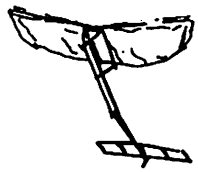


Indoor News





Issue 38 August 1996

DIARY

22-25 August Liège Belgium	**19th International Indoor,** All classes, see details in last issue. Contact: Bernard Delhalle, 62, Rue de Souvret, B 4200 Sclessin-Liège, Belgium, T +32 41 310792

POSTAL/PROXY EVENTS

1 August - 31 October 1996	**Japan vs USA 1996 Easy B Postal,** USA rules Easy B, 3 man teams. Contact: Tom Vallee, 444 Henryton So., Laurel, MD 20724-2222, USA, tel. (301)498-0790

1996 Indoor World Championships

Moscow, Idaho, USA, August 4-9, 1996

Report by Edmund Liem (CAN)

In the fall of 1995 there were rumours that the 18th Indoor World Championships could not be held in the Czech Republic. Andrew Tagliafico immediately offered to hold the Championships in the Kibbie Dome in Moscow, Idaho, USA. Through the support of Laurie Barr, the Indoor-minded countries and the CIAM accepted the offer and in a very short time Andrew Tagliafico and his team managed to set everything needed together. Preceding the official training day there were possibilities for practice flying during the Kibbie Dome Annual Trash. Only a few teams made use of the extra training possibilities. During the days preceding the World Championships the weather was very cold compared to summer standards. Outdoor temperatures were in the region of 20°C instead of the usual 30+°C. This sudden temperature drop and the hard blowing wind caused drift in the Kibbie Dome like never experienced before. Especially in the morning hours the drift was bad. Later on the day the conditions were getting better. During the International EZB contest the conditions were good enough to produce very long flights.

During official training day we heard of several cancellations of participants. The complete Polish team (Senior and Junior) could not come because of lack of finances. The complete Chinese team had to cancel due to visa problems. The Ukrainian team came only with the senior team, they had to leave the junior team home. The Czech Republic cancelled also. And the sole Yugoslavian entry did not show up. René Butty told that Dieter Siebenmann had to cancel his trip due to eyes problems. This resulted in a 10 country Senior Championships with 33 participants and a 1 country Junior Championships with 1 participant, Jake Palmer from the USA.

On the training day it was pretty obvious that almost everybody was using variable pitch propellers. Richard Doig (USA) and Pentti Nore (FIN) were the only ones using variable diameter propellers. And John Tipper (GBR) and Laurie Barr (not all the time) and Guy Cognet (FRA) were the only ones using fixed pitch. Most models were conventional braced models. Only Bernard Hunt, Laurie Barr and John Tipper were flying unbraced tandem models. The Romanian team had very small model boxes, designed by Aurel Popa. They measured 67 x 25 x 25cm approx. and contained 4 (FOUR) braced models, including propellers! This box solves all transport problems, because it fits in the overhead com-

COLOPHON

Indoor News is published at least four times a year and covers all types of indoor models, from peanuts to microfilm. Texts can be sent in Dutch, English, German and French. Please type your texts on 12,5 cm width. Texts can be sent on floppy disk (3½ or 5¼) in any text format. I can make drawings, if you are no draftsman.

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Indoor World Championships

Moscow, Idaho, United States, Aug 4-9, 1996

Individual Results

Name	Team	1	2	3	4	5	6	Total
1. Steve Brown	DWC	12'07	37'19	48'22	**49'18**	**50'29**	00'00	99'47
2. Cezar Banks	USA	39'30	44'27	**48'47**	**49'50**	44'28	42'17	98'37
3. René Butty	SWI	35'00	**46'26**	45'42	**48'01**	30'15	43'48	94'27
4. Bernard Hunt	GBR	36'09	44'44	34'24	**45'38**	39'47	**45'22**	91'00
5. Thomas Merkt	GER	42'14	42'32	**44'36**	43'15	44'33	**45'27**	90'03
6. Gary Underwood	USA	42'31	**45'01**	42'23	14'02	**44'47**	44'42	89'48
7. Vasile Nicoara	ROM	41'55	**43'59**	**44'30**	40'01	42'20	43'38	88'29
8. Jack McGillivray	CAN	**45'57**	10'50	32'59	**41'40**	17'19	23'03	87'37
9. Mike Thomas	CAN	40'56	27'55	41'17	**43'01**	42'12	**42'53**	85'54
10.Deszo Orsovai	HUN	35'07	33'49	36'32	19'23	**43'02**	**42'38**	85'40
11.Pentti Nore	FIN	40'37	40'40	**42'52**	33'11	**41'14**	30'19	84'06
12.Corneliu Mangalea	ROM	14'00	32'58	**39'39**	**43'30**	39'09	37'55	83'09
13.Laurie Barr	GBR	34'52	39'11	**41'04**	14'31	40'18	**41'13**	82'17
14.Richard Doig	USA	38'37	31'15	26'43	33'23	**41'26**	**40'49**	82'15
15.John Tipper	GBR	36'53	37'52	38'22	39'10	**39'22**	**40'47**	80'09
16.Rainer Lotz	GER	37'07	**39'41**	34'29	**40'20**	17'46	38'44	80'01
17.Vasili Moskalev	UKR	33'14	39'04	35'56	**39'40**	37'35	**40'15**	79'55
18.Edmund Liem	CAN	33'32	37'15	**38'48**	31'12	37'00	**39'45**	78'33
19.Lutz Schramm	GER	13'08	**39'33**	37'42	29'19	**38'08**	37'01	77'41
20.Aurel Popa	ROM	**36'52**	**40'42**	31'56	35'12	05'46	27'00	77'34
21.Ferenc Bakos	HUN	**37'52**	**39'03**	00'39	36'33	03'29	10'11	76'55
22.Hideyo Enomoto	JPN	36'39	**39'01**	30'33	**37'39**	19'56	18'52	76'40
23.Peter Keller	SWI	31'44	**36'58**	34'32	18'06	31'49	**39'21**	76'19
24.Yasutaka Tanaka	JPN	00'23	25'16	**37'54**	**38'21**	34'38	37'11	76'15
25.Andras Ree	HUN	31'20	35'09	**38'01**	**36'35**	26'59	00'00	74'36
26.Leif Englund	FIN	21'48	36'06	**36'39**	21'44	31'18	**37'55**	74'34
27.Robert Champion	FRA	18'41	30'41	34'11	35'00	**36'19**	**36'19**	72'38
28.Jake Palmer	USjr.	**34'55**	30'20	12'22	08'47	**37'06**	26'41	72'01
29.Shigeyoshi Nonaka	JPN	14'05	26'51	**39'14**	19'25	18'18	**31'44**	70'58
30.Gennady Iaschenko	UKR	**35'05**	**35'21**	31'07	15'03	35'05	24'25	70'26
31.Harro Erofejeff	FIN	29'42	34'02	**34'05**	31'49	09'24	**34'26**	68'31
32.Larisa Sidorenko	UKR	25'32	28'06	**33'19**	**34'28**	20'02	03'05	67'47
33.Jean-Francis Frugoli	FRA	26'08	20'53	**29'45**	15'34	**32'44**	19'34	62'29
34.Guy Cognet	FRA	**30'16**	20'37	26'18	27'56	28'55	**29'40**	59'56

Team Results

1. USA	270'40
2. Great Britain	253'26
3. Canada	252'04
4. Romania	249'12
5. Germany	247'45
6. Hungary	237'11
7. Finland	227'11
8. Japan	223'53
9. Ukraine	218'08
10.France	195'03
11.Switzerland	170'46



partment of most airliners (details in a later article). The French team suffered lots of travel damage to their models and were forced to do some major repairs.

Day One started with practice from 7.00AM till 12.00AM, followed by two 4 hour rounds ending at 9.00PM. Outdoor temperatures were normal again, and within a day conditions were as the usual Kibbie Dome standard = good to very good. Jack McGillivray from Canada started with an excellent flight. He needed some luck as his model flew through the wires above the curtain rod. He decided not to steer and it paid off with a new personal best and top time for the first round: 45'57! Thomas Merkt (GER), Mike Thomas (CAN) and Vasile Nicoara (ROM) made their first ever 40 minute flights in this round. Defending Champion Steve Brown (USA) had bad luck on his first flight. His rubber came off the front hook at 12'07 and completely damaged the model in midair. He was using a very short motorstick on this model (13", 330mm). The pace was set, and as expected, the winning times would be way above the 45 minutes mark. Steve Brown expected that the winning times would be around 50 minutes.

Round Two showed that Cezar Banks (USA) was still in contention with 44'27. His first round flight was "only" 39'30, but with the model reaching a height of only 20m! Top time in this round went to René Butty (SWI) with 46'26 with still enough room below the curtain rods (= 41m; top of ceiling = 45m), followed by Gary Underwood (USA) with 45'01. Gary had to fly above the curtain rod to achieve this time. Eight flyers flew 40+ in this round. Steve Brown had another bad luck flight, at 37'19 his rubber motor broke in midair, this was the same motor he used on his first flight. The rubber was of the famous August '93 batch. After two rounds Gary Underwood was in first place, followed by Vasile Nicoara and Thomas Merkt.

Day Two was scheduled the same like Day One. Conditions were good, and it was obvious that to avoid difficult steering conditions that you had to fly under the curtain rods. Drift was minimal when you did not get too high, the closer you got to the ceiling the more chances you had to steer. Cezar Banks made a no steer no touch flight of 48'47, followed by Steve Brown with 48'22 and René Butty with 45'42. Thomas Merkt, Vasile Nicoara and Gary Underwood made their third 40+ flights. Laurie Barr switched to a variable prop resulting in 41'17. After three rounds Cezar Banks leads followed by René Butty one minute behind and third was Vasile Nicoara. Team standings were USA, Germany and Rumania.

