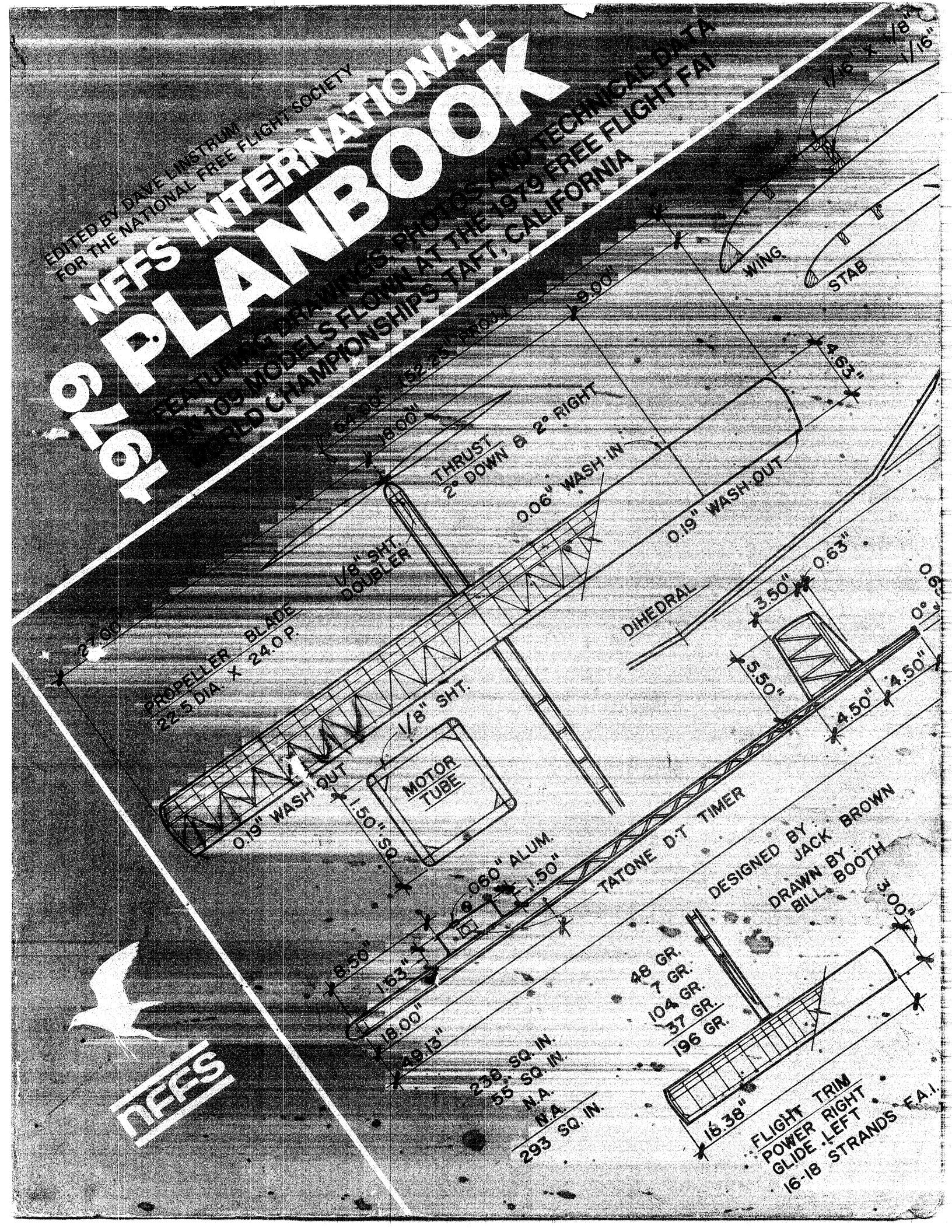
EDITED BY DAVE LINSTRUM
FOR THE NATIONAL FREE FLIGHT SOCIETY

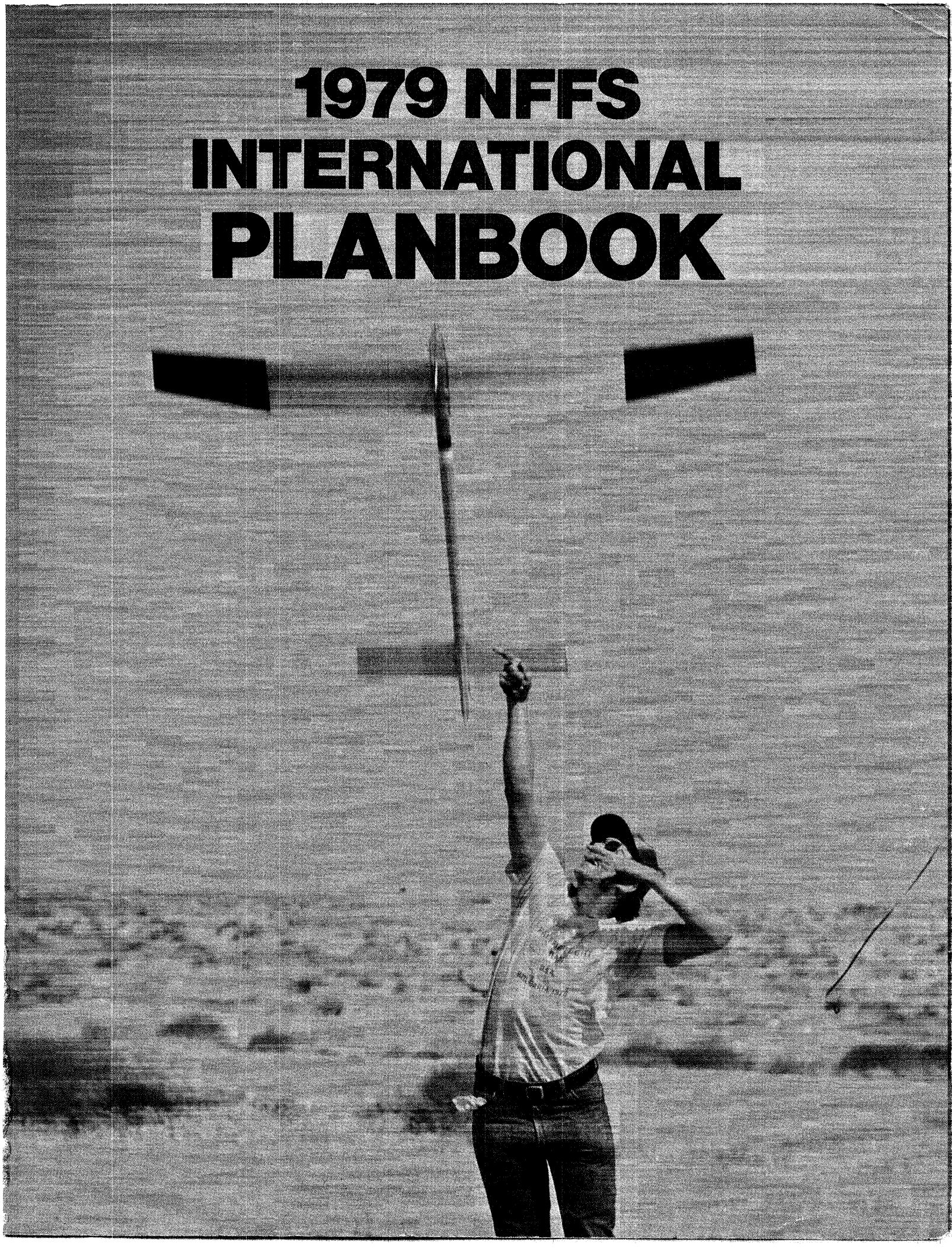
1979 NFFS INTERNATIONAL PLANBOOK

FEATURING DRAWINGS, PHOTOS AND TECHNICAL DATA
OF 10 MODELS FLOWN AT THE 1979 FREE FLIGHT FAI
WORLD CHAMPIONSHIPS TAFT, CALIFORNIA



NFFS

1979 NFFS INTERNATIONAL PLANBOOK



CONTENTS:

DEDICATION

PREFACE by Frank Zaic, author of Model Aeronautic Yearbooks

PLANS over 109 drawings of World Class Models: F1A, F1B, F1C

DATA Technical Data and Photos, Biographic Data on Flyers

HISTORY Articles on Wakefield and Nordic Glider Origins

RESOURCES Other Free Flight Publications of Interest

INDEX to Plans and Data plus Mailing Addresses of Flyers

Note: All plans are grouped according to Category, and the Teams are arranged in alphabetical order within that group. The index is alphabetical according to Flyer's last name. In some cases, no supporting data was submitted for plans.

Special thanks to Don Typond and Model Airplane News for the kind donation of color separations for the frontispiece, which shows Ed Carrol of Riverside, California slamming his F1C "SAJE" into the sky at Taft during the U.S. Free Flight Champs. Photo: Linstrum

CREDITS:

THE NATIONAL FREE FLIGHT SOCIETY

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ILLUSTRATION/DESIGN: Front Cover, Dave Linstrum (drawing by Bill Booth Jr.); Rear Cover, Design Origins; Preface Divider, Bill Noonan; Plans Divider, Bill Booth Jr; Data Divider, R.J. Mikkelsen; History Divider, Dave Linstrum; Resources Divider, Dave Linstrum; Index Divider, Joe Slovacek. Color Frontispiece: Model Airplane News. Dedication Photo: John Oldenkamp.

TYPESETTING: Summit Technical Associates

PRINTING: Doug Galbreath, The Printer

Additional copies of this report may be obtained from NFFS Plans and Publications, 4858 Moorepark Ave., San Jose, California (USA) upon written order. Price is $10 per copy plus postage. Book rate in USA is $1. First Class (Priority) is $2.50 in USA, Canada and Mexico. Air Mail to Europe is $3.50 and to the Far East $5. All payments must be in US funds. Make checks payable to National Free Flight Society. Request NFFS Plans & Publications catalog if you desire to order other items.

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Library of Congress Catalog Card Number: 79-55277

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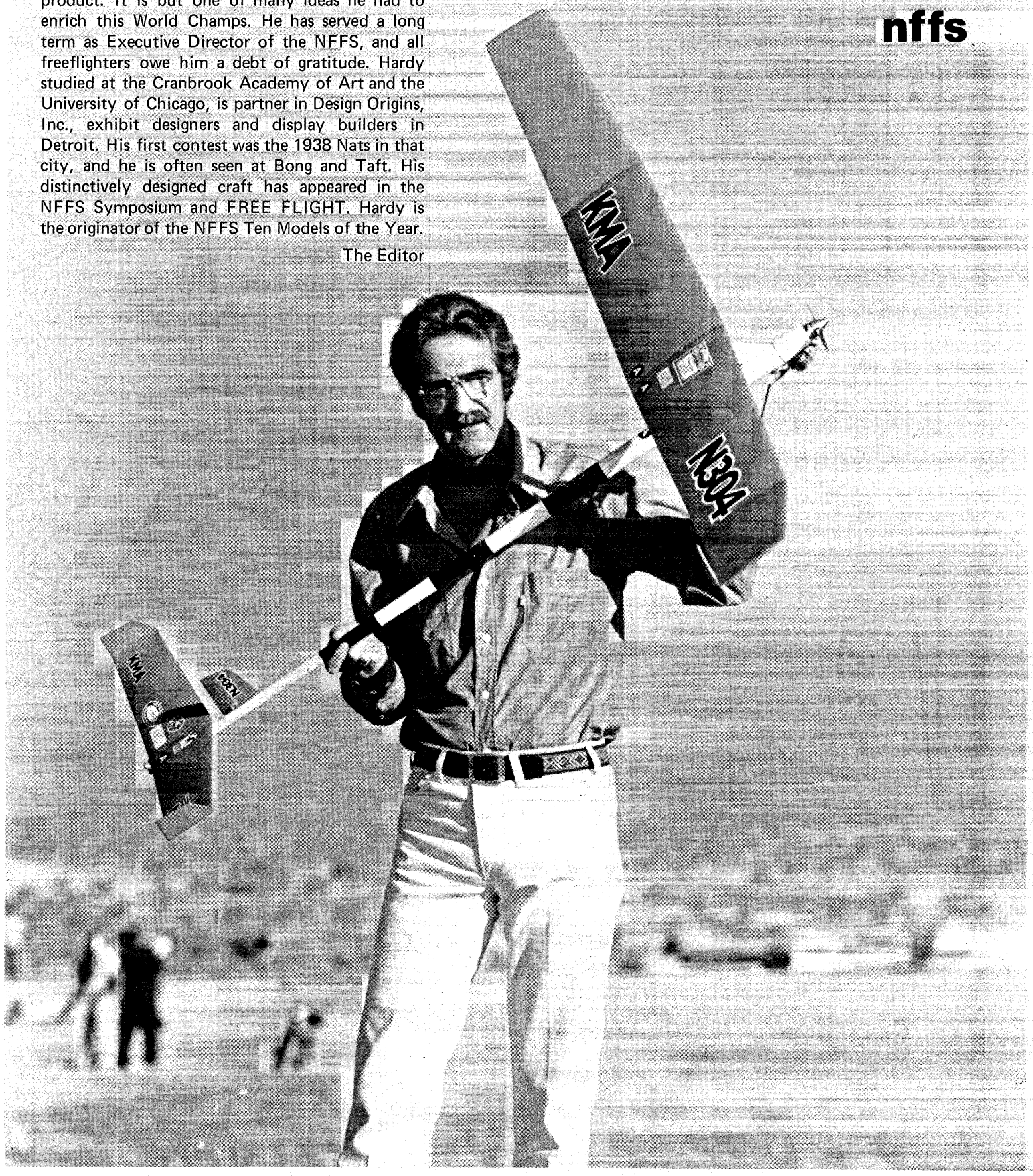
DEDICATION

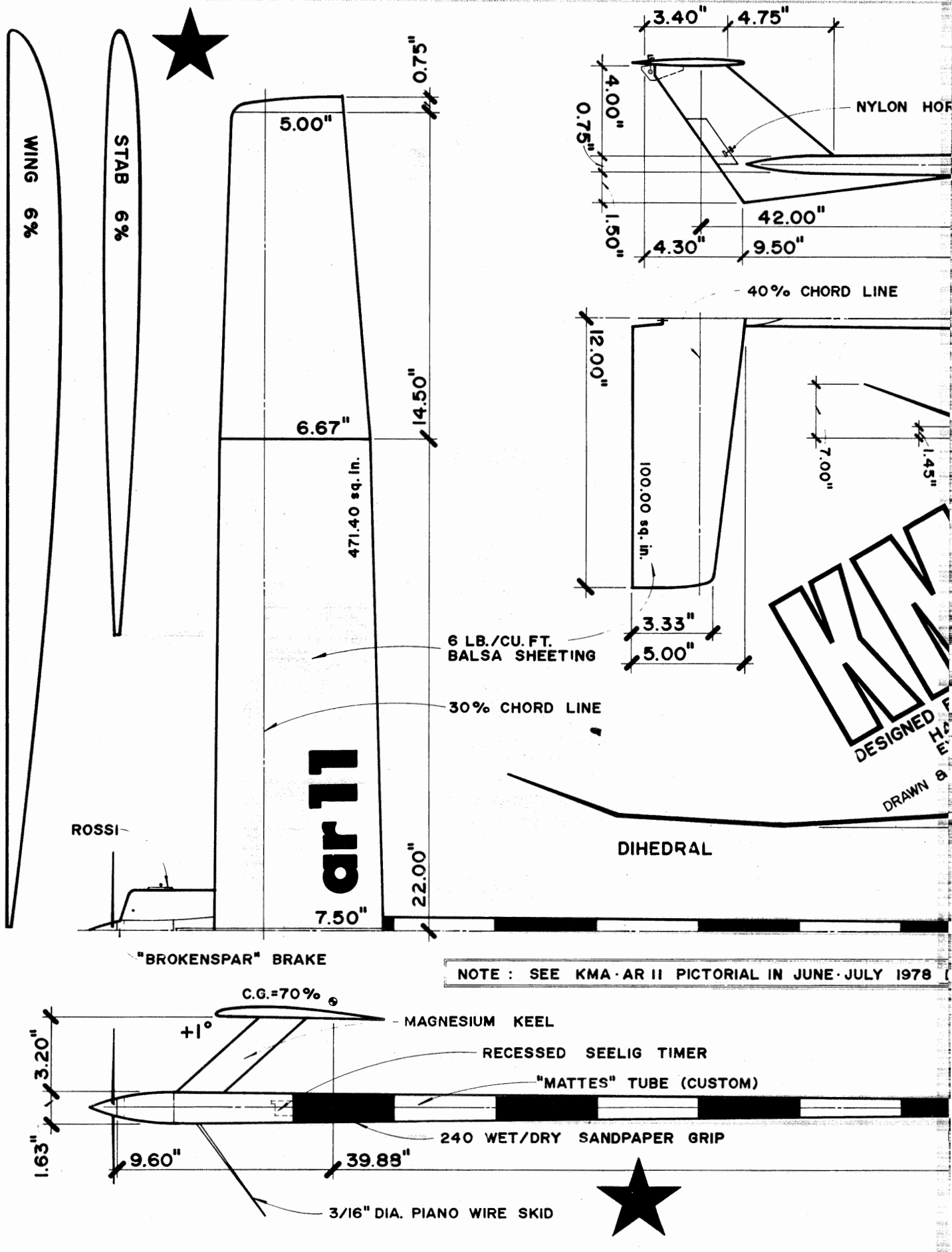
HARDY G. BRODERSEN

nffs

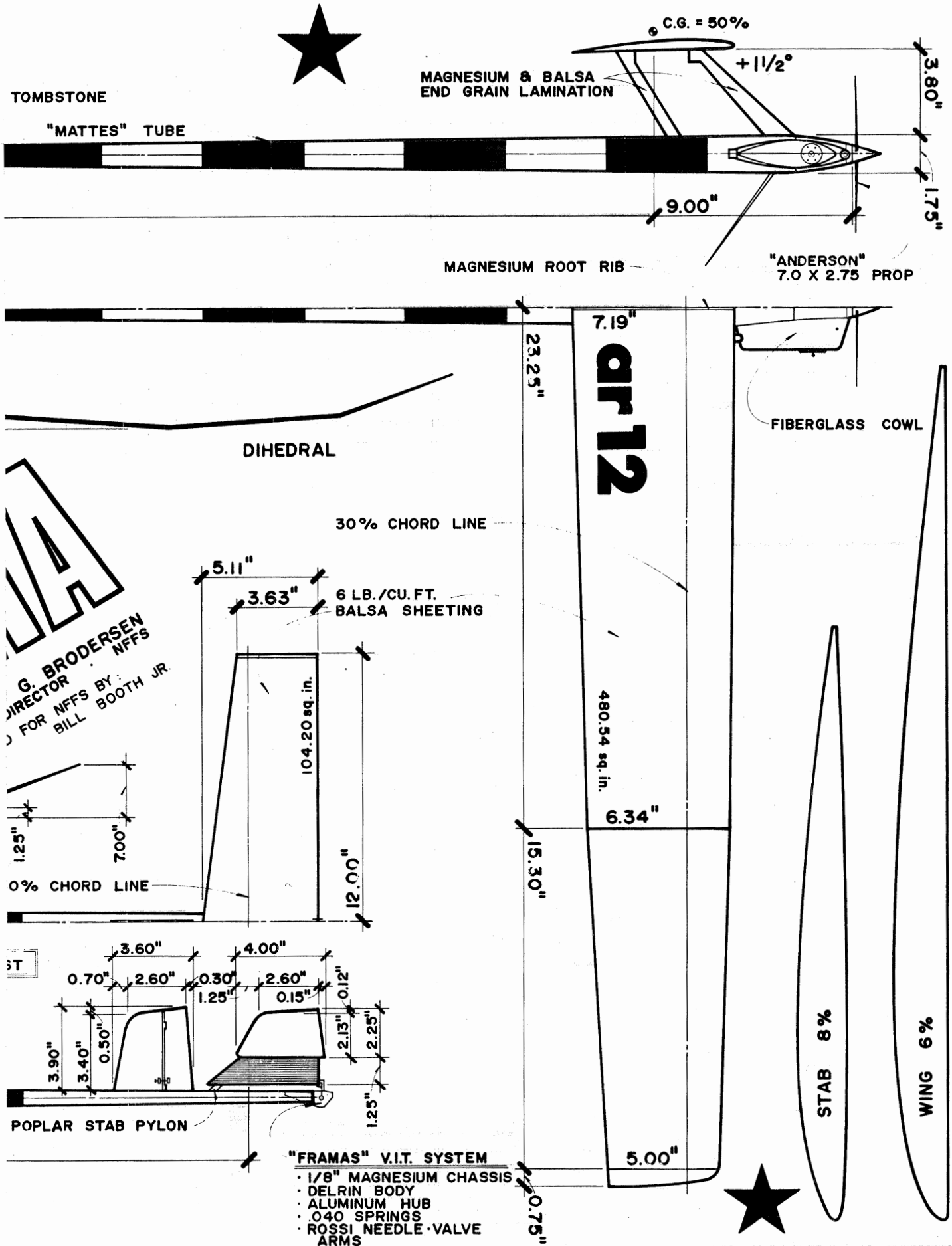
This NFFS Planbook is dedicated to Hardy Brodersen, who is seen here at Taft with his "KMA" advanced design (see drawing on following pages) during early testing. The Planbook was his idea; he nurtured it from the seed of a concept to a viable product. It is but one of many ideas he had to enrich this World Champs. He has served a long term as Executive Director of the NFFS, and all freeflighters owe him a debt of gratitude. Hardy studied at the Cranbrook Academy of Art and the University of Chicago, is partner in Design Origins, Inc., exhibit designers and display builders in Detroit. His first contest was the 1938 Nats in that city, and he is often seen at Bong and Taft. His distinctively designed craft has appeared in the NFFS Symposium and FREE FLIGHT. Hardy is the originator of the NFFS Ten Models of the Year.

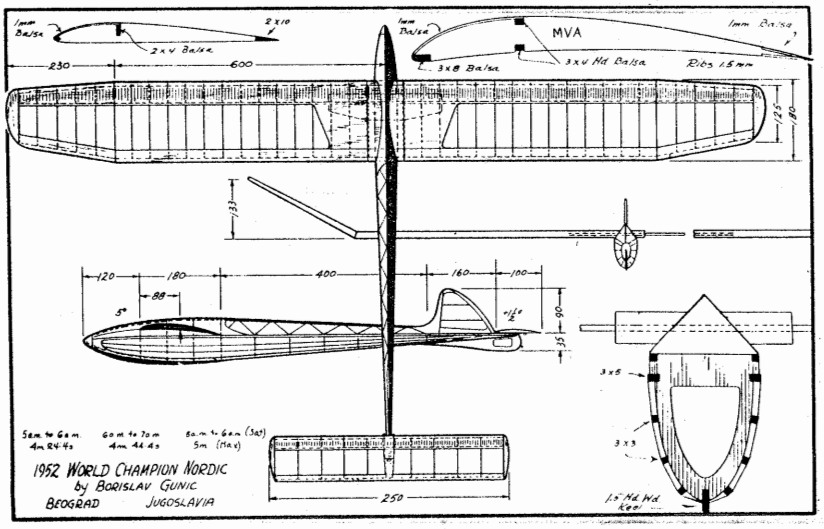
The Editor

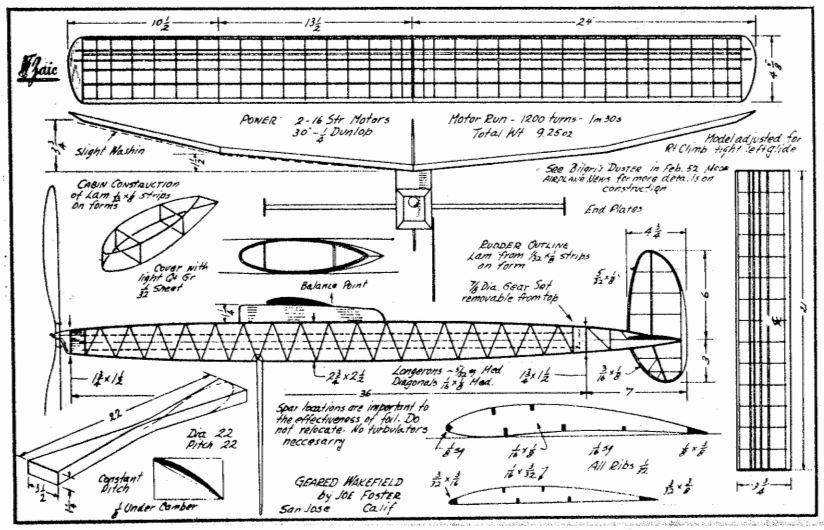


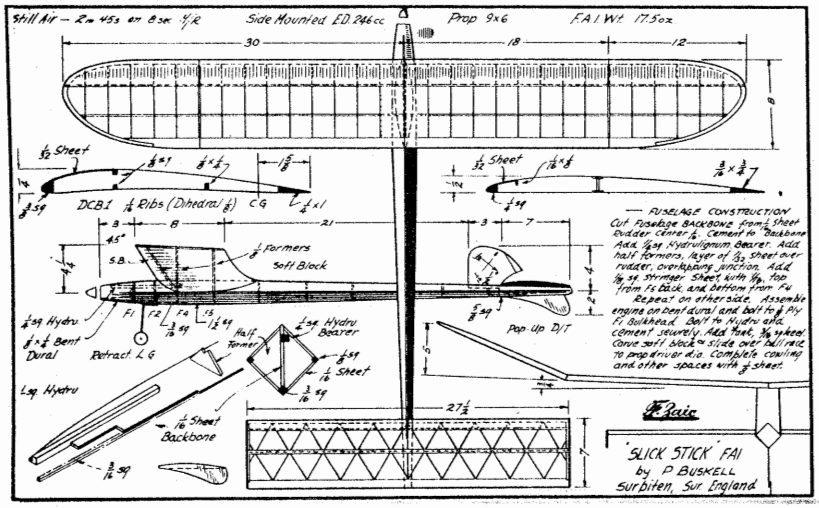


NOTE : SEE KMA·AR II PICTORIAL IN JUNE·JULY 1978


C.G. = 50%
+1½°
MAGNESIUM & BALSA
END GRAIN LAMINATION
TOMBSTONE
"MATTES" TUBE
3.80"
1.75"
9.00"
MAGNESIUM ROOT RIB
"ANDERSON"
7.0 X 2.75 PROP
7.19"
23.25"
ar 12
FIBERGLASS COWL
DIHEDRAL
30% CHORD LINE
5.11"
3.63"
6 LB./CU. FT.
BALSA SHEETING
104.20 sq. in.
480.54 sq. in.
6.34"
15.30"
12.00"
1.25"
7.00"
0% CHORD LINE
3.60"
4.00"
0.70"
2.60"
0.30"
2.60"
1.25"
0.15"
0.12"
2.13"
2.25"
3.90"
3.40"
0.50"
1.25"
POPLAR STAB PYLON
"FRAMAS" V.I.T. SYSTEM
· 1/8" MAGNESIUM CHASSIS
· DELRIN BODY
· ALUMINUM HUB
· .040 SPRINGS
· ROSSI NEEDLE-VALVE ARMS
5.00"
0.75"
STAB 8%
WING 6%
G. BRODERSEN
NFFS
DIRECTOR
FOR NFFS BY
BILL BOOTH JR.







Some drawings by Frank Zaic, maestro of the 3 view

EDITORIAL NOTES

Bringing this Planbook into the world seems almost like natural childbirth: frightening but fulfilling, painful yet joyous. It was truly a labor of love, like the early Yearbooks that Frank Zaic produced in the Thirties. We wish that we had the time Frank had then, and the lack of deadline, and the hassle-free situation of doing all the drawings ourselves. However, with a regular full time job, the need to have the book printed in time for the World Champs, and some 27 draftsmen to distribute work to, it became a real problem in management techniques!

Once the assignment was accepted (Brodersen proposed a "Mission Impossible") in April, it was necessary to contact WC entrants for submissions. Unfortunately, this was delayed and the deadline had to be extended. Special forms were provided for those who had no drawings of their models, and photos plus 300 words of text on design philosophy and contest record were solicited. The response was far from uniform. Some countries, such as France and the People's Republic of China, submitted nothing. Others, like Australia and Great Britain, had to cope with postal strikes. The strike in England prevented Peter G.F. Chinn from submitting an article on the evolution of FAI engines to complement our pair on Wakefield and Nordic Glider. Submissions trickled in for a month after the deadline, and we accepted them all! We were overwhelmed with the response, considering the tight deadline, and we want to extend our thanks to all contributors.

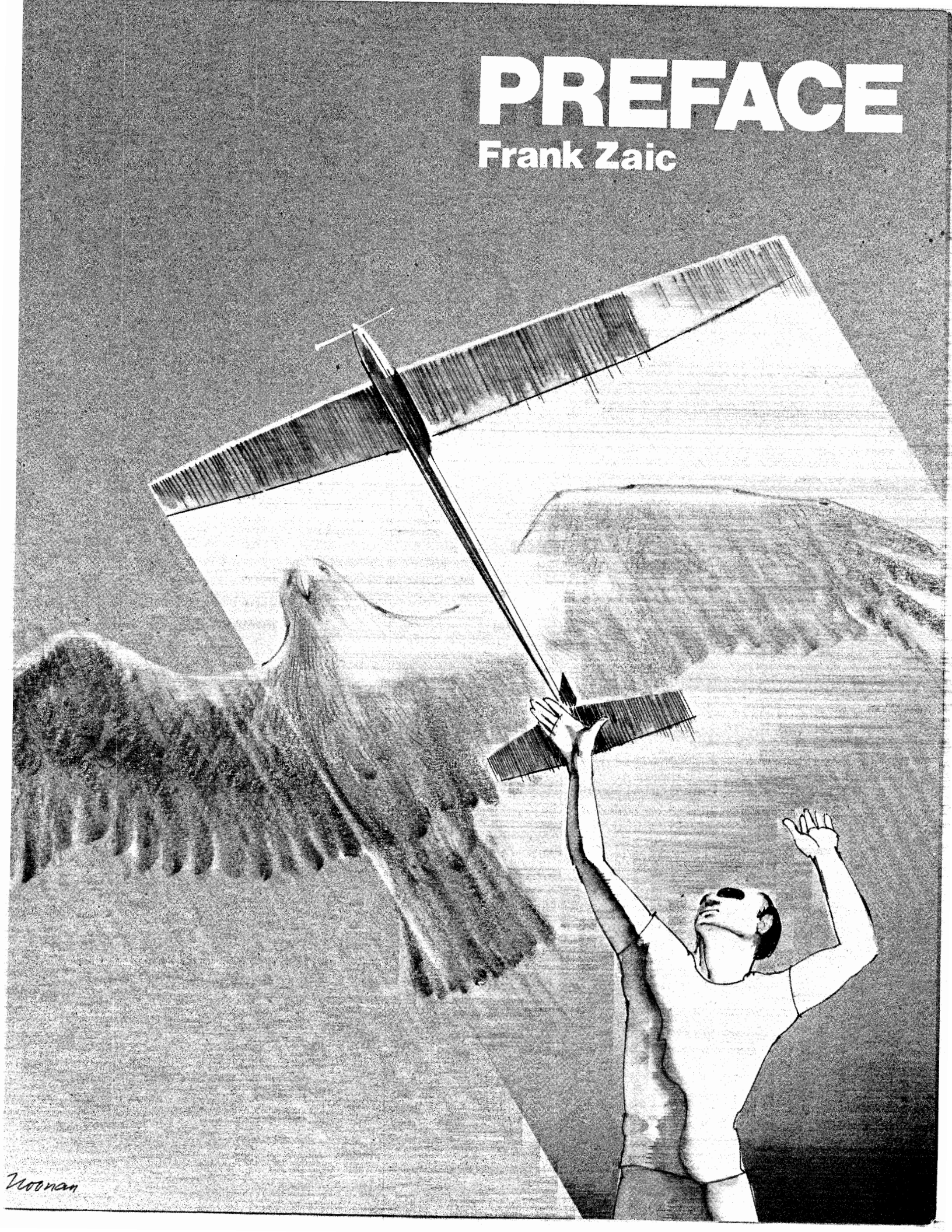
Our thanks also go to the valiant crew of draftsmen and illustrators who provided the graphics which comprise this book. They put as much data in the drawings as was available — in some cases, not as much as we asked for. Photos, biographical data, and technical data were not always submitted by contributors. Nevertheless, there is a tremendous amount of material here, and we know it will stimulate a lot of "bull sessions" in Bakersfield.

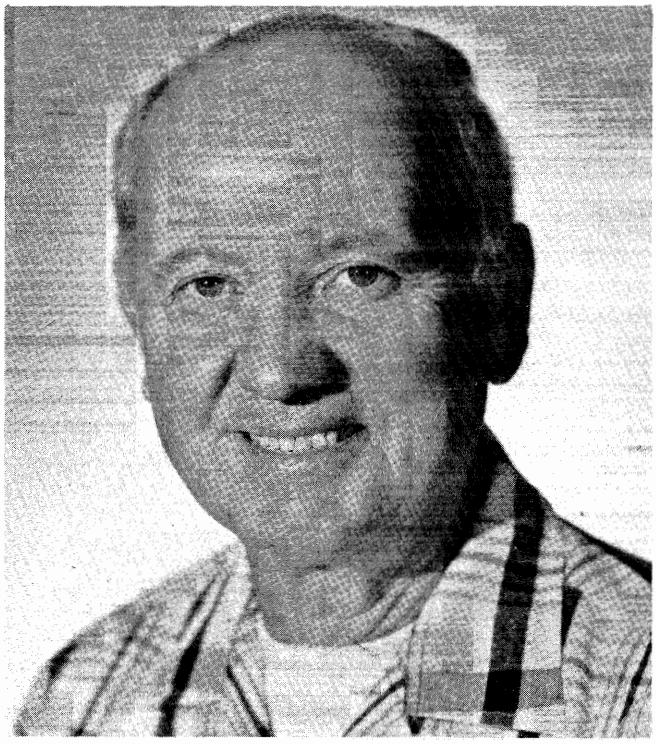
One comment about the index. We felt that it would be valuable to list the current mailing address for each flyer, so readers could contact them directly with comments and questions about their models. This international penpal list is strictly informal, which is in the nature of the international fraternity of free flight which brings us all together here in California. We welcome our brethren of all nations to the thermals of Taft. May your experience here be one of maxes and memorable encounters.

DAVE LINSTRUM NFFS

PREFACE

Frank Zaic





Frank Zaic of Northridge, California

FRANK ZAIC is a name known to aeromodelers worldwide, through his many efforts to promote the sport on an international basis and for his ten volume set of Model Aeronautical Yearbooks and other publications. Born in 1912 in Yugslavia, he emigrated to the USA in 1922. He was active in New York in the Thirties, helping found JASCO (now JETCO) and the Academy of Model Aeronautics. His FAI License dates back to 1933. Frank has also been a prolific designer; among his best creations are the Wakefield "New Yorker" (see photo) and the "Thermic" series of gliders. Also well known is his "Miss America" gas model. The magnificent drafting evident in the Yearbooks is Frank's hallmark. The Yearbooks offer a wealth of information for all modelers, FF and RC alike.

RECOLLECTIONS FROM THE 30's

The FAI: when did it begin? The seed was the Wakefield Cup. Although it was introduced in 1928, it did not achieve its intended purpose until 1936 when Great Britain sent a full team of six to the United States with avowed intentions of bringing the Cup back to England.

Between 1928 and 1936, internationally, the Cup was a sort of curious event which interested few builders enough to build the models to the spec and send for proxy flying. Those of us who participated in 1934 and 1935 were actually asked if we would be willing to make a Wakefield and send it to England by post for proxy flying. Why then the sudden burst of interest in 1936?

The sudden change can be traced directly to B.K. Johnson, chairman of the SMAE, and Lt. H.W. Alden, secretary and treasurer of the AAMA. During the lean 1932-35 years, they held extensive correspondence and made sure that the U.S. participated during this time. With the Cup in the U.S. after the 1935 win by Gordon Light, they decided to hold the Wakefield Competition in conjuction with the 1936 Nationals. By doing so, they also made it possible for the Canadians to hold their eliminations at the same time as we did. France and New Zealand also sent their models for proxy flying which added to the international atmosphere. This exposure to the contestants at the Nationals, and the coverage in the papers, made the Wakefield a premier event. The possibility of being on a team which would go overseas, just sort of made your fingers itch. Therefore, it may do well for us to pause for a moment and remember the two men, B.K. Johnson and Lt. H.W. Alden, who may have started the FAI.

On my 3 view technique? It was influenced 100% by my patent drafting experience. As you may know, I went to a business school for three months. I found that I was not cut out to be a secretary. So, at about 14 I started to work as an errand boy, packer and radiator/fender repair man. In the meantime, I was going to night school taking up drafting. When I was about 16, I did not like the way my hands were becoming hammy and quit the fender job. Wonder if I should have kept it up — considering how well it pays now. On the same day, the evening school teacher wanted to know if I would be willing to be interviewed for a drafting job. Yes!

Well, it turned out to be a patent drafting place. Salary was $10. for a 44 hour week. Quite a let down from $20. I was making. So it turned out for the best. I had trouble with my eyes for several months focusing on very fine work. It was not uncommon to reduce a 20 foot item to 12 inches. I also found out how to shade from a master. You have no idea how some of the old patent drawings were drawn; you could practically pick them off the paper. So, that is the way I came to pick up the ability to make very fine line drawings, shaded, and in small scale. I never used a board larger than 12" x 17". This means that you are able to swing the board around to fit your posture, sort of hunched over the board. The reduction was all done with proportional dividers so that the material was made to fit the page. That is why my model drawings fit the page. I used to be able to make three drawings of simple models per day; gliders — five at a time, etc. So, the pay may have been low, but it did provide me a way to make plans later on.

As to the reason for the Yearbook, I used to make radios and read the QST and the Handbook. I felt that we needed something like it. Brother Johnny had the idea of a log book, but you can read about this in the Dec. 1974 NFFS bulletin. Once I got into it, I realized that there was more to the books than making a living. They helped me feel at home in the USA. Also, they were an outlet to what I had in mind about model design. Basically, it seems that once you are doing something that meets with universal acceptance and approval, you find yourself in a situation that is hard to describe. Money/time has no meaning; getting the next book out is all that matters.

I am also enclosing a sketch of the proposed design for the Lindbergh award. It confirms my feeling after reading the book: lone eagle over the ocean. Some like it, others are not too happy. But plus seem to have it. Also included is an autographed menu of the 1937 Wakefield with words from Lord Wakefield.

FRANK ZAIC

NFFS TECHNICAL PROJECT

The National Free Flight Society is planning a special project for the World Championship to measure performance and to report on technical and tactical matters. Technical groups have been set up for each of the three categories. These teams are composed of active FAI modelers in the specific classes. In addition to groups for Nordic, Wakefield and Power, there will be a group for altitude measurement.

The technical groups will make notes and sketches as well as taking numerous photographs. They will solicit plans not already gathered for the NFFS International Free Flight Planbook. All these data and performance measurements will be compiled and analyzed. The data, the findings, the photographs and commentary will be the subject of an NFFS publication in the near future.

Some of the areas to be pursued in reporting:

General - Airframe parameters such as are included in most published plans; airfoil designations and deviations from coordinates, leading edge radii and turbulators; structural innovation; unusual use of exotic material such as Kevlar, carbon fiber and metal skins; correlation of climb and sinking speed with design elements.

Nordic - Towhook design and construction; autosurface programming for zoom; zoom altitude gain; zoom technique; tactics for gaining advantage over opponents; piggy backing.

Wakefield - Front end hardware; propeller design and sections; wing section and its fidelity; trimming warps, autosurface mechanization and programming; motor tube and tail cone construction; winding technique; protective systems; stooges.

Power - Engine innovation; prop brakes, timer systems, autosurface programming, propeller design and construction; structural treatment to control flutter and dynamic deflection.

Team Management - Organizational responsibilities, team discipline, handling of air picking and thermal detection devices; support of fliers during preparation and launch; operational innovation; tactical methods.

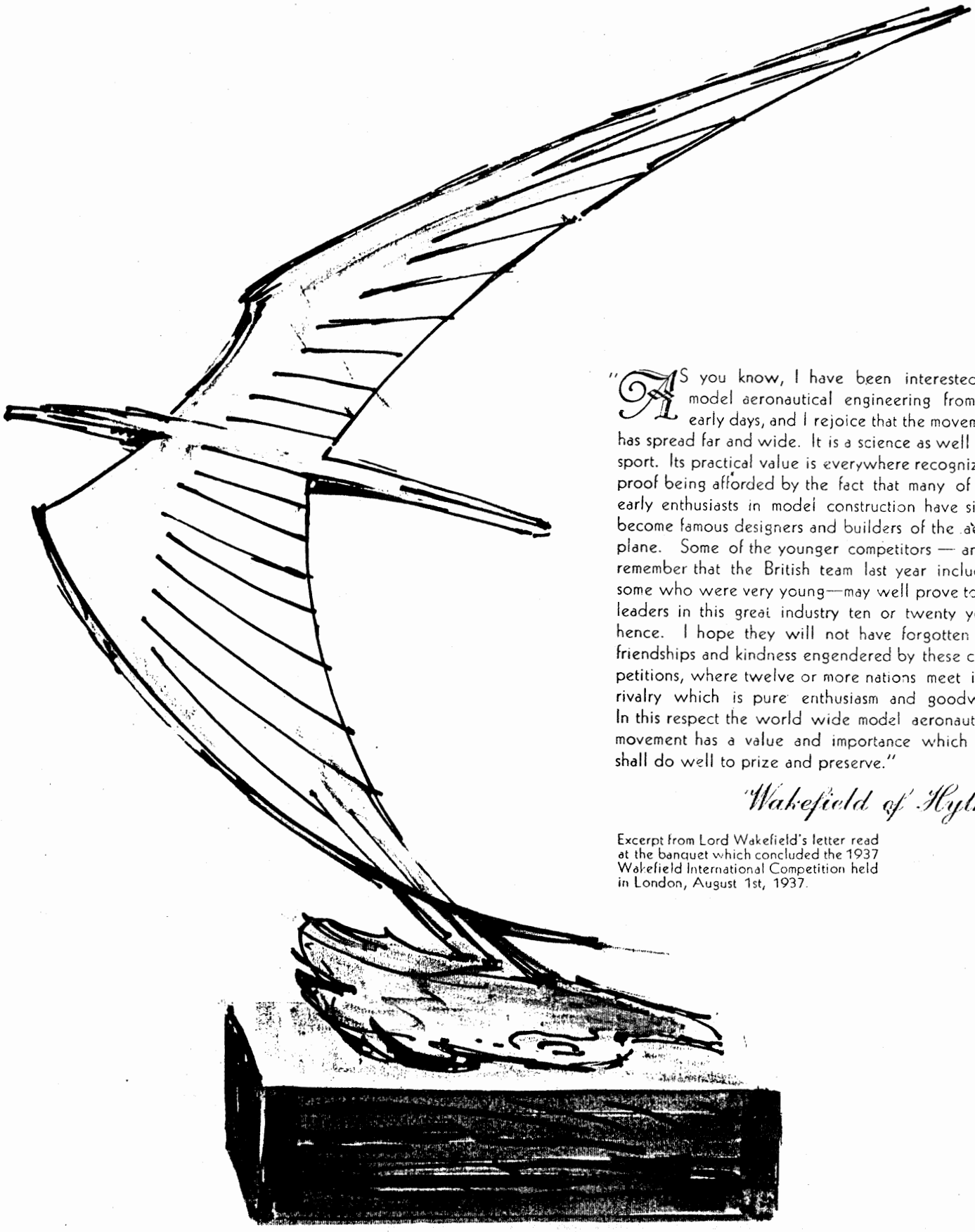
The altitude will be measured using an apparatus and technique that the model rocket fliers have used successfully for 20 years. Simple homemade theodolites such as that designed by Trip Barber of the National Association of Rocketry will be built by Tom McLaughlan. Earl Boteler is working out operational plans for the altitude system. See the figures for the layout of the range and design of a theodolite. Altitude will be measured during early hours of practice and in the first round when thermals are not dominating the altitudes achieved. We hope to measure the climb of Wakefields and Power models as well as the zoom height of Nordics. Sink rates will also be of high interest.

Suggestions are welcomed on how to best implement this project. Additional help is needed in the Wakefield and Power group as well as help in manning the theodolites to measure altitude. If you would like to help, please contact myself or the appropriate group captain.

Fred Pearce
Project Manager



nffs
NATIONAL FREE FLIGHT SOCIETY



"AS you know, I have been interested in model aeronautical engineering from its early days, and I rejoice that the movement has spread far and wide. It is a science as well as a sport. Its practical value is everywhere recognized, proof being afforded by the fact that many of the early enthusiasts in model construction have since become famous designers and builders of the aeroplane. Some of the younger competitors — and I remember that the British team last year included some who were very young—may well prove to be leaders in this great industry ten or twenty years hence. I hope they will not have forgotten the friendships and kindness engendered by these competitions, where twelve or more nations meet in a rivalry which is pure enthusiasm and goodwill. In this respect the world wide model aeronautical movement has a value and importance which we shall do well to prize and preserve."

Wakefield of Hythe

Excerpt from Lord Wakefield's letter read at the banquet which concluded the 1937 Wakefield International Competition held in London, August 1st, 1937.

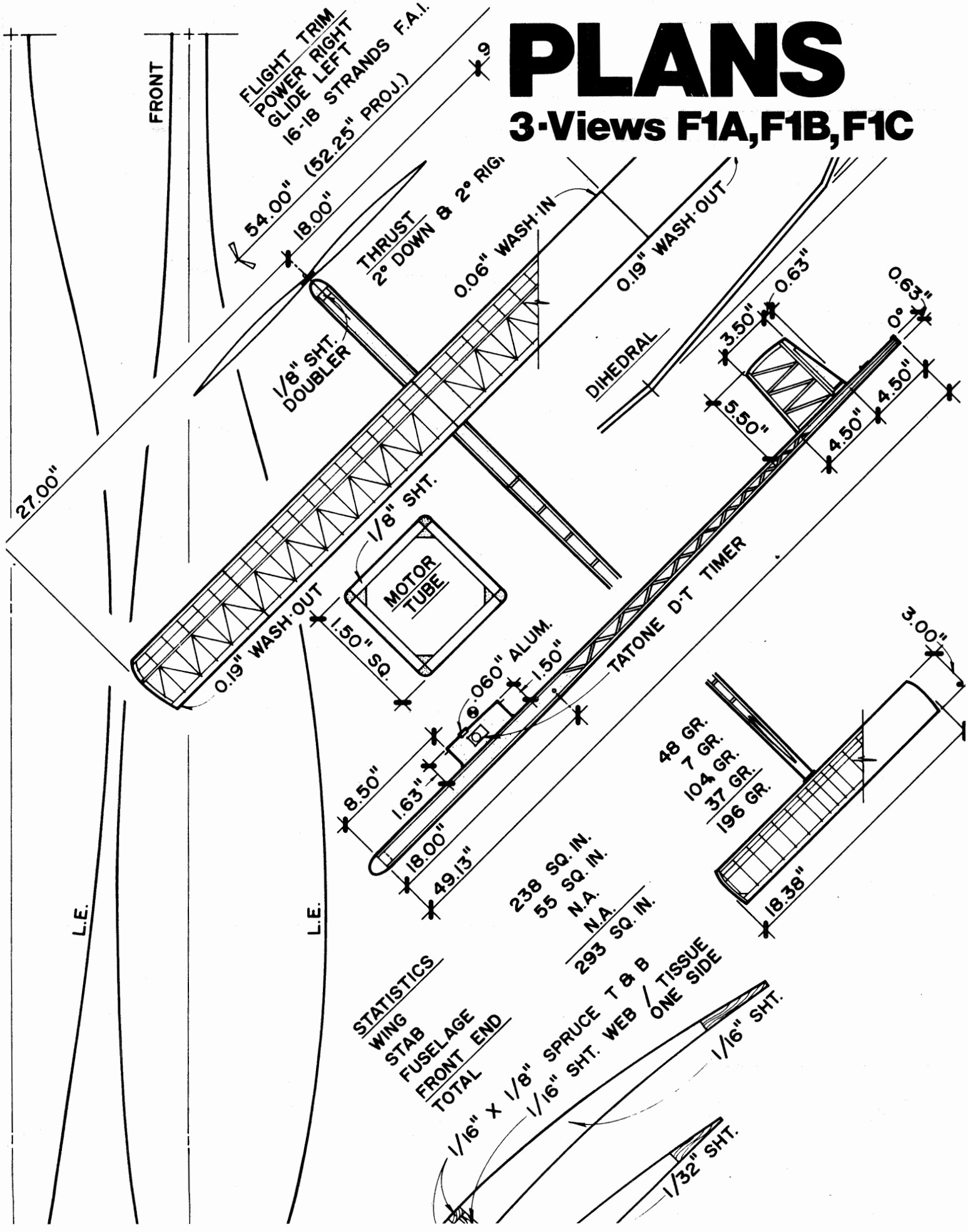
LINDBERGH AWARD

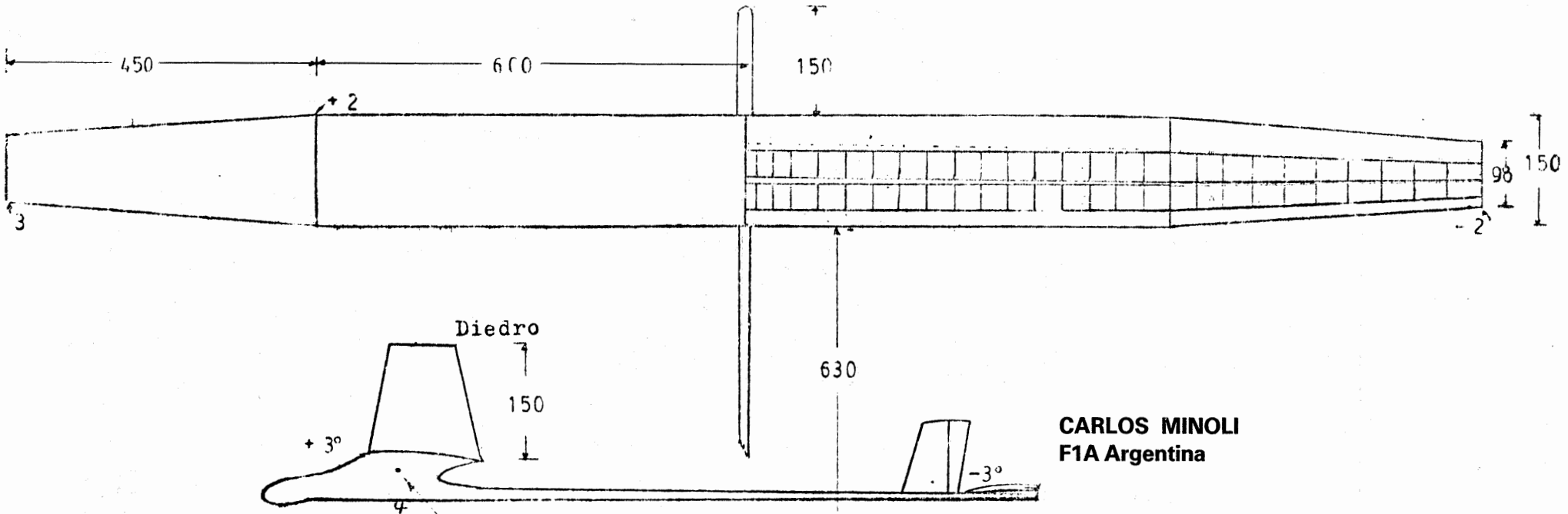
Sculpture Proposal by George Oglesby. Wing: 16-18 in. Polished Marine Aluminum. Sea Wave:Gold Anodized Aluminum. Base: Walnut

)PELLER BLADE
5 DIA. X 24.0 P.

PLANS

3-Views F1A, F1B, F1C



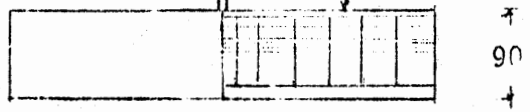


CARLOS MINOLI
F1A Argentina

Gancho para remolque circular al 30%.

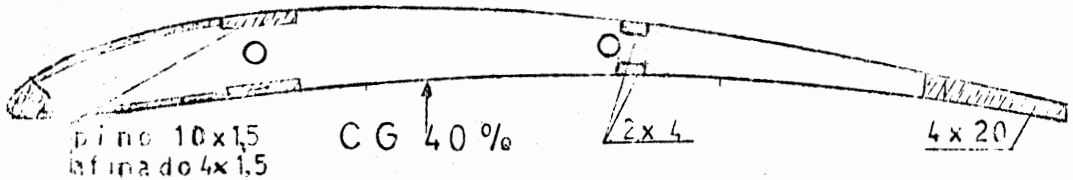
Pesos

Ala	150
Estab	9
Fuselaje	251
	410

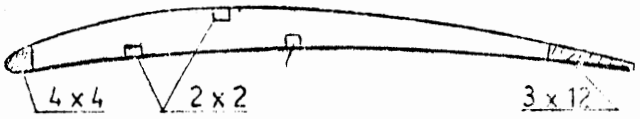


Perfil alar Sokolov



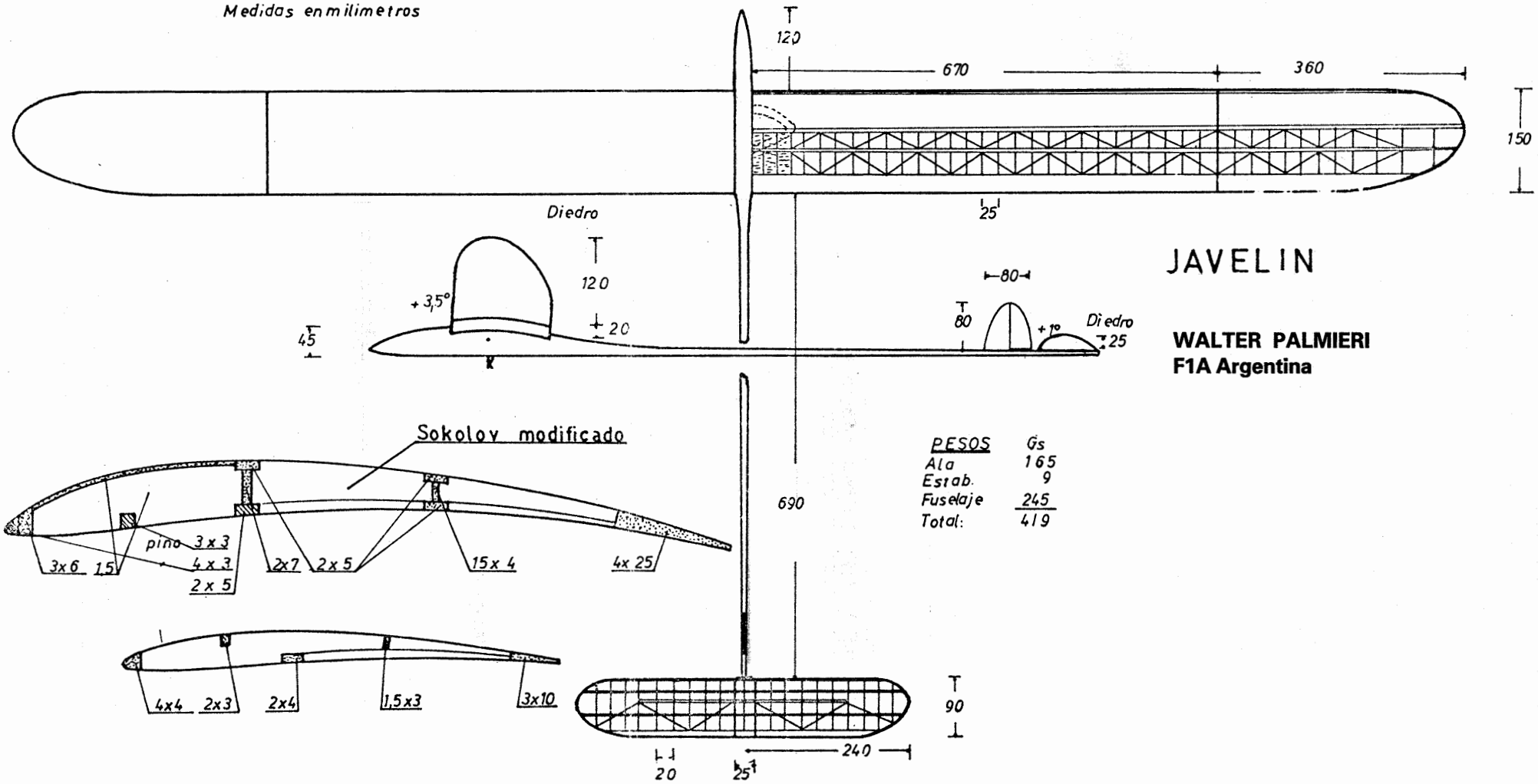


Benedek 6356



RIO DE LA PLATA
Noticiero Aeromodelista

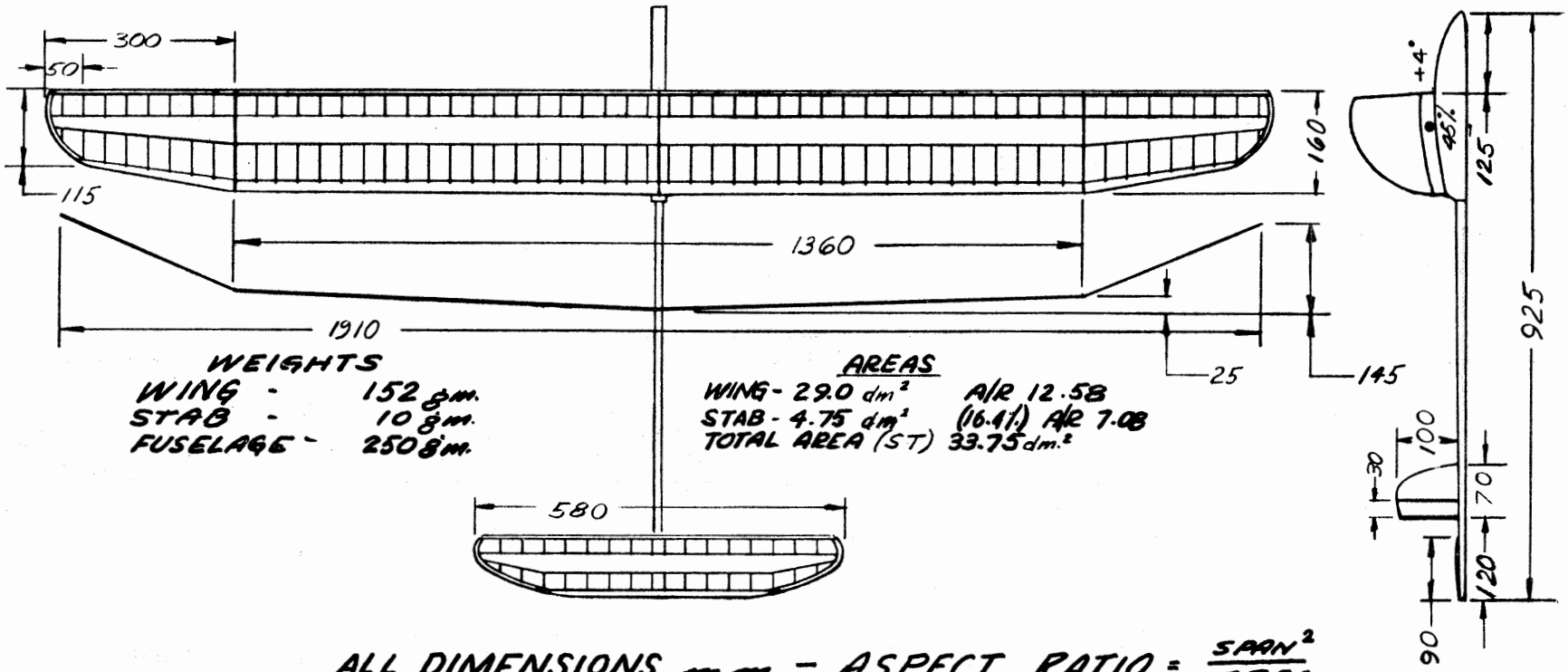
Medidas en milimetros



JAVELIN

WALTER PALMIERI
F1A Argentina

PESOS	Gs
Ala	165
Estab.	9
Fuselaje	245
Total:	419



WEIGHTS

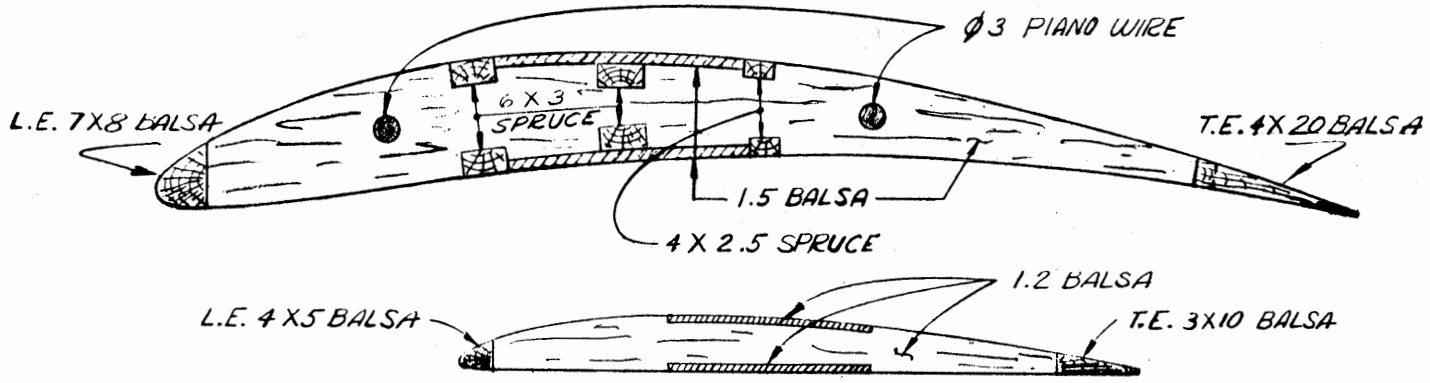
WING -	152 gm.
STAB -	10 gm.
FUSELAGE -	250 gm.

AREAS

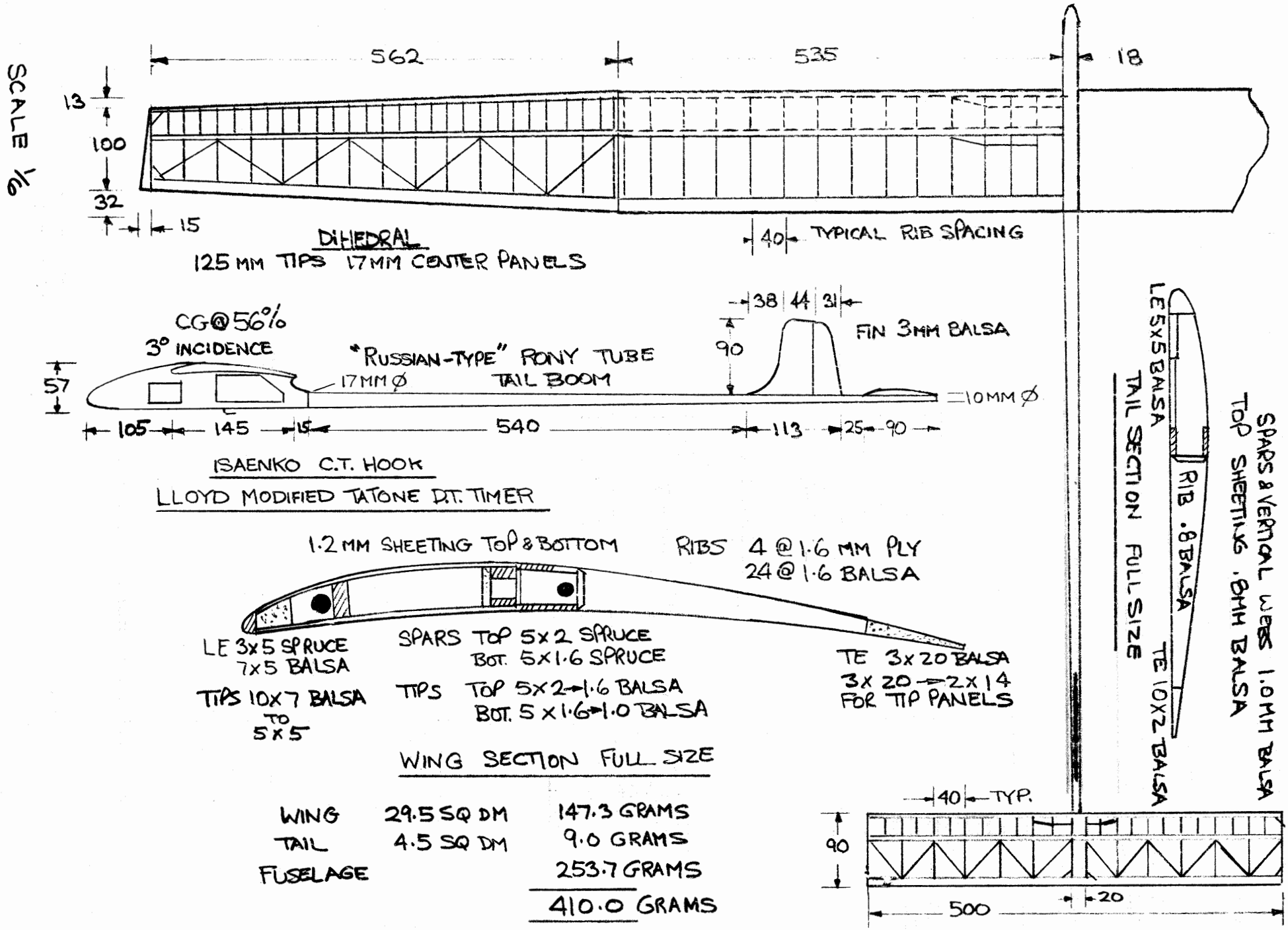
WING - 29.0 dm^2		A/R 12.58
STAB - 4.75 dm^2	(16.41:)	A/R 7.08
TOTAL AREA (ST) 33.75 dm^2		

ALL DIMENSIONS mm - ASPECT RATIO = $\frac{SPAN^2}{AREA}$

WING & STAB SECTIONS
SHOWN FULL SIZE

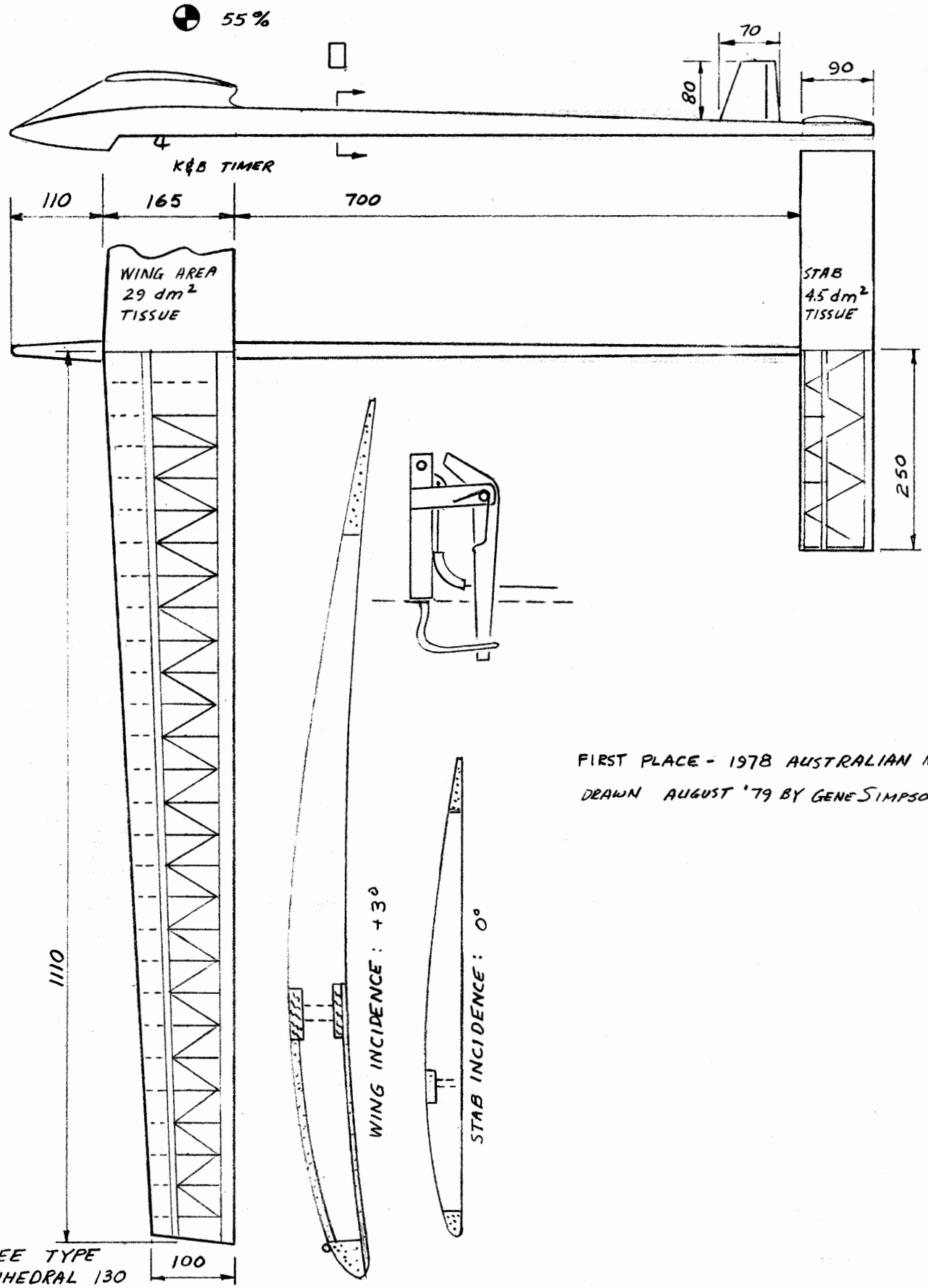


ANTONIO TARZIBACHI
F1A Argentina



WING	29.5 SQ DM	147.3 GRAMS
TAIL	4.5 SQ DM	9.0 GRAMS
FUSELAGE		253.7 GRAMS
		410.0 GRAMS

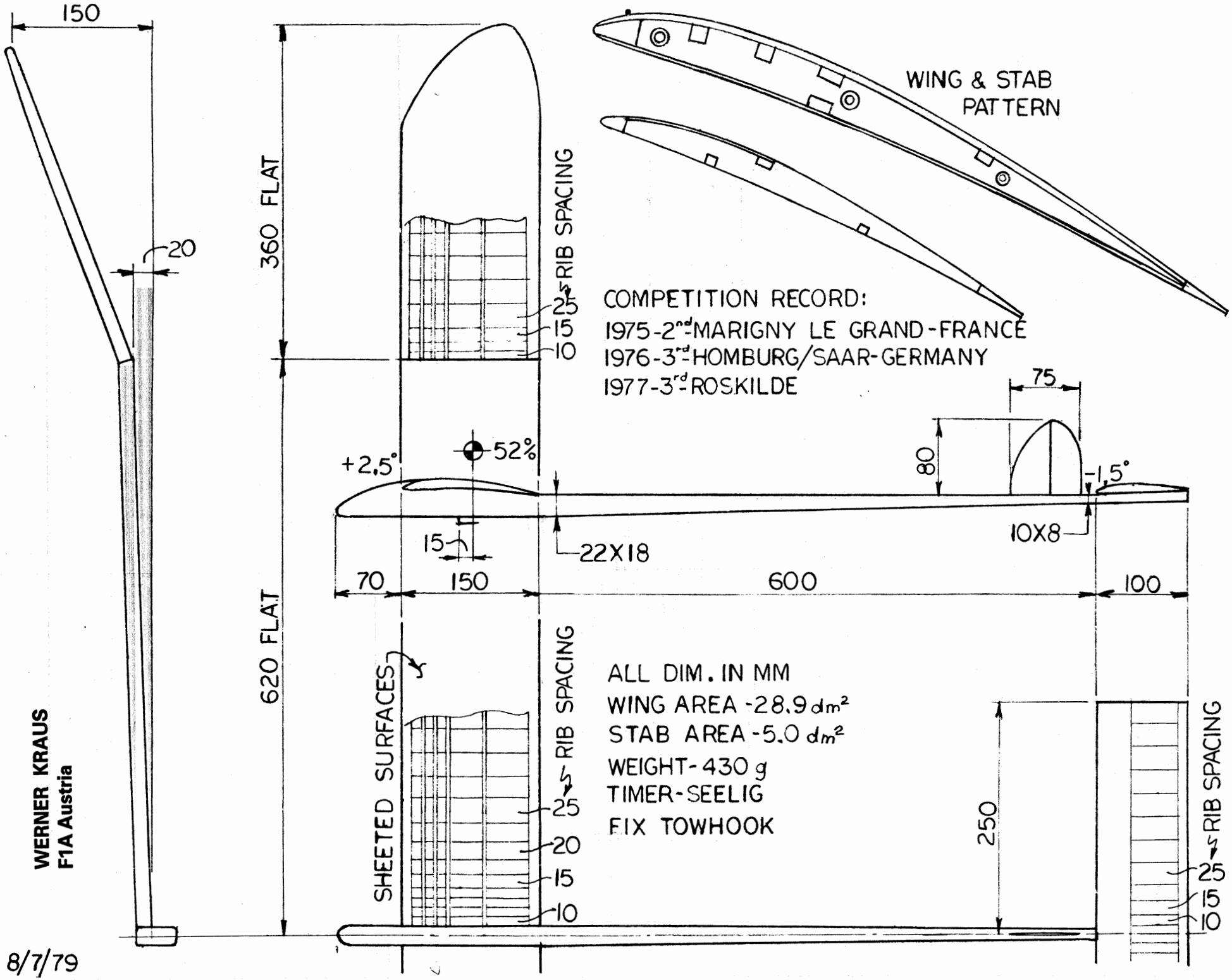
PETER LLOYD
F1A Australia

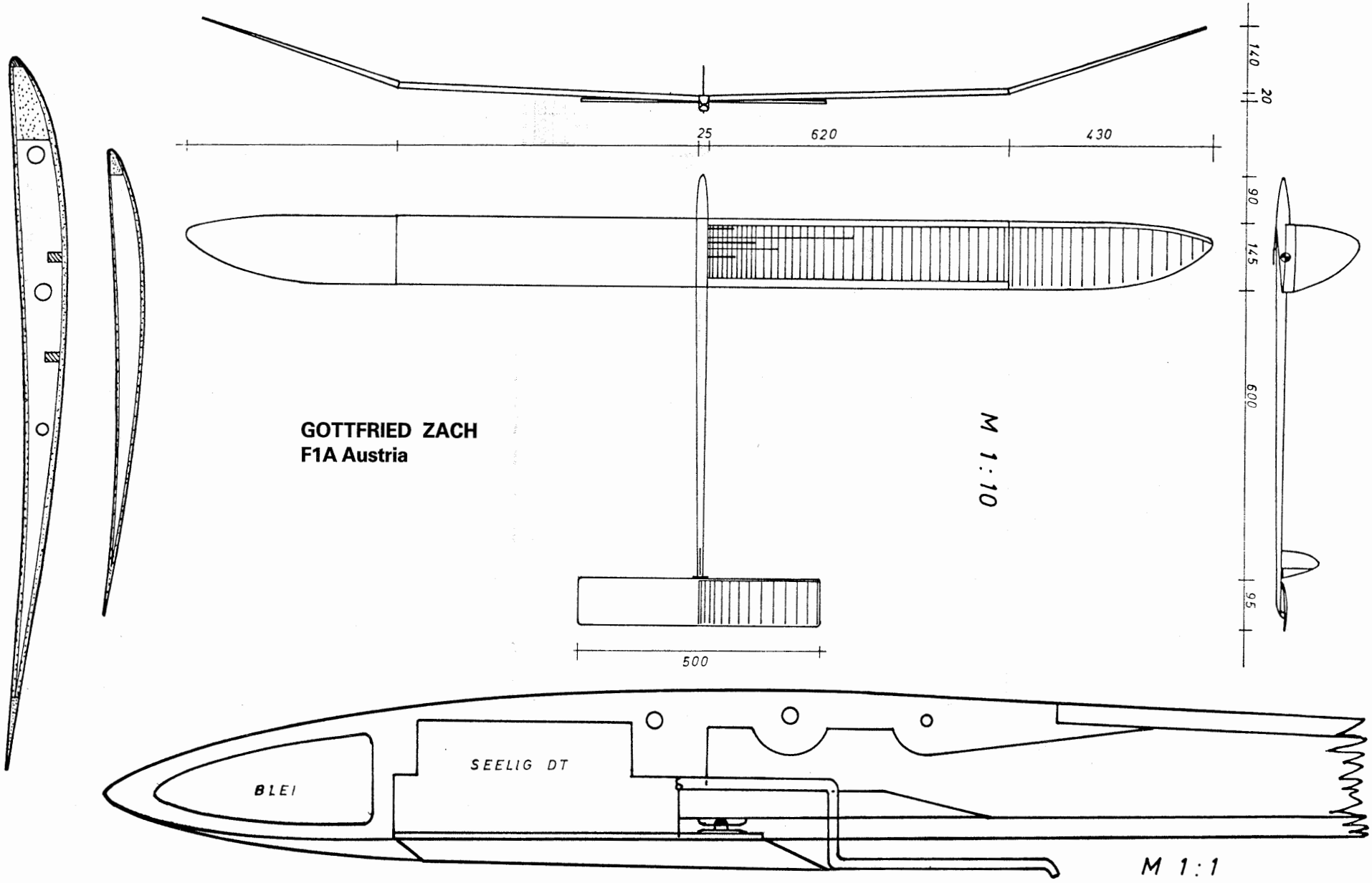


FIRST PLACE - 1978 AUSTRALIAN NATS

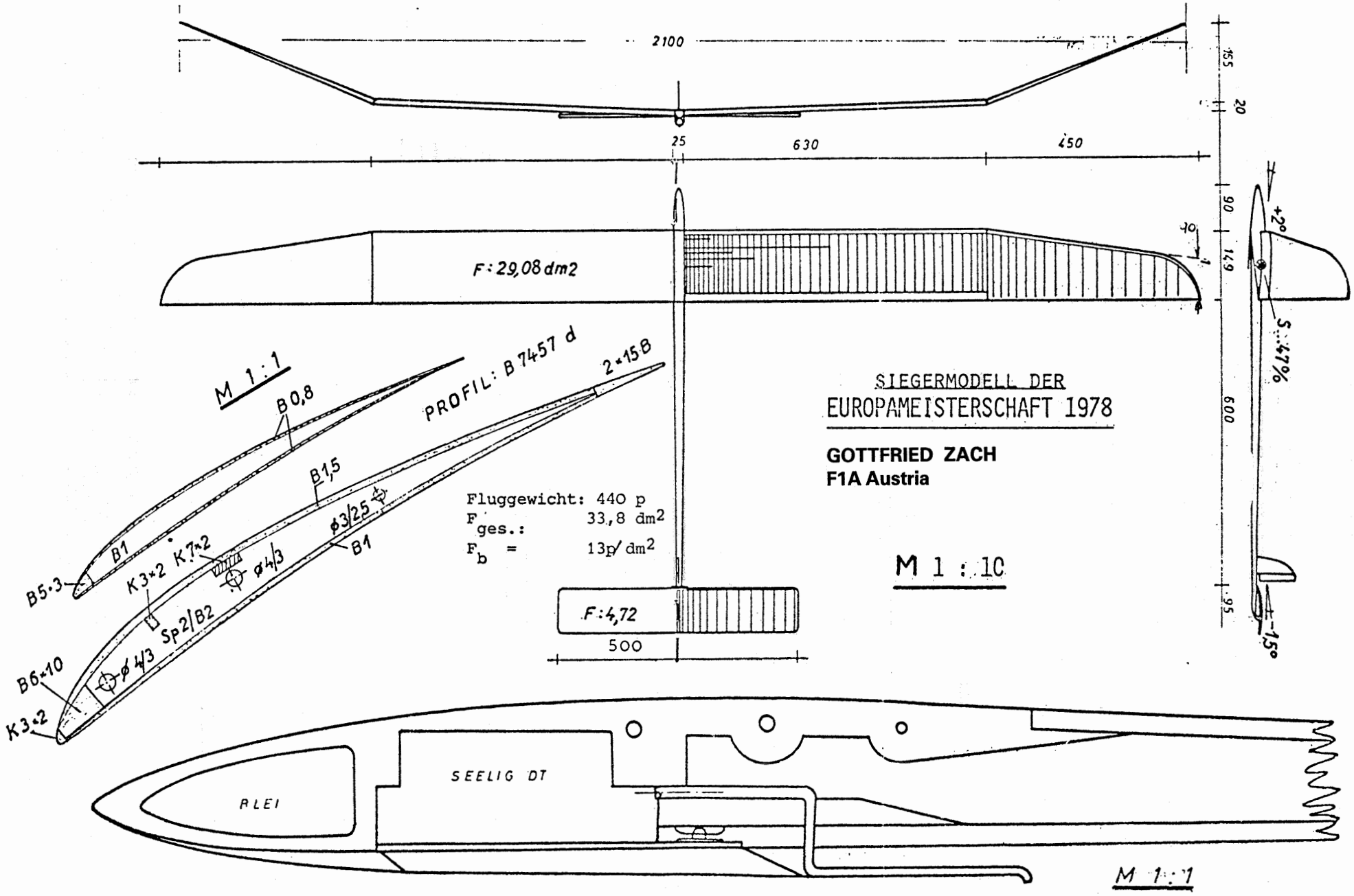
DRAWN AUGUST '79 BY GENE SIMPSON

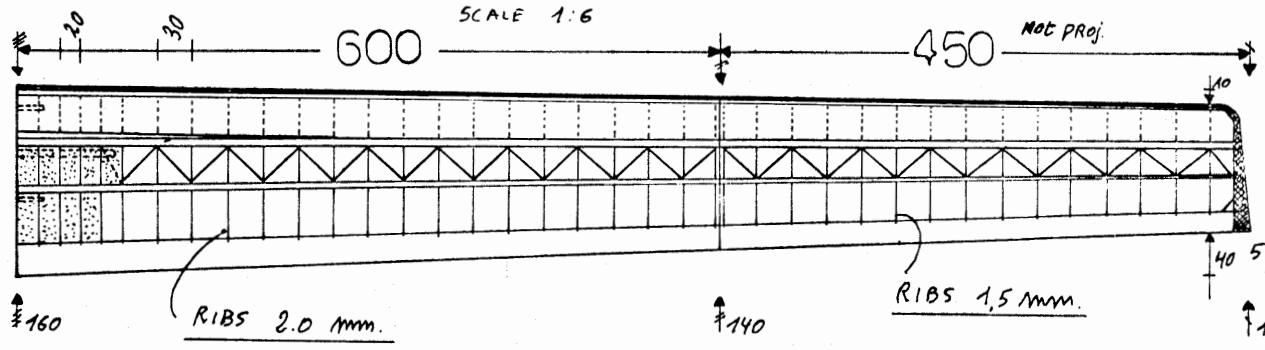
PETER NASH
F1A Australia


150
20
360 FLAT
620 FLAT
25
15
10
RIB SPACING
WING & STAB
PATTERN
COMPETITION RECORD:
1975-2nd-MARIGNY LE GRAND-FRANCE
1976-3rd-HOMBURG/SAAR-GERMANY
1977-3rd-ROSKILDE
75
80
+2.5°
52%
-1.5°
15
22X18
10X8
70
150
600
100
SHEETED SURFACES
ALL DIM. IN MM
WING AREA -28.9 dm²
STAB AREA -5.0 dm²
WEIGHT-430 g
TIMER-SEELIG
FIX TOWHOOK
250
WERNER KRAUS
F1A Austria
CH 8/7/79



Siegermodell der Europameisterschaft 1976 von Ing. G. ZACH - A 2700 Wiener-Neustadt

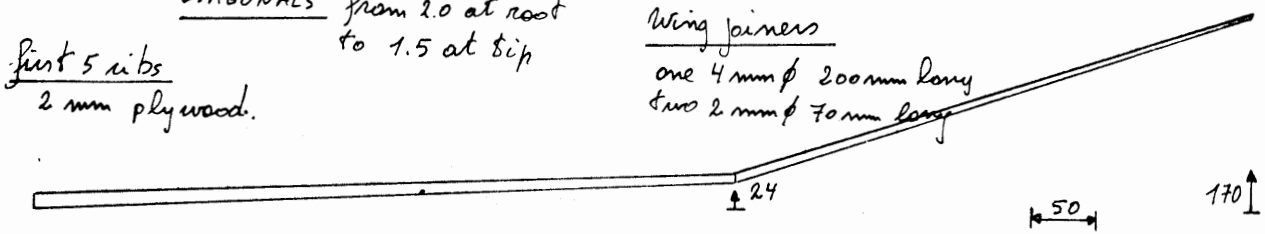

2100
25
630
450
155
20
90
149
600
95
F: 29,08 dm2
F: 4,72
500
+2°
S: 47%
+-1,5°
M 1 : 1
B 0,8
B 1,5
B 1
B 5·3
K 3·2
K 7·2
ø 4/3
Sp 2/B2
ø 3/25
B 1
B 6·10
K 3·2
PROFIL: B 7457 d
2·15 B
Fluggewicht: 440 p
F ges.: 33,8 dm2
Fb = 13p/dm2
SIEGERMODELL DER
EUROPAMEISTERSCHAFT 1978
GOTTFRIED ZACH
F1A Austria
M 1 : 10
BLEI
SEELIG DT
M 1 : 1

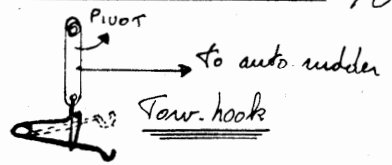


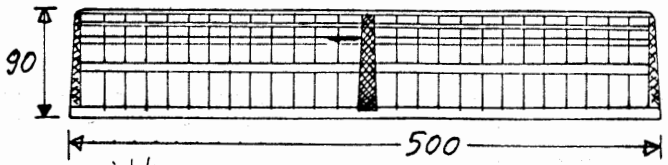
DIAGONALS from 2.0 at root to 1.5 at tip

First 5 ribs
2 mm plywood.

Wing joiners
one 4 mm ϕ 200 mm long
two 2 mm ϕ 70 mm long

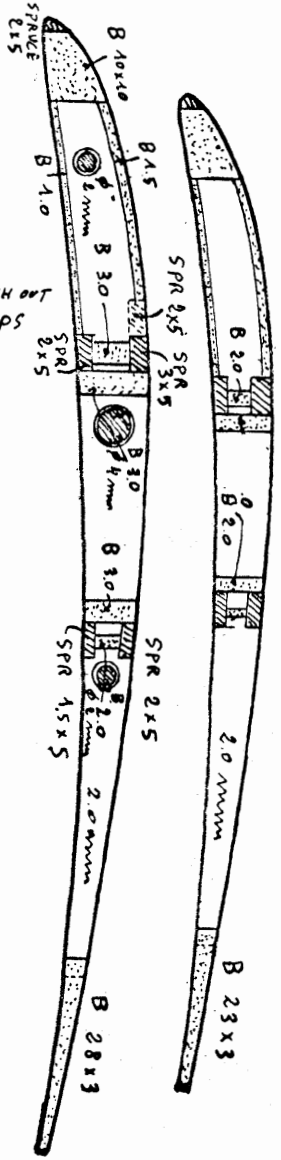


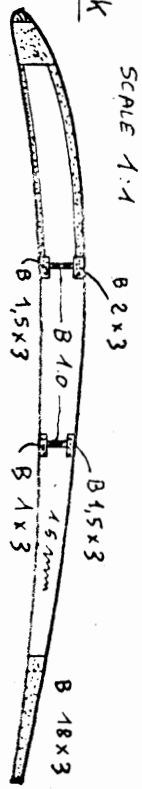




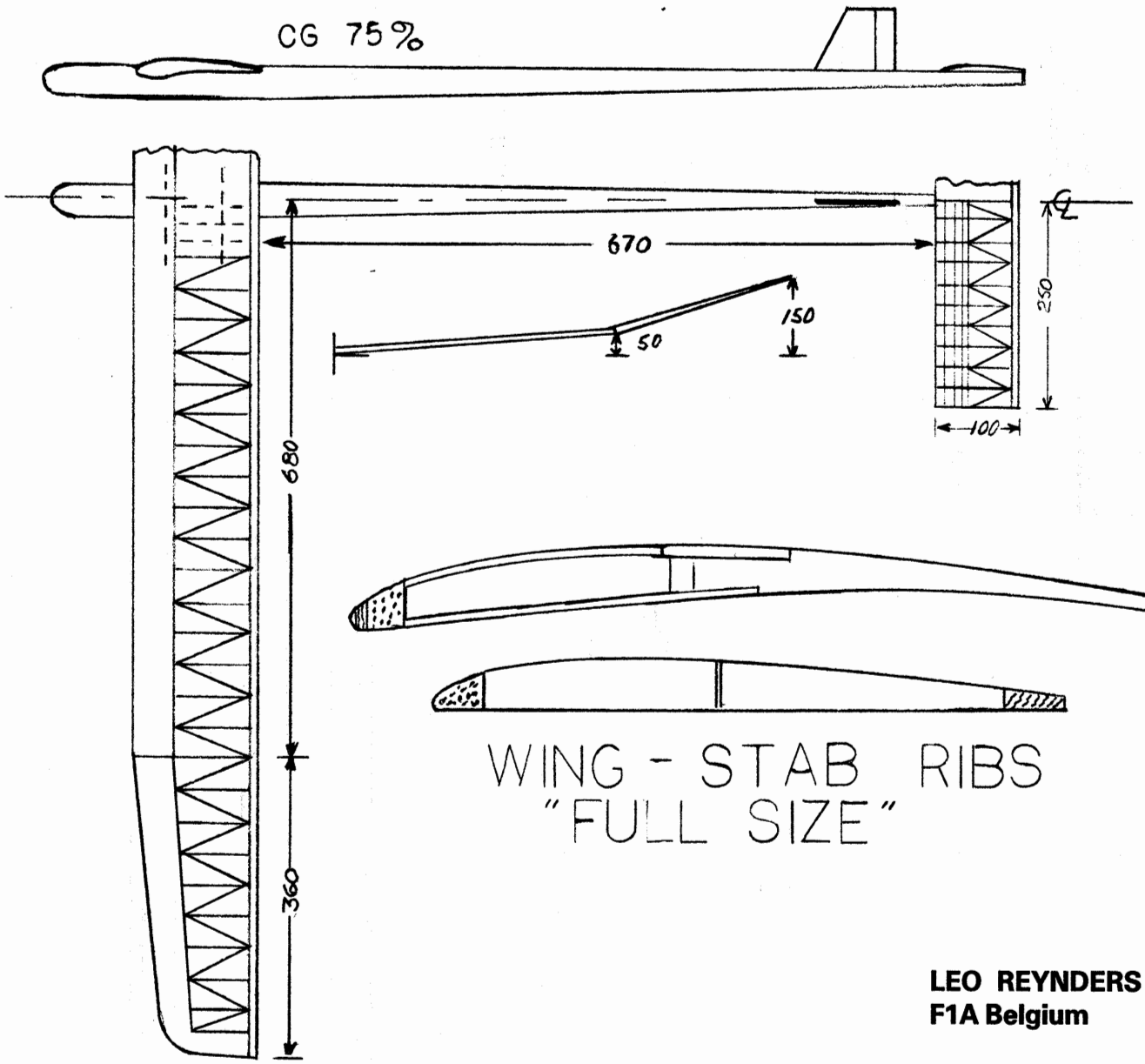
weights wing: 164 gr. tot: 414 gr.
STAB: 10 gr
FUSEL.: 240 gr

JOSEPH MELIS
F1A Belgium









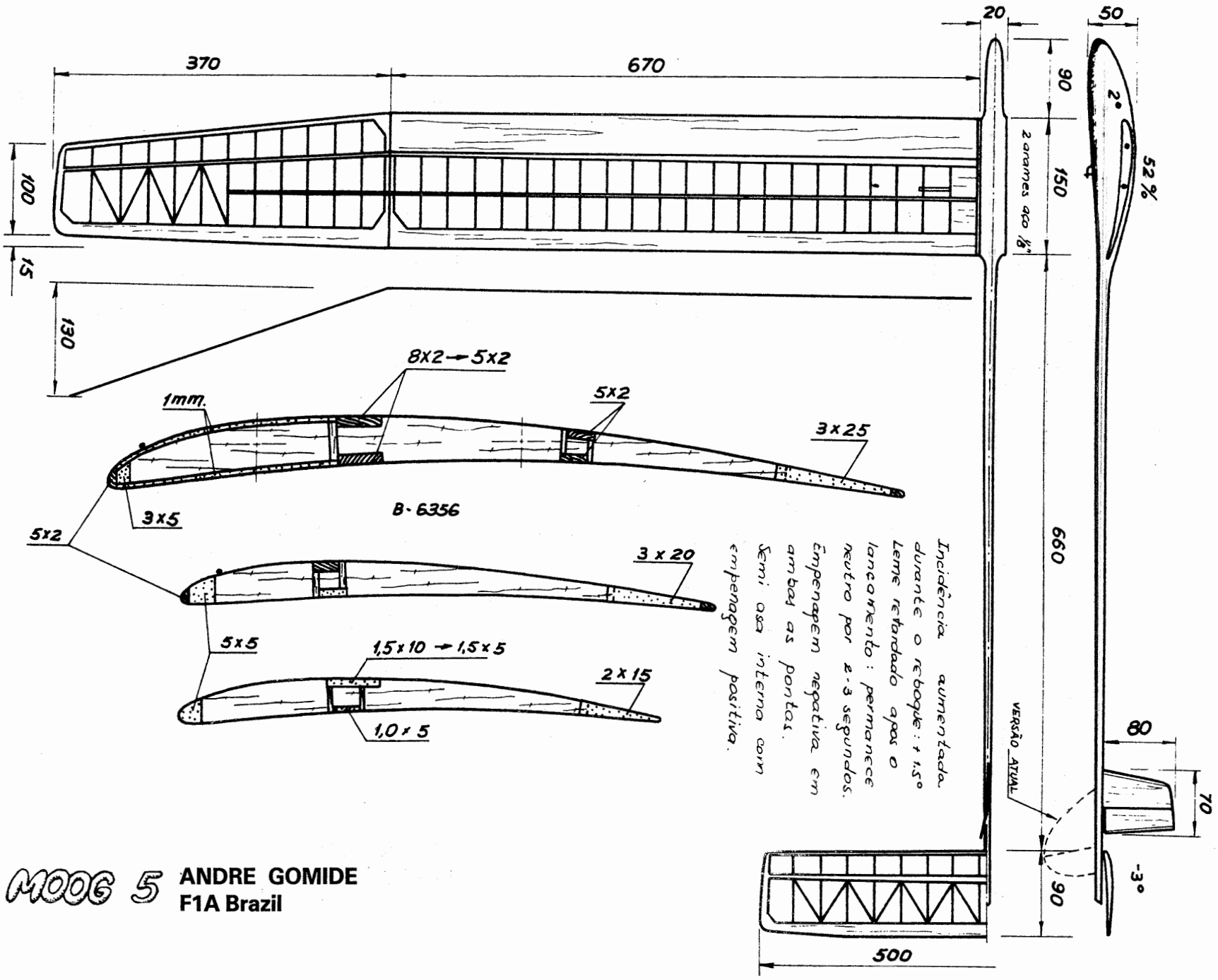
WING AREA 29 DM²
STAB AREA 5 DM²
WEIGHT 420 GR
TISSUE COVERED
GRAUPNER TIMER

CIRCLE TOWED
OWN DESIGN
TOW HOOK

WING - STAB RIBS
"FULL SIZE"

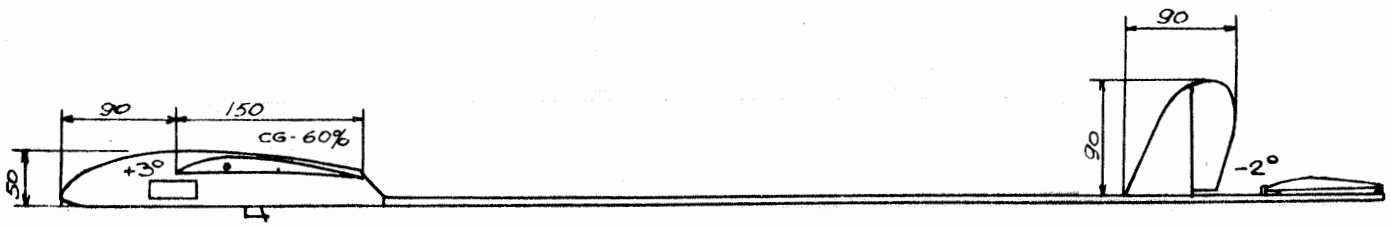
ALL DIMENSIONS - MM

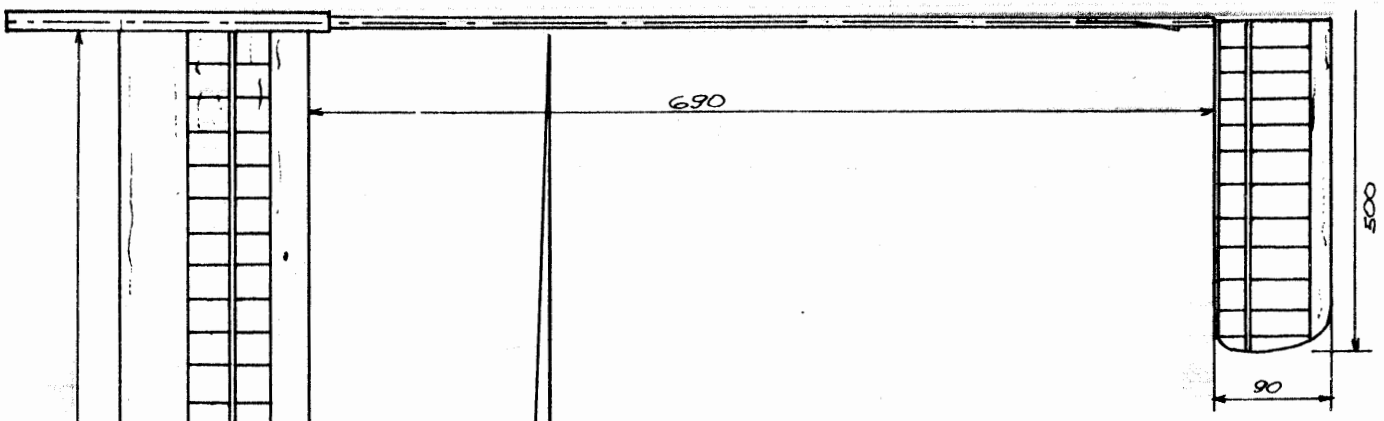
LEO REYNDERS
F1A Belgium



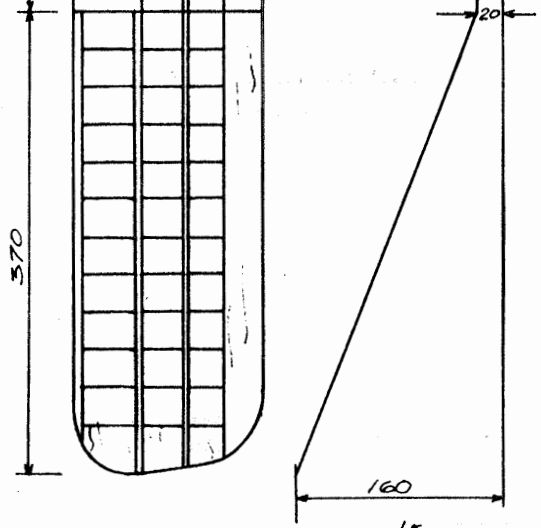
MOOG 5

ANDRE GOMIDE
F1A Brazil



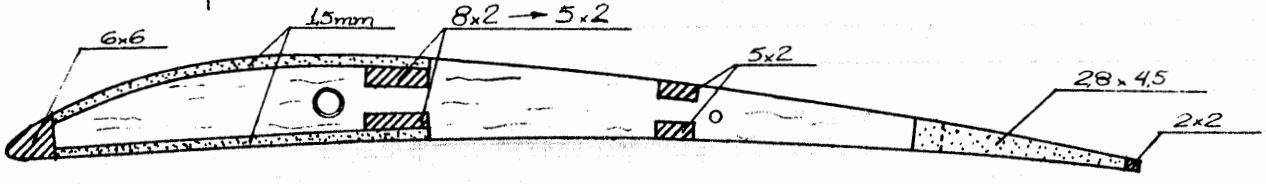


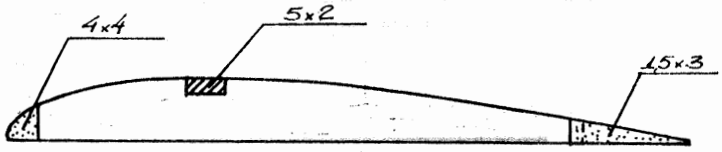
wing area: 28,3 dm²
stab area: 4,5 dm²
weight: 425 g
brazilian circle tow hook

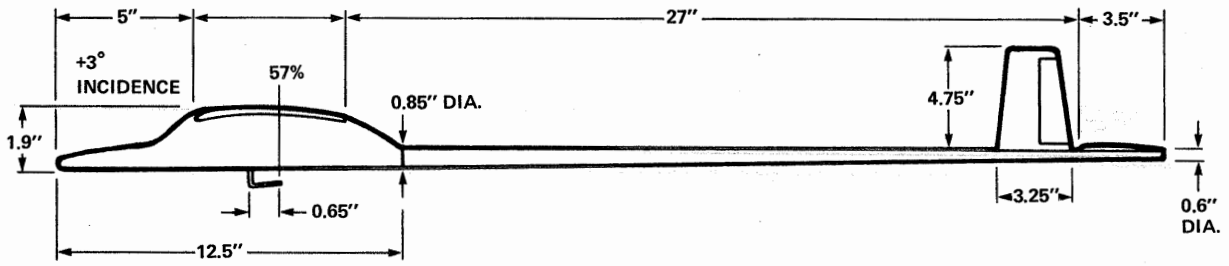


LVC II

FABIO NUTINI
F1A Brazil



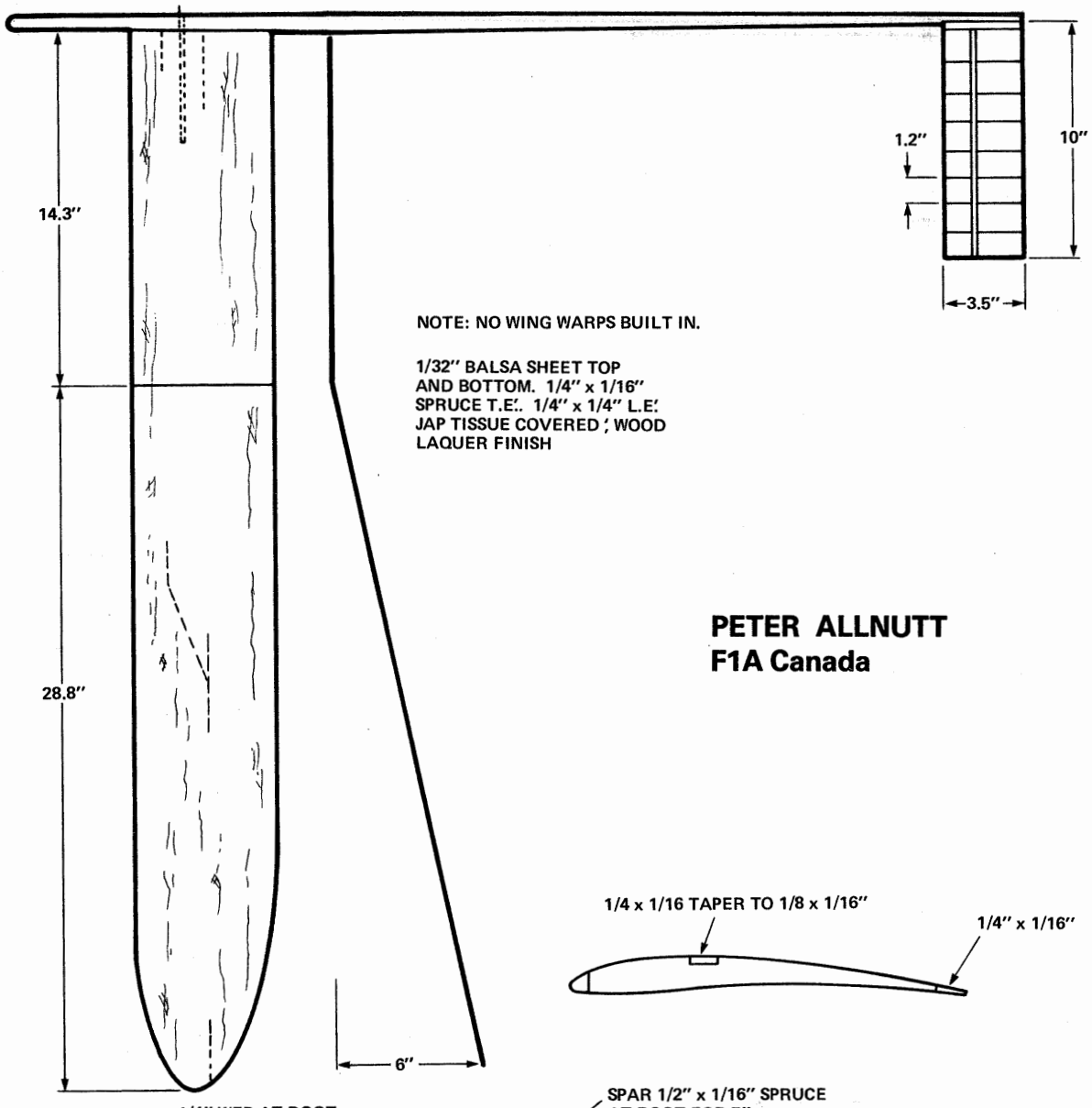




5/32" PIANO WIRE
10.5" LONG

ONE SPAR ONLY FOR LAST 18" OF SPAN

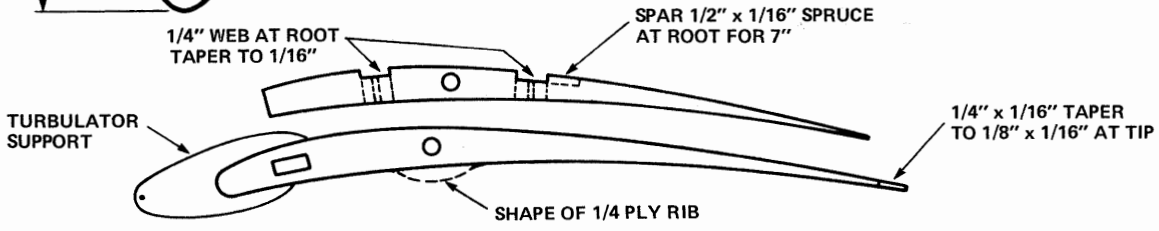
−2° INCIDENCE



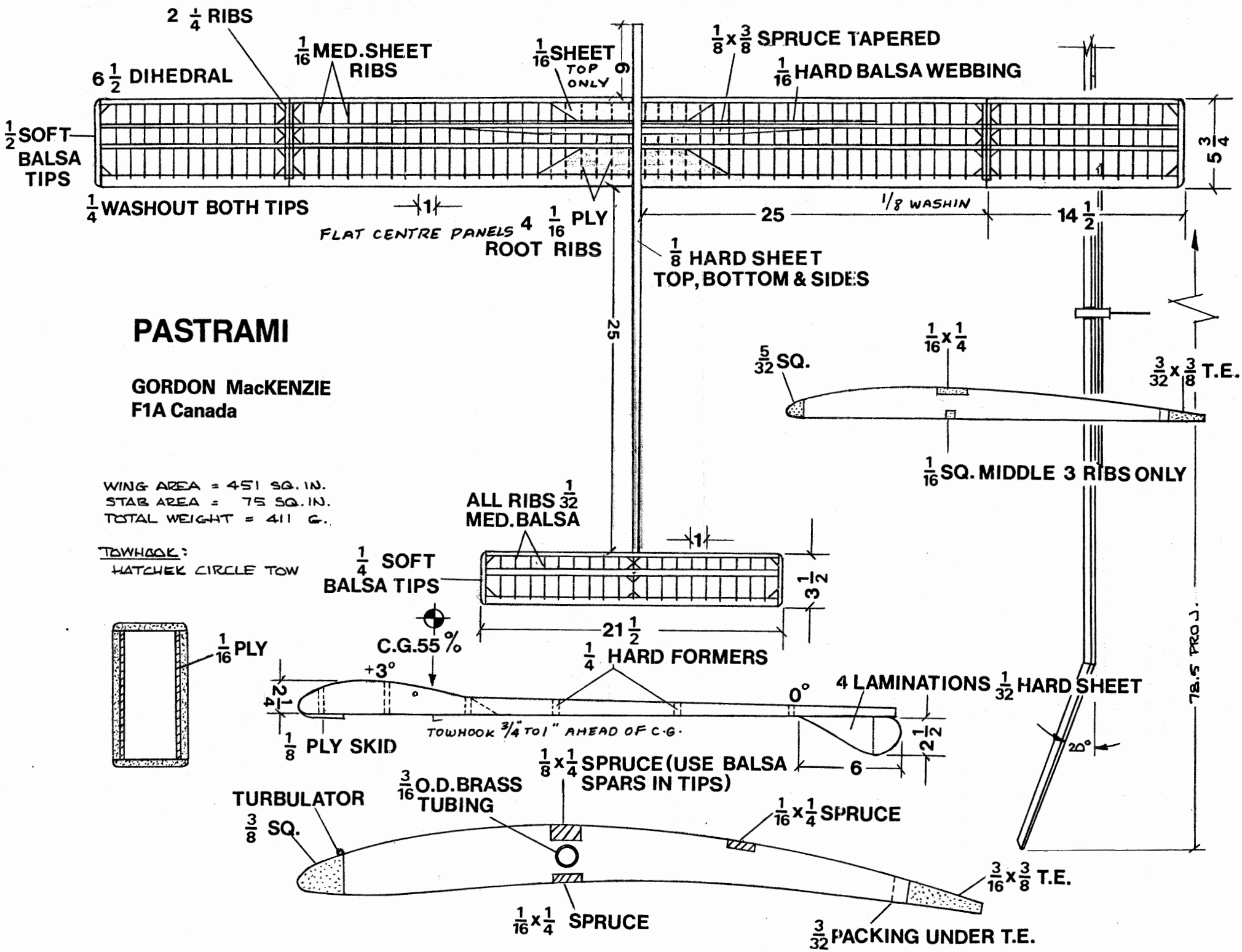
NOTE: NO WING WARPS BUILT IN.

