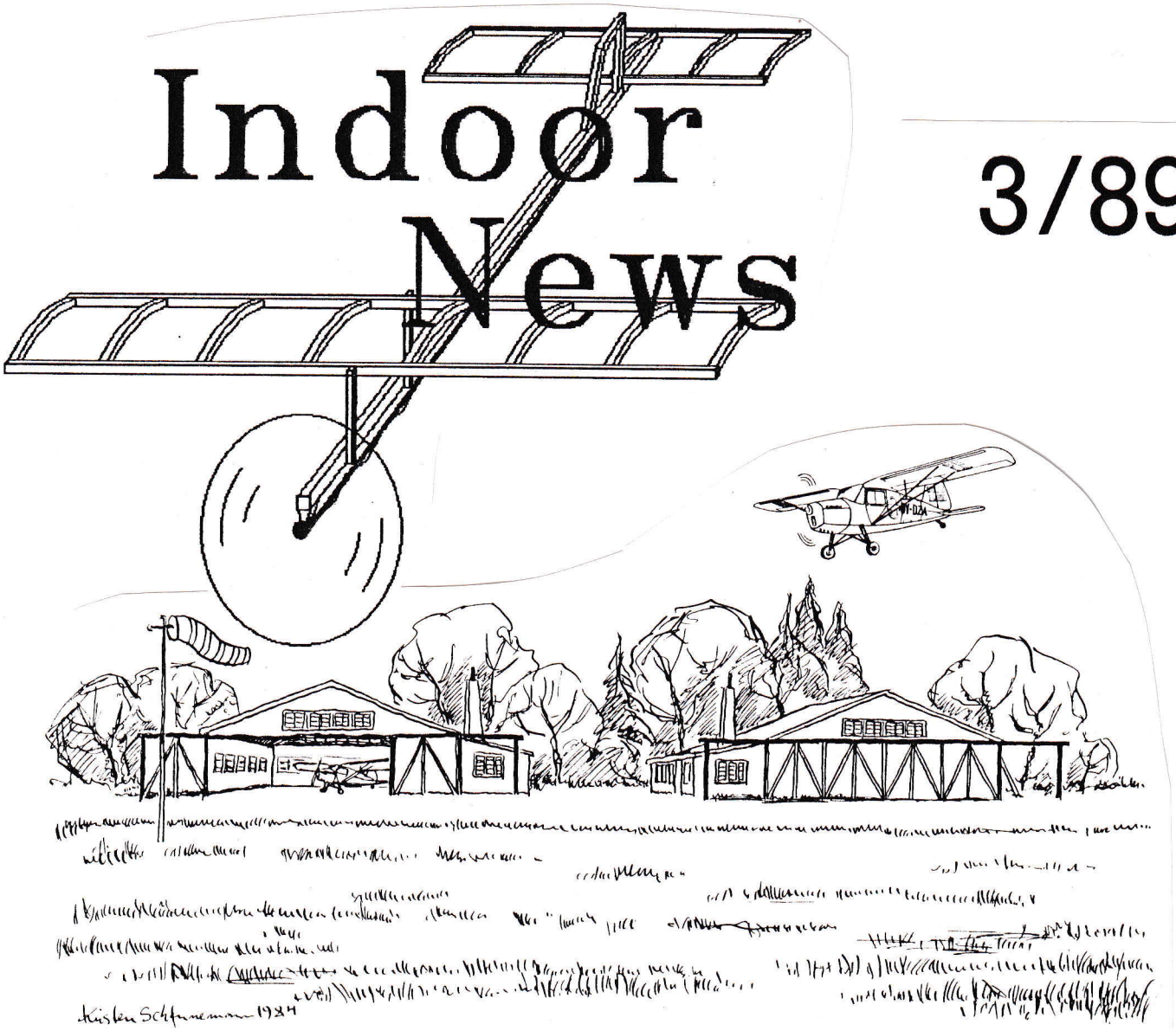
INDOOR NEWS

Indoor News

3/89



Editor etc .....

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Ahornweg 5,
D-2397 Ellund-Handewitt,
West Germany

Phone: 04608-6899

THE LAST... AT LAST !

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

Scandinevia 50,- Dkr
Europe 55,- Dkr/15 DM
Airmail elsewhere $10.00

I`M SORRY .....

.... these are the last words from me as the editor of INDOOR NEWS.

.... I`m also sorry that this issue has taken so long to be sent out. Of course I have a very bad conscience - as we say in Denmark - and I am the only one to blame. Now you can hate me, despise me, forgive me or bear with me!

I tried to get a man to take over the making of IN, and Bill Henderson nearly said yes, but eventually said no due to working abroad.

There are some 40 subscribers who still have issues due, and they will get the following offer:

1. They can have their money back.

2. They can have the American "INDOOR NEWS AND VIEWS" (INAV) for the rest of their money.

Ad 1: If you want your money back, just let me know and I will send it in a convenient way -

Ad 2: If I don't hear from you before April 1st, I will send your money to the editor of INAV, Frank Kieser, who has agreed to this suggestion. He will get your addresses as well.

Why do I stop now? First of all because I simply lost the motivation to make the newsletter. I found out that it was more fun to spend time building and flying my F1B models (Wakefields). Further I have started studying in my spare time in order to get an academic degree in WOOD- and METAL work in the educational areas. This also includes pedagogical aspects of free flight and model building.

As for indoor flying I have only flown spaaringly since 1988 and at the end of 1991 I tried to reestablise the Danish Indoor Team for the W/Ch in POland. But the other two team members had problems with legs and housing! so now I decided too not to go this year. Well .... I'LL BE back someday!!

LAST BUT NOT LEAST: THANK YOU VERY MUCH FOR ALL YOUR SUPPORT (articles, drawings, tips, kind letters, Christmas cards etc....) DURING THESE YEARS. IT WAS ONE OF THE BEST THINGS ABOUT MAKING "IN" .... AND I DO NOT HOPE THAT YOU WILL BE TOO ANGRY WITH ME ....

I WISH YOU ALL A HAPPY LIFE AND VERY GOOD INDOOR FLYING TIMES.....

THANK YOU VERY MUCH
CHEERS

YOURS

JØRGEN

These are the subscriptions which are still due, according to my files. I do hope they will agree with yours ... if not, give me a note. Thanks.

T. André 20,- DM
N. Aikman 1,50 £
B. Aslett 1,50 £
B. Bailey 5,- £
C.E.J. Baker 5,- £
D.W. Barber 16,50 $
W. Beekmeyer 10,- DM
G.J.H. Breteler 15,- DM
U. Bundesen 5,- DM
R. Butty 10,- DM
R. Champion 15,- DM
P.Y. Chaussebourg 15,- DM
S. Chilton 10,- $
M. Collins 7,50 £
F. Dressler 15,- DM
O. Gahm 20,- KR
L.W. Garber 6,50 $
K. Halsas 5,- DM
W. Henderson 16,50 $
G. Honda 10,- $
T. Hua-Ngoc 5,- DM
W. de Joode 5,- DM
G. Jones 5,- £
P. Keller 15,- DM
B. Kenny 10,- £
P. Kuttler 15,- DM
S.-O. Linden 20,- KR
B. Lindquist 75,- KR
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D. Melloni 15,- DM
B.O. Miehe 15,- DM
F. Nielsen 20,- KR
K. Ohta 10,- $
G. Ondraczek 15,- DM
S. Robbins 10,- $
B. Romak 30,- $
B. Schlosser 45,- DM
U. Schaller 15,- DM
D. Siebenmann 15,- DM
L. Shaw 10,- $
G. Underwood 16,50 $
D. Yates 7,50 £
M. Weist 15,- DM
B.R. Wills 1,50 £
P. Williams 7,50 £
B. Waechter 15,- DM
J. O`Donnell 1,50 £

EUROPEAN CHAMPIONSHIP FOR INDOOR MODELS-F1D
SLANIC-PRAHOVA ROMANIA 25-29 SEPT 1991

F1D Individual
Final results

Pl.	No	Name	Country	
1	5	REE, Andras	HUN	73.30
2	6	REE, Laszlo	HUN	68.44
3	4	ORSOVAI, Dezso	HUN	67.04
4	18	MORAR, Aurel	ROM	67.03
5	19	MANGALEA, Corneliu	ROM	64.58
6	17	POPA, Aurel	ROM	64.01
7	14	KOMAROV, Vladimir	URS	60.40
8	16	IVLEV, Michail	URS	60.12
9	15	MOSKALEV, Vasili	URS	59.12
10	2	TRACHEZ, Andre	FRA	57.48
11	3	CHAMPION, Robert	FRA	54.25
12	1	COGNET, Guy	FRA	52.36

F1D Individual
Final results

Pl.	No	Name	Country	
1	28	BOLONY, SZABOLCS	ROM	56.43
2	30	BORSOS, FERENC	ROM	56.04
3	29	BOLONY, LEVENTE	ROM	52.16
4	24	HANRIOT, CRISTOPHE	FRA	45.40

FORTY MINUTE CLUB

January 1991

NAME	COUNTRY	TIME	1*	2*	YEAR	SITE
ASLETT, BERNARD	ENGLAND	52:22	X		1983	CARDINGTON
RICHMOND, JIM	USA	52:14	X		1979	AKRON
KOWALSKI, DICK	USA	50:41	X		1976	AKRON
RICHMOND, JIM	USA	47:44		X	1986	CARDINGTON
RANDOLPH, BOB	USA	47:30	X		1987	SANTA ANA
BARR, LAURIE	ENGLAND	47:28		X	1982	CARDINGTON
HARLAN, RAY	USA	47:13		X	1980	AKRON
DOIG, RICH	USA	46:24	X		1983	AKRON
RODEMSKY, ERV	USA	45:50	X		1974	SANTA ANA
BANKS, CEZAR	USA	45:48		X	1986	CARDINGTON
RIEKE, K.H.	W. GERMANY	45:40	X		1962	CARDINGTON
BROWN, STEVE	USA	45:25		X	1987	SANTA ANA
REDLIN, CARL	USA	45:17	X		1962	CARDINGTON
HUNT, BERNARD	ENGLAND	45:16		X	1986	CARDINGTON
ANDREWS, PETE	USA	44:59		X	1979	AKRON
MATHER, CLARENCE	USA	44:44	X		1974	SANTA ANA
ASLETT, BERNARD	ENGLAND	44:37		X	1985	CARDINGTON
RANDOLPH, BOB	USA	44:37		X	1986	SANTA ANA
ROMAK, BUD	USA	44:23		X	1987	SANTA ANA
HACKLINGER, MAX	W. GERMANY	44:20	X		1961	CARDINGTON
NORE, PENTTI	FINLAND	44:01		X	1986	CARDINGTON
ANDRE, THEDO	NETHERLANDS	44:01		X	1986	CARDINGTON
KOPECKY, ERNIE	USA	43:42	X		1963	SANTA ANA
ORSOVAI, DEZSO	HUNGARY	43:37		X	1986	CARDINGTON
CUMMINGS, FRANK	USA	43:28	X		1963	SANTA ANA
ATWOOD, BILL	USA	43:17	X		1963	SANTA ANA
PLOTZKE, RON	USA	42:53	X		1969	LAKEHURST
FOSTER, JOE	USA	42:44		X	1987	SANTA ANA
SIEBENMANN, DIETER	SWITZERLAND	42:33		X	1986	CARDINGTON
BUTTY, RENE	SWITZERLAND	42:30		X	1986	CARDINGTON
CAILLIAU, LARRY	USA	42:29		X	1985	AKRON
DOMINA, DAN	USA	42:25		X	1979	AKRON
CANNIZZO, SAL	USA	42:20		X	1983	LAKEHURST
REE, ANDRAS	HUNGARY	42:06		X	1986	CARDINGTON
FYMM, DAVE	ENGLAND	42:03		X	1986	CARDINGTON
ROMAK, BUD	USA	42:01	X		1965	MOFFETT NAS
GIBBS, BOB	USA	41:35		X	1981	SANTA ANA
OBARSKI, DICK	USA	41:30		X	1981	AKRON
FINCH, TOM	USA	41:27	X		1963	SANTA ANA
CHAMPINE, BOB	USA	41:23	X		1963	SANTA ANA
RODEMSKY, ERV	USA	41:23		X	1979	AKRON
STOLL, ED	USA	41:21	X		1963	SANTA ANA
MATHER, CLARENCE	USA	40:54		X	1974	SANTA ANA
DRAPER, RON	ENGLAND	40:44	X		1962	CARDINGTON
HULBERT, BILL	USA	40:39		X	1983	AKRON
BILGRI, JOE	USA	40:37	X		1965	SANTA ANA
NONAKA, S	JAPAN	40:36		X	1978	CARDINGTON
STEVENS, DARRYL	USA	40:35		X	1986	SANTA ANA
BAILEY, BOB	ENGLAND	40:25		X	1987	CARDINGTON
SLUSARCZYK, DON	USA	40:24		X	1989	AKRON
GITLOW, LEW	USA	40:15		X	1987	SANTA ANA
MCGILLIVRAY, JACK	CANADA	40:14		X	1988	JOHNSON CITY
DOIG, RICH	USA	40:13		X	1981	AKRON
KALINA, JIRI	CZECH	40:11		X	1975	CARDINGTON
RODENBURG, OTTO	NETHERLANDS	40:11		X	1986	CARDINGTON
TRIOLO, JOHN	USA	40:06	X		1974	LAKEHURST

