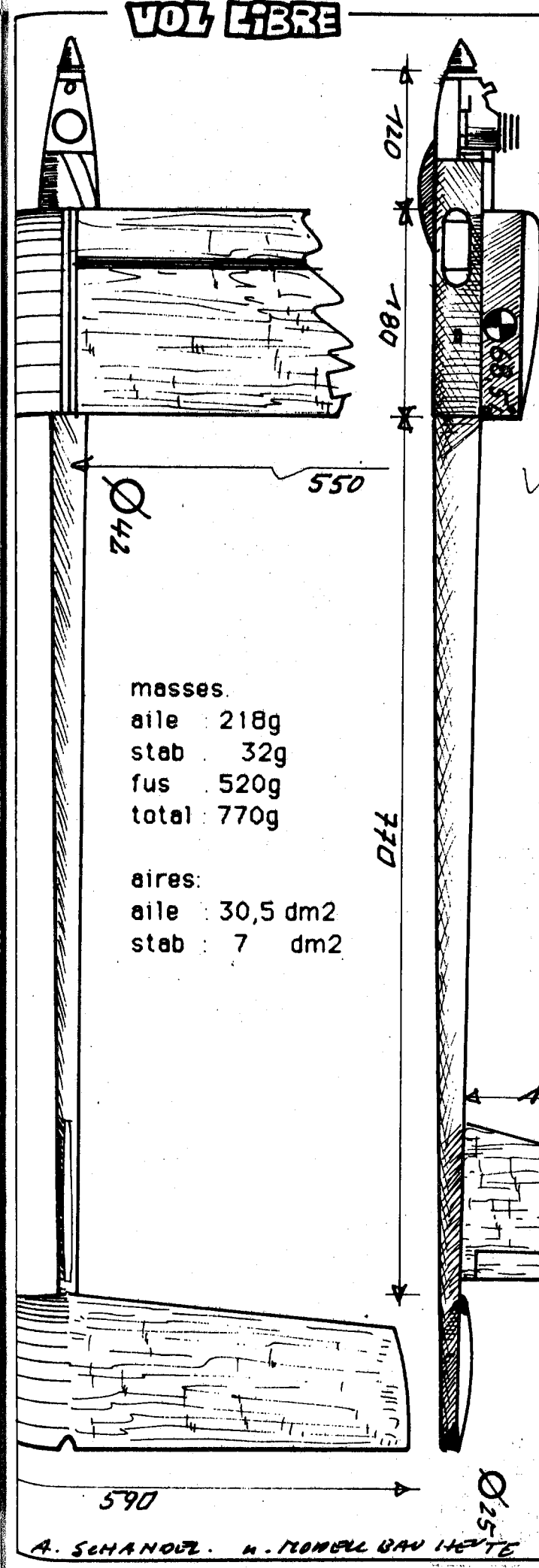
Jaroslav
ZIELINSKI

Masses aile 215g
stab 22g
fus 558g
Aires aile 31,90 dm²
stab 4,94 dm²
total 36,84 dm²