1/32" BALSA SHEET TOP
AND BOTTOM. 1/4" x 1/16"
SPRUCE T.E.. 1/4" x 1/4" L.E.
JAP TISSUE COVERED ; WOOD
LAQUER FINISH

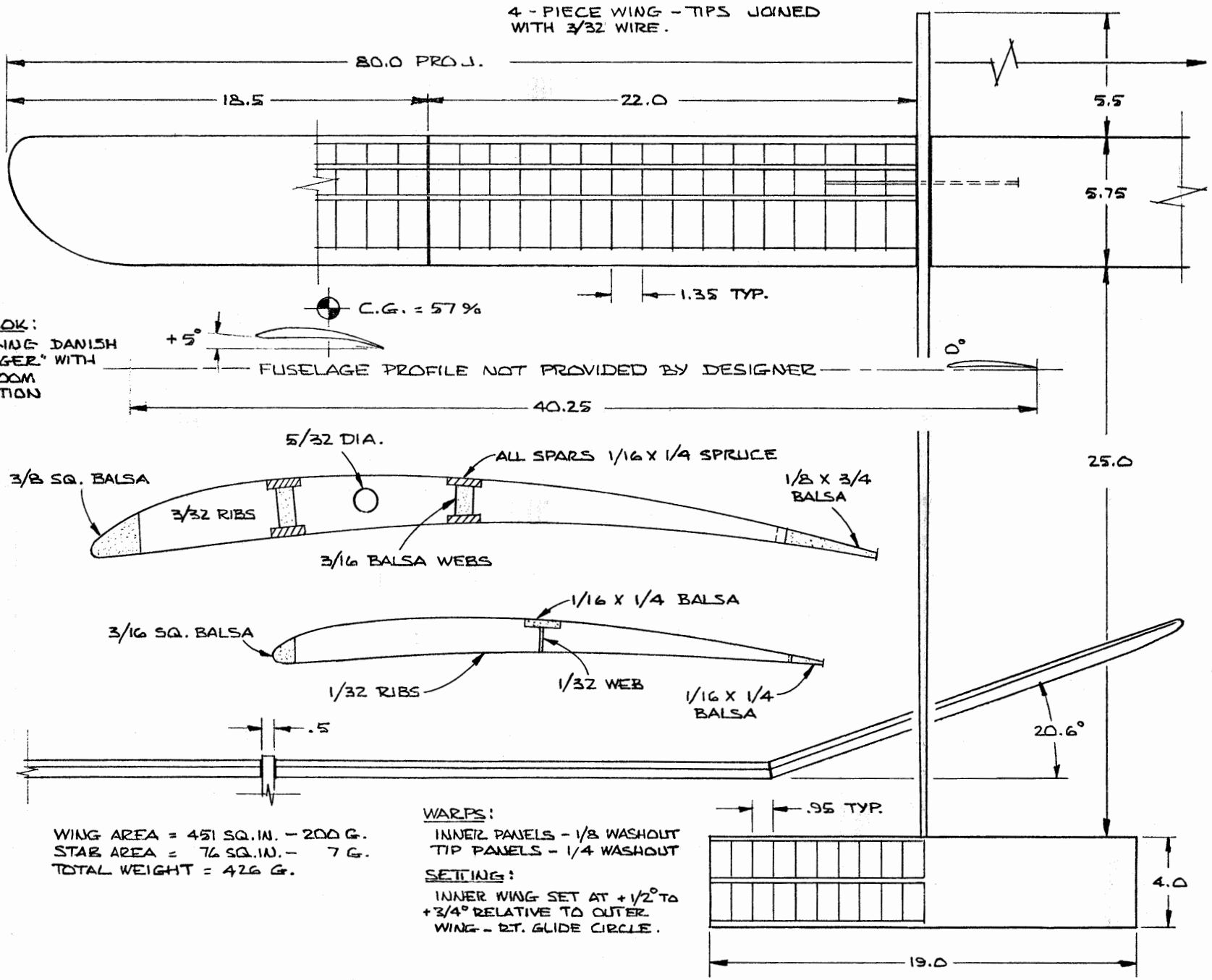
PETER ALLNUTT
F1A Canada



DRAWN BY JOE Mc CARTHY


2 1/4 RIBS
1/16 MED. SHEET RIBS
1/16 SHEET TOP ONLY
1/8 x 3/8 SPRUCE TAPERED
1/16 HARD BALSA WEBBING
6 1/2 DIHEDRAL
1/2 SOFT BALSA TIPS
5 3/4
1/4 WASHOUT BOTH TIPS
1
FLAT CENTRE PANELS
4 1/16 PLY ROOT RIBS
25
1/8 WASHIN
14 1/2
1/8 HARD SHEET TOP, BOTTOM & SIDES
25
PASTRAMI
GORDON MacKENZIE
F1A Canada
1/16 x 1/4
5/32 SQ.
3/32 x 3/8 T.E.
1/16 SQ. MIDDLE 3 RIBS ONLY
WING AREA = 451 SQ. IN.
STAB AREA = 75 SQ. IN.
TOTAL WEIGHT = 411 G.
TOWHOOK:
HATCHEK CIRCLE TOW
ALL RIBS 1/32 MED. BALSA
1/4 SOFT BALSA TIPS
1
3 1/2
21 1/2
1/16 PLY
C.G. 55 %
1/4 HARD FORMERS
+3°
0°
4 LAMINATIONS 1/32 HARD SHEET
2 1/4
TOWHOOK 3/4 TO 1" AHEAD OF C.G.
1/8 PLY SKID
1 1/2
6
20°
78.5 PROJ.
1/8 x 1/4 SPRUCE (USE BALSA SPARS IN TIPS)
3/16 O.D. BRASS TUBING
TURBULATOR 3/8 SQ.
1/16 x 1/4 SPRUCE
3/16 x 3/8 T.E.
1/16 x 1/4 SPRUCE
3/32 PACKING UNDER T.E.

WILLARD THOMPSON
F1A Canada



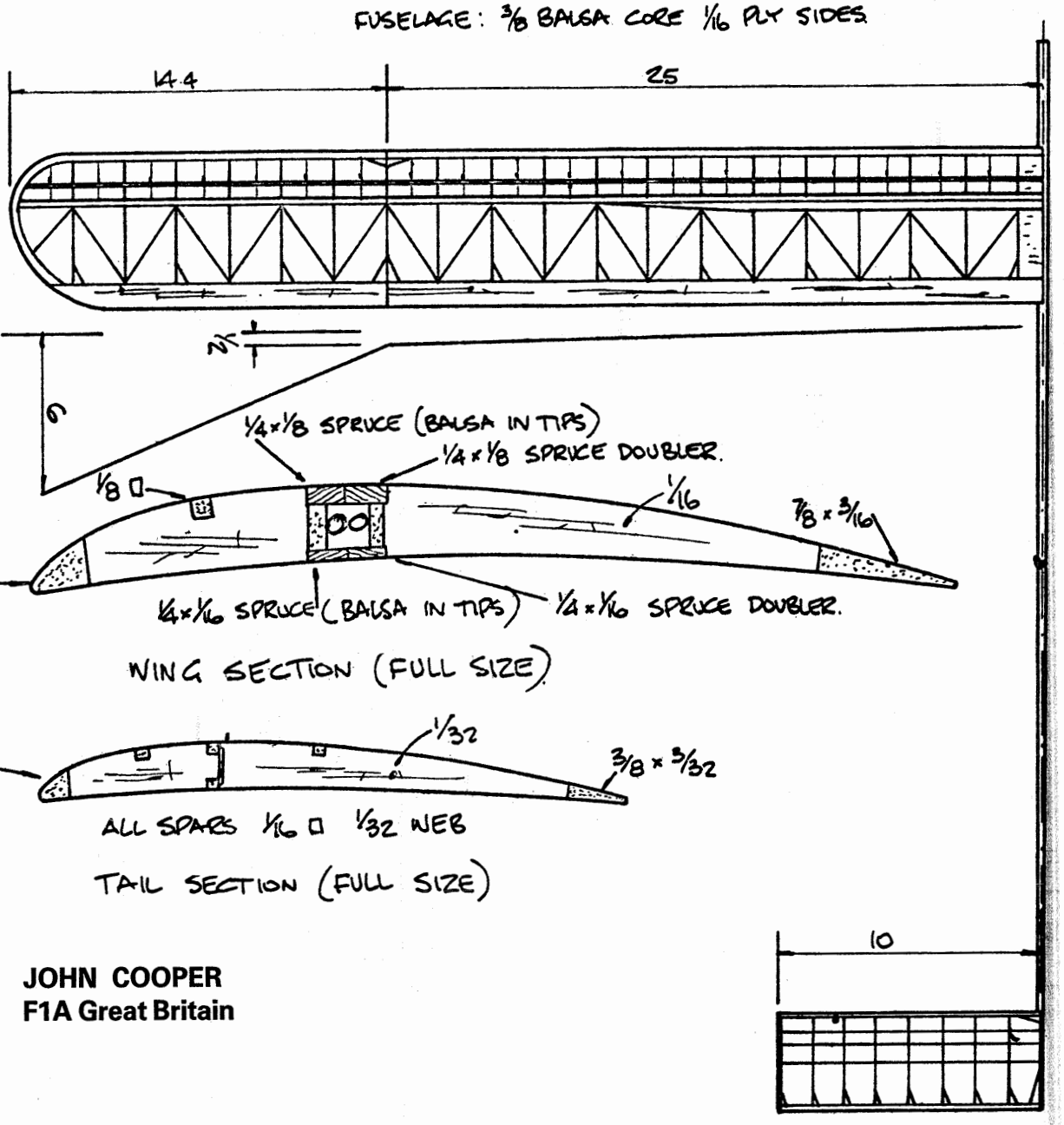
WING AREA = 451 SQ.IN. – 200 G.
STAB AREA = 76 SQ.IN. – 7 G.
TOTAL WEIGHT = 426 G.

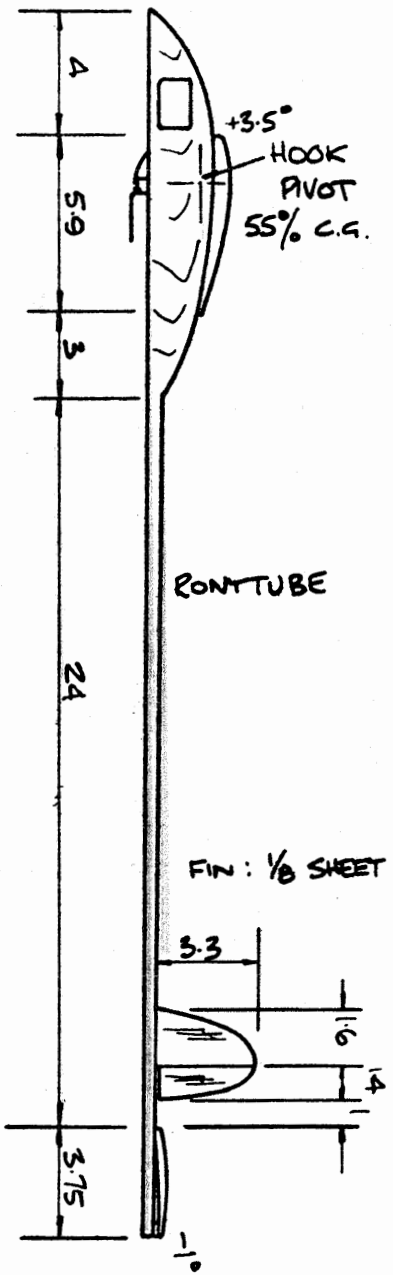
WARPS:
INNER PANELS – 1/8 WASHOUT
TIP PANELS – 1/4 WASHOUT

SETTING:
INNER WING SET AT +1/2° TO +3/4° RELATIVE TO OUTER WING – RT. GLIDE CIRCLE.

SCALE 1:6 ALL DIMENSIONS IN INCHES

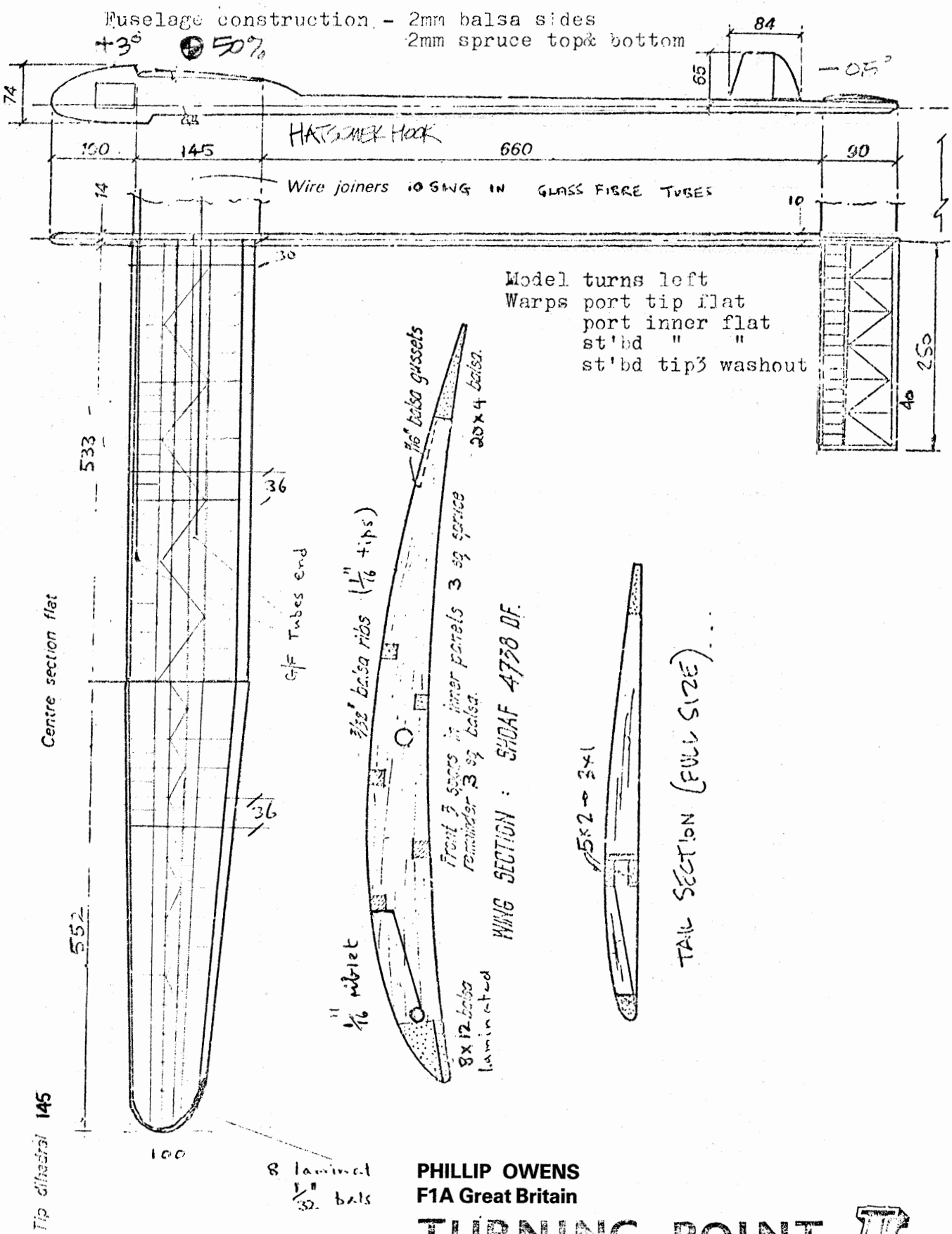
FUSELAGE: 3/8 BALSA CORE 1/16 PLY SIDES





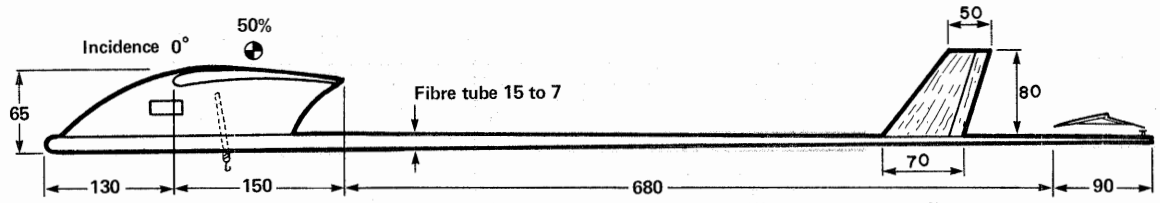
JOHN COOPER
F1A Great Britain

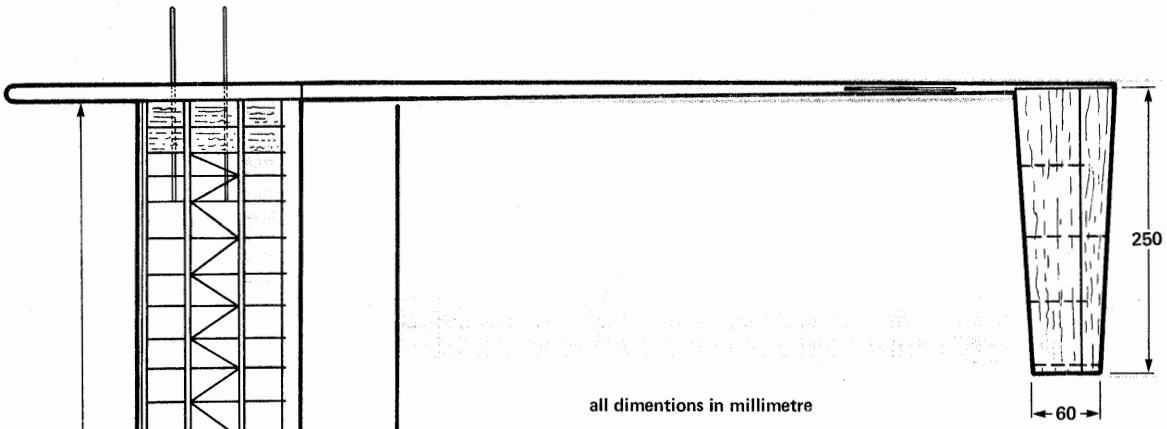
All dimensions in mm



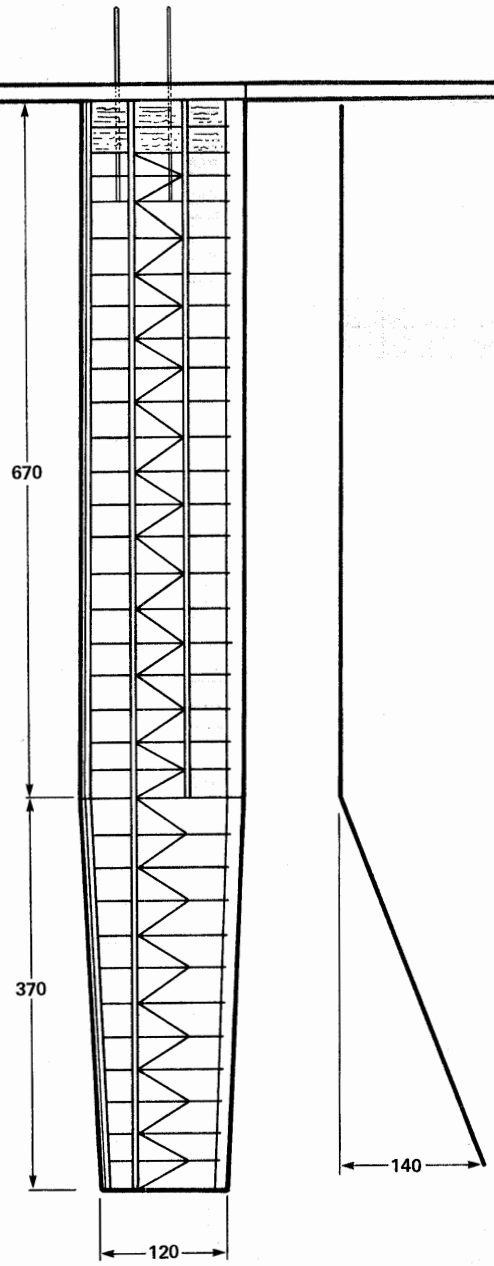
PHILLIP OWENS
F1A Great Britain

TURNING POINT



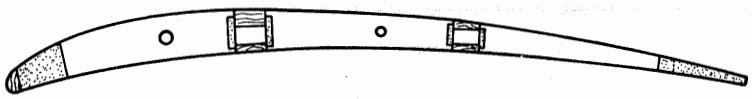


all dimentions in millimetre

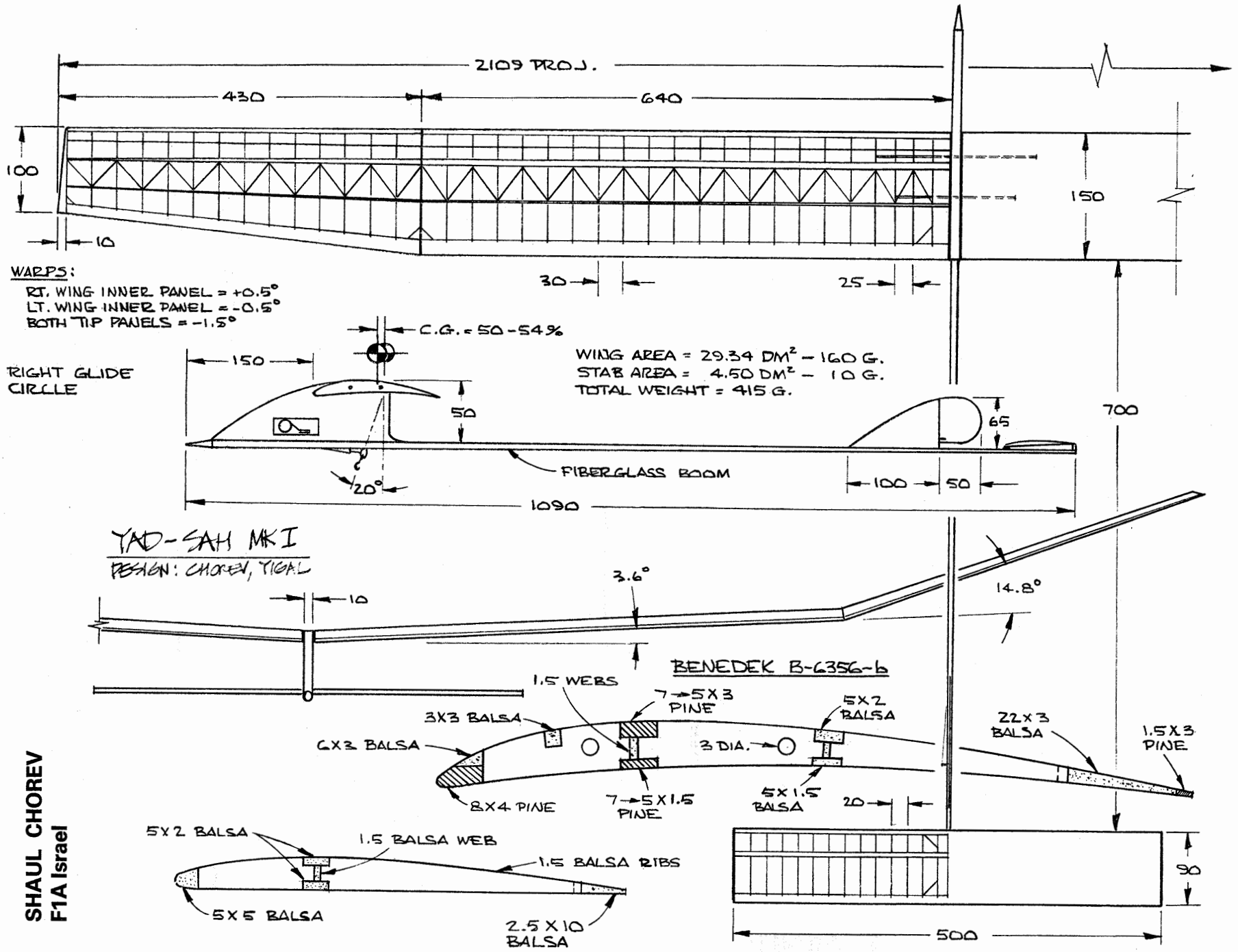


ABRAHAM BARUCH
F1A Israel



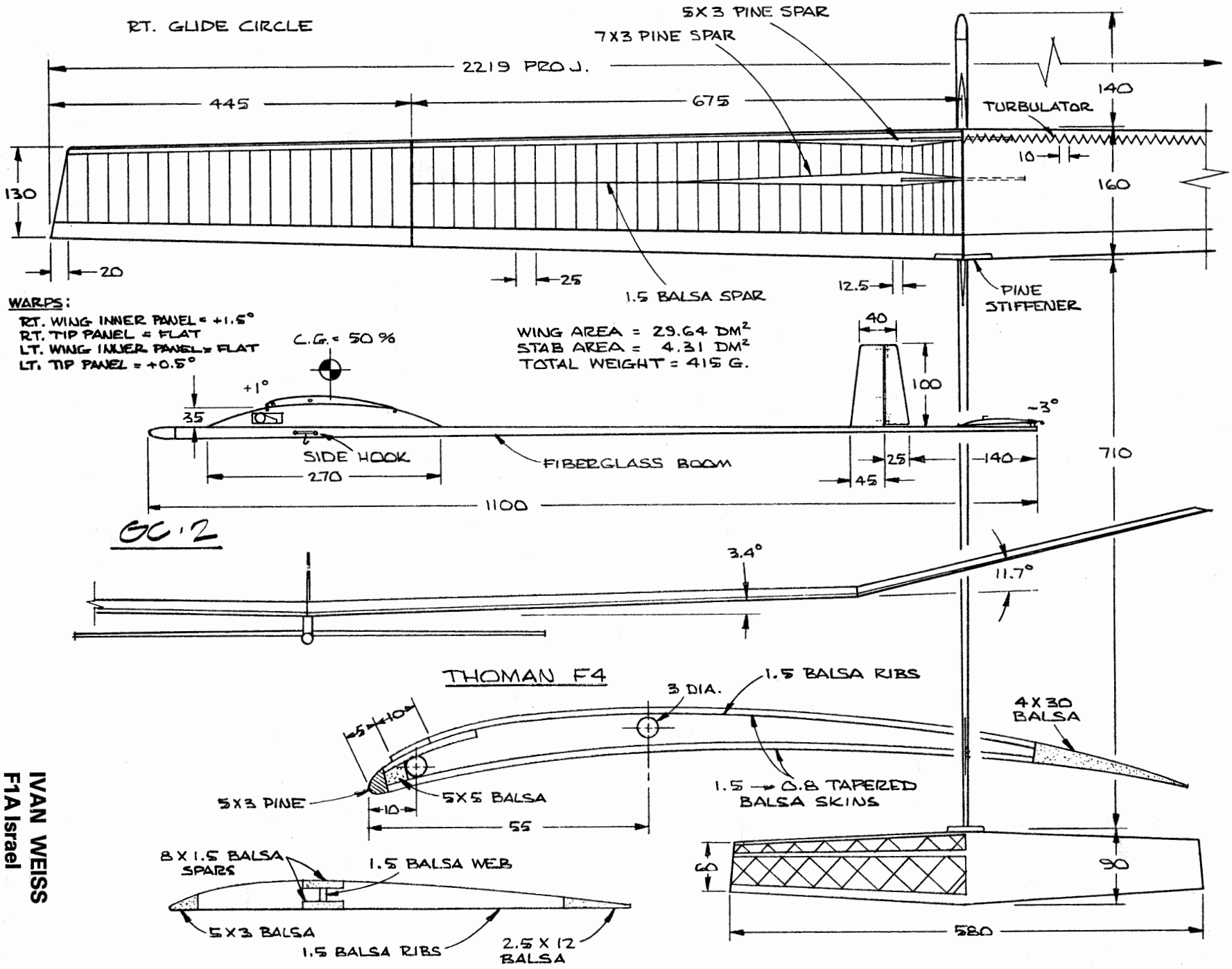


DRAWN BY JOE Mc CARTHY



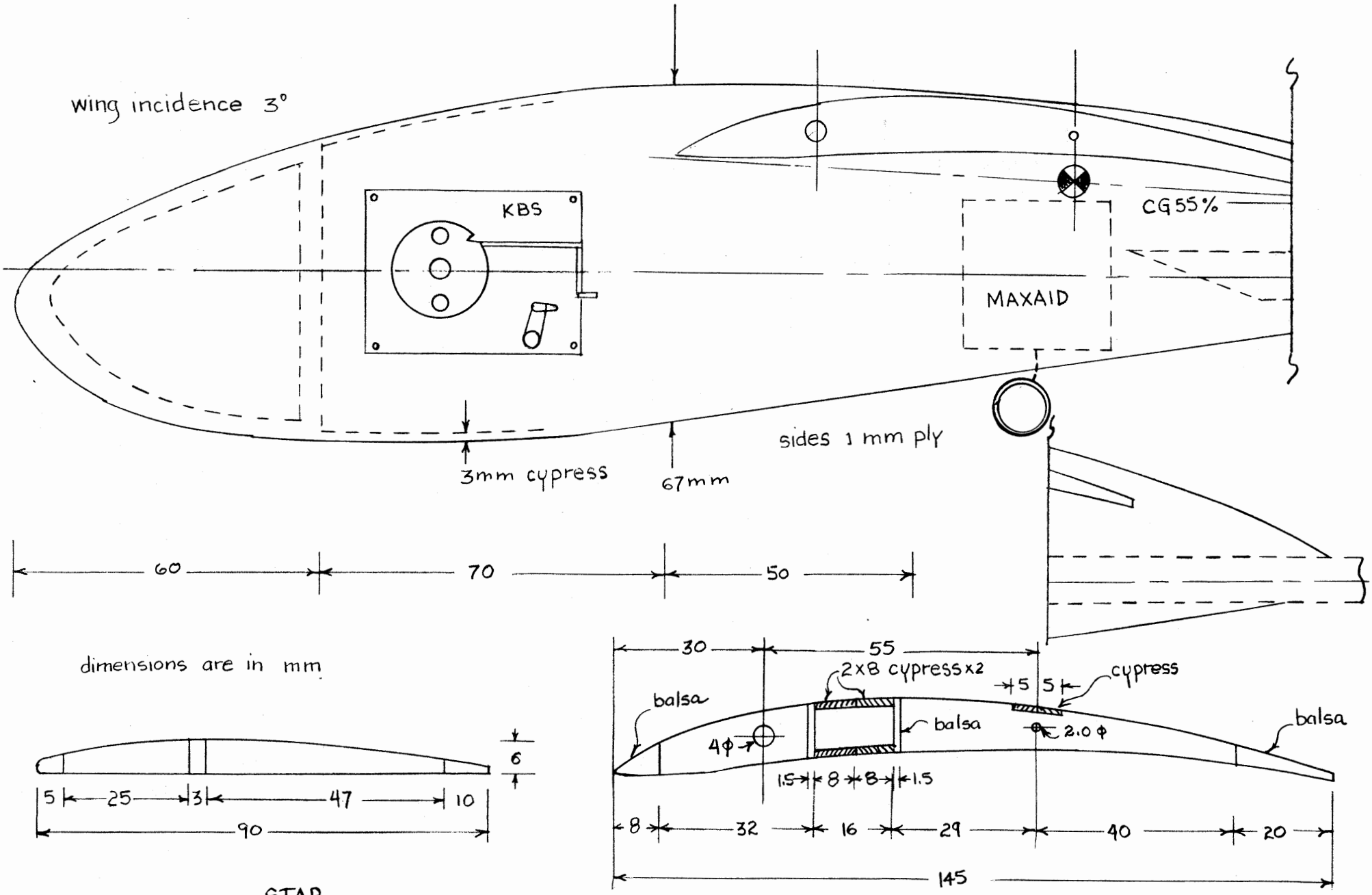
SHAUL CHOREV
F1A Israel

DRZ

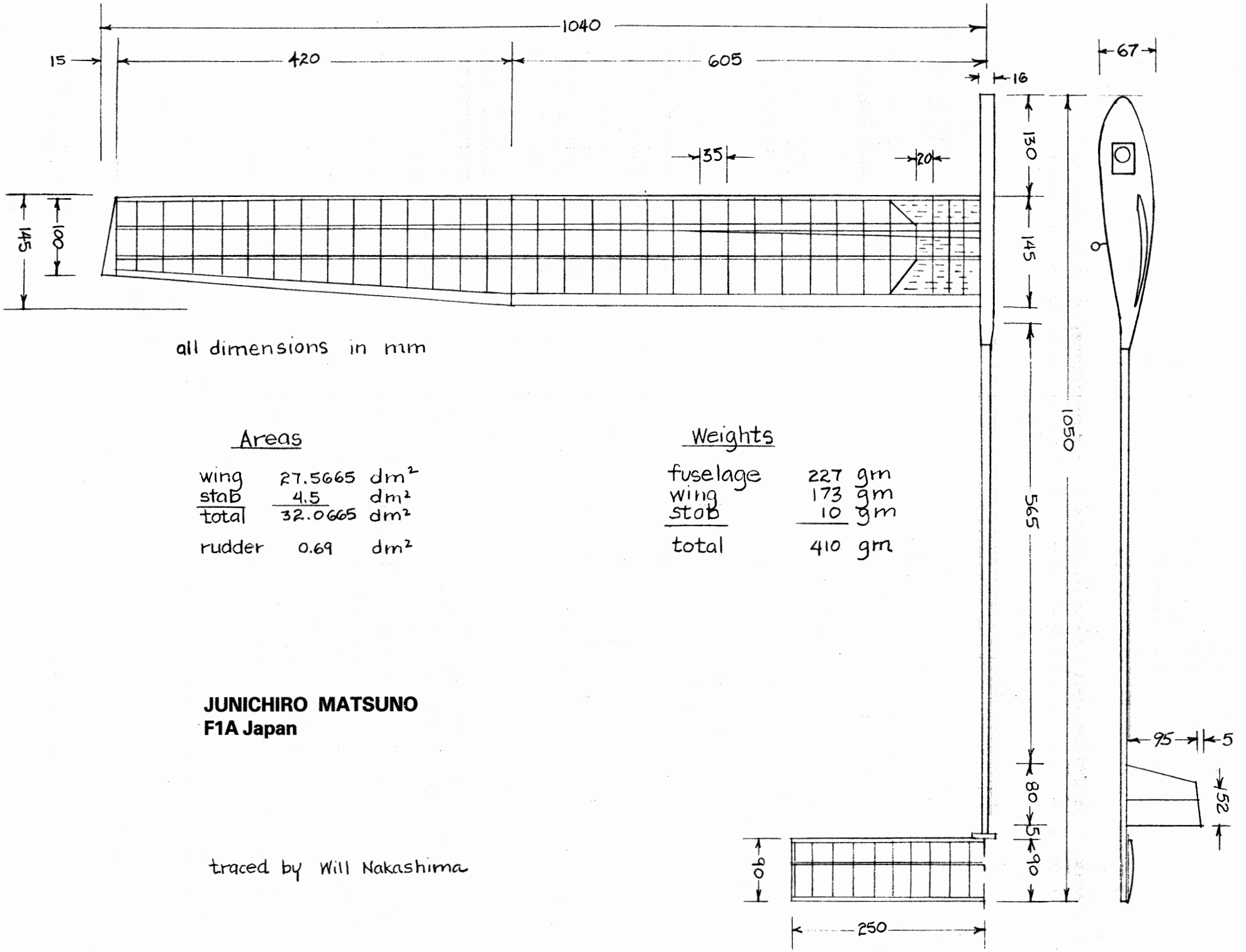


IVAN WEISS
F1A Israel

DRZ



JUNICHIRO MATSUNO
F1A Japan



all dimensions in mm

Areas

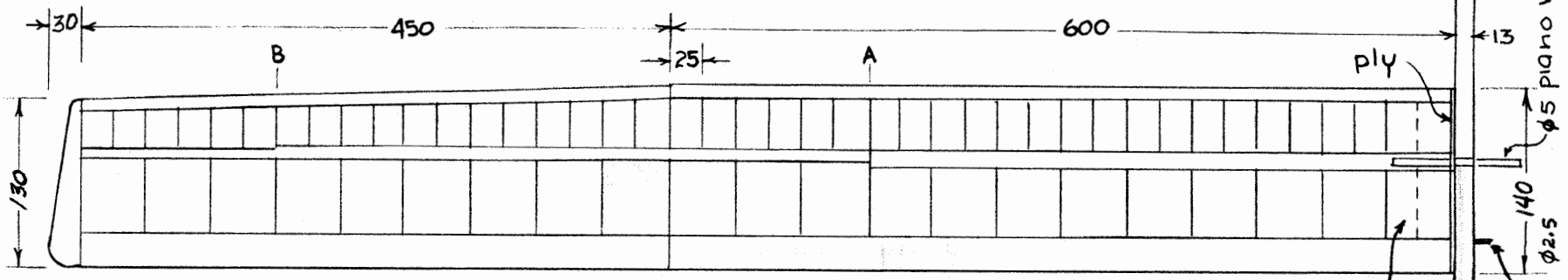
wing	27.5665	dm^2
stab	4.5	dm^2
total	32.0665	dm^2
rudder	0.69	dm^2

Weights

fuselage	227 gm
wing	173 gm
stab	10 gm
total	410 gm

JUNICHIRO MATSUNO
F1A Japan

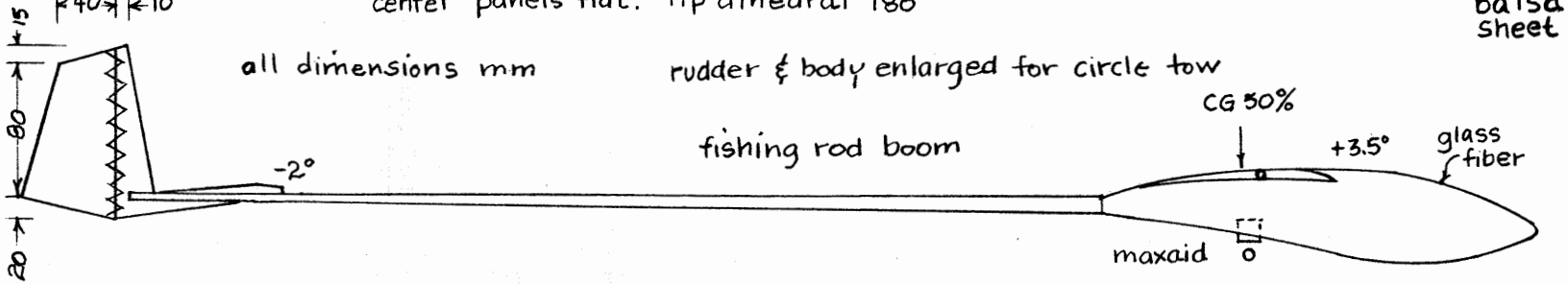
traced by Will Nakashima

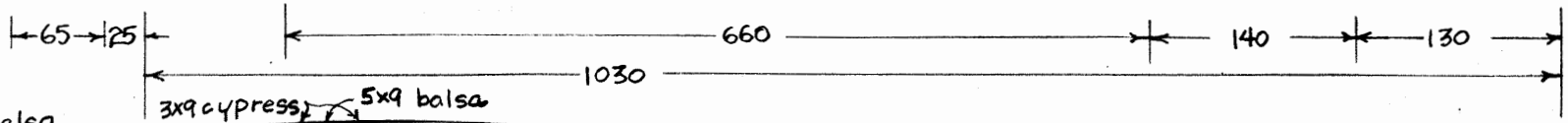


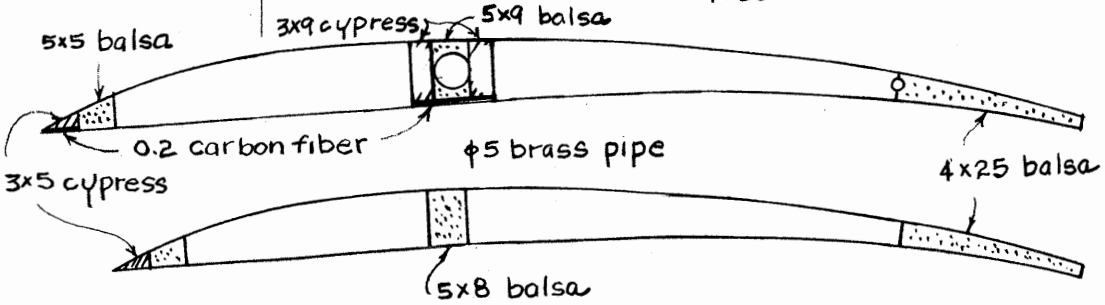
center panels flat. tip dihedral 180

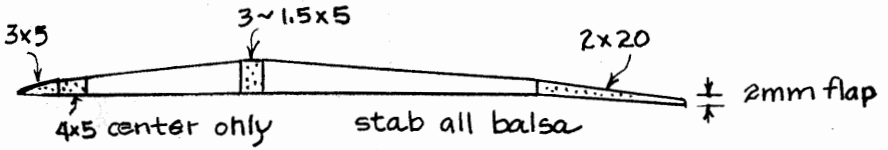
all dimensions mm

rudder & body enlarged for circle tow



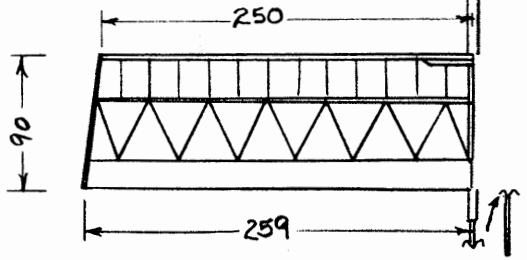






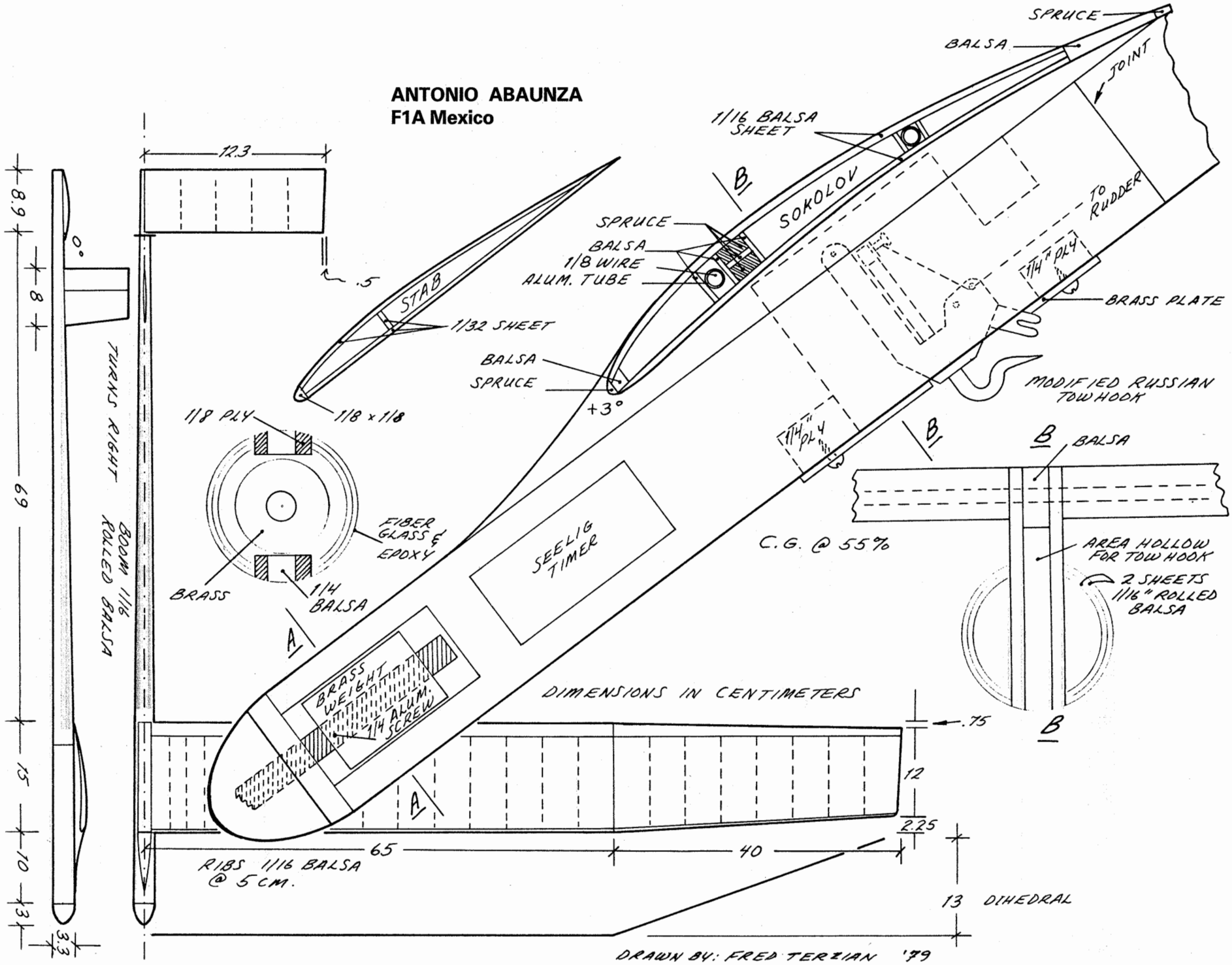
Areas	
wing	28.77 dm²
stab	4.58 dm²
total	33.35 dm²

Weights	
wing	181 gm
stab	8.5 gm
body	176 gm
timer	19 gm
wing wire	25.6 gm
total	410.1 gm



traced by Will Nakashima

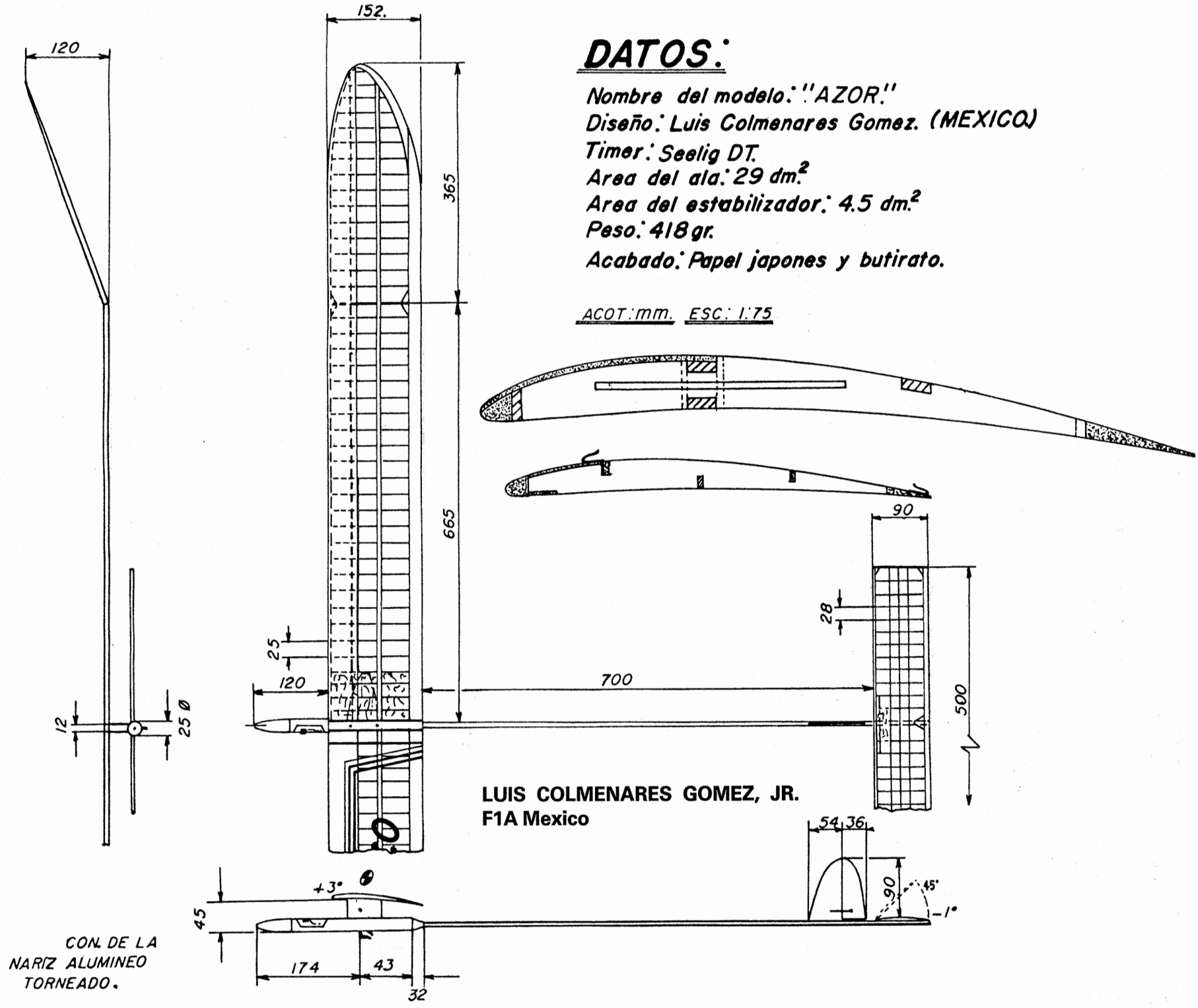
HIROSHI YOSHIKAWA
F1A Japan


ANTONIO ABAUNZA
F1A Mexico
SPRUCE
BALSA
JOINT
1/16 BALSA SHEET
SOKOLOV
TO RUDDER
1/4" PLY
BRASS PLATE
MODIFIED RUSSIAN TOW HOOK
12.3
.5
STAB
1/32 SHEET
SPRUCE
BALSA
1/8 WIRE
ALUM. TUBE
BALSA
SPRUCE
1/8 x 1/8
+3°
0°
8.9
8
69
15
10
3
3.3
TURNS RIGHT
BOOM 1/16 ROLLED BALSA
1/8 PLY
FIBER GLASS & EPOXY
BRASS
1/4 BALSA
SEELIG TIMER
BRASS WEIGHT 1/4 ALUM. SCREW
A
B
BALSA
C.G. @ 55%
AREA HOLLOW FOR TOW HOOK
2 SHEETS 1/16" ROLLED BALSA
DIMENSIONS IN CENTIMETERS
.75
12
2.25
65
40
RIBS 1/16 BALSA @ 5 CM.
13 DIHEDRAL
DRAWN BY: FRED TERZIAN '79

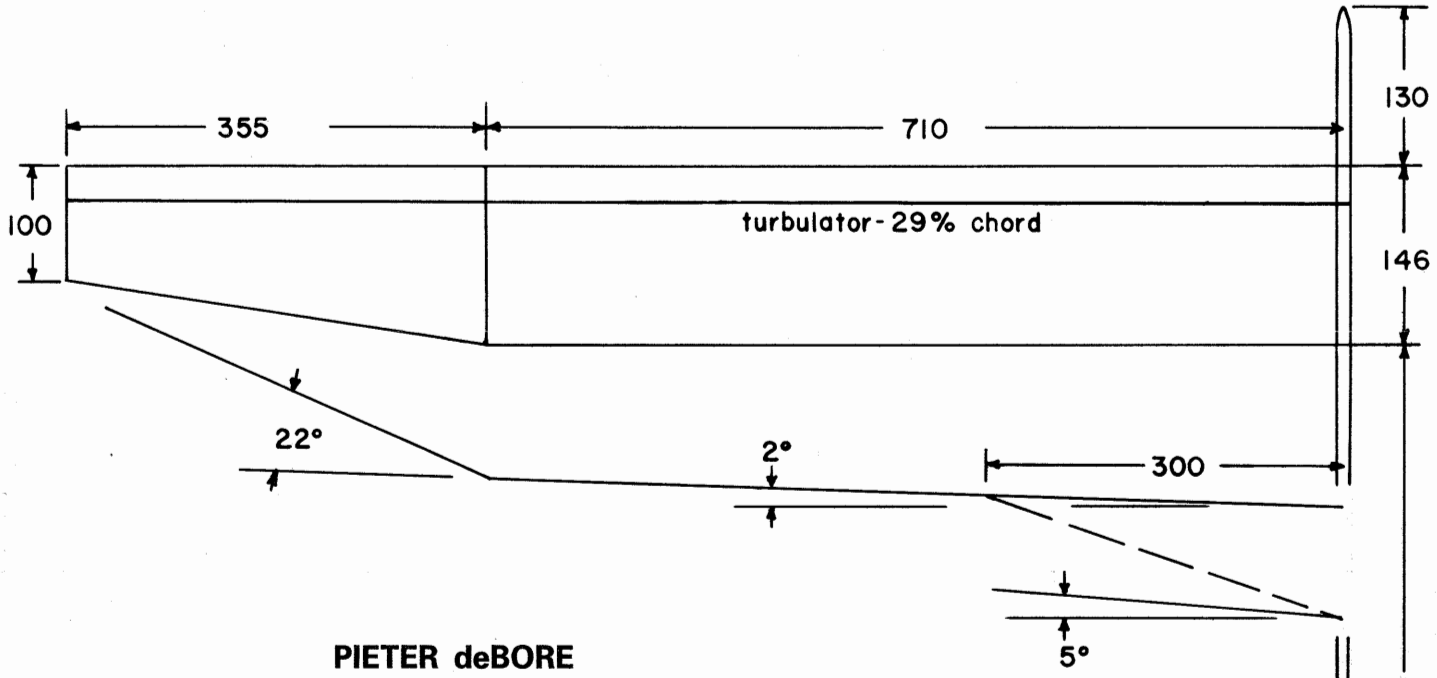
DATOS:

Nombre del modelo: "AZOR."
Diseño: Luis Colmenares Gomez. (MEXICO)
Timer: Seelig DT.
Area del ala: 29 dm.²
Area del estabilizador: 4.5 dm.²
Peso: 418 gr.
Acabado: Papel japones y butirato.

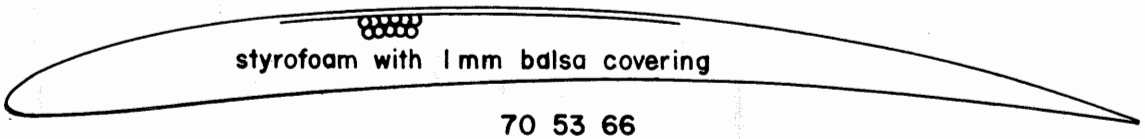
ACOT: mm. ESC: 1:75



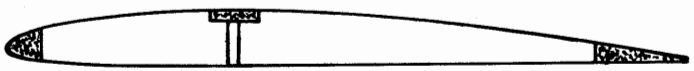
LUIS COLMENARES GOMEZ, JR.
F1A Mexico

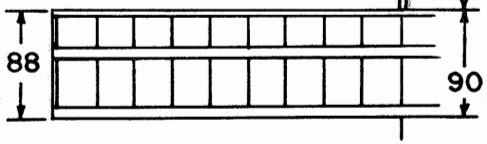


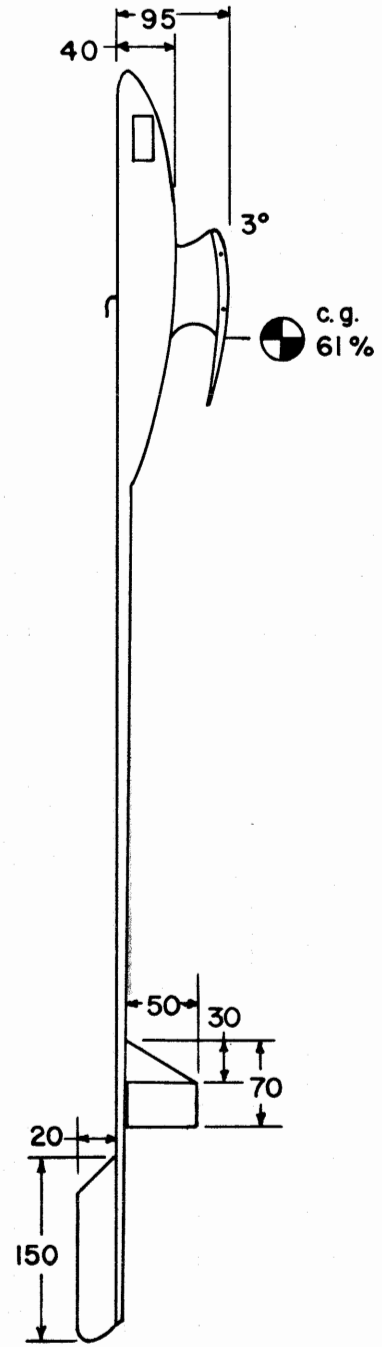
PIETER deBORE
F1A Holland



%	0	1.25	2.5	5	7.5	10	15	20	25	30	40	50	60	70	80	90	95	100
Yb	1.00	2.61	3.56	4.81	5.63	6.40	7.53	8.29	8.34	9.24	9.68	9.56	8.97	7.84	6.04	3.65	2.06	0.42
Yo	1.00	0.14	0.16	0.01	0.22	0.50	1.02	1.51	2.06	2.41	3.07	3.54	3.78	3.41	2.71	1.40	0.74	0.04







M.A.C. - 739 mm Span - 2076 mm

A-wing - 28.8 dm^2 A-stab - 5.1 dm^2

A-total - 33.9 dm^2

drn. by A. A. Lidberg

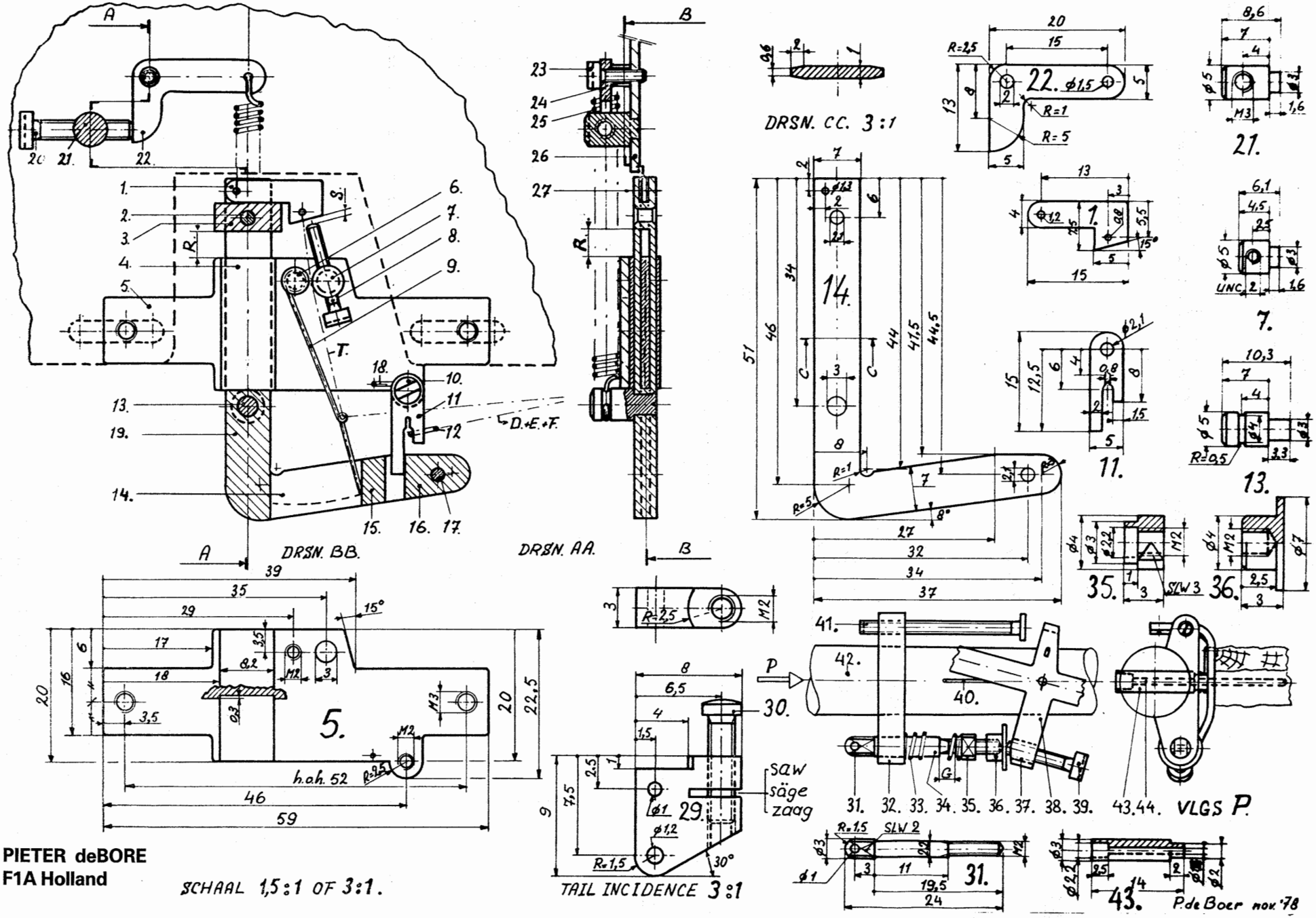
dim. in mm

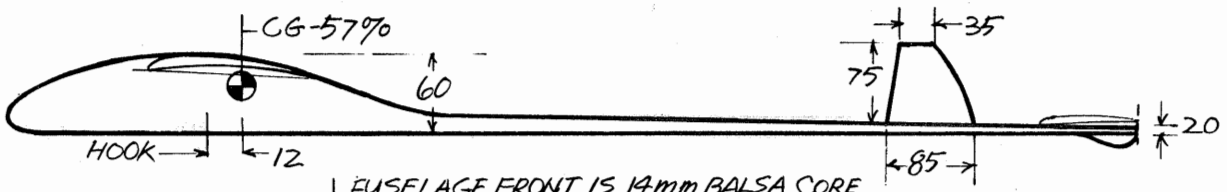
D = Activation timer
E = Activation tailincidence
F = Activation shortened curve with adjustment G
G = Adjustment shortened curve ±2mm.
R = Maximal removal hook = 4mm deblocking Nº 11 = 3,5mm.
S = Adjustment launche curve
T = Activation rudder

Part	Number	Name	Material	Dimension	Note
44	1	Pin	St.go	ϕ1,2x35	Collar brass ϕ2
43	1	Bearing	Al.h.	ϕ3x14	Drilled ϕ1,3
42	1	Pipe	Glassfiber	Homemade	
41	1	Adjustment screw	Brass	M2x25	Flat top
40	1	Torsion spring	St.go	ϕ4xϕ3,4x0,3	4,5 Turns
39	1	Adjustment screw	Nylon 6.6	UNC 2x5/8"	
38	1	Mounting plate	Al.s	1mm thick	
37	1	Threadtube	Al.h.	ϕ3x4	UNC 2
36	1	Endstop	Al.h.	ϕ7x3	M2
35	1	Nut	Al.h.	ϕ4x3	M2
34	1	Tube	Brass	ϕ3xϕ2,2x10	
33	1	Press spring	St.go	ϕ4xϕ3,2x0,4	L_o = 11mm.
32	1	Base	P.V.C. h.		
31	1	Shaft	Al.h.	ϕ3x24	M2
30	1	Adjustmentscrew	Brass	M2x10	Flat top
29	1	Tailincidence	Al.h.	8x9x3	M2
28					
27	1	Shaft	St.go	ϕ1,2x3,2	
26	1	Neck	Dural 7075	1,5mm thick	
25	1	Pull spring	St.go	ϕ4,5xϕ3,1x0,7	L_o c.t.c = 40mm
24	1	Distance tube	Brass	ϕ3xϕ2,2x3	
23	1	Screw	Brass	M2x7 c.h.	
22	1	Lever	Dural 7075	1,5mm thick	
21	1	Adjustment plug	Al.h.	ϕ5x8,6	Glue+rivet
20	1	Adjustment screw	Brass	M3x15 c.h.	
19	1	Distanceplate	Dural 7075	1,2mm thick	
18	1	Torsionspring	St.go	ϕ3xϕ2,4x0,3	5,5 Turns
17	1	Rivet	Al.	ϕ2x5	Pan head
16	1	Distanceplate	Dural 7075	1,2mm thick	
15	1	Distanceplate	Dural 7075	1,2mm thick	
14	2	Hook	Stainl. St 18.8	1mm.thick	Glue+rivet
13	1	Stop	St.	ϕ5x10,3	Glue+rivet
12	1	Ring	St.	ϕ4	
11	1	Blocking	Stainl. St. 18.8	1mm.thick	
10	1	Screw	Brass	M2x5	
9	1	Lever	St.go	ϕ0,8	Bend
8	1	Adjustment screw	Nylon 6.6	UNC 2x5/8"	
7	1	Adjustment plug	Al.h.	ϕ5x6,1	Glue+rivet
6	1	Screw	Brass	M2x3	Flat top
5	1	Base plate	Dural 7075	1,5mm thick	
4	2	R.H.S.	Brass	7x1	Braze
3	1	Stop	Dural 7075	10x4x1,2	Glue+rivet
2	1	Rivet	Al.	ϕ2x5	Pan head
1	1	Lever	Dural 7075	1mm thick	

LAUNCHHOOK

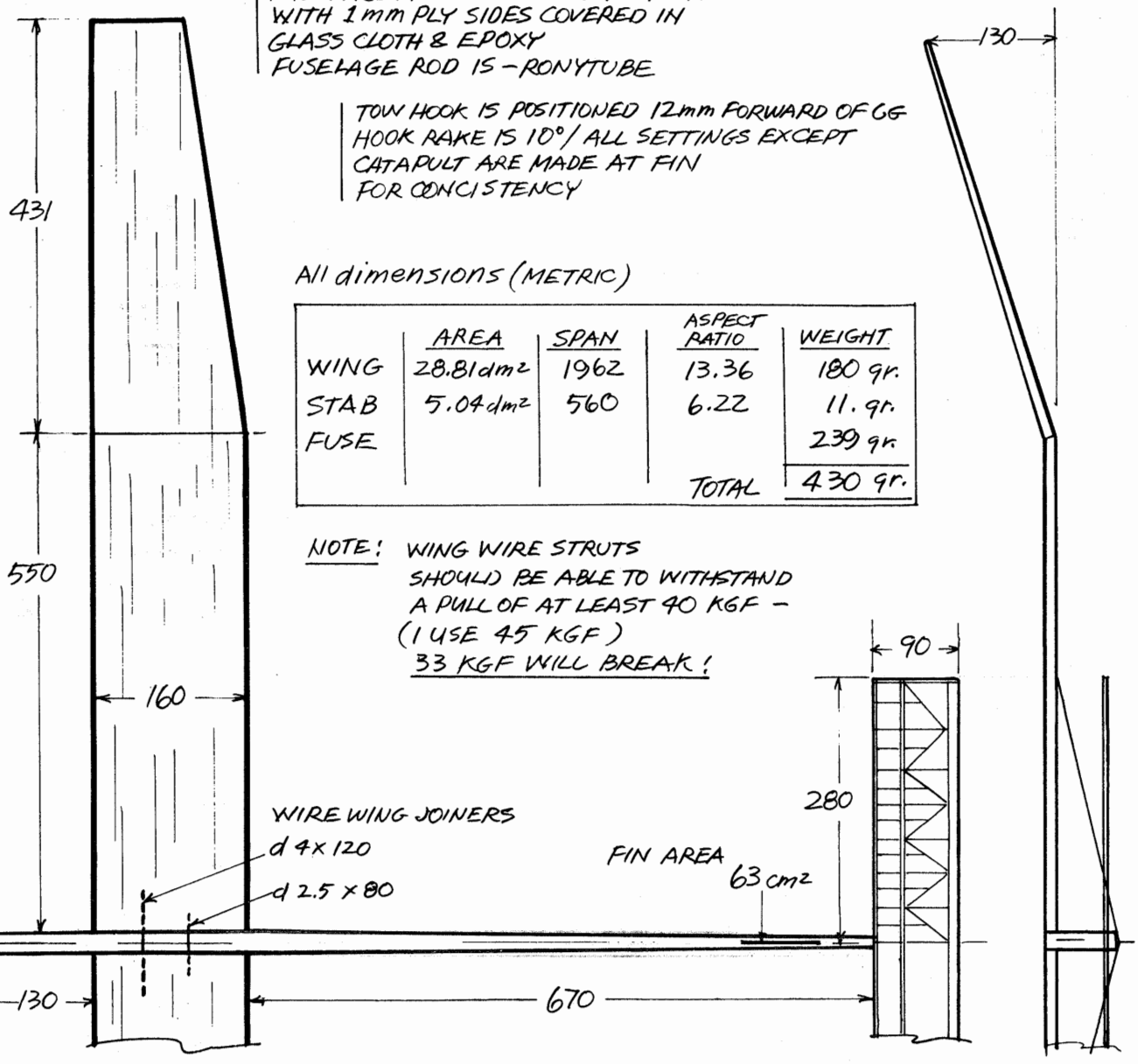
PIETER deBORE
F1A Holland


DRSN. BB.
DRSN. AA.
DRSN. CC. 3:1
SCHAAL 1,5:1 OF 3:1.
TAIL INCIDENCE 3:1
VLGS P.
PIETER deBORE
F1A Holland
P.de Boer nov '78



FUSELAGE FRONT IS 14mm BALSA CORE
WITH 1mm PLY SIDES COVERED IN
GLASS CLOTH & EPOXY
FUSELAGE ROD IS - RONYTUBE

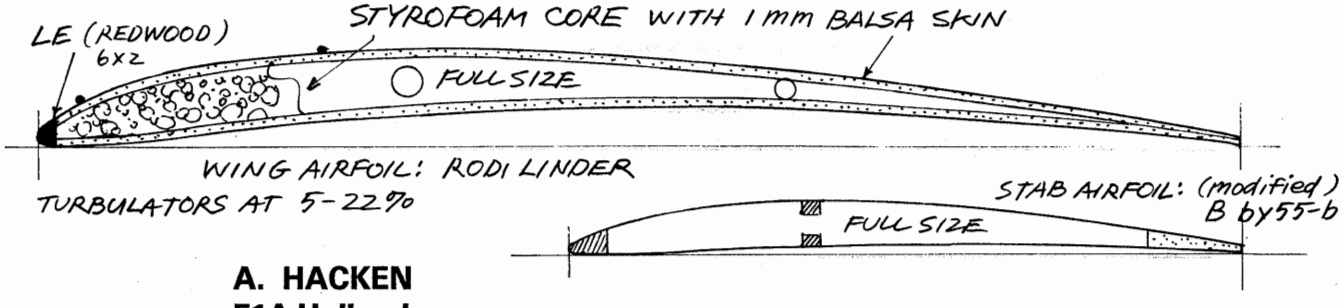
TOW HOOK IS POSITIONED 12mm FORWARD OF CG
HOOK RAKE IS 10°/ ALL SETTINGS EXCEPT
CATAPULT ARE MADE AT FIN
FOR CONCISTENCY



All dimensions (METRIC)

	AREA	SPAN	ASPECT RATIO	WEIGHT
WING	28.81 dm²	1962	13.36	180 gr.
STAB	5.04 dm²	560	6.22	11. gr.
FUSE				239 gr.
			TOTAL	430 gr.

NOTE! WING WIRE STRUTS
SHOULD BE ABLE TO WITHSTAND
A PULL OF AT LEAST 90 KGF -
(I USE 45 KGF)
33 KGF WILL BREAK!

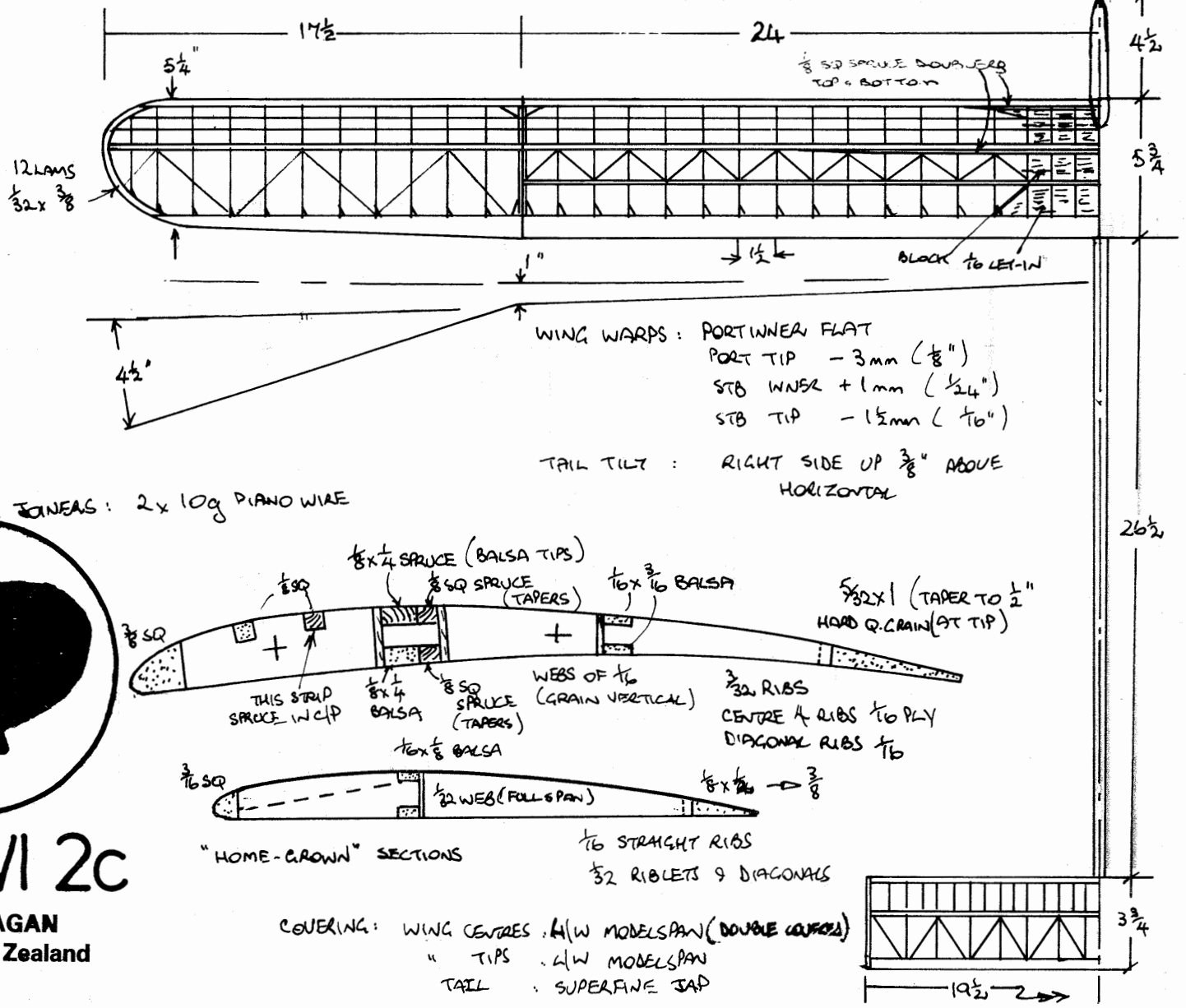


A. HACKEN
F1A Holland

DRAWN BY / JOE SLOVACEK

SIN 79

1/6 SCALE : DIMENSIONS IN INCHES

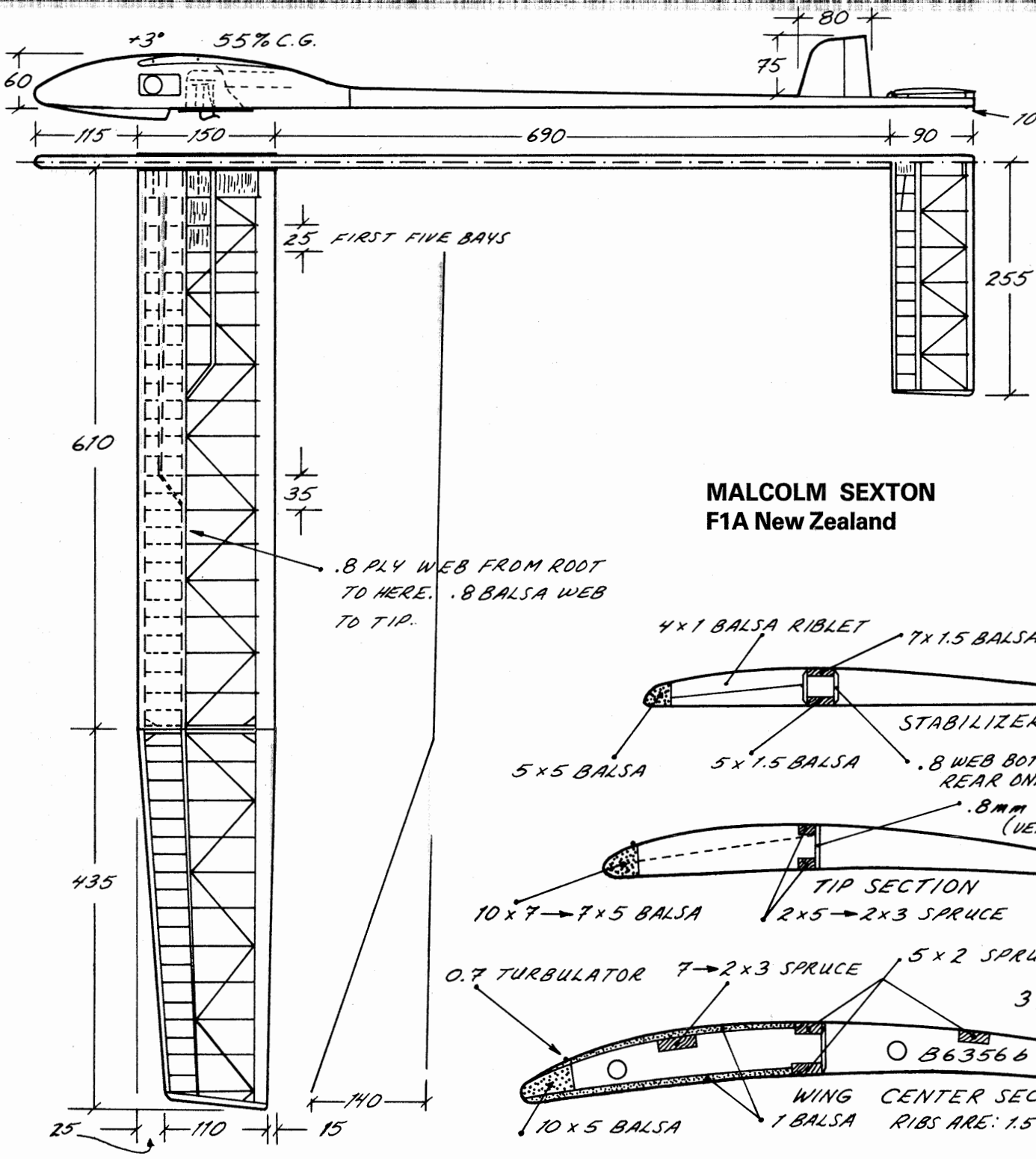


COVERING : WING CENTRES : 1/4 OZ/W MODELSPAN (DOUBLE COVERED)
" TIPS : 1/4 OZ/W MODELSPAN
TAIL : SUPERFINE JAP

KIWI 2c

PAUL LAGAN
F1A New Zealand

DRAWN BY: F. TERZIAN
AUGUST, 1979

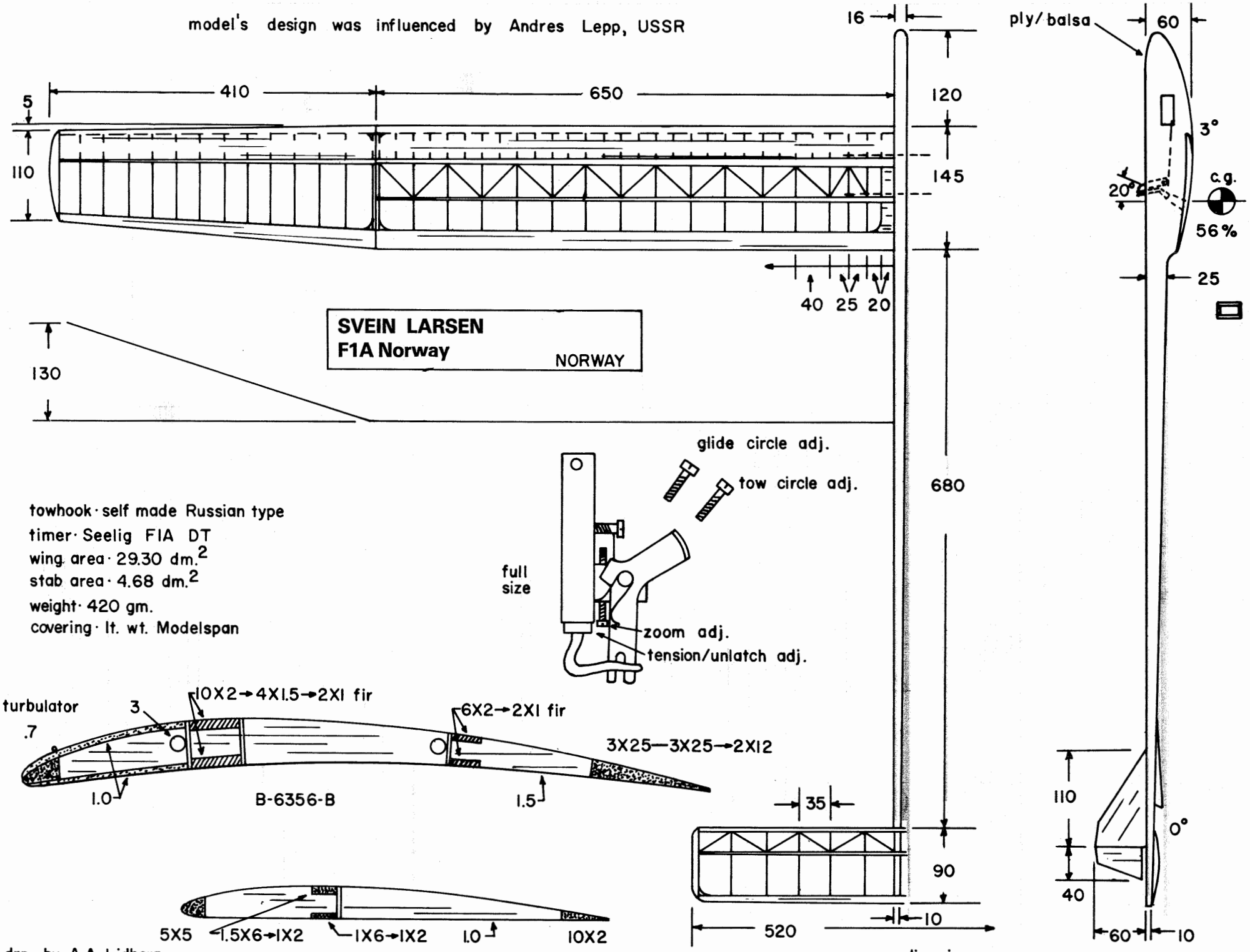


SPECIFICATIONS

WING: 160 grams
STAB: 9 grams
FUSELAGE: 246 grams
TOTAL WEIGHT: 415 grams
FUSELAGE: 9mm BALSA CORE 2.5 mm PLY SIDES. GLASS FIBER BOOM. 2mm BALSA RUDDER & TAIL. 2.5 mm PLY KEEL.

MALCOLM SEXTON
F1A New Zealand

model's design was influenced by Andres Lepp, USSR

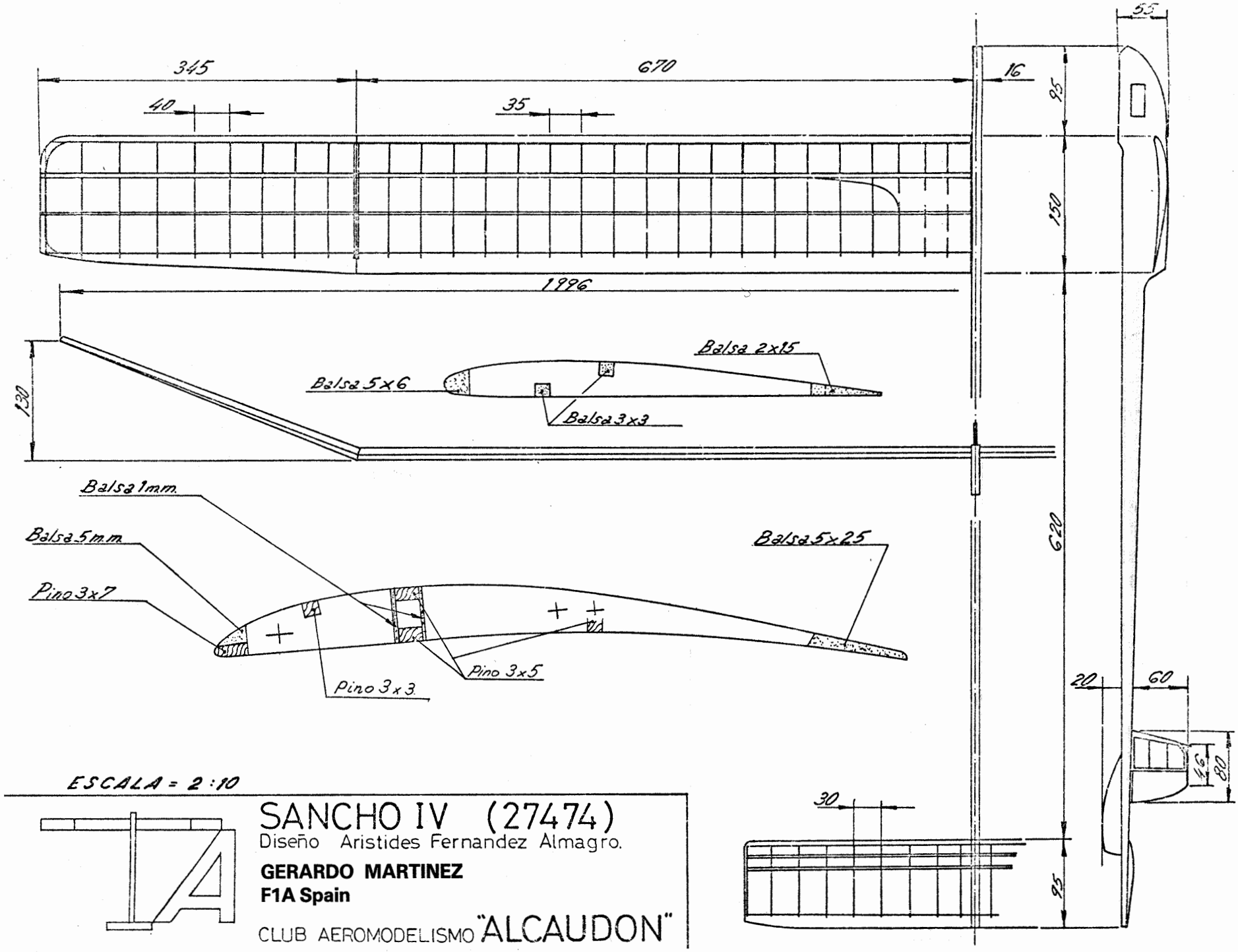


SVEIN LARSEN
F1A Norway
NORWAY

towhook · self made Russian type
timer · Seelig F1A DT
wing area · 29.30 dm.^{2}
stab area · 4.68 dm.^{2}
weight · 420 gm.
covering · lt. wt. Modelspan

drn. by A.A. Lidberg

dim. in mm.



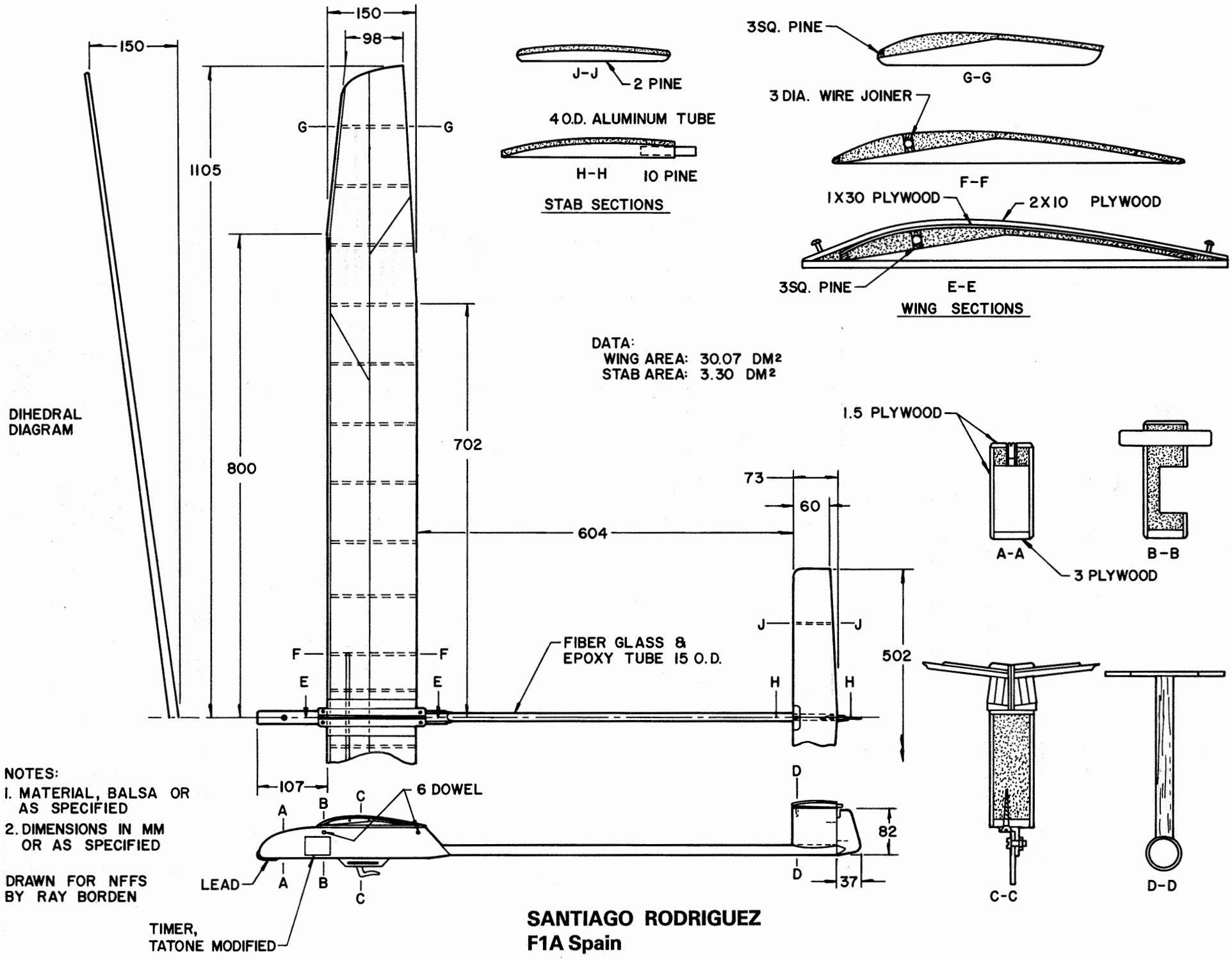
ESCALA = 2 : 10

SANCHO IV (27474)

Diseño Aristides Fernandez Almagro.

GERARDO MARTINEZ
F1A Spain

CLUB AEROMODELISMO "ALCAUDON"

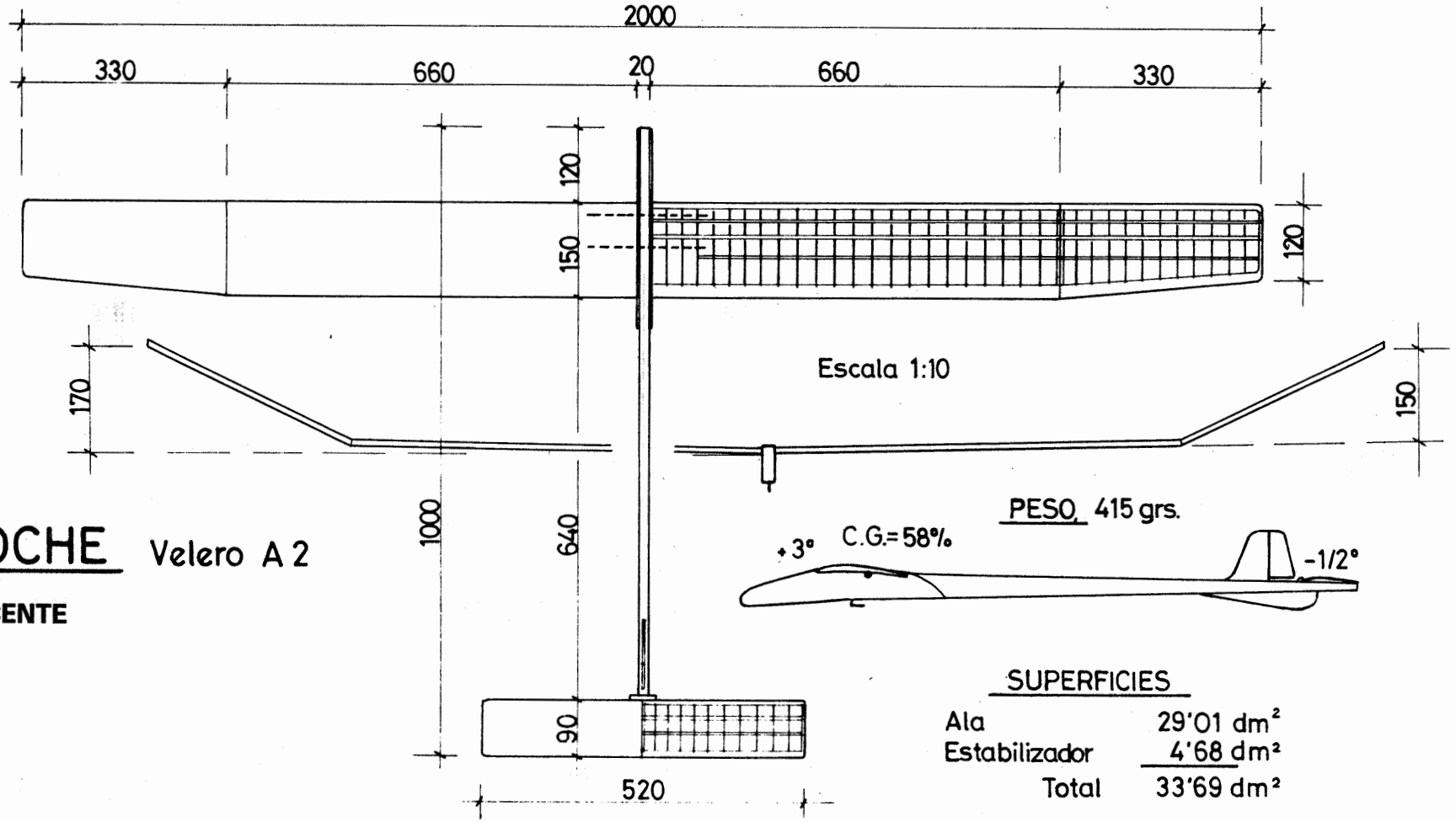


NOTES:

1. MATERIAL, BALSA OR AS SPECIFIED
2. DIMENSIONS IN MM OR AS SPECIFIED

DRAWN FOR NFFS
BY RAY BORDEN

SANTIAGO RODRIGUEZ
F1A Spain



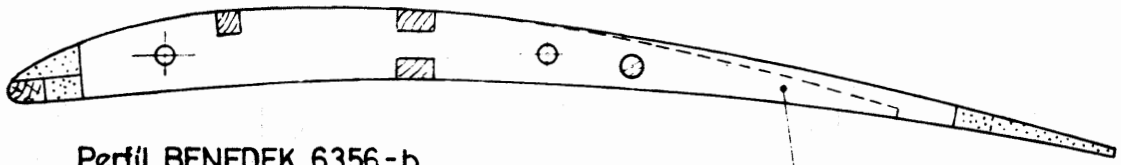
ALIMOCHE Velero A 2

JOSE VINCENTE
F1A Spain

PESO, 415 grs.

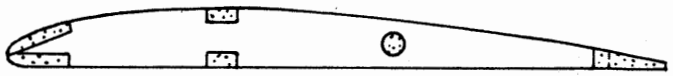
SUPERFICIES

Ala	29'01 dm²
Estabilizador	4'68 dm²
Total	33'69 dm²



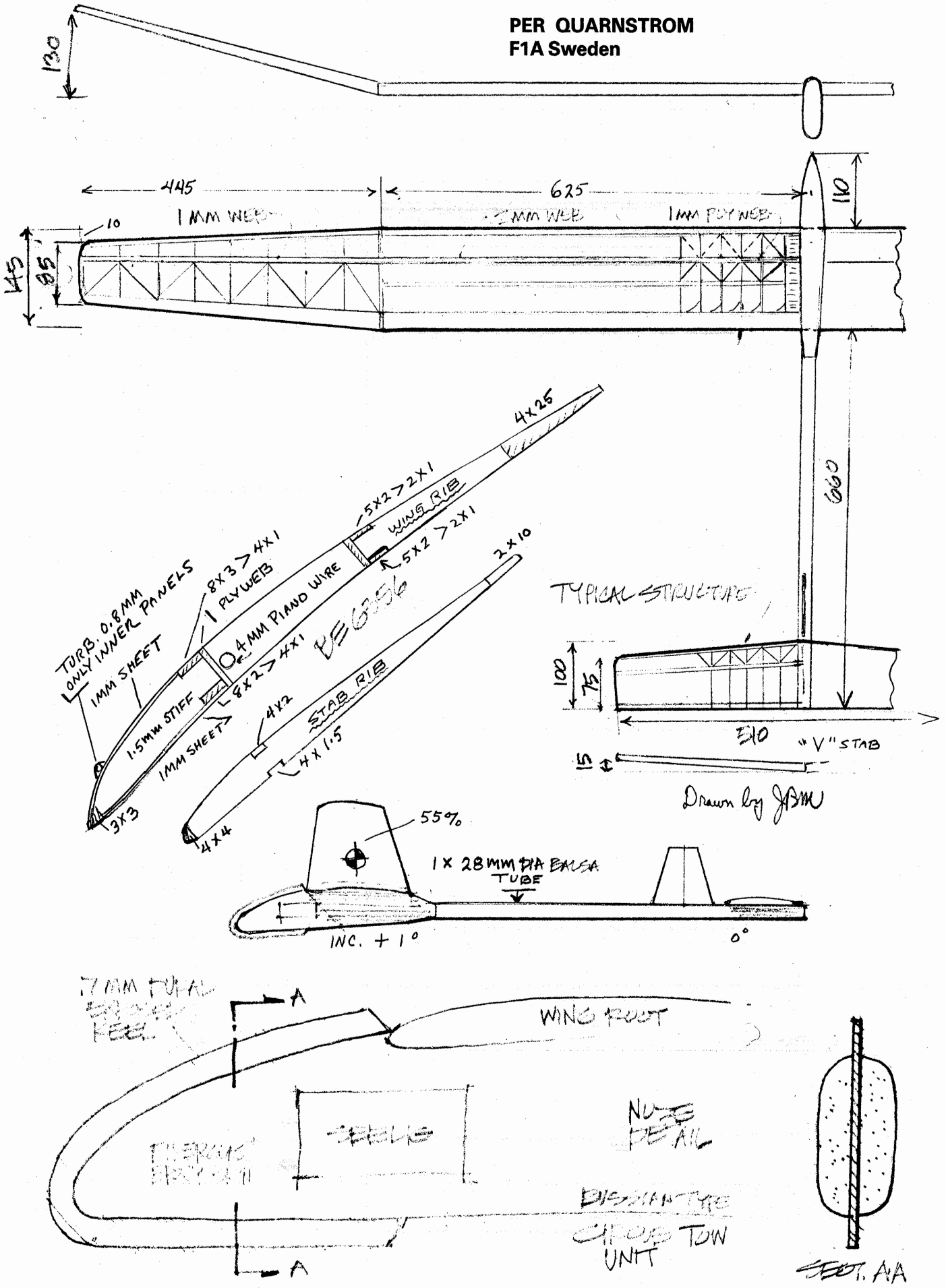
Perfil BENEDEK 6356-b,
aumentadas 0'50 las cifras del extradós.

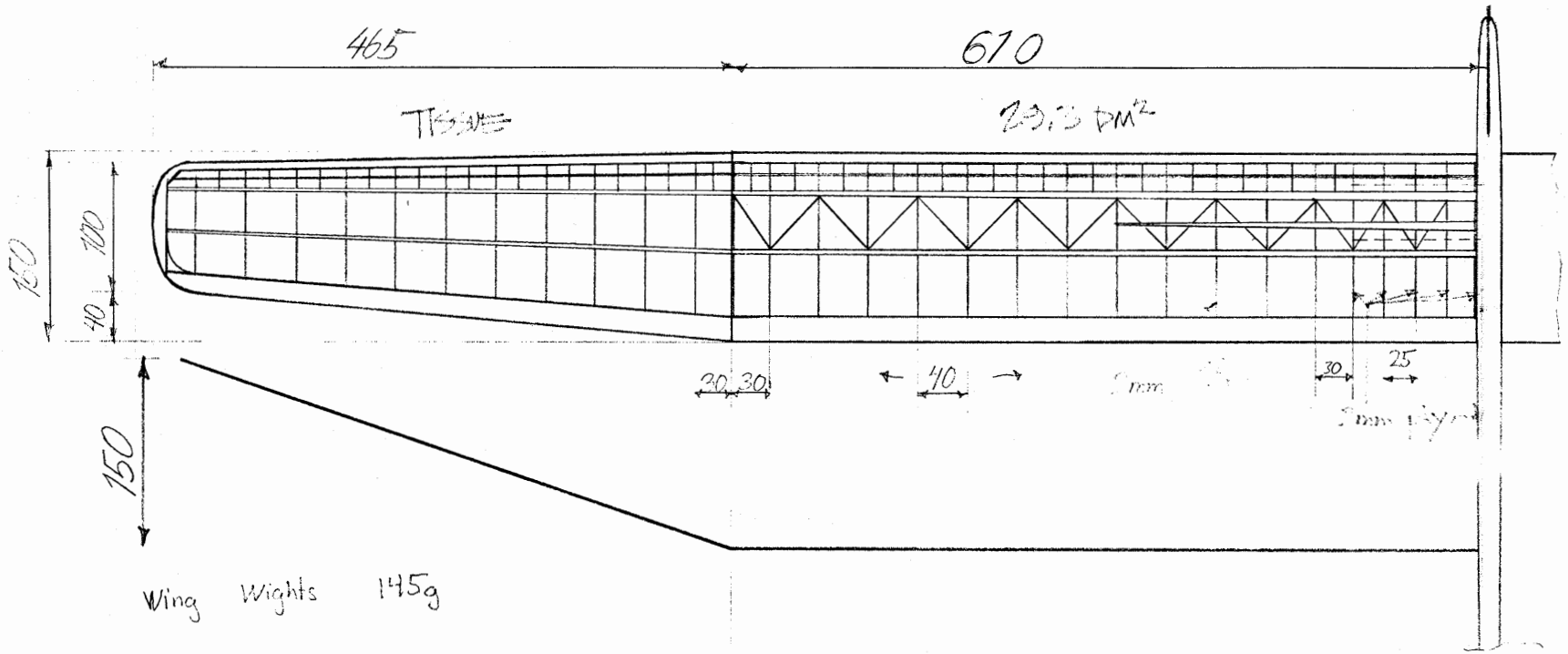
Última costilla de la orejuela



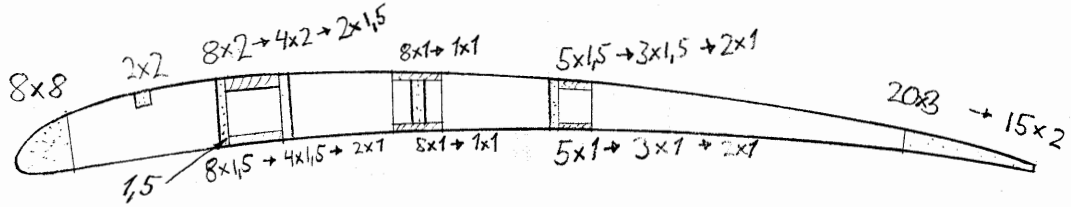
Escala 1:1

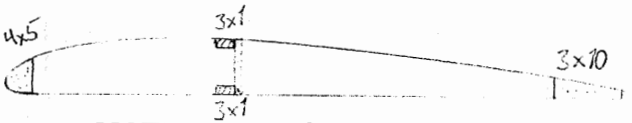
PER QUARNSTROM
F1A Sweden

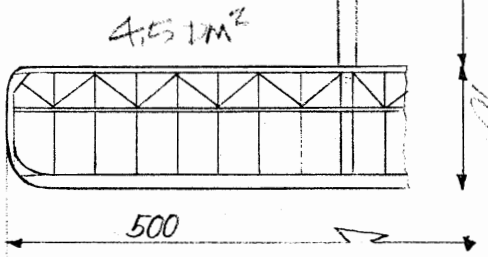


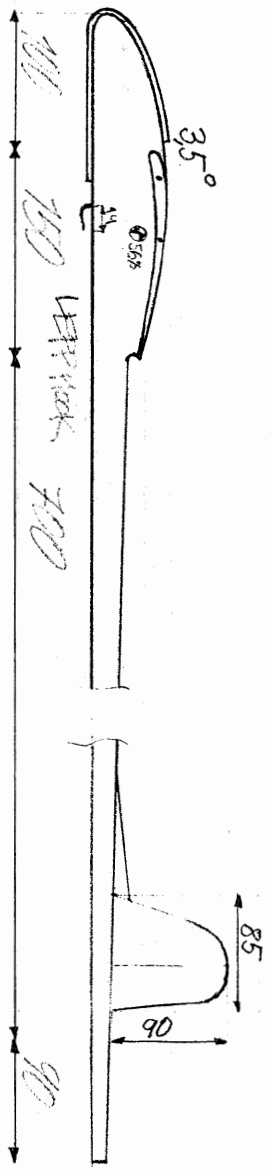


Wing Wights 145g







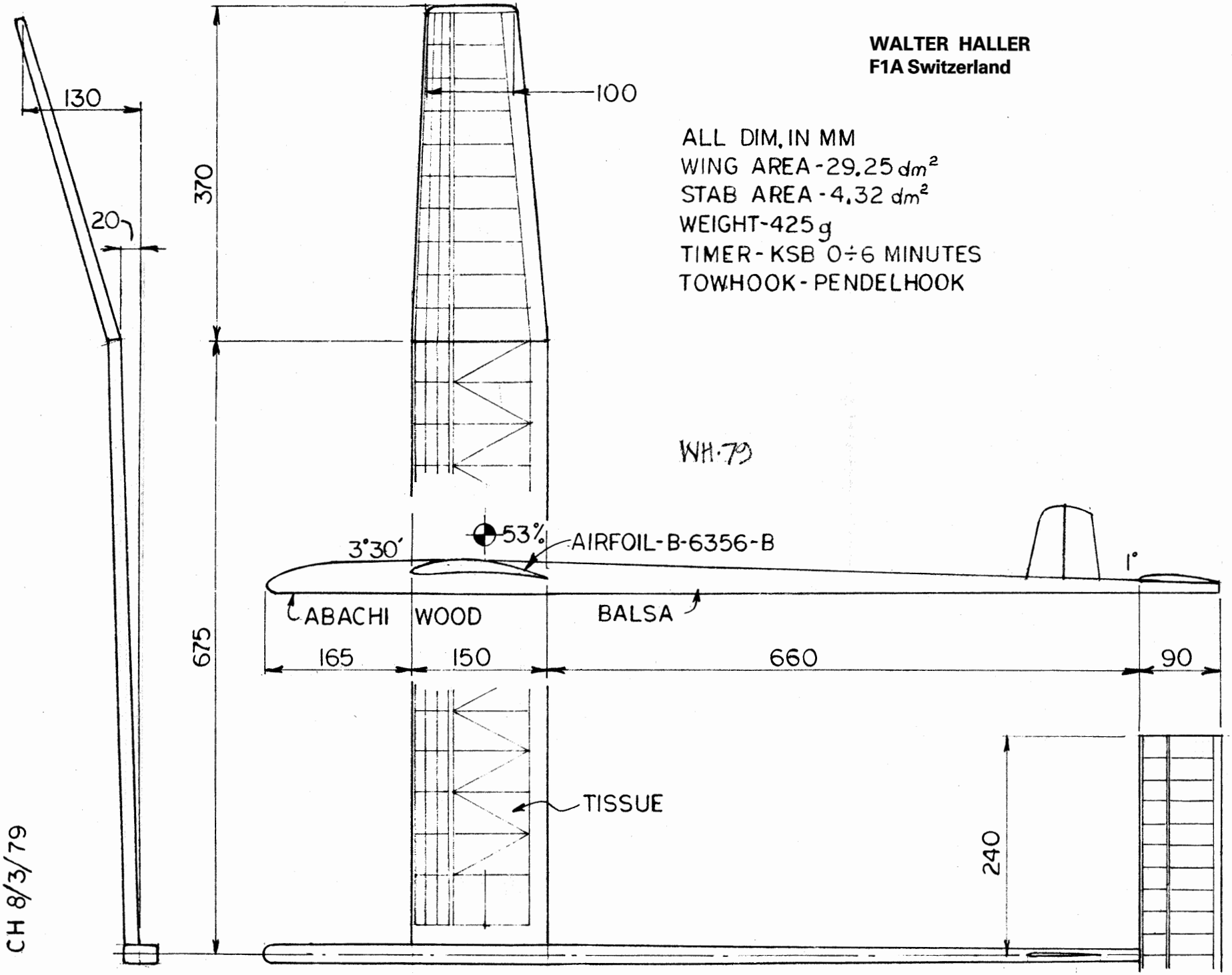


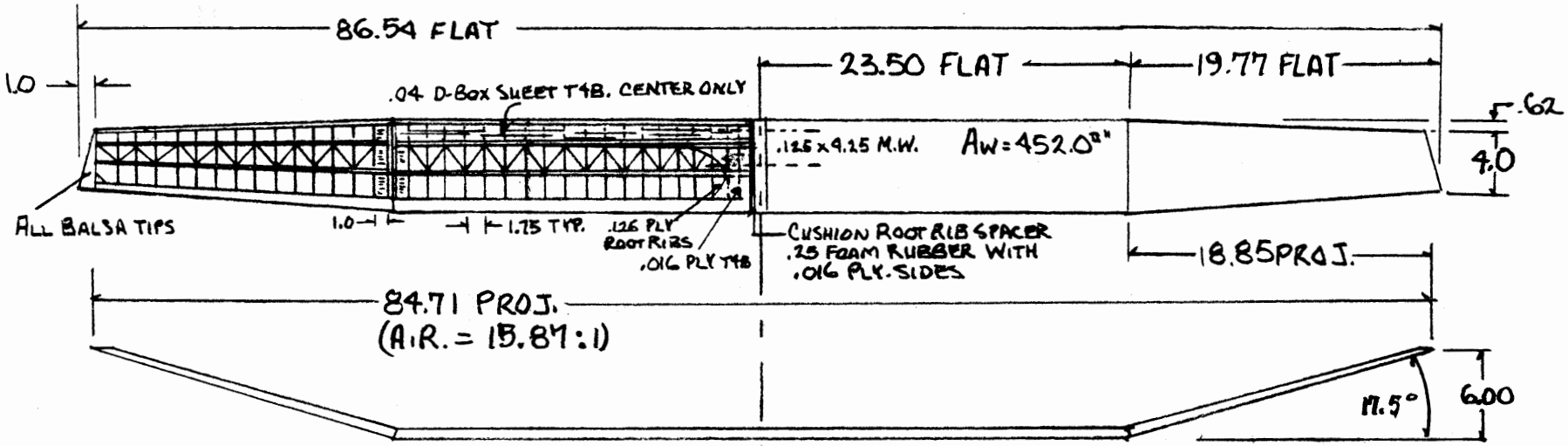
MATS ROSLING
F1A Sweden

PER SJOLUND
F1A Sweden

DRAWN: JIM O'REILLY

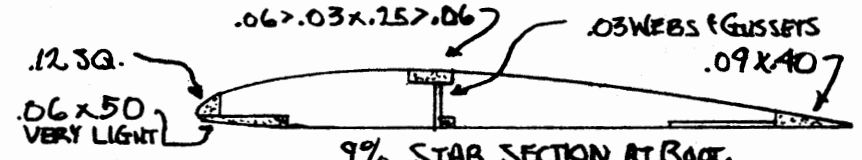
WALTER HALLER
F1A Switzerland

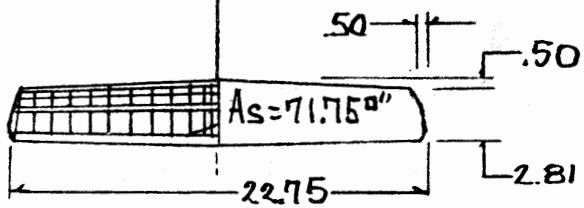


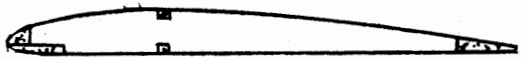


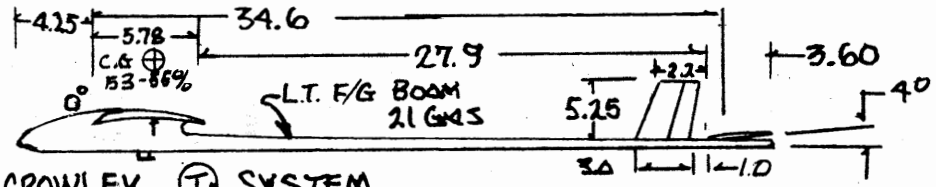
NOTES:

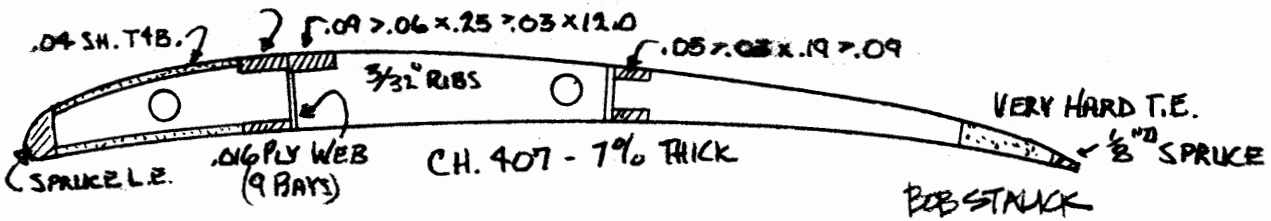
1. WING WIRES (.125Ø M.W) FITS IN ½" PLY RIB HOLES - NO WING TUBES.
2. WINGS WEIGH 166 GMS. TOTAL.
3. USE ONLY AIRCRAFT QUALITY SPRUCE.

