



ANDY CRISP'S WORLD OF

FREE FLIGHT MODEL AIRCRAFT

A.J.C.

Andy Crisp's World of Free Flight Model Aircraft

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Andy Crisp's World of Free Flight Model Aircraft

Welcome to Andy Crisp's World of Free Flight Model Aircraft. What a World it is, ranging through the Flashback range of variants and other FAs into Rubber, SLOP, HLG & Catapult Glider including designs created for school and club use; not everything that Andy has designed is here, we'd need a much bigger book, but this is Andy's provisional selection to be published as an InstantBooks Edition of 'Andy Crisp's World of Free Flight Model Aircraft'.

All the way back in 1974 I was probably the only Free Flight Aeromodeller not to know Andy Crisp, but all that was soon to change. I accepted a job with the Oxfordshire Finance department, with Ros moved to Grove in south Oxfordshire, sending out the usual 'change of address' cards. Martyn Cowley, then completing an architecture degree at Oxford Poly, gave us a ring about forming a new Free Flight model aircraft club; he was sharing a house with fellow aeromodeller Steve Marriott at the time. We agreed to meet and headed for the pub for the first discussions that were to result in Biggles Free Flight Team; at the 'Rancid Badger' (local nick name) we plotted forming a club that would beat all of Britain; just the four of us, Ros, Martyn, Steve and myself. First thoughts were who else we could bring into this 'Winning' team. Andy Crisp was first on the list, along with John Cooper and Trevor Payne from our Northampton MAC school days. Martyn drew the now infamous 'Rats! Woodstock's Maxed Out' logo for our sweat shirts and T-shirts so even though there were very few of us for the start of the 1975 Competition Season, we were very visible. Andy Crisp had joined us, even though he has always kept his Oxford MAC membership as a club priority he dived into the Biggles philosophy with a naked ambition.

Naked ambition drove us, Andy in both models and dress when he appeared at the Little Rissington Nationals sporting only a loin cloth for three days of fabulous weather! We hit it off as great friends and antagonists immediately, through 75 to 78 Andy and myself toured the UK circuit; me mostly as driver to Andrew though I flew a bit. I'd arrive at Andy and Sue's Summertown house to rouse Andy after a hard night 'gigging' on the drums; a quick handful of breakfast cereal, a french stick shoved into his 'ammunition case' flying box and we were off to whatever Free Flight contest was on that Sunday. Andy aimed for being the Gala Champ at every contest so we piled out of the car, entered, and then we were into a dizzying round of Power flights, Rubber flights, Glider flights. It was the best of years and the weather smiled on us. Biggles won the Plugge Cup and Club Championship so often that as BMFA Treasurer I had to endure jibes of professionalism, and poaching of top club flyers; all of it sour grapes, a handful of determined Biggles from the East Midlands having bested the best the rest of the country could offer.

We're all Stars in Biggles FFT, but Andy Crisp has always stood out as being the 'Naked Ambition' of model flying including 'dress sense'! Andy has such a passion for our hobby/sport that it simply radiates off him. We were proud to produce replica Biggles shirts for Andy's 25th Oxford MAC Gala on Portmeadow in 2006; the 25th consecutive Andy event. I count Andy (and Sue) amongst my closest of friends and it makes me very happy that Andy's genius is released on the Free Flight World through our new company; InstantBooks having itself been designed for just this event, though spread over thousands of hobbies and interest areas.

So to Andy Crisp 'Great Aeromodeller', here is 'Andy Crisp's World of Free Flight Model Aircraft' I'm so happy that at last Andy's enthusiasm can be received by the World Wide fraternity that is Free Flight.

David Brawn founder member of Biggles Free Flight Team and InstantBooks

Andy Crisp's Notes On Models

(in normal typescript)

A1 (F1H) GLIDERS

Little Bustard - simple "bitsa". Successful in domestic contests, but using straight tow hook, not the bent wire circle hook on plan. Wing was from a 'compact' Wake which spent 18 months in a pheasant coop in Norfolk!

B.T.B 52 - an easy to build windy weather job. Fits in a trombone case. Well three of them, actually. Would be fine for the new B.M.F.A. Ruling on 75m. Line.

A2 F1A GLIDERS

Flashback - This is typical of the original versions and was featured in Aeromodeller. Could do with the top spars being doubled at the wing root for the heavy handed.

Mk 7 Flashback - Very strong, but did not get the success it deserved. Lost up a tree on Woodbury Common, on my first visit there.

Mk 8 Flashback - went to Australia in 1983 and contributed to GBR winning team title in World Champs. Details show simple impulse circle tow system.

Millennium Flashback - after abandoning the 'line' for other projects, I decided to make 'just one more' for the new century. Solid as a rock, it flew very well, too well, in fact, as I lost it in an enormous boomer at Lost hills, U.S.A. In the World Cup event at the 2001 W/Champs. Modern type construction, with old style wood.

Flashbacks 10 & 11 - OK, even more have been made - this time the complete works carbon, kevlar etc. Very high launch when everything is right.

Flashback 12 - back to wood again, for simplicity. Salzer tissue covered wing allows flutter - suggest Jap over mylar.

Oriole - A good solid, rough weather job. After publication in FFN, has flown well for other people.

Flyright - based on Ivan Horejsi (CSE) proportions married with Alan Gibbs' wing construction this has been (and still is) a very reliable flier. Uses towhook as sold by FFN, connected to KSB timer. Alas, you can't get either now!

Tchip Tchop - Five were made, and the Mk1a was my best glider ever. Based very closely upon Victor Tchop's 1975 W/Champs winner, it scored 14 straight maxes over two trials meetings to make a British record. Wing sections used the Tchop under surface profile. The top shape varied between 6 and 8% on different versions. Surprisingly, the thickest went best. Some stabs were undercambered, others flat. Little difference noted!

The Boogaloo - made in 1977 when I got on the team for the W/Champs in Denmark (The all-Biggles glider team). Had a fine still air performance for the time, but the wings were a bit flexible with 12 swg joiners!

HLG & CATAPULT GLIDERS

Groovin' High - 'Large' series of HLGs. Built with success by others. Last remaining model now converted to Discus Launch trainer.

Rotator - Enormous D.L model. Recently made. Has teething troubles. I will get there in the end!

Meadow Mite - Beginners' job, designed to encourage H.L.G activity in Oxford M.F.C. Hook 2" back from nose would make it OK for catapult.

Depron-Do-Dah - made for Model Engineer Exhibition contests at Olympia. Depron (as required by rules) does not add much strength!

Depron Wing Indoor - ditto

The Angler - quite a rarity - a tail-less H.L.G. What fun. Published in Tailless News.

Boogie Woogie - steady flier, but needs a stiff boom for consistent launches.

Catapult Glider #5 - the current competition model. Placings in local events over last two seasons.

Avocet - sport flier, mostly from one piece of wood. Fast, spectacular performance.

The Sunflower - Another design on similar lines. Drawn up to encourage girls at a school where I taught to play with balsa.

RUBBER MODELS

F1H (COUPE d'HIVER)

No Name - first made in 1975, still going strong thirty odd years later. Currently has larger out-rigger prop.

Le Rip-Off #2 - based upon French designs of the '70s'. Again, still in constant use, but minus 'cabin' now that cross-section rule has gone.

Five O'Clock Shadow - blatant copy of Anselmo Zeri's Silver Shadow, but with different wing + tail construction. Very Large. Superb in calm. A bit of a handful in wind.

F1B (WAKEFIELDS)

The Little Bustard F1B - conceived as a simple Flashback type Wake. Flew well. After loss, converted to A1!

Yugo Victor - my version of Vilim Kmoch's 1971 W/Champs 2nd placer. Still going strong with shortened nose for 30gm motor. Now has no underfin.

Neo-Dada - A simple brutalist model named after brutalist art movement. Now lost. Surprisingly good in wind despite stretched layout.

Sheet Little 16 - French style Wake with solid sheet wing. Just like a giant H.L.G. 3 made. All very stable with good glides.

OPEN RUBBER

Shook-Up #2 - Assymetry of flying surfaces inspired by Andy Anderton's designs. It would be good on 50g rubber (or less) for new BMFA open rubber class.

POWER MODELS

Old Man Mose - large and light SLOP design for Cox 09. Would take PAW 1.5 for Brit Power with shortened nose. Surprisingly fast for the wing area.

Lindy Hop, Classical Gas, Ode to JR

Three varying studies for Slow Power when the rules first came out, to prove that you did not have to make a Dixielander! Lindy Hop actually built. Showed potential but fins proved vulnerable on hard landing.

The Anser - A good flier on low power. Won the power prize in the 1989 Lady Shelly comp at NATS. Later destroyed itself turning right. You have been warned.

1 NOTES ON MODELS

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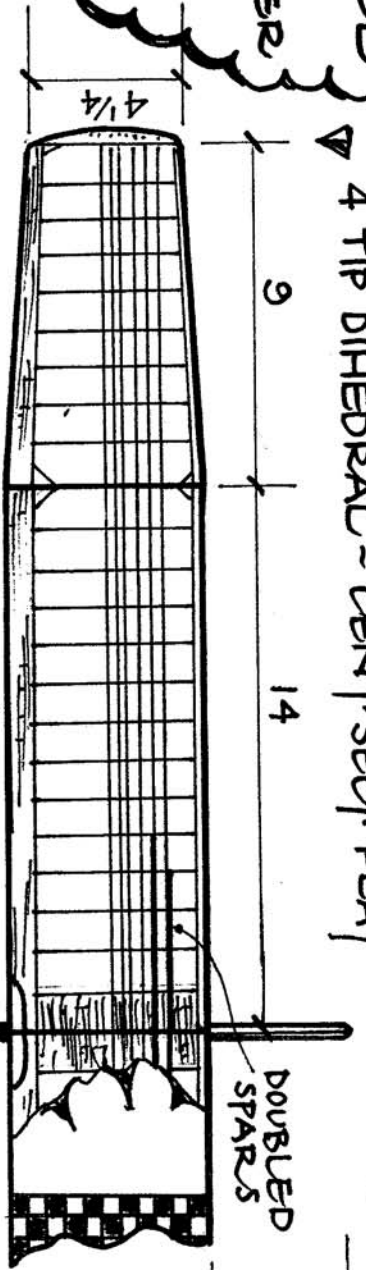
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"LITTLE BUSTARD"

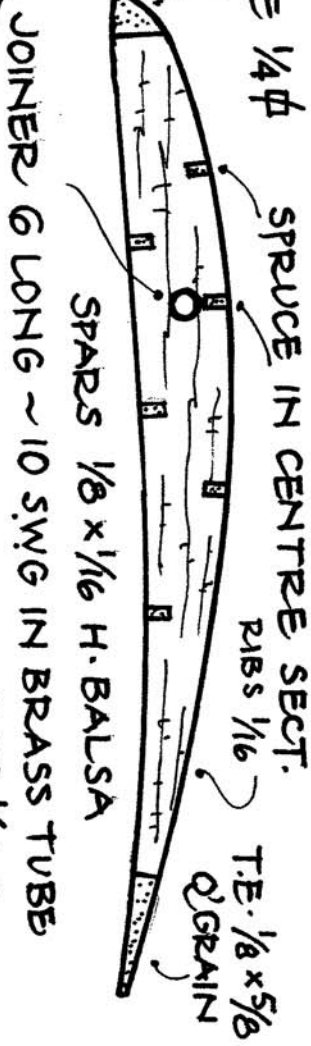
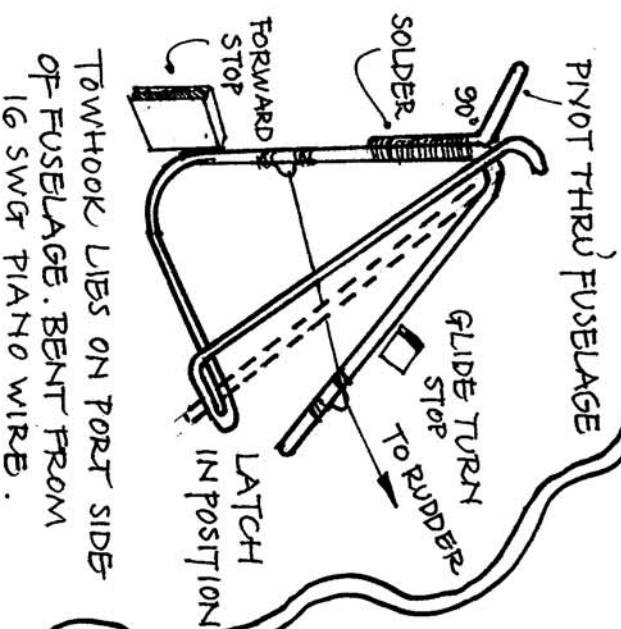
A BASIC FIB GLIDER
by ANDREW CRISP

4 TIP DIHEDRAL - CENT. SECT. FLAT

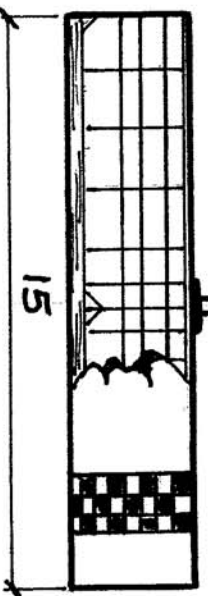
SCALE 1:5 & 1:1



VERY SIMPLE
(AND CHEAP)
CIRCLE TOW
UNIT



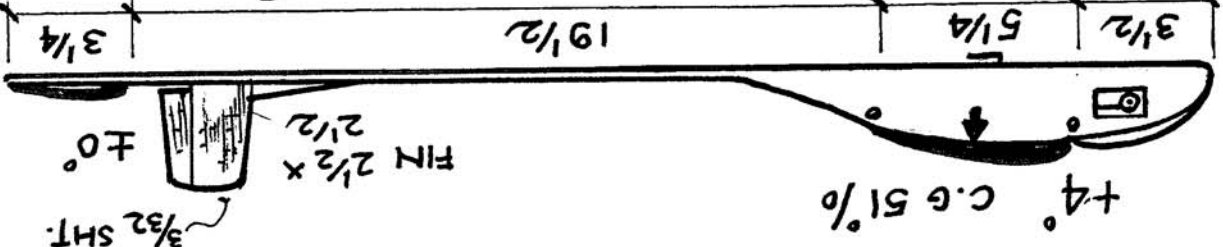
FUSELAGE POD
X - SECTION



WARPS:
PORT TIP 1/8 W.O.
C/SECT FLAT
S'B'D TIP 1/16 W.O.
RIGHT GLIDE

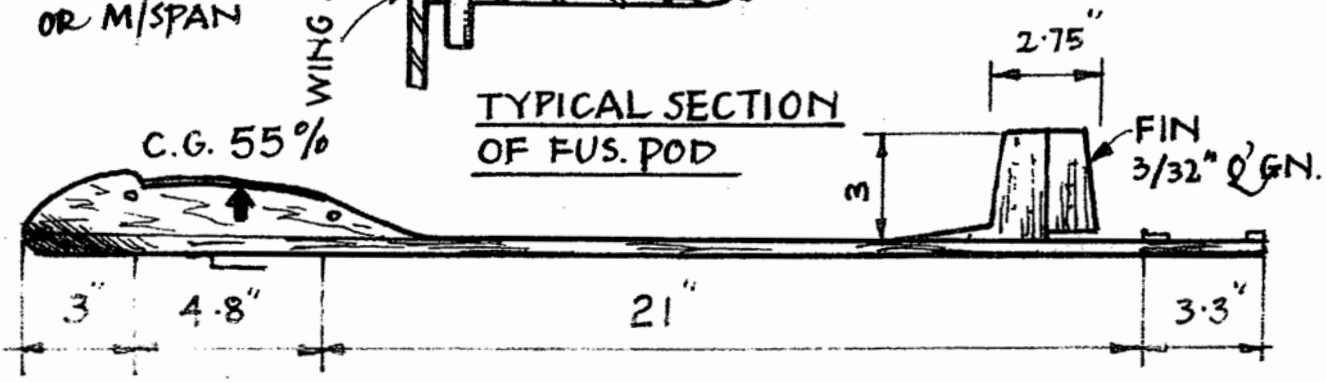
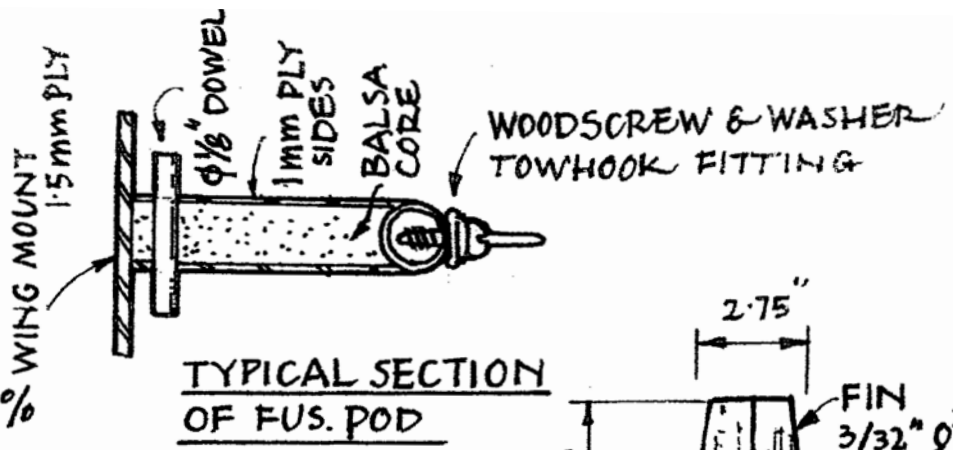
WEIGHT:
225 GM.