* CLASS 1 - FAI 90 cm OR AMA D
CLASS 2 - FAI 65 cm - 1 gram

Listings are of official flights at officially sanctioned activities (best effort only, by individual, by class is shown)

For additions, corrections, etc. send details to: BOB GIBBS
22870 Springmist Drive, Moreno Valley, CA 92387 USA

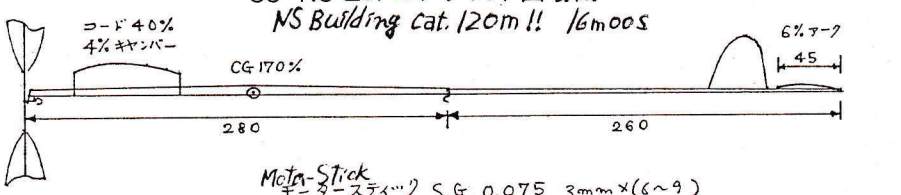
KANAGAWA INDOOR PLANE NEWS
第1号　1990. 2. 25
KIPC
神奈川インドアプレーン・クラブ

1990年度役員決定

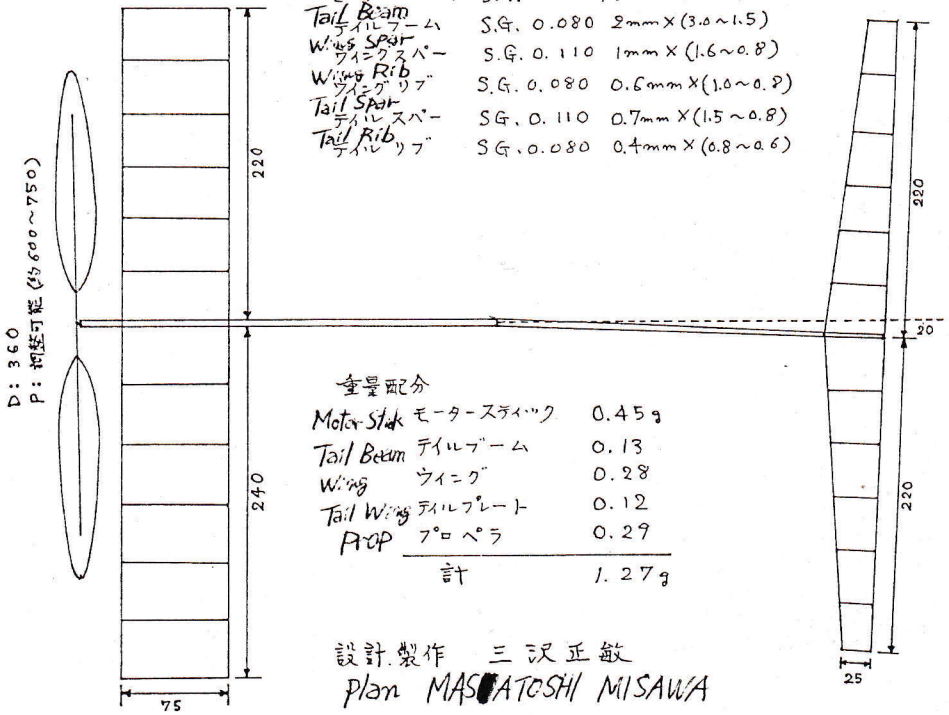
HIDETO HORIKIRI
1-41 Mukai-machi
Turumi-ku, Yokohama-shi
230 JAPAN

'89 NSビルコンテスト出場機

NS Building Cat. 120m !! 16moos



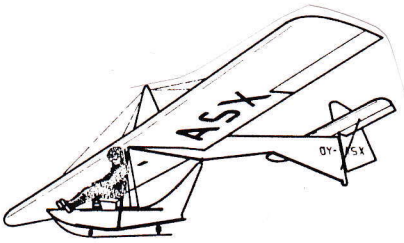
Motor-Stick モータースティック	S.G. 0.075	3mm×(6~9)
Tail Beam テイルブーム	S.G. 0.080	2mm×(3.0~1.5)
Wing Spar ウィングスパー	S.G. 0.110	1mm×(1.6~0.8)
Wing Rib ウィングリブ	S.G. 0.080	0.6mm×(1.0~0.8)
Tail Spar テイルスパー	S.G. 0.110	0.7mm×(1.5~0.8)
Tail Rib テイルリブ	S.G. 0.080	0.4mm×(0.8~0.6)



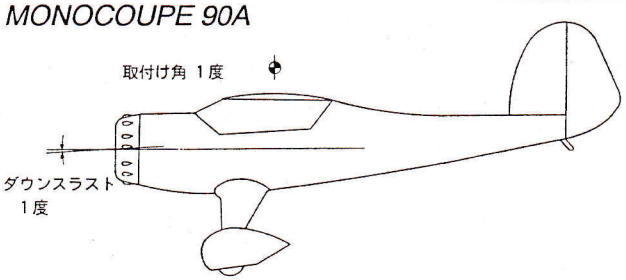
重量配分

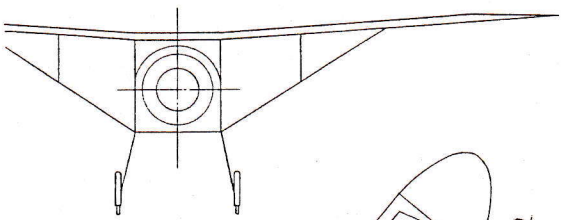
Motor-Stick	モータースティック	0.45g
Tail Beam	テイルブーム	0.13
Wing	ウィング	0.28
Tail Wing	テイルプレート	0.12
Prop	プロペラ	0.29
	計	1.27g