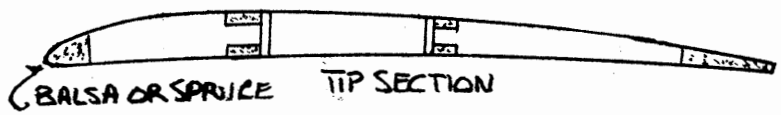




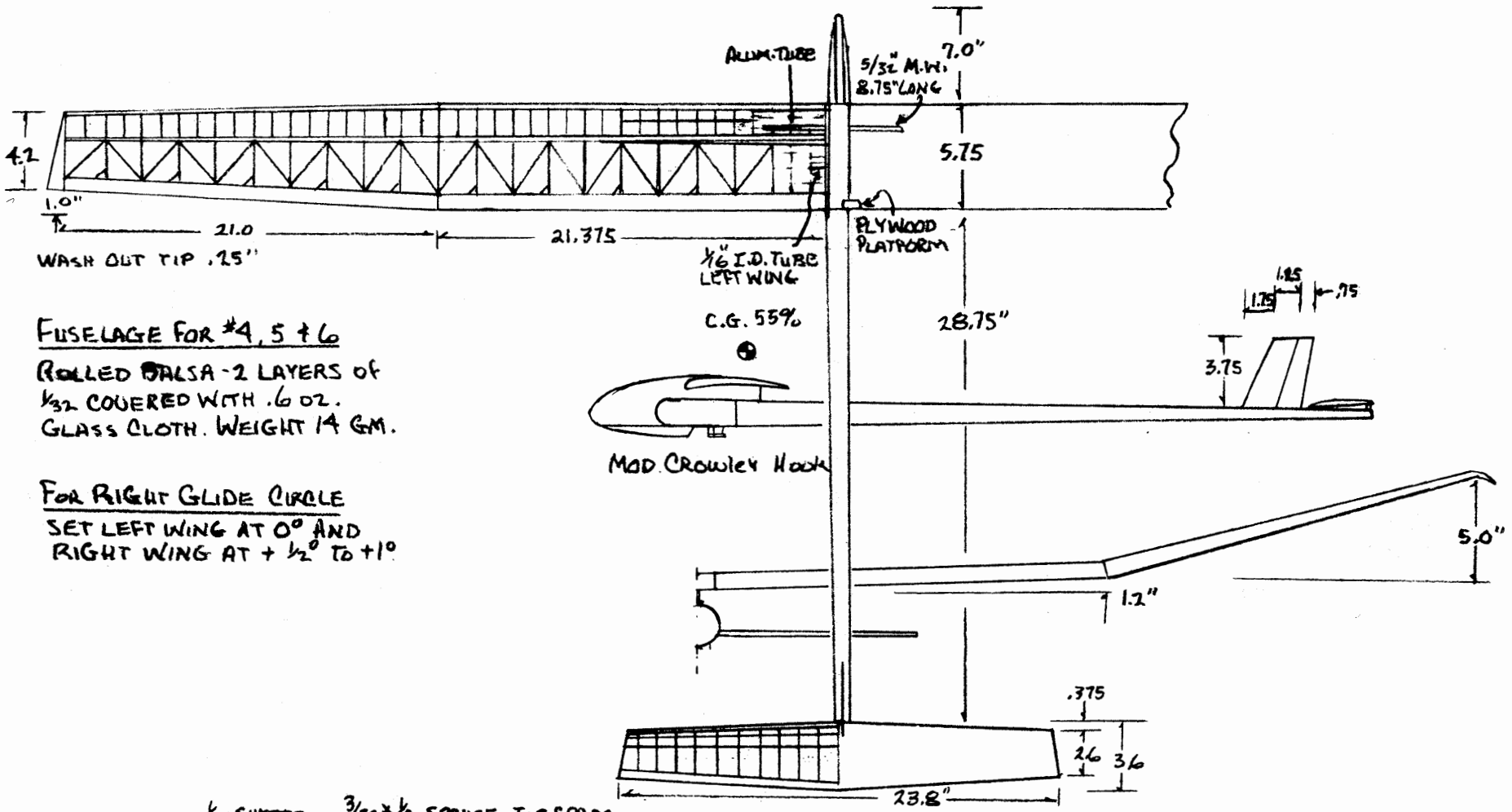








LEE HINES
F1A United States

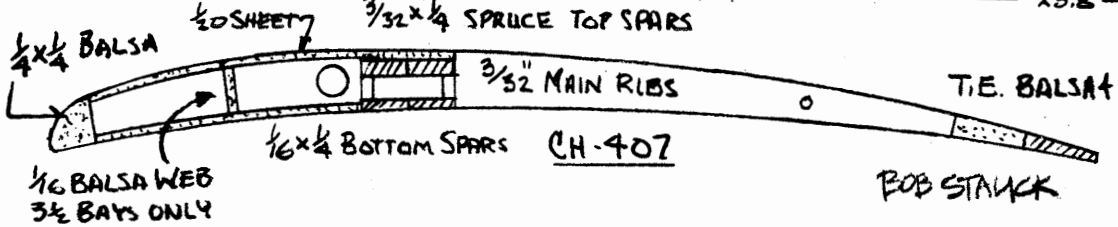


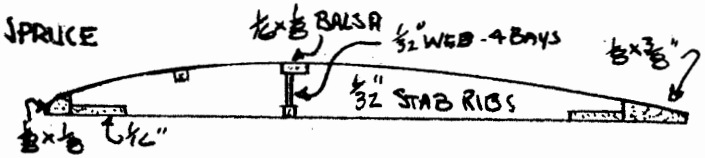
FUSELAGE FOR #4, 5 & 6

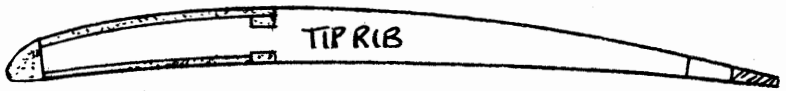
ROLLED BALSA - 2 LAYERS OF 1/32 COVERED WITH .6 OZ. GLASS CLOTH. WEIGHT 14 GM.

FOR RIGHT GLIDE CIRCLE

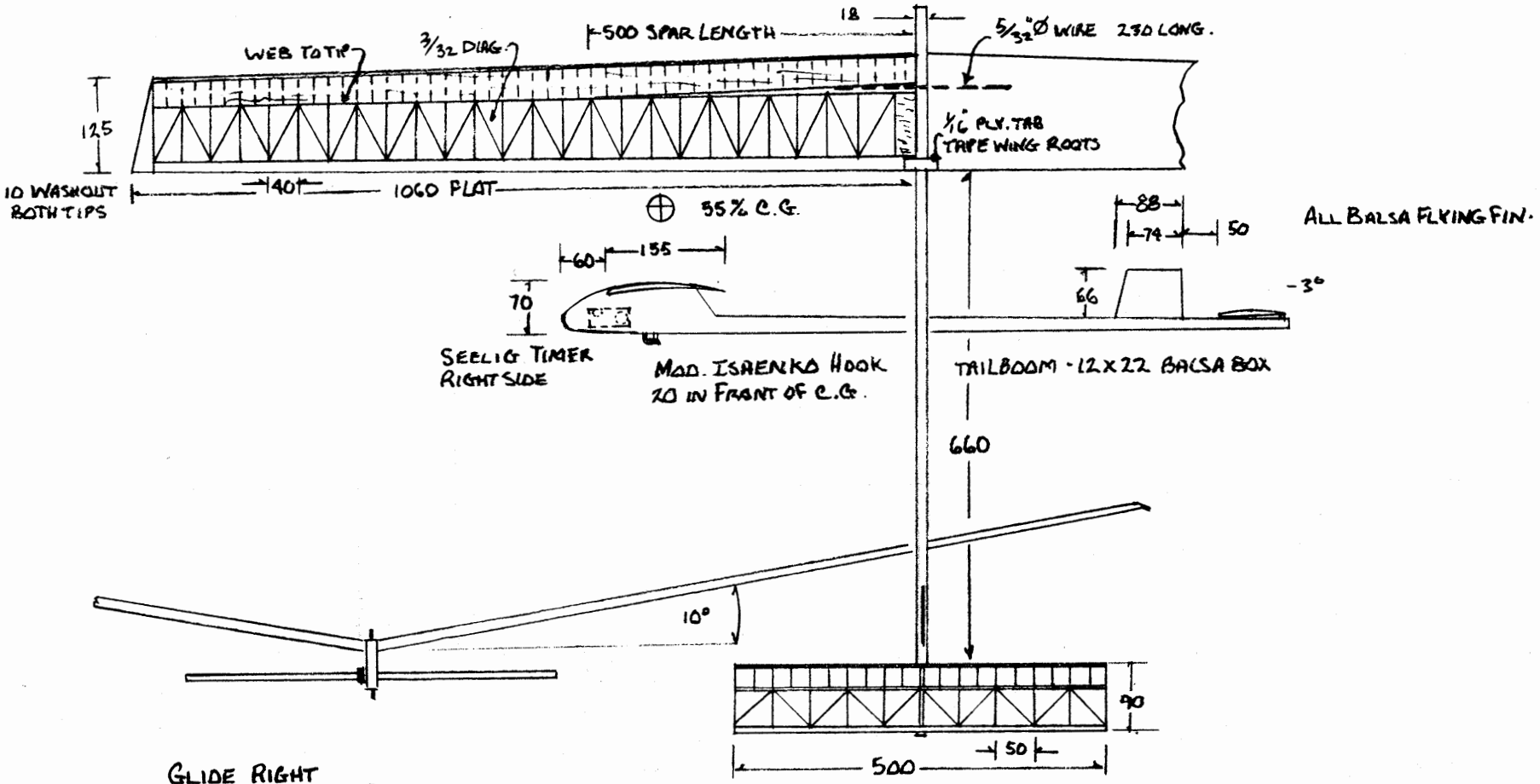
SET LEFT WING AT 0° AND RIGHT WING AT + 1/2° TO +1°







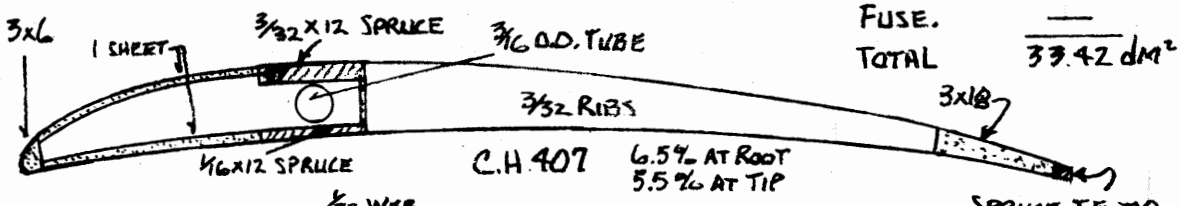
BOB ISAACSON
F1A United States

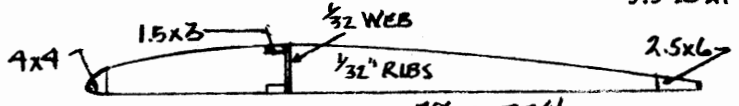


GLIDE RIGHT
RIGHT WING +½°
LEFT WING 0°

	AREAS	WEIGHTS
WINGS	28.92 dm²	169 gm.
STAB	4.5	9
FUSE.	—	232
TOTAL	33.42 dm²	410 gm.

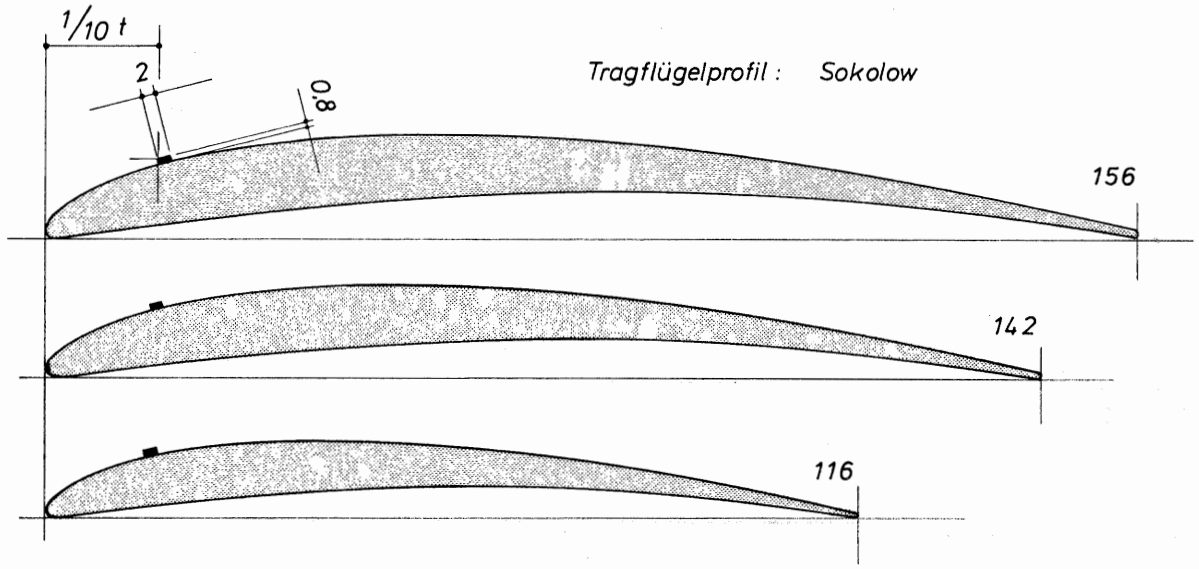
DIMENSIONS IN MILLIMETERS

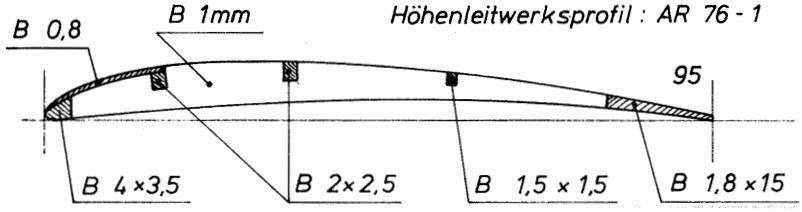


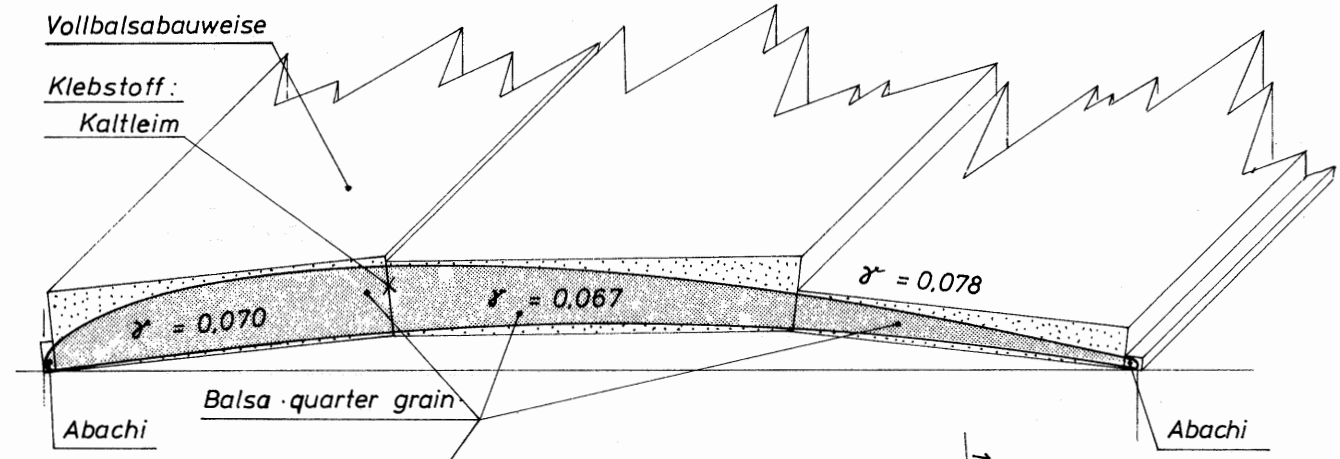


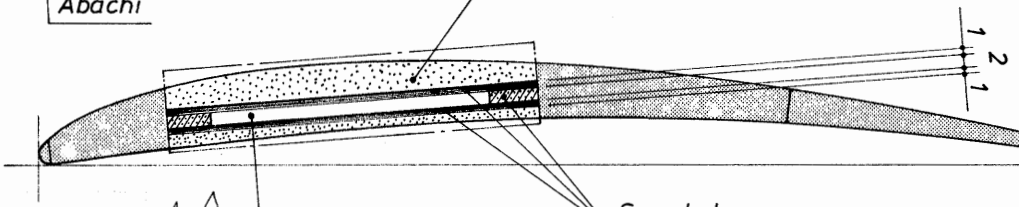
STAB SECTION - 7% AT 35%

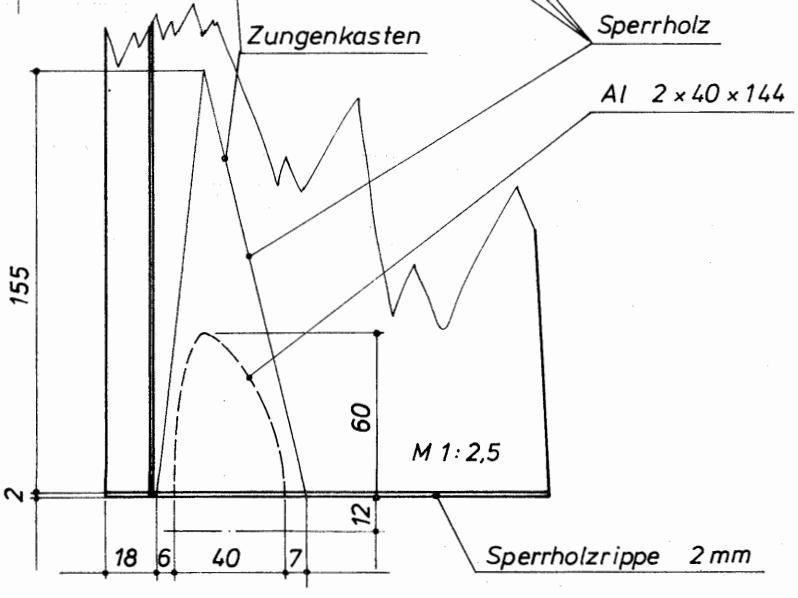
JIM WILSON
F1A United States



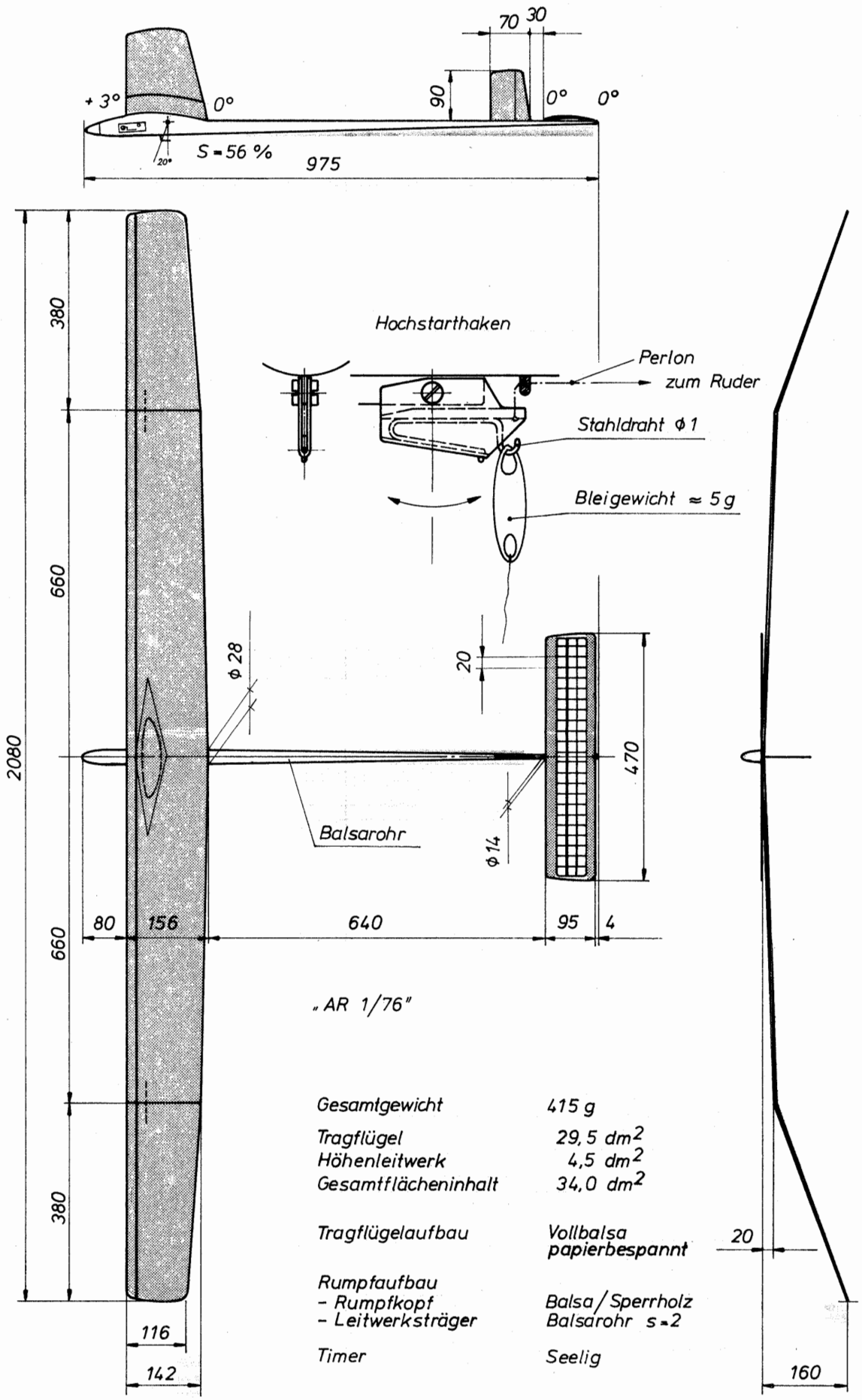








ALBERT RIEDINGER
F1A BRD



„AR 1/76"

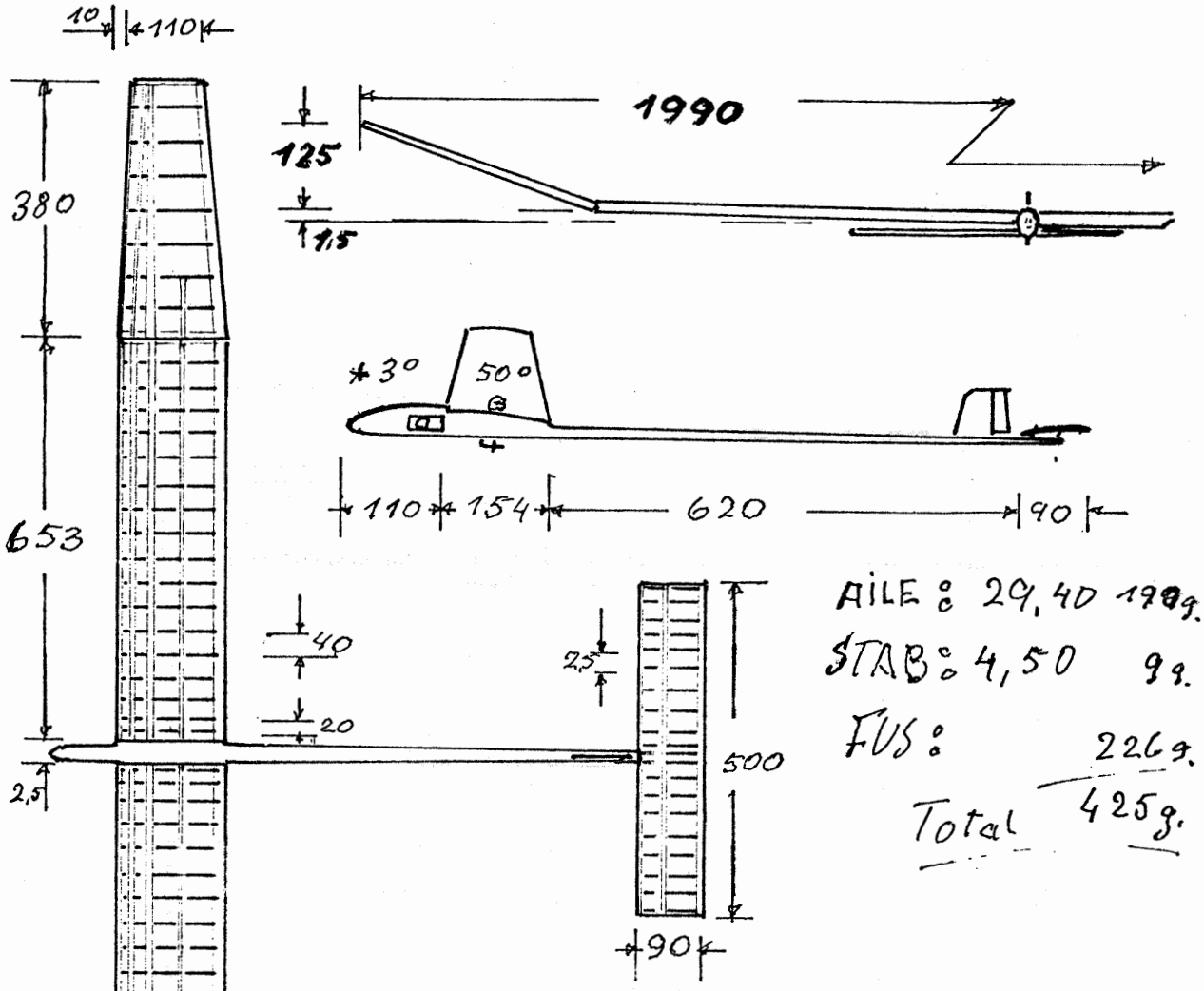
Gesamtgewicht	415 g
Tragflügel	29,5 dm²
Höhenleitwerk	4,5 dm²
Gesamtflächeninhalt	34,0 dm²
Tragflügelaufbau	Vollbalsa papierbespannt
Rumpfaufbau	
- Rumpfkopf	Balsa/Sperrholz
- Leitwerksträger	Balsarohr s=2
Timer	Seelig

Segelflugmodell der Klasse

M 1 : 10

16.05.76

ALBERT RIEDINGER
F1A BRD



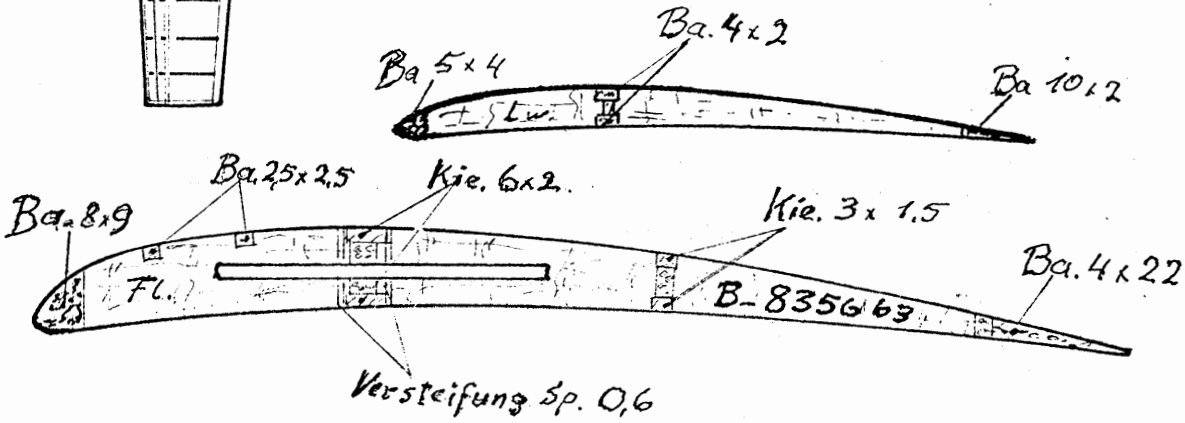
AILE : 29,40 198g.

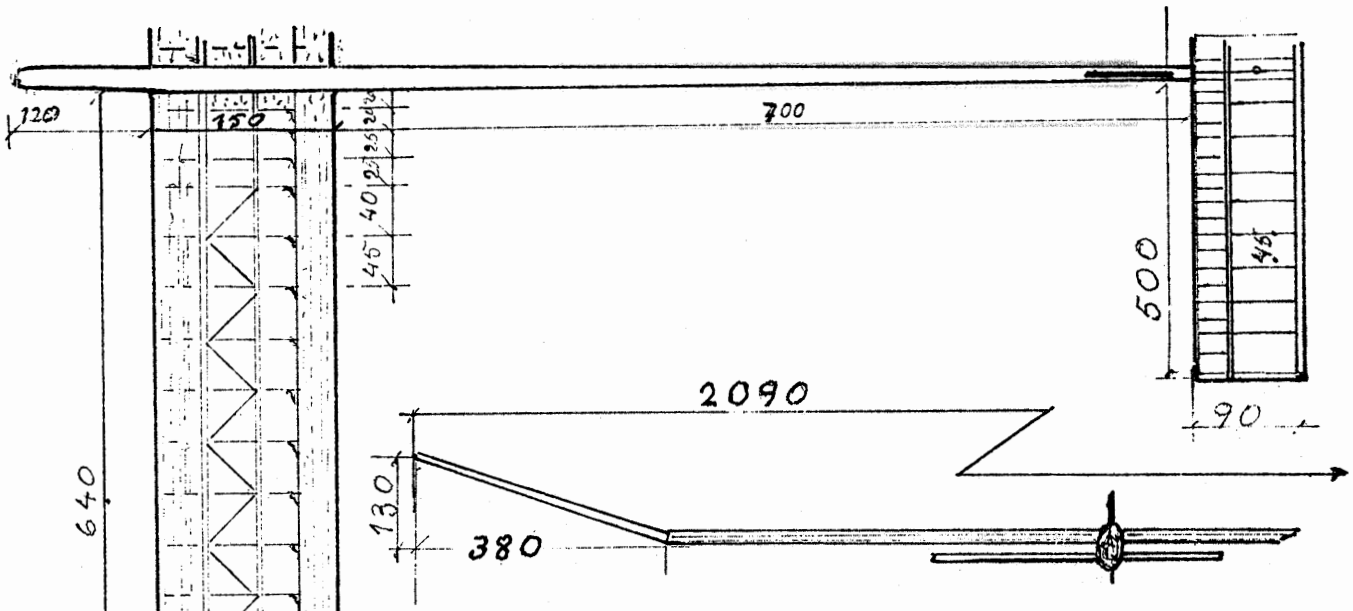
STAB : 4,50 9g.

FUS : 226g.

Total 425g.

HERBERT SCHMIDT
F1A West Germany

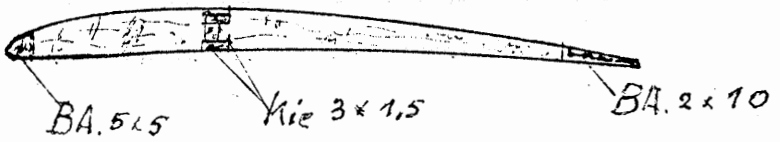


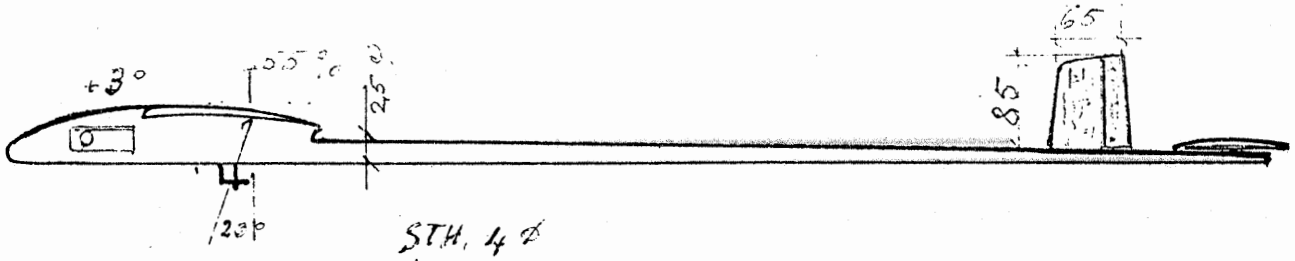


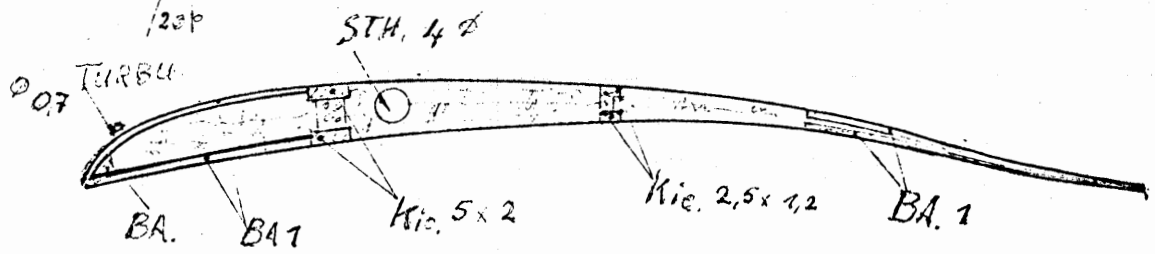
HERBERT SCHMIDT
F1A West Germany

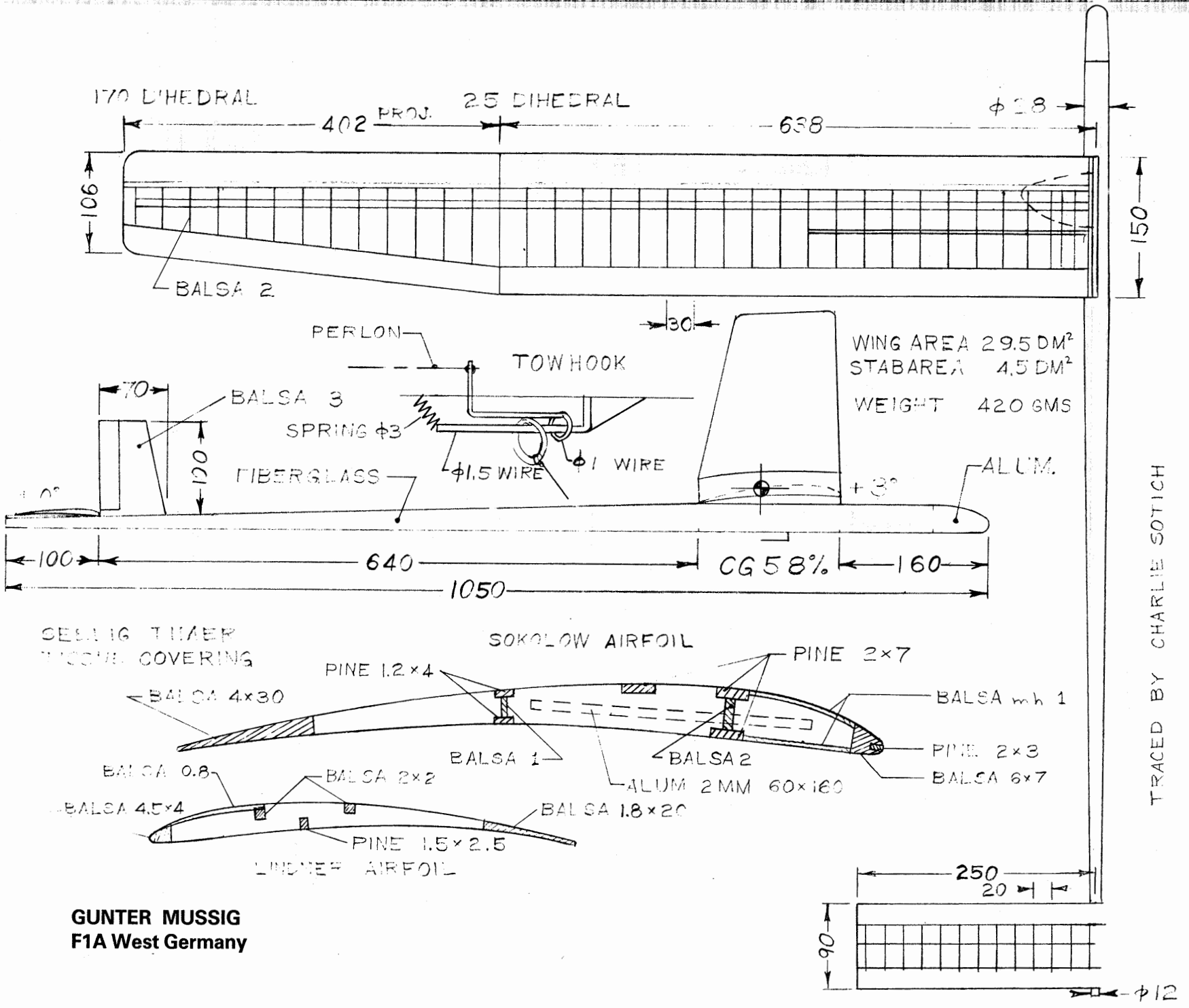
AILE :	29,45	180 g
STAB :	4,50	9 g
FUS :		231 g
TOTAL :		420 g

HS5



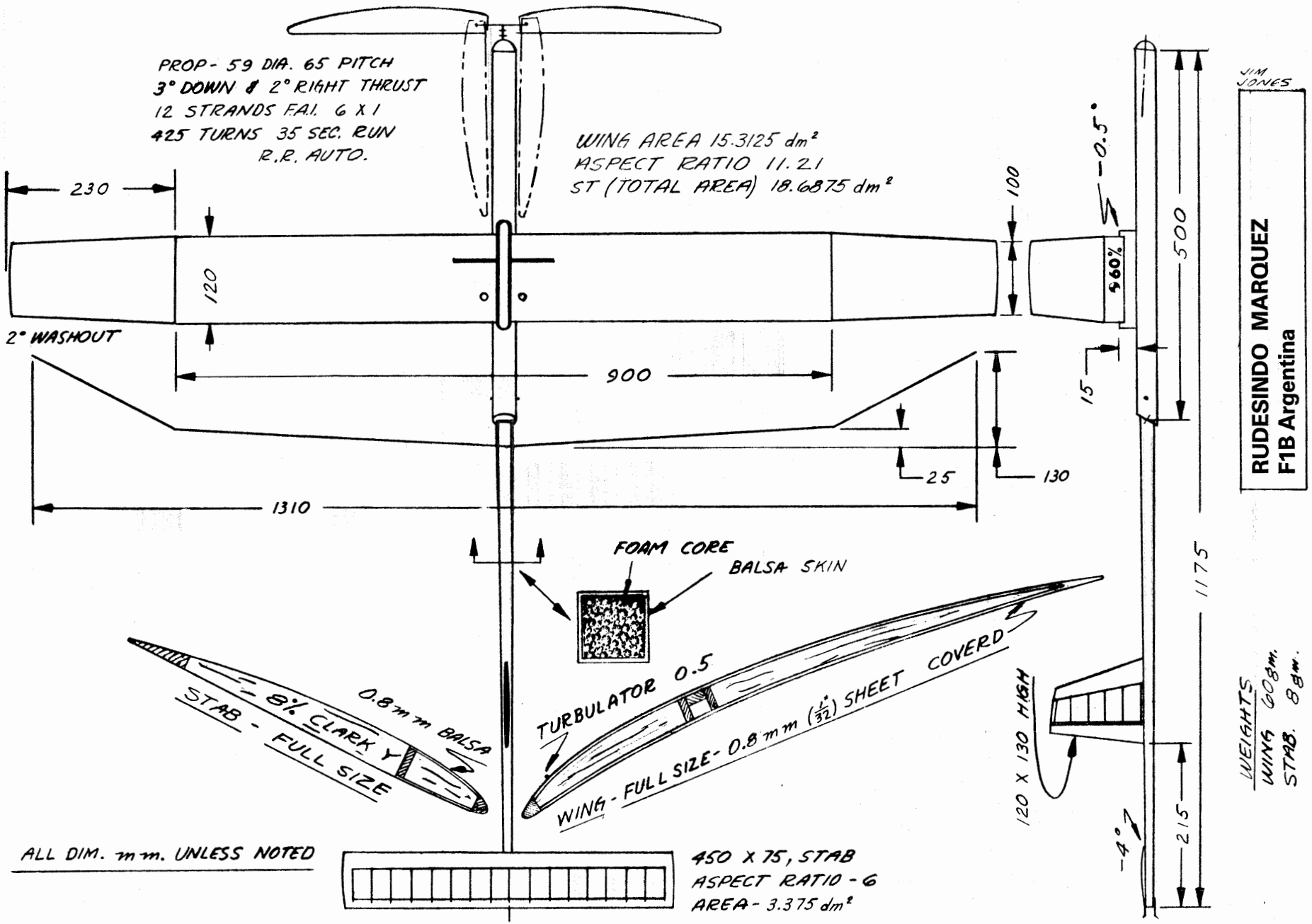


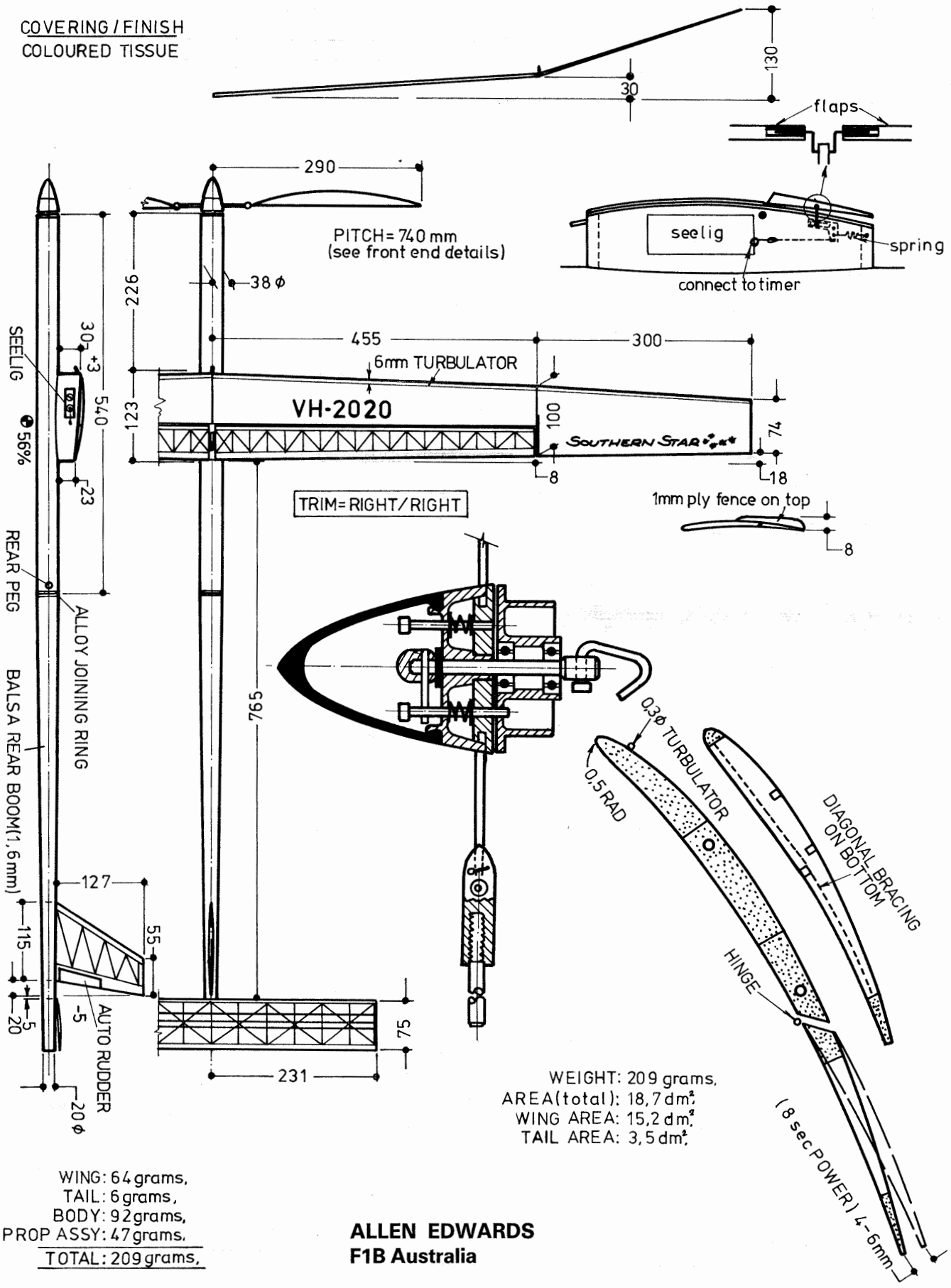




TRACED BY CHARLIE SOTICH

GUNTER MUSSIG
F1A West Germany

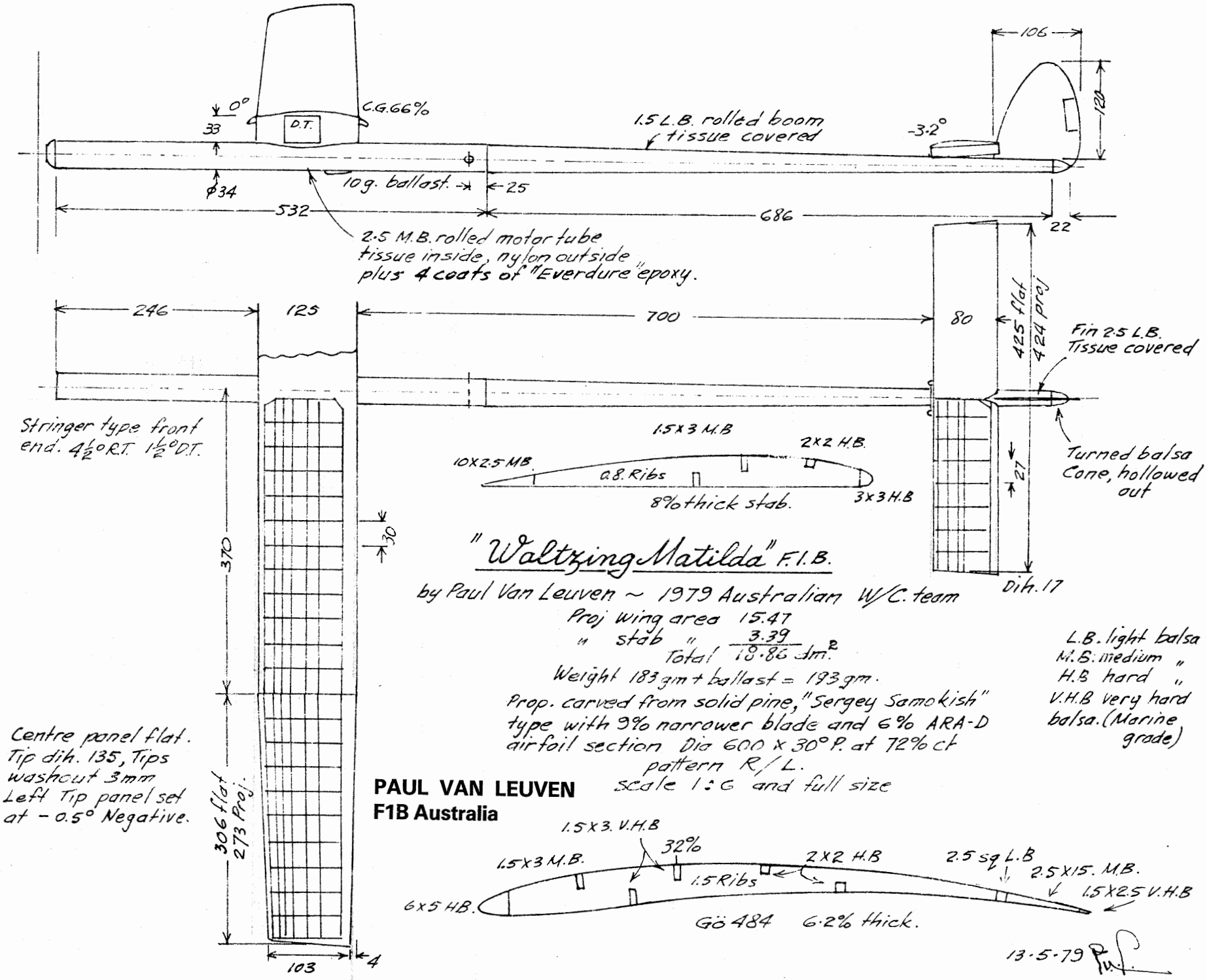

PROP - 59 DIA. 65 PITCH
3° DOWN & 2° RIGHT THRUST
12 STRANDS F.A.I. 6 X 1
425 TURNS 35 SEC. RUN
R.R. AUTO.
WING AREA 15.3125 dm²
ASPECT RATIO 11.21
ST (TOTAL AREA) 18.6875 dm²
230
120
100
-0.5°
60%
500
2° WASHOUT
900
15
25
130
1310
FOAM CORE
BALSA SKIN
TURBULATOR 0.5
0.8 mm BALSA
8% CLARK Y
STAB - FULL SIZE
WING - FULL SIZE - 0.8 mm (1/32) SHEET COVERD
120 X 130 HIGH
1175
215
-4°
ALL DIM. mm. UNLESS NOTED
450 X 75, STAB
ASPECT RATIO - 6
AREA - 3.375 dm²
JIM JONES
RUDESINDO MARQUEZ
F1B Argentina
WEIGHTS
WING 60gm.
STAB. 8gm.



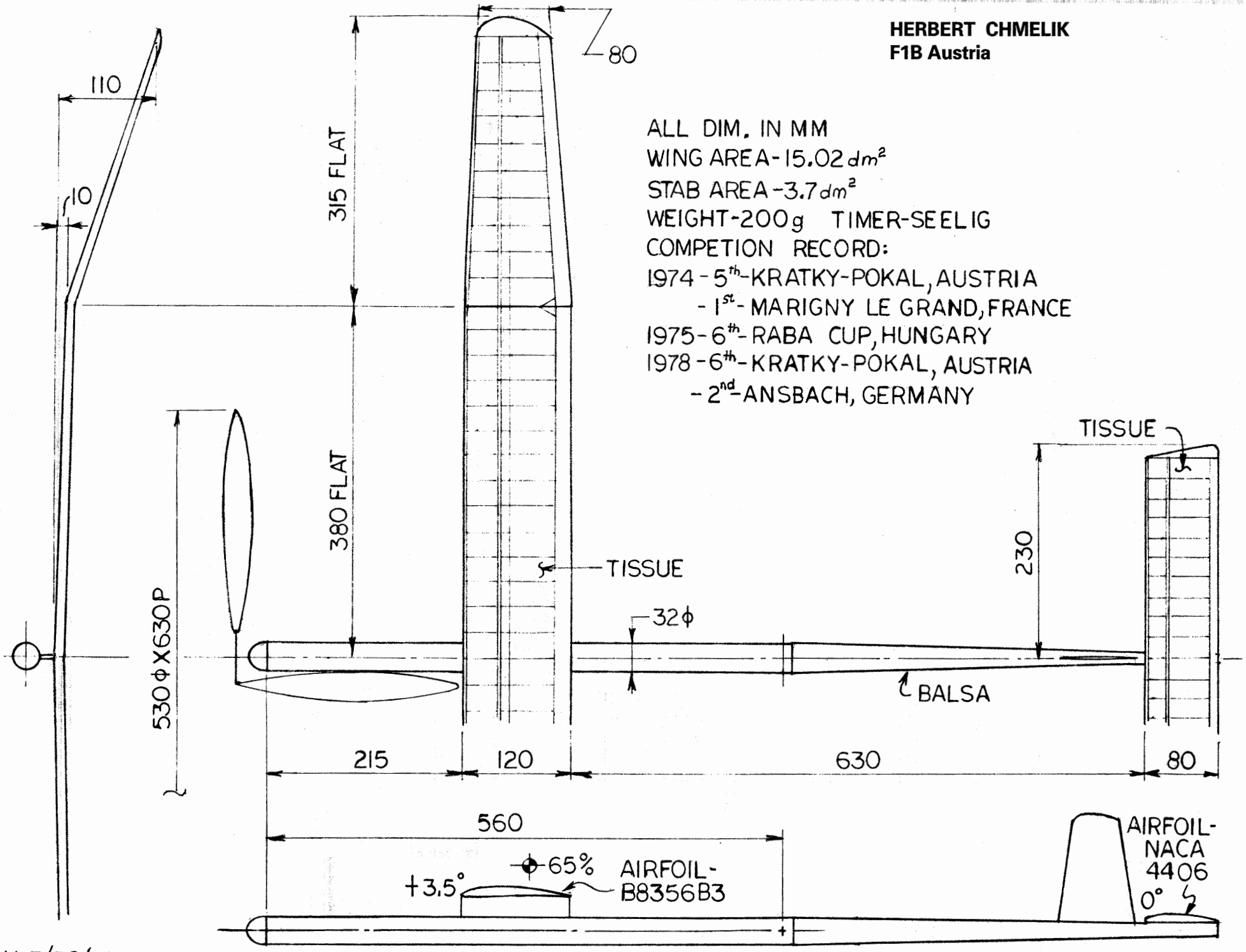
WEIGHT: 209 grams,
AREA (total): 18,7 dm²,
WING AREA: 15,2 dm²,
TAIL AREA: 3,5 dm²,

WING: 64 grams,
TAIL: 6 grams,
BODY: 92 grams,
PROP ASSY: 47 grams,
TOTAL: 209 grams,

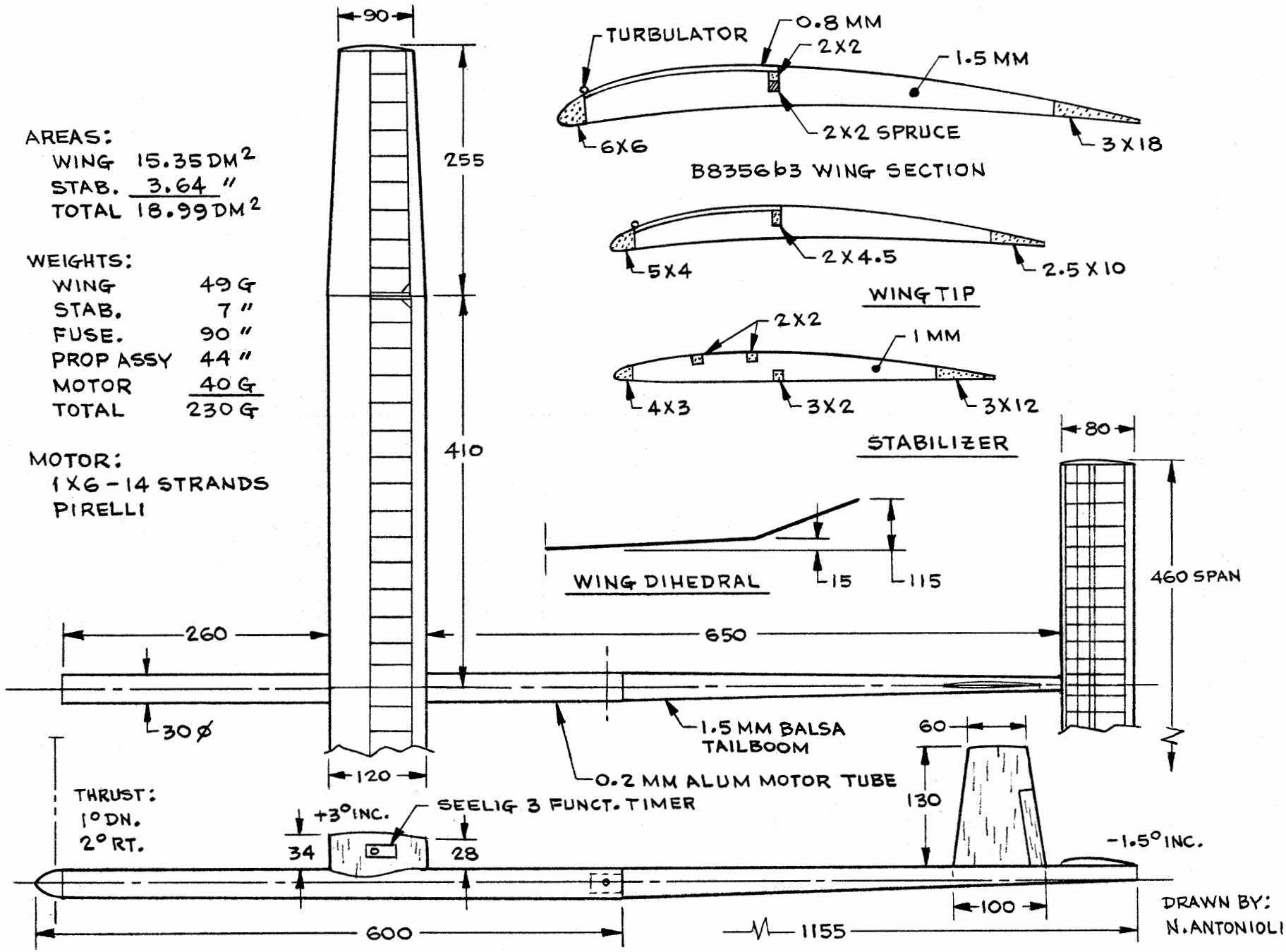
ALLEN EDWARDS
F1B Australia

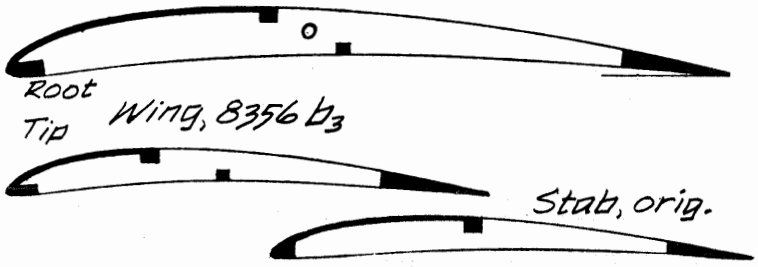

106
120
0°
33
C.G.66%
D.T.
1.5 L.E. rolled boom
tissue covered
-3.2°
ϕ34
10g. ballast.
25
532
686
22
2.5 M.B. rolled motor tube
tissue inside, nylon outside
plus 4 coats of "Everdure" epoxy.
246
125
700
80
425 flat
424 proj.
Fin 2.5 L.B.
Tissue covered
Stringer type front
end. 4½°R.T. 1½°D.T.
1.5x3 M.B
2x2 H.B.
10x2.5 M.B.
0.8 Ribs
3x3 H.B
8% thick stab.
27
Turned balsa
Cone, hollowed
out
370
30
Dih. 17
"Waltzing Matilda" F.I.B.
by Paul Van Leuven ~ 1979 Australian W/C. team
Proj wing area 15.47
" stab " 3.39
Total 18.86 dm²
Weight 183 gm + ballast = 193 gm.
Prop. carved from solid pine, "Sergey Samokish"
type with 9% narrower blade and 6% ARA-D
airfoil section Dia 600 x 30° P. at 72% ct
pattern R/L.
scale 1:6 and full size
L.E. light balsa
M.B. medium "
H.B hard "
V.H.B very hard
balsa. (Marine
grade)
Centre panel flat.
Tip dih. 135, Tips
washout 3mm
Left Tip panel set
at -0.5° Negative.
306 flat
273 Proj.
PAUL VAN LEUVEN
F1B Australia
1.5x3. V.H.B
32%
1.5x3 M.B.
2x2 H.B
2.5 sq L.E.
2.5x15. M.B.
1.5 Ribs
1.5x2.5 V.H.B
6x5 H.B.
Gö 484 6.2% thick.
103
4
13-5-79

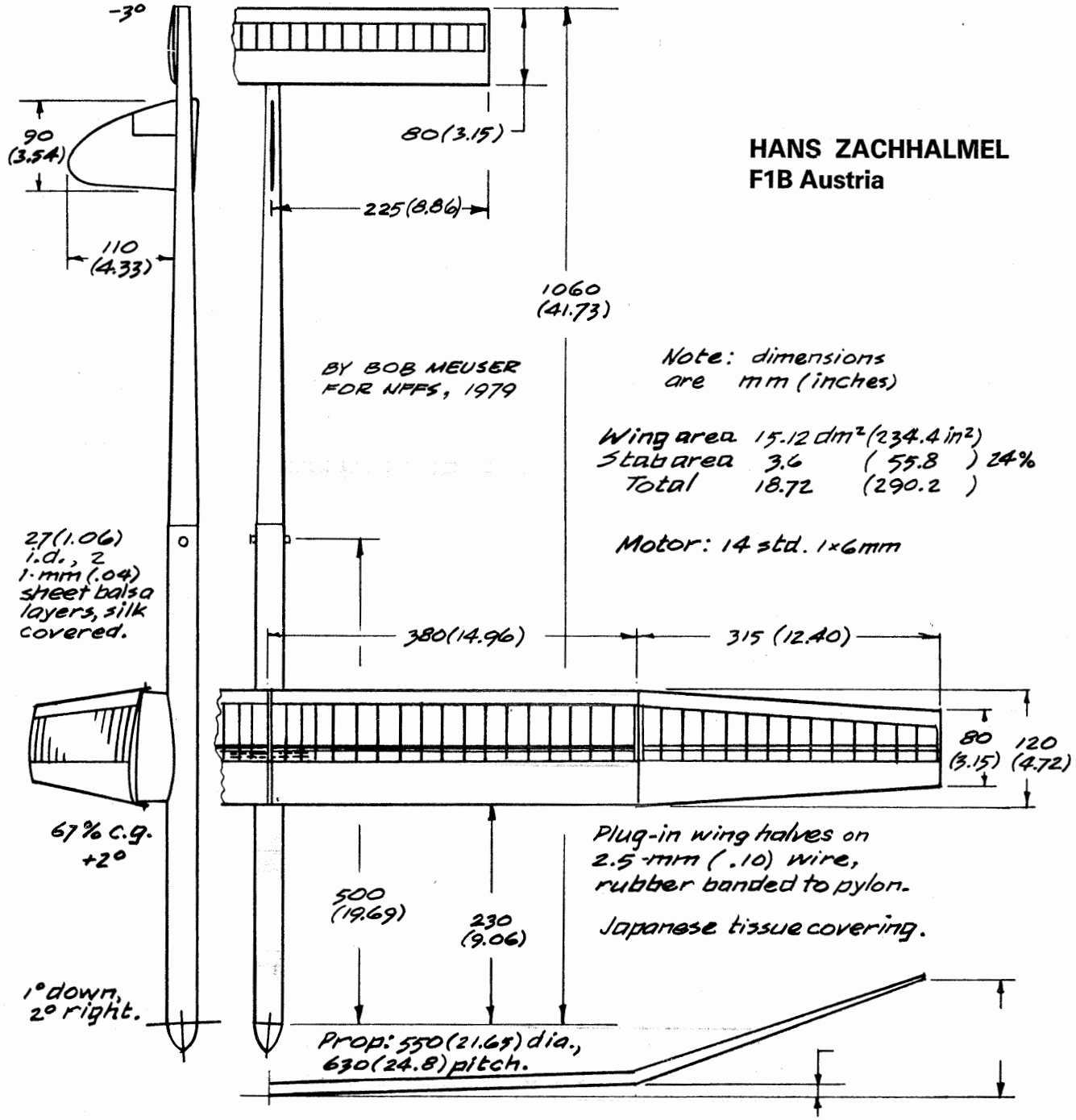
HERBERT CHMELIK
F1B Austria



CH 7/30/79


AREAS:
WING 15.35 DM²
STAB. 3.64 "
TOTAL 18.99 DM²
WEIGHTS:
WING 49 G
STAB. 7 "
FUSE. 90 "
PROP ASSY 44 "
MOTOR 40 G
TOTAL 230 G
MOTOR:
1X6 - 14 STRANDS
PIRELLI
90
255
410
120
260
650
30 Ø
TURBULATOR
0.8 MM
2X2
1.5 MM
2X2 SPRUCE
6X6
3X18
B8356b3 WING SECTION
5X4
2X4.5
2.5X10
WING TIP
2X2
1 MM
4X3
3X2
3X12
STABILIZER
80
460 SPAN
WING DIHEDRAL
15
115
1.5 MM BALSA TAILBOOM
0.2 MM ALUM MOTOR TUBE
60
130
THRUST:
1° DN.
2° RT.
+3° INC.
SEELIG 3 FUNCT. TIMER
34
28
-1.5° INC.
100
600
1155
DRAWN BY:
N. ANTONIOLI
PROP: 565X600
DIMENSIONS IN MILLIMETERS
ERNST REITTERER
F1B Austria





HANS ZACHHALMEL
F1B Austria

BY BOB MEUSER
FOR NFFS, 1979

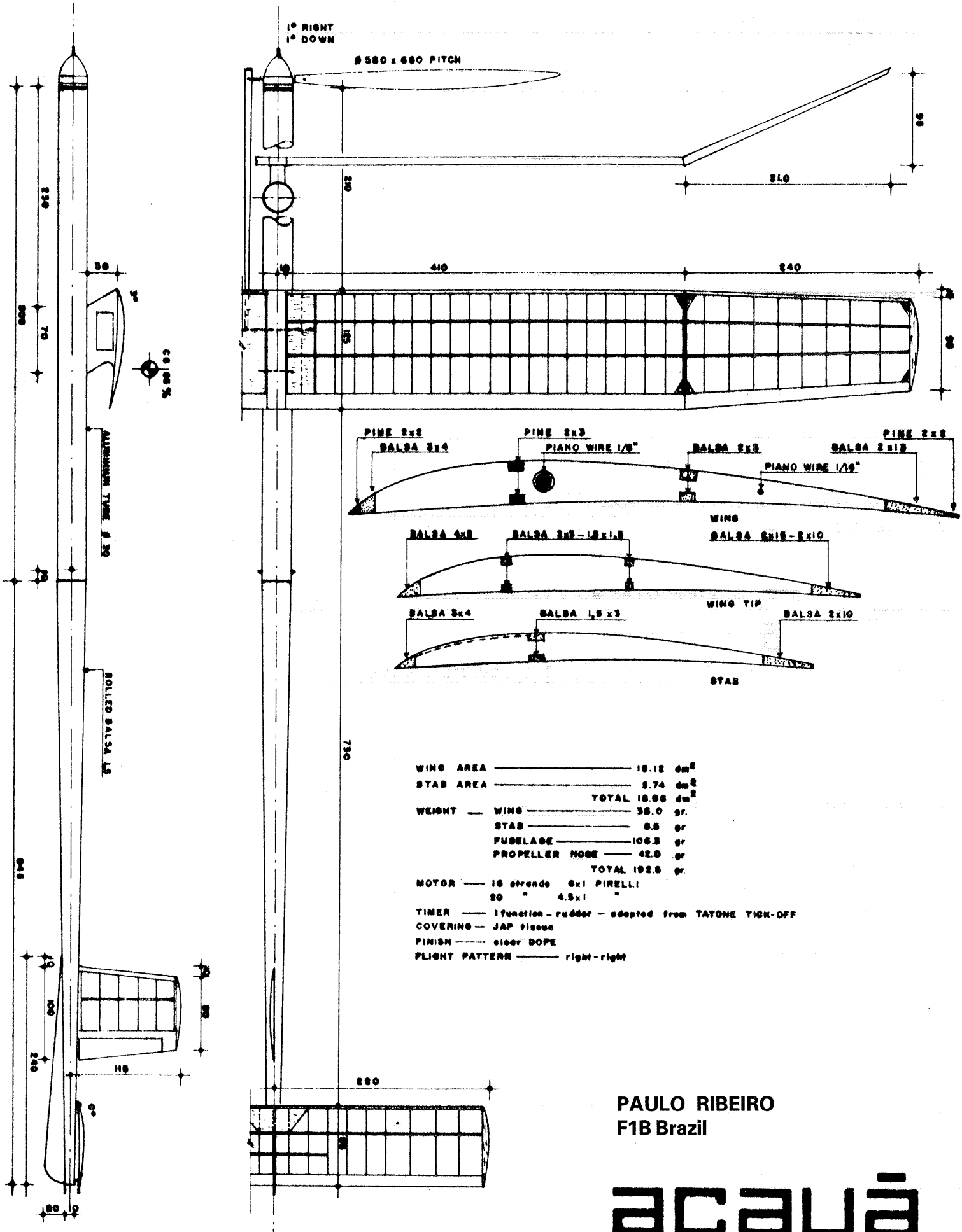
Note: dimensions
are mm (inches)

Wing area 15.12 dm² (234.4 in²)
Stab area 3.6 (55.8) 24%
Total 18.72 (290.2)

Motor: 14 std. 1×6mm

Plug-in wing halves on
2.5-mm (.10) wire,
rubber banded to pylon.

Japanese tissue covering.



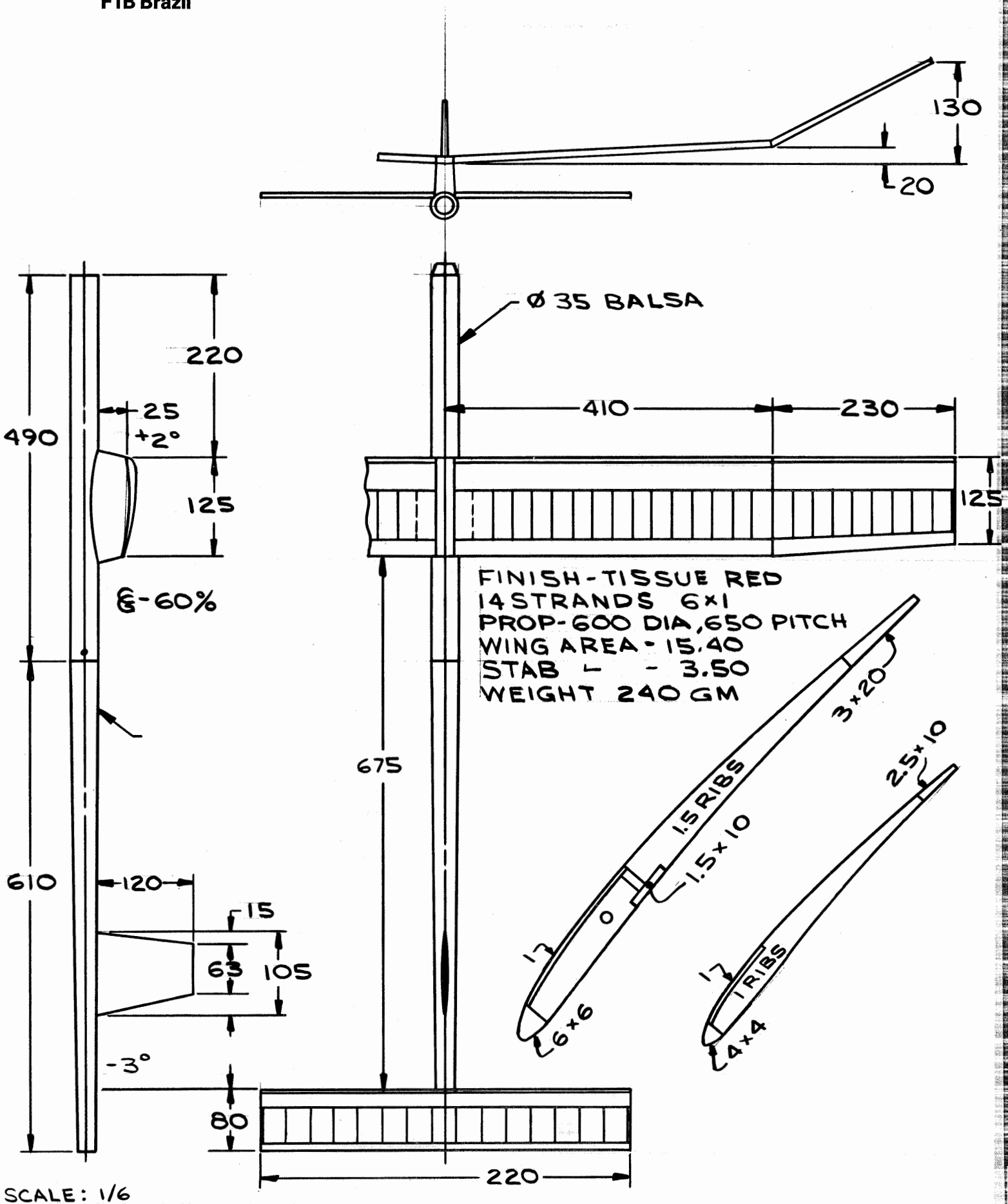
WING AREA		15.12	dm^2
STAB AREA		3.74	dm^2
	TOTAL	18.86	dm^2
WEIGHT — WING		38.0	gr.
STAB		6.5	gr
FUSELAGE		106.3	gr
PROPELLER NOSE		42.0	gr
	TOTAL	192.8	gr.

MOTOR — 16 strands 6x1 PIRELLI
20 " 4.5x1 "
TIMER — 1 function - rudder - adapted from TATONE TICK-OFF
COVERING — JAP tissue
FINISH — clear DOPE
FLIGHT PATTERN — right-right

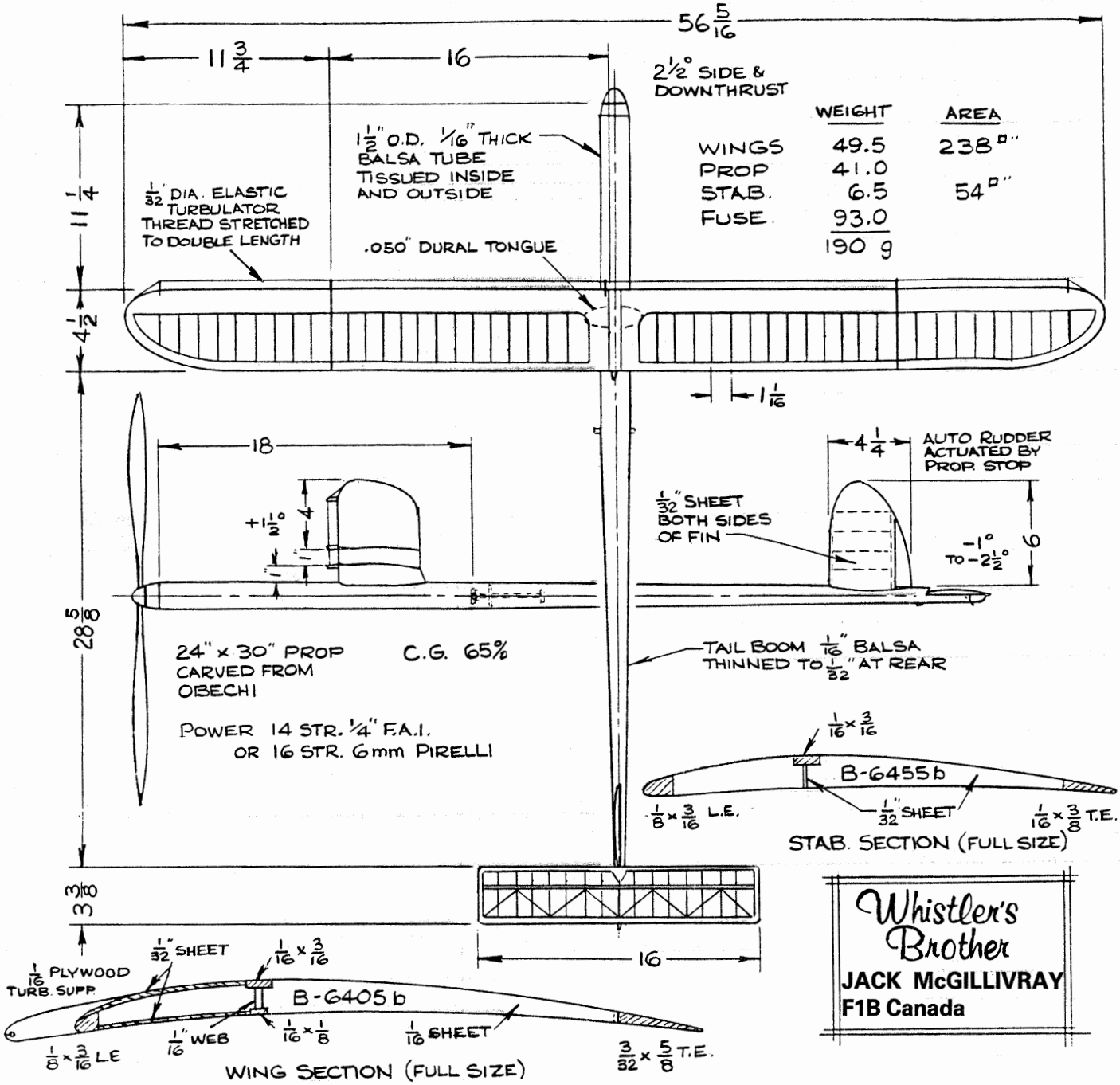
PAULO RIBEIRO
F1B Brazil

acauã

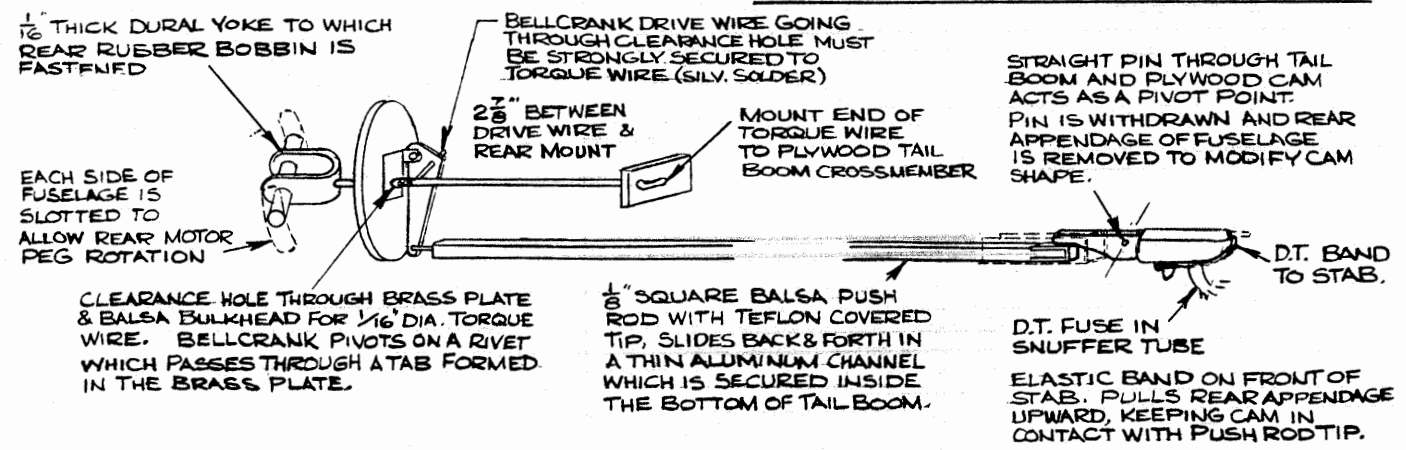
GILBERT TONI
F1B Brazil

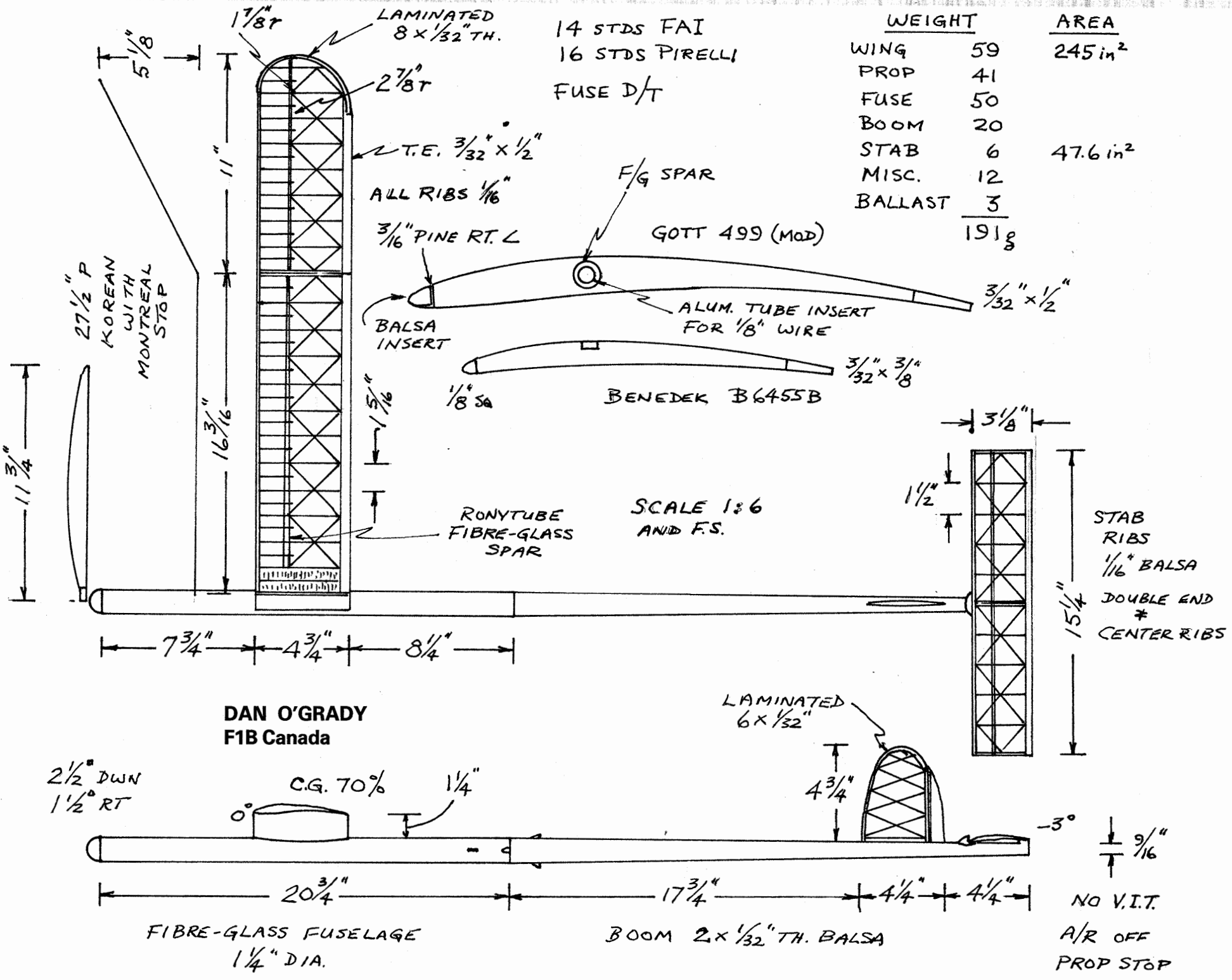


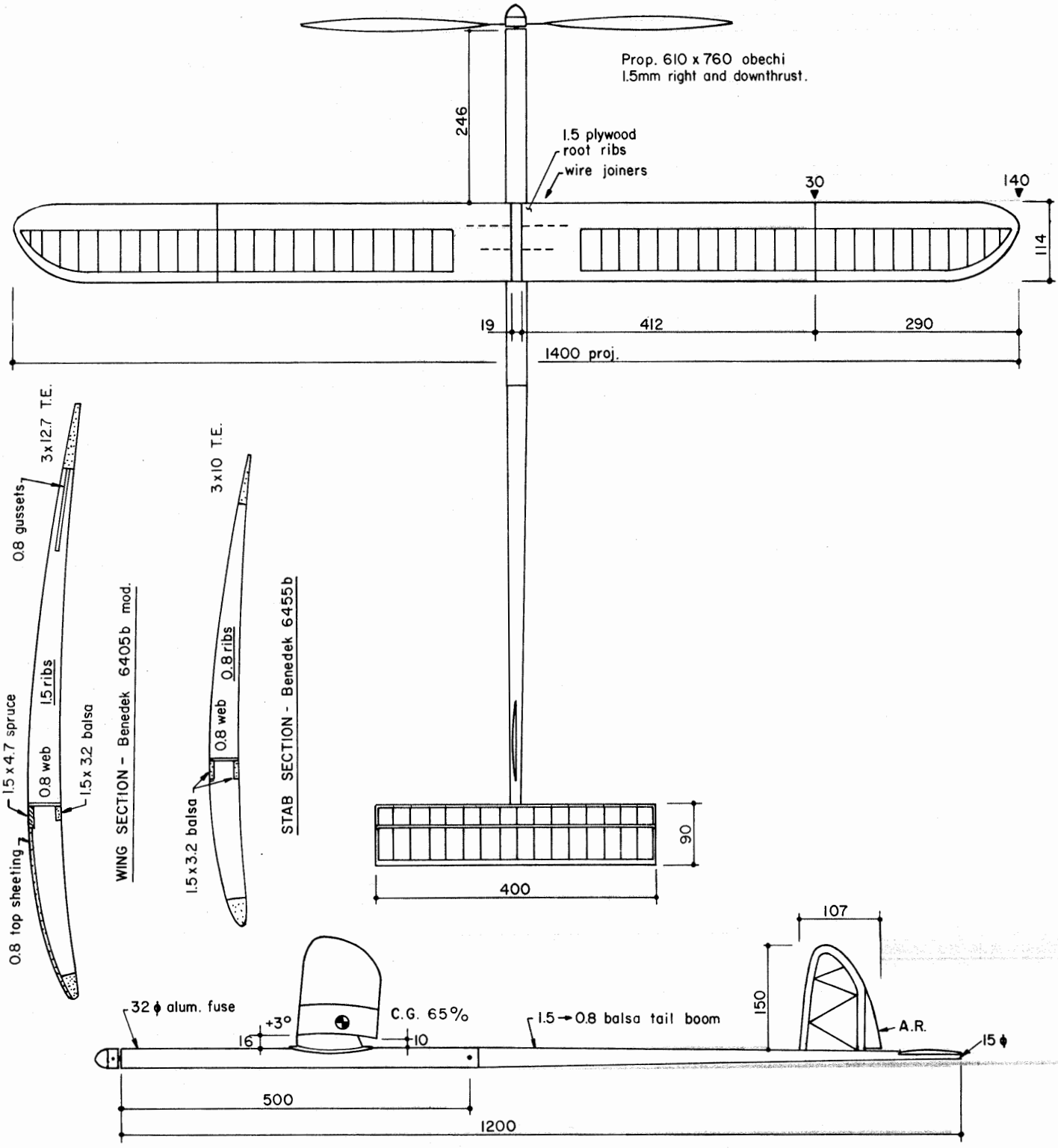
SCALE: 1/6
DR BY: WALT GHIO



VARIABLE INCIDENCE TAILPLANE DETAILS

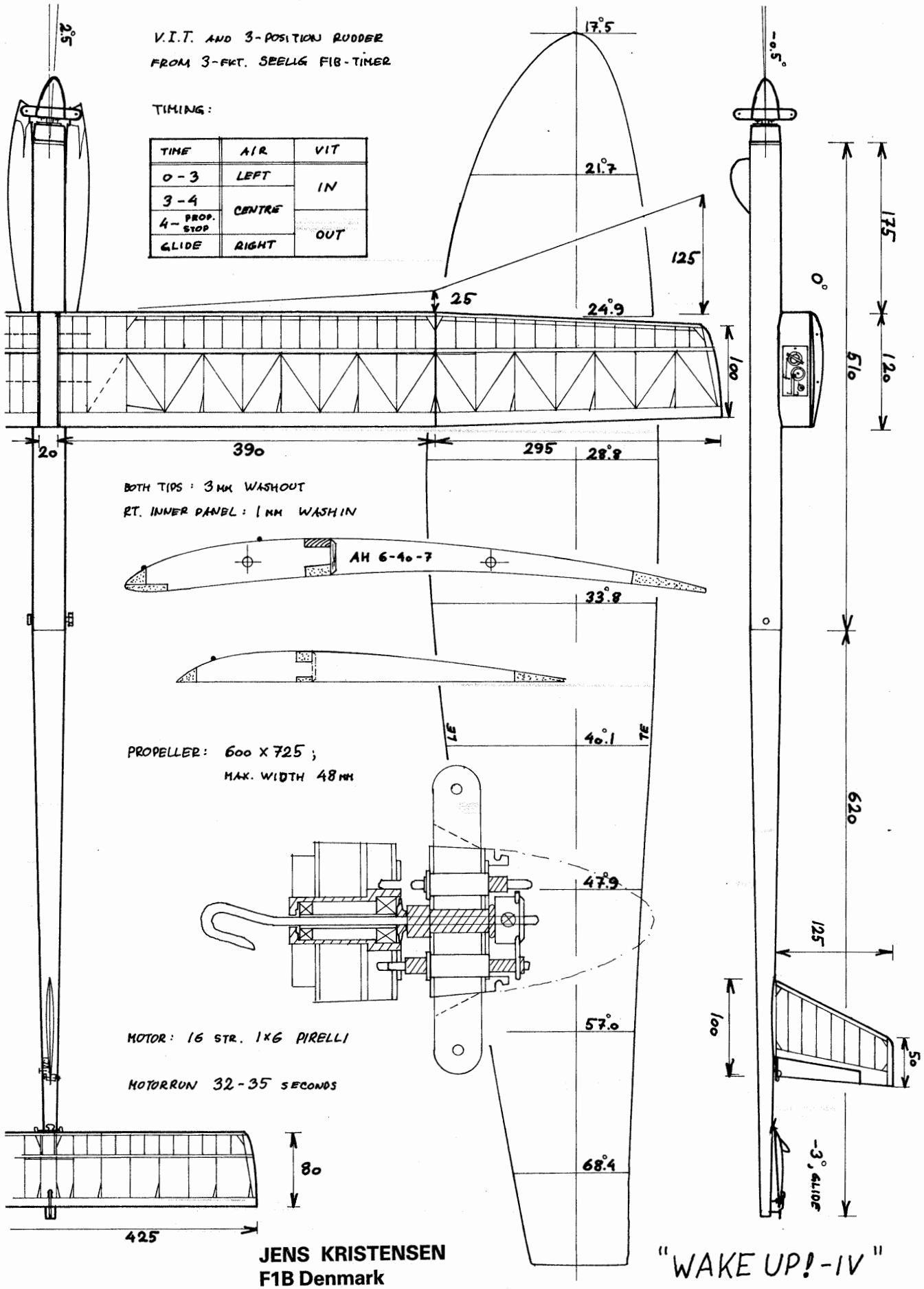


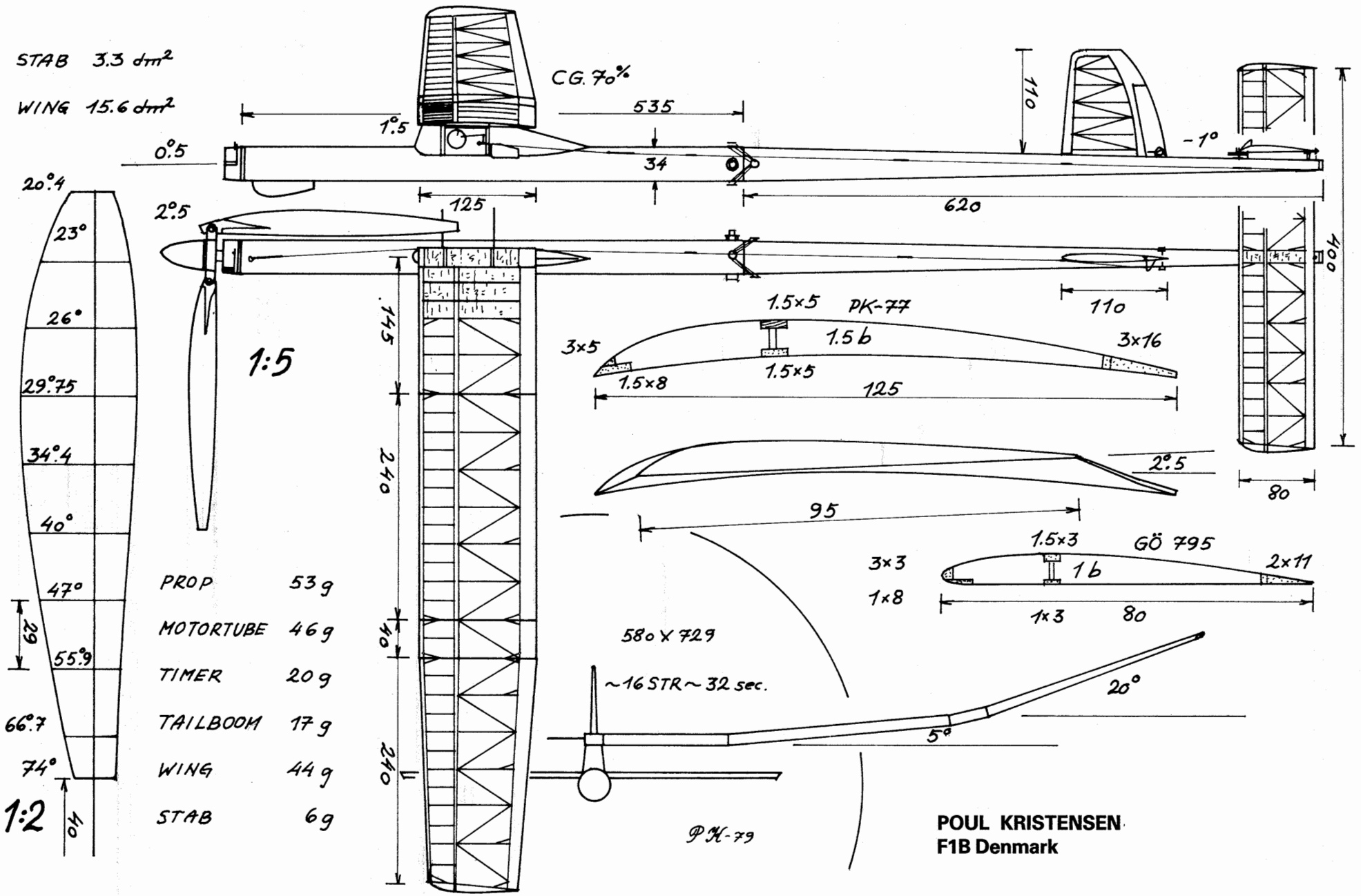

1 7/8" T
LAMINATED 8 x 1/32" TH.
14 STDS FAI
16 STDS PIRELLI
FUSE D/T
WEIGHT
WING 59
PROP 41
FUSE 50
BOOM 20
STAB 6
MISC. 12
BALLAST 3
191 g
AREA
245 in²
47.6 in²
5 1/8"
2 7/8" T
11"
T.E. 3/32" x 1/2"
ALL RIBS 1/16"
F/G SPAR
3/16" PINE RT. ∠
GOTT 499 (MOD)
3/32" x 1/2"
ALUM. TUBE INSERT FOR 1/8" WIRE
BALSA INSERT
3/32" x 3/8"
1/8 SQ
BENEDEK B6455B
27 1/2" P
KOREAN WITH MONTREAL STOP
16 3/16"
1 5/16"
11 3/4"
3 1/8"
1 1/2"
SCALE 1:6 AND F.S.
RONYTUBE FIBRE-GLASS SPAR
STAB RIBS 1/16" BALSA DOUBLE END * CENTER RIBS
15 1/4"
7 3/4"
4 3/4"
8 1/4"
DAN O'GRADY
F1B Canada
LAMINATED 6 x 1/32"
4 3/4"
2 1/2° DWN
1 1/2° RT
C.G. 70%
1 1/4"
0°
-3°
9/16"
20 3/4"
17 3/4"
4 1/4"
4 1/4"
FIBRE-GLASS FUSELAGE 1 1/4" DIA.
BOOM 2 x 1/32" TH. BALSA
NO V.I.T.
A/R OFF PROP STOP

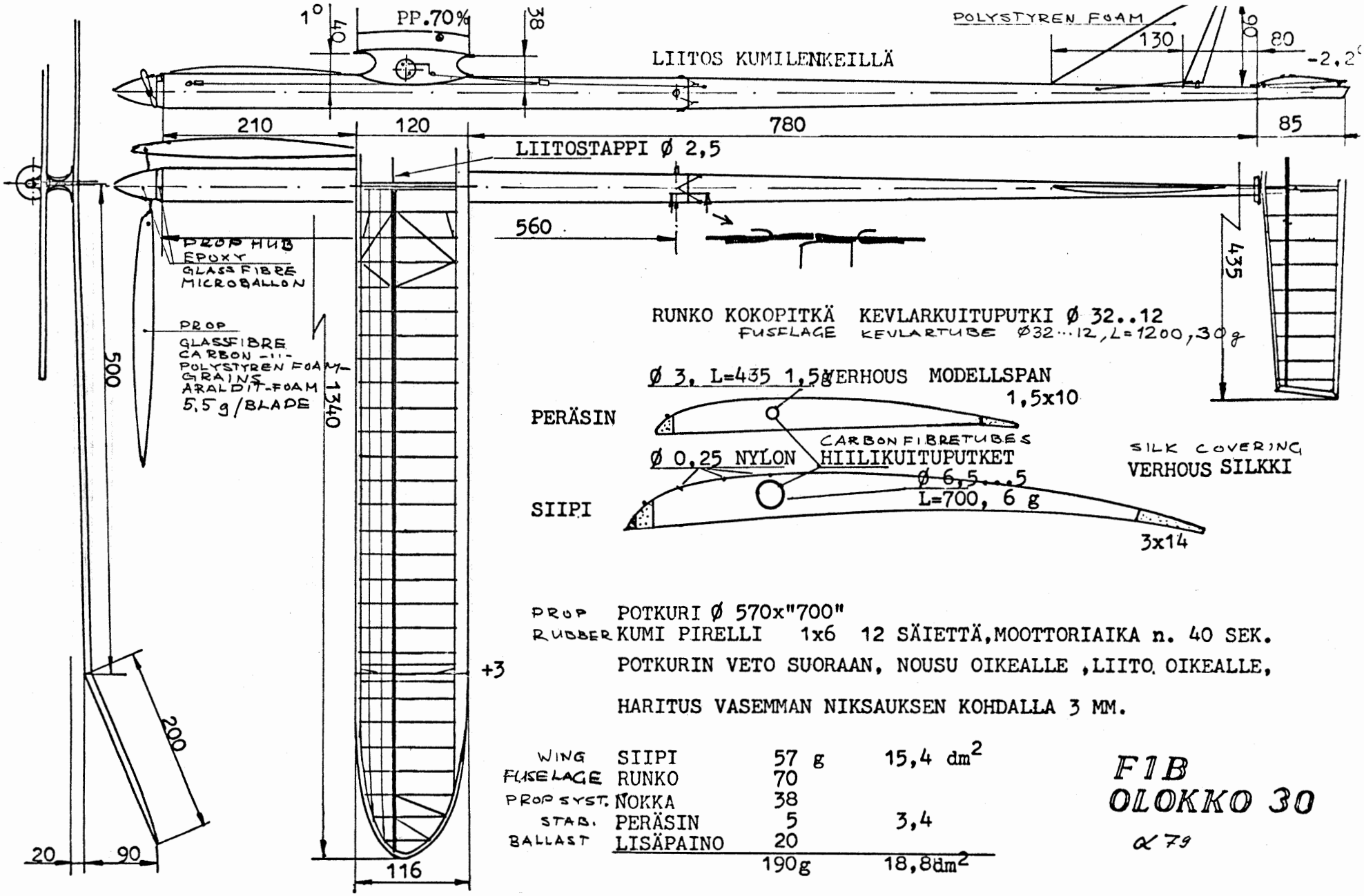


Dimensions in mm
Scale - 1:7.5
Tmelg

PAUL ROBERTS
F1B Canada


V.I.T. AND 3-POSITION RUDDER
FROM 3-FKT. SEELIG F1B-TIMER
TIMING:
TIME | AIR | VIT
0-3 | LEFT | IN
3-4 | CENTRE |
4- PROP. STOP | | OUT
GLIDE | RIGHT |
2°
17°5
21°7
24°9
-0.5°
0°
125
25
100
175
120
510
20
390
295
28°8
BOTH TIPS : 3 MM WASHOUT
RT. INNER PANEL : 1 MM WASH IN
AH 6-40-7
33°8
37
40°1
TE
PROPELLER: 600 X 725 ;
MAX. WIDTH 48 MM
620
47°9
125
100
50
57°0
MOTOR: 16 STR. 1X6 PIRELLI
MOTORRUN 32-35 SECONDS
-3°, ALLOF
68°4
80
425
JENS KRISTENSEN
F1B Denmark
"WAKE UP! - IV"


STAB 3.3 dm²
WING 15.6 dm²
CG. 70%
535
1°.5
0°.5
34
125
620
110
-1°
400
2°.5
20°.4
23°
26°
29°.75
34°.4
40°
47°
55°.9
66°.7
74°
29
40
1:2
1:5
145
240
140
240
1.5×5 PK-77
1.5 b
3×5
3×16
1.5×8
1.5×5
125
110
2°.5
80
95
1.5×3 GÖ 795
3×3
1×8
1 b
2×11
1×3
80
580 X 729
~16 STR~ 32 sec.
20°
5°
PK-79
PROP 53 g
MOTORTUBE 46 g
TIMER 20 g
TAILBOOM 17 g
WING 44 g
STAB 6 g
POUL KRISTENSEN
F1B Denmark



PROP POTKURI Ø 570x"700"

RUBBER KUMI PIRELLI 1x6 12 SÄIETTÄ, MOOTTORIAIKA n. 40 SEK.