WING:
LT. WT. MOD/
SPAN
TAIL:
JAP



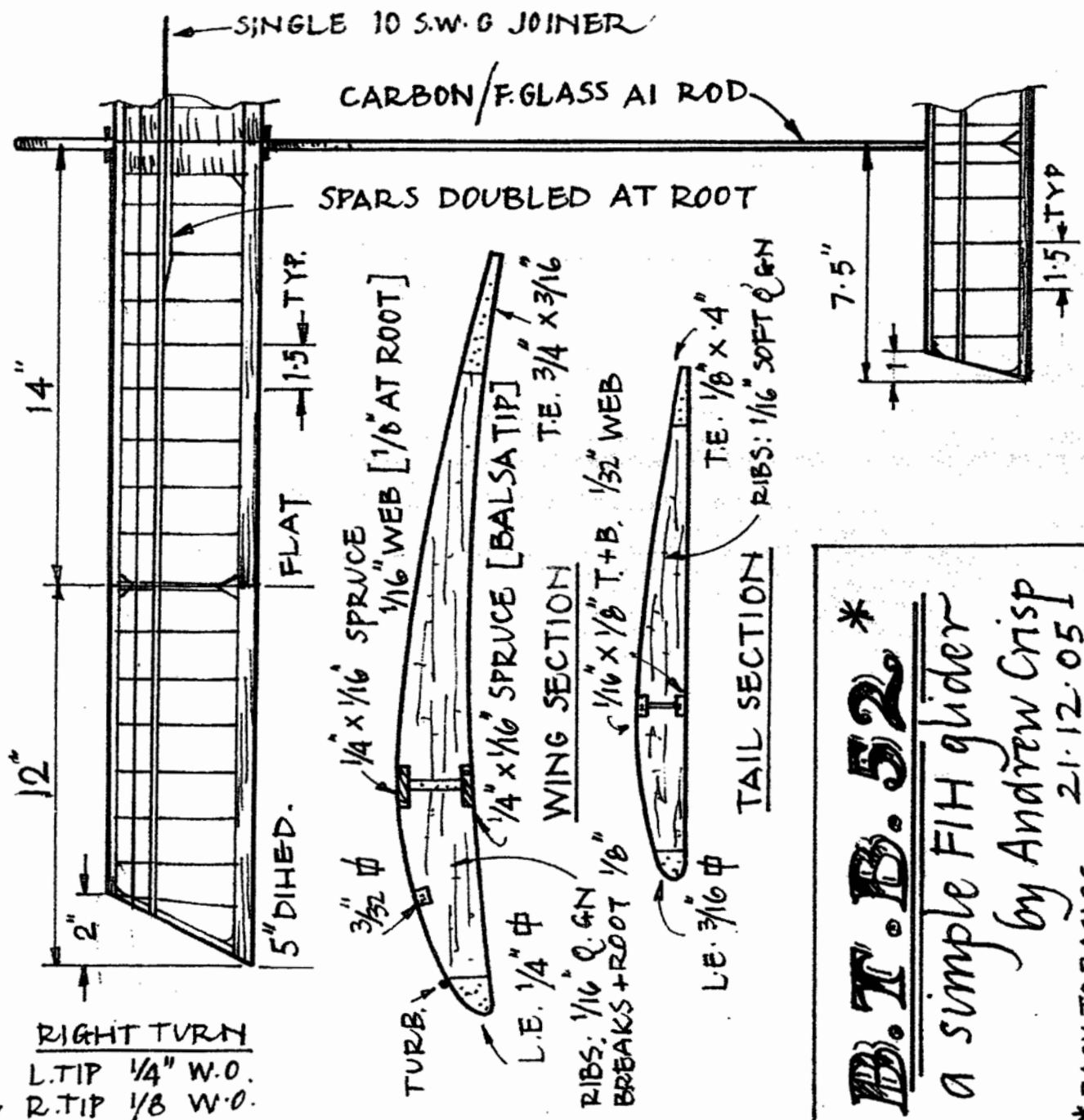
ALL DIMENSIONS IN INCHES

COVERING
 WING - SALZER
 TAIL - JAP OR MYLAR
 FUS - F/G CLOTH OR M/SPAN



TYPICAL SECTION OF FUS. POD

SCALE: 1:5 & 1:1

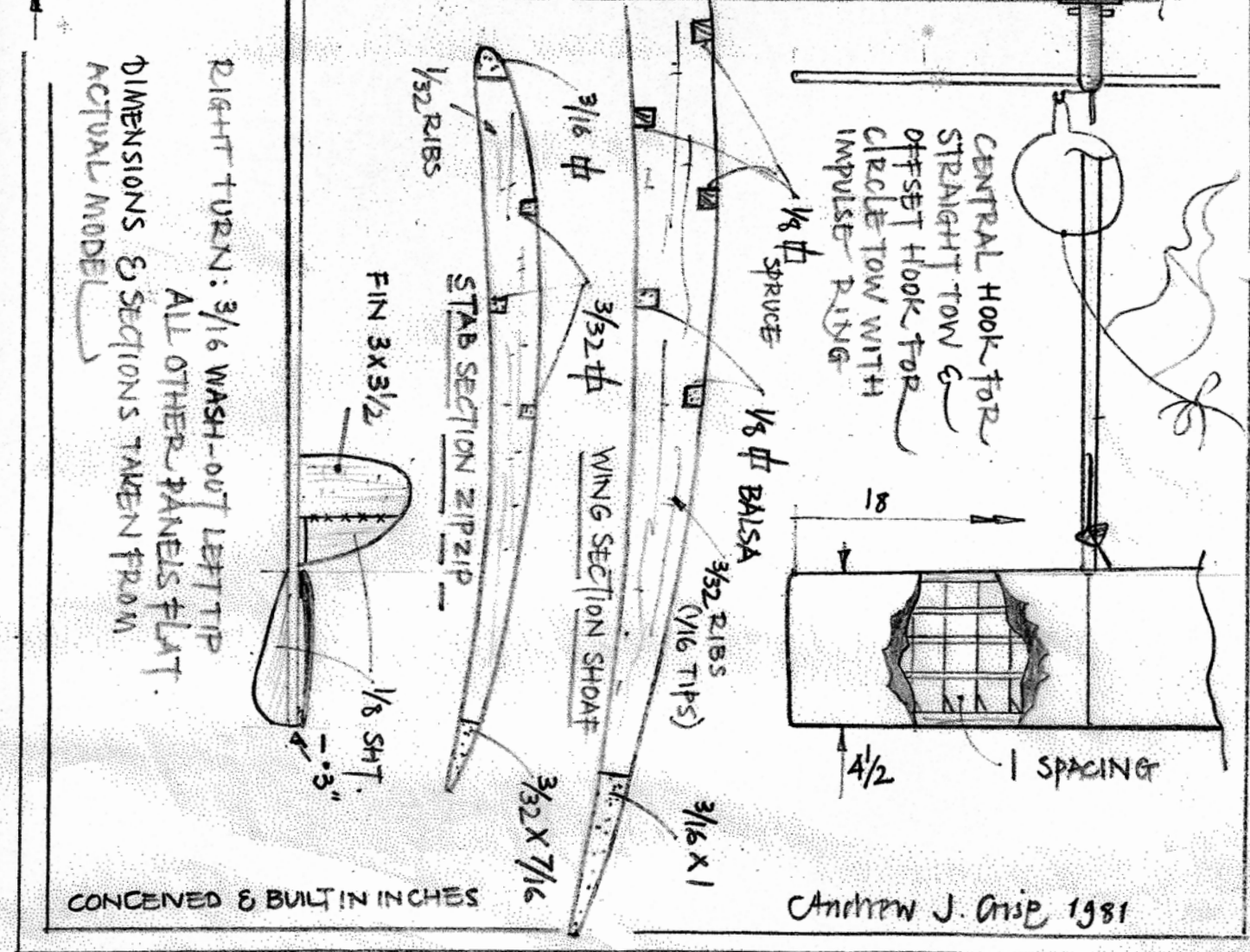
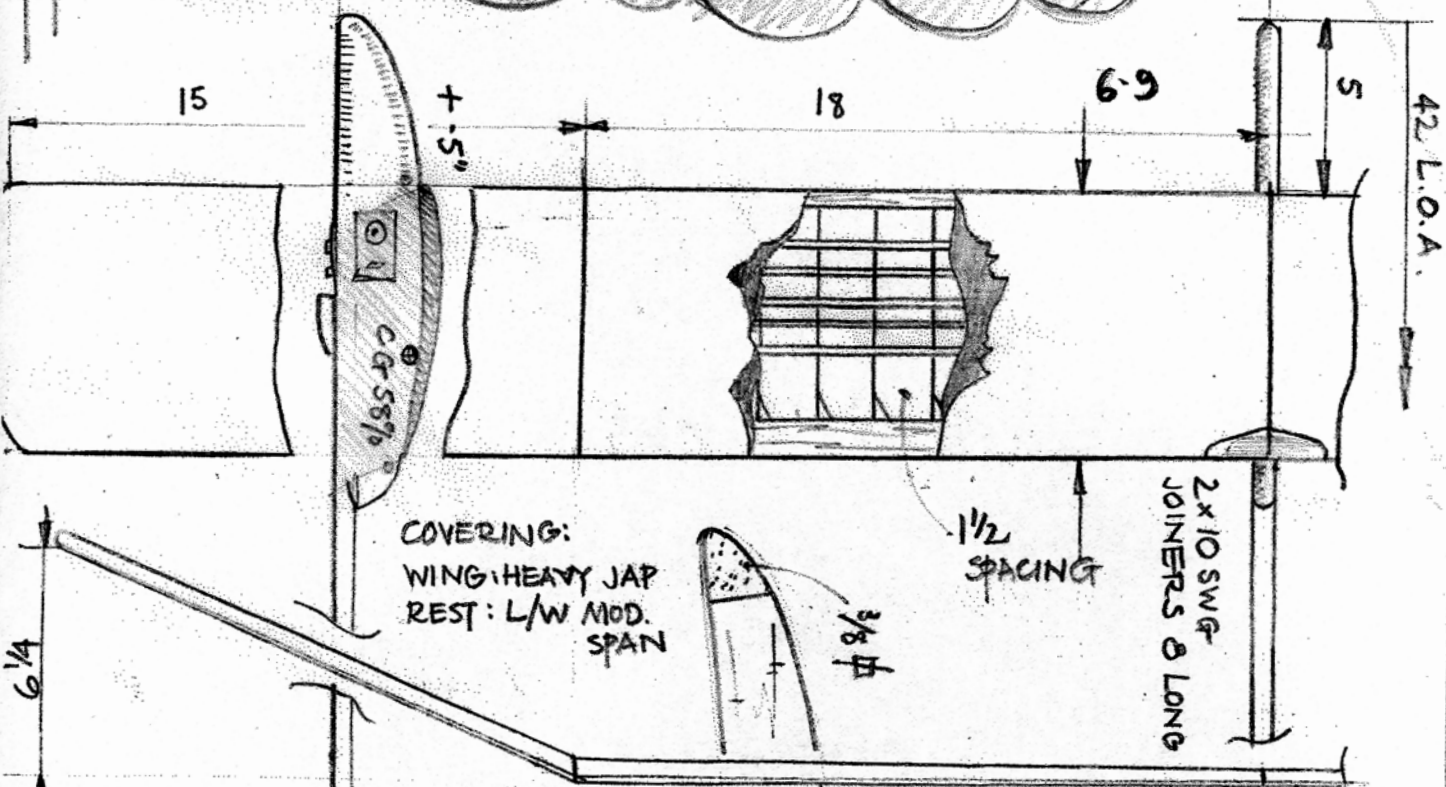


RIGHT TURN
 L.TIP 1/4" W.O.
 R.TIP 1/8" W.O.

B.T.B. 52*
 a simple FIH glider
 by Andrew Crisp
 21.12.05
 *BACK TO BASICS

SCALE 1:5

Flashback



Andrew J. Crisp 1981

WEIGHTS: ~

WING 180 gm.

TAIL 10 gm.

FUSELAGE

BALLAST 225 gm.

JOINER

TIP 3/8" SOFT

15 1/2"

18"

WINGS FOR RIGHT GLIDER: ~
LEFT TIP 1/4" WASH OUT
CENTRE PANELS FLAT
RIGHT TIP 1/16" WASH OUT

WEBS: 1/8" FOR 7 BAYS.
THEN 1/16" TO FIRST
BAY OF TIP, THEN 1/32"
ALL GRAIN SPANWISE.

1/16" x 1/8" SPRUCE
L.E. CAP
1/8" x 1/16"

3/8" x 1/8" SPRUCE (3/8" - 3/16" x 1/16" V.H. BALSAL IN TIPS)

1/16" x 1/8" SPRUCE
L.E. CAP
1/8" x 1/16"
3/8" (HARD CENTRE, MED. SOFT TIPS)

"TOWLINE"
TURBULATOR

1/16" x 1/4" SPRUCE
V.H. BALSAL 1/16" FOR 7 1/2"
AT ROOTS - 1/16" WEB

3/16" x 1/16"

3/16" (HARD CENTRE, MED. SOFT TIPS)
1/32" WEB

1/32" RIBS (CENTRE 1mm. PLY)

RIBS - 1/8" BALSAL + 1/64" PLY
AT ROOT
2 NO. 3/16" AT DIHED. JOINT
THE REST 1/16" Q.G. MED HARD

8 S.W.G. JOINER - 6 1/2" LONG

3/4" x 3/16" Q.G.
RIBS INSERT
1/16"

5/16" x 3/32"

9"

OWN IMPULSES
RELEASE CIRCLES
TOW HOOK

TIP 1/8" SOFT

SCALE 1:6

+2° C.G. 52%

COVERING: ~ WING: CENTRE SECTS.
2 LAYERS LT. WT. MOD SPAN
TIPS - 1 LAYER M.S., 1 LAYER JAP.
STAB & FIN: LT. WT. MOD SPAN.

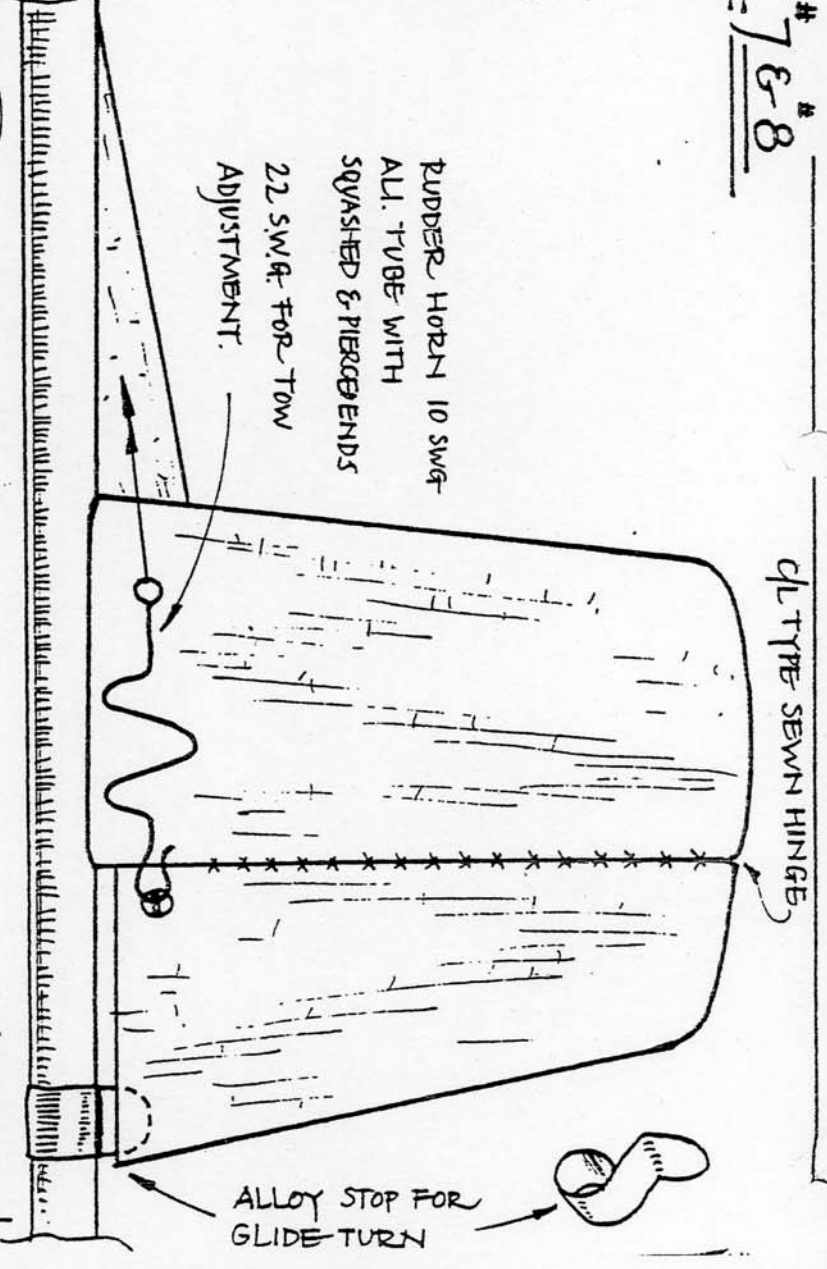
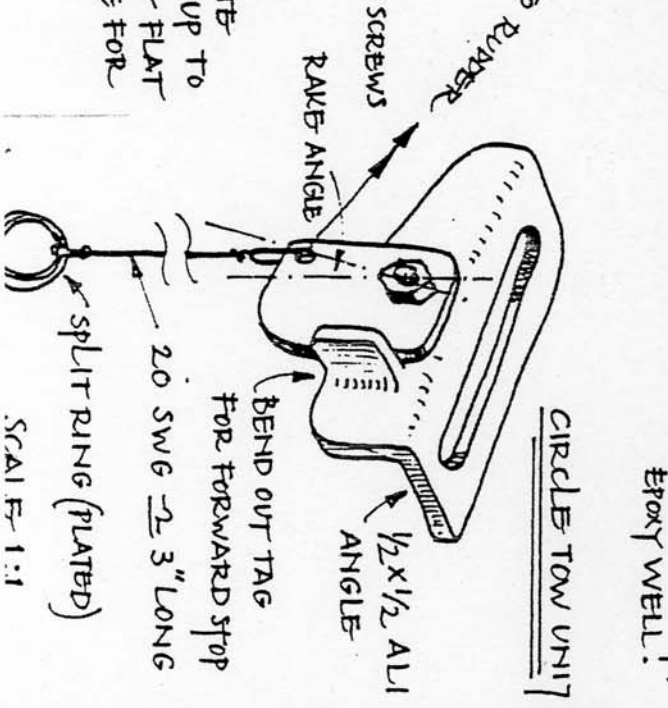
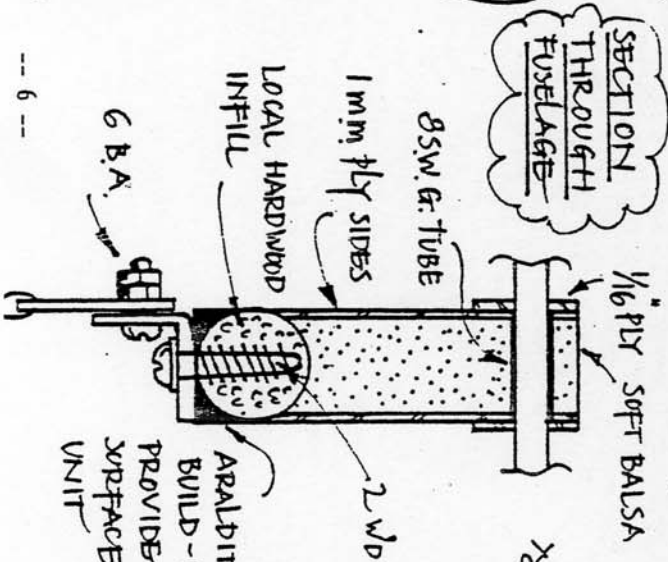
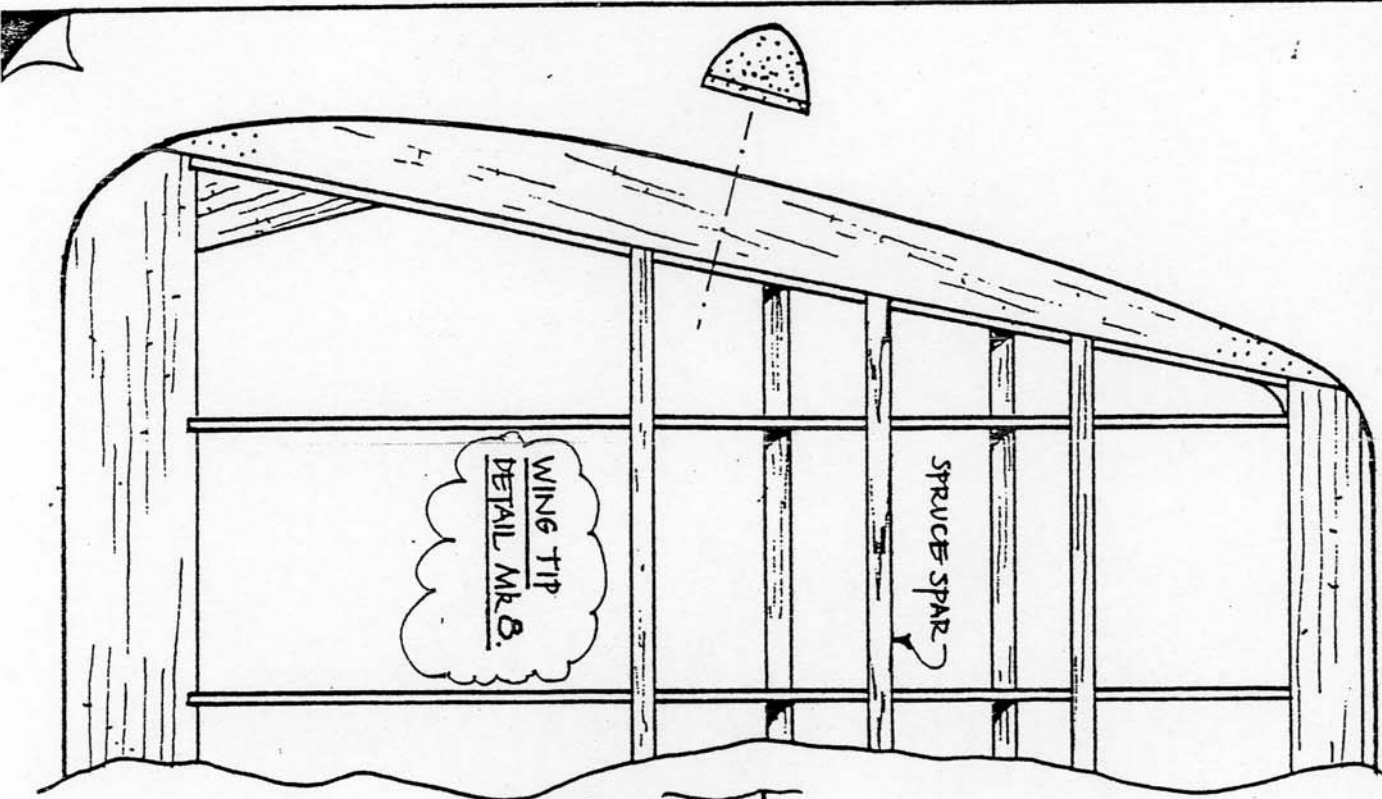
FUSELAGE POD: 1/2 OZ GLASS CLOTH
STANDARD RONTUBE