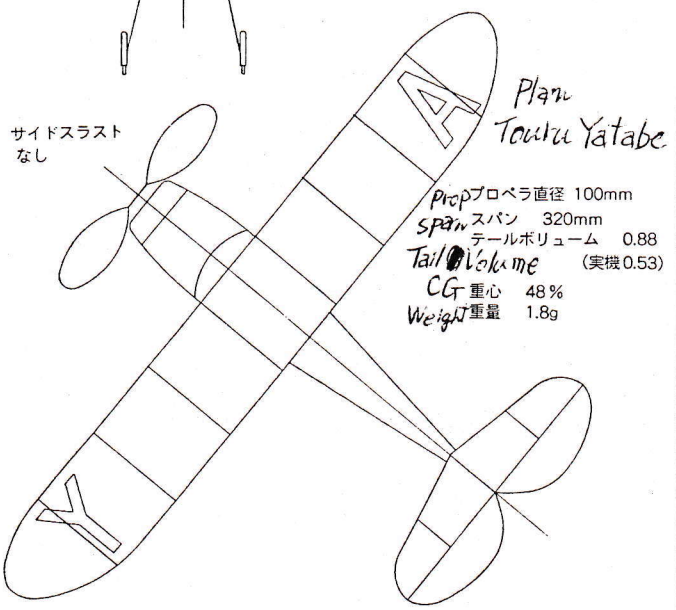
設計.製作　三沢正敏
Plan MASATOSHI MISAWA

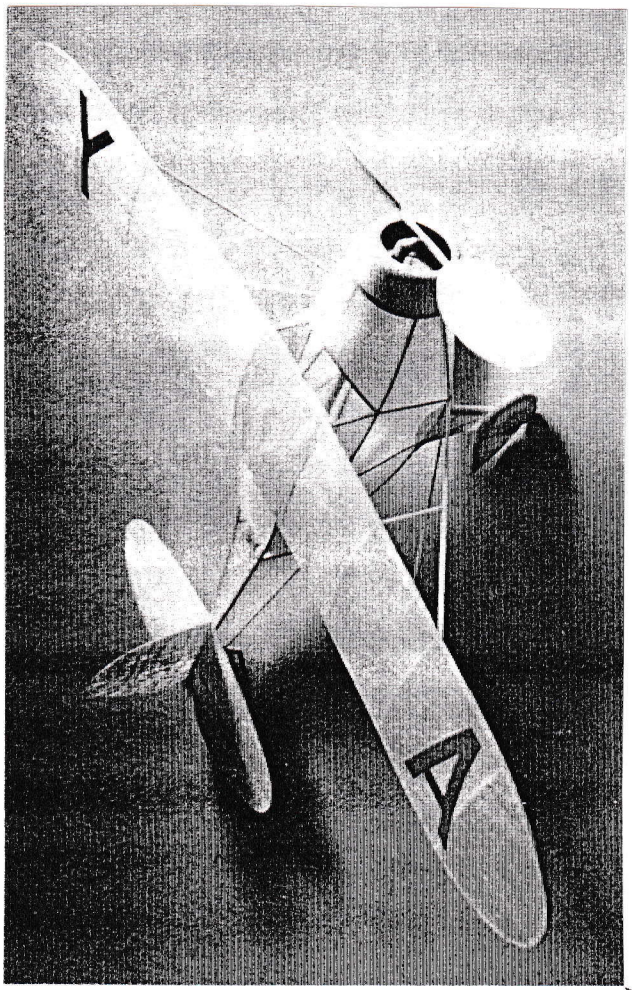


MONOCOUPE 90A



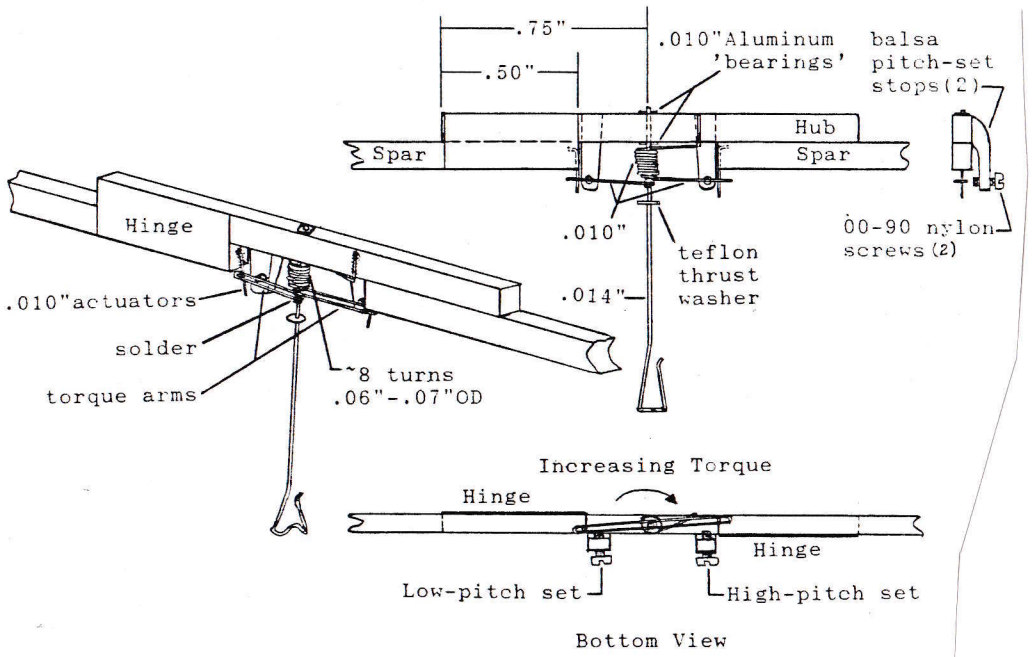






ADJUSTABLE VARIABLE PITCH PROP

by Cezar Banks
July'90



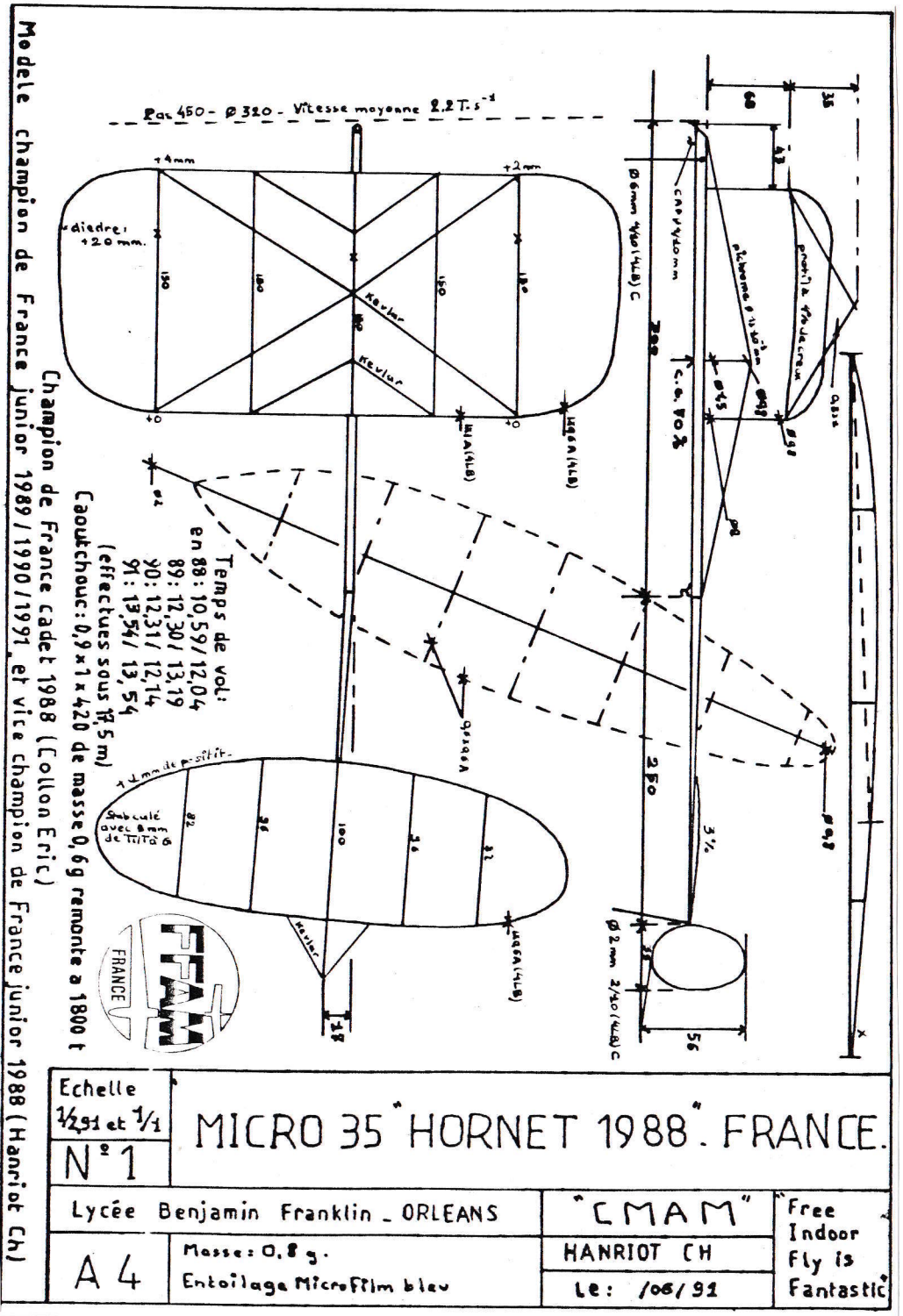
Bottom View

NOTES:

1. This design used at both '88 and '90 wch.
2. Hinges are iron-on Monokote or Micafilm.
3. Ends of nylon screws act as adjustable stops to rotation of torque arms.
4. 00-90 Nylon screws are available from:
   Small Parts Incorporated
   6901-N.E. Third Avenue
   P.O. Box 381736
   Miami,Florida 33238-1736
   Ph. 1-305-751-0856
5. Threads in balsa stops are 'cast' out of cyano using 00-90 steel machine screw as a mold. Force screw it out when cyano has 'set'.
6. Torsional pre-load on spring determines when 'switchover' starts. I try for 25-30 minute mark. To adjust, bend free end of spring or add shims where spring end is glued to hub. Transition time to reach low pitch stop is determined by number of coils and coil diameter.

(4)

"John C. Fredriksen has published his book, Flying Model Warplanes: An International Guide to Plans and Kits. It is 304 pages long, lists 8,656 plans and kits from fifteen countries, and represents 624 types of historical aircraft. It is available for $14.95US and $2.95US postage from: Air Age Publications, 251 Danbury St., Wilton, CT 06897 USA."



TERRY COWGILL

You might have had some contact with people around the world who use, or make, or would like to have surface ground indoor balsa. Don Godfrey in the US is probably the best source of info on this item and process. He is a retired machinist or tool and die maker, not sure which, and his company had amongst its' machinery a surface grinder. He appropiately adapted the process so that he could grind balsa on the machine. He can grind sheets down to .006" or less, accurate to .0001" all over the sheet. More importantly, however, is that the grinding process removes the unevenness of the sawing process along with the "fuzz" on the surface of the wood. Since the wood is only as strong as it is at its thinnest point, saw marks that are .001-.0015" deep on wood that is only .008" thick effectively reduce the thickness of that wood to .007 or .0065". The rest of the thickness of that wood is simply added weight that provides little or no added strength. Sanding the wood, which I can do with a surface sander I made from a design by Andy Tagliafico, can make the make the thickness uniform to well under .0005", but it leaves "fuzz" on the surface which again provides no strength, only weight. The grinding process does not leave such a surface, and in fact is more like a cut surface. The net result is that all of the wood is providing strength, and you get the highest strength to weight ratio possible. A side effect to this process is that if you take a piece of wood, and check its' density using tables similar to those you sent me, and then grind the surfaces of that same piece, when re-checked its' density will appear to have gone up! This seems to be due to the fact that the less dense "fuzz" on the surface (which added to its' measured thickness) has now been removed and the wood is now at its' true full density all the way to the surface of the piece.

? see Chilton Article

Stan Chilton has done some grinding, apparently with poor success, having gone out and purchased a used grinder after seeing Godfrey's wood. He unfortunately got the wrong type of grinder for the task. A true surface grinder of the type Godfrey is using runs $7,000 to $9,000. Stan has apparently told Lew Gitlow he would pay up to $8.00 a sheet for such properly ground wood because it is so good. Interestingly, it appears that the pieces of wood that would be picked to be the best pieces in a given lot before grinding, may not be those that would be judged to be the best after grinding because the limitations of the surface irregularities can give false indications of the true potential of a given piece of wood after grinding.

In any case, due to the added potential for weight savings and added strength (a tailboom made from ground .008" C-grain would be stiffer than one from sawed .008" C-grain) we are in the process of constructing a grinder. I will probably actually do the construction. Andy, who is an architect and has worked as a machinist, will review details and drawings before construction is actually started. We feel confident that the entire unit can be constructed for a few hundred dollars since a surface grinder such as Don Godfrey used has far more capability and adjustment potential than is necessary to grind balse, having been made to grind steel. I will keep you informed on this as it proceeds.

You will note that I have also enclosed an expanded set of tables for density calculations. These were done just after having sent my last letter. I felt that the concept was useful, and expanded the tables so that they would cover all thicknesses from .007 to .060" for wood of 18 and 24" lengths. Widths are listed from 1 1/16 to 1 3/16" in 1/32"

Wood Density Tables

TERRY COWGILL, USA.

Suppliers of wood for indoor model construction normally stamp the the thickness and its' density on each piece. This density is calculated from the original block that the wood is cut from. Since all wood shows some variation in uniformity, various pieces cut from one block will vary somewhat in density. The density of the final sheet can be readily calculated from the following tables with minimal effort using a sensitive indoor scale, thickness gage, and ruler. Recommended method is as follows:

1. Measure the width of the sheet to the nearest 1/32" with the ruler.
2. Measure the thickness of the sheet at each end and in the middle of the sheet. Do a quick mental average of the three values to determine its' average thickness.
3. Weigh the sheet as accurately as your scale will allow.
4. Using the appropriate table, locate the factor for the width and thickness of the sheet.
5. Multiply the weight of the sheet by the factor from the table to directly obtain its' density.

Two tables are provided for weights measured in grams, and two for ounces. Each has one table for 18 and 24 inch sheet lengths, those being the most common lengths for indoor wood. Each table has columns for widths from 1 1/16" to 1 3/16", those values representing the standard width of 1 1/8" + or - 1/16". A column for 1.200" is provided as well since that width is also encountered.

This technique will give very accurate values of density for sheets to be used for motor sticks or tailbooms, etc. (which are made from wood in sheet form). Naturally a large proportion of the mass of an indoor plane resides in the motor stick and tail boom. It should be noted, however, that just as various sheets will differ somewhat in density from a given block, strips cut from a sheet can vary when they are cut from different parts of that sheet. This does not detract from the value of determining the density of the sheet, however, since it does help give one more way to classify and segregate the materials used to construct these airplanes where weight is so critical!

(5)

Indoor Wood Density Table I

Density in #'s / cubic foot of 18 inch long sheets = (weight in grams)(factor from table)

Thickness in Inches	Width of Sheet in Inches					
	1 1/16	1 3/32	1 1/8	1 5/32	1 3/16	1.200
0.007	28.456	27.643	26.875	26.149	25.461	25.196
0.008	24.899	24.188	23.516	22.880	22.278	22.046
0.009	22.133	21.500	20.903	20.338	19.803	19.597
0.010	19.919	19.350	18.813	18.304	17.823	17.637
0.011	18.109	17.591	17.103	16.640	16.202	16.034
0.012	16.600	16.125	15.677	15.254	14.852	14.697
0.013	15.323	14.885	14.471	14.080	13.710	13.567
0.014	14.228	13.822	13.438	13.075	12.730	12.598
0.015	13.280	12.900	12.542	12.203	11.882	11.758
0.016	12.450	12.094	11.758	11.440	11.139	11.023
0.017	11.717	11.383	11.066	10.767	10.484	10.375
0.018	11.066	10.750	10.452	10.169	9.9015	9.7983
0.019	10.484	10.184	9.9015	9.6339	9.3803	9.2826
0.020	9.9597	9.6751	9.4064	9.1522	8.9113	8.8185
0.021	9.4854	9.2144	8.9585	8.7163	8.4870	8.3986
0.022	9.0643	8.7956	8.5513	8.3201	8.1012	8.0168
0.023	8.6606	8.4132	8.1795	7.9584	7.7490	7.6683
0.024	8.2998	8.0626	7.8387	7.6268	7.4261	7.3487
0.025	7.9678	7.7401	7.5251	7.3217	7.1291	7.0548
0.026	7.6613	7.4424	7.2357	7.0401	6.8549	6.7835
0.027	7.3776	7.1668	6.9677	6.7794	6.6010	6.5322
0.028	7.1141	6.9108	6.7188	6.5373	6.3652	6.2989
0.029	6.8688	6.6725	6.4872	6.3118	6.1457	6.0817
0.030	6.6398	6.4501	6.2709	6.1014	5.9409	5.8790
0.031	6.4256	6.2420	6.0686	5.9046	5.7492	5.6893
0.032	6.2248	6.0470	5.8790	5.7201	5.5696	5.5116
0.033	6.0362	5.8637	5.7008	5.5468	5.4008	5.3445
0.034	5.8587	5.6913	5.5332	5.3836	5.2420	5.1873
0.035	5.6913	5.5287	5.3751	5.2298	5.0922	5.0391
0.036	5.5332	5.3751	5.2258	5.0845	4.9507	4.8992
0.037	5.3836	5.2298	5.0845	4.9471	4.8169	4.7668
0.038	5.2420	5.0922	4.9507	4.8169	4.6902	4.6413
0.039	5.1075	4.9616	4.8238	4.6934	4.5699	4.5223
0.040	4.9799	4.8376	4.7032	4.5761	4.4557	4.4092
0.041	4.8584	4.7196	4.5885	4.4645	4.3470	4.3017
0.042	4.7427	4.6072	4.4792	4.3582	4.2435	4.1993
0.043	4.6324	4.5001	4.3751	4.2568	4.1448	4.1016
0.044	4.5271	4.3978	4.2756	4.1601	4.0506	4.0084
0.045	4.4265	4.3301	4.1806	4.0676	3.9606	3.9193
0.046	4.3303	4.2066	4.0897	3.9792	3.8745	3.8341
0.047	4.2382	4.1171	4.0027	3.8945	3.7920	3.7525
0.048	4.1499	4.0313	3.9193	3.8134	3.7130	3.6744
0.049	4.0652	3.9490	3.8393	3.7356	3.6373	3.5994
0.050	3.9839	3.8701	3.7626	3.6609	3.5645	3.5274
0.051	3.9058	3.7942	3.6888	3.5891	3.4946	3.4582
0.052	3.8307	3.7212	3.6178	3.5201	3.4274	3.3917
0.053	3.7584	3.6510	3.5496	3.4536	3.3628	3.3277
0.054	3.6888	3.5834	3.4838	3.3897	3.3005	3.2661
0.055	3.6217	3.5182	3.4205	3.3281	3.2405	3.2067
0.056	3.5570	3.4554	3.3594	3.2686	3.1826	3.1495
0.057	3.4946	3.3948	3.3005	3.2113	3.1268	3.0942
0.058	3.4344	3.3363	3.2436	3.1559	3.0729	3.0409
0.059	3.3762	3.2797	3.1886	3.1024	3.0208	2.9893
0.060	3.3199	3.2250	3.1355	3.0507	2.9704	2.9395

MANNY`S WRINKLES

What is the correct height to compute the thickness of an indoor airfoil?



