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line action

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from Florida



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Vintage Weekend report



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# 1991 MODEL AVIATION MUSEUM CALENDAR

Where Models Work

The Model Aviation Museum will shortly be compiling their Events Calendar for 1991.

Any Flying Clubs, Associations or other groups who would like to take advantage of the excellent facilities at Goosedale - the new permanent modellers forum and meeting place, should contact the museum now to discuss their requirements.

Traders who wish to participate in these events should also now contact the museum.

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Tel: (0602) 632175

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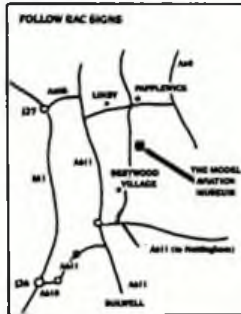
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Recruiter	3	£11.10
SWAT	3	£18.85
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D 12-5	(x3) £7.00
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# AERO

## MODELLER



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<b>Editor</b>	<i>Geoff Clarke</i>
<b>Editorial Assistant</b>	<i>Andrea Silver</i>
<b>Group Editor</b>	<i>Alec Gee</i>
<b>Art Editor</b>	<i>Peter Kirby</i>
<b>Design</b>	<i>Iain Houston</i>
<b>Advertisement Manager</b>	<i>Alan Cole</i>
<b>Advertisement Copy Control</b>	<i>Tina Higgs</i>

Cover: Never one to shirk a challenge, Bill Brown came down from Scotland to delight C/L Scale enthusiasts at the Nationals with his remarkable Caproni trimotor bomber (actually flown as a twin with freewheeling, centre pusher prop). Let down by poor documentation but certainly impressive! Our first look at the Nationals is our colour, centre page feature this month. More in the December issue!

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# ASP

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# HANGAR DOORS

## Great Nats!

The 1990, August Nationals was one of the most encouraging in recent years. Healthy participation was the keynote of the meeting, even though visa difficulties meant that the anticipated Soviet attendance failed to materialise, although Russian influence was most obvious in the hectic arena of Combat, with an interesting, fresh variety of available motors adding to the flavour. We noted the ever-increasing growth of Vintage C/L – and the comment from those active at the R/C flightlines that the 'real' Nationals activity was taking place in the C/L corner...

The precision of Aerobatics (C/L and R/C) astonishes, as ever; and we sensed rekindled enthusiasm amongst many in general, with great things promised for next year... In order to accommodate our report on the C/L World Championships we have restricted our Nats coverage in this issue to a results summary, below, and a centrespread of colour action. Full details of all the activity in the December issue!

## Skybirds remembered

Douglas Odell Jones has reminded us that it is now fifty years since the last competition was held by the Skybird League for the Aeromodeller Shield. This magazine donated a shield every year, beginning in 1936, and Douglas himself was the winner in 1939 and 1940 (see photograph). After this, all trophies held by the League were destroyed by bombing; Douglas has tried to contact winners – and surviving trophies – but without success. This is where we come in. Can you add to the story? Let us know at the Aeromodeller office, if so...



Just part of the merry assortment of model aircraft at the Model Aviation Museum, Goosedale Farm near Bestwood, Nottingham. Visitors are assured of a warm welcome and an enthralling time. Below: Evocative Skybird League plaque from the early war years should awaken a few memories...

## Sponsorship stories

John Bailey's exploits in trying to obtain sponsorship towards the expense of representing Great Britain in the F/F Eurochamps makes interesting reading. John is a teacher, and as the Championships did not fall with the usual, holiday period, so of John's ten-day leave of absence, only three were paid. After approaching local firms and organisations John received a variety of encouraging replies but no money apart from a donation from Laporte Industries, who mine Fullers Earth at Clophill. Then Airship Industries, now owned by Holgrove Properties Ltd, provided a substantial amount, expressing interest in sponsoring John's future efforts – or maybe even the whole team. Airship Industries, who operate out of Cardington airfield, are best known for their pleasure flights which take in Bedford and the surrounding area. Approximate cost of a 45 minute flight is approximately £50. Interested? Contact Airship Industries on 0234 741901. And let's hear your tales of sponsorship!

## Chart C/L Handle

The adjustable control line handle produced by Chart Hobby Distributors and illustrated in the last issue's Trade Topics will retail at £3.25 including VAT.

## Model Aviation Museum news

Goosedale Farm is the setting for the most adventurous focus of aeromodelling endeavour in the UK, for here resides the Model Aviation Museum (motto 'Where Models Work') run by Mike and Val Ward. Besides extensive model displays – a constantly changing input ensures the impact remains fresh – there is a superb flying site which hosts model flying displays every Sunday during the summer. The 1991 Events Calendar is now being prepared and the invitation is extended to Clubs and Associations, who may care to take advantage of Goosedale's facilities, to contact Val and Mike on 0602 632175. Traders would also be welcomed...

Of course, the majority of enthusiasts will simply wish to visit the Museum and view the contents. Added charms include a restaurant and workshop. See the advertisement in this issue for all the details. Well worth a visit!

## Vintage correction

Tony Brookes, whose Mini Jaded Maid was one of our full-size plans in the April issue, has a slight correction to make. He tells us: 'A number of people have corrected me on one point. It appears that Norman Marcus

did, after all fly this design in 1950 with a flip-tail DT, and my statement that it is not authentic was in fact quite wrong. Certainly all the pictures I have ever seen of Norman's Jaded Maids show a lashed-on parachute but that, it seems, is not the whole story. Needless to say a flip-down tail will not, in the light of the new information, disqualify anyone's Mini Jaded Maid under SAM 35 rules, at least, not if I am the CD!'