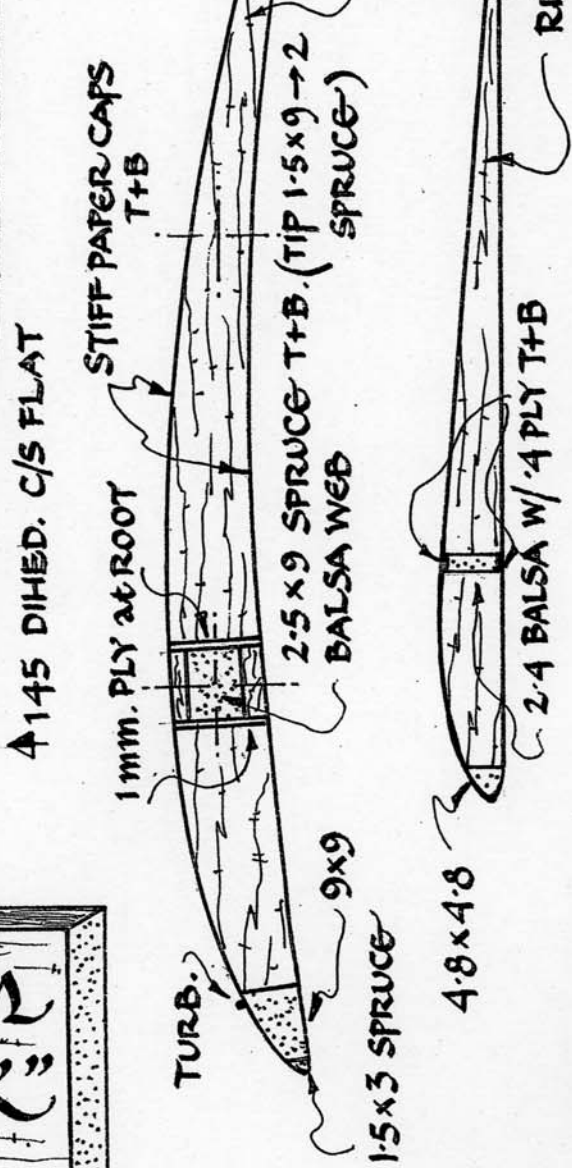
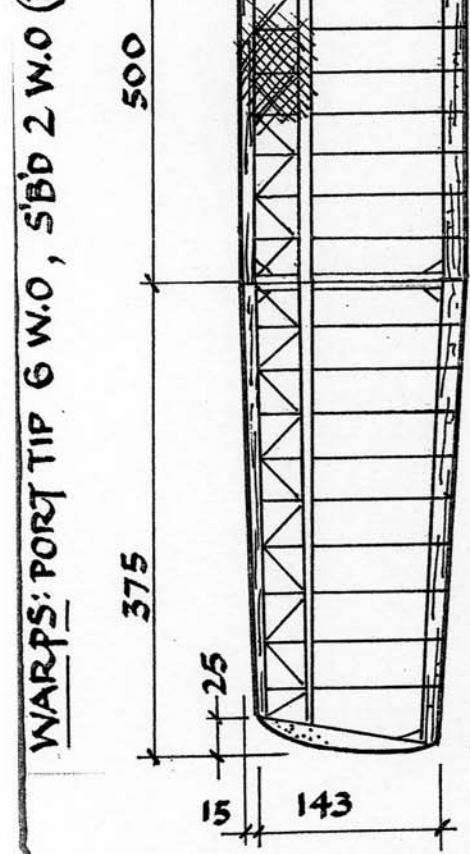
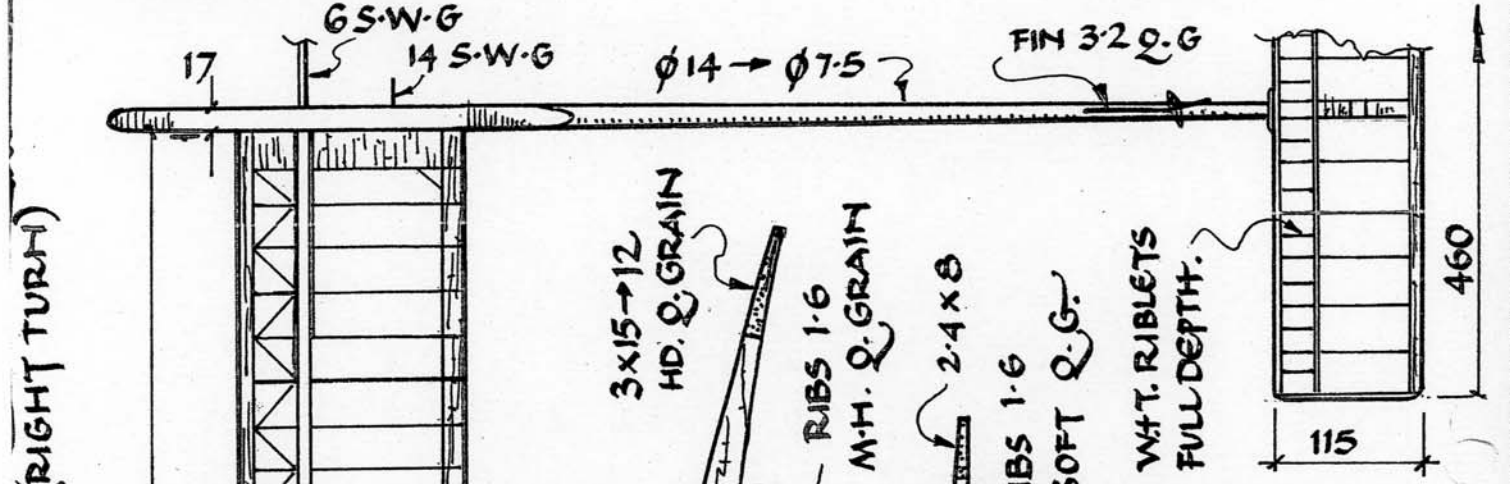
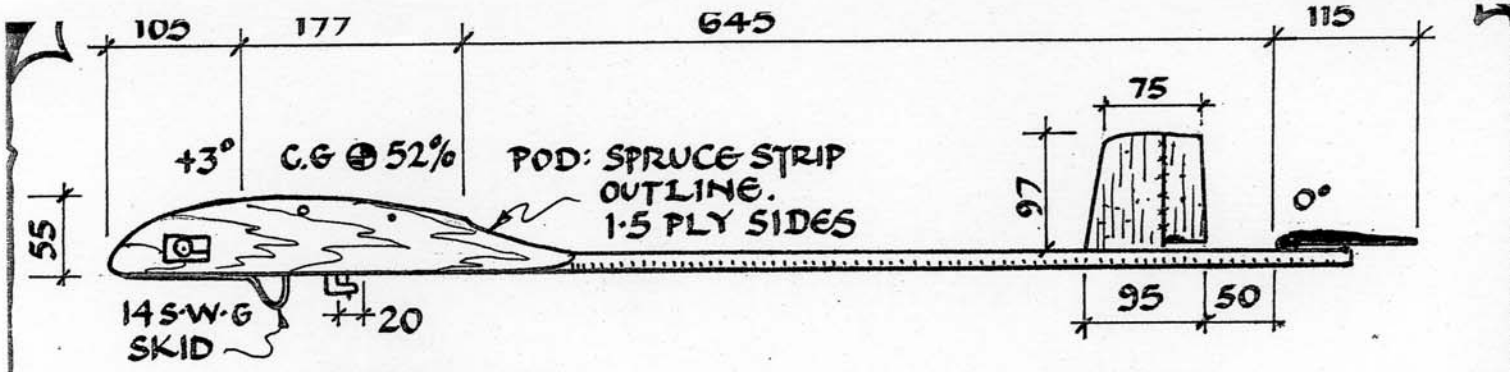
3 1/2"
2 1/2"
2 1/8"
2 1/8"
4 1/2"
4 1/2"
NEGATIVE
AS RECD
FIN 1/8" QTR.
GT.

FUSELAGE POD: ~ SOFT 1/2" SHT.
CENTRE, 1mm. PLY SIDES

Mk. 7 FLASHBACK
'The Tapered Version'
by **Andrew J. Crisp**

DETAILS SHEET - FLASHBACKS #7 & 8





COVERING:
 WING FORWARD OF SPAR - 2 LAYERS 'SALZER' TISSUE at ± 45° THE REST 1 LAYER, GRAIN SPANWISE.
 TAIL - SILVER MYLAR
 FUSELAGE POD ~ LIGHT GLASS CLOTH.

SCALE 1:6 & 1:1
 DIMS in MM.

	WEIGHT (g)	AREA (dm ²)
WING	190	28.56
TAIL	8	5.29
FUSEL.	205	
JOINERS	22	
TOTAL	425	33.85

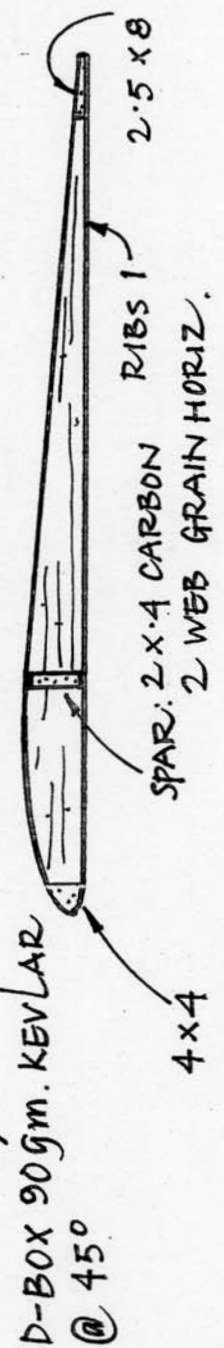
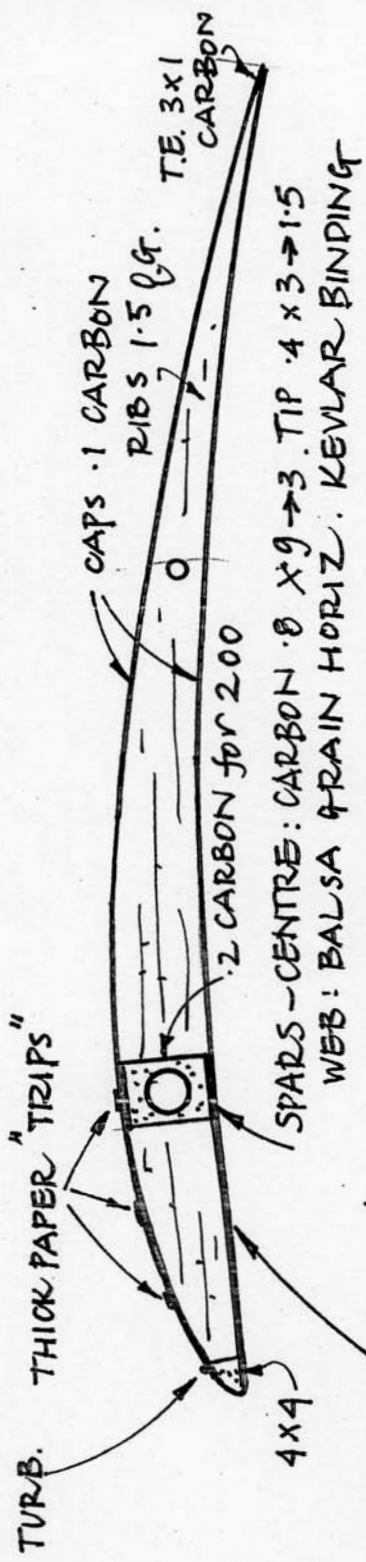
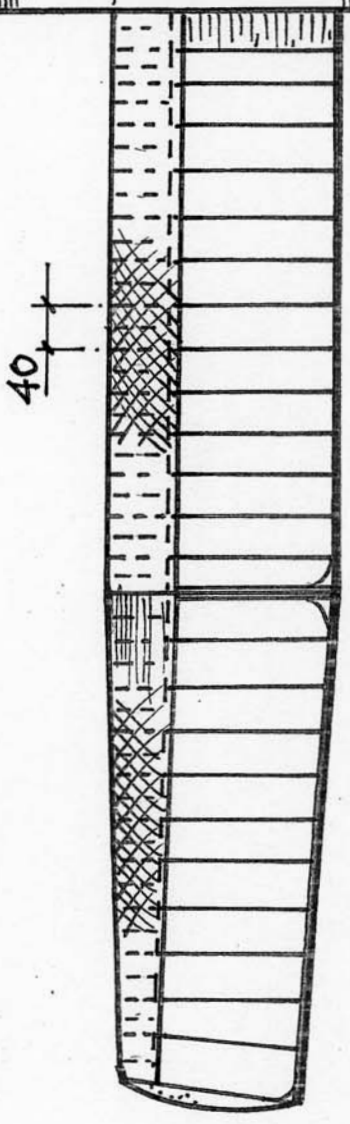
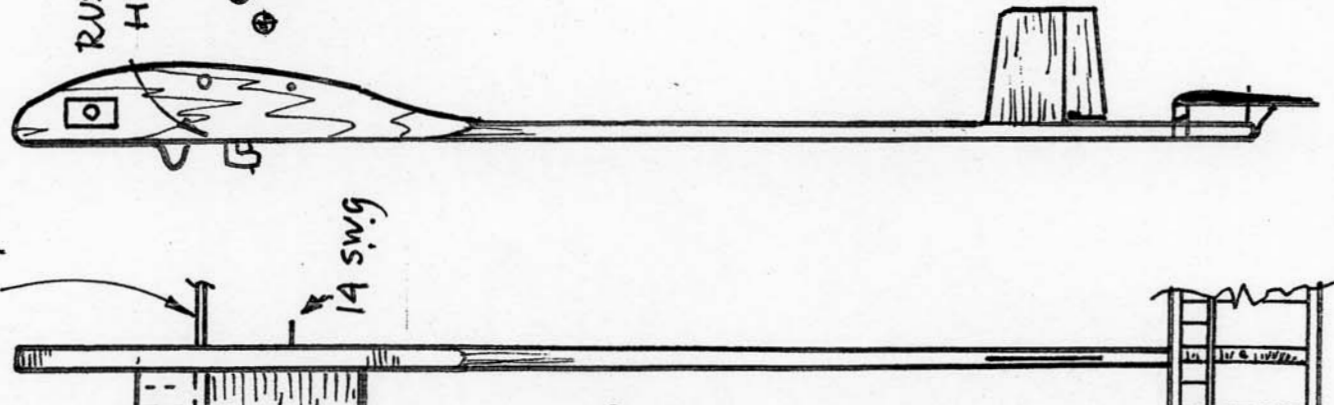
"MILLENNIUM FLASHBACK"
 FIA by
A.J. Crisp

FULLSIZE DRAWINGS AVAILABLE from "FREE FLIGHT SUPPLIES."

SCALE 1:1 & 1:6

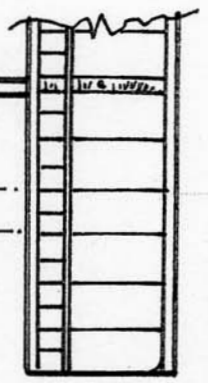
	WT. (g)	A (dm ²)
WING	175	28.5
STAB.	111	5.24
FUSE.	214	
JOINERS	30	
TOTAL	430	3374

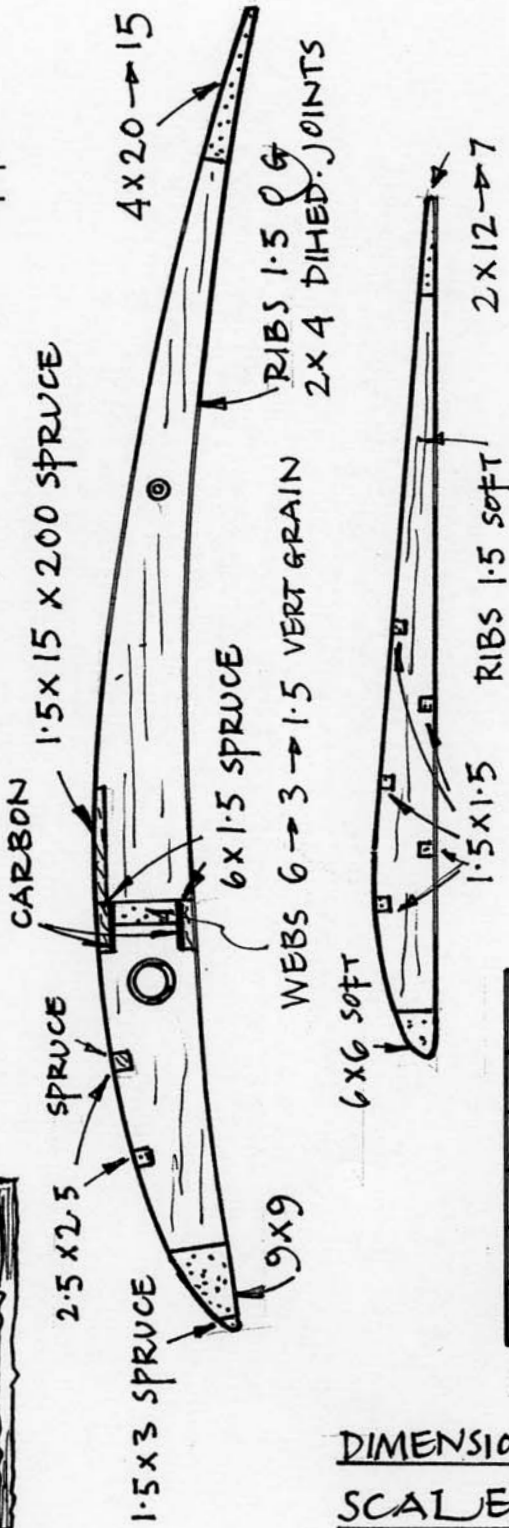
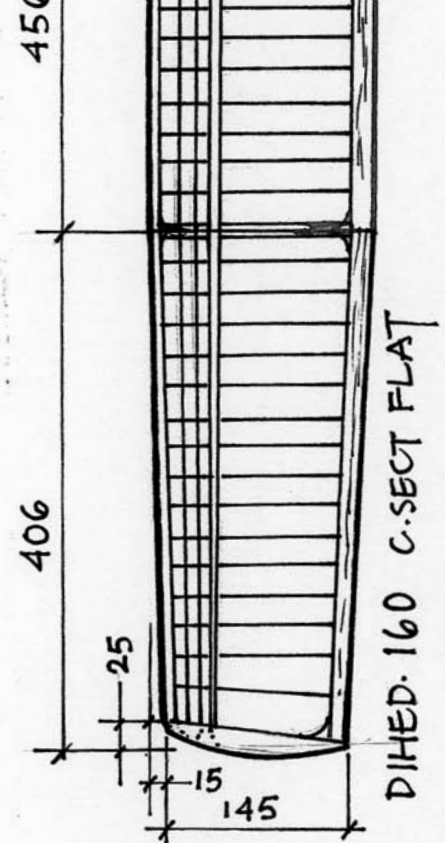
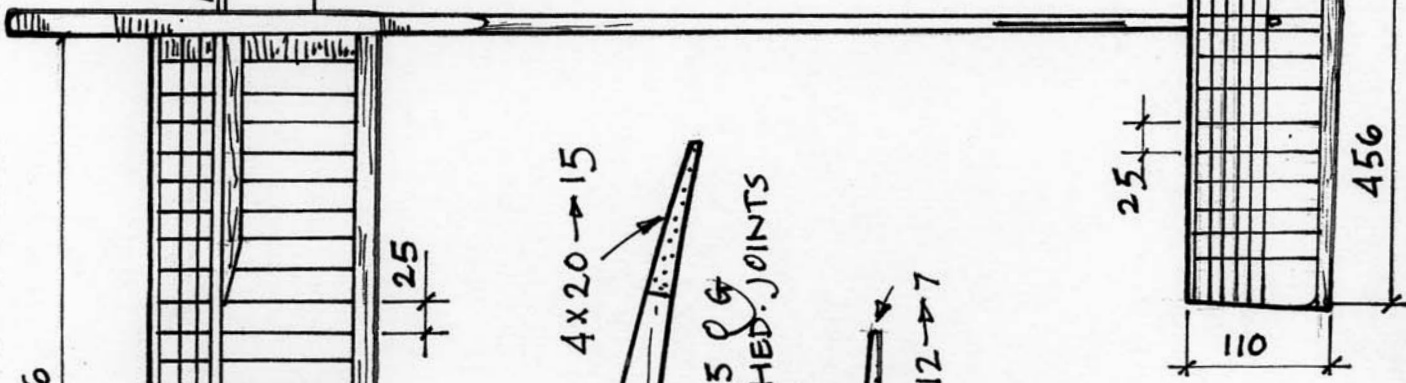
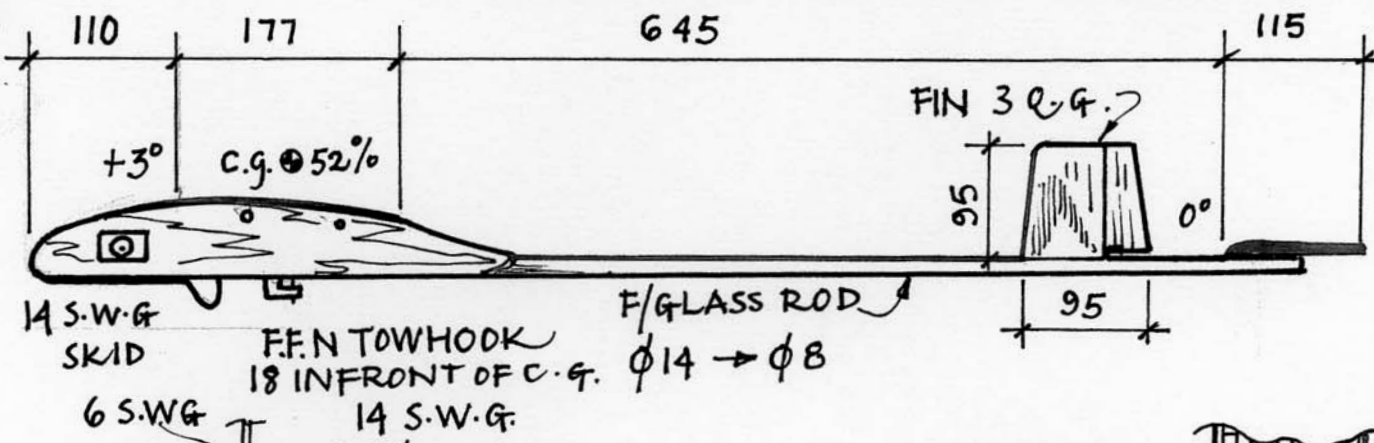
WING JOINER $\phi 5.8$