Is the real height A to C or B to C? Tell Manny Radoff at 61 Springbrook Road, Livingston, NJ 07039, USA.

— — — —

Here is an easy way to put indoor washers on a prop shaft. Select a piece of soft balsa. Wet the edge on end grain side with saliva and pick up the washer from wherever. Put the end of the shaft hook in hole and push into washer and pull out edge of balsa with the grain.



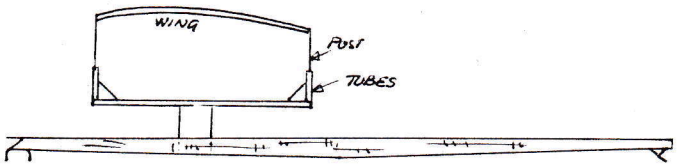
The WAY to use TAN RUBBER.

One of our local engineer modellers has come up with a formula to compare TAN to PIRELLI.

1. Cut the TAN 18% wider or heavier per unit length.
2. Make motor lenght 85% of PIRELLI motor.

This will give you a TAN motor of about the same weight of the PIRELLI and it will take the same or more turns.

The RADOFF MOUNT for EZB April 1990 ...
for avoiding wing twists.



My neighbor, a model-plane enthusiast, had a radio-controlled helicopter. One day, I heard a motor running and assumed he was doing some flying in his yard. I was right. He had the chopper hovering just above the ground and, by maneuvering it back and forth, was blowing the leaves off his lawn.

—Contributed by Charles E. Woodrow

Exhibit VI: Description of Randolph 30 Min 20 Sec Record Attempt F1D 32a.

Outdoor conditions on the day of the flight were cool with mostly clear skies. The temperature was 45-50° F. the relative humidity was low and the wind 5-10 MPH. There was some turbulence inside the gym the entire day but the drift rate was low. The site is well sealed, has recessed lights, and has solid wooden beams which prevents hang ups. The floor area is quite small (85x105 ft.) and there are six basketball backboards around the perimeter. The model design, Top Cat 90L, with minor changes is the current record holder of the FAI and Hand-Launched Stick AMA Records which were set in Nov. 1990. Early in Dec. this model exceeded the current World Record with a flight of 29:24, but was 5 seconds short of the required 2%.

The variable pitch propeller is torque actuated and has a tiny 00-90 nylon screw for adjusting the maximum high pitch. This type of VP Prop at the 1990 World Champs resulted in all six official flights exceeding 40 minutes.

One full motor test flight of 30:47 was made before all the time-keepers and observers arrived.

At approximately noon, the record flight was iniated. 1360 turns were put in, using a 20/1 geared winder. Torque was reduced from 55 to 43 units on a Polish Torquemeter by backing off about 20 turns. The model was hand launched 3 feet from the floor in a level attitude. The first 2 or 3 circles were rather exciting because the high torque and pitch increases the circle size so there is only 3 or 4 foot of clearance to the walls. The slow but steady climb reached the ceiling in 6 minutes. It grazed or bumped the beams about 12 times and the last touch was at 13 minutes.

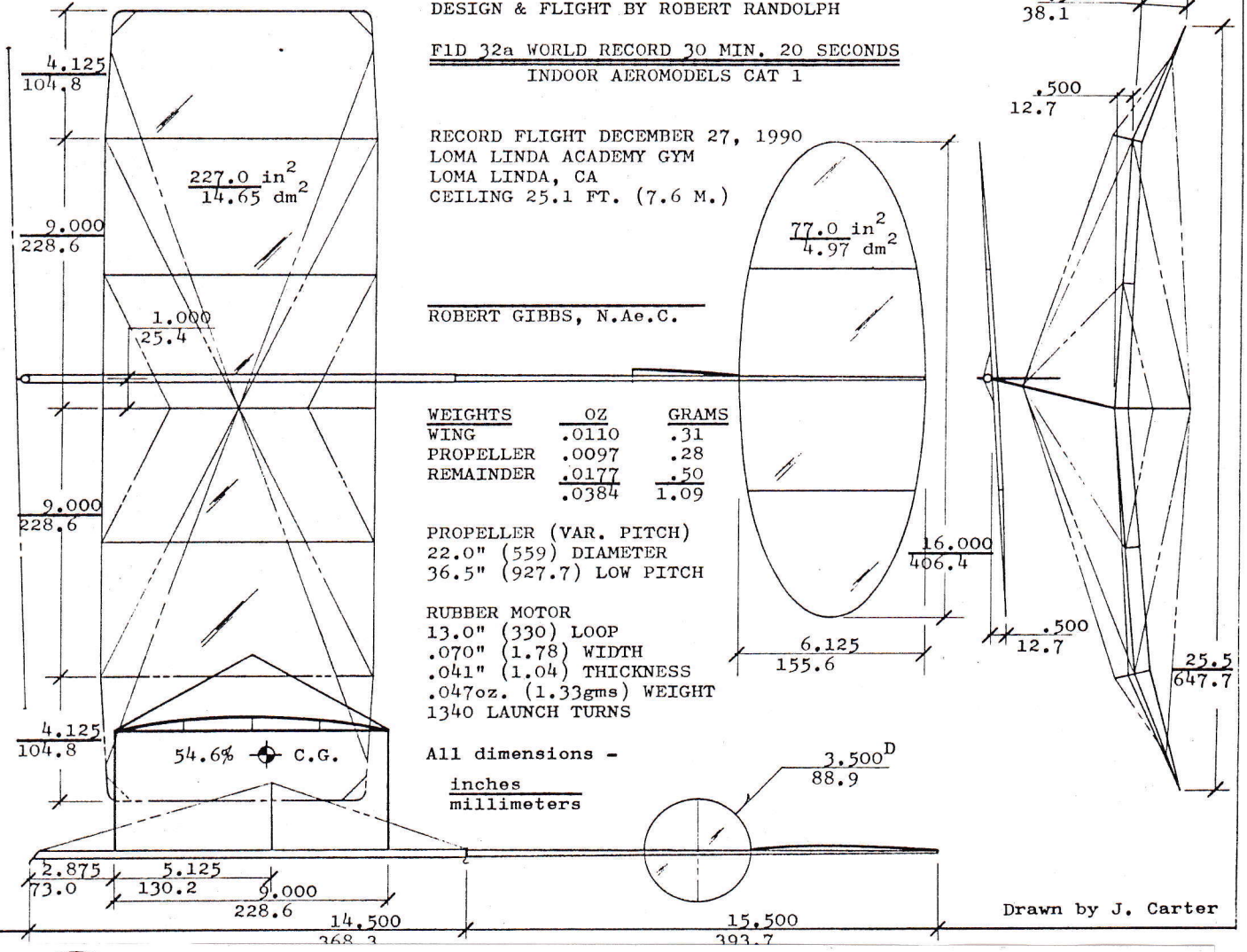
At maximum altidude, slight drift to the East required several steers to stay away from the wall and a retracted basketball backboard and some climbing ropes at that end. All steering was done with a 21 ft. pole by tapping the front of the left wing to turn the model from harms way. At no time was the propeller stopped. After descending about 2 ft. the model orbited without any apparent loss of altitude for almost 10 minutes. It finally started slowly descending and settled to the floor at 30:20. 128 turns were unused, so the average propeller RPM was 40.0. The highest temperature noted inside the gym that day was a cool 61° F.

DESIGN & FLIGHT BY ROBERT RANDOLPH

F1D 32a WORLD RECORD 30 MIN. 20 SECONDS
INDOOR AEROMODELS CAT 1

RECORD FLIGHT DECEMBER 27, 1990
LOMA LINDA ACADEMY GYM
LOMA LINDA, CA
CEILING 25.1 FT. (7.6 M.)

ROBERT GIBBS, N.Ae.C.



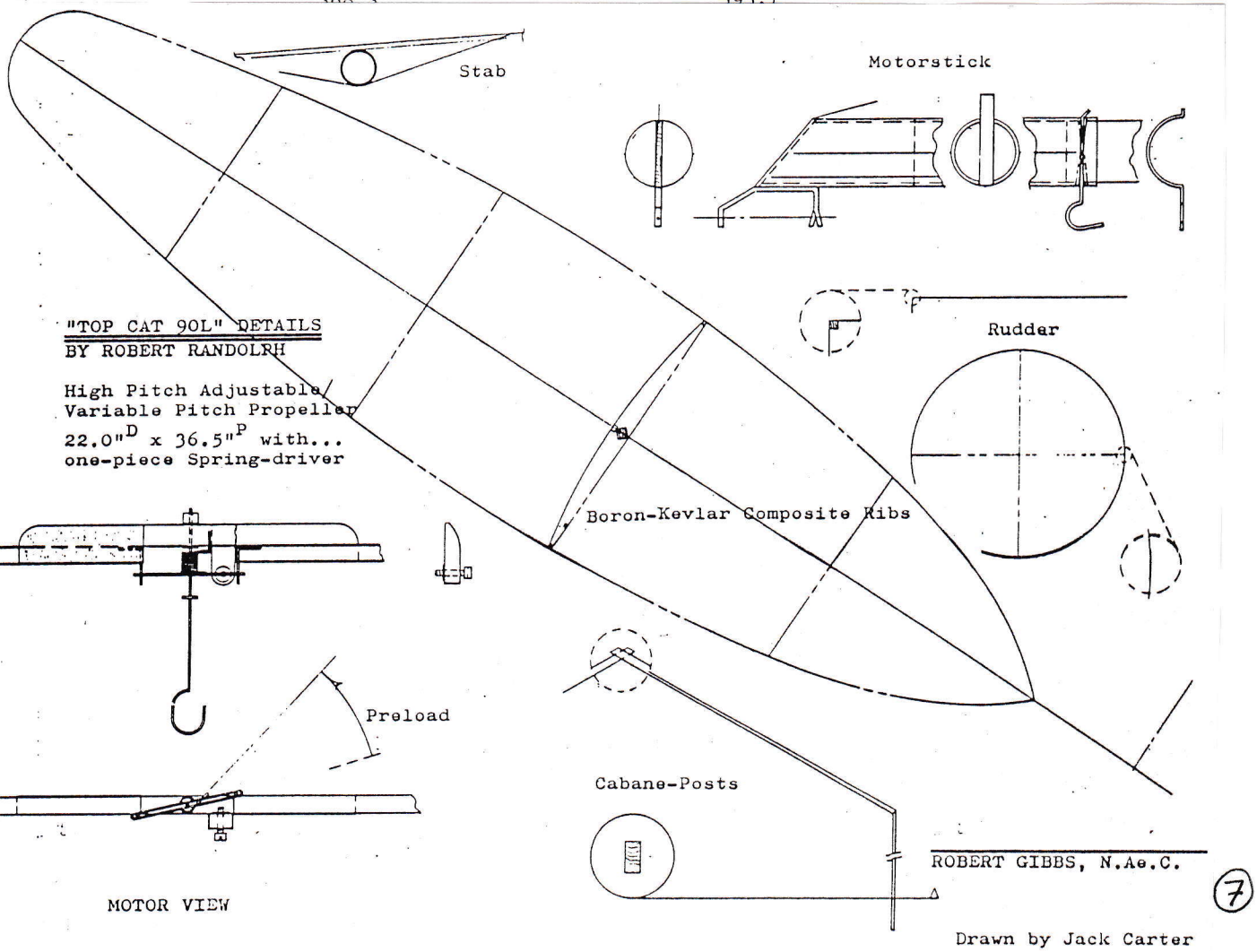
WEIGHTS	OZ	GRAMS
WING	.0110	.31
PROPELLER	.0097	.28
REMAINDER	.0177	.50
	.0384	1.09