A. SCHANDERL

138

VOL LIBRE



Mantred THOMAS

masses.
aile 218g
stab 32g
fus 520g
total 770g

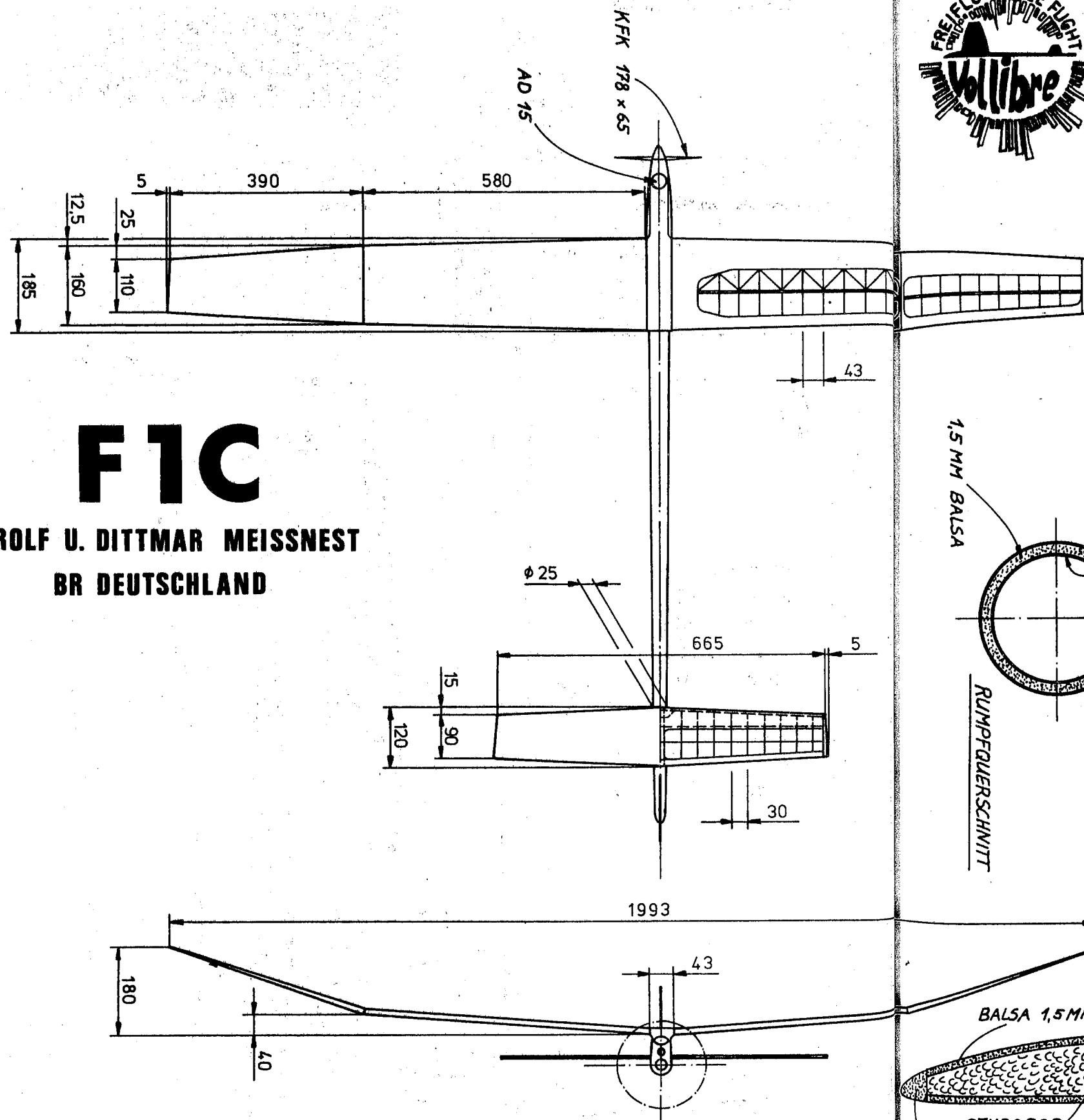
aires:
aile 30,5 dm²
stab 7 dm²

139

A. SCHANDERL. H. KRONAUER

F1C

ROLF U. DITTMAR MEISSNEST
BR DEUTSCHLAND



ALUMINIUM - WAHLWEISE
MAGNESIUM - MOTORSCHALE

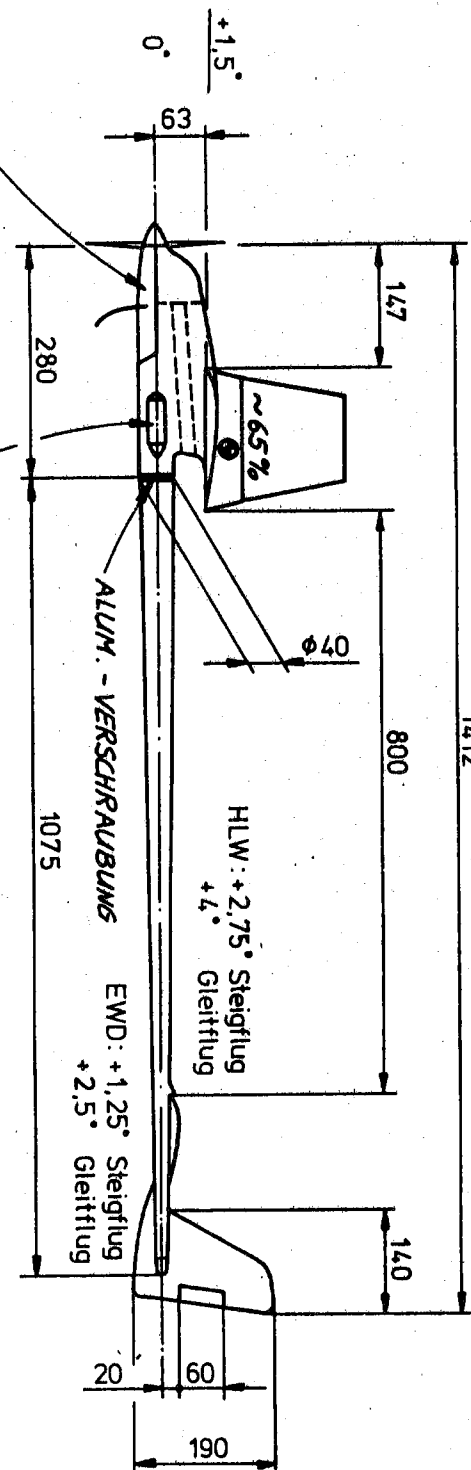
SEELIG - TIMER

1 x 80 g/m² GFK

ROHR BESpanNT MIT 1 x 12 g/m² JAPAN-PAPIER
AUßEN 1 x 80 g/m² GFK

1,5 MM Balsa

RUMPFQUERSCHNITT



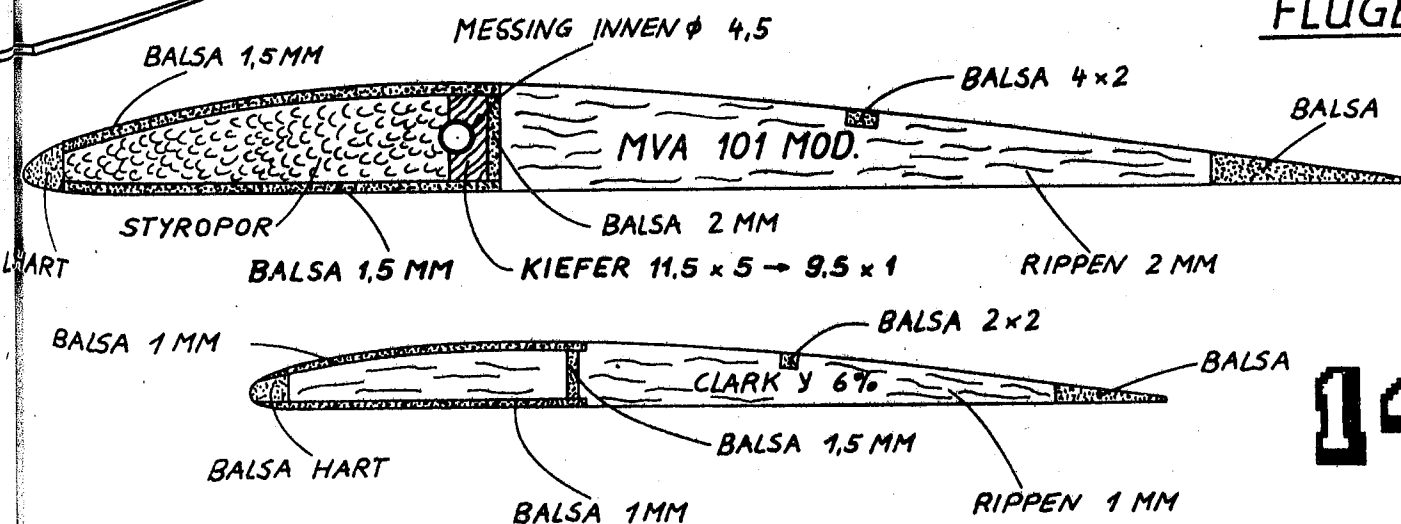
GESAMTMASS: 780 G

FLÄCHENINHALT: FLÜGEL 31,4 DM²
HLW 7,0 DM²
GESAMT 38,4 DM²

OBERFLÄCHE:

FLÜGEL
BEPANLUNG 1 x 12 g/m² JAPANPAPIER
BESpanNUNG 2 x 12 g/m² JAPANPAPIER
HLW
1 x 12 g/m² JAPANPAPIER

FLÜGEL



MVA 101 MOD.

X	0	1,25	2,5	5	7,5	10	15	20	30	40	50	60	70	80	90	95	100
Y ₀	0,7	2,2	3,0	4,2	5,0	5,7	6,65	7,3	7,9	7,55	6,75	5,7	4,45	3,1	1,6	0,8	0
Y _u	0,7																