DIMENSIONS & FUSELAGE
DETAILS IDENTICAL TO
#12. NUMBER 11 HAS
BUNT MECHANISM FITTED

FLASBACKS
#10 & #11
2004
by A. J. CRISP





COVERING
 FUSE POD HEAVY
 MODELSPAN.
 WING + STAB.
 SALZER TISSUE

TIMER K.S.B
 TOWLINE ~
 80 lb SALZER

	WT. (g)	A (dm ²)
WING	168	28.5
STAB	10	5.13
FUSE.	220	
JOINERS	22	
TOTALS	420	33.63

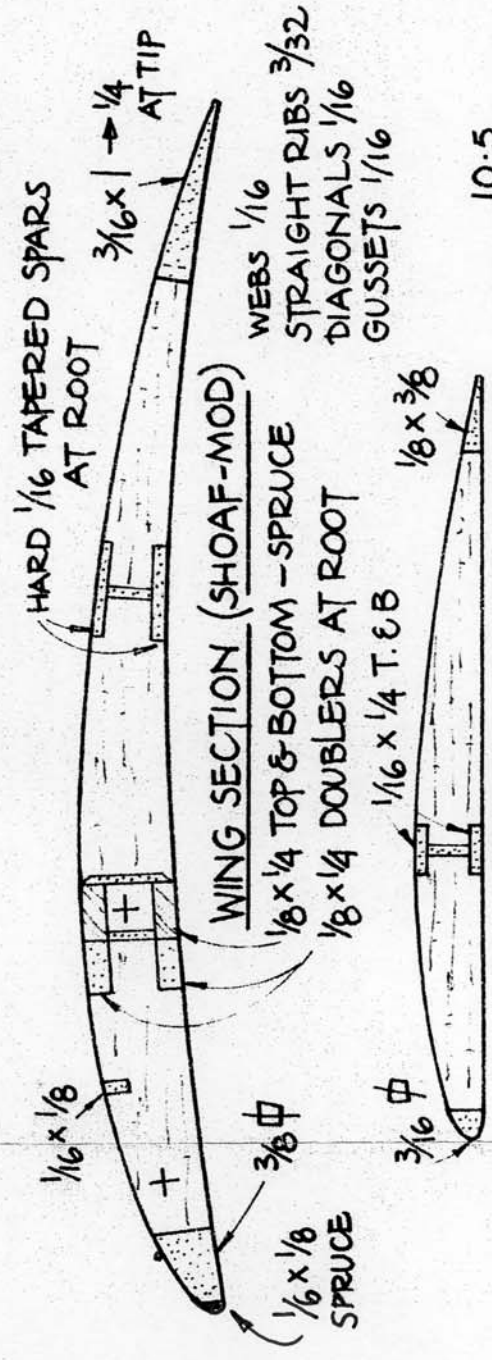
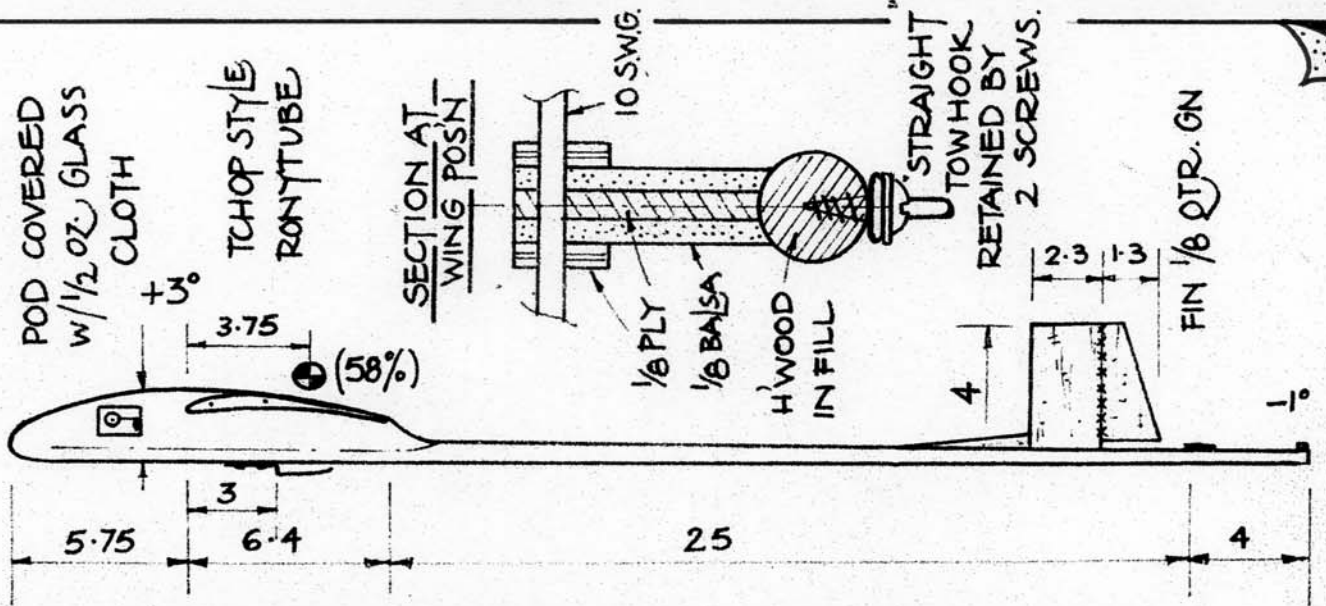
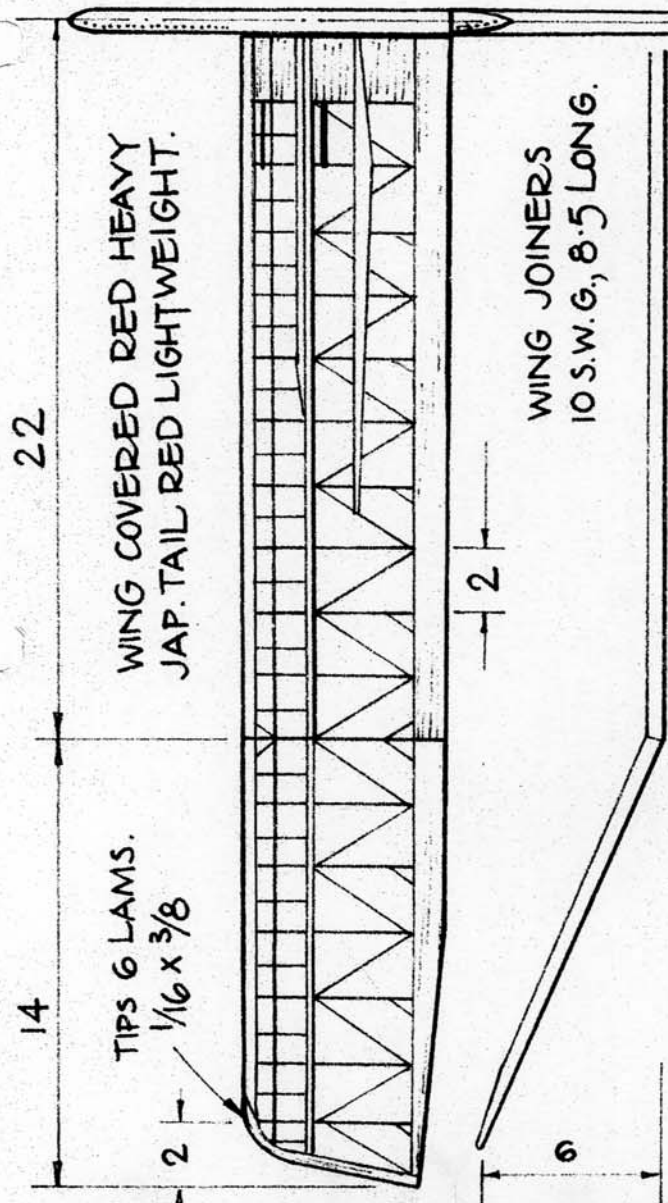
FLASHBACK
 MARK 12
 2004
 BY a.j.crisp

DIMENSIONS IN MM.
SCALE 1:1 & 1:6

RIGHT GLIDE

L. Tip - 3/16
 L. Cen. - FLAT
 R. Cen. - 1/8
 R. Tip - 3/16

WT : 430 gm.



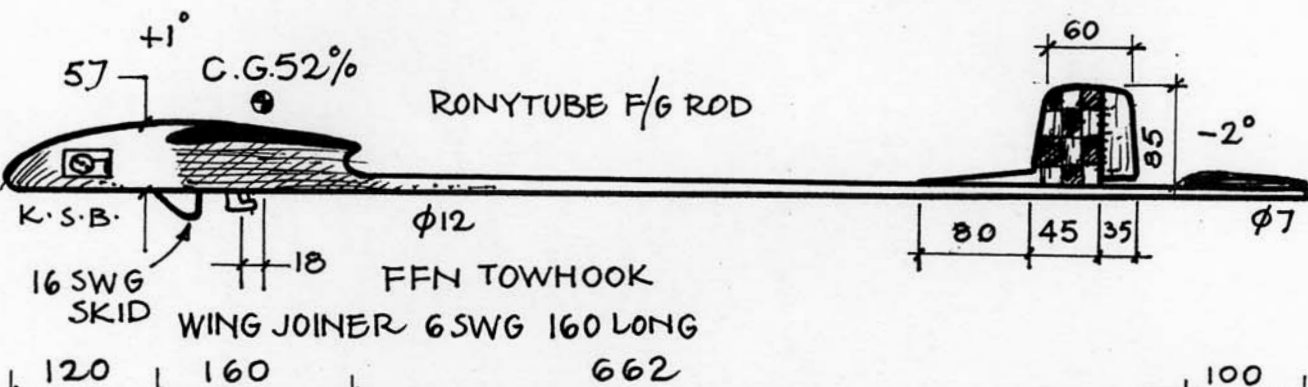
"THE ORIOLE" FIA
 by Andrew J. Crisp

SCALE 1:6
 ALL DIMENSIONS
 IN INCHES.

SCALE 1:6 ALL DIMENSIONS MM

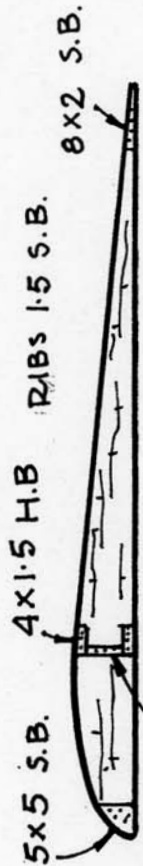
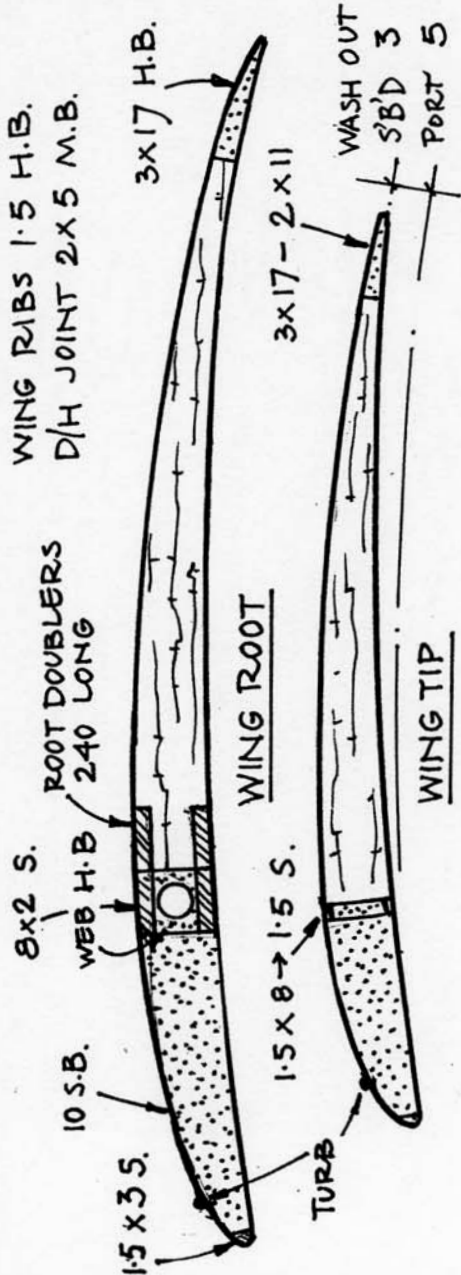
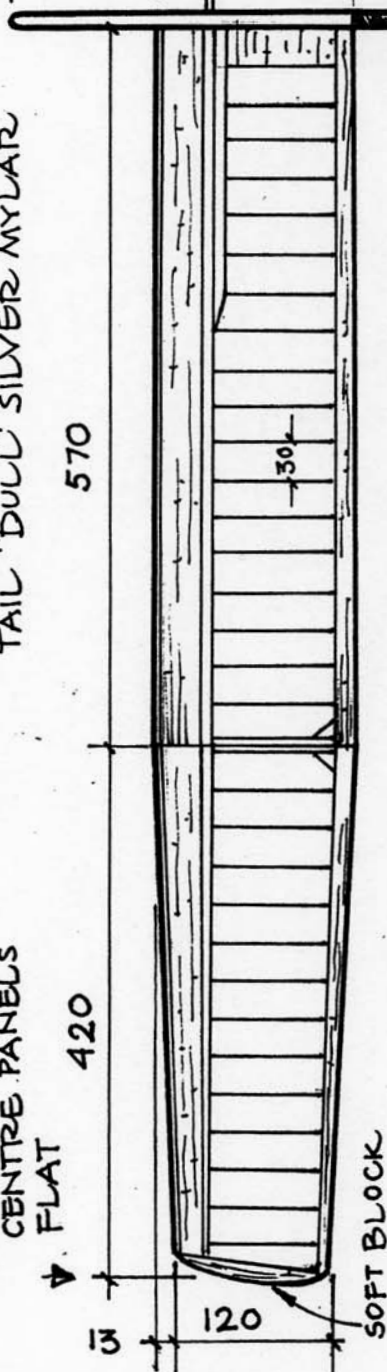
POD 1.5 PLY SIDES 10 Balsa CORE

FUSELAGE POD 20 GRM M² G/CLOTH



COVERING: - WING 2 LAYERS "DILLY JAP",
TAIL "DULL" SILVER MYLAR

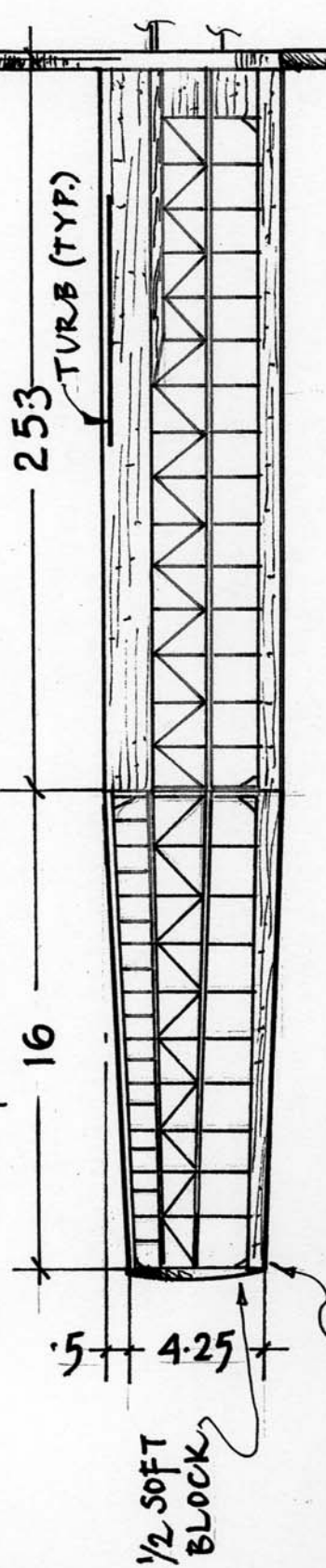
145 DIHED.
CENTRE PANELS
FLAT



	WEIGHT G.	AREA DM. ²
WING	195	29.35
TAIL	8	4.6
FUSE.	222	

FLYRIGHT #2
F I A
by A. J. CRISP

WARPS:- CENTRES-FLAT PORT TIP 3/16 W.O, SBD 3/32 W.O RT-TURN.



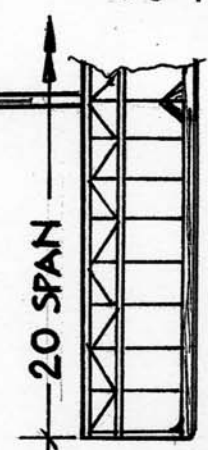
DIHED. 5.5 CENTRES FLAT

SPRUCE I BEAM 1/16 x 1/4 SP. T+B
 6" AT ROOT
 DOUBLERS 10 1/2" AT ROOT

SPAR WEBS 3/32 → 1/32
 RIBS 1/16 O.G.
 5/32 x 3/4 → 1/2
 1/8 x 1/16 SP T+B
 1/16 SHT T+B

CENTRE PANELS ONLY
 WING SECTION

RIBS 1/32 O.G.
 3/16 x 1/16 TAIL
 3/32 x 3/8

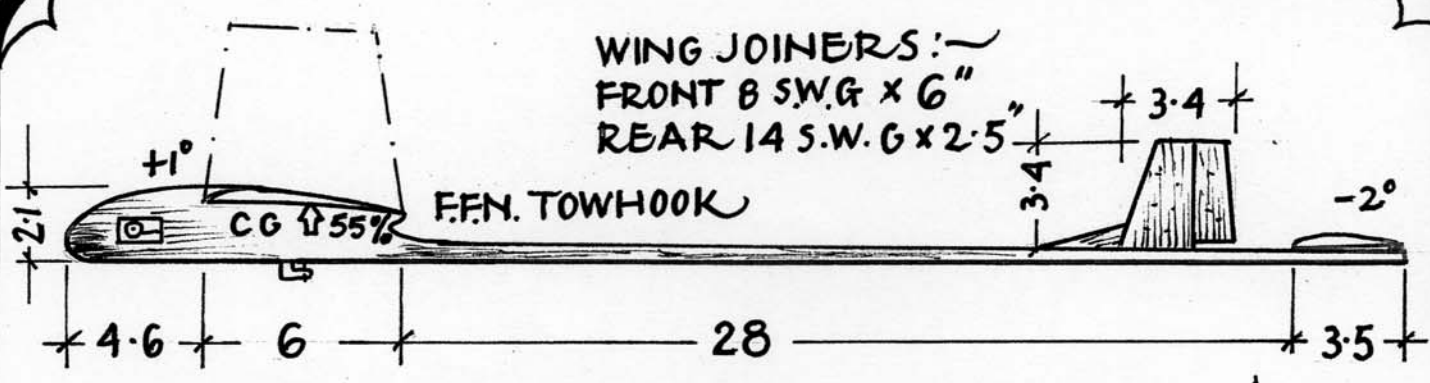


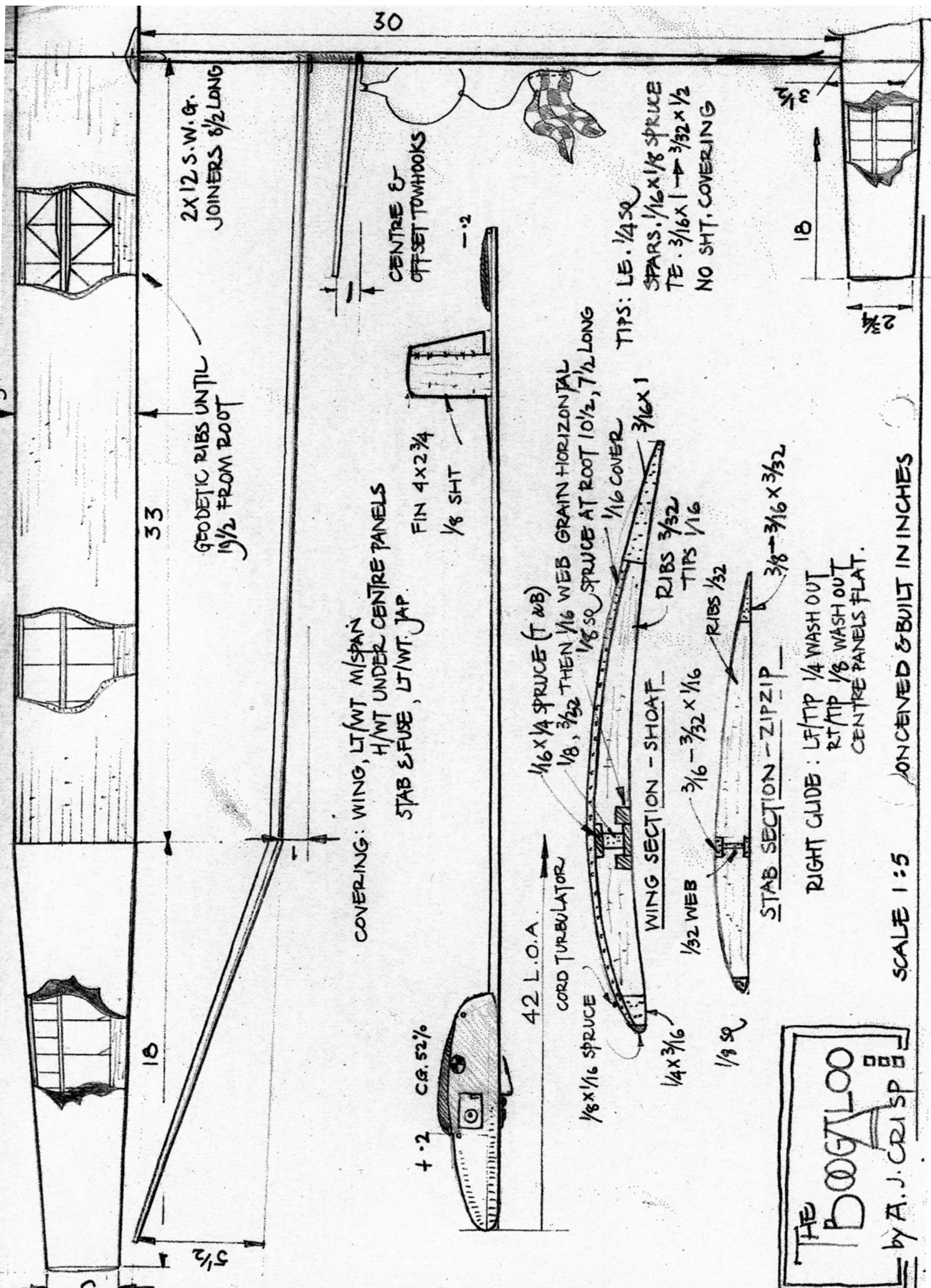
	WEIGHTS	AREAS
WING	160 g.	453 in ²
TAIL	11 g.	70 in ²
FUSE+BAL	245 g.	
TOTAL	416 g.	523 in ²

CHIP TCHOP
 F1A
 by Andrew Crisp
 BUILT 1982

ALL DIMS. INCHES
 SCALE 1:6 & 1:1

WING JOINERS:
 FRONT 8 S.W.G x 6"
 REAR 14 S.W.G x 2.5"





30

2X12 S.W.G.
JOINERS 8 1/2 LONG

33

GEODETIC RIBS UNTIL
1 1/2 FROM ROOT

CENTRE &
OFFSET TOWHOOKS

--2

COVERING: WING, LT/WT M/SPAN
H/WT UNDER CENTRE PANELS
STAB & FUSE, LT/WT JAP.

FIN 4X2 3/4
1/8 SHT

+ 2 GR. 52%

42 L.O.A

CORD TURBULATOR

1/16 X 1/4 SPRUCE (T & B)
1/8, 3/32 THEN 1/16 WEB GRAIN HORIZONTAL
1/8 SQ SPRUCE AT ROOT 10 1/2, 7 1/2 LONG

1/16 COVER
3/16 X 1

TIPS: LE. 1/4 SQ
SPARS. 1/16 X 1/8 SPRUCE
TE. 3/16 X 1 -> 3/32 X 1/2
NO SHT. COVERING

WING SECTION - SHOAF

1/32 WEB

3/16 - 3/32 X 1/16

RIBS 3/32

TIPS 1/16

RIBS 1/32

STAB SECTION - ZIP ZIP

3/8 - 3/16 X 3/32

RIGHT GUIDE: LF/TIP 1/4 WASH OUT
RT/TIP 1/8 WASH OUT
CENTRE PANELS FLAT.