Round 4 was the last evening round. Those with ambitions to win could not afford to miss this round. Ten flights were 40+ of which 3 were 48+!! Cezar Banks showed the way by flying an incredible top time of 49'50, breaking Steve Browns last year record. This was a no steer flight, although the flight ended in the south-west corner of the building, with at least 25 minutes flying over the stands. Supporters were sitting on the stand to help drift the model back into the open field. This flight was so remarkable that this corner will be remembered as "Cesar's Corner". Cezar's position was very strong by now having a flight of 48'47 and 49'50. Steve Brown improved his best flight to 49'18, but not enough to top Cezar Banks. René Butty showed that he also was in contention with a very fine 48'01. Gary Underwood broke his string of 40+ flight with a hang-up on the curtain rod. Thomas Merkt and Vasile Nicoara still making their fourth 40+ flights! In this round Rainer Lotz of Germany and Corneliu Mangalea of Romania made their first 40+ flights. Bernard Hunt did 45'38 with his tandem model and moved his team into third position. Positions after Round 4: Cezar Banks, Steve Brown and René Butty. Team standings: USA, Romania, Great Britain.

Round 5 started earlier than the other days at 8.30AM. The conditions were good for this last day. Outdoor temperatures were 30+°C with hardly any wind. René Butty had his flight ruined after his stabilizer went out of position during a steering mishap. The flight resulted in a disappointing 30'15. Cezar Banks tried to improve his total but failed at 44'28. Richard Doig finally made a 40+ flight after having to struggle on all of his other flights. He had problems setting his variable diameter propeller for this building. Steve Brown did an outstanding flight in this round. He needed one steer on the descent at 20m height, but otherwise this was an untouched flight staying under three curtain rods. His model landed at an incredible 50'29!!! With this flight he was now leading with one minute to spare over Cezar Banks. Vasile Nicoara and Thomas Merkt habitually continued doing 40+ flights! The Hungarian team had all sorts of bad luck. Two midair collisions and one hang-up, but luckily for Deszö Orsovai his reflight resulted in his best time of 43'02. Andras Ree had so much bad luck that he ran out of models for the sixth round. With one more round to go the standings were: Steve Brown, Cezar Banks and René Butty, teams: USA, Great Britain, Romania and on fourth place Canada. The difference between

fourth to second team place was just about one minute, very close!

For the last round the conditions continued to be very good. Cezar Banks needed at least 49'58 to beat Steve Brown. His flight ended in a disappointing 42'17. René Butty needed 52+ but did only 43'48. So the first three places were decided. Because nobody was in a position to beat him, Steve Brown decided not fly in the sixth round. Thomas Merkt and Vasile Nicoara made their sixth 40+ minute flight, with Thomas at 45'27 just short of the legendary flight of Karl-Heinz Rieke in 1962 (45'40). With a flight of 39'45 Edmund Liem of Canada secured a team medal, but the colour (silver or bronze) was yet to be decided by the last flight of the meeting. After some heroic steering Bernard Hunt made 45'22.

Final Team standings:
1. USA (Cezar Banks, Gary Underwood, Richard Doig)
2. **Great Britain** (Bernard Hunt, Laurie Barr, John Tipper)
3. **Canada** (Jack McGillivray, Mike Thomas, Edmund Liem)

Final Individual:
1. Steve Brown (USA, Defening World Champion)
2. Cezar Banks (USA)
3 René Butty (Switzerland)

Top Junior is Jake Palmer (USA). In the total ranking he ended on place 28. A very good performance for a 17 year old flyer (37'06 is great!). And we also had one lady in the competition from Ukraine, Larissa Sidorenko. With massive support from her team mates she placed 32.

In summary: this was a high quality championship, with high times never seen before in a World Championships. The flying conditions were very good, comparable to Johnson City, but with different characteristics. Steering is still needed, but when you do not get over the curtain rods, the need for steering in minimal. Everybody had at least one flight above 30 minutes, 49 were above 40 minutes!! Thomas Merkt and Vasile Nicoara had all their flights above 40 minutes and Cezar Banks, Gary Underwood and Mike Thomas had 5 40+ flights. For Cezar this is the 7th time he ended in second place. Steve won in Slanic with fixed pitch propellers and now wins in Moscow, Idaho, with variable pitch propellers, a truly great champion. And rumours about the next championships: Nagoya, Japan???

BMFA 1996 Indoor Scale Nationals

Nottingham, May 5, 1996

Report by Reg Boor (GB)

Those of you who follow my occasional reporting of the indoor scale scene will remember that I have been excited by the appearance in the UK and at the Maastricht Interscale of models carved from solid blue foam which are then split apart, hollowed-out for lightness, re-assembled and painted. This technique allows models of monocoque construction to be represented with more fidelity than traditional "stick and tissue" methods, which, because of their visible stucture do not score well as monocoques in the static judging under F4D and F4E rules. Antonin Alfery, we know, was producing fabricated, rather than carved, foam models some years ago but he stayed within the Peanut, or F4F, formula and was caught-out for the opposite reason. At that time in Peanut more points were scored for a traditional structure. This has now been corrected to some extent, but not entirely.

What, you will be asking yourselves, has all this to do with the UK Indoor National Competitions? Well, I feel that we may have seen at this meeting the end of F4D as we have known it since its inception as "Open Rubber" in the UK some decades ago. If you think that this remark is rather strong wait until I tell you that F4D was won by Peter Smart, flying a foam construction 1/44th scale model of the Avro Lancaster, with four rubber motors inside the nacelles, which took-off and flew around so well that the flight judges awarded higher marks for some aspects of the flight than they have ever been inclined to award in their long experience. Where can we go from here? You will recall also that at Maastricht last year Richard Crossley achieved second place in the F4D event with his foam Junkers 88 and that this was the first time ever that a multi-engined, extensible motor model had placed in an F4D competition. Richard, as you will see, was second to the Lancaster at Nottingham. If we remove the multi-engine flight bonuses from the best flights of Peter and Richard, which are 10% for a twin and 20% for a four, we see that Richard's Junkers was awarded the highest flight points but Peter's higher static score combined with his 20% flight bonus won the day for him.

So, from their first appearance a mere twelve months ago, when none of them had undercarriages and I doubted, in print, whether they could be fitted, we have seen a major breakthrough in manufactu-

ring techniques, allowing the construction of models previously only attempted by the brave or the foolhardy, to win a major UK event. It will be interesting to see what happens next.

Of the other models in F4D, the SE5a of Divs Masters looked and flew beautifully and Mike Goldby's Moustique is a fine model by any standards. As I have said before, Ray Johnson's models always fly well and this year was no exception to that rule. Mike Hadland's Tiger Moth achieved a fine flight. The rest of us tried hard!

In F4E, CO2/Electric, Mike Goldby's Bristol Fighter dominated the static scores, as it has been doing for some time, but closely followed by a Bristol Bulldog of Dave Causer. Both truly superb models. Mike made a breakthrough of his own at this contest by pursuading his F2B to take-off. He has previously won numerous contests from hand-launch with this model. Dave's Bulldog, on the other hand, could not be made to fly well enough to realise his high static score and he placed 4th. The Sopwith Schneider of Mike Allen, with its huge floats fitted with tiny wheels can take-off, fly around and land most convincingly and, in fact, was awarded the best flying score in this event. To everybody's delight, Peter Smart made a superb flight with his Kalinin to place 2nd to Mike's 3rd. In 5th place was Richard Granger flying the model of his Father's Archeopteryx tailless aircraft that he flew at Maastricht last year. Powered by a CO2 twin, not electric as I stated then, it is very tricky he tells me. Too much charge and it hits the ceiling, too little and it does not get the required 15 seconds, get the charge right and it tends to straighten-out at the end of the power run and fly into the walls so thus requires launching from the correct place in the hall. The trials of aeromodelling, why do we do it ? Richard was awarded the Aeroplane Monthly trophy for the best model of an "ultralight" flown at the meeting and thoroughly deserved it.

In F4F, Peanut, my dreams came true! Not, you understand because I won, far from it, but because a low-wing model broke the domination of Harris's Voisin and Master's SE5a. Hope survives! A Douglas Dauntless in blue foam by Richard Crossley was in 2nd place. This model is an absolute work of art in the material. Fully crewed and in camouflage with many details it is extremely light and was incredibly 1st in the flying section. However, it lacks an undercarriage, so must lose static marks there and, of course, being a monocoque you cannot count the "number of wing ribs", so it loses marks there as well. Which is what I meant earlier when I said that foam construction as opposed to traditional in Peanut is not yet quite a level playing field and this tends to penalise models of low-wing aircraft as most of them are monocoque. However, well-done Richard.

Another most interesting result in F4F was the 4th place of Derek Knight flying a Supermarine Swift jet fighter with a propeller at the front! An amazing 8th in static and 7th in flying. Note, also, the 3rd place in F4F flying by Nick Peppiat with his Aeronca, which is a delightful little model. Unfortunately, I do not have all the actual flight times but my own two flight total was 1 minute 27 seconds for 10th place in the flying!

In Pistachio also the Masters/Harris, SE5a/Voisin domination of recent contests was split by the 2nd place of Nick Peppiat flying a Beercat. This model was 1st in flying but 5th in static. Nick, in fact, tied in overall score with the SE5a but as his static score was the lower of the two he had to concede 1st place to Divs Masters. As did Frostick with Harris for 3rd place. These three models have, in fact, been exchanging top placings on the UK Pistachio scene for some time. By the way, I'm fairly sure that Beercat is correct and not Bearcat.

Richard Granger with his usual aplomb and enthusiasm organised the air race and the mass-launch. In the air race the problem of collisions with the heads of other crews is, I think, a difficulty that we should address to make the event more attractive. I shall not complain about the mass-launch, which was altogether more restrained this time, being for profile scale models in which each round lasted for between two and three minutes, because my own Spitfire prototype was 2nd, after many rounds, to Peter Frostick's flat foam Lacey.

To end on a very personal note. When I was a little boy I was taken to Nottingham (with my Mother who was a professional soprano and had a concert in the town) and, in particular, to the Castle Museum where I can remember to this day staring up at what I should now guess to be an SE5a which hung in the entrance hall. Nottingham was the birthplace of Captain Albert Ball, one of the WW1 Air Aces who crashed or was shot down, we do not know which, and killed at the tender age of 20 years the day after his 47th victory. There are still memorials to Ball in the present Museum but not, alas, the SE5a.