PROPELLER (VAR. PITCH)
22.0" (559) DIAMETER
36.5" (927.7) LOW PITCH

RUBBER MOTOR
13.0" (330) LOOP
.070" (1.78) WIDTH
.041" (1.04) THICKNESS
.047oz. (1.33gms) WEIGHT
1340 LAUNCH TURNS

All dimensions -
inches
millimeters

Drawn by J. Carter

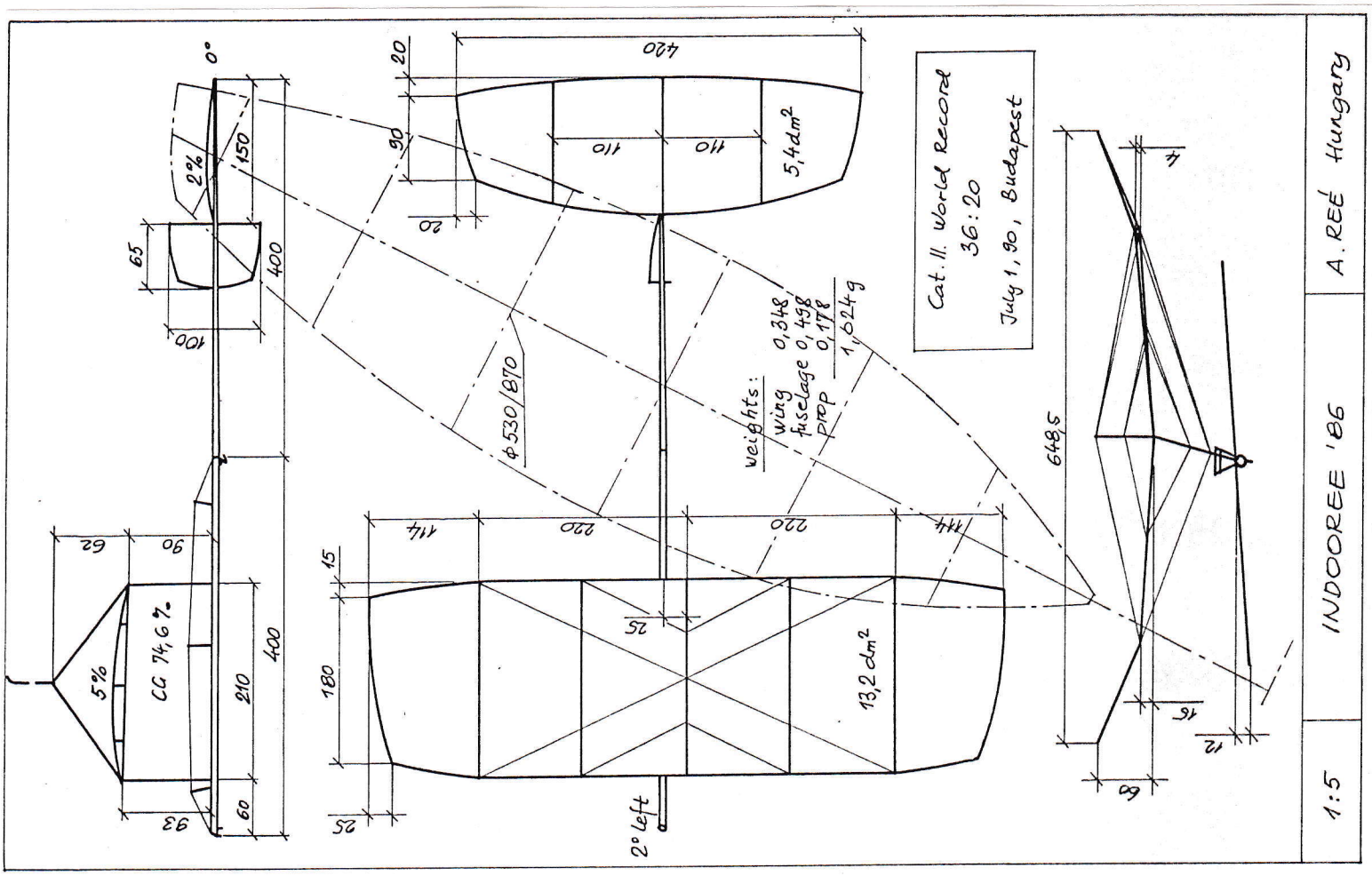


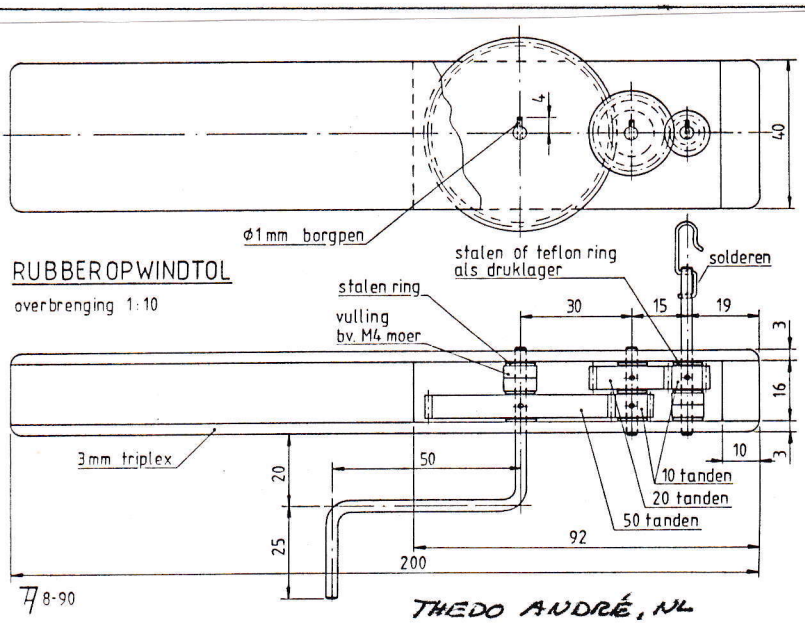
"TOP CAT 90L" DETAILS
BY ROBERT RANDOLRH

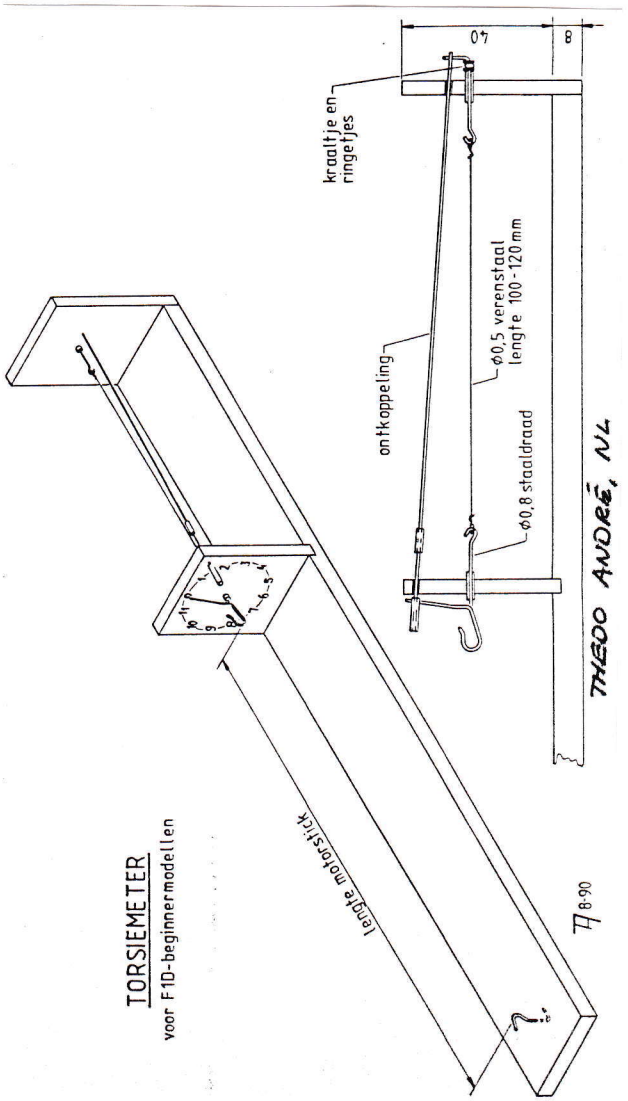
High Pitch Adjustable/
Variable Pitch Propeller
22.0"D x 36.5"P with...
one-piece Spring-driver

ROBERT GIBBS, N.Ae.C.

Drawn by Jack Carter







MANNY`S wrinkles

For years I have heard that CASTOR OIL was not good for rubber. It makes the rubber lose its memory. I used it for years with no bad results but .... I have a model airplane friend who is a chemical engineer and he impressed me. However .. I do think for myself a bit, so I decided to test the effect of castor oil.

I cut six motors, soaked two in castor oil, two in his lubricant and two I left untouched. After six months of storage/soaking I tested all three specimens:

Results: Untreated test best 14.58 cruise torq.

Castor Oil second 14.01

Friends lube third 13.73

I have taken the torque readings from 1300 to 500 turns as the cruise torque (added up).

Interesting?!!

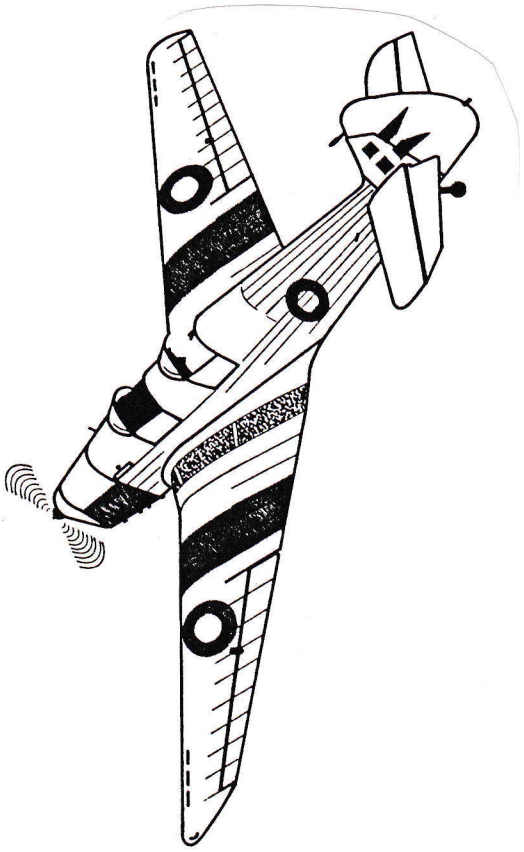
COMMENTS AND THOUGHTS ABOUT THE RUBBER PROGRAMME

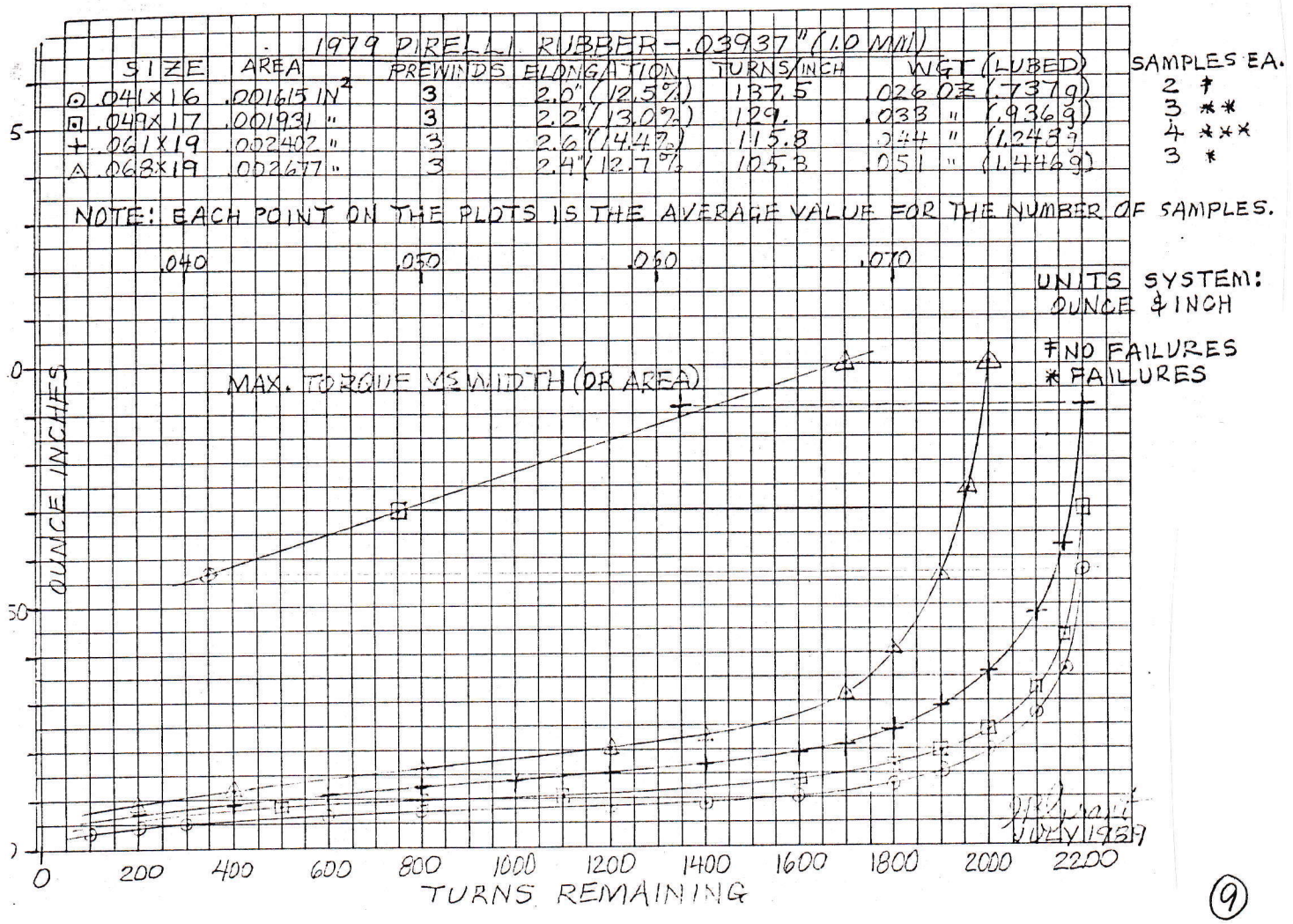
I hate to contemplate on the number of rubber motors that were broken in order to complete the data contained in the accompanying charts. Suffice to say, I am not really the poorer for it all.