THE BOOGLOO
by A. J. CRISP

SCALE 1:5

CONCEIVED & BUILT IN INCHES

3 1/2

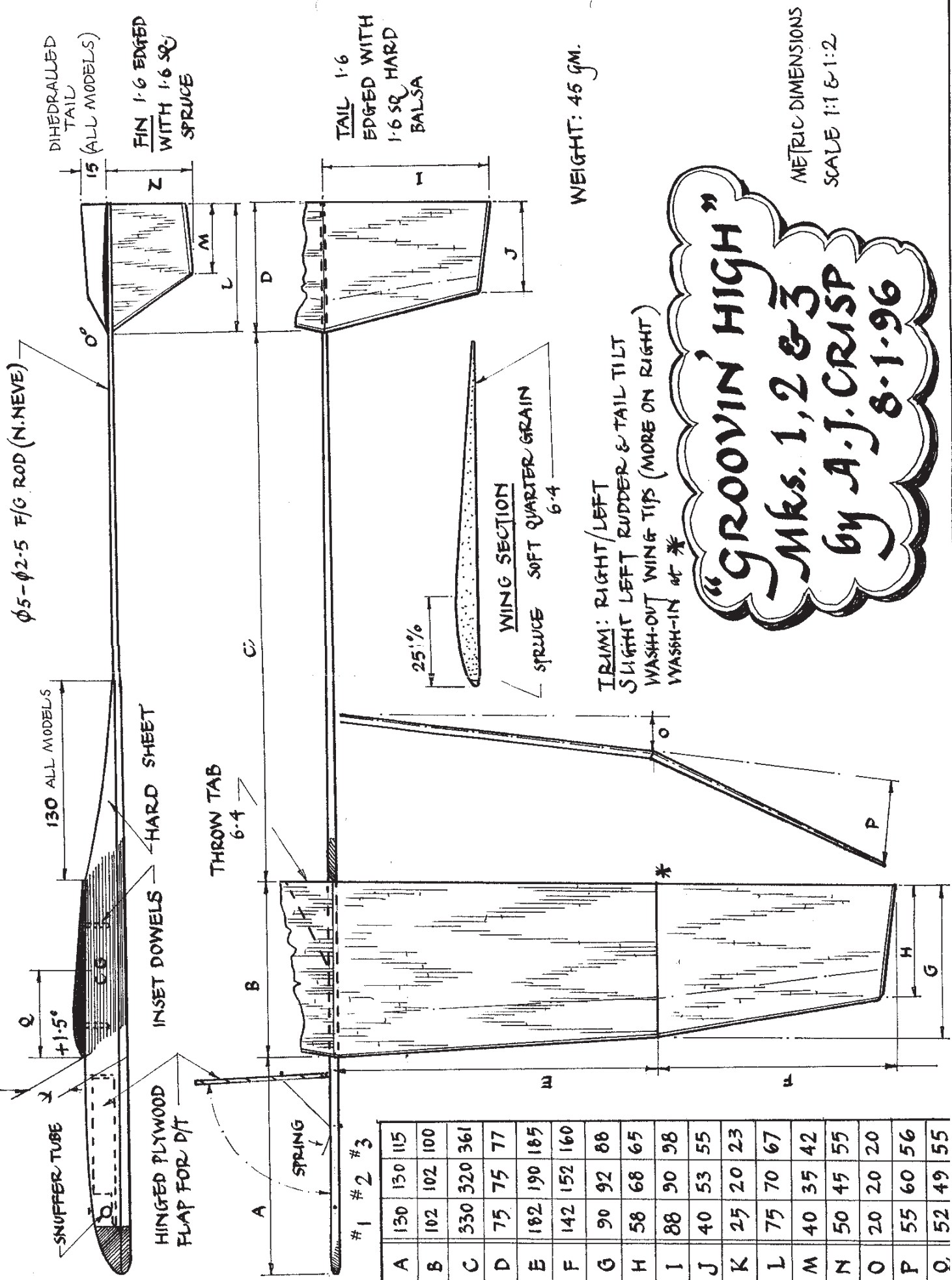
18

2 3/4

5

18

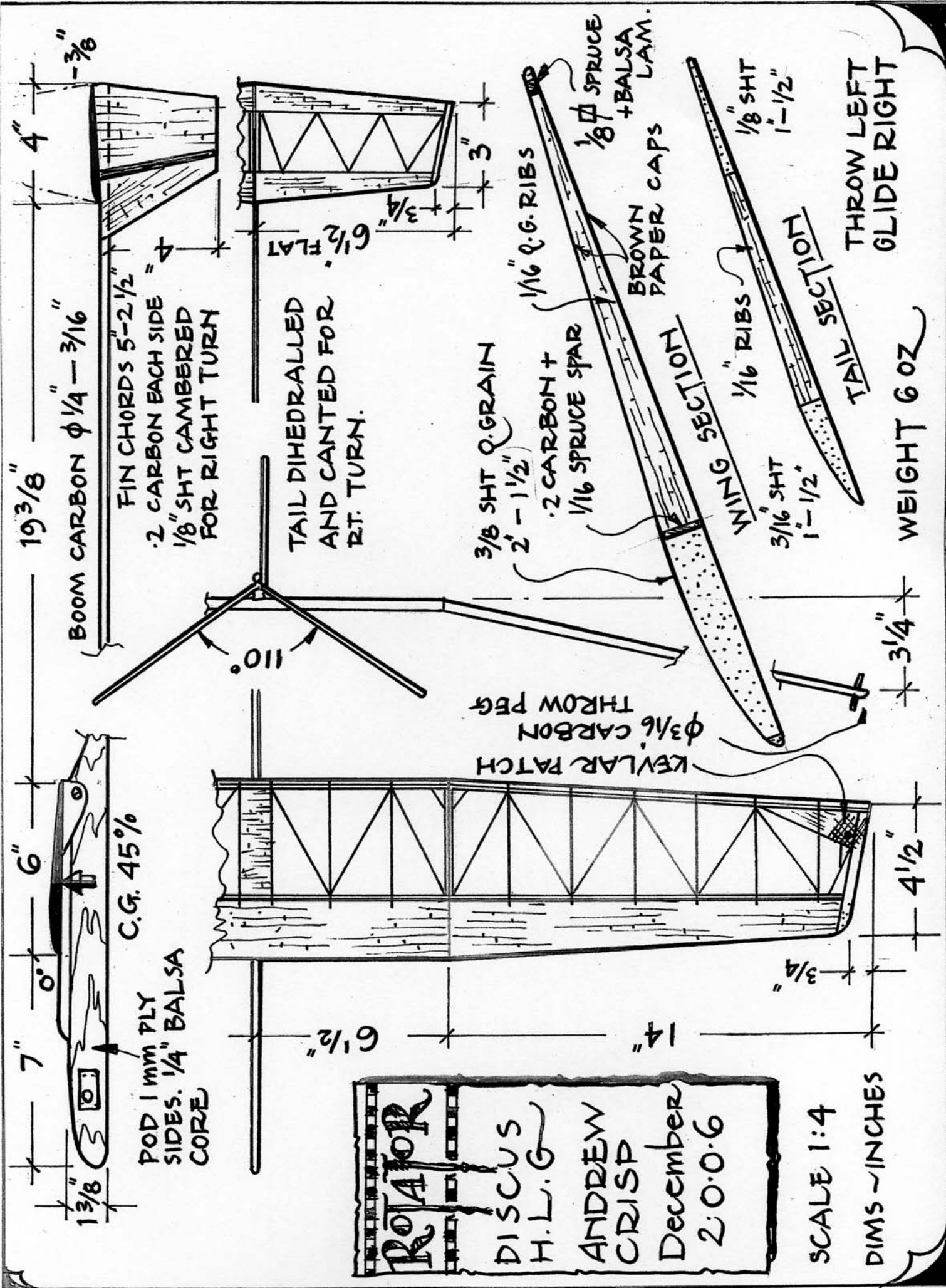
5 1/2



"GROOVIN' HIGH"
 Mks. 1, 2 & 3
 by A.J. CRISP
 8-1-96

DIMENSIONS OF ALL THREE VERSIONS

	#1	#2	#3
A	130	130	115
B	102	102	100
C	330	320	361
D	75	75	77
E	182	190	165
F	142	152	160
G	90	92	88
H	58	68	65
I	88	90	98
J	40	53	55
K	25	20	23
L	75	70	67
M	40	35	42
N	50	45	55
O	20	20	20
P	55	60	56
Q	52	49	55



MEADOW MITTE

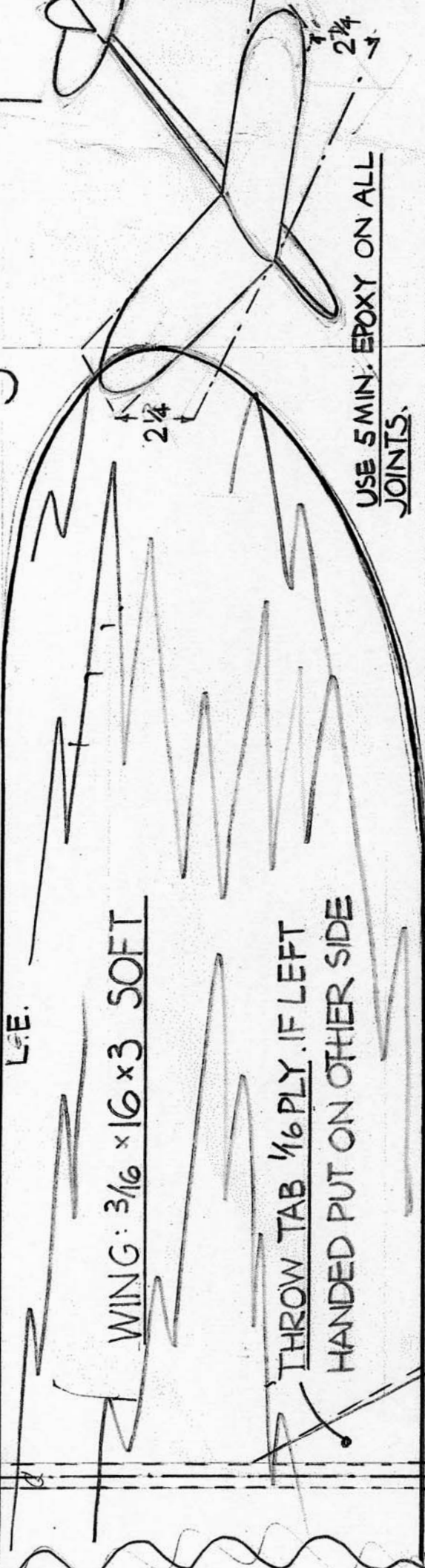
by A. J. CRISP.

TRIM: (RIGHT HANDED): BEND SLIGHT LEFT RUDDER
TEST GLIDE, ADJUSTING BY BENDING T.E. OF TAIL UP OR DOWN
DO NOT ALTER BALANCE. THROW HARD TO RIGHT. GLIDE LEFT.

L.F.E.

WING: $\frac{3}{16} \times 16 \times 3$ SOFT

THROW TAB $\frac{1}{16}$ PLY. IF LEFT
HANDED PUT ON OTHER SIDE



USE 5 MIN. EPOXY ON ALL JOINTS.

CARVE & SAND WING TO SECTION BEFORE CUTTING DIHEDRAL

FUSELAGE $\frac{3}{4} \times \frac{3}{16}$ VERY HARD BALS

OR $\frac{1}{2} \times \frac{3}{16}$ SPRUCE

BALANCE HERE

INSET LEAD OR
ADD PLASTACINE

TAIL: $\frac{1}{16} \times 6\frac{1}{4} \times 2\frac{1}{2}$

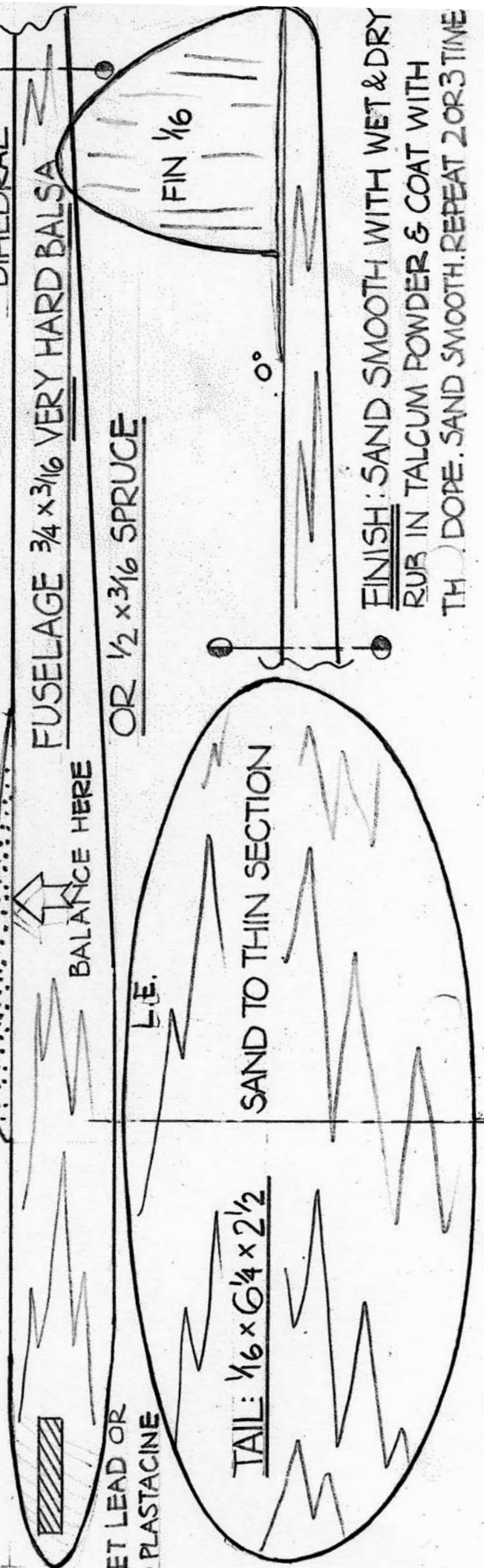
SAND TO THIN SECTION

L.F.E.

FIN $\frac{1}{16}$

0°

FINISH: SAND SMOOTH WITH WET & DRY
RUB IN TALCUM POWDER & COAT WITH
THIN DOPE. SAND SMOOTH. REPEAT 2 OR 3 TIME



FULL SIZE

"DEPRON-DO-DAH"
INDOOR H.L.G.
1" CRISP
ANDREW

BALSA L.E. PIECE

'DEPRON' FOAM

BRACE

BALSA T.E. PIECE

8" BETWEEN WING T.E. & STAB L.E

CARBON ROD $\phi 1/8"$ $\rightarrow \phi 1/16"$

STAB $3/8"$ DIHEDRAL

FIN & STAB
 $1/32"$ Q' GRAIN

BALSA/CARBON/BALSA
LAMINATE

CG \square 55%

POD BALSA/CARBON/BALSA LAMINATE

$13/4"$ DIHEDRAL

0°

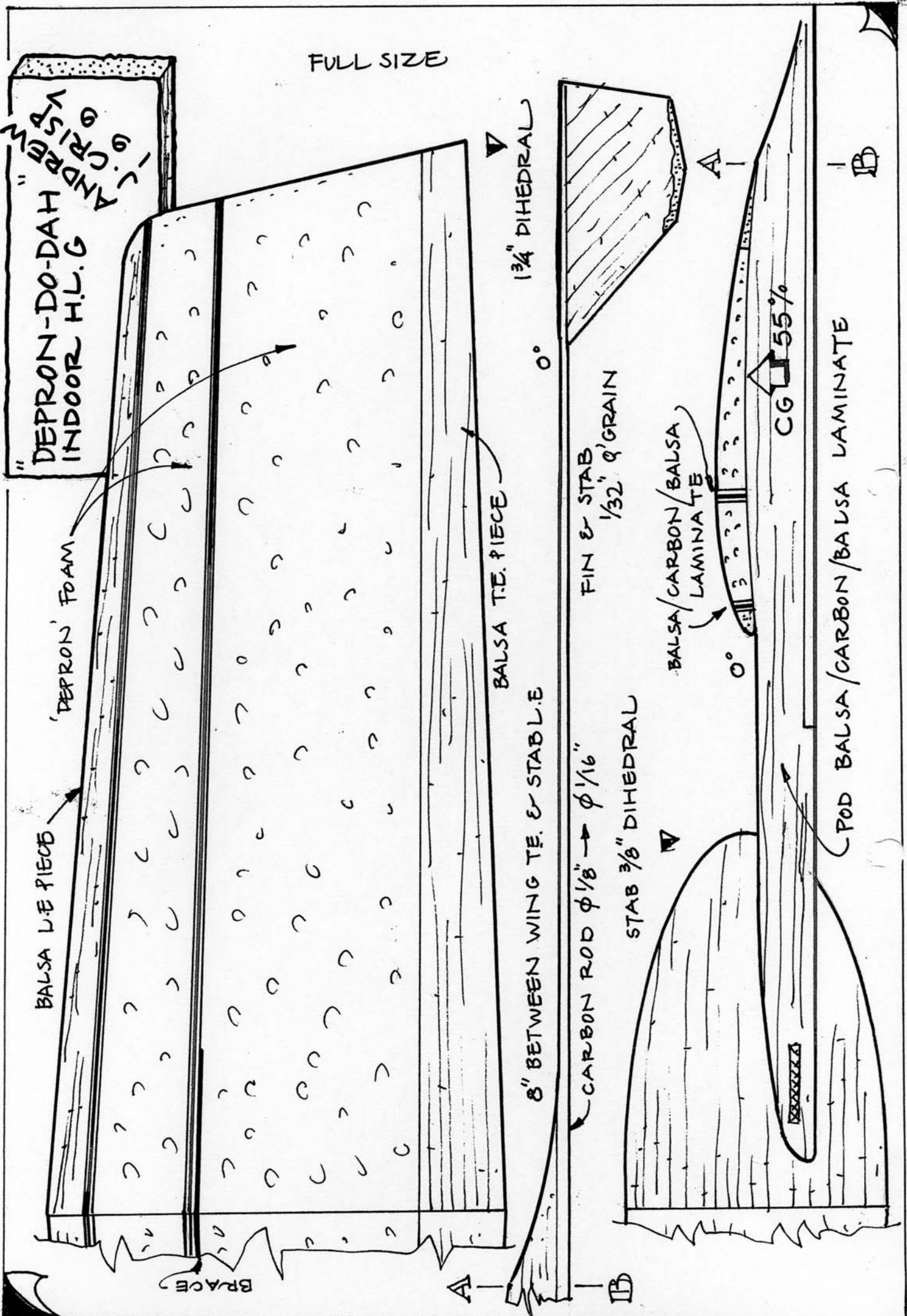
0°

A

B

A

B



1/4" SOFT BALSA

DEPRON WING INDOOR H.L.G.
ANDREW CRISP 1997

FULL SIZE

1 3/4" DIHEDRAL



"DEPRON" FOAM

8" BETWEEN WING T.E. & STAB L.E.