140

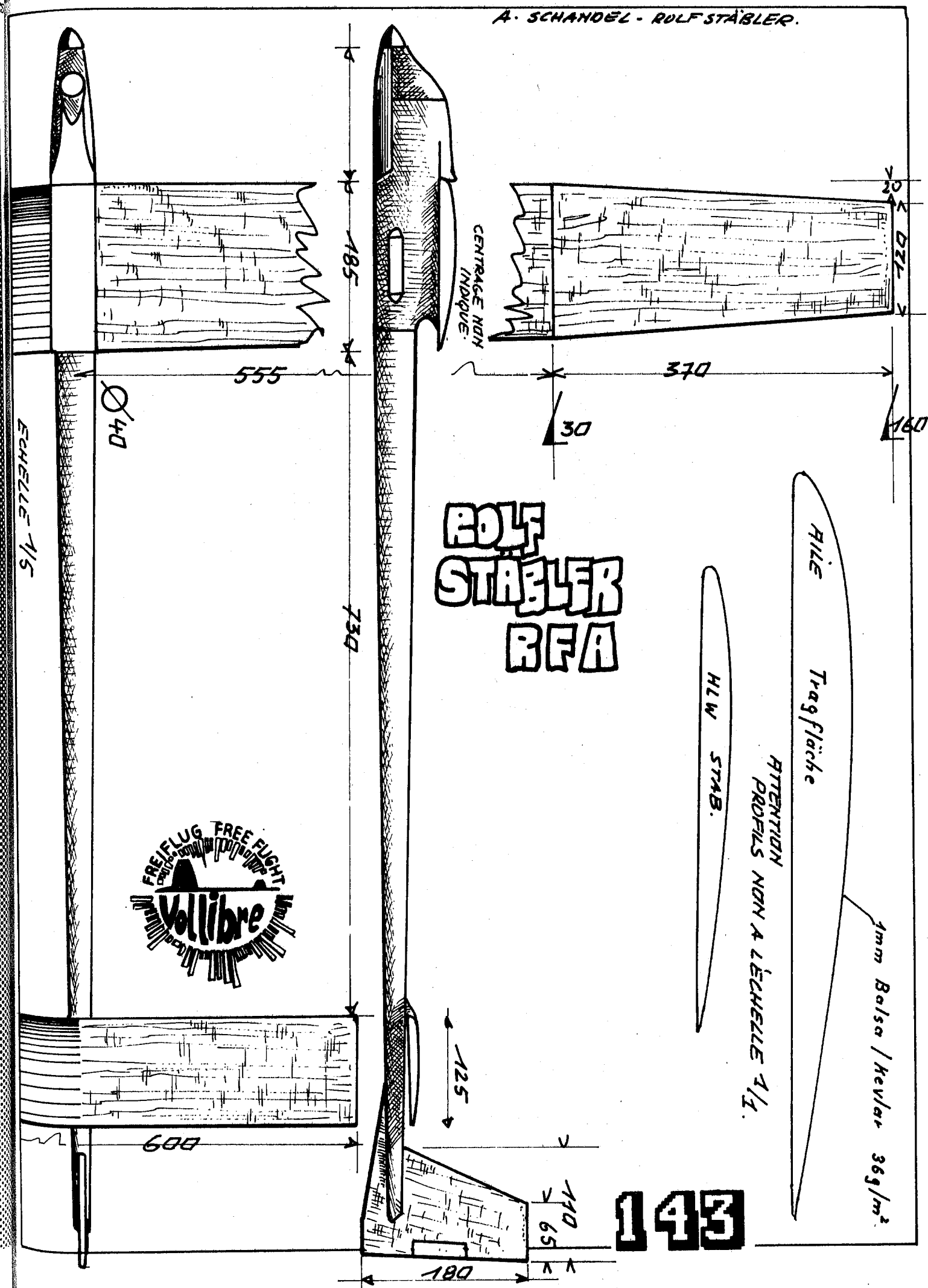
141



K. Wächtler (RDA) un des équipiers FIC de la RDA qui ont fait beaucoup parler d'eux, par leur performance derrière les Russes. Un image de la sobriété et de l'efficacité pour un modéliste FIC par rapport à d'autres qui utilisent une montagne d'accessoires.....

142

Photo -
TEAM BOO



СССР



Чертеж модели мастера спорта СССР международного класса, призера чемпионата СССР, члена сборной команды СССР В. Струкова (Украина).

V STRUKOV



HELICE									
Propeller diameter=178									
Radius mm	19	29	39	49	59	69	79	89.	
Angle deg	28.7	21.3	16.0	13.0	11.0	9.0	7.5	6.7	
Pitch mm	65.4	71.0	70.3	71.1	72.1	68.7	65.4	65.7	

AILE- COORDONNEES

	0	2.5	5	10	15	20	25	30	40	50	60	70	80	90	100
Chord															
Upper	1.08	3.28	4.25	5.54	6.45	7.15	7.58	7.85	8.01	7.69	6.99	5.81	4.30	2.53	0.43
Lower	1.08	0.18	0.11	0.18	0.45	0.70	0.97	1.18	1.72	2.10	2.28	2.10	1.61	0.91	0.00

1	V Tchop	USSR	1260	240	300	360	237	
2	I Horejsi	CS	1260	240	300	360	206	
3	M Preuss	DDR	1260	240	300	360	187	+251
4	L Reynders	B	1260	240	300	360	187	+218
5	L Horak	CAN	1260	240	300	360	183	
6	Zhang Yingjie	CHN	1260	240	300	360	182	
7	K Itzhakov	IS	1260	240	300	360	177	
8	V Brussolo	I	1260	240	300	360	139	
9	E Sahinovic	YU	1260	240	300	360	136	
10	P Buchwald	DK	1260	240	300	360	349	
11	U Ruch	DDR	1260	240	300	360	322	
12	Liang Yue	W/C	1260	240	300	360	285	
13	C Bistacchi	I	1260	240	300	360	213	
14	L Larsson	S	1260	240	300	360	209	
15	Sun Kai	CHN	1260	240	300	360	189	
16	R Cal	I	1260	240	300	360	173	
17	H Bleuer	CH	1260	240	300	360	163	
18	J Bradley	USA	1260	240	300	360	153	
19	Li Chol	NKOR	1260	240	300	360	149	
20	E Dondero	ARG	1260	240	300	360	130	
21	W Colledge	GB	1260	240	300	360	119	
22	J Orel	CS	1260	240	300	360	68	
23	M Williams	AUS	1260	240	300	360	286	
24	P De Boer	NL	1260	240	300	360	196	
25	Zhou Yaodong	CHN	1260	240	300	360	186	
26	H Nyhegen	DK	1260	240	300	360	173	
27	K Salzer	A	1260	240	300	360	137	
28	H Tahkapaa	FN	1260	240	300	360	100	
29	R Rodriguez	SP	179	180	180	180	180	1259
30	W Palmieri	ARG	179	180	180	175	180	1254
31	C Edge	GB	180	180	173	180	180	1253
32	N Karanovic	YU	167	180	180	180	180	1247
33	G Curtis	NZ	165	180	180	180	180	1245
34	H Schmidt	D	162	180	180	180	180	1242
35	Kim Jong Sik	NKOR	161	180	180	180	180	1241
36	J Benesch	CH	180	180	180	180	180	1240
37	K Bleuer	CH	159	180	178	180	180	1237
38	G MacKenzie	CAN	157	180	180	180	180	1237
39	M Gruneis	A	157	180	180	180	180	1237
40	A Klemetsen	N	177	156	180	180	180	1233
41	C Ziober	PL	151	180	180	180	180	1231
42	V Stamo	USSR	180	145	180	180	180	1225
43	N Russev	BUL	144	180	180	180	180	1224
44	R Weiler	USA	139	180	180	180	180	1219
45	L Lutchev	BUL	137	180	180	180	180	1217
46	A Van Wallene	NL	180	180	180	180	137	1217
47	D Barberis	F	180	180	136	180	180	1216
48	J Somers	NL	136	180	180	180	180	1216
49	R Golubowski	PL	136	180	180	180	180	1216
50	P Grunnet	DK	180	180	180	180	134	1214
51	M Borell	S	180	180	172	180	180	1213
52	J Godinho	F	180	131	180	180	180	1211
53	P Findahl	S	180	180	180	180	131	1211
54	V Morgan	AUS	180	180	180	180	127	1207
55	G Madelin	GB	180	180	180	125	180	1205
56	S Moore	NZ	128	180	180	180	177	1205
57	F Georgi	DDR	125	180	180	180	180	1205
58	P Petkov	BUL	176	180	126	180	180	1202
59	D Elder	USA	132	180	180	164	180	1196
60	A Abaunza	MEX	180	180	115	180	180	1195
61	O Helman	ARG	175	180	180	180	117	1192
62	J Nahlovski	CS	180	180	180	180	106	1186
63	Y Yohioka	J	180	180	180	180	180	1186
64	D Marin	YU	103	180	180	180	180	1183
65	P Conejero	SP	180	107	180	180	176	1183
66	Sahi Patri	FN	101	180	180	180	180	1181
67	Choi Sung Gi	NKOR	180	180	180	180	95	1175
68	Y Drori	IS	180	180	124	180	180	1167
69	W Gerlach	D	163	165	110	180	180	1158
70	A Galichet	F	180	73	180	180	180	1153
71	P Reynders	B	140	180	180	112	180	1152
72	S Makarov	USSR	180	180	96	180	153	1149
73	S Jurczeniak	PL	164	180	180	84	180	1148
74	K Iida	J	180	180	180	145	89	1134
75	R Lewis	NZ	180	180	180	180	50	1130