BMFA 1996 Indoor Scale Nationals

INDOOR SCALE F4D, EXTENSIBLE MOTORS

PLACE	NAME	MODEL	FLY1	FLY2	FLY3	FLY4	STATIC	TOTAL
1	P.Smart	Lancaster	604.8	676.8	823.2	1357.2	928	2285.2
2	R.Crossley	Junkers 88	1229.8	1062.6	1024.1	1343.1	873	2216.1
3	D.Masters	SE5a	963	746	750	852	1052	2015.0
4	M.Goldby	Moustique	784	832	934	967	900	1867.0
5	R.Johnson	P/Porter	867	990	0	640	710	1700.0
6	M.Hadland	Tiger Moth	933	600	1024	703	674	1698.0
7	R.Boor	H/Fury	0	0	776	0	556	1332.0
8	V.Masters	Lacey M10	666	0	566	0	506	1172.0
9	R.Blackburn	Widgeon	492	0	584	436	520	1104.0
10	K.Bates	P/Vagabond	274	264	570	380	478	1048.0
11	D.Knight	S/Swift	504	666	402	518	370	1036.0
12	D.Reece	C/Super Ace	0	410	0	0	473	883.0
13	J.Lawson	Avro Triplane	218	309	314	324	499	823.0

INDOOR SCALE F4E, CO2/ELECTRIC

PLACE	NAME	MODEL	FLY1	FLY2	FLY3	FLY4	STATIC	TOTAL
1	M.Goldby	Bristol F2B	912	1029	871	904	1081.5	2110.5
2	P.Smart	Kalinin	0	760	1040	924	892.5	1932.5
3	M.Allen	S/Schneider	1052	0	1124	1162	749.5	1911.5
4	D.Causer	B/Bulldog	0	0	0	794	1054.5	1848.5
5	R.Granger	Archeopteryx	860	934	0	828	869.5	1803.5
6	R.Johnson	DH5	684	824	0	0	866.0	1690.0
7	J.Hovel	B/Mono	0	920	0	897	764.5	1684.5
8	D.Knight	Avro 560	724	0	0	0	847.5	1571.5
9	I.Pallister	S/Arrow	0	491	0	0	950.5	1441.5
10	G.Spencer	Tiger Moth	0	608	0	452	827.5	1435.5
11	M.Green	Anec	648	464	538	729	626.5	1355.5

INDOOR SCALE F4F, PEANUT

PLACE	NAME	MODEL	FLY-PLACE	STATIC-PLACE	TOTAL
1	M.Harris	Voisin	2	2	4
2	R.Crossley	Dauntless	1	5	6
3	D.Masters	SE5a	6	1	7
4	M.Hadland	Tiger Moth	4	4	8
5	D.Knight	S/Swift	7	8	15
5	P.Boys	H-47	5	10	15
5	N.Peppiat	Aeronca	3	12	15
8	V.Masters	Lacey M10	11	11	22
8	L.Smith	Albatross	19	3	22
8	D.Prior	Zlin 526	8	14	22
11	G.Dimes	Gypsy Moth	17	6	23
11	J.Hovell	Blackburn	14	9	23
11	R.Boor	Avro 560	10	13	23
14	B.Pallister	S/Sparrow	9	17	26
15	P.Frostick	MB5	21	7	28
16	B.Stichbury	Piper Cub	13	16	29
17	B.Pursglove	He46	16	15	31
17	A.Allen	Pulsar	12	19	31
19	J.Lawson	Pottier	15	18	33
20	K.Bates	Buttercup	18	20	38

INDOOR SCALE PISTACHIO

PLACE	NAME	MODEL	FLY-PLACE	STATIC-PLACE	TOTAL
1	D.Masters	SE5a	4	2	6
2	N.Peppiat	Beercat	1	5	6
3	M.Harris	Voisin	5	3	8
4	P.Frostick	Lacey M10	2	6	8
5	D.Hanks	S/Triplane	9	1	10
6	C.Blanch	D/Falke	3	9	12
7	P.Boys	Tiger Moth	10	4	14
7	G.Dimes	Fike E	7	7	14
9	A.Allen	Pulsar	8	8	16
10	B.Stichbury	Hergt Mono	6	10	18

1996 Mini-Stick Postal Competition

Name	Country	Time	Ceiling Ht- ft	rection fac	Corrected time	Place
Vangorder,Walt	USA	538	17.916	1.733	932.598	1st Overall
Clem ,Jim	USA	558	23	1.618	902.628	1st USA
Toru, Yatabe	JAPAN	563	29.52	1.504	846.670	1st International
Vancil,Mark	USA	424	10.5	1.984	841.139	2nd USA
Platt ,Bob	USA	398	8.166	2.101	836.138	3rd USA
Toru, Onishi	JAPAN	547	29.52	1.504	822.608	2nd International
Mzik, Larry	USA	473	20	1.682	795.698	
Frugoli,Gene-Francis	FRANCE	378	8.22	2.098	792.969	3rd International
Yatabe, Toru	JAPAN	508	29.52	1.504	763.958	
Collins, Walt	USA	359	8.166	2.101	754.205	
Sova, Tom	USA	441	20	1.682	741.866	
Shigezoshi, Nonaka	JAPAN	470	25.94	1.562	734.367	
Hoffman, Earl	USA	424	18.95	1.707	723.898	
Kazumasa, Kihara	JAPAN	473	29.52	1.504	711.323	
Sablscak Tony	USA	353	10.5	1.984	700.288	
Shigezashi, Nonaki	JAPAN	439	25.94	1.562	685.930	
Sauderlsen, Pete	USA	401	18.95	1.707	684.629	
Cagan, John	USA	395	18	1.731	683.852	
Richards,Derek	USA	400	18.958	1.707	682.844	
O'Donnell, John	USA	400	18.958	1.707	682.844	
Person< Lee	USA	322	8.166	2.101	676.474	
Jintarow, Nakao	JAPAN	432	25.94	1.562	674.993	
Thuthu, H	JAPAN	428	25.94	1.562	668.743	
Wilson, Roy	ENGLAND	438	28.07	1.527	668.656	
Yoshihiko, Arai	JAPAN	423	25.94	1.562	660.931	
Shinsuke, Miura	JAPAN	435	29.52	1.504	654.177	
Hirotdvaka,Inove	JAPAN	418	25.94	1.562	653.118	
Hidahararu, Thutenu	JAPAN	416	25.94	1.562	649.993	
? ?	JAPAN	429	29.52	1.504	645.154	
Kaneko, Shoji	JAPAN	428	29.52	1.504	643.650	
Minorue, Jida	JAPAN	427	29.52	1.504	642.146	
Yates, Dave	USA	374	18.958	1.707	638.459	
Crosby, Don	USA	476	43	1.338	636.844	
Grant, Jim	USA	365	18	1.731	631.914	
Tadashi, Abe	JAPAN	420	29.52	1.504	631.619	
Kurihara, Hiroshi	JAPAN	402	25.94	1.562	628.119	
Aldo, Akahoshi	JAPAN	397	25.94	1.562	620.306	
Alverez, Phil	CANADA	478	48.3	1.288	615.803	
Slusarczyk, Chuck	USA	475	48.3	1.288	611.938	
Sadao, Soneya	JAPAN	391	25.94	1.562	610.931	
Atzio, Atzakoshi	JAPAN	391	25.94	1.562	610.931	
Nakao, Jintarou	JAPAN	387	25.94	1.562	604.681	
Goro, Ueno	JAPAN	386	25.94	1.562	603.119	
Roch Edmond	FRANCE	354	19.52	1.694	599.506	
Tomita, Sadayoshi	JAPAN	353	19.84	1.686	595.146	
Tellier, Fred	USA	458	48.3	1.288	590.037	
O'Grady, Dan	CANADA	483	59	1.205	582.014	
Hiroshi, Anno	JAPAN	385	29.52	1.504	578.984	
Tsunekaru, Thujz	JAPAN	383	29.52	1.504	575.976	
Yuichi, Kateoh	JAPAN	367	25.94	1.562	573.432	
Ross, Lincoln	USA	300	12.8	1.891	567.293	
Kazumasa, Komura	JAPAN	377	29.52	1.504	566.953	
Sadayoshi, Tomita	JAPAN	363	29.52	1.504	545.899	
Fukuda, Minoyu	JAPAN	348	25.94	1.562	543.744	
Weckerly, Stu	USA	416	48.3	1.288	535.929	
Tornkvist, George	SWEDEN	250	7.8	2.122	530.509	
Oishefsky. Peter	CANADA	439	59	1.205	528.994	
Kiyoshi, Sikimizu	JAPAN	338	25.94	1.562	528.120	
Seizou, Tamia	JAPAN	349	29.52	1.504	524.845	
Akira,Someya	JAPAN	332	25.94	1.562	518.745	
Hashimoto, Kenjiro	JAPAN	339	29.52	1.504	509.807	
Hirashi, Kurihara	JAPAN	320	25.94	1.562	499.995	
Brocks, Peter	USA	236	8.166	2.101	495.801	
Ikeda, Yoichi	JAPAN	327	29.52	1.504	491.760	
Komura, Kazumasa	JAPAN	324	29.52	1.504	487.249	
Steeb,Don	CANADA	403	59	1.205	485.614	
Tokeshi, Myozorown	JAPAN	307	25.94	1.562	479.683	
Harolaka, Inone	JAPAN	304	25.94	1.562	474.995	
Long, Don	CANADA	363	48.3	1.288	467.649	
yoichi, Ikeda	JAPAN	303	29.52	1.504	455.668	
Tamia, Seizo	JAPAN	298	29.52	1.504	448.149	
Campbell, Dave	USA	225	10.5	1.984	446.359	
Grange, Yannick	France	256	19.52	1.694	433.541	
Tabellini, Renzo	ITALY	279	26.9	1.546	431.316	
Sullivan, Ed	USA	204	8.166	2.101	428.573	
Pontan, Sven	SWEDEN	263	23.8	1.602	421.298	
Dimes, George V.	ENGLAND	246	19.3	1.699	417.902	
Orr, Don	USA	195	8.166	2.101	409.666	
Chambers, T	USA	253	24.6	1.587	401.442	
De Angelo, Giacomo	ITALY	259	26.9	1.546	400.397	
VanDover,Abram	USA	186	8.166	2.101	390.758	
Slusarczyk,Chuck	USA	321	59	1.205	386.804	
Rosenberg, David	USA	279	59	1.205	336.195	
Hartstein,Daniel	SWEDEN	181	19.84	1.686	305.160	
Barber, Jack	USA	253	59	1.205	304.865	
Pianigiani, Franco	ITALY	155	26.9	1.546	239.620	
Font-Bellot, Luis	SPAIN	127	13.3	1.873	237.870	
Rodriguez, Santiago	SPAIN	134	16.4	1.775	237.819	
Ogden, Ron	USA	178	59	1.205	214.490	
Hacker, Vern	USA	162	59	1.205	195.210	
Ms. De Robertis, Stefania	ITALY	116	26.9	1.546	179.328	
Bender, Robert	USA	126	36.54	1.409	177.508	
Spagnoli, Maurio	ITALY	102	26.9	1.546	157.685	
Haro-Martinez, Fernando	SPAIN	81	13.3	1.873	151.713	
Fagnotti, Maurizio	ITALY	97	26.9	1.546	149.956	