1/4" ANHEDRAL

FIN & STAB 1/32 Q' GRAIN

±0°



0°

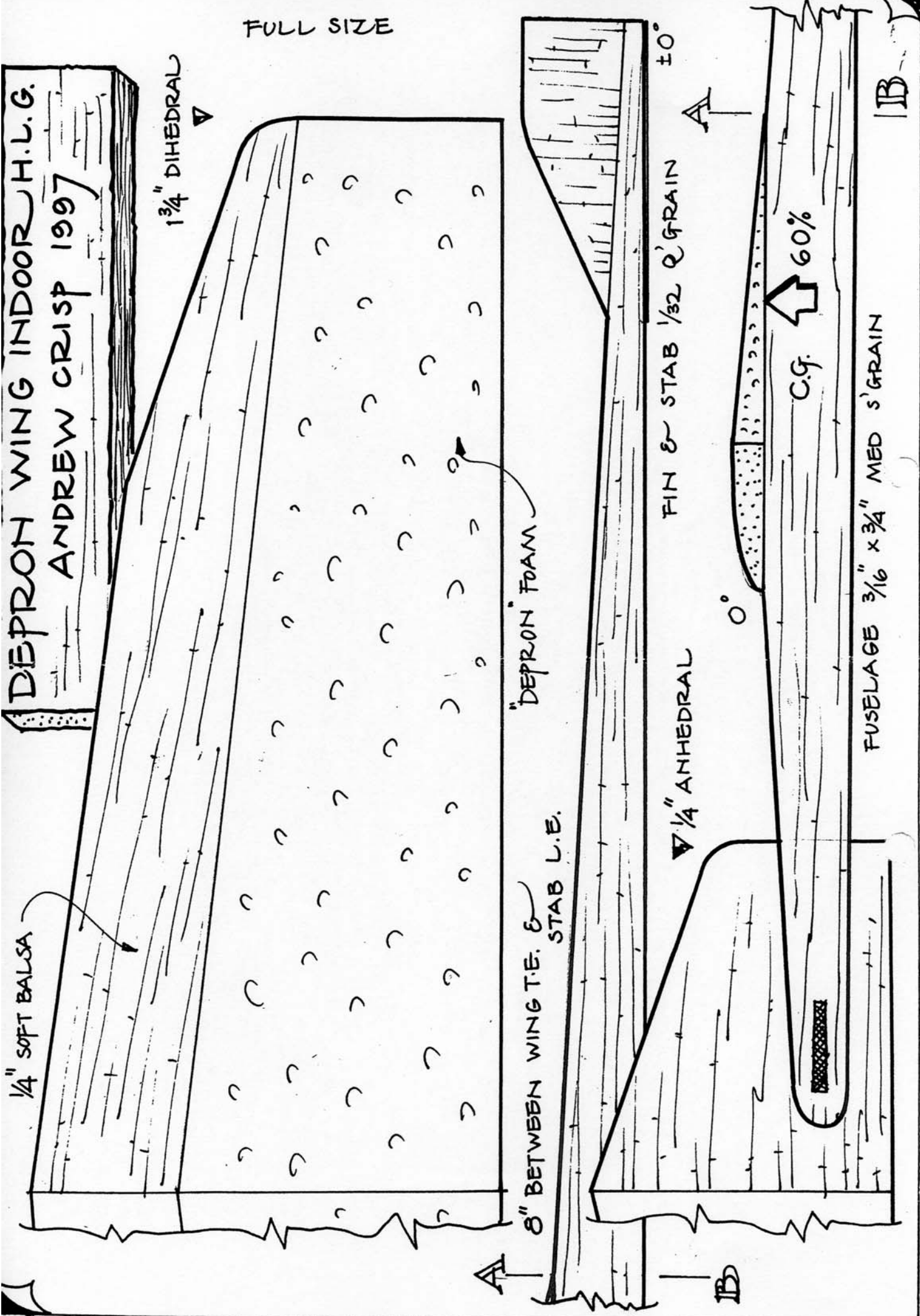
C.G. 60%

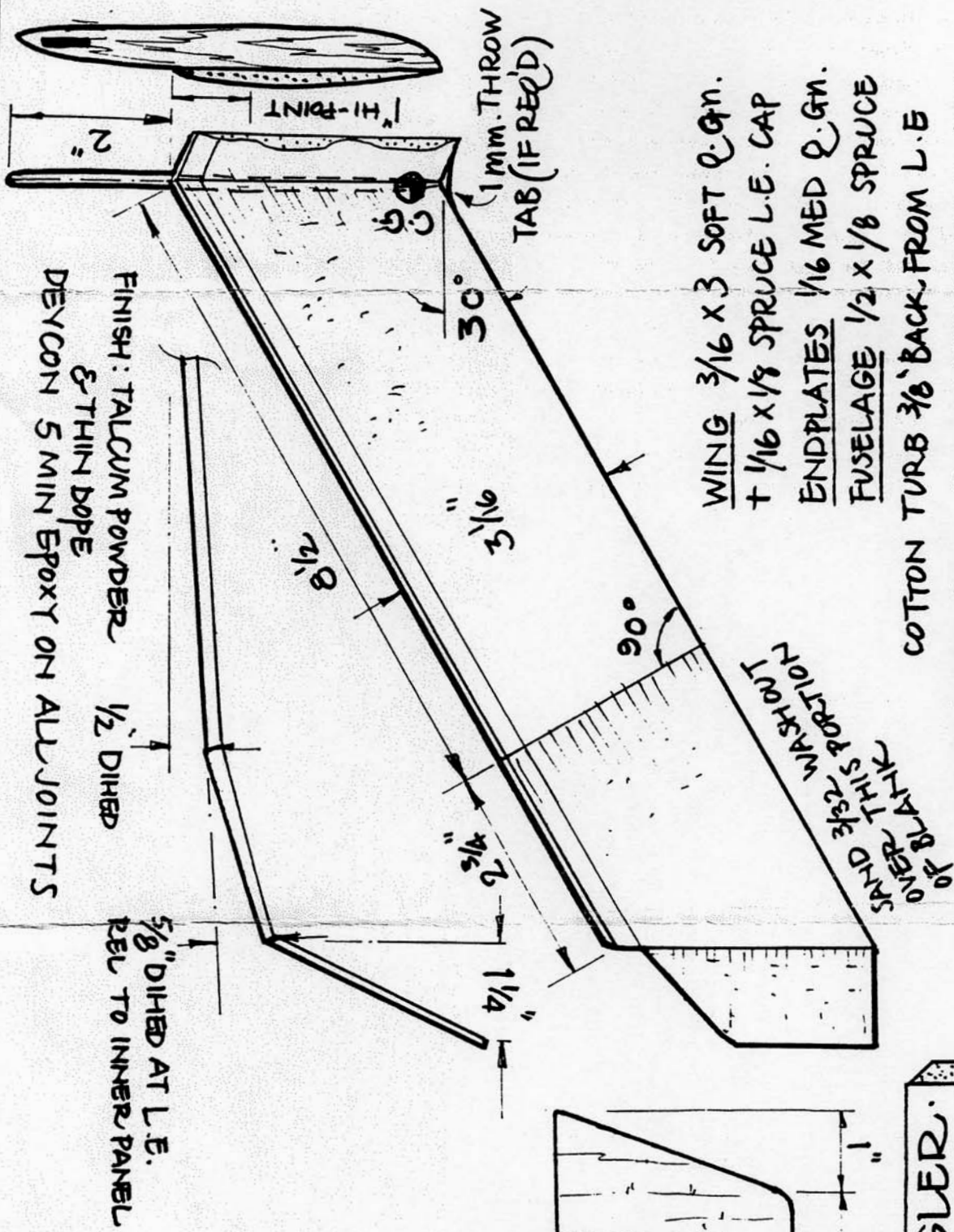
FUSELAGE 3/16" x 3/4" MED S' GRAIN

IB

A

B





FINISH: TALCUM POWDER & THIN DOPE
 DEVCON 5 MIN EPOXY ON ALL JOINTS

1/2" DIHED
 5/8" DIHED AT L.E.
 REL TO INNER PANEL

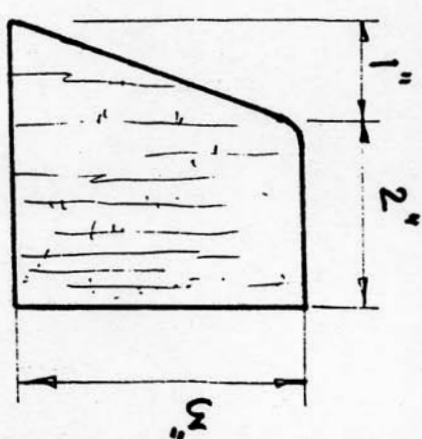
SCALE 1:2

WING 3/16 X 3 SOFT Q.GN.
 + 1/16 X 1/8 SPRUCE L.E. CAP
 ENDPLATES 1/16 MED Q.GN.
 FUSELAGE 1/2 X 1/8 SPRUCE

COTTON TURB 3/8" BACK FROM L.E

GLIDE LEFT - FROM SLIGHT DIFFERENTIAL W.O.
 THROW RIGHT TO AVOID LOOPING

SAND THE WASHOUT
 OF BLANK
 OVER THIS PORTION



THE ANGLER.
 T.L. H.L.G.
 by a. j. crisp

1/4 MM. PLY AT BASE
OF FIN FOR FINGER
GRIP

1/8" HD. Balsa WITH
1MM. PLY EACH SIDE.

CARBON
ROD

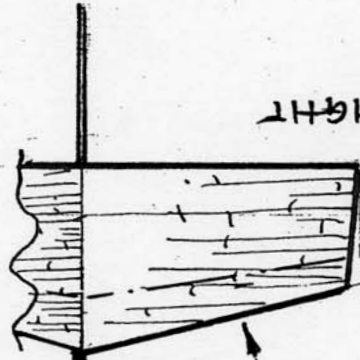
1MM. PLY PLATES
PINNED

40° + D/T
ANGLE

D/T

RUBBER HOOK

-1/2"



TAIL + FIN
1/16" Q. GRAIN

TARGET WEIGHT
25 gm.

33% Hi-Point

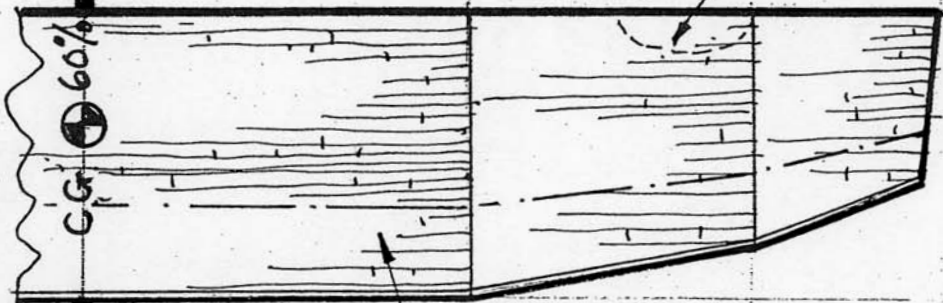
1/32" UPSWEEP

WING SECTION - FULL SIZE



1/2" TAIL DIHED.

SLIGHT WASH-IN
LEFT WING



CG 60%

LEAD BALLAST

1/16 x 1/8"
SPRUCE

WING
3/16" Q. GRAIN

POWER: -
6" LOOP 1/4" FLAT
GREY F.A.I.
RUBBER

SCALE: 1:2
E 1:1

TRIM: SLIGHT RIGHT CLIMB
LEFT GLIDE

BOOGIE WOOGIE
catapult glider.....
ANDREW CRISP DEC 2001

V-HARD Balsa LE STRIP

WING 3/16", TAIL & FIN 1/16". ALL SOFT QUARTER GRAIN

HI-POINT

HINGE LINE

HINGE - 1/2" STRIP of SALZERTISSUE TOP ONLY

SLIGHT WASHIN LEFT WING ONLY

SCALE 1:1

CATAPULT GLIDER #5 by A.J. CRISP DEC 2004

2 1/4" TOTAL DIHEDRAL 3/8" INNER PANELS

TRIM: - SLIGHT RT. CLIMB LEFT GLIDE LEFT RUDDER LEFT TAIL TILT

DIT TIP UP ANGLE

A-B = 9" BIND w/ COTTON FOR GRIP

A

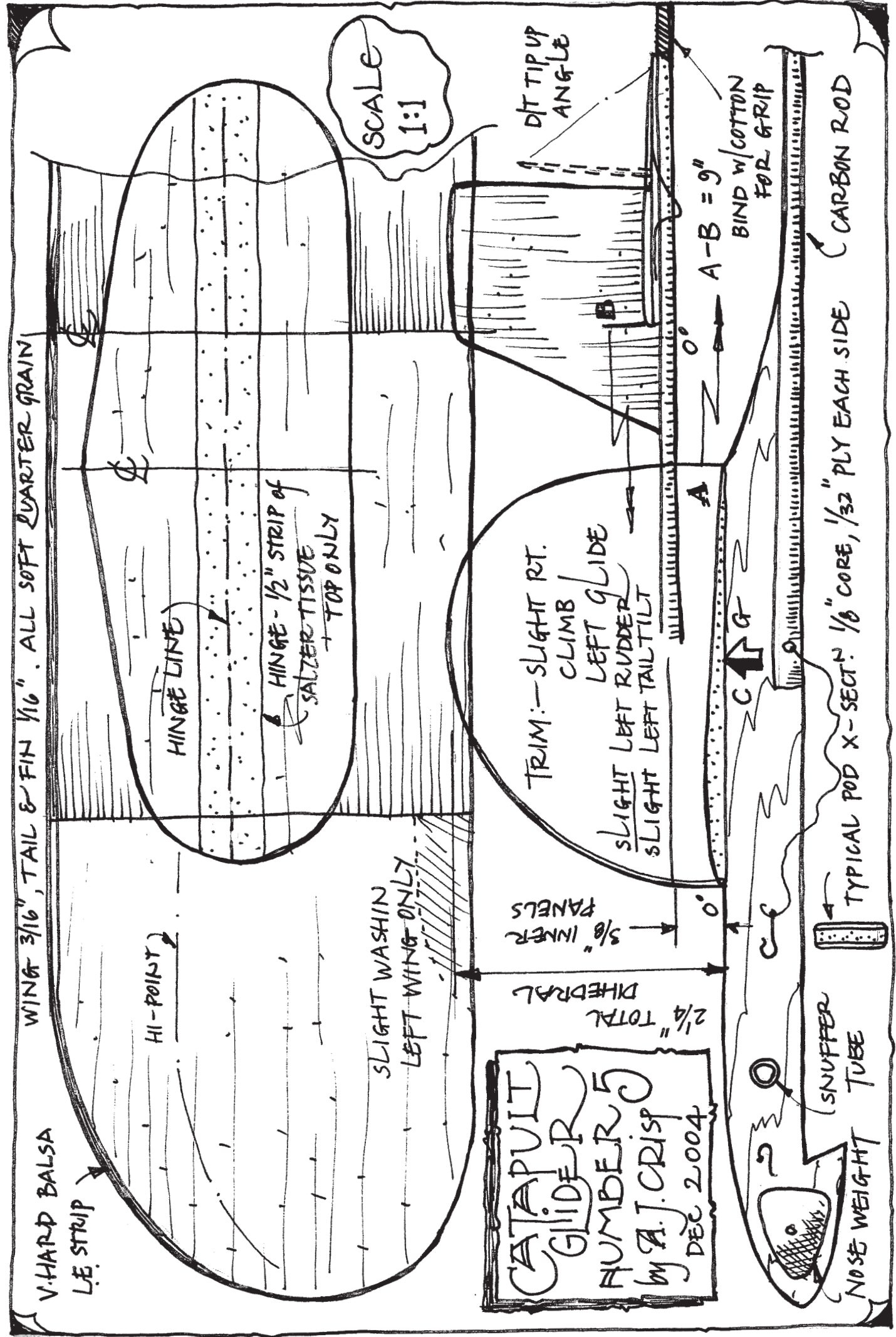
C ↑

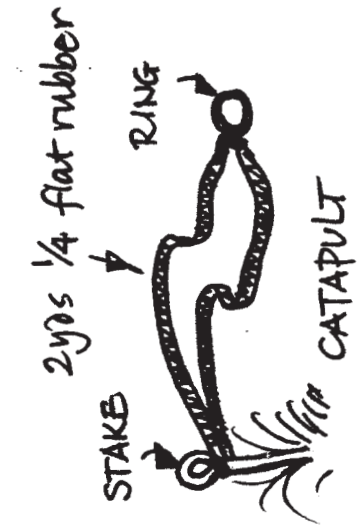
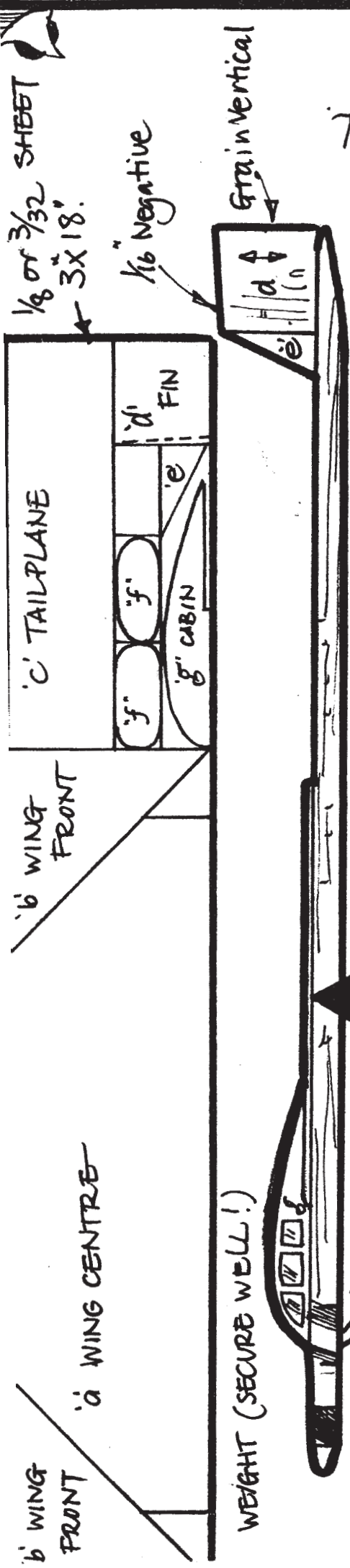
CARBON ROD

TYPICAL POD X-SECT: 1/8" CORE, 1/32" PLY EACH SIDE

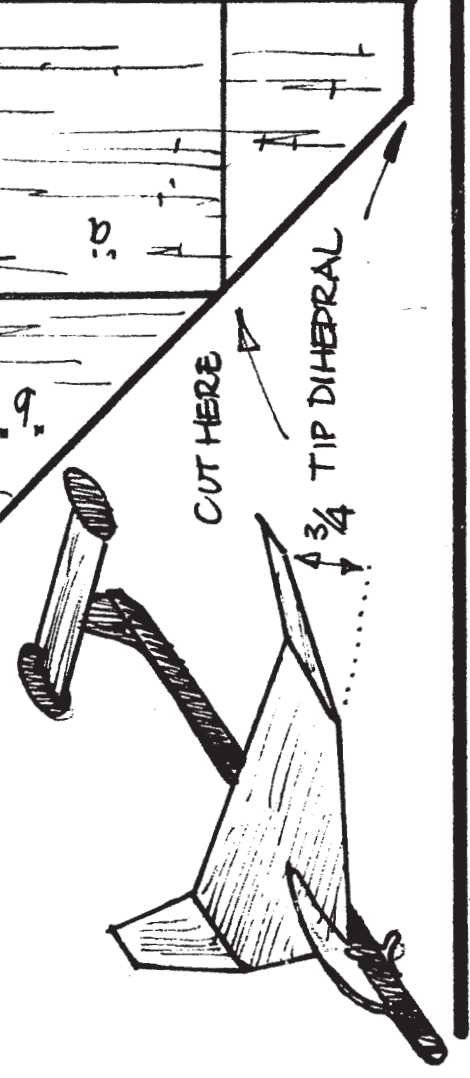
SNUFFER TUBE

NOSE WEIGHT





NOTES:
 CUT THE SHEET AS SHOWN
 AND YOU CAN MAKE 2 MODELS
 FROM ONE SHEET OF 3X36
 BALSA & ONE LENGTH 36" SPRUCE.
 GLUE ALL JOINTS SECURELY



N.B. SAND WING TO SLIGHT
 AIRFOIL. SAND TAIL SYMMETRICAL
 WITH NEGATIVE ON TAIL AS SHOWN
 TRIM BY VARYING NOSE WEIGHT.

"AVOCET"

a catapult glider
 by a. j. drisp.

SCALE 1:4

8"

13 1/2"

13 1/2"

8"



3/16" W.O.

4 7/8" +- 1" typ.

1" x 1" 2.1 x 1.5" cabin!

WING: Jap
 FUSE: M/SPAN.
 1/8" x 1/8" Runners
 STAB: MYLAR
 LONGEVUS 3/32" x 3/32"

1/8" W.O. 3 1/2"

Rel. to inner

Fin 1/16" sht.



3 5/8"

-3°

spacers 3/32" x 1/16" 36"

3/32" x 3/32"

36"

Ribs: 1/32" sht. open breaks 1/16"

3/16" x 3/16"

3/32" x 1/4"

1/8" x 3/32"

3/32" x 3/32"

1/16" x 1/8"

1/8" x 1/8"



1 1/2"

15"

PROP: 17x24"

POWER 6 strands 6x1mm

WOODSCREW STOP.

PROP BLADES from 3/8" sht.

PATTERN R/R RUDDER+TILT

#2

BY ANDREW CRISP
DEC 1.9.9.9

340

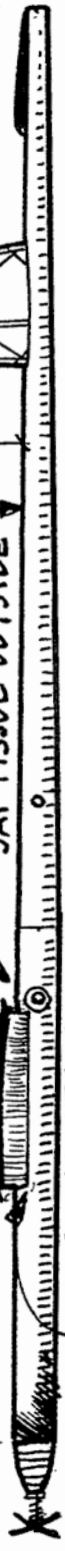
615

292

0°

65%

MOTOR TUBE 1.5 SOFT
TISSUE INSIDE & OUT
BOOM 1.5 → .8
JAP TISSUE OUTSIDE



WING MOUNTS 3 Q.G. SOFT



L phi 25

PROP. 500 X 600

3 LAMS .8 SHT

SPRING & WOODSCREW
STOP.

MOTOR: 6 STRANDS

1/4" OR 8 STRANDS

3/16" TAN II.

400 TURNS.

WARPS:-

BOTH TIPS 1.5 W.O.

RIGHT INNER

1.5 W.I.

TRIM RT/RT.

SLIGHT RT STAB TILT

425

85

FUSE D/T

RIBS .8 Q.G.

3X3 (1 + 1X.1 CARBON 1.5X6

16 SWG JOINER

RIBS 1.5 Q.G. SOFT .8X2

2 LAMS. 2 + 2X.2 CARBON 2X5

COVERING: PROP. BLACK MOD. SPAN.

FUSE. BLACK & WHITE JAP.

WINGS, TAIL, FIN JOD MYLAR

AIRFRAME WEIGHT ~ 72 gms.

FIVE O'CLOCK SHADOW
FIH by Andrew Crisp
I c 2003

110 DIHED.
q/s FLAT

335

127

SCALE 1:5

NO DOWNTHRUST -
GENEROUS RIGHT
THRUST.

0°

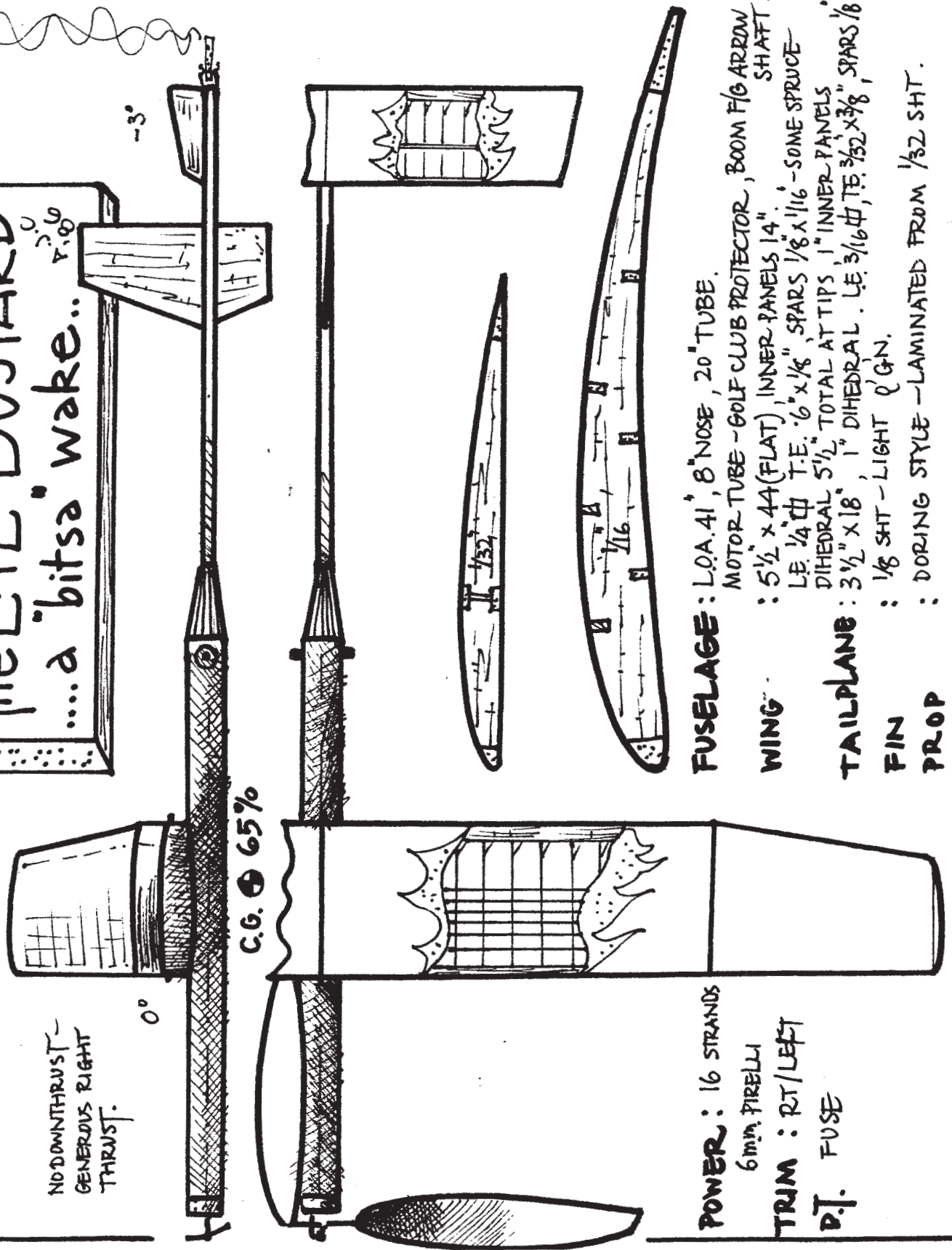
C.G. @ 65%

"The LITTLE DUSTARD"
...a "bit'sa" wake..