76	R Blackman	AUS	98	180	180	180	127	180	180	1125
77	B Pereira	P	180	92	180	180	180	118	180	1110
78	M Tahkapaa	FN	180	180	180	180	127	71	180	1098
79	L Farkas	CAN	93	180	180	180	180	159	121	1093
80	H Fuss	A	117	180	180	180	135	121	180	1093
81	J Abad	SP	35	157	157	180	180	180	180	1069
82	R Bertrand	GM	148	133	180	55	180	180	180	1056
83	M Rios	MEX	110	56	147	180	180	180	180	1033
84	M Olstad	N	121	180	180	180	180	120	70	1031
85	A Coelho	P	101	180	180	180	123	180	82	1026
86	V Schmelter	D	74	180	180	180	180	51	180	1025
87	A Prozniak	IS	137	180	180	180	180	71	43	971
88	J Masuno	J	115	180	180	22	102	180	180	959
89	V Nereng	N	155	152	180	109	180	0	180	956
90	A Monica	P	114	163	180	180	75	81	153	946
91	F Nutini	BRZ	81	126	70	180	99	180	180	916

Number of maximums 51 78 79 83 79 78 78
Number of full scores 51 46 40 38 35 33 28

EQUIPES

1	Italy	I	3780	1	1	1	1	1	1	1
2	China	CHN	3780	1	1	1	1	1	1	1
3	Switzerland	CH	3737	11	9	9	8	6	5	3
4	Denmark	DK	3734	1	1	1	1	1	1	4
5	East Germany	DDR	3725	14	13	11	10	8	6	5
6	Great Britain	GB	3718	1	1	6	11	9	8	6
7	Czechoslovakia	CS	3706	1	1	1	1	11	10	7
8	Argentina	ARG	3706	9	7	5	6	11	10	7
9	Netherlands	NL	3693	13	12	10	9	7	12	9
10	Yugoslavia	YU	3690	24	22	19	17	13	13	10
11	Sweden	S	3684	1	1	7	5	4	7	11
12	North Korea	NKOR	3676	10	8	8	7	5	4	12
13	USA	USA	3675	22	20	17	19	15	14	13
14	Bulgaria	BUL	3643	19	18	23	22	20	17	14
15	USSR	USSR	3634	1	10	22	21	21	18	15
16	Poland	PL	3595	22	20	17	16	22	19	16
17	Australia	AUS	3592	18	17	15	14	19	16	17
18	Canada	CAN	3590	25	23	21	20	16	15	18
19	Austria	A	3590	20	19	16	15	17	20	18
20	New Zealand	NZ	3580	16	15	13	12	10	9	20
21	France	F	3580	1	25	25	23	23	21	20
22	Finland	FN	3539	17	16	14	13	18	23	22
23	Spain	SP	3511	28	27	28	28	26	24	23
24	West Germany	D	3425	26	25	26	25	25	25	24
25	Israel	IS	3398	12	11	20	18	14	22	25
26	Japan	J	3279	15	14	12	27	27	26	26
27	Norway	N	3220	21	24	24	24	24	27	27
28	Portugal	P	3082	27	28	27	26	28	28	28
29	Belgium	B	(2) 2412	29	29	29	29	29	29	29
30	Mexico	MEX	(2) 2228	30	30	30	30	30	30	30
31	World Champ	W/C	(1) 1260	31	31	31	31	31	31	31
32	Guatemala	GM	(1) 1056	32	32	32	32	32	32	32
33	Brazil	BRZ	(1) 916	33	33	33	33	33	33	33

CHALLENGE FRANCE

1	China	11297	11	Switzerland	10619
2	USSR	11143	12	Yugoslavia	10605
3	Sweden	11084	13	France	10579
4	Great Britain	11049	14	Canada	10562
5	U.S.A.	11033	15	Denmark	10509
6	North Korea	10888	16	Argentina	10304
7	Poland	10874	17	Australia	8311
8	Italy	10760	18	Israel	7825
9	W Germany	10654	19	Finland	7736
10	Bulgaria	10638	20	E Germany	7505

1	R White	USA	1260	+	240	+	300	+	360	+	295
2	K Rozycki	PL	1260	+	240	+	300	+	360	+	175
3	K Jusufbasic	YU	1260	+	240	+	300	+	315		
4	Lu Jifa	CHN	1260	+	240	+	300	+	277		
5	Zhang Wenyi	CHN	1260	+	240	+	300	+	238		
6	Li Zhiming	CHN	1260	+	240	+	300	+	232		
7	Z Alipiev	BUL	1260	+	240	+	300	+	230		
8	Y Goulougonov	USSR	1260	+	240	+	300	+	188		
9	R Hofsass	W/C	1260	+	240	+	269				
10	H Kucharski	PL	1260	+	240	+	243				
11	P Fauser	AUS	1260	+	240	+	216				
12	I Taylor	GB	1260	+	240	+	160				
13	L Guzzetti	I	1260	+	198						
14	Chang Yong Bom	NKOR	1260	+	161						
15	L Dupuis	F	1260	+	108						
16	L Hansson	S	1260	+	83						
17	Stefanchuk	USSR	175	180	180	180	180	180	180	180	180
18	T Madea	J	180	180	170	180	180	180	180	180	180
19	B Silz	D	180	176	180	180	180	180	180	165	
19	G Xenakis	USA	180	180	161	180	180	180	180	180	180
21	M Kapetanobic	YU	159	180	180	180	180	180	180	180	180
22	Li Jung Gwan	NKOR	180	180	180	180	180	156	180	180	180
22	F Tapernoux	CH	180	180	156	180	180	180	180	180	180
24	A Hacken	NL	171	180	180	180	180	180	164	180	180
25	R Schlesinger	D	148	180	180	180	180	180	180	180	180
25	J Kristensen	DK	148	180	180	180	180	180	180	180	180
25	R Pollard	GB	148	180	180	180	180	180	180	180	180
28	B Eimar	S	180	147	180	180	180	180	180	180	180
29	S Yordanov	BUL	141	180	180	180	180	180	180	180	180
30	A Andrukov	USSR	180	180	180	180	180	180	180	134	
31	L Doring	D	180	143	180	170	180	180	180	180	180
32	T Urban	CH	130	180	180	180	180	180	166	180	180
33	J Krasznai	H	180	180	180	180	168	118	180	180	180
34	L Flodstrom	S	180	180	100	180	180	180	180	180	180
35	S Ruyter	NL	180	180	180	180	99	180	180	180	180
35	J Malkin	NZ	180	180	137	180	180	180	180	142	
37	G Foster	GB	180	96	180	180	180	180	180	180	180
38	D Andrew	CAN	180	180	180	180	180	180	180	93	
38	M Varadi	H	180	168	180	112	180	173	180	180	180
40	A Baruch	IS	151	180	180	180	180	180	180	120	
41	A Armesto	ARG	180	155	130	170	180	174	180	180	180
41	E Garcia	P	180	180	180	180	180	180	180	89	
43	J Quinn	USA	180	180	180	180	85	180	180	180	180
44	P Smith	AUS	164	180	180	180	180	180	180	85	
45	C Zold	H	129	180	112	180	180	180	180	180	180
46	Chi Yong Chol	NKOR	120	120	180	180	180	180	180	180	180
47	J Cheneau	F	180	180	147	89	180	180	180	180	180
48	F Dahlin	DK	148	180	180	87	180	180	180	180	180
49	O KipelaInen	FN	128	149	180	180	136	180	180	180	180
50	Mazor Oani	IS	110	180	114	180	180	180	180	180	180
51	M Kiiskinen	FN	180	180	119	180	180	100	180	180	180
52	B Jorgensen	DK	122	89	180	180	180	180	180	180	180
53	A Zeri	NL	180	135	180	72	180	180	180	180	180
54	J McGillivray	CAN	180	180	180	98	105	180	180	180	180
55	H Maru	J	162	170	180	180	114	111	180	180	180
56	O Torgensen	N	144	143	180	180	112	180	156	180	180
57	G Odgers	AUS	180	123	180	180	180	180	63	180	180
58	E Cofalik	PL	171	180	180	154	164	90	118	180	180
59	I Ben Itzhak	IS	180	114	180	98	180	180	123	180	180
60	A Mantere	FN	180	124	180	88	120	180	180	180	180
61	P Lepage	F	180	180	180	112	106	103	180	180	180
61	I Fichera	I	180	128	180	144	121	108	180	180	180
63	D Ackery	NZ	180	91	180	180	180	100	129	180	180
64	J Franic	YU	180	180	89	180	180	110	115	180	180
65	S Zaballa	MEX	79	110	180	120	180	180	180	180	180
66	M Kohler	CH	180	180	98	91	119	180	180	180	180
67	P Zoppelli	I	180	180	128	78	104	180	157	180	180
68	M Blitzman	ARG	144	148	81	180	89	180	180	180	180
69	P Manzanelo	SP	96	180	160	180	180	123	61	180	180
70	J Henson	NZ	180	77	139	180	180	180	37	180	180
71	M Thomas	CAN	180	180	74	95	180	180	80	180	180
72	P Jimenez	SP	180	180	104	87	128	180	79	180	180
73	R Alvarez	MEX	112	77	180	111	157	91	180	180	180
74	C Bastos	P	180	138	180	0	180	47	180	180	180