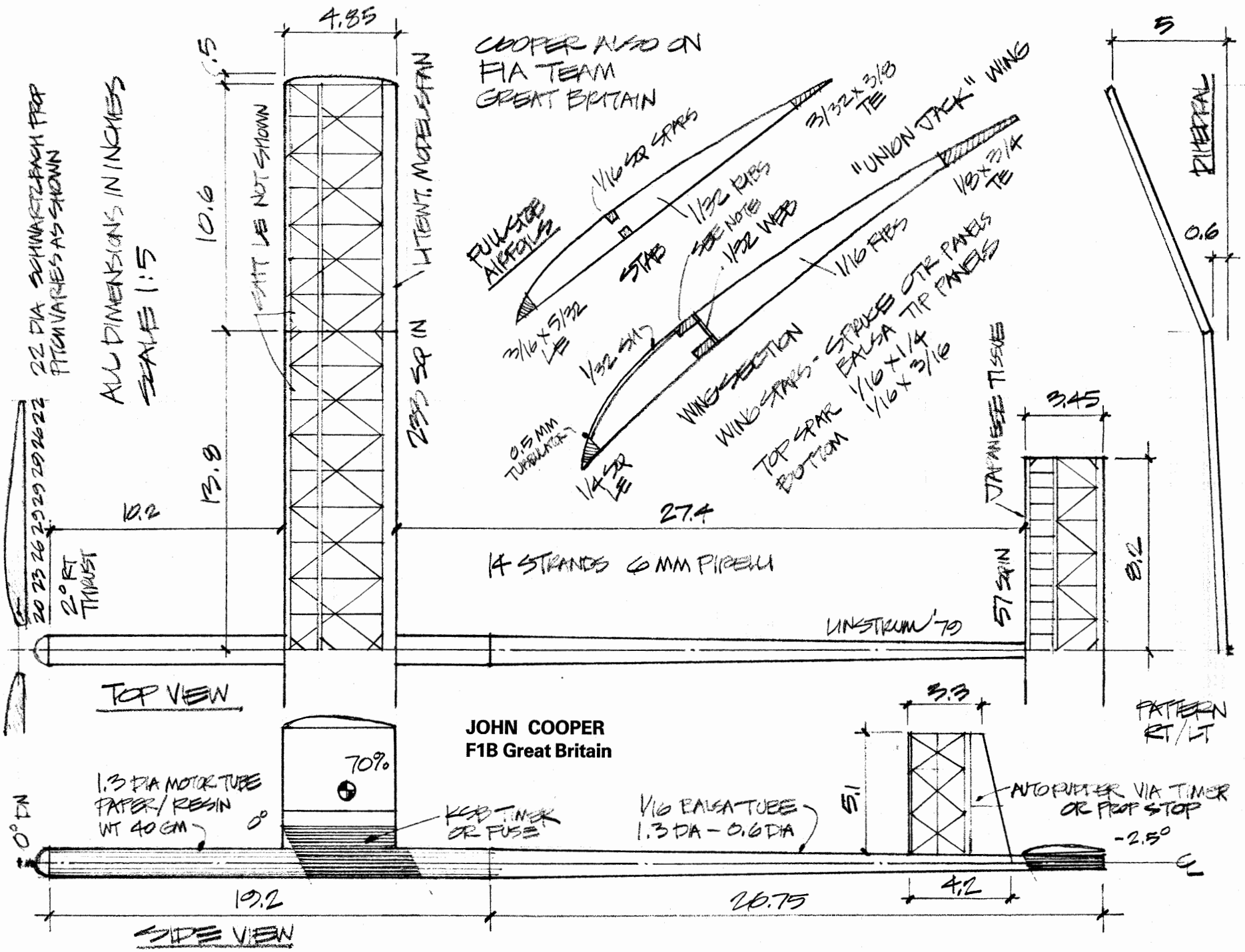
POTKURIN VETO SUORAAN, NOUSU OIKEALLE, LIITO OIKEALLE,

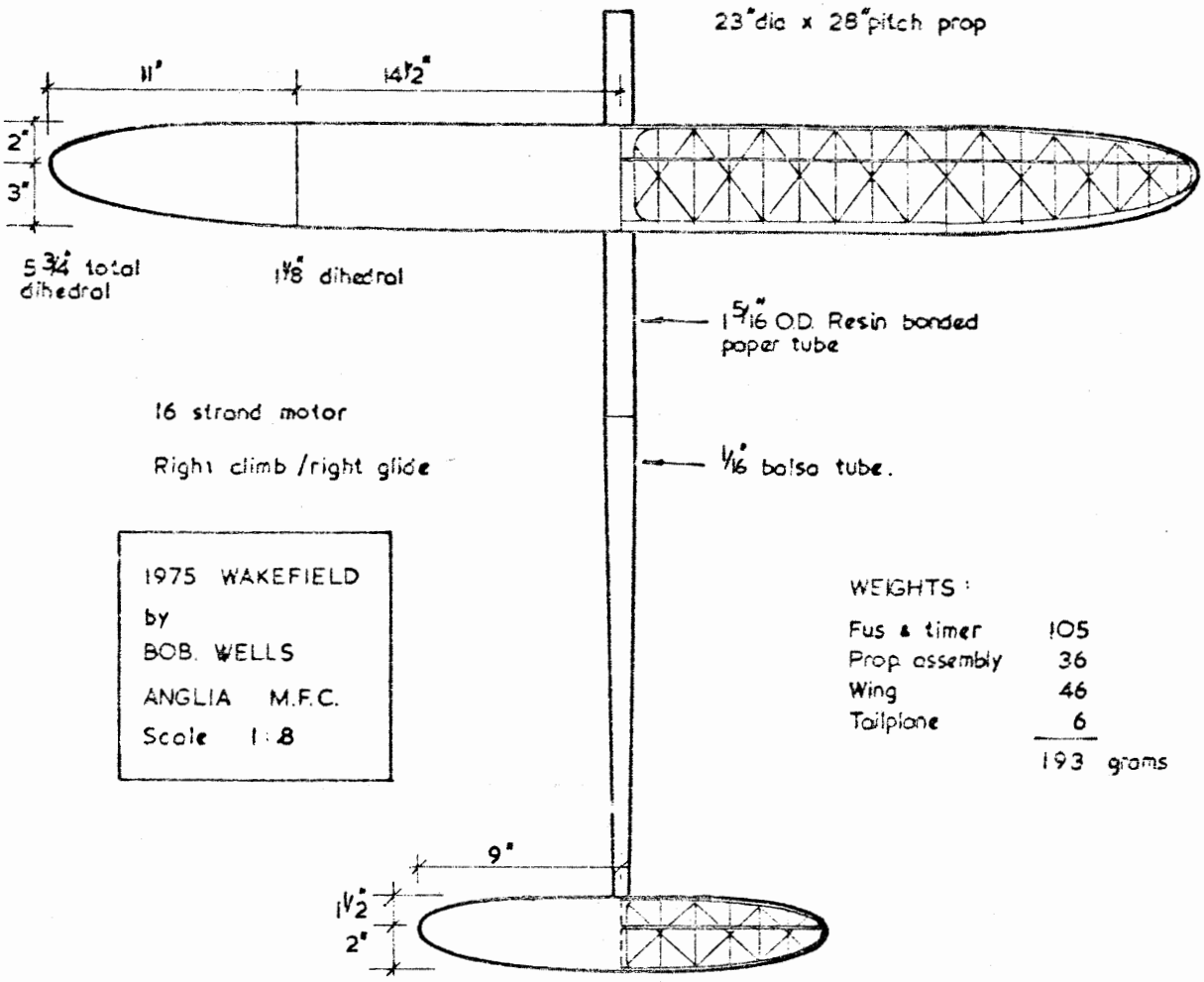
HARITUS VASEMMAN NIKSAUKSEN KOHDALLA 3 MM.

WING	SIIPI	57 g	15,4 dm²
FUSELAGE	RUNKO	70	
PROP SYST.	NOKKA	38	
STAB.	PERÄSIN	5	3,4
BALLAST	LISÄPAINO	20	
		190g	18,8dm²

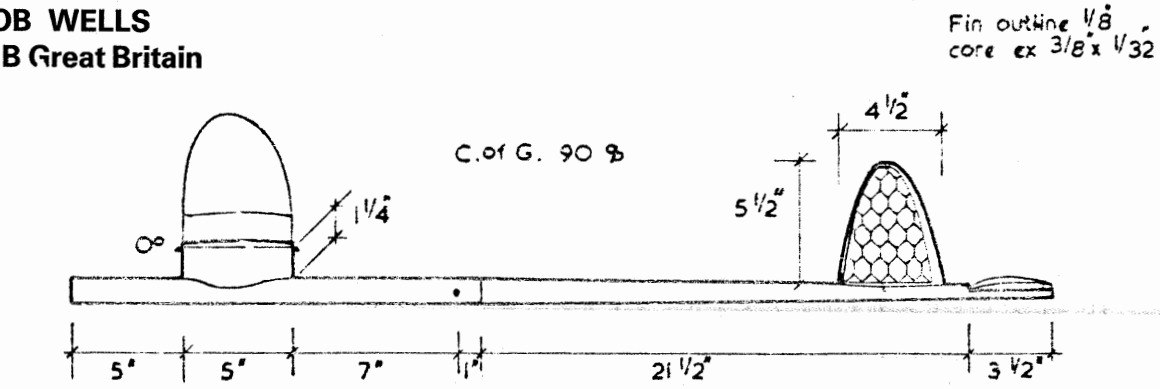
F1B
OLOKKO 30
α 79

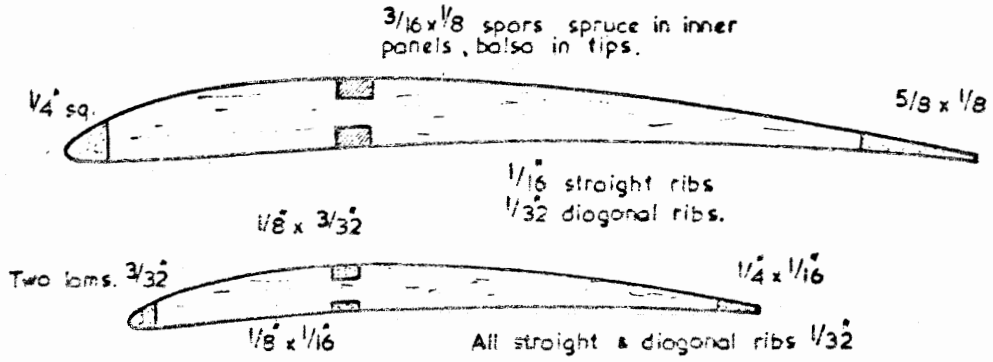
OSSI KILPELAINEN
F1B Finland


JOHN COOPER
F1B Great Britain
TOP VIEW
SIDE VIEW
ALL DIMENSIONS IN INCHES
SCALE 1:5
22 DIA ROHMARTBACH PROP
PITCH VARIES AS SHOWN
COOPER ALSO ON
FIA TEAM
GREAT BRITAIN
4.85
10.6
13.8
10.2
27.4
14 STRANDS 6 MM PIRELLI
LINSTRUM '70
2° RT THRUST
20 23 26 29 29 26 23
HTENT. MODEL SPAN
238 SQ IN
FULLER AIRFOIL
1/16 SQ SPARS
3/32 x 3/16 TE
1/32 RIBS
1/32 WEB
1/16 RIBS
1/32 SHT
3/16 x 5/32 LE
1/4 SQ LE
0.5 MM TURBULATOR
"UNION JACK" WING
1/8 x 3/4 TE
WING SECTION
WING SPARS - SPRUCE OTR PANELS
BALSA TIP PANELS
TOP SPAR 1/16 x 1/4
BOTTOM 1/16 x 3/16
JAPANESE TISSUE
3.45
8.1
57 SQ IN
5
RIB DETAIL
0.6
PATTERN RT/LT
5.3
5.1
4.2
AUTO PULLER VIA TIMER OR PROP STOP
-2.5°
1.3 DIA MOTOR TUBE
PAPER/RESIN
WT 40 GM
0°
KOD TIMER OR FUSE
1/16 BALSA TUBE
1.3 DIA - 0.6 DIA
70%
10.2
26.75

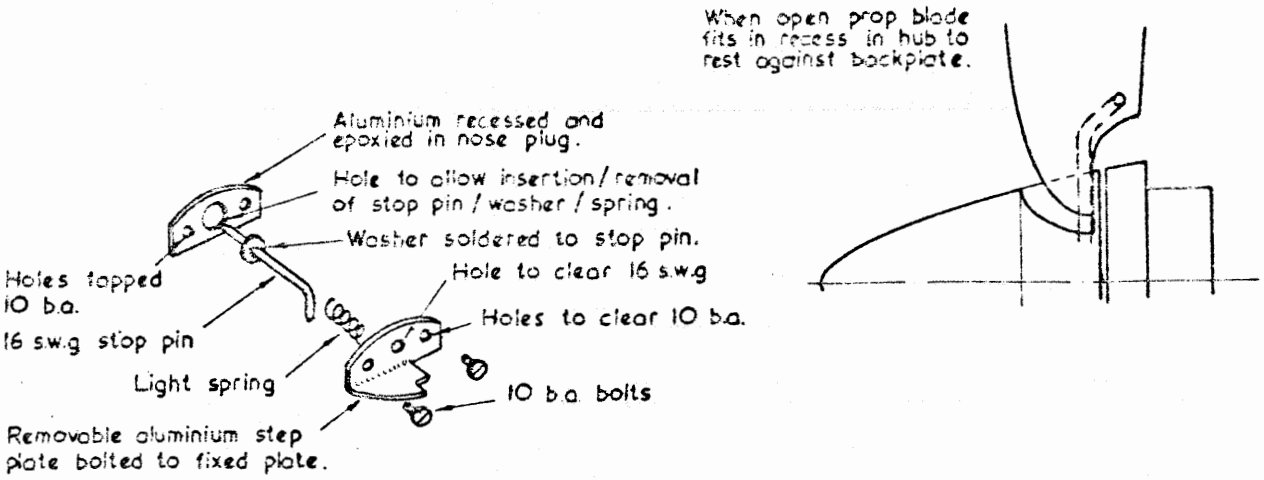


BOB WELLS
F1B Great Britain

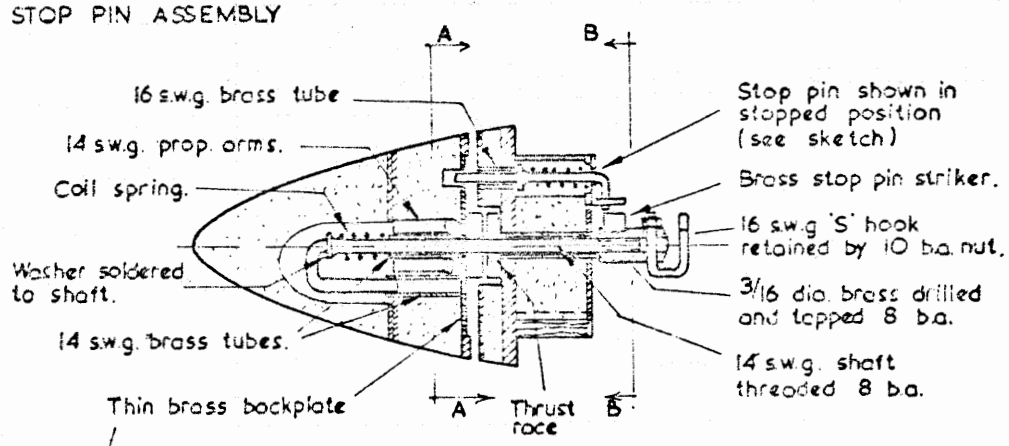


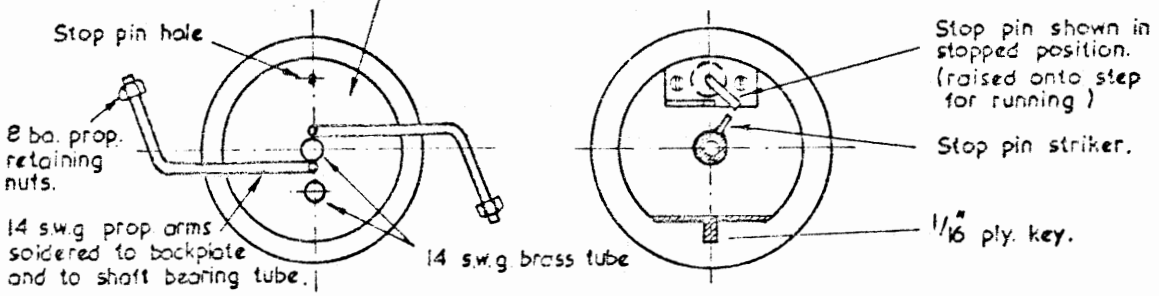


FULL SIZE SECTIONS



SKETCH OF STOP PIN ASSEMBLY





SECTION A A

SECTION B B

Block construction :

Spinner from balsa block backed 1/32" ply.

Hub from 3/8 balsa faced 1/32 ply. 1"dia. brass backplate and 1"i.d. x 1¼" o.d. ply. ring epoxied to back of hub.

Nose block 3/32" balsa faced 1/32" ply. backed 1/16" ply.

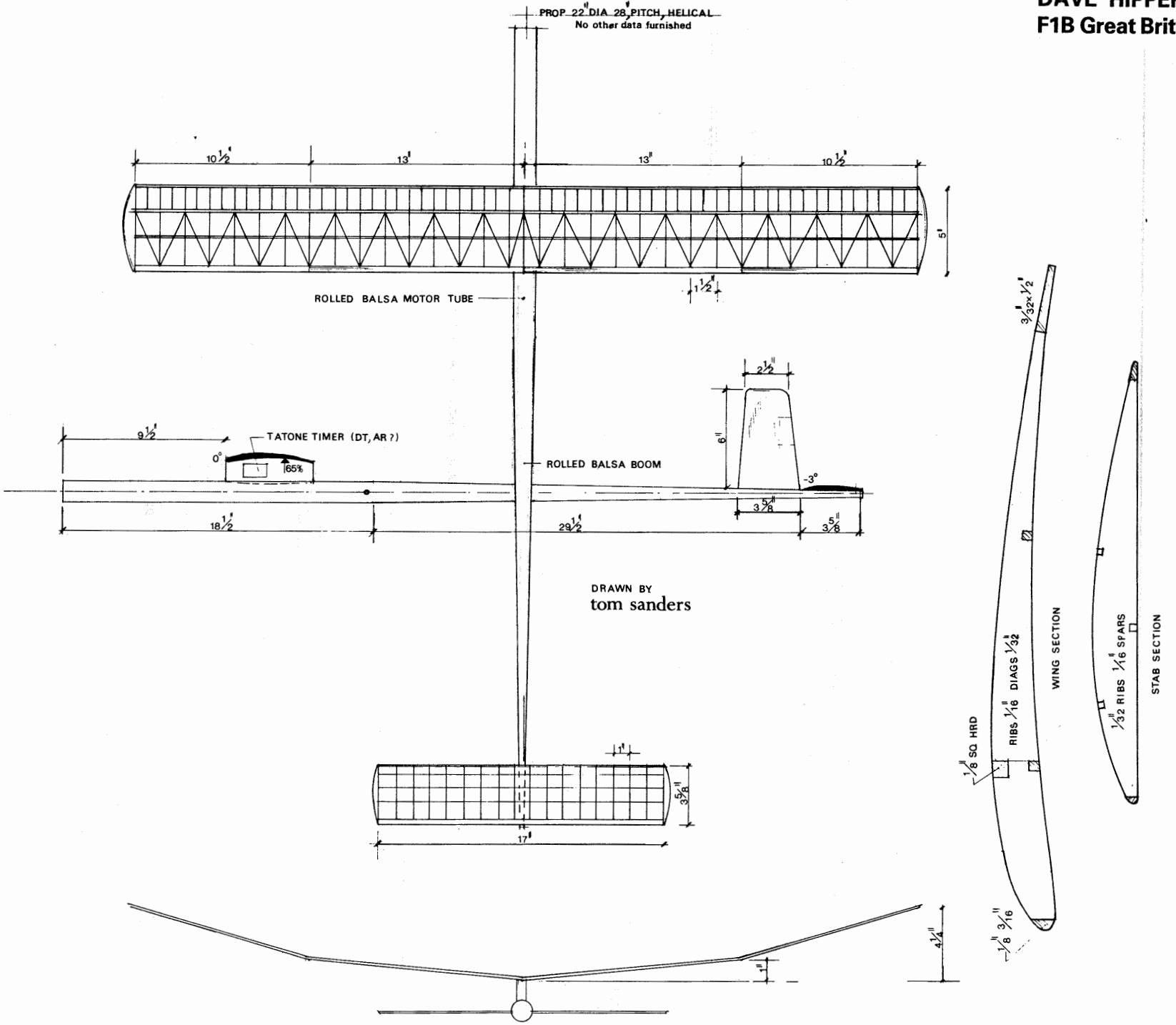
Nose plug 3/8" balsa backed 1/32 balsa.

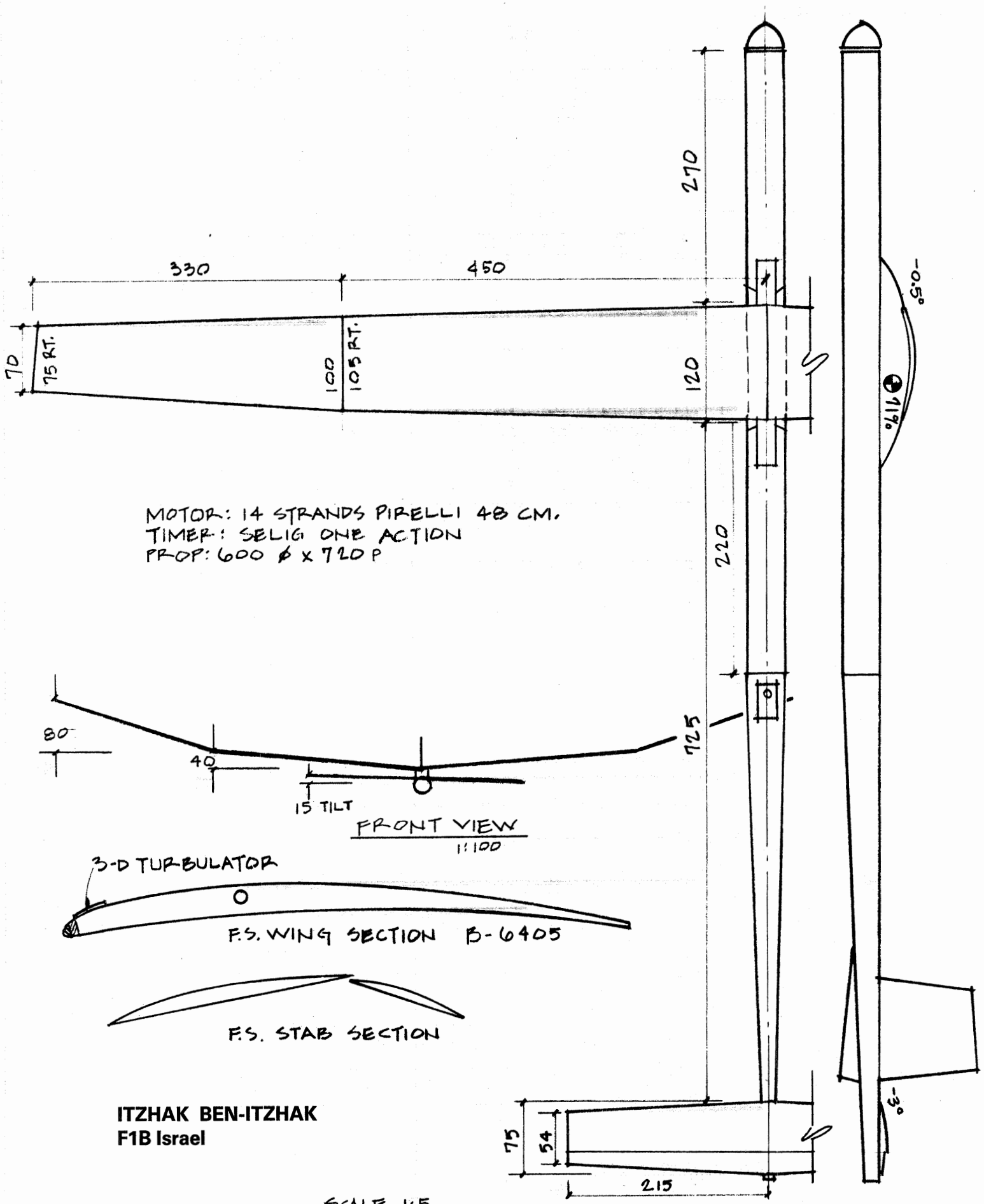
BOB WELLS
F1B Great Britain

BOB WELLS' 1975 WAKEFIELD

FULL SIZE DETAILS OF PROP ASSEMBLY

DAVE HIPPERSON
F1B Great Britain

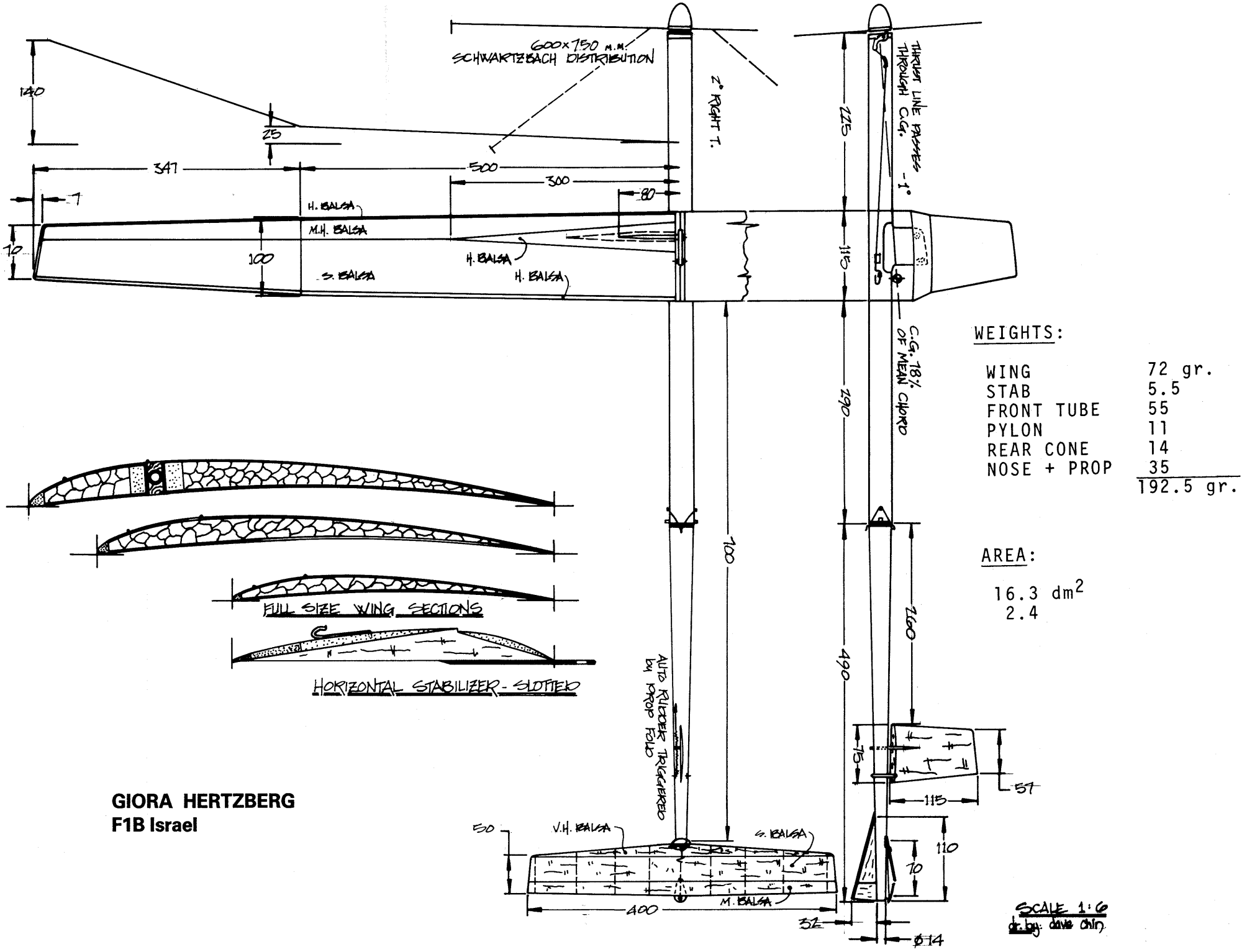




ITZHAK BEN-ITZHAK
F1B Israel

SCALE 1:5
DIMENSIONS IN M.M.

DRAWN BY MIKE ARAK



GIORA HERTZBERG
F1B Israel

WEIGHTS:

WING	72 gr.
STAB	5.5
FRONT TUBE	55
PYLON	11
REAR CONE	14
NOSE + PROP	35
	192.5 gr.

AREA:

16.3 dm^2
2.4

SCALE 1:6
or by: dave chin

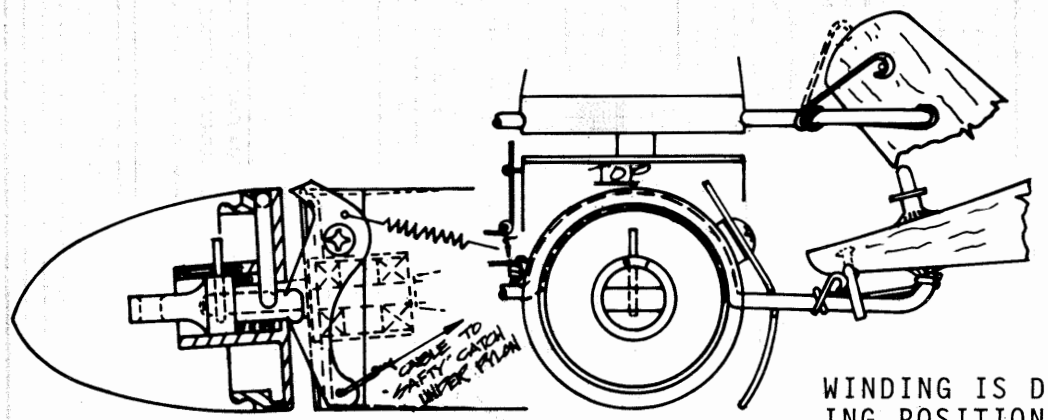
WING: 0.02 DENSITY S. FOAM CORE, COVERED TOP AND BOTTOM WITH BALSA 0.5 0.4 0.3 MM AND MICROGLASS, USING THINNED EPOXY, GLUED IN VACUUM.
AIRFOIL: GARD 6509, UNDERCAMBER REDUCED TO 3.6%, UPPERCAMBER: ROOT - UNCHANGED, DIHEDRAL BREAK - REDUCED TO 8.6% TIP - REDUCED TO 7.8%, 0.5 MM. THREAD TURB. AT 7;23%.
WARPS: ALL PANELS INTENDED TO BE FLAT, THEN RIGHT HALF INC. IS INCREASED TO OBTAIN BEST THERMAL SENSITIVITY.

STAB: Q-GRAIN BALSA ONLY, GLUED WITH CNA GLUE, OUTLINED WITH HEAVY GLASS FIBER THREAD, POLYURETHANE VARNISHED, SLOTTED, HIGHLY CAMBERED AIRFOIL.

FUSELAGE: FRONT - ANODIZED DURAL, REAR CONE - BALSA 1.2 0.8 MM WITH 0.8 MM FORMERS, 20 MM SPACED. PYLON - 4 MM END GRAIN BALSA SANDWICHED BETWEEN 0.25 MM GLASS FIBER/EPOXY VACUUM FORMED. HELD ON TUBE WITH MASKING TAPE FRONT WING WIRE - 2.5 MM, 60 MM LONG. REAR WIRE - PASSES DIAGONALLY THROUGH 3 M SCREW SLOTTED IN PYLON SO THAT BOTH TOTAL AND RELATIVE INCIDENCES ARE ADJUSTABLE.

POWER: 14 ST. NEW PIRELLI, 360-420 TURNS, 35-45 SEC. MOTOR RUN.

PATTERN: WIDE RIGHT TURN CLIMB, RIGHT-LEFT CLIMB TRIM; WIDE RIGHT GLIDE TURN (40-45 SEC.)

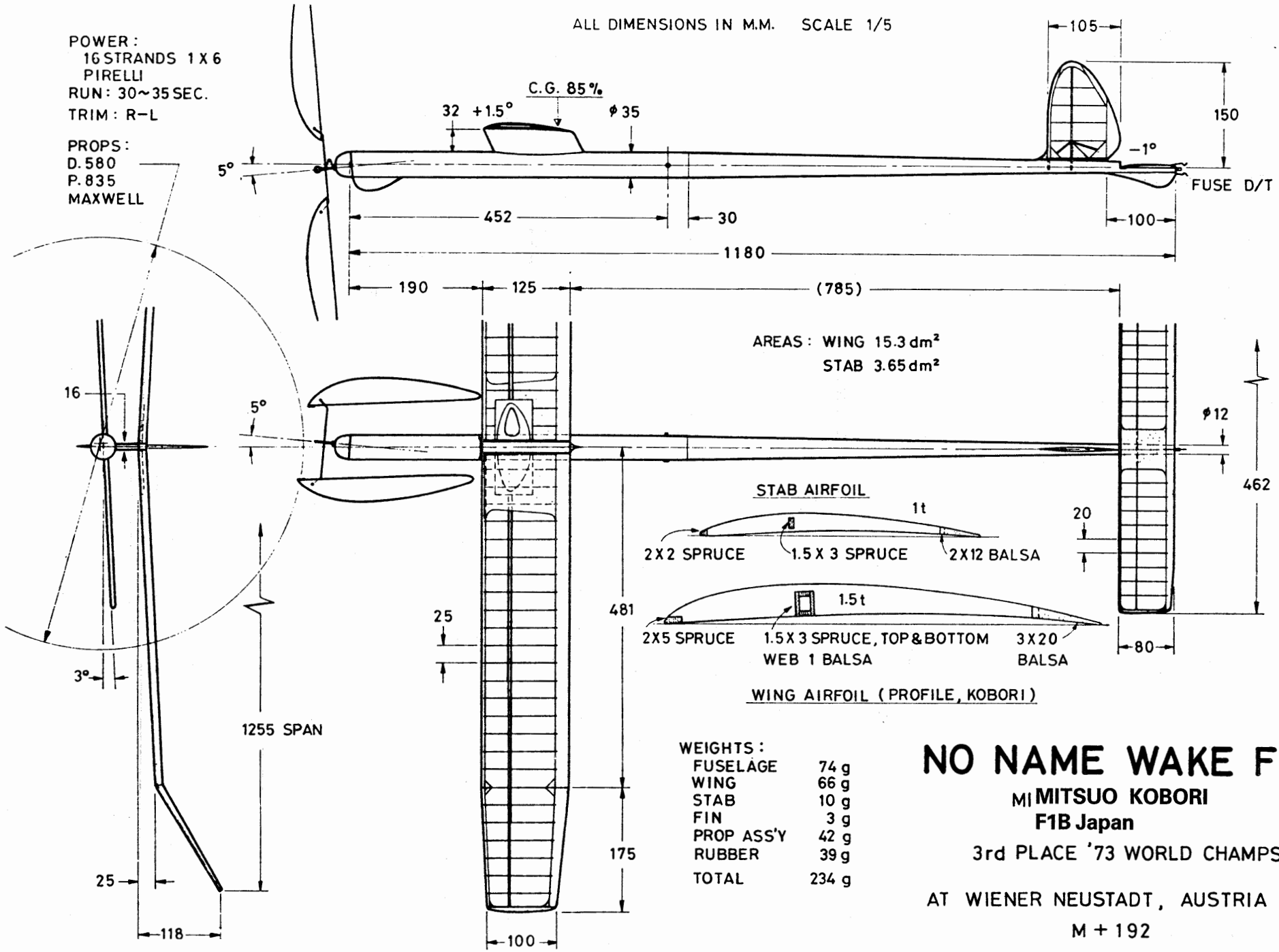


DETAIL PROP HUB

SCALE: 1:1

WINDING IS DONE WITHOUT PROP. "WAITING POSITION IS WITH HUB IN FOREWARD POSITION, LEVER ROTATED SO THAT ITS TIP ARRESTS HUB. BLADES ARE SEMI-FOLDED HELD IN PLACE BY 0.6 MM PIANO WIRE "CATCHES". ON LAUNCH LEVER IS ROTATED TO SHOWN POSITION, PROP STARTS TURNING AND BLADES OPEN. WHEN TORQUE RUNS OUT HUB MOVES BACKWARDS, STRIKES AND RELEASES SMALL LEVER CONNECTED TO AUTO-RUDDER, THEN LOCKS IN SMALL RECESS IN LEVER TO ENSURE RELIABLE FOLD WITH FRONT BEARING DIRT PROTECTED.

GIORA HERTZBERG
F1B Israel



WEIGHTS :

FUSELAGE	74 g
WING	66 g
STAB	10 g
FIN	3 g
PROP ASS'Y	42 g
RUBBER	39 g
TOTAL	234 g

NO NAME WAKE F1B

MI **MITSUO KOBORI**

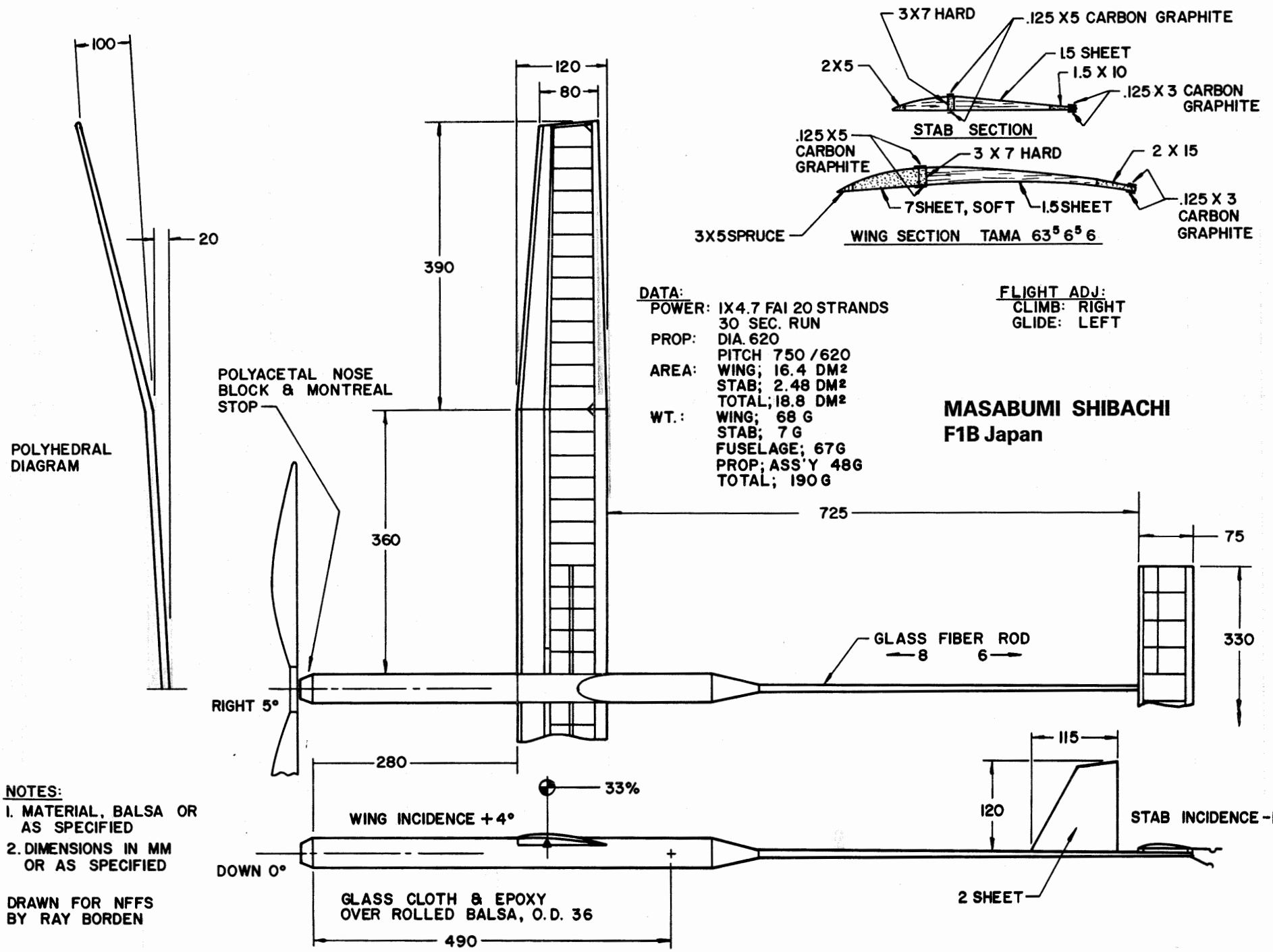
F1B Japan

3rd PLACE '73 WORLD CHAMPS

AT WIENER NEUSTADT, AUSTRIA

M + 192

DRAWN BY H. KATSUTA



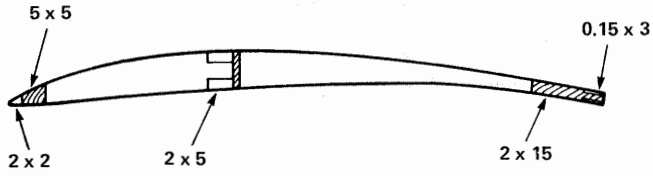
DATA:
POWER: 1X4.7 FAI 20 STRANDS
30 SEC. RUN
PROP: DIA. 620
PITCH 750/620
AREA: WING; 16.4 DM²
STAB; 2.48 DM²
TOTAL; 18.8 DM²
WT.: WING; 68 G
STAB; 7 G
FUSELAGE; 67G
PROP; ASS'Y 48G
TOTAL; 190 G

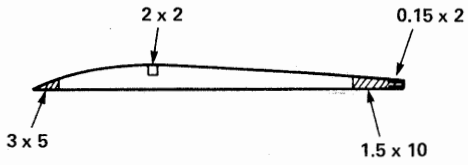
FLIGHT ADJ:
CLIMB: RIGHT
GLIDE: LEFT

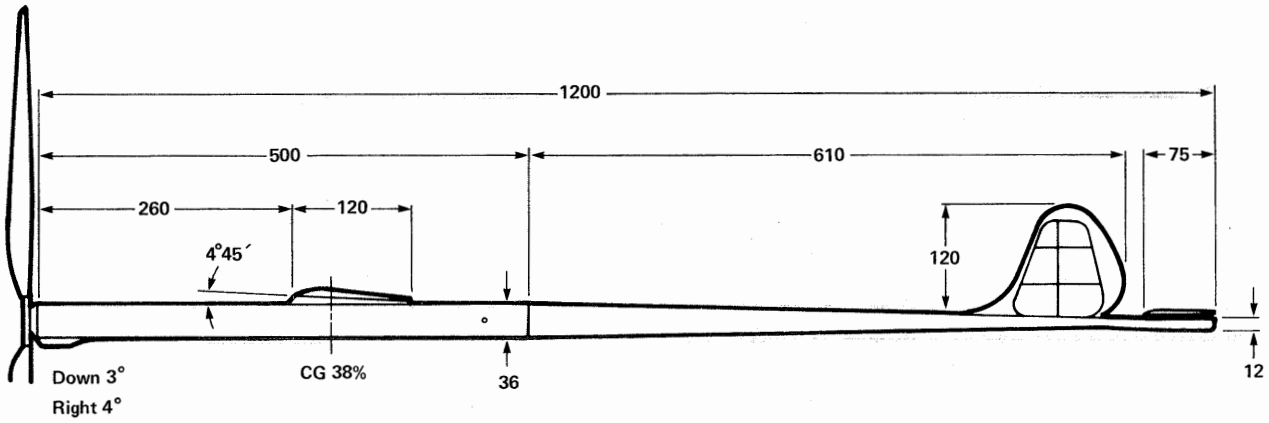
MASABUMI SHIBACHI
F1B Japan

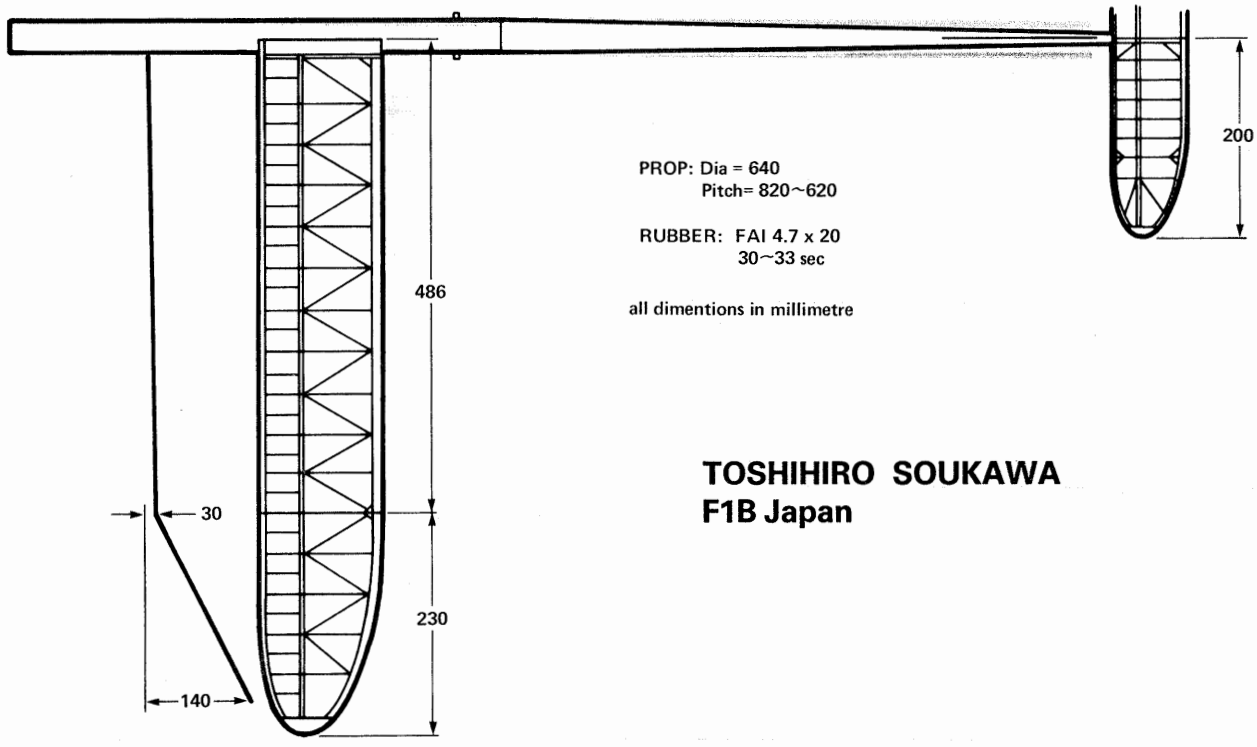
NOTES:
1. MATERIAL, BALSA OR AS SPECIFIED
2. DIMENSIONS IN MM OR AS SPECIFIED

DRAWN FOR NFFS
BY RAY BORDEN



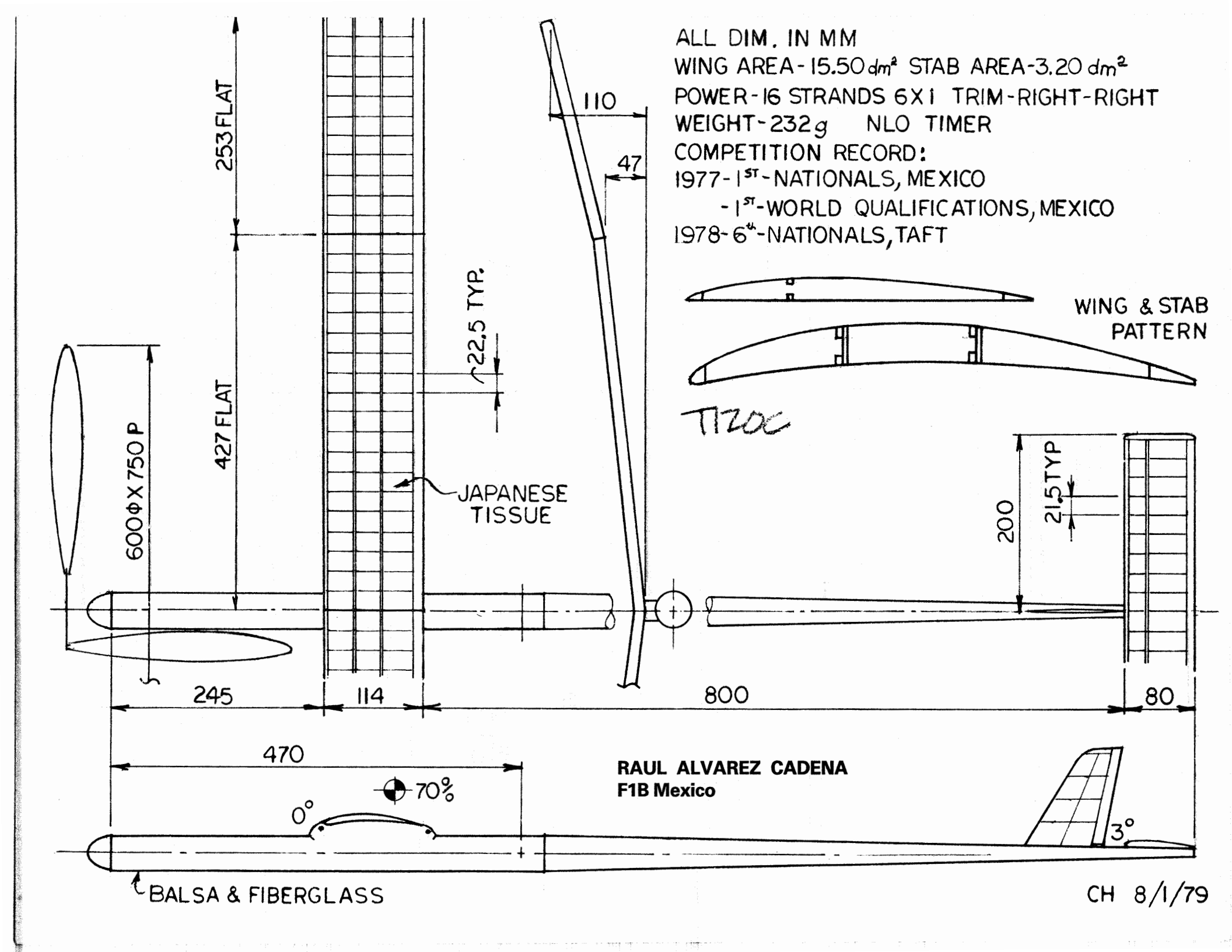


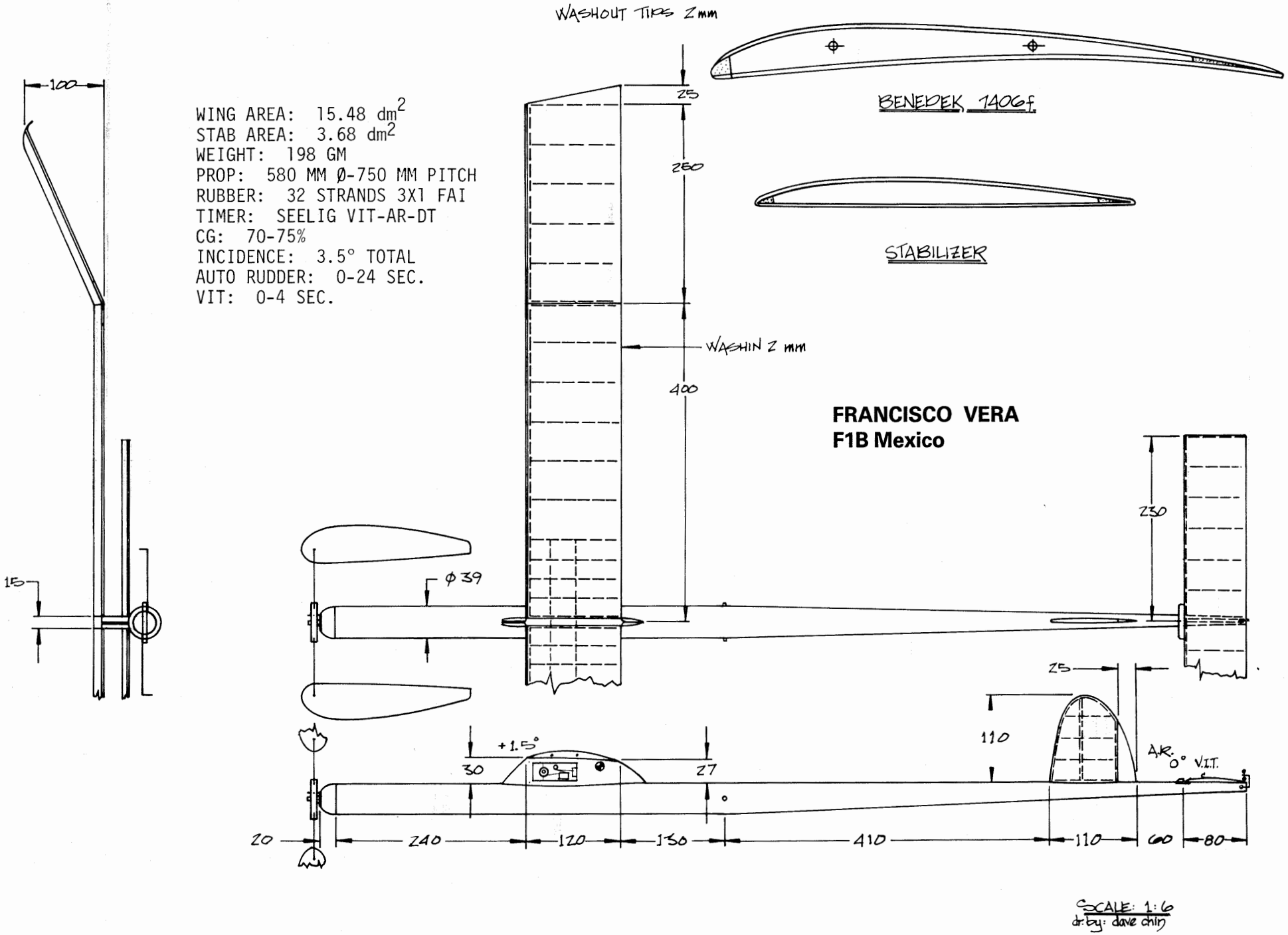


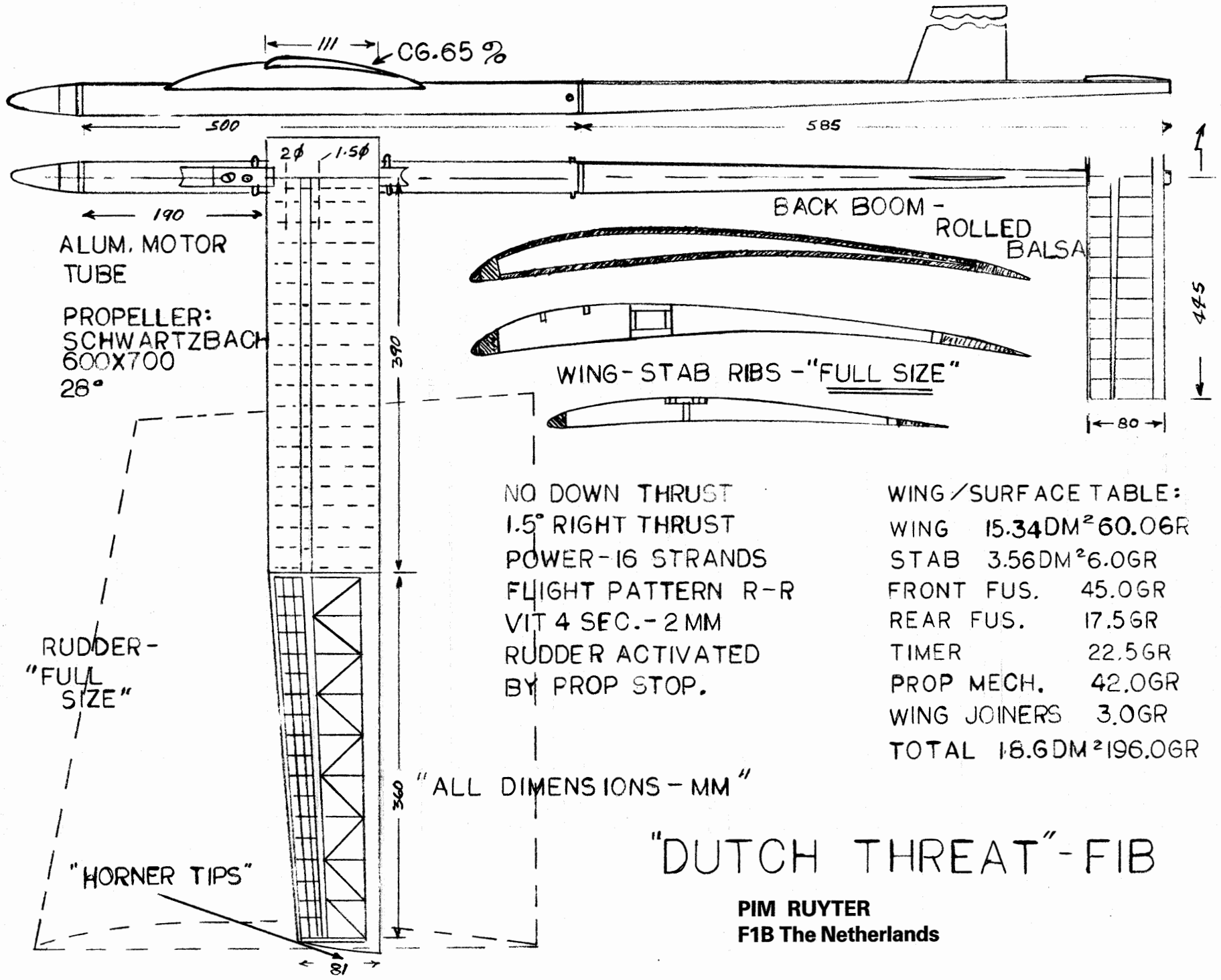


TOSHIHIRO SOUKAWA
F1B Japan

DRAWN BY JOE Mc CARTHY


ALL DIM. IN MM
WING AREA - 15.50 dm² STAB AREA - 3.20 dm²
POWER - 16 STRANDS 6X1 TRIM - RIGHT - RIGHT
WEIGHT - 232 g NLO TIMER
COMPETITION RECORD:
1977 - 1ST - NATIONALS, MEXICO
- 1ST - WORLD QUALIFICATIONS, MEXICO
1978 - 6th - NATIONALS, TAFT
WING & STAB PATTERN
TIZOC
253 FLAT
427 FLAT
22.5 TYP.
110
47
600 Φ X 750 P
JAPANESE TISSUE
200
21.5 TYP
245
114
800
80
470
70%
0°
3°
RAUL ALVAREZ CADENA
F1B Mexico
BALSA & FIBERGLASS
CH 8/1/79


WASHOUT TIPS 2mm
100
WING AREA: 15.48 dm2
STAB AREA: 3.68 dm2
WEIGHT: 198 GM
PROP: 580 MM Ø-750 MM PITCH
RUBBER: 32 STRANDS 3X1 FAI
TIMER: SEELIG VIT-AR-DT
CG: 70-75%
INCIDENCE: 3.5° TOTAL
AUTO RUDDER: 0-24 SEC.
VIT: 0-4 SEC.
BENEDEK 1406f
STABILIZER
25
250
WASHIN 2 mm
400
FRANCISCO VERA
F1B Mexico
230
15
Ø 39
25
110
+1.5°
30
27
A.R. 0°
V.I.T.
20
240
120
130
410
110
60
80
SCALE: 1:6
dr. by: dave ching

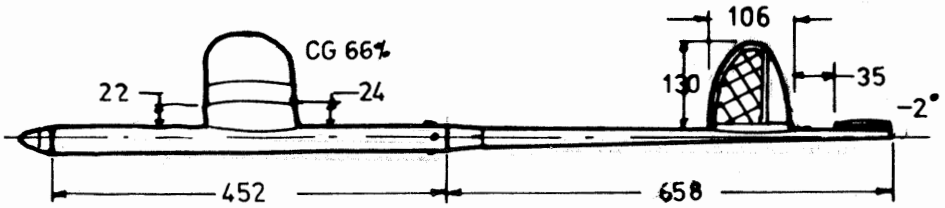


WING/SURFACE TABLE:

WING	15.34DM²	60.0GR
STAB	3.56DM²	6.0GR
FRONT FUS.		45.0GR
REAR FUS.		17.5GR
TIMER		22.5GR
PROP MECH.		42.0GR
WING JOINERS		3.0GR
TOTAL	18.6DM²	196.0GR

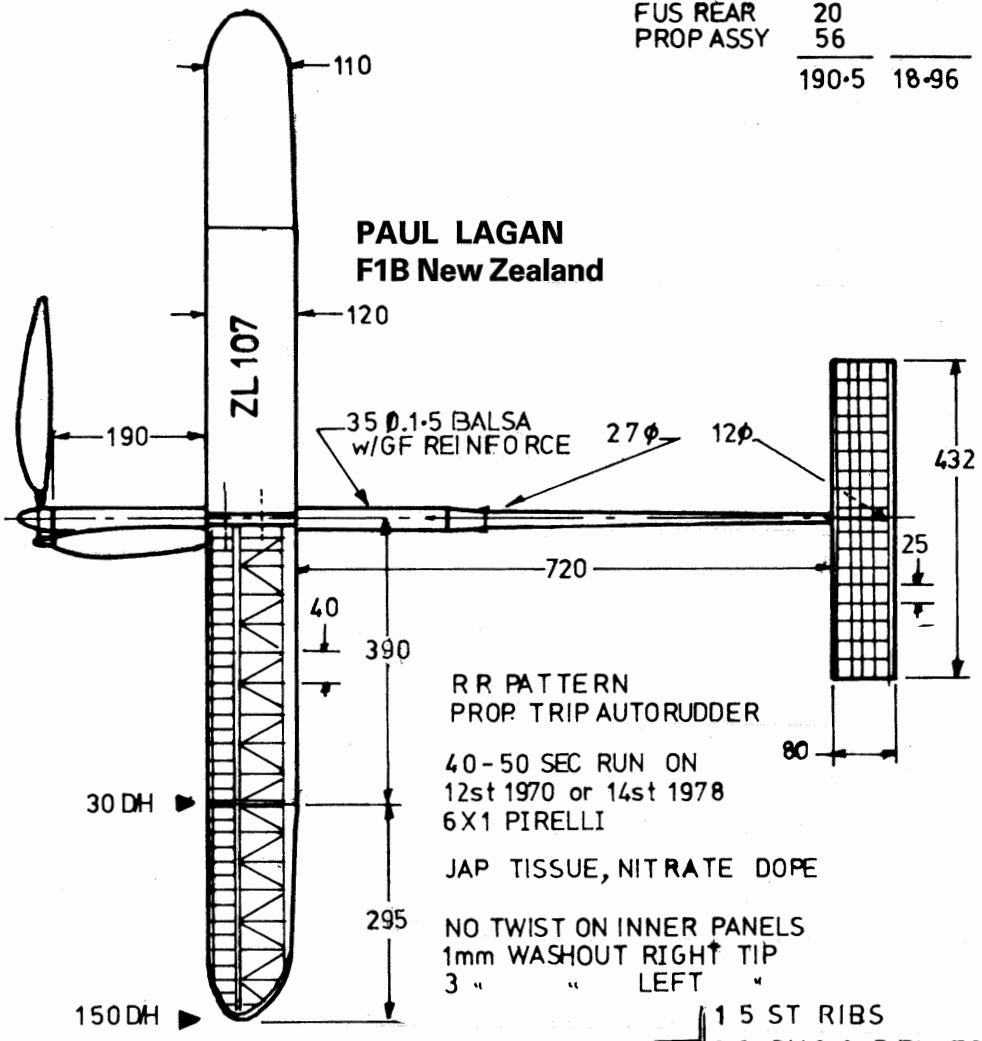
"DUTCH THREAT" - F1B

PIM RUYTER
F1B The Netherlands



4° DOWN 10mm PYLON
3° RIGHT THRUST

	gm	dm²
WING	51	15·5
STAB	6·5	3·46
FUS FRONT	57	
FUS REAR	20	
PROP ASSY	56	
	190·5	18·96



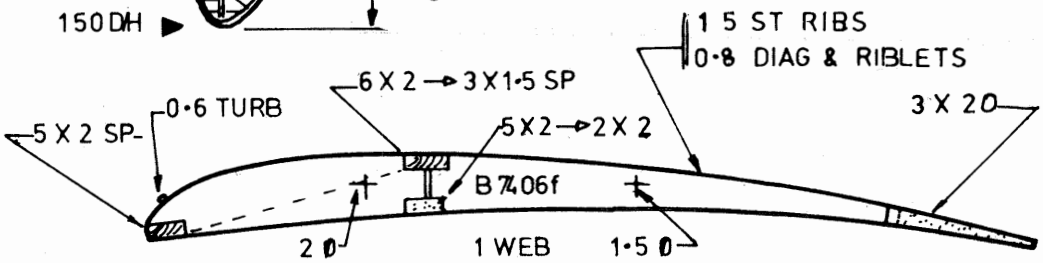
PAUL LAGAN
F1B New Zealand

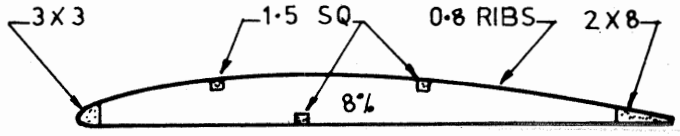
R R PATTERN
PROP TRIP AUTORUDDER

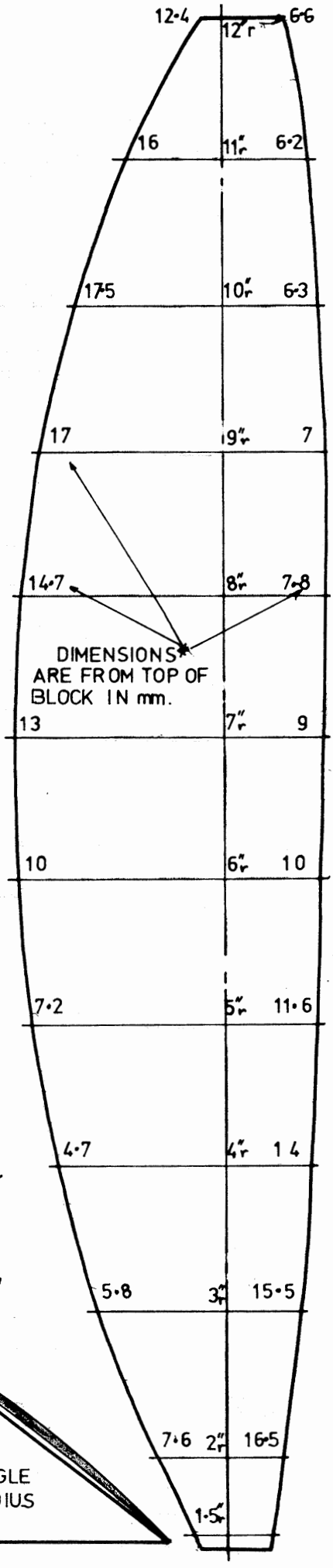
40-50 SEC RUN ON
12st 1970 or 14st 1978
6X1 PIRELLI

JAP TISSUE, NITRATE DOPE

NO TWIST ON INNER PANELS
1mm WASHOUT RIGHT TIP
3 " " LEFT "

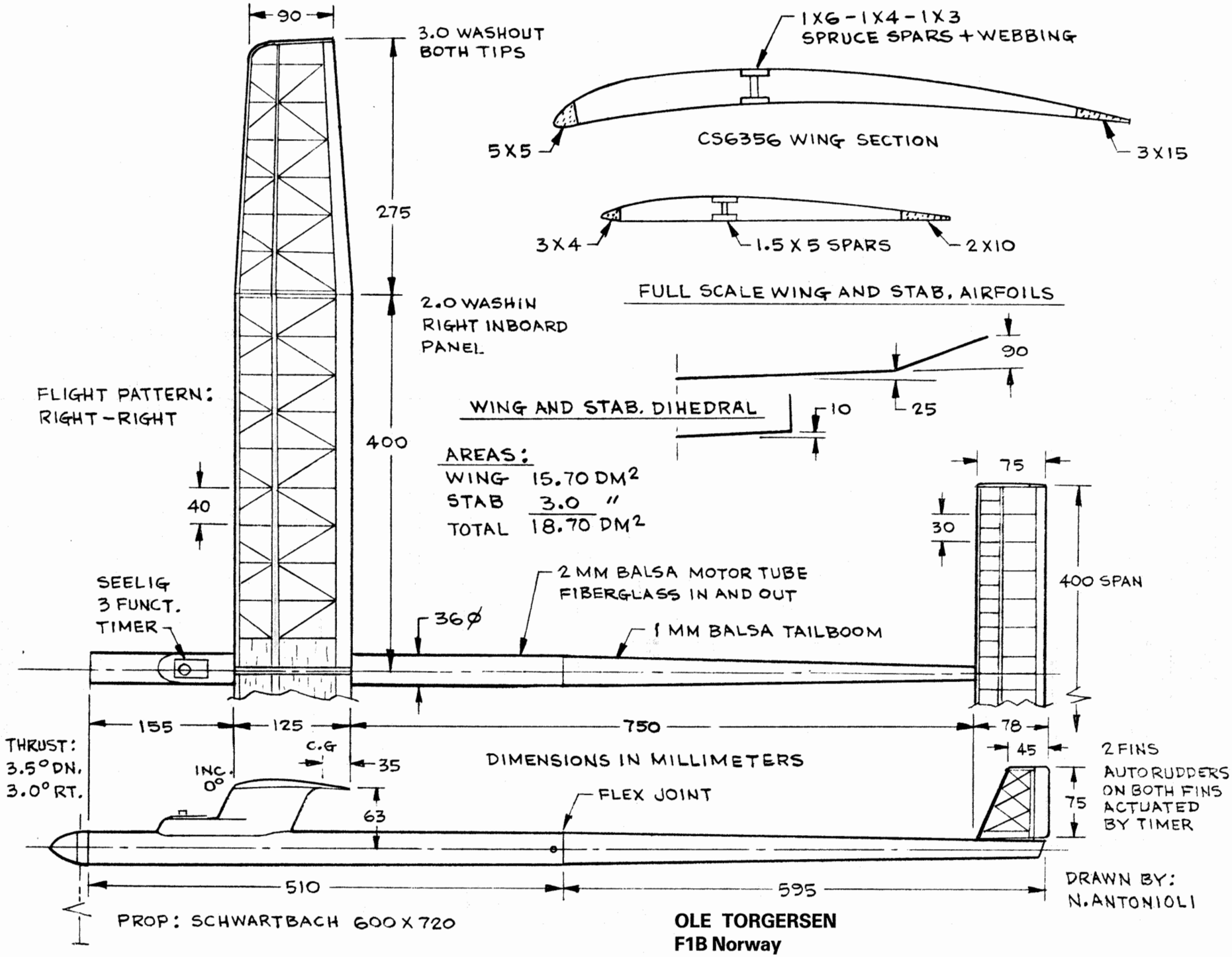




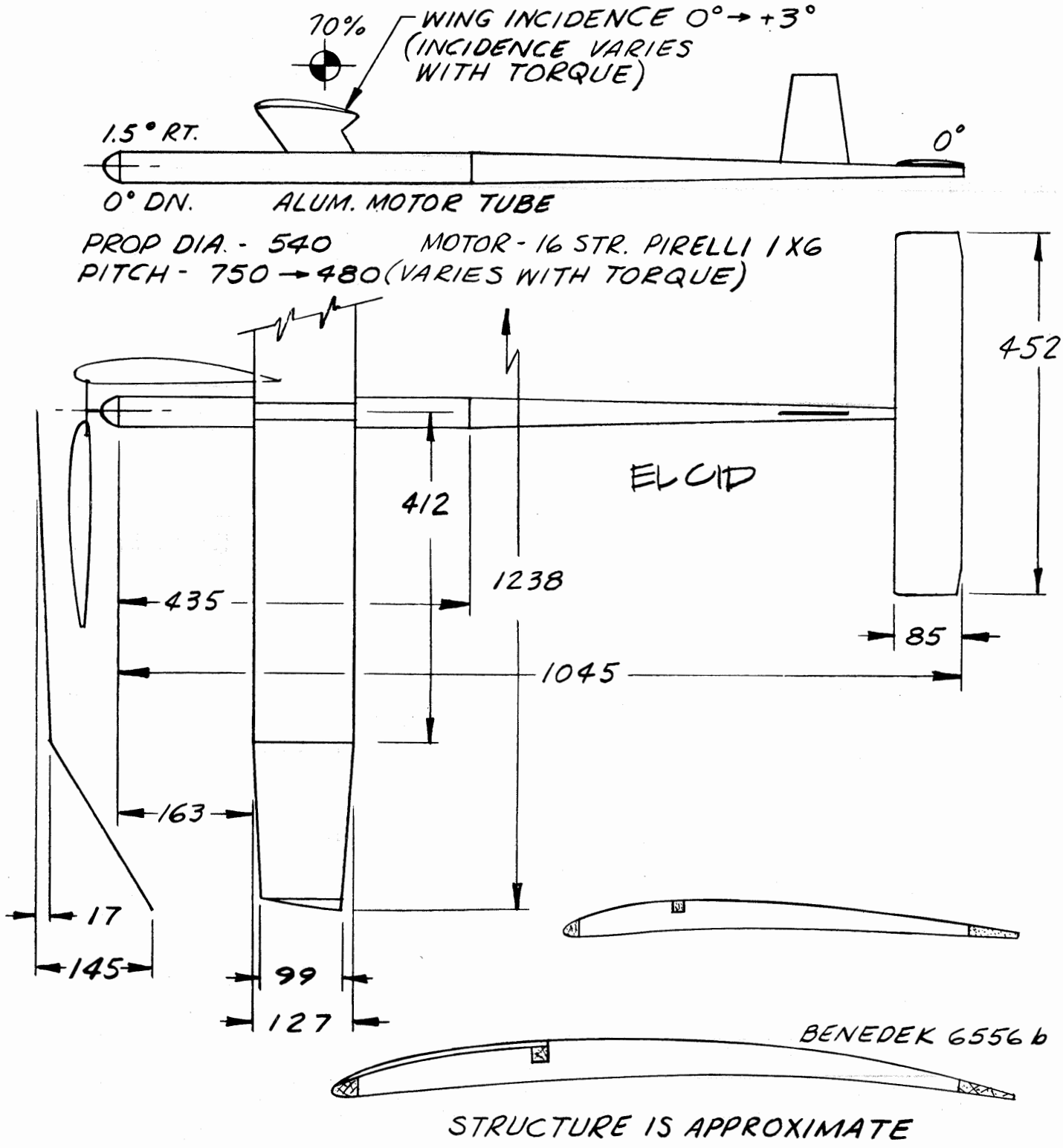


PROPELLOR: 24"X 29" WITH BROCKLEHURST PITCH DIST.
CARVED FROM 20mm SHEET.

1:10 P.H.L. 4 JULY '79



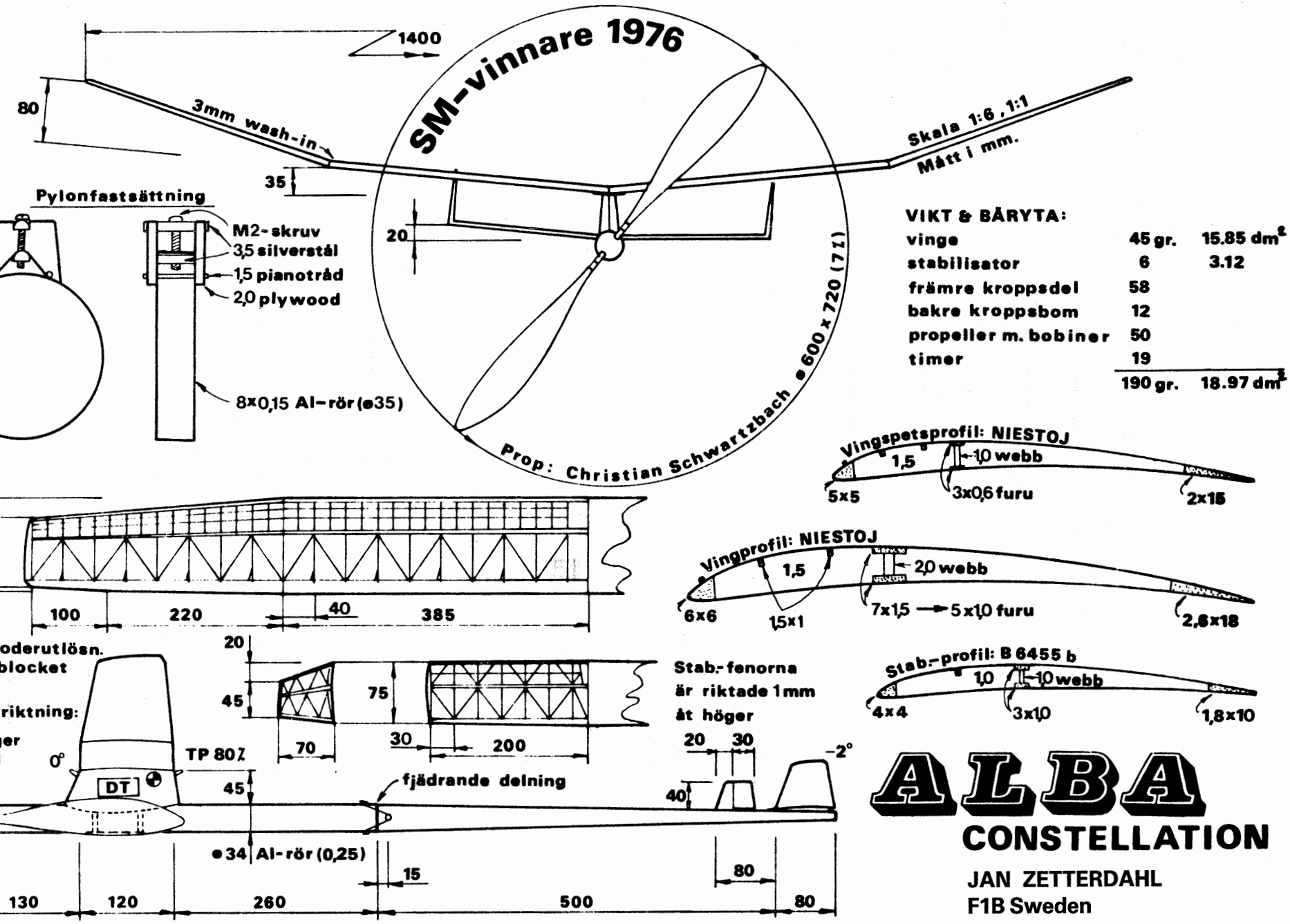
OLE TORGERSEN
F1B Norway



WING AREA 15.14 DM²
STAB AREA 3.84 DM²
AIRFRAME WT. - 194 GM.
FLIES RIGHT-RIGHT

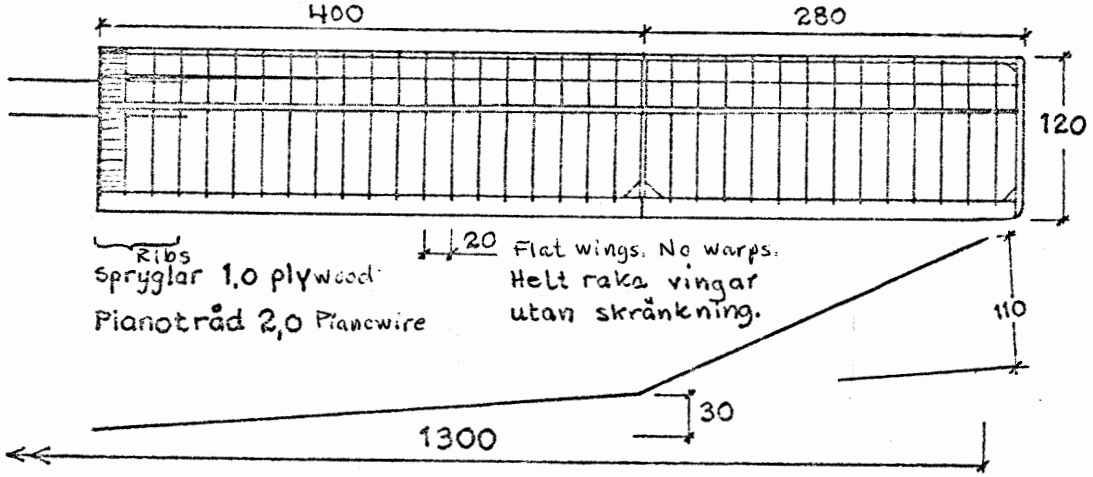
LUIS SERRANO MATUD
F1B Spain

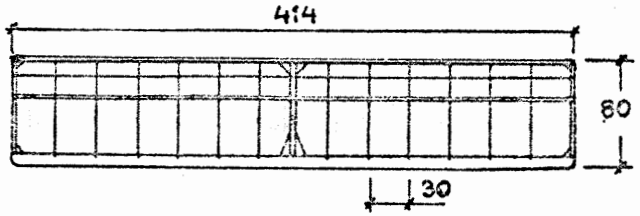
DRAWN: JIM O'REILLY

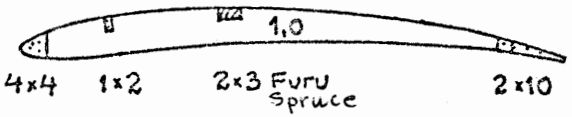


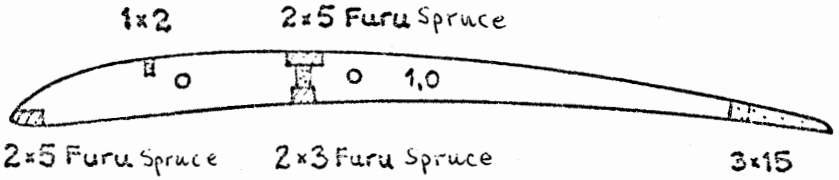
ALBA
CONSTELLATION

JAN ZETTERDAHL
F1B Sweden

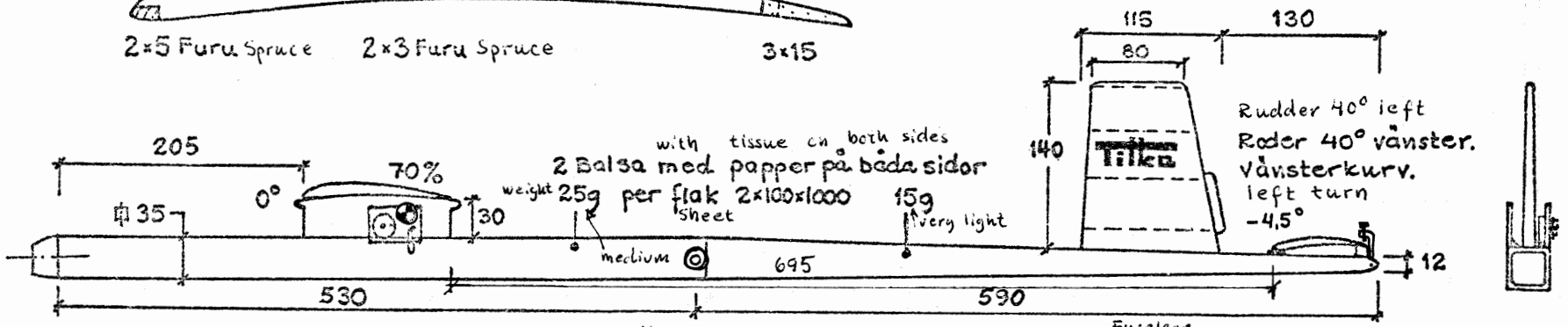








Fin 11% symetric
Fena 11% symmetrisk.
0,8 Balsa på spryglar.
around ribs



Prop. axel: 4° höger right trust
shaft 1,5° ned down trust

Prop: Diam 600
Stign Pitch 720

Motor: 16 str 6×1 320 turns varv.
18 str 6×1 280 varv

Ytor: Areas
Vinge wing 15,6 dm²
Stab 3,3 "
Tot 18,9 dm²

Vikter: Weights
Fuselage kropp 52 g
timer 20 g
prop. 46 g
vinge wing 66 g
stab. 8 g
Total 192 g

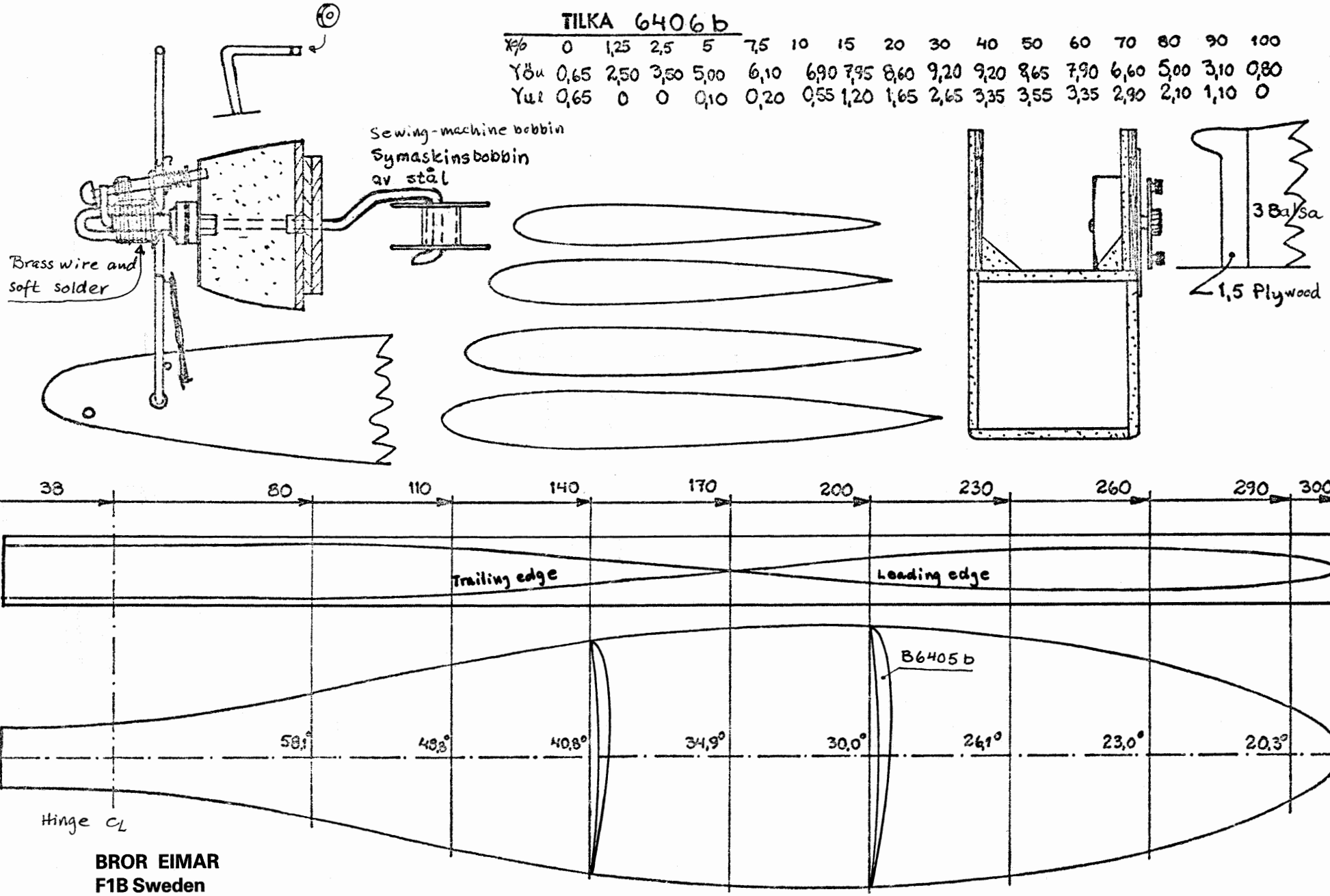
Autostab -2°
6-9 sec.

BROR EIMAR
F1B Sweden

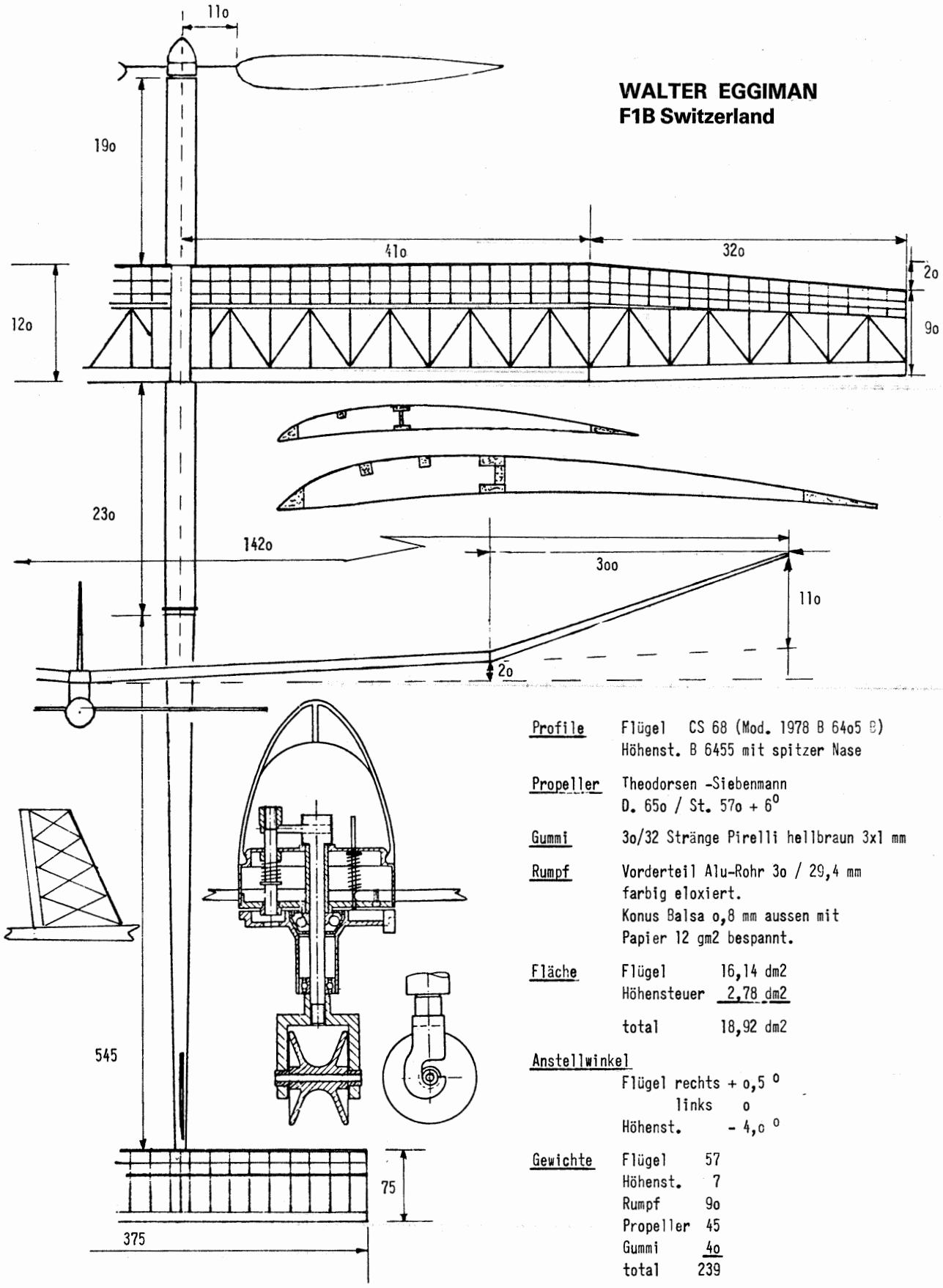
Balsa if not stated otherwise.

TILKA 6406b

x%	0	1,25	2,5	5	7,5	10	15	20	30	40	50	60	70	80	90	100
Yöu	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
Yul	0,65	0	0	0,10	0,20	0,55	1,20	1,65	2,65	3,35	3,55	3,35	2,90	2,10	1,10	0



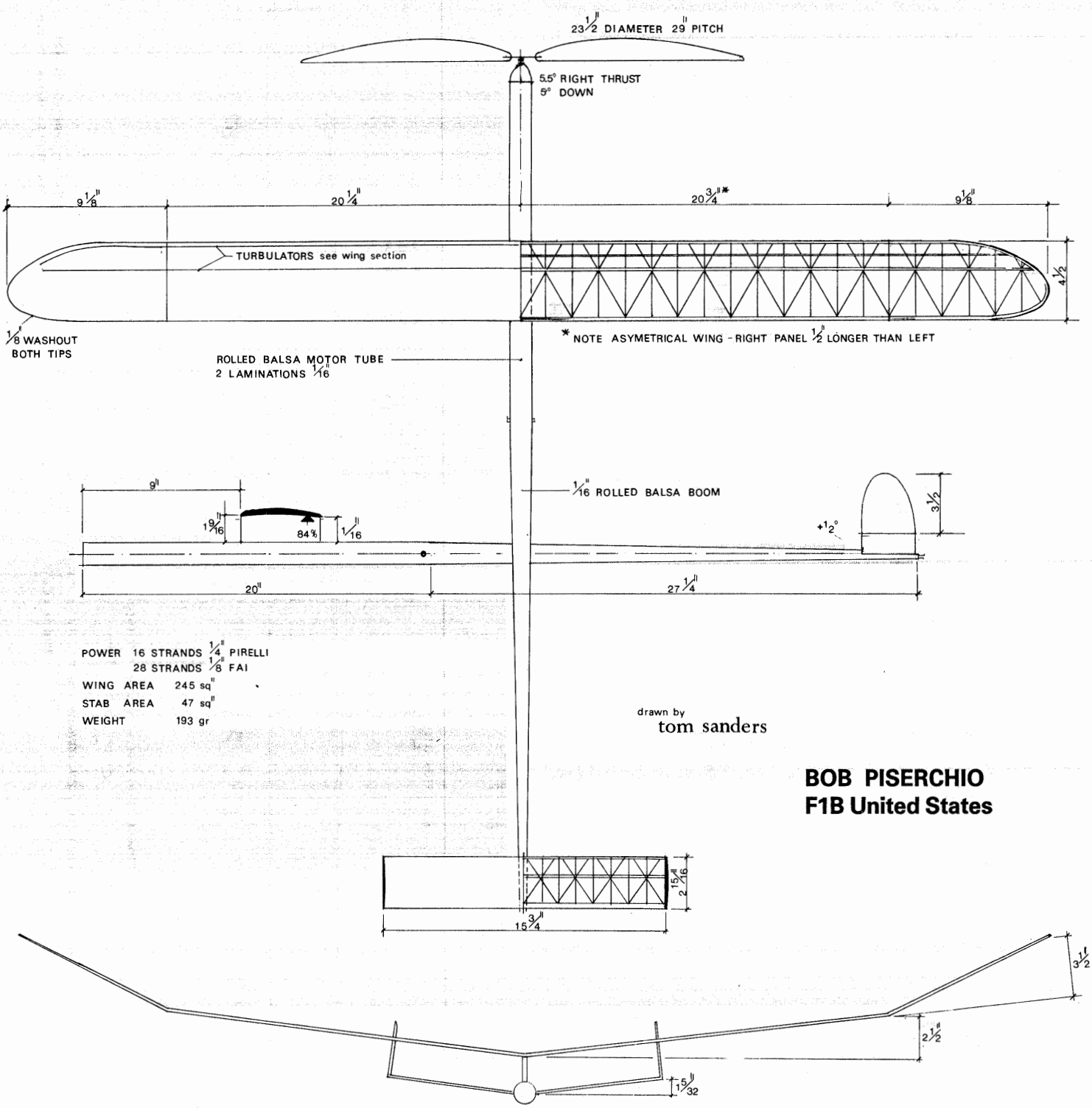
BROR EIMAR
F1B Sweden

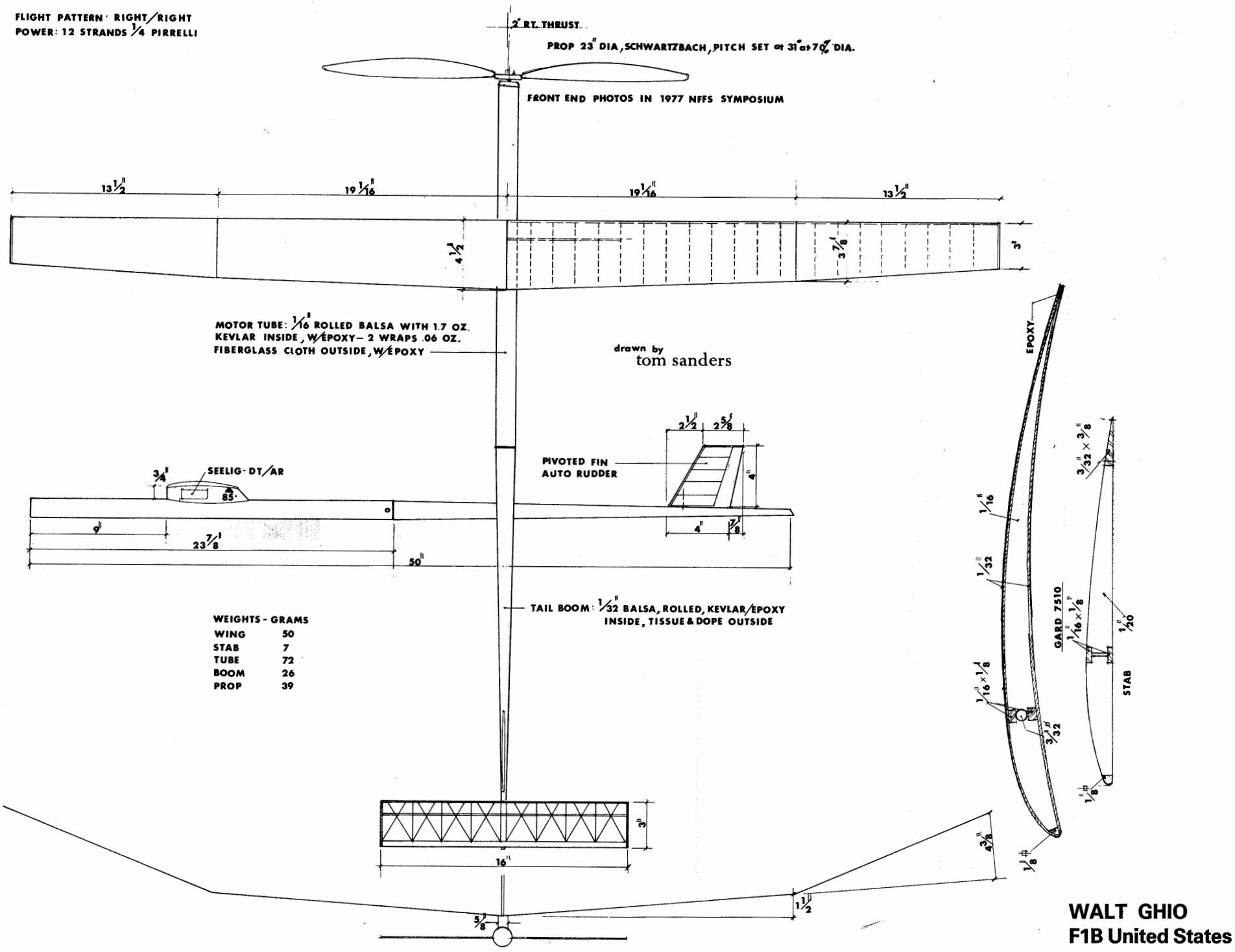


WALTER EGGIMAN
F1B Switzerland

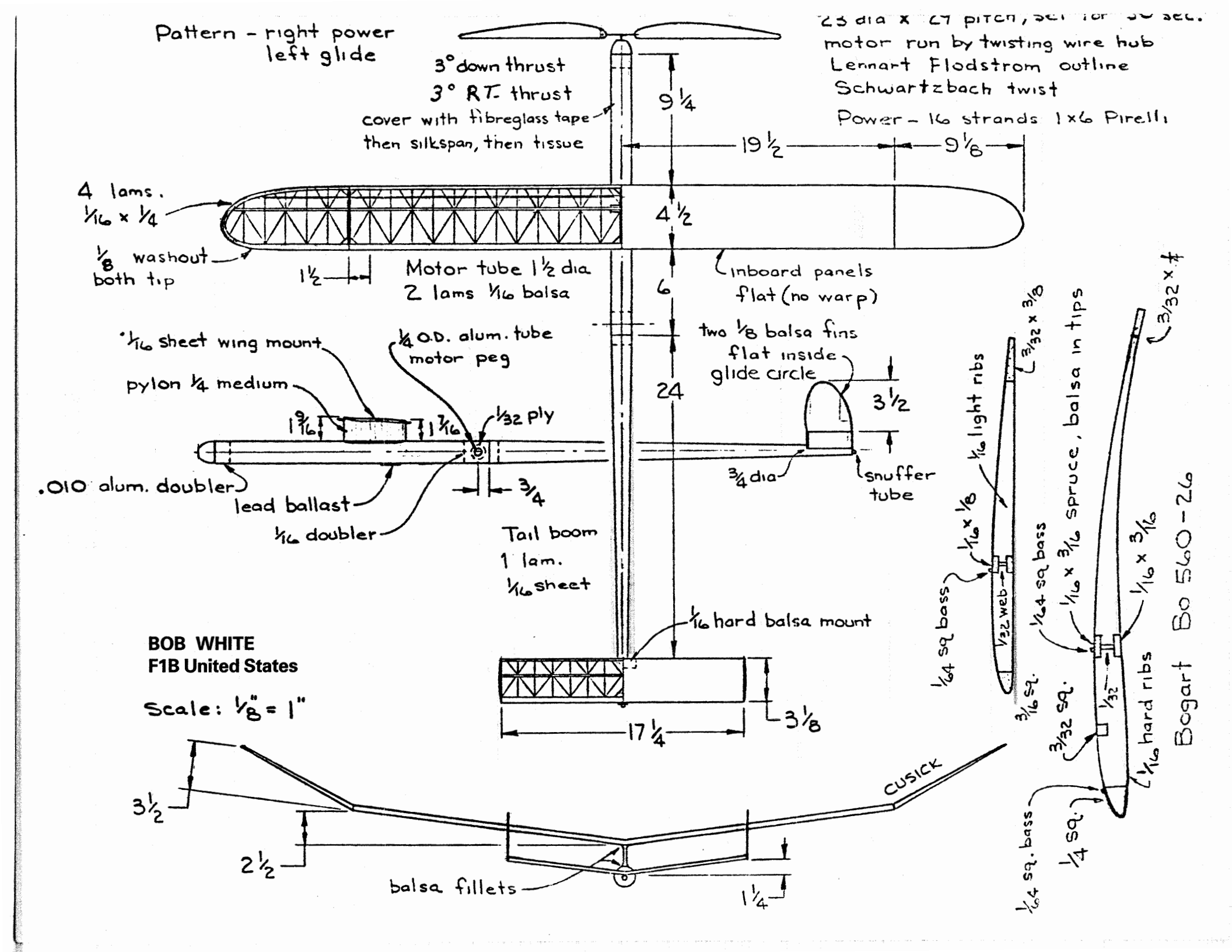
Profile	Flügel CS 68 (Mod. 1978 B 64o5 B) Höhenst. B 6455 mit spitzer Nase
Propeller	Theodorsen -Siebenmann D. 65o / St. 57o + 6°
Gummi	3o/32 Stränge Pirelli hellbraun 3x1 mm
Rumpf	Vorderteil Alu-Rohr 3o / 29,4 mm farbig eloxiert. Konus Balsa o,8 mm aussen mit Papier 12 gm2 bespannt.
Fläche	Flügel 16,14 dm2 Höhensteuer 2,78 dm2 total 18,92 dm2
Anstellwinkel	Flügel rechts + o,5 ° links o Höhenst. - 4,o °
Gewichte	Flügel 57 Höhenst. 7 Rumpf 9o Propeller 45 Gummi 4o total 239
Kurven	Steigflug rechts Gleitflug rechts

21.5.1979 / WE

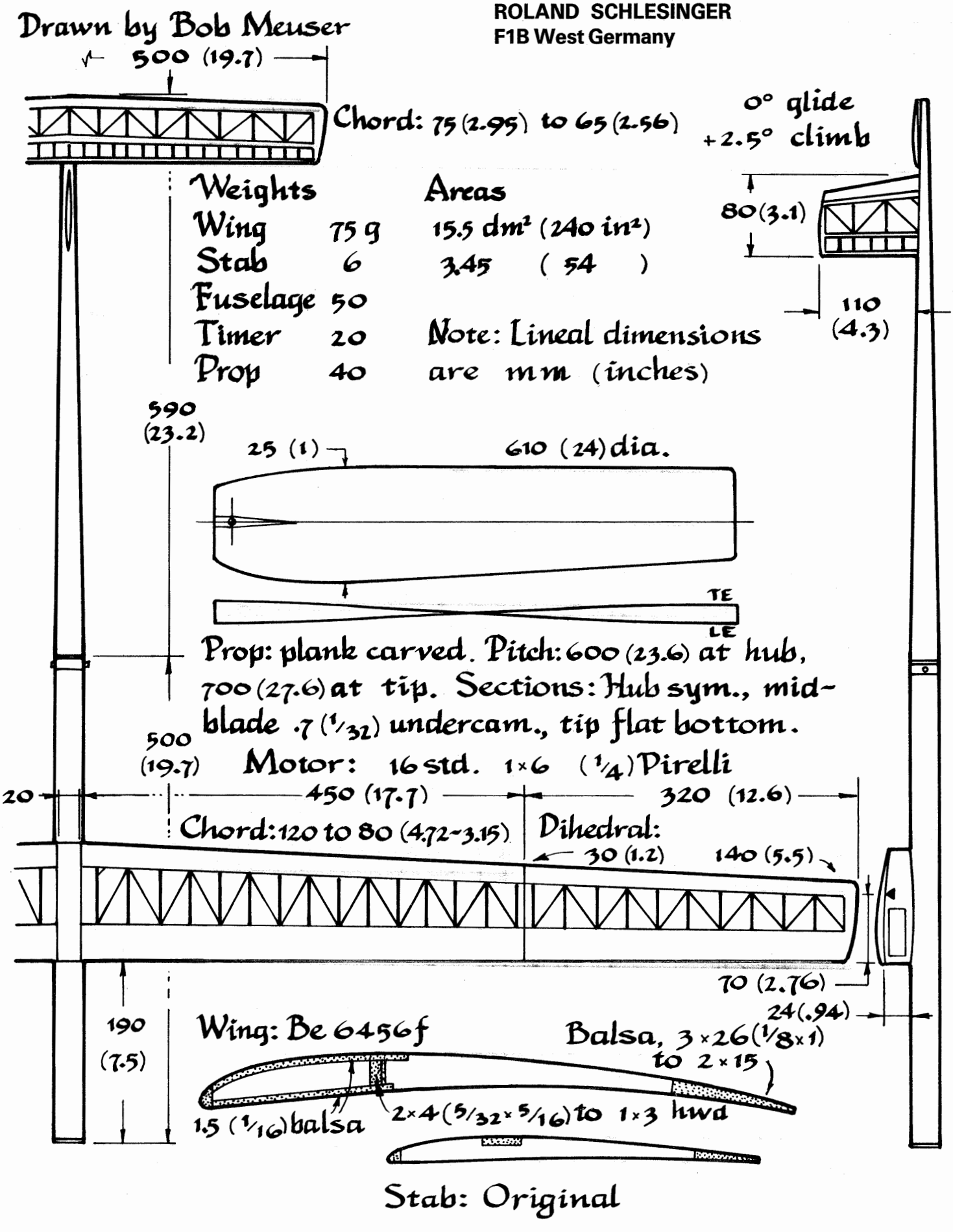

23 1/2" DIAMETER 29" PITCH
5.5° RIGHT THRUST
5° DOWN
9 1/8"
20 1/4"
20 3/4"*
9 1/8"
TURBULATORS see wing section
4 1/2
1/8 WASHOUT
BOTH TIPS
* NOTE ASYMETRICAL WING - RIGHT PANEL 1/2 LONGER THAN LEFT
ROLLED BALSA MOTOR TUBE
2 LAMINATIONS 1/16
9"
1 9/16"
84%
1/16"
1/16" ROLLED BALSA BOOM
+1 2°
3 1/2
20"
27 1/4"
POWER 16 STRANDS 1/4" PIRELLI
28 STRANDS 1/8" FAI
WING AREA 245 sq"
STAB AREA 47 sq"
WEIGHT 193 gr
drawn by
tom sanders
BOB PISERCHIO
F1B United States
15/16"
2"
15 3/4"
3 1/2
2 1/2
1 5/32
BASS 1/32" x .010 high
BASS 1/32" x 015"
3/32" sq
1/32" WEB
3/16" x 1/4"
1/16" x 3/16"
3/32" x 3/8"
WING SECTION - BOGART BO 560
1/8" sq
1/16" x 1/8"
1/16" x 1/4"
STAB



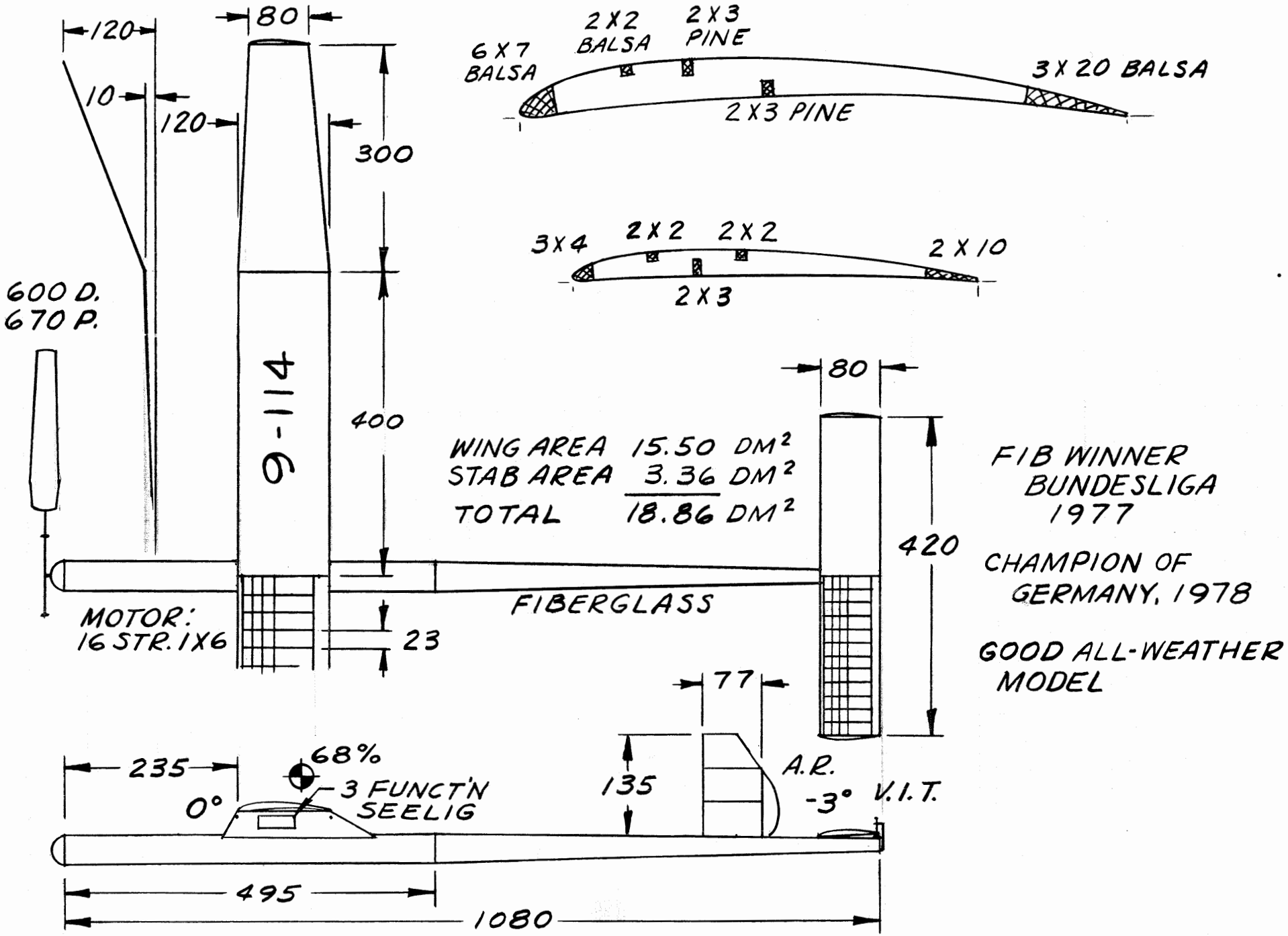
WALT GHIO
F1B United States


Pattern - right power
left glide
23 dia x 27 pitch, set for 30 sec.
motor run by twisting wire hub
Lennart Flodstrom outline
Schwartzbach twist
Power - 16 strands 1x6 Pirelli
3° down thrust
3° R.T. thrust
cover with fibreglass tape
then silkspan, then tissue
9 1/4
19 1/2
9 1/8
4 lams.
1/16 x 1/4
1/8 washout
both tip
1 1/2
Motor tube 1 1/2 dia
2 lams 1/16 balsa
4 1/2
6
24
Inboard panels
flat (no warp)
two 1/8 balsa fins
flat inside
glide circle
3 1/2
1/16 sheet wing mount
1/4 O.D. alum. tube
motor peg
pylon 1/4 medium
1 9/16
1 7/16
1/32 ply
.010 alum. doubler
lead ballast
1/16 doubler
3/4
3/4 dia
snuffer
tube
Tail boom
1 lam.
1/16 sheet
1/16 hard balsa mount
3 1/8
17 1/4
BOB WHITE
F1B United States
Scale: 1/8" = 1"
3 1/2
2 1/2
balsa fillets
1 1/4
CUSICK
3/32 x 3/8
1/16 light ribs
1/16 x 1/8
1/64 sq bass
1/32 web
3/16 sq.
3/32 x 1/4
1/64 sq bass
1/16 x 3/16 spruce, balsa in tips
1/16 x 3/16
3/32 sq.
1/32
1/16 hard ribs
1/4 sq.
1/64 sq. bass
Bogart Bo 560 - 26