INTERNO 3. H 1:2

A 180

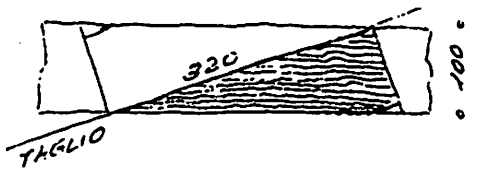
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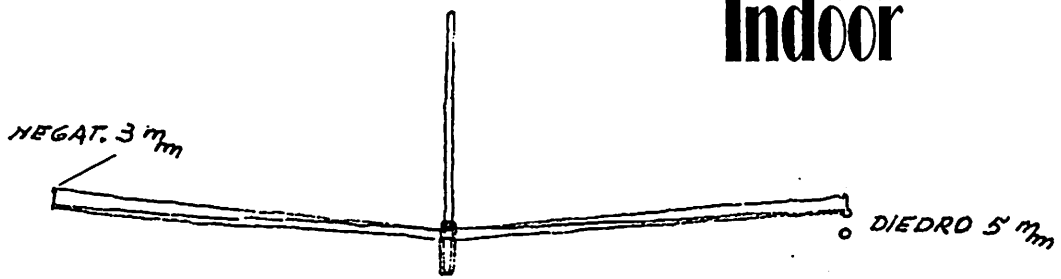
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Q/S 2,7 g/dm²

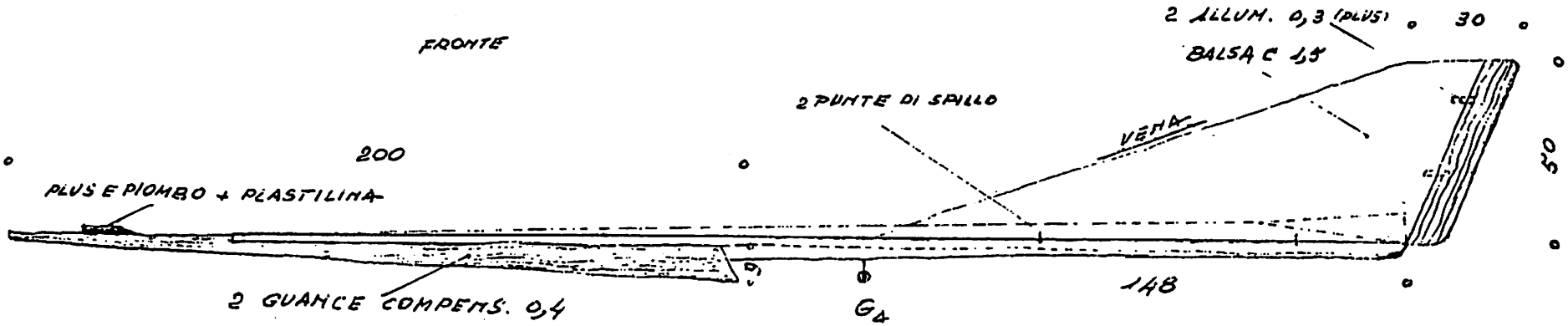
MICHELE IANNACCI
16·XI·94

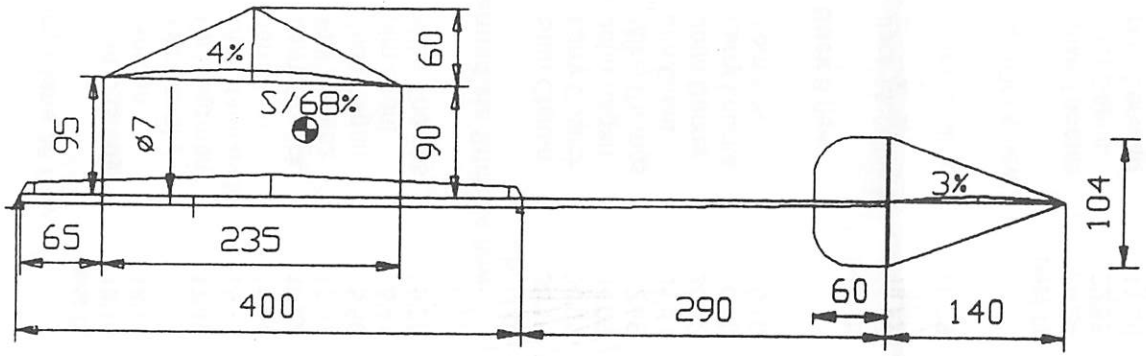


News
Indoor



FRONTE

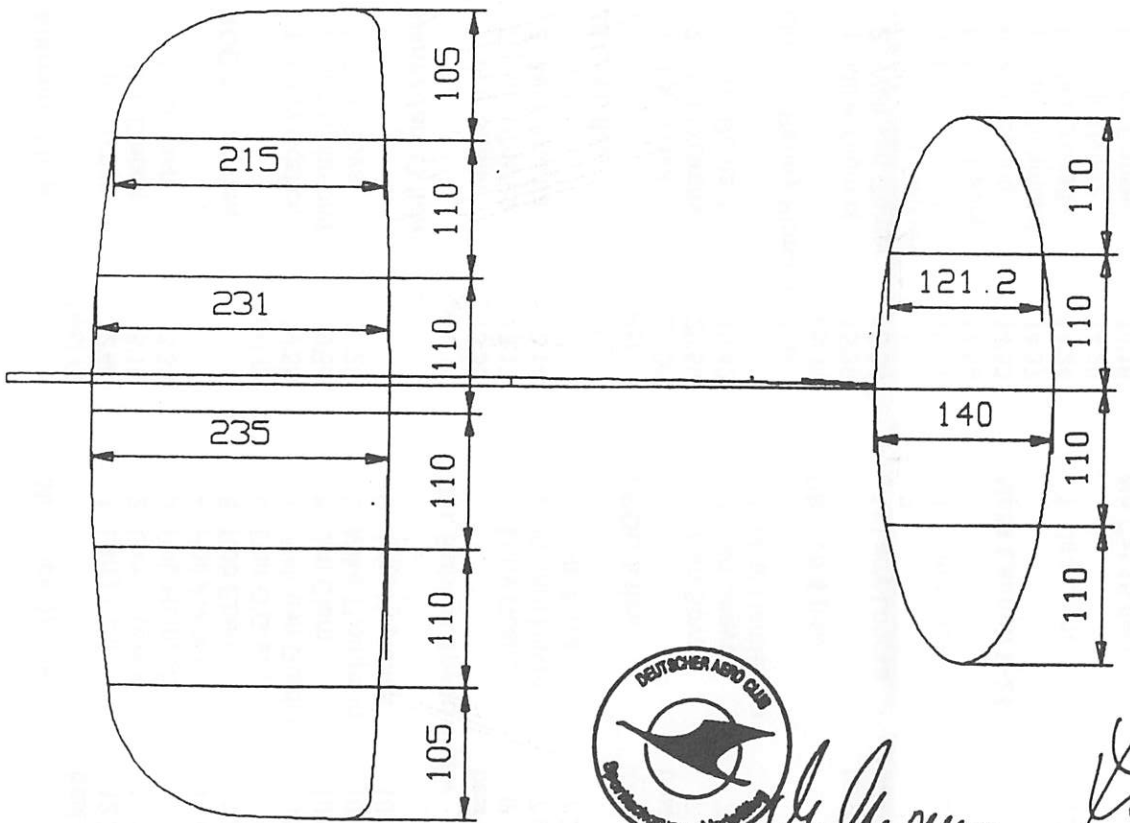


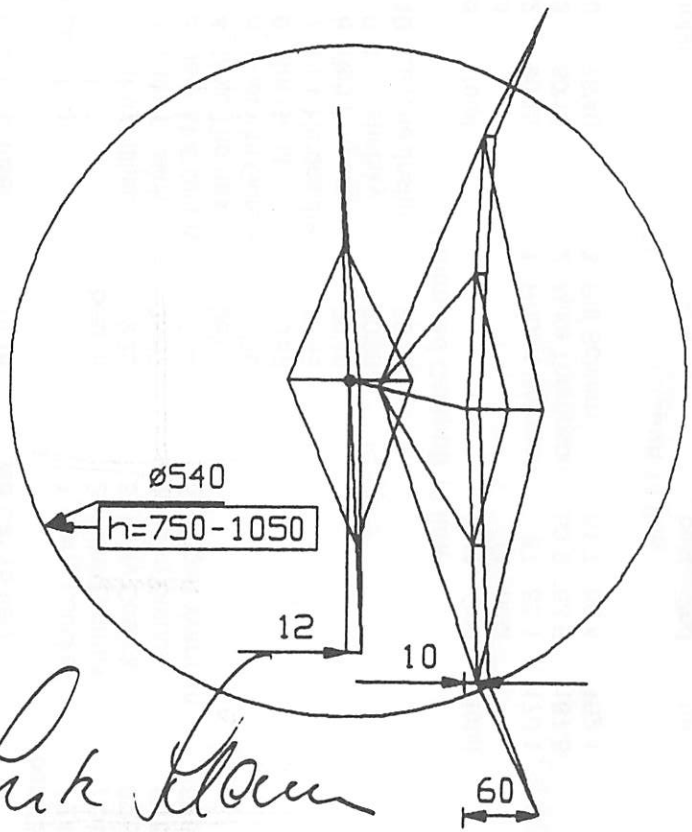


Gewicht	
Tragfläche	360 mg
Rumpf	340 mg
Leitwerk	240 mg
Propeller	240 mg
Gesamt:	1180 mg