Classement Classement

30	Carlsson	S	180	180	180	180	145	180	180	1225
31	D Thomas	AUS	180	180	180	144	180	180	180	1224
32	D Sugden	CAN	180	180	143	180	180	180	180	1223
33	O Vassilev	BUL	180	180	180	174	147	180	180	1221
34	Kim Jung Hi	NKOR	180	180	180	180	139	180	180	1219
35	Wang Xian	CHN	180	180	180	180	137	180	180	1217
36	S Slavov	BUL	180	180	170	180	145	180	180	1215
37	S Screen	GB	180	180	180	180	132	180	180	1212
38	O Maczko	H	180	180	180	131	180	180	180	1211
39	P Murer	CH	180	180	129	180	180	180	180	1209
40	R Truppe	A	180	180	180	180	122	180	180	1202
41	M Roman	PL	180	180	180	180	121	180	180	1201
42	J Kaiser	CS	180	180	180	180	180	180	120	1200
43	R Monks	GB	180	180	180	180	115	180	180	1195
43	M Pavlov	YU	179	180	180	143	153	180	180	1195
45	K Koster	DK	180	180	180	180	113	180	180	1193
46	R Stabler	D	180	180	180	180	103	173		1176
47	R Sifleet	USA	180	180	180	180	180	92		1172
48	A Bartschi	CH	137	128	180	180	180	180		1165
49	D Tele	ARG	180	163	137	180	180	142	180	1162
50	D Ferrero	F	180	180	176	180	180	83	180	1159
51	G Venuti	I	180	180	180	180	147	180	105	1152
52	L Braire	F	180	139	180	180	110	180	180	1149
53	D Varda	YU	180	180	132	123	180	143	180	1118
54	T Bortne	N	167	127	180	180	136	180	145	1115
55	S Reda	D	180	180	180	31	180	180	180	1111
56	M Zito	ARG	180	180	21	180	180	180	180	1101
57	Kim Song Hak	NKOR	180	17	180	180	180	180	180	1097
58	N Weisman	IS	180	180	180	115	95	180	147	1077
59	R Radovan	YU	109	176	157	180	180	180	87	1069
60	U Stalder	CH	122	126	180	180	180	180	80	1048
61	K Kuukka	FN	77	166	84	81	180	171	134	893
62	T Koster	DK	180	180	180	180	128	0	0	848
63	J Soares	P	139	73	70	180	0	0	0	462

Number of maximums 53 53 53 55 46 56 51

Number of full scores 53 49 43 38 28 27 24

EQUIPES

1	USSR	USSR	3780	1	1	1	1	1	1	1
2	East Germany	DDR	3780	1	1	1	1	1	1	1
3	China	CHN	3737	1	1	1	1	6	6	3
4	Sweden	S	3733	1	12	11	9	6	6	4
5	Hungary	H	3731	1	1	1	12	8	8	5
6	Canada	CAN	3727	16	13	14	13	9	9	6
7	Czechoslovakia	CS	3720	1	1	1	1	1	1	7
8	Poland	PL	3702	17	15	13	11	10	10	8
9	Bulgaria	BUL	3696	1	1	12	10	11	11	9
10	USA	USA	3692	1	1	1	1	1	1	10
11	Italy	I	3672	1	1	1	1	5	5	11
12	Great Britain	GB	3667	1	1	1	1	12	12	12
13	North Korea	NKOR	3576	1	18	17	16	16	13	13
14	France	F	3558	15	16	15	14	14	14	14
15	West Germany	D	3547	1	1	1	1	15	15	15
16	Argentina	ARG	3523	1	14	18	17	17	16	16
17	Switzerland	CH	3422	19	19	19	19	18	17	17
18	Yugoslavia	YU	3382	18	17	16	18	19	19	18
19	Denmark	DK	3301	1	1	1	1	13	18	19
20	Australia	AUS (1)	1224	20	20	20	21	20	20	20
21	Austria	A (1)	1202	20	20	20	20	21	21	21
22	Norway	N (1)	1115	23	23	23	23	22	22	22
23	Israel	IS (1)	1077	20	20	20	22	23	23	23
24	Finland	FN (1)	893	25	24	24	25	24	24	24
25	Portugal	P (1)	462	24	25	25	24	25	25	25