ROLAND SCHLESINGER
F1B West Germany

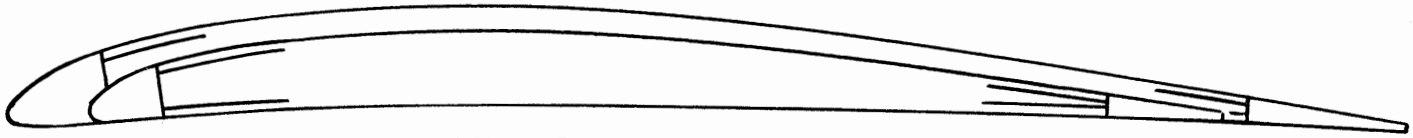


Stab: Original

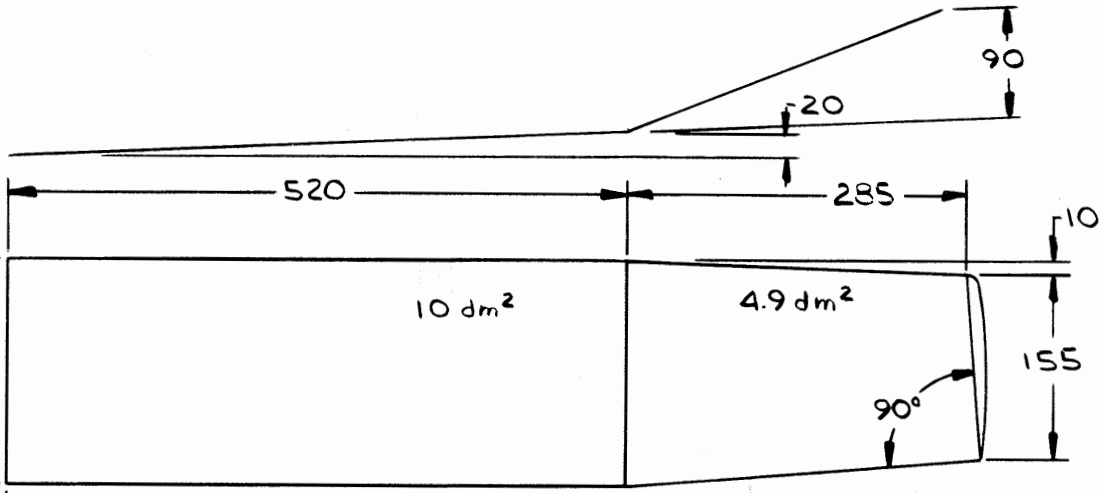


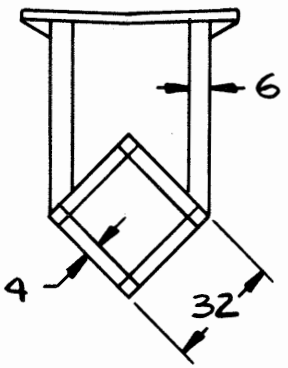
DRAWN: JIM O'REILLY

BERND SILZ
F1B West Germany



WING

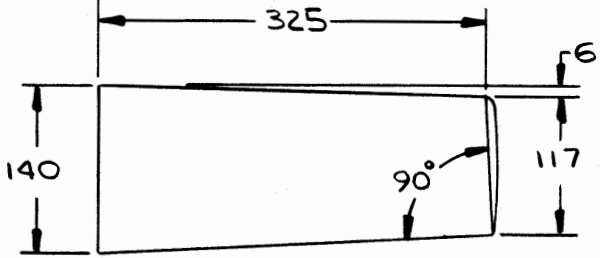




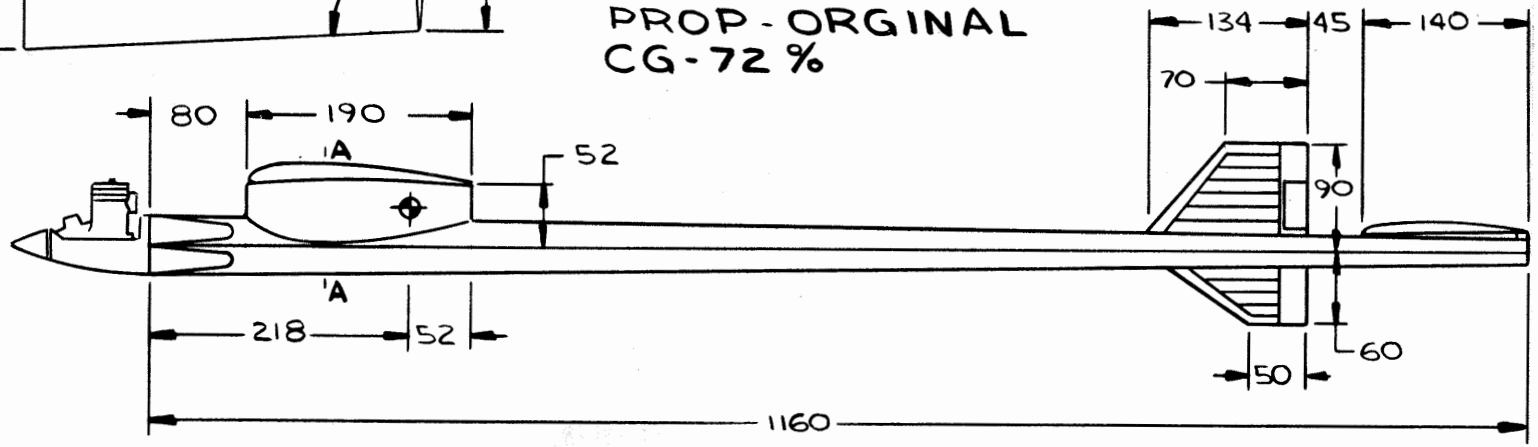
A-A



STABILIZER

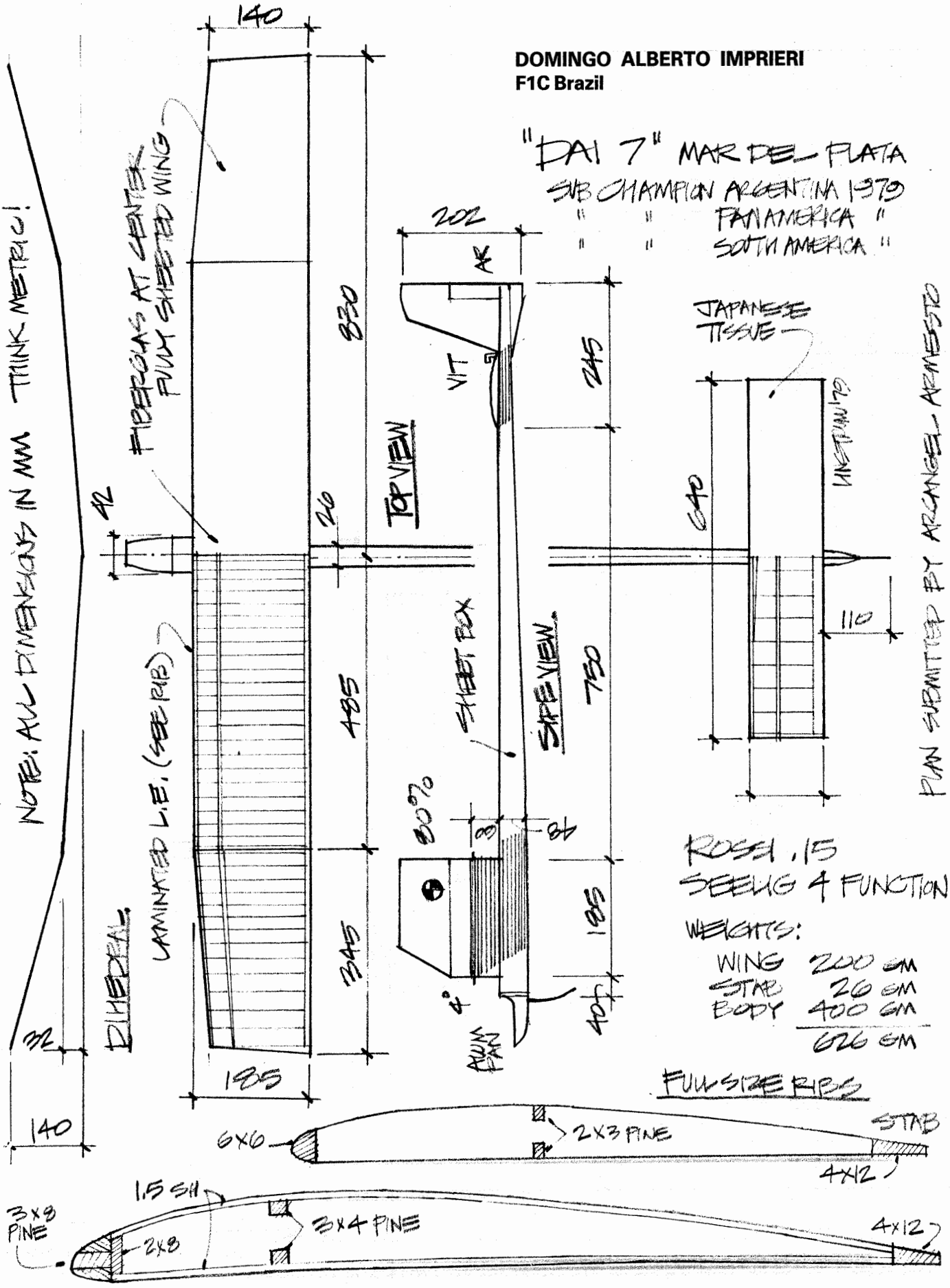


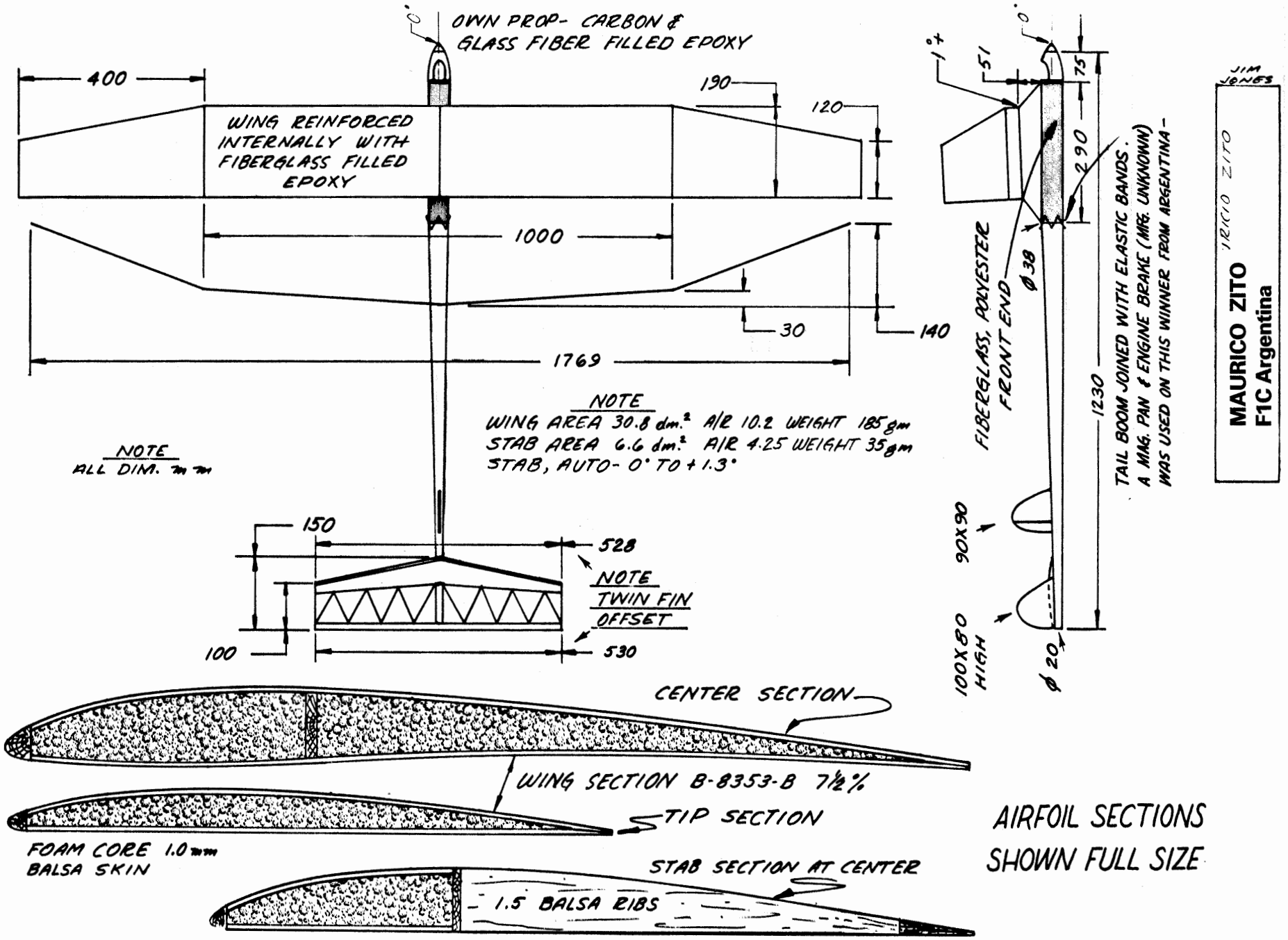
ROSSI 15
PROP - ORGINAL
CG - 72 %

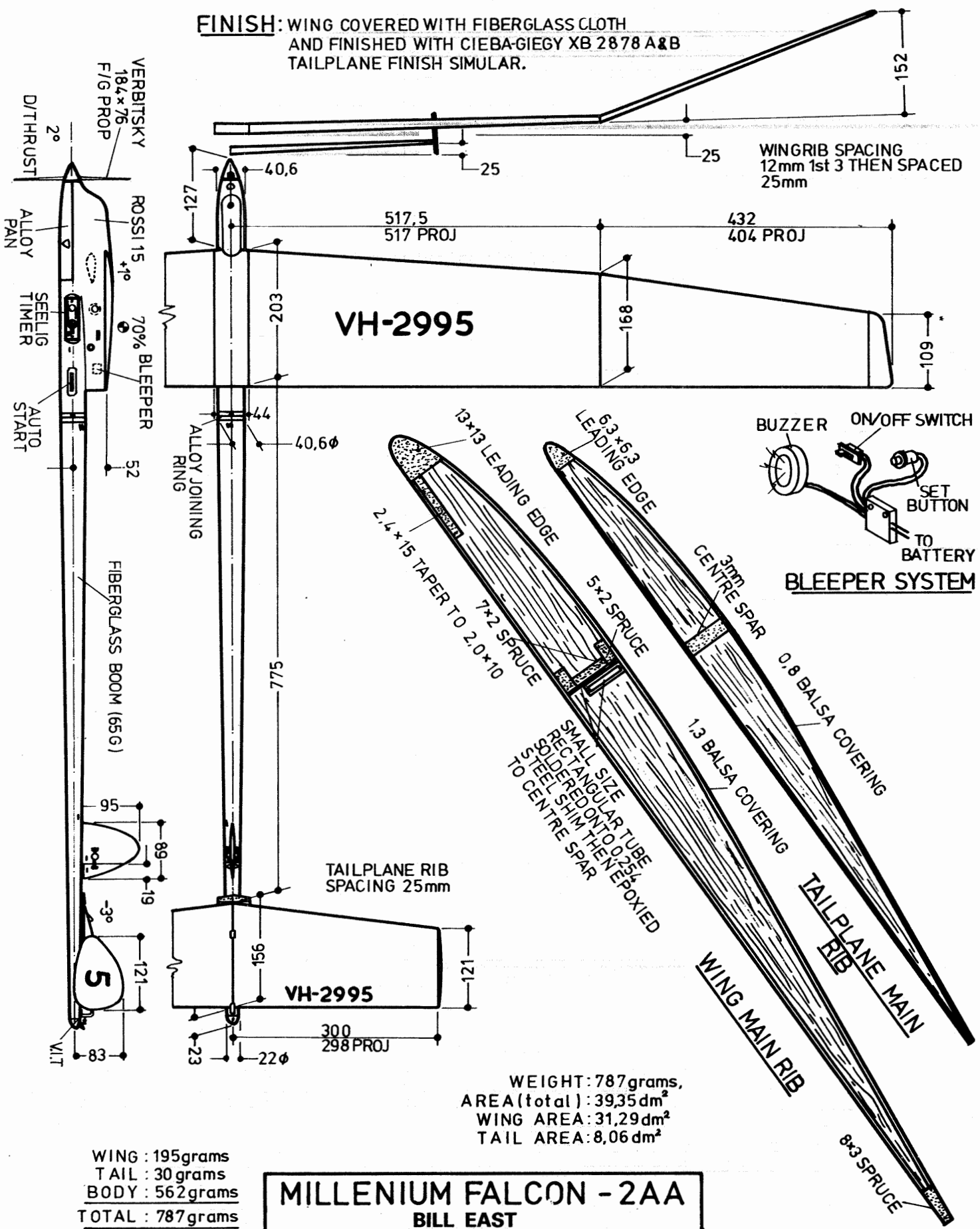


SCALE : 1/6
DR BY : WALT GHIO

JOSE BONETTO
F1C Argentina


DOMINGO ALBERTO IMPRIERI
F1C Brazil
"DAI 7" MAR DEL PLATA
SUB CHAMPION ARGENTINA 1979
" " PANAMERICA "
" " SOUTH AMERICA "
NOTE: ALL DIMENSIONS IN MM THINK METRIC!
140
FIBERGLASS AT CENTER
PLUS SHEETED WING
LAMINATED L.E. (SEE RIB)
DIHEDRAL
12
140
185
345
485
830
26
42
TOP VIEW
202
AIR
VIT
245
SIDE VIEW
SHEET BOX
80°
8
48
185
40
4°
AWM PAN
JAPANESE TISSUE
UNSHRUNK
640
110
760
PLAN SUBMITTED BY ARCANGEL ARMESTO
ROSSI .15
SEEING 4 FUNCTION
WEIGHTS:
WING 200 GM
STAB 26 GM
BODY 400 GM
626 GM
FULL SIZE RIBS
6X6
2X3 PINE
STAB
4X12
1.5 SH
3X8 PINE
2X8
3X4 PINE
4X12


OWN PROP- CARBON & GLASS FIBER FILLED EPOXY
400
190
120
WING REINFORCED INTERNALLY WITH FIBERGLASS FILLED EPOXY
1000
30
140
1769
NOTE
WING AREA 30.8 dm.² A/R 10.2 WEIGHT 185 gm
STAB AREA 6.6 dm.² A/R 4.25 WEIGHT 35 gm
STAB, AUTO- 0° TO + 1.3°
NOTE
ALL DIM. m m
150
528
NOTE
TWIN FIN OFFSET
100
530
1°
0°
51
75
290
FIBERGLASS, POLYESTER FRONT END
Ø 38
1230
TAIL BOOM JOINED WITH ELASTIC BANDS. A MAG. PAN & ENGINE BRAKE (MFG. UNKNOWN) WAS USED ON THIS WINNER FROM ARGENTINA -
90X90
100X80 HIGH
Ø 20
JIM JONES
IRCO ZITO
MAURICO ZITO
F1C Argentina
CENTER SECTION
WING SECTION B-8353-B 7½%
TIP SECTION
FOAM CORE 1.0 m m
BALSA SKIN
STAB SECTION AT CENTER
1.5 BALSA RIBS
AIRFOIL SECTIONS
SHOWN FULL SIZE



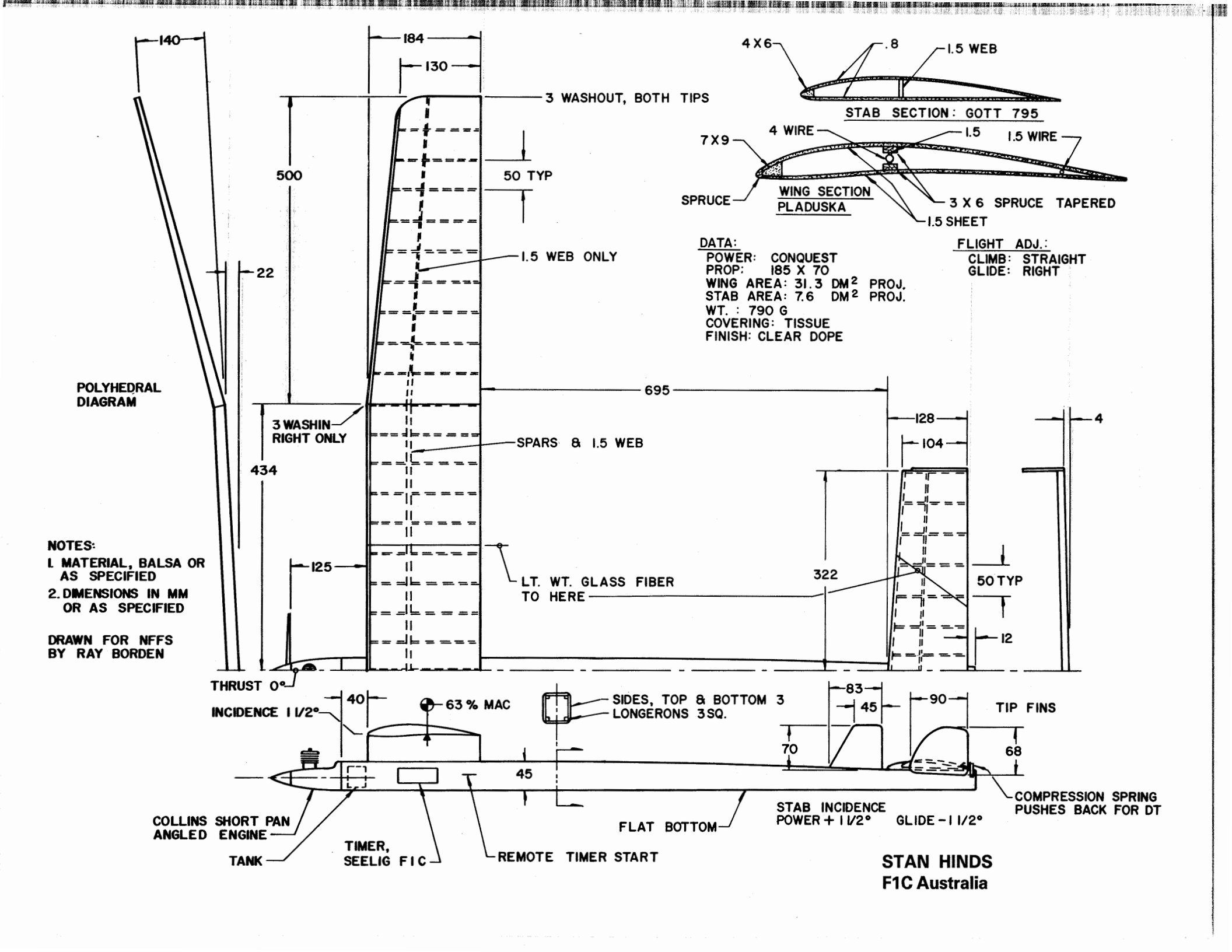
WEIGHT: 787 grams,
AREA (total): 39,35 dm²
WING AREA: 31,29 dm²
TAIL AREA: 8,06 dm²

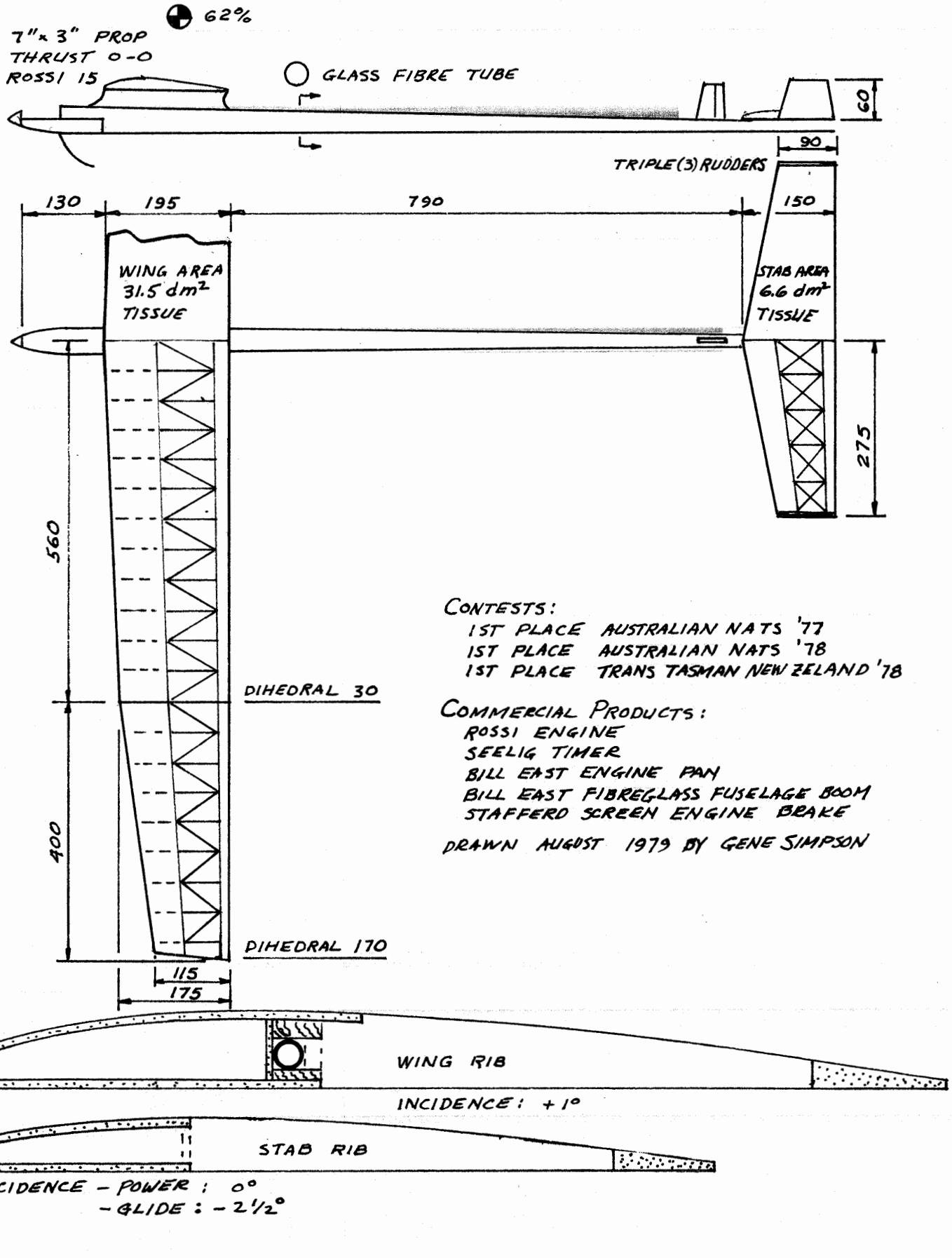
WING : 195 grams
TAIL : 30 grams
BODY : 562 grams
TOTAL : 787 grams

MILLENIUM FALCON - 2AA

BILL EAST

F1C Australia


140
184
130
3 WASHOUT, BOTH TIPS
500
50 TYP
1.5 WEB ONLY
22
POLYHEDRAL DIAGRAM
3 WASHIN RIGHT ONLY
434
SPARS & 1.5 WEB
695
128
104
4
125
LT. WT. GLASS FIBER TO HERE
322
50 TYP
12
THRUST 0°
40
INCIDENCE 1 1/2°
63 % MAC
SIDES, TOP & BOTTOM 3
LONGERONS 3SQ.
83
45
90
TIP FINS
70
68
45
COLLINS SHORT PAN ANGLED ENGINE
TANK
TIMER, SEELIG F1C
REMOTE TIMER START
FLAT BOTTOM
STAB INCIDENCE
POWER + 1 1/2°
GLIDE - 1 1/2°
COMPRESSION SPRING PUSHES BACK FOR DT
4 X 6
.8
1.5 WEB
STAB SECTION: GOTT 795
7 X 9
4 WIRE
1.5
1.5 WIRE
SPRUCE
WING SECTION
PLADUSKA
3 X 6 SPRUCE TAPERED
1.5 SHEET
DATA:
POWER: CONQUEST
PROP: 185 X 70
WING AREA: 31.3 DM2 PROJ.
STAB AREA: 7.6 DM2 PROJ.
WT. : 790 G
COVERING: TISSUE
FINISH: CLEAR DOPE
FLIGHT ADJ.:
CLIMB: STRAIGHT
GLIDE: RIGHT
NOTES:
1. MATERIAL, BALSA OR AS SPECIFIED
2. DIMENSIONS IN MM OR AS SPECIFIED
DRAWN FOR NFFS BY RAY BORDEN
STAN HINDS
F1C Australia

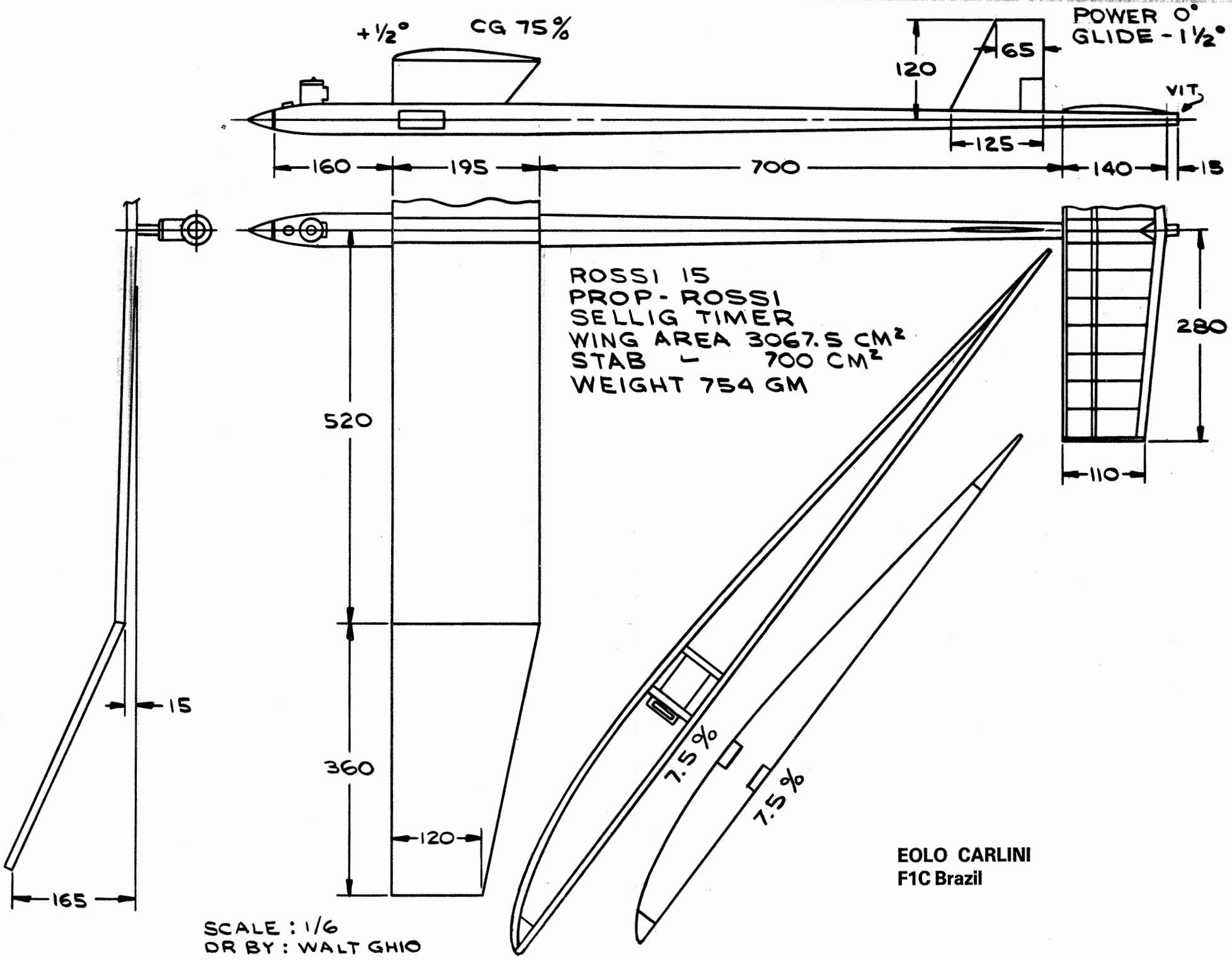


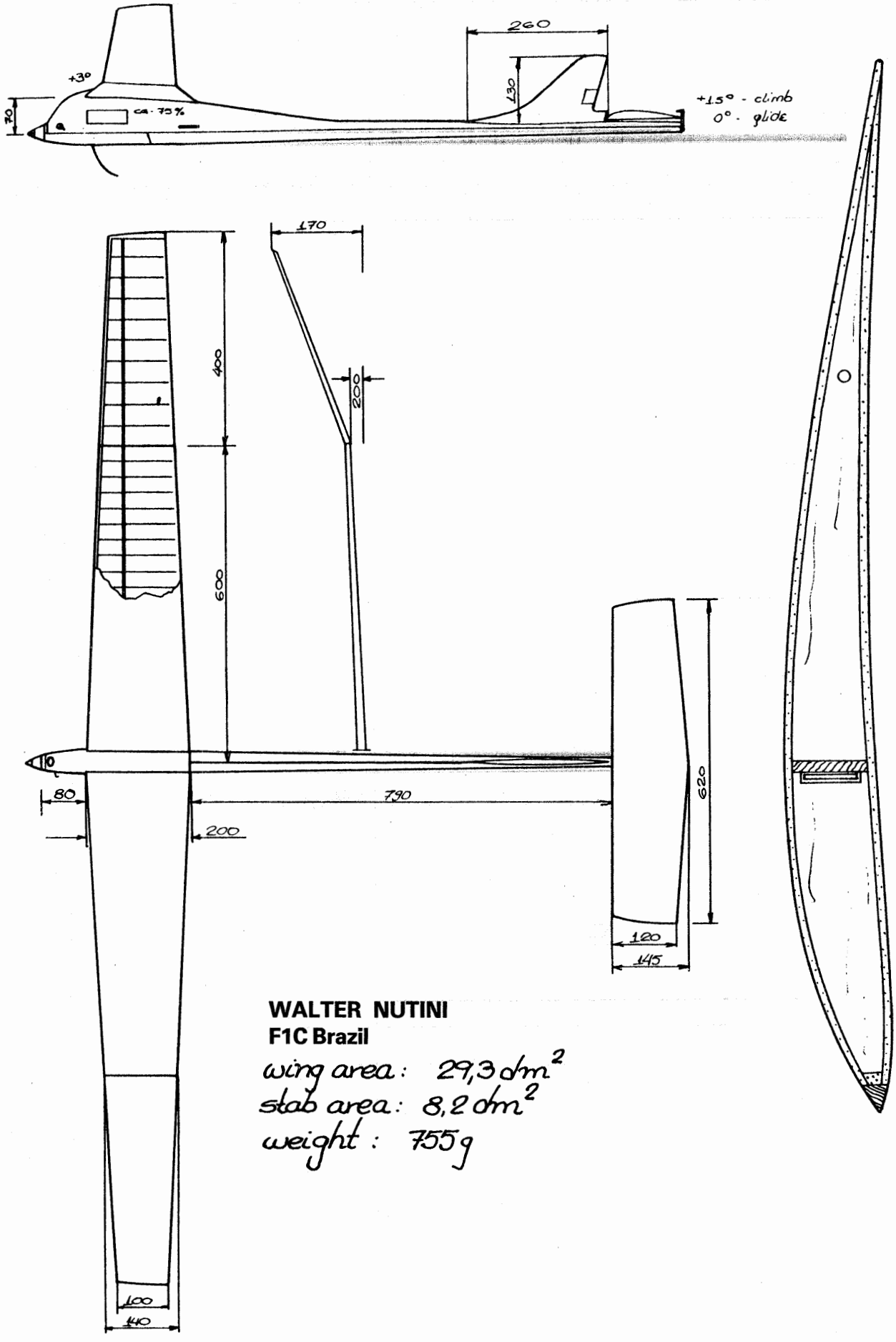
CONTESTS:
- 1ST PLACE AUSTRALIAN NATS '77
- 1ST PLACE AUSTRALIAN NATS '78
- 1ST PLACE TRANS TASMAN NEW ZELAND '78

COMMERCIAL PRODUCTS:
- ROSSI ENGINE
- SEELIG TIMER
- BILL EAST ENGINE PAN
- BILL EAST FIBREGLASS FUSELAGE BOOM
- STAFFERD SCREEN ENGINE BRAKE

DRAWN AUGUST 1979 BY GENE SIMPSON

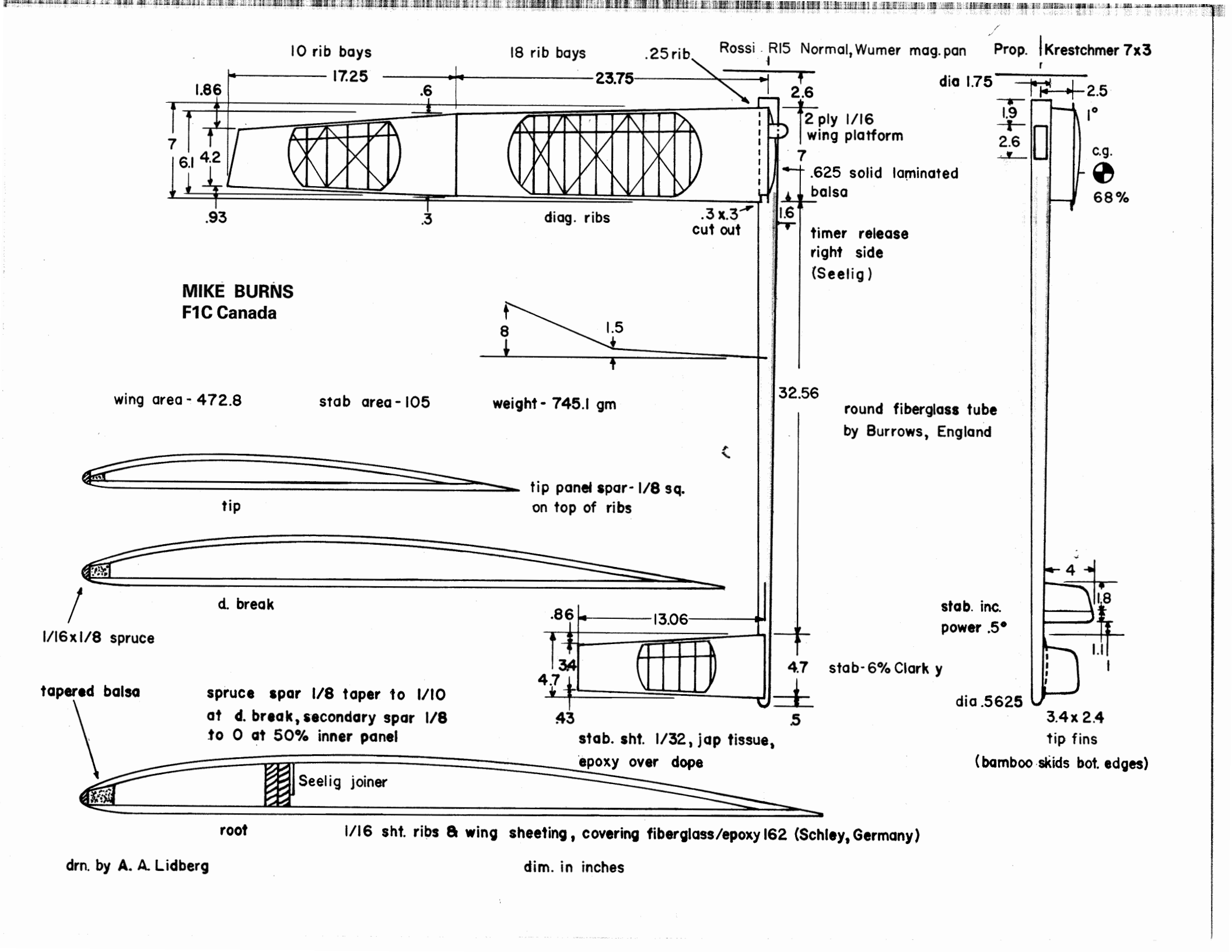
PETER NASH
F1C Australia

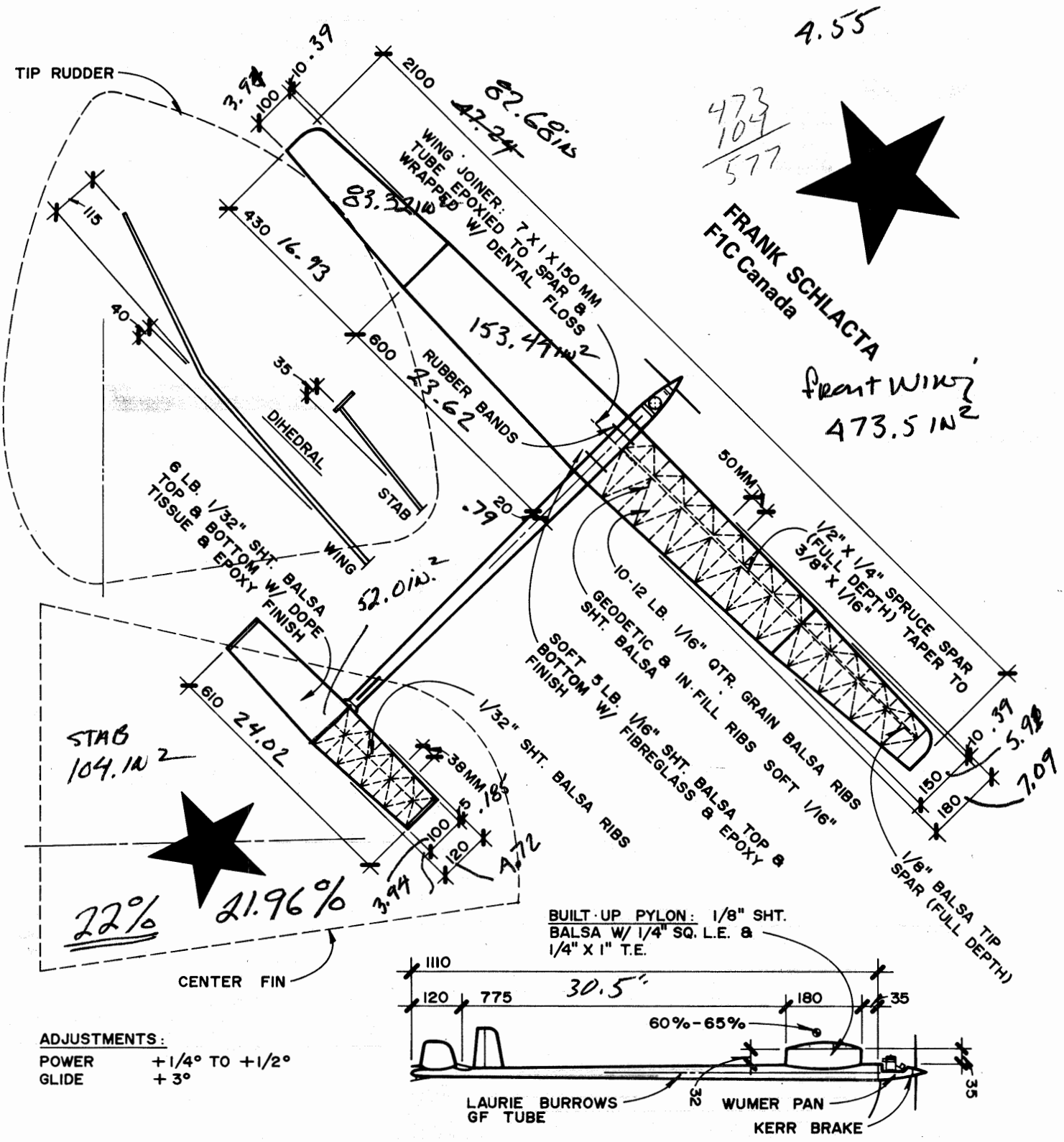

+½°
CG 75%
POWER 0°
GLIDE - 1½°
120
65
VIT
125
160
195
700
140
15
ROSSI 15
PROP - ROSSI
SELLIG TIMER
WING AREA 3067.5 CM²
STAB " 700 CM²
WEIGHT 754 GM
280
520
110
15
360
120
165
7.5%
7.5%
SCALE : 1/6
DR BY : WALT GHIO
EOLO CARLINI
F1C Brazil

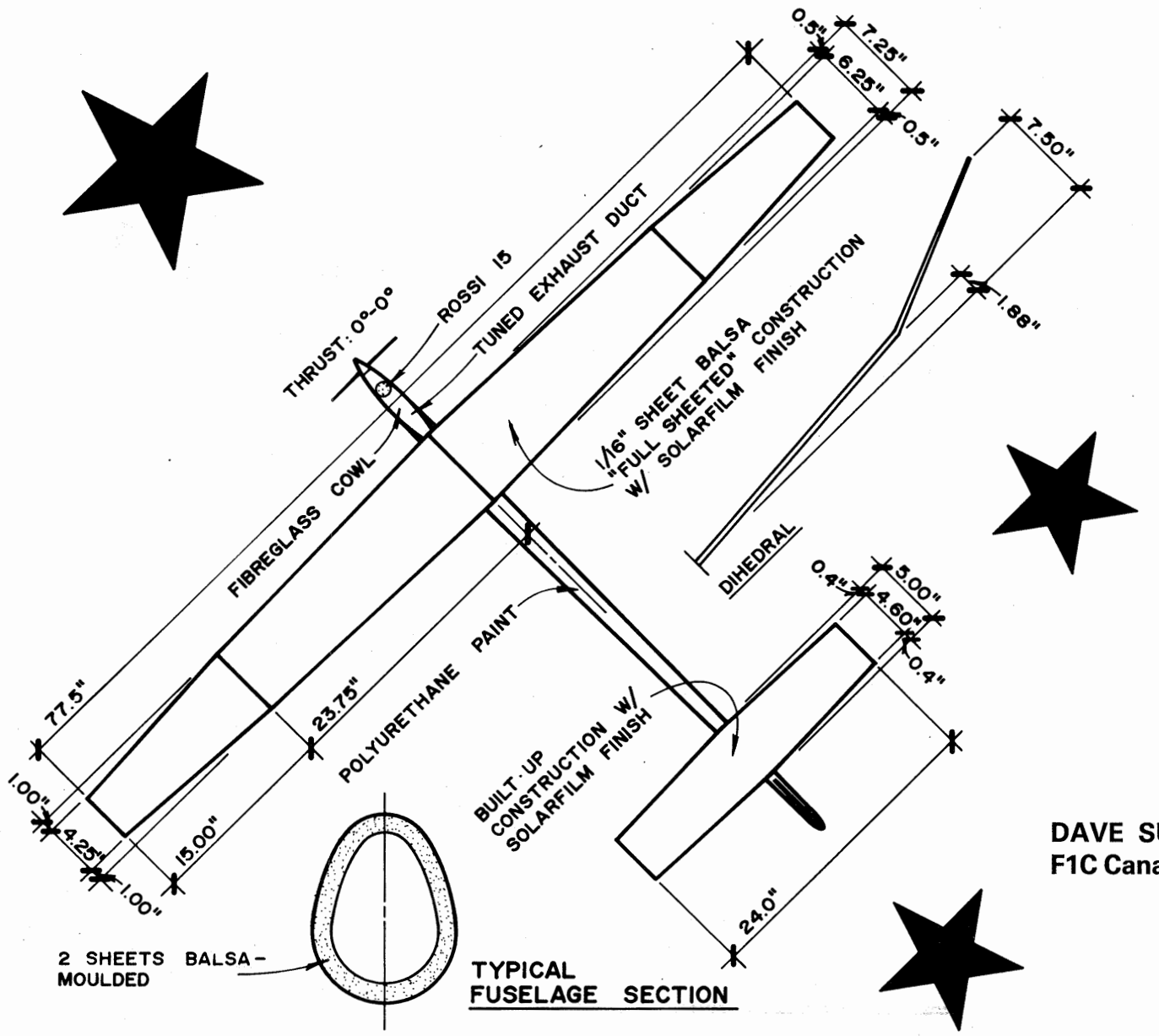


WALTER NUTINI
F1C Brazil

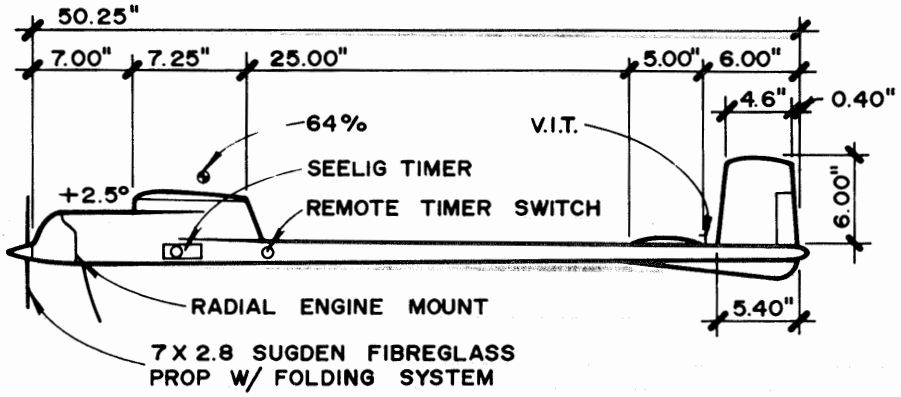
wing area: 29,3 dm²
stab area: 8,2 dm²
weight: 755 g


10 rib bays
18 rib bays
.25 rib
Rossi RI5 Normal, Wumer mag. pan
Prop. Krestchmer 7x3
17.25
23.75
1.86
.6
2.6
7
6.1
4.2
2 ply 1/16
wing platform
.625 solid laminated
balsa
.93
.3
diag. ribs
.3 x .3
cut out
1.6
timer release
right side
(Seelig)
dia 1.75
2.5
1.9
2.6
1°
c.g.
68%
MIKE BURNS
F1C Canada
8
1.5
32.56
wing area - 472.8
stab area - 105
weight - 745.1 gm
round fiberglass tube
by Burrows, England
tip
tip panel spar - 1/8 sq.
on top of ribs
d. break
1/16x1/8 spruce
.86
13.06
4.7
.34
4.7
.43
.5
stab - 6% Clark y
4
1.8
stab. inc.
power .5°
1.1
dia .5625
3.4 x 2.4
tip fins
(bamboo skids bot. edges)
tapered balsa
spruce spar 1/8 taper to 1/10
at d. break, secondary spar 1/8
to 0 at 50% inner panel
stab. sht. 1/32, jap tissue,
epoxy over dope
Seelig joiner
root
1/16 sht. ribs & wing sheeting, covering fiberglass/epoxy 162 (Schley, Germany)
drn. by A. A. Lidberg
dim. in inches


4.55
TIP RUDDER
3.94
10.39
100
2100
82.68 in
42.24
473
109
577
FRANK SCHLACTA
F1C Canada
front wing
473.5 IN²
WING · JOINER: 7 X 1 X 150 MM TUBE EPOXIED TO SPAR & WRAPPED W/ DENTAL FLOSS
83.35 IN²
115
430 16.93
153.49 IN²
40
600
RUBBER BANDS
43.62
35
DIHEDRAL
STAB
6 LB. 1/32" SHT. BALSA TOP & BOTTOM TISSUE & EPOXY W/ DOPE FINISH
WING
.79
20
52.0 IN²
50MM
1/2" X 1/4" SPRUCE SPAR (FULL DEPTH) TAPER TO 3/8" X 1/16"
10-12 LB. 1/16" QTR. GRAIN BALSA RIBS
GEODETIC & IN-FILL RIBS SOFT 1/16" SHT. BALSA
SOFT BOTTOM 5 LB. 1/16" SHT. BALSA TOP & FINISH W/ FIBREGLASS & EPOXY
1/32" SHT. BALSA RIBS
1/8" BALSA TIP SPAR (FULL DEPTH)
10 .39
5.98
150
180
7.09
STAB
104. IN²
610 24.02
38MM
.18
100
120
4.72
3.94
22%
21.96%
CENTER FIN
BUILT-UP PYLON: 1/8" SHT. BALSA W/ 1/4" SQ. L.E. & 1/4" X 1" T.E.
1110
120
775
30.5"
180
35
60%-65%
LAURIE BURROWS GF TUBE
32
WUMER PAN
KERR BRAKE
35
ADJUSTMENTS:
POWER +1/4° TO +1/2°
GLIDE +3°
STAB
WING
WEIGHTS:
WING 245 G
STAB 35 G
FUSELAGE 480 G
TOTAL 760 G
DRAWN BY: BILL BOOTH, JR.

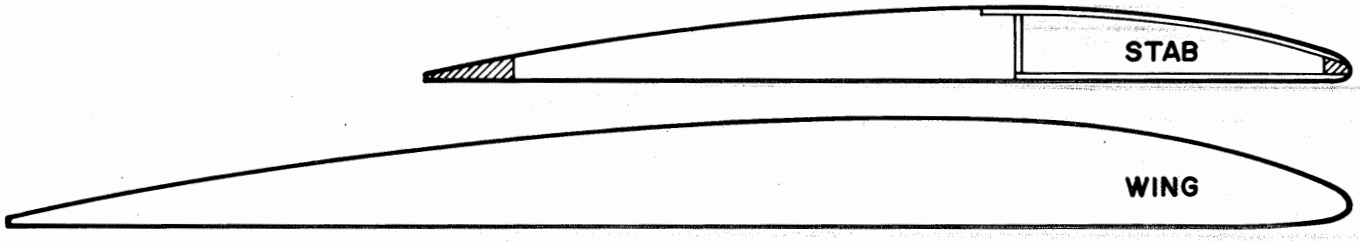


DAVE SUGDEN
F1C Canada

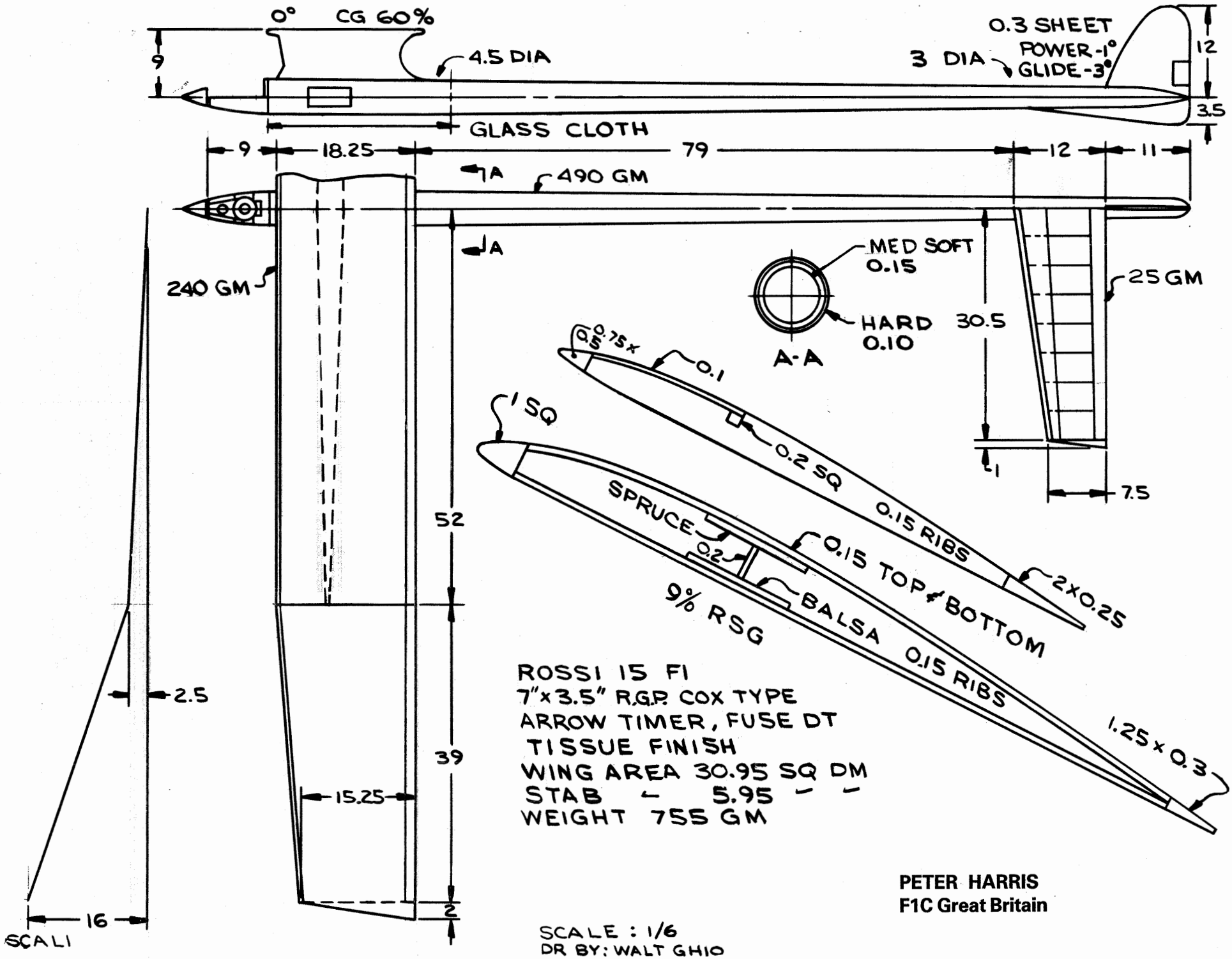


AREAS:	
WING	466.0 SQ. IN.
STAB	115.0 SQ. IN.
TOTAL	581.0 SQ. IN.

TOTAL WEIGHT 750 G.



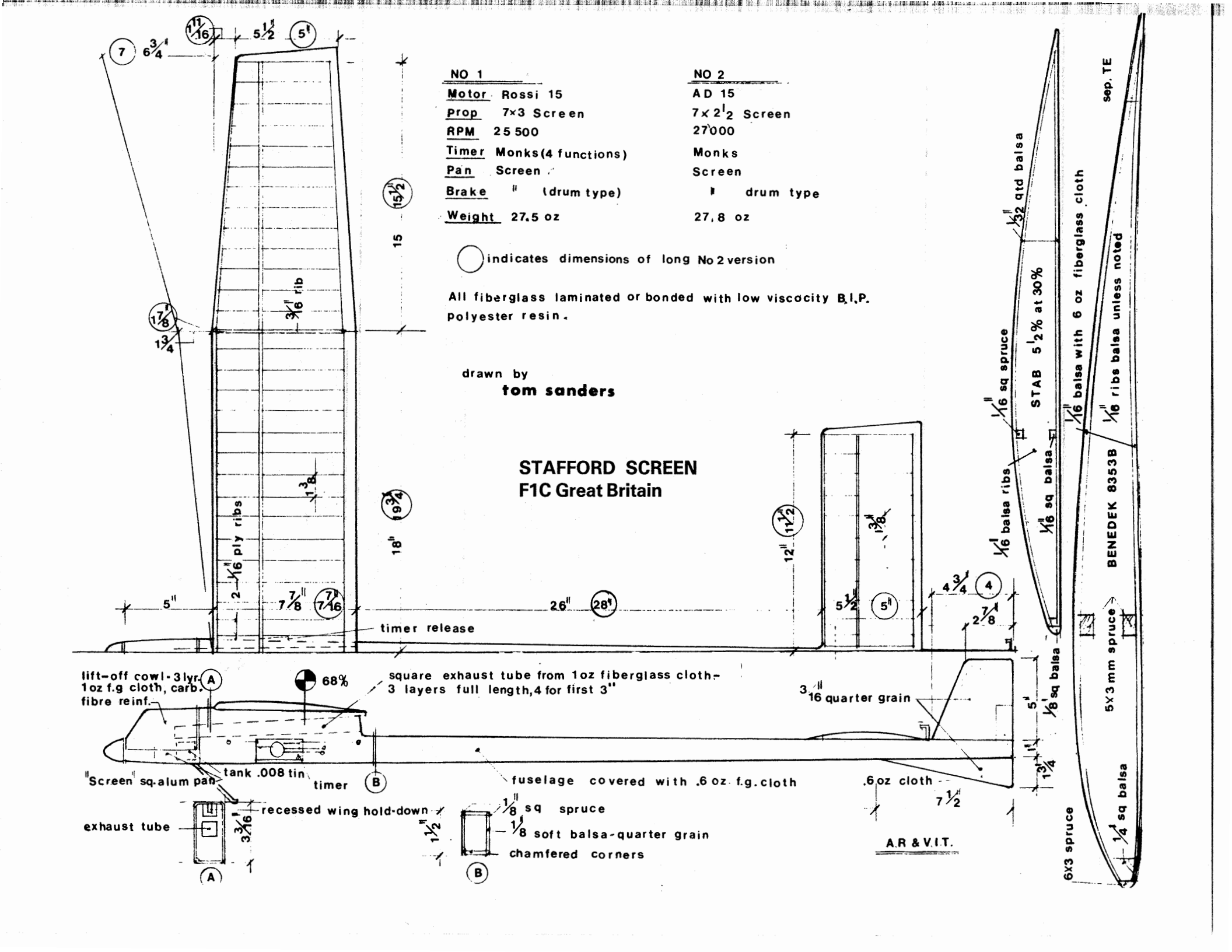
DRAWN BY: BILL BOOTH, JR.

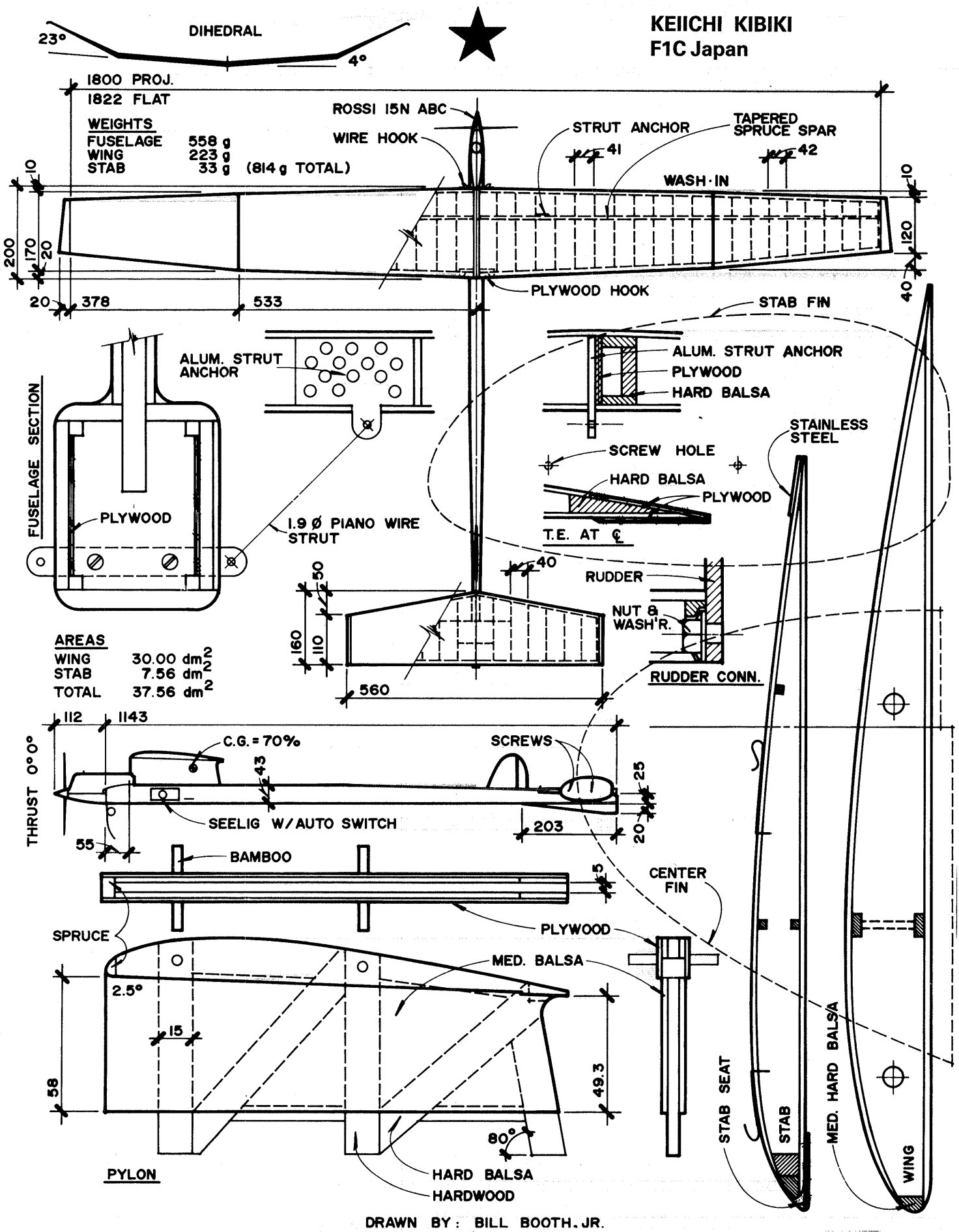


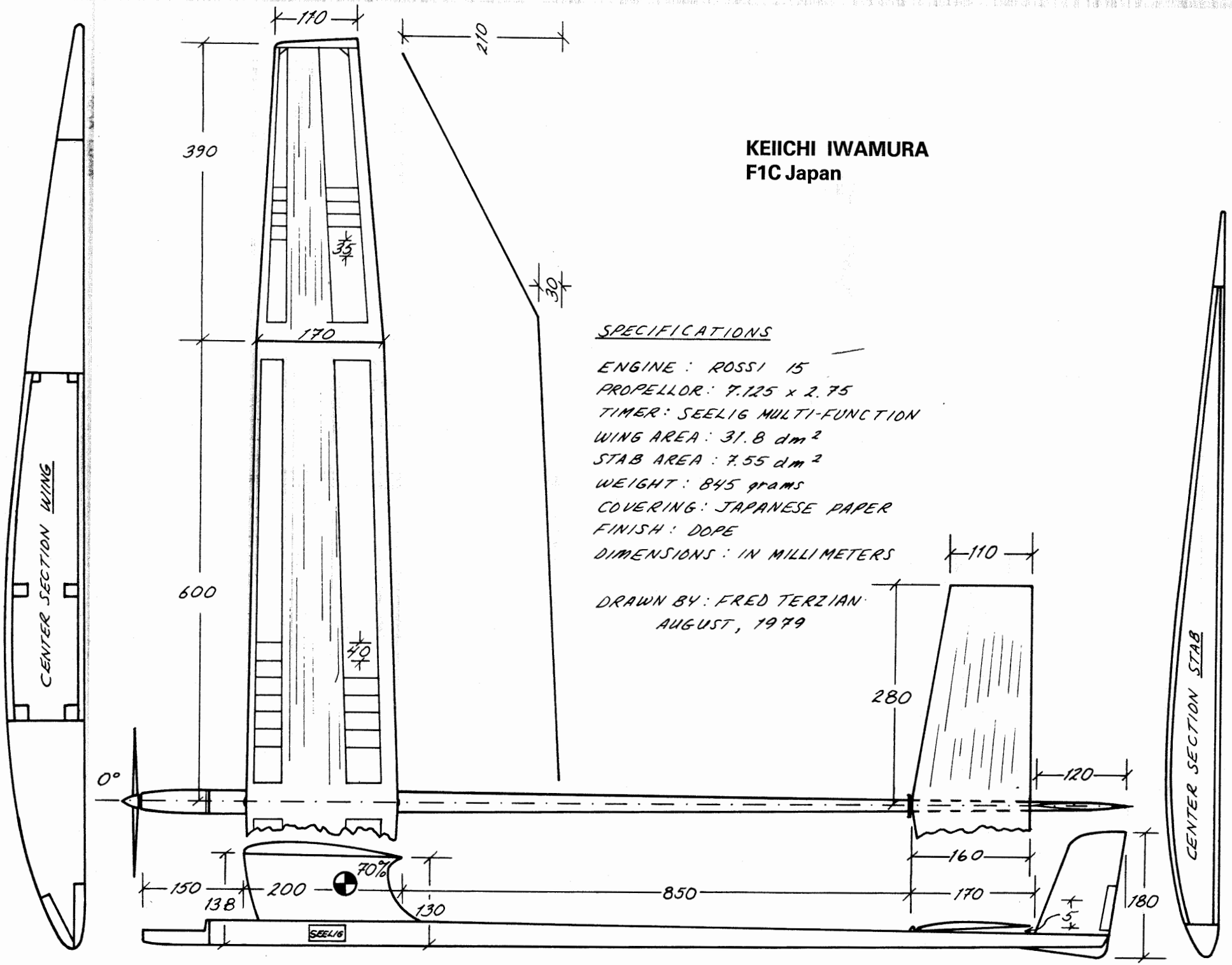
ROSSI 15 FI
7"x3.5" R.G.P. COX TYPE
ARROW TIMER, FUSE DT
TISSUE FINISH
WING AREA 30.95 SQ DM
STAB " 5.95 " "
WEIGHT 755 GM

SCALE : 1/6
DR BY: WALT GHIO

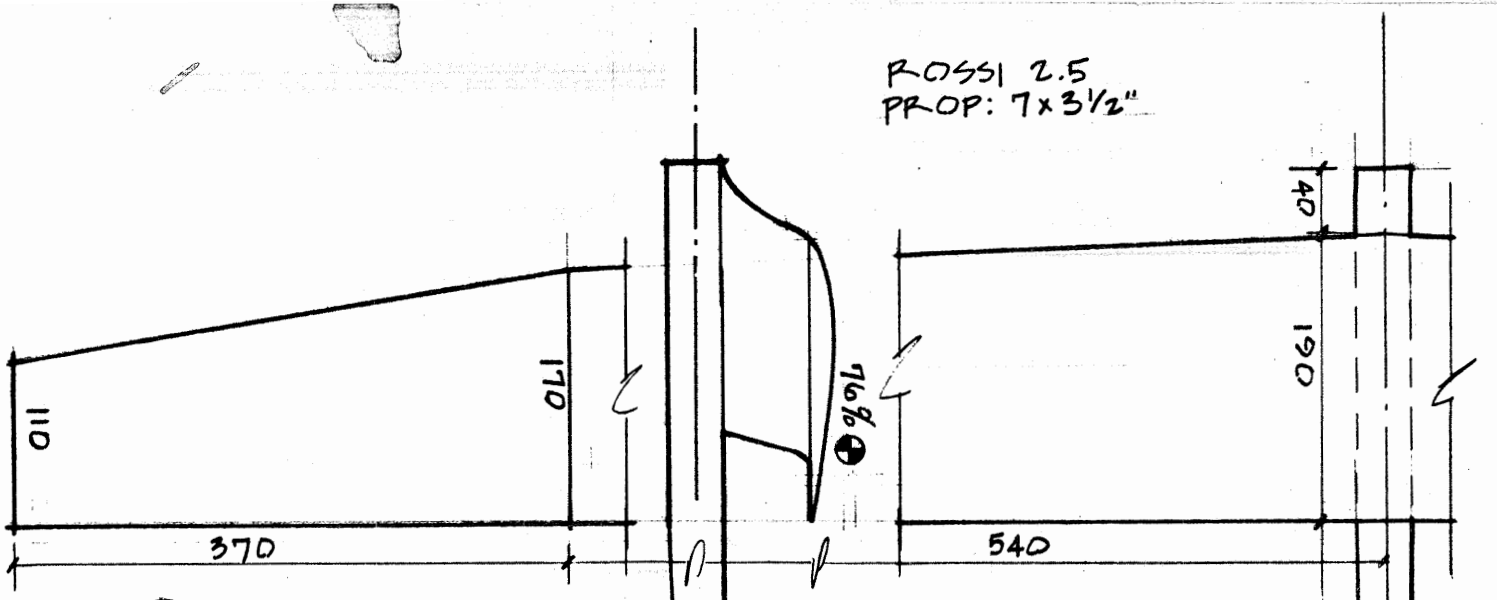
PETER HARRIS
F1C Great Britain

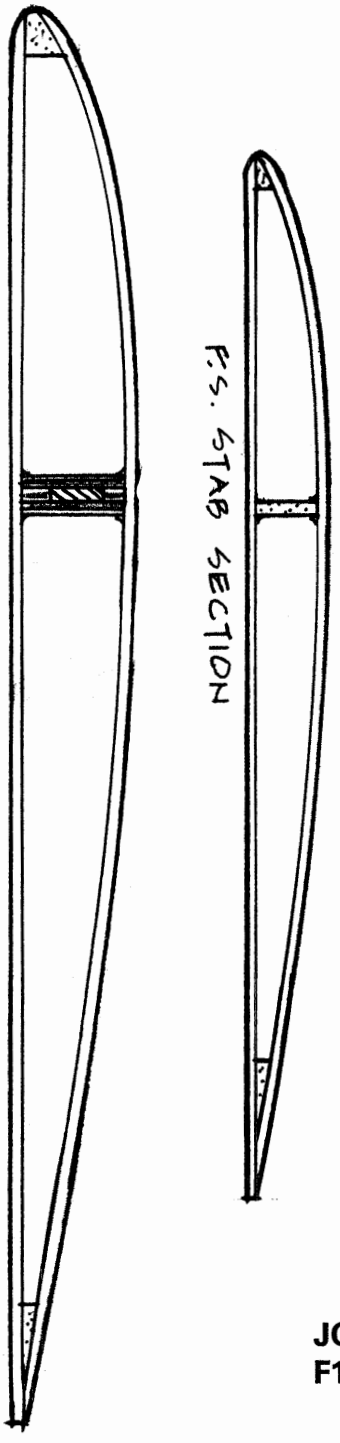

NO 1
Motor Rossi 15
Prop 7×3 Screen
RPM 25 500
Timer Monks (4 functions)
Pan Screen
Brake " (drum type)
Weight 27.5 oz
NO 2
AD 15
7×2 1/2 Screen
27000
Monks
Screen
" drum type
27,8 oz
indicates dimensions of long No 2 version
All fiberglass laminated or bonded with low viscocity B.I.P. polyester resin.
drawn by
tom sanders
STAFFORD SCREEN
F1C Great Britain
1/16 ply ribs
3/16 rib
1/16 balsa ribs
1/16 sq spruce
1/32 qtd balsa
STAB 5 1/2% at 30%
1/16 sq balsa
1/16 balsa with 6 oz fiberglass cloth
1/16 ribs balsa unless noted
sep. TE
BENEDEK 8353B
5×3 mm spruce
6×3 spruce
1/4 sq balsa
timer release
lift-off cowl - 3 lyr. 1oz f.g cloth, carb. fibre reinf.
68%
square exhaust tube from 1oz fiberglass cloth - 3 layers full length, 4 for first 3"
3/16 quarter grain
1/8 sq balsa
"Screen" sq. alum pan
tank .008 tin
timer
fuselage covered with .6 oz f.g. cloth
.6oz cloth
recessed wing hold-down
exhaust tube
1/8 sq spruce
1/8 soft balsa-quarter grain
chamfered corners
A.R & V.I.T.


KEIICHI KIBIKI
F1C Japan
DIHEDRAL
23°
4°
1800 PROJ.
1822 FLAT
WEIGHTS
FUSELAGE 558 g
WING 223 g
STAB 33 g (814 g TOTAL)
ROSSI 15N ABC
WIRE HOOK
STRUT ANCHOR
TAPERED SPRUCE SPAR
41
42
WASH-IN
PLYWOOD HOOK
STAB FIN
ALUM. STRUT ANCHOR
PLYWOOD
HARD BALSA
STAINLESS STEEL
SCREW HOLE
HARD BALSA
PLYWOOD
T.E. AT ℄
ALUM. STRUT ANCHOR
FUSELAGE SECTION
PLYWOOD
1.9 Ø PIANO WIRE STRUT
RUDDER
NUT & WASH'R.
RUDDER CONN.
AREAS
WING 30.00 dm²
STAB 7.56 dm²
TOTAL 37.56 dm²
THRUST 0° 0°
C.G. = 70%
SCREWS
SEELIG W/AUTO SWITCH
BAMBOO
CENTER FIN
PLYWOOD
SPRUCE
MED. BALSA
2.5°
80°
HARD BALSA
HARDWOOD
PYLON
STAB SEAT
STAB
MED. HARD BALSA
WING
DRAWN BY: BILL BOOTH. JR.


KEIICHI IWAMURA
F1C Japan
SPECIFICATIONS
ENGINE : ROSSI 15
PROPELLOR : 7.125 x 2.75
TIMER : SEELIG MULTI-FUNCTION
WING AREA : 31.8 dm²
STAB AREA : 7.55 dm²
WEIGHT : 845 grams
COVERING : JAPANESE PAPER
FINISH : DOPE
DIMENSIONS : IN MILLIMETERS
DRAWN BY : FRED TERZIAN
AUGUST, 1979
CENTER SECTION WING
CENTER SECTION STAB
170
210
390
35
30
170
600
40
110
280
120
0°
160
70%
150
138
200
850
170
130
180
5
SEELIG

ROSSI 2.5
PROP: 7x3½"





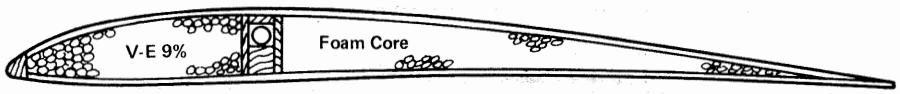
MULA "AZUL"

WING: 29.26 DM.²
STAB: 6.64 DM.²
WEIGHT: 760 GRAMS
FINISH: EPOXY
TIMER: SELIG 4 FUNCTIONS



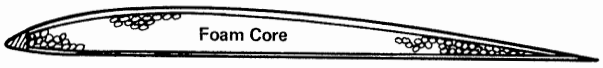
JOSE RAMIREZ
F1C Mexico

DRAWN BY MIKE ARAK



Wing airfoil: Eiffel 400 modified upper & lower camber. Nose entry to 9% thickness at high point.
Stab is a modified Benedek of the B.E. flat botton series

Foam core is 1.8 per cubic foot in wing planked with a thin 1/16 sheet balsa. Epoxy & cloth covered.
Same in Stab, except for 1/32 planking.



all dimentions in millimetre
(except wing spars)

Power: Rumpel Rossi
Propeller: Mixed Pitch 3.5 at 40/100
Wing Area: Approx 36 sqd^2 at 60/100
Stab Area: Aprox 6.2 sqd
Weight: 766 grms
Covering/Finish: Wings balsa skin over foam, covered with light cloth & Epoxy Resin ; same in stab.

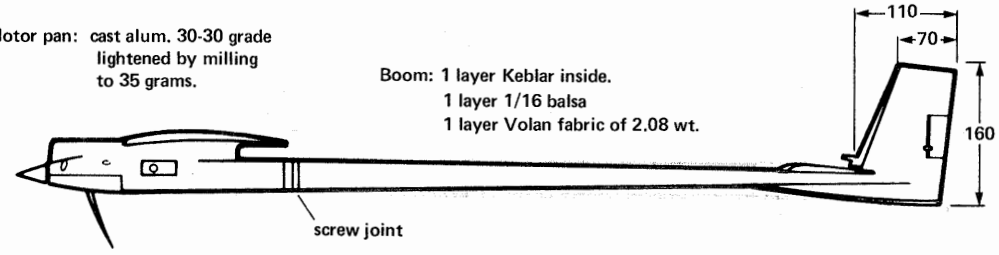
Wing: 195 grms

Stab: 30 grms

wing joint is by a unhardened drill rod 5/32 dia.
ONLY WARP LEFT WING
8mm WASH OUT

Motor pan: cast alum. 30-30 grade lightened by milling to 35 grams.

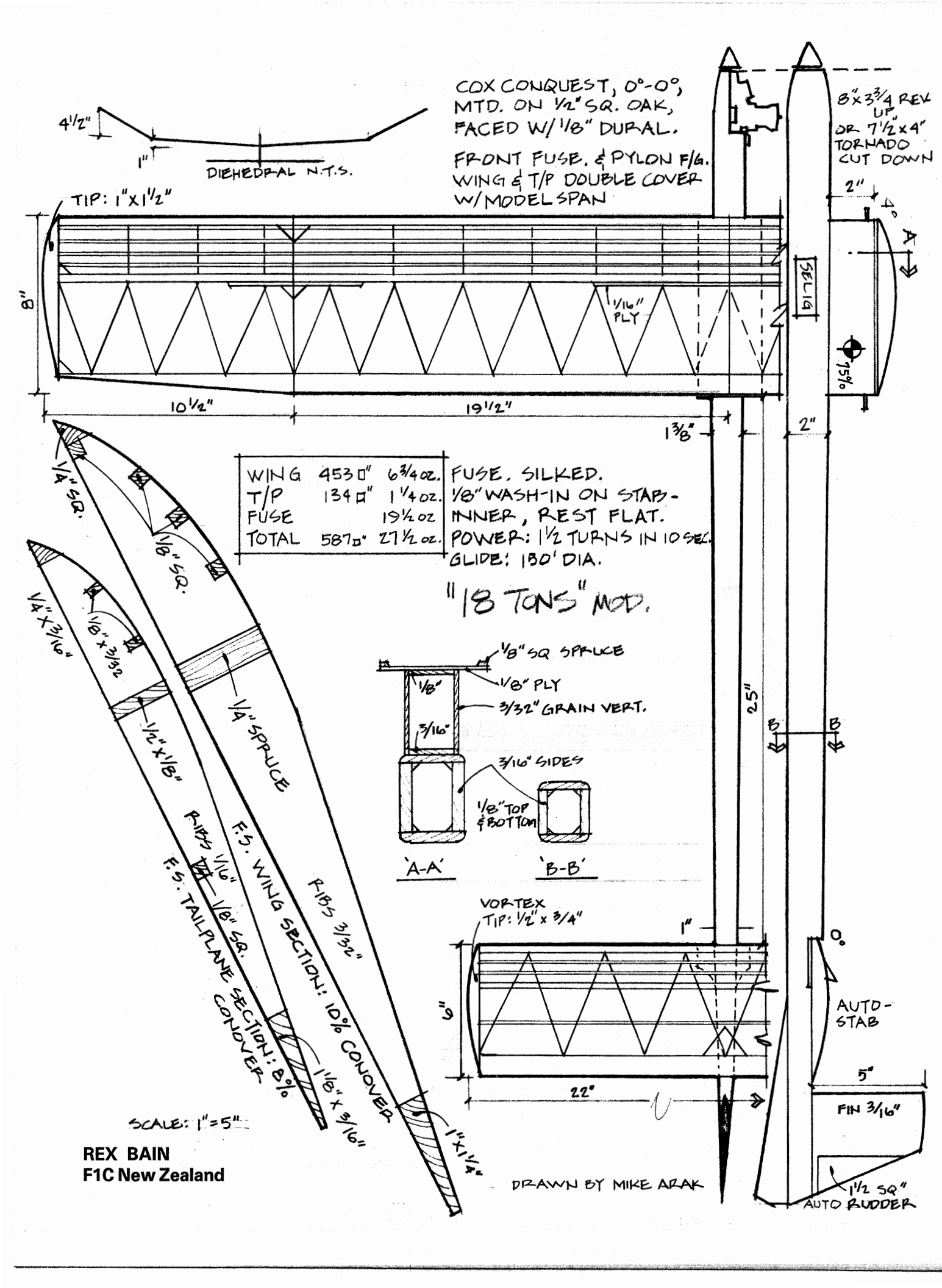
Boom: 1 layer Keblar inside.
1 layer 1/16 balsa
1 layer Volan fabric of 2.08 wt.



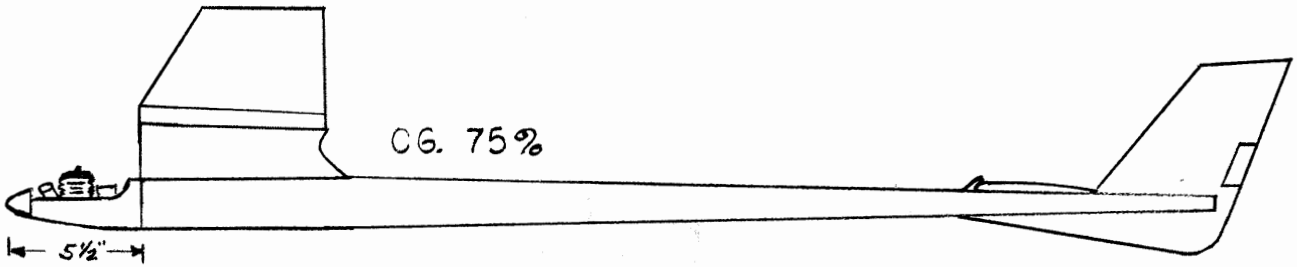
Front moulded in 2 sides & joint.
Materials: Epoxy Resin " HI TEMP.=
6 layers, carbon fibers sandwished in each each layer.

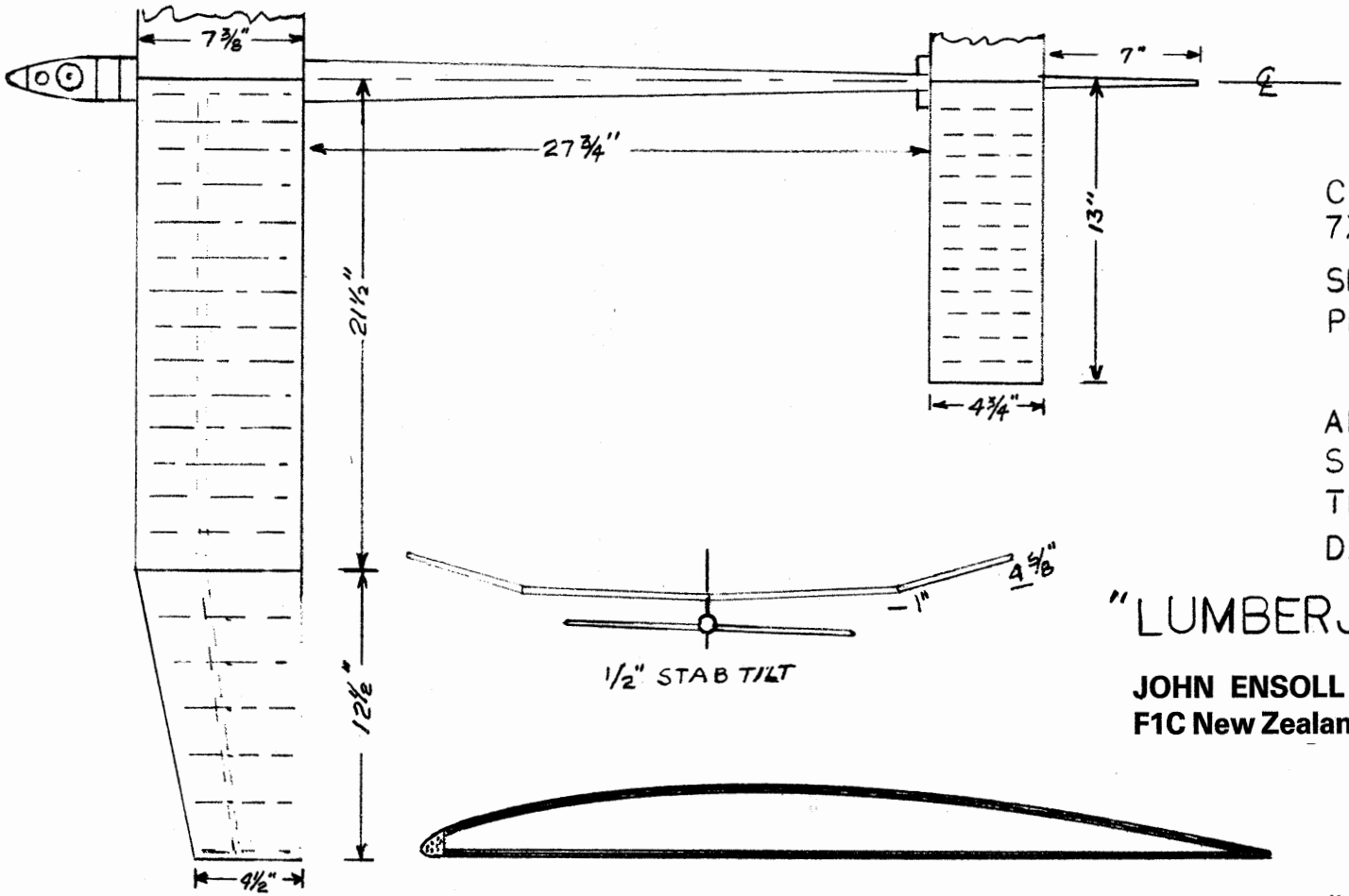
ALBERTO VELA
F1C Mexico

DRAWN BY JOE Mc CARTHY



REX BAIN
F1C New Zealand





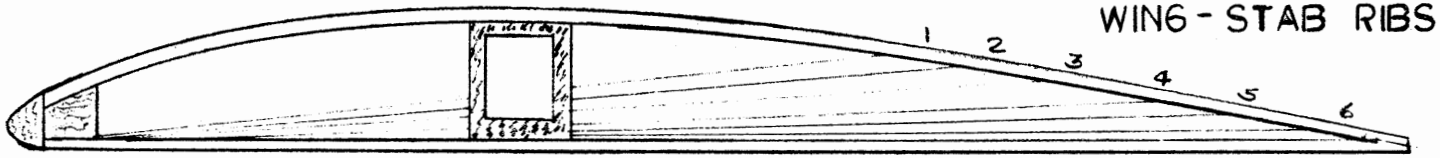
COX ENGINE
7X3½ PROP

SEELIG TIMER
PROP BRAKE - KERR TYPE

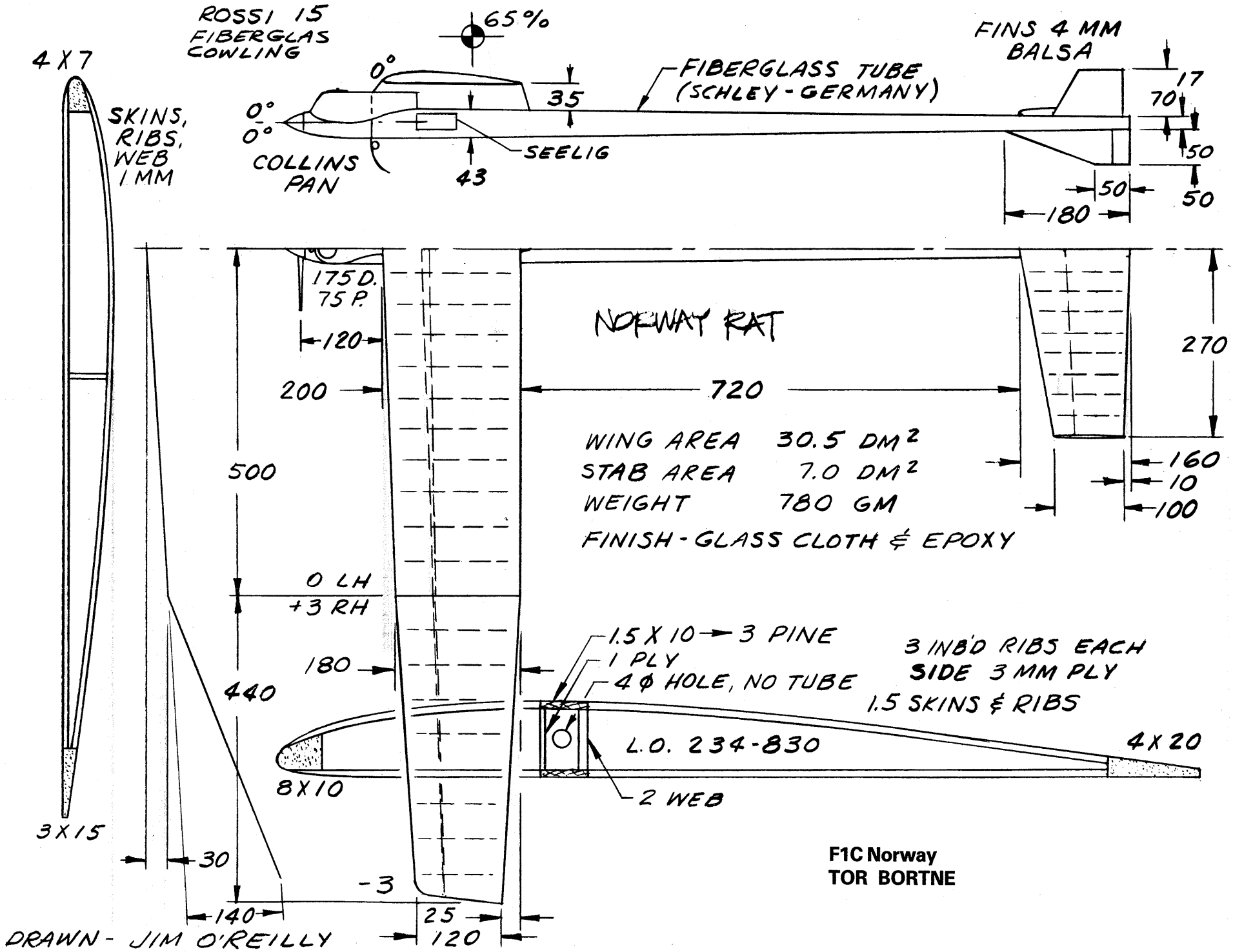
ALL SURFACES
SHEETED BALSA -
TISSUE COVERED
D. McANNELY - PAN

"LUMBERJACK II" - FIC

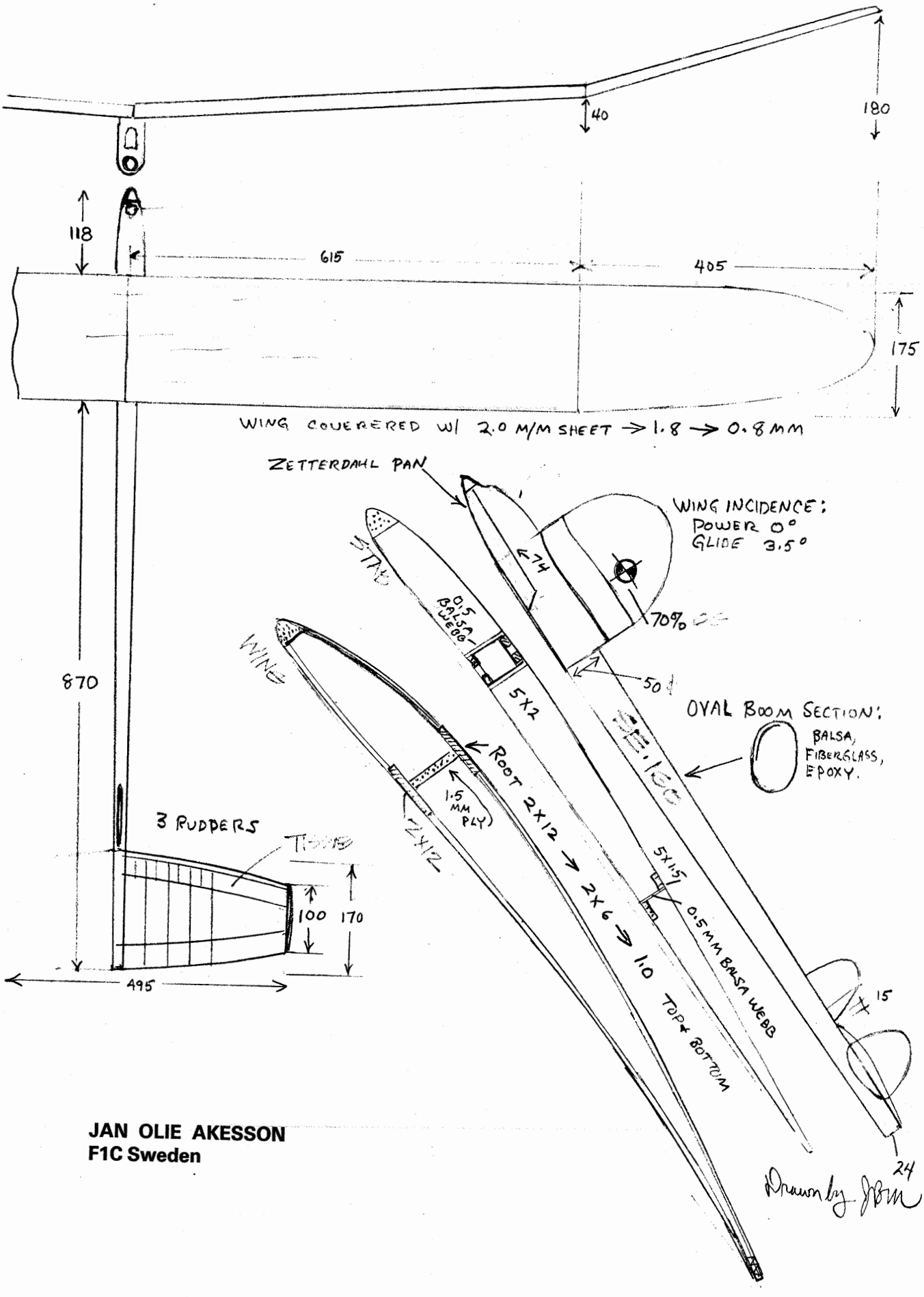
JOHN ENSOLL
F1C New Zealand



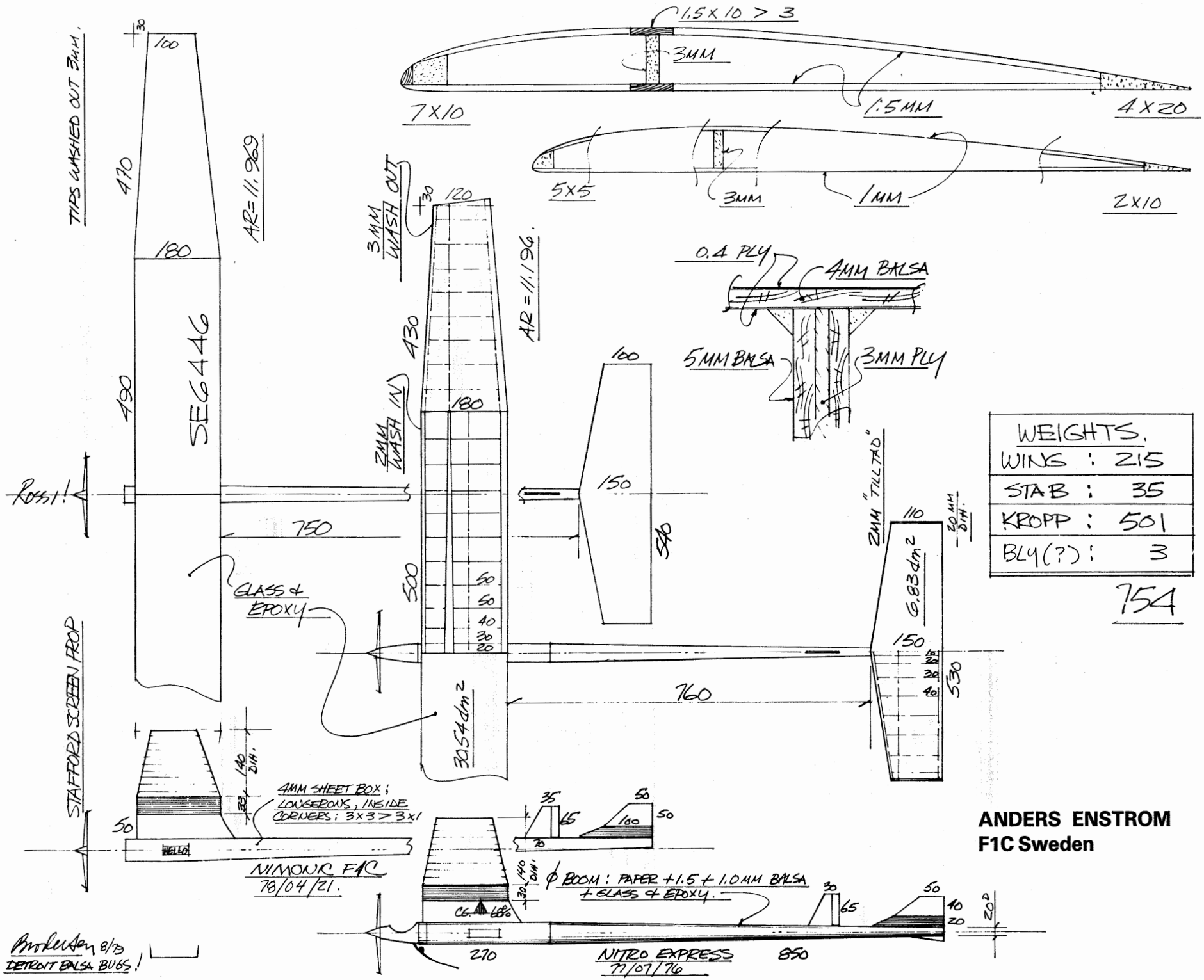
WING - STAB RIBS "FULL SIZE"