Gummi: TAN1.4g/360 lang
1720 Umdr.
Rekordzeit: 36:56 min./Kat. 1

Sporthalle Dillingen/ 20/05. 1995
Hallenhöhe: 6.9 m
Kanstr. Lutz Schramm





United States Indoor Championships

Johnson City, May 29 - June 2, 1996

Penny Plane 36 flew

		best flt
1	Dan O'Grady	18'16
2	Gordon Wisniewsky	18'14
3	Phil Hartman	17'49
4	Dick Hardcastle	16'26
5	Jim Clem	16'24
6	Larry Coslick	16'22
7	Phil Alvarez	15'53
8	John Kagan	15'50
9	Jim Grant	15'41
10	Mike Thomas	15'25

Intermediate Stick 24 flew

		best flt
1	Stan Chilton	38'10
2	Larry Coslick	36'05
3	John Kagan	34'09
4	Mike Thomas	32'49
5	Jim Grant	31'51
6	John Barker	30'32
7	Larry Loucka	30'30
8	Tom Sova	30'10

HL Stick 8 flew

		best flt
1	Jack McGillivray	41'06
2	Stan Chilton	40'48
3	Larry Coslick	40'29

Cabin ROG 4 flew

		best flt
1	Mike Thomas	24'24
2	Ron Ganser	22'58
3	Nick Leonard	11'39

Ornithopter 4 flew

		best flt
1	Roy White	14'29
2	Larry Coslick	12'40
3	Ed Ripley	7'15

Helicopter 3 flew

		best flt
1	Tom Vallee	9'00
2	H.J. Diebolt	5'51
3	Bill Bigge	2'14

Autogiro 3 flew

		best flt
1	Ron Ganser	12'46
2	H.J. Diebolt	8'15
3	Fred Rash	3'33

ROG Stick 4 flew

		best flt
1	Larry Coslick	19'55
2	Jim Richmond	19'36
3	Tom Sova	16'28

Manhattan 13 flew

		best flt
1	Jim Grant	13'35
2	Larry Coslick	13'17
3	Mike Thomas	13'14

35 CM 8 flew

		best flt
1	Tom Sova	23'06
2	Dan O'Grady	20'59
3	Rob Romash	19'42

Limited Penny Plane 59 flew

		best flt
1	Mike Thomas	15'39
2	Walt van Gorder	15'34
3	Jack McGillivray	15'27
4	Larry Coslick	15'01
5	William Pavek	14'59
6	Rob Eberle	14'53
7	Jim Richmond	14'37
8	Dan O'Grady	14'24
9	Phil Alvirez	14'20
10	John Ganser	14'16

EZB 37 flew

		best flt
1	Larry Cailliau	29'25
2	Larry Coslick	28'57
3	Jack McGillivray	26'54
4	Mike Thomas	26'08
5	Walt van Gorder	24'50
6	Jim Grant	20'59
7	Dick Hardcastle	20'55
8	Rob Romash	20'40
9	P. Olshefsky	20'36
10	Eugene Joshu	20'32

Ministick 37 flew

		best flt
1	Larry Cailliau	12'20
2	Larry Coslick	12'17
3	Rob Romash	12'11
4	Phil Alvirez	11'47
5	Rob Eberle	11'22
6	Dan O'Grady	11'19
7	Walt van Gorder	10'55
8	Jim Clem	10'54
9	Mike Thompson	10'40
10	John Koptonak	10'37

Unl. Rubber Speed 4 flew

		best flt
1	Larry Coslick	6.02
2	William Pavek	7.63
3	Tom Sova	7.76

FROG 5 flew

		best flt
1	Tom Sova	7'52
2	Ted Seaver	7'13
3	Neal Henderson	6'22

PRO 20 4 flew

		best flt
1	Larry Loucka	24'18
2	Tom Sova	21'37
3	Dan Marek	16'21

Mass Launch P-24

1	Jim Clem	5'25

No Cal 18 flew

		best flt
1	Larry Loucka	7'24
2	Mike Thomas	7'04
3	Larry Coslick	6'25
4	John Diebolt	6'18
5	Robert Warman	6'16

F1D 8 flew

		best flt	2nd best	total
1	Jim Richmond	45'43	44'32	90'15
2	Richard Doig	41'03	39'13	80'16
3	Bill Hulbert	40'20	38'20	78'40

Hand Launch Glider 5 flew

		best flt	2nd best	total
1	Bernard Boehm	75.8	75.4	151.2
2	Rob Eberle	70.5	67.8	138.3
3	Rob Romash	66.8	66.0	132.8

Unlimited Catapult 13 flew

		best flt	2nd best	total
1	Robert Warman	87	83.1	170.1
2	Mike Thompson	83.9	83.6	167.5
3	Bill Schlarb	81.7	80.4	162.1

Standard Catapult 14 flew

		best flt	2nd best	total
1	Mike Thompson	82.5	82.5	165.0
2	Bill Schlarb	81.3	81	162.3
3	Ralph Schlarb	79.8	79.8	159.6

Bostonian 16 flew

		best flt	2nd best	flt total	charisma	total
1	Richard Miller	5'29	5'16	645	1.18	761
2	Mike Thomas	5'03	5'30	633	1.14	738
3	Mike Thompson	5'29	5'25	654	1.12	732
4	Jim Grant	4'53	4'23	556	1.17	650
5	Larry Coslick	4'43	4'15	544	1.18	641

Peanut Scale 16 flew

		subject	scale sc	best flt	best max	2nd flt	2nd max	avg	total
1	Jack McGillivray	Voisin	137.5	106	106	97	97	101.5	239
2	Ron Ganser	Voisin	123.75	112	112	100	100	106	229.75
3	Mike Thompson	Farman	107.5	119	107.5	116	107.5	107.5	215

Kit Plan Scale 7 flew

		subject	best max	2nd flt	2nd max	fidel.pts	craft pts	best 2 flts	total
1	John Blair	Fairchild Ranger	92		92	57	35	184	276
2	Richard Miller	Howard DGA-9	92		92	57	35	184	276
3	Jim Grant	Taylorcraft	92	92	92	58	34	184	276

Flying Rubber Scale 6 flew

		subject	best flt	2nd flt	avg	time pts	scale pts	total
1	Ron Ganser	1911 Cessna	2:00	1:49	0:90	90	97	187
2	Jack McGillivray	SE-5	0:90	0:90	0:90	90	93	183
3	John Blair	Church Midwing	0:90	0:87	0:885	88.5	90.5	179

FAC Scale 11 flew

		subject	scale sc	best flt/secs	flt sc	total
1	Jack McGillivray	Voisin	90	94	76	166
2	Richard Miller	Wet Wot	81	94	76	157
3	J. Miller	Voisin	92	65	62.5	154.5

High Wing Mono 12 flew

		subject	scale sc	best flt/secs	flt sc	total
1	Bill Passarelli	PAMA	62.5	120	92.5	145
2	Mike Thompson	Lacey M-10	60	82.5	82.5	142.5
3	Stu Weckkerly	Stout 2-AT	52	120	82.5	134.5

Golden Age Scale 9 flew

			flt 1	flt 2	flt 3	total
1	Stu Weckerly	Stout 2-AT	120	120	120	360
2	John Koptonak	Fairchild Ranger	120	120	120	360
3	Dave Rees	Nicholas Beasley	120	120	120	360

Coconut Scale 5 flew

		time	ranking	scale	total
1	Dave Rees	2'27	2	1	3
2	Stu Weckerly	2'28	1	3	4
3	Bill Landrum	1'35	3	2	5

Pistachio 12 flew

		subject	scale	flt 1	flt 2	flt pts	total
1	William Pavek	Voisin	1	1'31	1'33	1	2
2	Ed Ripley	WeeBee	3	1'06	1'06	4	7
3	John Martin	Quetzalcoatl	5	1'07	1'09	3	8

Grand Champion: Mike Thomas (CAN)

A portable beam balance for indoor models

by Roy Bourke (CAN)

(from SAM 86 Speaks)

It is often handy to carry a simple weighing scale in your field kit for indoor models. Many indoor modelers carry spring scales of various types. However a spring scale is difficult to calibrate, and has a fixed range, so one scale will not cover the range from weighing a rubber motor or a part of an airplane to weighing complete airplanes of various classes. A beam balance, on the other hand, is very easy to calibrate and check, and by using various tare weights, can cover a large series of weight ranges. For this reason I decided to design a simple and rugged beam balance which could be dismantled easily and carried in my field kit.

The resultant beam balance has a basic range of 0-2.5 gm, with sensitivity to measure to .005 gm or better. A series of tare weights extends the weighing range by 2.5 gm increments to 15 gm or more, limited only by the structural strength of the beam. The beam itself is made from a piece of basswood 5/16x7/8x17" long, grooved and shaped approximately as shown, and finished with dope or varnish. For a scale, I used the first 25 cm of a cheap 1/4"wide inch-centimeter tape measure, cutting the tape in half (to 1/8"width) to remove the inch-scale. The stand is made of 1/8"aircraft plywood, with a piece of 1/2" thick hardwood (I used birch) for a base. The stand is off-center to allow access to the scale rider at the zero point of the scale. Details of the main pivot, hook mount, zero adjust screw, and scale rider are shown on the diagram. The tare weight position is at the 25 cm point of the scale, and consists of an embedded brass tube similar to the hook mount. None of the design details are critical, so feel free to innovate or to vary dimensions. The scale rider is the last item to be made, and its weight must be adjusted to calibrate the balance.

When the beam, stand and pivot are completed (less rider), the beam can be balanced. For a balance indicator, insert a short pin or wire in the scale end of the beam. This can be lined up to a reference mark on any stationary object (such as a box, etc.) set up at the end of the beam to indicate balance position. Set the zero-adjust nuts to the center of the screw. Then balance the beam by adding weight to the hook-end (I used heavy solder epoxied into holes in the end of the beam).

Calibration can now be done using only a known 2 gram weight (or any known weight near full-scale). Make up a scale rider to approximately correct weight, position it at the scale zero, and re-check the zero balance. Adjust if necessary using the zero adjustment. Then hang the known 2-gram weight on the hook, and add or subtract weight from the rider until balance is achieved at the 20 cm (2.0 gm) point on the scale. You now have a balance with a range of 0-2.5 gm.

Tare weights can now be made to extend the range of the balance. If you have access to a set of standard weights, tare weights can be made using the following procedure:

1. Position the rider at zero, and adjust the zero balance.
2. Hang a known 2.5 gm weight on the hook
3. With the rider still at the scale zero, make up a tare weight on a piece of wire, which will balance the beam when mounted at the tare position (make sure the design of the tare weight will allow the rider to reach the 25 cm mark).