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STEFAN CHUK
URSS

Photo: J. BOOS

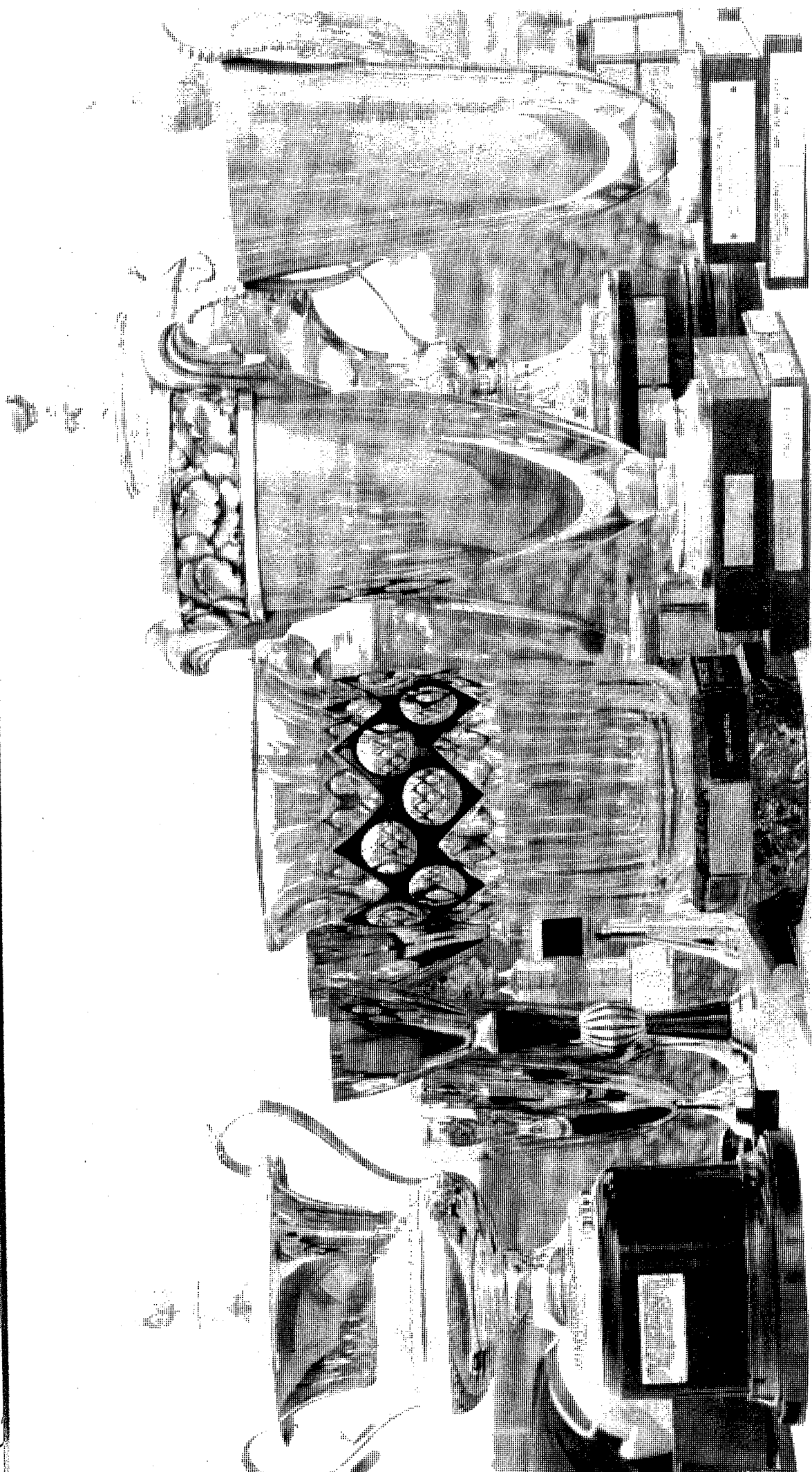
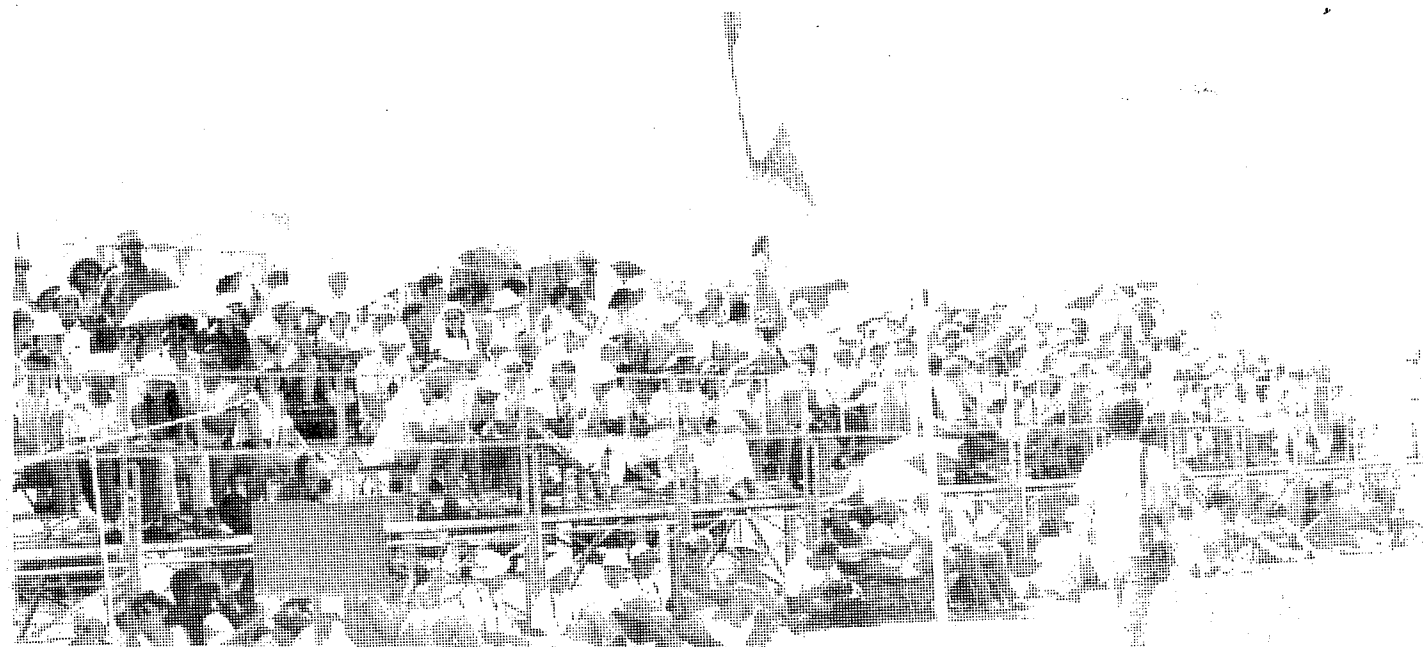


Photo: A-SCHANDER

Les trophées, les plus importantes
et les plus convoités, FIB
F1A, F1C...

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PHOTOS A. SCHANDEL



Page 152

Pendant la cérémonie d'ouverture la tribune des officiels sous un soleil écrasant..... Défilé des équipes l'équipe de l'Union Soviétique.....

Le contrôle des modèles, Jim Bradley USA, FIA, sous l'oeil intéressé de J. Besnard; T. Schandel et T. Marilier.

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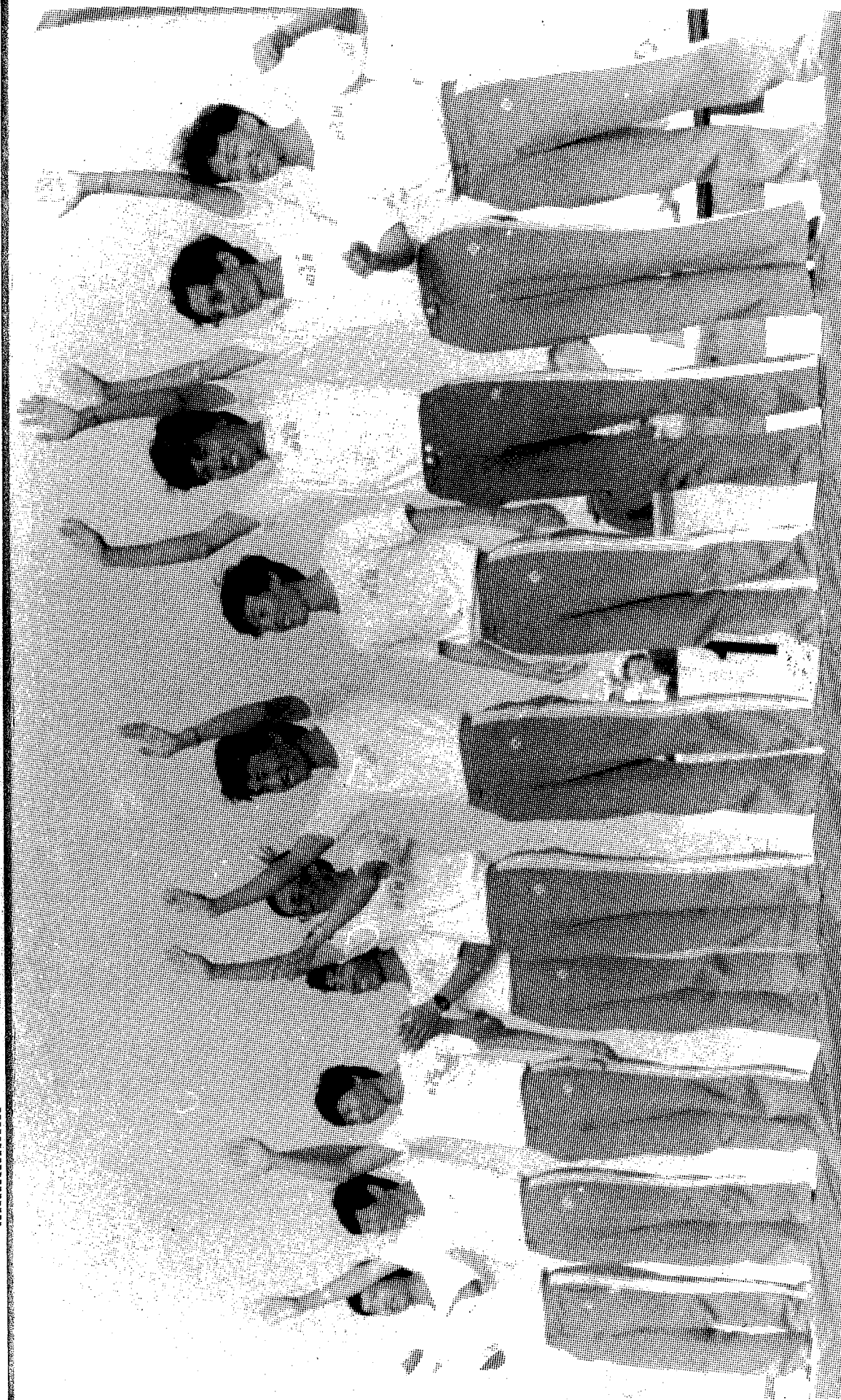