F1C Norway
TOR BORTNE



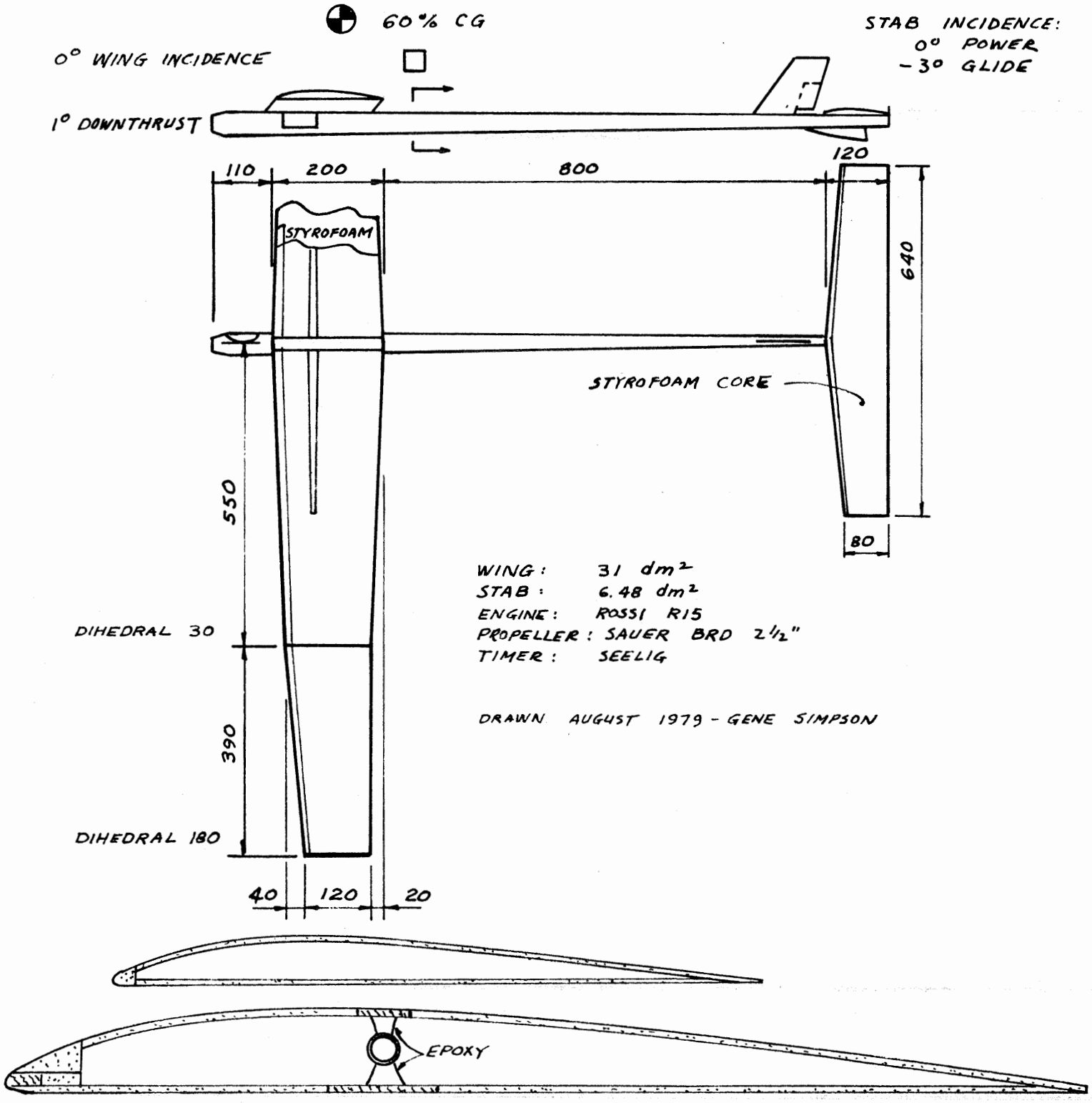
JAN OLIE AKESSON
F1C Sweden



WEIGHTS.	
WING :	215
STAB :	35
KROPP :	501
BLY(?) :	3

754

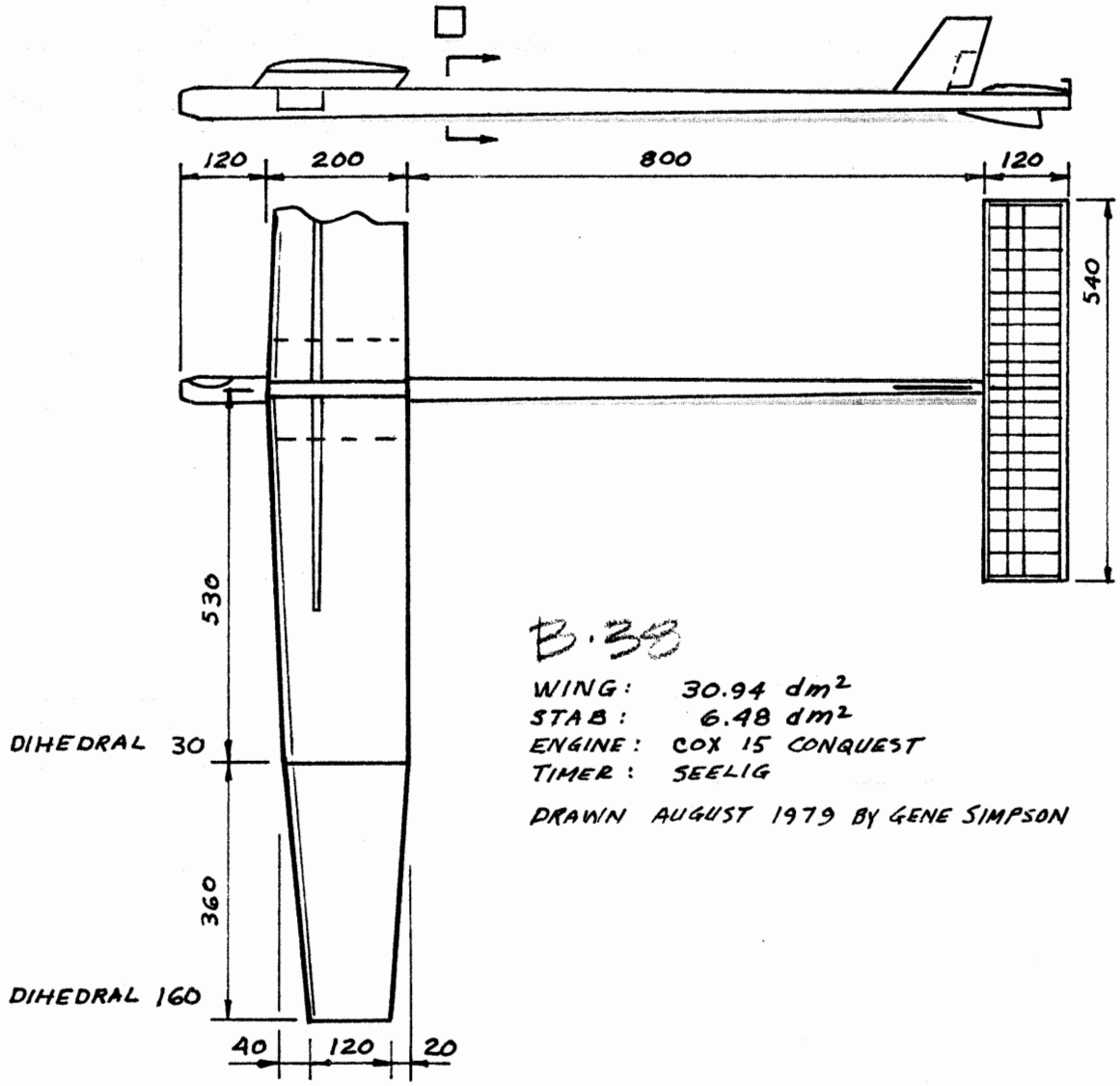
ANDERS ENSTROM
F1C Sweden



WING: 31 dm^2
STAB: 6.48 dm^2
ENGINE: ROSSI R15
PROPELLER: SAUER BRD 2 1/2"
TIMER: SEELIG

DRAWN AUGUST 1979 - GENE SIMPSON

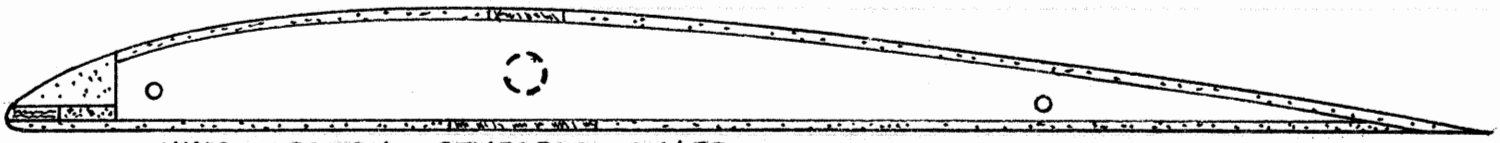
ANDRES BARTSCHI
F1C Switzerland



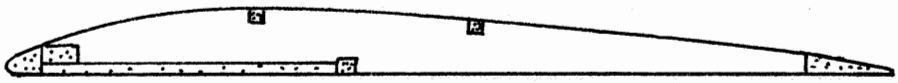
B-38

WING: 30.94 dm^2
STAB: 6.48 dm^2
ENGINE: COX 15 CONQUEST
TIMER: SEELIG

DRAWN AUGUST 1979 BY GENE SIMPSON

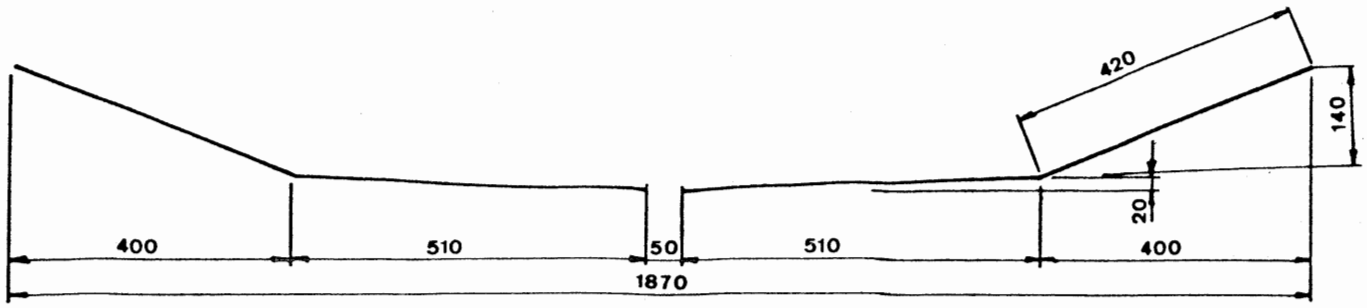


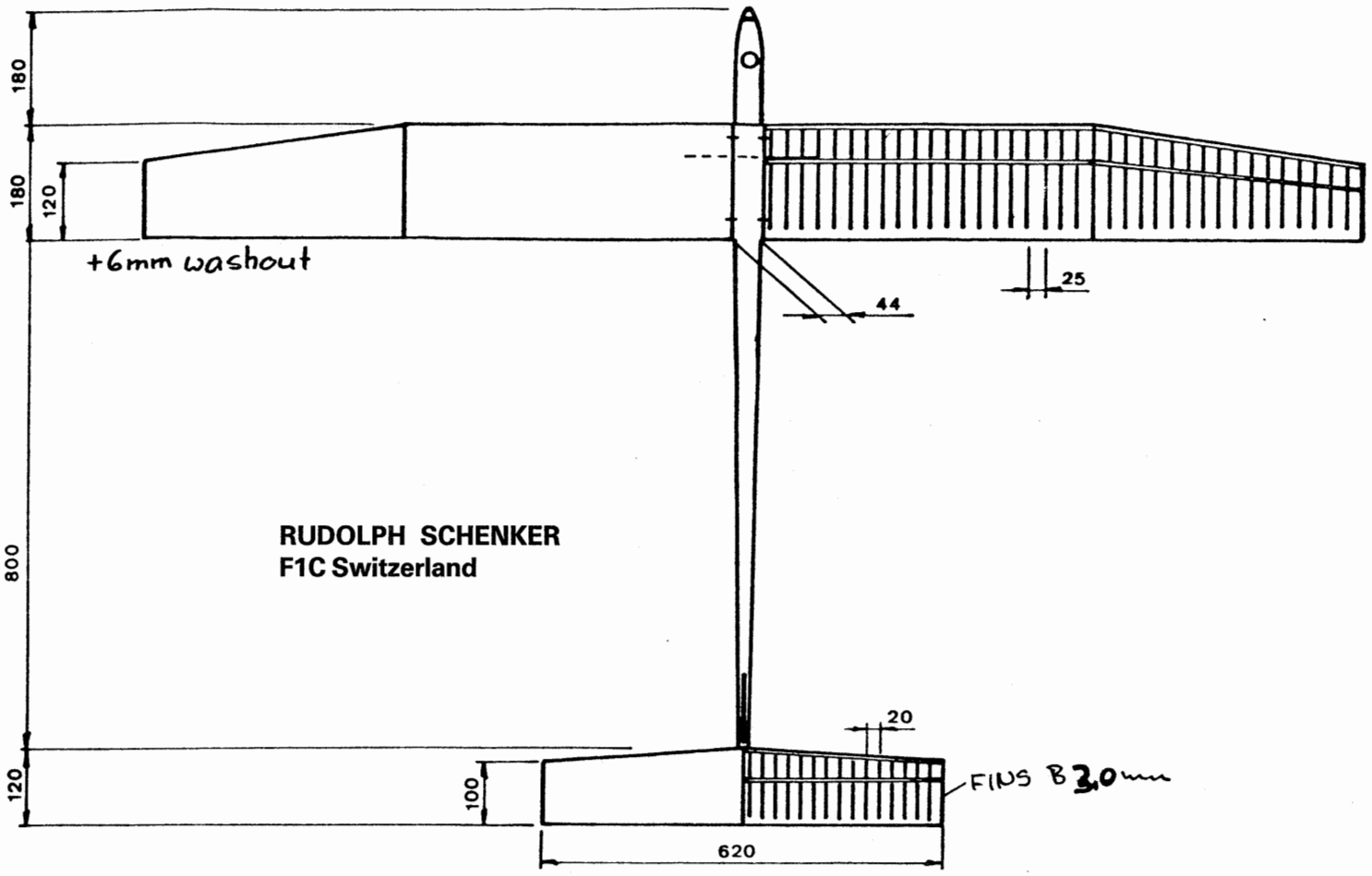
WING SECTION - STYROPOR FILLED

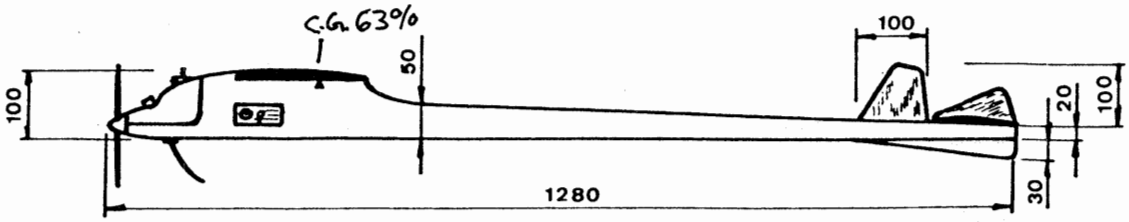


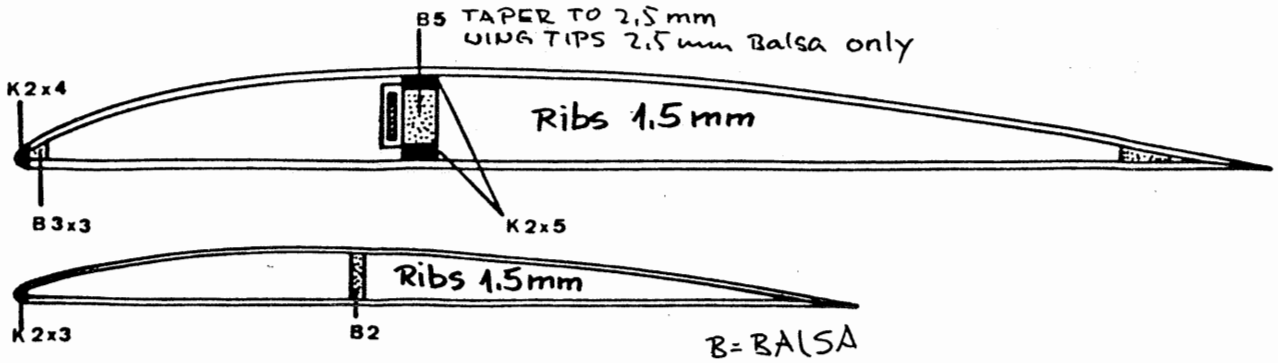
STAB SECTION

ANDRES BARTSCHI
F1C Switzerland


420
140
20
400
510
50
510
400
1870


180
180
120
+6mm washout
25
44
800
RUDOLPH SCHENKER
F1C Switzerland
20
120
100
FINS B 3.0mm
620

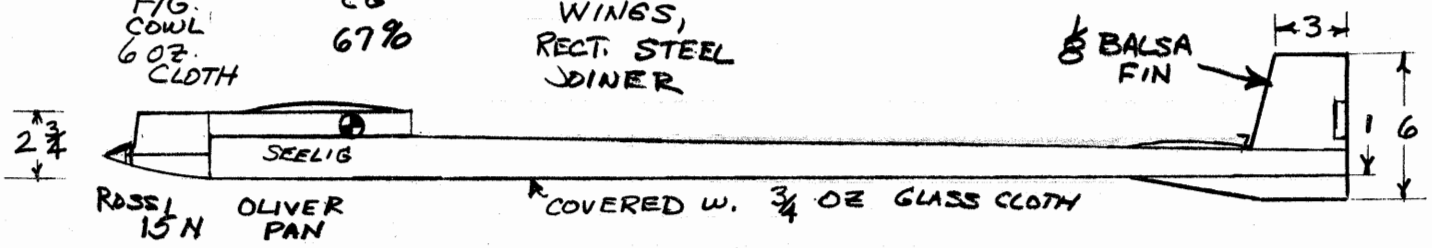

C.G. 63%
50
100
100
20
100
30
1280

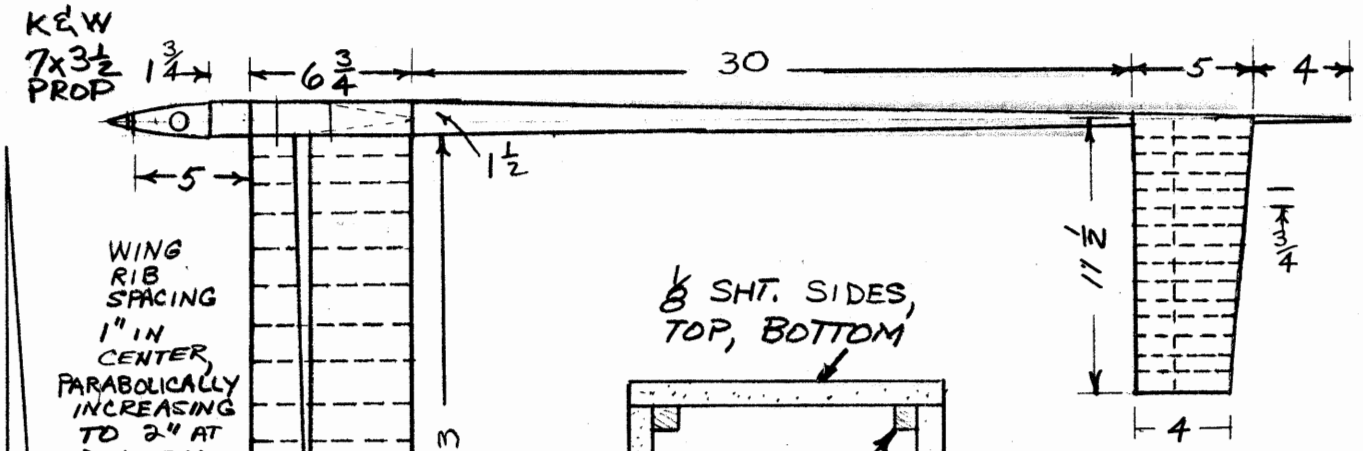

B5 TAPER TO 2,5 mm
WING TIPS 2,5 mm Balsa only
K2x4
Ribs 1,5 mm
B3x3
K2x5
Ribs 1,5mm
K2x3
B2
B=BALSA
K=SPRUCE

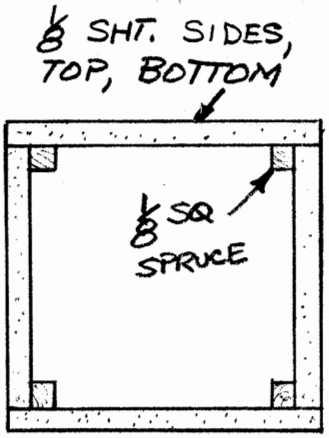
F/G COWL 6 OZ. CLOTH

CG 67%

PLUG-IN WINGS, RECT. STEEL JOINER



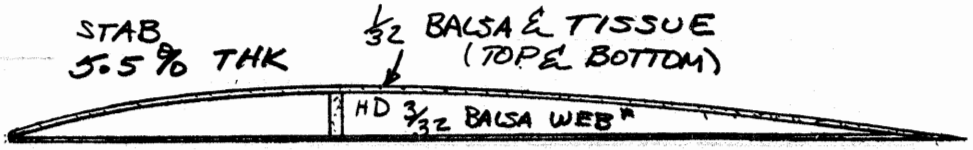




FUSELAGE X-SECTION

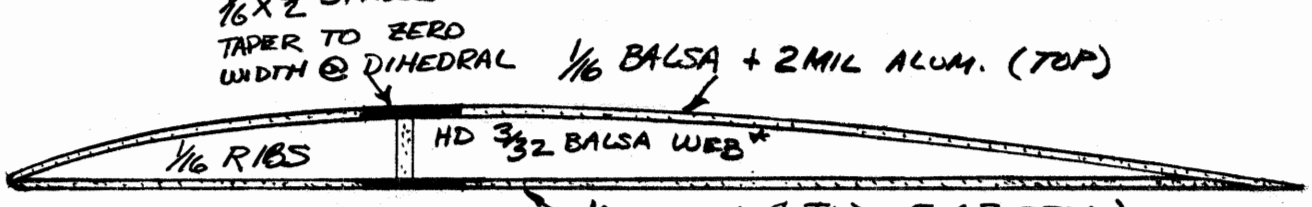
	AREA	WT.
WING	470.4	203
STAB	103.5	27
FUSE	10.1	525
TOTAL	584 IN²	755g

CARL BOGART
F1C United States



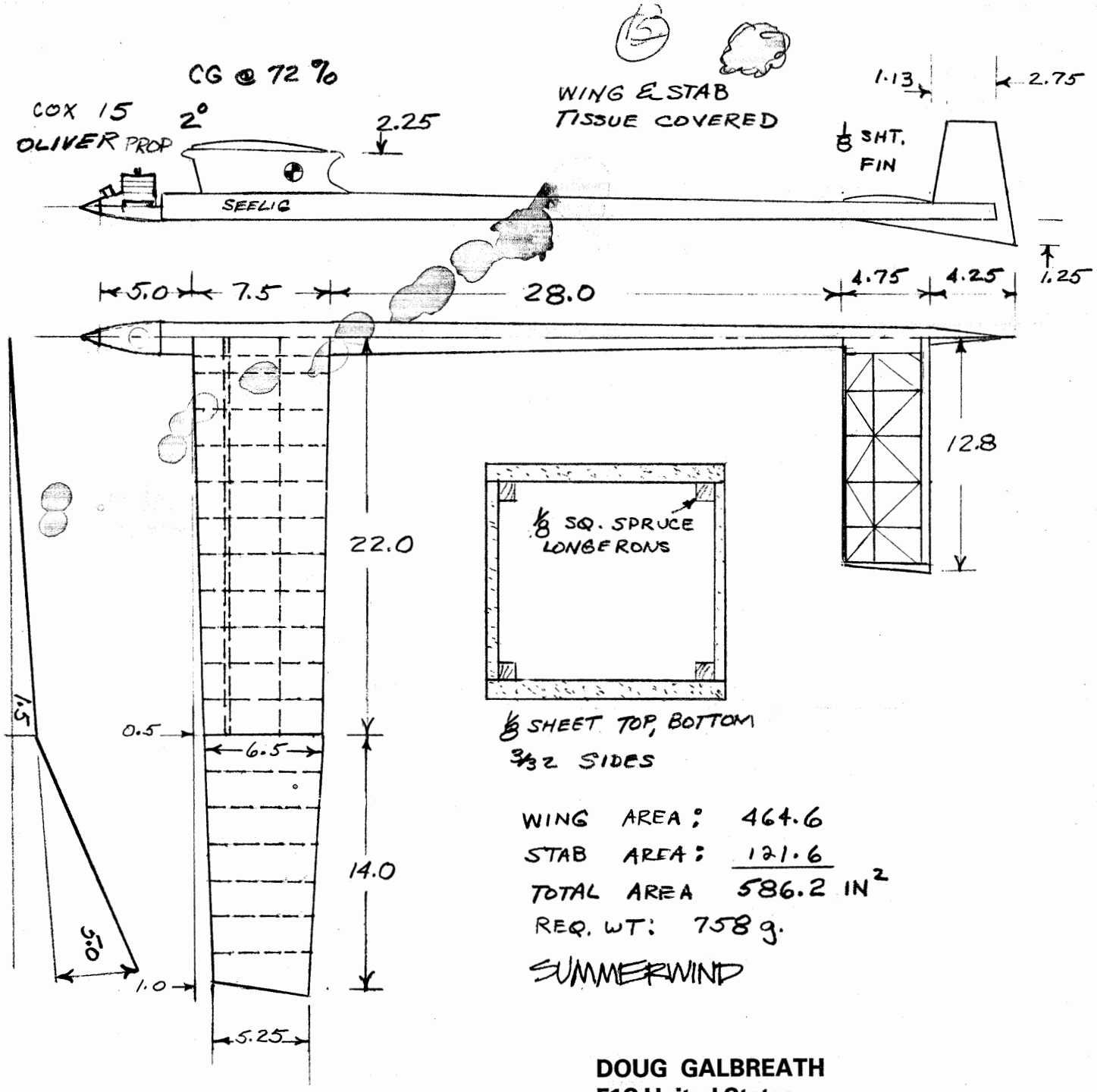
* BALSA WEBS RUN FULL SPAN, GRAIN SPANWISE
ALL RIBS CUT OUT FOR WEB

1/8 SCALE



WING 6.5% THK

Tom Hutchinson
AUG. '79

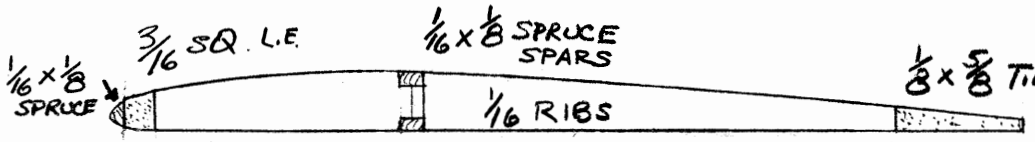


WING AREA: 464.6
STAB AREA: 121.6
TOTAL AREA 586.2 IN²
REQ. WT: 758 g.

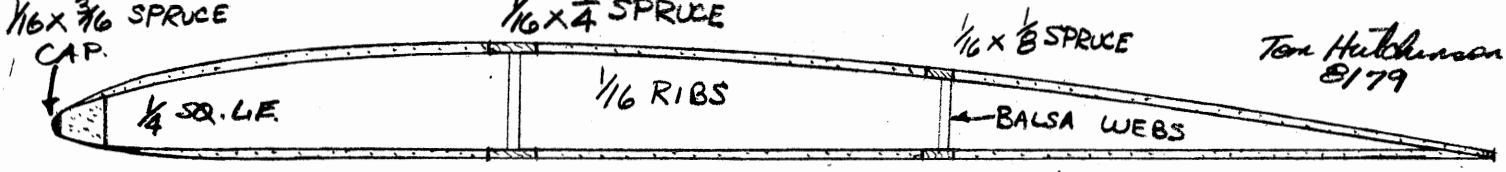
SUMMERWIND

DOUG GALBREATH
F1C United States

⅛ SCALE



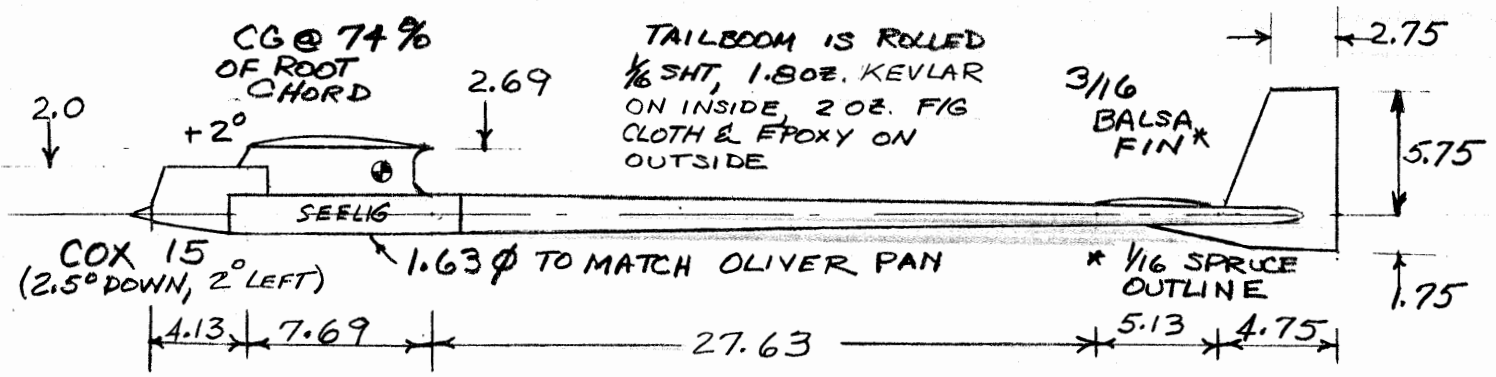
STAB - 6.5 % RSG 28

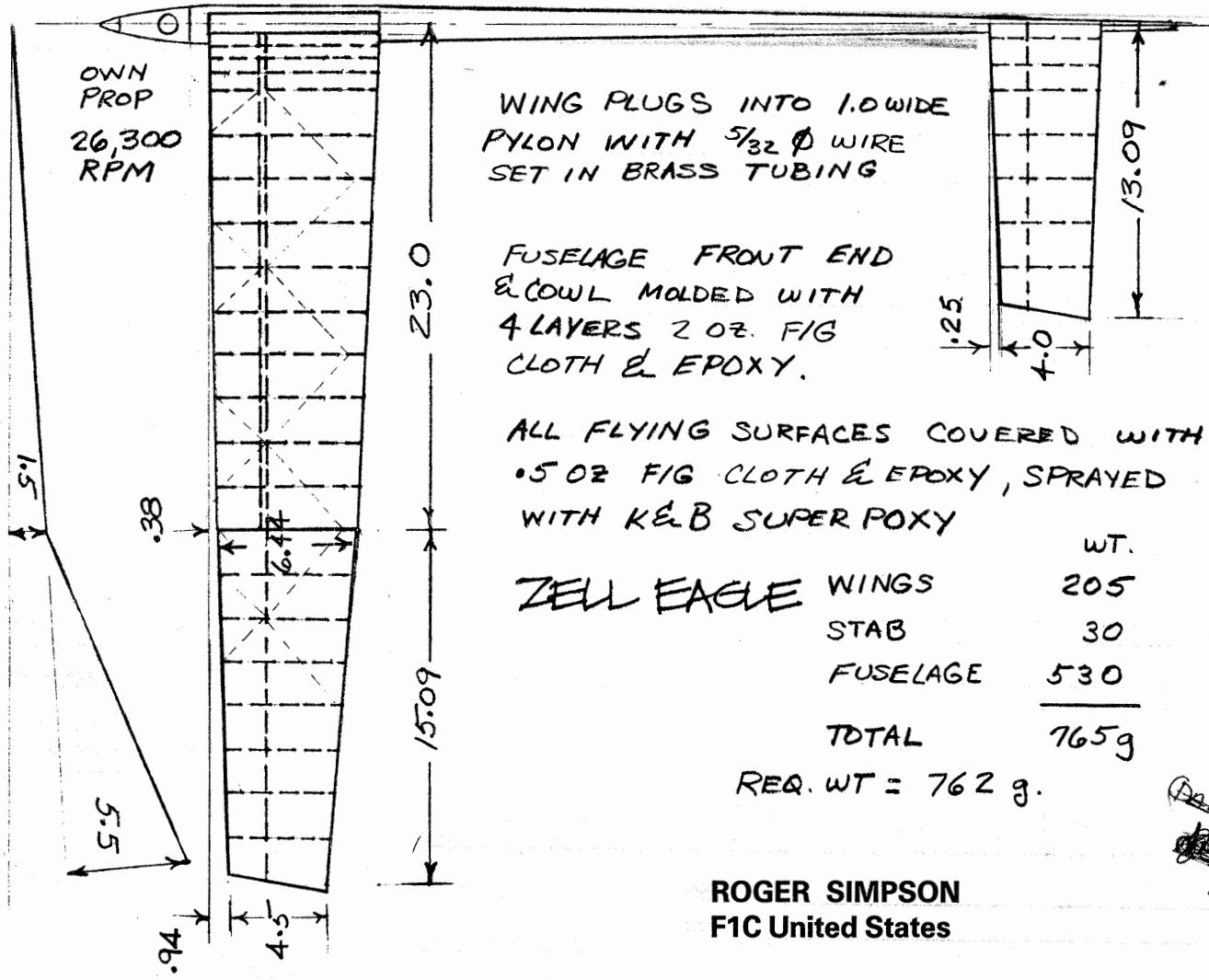


Tom Hutchinson 8/79

WING - GOTT. 795 - 8% THK.

1/16 LIGHT SHEETING (C-GRAIN @ T.E.)

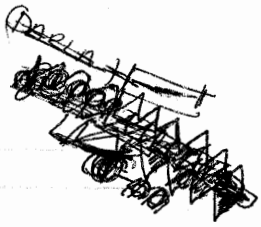




ZELL EAGLE

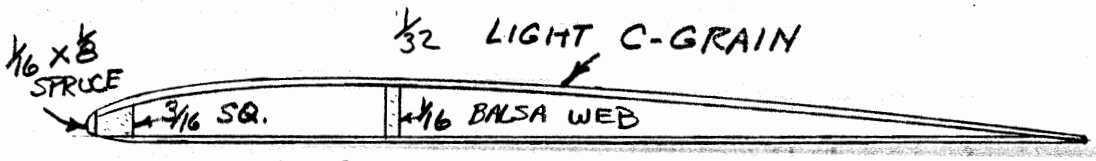
	WT.	AREA
WINGS	205	472.0
STAB	30	119.5
FUSELAGE	530	
TOTAL	765g	591.5 IN²

REQ. WT = 762 g.

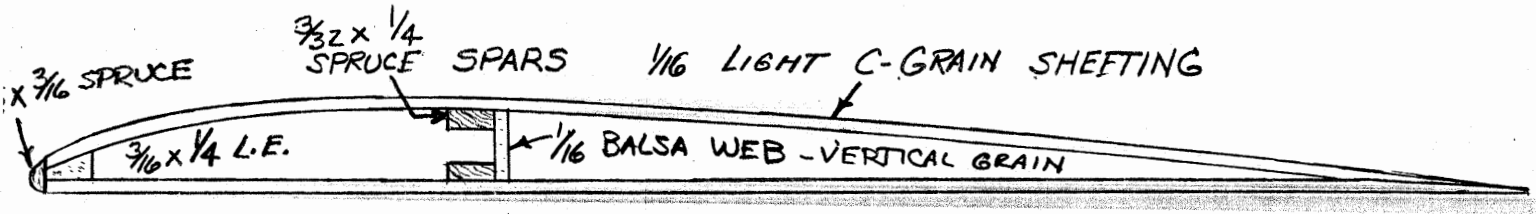


ROGER SIMPSON
F1C United States

1/8 SCALE.

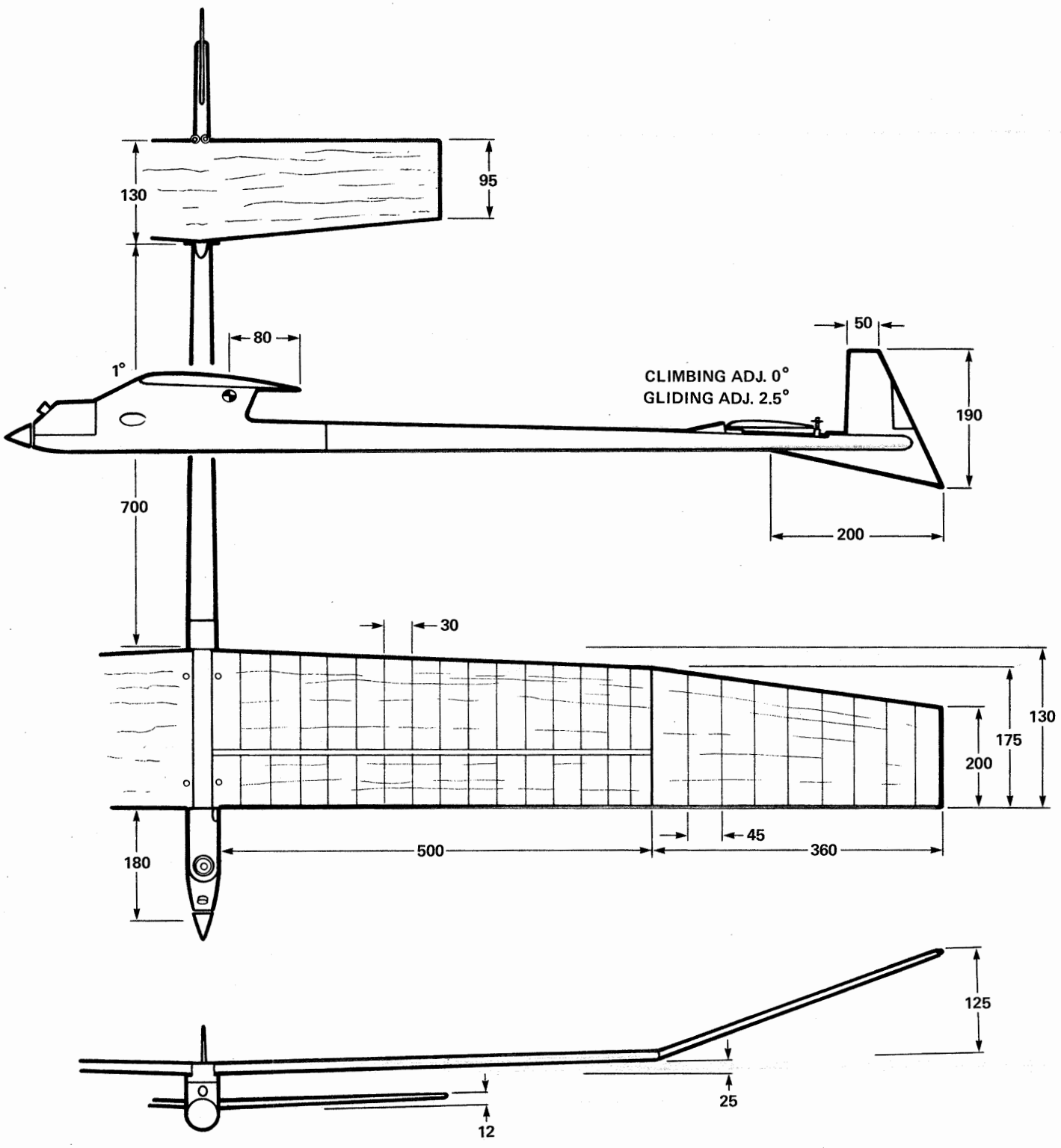


STAB - 6.5% THICK



WING - 6.5% THICK

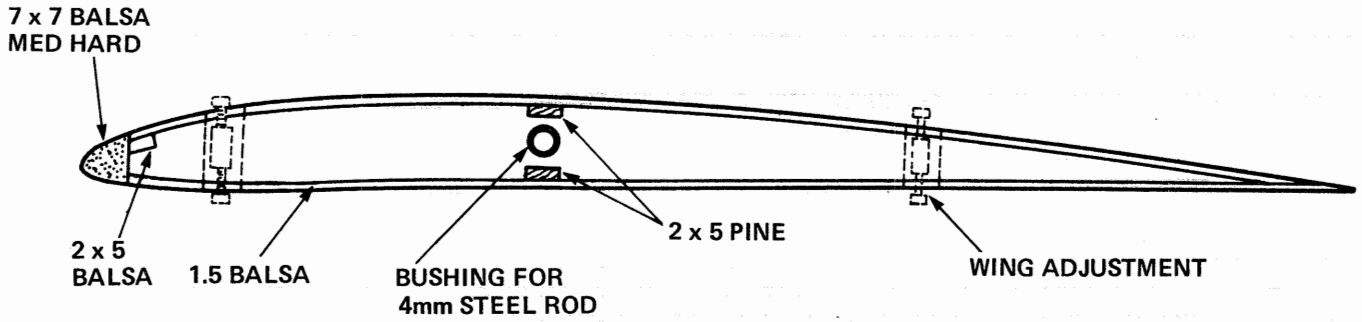
Tom Hutchinson
8/79

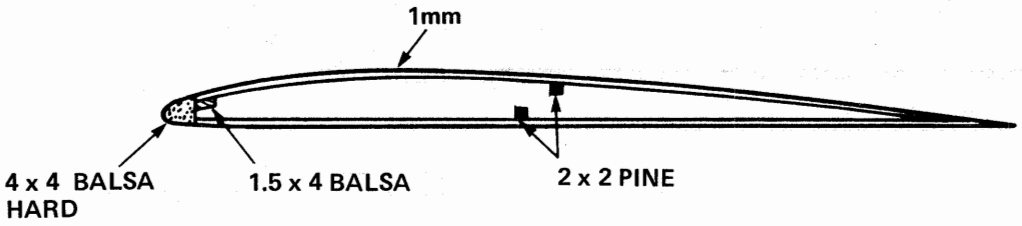


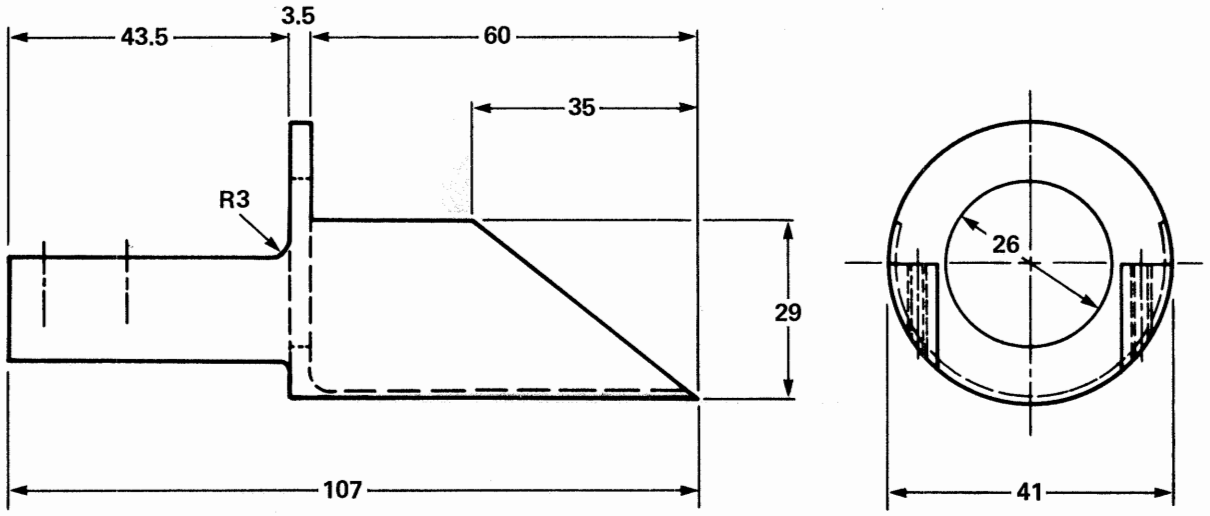
FRANZ BAUMANN
F1C West Germany

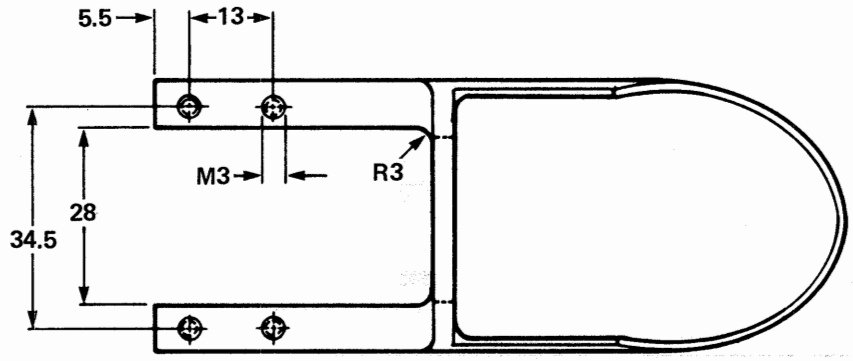
DRAWN BY JOE Mc CARTHY

	0	1.25	2.5	5	7.5	10	15	20	30	40	50	60	70	80	90	100
yo	1.5	2.8	3.5	4.4	5.2	5.8	6.5	7.0	7.25	6.9	6.2	5.25	4.2	3.0	1.5	0.1
yu	1.5	0.7	0.4	0.2	0	0	0	0	0	0	0	0	0	0	0	0









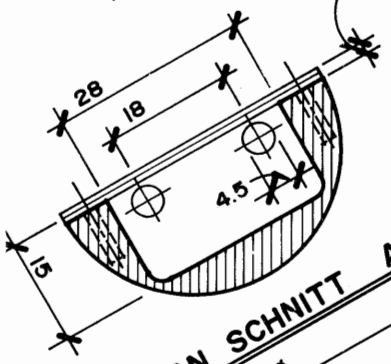
FRANZ BAUMANN
F1C West Germany

AREAS:

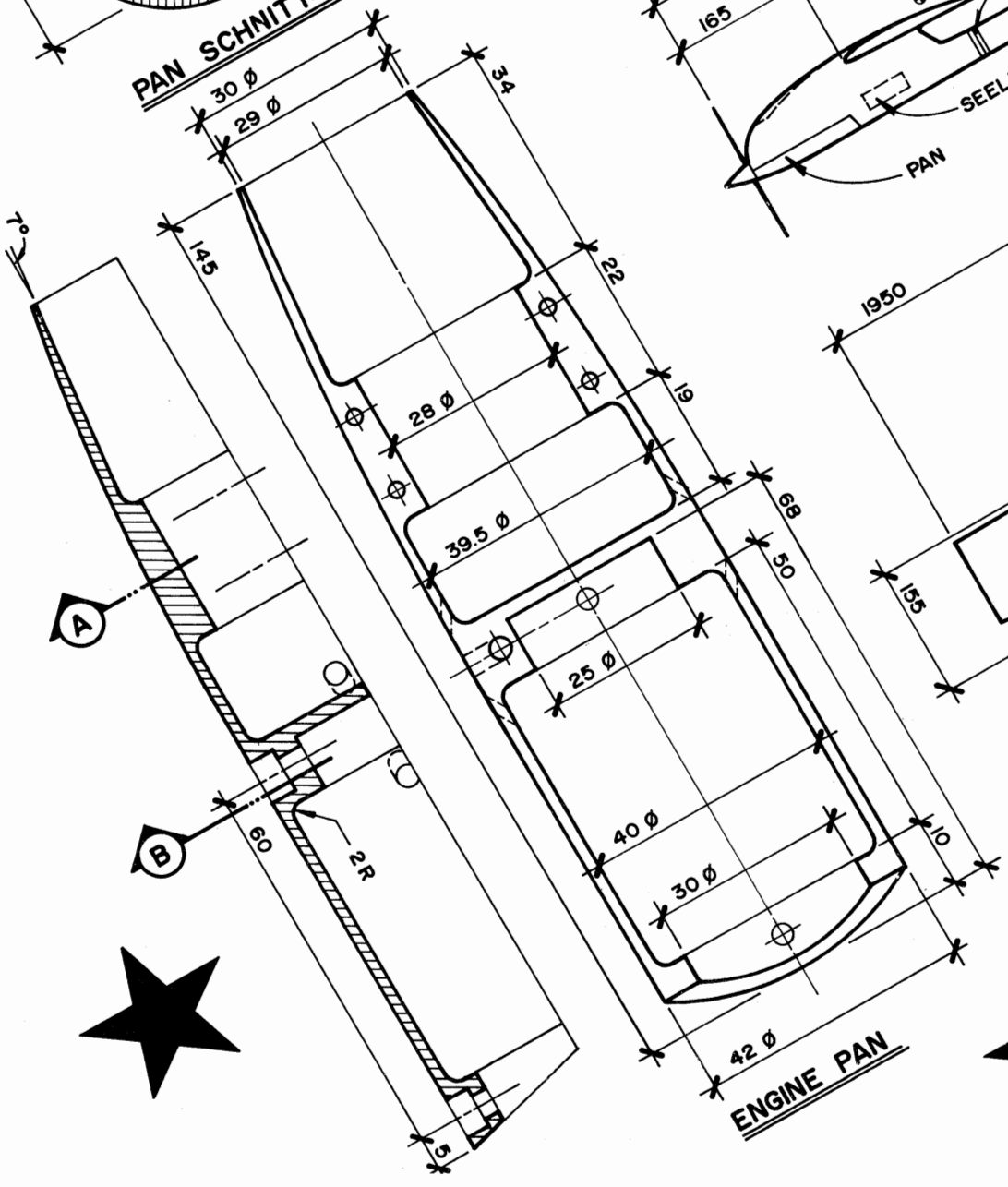
WING	30.5 DM²
STAB	7.0 DM²
TOTAL	37.5 DM²

TOTAL WEIGHT: 780 G

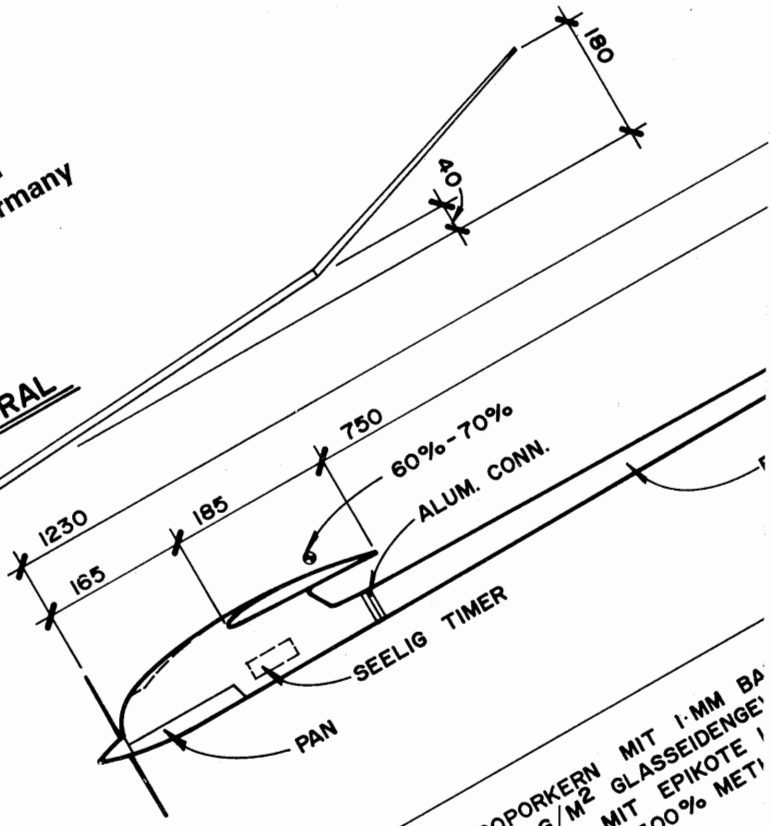
HANS SEELIG
F1C West Germany

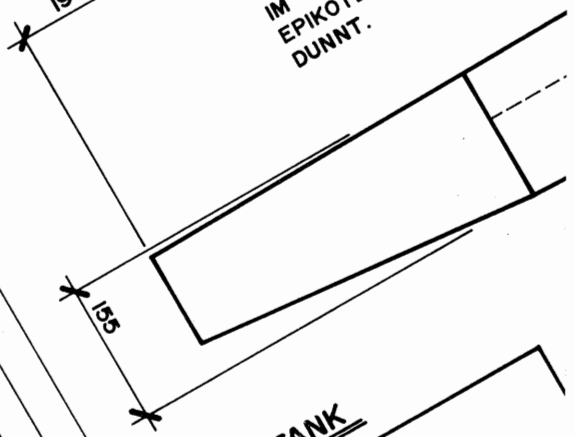


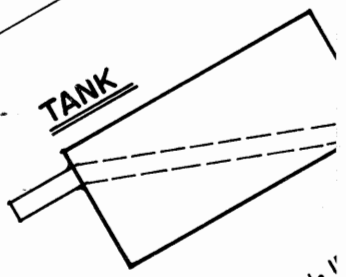
PAN SCHNITT A

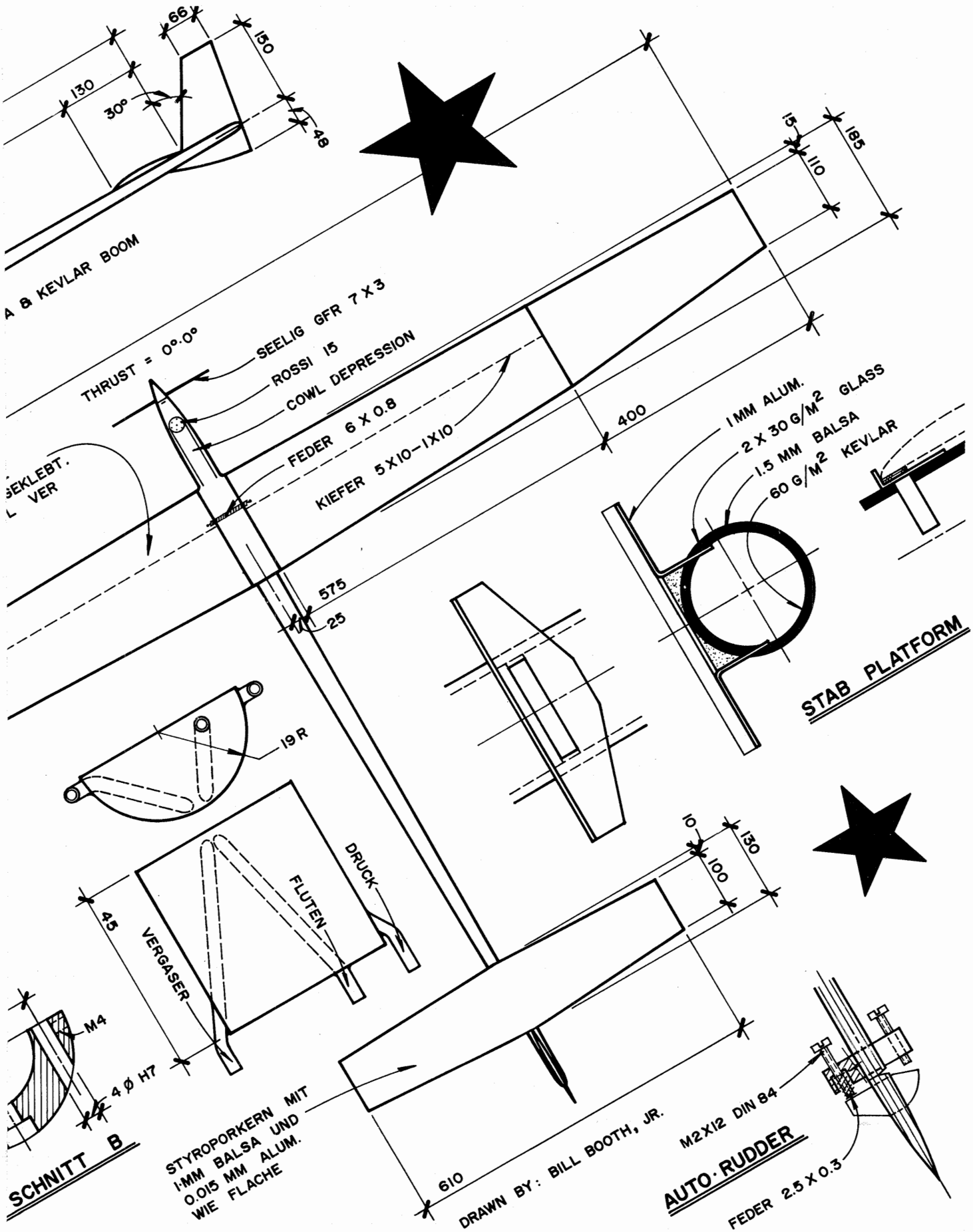


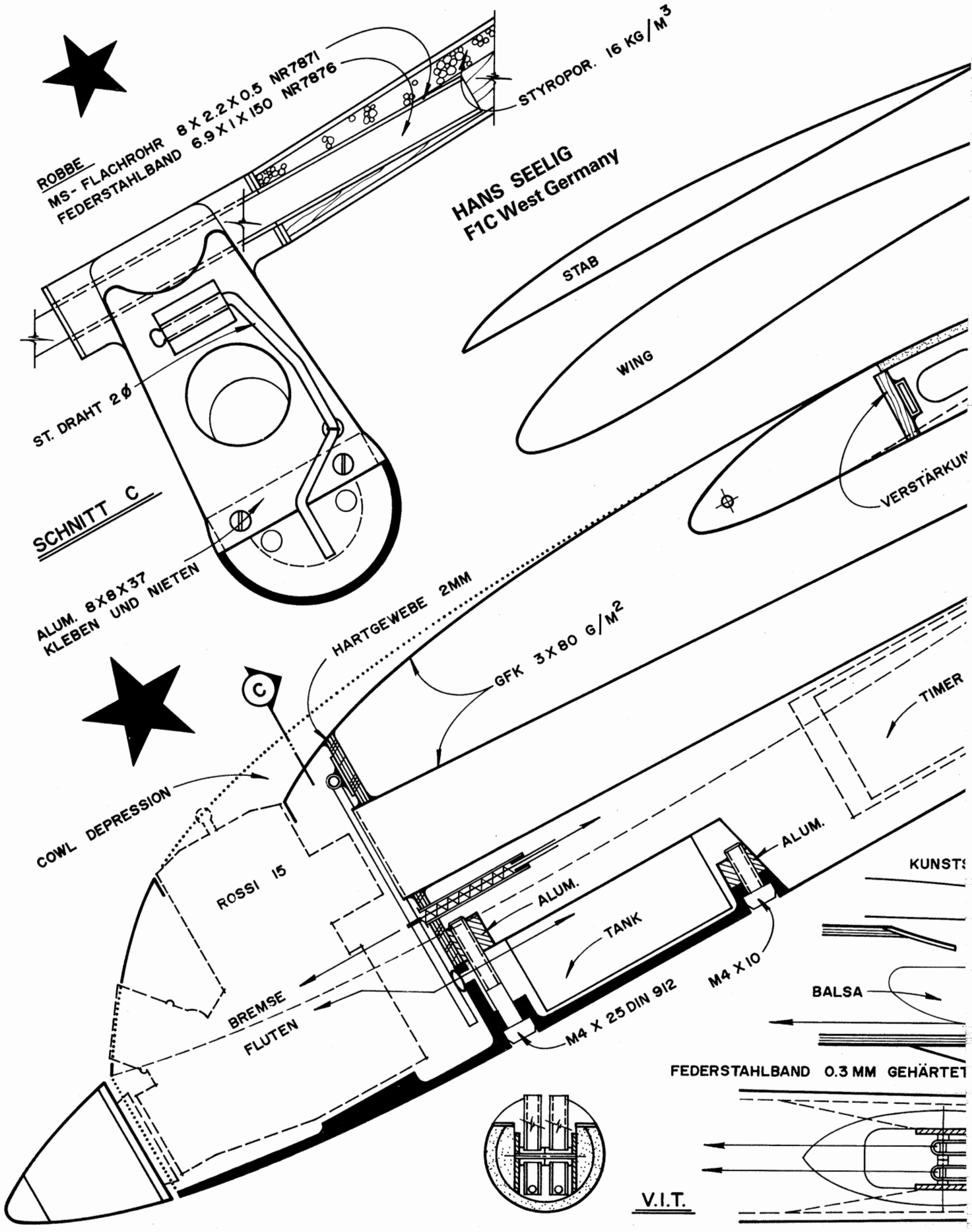
ENGINE PAN

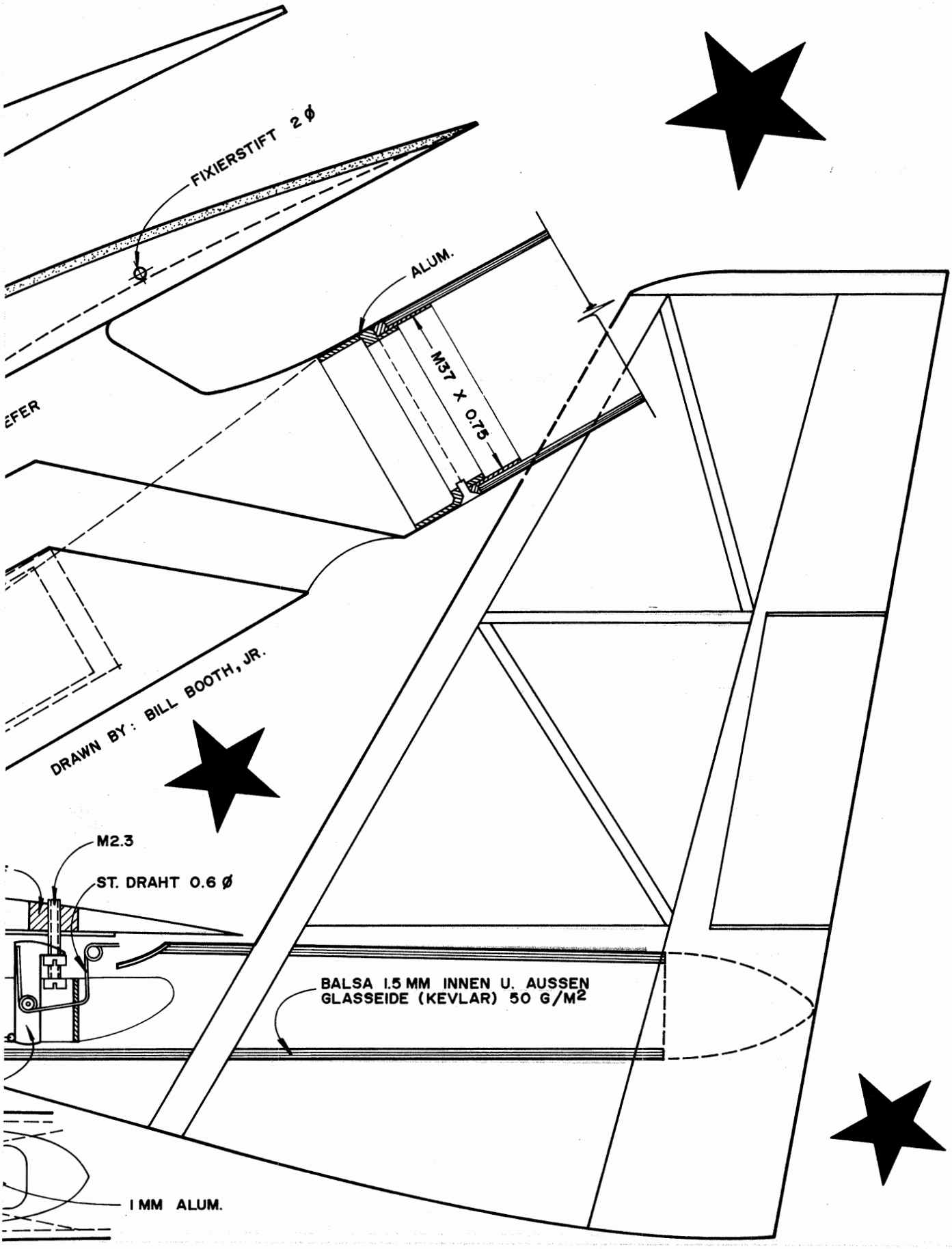


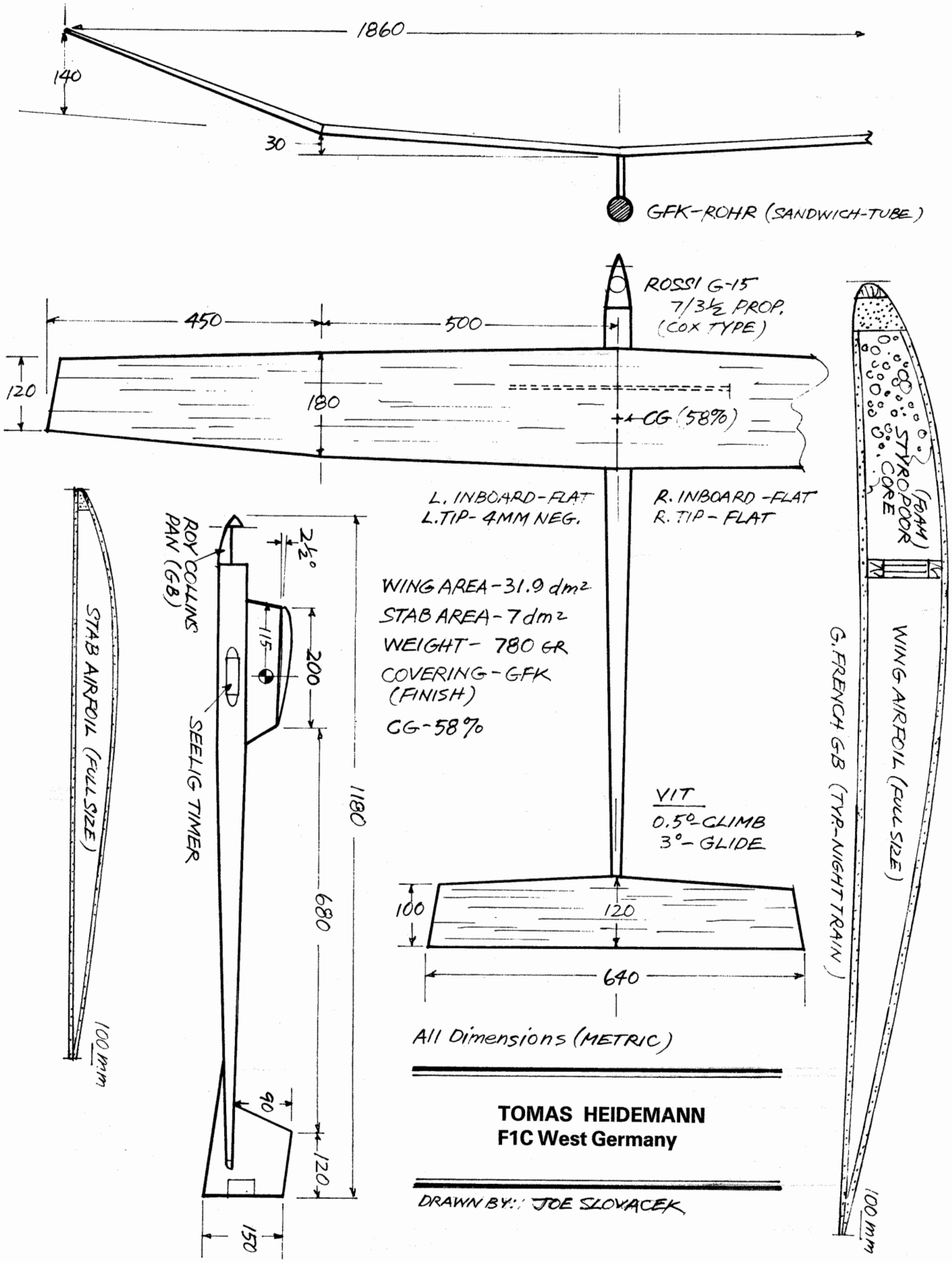





66
150
130
30°
48
A & KEVLAR BOOM
THRUST = 0°-0°
SEELIG GFR 7 X 3
ROSSI 15
COWL DEPRESSION
FEDER 6 X 0.8
KIEFER 5X10-1X10
GEKLEBT.
L VER
400
15
110
185
575
25
1 MM ALUM.
2 X 30 G/M2 GLASS
1.5 MM BALSA
60 G/M2 KEVLAR
STAB PLATFORM
19 R
45
VERGASER
FLUTEN
DRUCK
10
100
130
M4
4 Ø H7
SCHNITT B
STYROPORKERN MIT
1 MM BALSA UND
0.015 MM ALUM.
WIE FLACHE
610
DRAWN BY: BILL BOOTH, JR.
M2X12 DIN 84
AUTO-RUDDER
FEDER 2.5 X 0.3


ROBBE
MS- FLACHROHR 8 X 2.2 X 0.5 NR7871
FEDERSTAHLBAND 6.9 X 1 X 150 NR7876
STYROPOR. 16 KG/M3
HANS SEELIG
F1C West Germany
STAB
WING
ST. DRAHT 2Ø
SCHNITT C
ALUM. 8X8X37
KLEBEN UND NIETEN
HARTGEWEBE 2MM
GFK 3X80 G/M2
C
COWL DEPRESSION
ROSSI 15
BREMSE
FLUTEN
ALUM.
TANK
M4 X 25 DIN 912
M4 X 10
TIMER
BALSA
FEDERSTAHLBAND 0.3 MM GEHÄRTET
V.I.T.


FIXIERSTIFT 2 Ø
ALUM.
M37 X 0.75
DRAWN BY: BILL BOOTH, JR.
M2.3
ST. DRAHT 0.6 Ø
BALSA 1.5 MM INNEN U. AUSSEN
GLASSEIDE (KEVLAR) 50 G/M2
1 MM ALUM.


1860
140
30
GFK-ROHR (SANDWICH-TUBE)
ROSSI G-15
7/3½ PROP.
(COX TYPE)
450
500
120
180
CG (58%)
L. INBOARD-FLAT
L. TIP- 4MM NEG.
R. INBOARD -FLAT
R. TIP- FLAT
STYROPOOR (FOAM) CORE
WING AIRFOIL (FULL SIZE)
G. FRENCH GB (TYP-NIGHT TRAIN)
100 m/m
STAB AIRFOIL (FULL SIZE)
100 m/m
ROY COLLINS PAN (GB)
2½°
115
200
SEELIG TIMER
1180
680
90
120
150
WING AREA - 31.9 dm²
STAB AREA - 7 dm²
WEIGHT - 780 GR
COVERING - GFK
(FINISH)
CG - 58%
VIT
0.5° - CLIMB
3° - GLIDE
100
120
640
All Dimensions (METRIC)
TOMAS HEIDEMANN
F1C West Germany
DRAWN BY: JOE SLOVACEK

DATA

Flyers, Models



ANTONIO TARZIBACHI
F1A Argentina

After long practice sessions and successive corrections in his design, came good results. In the previous year, he won the Gold Medal in the Concurso de la Flor for the best timing in all classes, FAI, and now the National Championship and the selection of becoming first in the Argentinian team.

The models series are called "Martin," after his grandson. The III model is truly the simplest that could be made in its category, where the design and development of the circular towhooks made aerial hobbyist's designs (five collections) of springs, screws, wires, and levers ineffective and contrasting as always.

The hook used by Tarzibachi is the one designed by Delmo Donnelli, a simple 1 mm bronze plated U that sits a 1.5 mm steelwire hook, held in place by a screw, that at the same time, is used to adjust the disengage tension, which in this case is in the order of 2.5 to 2.8 kg.

The "MARTIN III" is a very stable model. The wing profile is similar to the one used by the Czechoslovakian, Pavel Dvorak, in his winning model in the 1971 world competition. The tips in the wings are laminated with very light balsa wood, and the whole ensemble has no special turns or curves.

The tailgroup is very light with a flat profile in the stabilizer at 7.7% and also has laminated tips.

PETER LLOYD
F1A Australia

Design originality is rare in F1A's and most models published, embelished the thoughts of others in layout and structure and with the ESTE-AIR series, this is no exception.

The original concept borrowed heavily from Jim Baguley's "Classic" in stab area, wing chord and longitudinal moments. The projected wing shape came from the Hines "Ultimax" and to speed construction, a modified Jedelsky structure was employed.

Encouraging contest results dictated further design improvements, starting with a new wing of lower inertia moments and restructured to take advantage of the knowledge gleamed from Iseanko's article, allied to the choice of the CH407 section which appeared to offer the best duration potential. A TCHOP-influenced fuselage and fin, completed the package and with no other changes, MK4 came into existence in early 1977 and over the past 18 months it has provided me with success which had eluded me so far.

For several years, circle towing had been known to me but had not figured in any of my models, so an excursion into an MK5 ESTE-AIR complete with an Iseanko hook rose from the building board, but it lacked MK4's magic, so plans were layed out again. MK5's lessons were incorporated into MK4; the tail area reduced to 4.5 sq dm and the wing redesigned to incorporate features used by Horejsi on his "FIK" model, plus my own wing section to give the model presented here.

PETER LLOYD, 31, single, is a Production Control Supervisor for the Government Aircraft Factories in Greensborough, Australia. He has flown FF for 17 years and also enjoys photography, engine collecting and motorbike racing. His "Esti-Air" glider uses the Russian Isaaenko Circle Tow system and a Lloyd modified Tatone DT timer. Peter is Secretary of the Victorian FF Society and Editor of "Flypaper," the newsheet. His competition placings are too numerous to mention and he holds several Australian category records. His models have been flown before in the USA.



Peter Lloyd with his glider

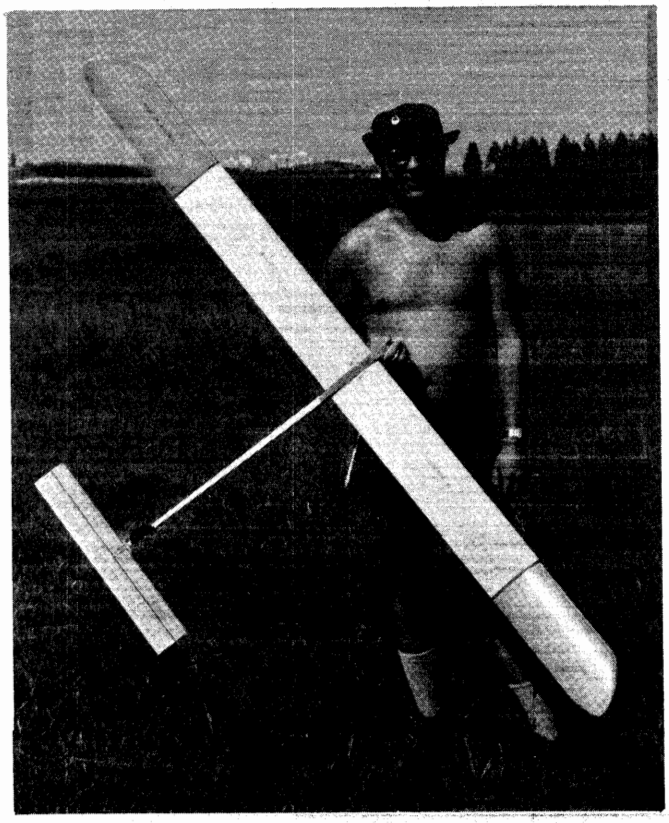
PETER NASH
F1A Australia



Elegant FIA by Peter Nash

WERNER KRAUS
F1A Austria

WERNER KRAUS, 29, is a printer with the Steverbrater in his native Vienna. He has been on the field as a freeflighter for 14 years, and his "Schlumpfi" FIA is typical of the current Austrian glider school of thought. Werner is single and enjoys flying RC sailplanes in the thermals near the Alps.



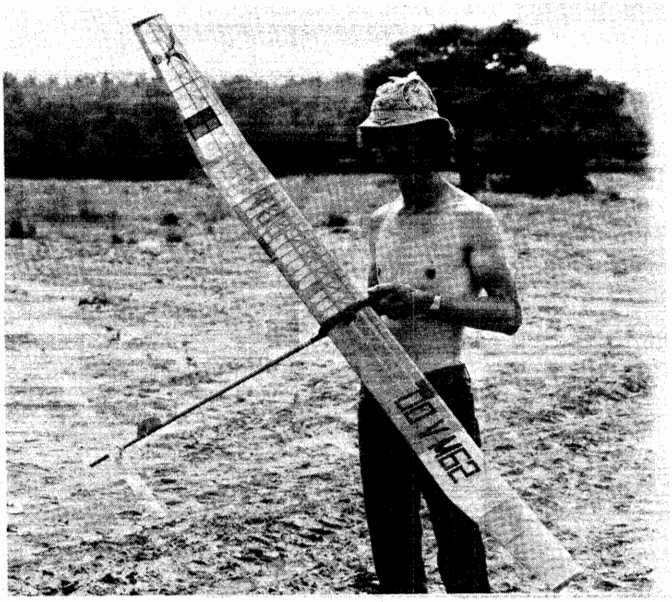
Werner Kraus with FIA "Schlumpfi"

Leo Reynders and sunlit FIA

GOTTFRIED ZACH
F1A Austria

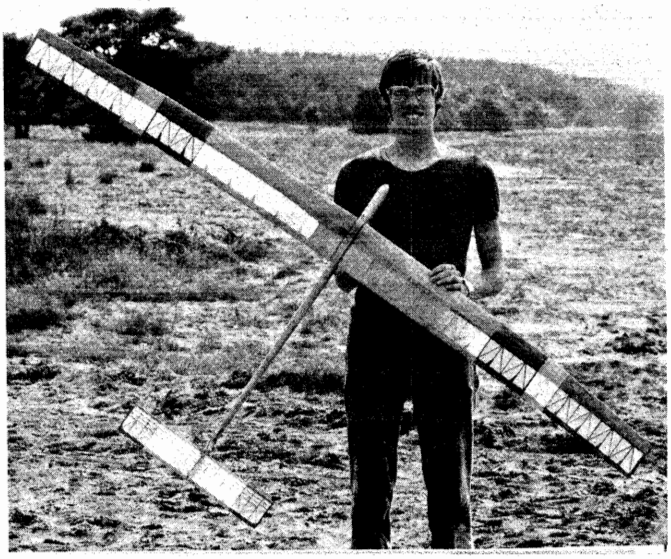
GOTTFRIED ZACH, 33, married with 2 children, is a chemist on the staff of Furtenbach Chemie in Weiner-Neustadt. He has flown FF for 20 years and also enjoys hang gliding. He holds Austrian Records in Magnet Glider; also was European Champ in '76 and '78. His original designs are most elegant.

JOSEPH MELIS
F1A Belgium



Joseph Melis and glider in Belgium

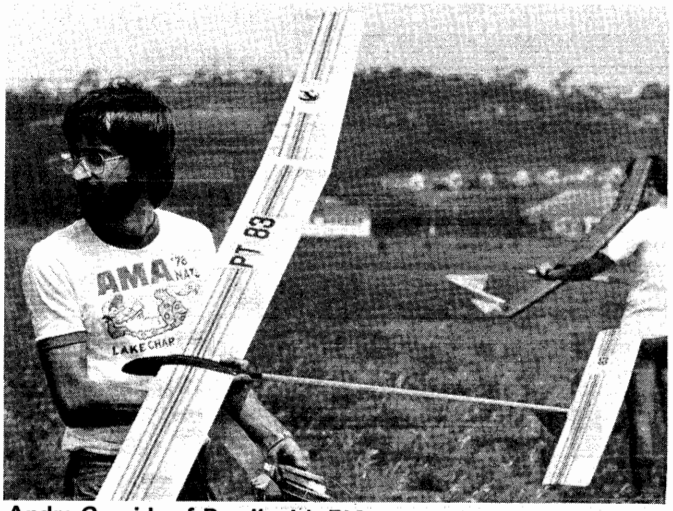
JOSEPH MELIS, 28, married, a Ford repairman and a free flighter for 15 years, also enjoys playing folk guitar in Belgium. He uses Dacron towline on his original glider design, and a Seelig to bring it down from thermals. Last year Joseph was 2nd in the Belgium Champs.



LEO REYNDERS
F1A Belgium

LEO REYNDERS, 24, married with one child, is a Mechanical Engineer, which helped in design of his variable incidence tail (which helps in zoom launch). He uses a 3-function Seelig. Leo was 19th at World Champs, 4th at Pierre Trebod in 1977. He has been a modeller for 8 years.

ANDRE GOMIDE
F1A Brazil



Andre Gomide of Brazil with FIA

Over a period of 15 years, I have built 28 Nordic gliders using the most varied concepts. The Moog design appeared in 1968 based on a Renato Zamorano (Chili) model named ARAS. The initial design suffered a large number of variations, as the series is now at the Moog VI, but the layout and general concept is still the same: a model intended for all-weather conditions and with good thermal characteristics. A low sinking speed was not judged important in the first models, but is one of the most desirable characteristics of my actual designs. In 1972, I began to try the Russian-type circle tow-hook, and in three years the technique was well-dominated. Our approach was to find a thermal and release. But soon the gain, possible with a catapult launch, was felt and the wing structure became an important part of the game.

Moog V, the model presented here, was the first to receive special attention on wing structure. I had noted that stiffer wings do not gain much at release, because they don't flex. Too much wing flexibility causes very little gain, due to its springless attitude. The ideal wing should flex equally in any point, have enough "spring-back" effect and be flutter-resistant. To add flexure and get low drag and sink speed, the airfoil was to be the B6356b. However, the upper surface was changed to the Hirchel VM-7, and a thicker airfoil near the L.E. and T.E. was obtained, easier to build, but still with the original 6% thickness. The spars were carefully tapered from Brazilian pine (harder than spruce) and were webbed with 1/16" balsa all the span-long. A 1 mm sheet was used to assemble the front D-box, which gave enough torsional resistance to avoid flutter at the hardest catapults. A tissue covering, double near the center, gave a strong wing weighing about 140 gr.

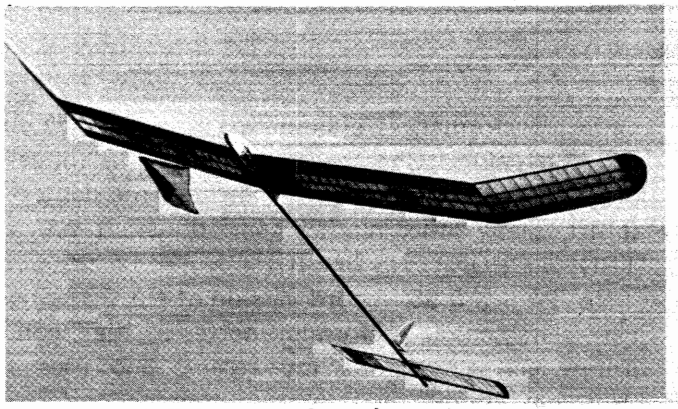
The style of the model is quite conventional being the wing attach angle is the only noticeable thing; two degrees related to the tail boom. The model flies slightly tail down (the intention was to put the boom parallel to the airstream deflected by the wing), and the stabilizer probably is inside the wing's turbulent wave. I didn't see any effect on the longitudinal stability nor in the flight time.

At the initial tests, I found that the "spring-back" idea worked. Energy could be stored and released at the catapult. The problem was how to control that energy. Another problem was that the model refused to fly in tight circles, even with the great amount of wash-in at the inside panel, a usual practice here, to avoid spinning down in the heaviest thermals. Indeed, the model showed to be completely different from any other I have ever flown and I spent much time to become accustomed to its characteristics. The curve problem was overcome, passing the rudder to the underside. With that, I discovered that the model tightened its curve when hitting a thermal. In very weak ascents, the circles were still large but the model seemed to "hunt" the center of the lift, and even in turbulent weather its behavior was pretty good.

In order to use the energy stored in the wings, I had to put two more functions on my Seelig timer. This made it possible to delay the rudder and the V.I.T. system. I used an increase of about two degrees during tow or just the maximum to have a stable tow. After many attempts to achieve the maximum height at launch, I found that the best pattern should be using a moderated catapult curve, rudder delayed by one second and V.I.T. release delayed by three seconds. This produces a slight banked climb changing into a horizontal spin and opening to glide. Height gain is about seven meters. With rudder being released at three seconds and no V.I.T. delay, the gain is greater, but unstable. I was put down on the last South American Championship by a loop — too much tension on the line. It is safer to use the first method.

My investigations on the catapult launch are just at the beginning, mostly by curiosity. In Brazil, it is very difficult to have a day where the height gain should be a must. All you have to do is to release into a thermal and you'll max. Weak thermals are so uncommon here that our main design approach is thermal ability. This model, however, kept the all-weather flight characteristics with an excellent calm-air performance.

ANDRE COURREGE GOMIDE, 25, is married with 1 child and works as an engineer for Cummins Diesel in Sao Paulo, where he flies his "Moog" glider with a Russian type CTU and a Seelig operating DT and VIT. He also enjoys photography and has been Brazilian Champ, as well as 2nd in South American champs. He is the President of the Aerobu FF Club.



Fabio Nutini's FIA on tow-elegant!

FABIO NUTINI
F1A Brazil

This model is derived from a line of seven models that I had flown in Brazil, Argentina and Uruguay. The first was based on the "Javelin" of the Argentine, Walter Palmieri. It delayed to fly well and after trimmer, I changed some things that didn't look good and used these conclusions in other models.

Many times I changed the layout of the wing tips and did some experiences with wing airfoils until I got the FN7. That was so different from the previous models, that I called it LVC I. Then I built the other ones up to the LVC V.

The LVC II is actually my number one model. The airfoil used on it is MVA 173, very good for the weather of São Paulo and very efficient everywhere.

It is a strong model with Russian-like structure, spruce and cedar spars, and circle towhook developed by us, in Brazil, but still based on the Russian type. It has 2° of incidence in increase during tow and a tight curve. This is very good to circle flight in small diameter thermals. This curve was tried first in the LVC I, with which I trained, until it became adapted. In the LVC II, two years ago, I included the delayed VIT to have a good launch. After much training, I obtained a fine release gaining about 8 meters.

The LVC I won the '77 São Paulo Championships and the '78/'79 Brazilian Nats. The LVC II won many local events also and got 2nd in the '79 South American Championships, doing 1260 + 240 + 176.

Flying with the 'I in some championships and with 'II in others, I won my Club '78 Annual Criterium.

I owe the most part of my titles, principally between 1977 and 1979, to these two models.

FABIO NUTINI, 22, has been an FFer for 15 years, following in his Father's footsteps. He is single and a student in Sao Paulo, where he flies his original glider with a CTU of Russian influence and a Seelig that gives DT and VIT. His other hobby is photography and he has been Brazilian and South American Champion, as well as a team manager.

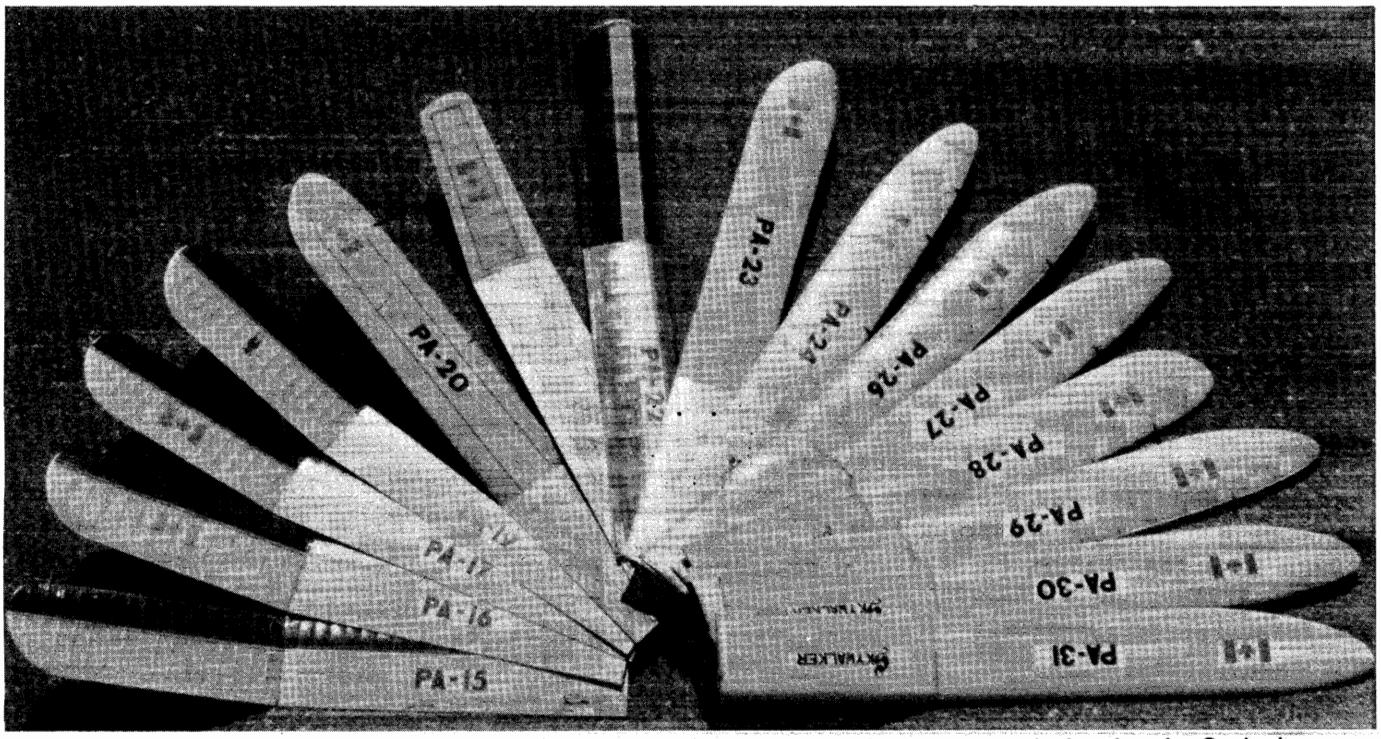


Peter Allnutt after a max — relaxed!

PETER ALLNUTT
F1A Canada

My number one model for the 1979 World Championships is No. 27 in a series started in 1964.

The development started with the "Arabesque" series. Nos. 2 and 3 used the Benedek B6356b section (as used today by the 'Russian' school) and were flown in the 1965 World Championships in Finland to 28th place. The model was very good but had rather small tips and wasn't really happy



An array of Allnutt F1A wings show 15 airfoil variations, clockwise from nine: PA-15, GF6 (5.9"); PA-16, B745702; PA-17 and PA-19, GF6 (5.75"); PA-20, Hacklinger; PA-21, Averianov; PA-22, Lively Lady (Drew); PA-23, Wortman CH407; PA-24, Hacklinger (5.6"); PA-26, Computer #5; PA-27, Hacklinger; PA-28, Hacklinger; PA-29, Computer #7; PA-30, Computer #9; PA-31, Computer #10.

in strong lift. A variety of sections were tried with this layout until the next phase of development.

In 1967, the "Adagio" was designed using the Benedek B7457d2 and proved to be a very useful model. It featured larger wing tips than previously used, an aluminum spine, circular fuselage, hidden timer and a 'bullet-proof' spar system. It towed and flew very well and could handle the strong lift. The glider was now a serious event for North Americans! Probably the best "Adagio" built was No. 15. This used the GF-6 section on a basic layout and became an excellent contest model especially in very light lift and calm conditions. However, the ideal model still wasn't in MY box, so back to the drawing board.

The final and present phase of development started with No. 20. This was different than most models in that it featured all sheet wing construction and very long wing tips. The theory being that sheet structures would be less prone to warping and more able to withstand the rigours of competition flying. The large wing tips give the towing characteristics of a conventional model, but the flying characteristics of a vee-wing model. Wood lacquer was used for the finish to ensure no warping. No warps in the wings and large tips plus a 5.9" chord Hacklinger section proved to be the perfect set-up. This model started a long string of good contest performances culminating in 2nd place at the 1975 World Champs in Bulgaria. This model loved to fly and would thermal up in the lightest of lift, while other models came down. It was a 'TROPHY HUNTERS DELIGHT'!

No. 24 is a 5.55" chord version of No. 20 being just as stable but performing better in 'flat' conditions. This model is my reserve and uses a "Hatschek" hook.

Nos. 25 and 26 were the first models to use a computer-designed wing. The sections were designed by Brian Egglestone and are quite useful.

No. 27 — This is my No. 1 model and features the now universal Russian hook.

No. 28 replaced No. 20 (now gracefully retired) and is a windy-weather model (5.9" chord Hacklinger).

Nos. 29, 30 and 31 are computer-designed wings on a basic "Skywalker" layout.

Successes over the years are due in large part to being lucky to get one or two really good models. Over 50 trophys have been won including:

U.S. Nationals — '69, '70 & '72 — 1st place
Canadian Nationals
Coupe D'Amsterdam — 1975 — 3rd place
Pierre Trebod — 1972 — 1st place
Pierre Trebod — 1975 — 3rd place
Criterium du Nord — 1975 — 3rd place
World Champs — 1975 — 2nd place

For the future, carbon fibers and Kevlar will be needed to enable wings to withstand the 10+ G's being imposed on them each flight!

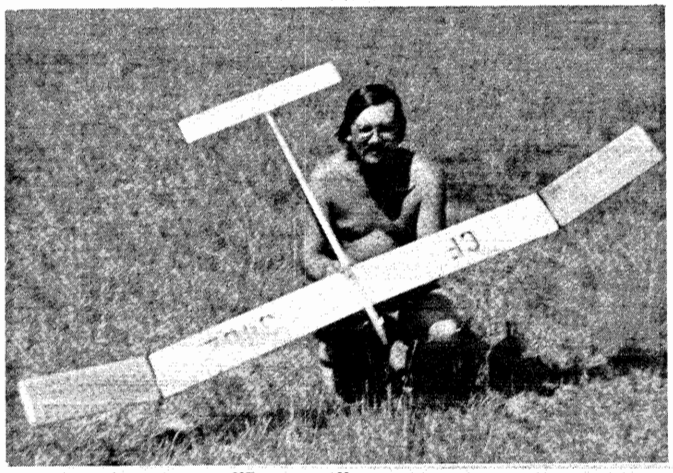
GORDON MacKENZIE
F1A Canada

The Pastrami was designed many years ago for our typical turbulent and windy Canadian weather. I use a modified cheesman airfoil which, as you can see, makes a very rigid wing and has very few problems with warps without using jigs. The stab section is a simple flat bottom Clark Y. Even though the wing airfoil is quite thick, the glide is surprisingly good and most important of all, they have flown very consistently for me throughout the years.

When the model was first built, I cannot say it was an instant hit. Lighter wings, a turbulator and a higher aspect ratio improved the towing and thermaling capability immensly. The main objective of the design was to keep the building and trimming aspects as simple as possible and of course, with good results.

A couple of my models are equipped with a simple straight Danish towhook system, only used at competitions when circling is unadvisable. The others are equipped with either "Bob Hatchek or Horejsi-Chech circle towhooks". The wing warps consist of 1/4" washout in both tips and 1/8" to 3/15" washin in the inboard wing to prevent any spinning when thermaling is strong lift or when zoom launching off the top of the line.

This design has done very well for me in the past, such as team placings on the 1971, 1973, 1977 and 1979 Canadian teams.



Gord Mackenzie and "Pastrami"



The Canadian Glider Team for 1979



Willard Thompson admires his "Bolo Bat"

WILLARD THOMPSON
F1A Canada

I gave up "designing" airplanes because I was getting hurt by ships falling out of the sky. Then I found out that I couldn't even duplicate the only good ship in the box. That really buried all hopes of being able to "design" entire ships from scratch.

Now I simply swipe a "going" airplane and try to duplicate the wing. The airfoil and the structure seem in some cases to be of equal importance.

The airplane to be stolen must therefore have a structure which I "agree" with, i.e. one in which the airfoil will not distort because of covering shrinkage. This usually means shallow spar slots, of equal depth, equally distributed between the upper and lower camber.

The resulting ship never seems to fly like the original, but if it seems to go well, a duplicate usually gets built and it does fly like its predecessor.

Structures now have to include some sort of "D Boxing" to prevent flutter and very strong spar. The path of least resistance is therefore to try one of the many varieties of Benedek 6356b - - preferably one of the thicker variants such as Ehtenkov's. From what I've seen of the Benedeks, they coast up higher in the zoom launches - - one of the few instances of something for nothing.

WILLARD THOMPSON, 43, has been a modeler for 25 years and says of his competition record: "won some, lost some." He is a technician for the Stelco Company in Hamilton, Ontario. His "Bolo Bat" uses a Danish twanger towhook. Willard is married and has been on past Canadian teams.

JOHN COOPER
F1A Great Britain

A.2 Glider PINK ELEPHANT, Nos. 17 and 22.

No. 17 was built in early 1976 and proved to be a very successful model in G.B. in 1976. It was used at the '77 World Champs but let me down badly on the second flight, when I was forced to release just as the round ended (the model was still on its first glide circuit when the round ended).

No. 22 was built in '78 and was basically exactly as per No. 17, but with a thinned down wing section and a balsa and spruce fuselage. The overall effect of these changes was to give a slightly faster catapult launch and a slightly better glide. Hence, dead air performance has gone up from about 160 to 175 seconds. Unfortunately, it hasn't had a lot of testing due to our hopeless weather this year.

Some of the more uncommon features of the model are: 1) The circle towhook mechanism. This has all the rudder adjustments made at the rudder end of the system, since I feel that this must give more positive settings than having the adjuster at the hook end. The system also has a latch that moves the rudder to the catapult setting when the latch releases, and the rudder will not return to the straight two setting when tension is reduced. This gives no problems, provided that your release tension is not below 6-1/2 lbs. 2) The wing-joining method has both joiners at the main spar, which allows the relative incidences of the two wing halves to be altered. This can be a useful trimming aid.

The wing construction technique is used in preference to the popular D-box leading edge, since I find that a built-up wing gives a model that thermals better.

Contest record to date:

Feb. 79 Crookham Gala — 9.00 + 3.02, 5th. Very dead air in fly-off.

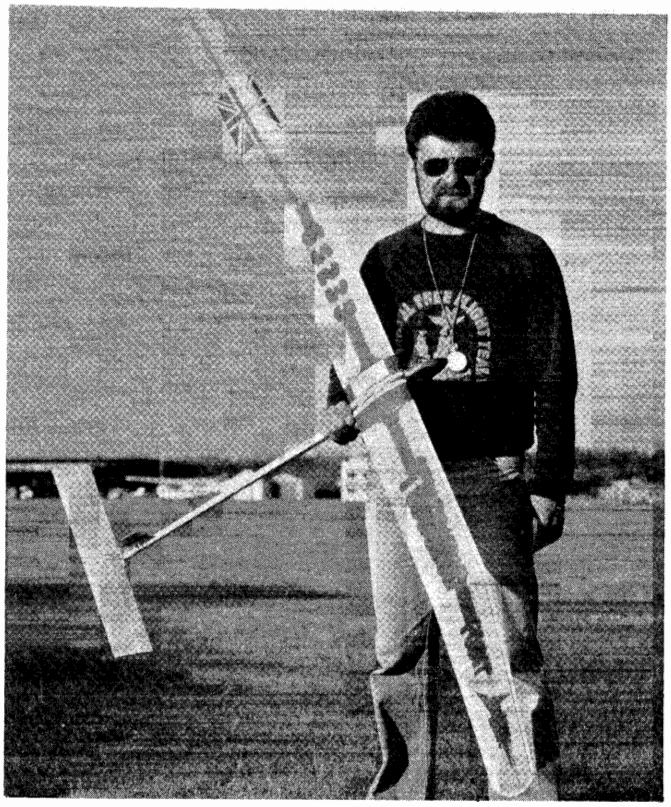
March 79 K.M.A.A. Trophy — 15.00 + 2.50, 2nd. Pouring rain in fly-off.

April 79 2-day Easter contest — 9.00, not used for fly-off.

April 79 Midland Gala — 9.00 + 3.11, 1st. Pouring rain in fly-off.

May 79 Area centralized contest — 9.00, not used for fly-off.

JOHN COOPER, 28, married with 1 child, enjoys beer drinking as well as flying on both the Wakefield and Glider Teams for England! He is a VAT inspector for HM Customs & Excise. His "Pink Elephant" glider uses an original design CTU. John employs some good Ian Dowsett Pirelli in his Wakefield, swinging a 22" x 29" prop. He has won the British Nats twice, was British Champ in 1970, and has been on the FIA Team four consecutive times!



Philip Owen's and FIA "Turning Point"

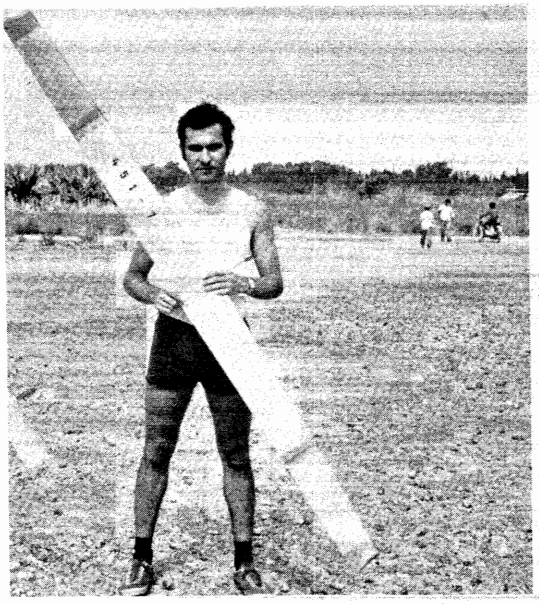
PHILLIP OWENS
F1A Great Britain

"Turning Point", as the name implies, represents a significant design change in my models but retains many well tried features.

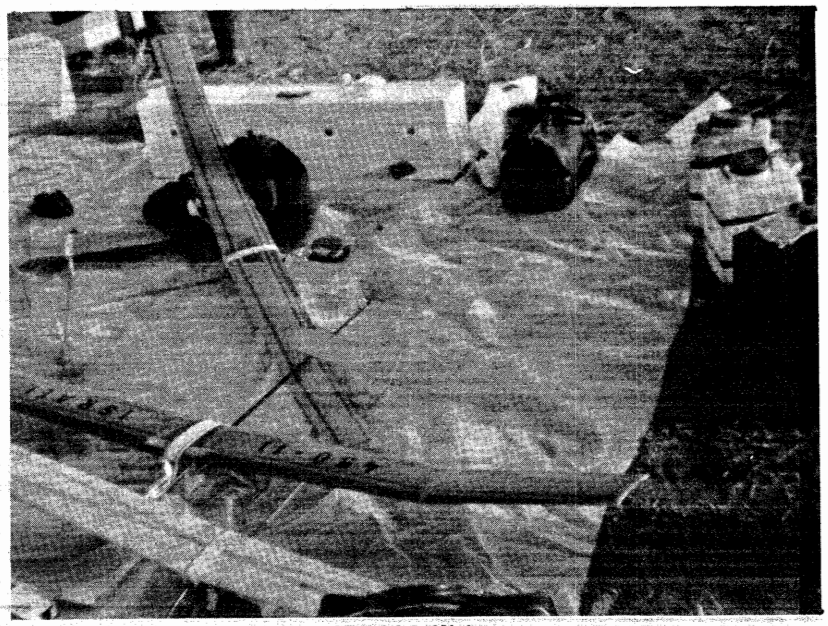
My previous Piranha series of models, dating back some eight or nine years, were based loosely on the Rolling Stone design of the early Sixties. Various wing sections have been tried and the most successful has been the Shoaf, particularly when coupled with a multi-spar wing construction. These models all exhibited excellent thermalling characteristics coupled with ruggedness and good towline behavior.

"Turning Point" retains the Shoaf section and multi-spar construction and is an attempt to improve the performance of the model in marginal conditions. In this respect, it has been successful: performing very well indeed in very light lift. "Turning Point" differs from my pervious designs in that it employs long tapered wing tips, a flat bottomed tailplane and abandons the previously used glass-fibre fuselage boom in favor of a balsa/spruce box.

PHILIP OWENS, 37, has been 10 years in FF and 25 in aeromodelling. He is married with 2 children, is a Senior Lecturer in Theoretical Chemistry at Liverpool Polytechnic. His "Turning Point" glider uses a Hatschek CTU and a KSB timer. Philip also enjoys jazz music and cycling when not circle-towing. He won the Aeromodeller Cup in '78.



Schaul Chorev and GC-2 glider



Israeli FIA at rest — Number 450-11 is Weiss

SHAUL CHOREV
F1A Israel
IVAN WEISS
F1A Israel

I am enclosing two plans with a few words of explanation on each. The first, 'GC-2,' is Ilan Weiss's "number one." The second, 'YAD SAH-Λ,' is my probable "number one" glider.

Ilan Weiss has been a permanent member of the Israeli Team for seven years, and has flown the 'GC-2' as his No. 1 all this time.

Ilan and I are good friends and have been members of the same club in our city of Nahariya for 16 years (since we were 12 years old in 1963).

I also fly the 'GC-2' alot and I still don't know if this ship or the pretty new 'YAD SAH-Λ' will be my No. 1.

Enclosed is a plan of the GC-2 and outlines of the 'YAD SAH-Λ.' Hopefully, your draftsmen will be able to make a plan out of the outlines.

I have no pictures of the new 'YAD SAH-Λ' and it is too late to take some, but enclosed you will find a picture of Ilan and me with the 'GC-2.' You will notice a bit different tailplane. We are flying the 'GC-2' alot even though I plan to fly the 'YAD SAH-Λ' this time.

The first model GC-2 was designed in 1972 by Giora Herzberg and Schaul Chorev. The THOMAN F-4 profile gave us comfort in work and together, with the wing design, we got exceptional flight-time performance.

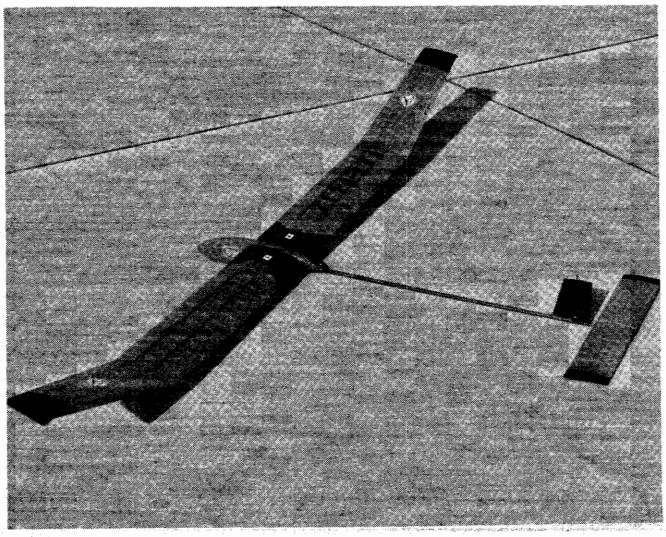
Ilan made a few changes in 1973 and built the GC-2. Interesting points are the shape of the tail-plane bases, the side towhook, and the tension spring in the rudder (so no rubber is needed).

Since 1974, it has been the most popular model in Israel, winning most of the internal competitions. Ilan is competing with the GC-2 in all the European and World Championships.

The wing is very strong and because of its structure, it is very good to fly in rough sites such as we have in Israel. We have little green grass, but alot of banana and avacado trees plus thorn-bushes. The timer is Seelig and the model is covered with tissue doped in place.

JUNICHIRO MATSUNO
F1A Japan

JUNICHIRO MATSUNO, 53, is married with 2 children and works on the staff of the Kawakami Electric Construction Company in Tokyo. His glider uses the English MaxAid Mk II CTU and in 1977, he was Japan Champ in F1A with his original design.



Matsuno's glider at rest in Japan



Yoshikawa in park with his FIA

HIROSHI YOSHIKAWA
F1A Japan



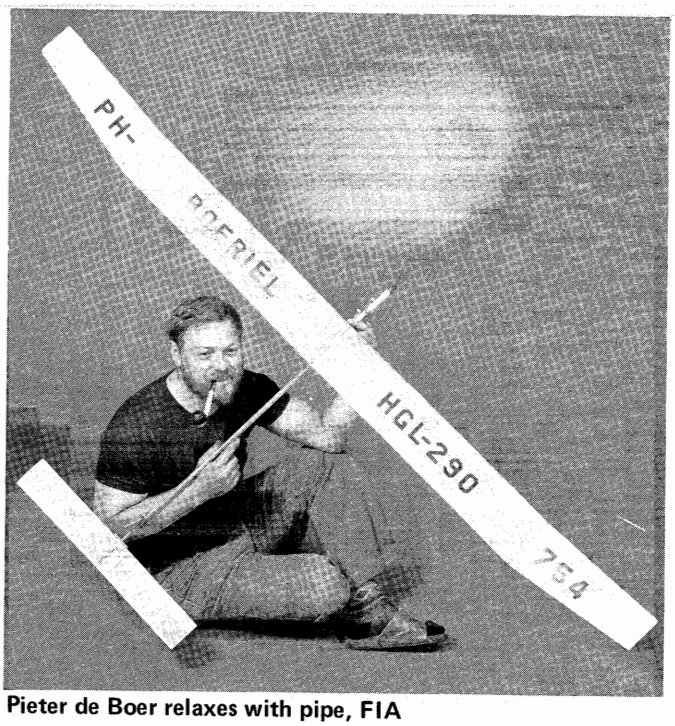
Antonio Abaunza in Mexico City FIA

ANTONIO ABAUNZA
F1A Mexico

ANTONIO ABAUNZA, 43, is a Civil Engineering and Mathematics Professor at the University of Mexico. He lives in Mexico City with his wife and 2 children. His original glider uses the MaxAid CTU and a 3-function Seelig. Antonio has been a FFer for 15 years and has placed at Texcoco and Taft. He supplied the photos and data for the team.

PIETER DE BOER
F1A The Netherlands

All wing parts are sheeted with 1 mm (between 1/32 and 1/20") balsa, including the bottom; density 100 kg/m^3 (about 6 lb/ft^3). The balsa is glued with epoxy/methanol resin (100% epoxy/ 150% methanol). Weight cost for one wing section, 15 dm^2 both sides, is about 8 gr. Now a spruce leading edge is glued. After that, the whole business



Pieter de Boer relaxes with pipe, FIA

is covered with fiberglass, 16 gr/m^2 (about 0.5 oz/yd^2), at 45° with the same epoxy resin and methanol. Depending on the strength the wing needs, I make spars of spruce or fiberglass, 6 or 5 x 1 or 1.2 mm. The spar is used as a turbulator too – located at about 28% chord.

The final weight is still too high, 100 gr/wing. I've had no troubles with warps or stiffness (flutter), and it is a very strong wing. My release tension during launch is about 8 kg. (almost 18 lb!!). I should like to make the same wing with less weight. On the other hand, I don't believe in extremely light wings.

The drawings Pieter supplied show the details of his wing construction very nicely. Steel wire wing bracing allows for high launch loads and has been used on Soviet nordics. The foam used has about the same density as 1.8 lb/ft^3 Styrofoam insulation board.

PIETER DEBOER, 35, is married with 2 children, is employed as a technical designer for the University of Twente in Borne, Holland where he also enjoys photography and art. He has been a FF enthusiast for 19 years; uses twined Trevira line to circle tow his glider. The circle tow unit is well detailed in the drawings, which he prepared. Pieter also uses advanced design fiberglas skinned foam core wings.

ARNO HACKEN
F1A The Netherlands

A few words to the three view. The three most unusual features of this model are the wing structure, the use of wire struts and the towing hook. The wing features a foam core covered in light-weight balsa wood. The lower wing surface is straight

grained balsa and glass cloth covered. This is done to prevent excessive bending. The upper surface is covered in quarter grain balsa, to give torsional strength (no glass cloth). Everything is glued using epoxy.

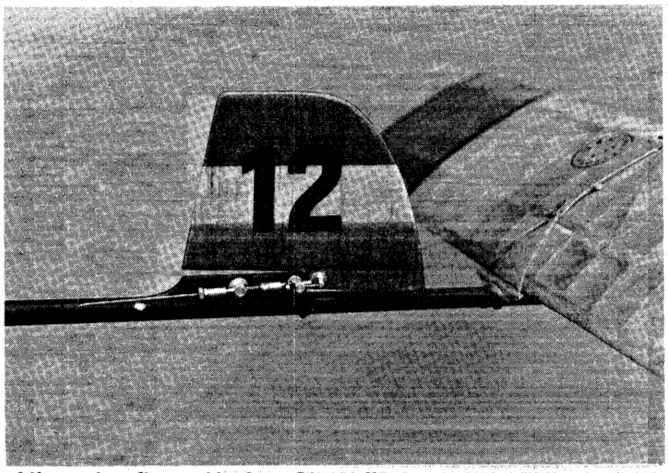
Still, this type of wing is able to bend a lot, therefore, I use wire struts. Excessive bending of the wing can and will lead to instability of the ship, which is very dangerous in high speed catapult launches. The wire doesn't seem to affect the flying, so it gives a great assurance with almost no losses.

The towing hook I use is cross-bread between a Russian type hook and an impulse release system (type Elton Drew). The advantages are; no bothering with suddenly unlatching hooks, and releases are possible with almost all line tensions (from zero to as high as the wing can stand).

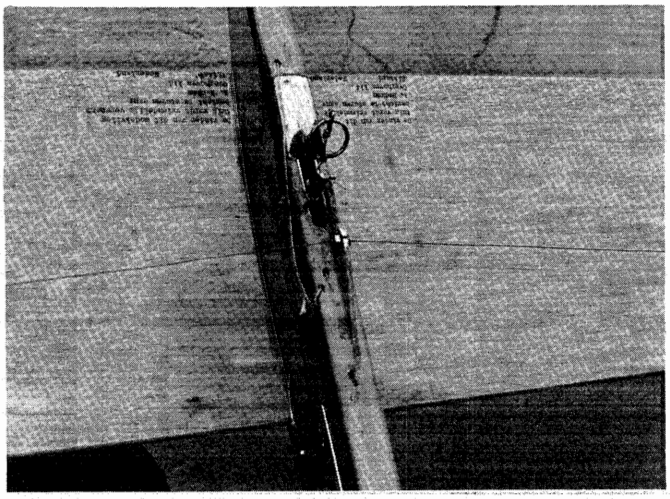
This model behaves well in all conditions and is a very good performer in light lift. It helped me in securing my first team place and also by winning some other national contests. It will certainly be my number one model at the Champs.

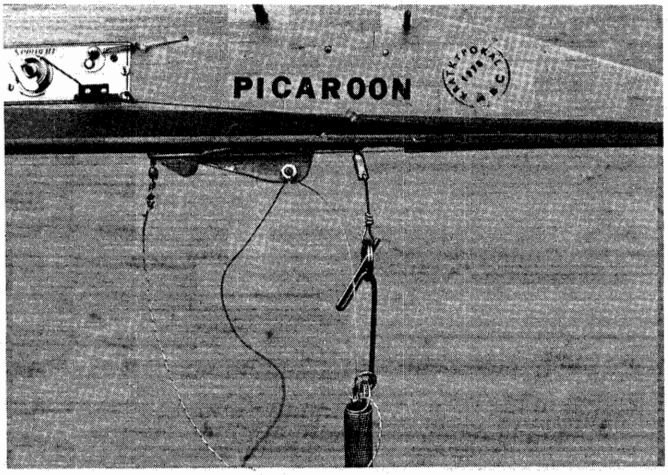


Arno Hacken and his sheetwing/foam core ship



All-moving fin on Hacken Glider "Picaroon"





Twanger towhook and timer — Hacken FIA

PAUL LAGAN
F1A New Zealand

I plan to bring four models to Taft. Two are Lepp AL-29s, one will be a 'stretched' Russian style model of 2.3 m wingspan and the fourth is the KIWI 2C drawn here. I don't think conditions for the W/C will warrant the use of the big model and so I will probably fly the two AL-29s and the KIWI 2C. One AL-29 will be set up for a fast, high zoom in low lift air and its glide will also be adjusted for the morning and evening rounds; the second AL-29 will be adjusted for light air, gentle lift; and the K2C will be adjusted for wind and strong lift.

KIWI 2C is a development that started back in 1966 after my experiences with Mike Woodhouse's WICHITA designs. The KIWI 2 designed at that time was, naturally, a straight tow model and construction would not stand zoom launches. The 2C has incorporated the generous stability margin, thick wing section, strong construction features necessary to be able to be flown in typical N.Z. contest weather (wind!) and has a wing that is strong enough in bending, not to peel open at 3.5 kg tension launches. Torsional rigidity is provided by the

diagonal bracing and a good tight tissue (double covered with light modelspan) on the relatively thick wing section. The section has been changed over the years starting from the Mike Burrow's section of around 1961 -- the front spars turbulate the wing sufficiently, though I plan to try another string turbulator in pre-Champs practice at Taft in the lower density air there.

I use a Hatschek hook with timer start line (seelig timer) connected to the latch so that the timer starts at release. The wing warps and tail tilt give a good balance of roll and yaw at launch to enable reasonable zooms without delayed glide rudder. My best AL-29 has a delayed glide rudder fitted but this can be launched much faster and higher than the K2C. Launched in the same evening air as the AL-29, the K2C typically glides for around 10 seconds less than the AL-29 due mainly to the added zoom height from the Russian model. In strong lift though, K2C is easier to 'spot' during tow into the best air and it behaves very well in thermals tending to center well in all strengths of lift.