There were surprises, both pleasant and disappointing, which increased my respect for rubber as a mechanical material as well as teaching of its limitations. Surprise number one was the linearity of both torque and number of turns per inch, as a function of strip width. Prior to testing I supposed that strips with a square cross section would have tended toward more turns per inch and proportionally lessened torque as compared to rectangular sections, which would have resulted in slightly curved plots. Quite obviously, I was wrong. The other surprise, shown on the polar curves which compare maximum torque vs width for 3 kinds of rubber is the convergence of the "curves" as they approach the smaller sizes. As can be seen, a crossover is imminent. Why?

One other difference which was not a surprise is the much flatter torque curve of the "more elastic" Pirelli compared to the "more plastic" other two. This characteristic of the Pirelli makes for better cruising torque. Notice that on the Torque Charts, the slopes of all of the curves are closely asymptotic to parallels of the abscissa lines, indicating that failure is imminent. Indeed, 9 out of 39 loops failed.

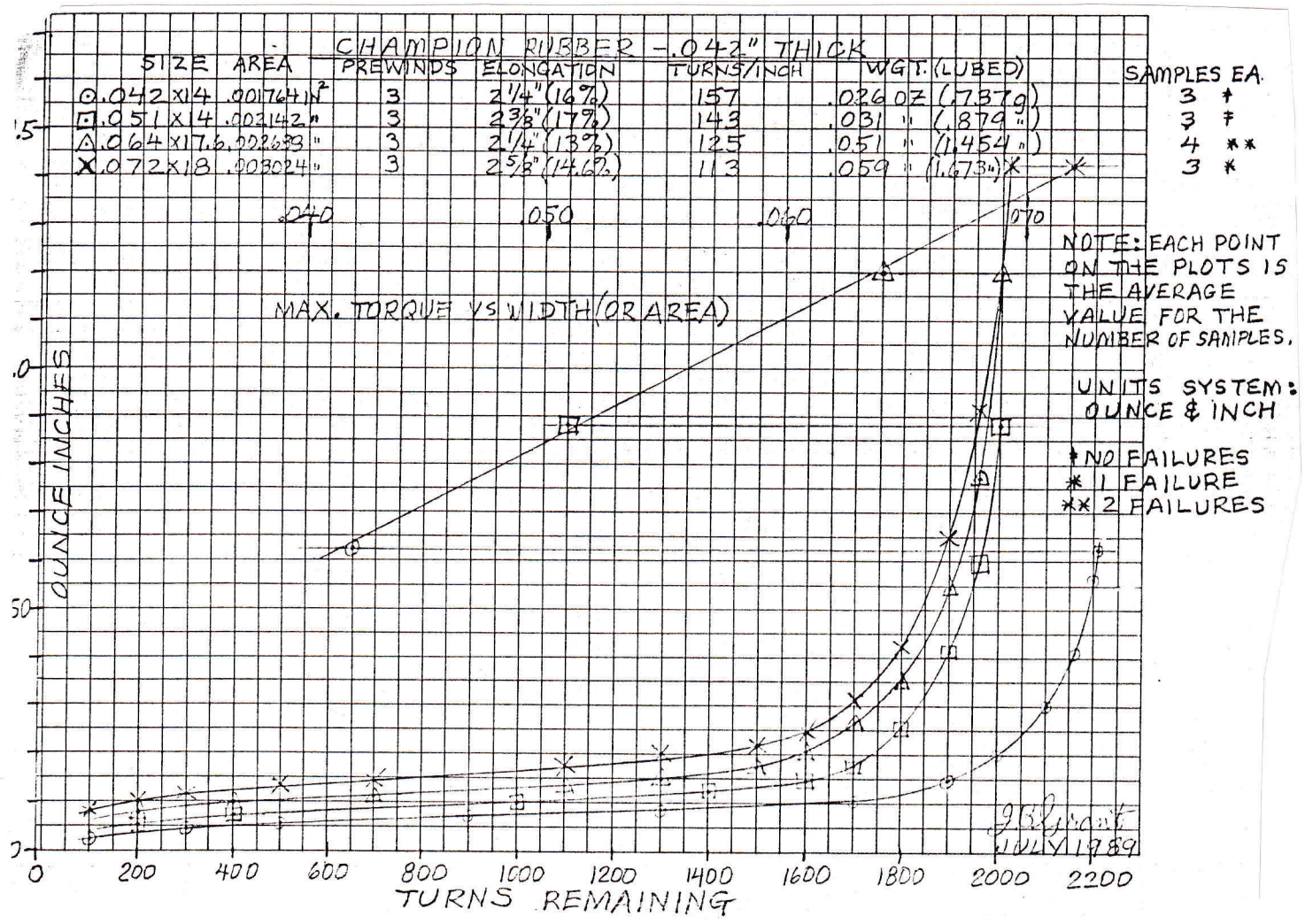
James B Grant
22 July 1989





CHAMPION RUBBER -.042" THICK

SIZE	AREA	PREWINDS	ELONGATION	TURNS/INCH	WGT. (LUBED)	SAMPLES EA.
⊙ .042 x 14	.001764 IN²	3	2 1/4" (16%)	157	.026 OZ (.737g)	3 †
⊡ .051 x 14	.002142 "	3	2 3/8" (17%)	143	.031 " (.879 ")	3 †
△ .064 x 17.6	.002683 "	3	2 1/4" (13%)	125	.051 " (1.454 ")	4 **
X .072 x 18	.003024 "	3	2 5/8" (14.6%)	113	.059 " (1.673 ")	3 *



NOTE: EACH POINT ON THE PLOTS IS THE AVERAGE VALUE FOR THE NUMBER OF SAMPLES.