Photo - A. SCHANDEL

Images
vol libre

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L'ensemble de l'équipe chinoise, vainqueur du trophée de France, nouvellement créé. Cette équipe n'a pas remporté de titre individuel, a cependant été remarquable par sa solidarité, par son expérience, son entraînement, ensemble très sympathique qui avait souvent les faveurs du public.....

CHINOIS



Les Chinois en F1A, quatre concurrents avec des modèles semblables, efficaces.....

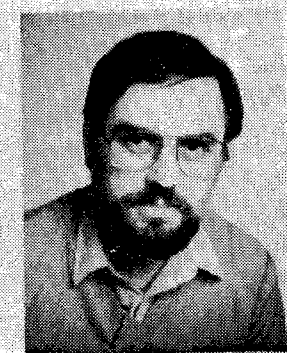
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Dittmer MEISSNEST (RFA)



Javier ABAD (Espagne)



Frank DAHLIN (DK)



Itzhak BEN ITZHAK (Israel)

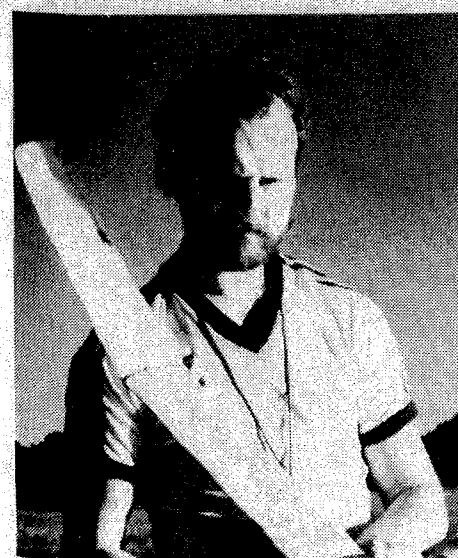


Takashi MAEDA (Japan)



H. TAKHAPAA (Finlande)

P. SAHI (FINLANDE)



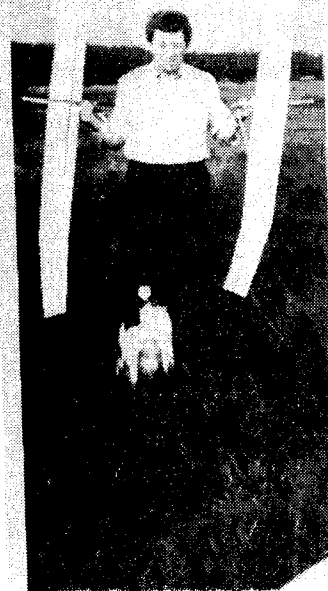
I. MATSUNO (JAPON)



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Hideo MARU (Japan)
David ACKERY (N.Z.)
Dan MAZOR (Israel)

Igal DRORI (Israel)
Rod LEWIS (NZ)
Abraham Baruch (Israel)

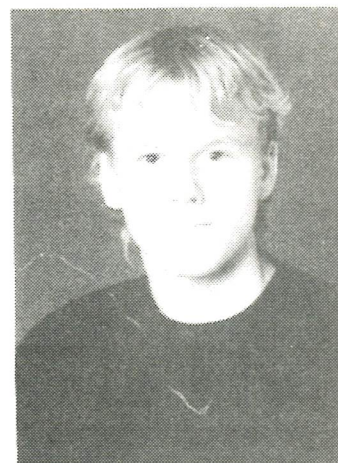
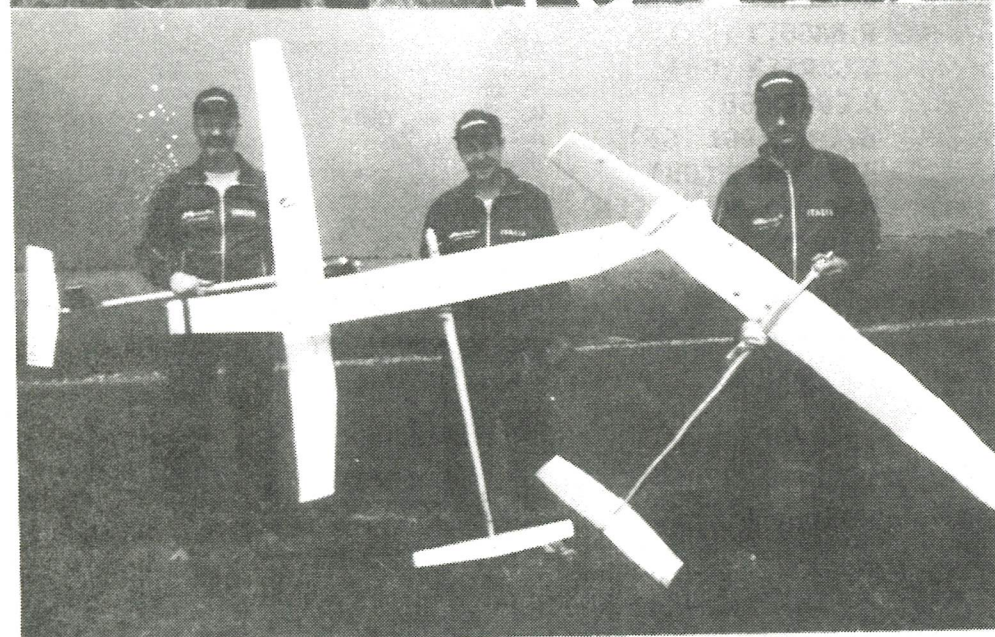
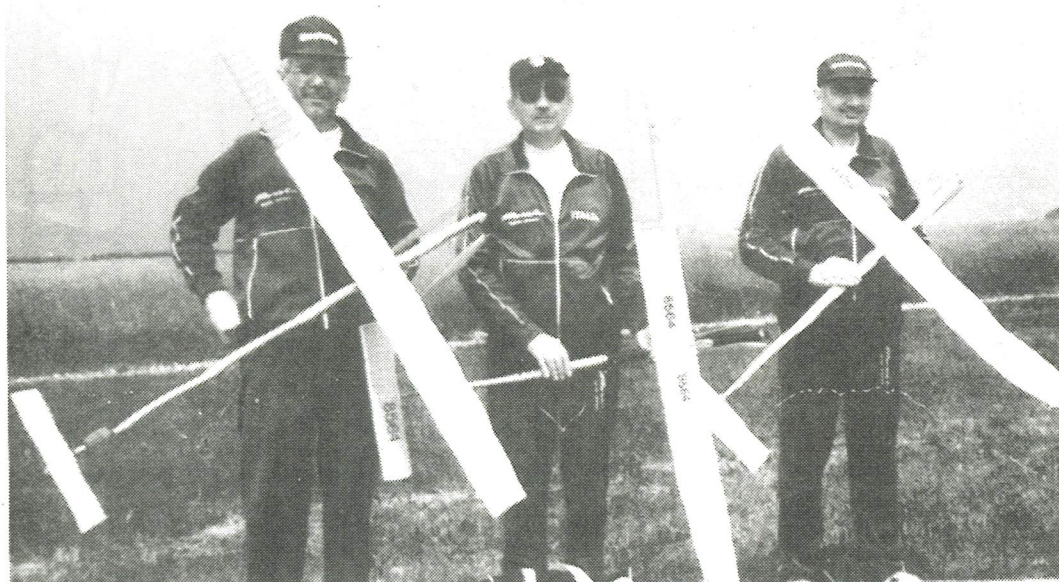
Jan SOMERS (NL.)
Tobi ITZHAKOV (Israel)