2.00

1.00

-3°



POWER : 16 STRANDS
6mm FIRELLI

TRIM : RT/LEFT

P.T. FUSE

FUSELAGE : L.O.A. 41", 8" NOSE, 20" TUBE.

MOTOR TUBE - GOLF CLUB PROTECTOR, BOOM F/G ARROW
SHAFT.

WING :

5 1/2" x 44 (FLAT), INNER PANELS 14"

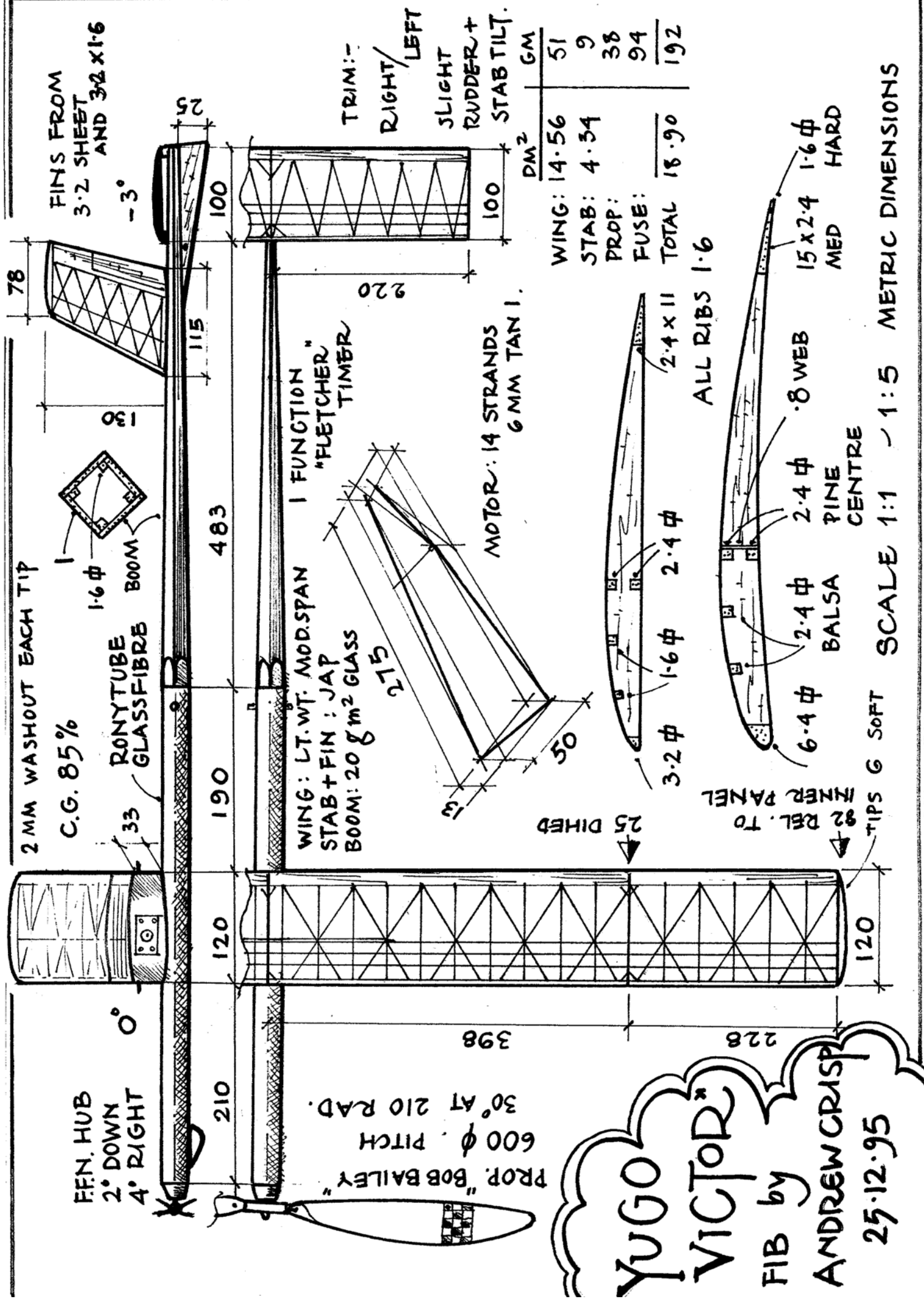
L.E. 1/4" CH T.E. 6" x 1/8", SPARS 1/8" x 1/16" - SOME SPRUCE

DIHEDRAL 5 1/2" TOTAL AT TIPS, 1" INNER PANELS

TAILPLANE : 3 1/2" x 18", 1" DIHEDRAL. L.E. 3/16" CH, T.E. 3/32" x 3/8", SPARS 1/8" x 1/16"

FIN : 1/8" SHIT - LIGHT Q'GN.

PROP : DORING STYLE - LAMINATED FROM 1/32" SHIT.



2 MM WASHOUT EACH TIP

C.G. 85%

RONYTUBE
GLASS FIBRE

1-6 φ

BOOM

1-6 φ

FINS FROM
3-2 SHEET
AND 3-2 X 1-6

-3°

FFN. HUB
2° DOWN
4° RIGHT

0°

210

120

190

483

115

100

25

WING: LT. WT. MOD. SPAN
STAB + FIN: JAP
BOOM: 20 gm² GLASS

1 FUNCTION
"FLETCHER"
TIMBER

PROP. "BOB BAILEY"
600 φ . PITCH
30° AT 210 RAD.

398

228

220

MOTOR: 14 STRANDS
6 MM TAN I.

TRIM:-
RIGHT / LEFT
SLIGHT
RUDDER +
STABILIT.

	DM²	GM
WING:	14.56	51
STAB:	4.34	9
PROP:		38
FUSE:		94
TOTAL	18.90	192

25 DIHED

82 REL. TO
INNER PANEL

3-2 φ 1-6 φ 2-4 φ 2-4 φ 2-4 x 11

ALL RIBS 1-6

6-4 φ 2-4 φ 2-4 φ 15 x 2.4 1-6 φ
BALSA PINE CENTRE MED HARD

TIPS 6 SOFT

SCALE 1:1 - 1:5 METRIC DIMENSIONS

YUGO

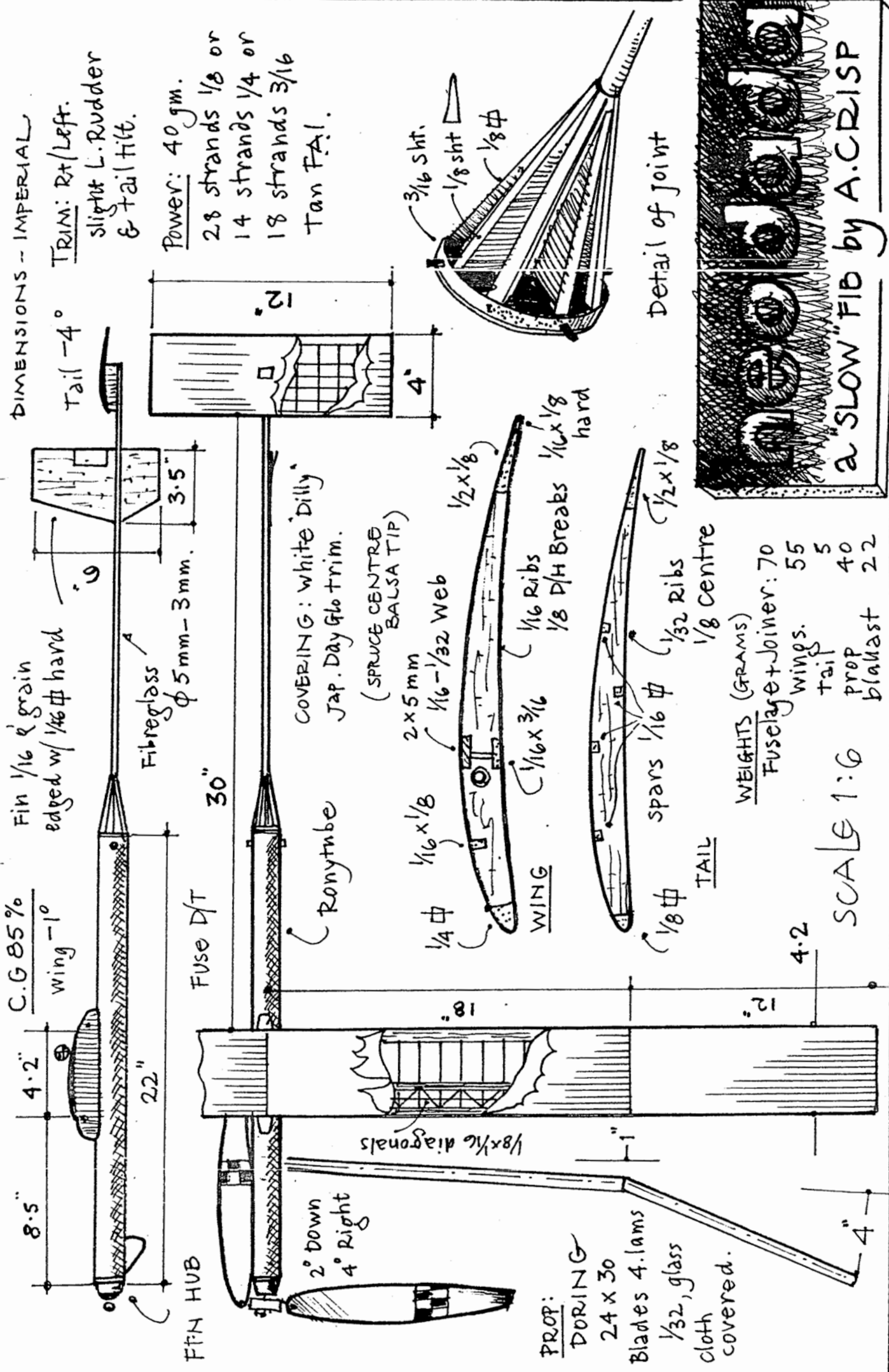
VICTOR

FIB by

ANDREW CRISP

25.12.95

DIMENSIONS - IMPERIAL



Fin 1/16 & grain
edged w/ 1/16 # hard

C.G. 85%
wing -1°

Tail -4°
TRIM: Rt/Left.
slight L. Rudder
& tail tilt.

Power: 40 gm.
28 strands 1/8 or
14 strands 1/4 or
18 strands 3/16
Tan FAI.

COVERING: white 'dilly'
Jap. Day Glo trim.

(SPRUCE CENTRE
BALSA TIP)

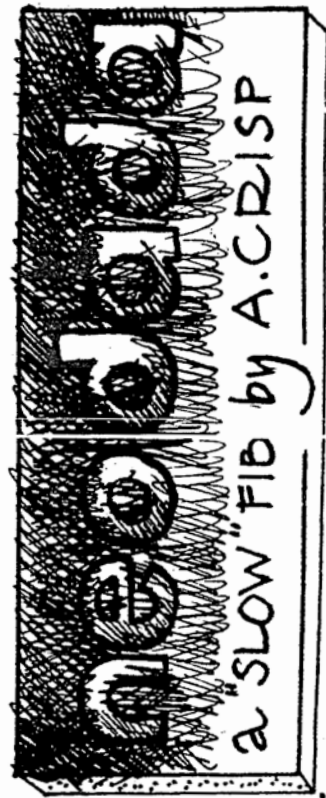
PROP:
DORING
24 x 30
Blades 4. lams
1/32, glass
cloth
covered.

WEIGHTS (GRAMS)

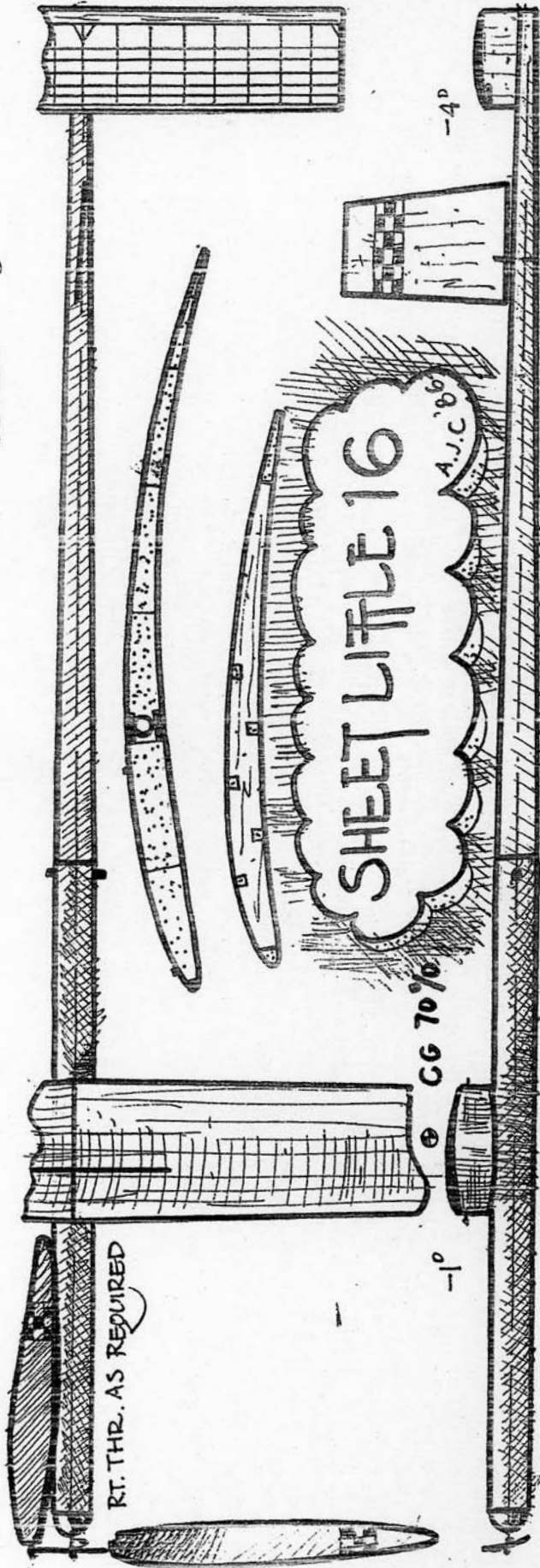
Fuselage+Joiner:	70
wings:	55
tail	5
prop	40
ballast	22

SCALE 1:6

Detail of Joint



SCALE 1:5



FUSELAGE: 46 LOA. NOSE LENGTH 9". MOTOR TUBE 20"

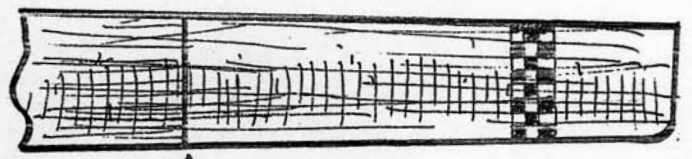
TUBE - RONYTUBE, BOOM 1/16 Balsa - TISSUE IN & OUT
 PYLON 1/16" BUILT UP. 1/8" SUBFIN STAB SUPPORT
FIN : 5" HIGH X 4"-3" 1/8" LIGHT QTR G'N.
 PIVOTS FOR TURN ADJUSTMENT.

WING : 66" SPAN (FLAT) INNER PANELS 20" CHORDS 4 1/2"-3".
 CARVED FROM 1/4" & 3/16" LIGHT SHT. QTR G'N.
 HARD 1/16" Balsa EDGES. ONE 12 SWG. JOINER.

TAILPLANE: SECTION AS ABOVE. 16" X 3 3/8". L.E. 1/8" ϕ , T.E. 3/32" X 1/16"
 SPARS 1/16" ϕ HARD. RIBS 1/32", CENTRES, TIPS 1/8"
PROP : 2.2 X 2.8 HELICAL. MOULDED FROM 4 LAMS 1/32"
 14 SWG SHAFT, "WOODSCREW" STOP.

POWER : 14 STRANDS 6MM. PIRELLI OR 16 STRANDS 3/16 FAL.

TRIM : P.G.I. STYLE. RIGHT POWER, LEFT GUIDE
 NO GADGETS



D.T: K.S.B, SNOOPY
 OR FUSE-A.S
 WEIGHT ALLOWS!

6 TOTAL

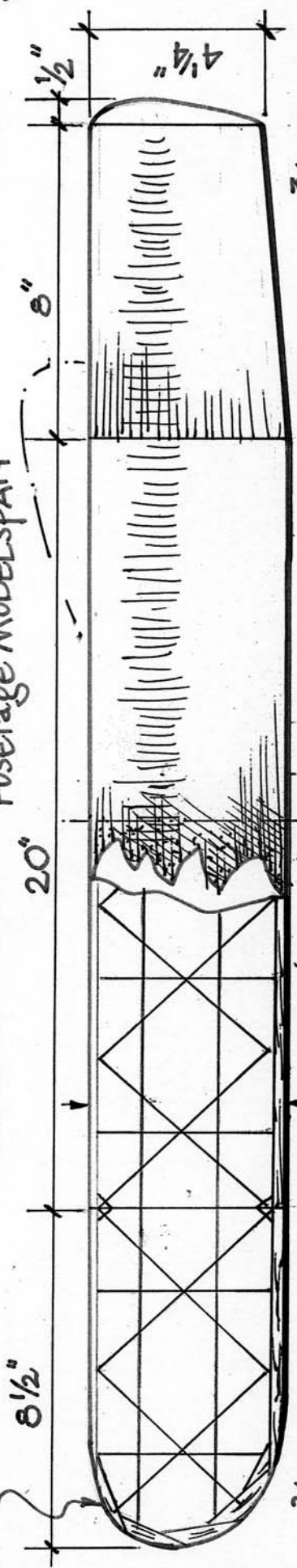
Andrew J. Crisp '86

Tip from 1/16 sht

centre sect. flat

wing, stab, fin. JAP
Fuselage MODELSPAN

3 1/2" Tip Dihed. ▽



3/32 W.O.

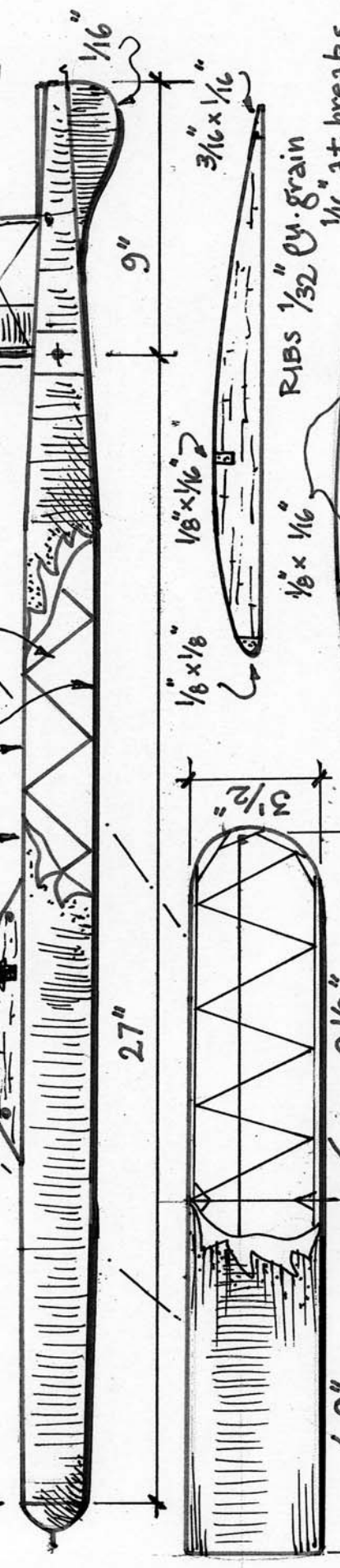
3/32 W.O.

TRIM: Rt / Left
0° 1/16 SHT.

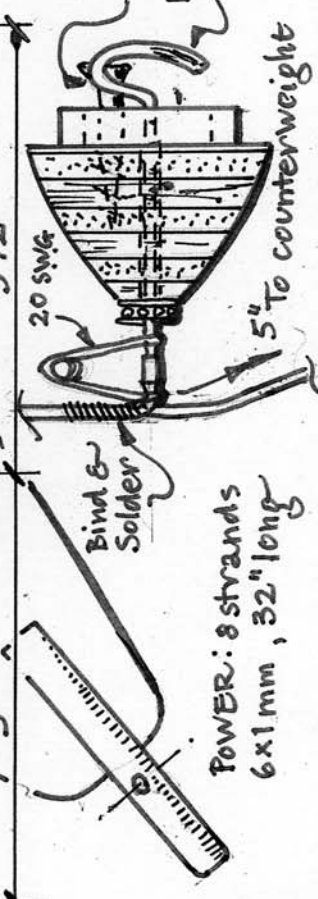
Longerons 3/32 sht
spacers 3/32 x 1/16
1 5/8 x 1 5/8 1 1/4 x 1 1/4

0° Down.
3° Rt.