Using this tare weight will make the range of the balance 2.5 gm to 5.0 gm. In other words, you add the tare value (+2.5 gm in this case) to each reading obtained from sliding the scale rider to balance. Similarly, tare weights can be made up to add +5.0 gm, +7.5 gm, +10.0 gm, etc. to as high a range as you wish to go (please note that, because of the asymmetrical geometry of the beam, a +5.0 gm tare weight does not itself weigh 5.0 gm).

If you do not have access to a set of standard weights, tare weights can still be made up using the following procedure:

1. Position the rider at scale zero, and adjust the zero balance.
2. Position the rider at the 25 cm (2.5 gm) point.
3. Add temporary weights to the hook until the beam balances.
4. Return the rider to scale zero, leaving the temporary 2.5 gm weight on the hook.
5. Make up a tare weight which will balance the beam.

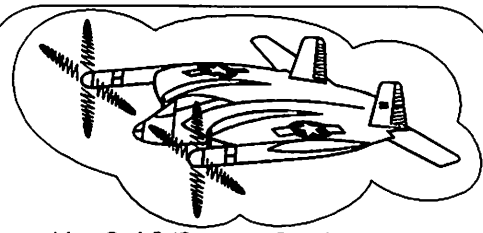
You now have a balance which will measure up to 5.0 gm. You can now make up a temporary 5.0 gm weight to hang on the hook in order to make up the 5.0 gm tare weight, and so on for as many tare weights as you want (this method is less accurate than the first method, using the standard weights, because errors can accumulate).

Handy accessories you can make for your beam balance include:

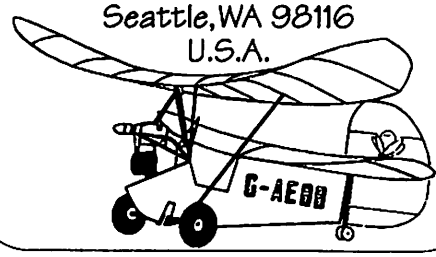
- A small pan to hang from the hook, together with a tare weight which will balance the pan,
- A small alligator clip with padded jaws (for holding balsa) to hang from the hook, together with a corresponding tare weight.

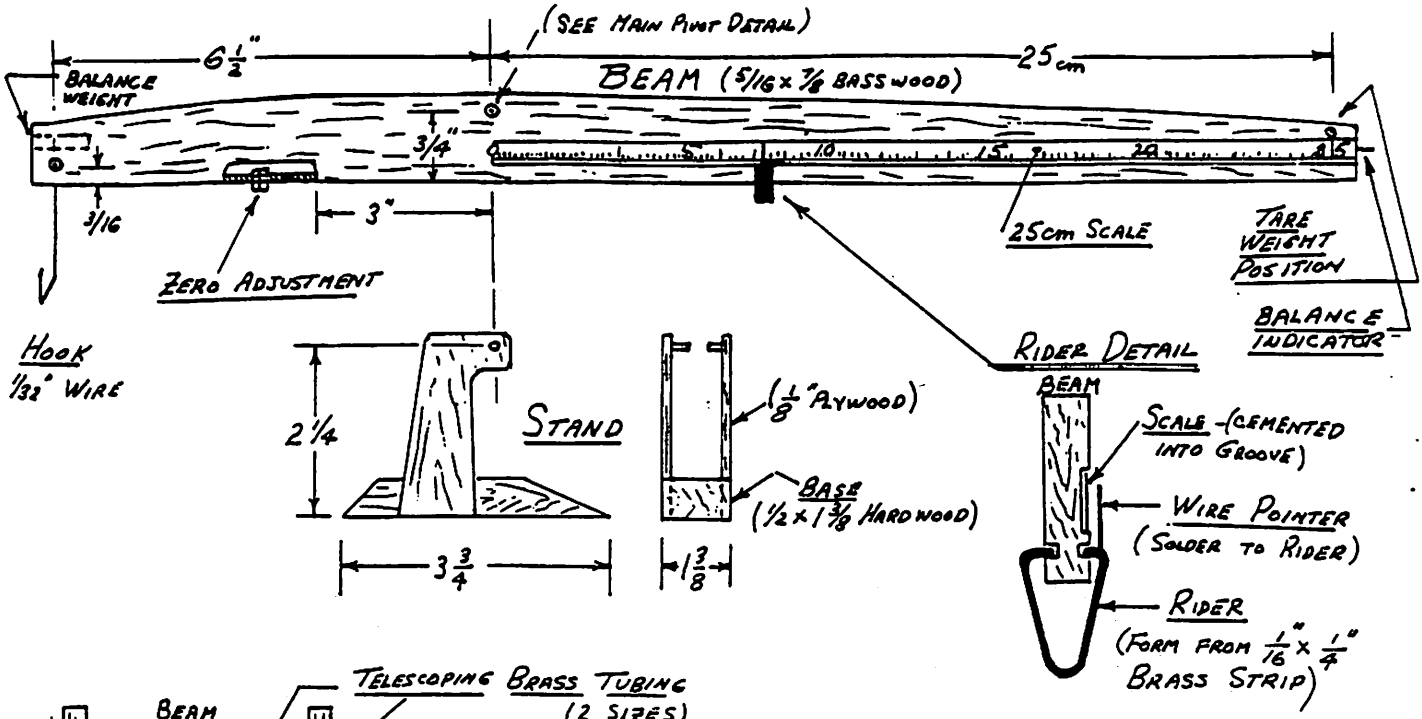
FAI Model Supply

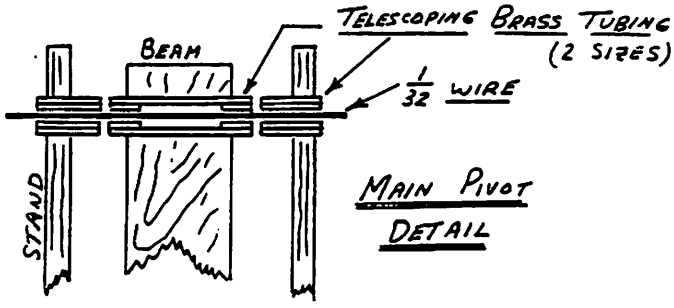
Ed Dolby, supplier of Tan II rubber and other goods, has sold his company to John Clapp. The new address of FAI Model Supply is: P.O.Box 366, Sayre, PA 18840-0366, USA, tel. ++ 717 882 9873.

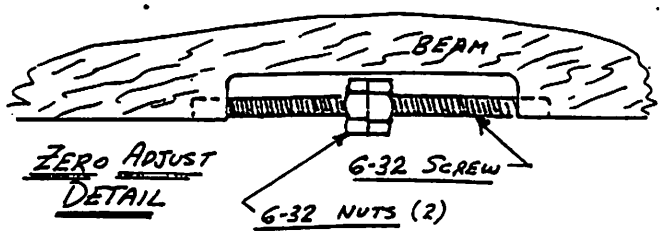


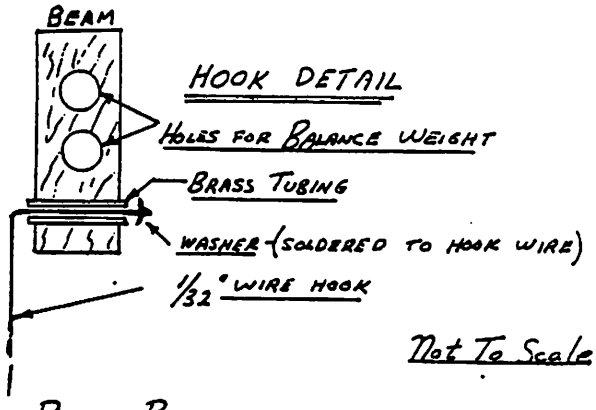
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Seattle, WA 98116
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BEAM BALANCE
by R. S. BOURKE (16/7/91)

PREPRINTED WW1 GERMAN CAMOFLAGE TISSUES

THIS LIGHTWEIGHT PRINTED TISSUE IS APPLIED TO THE FRAME USING THE CONVENTIONAL METHOD, EXCEPT WHEN SHRINKING. THE INK USED HERE IS NOT PERMANENT, AND WILL RUN IF WATER IS USED TO SHRINK. THE METHOD I PRESCRIBE IS THAT AFTER THE PART IS COVERED, ONE SPRAYS A FINE MIST (FROM A GOOD ATOMIZER) OF DENATURED ALCOHOL INTO THE AIR, THE PASSES THE PART THROUGH THE MIST UNTIL TISSUE APPEARS BAGGY. THE PART THEN, IN THE CASE OF A WING OR STABILIZER, IS PUT INTO A JIG TO DRY (TO PREVENT WARPING) THEN SEAL WITH A CLEAR COAT (KRYLON OR DOPE)

THIS TISSUE IS AVAILABLE IN ANY SCALE FROM PISTACHIO TO AROUND 24" WING SPAN, AND IS PRINTED ON GOOD JAP TISSUE 81/2" X 12". I ALSO PRINT ON GAMPI WHICH IS A EXTREMELY LIGHT TISSUE. I RECOMMEND THIS FOR INDOOR USE. WHEN A PART EXCEEDS THE TISSUE, SPLICES MUST BE MADE, (ON THE NEAREST FRAMEWORK) AND YOU WILL FIND THE PATTERN REPEATS BOTH WAYS.

PATTERNS AVAILABLE ARE AS FOLLOWS:
GERMAN 4-COLOR LOZENGE (LT AND DK)
GERMAN 5-COLOR LOZENGE (LT AND DK)
AUSTRO-HUNGARIAN HEX (9-COLOR)
GERMAN NAVY 4 COLOR HEX

THE PRICE SCHEDULE IS AS FOLLOWS:
1-7 SHEETS $5.00 PER SHEET ANY SCALE, ANY PATTERN
8-14 SHEETS $4.40 " " "
15-21 SHEETS $4.15 " " "
22-28 SHEETS $3.95 " " "
ALL PRICES INCLUDE POSTAGE

FOR THE MOST PART, 2-4 SHEETS SHOULD COVER PEANUT SCALE AIRCRAFT, WHILE SOME OF THE LARGER SCALES CAN USE UP TO 12 SHEETS.
KEEP IN MIND THAT IN THE CASE OF LOZENGE PRINT, DARK WAS USED TO COVER UPPER SURFACES, AND LIGHT TO COVER LOWER SURFACES. ALSO DECIDE WHETHER YOU'RE COVERING THE ENTIRE AIRCRAFT OR ONLY THE FLYING SURFACES.