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R. MONKS (GB)
R. BAGOTT (GB)
S. SCREEN (GB)
C. EDGE (GB)
B/COLLEDGE (GB)
G. MADELIN (GB)
O. KILPELAINEN (FN)
L. LARSSON (SUEDE)





P. FINDHAL (SUEDE)
B. EIMAR (SUEDE)



GUZZETTI Luigi, 49 ans né et résidant à Bologne. Métallurgiste, a participé à 4 Champ. du Monde.

ZOPPELLI Pietro 58 ans, né et résidant à Trévise. Médiateur. A participé à deux Ch. du monde. Champion d'Italie 1986 et 1er à Maniago 1987.

FICHERA Isidoro Nino 51 ans, né en Sicile et résidant à Trévise. Maître. A participé à deux Ch. du Monde.

YENUTI Giorgio, 46 ans né et résidant à Monfalcone. Employé chez Italcantieri Monfalcone. Vice Ch. D'Europe 1986 1er à Zagreb en 86 et à Maniago 1987.

FIEGL Bruno 47 ans, né à Gorizia et résidant à Milan. Employé chez Alfa Romeo, a participé à 6 championnats.

BISTACHI Carlo, 45 ans né et résidant à Milan. Photographe.

BRUSSOLO Vittorio, 31 ans né et résidant à Trévise. Employé chez Benetton. A participé à quatre Championnats.

CAL Roberto, 30 ans, né et résidant à Trévise. Expert mécanique, 4ème aux Ch du monde du Burgos. Champ. d'Italie en 1986.

LUSTRATI Silvano, 59 ans né et résidant à Rome. Ingénieur, a été Champion du Monde en Australie 1983.

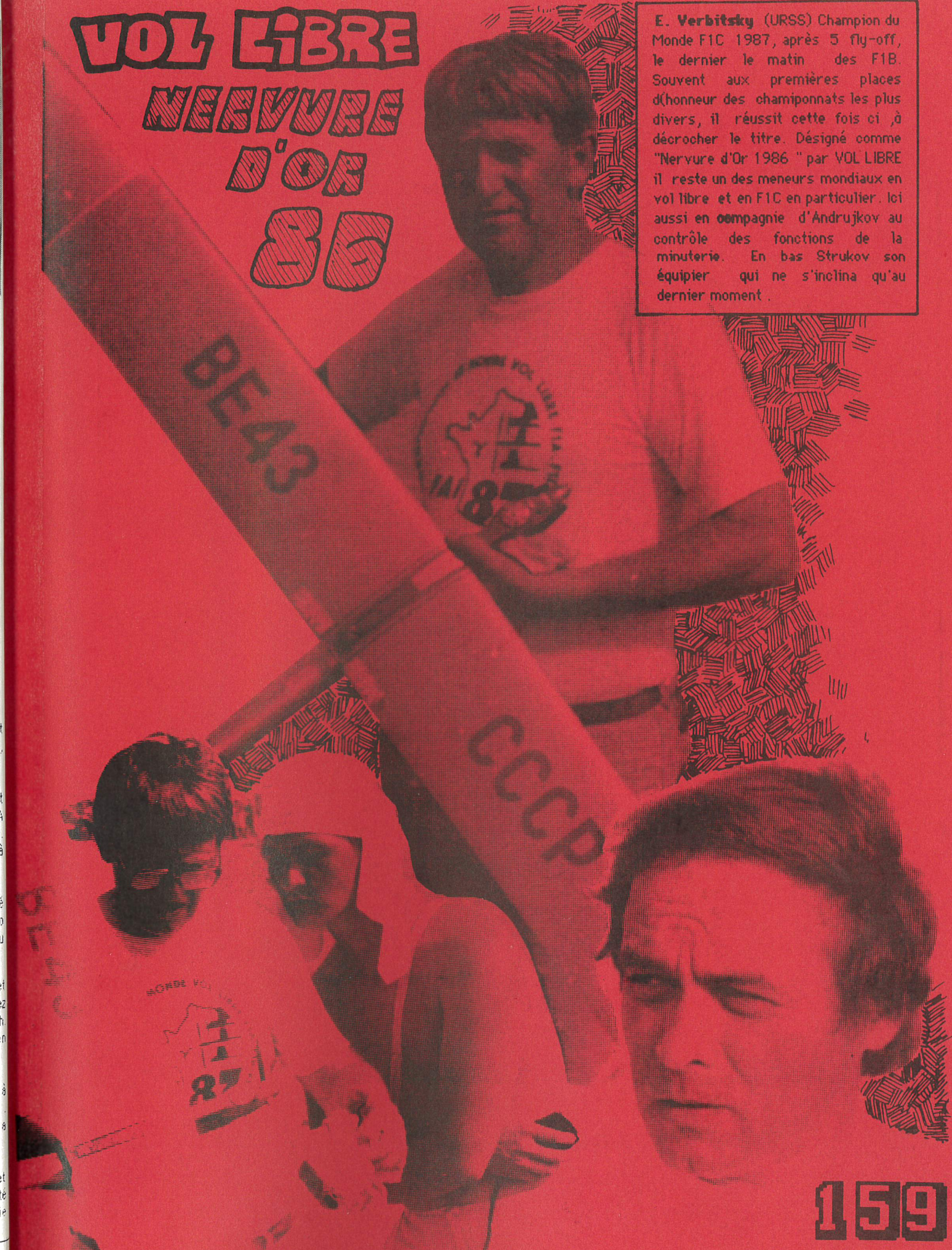


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VOL LIBRE
NERVURE
D'OR
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E. Verbitsky (URSS) Champion du Monde F1C 1987, après 5 fly-off, le dernier le matin des F1B. Souvent aux premières places d'honneur des championnats les plus divers, il réussit cette fois-ci à décrocher le titre. Désigné comme "Nervure d'Or 1986" par VOL LIBRE il reste un des meneurs mondiaux en vol libre et en F1C en particulier. Ici aussi en compagnie d'Andrujkov au contrôle des fonctions de la minuterie. En bas Strukov son équipier qui ne s'inclina qu'au dernier moment.



PHOTOS: A. SCHANDEL ET JEAN BOUS.

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Photo - A. SCHANDER

Reiner Hofsäss (RFA) champion sortant (1985 Livno YU) au départ, à remarquer que l'angle de montée de son ESPADA semble être bien inférieur à celui des concurrents Russes, Chinois et autres les chronos semblent cependant impressionnés, et Eric Masson à un mouvement de recul