Lam. 3/32 x 1/32
-2 1/2°



RIBS 1/32 Ply. grain
1/16" at breaks



Bind & Solder

3/16 x 3/16
Woodscrew stop
16 S.W.G.

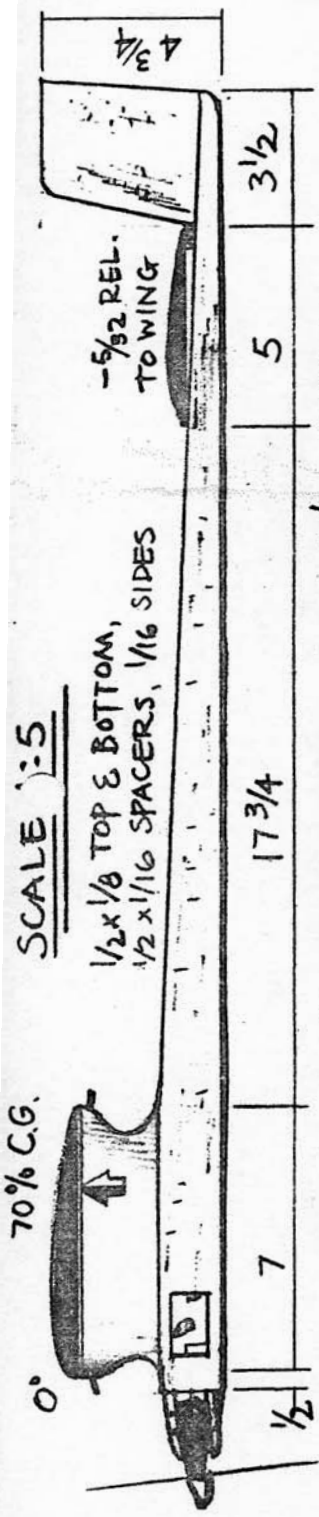
POWER: 8 strands
6x1mm, 32" long

HOOPER RUBBER by
A.J. CRISP

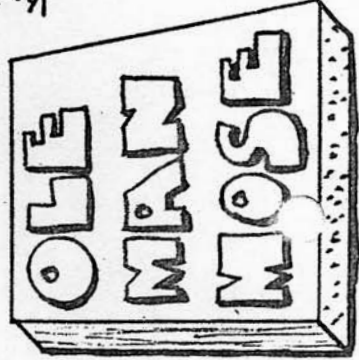
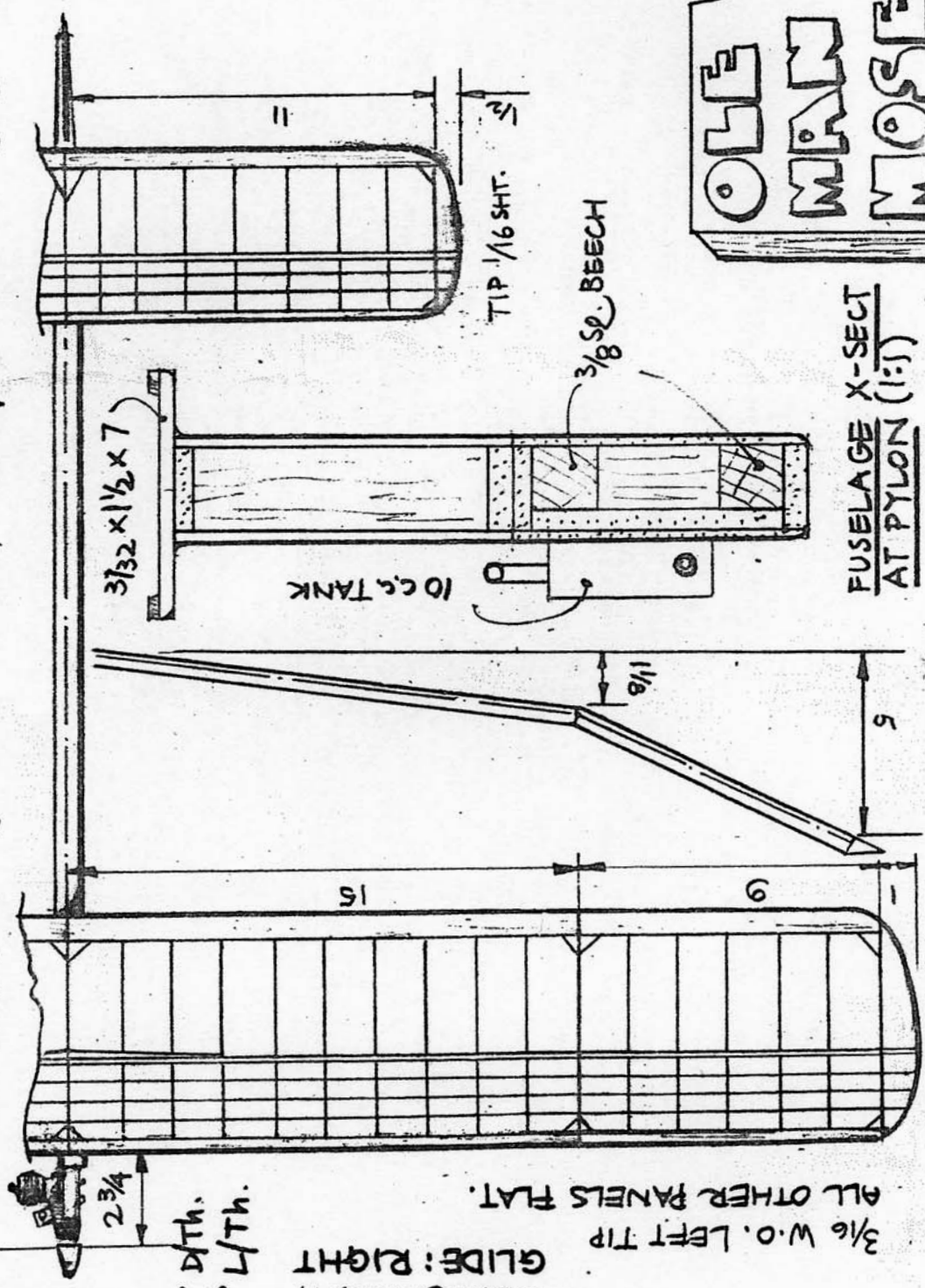
1-12-39

DIMENSIONS IN INCHES.

by A. J. CRISP

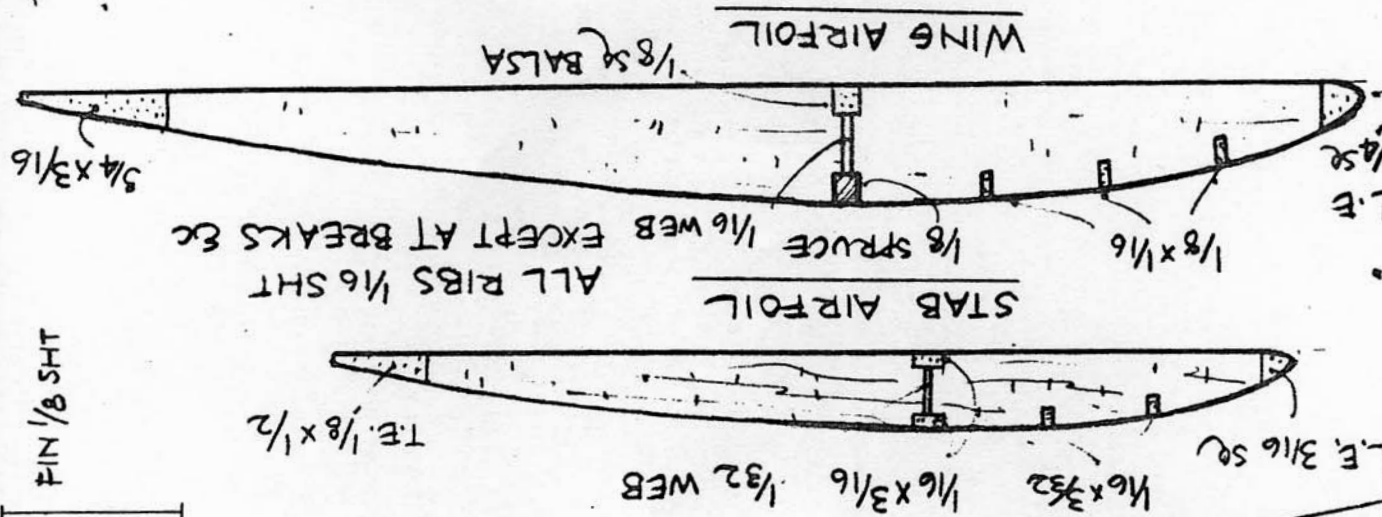


7x3 PROP. COX .09, K.S.B. TIMER, FUSE D/T. WEIGHT: 90Z



FUSELAGE X-SECT AT PYLON (1:1)

A "SLOW OPEN POWER MODEL"



PAW 1.5cc 7x3 prop $\frac{3}{16}$ Washin

+2°

CG 75%

4 10 8

5 1/2

1 1/2

stab tilt

TRIM: R/R

WEIGHT
10 OZ

21

Longerons $\frac{1}{2} \times \frac{1}{8}$
spacers $\frac{1}{2} \times \frac{1}{16}$
SIDES $\frac{1}{16}$ SHT

FINS $\frac{3}{32}$

0°

9

$\frac{1}{8}$ sq (spruce top
centre sect.)

$\frac{3}{4} \times \frac{3}{16}$

$\frac{1}{16}$ SHT.

$\frac{5}{32} \times \frac{5}{8}$

7" CHORD

4 1/4" CHORD

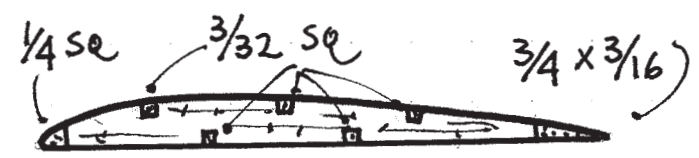
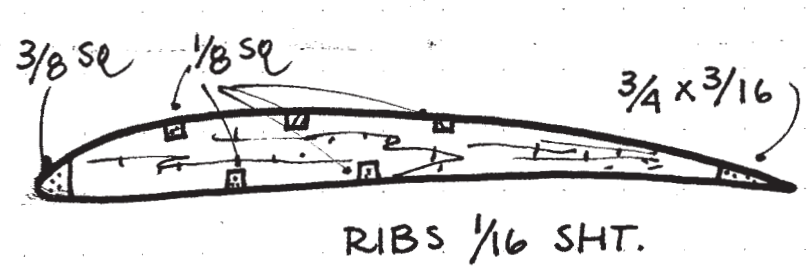
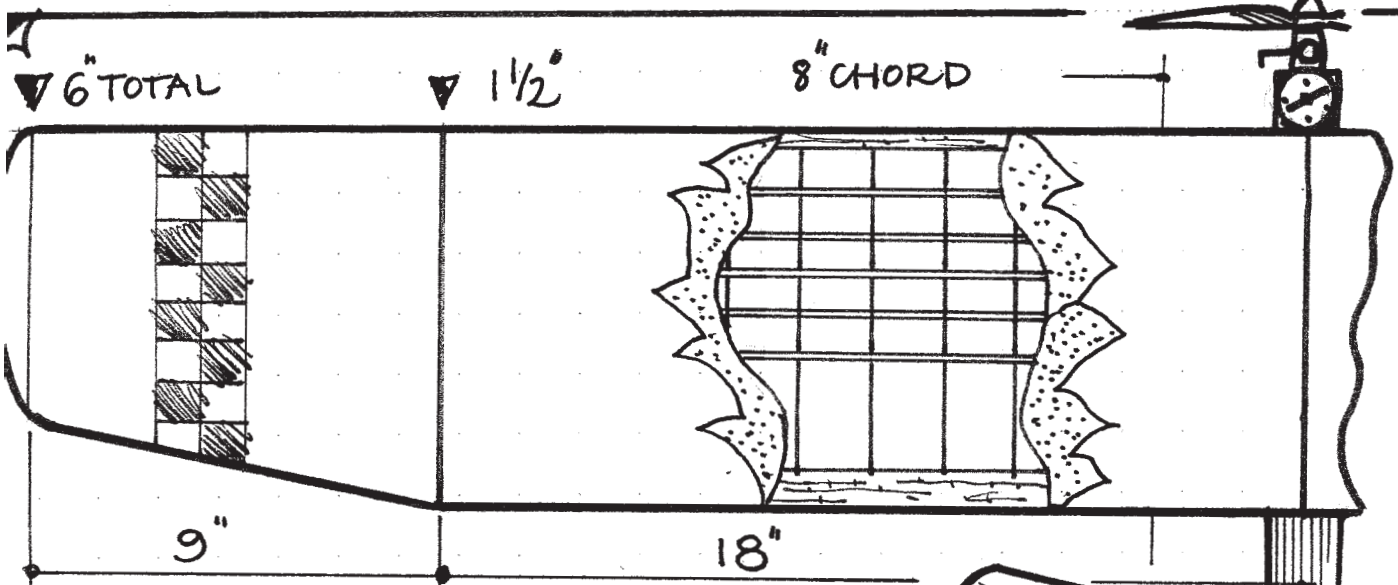
$\frac{3}{32}$ sq
 $\frac{1}{4}$ sq

$\frac{3}{32}$ sq
web centre

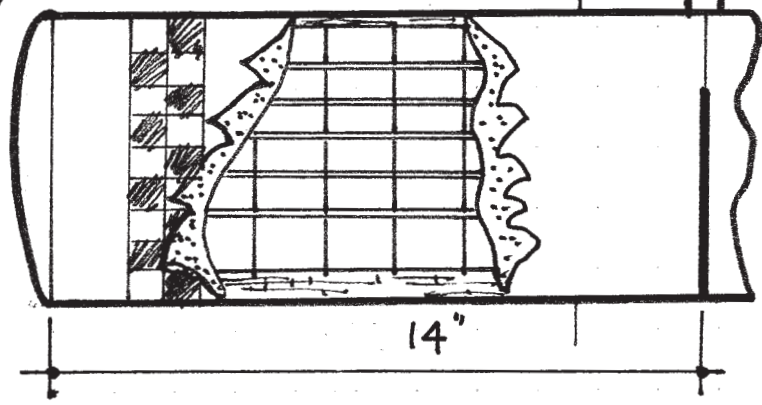
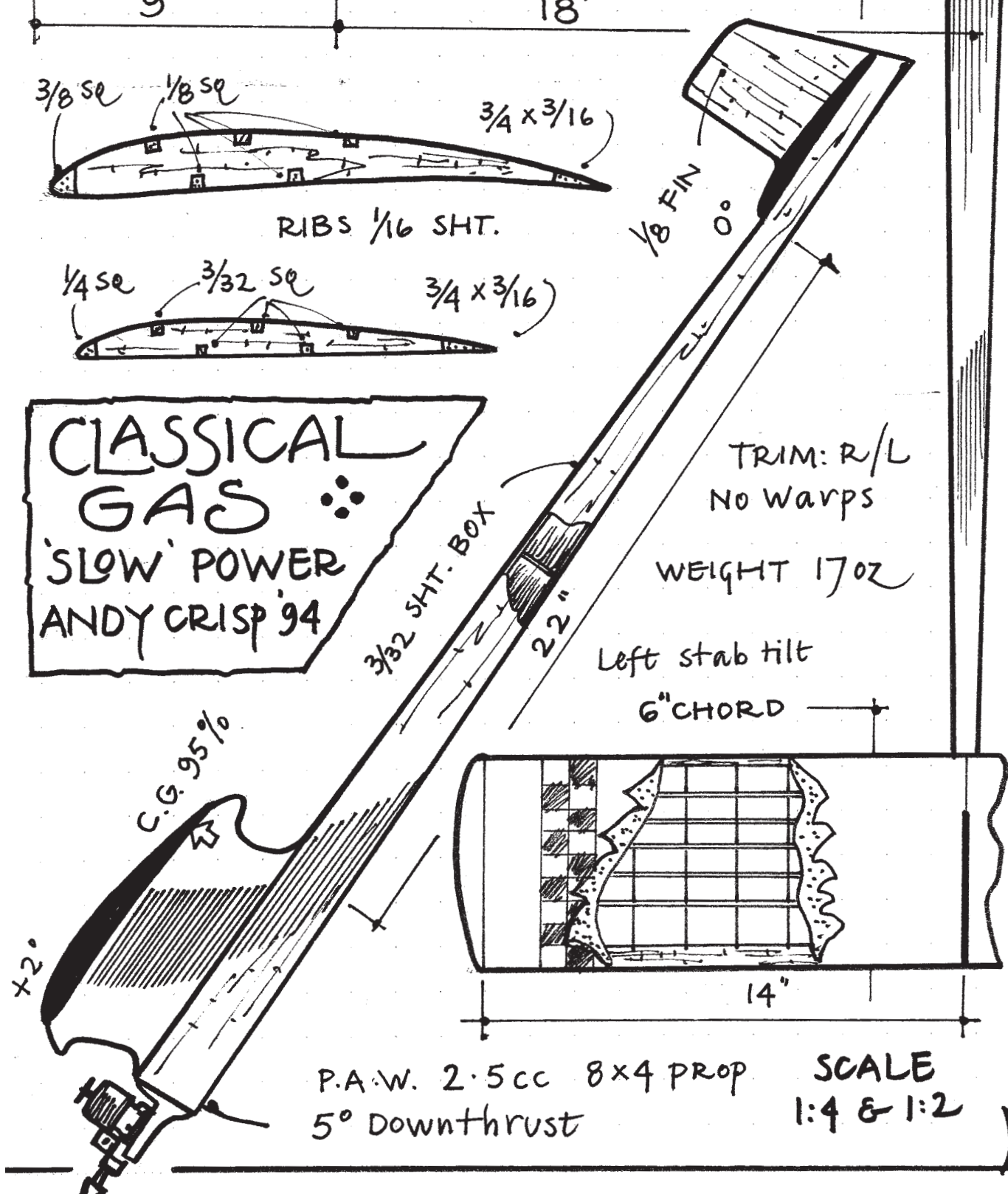
$\frac{3}{16}$ sq

SCALE
1:4

LINDY HOP
SLOW POWER
ANDY CRISP '94



CLASSICAL
GAS
'SLOW' POWER
ANDY CRISP '94



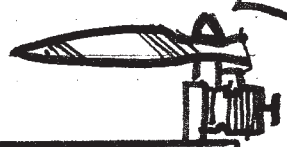
SCALE
1:4 & 1:2

6" TOTAL

1/8 washin

1 1/2"

8" CHORD



10 1/2"

16 1/2"

1/16 cross grained end plate

FIN 1/8

Weight: 17oz

"ODE TO C.J.R."
SLOW POWER
ANDY CRISP '94

TRIM L/L. Left stab tilt

SCALE 1:4 & 1:2

3/8 se
1/4 se

3/8 x 1/16 → 3/16 x 1/16
webs 1/16
Longerons & spacers 1/8 x 1/2
Sides 1/8 SHT. E.G.

3/4 x 3/16
Ribs 1/16 SHT. E.G.

21"

C.G. 85%

4 1/2"

8"

13 1/2"

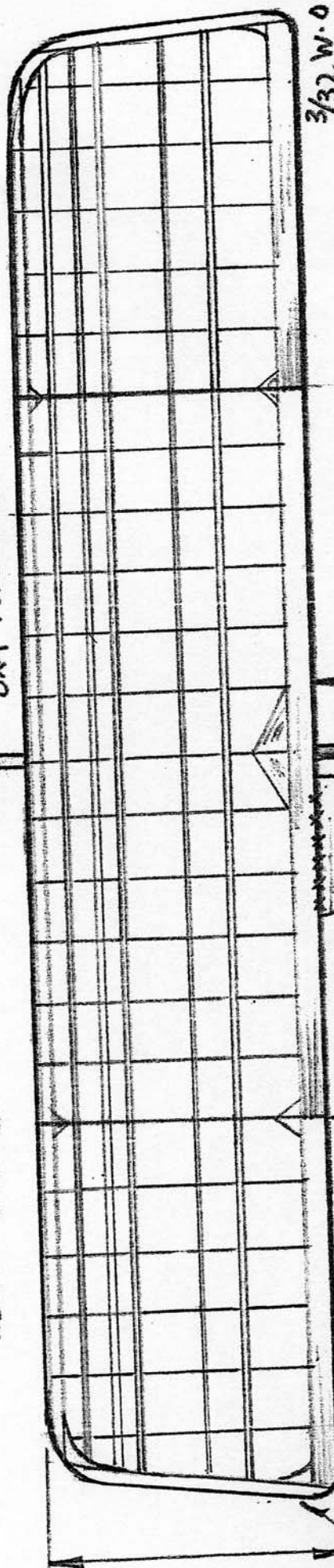
PAW 2.5 cc 8x4 prop.

SCALE 1:5
WEIGHT 8 1/2 OZ

4° LEFT

D.C. MERLIN
8x4 TOPFLIGHT

3" TIP DIHEDRAL
C/S FLAT ▼



9 1/2

3/32 W.O.

TIPS 3/8 S. TRIM: POWER LEFT
GLIDE RIGHT

12

FLAP-BEND
DOWN

10° DOWN

C.G. 20%

1/8 O.G

3/32 W.O.



RONYTUBE

1/4 x 3/4 M.

SCRAP PROPS TO
ASSIST BUILDING

.2 .4

HEIGHT FROM
BOARD

SPARS 1/8 φ H. RIBS 3/32 M. O. G.

1/4 φ H

1/8 x 5/8 S

"THE ANSWER" by A. J. CRISP

*LATIN FOR GOOSE!