Paul Lagan and his "Kiwi" glider

MALCOLM SEXTON
F1A New Zealand

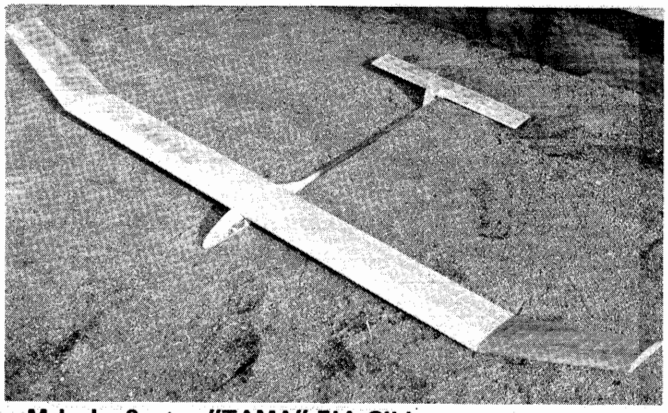
Tama design series has developed from a study of half a dozen three-views of successful models, published 3 or 4 years back. General concept would probably rate as 'Russian design'. Adaptations being made to suit practicalities of my building and flying. I don't know enough theory or have sufficient time to experiment with radical changes and so follow the 'Tried and True' ideas.

I use a Russian type sliding plate hook because I found it easy to adapt the detailed drawings from Aeromodeller to enable me to make this type with no more equipment than a hacksaw, file and electric drill. I used one size of bolt 8.BA, filling grooves in one to make a tap, and building up the main bolt with extra nuts and washers. Springs are rewound from 'Bic' Ballpoint pen springs. Twenty-five to 30 turns on 16 swg mandrel depending on tension required. Simple. Method from Aeromodeller - December '76.

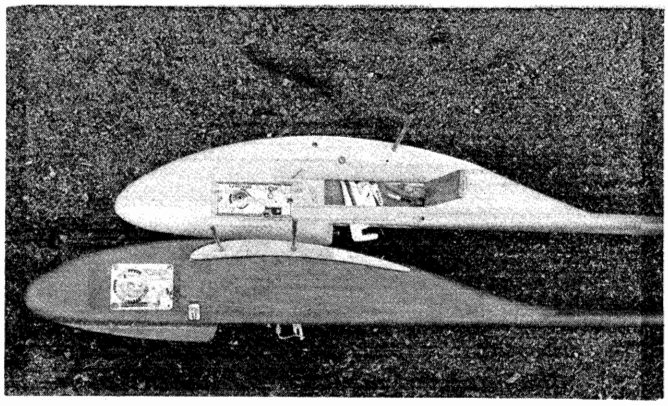
Competition: - Original Tama (straight tow) gained 5th overall in trials to select N.Z. Trans Tasman Team '78. Flyer was still recovering from glandular fever.

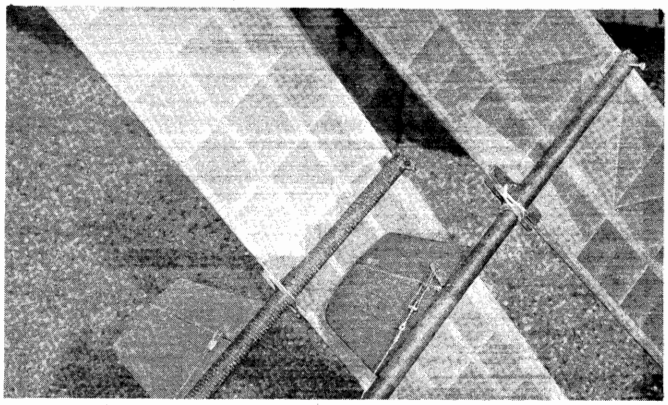
Tama 2 (circle tow) - 1st N.Z. Decentralized '78; 3rd '78/'79 Nats; 2nd World Champs trials.

MALCOLM SEXTON, 40, is married with 2 children and has been a modeller since 1954. He owns and operates a small plant nursery in New Zealand, where he flies Nordic with friend, Ian Weston. Since the Weston model is almost identical, except for wing and stab structural detail, we have listed them as flying the same design and only one plan is shown. The differences are evident in the photos.



Malcolm Sexton "TAMA" FIA Glider





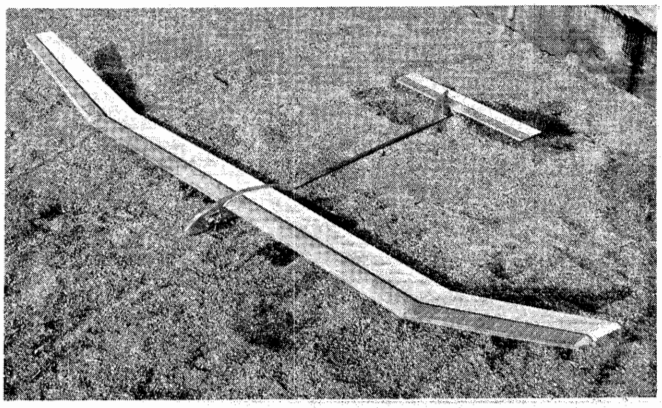
Upper — Malcolm Sexton, Lower — Ian Weston FIA

IAN WESTON
F1A New Zealand

My number one machine is basically a "Russian" type being a cross between Horejsi's F1K and Lepp's AL-29. The towhook is a Czech type adapted to home manufacture using just files, hacksaw, electric drill and a couple of taps - 1/8" whit & 10 BA.

My building is governed by three principals - Use a proven design, keep it simple and it must be practical. Unfortunately, I have the bad habit of changing things to suit my tastes i.e. fin shape, fuselage shape, the addition of Hoehner Anti Vortex tips etc, etc. I have no theories to support these changes.

As this is a new machine, it has yet to be flown in a contest. I have been flying my only A2 (now the reserve) for the last three years. However, after gaining third place on the team, I have been busy building two new A2's for the World Champs.



Ian Weston's unnamed glider similar to Sexton

SVEIN LARSEN
F1A Norway

This is my 9th F1A model and my newest, which was very much inspired by Andres Lepp.

When I start planning new models, I normally use well-known, accepted and well-proven constructions as a guideline. In some details, I certainly follow my own format. I prefer to go flying instead of spending too much time on trying to design "That" new worlds best model.

All my models have identical trim. I use a self-made Russian type circular towhook system. This is also most like A. Lepp's system. The models are equipped with a Seelig F1A.DT. timer. The models glide to the left with the left inner wing 1 mm wash-in, and the left wing tip has 2 mm wash-out. The right inner wing is neutral, and the right wing tip has 3 mm.wash-out.

I won the F1A in the Norwegian team selection this year with mostly the use of my No. 9. Norwegian team selection was based on three five-round contests, all on frozen lakes last winter. My score was 2695 sec. My No. 9 is almost similar to my No. 8, which won for me the F1A at the Nordic free-flight championship in Denmark in 1978.

The World Champs at Taft will be my third in line. I participated in 1975 and 1977. The atmosphere at free-flight World Champs, the international friendship and good sportsmanship are, from my point of view, wonderful and makes free-flight the greatest hobby and sport in the world.

SVEIN LARSEN, 33, is married with 2 children and works as an instrument mechanic for the Norwegian Institute for Aero Research in Moss. He has been a modeler for 18 years; in FF for 8. His design was inspired by the Russian, Lepp, and uses a Russian CTU. Svein won the Nordic Champs in '78 in F1A and was on the '75 and '77 Norwegian Teams at the World Champs.

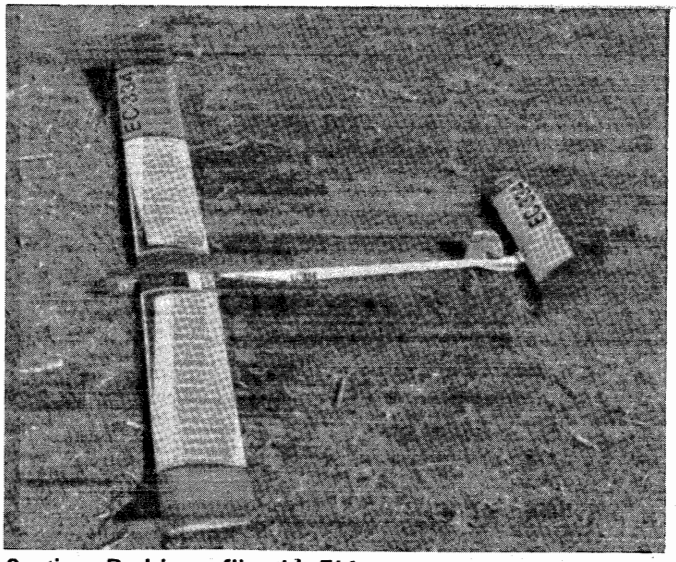


Svien Larsen freezes with FIA



SANTIAGO RODRIGUEZ
F1A Spain

SANTIAGO RODRIGUEZ GARRIDO, 29, has been a modeler for 15 years but only 3 in FF. He is single and works for Iberia Airlines as a crew member. His other hobbies include canoeing and drinking beer in his native Madrid. He was Spanish Champion in '78 and his models use both straight tow and CTU. Santiago chose the MaxAid system produced in England by Elton Drew.

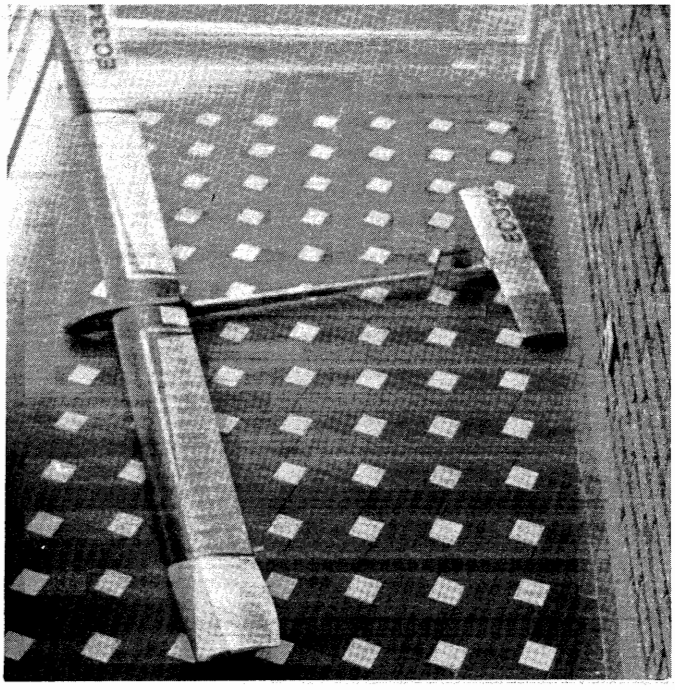


Santiago Rodriguez flies this FIA

GERARDO MARTINEZ
F1A Spain

GERARDO MARTINEZ, 18, is single and a student in Madrid. He flies his "Sancho IV" (design by Aristides Almagro) with straight and circle tow. He has won several first places in his 7 years of competition.

"Sancho IV" flown by Martinez in FIA





Spanish lady launches for Jose Sanz-Cruzado

JOSE SANZ CRUZADO
F1A Spain

JOSE SANZ-CRUZADO, 19, single, has been a FF fan for 7 years. He is a student in Madrid, where he flies his original glider in the abundant Spanish thermals.



Mats Rosling in classic pose FIA

MATS ROSLING
F1A Sweden

This is the first of two new models that I am going to build for the World Championships. The model has just been finished, so up to date, I have only made a few starts with it. The aerofoil is CH 407, thickened 7% at the bottom. The ribs in the center panels are of 2 mm hard balsa; in the tips 2 mm medium balsa. All the spars in the wing are spruce. The fuselage is made of balsa and the sides are 3 mm, tapered to 1 mm at the end. The towhook is a Russian type. A timer start is fitted

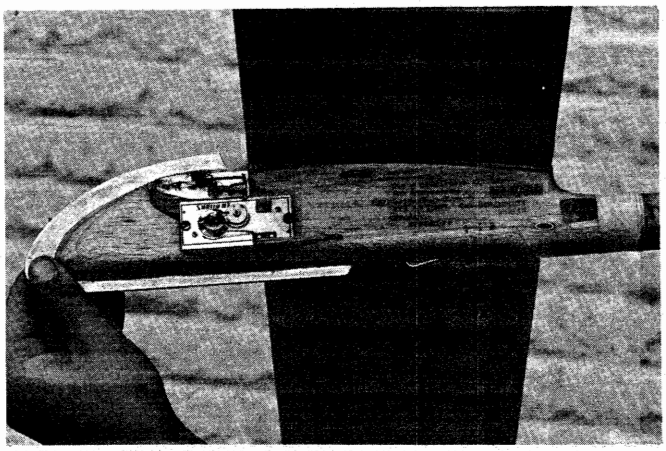
to the towhook so that the timer starts when the towhook has released and is in the back position. The connection between timer and towhook is a pushrod (Gold-n-push Rods) Cabel size, 030". I have been flying with this timer start system for a year in another model and it has been working very well all that time.

MATS ROSLING, 19, has been flying FF for 7 years and is a student in Uppsala, Sweden. He is single and flies his "Delta" design with a Russian type CTU. He was Swedish Junior Champion in '77 and enjoys sailing, reading and music as other hobbies.



Per Quarnstrom and FIA "Queremos"





Quarnstrom nose detail — note Dural keel



Quarnstrom and Russian influenced FIA

PER QUARNSTROM, 23, is single and thus enjoys "food, beer and girls" as other hobbies. He is a building engineer for Malmohus Lans Lansting in Lund, Sweden. His glider uses a Circle Tow Unit made by Jan Zetterdahl. Per has been a FF flyer for only 10 years, but has placed high at European meets, including 2nd at Swedish Champs. He really likes Nordic, but relaxes with Peanut Scale.

PER SJOLUND
F1A Sweden

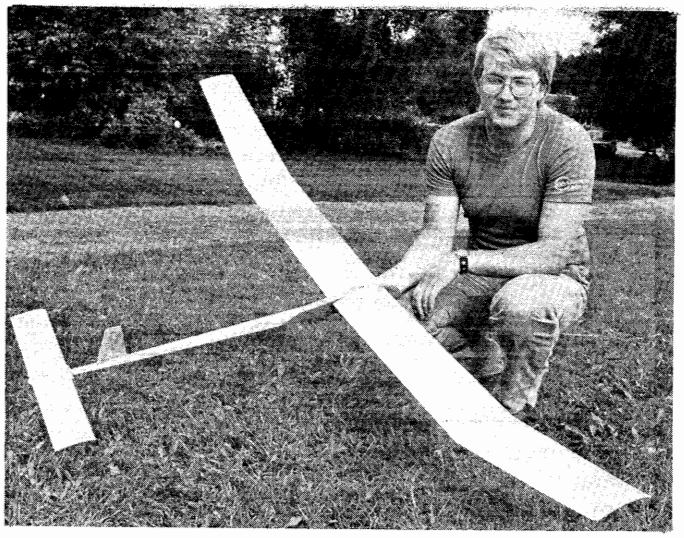
Here are the papers and photos. Some words about the model. I have flown with this type of model since 1974, just with smaller modifications. All models (6) have been very easy to trim and have had very good flying characteristics. To think about when building a model, use very light balsa in rear fuselage, foil and wing tips. Low weight of wings is not so important. I have had wings weighing between 130-180 grams without a difference in the flying. It's no problem to get the model light (< 410 gr). The model will, in a few months, be available as a kit from a manufacturer here in Härnösand.

Modellprodukter
Box 2060
S-87102 Härnösand
Sweden

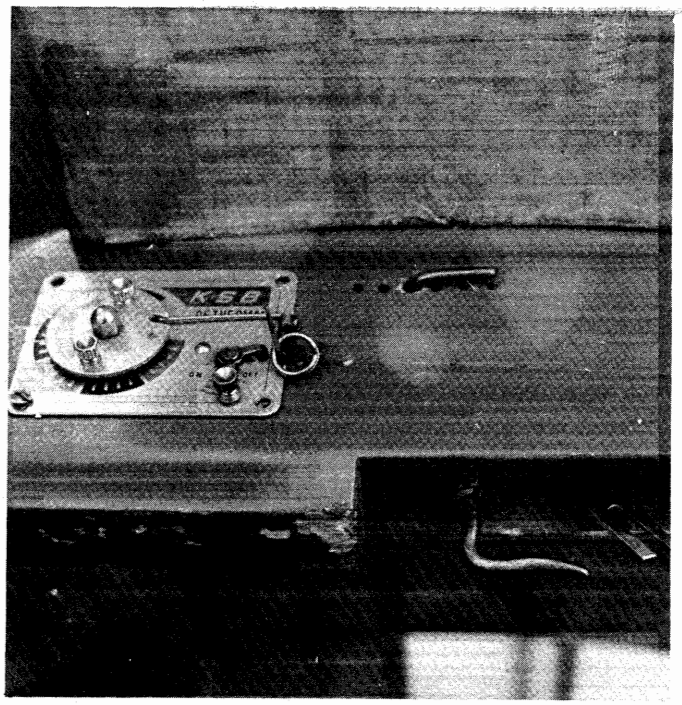
Thank you for your good initiative.

Contest Performances:
2nd at Nordic Champs 1978
3rd at Swedish W.C.-test 1979
5th at Swedish Champs 1978 (first year as a Senior), and a lot of 1st places at the National contest in the Junior class – 1975-1977.

PER SJOLUND, 20, has been into free flight only 8 years but is very much an enthusiast. He is single and a student in Harnosand, Sweden. His original design glider has a most unusual towhook, and will soon be available as a kit from Modellproduckter, Box 2060, S 87 102, Harnosand, Sweden. Per's other hobby is Ice-hockey, which keeps him busy during non-flying weather. He came in 2nd at the Nordic Championships and has won several places in F1A and HLG at Swedish contests. The hook on his glider was designed by this team mate, Jan Zetterdahl.



Per Sjolund displays his Nordic Glider



Towhook and Timer details Sjolund



Walter Haller in the Alps F1A

WALTER HALLER
F1A Switzerland

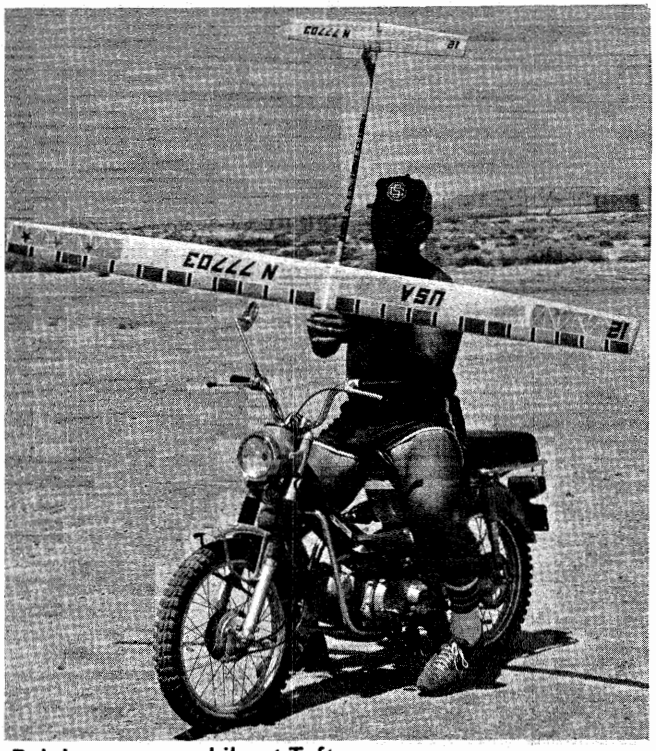
LEE HINES
F1A United States

The design concept for "Mean Machine" sprang from a simple origin. In 1976 after selecting seven of the better-known A2 designs, I charted all major dimensions and arrived at average values for them through summation. These values were then used to produce a 3-view drawing which was, naturally, somewhat affected by my own experiences and personal preferences. Nonetheless, the results did approach the "Mean" of the A2 "Machines" used in the summation and "looked good" besides. (What more can one ask?) Consequently, I built one and, incidentally, so have a few others since. To the best of my knowledge, they are as pleased with their "Mean Machines" as I am with mine.

Some problems were encountered and solved (i.e., flutter, structure of wing and stab airfoil, as chronicled in past NFFS Digests), but the basic plan form seems reasonable sound. The features include: excellent towline habits, very good zoom launches, above-average transition, and ten percent better still-air time than my prior A2 designs.

The "Mean Machine" generally has done quite well in competition. At the '78 Team Finals it returned 220 seconds to lead round one, then on the first round of the third day it did 252 seconds to ground for one of the few 4-minute maxes. That raised me to a team spot where I was able to remain the rest of the day. "Mean Machine" has been instrumental in my victories at '78 Livotto FAI Invitational and '78 Sierra Cup where it paved the way with maxes in the difficult first rounds.

LEE HINES, 41, has been an avid free flighter for 30 years, while also enjoying music, wine, travel and Grand Prix auto racing. He drives his BMW to work as Supervisor of the Mechanical Design Group at Printronix in Costa Mesa, California. His many designs include the Sweepette, the Sharkie, the Ultimax, Mean Machine and Mean Bird. He won 1st in F1A at the 1977 USFFC, '78 Sierra Cup, '78 Livotto and '76 MaxMena Annual. He has set records in Indoor Hand Launch and was 3 times National Champion. He is married and still manages to Circle Tow all day.



Bob Isaacson on a bike at Taft

BOB ISAACSON
F1A United States

Wishbone was designed for circle tow and zoom launch. I had several goals in mind.

1. Glide performance should be nearly equal to my special calm air glider when floated off the line in early morning or late evening air.
2. The model should be able to take advantage of very light lift, but be able to center in and ride the strongest thermals.
3. Wings must be able to withstand the loads associated with the hardest zoom launch.
4. Wings must not flutter at zoom launch speeds.
5. The model must be durable.
6. The model must tow well.
7. The model should gain altitude on the zoom launch and recover well.

Wishbone has been a reasonably successful and consistent competition machine. During the 1978 contest season, my models were flown in 5 meets. They finished first in four contests and second in one. During the first three events of the year, Wishbone recorded 30 straight maxes before missing in the fly-off at the U.S. Free Flight Championships.

To date, I have built six versions of the model. Each ship has been slightly different from its predecessors. Most changes have been made in structure with an eye toward lighter extremities and greater torsional rigidity in the wings. The model in the drawing is Number 4. It is the latest model to be proven in competition. Number 5 looks very good, but is not yet contest proven. As of this writing, Number 6 has not been flown.

BOB ISAACSON, 44, has only been a modeller for 9 years but what progress! He was on the 1977 USA Nordic Team with his "Wishbone" and teaches in the Continela Valley Union High School, where he also coaches football. He enjoys skiing, which helps keep him in shape for circle towing with a Russian style hook. Bob is married and lives in Westminster, a suburb of Los Angeles.

JIM WILSON
F1A United States

Number 6 is a simple model designed to fly well at Taft. The conditions there vary a lot from dead to rough so an all around model must stand up to a lot.

The airfoil is high lift and produces a fine glide but the rest of the model aims for low drag and responsiveness to light air. V dihedral is easy to build and pack and also has lower drag than other types. The long trailing edge produces lower induced drag. The "every part needs a purpose" thought produces a light enough tail to allow the short nose and concentration of the ballast and balance weight at the wing leading edge. The wing and stab constructions are reliable and stable with time. The tapered wing is both strong at the root and flexible

Towhook is a modified Issaenko type. Two mm of rake is built in and the timer start works off the latch. This hook is excellent because of its long unlatch move and fine, independent adjustments. Also, I don't like to solder. Or, to make field solder repairs either! Towhook forces are: first move - 2 kg, unlatch - 2.5 kg, bottom out - 3.0 kg. The towhook is as far forward as allowed by calm air launches. The timer is mounted on the right side of the fuselage to simplify its start mechanism. The flying fin is lighter than the conventional style and somewhat less responsive which helps spiral stability and trimming.

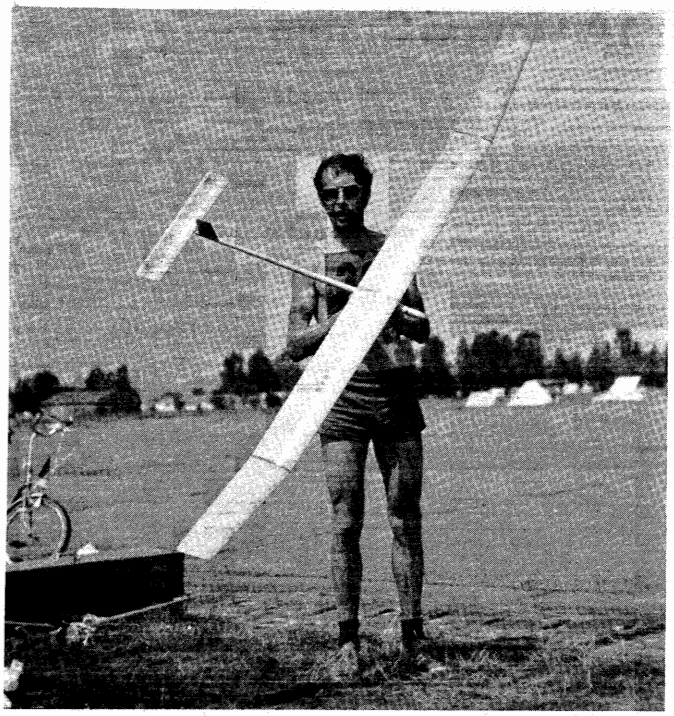
Number 6 tows very well. I like the launches especially because it flys a large, fast pattern and climbs well. The evening performance is very com-

petitive. In heavy thermals a stall can develop but this doesn't seem to hurt the turn circle or rate of climb so I don't usually make trim changes.

JIM WILSON, 33, is married with 2 sons, who help launch and fetch his gliders. He has a MS in Mechanical Engineering and works as District Sales Manager for Betz Laboratories. He has been a modeller for 21 years, mostly U/C. He has been a member of the Southern California Aero Team and an F1A flyer for 3 years and attended the last World Champs in Denmark. Jim is also a private pilot and parachutist, as well as being interested in running and fitness.

GUNTER MUSSIG
F1A West Germany

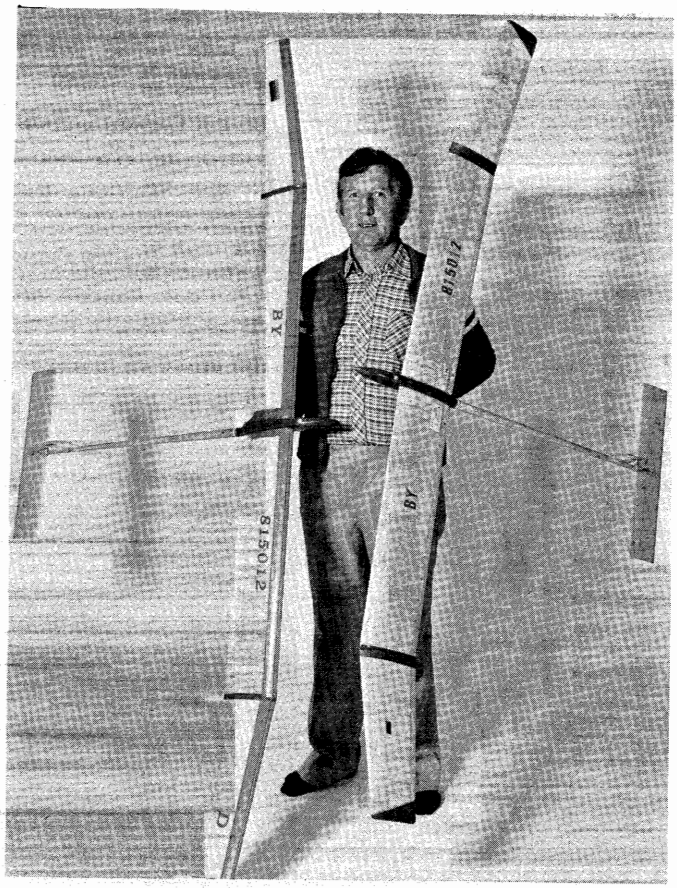
GUNTER MUSSIG, 48, married, is a technician for Messerschmitt-Bolkow-Blom in Laupheim, where he has flown FF for 36 years. He also enjoys singing in choir when not out circle-towing his glider. He was German Champ in 1972. Gunter also dethermalises with a Seelig timer.



Albert Riedlinger and Segel Model

ALBERT REIDLINGER
F1A West Germany

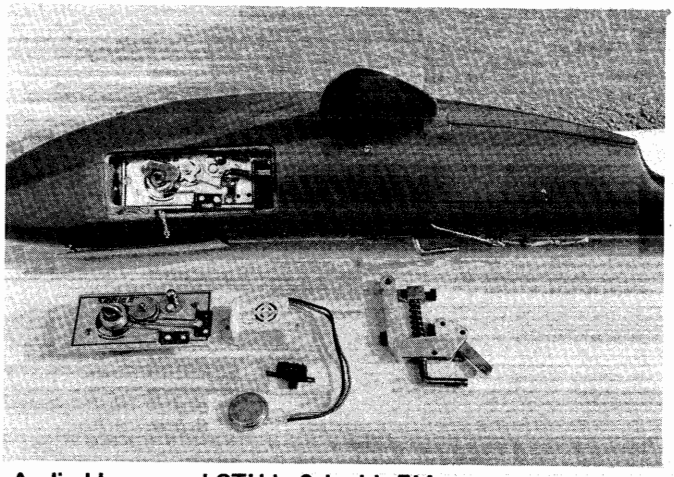
ALBERT RIEDLINGER, 39, is a machine designer in Metzingen, West Germany. He has been a FF modeler for 14 years and specializes in all-balsa construction. He and his wife enjoy music, literature, nature and many sports including modelling. Albert flies indoor and magnet gliders as well as FIA. He won the Europa Cup in 1962 and has won other national and international competitions.



Herbert Schmidt and a pair of Segelmodell

HERBERT SCHMIDT
F1A West Germany

HERBERT SCHMIDT, 45, is married and resides in Bavaria. He is employed in personnel for a Regional Hospital. Herbert enjoys skiing and hiking in the Alps as well as flying flider in the meadows, which he has done for 26 years. His original designs got him the Bavarian Champ 6 times; the German Champ 3 times. He was twice European Vice-Champion. He is loyal to the Seelig timer.



Audio bleeper and CTU in Schmidt FIA

RUDESINDO MARQUEZ
F1B Argentina

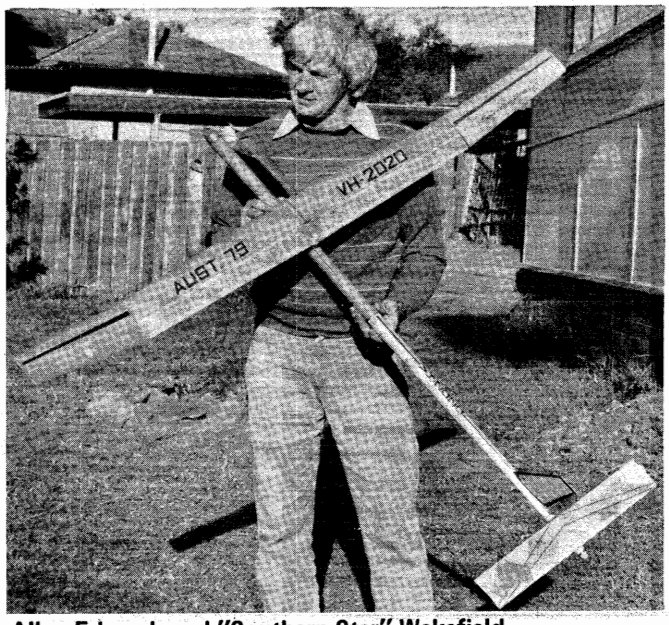
He is a modeler of long standing and of particular ingenuity, since he is the generating fountain of novelties and innovations in the Argentinian category. His models are always exciting to look at.

He was the winner of the last two National Championships and winner of the selection for the 1979 TAFT worldwide championship. He participated in the 1975 Austrian World competition and the 1977 Bulgarian World competition.

His model "CHIVI" is centrally oriented, passing the line of traction by the center of gravity. Its wings have a personal airfoil with a maximum thickness of 21% 6.5 mm. The maximum curvature is at 48% and the maximum height of the "extrados" at 36%. The stabilizer has a Clark Y profile at 8%.

The propeller is a variation of the one used by the Soviet Sergey Samokis, constructed in 10 mm balsa sheet; the motor is 12 strands of FAI Supply 77.

On the wings, he uses two little screws at the root of the half wings at the height of the cabana, with which he adjusts the difference of decalage in between them, to adjust the climb trajectory and to improve the glide. The tail boom is made of expanded polyester and covered with 1.5 mm balsa wood.



Allan Edwards and "Southern Star" Wakefield

ALLAN EDWARDS
F1B Australia

After the 1971 World Champs, I undertook a program of rethinking my designs for Wakefields. I considered at that time solid wings would produce uniform, consistent and predictable characteristics and by early 1973 had several outstanding models. Those models were capable of utilizing the high torque rubber of the period with fixed rear rudder. On these models, I employed my high cambered thin solid wings and the complete model, prop, rubber combination was just about ideal. These models were flown in the 1973 World Champs in which I dropped two maxes, due to bad launches. To control this possibility in the future, I constructed new models with forward fin and auto rudder. These naturally had a straighter climb and they were able to be altered to suit the rubber quality which started to deteriorate about this time. Since 1972, I had constructed 9 of this basic type, however in recent times, rubber quality is generally less than 1972 vintage. I have been dissatisfied with the performance of my older models (used in 1975 World Champs) and decided perhaps a new approach was required to utilize the lower torque, hence the development of the flapper. To date, the straight away climb characteristics are encouraging and by the time Taft is underway all should be known of this model.

ALLAN EDWARDS, 40, married with 4 children, has been a FF buff for 27 years. He is an Engineer in Sydney. His "Southern Star" is powered by Pirelli direct from the factory, rotating a laminated blade prop with adjustable pitch. Allan enjoys travel, and was twice Australian Champ. He edits the Newsletter "Free Flight Down Under."

PAUL VAN LEUVEN
F1B Australia

Originally started off as a model designed by Allen Edwards and named the "Warrigal," it was later modified by different modellers with different C.G. and using 0° incident on wing, became very successful. One of these modified models won 2nd place in the Australian Nats. and 2nd place in the State Champs.

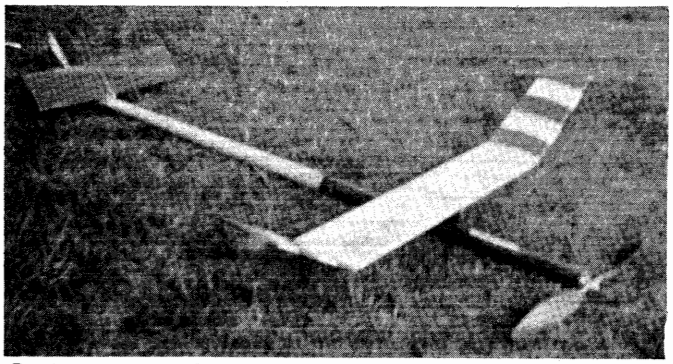
My model has a longer tail moment, smaller stabilizer and more tapered wing tips plus being very light. The model propeller is based on the ARA-D airfoil section, of which I wrote a paper for the "Bakersfield International Symposium." This airfoil produces much thrust and makes the model hard to handle at launch. The model can be flown R/R or R/L, but in the latter mode she climbs better and higher.

The name "Waltzing Matilda" was chosen as the model behaved (in waltzing circles). With 14 sh. of FAI or 16 sh. Perelli, she will do a 30-34 sec. motor run. This model was specially made for Taft.

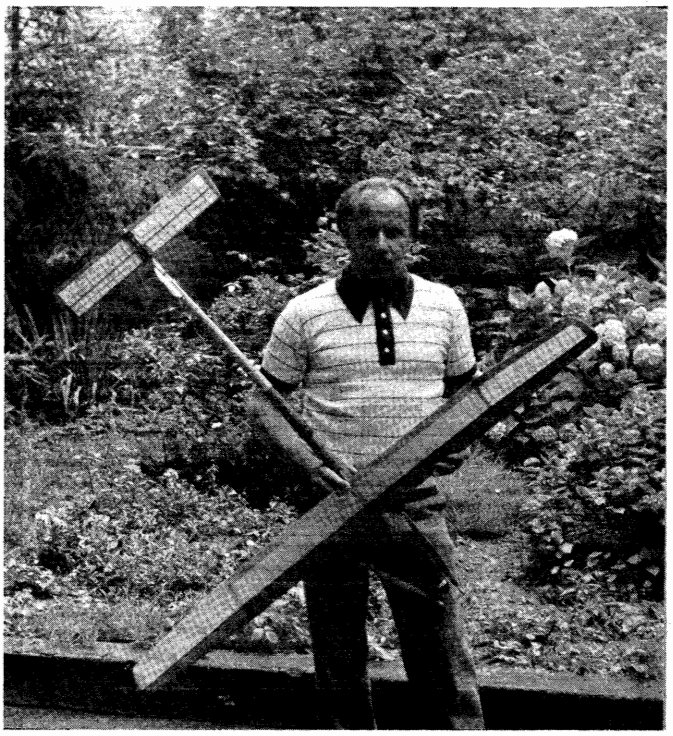
Note my other models are all twin fins. They are NOT copies of B. White's model, but they are a development from Mark I which won the 1956 Nats. in Australia and every Spring had many wins in State and other contests. No. 8 model was flown

at the 1977 World Champs and came in at 34th place, which was the top place for all Australian team members.

PAUL VAN LEUVEN, 55, has been a FF flyer for 20 years, is married with 4 children, and is a Civil Engineer for the Commonwealth Department of Construction in Australia. He is also interested in craft work, camping and boating. He has been a Nats winner and placed 34th at the 1977 WC. He also flies FF Scale and Peanut Scale. Paul's Wake "Waltzing Matilda" uses 14 strands of FAI Supply rubber to turn a Russian style prop.



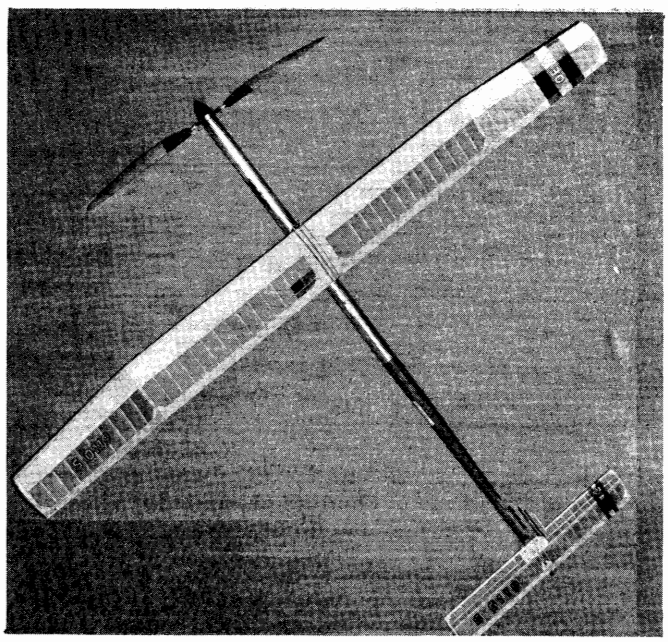
Paul Van Leuven's "Waltzing Matilda"



Herbert Chmelik likes F1B and flowers

HERBERT CHMELIK
F1B Austria

HERBERT CHMELIK, 48, is married and works as a machinist with the local Gas Company in Vienna. He also enjoys skiing and mountainclimbing. Herbert flies his F1B on the Austrian Team where he placed 3rd in '77 and high in other meets, including Marigny '74, where he came first. He uses Pirelli to drive the 560 x 680 prop on his model, which is the "Pollux" design by Hans Martin.



Ernst Reitterer's metal body F1B

ERNST REITTERER
F1B Austria
HANS ZACHHALMEL
F1B Austria

The wing (50 g) and the elevator (8 g) are of ribbed construction with balsa planking; they are covered with light Japanese tissue. The wing halves are connected by a 2.5 mm wire and fastened to the body with rubber bands. The motor tube is laminated from two layers of 1 mm balsa and is covered with silk. (Weight of body including timer and fin, 85 g.) The prop whose blades are carved from 10 mm balsa has a diameter of 550 mm and a pitch of 630 mm. (Prop and noseblock assembly, 45 g).



Hans Zachhalmel and new F1B

Significant Results:

3rd place: World Champs, Plovdiv, Bulgaria, 1975
1st place: Austrian National Championships in the years 1972, 74, 76, and 78.
1st place: International Competition, Munchen, BRD, 1972.
1st place: Internationaler Raba Cupa Györ, Hungary, 1971.
2nd place: International H. Kratky Contest, Weiner Neustadt, Austria, in the years 1971, 74, 76, and 78.

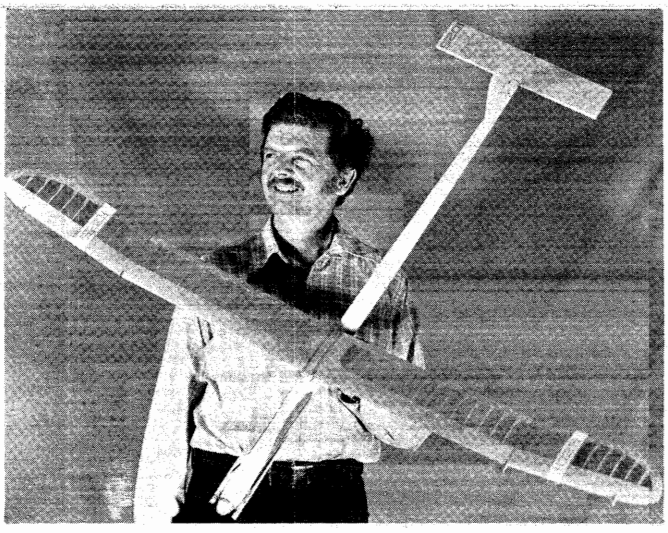
HANS ZACHHALMEL, 39, has been a flyer for 20 years, and is married with 2 children. He is employed in the local hospital in St. Polten, Austria and uses Pirelli and a Montreal Stop on his F1B. Hans is National Champ of Austria and has been on several WC Teams.



Paulo Ribiero winds his FIB by hand

PAULO RIBEIRO
F1B Brazil

PAULO SOLON RIBIERO, 50, married, has been an FF modeller for 27 years, works as an architect in Sao Paulo where he flies his Wakefield F1B and also enjoys woodworking, photography and art. He was South American Champ in '70 and Brazilian Champ in '78. He also flies Coupe D'Hiver, P-30 and F1A gliders for relaxation.



GILBERT TONI
F1B Brazil

GILBERT TONI, 48, has been flying free for 10 years, is married with 3 children and is an architect in his native Sao Paulo. He uses 14 strands of Pirelli in his F1B and has placed in South American and Uraguayan Champs.



Gilbert Toni ready to wind his motor FIB

JACK McGILLIVRAY
F1B Canada

This higher aspect ratio version of my 20 year old Whistler design was originated in preparation for the 1963 World Championships. Its endurance in calm conditions was excellent, however it suffered in turbulent conditions, and was subsequently sidelined for a number of years until a variable incidence tailplane was introduced. The V.I.T. permitted the centre of gravity to be shifted forward to 65%, giving glide stability equal to the Whistler. Indoor glide tests were made which suprisingly showed that a generous C.G. shift forward gave no measurable increase in the sinking rate.

The torque-actuated V.I.T. shown on the drawing can control any portion of the power pattern by modifying the cam shape. I only use it to control the initial few seconds of power burst though, then give the stab. a smooth transition to the glide position. In contrast, a timer operated V.I.T. generally gives a sudden snap action, which sometimes results

Jack McGillivray with "Whistler's Brother"

in a power stall. Also, the time interval must be judged according to the rubber torque. With a torque actuated V.I.T. it's all automatic. Most torque type systems become more complex because the model must come apart for service and adjustment. Sometimes, too special machined parts are required. The arrangement shown, has no machined parts, and only the plywood cam can be removed for adjustment purposes by withdrawing a strait pin. If internal repairs are required though, surgery is necessary.

The original Whistler was checked out years ago with various types of wing turbulators, none of which gave any performance improvement. Wind tunnel tests with this wing section suprisingly showed that improvements could be made by using just about any kind of turbulator, so another evaluation was made. Subsequent indoor glide tests with surface turbulators in various sizes and positions, contrary to wind tunnel tests generally gave an inferior glide performance. Only one type of turbulator was beneficial in glide tests, and this outrigger type is shown on the drawing.

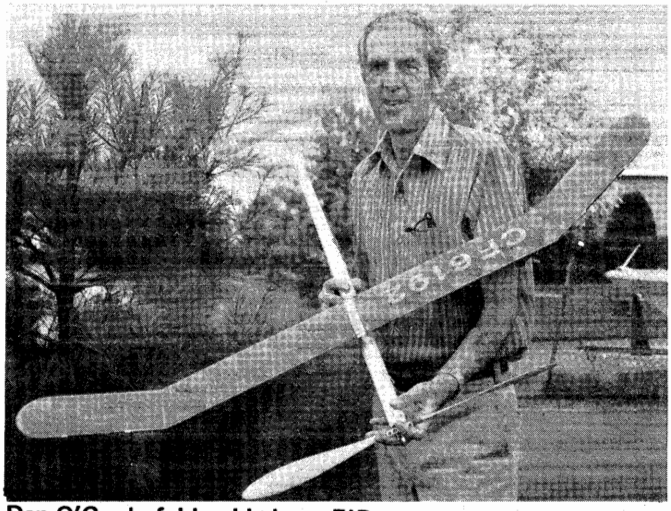
JACK McGILLIVRAY, 44, has been an aeromodeller for 36 years and is most noted for his folding-wing power design. He is single and an engineering product supervisor for John Wood Mfg. Ltd. in Toronto, where he is a member of the Toronto FAI Group. His other sport is bowling. He came in 3rd in the 1959 WC, 7th in '63 and won the USA Nats. in '66 in Wakefield. Jack uses FAI Supply rubber to power his "Whistler's Brother."

DAN O'GRADY
F1B Canada

My current models are the third in a series in which features found to be worthwhile were retained while other ideas were altered in favor of those which appeared to be successful for other Wakefield flyers.

Previous models used balsa fuselages - two layers of 1/32" balsa, spiral wound and reinforced with light-weight fiberglass cloth and epoxy resin. These worked well and weighed about 25g but were rather time-consuming to produce. The ready-made fiberglass fuselages were adopted to save time. Their current price may force a return to the balsa fuselages.

Each end of the fiberglass tube is reinforced with three laminations of 1/64" plywood about 3/4" long. The inner wing panels incorporate a tapered fiberglass wing spar (Rony tube) which has proven to be very worthwhile and extremely strong. Although the current wings are on the heavy side previous wings have been built as light as 50 grams using these spars. Unfortunately Ron Pollard has discontinued this particular size of spar.



Dan O'Grady folds a blade on FIB

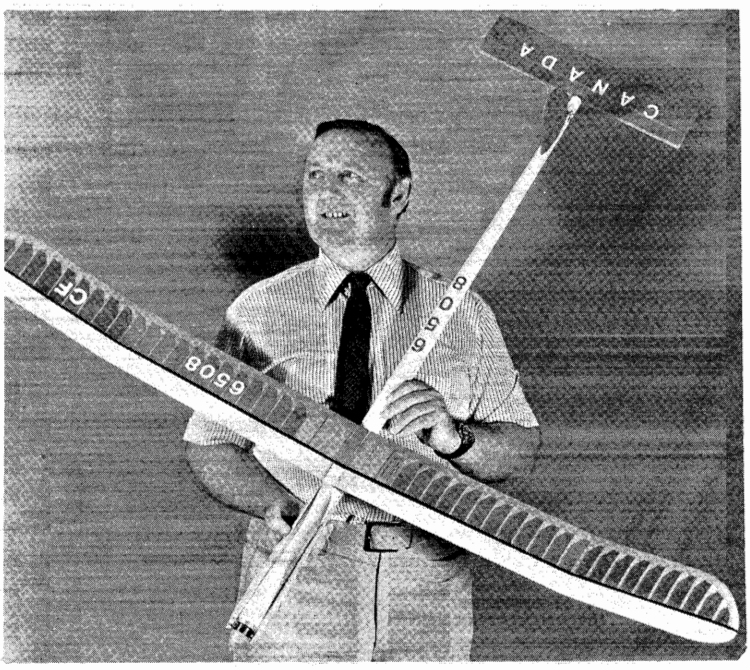
The tip panels use a tapered balsa spar 3/32" thick, on edge, tapering from 3/16" to 3/32".

The wing leading edge construction has proven itself. It is rigid and light-weight. It uses a 3/16" right angle section of Northeastern pine produced for model railroad use. Set into this is a 3/16" sq. piece of 10 lb. balsa. The resulting leading edge is very stiff but light.

A 1/16" ply root rib is used on each wing panel and 1/32" balsa is used to fill in the first two rib bays, top and bottom. Cyanoacrilate glue is used for practically all of the construction, the boom lamination being an exception. For this, diluted white glue is used.

The model shown has no dihedral on the inner wing panels. Two others of the same series have 1/2" dihedral on each inner wing panel.

PAUL ROBERTS
F1B Canada



Paul Roberts and "Vindicator" FIB



Young Jens Kristensen and his Wake



Poul Kristensen just back from Pierre Trebod

POUL KRISTENSEN
F1B Denmark

I finished the first example of this design in the spring of 1978 and the five models built, have to date, been entered in nine contests with good results, making 36 max. flights out of 46. The drawing shows the latest version with an improved wing construction.

The mechanical systems, a variable-incidence tailplane and a three-position autorudder, together with improved propellers and careful motor selection has improved the climb a lot over my earlier models. The VIT makes the initial climb fast and is insensitive to ground turbulence (a great asset in rough weather, as we often have it in Denmark); and the final part of the climb is good too, probably because of the freedom of trim that the three-position rudder gives.

With a good motor, the dead-air performance of the model is probably over 3.30 but this is difficult to determine exactly.

Two of the models have, unfortunately, been lost, but I hope to enter the three remaining at the World Champs.

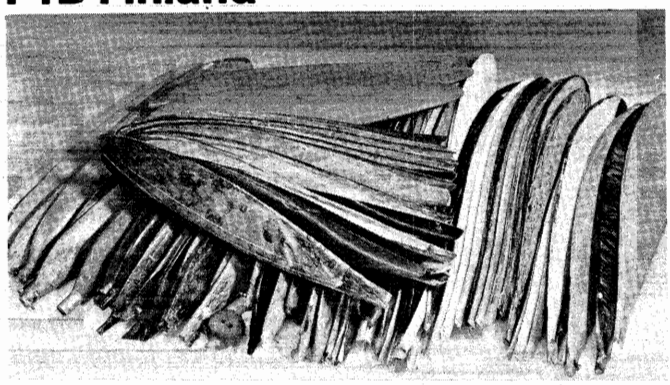
The most important contest results to date have been:

Nordic countries championships 1978:
2nd, 1160 sec.
European championships 1978 :
8th, 1186 sec.
Danish national championships 1978 :
1st, 1180 sec.
Holland International 1979 :
1st, 1183 sec.

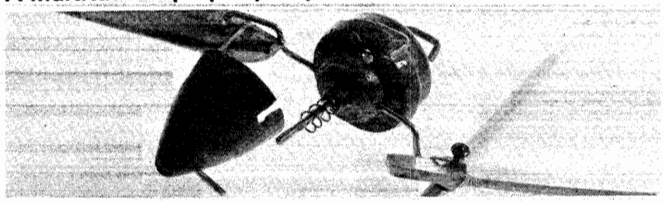


Ossi and a snow scene in Finland

OSSI KILPELAINEN
F1B Finland



A multitude of props by Kilpelainen



JOHN COOPER
F1B Great Britain

The model drawn was built in 1974 and has been used as my number one model ever since. For the World Champs, I have built one identical spare and two other similar models which have different wing sections, one a Gottingen 499 and the other a GARD (circa 1972). The model was intended to be a steady, consistent performer rather than being capable of spectacular still-air times. However, after making various changes to the propeller and fitting an auto rudder, the models performance has increased to a satisfactory level, about 200-210 seconds on 1979 Pirelli.

I have found that the best and most consistent performances come from using a fairly long motor run of between 40-45 seconds. Using this long run, it isn't necessary to use V.I.T. but the use of an auto rudder makes the model far less critical to trim for the power burst. This auto rudder is either operated by a K.S.B. timer or by the propeller fold, which releases a trigger mounted on the fuselage side just in front of the wing.

The noseblock is of the old-fashioned spring and woodscrew style, but it has never given me any problems despite using two different types of rubber which give motor lengths between 16" (1972 Pirelli) and 19" (1979 Pirelli).

I haven't flown Wakefield much in the past five years due to putting all my time in on A.2 gliders, however, the full contest record is below. The model seems to like thermals which often helps to make up for my mistakes.

June 75 Weston Trophy — 2nd, 21.00 + 2.49
Sept. 75 Gutteridge Trophy — 2nd, 21.00 + 2.50
June 76 Weston Trophy — 2nd, 19.36
Sept. 76 Gutteridge Trophy — 2nd, 20.27
} Dave Hipperson came first in all of these.

Feb. 77 Team Trials — 6th, Approx. 29-1/2 mins. out of 33

June 77 Weston Trophy — 4th, Approx. 19-1/2 mins. out of 21

July 78 Team Trials — 1st, 39.28 mins. out of 42

May 79 Weston Trophy — 8th, 14.53 mins. out of 15.

JOHN COOPER Biography under FIA

DAVE HIPPERSON
F1B Great Britain

This design has existed in virtually this form since the end of '67 when the Benedeck 7406F section was originally adopted. The heart of the model is the wing and the outstanding all weather glide achieved with it has been greatly responsible for the models continued success over the years.

The 5" chord and reasonable aspect ratio (not too high) was decided upon after consistent failure with high aspect ratio layouts. They were found to be very critical to trim and varied in performance on the glide from flight to flight.

No turbulation has been found necessary apart from that naturally occurring by way of the main spar location. The model is trimmed to fly right and in quite wide glide circles - perhaps as much as 50 seconds per turn.

The prop is a 22" dia by 28" pitch helical from an X blank and has virtually no underchamber, but quite wide and thick elliptical blades. The motors are made up to close-on 20", which usually necessitates 14 strands. This runs off in 45 seconds or a little longer, if well used rubber is employed. The very good Pirelli I have for the W.C. runs then turns off in between 40-45 secs when new.

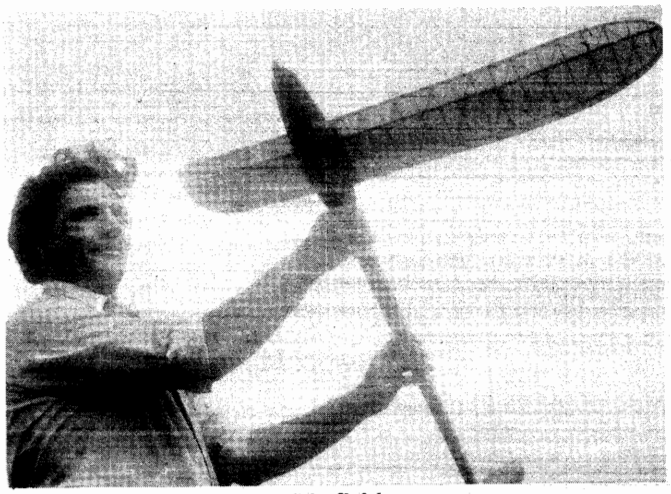
The model uses no gadgets. A simple Rock-Maple nose plug/hub assembly capped with a spinner and running on 14 swg wire has proved virtually indestructable. There are no auto surfaces and although the model is not at its best in winds above 15 mph, in such conditions, the power run is usually only blown 'out of shape.' I have often found the less powerful and longer run most beneficial in rough or turbulent conditions, as a muffed launch wastes less of the power run. The longer run also centers into lift better in all conditions.

I will be bringing four of these models. None have been specially built for the Champs. All are at least four years old and one is seven years old. I believe the older, the better for consistent flying. Two have G.F. motor tubes, the other two are balsa. All tail booms are balsa.

DAVE HIPPERSON, 33, married and a self-employed sound engineer in London, enjoys photography as well as winning the British Nats. His Wakefield is powered by Pirelli (including the Dowsett batch) which revs a 22/28 prop. DT is by Tatone. Dave regularly wins a half-dozen events a year in U.K. competition, where he is very active.

BOB WELLS
F1B Great Britain

BOB WELLS, 39, is single and serves the Essex County Council as a heating engineer. He is an avid Wakefield flyer and has been into FF for 25 years. He wrote an article on design for the recent "World Free Flight Review," edited by Bill Hartill. His model uses Pirelli and a clockwork DT timer. Bob was on the '69 and '75 British Teams.



Bob Wells with his latest Wakefield



A potent pair of F1B by Wells

ITZHAK BEN-ITZHAK
F1B Israel

This model was designed in '77 and was ready to fly at the end of '77.

Since then, it has been my number one model and its competition record in Israel is three times 2nd place, and one time 1st place, making 840 out of 900 average.

This model was designed to fly in all weather conditions (after being in the W.C. held in Denmark) without a great loss in still-air performance.

The model has an aspect ratio of 15 but the strong and flexible wing can survive any weather. The stabilizer airfoil is a highly cambered slotted airfoil giving good stability with a small tail volume. The propeller and rubber motor are selected to give 40-50 sec climb with a motor length of 45-50 cm. The wing Aerodynamic.

The model was designed to fly in a 30 sec circle, so an asymmetric wing was used.

Begin with a double tapered wing giving the best straight line approximation of an elliptical wing, increase the chord of the inner panels, and decrease the chord of the outer panels. The panels lengths are the same in the left and right halves.

Structure Details:

Wing: A polystyrene core with 0.6 mm balsa sheets epoxied to it in vacuum.

Motor Tube: Two sheets of rolled 1.6 mm balsa with microglass covering – 2 inside, 1 outside.

Tail Boom: Two sheets of rolled 1.2 mm balsa with one microglass cover outside. The one function Seelig timer is installed in the boom.

Propeller: 600 Ø x F2o (Nom.) carved of balsa block.



Ben-Itzhak gets off a Max in Israel

ITZHAK BEN-ITZHAK, 27, has been into FF for 17 years in Israel. He is a student at Technion, where he flies his "Poogy" with style. His Schwartsbach style prop is turned by Pirelli and he uses a Seelig for DT only. Itzhak is single and enjoys corresponding with other modellers.



Giora Herzberg and Jedelsky F1B

GIORA HERTZBERG
F1B Israel

This model is based on the French P.G.I. concept, as explained by J. Wantzenriether in various texts, but also sports some new elements both structural and aerodynamic.

P: THRUST, Thrust is vectored through C.G.
G: C.G., C.G. as rear as possible (minimum stability margin)
I: INCIDENCE, Final climb attitude trimmed by changing wing incidence (together with stab incidence),

combined with right-left climb trim, with right glide triggered by prop fold. This gives flight pattern which is very reliable in all conditions and insensitive to motor torque pattern and number of stands. Trim process is also very fast, aided by the ability to quickly change C.G. position, wing incidence, and warps on the field.

The wing airfoil is corrected at each station to varying RN. Foam-balsa-microglass structure is an experiment and is not considered lighter or stiffer than solid balsa wing.

Stab employs slotted airfoil, highly cambered, easy to build and repair, and is very efficient (1.8-2 sq. dec. should be sufficient). Stall recovery is very good.

The prop is locked in a semi-folded position by a lever connected to a "safety" catch positioned under the pylon, and is released at moment of launch (a la French method), preventing loss of turns and ensuring perfect release attitude every time. After launch, the lever swings to a new position serving as a fold stop of the spring-loaded prop hub which moves backward when torque runs out, and in doing so, releases a small lever connected to the auto rudder. The final position of hub protects the bearing from dirt. Hub, double position lever and simple auto rudder are the original design, and the whole system is considered a great asset contributing to reliability and ease of tactical flying.

Flying in an overweight configuration (256 gr.) on many first very early contest rounds, the model never failed to max; flight times usually are 3:15-3:50 with up to 10 min. holding time. Thermal sensitivity is very good. The model often opens its wide glide turns, commencing long straight path, and then centers itself on a new patch of lift and resumes turning.

Other models employ the same trim principle and systems, with variations of airframe structure, airfoil and AR.



Mits Kobori, wife and Wakefield in Japan

MITSUO KOBORI
F1B Japan

MITSUO KOBORI, 50, has been in modelling over 40 years! He is married with 2 children and serves as an engineer for Nichiei Jidosha Ltd. in Tokyo. Sixteen strands of Pirelli power his F1B with an original design prop, and it came in 3rd in the World Champs at Winer-Neustadt in 1973. Mitsuo's only hobby is aeromodelling and he looks forward to meeting old friends from the 1973 WC at Taft.



Kobori off to a Max with his superb FIB



The Japanese Wakefielders — All Smiles!

MASABUMI SHIBACHI
F1B Japan

Blue Max MK-II was developed from the Blue Max that I used in the W.C. at Denmark (4th place).

Characteristics of this model are as follows:

1. forward C.G. position (33%)
2. small stabilizer (2.48 dm^2)
3. TAMA wing profile (TAMA $63^5 6^5 6$)
4. No pylon (shoulder wing)

This formation gives excellent smooth climb (dash ⇒ cruising) and good transition (prop. stop → glide). TAMA series wing profiles are very popular in Japan and over 50% F1B modelers are using this one (developed by I and Mr. H. Ishii). This wing profile guarantees very high glide ratio (L/D) and a good stall characteristic, compared with well-known Benedic series profile (without turbulator).

Construction of this model is very simple and has enough strength. Characteristics of construction and materials are as follows:

1. glass fiber rod tail boom
2. solid balsa wing front part
3. reinforced longeron and trailing edge (by 0.125 mm thickness carbon graphite sheet)
4. polyacetal nose block and Montreal stop.

Contest Record:

1976	Japan Championship	2nd place
1977	World Championship	4th place
1978	Japan Championship	3rd place
1979	W.C. Team Selection	2nd place

MASABUMI SHIBACHI, 37, has been a FFer for 30 years (wow!) and is on the business staff of the Asahi-Dow Ltd. Company in Tokyo. His "Bleu Max" came in 4th in the 1977 World Champs in Denmark. Masabumi is married with two boys, who may start aeromodelling also at age 7. His prop is of the Herabuna type and is powered by FAI Supply rubber. He also flies F1A Glider and Coupe d Hiver in Japanese competition.



Soukawa's smile complements his flying

TOSHIHIRO SOUKAWA
F1B Japan

TOSHIHIRO SOUKAWA, 38, has been flying only 15 years but still designs his own models. He is married with 3 children, and works in Tokyo for Isuzu Motors Ltd. as an Engineer. He placed 3rd in the 1977 Japanese FF Champs with his original design, which uses 20 strands of FAI Supply rubber to turn a 640 mm D by 820 mm P original design prop. Toshihiro also enjoys playing piano.



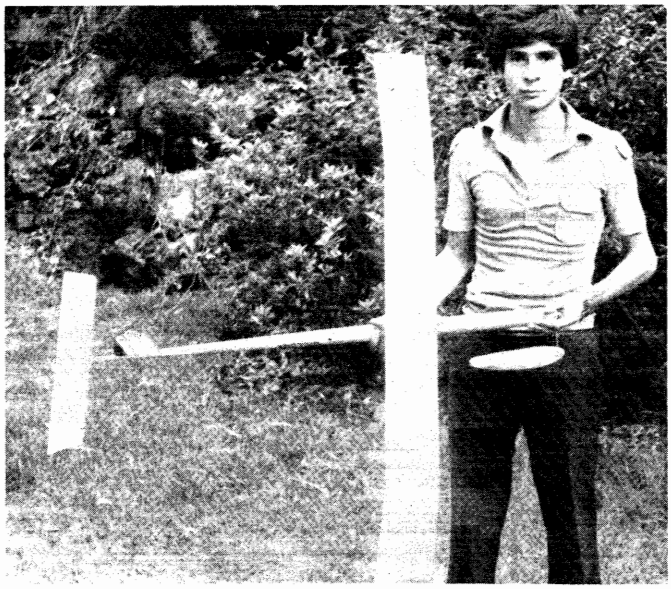
Mits Shibachi named his F1B "Blue Max"



Raul de la Cadena prepares to launch

RAUL ALVAREZ CADENA
F1B Mexico

RAUL ALVAREZ de la CADENA, 54, is married with 4 children and an engineer for the Federal Commission of Electricity in Mexico City. He has been a FF flyer for 20 years, and has won the Mexican Champs. His "Tizoc" is powered by 6 mm FAI Supply rubber running a 660 x 750 prop.





Jorge Arjona, Francisco Vera fly same design F1B

JORGE ARJONA
F1B New Mexico

JORGE ARJONA, 20, is a student in Mexico City and has been a modeler for 4 years. His model was designed by Team Manager, Lipcsey, and uses FAI Supply rubber (from Hugo Sandroni at Che Hobbies) to turn the prop. Jorge is single and has placed at the Texcoco contest.

FRANCISCO VERA
F1B Mexico

FRANCISCO VERA, 25, has been a modeler only 2 years and is married with one child. He is an architect in his native Mexico City and has won the Texcoco champs. He uses FAI Supply rubber in his Wake, which was designed by the Mexican Team Manager, Alberto Lipcsey.

PIM RUYTER
F1B The Netherlands

Please find enclosed the requested scale drawing of my probable No. 1 model for the next F.F.W.C., Taft, Calif. Although this model is not my most recent, it's my most reliable.

The first model of the "Dutch T(h)reat" series was built during the winter of 1973/74. This series was a completely new design. Up to that time, I was searching for a design which had an acceptable performance. After the 1973 W.C. in Austria, I was so fed-up with the performance and variety of models I had, that I was ready for something new. I wanted a model as versatile as possible, able to fly under all circumstances in still-air and turbulent weather. After much research and calculations, I came up with the design of "Dutch T(h)reat" which I modified only in minor areas since 1973.

The design philosophy was as follows:

Fuselage: Alu front end, burst-resistant, short pylon (glass fiber) timer in front of the wing to reduce nose moment, strong wing moment and reduces down thrust. The rear fuselage 1.5 mm soft sheet only, light, reduces tail moment.

Wings: My idea was to use the wing section GARD 6509. This created a construction problem due to the thin trailing edge and was never used. A good alternative was the Benedeli 6456F; the underside coordinates are exactly the same as GARD and the upper front end is nearly identical. The advantage of B6456F is the stubby trailing edge, which enables you to design a stronger wing maintaining a thin small cord wing design. The early version up to 1976, had a rib-paper construction center panel, due to the fact that I launch very hard. I was suffering from wing flutter, therefore from 1976 on, I used sheeted center panels. In 1977, I modified the B6456F section to incorporate a sharp leading edge. This made the cord 1 mm wider and I reduced the span by 1 cm to maintain the surface area. The revised construction of a sheeted center panel and long paper covered tips, have the advantage of a strong wrap-free construction moving the construction weight to the wing root. In general, having all construction weight as close to the pylon (C.G.) as possible, wing as well as fuselage makes your model sensitive without being unstable.

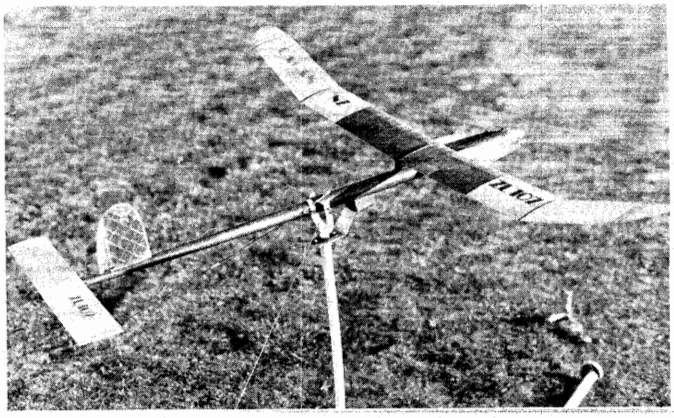
Stabiliser: The original section is NACA 4409. I have used this section already for 20 years for my stabiliser, why not for this model? The original construction was geodetic, difficult to make and had no constructional advantages, maybe disadvantages, when it wraps. From 1976, I used a non-geodetical construction. My newest model "stabiliser" is tapered, has 2 small rudders at the tip and a small rudder on the fuselage (Scandinavian

style). So far, I have not been able to get this model flying satisfactorily, over stable.

Propeller: The prop is made from glass fiber and soft sheet balsa in a mold. The mechanism is my own design and has not changed since 1973.

Unfortunately, I am not able to send you any picture, first of all due to the short notice and secondly, I am a little superstitious. I do not like pictures published before a contest starts. My contest record, just to mention, I was European champ last year with this model.

PIM RUYTER, 40, has flown FF for 27 years in the Netherlands, where he works as Product Support Manager for Digital Equipment Co. in De Meern. He is married with 2 children, was European Champ in F1B in 1978 and flies his Wakefield on Pirelli with his own design prop. His other hobby is computers.





Paul Lagan cranks in turns on Pirelli

PAUL LAGAN
F1B New Zealand

The 1978 model drawn here is fairly conservative in shape and is the 16th Wakefield I have built since 1967, and the 5th in the series with this outline. The Loffler version of the B7406f section is the most recent change to the series and is a section that gives a good overall glide performance with the turbulator and forward rib spacing drawn. Contest successes with this series have included three N.Z. Nationals wins plus a 1st and two 2nd placings in the biannual Trans Tasman International. World Champs placings have been 16th in 1971 and 41st in 1973.

The propeller is a 1979 feature and is the best I have tried. It has Schwartzbach pitch distribution modified along the lines suggested by Alan Brocklehurst in his 'Opt-Prop' Sympo paper. With a fairly wide blade and a nominal 29" pitch (at 70% radius) it is a 'slow' prop and has been designed to run off at an average of 10 revs per second. The section is carved to be as near as possible to the Pfenninger foil and trips from thick striping tape have been tried on the blades without any real conclusions being drawn as yet. The 20 mm block layout enables selection of a good C-grain face from the very hard balsa blank (10 to 15 lb density), and I try to obtain a high gloss finish with up to 15 coats of thin dope rubbed and polished.

The auto rudder is prop-stop actuated and although it is possible to reduce side thrust to the point where auto rudder is not necessary, this condition requires a very delicate balance of rudder, thrust and tail tilt which can easily go out of equilibrium -- the auto rudder working against the sidethrust on climb is a far safer bet and can be used with the fairly generous wing warps on glide for a consistent and safe glide circle. Earlier versions had a more rearward CG (lower stability margin) that gives a spectacular initial climb, but my latest approach has been for longer prop runs that enable the more forward CG to be used with benefit to glide stability.

Rubber is the biggest single variable in F1B and is where I have done most homework. I still prefer 1970 Pirelli (well-stored) and use it in 12 strands wound typically to 500 turns and 85 in-oz.

Two models similar to the plan will go to Taft plus a couple of back-ups and my rather more radical 1979 model which has a 1.5 m span B6356b wing, low drag stab fittings, thin rectangular tailboom -- it is called RASPUTIN and will be used at 65 sec prop runs in calm air.

PAUL LAGAN, 38, married with 3 children, is an Engineering Officer for the Royal NZ Air Force. He has been a FF enthusiast for 29 years — we first met him in Sweden after a lengthy correspondence. He has published the South Island News for many years, also flies some RC. He is chairman of FFONZ and has won innumerable modeling prizes. He flies both Wakefield and Nordic (Lepp design as well as original) with great skill. Paul's other hobbies include jogging, squash and motorcycling.



Paul Lagan and his F1B from New Zealand

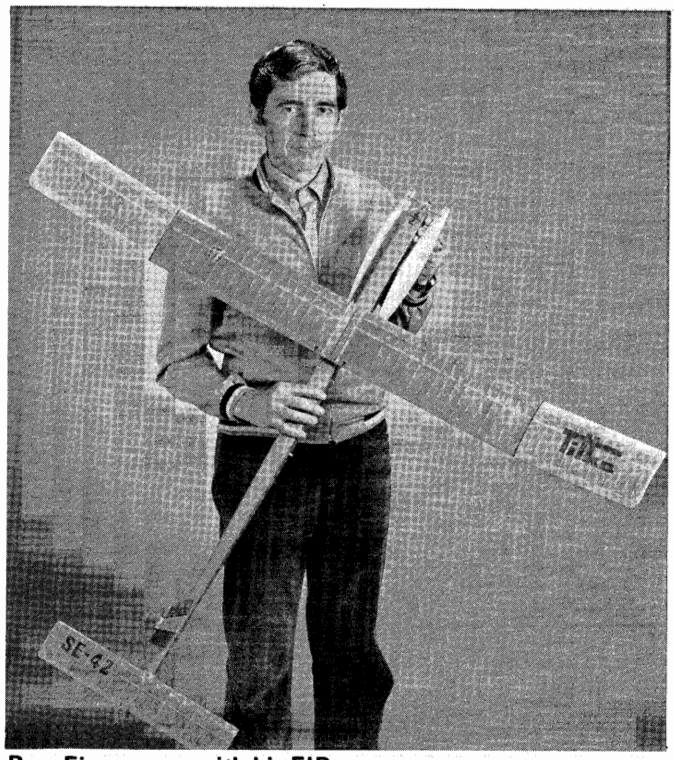
OLE TORGERSEN
F1B Norway

OLE TORGERSEN, 45, is a FFer of 18 years, married with 2 children, and works for the Raufuss Ammunition Works as a Mechanical Engineer in Norway. He was first in the Nordic Champs in '76 and has won several Norwegian Champs. Ole uses both Pirellia and FAI rubber to swing a Schwartsbach prop.

LUIS SERRANO MATUD
F1B Spain



Luis Matud off to a max in F1B



Bror Eimar poses with his F1B

BROR EIMAR
F1B Sweden

I took up Wakefield flying again in 1973, after 10 years of flying gliders only. As I wanted to test a new wing section and some other details, I decided to build a simple square outline model. It turned out well and I haven't changed more than a few small details on the 7 models built since then. When I started to use a winding tube, I got problems with the climb pattern. When winding nearer maximum turns, the higher torque caused the typical pattern with an ↗ in it. I tried to cure it with wash-in on the right wing panel but this resulted in a dangerous left spiral in the glide. The problem was solved with –2 degrees autostab for 6-9 seconds, and I could return to flat wings with no warps.

The model is a good beginners model and is now, with a few simplifications, kitted by Modellprodukter, Harnosand, Sweden.

The model has won for me the Swedish Champs, the Scandinavian Countries Champs and most of the major annual Swedish contests.

BROR EIMAR, 40, has been a free flighter for 27 years. He is a salesman and building engineer for Ake Karlsson in Monsteras, Sweden. Bror is married with 2 children ages 10 and 13. He is a member of the famous Solna Modelsportclub (though he lives 240 miles from the town of Solna). His other hobbies include music and reading. He was Scandinavian Countries Champ three times, Swedish Champ four times and has won most major Swedish FF events. He also flies Nordic F1A glider, Coupe D'Hiver and Swedish Rule F1B.

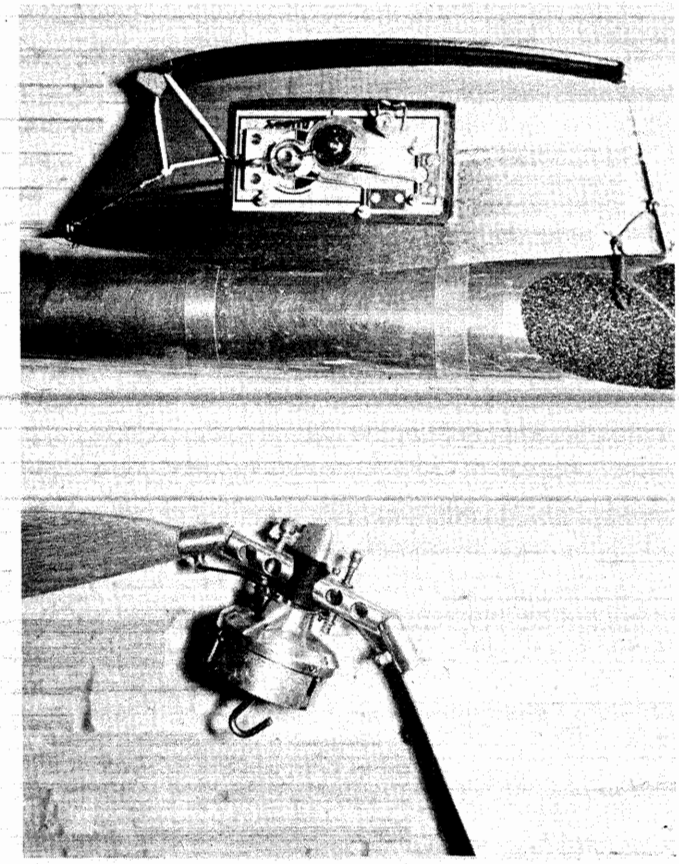


Jan Zetterdahl and elegant "Alba"

JAN ZETTERDAHL
F1B Sweden

The "ALBA Constellation - 79" is the result of 10 years Wakefield testing and competitions. Since '72, the layout has been the same, apart from the tail. It was changed to triple fins - 74. It is not critical on launching directions (a little bit to the left helps). I have found it most important to have a concordant combination of propeller-model and good rubber. My strategy is to have a fast climb for better tactics on the ground. The IPR-system and the large CS-prop can handle the burst of a high torque motor for a straight climb, and the VIT turns the model into a high nose cruise for 3 laps in 25-30 sec. The autorudder unlatches when the prop folds and keeps it to right turns for safer thermal riding. The structural design has been refined during the last years and made the "ALBA" a good contest model, I hope. — You still have to be alert on the field!

JAN ZETTERDAHL, 34, is an NC operator for Siemens-Elema in Spanga, Sweden. He has flown FF for 20 years and is a past Swedish Team member. His original design "Alba" has been published in various journals in several countries. Other hobbies include photography, cars, machine tools and a pet collie dog. Jan has been 10 years on the international FF circuit and was Swedish Champ in 1976. His original designs in all the FAI classes are outstanding. The FAI Dolby rubber in "Alba" comes through Modellprodukter, Sweden, which seems to be a good connection for this powerful stuff.



Details of Zetterdahl F1B — complex!

WALT GHIO
F1B United States

Honey is a revised model of my RL-1 design. The wing and stab are the same size as RL-1. I did not have the coordinates of John Gard's G-7510 when I made RL-1. I now have the coordinates and I am using the airfoil as designed.

The motor tube is the same as RL-1. Kevlar (1.7 oz./yd.) and epoxy on the inside of a 1/16 rolled sheet with 2 wraps of fiberglass cloth (.60 oz./yd.) and epoxy on the outside. The tail boom is rolled 1/32 with Kevlar and epoxy on the inside. Tissue and clear dope on the outside. Both the motor tube and the tail boom are moulded on a mandrel.

I have shortened the fuselage by 2 inches and made an all moving rudder. The pylon was raised to allow a seelig timer to be used. The dihedral was increased by 5/16" in the main panels. These changes were made to allow a R/R pattern over R/L and a little more stability for flying in gusty conditions. RL-1 has behaved good in the wind, but it is designed for a maximum flyoff model in calm conditions.

Both models are designed for flying at Taft in light to moderate conditions. The hard flying surface of Taft is why I went to the tail boom design. The epoxy and Kevlar also stop warping of the boom due to the high temperatures of Taft during the day.

I use a Schwartzbach prop with the diameter increased to 23" and the pitch set at 31" at 70% of the diameter. John Gard's unlimited models fly with this set up and I have tried it with good results.

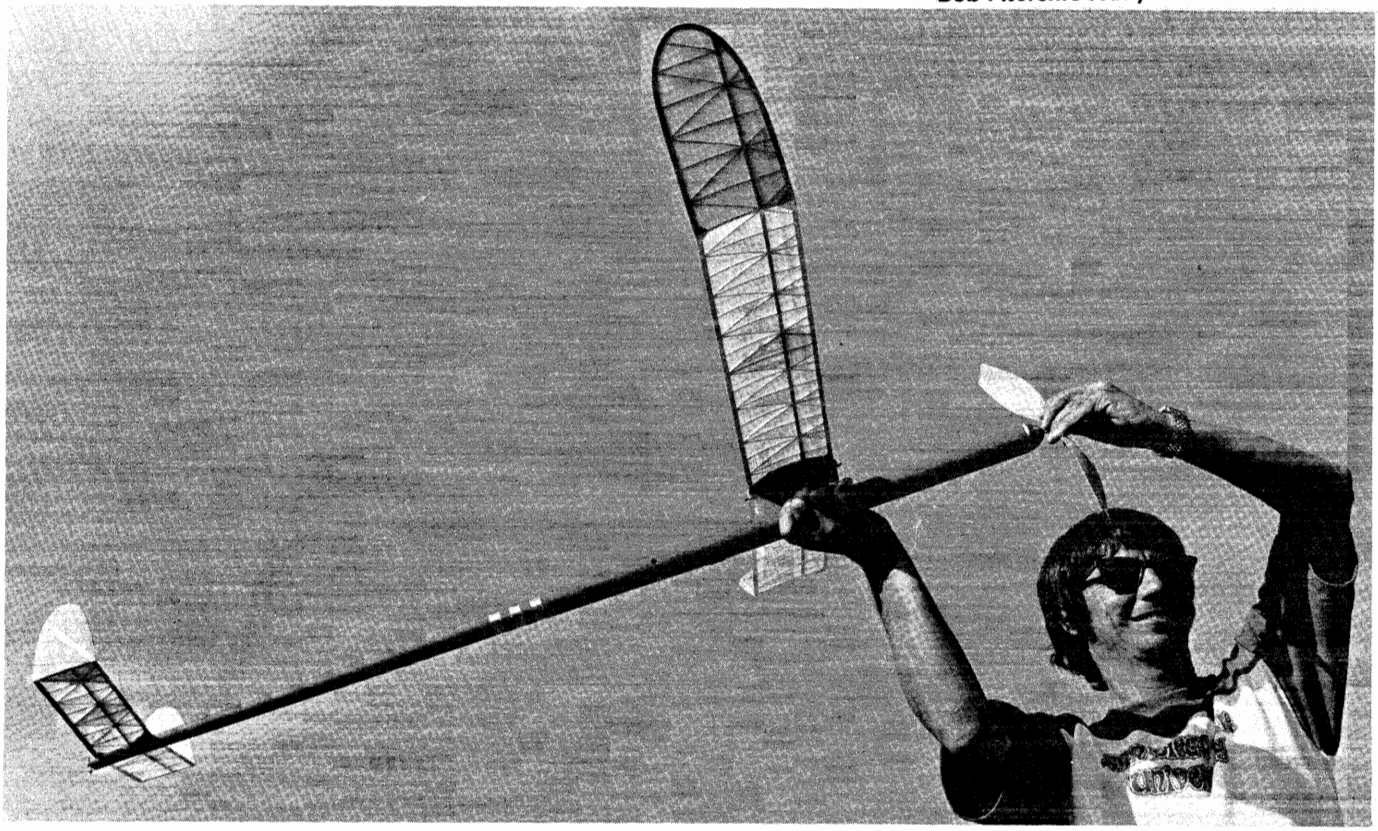
WALT GHIO, 37, has been a FF fan for 23 years, is married and works as a draftsman for the Sandia Labs in Stockton, California. His other interests include golf, sports and photography. He was 1st at the '76 and '78 USA Team Finals, 36th in Denmark. His original designs "Flux", "Honey" and "RL-1" uses Schwartsbach 23" and 24" diameter props swinging on vintage Pirelli. Walt uses a Seelig for all auto functions.



Judy Ghio with his new "Honey"

BOB PISERCHIO
F1B United States

Bob Piserchio ready to launch "Ruffian"





Bob White gets off a Max at Plovdiv WC

BOB WHITE
F1B United States

The airplane is a simple straightforward layout, very conventional, with a rather long tail moment and twin rudders. The flight characteristics are, a rather fast climb to the right and a left glide in an average-sized circle.

The models are trimmed with a rearward c.g. with small angular differences between the wing and stab to eliminate the need for auto surfaces. The plane uses larger thrust angles than are customarily used on Wakefields (approximately 5°d and 4° or 5° right). I feel this is necessary because of the higher thrust of the motor at launch, 130 inch ounces of torque).

Propellor used has the diameter of 23 1/2 inches and 29 inch pitch of rather narrow blade width and very thin cross section. It is made from hard wood, (a form of cypress from Japan).

The mechanical devices involved in this design are a bare minimum to insure reliability and require little attention during preparation for the plane's flight.

Though not apparent, the design of this plane was developed for weather characteristics prevalent at Taft, as this is where most of the competition flying has been done over the years.

Following is a list of some of Number Eight's Accomplishments: (The Basic Design)

1972 - Taft, Calif. - First Place at U.S.F.F. Champs Maxed plus 4 minute fly-off.
1972 - Caddo Mills, Texas - Earned a place on 1973 U.S. Wakefield Team.
1973 - World Champs in Wiener Neustadt, Austria - Maxed out and was 5th in the fly-off.
1973 - Marigny le Grand, France - Maxed out and won 1st place at Criterium Pierre Trebod International.
1974 - Taft, Calif. - First Place at U.S.F.F. Champs
1974 - Taft, Calif. - Maxed out in Team Selection Finals - to earn a place on 1975 U.S. Wakefield Team.
1975 - Plovdiv, Bulgaria - World Champs - Maxed out and placed second after 3 fly-off flights.
1975 - Marigny, France - Third in Pierre Trebod.
1975 - Amberieu, France - Only Wakefield flyer to get seven maxes at the French Nationals.
1977 - Taft, Calif. - Max Men 14 Round FAI Annual - First Place in Wakefield with 14 Maxes.
1977 - Sacramento, Calif. - Winner of First Sierra Cup.
1977 - Taft, Calif. - First Place in W.F.F.A. International Challenge.
1978 - Taft, Calif. - Won place on 1979 U.S. Wakefield Team at Team Selection Finals.
1978 - Taft, Calif. - W.F.F.A. International Challenge - Maxed out with First Place win.
1979 - Buckeye, Ariz. - First Place in Southwest Regionals.
1979 - Taft, Calif. - Max Men 14 Round FAI Annual - First Place with 14 maxes.
1979 - Taft, Calif. - U.S. Free Flight Champs. - Maxed Out - Won First Place in fly-off.

Prior to the advent of Number Eight, planes of similar design were also successful. In 1970, No. 2 earned a place on the U.S. Team at Finals in Albuquerque, N.M. In 1971 at the World Contest in Sweden, planes No. 6 and 7 Maxed Out and won third place in the fly-off.

BOB WHITE, 55, has 2 children and 5 grandchildren, has been a modeler for 45 years and works for Bell & Howell as Electronics Manufacturing Supervisor. He lives in Monrovia, California with his wife Toni and about a million trophies and AMA Record certificates. He is present holder of the Mulvihill National Record in all 3 categories plus the Coupe Record. He has held numerous other records and once flew control line and gas power FF. Bob and his "Vol Libre" are a superb team.



Bernd Silz is a winner in Wakefield

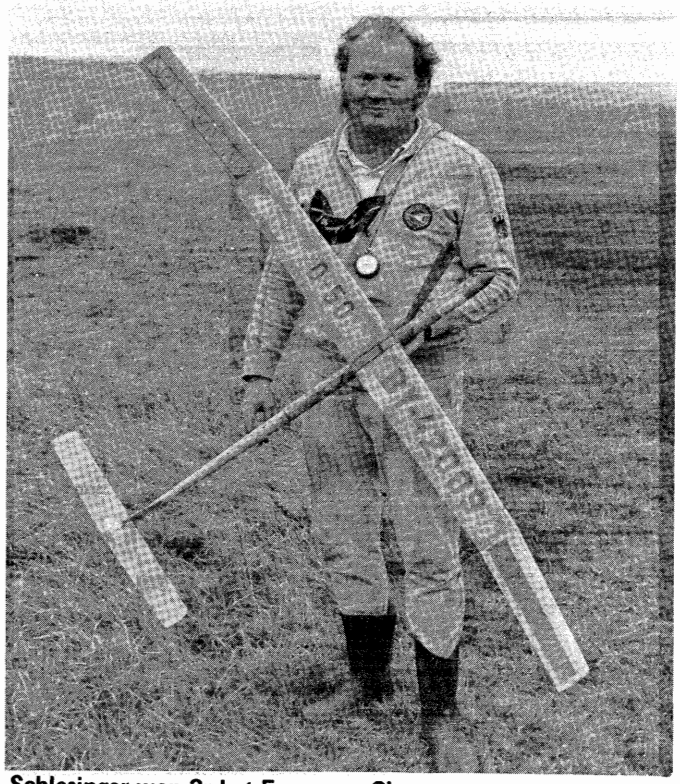
BERND SILZ
F1B West Germany

The F1B Model in the plan is of self-construction. This model developed out of several tries with other models. Seven years ago when the league committee for free flight models in Germany began, I only then took seriously the class of F1B models. In the last 7 years, I have built 15 Wakefield models. Out of those models, I tried out 8 different types. These 8 had different profiles, other wing dimensions, steering and flaps. The first motor tubes were built with aluminum with balsa tube booms. Today, I only fly fiberglass main bodies; weight saving is almost 10 grams. With the wing, I tried several different experiments, balsa sheet, and later different foam materials strengthened with carbon fiber. With the last model, I used again the old spar and rib construction. From the beginning, my goal was to find a model that one can fly in any optimal weather condition. That's how I happened to come up with the wing span of 135-145 cm. That model has a starting total weight of 195 grams. It uses 16 threads, 1 x 6 or 32 threads, 1 x 3. The input angle difference is 2-3 mm. It climbs right and the gliding curve is after the propeller folds. Since the German Championship in 1978, I fly the model with a double curved uplift flight that is steered through the Seelig Timer, so that the model circles in the thermal. The propeller is carved out of balsa wood, has a diameter of 600 mm and about a 67° angle.

BERND SILZ, 37, has been a free flying fellow for 26 years and operates a gas station in Mainz, Germany. He has been German Champion and European Vice-Champion. Bernd flies RC models as respite from Wakefield. His original design prop is swung by 32 strands of 3 mm Pirelli and he uses a Seelig 3-function timer for auto surfaces.

ROLAND SCHLESINGER
F1B West Germany

ROLAND SCHLESINGER, 36, is a FF flyer of 23 years and works as a master machinist for P. Bretting Werkzeugbau in Vietsbronn. He has been Bavarian Champ 4 times, German Champ once, and was 3rd in European Champs. His original design prop is rotated by 32 strands of that good 3 mm Pirelli and a Seelig operates auto functions.



Schlesinger won 3rd at European Champs



Walt

JOSE BONETTO
F1C Argentina

Uses a model drawn by Eliseo Scotto, with a particular configuration of the fuselage for its category, a rhombus with the lateral sides made out of 4 mm balsa wood with 4 longerons of hard wood. He also utilizes a stabilizer of generous surface with asymmetrical profile.

Bonetto participated in the tiebreaker flights of Bulgaria, 1975.

He is number one in his team and National Champion of his category.

MAURICO ZITO
F1C Argentina

If we go back to Wisvaden, Frankfurt 1955, this was his first world competition (15 seconds, launching pad take-off, 500 gs. maximum weight and free mix). Here, he qualified 21st as an individual and the Argentinian team ranked 3rd in the competition. He has remained active since then, which permits us to measure the passion and enthusiasm of this aerial-hobbyist.

The wings of his ZN°25 have the widely used B8353 modified to 7.5%, that modifies at the tips to become flat. It is totally covered in expanded polyester at 1 mm, reinforced with fiberglass and totally glued with epoxy.

The stabilizer has two V.I.T. arms whose plackets are connected with an angle of convergence of approximately 0.8°. The front part consists of polyestyrene; the posterior part is conventional, all covered in 1 mm.

The tail boom has two layers of 1 mm balsa wood with a 28 gm weave fiberglass core wrap. The formers are glued in between with epoxy; the total weight of the boom is 35 gm.

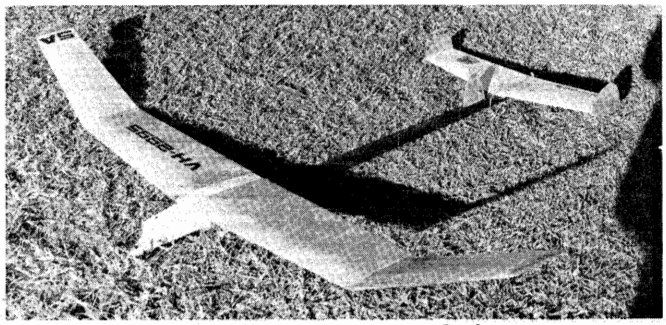
BILL EAST
F1C Australia

The Falcon is the culmination of 3 years of development and design, in which the aim was to produce a fast, stable and functional aircraft with good thermal holding qualities. The prototype Falcon was first flown in September, 1978. Since then its places in major contests have been excellent, winning three and placings in two.

The design outline of the plane is simple in shape and is proportioned to modern day power models. Having a fairly short nose and long moments to provide good transition, tailplane tips are angled inwards to provide a certain stability in climb. Also the wing airfoil has been kept to around 6.75% to give a fast climb, yet good glide. One innovation of the Falcon is the electronic bleeper system mounted in the fuselage under the wing. This unit has a range of some 250 yards with an audibility of 4.5 kHz and is powered by fast charge chromide batteries. The unit has facility for test and electronic timer attachment (now in development). The weight of the bleeper has been kept to 35 grams complete, and is completely vibration proof. The circuit board being only 1" square x 1/4" wide.

The construction of the Falcon is basically fiberglass. The front end is cloth-layered and pressure-set, where the boom is a professionally made unit in Queensland. Off my own designed mandrel, the weight has been kept as low as possible, the boom weighing 60 grams, and the front end 51 grams. The wings are made from 1/20" sheet balsa covering, with 14 grams fiberglass cloth finish. The tailplane is 1/32" balsa covering; the finished weight of wing and tail is 190 grams and 30 grams, respectively.

The power for the Millenium Falcon is the Rossi 15, modified and developed by Alan Shing, one of Australia's foremost engine developers. The propeller used is the Verbitsky 7" x 3-1/2" which the Rossi turns at 28-29K static.



Bill East's "Millenium Falcon" at rest in Sydney



BILL EAST, 28 and single, has been a devoted FF'er for 6 years of 19 in modeling. He holds many records and Australian titles. He is a tooling and design draftsman for Telecom Australia. His "Milennium Falcon" uses a Rossi rather than hyperspace drive (sorry, Han Solo) and is shut down by a disc brake. He uses a Verbitsky prop of epoxy and glasfiber. Seelig, of course, plus an electronic bleeper to find the bird. Bill enjoys reading, drawing and CB radio. He spent $50 on air courier service to insure his drawings reached us during a mail strike, so you can be sure he is dedicated. He also did the drawing for the Edward s Wake.



Bill East and engine man Alan Shing, Bill's F1C

STAN HINDS
F1C Australia

My models owe a lot to Lars Olofsson, who I gratefully acknowledge.

They ought to have cowled engines, but I've been slowly developing F1C's over two years and have not had enough time for "new technologies" except props, which I make from copying Olofsson's Verbitsky.

There is little to choose in power between my Rossi and Conquest; chose the latter to get up to weight and move C.G. further forward. Rossi gives about 1% more static r.p.m. on same prop than the Conquest, but this is dependent on how well I can set the needle valve. The method I use to get accurate r.p.m.'s is to use a Digital Frequency Meter (spin-off from my short-wave radio interests!) plus a photodiode as a light tacho. The DFM is accurate to 1 in the last figure, which converts to about 1 in 800 for rev's per sec. with a 2-bladed prop.

The top surface of the wing outer panel is "00 Silkspan" deliberately left unsmooth after doping. I hope this acts as a turbulator (see Aeromodeller Annual 1974-5, page 114, also a contribution I sent for the 1979 NFFS Sympo.) to inhibit tip stalling on the glide. Perhaps the inner panels may need turbulating but they have larger chord and a tip stall is worst - and turbulating the inners may give unacceptable drag on the climb. The tailplane doesn't have turbulators because it is probably already in very turbulant air from the wing wake.

The contest record includes several seconds and thirds in Australian contests - sufficient to get a team place!

STANLEY HINDS, 46, has been enjoying Free Flight for 33 years, now flies F1C in Cook, where he is a Physicist for the Australian National University. He is married with 2 children and also enjoys electronics, shortwave radio and RC flying. The Cox Conquest in his power ship turns a Lars Oloffsson design prop to the Verbitsky mold with carbon fiber and epoxy. His Seelig timer allows a straight/right pattern on his "H109" original design.



Stan Hinds and F1C in front of Australian Pines

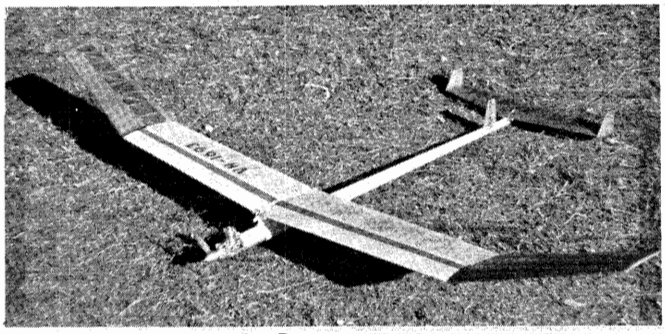
PETER NASH
F1C Australia

Generally, I don't like to spend too much time building – rather fly them so I keep the structure simple so long as it's good enough in the air. The diagonal ribs, I find necessary in this often hot and humid climate, to keep out unwanted warps.

FIA. I have always liked the appearance of straight tapered, V dihedral gliders and have built 5 in recent years; the last 3 having circle tow capability. They have a clean efficient wing uninterrupted by tip dihedral joints, each wing being one continuous structure making strength and weight distribution easy. The realistic appearance in flight makes them easy to identify among more usual designs. Towline stability is excellent and the straight wing panels are easy to hook and keep warp free. In comparison with polyhedral wings, they require more dihedral to achieve the same lateral stability and don't recover from unusual altitudes as

well. I have overcome the stability problems by sweeping back the wing leading edge instead of using more dihedral; keeping all the nose weight and ballast low in the fuselage also helps. My latest FIA has polyhedral, parallel chord center sections and swept leading edge tips in an attempt to improve recovery from catapult launches – untested as yet.

FIC. The present design originated in the second half of '77 after studying Koster's "Square Cream" drawings. The general dimensions looked about right so why change something designed by an expert. The whole structure was redesigned to simplify building in keeping with my previously stated policy. I like the swept leading edge, which seems to give good directional stability, the small tailplane for a good glide and the triple fins which keep some of the area out of the prop slipstream. I believe this makes bad (out of wind) launches more forgiving. The wing is only partially sheeted to keep it light with a 7.7% flat bottom airfoil to give a good climb. The low pylon also helps the climb by keeping the drag center nearer the thrust line. The '77 and '78 machines are nearly identical; Cox Conquest powered driving a Kretshmer 6-3/4 x 3-1/2 or a Verbitski pattern 7 x 3 prop. No prop brakes were originally used, but have since been fitted. The '79 model differs by having a fiberglass fuselage boom and redesigned tip fins. Power is a Rossi 15 with a Stafford Screen brake.



Triple-Fin power ship by Peter Nash



Smiling Eolo Carlini returns from a Max



Walter Nutini shows good launch form

EOLO CARLINI
F1C Brazil

EOLO CARLINI, 50, has been in FF for 19 of his 37 years in modelling. He is married with 4 children, and is an industrial engineer in the city of Sao Paulo. He has been Brazilian Champ many times and his original power ship uses a Rossi .15 swinging a K&W 7 - 3.5 with an original design brake.

WALTER NUTINI
F1C Brazil

I began my aeromodelling activities in 1944, but only from 1959, could I devote myself to the development of the new ideas which were growing everywhere by the advent of the international contests.

At that time I practiced all outdoor FF Aeromodelling classes. Presently, white-haired and very busy as President of Brazilian Aeromodelling Association, I fly only power models.

My number one model is the 23rd from a series called Alegria-Alegria which was started 12 years ago. I have tried during that time to develop the models and to improve their performance by doing a lot of modifications and experiences.

Many times I have won the Brazilian Nationals, and twice the South American Championship. In 1977, the first time I participated in a World Championship: 37th place.

The number one model has no very impressive wins yet (a 3rd place in 1979 South American

Championship and 1st place in many local events). Details: for obtaining a stronger fuselage I tried fiberglass tube. As its weight was a great problem, I turned back to balsa but reinforced it with fiberglass.

I make my own props - Cox 7 x 3-1/2 or Seelig types - using fiberglass or carbon fiber when I can get it (it is not easy to acquire proper aeromodelling materials in Brazil).

I placed one more mechanism on my new ship: a small "hammer" pulling the stab down two seconds before the motor stops. It gives an appropriate "stop position" to the model to go into a glide smoothly. But I had to modify the Seelig timer for four positions, plus motor, by adding one plate more to get a longer timer axis.

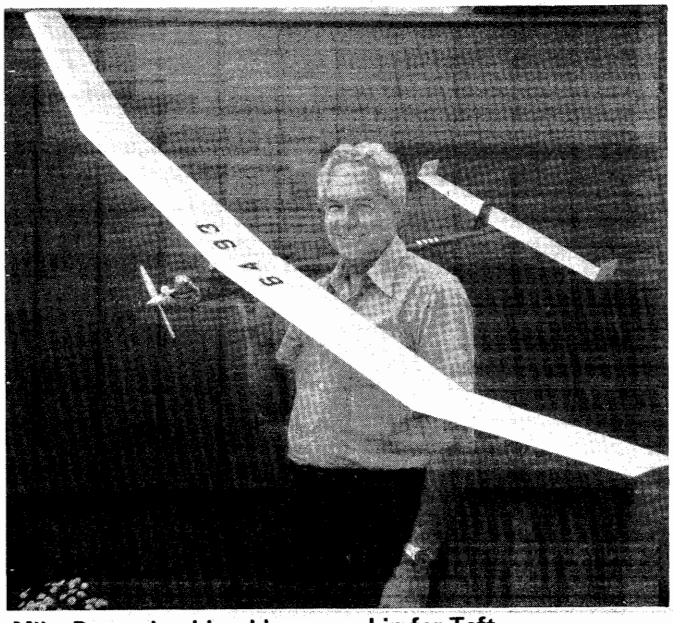
The stab is attached to the fuselage by means of an extension spring fixed on the rudder (as Erno Frigs system).

The two-piece wings have brass boxes for fitting 12 cm x 1 cm x 1 mm steel spar joiner.

I make the pan moulding (magnesic 50 grs). Engine brake is English type.

Ideal C.G. 72 to 75%. The total weight: 755 grs; wings - 200 grs; stab - 25 grs; and fuselage - 530 grs.

WALTER NUTINI, 49, is married and his son, Fabio, is also a flyer. He is in the construction industry in Sao Paulo and has flown FF for 20 of his 35 years in aeromodelling. His own design, "Alegria-Alegria," uses an English brake to stop the Cox type 7 - 3.5 prop on the Rossi. Walter has been South American Champion in '68 and '72, Brazilian Champ many times. He is President of the Brazilian Association of Aeromodelling.



Mike Burns shoulders his power ship for Taft

MIKE BURNS
F1C Canada

My design concept is basically to build for glide performance and reliability. After careful study of the last two World Championships, I feel "Three Fin" are much steadier on climb and require less trimming although the transition from power to glide pattern is more difficult to achieve.

Although I haven't flown any major contests with this model, I am planning on having two copies of this ship for W.C. I never fly or test without following a checklist with my wife. This has saved many disasters and I highly recommend a checklist for everyone.

At W.C. contests, you must rely on the air-picking ability of the people with you as air conditions are quite different in other countries. The job of the flyer is to put the airplane in the patch of air that all agree on as being right.

I would like to find shortcuts to save building time but there does not seem to be an easy way when precision is needed.

In the past, I have placed 3rd in Bulgaria and 11th in Denmark.

MIKE BURNS, 51, is an auto service manager for Braden Ford Sales in Brockville, Ontario where he has flown FF for 10 years. He is married with two children, and enjoys cross-country skiing. His Rossi uses a Kerr brake and turns a Kretschmer 7 x 2.8 prop. Mike was 3rd in Power at the World Champs in Plovdiv and 11th in Denmark.

FRANK SCHLACHTA
F1C Canada

Attached is my resume on my FIC called "Stinger". Originally called "The Sting," but after the problems in Denmark it was quickly renamed the Stink, and then Stunk and finally Stank. Problems are outlined below and were allocated to using too soft a grade of wood for wing ribs.

To the best of my knowledge, the following is the contest record.

1976 1st F.A.I. F/F trials
1st Galeville, N.Y. F.A.I. Challenge

1977 27th World Champ
9th Pierre Trebod
3rd Great Grape Gathering
1st Intercities Meet
2nd Galeville N.Y. F.A.I. Challenge

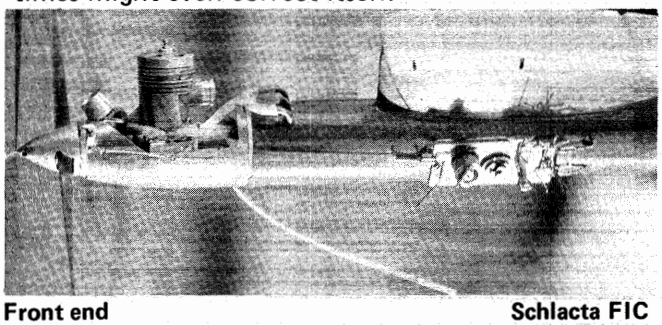
1978 1st Spring Invitational P.T.O.
1st E.C.O.
3rd F.A.I. F/F trials
2nd Intercities Meet
1st Galeville, N.Y. F.A.I. Challenge

1979 1st Spring Invitational

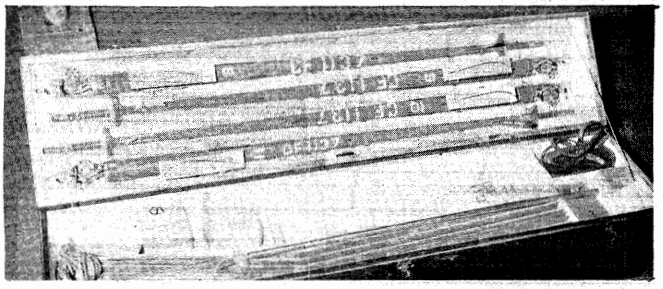
After flying my old Loons successfully for over 5 years and missing the 2nd fly-off round at the W.C. in Bulgaria by 10 sec., it became evident that a new model with higher potential was required. Dave Sugden recorded some attractive results from a 14:1 ratio flat bottom wing, so I decided to go all out for the maximum in design potential. Many European flyers were using the 3 fin concept so I decided to try it on this new ship.

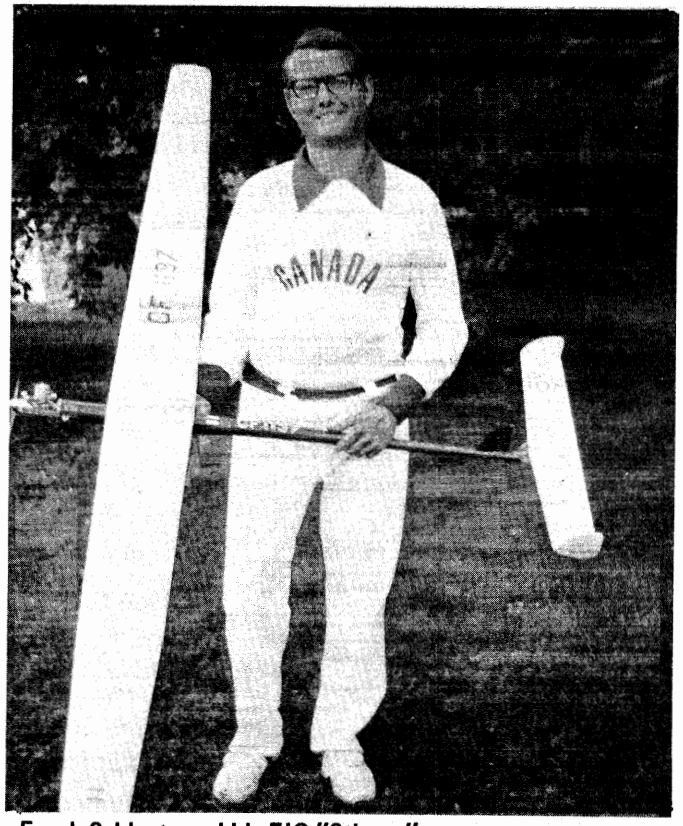
The original model was built during the spring and summer of 1976 and trimmed in time for the 1976 trials. It performed very well from the beginning showing great potential in the glide. In fact, it performed well enough to be used for the better part of the '76 trials, except for a few very windy rounds when I used my old Loons.

I realized this was the route to take and knew that another test ship would have to be completed that fall and if all went well, I'd build two new ships that winter to give me 4 high aspect ratio ships for Denmark. I worked like crazy for 3 weeks and managed to have the ship ready to be tested, weather permitting at Galeville that fall (1976). The original ship was used throughout the meet and towards the last round, conditions were ideal to do some testing. Again I experienced no problems with this new ship and in fact after about 6 test hops, I used it in the fly-off. If I remember correctly, there were 6 or 7 in the 4-minute fly-off but only two managed to make it, Dale Maten and myself. The second fly-off round left Maten with about 4:10 and myself with about 4:35 in a heavy drizzle. I was very pleased with this new design; the ease in trimming was evident from the start. I found the 3 fins an asset. You can, in fact, launch left of the wind with this set-up and it will fight the poor launch all the way up. A single fin would have gone inverted on a left launch and smashed in or come close to it in 7 sec. The 3 fin design will keep its nose up all the way, and at times might even correct itself.