TO ORDER TISSUE SIMPLY STATE THE AIRCRAFT TYPE, SCALE, AND ANY OTHER OUTSTANDING INFORMATION YOU DEEM NECESSARY, AND MAIL WITH CHECK OR MONEY ORDER TO:
ROBERT WELLS
ONE ROCKINGHAM DRIVE
WILMINGTON, DE 19803



INDOOR MODEL SUPPLY
1887 West Haven, N.W.
Salem, OR 97304

1-503-370-6350



R

Dear Thedo,

Regards your need for plastic props, the red N. Pacific props will no longer be carried as the dye is so warn that the props are not true or flash free.

I will be carrying Peck gray plastic props on hangers with shafts instead, in sizes as listed. If you want quantities of over 12 per order, please send in advance as there is no large demand and only about 20 are in inventory at any time.Good light plastic props, the old N. Pacific, are no longer available I owe you some credit let me know.

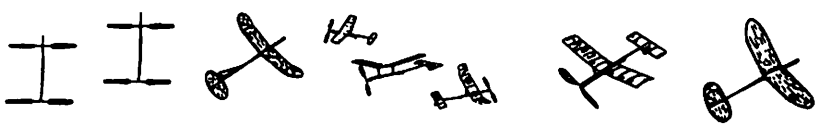
After the shiny Tungsten supply is gone, maybe 2 years from now, I will not be able to obtain the three sizes I have now. But, I already have a 30 year supply of new wire that is bright silvery in sizes required plus Tungsten for motor sticks. It will not be spooled until then.

Regards Balsa, the requests for only one size for motor sticks will be filled with plus or minus .001" of the size ordered in order to allow everyone to obtain first class material. I will try to make the WEIGHT, strength, and uniformity meet the demanding requirements of motor stick sheets. For example, with four boron and a single post a 12.5 to 13" stick made properly will support over 150 grams in compression as will a stick made from 13,14, or 15 tho lighter balsa if it is uniform in thickness and good strong wood.

Secondly I am sending out less spar stock each year as I send out higher quality sheets. So, as I discard more each year as I increase the quality, the cost must go up. However, since sheets required for ribs need not be completely uniform in quality for 18", or spar stock for certain class models, the NEW 12" lengths which are equal to the first class 18" lengths, at less cost, should lower costs and still fill the specifications for spar requirements as well as ribs and short outlines.

Perhaps you can pass along some of the above information so that it can become common knowledge?

Best regards, Lew Gitlow



PRECISION PRODUCTS FOR MODELERS SINCE 1988

Indoor Model Supply Catalog

Prop Shafts by Pack		QTY	COST
#2 Pack, 1-32" for P-Nuts	1.35		
#3 Pack, 3-64" diameter	1.35		
#4 Pack 6" long, 3-64" dua	1.35		
Nylon Bearings for above:			
1/32" 4 Pack	1.35		
3-64" 4 Pack	1.35		
Prop Packs inc. shafts, small washers & nose plugs, large	3.50 / 4.50		
Plactic Props 4"	.50		
with Bearing 6"	.75		
with Bearing 7"	85		
Folding Propeller inc. 14"	6.95		
Ball Bg. and shaft 18"	9.95		
Rubber Winder 6:1 Ratio	$9.95		
Rubber Winder 15:1 Ratio	16.95		
Rubber Winder 20:1 Ratio, counter, aluminum, ball bgs.	75.00		
Micrometer Stripper .001"	79.00		
Balsa Stripper	7 50		
Torque Meter- New Design	29.95		
Rubber Scale + calibr. wt	8.95		
Prop Block Shaft Attach	12.95		
I M.S. Beam Balance Scale	39.95		
Prop Pitch Guage	39 50		
Zona Saw Universal	4.50		
Zona Saw Fina	4 50		
Razor Plane	6 50		
T-Pin Pin Clamps	1.25		
Box of T-Pins 100	2 25		
Sharpy Blade Sharpener	3.25		
Lead Weights for strips	1 65		
Cautery, not used, cuts U.F.	12.95		
Rubber Stripper,	139 00		
Mini spring load clamps, 4/bag	2.75		
Surgical steel sealed blade, ea.	90		
Teflon T .033, 037, 043, 045 OD	3 95		
Slack it for tight microfilm	3 95		
Vintage Rubber Wheels in Pairs See Pg 9 .75WB124	2.00		
1"WB125	2.00		
1.25WB126	2.25		
Rubber Tire Wheels .75PA098	2 30		
Clear Hub 1"PA099	2.30		
Golden Age 1 25WBPA100	2.00		
Rubber Tire Wheels .75WB146	2.00		
White Hub 1"WB147	2.00		
1.25WB148	2.25		
Six Light Weight Wheels 3/4	1.35		
7/8	1 35		
1"	1.35		
INDOOR GLUE GUN Type A	1 95		
Type B	1 95		
Type C	2.80		
Type D	9.95		
CONTEST RUBBER .020 to .100	$2.65		

Please list sizes and no. of packs, then total, multiply by $2.65 and insert total DOLLAR AMOUNT TO RT. ____

INCL. SIZE AND NUMBER

INDOOR BALSA See Pg. 14 & 15			
Motor Stick Sheet EZB, PP	2.75		
Motor Sticks #1 EZB	2.50		
#2 Ministick	1.95		
#3 Penny Pl.	2.50		
Sheet Wood Packs			
#1 app .035	4.95		
#2 app 045	4.95		
#3 app .065	4.95		
Strip Wood Packs			
12" # 1 .035	4.95		
12" # 2 .045	4.95		
16" # 3 .065	5.95		
Indoor Balsa Starter Pack	11.95		
Peanut Scale Balsa Pack	11.95		
Pistachio Balsa Pack	9.95		
Easy B Sheet PROP Pack	4.95		
Easy B Sheet SPAR Pack	4.95		
Penny Plane SPAR Pack	4.95		
Penny Plane PROP Pack	4.95		
SUB TOTAL			

INDOOR WOOD
PRICES CONTEST GRADE QUALITY See Pg. 14 & 15
C Cut for Motor Stick, Tail Cone & Props
4.8 lb ±, May not have A weight stamp,
A or B Cut Spar and Rib Stock $1.85
Tapered 12" $1.85

WORLD CHAPIONSHIP GRADE QUALITY
C Cut for Motor Stick, Tail Cone & Props, 18"
4.5 lb $3, 4.2 lb $3.50, 4.0 & under $4

Because of width differences margin of error weights are ± .2 lb/cu. ft.

THE EMPHASIS IS ON ALL THE CRITERIA OF QUALITY

A or B Cut Spar and Rib Stock, ... $2.50 for 12"
A or B Cut Spar and Rib Stock .... $3.95 for 18"
Tapered $2.95
Special Length $3.95
Minimum Order on 24" is 5 sheets
GETTING STARTED? LOOK OVER THE PACK DESCRIPTIONS IN THE CAT. PG. 14 & 15. THESE ARE YOUR BEST BET. PROP WOOD PACKS ARE ALSO USED IN THE CONSTRUCTION OF P-NUTS AND PISTACHIOS THAT REQUIRES THIN C GRAIN.

INDOOR BALSA - see Pg. 14 & 15

STAFF USE DESCRIPTION	QTY	COST

		QTY	COST
A-23 prop	2.50		
BROWN JUNIOR CO_2 B-100 prop	2.50		
A-23 7.2 gr. 3cc tank, prop	49.95		
B-100 17 gr, 6cc tank, prop	49.95		
B-200 Twin, 10cc tank, prop	69.95		
BROWN ACCESSORIES			
3 cc tank, 3 grams	8.50		
6 cc tank, 7 grams	10.50		
10 cc tank, 12 grams	12.95		
20 cc tank, 19 grams	16.25		
tank lid and O ring	3.50		
CO-2 Gun Charger	24.95		
CO-2 Hose Charger	39.95		
Filler Nozel & tubing	7.50		
Copper Tubing (Per foot)	3.95		
A-23 Mounting Screws	2.95		
G-12 Charger Head replacement for the standard Head; with extra spare parts in case you lose one on the floor	19.95		
Gasparin CO-2MOTORS			
G-6 2.8 grams, 6.3 cu.mm.	CALL		
G6-T 4.1 grams,12.5 cu.mm.			
G10 4.0 grams,2.9 cu.mm.	FOR		
G10T 4.8 grams, 19.6 cu.mm.			
G24 7.3 grams, 23.7 cu.mm.	LOW		
G24T 8.6 grams, 47.5 cu.mm.			
G24N 36. grams, 62.3 cu.mm.	PRICES		
extra wood prop, ea			
Gasparin Charger			
SUB TOTAL			

Books & Plans 1996 Prices

		QTY	COST
Indoor Flying Models	22.00		
Indooor Scale Model Flying	6.95		
Peanut Power Book, Hannan	15.95		
Rubber Powered Models Pl.	12.95		
Peanuts & Pistachios Vol 1	7.95		
Vol 3	8.95		
Vol 5	9.95		
Model Planes & 3 Views	9.95		
5 I.M.S. Kit Plans, with iron ons of print wood	7.95		
Stick & Tissue, By B.H.	9.95		
KITS			
The Salem 6	5.95		
per units of 10	45.00		
The I.M.S. Glider	4.95		
2 Parlor Copters	6.50		
The Easy B	7.95		
The Slowpoke	6.95		
The Novice Penny Plane	9.95		
3 Parlor Planes	10.95		
3 Mini Sticks	10.95		
The Flapping Flyer	10.95		
Daphne 20" Wing	10.95		
Korda 22" Wing	10.95		
Embryo Sport 20" Wing	10.95		
1929 Alco Sport P-nut	10.95		
1929 Heath Parasol P-nut	10.95		
1921 Waterman Racer P-nut	10.95		
1937 Aeronca K P-nut	10.95		
The Sky Rider P-nut	8.95		
The Zippy Sport	10.95		
Nesmith Couger	10.95		
Miles M18	10.95		
P-51D Mustang	10.95		
Piatenpol Air Camper	10.95		
Druine Turbulent	10.95		
Andreason Bi Plane	10.95		
Gypsy Moth Bi Plane	10.95		
Gamagobie	10.95		
Lacey M-10	10.95		
Zero	10.95		
Piper J3 Cub	10.95		
Prarie Bird	10.95		
Baby Ace	10.95		
Bostonian Pup	10.95		
Stringless Wonder	6.95		
Flying Aces Moth	11.95		
One Night 28	11.95		
One Nite 16	10.95		
Playboy Sr. 36" Span	22.95		
Strato-Streak 33" Span	20.95		
So Long 32 Span	21.95		
Brooklyn Dodger 32"	24.95		
Spad and Fokker	27.95		
Nieuport and Taube	26.95		
SEA-5 and Fokker D8	25.95		
Peck R.O.G.	4.95		
Maverick Unlimited 32" F.P.	24.95		
Panda P-30 30"	21.95		
Two-Step Unlimited 32" F.P.	23.95		
Glider Trio (pre-shaped)	15.95		
Sparrowhawk Unlim. 34" F.P.	25.95		
Nite Bird P-30 30" P.P.	19.95		
Korda Wakefield 33"	28.95		
Flying Cloud 33"	26.95		
Longster 36"	24.95		
Bleriot 1911 Bee Co-2	24.95		
Caudrone 1911	27.95		
Curtiss 1911 Bee CO-2	19.95		
Leveque Flying Boat 1912	31.95		
Lincoln Beachy 25"	21.95		
SUB TOTAL			