UNITS SYSTEM: OUNCE & INCH

† NO FAILURES
* 1 FAILURE
** 2 FAILURES

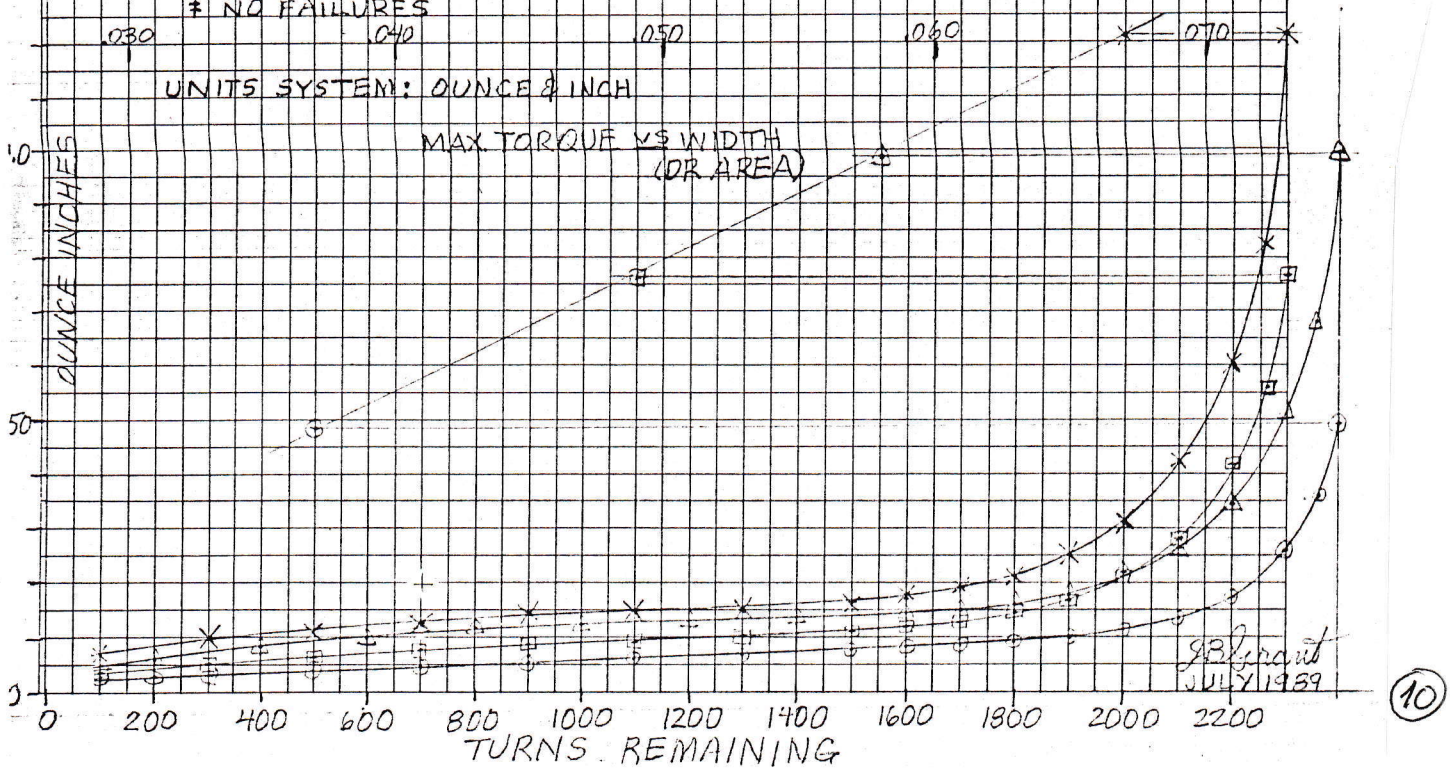
FAI-TAN RUBBER -.042 THICK

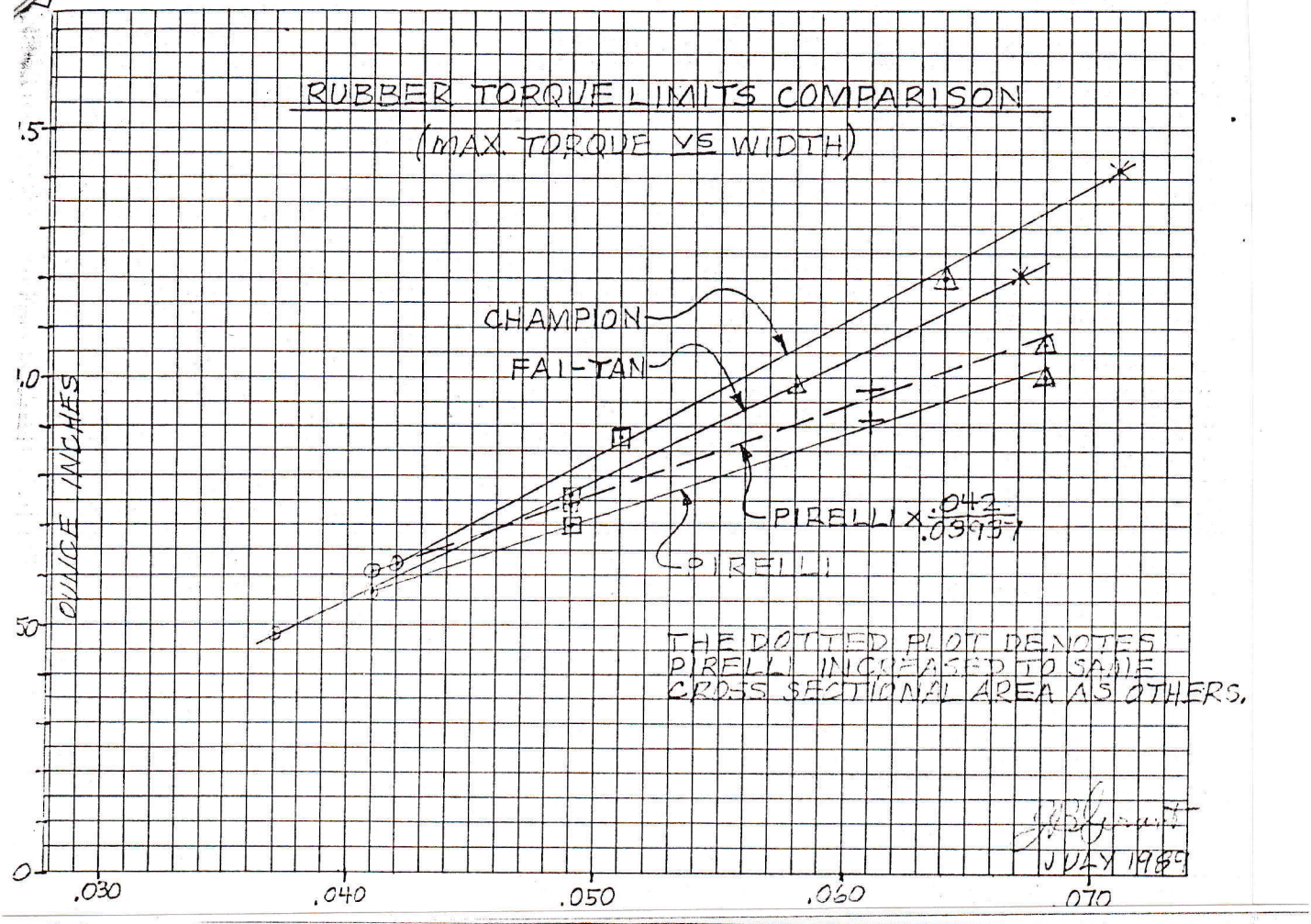
SIZE	AREA	PREWINDS	ELONGATION	TURNS/INCH	WGT.	SAMPLES EA.
⊙ .037 x 14	.001554 IN²	3	2.4" (17.1%)	171.4	.0247 oz (.700 g)	4
⊡ .049 x 15	.002058 "	3	2.8" (18.7%)	153.3	.0343 " (.972 g)	4
△ .058 x 17	.002436 "	3	2.6" (15.3%)	141.2	.0463 " (1.313 g)	3 ‡
X .067 x 18	.002814 "	3	2.6" (14.4%)	127.8	.0543 " (1.540 g)	3

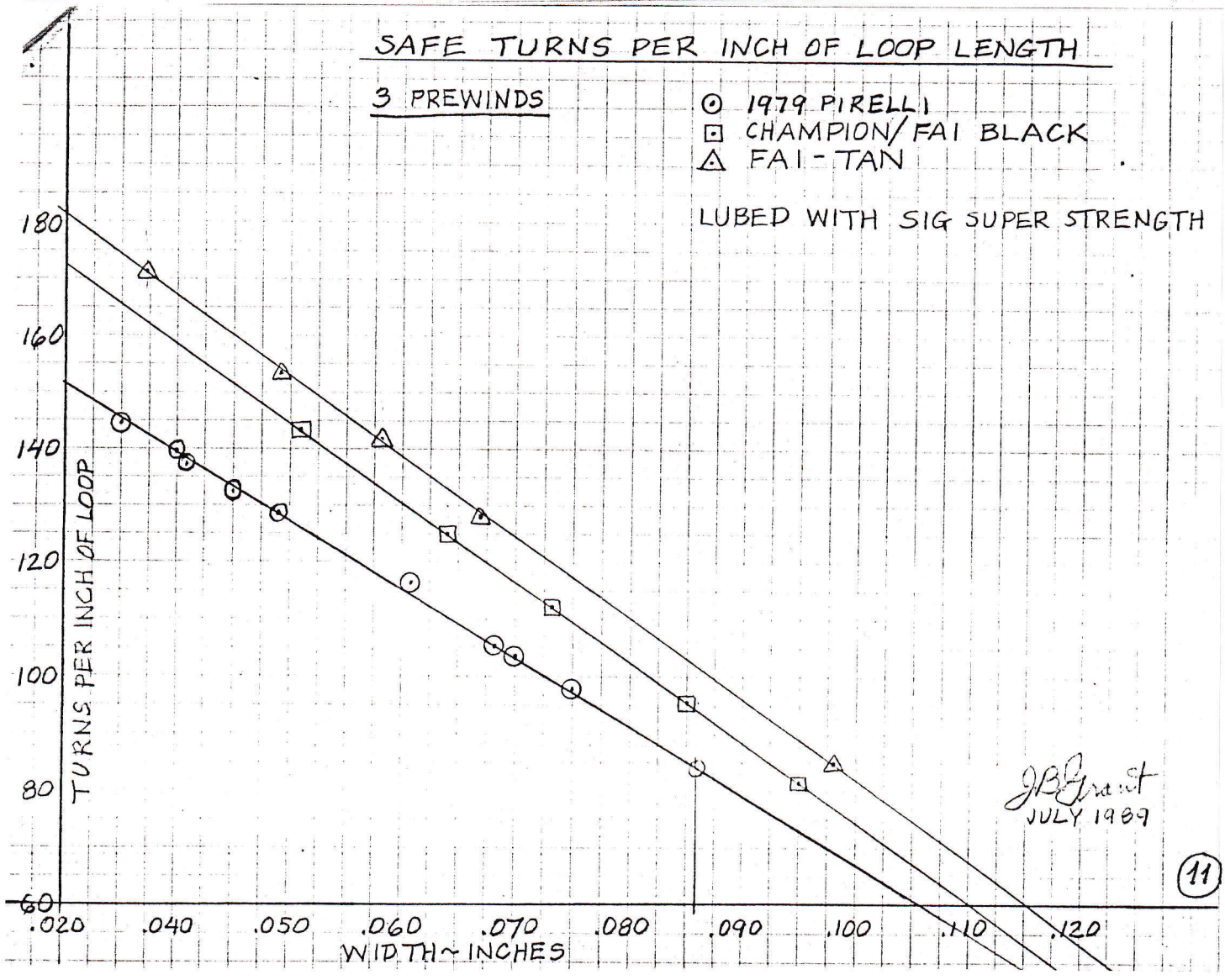
NOTE: EACH POINT ON THE PLOTS IS THE AVERAGE VALUE FOR THE NUMBER OF SAMPLES.

‡ NO FAILURES

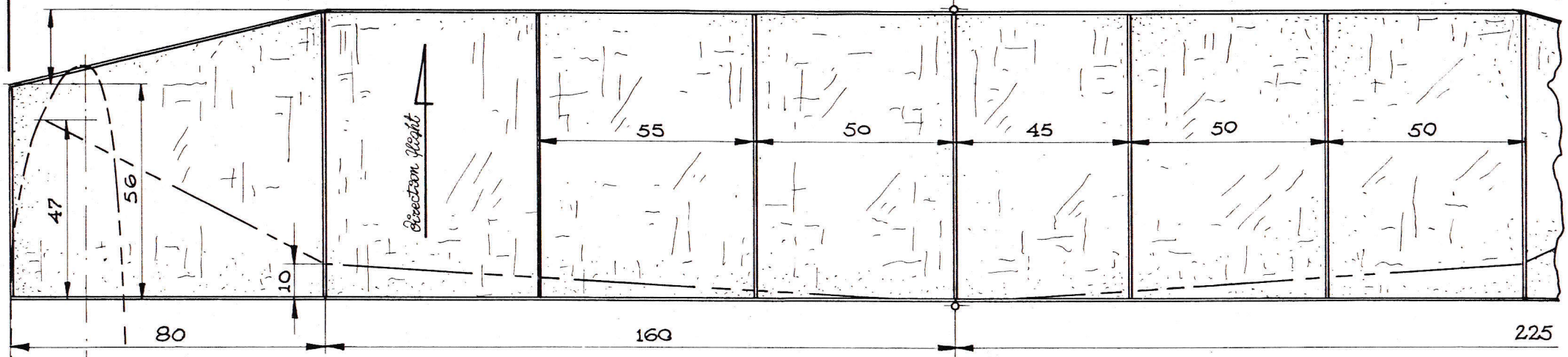
UNITS SYSTEM: OUNCE & INCH

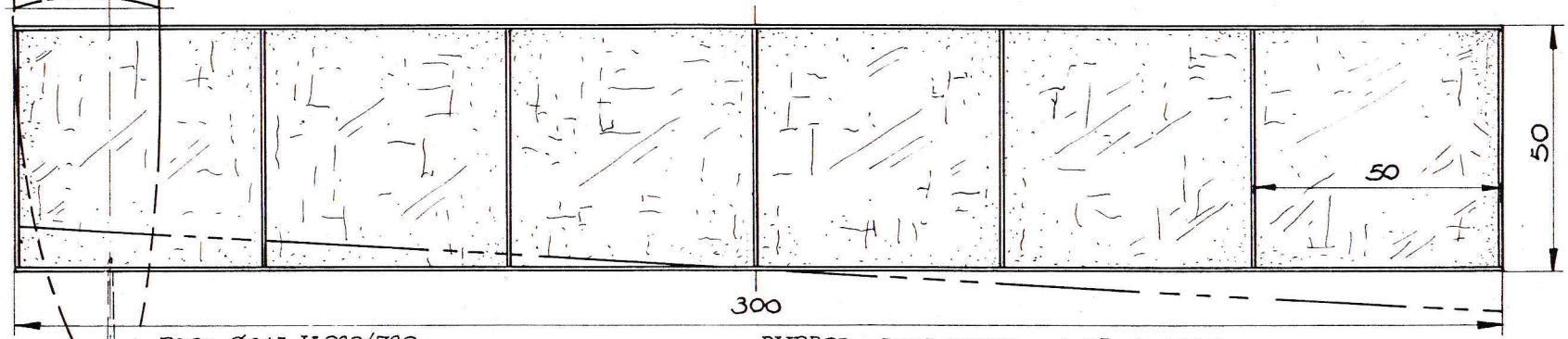



RUBBER TORQUE LIMITS COMPARISON
(MAX. TORQUE VS WIDTH)
CHAMPION
FAI-TAN
PIRELLI X-SECTION .042 / .091
PIRELLI
THE DOTTED PLOT DENOTES PIRELLI INCREASED TO SAME CROSS SECTIONAL AREA AS OTHERS.
J B Grant
JULY 1980
OUNCE INCHES
.5
1.0
50
0
.030
.040
.050
.060
.070

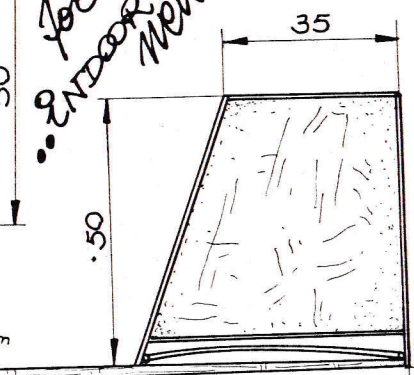

SAFE TURNS PER INCH OF LOOP LENGTH
3 PREWINDS
1979 PIRELLI
CHAMPION/FAI BLACK
FAI-TAN
LUBED WITH SIG SUPER STRENGTH
TURNS PER INCH OF LOOP
180
160
140
120
100
80
60
.020
.040
.050
.060
.070
.080
.090
.100
.110
.120
WIDTH~INCHES
J B Grant
JULY 1980

WING & STABILIZERS – BALSA ..AB.. 0.09g/cm³ 1×1.5, PROPELLER – BALSA..BC.. 0.08g/cm³ ≠1>0.4, FUSELAGE – BALSA..BC.. 0.15g/cm³ 3×6,
BOOM – BALSA..BC.. 0.09g/cm³ 3×3 > 1.5×1.5, RIBS – BALSA..BC.. 0.09g/cm³ 1×1.5, GLUE ..UHU·HART.. & ..VELPON.., COVERING – SILVER MYLAR.





for ..INDOOR NEWS..