Front end Schlacta FIC





Frank Schlacta and his FIC "Stinger"

Needless to say, I built 2 new ships that winter.

Early in the spring of 1977, I began testing the new ships and found that if any of them flattened out, they developed a serious wing flutter. I was also having trouble keeping all of the ships in trim. I departed for Denmark feeling confident that if I could keep the models in trim, I could give Koster and Verbitsky a run for their money.

Denmark proved to be something else. My wings were warping from 1/8 wash-in to 1/8 wash-out back and forth every few hours, both center panels and tip panels. I was going nuts trying to keep everything in order. I managed to hold out until the last round when I dropped 30 sec. Reason, 3/16 wash-out in the right center panel. Exactly the same thing happened at the Pierre Trebod. The ship was reasonably controllable but once that hot sun came out, along came that 3/16 wash-out.

That winter I built all new wings using 10-12 lb. stock quarter grain ribs in the center panels and 8-10 lb. stock ribs in the tips, with geodetic throughout. This solved the problem. The models are now steady, reliable and good performers. An estimated potential of 5:30 on 7 sec. run. I hope we'll find out for sure in Taft.

FRANK SCHLACHTA, 40, has been flying free for 17 years and is a Manager for the Royal Bank of Canada in his native Ottawa. His "Stinger" was once the "Sting" and then "Stink" and uses a Kerr brake and an Anderson 7 x 2.75 prop on the Rossi. His other hobby is antique cars. Frank is married and has 3 boys who will be on the 1990 Canadian Power Team.





Dave Sugden admires his folding prop F1C

PETER HARRIS
F1C Great Britain

The unusual features are as follows: A very small, lightweight stabilizer combined with a light back end gives forward C.G. (approx. 60%) in order to give good stall recovery. (I had previously been flying high aspect, multi-fin models and had experienced transition problems; also difficulty in keeping the weight down.)

Rolled balsa fuselage (again, to keep the back end light).

My No. 2 model has a square body to assist handling in windy conditions.

I am using a full D.T. for simplicity and reliability. A modified camera timer provides normal auto rudder – flood off/brake – V.I.T. functions. Otherwise, there is little unusual about the design.

The model has only been used for some rounds in the '78 Nationals and for the Team Trials, since which time it has been in storage while I have been working on Nos. 2 and 3. No. 3 differs from 1 and 2 only in as much as it has a lower pylon and two-piece wings. All three fly the same – near vertical climb with little turn until a/r – R.H. glide circle in fairly wide circles. All models seem to fly well in a variety of conditions with no apparent vices.

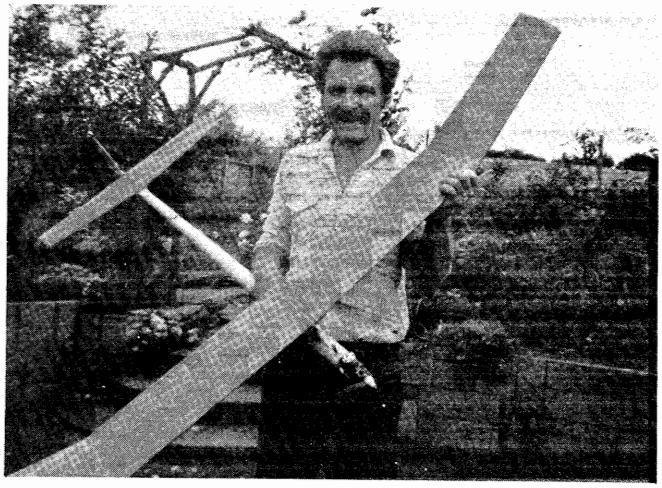
PETER HARRIS, 39, has been in FF for 20 years, is married with 2 children, works as a Telecommunications Engineer for the West Midlands Post Office. He enjoys watching soccer and flying his original Power ship with a Rossi, stopped by a wire spring brake. Prop is a Cox copy in glass and polyester resin. He uses a camera timer to shut it off. Peter has placed high in several British Nationals.

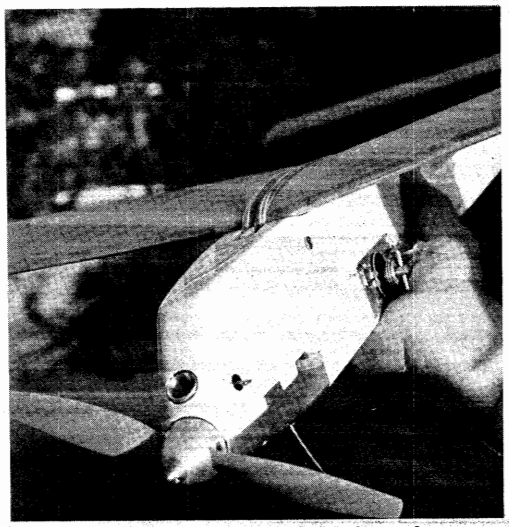
DAVE SUGDEN
F1C Canada

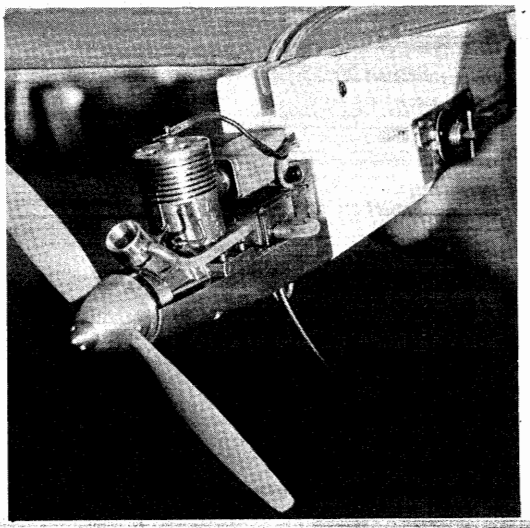
My models are designed for reliability, therefore, ultimate world beating performance is sacrificed. All fittings are externally mounted for observation and quick repair. The skin must be completely impervious. The use of fiberglass and plywood is limited to stiffening local areas, while the wood is the hardest that weights will allow. Aluminum and fiberglass covering have been found to be lacking in durability, weight or reliability to mylar film. The wing section is the result of towline testing and wind tunnel testing in the low-speed facility at Western University at London, Ontario. In this regard, I wish to acknowledge the valuable cooperation of Brian Eggleston and Dave Surry.

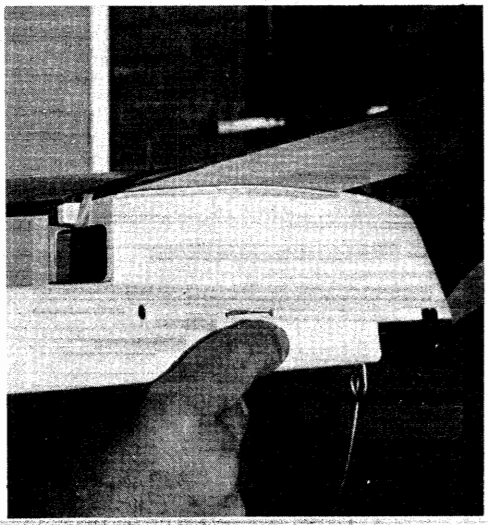
I would like to take this opportunity to thank all the Canadian free-flight modellers for their support and inspiration, particularly these of the Toronto FAI Group.

DAVE SUGDEN is an ex-aeronautical engineer turned dentist, is single, and has been a FFer for forty years. He has been on Canadian teams in all categories. He was 7th in Sweden in '71 and 5th in Denmark in '77. He has built several 2.5cc engines over the years, but the latest is down 1,000 rpm from Rossi.

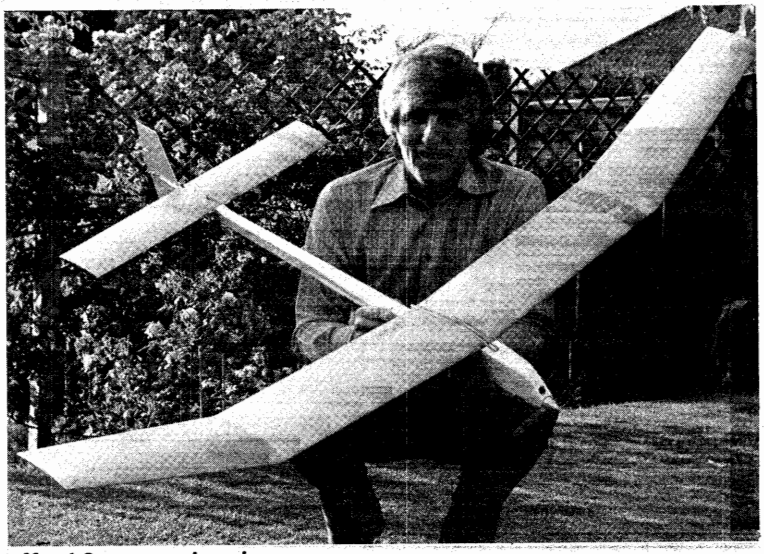








he Screen Rossi — and the fiberglas exhaust port



afford Screen and a winner



ibiki and son with his "F-12" power job

STAFFORD SCREEN
F1C Great Britain

STAFFORD SCREEN, 45, married with 2 children, has been a FF modeller for only 5 years but has had great success. He manufactures a popular engine brake, also enjoys cricket, soccer and golf. He won FIC at the British Nationals in '77 and '78. The Rossi in his sleek model is fully cowled, turns an original design polyester resin/carbon fiber/fiberglas prop and is shut down by a drum brake. Stafford is Technical Director (Engineering) of British Castors, Ltd.

KEIICHI KIBIKI
F1C Japan

I feel honored to have received your offer to publish my model as one of those to be flown at Taft in October.

Please find drawings of my F-12, the best model at present, enclosed herewith. I have not made a three-view drawing of the model but I have component drawings. Please make a three-view drawing using them.

I had pictures taken of the model and myself yesterday. I will send you a few prints next week.

I designed this model in 1976 and constructed it in 1977. I was strongly impressed by the aerodynamic cleanliness of those models of Coster, Schaller and Verbisky which I had seen at Provdiv and thus, the design was influenced by them.

I preferred a combination of conventional flanged engine mount and FRP cowling to half pan type mount because of availability. I adopted a triple fin layout to obtain long moment arm for both vertical tail and horizontal tail in a limited fuselage length. I determined the maximum fuselage length to be 1255 mm for the sake of transportation easiness.

I made the first flight of the model at the end of 1977. It experienced serious damage on the wing two times and increased weight by 20 g after suc-

cessive repair. The first one was a steep turn by a bad rudder setting for glide at an early stage of the test flight. The second was a power dive due to mechanical trouble and occurred just one week before the national championships in 1978. Therefore, I had to change the model to the old one for it. This F-12, for the first time, participated in a nationwide club contest and won in May this year. Looking forward to seeing you at Taft.

KEIICHI KIBIKI, 36, has been an aeromodeller for 29 years, 18 of them FF. He is assistant manager of the Heat Exchanger Section of Sumitomo Precision Products Ltd. in Ibaraki. Married with one child, he enjoys classical music and modern jazz. His Rossi powered craft uses a Stafford screen brake and carbon fiber prop. Keiichi has placed high in Japanese Nats: F1B 1st in '66, 2nd in '67, F1C 1st in '68, '73, '74, '76, '77, 2nd in '71 and '78. Now that is consistent!



Iwamura and his decorated "Kogo" FIC

KEIICHI IWAMURA
F1C Japan

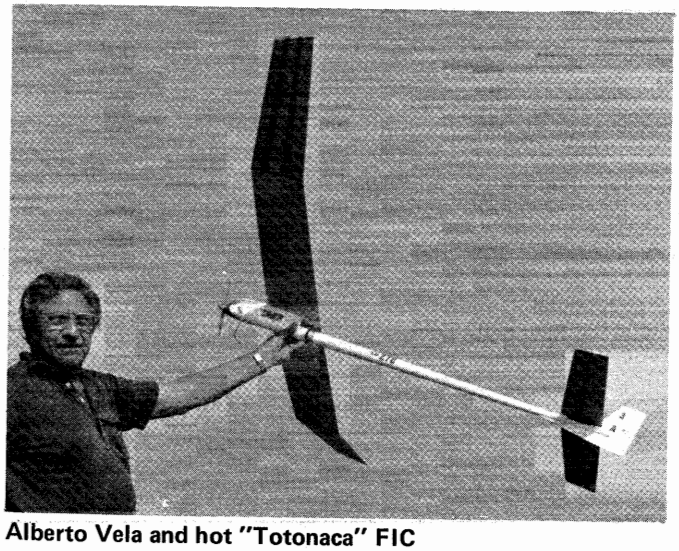
KEIICHI IWAMURA, 53, is married with 2 children, operates a lathe for his own Miyame factory. He has placed very high at many Japanese Champs. An Italian glasfiber/carbon fiber epoxy prop is revved by his Rossi and stopped by a Kerr brake. His "Kogo" design is elegant and embraces a Seelig timer. Keiichi has flown free for 30 years, lives in the lovely city of Kyoto.

JOSE RAMIREZ
F1C Mexico

JOSE RAMIREZ, 39, is married with 2 children and works for the Paper Carton Company of Mexico in Mexico City. He is President of the Mexican National Aeroclub and also flies RC and UC. His model was designed by Al Vela and runs a fiberglass 7 x 3.5 prop on the Rossi. Jose has placed at Texcoco, Taft, Roskilde and Plovdiv.



Jose Ramirez and his Vela design FIC



Alberto Vela and hot "Totonaca" FIC

ALBERTO VELA
F1C Mexico

ALBERTO VELA, 59, married with 3 children and 5 grandchildren, is a professional artist in Chino, California. His first F/F model, 40 years ago, was a Japanese kit made of wire and silk. Along with Bob White, Al was a founder of the "Max Men" Club and formerly was with the SCAT Group. Currently he is doing a series of historical western paintings and trimming his "Totonaca" FIC for Taft. The name derives from a race of fierce Mexican warriors who conquered the Aztecs. Flying for his native Mexico, Al hopes to prevail with his "state-of-the-art" power ship.

REX BAIN
F1C New Zealand

Paul Lagan has sent to all prospective N.Z. team members your request for information. I am afraid that I will have little to contribute to your publi-

cation as I am probably one of the least qualified to represent this country, however!

Although I have been modelling for 30 years (all types) I have done little F/F for 12 years. Most of my F/F modelling was done in the late 50's and mid 60's culminating in a place in the N.Z. FAI Power team which was proxy flown at Czechoslovakia in 1967. This was followed by a 'layoff' from modelling while I spent 4 years in Australia. During these last 10 years, I joined the ranks of the Radio Control enthusiasts and only regained interest in F/F following a period of active promotion and participation in 'Vintage' or 'Old Timer' modelling. I have in fact just relinquished the chairmanship of our N.Z. Society (Assn. of Vintage Aero Modellers of N.Z.).

At present I have only my two 1967 N.Z. Team FAI models which were based on Paul Lagan's '18 tons' developed in 1963/1966. Previously Super Tigre G15 powered, they are now fitted with Cox Conquests and were only pulled from the box 4 months ago where they have laid for 12 years! I have a Doug Galbreath 'Summer Wind' almost finished which I hope will be 'No. 1'. I must have the distinction of flying some of the oldest models at the champs!

REX BAIN, 37, has been a FF nut for 20 years, is married with 1 child, works as a chartered accountant for Firth Industries in Hamilton, NZ. His model is the old "18 Tons" by Paul Lagan, revived with a Cox Conquest and a Jackson 7-3.5 fiberglas prop. It uses no brake. Rex has trouble getting plugs for his Cox in New Zealand. He also enjoys off-road motorcycling, which should prepare him for Taft.

JOHN ENSOLL
F1C New Zealand

Lumberjack Contest Record:

1st NZ Team Trials for Australia v NZ. Trans-Tasman 1978.
2nd Trans Tasman 1978.
1st NZ Nationals 78-79.
2nd First WC Trial.
1st Second WC Trial.

John's Philosophy in a Nutshell:

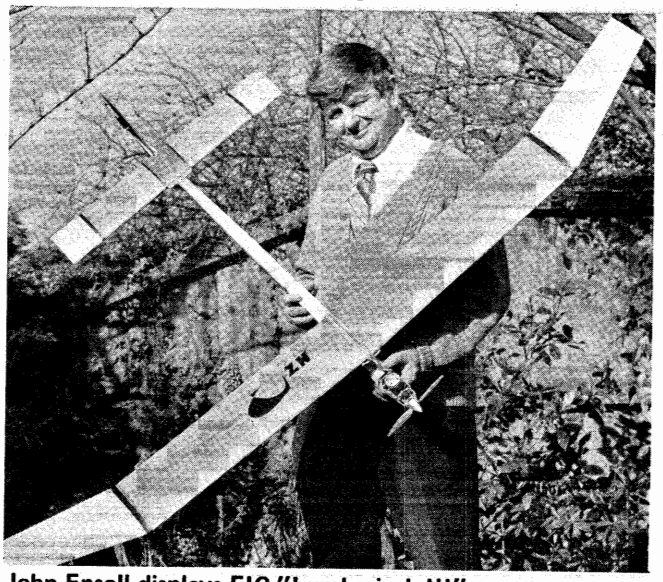
Keep it simple;
Know the model;
Spare models should have interchangeable parts;
Engines should start instantly and above all, the climb pattern and transition should be consistent.

He is currently developing a higher aspect Ratio Lumberjack.

JOHN ENSOLL, 48, is married with 4 children and works as an Aircraft Engineer for Air New Zealand. He has been a modeller for 20 years, in FF for 9. He also fishes for trout and salmon, while not running the hot Cox Conquest in his model. It uses a Kerr brake and Kerry Jackson Cox copy fiberglas prop, 7 x 3.5.Seelig is standard.



Rex Bain and his Lagan "18 Tons"

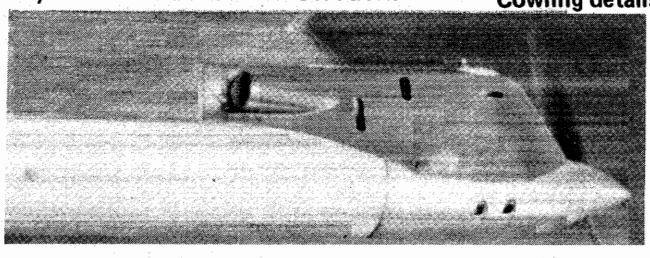


John Ensoll displays F1C "Lumberjack III"

F1C Norway
TOR BORTNE

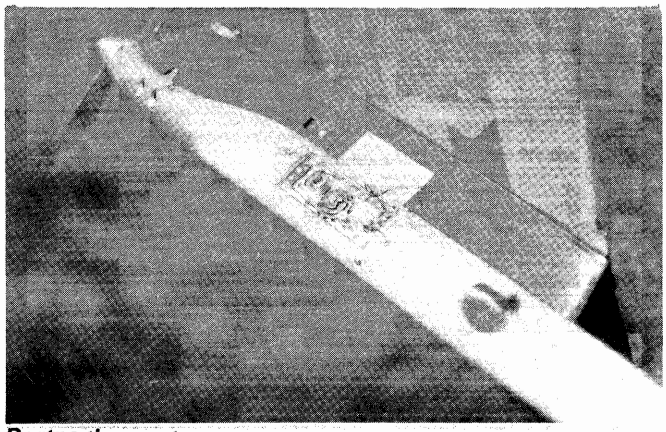
TOR BORTNE, 35, has been in FF for 20 years, is married with 2 children, and is a Forest Manager in Eina, Norway. He has been 3 times on the WC Team for his country. Tor also enjoys playing in the local band. His F1C uses a Stafford Screen brake and the Rossi swings a glasfiber prop made by Lars-G Oloffson in Sweden.

Cowling details

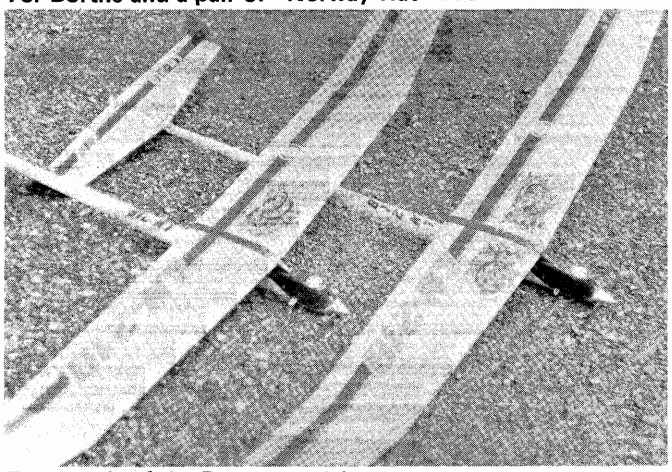




Tor Bortne and a pair of "Norway Rat" FIC



Bortne timer setup



Front ends of the Bortne models



Jan-Olle Akesson and his slick FIC

JAN OLIE AKESSON
F1C Sweden

JAN-OLLE AKESSON, 40, has been in the air with FF for 25 years, is married with 2 children, and works as a model builder for Semo Hobby (what a great job, eh?) in the town of Oxie, Sweden. He was 1st in the Pierre Trebod and was Swedish Champ. His Rossi revs up a Verbitsky copy carbon fiber/epoxy prop made by Quarnstrom. He uses a Lindholm brake to shut it down and a Seelig for auto feathers.

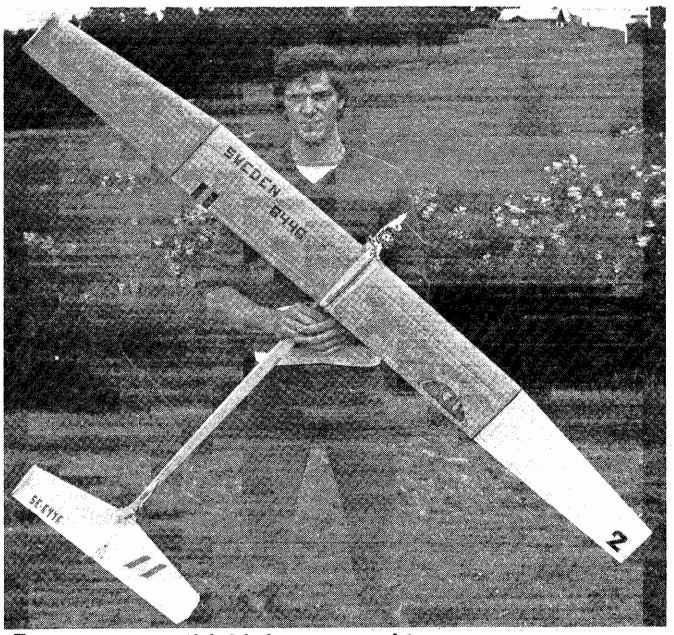
ANDERS ENSTROM
F1C Sweden

These are the models that I will use at Taft. Same wing profiles on both models.

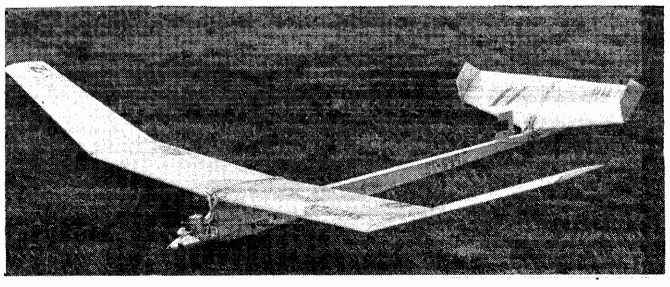
Nimonic – 13th in European Champs – '78, and 2nd in the team trials for the World Champs – '79.

Nitro Express – only flew one competition, 4th in the team trials for the European Champs – '78.

Engine mounts made by Jan Zetterdal. Props made by Lars Olofsson. Rossi motors with a specially-chromed steel liner. I hope this has been some help.



Enstrom poses with his hot power ship



Enstrom's FIC lurking in the grass



Rudi Schenker is happy about flying FIC

RUDOLPH SCHENKER
F1C Switzerland

Construction Details:

Wing: Fully sheeted with balsa 1.5 mm except underside of tips, 1 mm. Density 0.085 gr/cm^3. Center panel spar spruce/balsa type, width 5 mm tapered to 2.5 mm. Tip spar 2.5 mm balsa. Wing joint 7 x 1 mm flat steel guided in brass tube. Wing dowels hardwood. Whole wing covered with glasscloth 25 gr/dm^2 and epoxy.

Tail: Fully sheeted with balsa 1 mm. Density 0.08 gr/cm^3. Full height spar balsa 2 mm, covered with lightweight Jap tissue.

Fins: All made of balsa 3 mm and covered with light Jap tissue.

Fuselage: Square type, top and bottom balsa 3 mm, sides balsa 2 mm. Density 0.09 gr/cm^3, covered inside with glasscloth, outside with silk.

Profiles: Wing bottom flat--top MVA 101. Tail bottom flat--6% thick.

Power: Rossi 15, Propeller: Kretschmer.

Incidences: Wing fix + 1°, stab climb – 0.5°, glide – 3.5°.

Adjustments: Left wing tip 6 mm wash-out.

RUDOLPH SCHENKER, 52, has been a modeler for 39 years in his native Switzerland. He has been the Swiss Champion in FIC ten times, and has been a timer at as many World Champs. Rudolph's power model is definitely a "state-of-the-art" design.

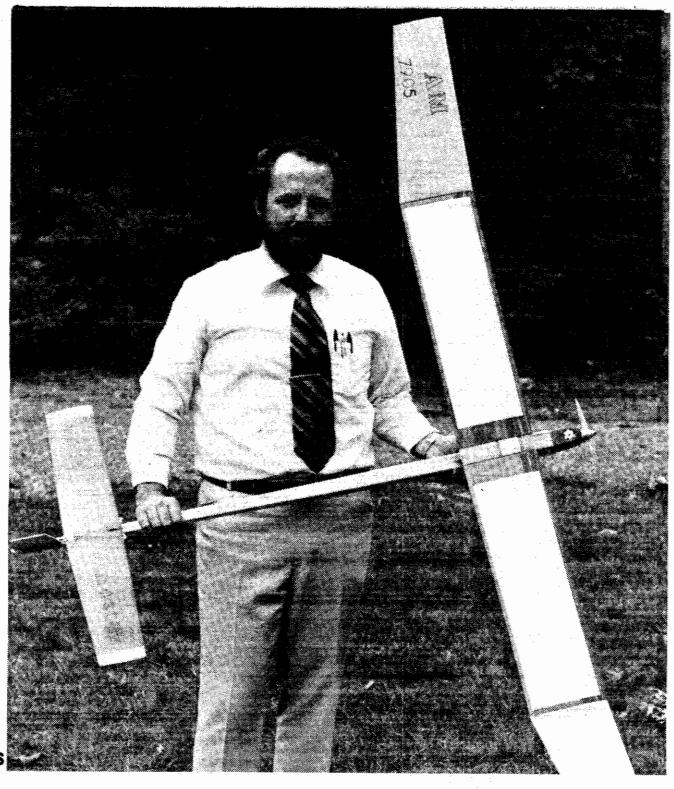
CARL BOGART
F1C United States

Enclosed is the material that I have available on the power models that I will be flying at the 1979 World Champs.

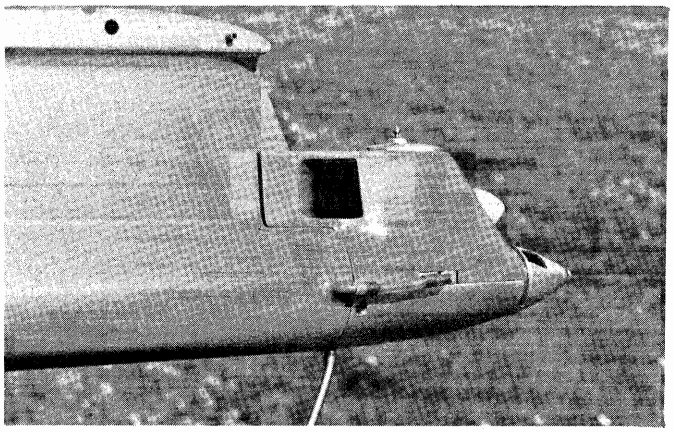
The model is standard FIC construction with the one major variation being the use of aluminum-covered main panels. As the thickness has decreased and the span increased, this was the best compromise to maintain the torsional rigidity required during the power run. The stab is 1/32" sheeted, covered with Aero Gloss and Jap tissue. The wings are 1/16" sheeted with inset of 1/16" spruce spars in the mains, starting with 1/2" width at the root and tapering to zero at the dihedral break. The tips are 1/16" sheeted, covered with Aero Gloss and Jap tissue. The fuselage is a 1/8" sheeted box with 1/8" balsa corners. The front 1" is covered with 2 oz. of fiberglass and the remainder with 3/4 oz. of fiberglass. Cowls are laminated from two layers of 6 oz. of cloth.

These particular models continue the design evolution of higher aspect ratio and thinner airfoils, though not as extreme as some. For instance, my previous models had 7-1/2% thick sections on a 7-1/2" chord, whereas these are 6-1/2% thick on a 6-3/4" chord.

My basic design principle has been to keep it simple. Of course, this only came about after early attempts to design and fly extremes. There is no secret to FAI power - just hard work, mechanically fool-proof simple systems, a good power pattern and launching at the right time which overcomes a lot of design defects, also a "honking" engine for still-air flyoffs. Best regards with your publication.



Carl Bogart uses aluminum skin on his wings



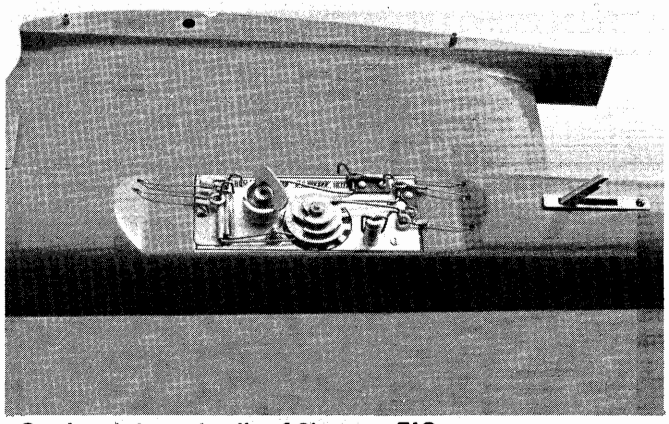
DOUG GALBREATH
F1C United States

The Summerwind is the model I "came back" with after a layoff from serious competition in the years 1968 to 1975. Its roots are the same as most other models. You look and see what's happening and "draw one up" so to speak. The first model was the only one of these I have built, but it is the only one for which I have drawings. Later editions are virtually the same except for fuselage, pylon, height and so on. Summerwind has an 8% flat bottom airfoil on the wing and 6-1/2% f.B. on stab.

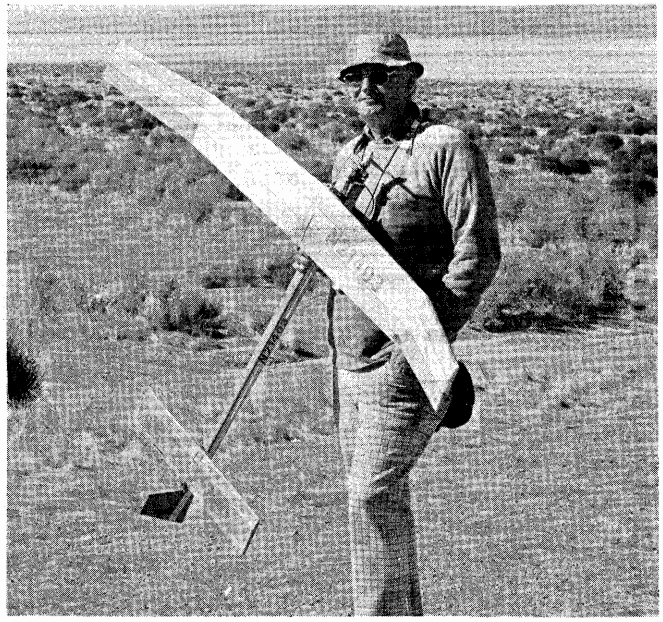
Contest record (incomplete and probably more but I cannot remember all of them):

1st	FAI Semi's Fresno	'75
1st	Fresno Annual	'75
2nd	WFFA Annual	'76
2nd	Nationals	'76
1st	Nationals	'77
2nd	Max Men FAI	'78
1st	Juan Livotto FAI Inv.	'78
3rd	USA Team Finals	'78
3rd	Sierra Cup FAI	'78
1st	Max Men Annual	'79
1st	Max Men FAI	'79

DOUG GALBREATH, 45, is married with 3 childen. He is self-employed as a printer and has printed NFFS publications (including this Planbook) for many years. He also enjoys motorcycling and fishing in Northern California. He has held the AMA Class C Gas record in Category I and II and was 1st in F1C at the '77 Nats. He also placed 3rd at the '63 World Champs and 6th at the 67 meet. He uses both the Cox Conquest and the Rossi, braking with a Brodersen-type device of his own making. His 7-3 propeller is of Cox design, made of graphite and epoxy by Ken Oliver. He is the USA representative for the Seelig timer, and naturally uses the 4-function model. Dougs latest design is called the "Solar Wind" and was developed in collaboration with Ken Oliver of Sacramento, California.



Cowl and timer details of Simpson F1C



Relaxed Doug Galbreath with F1C "Summer Wind"

ROGER SIMPSON
F1C United States

The "Zell-Eagle" is the 29th version of the Zell F1C design that originated in 1969. Gradual development of the design has produced a fairly high aspect wing and thinner airfoils that enable the model to have a very fast climb, but retains excellent glide characteristics. By using the same airfoil thickness in both the wing and the stab, I've been able to gradually move stab area into the wing while retaining trim control during the fast climb.

Two "Zell-Eagles" were built and first flown in February 1978, compiling the following contest record.

Feb.	1978	Maxmen Annual	1st
Mar.	1978	NCCFC Contest	1st
Apr.	1978	NCFFC Contest	3rd
May	1978	U.S. F.F. Championships	1st
Sep.	1978	U.S. Team Finals	2nd
Sep.	1978	NCFFC Contest	1st
Oct.	1978	NCFFC Contest	1st
Oct.	1978	Sierra Cup	1st
Nov.	1978	NCFFC Contest	2nd

Feb.	1979	Stockton Winter Contest	1st
Mar.	1979	NCFFC Contest	1st
Apr.	1979	NCFFC Contest	1st
May	1979	U.S. F.F. Championships	4th

In addition, the "Zell-Eagle" was selected by the National Free Flight Society as the F1C Model of the Year for 1978.



Roger Simpson prepares his "Zell-Eagle"

FRANZ BAUMANN
F1C West Germany

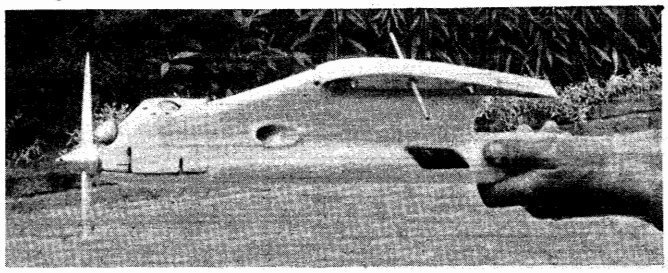
This model is a further development of the one with which I won the 1969 World Championship. On purpose, I have built this model to keep it simple in construction and it brings absolute top performance. It has to be launched with about an 80° angle. It reaches its full output capacity with 3/4 or 1 revolution.

I want to mention only the most important performances and successes. I can qualify since 1969 against the greatest competition — always to be in the world plus European Championships.

The covering is balsaskin type construction. One paints the balsa with thinned out epoxy glue 799 (300% methyl alcohol thinner). Let it lay one day to harden, then lightly sand. The balsa will get more sturdy. Cover this with 12 grams Japan paper. The paper is put on with thinned out Zabon lacquer. Let it dry thoroughly. At the end, paint 2 times with 300% thinned out epoxy glue 799 and let it dry. Sand it slightly; this way the surfaces are weatherproof.

FRANZ BAUMANN, 50, is married and enjoys dancing and music with his wife in the town of Niedertraubling. He is employed by the German Mail Communications Service. He was five times Bavarian Champ, twice European Champ, and won the FAI World Champs in 1975. The Rossi in his advanced design turns an own-design glasfiber prop and, like the rest of the German Team, he uses the Seelig timer.

ROGER SIMPSON, 43, is married with 3 children and works as a computer programmer analyst for the City of Sacramento. His "Zell Eagle" is named for his experience in Zell am See while in the USAF. It uses an Oliver-Galbreath brake to stop the original epoxy-graphite prop. Roger was 1st in F1C at the '64 and '65 US Nationals and 1st in the German Nats and European Champs in '70, as well as Zell am See. He won the Coupe d Amsterdam in '68 and '69 and the USFFC in '77 and '78. He also set a USA National record in 1965. Roger lives in Rancho Cordova and is a member of the Sierra Eagles club.



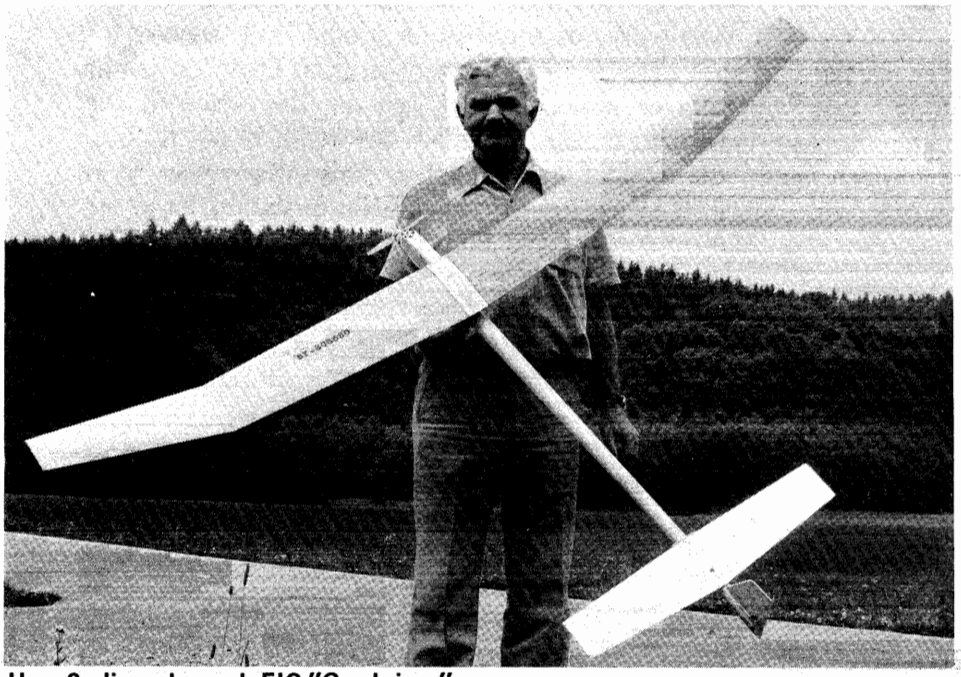
Details of Baumann Power Ship — Sleek!



Franz Baumann



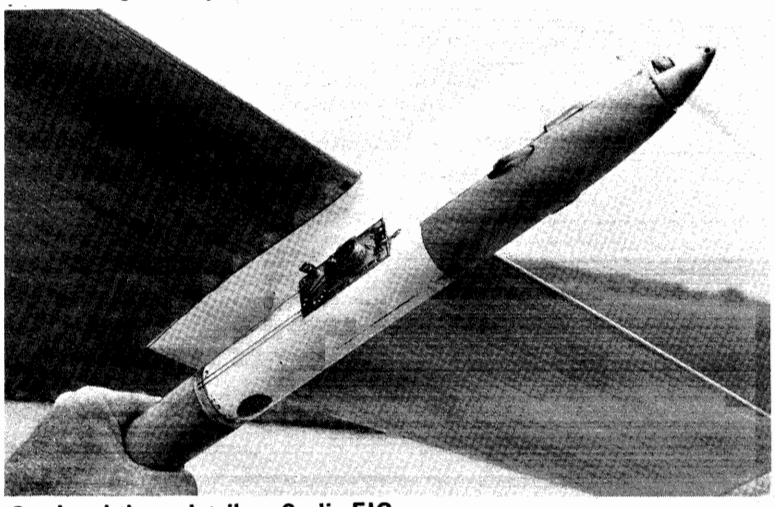
Franz Baumann off to another Max



Hans Seelig and superb FIC "Gambrinus"



Heidemann smile complements his flying



Cowl and timer detail on Seelig FIC



Heidemann ready for a Max

TOMAS HEIDEMANN
F1C West Germany

THOMAS HEIDEMANN, 24, is a student and has been a "Freiflugmodeller" for 14 years. He was German Junior Champ in '72 and has won many other meets. His unusual T-Tail design uses a sandwich type fuselage and the Rossi swings an original 7-3.5 epoxy and glasfiber prop. The brake is of the piano wire type.

HANS SEELIG
F1C West Germany

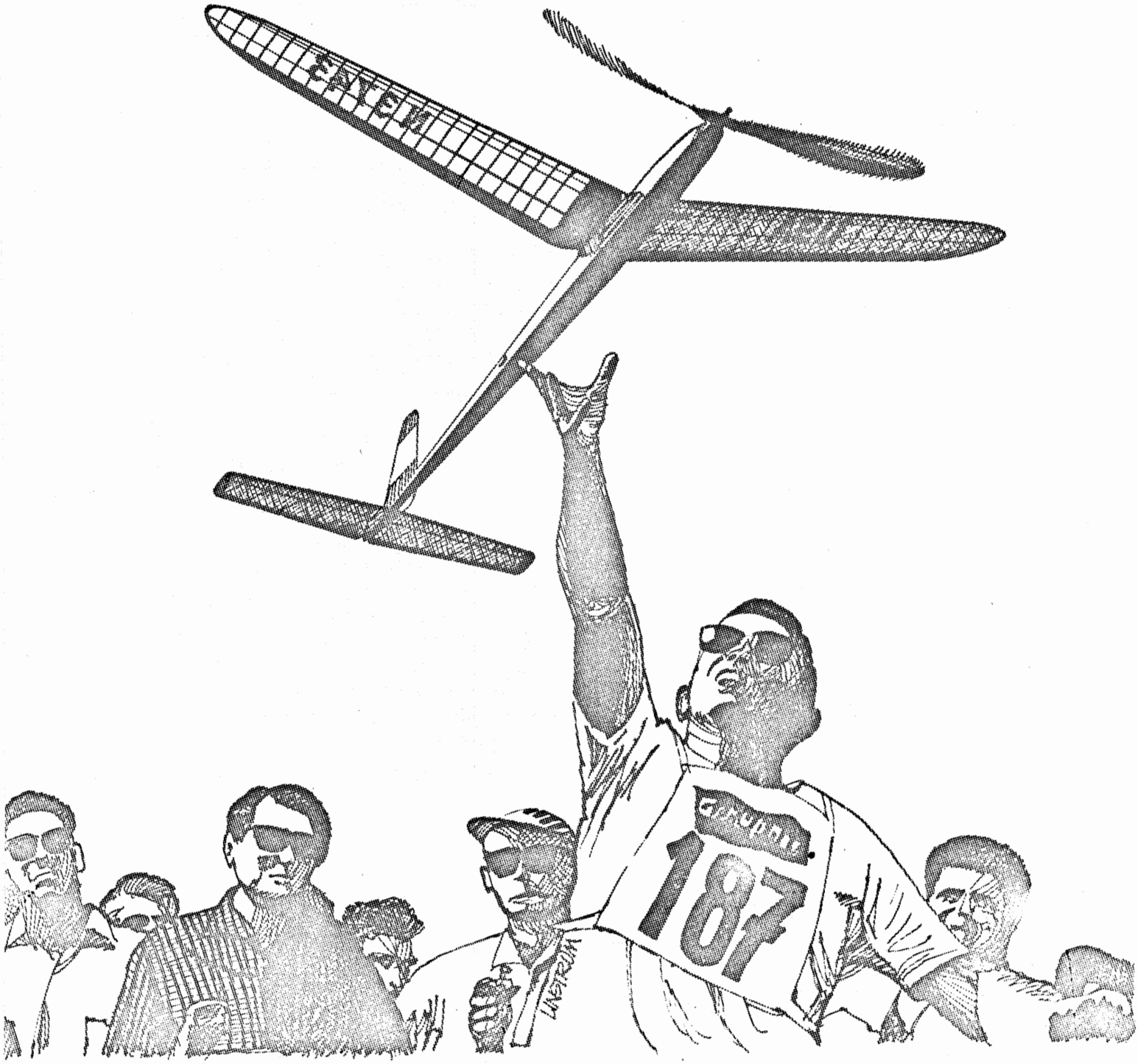
HANS SEELIG, 57, has been an aeromodeller for 44 years, is married with a son, and works as a designer for Hoechst AG in Bobingen, Germany. His other hobbies include Alpine skiing and making the world-famous Seelig clockwork timers. He was German Champion in '62 and '64; World Champion in '67. His new version of "Gambrinus" uses modern technology and materials. The Rossi swings an original glasfiber prop and is shut down by a spring brake. Naturally, he uses a Seelig 4-function timer.



Heidemann makes his Max — note form

HISTORY

Origins & Photos



ORIGINS OF WAKEFIELD

The Wakefield Cup for International Competition,
The Early Days, 1926-1936,

by Alwyn Greenhalgh, Honorary Member and
Historian Society of Model Aeronautical Engineers

ALWYN GREENHALGH is a noted modeler and historian in England; he traveled as a youth to the USA in the Mid-Thirties for the Wakefield Cup. Here he shares some of the origins of this historic competition with us.

During 1926, the provision of an international trophy for model aviation competition was under active consideration by the officials of the Society of Model Aeronautical Engineers in London, England.

Also in 1926, the American Contests for model aviation had been held at Philadelphia and included the Mulvihill Trophy contest which took place on 6 September.

Three British entrants competed; D.A. Pavely, S.C. Hersom and T.H. Newell, their models being trimmed by Mr. G. Westgate, who also flew the models during the contest. The Hersom model flew for 1 min: 31.5 secs and that of Newell for 1 min: 31.4 secs. Pavely placed 4th with a flight of 1 min: 38.2 secs. For interest, the first five results were as follows:

1. J. Loughner	Michigan Model Airplane Club	2:31.4 (Mulvihill Trophy and	$200
2. J. Lucas	Illinois Model Aero Club	2:9.4	$100
3. B. Pond	Illinois Model Aero Club	1:57.4	$ 75
4. D.A. Pavely	Society of Model Aeronautical Engineers	1:38.2	$ 50
5. A.O. Heinrich	(No Club)	1:34	$ 30

The prizes offered were substantial in value and in order to attract other nations, the SMAE considered that it would be necessary to provide suitable inducement which would compensate entrants for their travel and accommodation expenses in Britain.

The Chairman of the Society of Model Aeronautical Engineers at that time, was Francis de Prigent Green who held high office at the Bank of England. He undertook to investigate the provision of a suitable trophy together with attractive monetary prizes. Sir Charles Wakefield was suggested as a likely donor and the SMAE President, Sir Sefton Braucker as an eminently suitable intermediary; he was the Minister of Civil Aviation in the British Government of the day.

Sir Sefton wrote to Sir Charles Wakefield in July 1927 suggesting a cup for international model aircraft competition, value £30 to £50 ($60-$100), supplemented by a cash donation of £30 ($60) for monetary prizes over three successive years' contests. In reply, Sir Charles Wakefield spontaneously offered to bear all expenses relating to the cost of the trophy and the monetary prizes also.

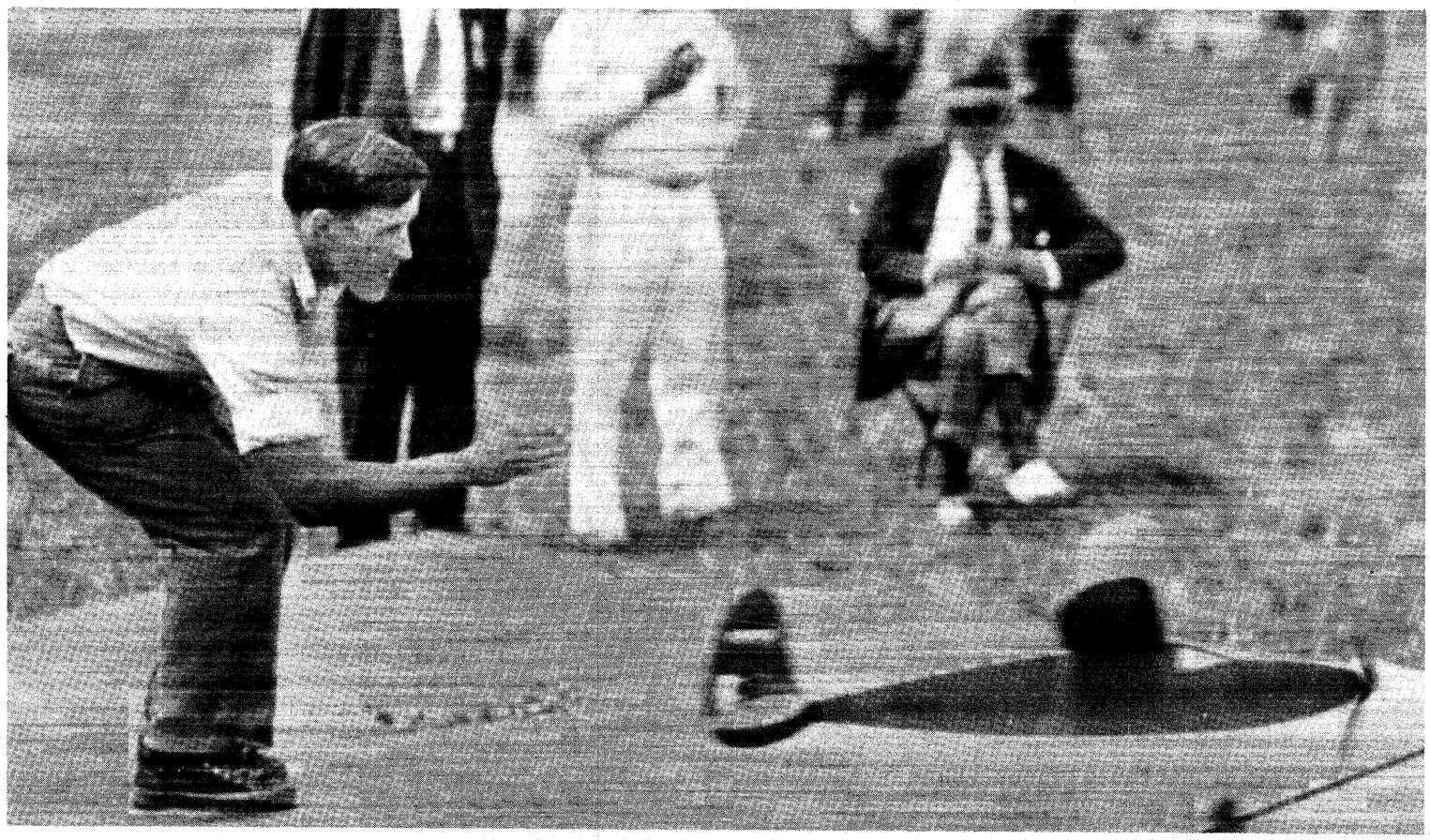
Charles Cheers Wakefield was a philanthropist and a visionary and one of his greatest interests was in the advancement of transportation be it automobile, marine or aviation. He personally provided finance for many record-breaking attempts, competitions, and the development of the engineering of vehicles and their machinery. He was not only interested in the technical aspects but also had deep concern for the people connected with any project, and particularly the younger people. Charles Wakefield had already, in 1911, presented a cup for model aircraft competition which was for endurance of flight of rubber-driven biplanes, weighing not less than 10 ounces and rising from the ground under their own power.

The new trophy was to be known as the "Wakefield Cup" and the Society of Model Aeronautical Engineers was to be its custodian, and also had the responsibility for compiling the rules of the competition. These stipulated a minimum cross-sectional area of the fuselage, a rise--off--ground requirement and a maximum weight of eleven pounds. Duration of flight, the best of three flights, would count in the contest and any method of power was eligible. The first contest was arranged to take place at the Royal Air Force Station Hendon, on 22 September 1928 but in the event, had to be postponed until 29 September.

Invitations to all interested countries were sent out and although many were acknowledged, by mid-September no overseas entry had been received. If none were to be forthcoming, the contest could not be held — it was an international contest.

At the Model Engineer Exhibition held in London during September 1928 — Mr. Juste van Hattum, the eminent Dutch aeromodeller, heard that no overseas entry had been received and he very sportingly offered to enter for his native country. In order to await the model from Holland, the contest was postponed until 29 September, nonetheless, the contest was very definitely on.

Opposite: Dick Korda launches winner, 1939, Ohio. 1936 English Team, L to R, Allman, Fairlie, Johnson (Mgr.), Copland, Smith (Mgr.), Jones, Judge, Greenhalgh (front)




CORPORATION
GENERAL
AND

The preliminary trials to select the British team were held at Hendon on 1 September and the results were as follows; the times are in seconds:

S.R. Badley (model flown by W.E. Evans): 11, 14-3/5, 16, 17.

R.N. Bullock: 26, 32.

S.C. Hersom: 29-2/5, 37-1/5, 13-4/5, 31, 25, 21-1/5.

H.T. Jackson: 30-3/5, 16.

T.H. Newell: 27, 23, 35, 40-2/5, 42-2/5, 42-1/5, 48-1/5.

J.E. Pelly-Fry: 30, 41, 47-2/5, 41, 26-3/5, 53.

The maximum number in the team of any country was, by the rules, limited to six. All six British entrants were therefore put in the team, but on the day, H.T. Jackson was unable to attend so his place was taken by D.A. Pavely.

Saturday, 29 September 1928, the day of the first ever Wakefield contest was not a particularly good one for the flying of model aircraft. The wind speed was up to some 20 m.p.h. and gusting.

The Dutch entry was flown proxy by Mr. B.K. Johnson. This model needed extensive trimming and additional rubber to coax it off the ground. Despite the inclement weather, the following results were achieved, the type of model is as given in the press at the time.

		Flights (seconds)		
Holland	Entrant	1.	2.	3.
Low wing monoplane	J. van Hattum	*	9-1/2	*
Great Britain				
Monoplane (Firefly-type)	S.R. Badley	24	14	*
Monoplane	R.N. Bullock	5	5-2/5	38-1/5
Monoplane	S.C. Hersom	23-1/5	28	Retired.
Monoplane	T.H. Newell	5-3/5	30-1/5	52-3/5
Monoplane (single surface)	D.A. Pavely	13	40	Retired.
Light Monoplane	J.E. Pelley-Fry	25	16-2/5	33

*Denotes failure to take off.

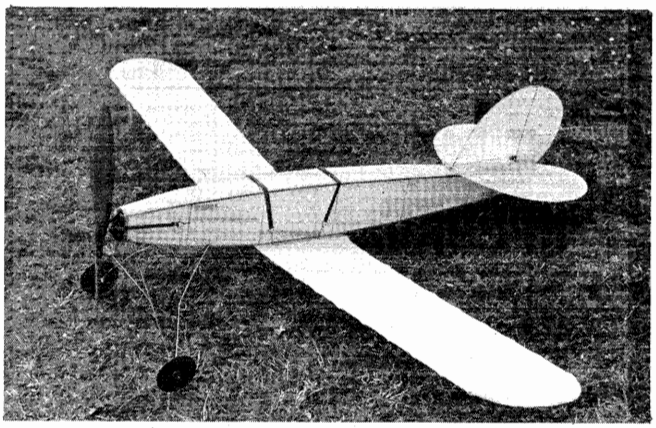
Tommy Newell was clearly the first winner of the Cup, with his model "Falcon." Although a party of American aeromodellers had visited Britain in July 1928, they were unable to remain for the contest and in any case, the USA had declined the invitation because "the lines along which American aeromodellists were working were so very different from the rules laid down for the Wakefield Cup as to be too severe a handicap for them." They hoped, however, to compete on more even terms the following year.

The 1929 Wakefield contest was held at the Royal Air Force Station Halton on 14 July. Three nations competed; Holland, USA and Britain and were constituted as follows:

Holland	USA	Britain
Juste van Hattum	J.S. Culver (Indoor Champion)	R.N. Bullock
	D.C. Burnham (Outdoor Champion)	T.H. Newell
	L.H. Proctor (Scale Champion)	J.E. Pelly-Fry
	F.M. Reck (Team Manager)	S.R. Badley
	Mrs. Reck (Team Assistant)	D.A. Pavely
		W.J. Plater

The rules were exactly the same as those for the 1928 contest. All models were rubber-powered with the exception of D.A. Pavely's, which was compressed air. The day of the second contest was fortunately slightly better than that of 1928, the wind however, was again fairly high and gusting to a small extent.

Ralph Bullock won the Cup with a flight of 70.4 seconds. The Dutch model returned a flight of 22.6 seconds. The American team had models built from balsa wood and covered with tissue and they did not stand up to the British climate at all well, their best flight was well under 20 seconds. The British and Dutch aircraft were built from spruce and silk-covered.

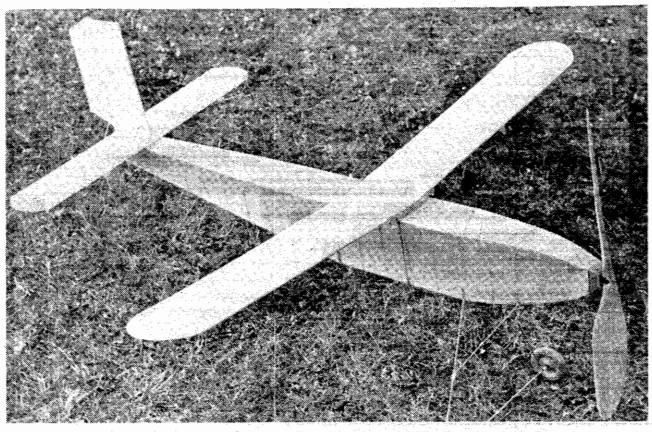


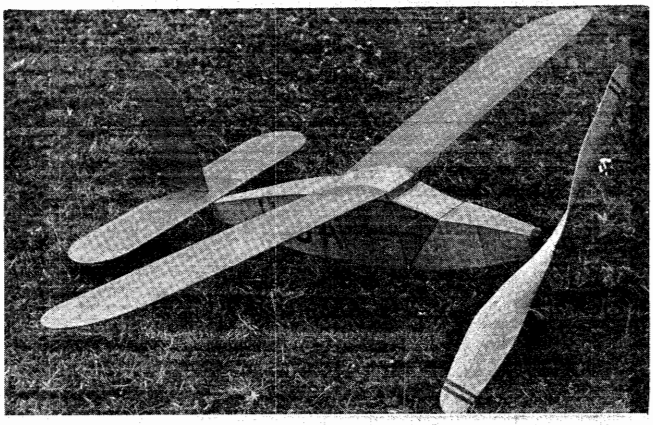
Ralph Bullock's 1929 winner (England)

During the remainder of 1929 and the first half of 1930, much effort was being expended, particularly in America, to improve the performance of models for the international contest. Other nations were becoming interested and the list of contestants for the 1930 Wakefield Cup, held at Halton once again, was much improved in comparison with that of the 1929 contest, five nations being represented at the outset but in the event, only four were present.

USA	Canada	Germany
J. Ehrhardt	R. Farquharson	E. Schalk (failed to arrive)
R. Thompson	**Britain**	
W. Chaffee	R.N. Bullock	
J. Schairer	T.H. Newell	**Holland**
	D.A. Pavely	J. van Hattum (scratched)
	W.J. Plater	
	A.M. Willis	
	J.E. Pelly-Fry	

Joe Ehrhardt won the Cup with a flight of 155 seconds, W.J. Plater was second, 84.0 seconds and T.H. Newell third, 63.2 seconds. The Ehrhardt model was of balsa and tissue construction and it was this model that sounded the knell of the spruce and silk construction.





The 1931 contest was held in Dayton, Ohio, USA on 30 June and the following is the text of the letter sent to S.G. Mullins, the Secretary of the SMAE in April of that year:

Dayton, Ohio,
25 April, 1931

Dear Mr. Mullins,

The Wakefield Cup Competition will be conducted under the same rules as used previously. We are still hoping that something will happen which will make it possible for you to send at least one or two of your members to the contest. Dayton, as you know, is the home of the Wright Brothers. Orville Wright still lives here. We are planning to have him at our banquet.

The Airplane Model League will be glad to look after any model that your members care to send us to be entered in the contest. Models should be accompanied by detailed instructions for flying, number of turns, setting of wings and elevations and such other details peculiar to the model. Let me assure you that we will do everything possible to get the most out of your models. If you should regain the cup, it would give us another good excuse for re-visiting England next year.

Merrill C. Hamburg, Secretary

Teams from Canada, USA and Britain entered for the 1931 contest, which was again won by Joe Ehrhardt. The first six places were as follows:

1. Joseph Ehrhardt	St. Louis, Mo.	264.8
2. Elmer Lueckerath	Ferguson, Mo.	217.8
3. Richard Herrick	Champaign, Ill.	207.2
4. R.N. Bullock	England	162.0
5. Albert Levy	Toronto, Canada	151.5
6. Ross Farquharson	Vancouver, Canada	138.0

The British models were flown proxy by:

Joseph Lucas and John Rappold, both of Chicago, Lawrence Hankamer - Des Moines, Iowa.

Raymond Thompson - National Indoor Champion. Ernest McCoy - Detroit Airplane Model Group.

The USA was once again the venue for the 1932 contest. There were only three members in the British team and the best flight was made by Gordon S. Light, 7 minutes 57.2 seconds. Most unfortunately, the contest had been held two months after the agreed date and the result was declared void.

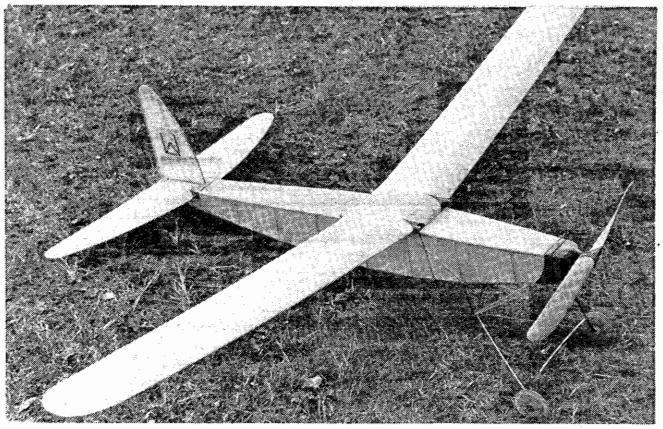
Joe Erhardt's 1930 Champ (USA)

Gordon Light's 1933 "Miss America"

The Royal Air Force Station Halton was chosen as the best place to hold the 1933 contest. This was later changed to the Fairey Great West Aerodrome, which is now totally engulfed by the London Heathrow Airport. By this time, all models were of balsa and tissue construction and only rubber-driven models were eligible for entry. Only the USA and Britain competed in 1933, Gordon Light had sent his model "Miss America" over and this was flown proxy by J.E. Pelly-Fry. The day was sunny but windy.

Joe Kenworthy won with a flight of 5 minutes 21 seconds also establishing a new British record for rise-off-ground flight. Gordon Light came third with a flight of 2 minutes 23.2 seconds.

From 1934, the rules were changed and instead of the best of three flights to count, it was now the average of three flights. Wing area had to be 200 square inches and minimum weight 4 ounces.



J.B. Allman's 1934 Victor (England)

Warwick Racecourse hosted the 1934 contest. The USA and Britain fielded full teams of six models and France, competing for the first time, fielded three. Justin B. Allman won with an average of 111.8 seconds for three flights. The full results

USA	Club	Duration	Position
L.M. Adams (J.W. Kenworthy)	Peru, Indiana	24.3	12th
A.H. Du Flon (H. York)	Ridgefield, New Jersey	40.1	9th
W. Getsla (R.O.G. Booth)	Chicago, Illinois	38.7	10th
A. Howell (D. Fairlie)	Worcester, Mass.	53.5	8th
G. Light (C.S. Rushbrooke)	Lebanon, Pa.	(Crashed)	Unplaced
F. Zaic (R.N. Bullock)	New York	85.2	3rd

Proxy flier in parentheses.

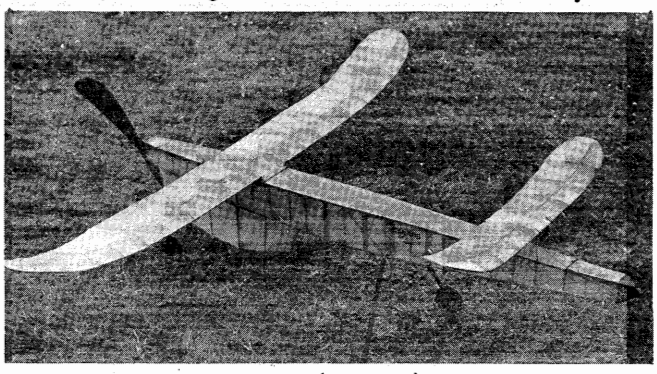
FRANCE			
Desnoes, Genay, Guillemard	Club Aeronautique Français des Modeles-Reduits	4.3	13th
		31.8	11th
		Scratched	Unplaced

BRITAIN			
J.B. Allman	Warwick	111.8	1st
W. Fillingham	Nottingham	70.2	5th
R.T. Howse	Bristol	90.3	2nd
T.H. Ives	SMAE	54.9	7th
A.H. Liggitt	T.M.A.C.	76.9	4th
R.A. White	T.M.A.C.	61.3	6th

Frank Zaic's model was very worthy of note, it placed third and yet it weighed 8 ounces which proved that it was of most sound aerodynamic design.

The venue for 1935 reverted to the Fairey Great West Aerodrome. The persistence of Gordon Light was well rewarded. He sent his model over for the contest and it was flown proxy by Tommy Ives, beating his own team mates when Gordon's model turned in a score of 2 minutes 30 seconds average for the three flights. Tommy Ives was ribbed for a long time afterwards and very well he took it. This humour did much to further entrench the already most friendly relations between the British and American aeromodellers.

The 1936 contest was held at Wayne County Airport, Detroit, on 1 July and five countries had entered. It was in this year that due to the generosity of Lord Wakefield and British Industry, members of the British team were to accompany their models to America. The exceedingly warm welcome and the many generous gestures made by their American hosts made the visit of the overseas contestants a most memorable one. The arrangements for the contest, the accommodations in the Book Cadillac Hotel and the entertainment laid on were very much appreciated. Other guests at the hotel were quite long suffering but they did object to the gas chaps testing their motors at about 2 am!



1936 Canard by D.A. Pavely (England)

Albert Judge retrieved the Cup for Britain in 1936, the first six results were as follows:

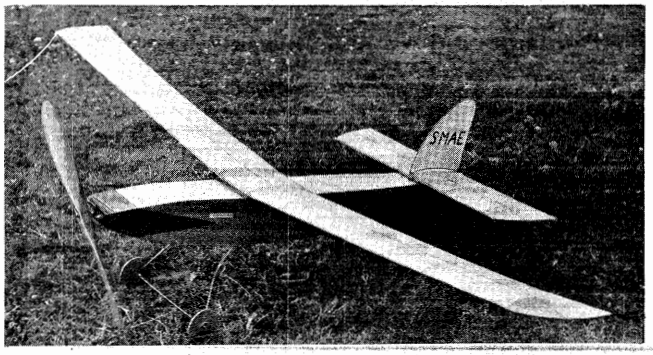
1. Albert A. Judge	G.B.	4:09.9
2. Roy Wriston	USA	4:02.7
3. Robert Copland	G.B.	3:23.8
4. Dick Everett	USA	2:59.2
5. Justin B. Allman	G.B.	2:43.3
6. Gordon S. Light	USA	2:40

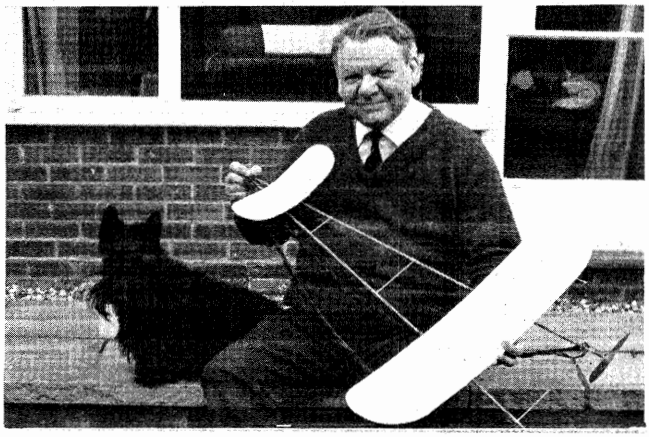
The 1936 Wakefield is, however, a story in itself. During ensuing years, the minimum weight of model was increased, the fuselage formula was discontinued and hand launches were permitted. The mass of the rubber motor became limited but throughout all these changes, the wing area has remained constant. Maximum time of flight is now stipulated.

The modern Wakefield model is a masterpiece of aerodynamic design and indeed of engineering; the construction of such a model can but be admired. Looking back though, it was a very difficult task to beat a four-ounce model off the ground on a damp, windy day, but it was extremely good fun doing it.

The Wakefield contest, more than anything else, has stimulated the development of model aviation and it has brought together kindred spirits from most parts of the world.









Clockwise from eleven: The Wakefield Cup, the author with 1926 Pavely Mulvihill, Viscount Lord Wakefield of Hythe, and the first winner (1928) T.H. Newell's "Falcon" (England)

ORIGINS OF NORDIC GLIDER

HOW THE NORDIC A/2 GLIDERS STARTED

by Sven O. Linden

SVEN-OLOV LINDEN is an all-around modeler in Sweden, flying Wake, glider and even Indoor (he was on the 1978 Swedish Team at Cardington) as well as publishing the newsletter, "Old Timer," about vintage events in his country. Here he tells us how the Nordic Glider Event (now F1A Glider) originated.

During the war, modellers were short of the usual building materials as balsa, tissue and rubber. Consequently, many aeromodellers tried to build their models from domestic material. In the Nordic countries, there were plenty of pinewood and thin plywood. Building powered models was out of the question – no rubber – no petrol, thus gliders dominated.

In spite of blockade and travelling problems, a certain Nordic contact was upheld. Between MAC "Vingarna" in Stockholm, Sweden and Odense MAC, Denmark, telegraphic contests were held and from Sweden a 4-man team every year went to Finland to take part in the Jamijarvi camp. The Finns paid a yearly reply visit to Sweden. At these meetings, an international match was held.

When the end of the war was near, discussions of international co-operation arose. As a member of the Swedish Aeromodelling committee, Sigurd Iscacson drew up a proposal of the joint work between the Nordic countries. Among other things, there was a proposal of a Nordic glider. In the Swedish magazine "Modellteknik," March 1945 the Dane Per Weishaupt forwarded this to "A Wakefield-Glider" with a wing-area max. 25 dm^2 and a min. weight 400 g.

"Isac" and "P.W." can take the honour of creating the A/2 or Nordic – now F1A-class.

In connection with the Nordic glider match in Stockholm June 1945, a conference between the Nordic aeromodelling leaders was held. There was G.H. Derantz of Sweden, L. Poppius of Finland and K. Flensted-Jensen of Denmark. At the suggestion of Poppius, the Swedish rules were made the basis of the discussions and from them a proposal of international rules were made suitable to present to FAI in Paris.

Gliders were marked A1, A2 and A3. Indoor models B, rubber models C and power models D.

In September 1946, delegates from 18 countries gathered in London to discuss private flying. G.H. Derantz represented Sweden and was elected a member of the FAI aeromodelling committee. The Nordic proposal was not discussed owing to lack of time, but a positive interest of international competition was noticed. At that time, FAI only registered international records.

In 1947, the Nordic rules were applied at Swedish contests. The Swedish Championship in 1947 was flown to these rules, as well as the 1947 Nordic Championship in Odense, Denmark, where Finland was the winning nation and E. Toropainen of Finland was the individual Champion. In 1948, the Nordic Championship was flown over the frozen lake Mjosa in Norway. Sweden was team winner and the "Grand Old Man", A. Host-Aaris, of Denmark was the individual winner. Finland was the host in 1949 where Denmark won the team and the individual honour by J.A. Lauridsen.

At the 1948 FAI-congress in Paris, G.H. Derantz presented the demands of international contests according to FAI authorized rules. Sweden and Denmark got unexpected support from Belgium and the committee made this statement: "FAI shall issue recommendations considering the organization of international contests."

The FAI-meeting of 1949 was placed in Cleveland, Ohio. In September, the long awaited international rules were established. These rules were the norm for the international contest to be held in Sweden 1950, as a feature of the 50 years anniversary of the Swedish Royal Aero Club.

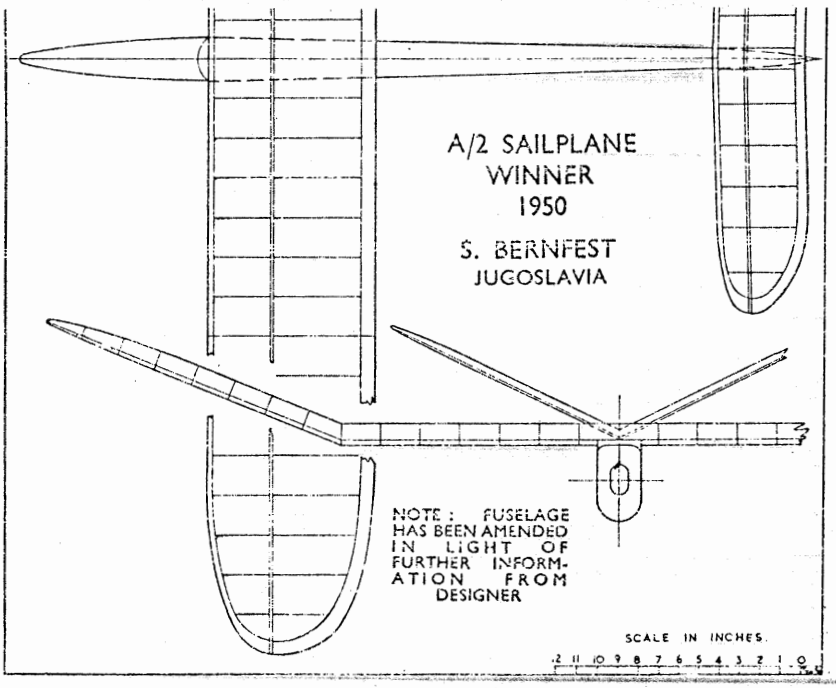
The contest was for gliders of A/2 specifications. All around the world that class had been accepted and notifications came from 10 countries.

PICTURES

1. Sigurd Isacson, designer of the famous "S.I." airfoils.
2. Per Weishaupt, now chairman of the Royal Danish Aeroclub. – Many of you met him as the inauguration speaker and prizegiver at the 1977 World Championships in Denmark.
3. George H. Derantz, Instructor of aeromodelling in Sweden in the 50ies.
4. Osvald Arnulf-Olsson, Swedish merchant-man, who donated the "Swedish Glider Cup."
5. The first winner of the Cup, unofficial World Champion, Stjepan Bernfest, Yugoslavia.

Photos Nos. 1-4 reprints from contemporary magazines.

Photo No. 5 taken by S.-O. Linden at Trollhattan, Sweden when Stjepan Bernfest was announced as the winner.

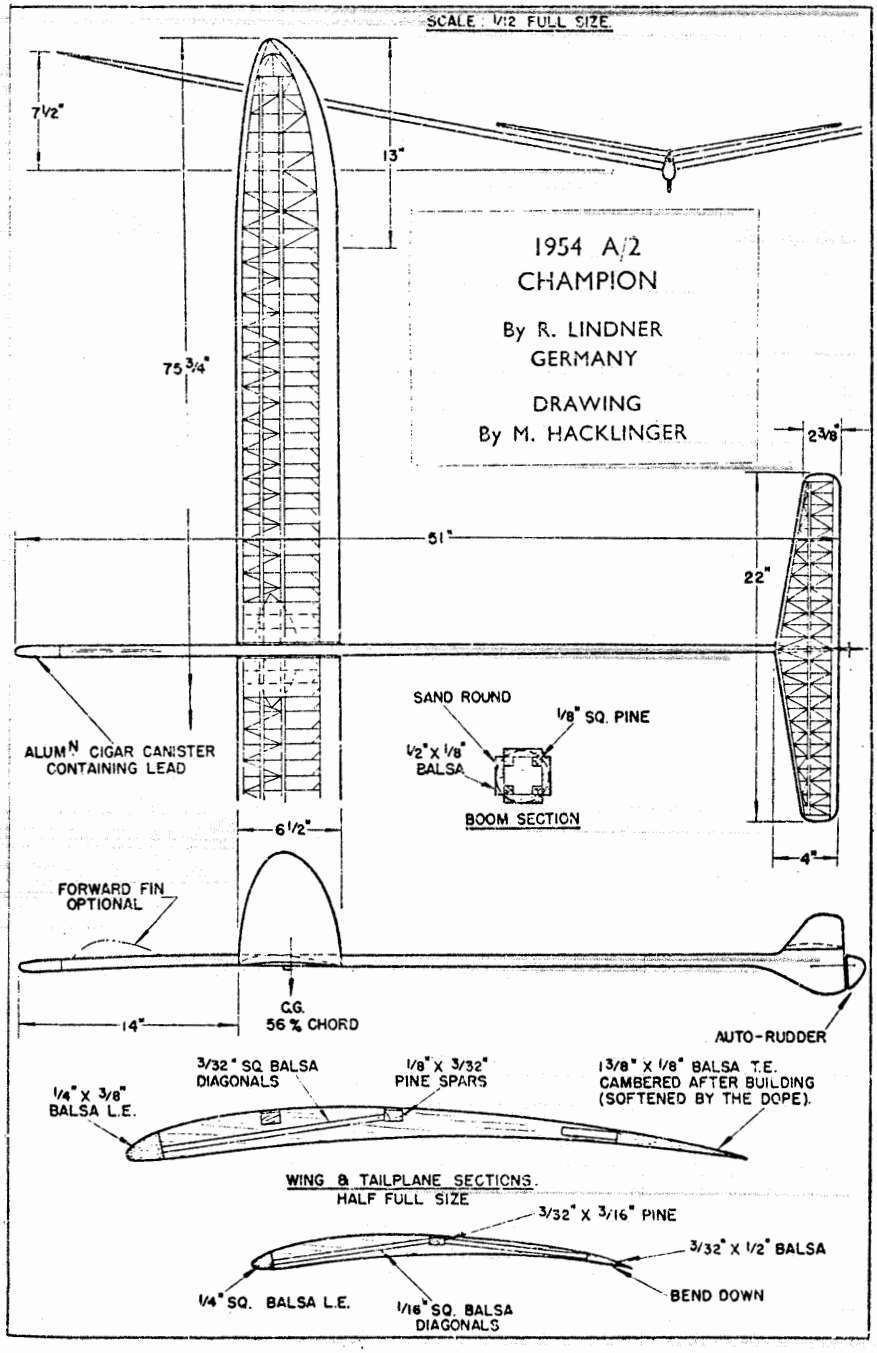

A/2 SAILPLANE
WINNER
1950
S. BERNFEST
JUGOSLAVIA
NOTE : FUSELAGE HAS BEEN AMENDED IN LIGHT OF FURTHER INFORMATION FROM DESIGNER
SCALE IN INCHES.
12 11 10 9 8 7 6 5 4 3 2 1 0



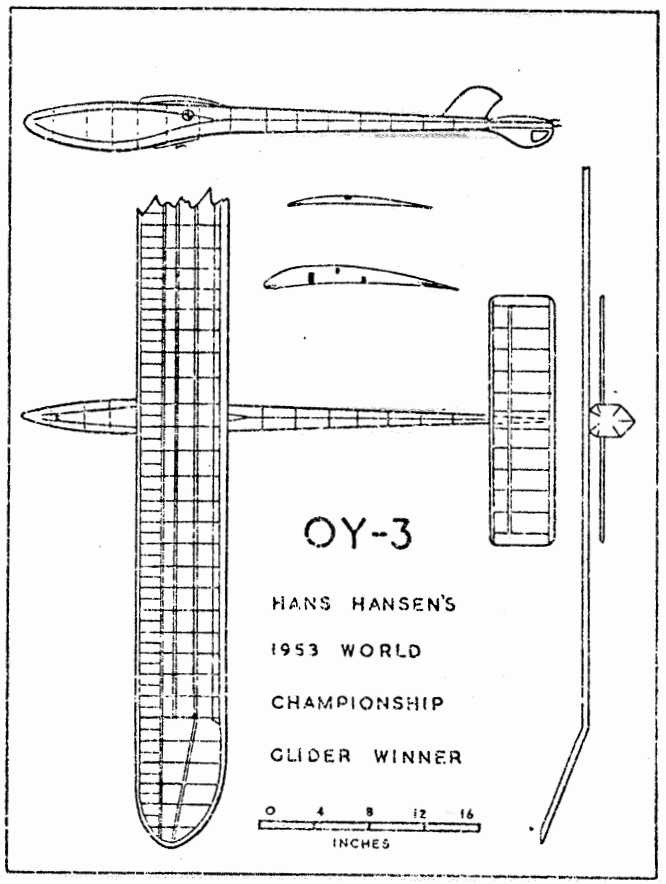







SCALE 1/12 FULL SIZE.
7 1/2"
13"
75 3/4"
1954 A/2
CHAMPION
By R. LINDNER
GERMANY
DRAWING
By M. HACKLINGER
2 3/8"
51"
22"
ALUMN CIGAR CANISTER CONTAINING LEAD
SAND ROUND
1/8" SQ. PINE
1/2" X 1/8" BALSA
BOOM SECTION
6 1/2"
4"
FORWARD FIN OPTIONAL
C.G. 56 % CHORD
14"
AUTO-RUDDER
3/32" SQ. BALSA DIAGONALS
1/8" X 3/32" PINE SPARS
1/4" X 3/8" BALSA L.E.
13/8" X 1/8" BALSA T.E. CAMBERED AFTER BUILDING (SOFTENED BY THE DOPE).
WING & TAILPLANE SECTIONS.
HALF FULL SIZE
3/32" X 3/16" PINE
3/32" X 1/2" BALSA
BEND DOWN
1/4" SQ. BALSA L.E.
1/16" SQ. BALSA DIAGONALS




OY-3
HANS HANSEN'S
1953 WORLD
CHAMPIONSHIP
GLIDER WINNER
0 4 8 12 16
INCHES

The Swedish merchantman, Osvald Arnulf-Olsson, of Gothenburg presented the magnificent silver cup known as "The Swedish Glider Cup." The contest in 1950 was not officially announced as a World Championship, but from 1951, FAI decided to officially acknowledge A/2 to be a World Championship class for gliders.

The 1950 unofficial World Champion was Stjepan Bernfest of Yugoslavia. His model was rather stout with a cord of 22 cm, at the rear was a V-tail. Many thought that this was the cause to his victory and it was widely copied. Runner-up was the Swede, Ragnar Odenman, with a typical Swedish design, "house and canopy." At this time, an A/2 model needed a fuselage section; surface area: 100 = 32-34 cm^2, that made all fuselage a bit plump compared to modern gliders.

The most unique way to fulfill that section-rule was demonstrated by the winner of the 1951 World Champs in Yugoslavia (Lesce-Bled), Oscar Czepa of Austria. He had fixed an "egg" with the stipulated cross section at the rear of the 200 cm long fuselage. At the 1952 contest in Graz, Austria, the Yugoslav Bora Gunic won with one of the most elegant designs at that time. In 1953, the contest once again was placed in Lesce-Bled, Yugoslavia. At last a man from the Nordic countries won. Hans Hansen of Denmark took 1st place with perfect 3 x 5 min. with his stable "Aurikel" or "Victory," as it was called in kit form.

The contest moved to Denmark in 1954. Alas the weather at Odense was very bad, hard wind and rain. Rudolf Lindner of West-Germany won and his winning times give an indication of the difficulties: 145 – 31 – 180 – 30 – 180 = 566 s. Two of the world's leading modelglider experts took part at that championship, Max Hacklinger of West-Germany and Hansheiri Thomann of Switzerland. If the weather had been better, probably one of them could have been the winner.

In 1955, West-Germany and the USA made a joint World Championship in Mainz-Finthen, West-Germany. Rudi Lindner repeated his win from the previous year and was the Champion once more. The only one who has made it in A/2.

Italy was the host of the 1956 contest in Florence. As a design, Marcel Brems' winning glider was a step backwards. At this time you had come to a point where you needed something more than just a good model. The Belgian, Brems, has the ability and luck to put his model in thermals, he knew how to fly his model and he was the winner.

Once more a Yugoslav, Slobodan Babic, was the Champion. In 1957 in Prag, Czechoslovakia he won with a clean design, very well proportioned and cleverly flown in a flight with the Russian, Jiri Sokolov. No less than six competitors had four 3-minute flights to their credit when they launched for the last flight.

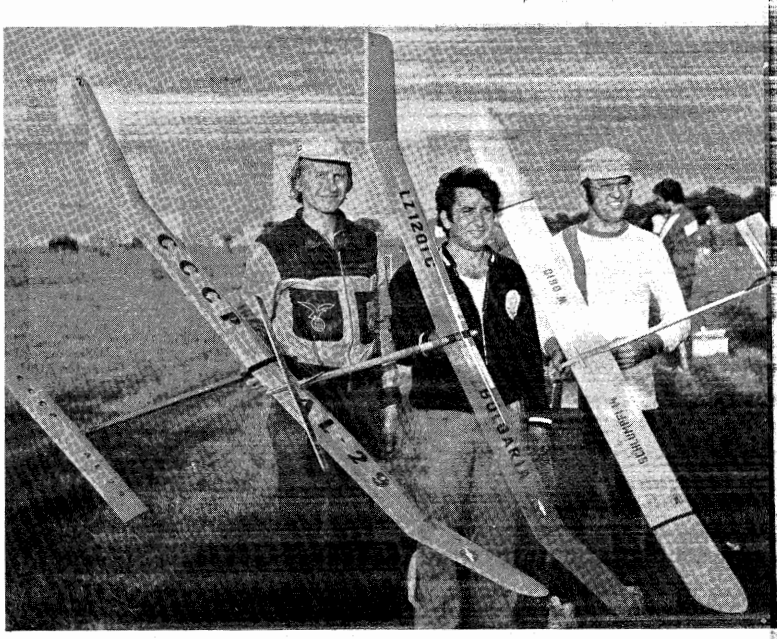
FAI had decided that World Championships were to be arranged biannually. The contest site in 1959 was in Leopoldburg, Belgium. Gerry Ritz of the USA was the Champion with his rather extreme "Continental." Here a combination of delicate design and construction, together with a complete flying knowledge, made its triumph.

The A/2 contests had reached a point where you needed something more to climb the tribune.

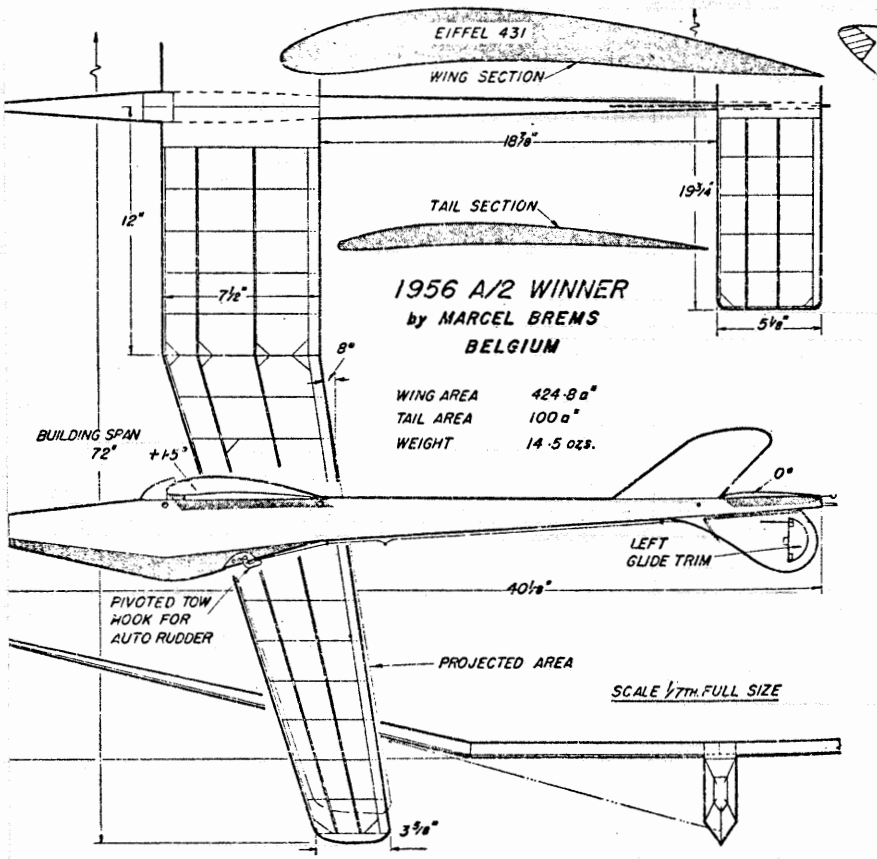
Some years later, you saw the invention of the circle towhook. . . . . .



1955 Nordic Winners Gilroy (2nd), Lindner (1st), Hagel (3rd)



1977 Winners Lepp (2nd), Abadjiev (1st), Kraus (3rd)

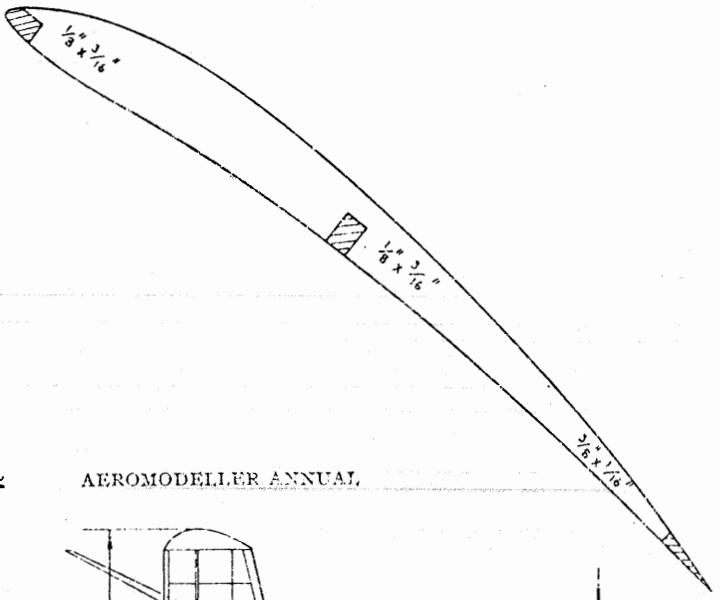


1956 A/2 WINNER

by MARCEL BREMS

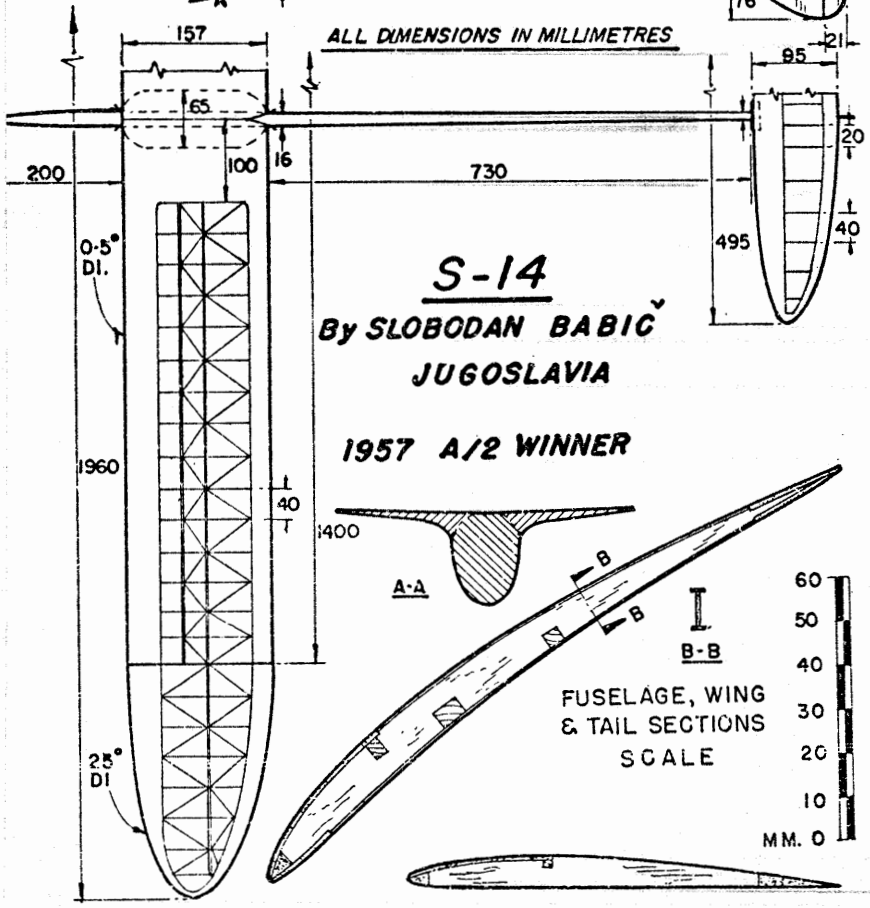
BELGIUM

WING AREA	424·8 a"
TAIL AREA	100 a"
WEIGHT	14·5 ozs.





ALL DIMENSIONS IN MILLIMETRES



S-14

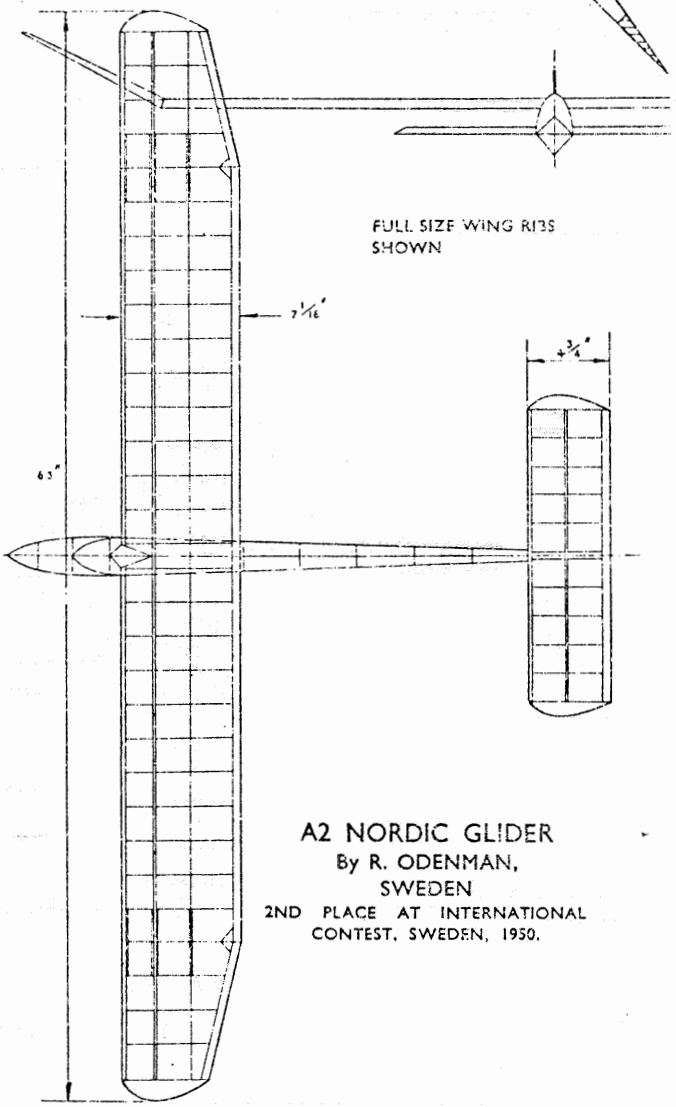
By SLOBODAN BABIC

JUGOSLAVIA

1957 A/2 WINNER

FUSELAGE, WING & TAIL SECTIONS SCALE

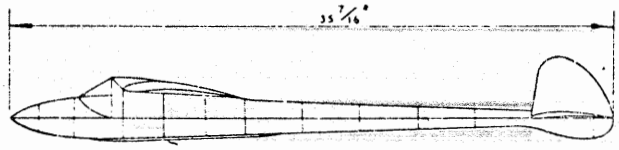
FULL SIZE WING RIBS SHOWN

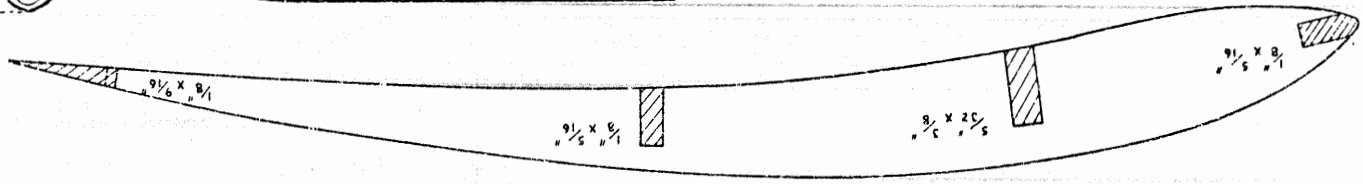


A2 NORDIC GLIDER

By R. ODENMAN,
SWEDEN

2ND PLACE AT INTERNATIONAL CONTEST, SWEDEN, 1950.

















Clockwise from one: Frank Zaic (Hal Cover built model), 1939 Korda, 1940 Copland, 1977 N. Korean winners, Jaguar (Evans), Joachim Loffler DDR.

RESOURCES

Other Free Flight Publications



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National Free Flight Society

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August 5, 1968

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About The Book

The Spirit

The profusely illustrated *Review* shows what the Free Flight models, modelers and places look like. But what is more, the photos capture the thrill of that launch into the sunset, the high speed climb, the colorful sky, the quiet glide, the gossamer-winged indoor model, the nostalgia of the vintage model. For perspective there is a report of the 1955 Free Flight World Championships held in Finthen, Germany. For excitement and tension there are the vivid descriptions and photos of fly-offs at the recent World Championships.

The Venture

There is more to the sport of Free Flight aeromodelling than launching your creation into a brilliant sunrise speckled sky. The *Review* describes in thrilling detail, complete with photos ,what it was like travelling on the fabled, mystical, *Orient Express* across Europe to attend the World Championships in Plovdiv, Bulgaria. And having arrived there, the *Review* treats you to a description of the electrifying opening ceremony, as the procession of national teams marched onto and once around the sports stadium filled with 40,000 fans. Floodlights caused a strange surrealisitc magic lantern effect as the shadows and light rays ricocheted across the green grass, producing an extravaganza, *phantasmogoria.*

The Discovery

The *Review* contains a Design Survey section of the major classes of Free Flight models; F1A-Nordic Glider, F1B-Wakefield Rubber Power, F1C-Piston Engined, F1D-Indoor Ultra-Light, and F1G-Coupe d'Hiver. A total of 109 full-page drawings of these models are included and these are supplemented with written comments, photos and sketches. Review reports of design and competition status of each of these classes are given by well-known experts from around the world.

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The challenge of Free Flight is found in the ultimate test; release of your creation to fly free, to deal alone with the physical laws of the atmosphere. The nature of the Free Flight challenge provides a basic logic for organized competition which finds thousands of competitors from dozens of countries flying in spirited, friendly competition around the globe. The *Review* contains a summary of Free Flight design and detailed reports of the major competitions for the years 1975, 1976 and 1977. Tabulations are included of the Federation Aeronautique International (FAI) rules, competition calendar, and results.

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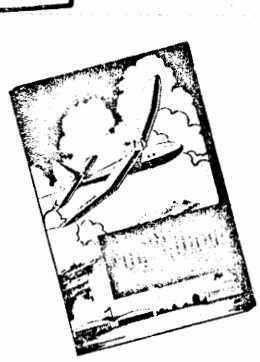
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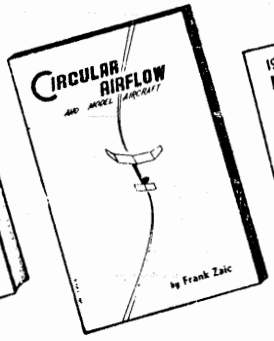


CONTENTS

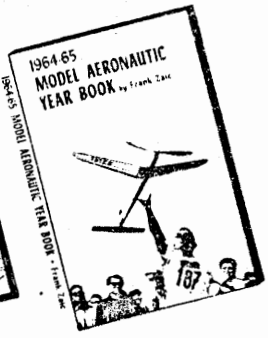
Aerodynamic Cen. 11,12,41
Airfoils 7,8,9
Altitude 2
Areas, 10,66
Aspect Ratio 13,14
B/Plane 35,36
Boats, Floats 67,69
Dihedral/Layout 11,12
Drawings 39,56
Center of Gravity 39,56
Center of Pressure 13,14
Cabin, Tailpost 23,26
Centrifugal Force 46
Circling Flight 52,53,54
Designing 22,24,26,65
Det-Hemmalite 60-62
Dihedral 47,48
Downthrust 36
Drag 5,6
Duration 58-60
Details, Construction 88-91
Empennages 10
Engine 78,79,80,20,26
Flapping Wings 70,72
Flight Chart 61
Flying Wings 27
Free Flight 21-25,28
Gliders 63-66
Gyroscopic Force 46,48
Helicopters 73,10,75
Incidence 14
Jets 191,83
Journal of Sections 7,11
Landing Gear 68,69
Lift (Force) 7
Lines Control 29,30
Loading 46
Material 84
Mean Camber 7
Micafilm 145
Moment of Inertia 48,51
N.A.C.A. Number 7
Nomograph 96,25
Parachute 60,62
Performance 51,62
Profile Drag 12
Propellers 15-20
Reynolds Number 7,12
Riser 16,17,54
Rotating Wings 73-75
Rubber 16,17.
Rudders 44,45
Select Section 9
Separation 8,19
Side Slip 56
Side Area 53,56,57
Sinking Speed 60
Slipstream 31,34
Scale Effect 12
Spinning 53,54
Stability 37-43,57
Stabilizer 66
Stress Calc. 85
Sweep Back 28
Stalling 8
Spec for Contests 33
Take-Off 49
Testing 85
Thrustline 51
Torque 35,36
Turbulator 8
V.E. Tail 45
Vibration 71,72
Weights 89,67
Yawing 42,54
Zero-Lift Line 7,8,61

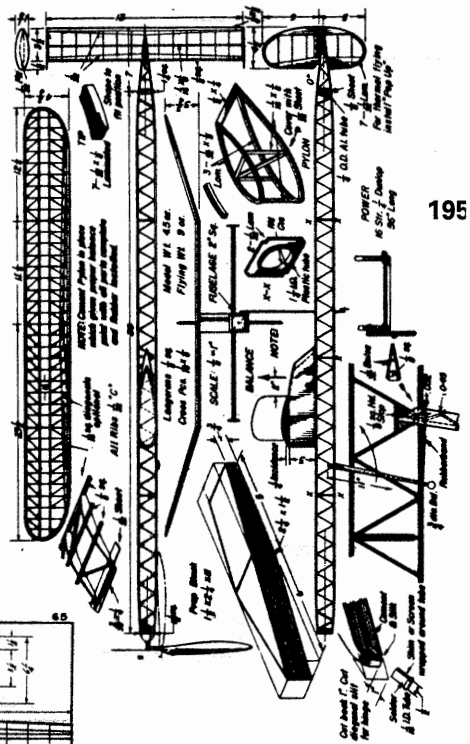
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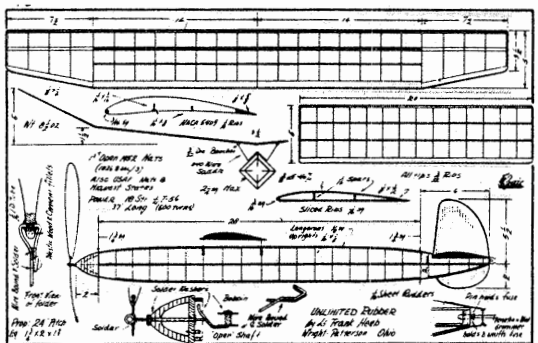


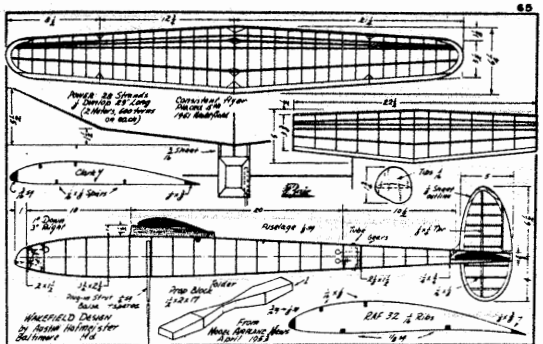


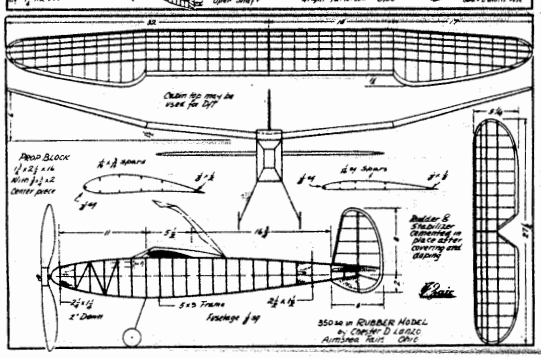


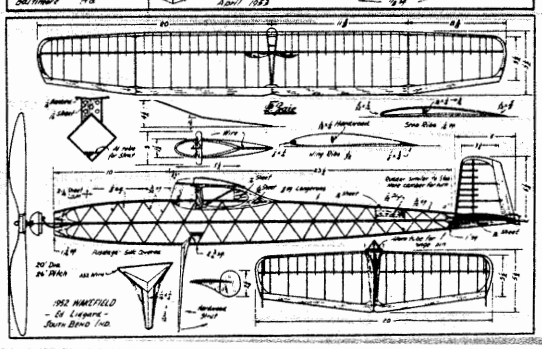


195











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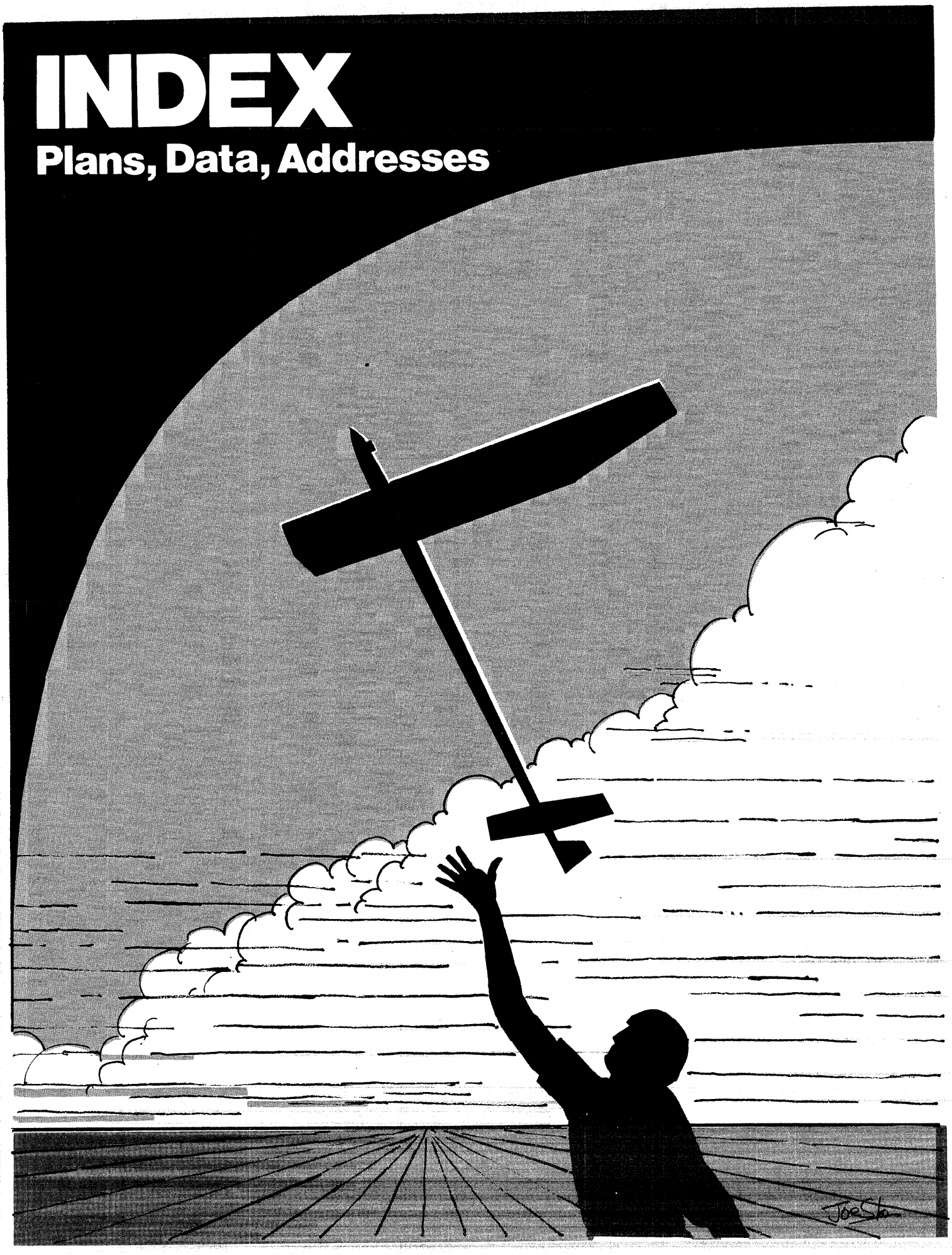
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INDEX

Plans, Data, Addresses



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