VISA MASTERCARD Expiration Date

From:
First Name Last Name
Street or Box No
City State Zip
Telephone Number ( )

Covering Materials

		QTY	COST
F.A.I. Microfilm Sol 3oz	5.95		
Old Japanese Tissue/sheet	1.30		
Roll J.T. R+O+Y+G+B+W+BL	8.95		
Condenser Paper .012oz, 2	3.50		
Condenser Paper .020oz,3	3.95		
Ultra film 10' + on a tube	7.50		
POLIMICRO FILM .0028oz/100	12.50		
CEMENT			
Ultrafilm and P-Micro Cmt	2.50		
Plastisizer, 3oz	9.95		
Tube Cement, 2oz Sig	1.95		
Glue Tips fit tube, 4 pack	1.25		
I.M.S. Indoor Cmt. 1oz	2.50		
Condenser Paper Cmt. 1oz	2.50		
Lite Coat for tissue 3oz	3.50		
Thinner for all above 3oz	2.25		
WIRE			
Revilar, 1000 fibers 15'	4.95		
Carbon fibers, 15'	4.95		
Nichrome Wire .001", 50'	3.00		
NEW shiny Tungsten .001", 50'	3.95		
NEW shiny Tungsten .007", 50'	3.95		
NEW shiny Tungsten .005", 50'	3.95		
NEW Tungsten .0015", 75'	3 95		
Boron fibers 24"tube	18.50		
Prop Shaft Wire .010" to .015": + .020"+.032", EA.	85		
Prop Shafts by Pack			
#2 Pack, 1/32" for P-Nuts	1.35		
#3 Pack,3/64" diameter	1.35		
#4 Pack 6" long, 3/64"dia	1.35		
Nylon Bearings for above: 1/32" 4 Pk	1.35		
3/64" 4 Pk	1.35		
THRUST BEARINGS			
Penny Plane 6 Pack	5.95		
one	1.25		
Super Single Hole 6 Pk	3.60		
one	.70		
Mini Single Hole 6 Pk	3.60		
one	.70		
Dual Two Hole 6 Pk	5.95		
one	.90		
Mini Dual 2 Hole 6 Pk	5.95		
one	.90		
Penny Plane Bearing Pk	1.85		
Teflon Washer .05" 12	1 85		
.07" 12	1.85		
3/32 12	1.85		
Brass Washers .03" ID	1.20		
Teflon Tube O.D. .06"	1.60		
Mini Glass Beads 12	1 25		
O-Ring Tubing 3 size Pack	2.50		
Aluminum Tube 1/16 OD one	.75		
Birch Dowel 1/16" one	.50		
Bambo Pack 1/16" OD+Flat	1.75		
ACCESSORIES			
Sheet Aluminum Ap. 2x12"	2.50		
Tube forms, glass, 3/16x12"	.90		
1/4x12"	.90		
metal 1/4x18"	2.00		
Tail Boom Tapered Form	19.00		
Windshield Plastic, 6 Pk.	1.50		
2 Micro Weights, inst. sheet & material for more	2.95		
Rubber Lube 1oz	2.50		
Rubber Lube in Glue Gun "C"	3.50		
5 Plastic Cylinders 1/4x3/8	2.50		
5/16x1/2	2.50		
Scale Instrument Sheet, 300	1.00		
ON Plastic Sheet, 300	2.00		
Sub Total 1+2=			
Sub Total 3+4=			
SUB TOTAL			

POSTAGE + Ins= ($5.00 minimum) ...
GRAND TOTAL $_____

TO ORDER:

MINIMUM ORDER $25.00 & $5.00 P&I

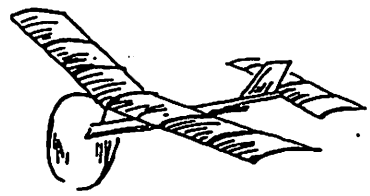
FOR FREE RUSH SERVICE, INCLUDE PAYMENT WITH YOUR ORDER. VISA and MASTERCARD ACCEPTED MINIMUM ORDER $10 00. PLUS SHIPPING, HANDLING & INS $5 00 IN USA

OVERSEAS, We ship air with inclusion of adequate postage! 70lb If overage, we will refund dollars, or include extra supplies. Please include WITH YOU ORDER, a Bank Draft in Dollars.

VISA and MASTERCARD ACCEPTED
INDOOR MODEL SUPPLY
Box 5311
Salem, Oregon 97304
PHONE
1-503-370-6350

FIRENZE 21 gennaio '96

GRANDE gara INDOOR





7ª edizione - Interregionale -

organizzata dal GRUPPO AEROMODELLISTI FIORENTINI — Postacasella 18250 50100 Firenze

C L A S S I F I C H E

Categoria: Elastico formula "Sport" = *FIA Beginner*

1)	Tabellini Renzo (AeC Bologna)	6'09	7'24	7'36	9'14	--	--	= 1010
2)	De Angelini Giacomo (ASA Siena)	5'18	2'30	7'36	7'59	--	6'35	= 935
3)	Sighelle Nello (Bologna)	6'38	3'11	2'32	5'05	--	4'36	= 703
4)	Spagnoli Mauro (Firenze)	4'25	5'24	5'13	5'12	5'29	4'56	= 653
5)	Pianigiani Franco (ASA Siena)	1'03	5'10	3'01	--	--	--	= 491
6)	Fanfani Licio (ASA Siena)	5'46	0'52	0'47	--	0'35	1'02	= 408

Categoria: Elastico formula "TH" = *German "Turnhalle" class*

1)	De Angelini Giacomo (ASA Siena)	3'53	3'40	5'53	5'58	5'54	5'39	= 712
2)	Tabellini Renzo (AeC Bologna)	4'54	5'30	5'31	5'47	5'48	1'43	= 695
3)	Fanfani Licio (ASA Siena)	5'11	4'58	4'50	5'26	5'07	3'38	= 637
4)	Sighelle Nello (Bologna)	4'50	5'00	4'32	3'56	4'25	3'12	= 590
5)	Spagnoli Mauro (Firenze)	3'06	3'27	4'06	4'12	1'35	3'39	= 498
6)	Pianigiani Franco (ASA Siena)	3'17	3'02	0'18	3'02	--	2'24	= 379

Categoria: Elastico formula "Mini-Stick"

1)	Tabellini Renzo (AeC Bologna)	3'06	3'11	3'22	4'09	4'29	4'39	= 548
2)	De Angelini Giacomo (ASA Siena)	4'19	1'28	0'38	3'32	3'07	0'04	= 471
3)	De Robertis Stefania (Roma)	1'56	0'16	1'38	1'50	1'25	1'15	= 226
4)	Pianigiani Franco (ASA Siena)	--	--	1'07	1'03	--	2'35	= 222
5)	Sagnotti Maurizio (AMIReL Roma)	0'29	1'29	1'37	1'30	1'33	0'06	= 190

Categoria: Balsetta "lancio a braccio" = *HLG*

1)	Schaller Urs (GMP Prato)	25-33-32-34-37-37-38-38	= 113
2)	Bolognini Lorenzo (Bologna)	02-03-10-12-04-05-13-17-17-18-19-20-19-21	= 60
3)	Pesciolini Jacopo (GAF Firenze)	15-13-02-16-16-16-19-17-17-20-18-19-20	= 59
4)	Zamperini Marco (ASA Siena)	10-12-09-11-16-18-18-17-18-20	= 56
5)	Pecchioli Vanni (GARC Firenze)	13-14-10-11-14-16-19-18-18	= 55
6)	Schaller Eva (Firenze)	11-05-10-09-12-11-17-18-14-16	= 51
7)	Chimenti Alessandro (Firenze)	17-11-15-13-16-16-17	= 50

Categoria: Balsetta "lancio a fionda" = *Catapult*

1)	Marcenaro Franco (AeC Varese)	20-09-24-22-21-25-26-25-28-26	= 80
2)	Sagnotti Maurizio (AMIReL Roma)	03-07-23-07-15-23-20-24-24-26-25	= 75
3)	Ceccarelli Loriana (AMIReL Roma)	04-19-17-12-18-22-21-20	= 63
4)	Pesciolini Carlo (GAF Firenze)	12-11-17-13-13-14-15-16-16-20-17-18	= 55
5)	Iannacci Michele (Roma)	05-11-14-06-10-11-14-13-14	= 42

Nuovi primati del locale:

- Elastico formula "Sport": Tabellini Renzo 9'14 (precedente: 8'01)
- Elastico formula "Mini-Stick": Tabellini Renzo 4'39 (precedente: 3'14)

Miglior "Indice di prestazione": 143,8 % Tabellini Renzo, "Mini-Stick".

Commissari sportivi: Giorgio Cantini, Marco Giachi, Maurizio Merciai, Piero Pecchioli, Silvano Tonetti. - Direttore di gara: Giancarlo Sestini.

Allestimento "party" a cura di: Vanda Bizzarri, Cécile Pesciolini, Anna Schaller - Mauro Spagnoli.

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