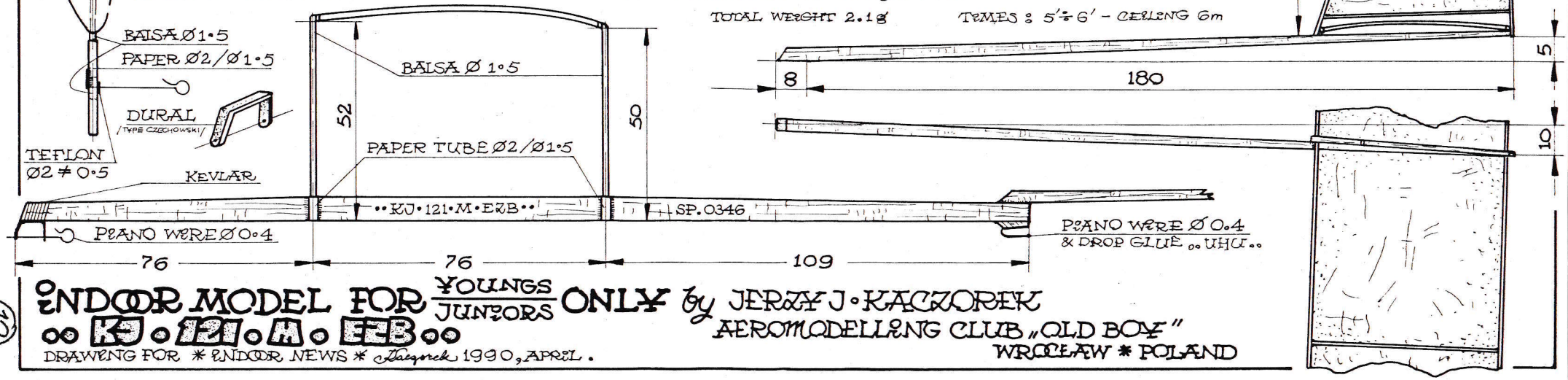


PROP. Ø345 H 620/720

RUBBER ..ALPA ROMEO.. 1.55g/m ×430

TOTAL WEIGHT 2.1g

TIMES: 5'÷6' – CEILING 6m



ENDOOR MODEL FOR YOUNGS / JUNIORS ONLY

..KJ·121·M·EEB..

by JERZY J. KACZOREK
AEROMODELLING CLUB „OLD BOY"
WROCŁAW * POLAND

DRAWING FOR * INDOOR NEWS * Kaczorek 1990, APRIL.

12

FAREWELL, WALT

By Bill Hannan

On March 1st, 1990, Walter E. Mooney, age 64, passed away.

How can one let go of such a friend?
By reflecting upon his accomplishments?
By remembering joys shared with him?

Walt was an artist, author, engineer, historian, test pilot, lecturer, TV performer and possibly the most productive designer of model airplanes in the United States, if not the world.

Truly a "total aviation person", he was equally at home in the spheres of model aircraft, sailplanes, lightplanes and aerospace vehicles, although one suspects that the smallest ones were his favorites.

Walt's enthusiasm for life was contagious - he delighted in sharing his pleasures with others - and gave freely of his encyclopaedic knowledge. His energy seemed boundless, and he packed more living into a day than anyone else I've ever met. His curiosity was unlimited, extending far beyond aviation, encompassing animals, especially birds, all types of machinery, languages and philosophy.

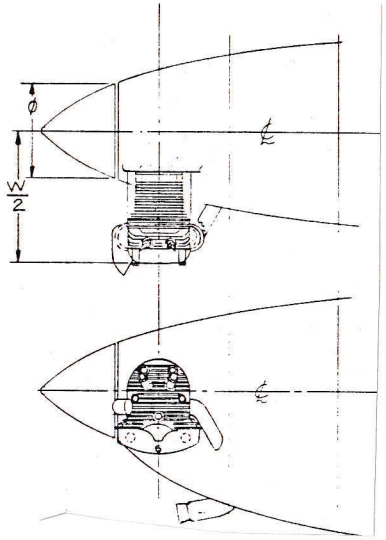
He had friends throughout the world, and a large portion of his spare(?) time was devoted to answering mail. He also had strong feelings for political injustice and used his powerful pen to make his opinions known. Counterbalancing this was his remarkable ability to deliver jokes and puns in apparently endless variety.

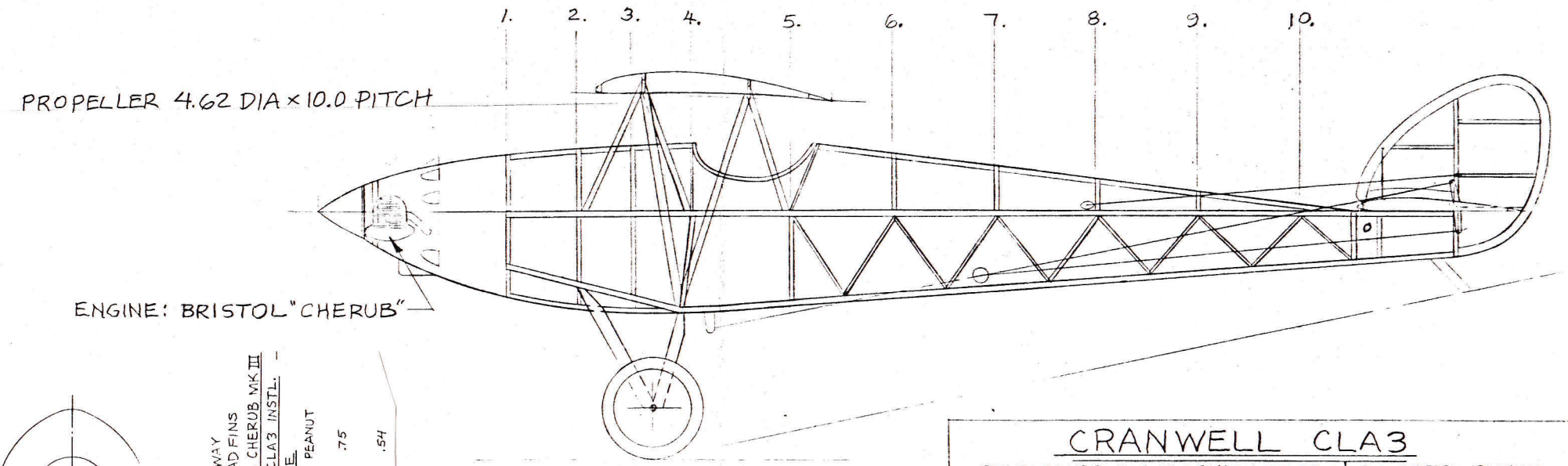
To Walt, each day was a new adventure, and he made the most of it, finding "silver linings" even in situations which would have discouraged most people. For example, when confined to a hospital bed some years ago with a serious heart condition, Walt didn't feel sorry for himself at all. Rather, he seized the opportunity to design and draw half a dozen new Peanut Scale models! And, his positive outlook made such an impact on the nurses that they told him he was one of the very few patients they didn't want to leave...

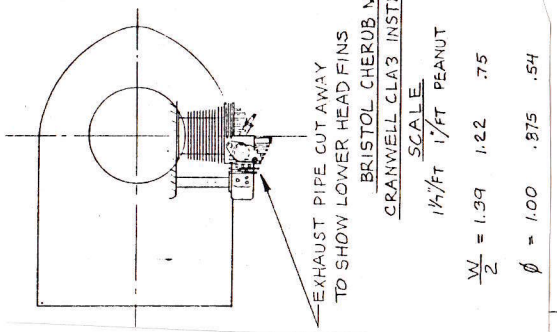
Walt leaves us with a rich legacy -his family - all of whom are endowed with sizeable portions of his philosophy, his legion of friends who will help keep his memory alive, and, of course, his designs which are now such an integral part of both full-size and miniature aviation.

In thinking back over the many years it was my good fortune to know Walt Mooney, I remember most his cheerful disposition, optimism, patience and willingness to share.

One special experience stands out: During a glorius summer day near Lake Elsinore, California, one of Walt's models caught a thermal and headed for the horizon, with the two of us running, eyes skyward, to keep it within view. When the model finally landed we were far from the contest site and weary from the long chase. It was only as we gazed around us that we noticed thousands of brilliant wildflowers in varigated colors extending in all directions. As we sat down among them to rest, Walt turned to me and said: "You know Hannan, this is probably as close to Heaven as we'll ever be here on earth." How right he was...







(13)

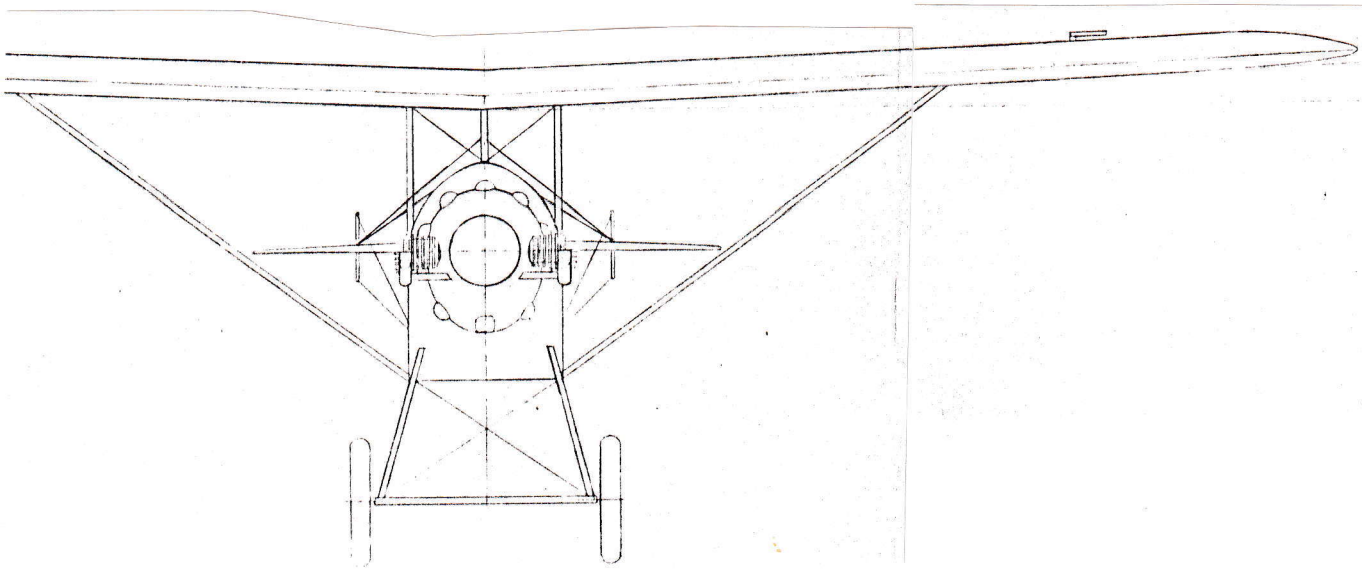
ENLARGE 141%

CRANWELL CLA3

DESIGNED BY FLIGHT LIEUT. N. COMPER, BUILT BY THE CRANWELL LIGHT AEROPLANE CLUB FOR THE 1925 LYMPNE RACES. SPAN 21 FT

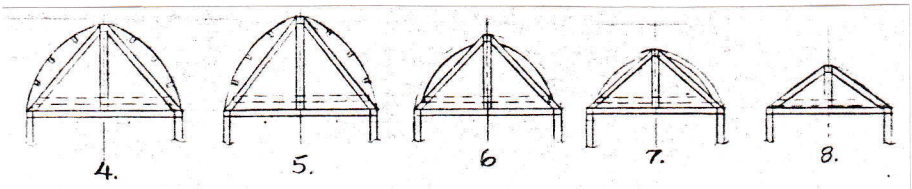
REFERENCES: "AVIATION", SEPT 7, 1925
JANES' "ALL THE WORLDS AIRCRAFT", 1926

DRAWN: JB Grant 27 OCT '88 SCALE: PEANUT



.28 (7.1 MM)

NOTE:
ON STATIONS 1 THROUGH 8, CEMENT IN PLACE THE TRUSS MEMBER SHOWN DOTTED, THEN REMOVE THE LOWER PORTION OF THE INVERTED "T" TRUSS TO PROVIDE CLEARANCE FOR THE RUBBER MOTOR.
STRINGERS ARE EQUALLY SPACED.
LONGERONS & MAIN TRUSSES -.050 SQ (1.3MM)
MINOR TRUSSES .025 x .050 (.65 x 1.3 MM)
SHEET PARTS .018 (.50 MM)
NOSE BLOCK WALL THICKNESS-.050 (1.3 MM)



ENLARGE 141 %