## Oh no, not more of them

'Mary had a little Scram', and variations, continue to proliferate. Here's some...

From 'Anon':  
*Mary built a little Scram  
but added turbulence  
in consequence she has incurred  
Expensive litigation.*

Tony Kelly sent two:  
*Mary had a little Scram  
which she ROG'd on grass  
Unfortunately it ground looped  
and hit her little ass  
(which was grazing nearby).*

and:  
*Mary had a little Scram  
She flew her Jumping Bean  
But after sniffing a snorter or two  
They called her the Acid Queen.  
(Don't really understand that one! GC)*

Graham Cross also submitted a couple; thanks, Graham, but this

is a family(ish) magazine. On to Bill White's offering:

*Mary had a little Scram  
She also had a Puffin  
One fine day, both flew away  
And she finished up with nuffin.*

Bill also supplied a few more, but you can have to much of a good thing... More next time!

### Falcons Gala

Room here to note, in addition to inclusion in What's On, that the 1990 Falcons Gala will take place on 4th November. Venue, which is yet to be announced, can be confirmed by a telephone call to organiser Russell Peers on 0270 60893.



From Merv Buckmaster, editor of Airborne magazine 'down under' comes this neat and compelling volume - see our review next month.

### 1990 Nationals C/L and F/F Scale Results

#### Vintage A Team Race

1	Evans/Horwood	8:22.2
2	Hunt/Gibbs	8:32.9
3	Holmes/Pilgrim	11:45.8

#### Vintage B Team Race

1	Taylor/Yeldham/Banks	7:57.8
2	Jones/Darke	8:48.1
3	Evans/Horwood	8:55.7

#### Open Goodyear

1	Vaughan/Dalglish	7:52.4
2	Catlow/Jephcott	8:50.5
3	Swinburne/Swinburne	Ret'd

#### British Goodyear

1	Clarkson/Needham	7:38.5
2	Catlow/Jephcott	7:45.4
3	Vaughan/Crawford	Ret'd

#### 1/2A Team Race

1	Heston/Haworth	7:07.3
2	Davies/Broadhead	8:00.2
3	Lorrimar/Ross	Ret'd

#### B Team Race

1	Clarkson/Needham/Barnes	8:37.7
2	Gough/Ward	10:01.1
3	Smith/Yeldham	Ret'd

#### FAI Team Race

1	Smith/Brown	7:02.1
2	Langworthy/Campbell	7:12.9
3	Sladdin/Gardner	7:26.8

#### F2B Aerobatics

1	B Draper	6228
2	B Robinson	6133
3	J Hamilton	6098

#### F2D Combat

1	M Whillance
2	M Wakkerman

#### C/L Scale

1	C Bradford	Nieuport
---	------------	----------

#### F/F Super Scale

1	T Manley	1 1/2 Strutter
---	----------	----------------

#### Mini-Goodyear

1=	Round/Round
1=	Banding/Darke

#### 1/2A Combat

1	R Herbert
2	I Wakkerman

#### Handicap Speed

1	D Smith
---	---------

#### CO./Electric Scale

1	B Hotham	General Aristocrat
---	----------	--------------------

#### Rubber Scale

1	W Dennis	Issacs Fury I
---	----------	---------------

#### Vintage Stunt

1	Maurice Doyle
---	---------------

#### Classic Stunt

1	Dave Day
---	----------

# WHAT'S ON

### 14th October SAMS INDOOR FUN-FLY

Venue: Watford Leisure Centre. adults only from 9-11am; everyone welcome 11am-6pm. Contact: George Wallbridge. Tel: 076 388 384.

### 28th October CROYDON WAKEFIELD DAY

Venue: RAF Barketon Haat F18 Vintage Wakefield (4oz, 8oz and own design). 9.30am start. Contact David Beales. Tel: 081 858 2714.

### 29th December - 6th January 60TH MODEL ENGINEER EXHIBITION

Venue: ALEXANDRA PALACE. WOOD GREEN, LONDON N22. TWO DAYS OF MODEL FLYING! DPR Model Flying Championships on 1st January. 10.30 start with the DPR Workshop in operation all day! Hit the Kit Competitions at 11am and 1pm for the under 13s at 12.00, with the Junior and Senior National Chuckie Championship at

2.30pm. Super prizes! Send for entry form to DPR Models, Unit 9, The Vanguards, Shoeburyness, Essex S53 9AY with SAE. Return form before 21st December for free admission ticket to the Exhibition!  
Also - Fun-Fly Model Day on Thursday 3rd January. Fly from 10.30 till late! Displays and competitions too. More details to follow... Meantime, contact Aeromodeller on 0442 66551.

### 28th October SMAE INDOOR SCALE MEETING

Venue: Alumwell Centre Walsall. 08.30 to 17.00. Peanut, Open Rubber Scale, CO./Electric Scale, Air Racing. Battle of Britain Commemorative Events. Entry for the last two events on the day. Tel: 0272 697595.

### 4th November 1990 FALCONS GALA

Venue to be announced. Classes: Open Rubber, Open Glider, Open Power, Vintage (in rounds). Contact: Russell Peers. Tel: 0270 60893.

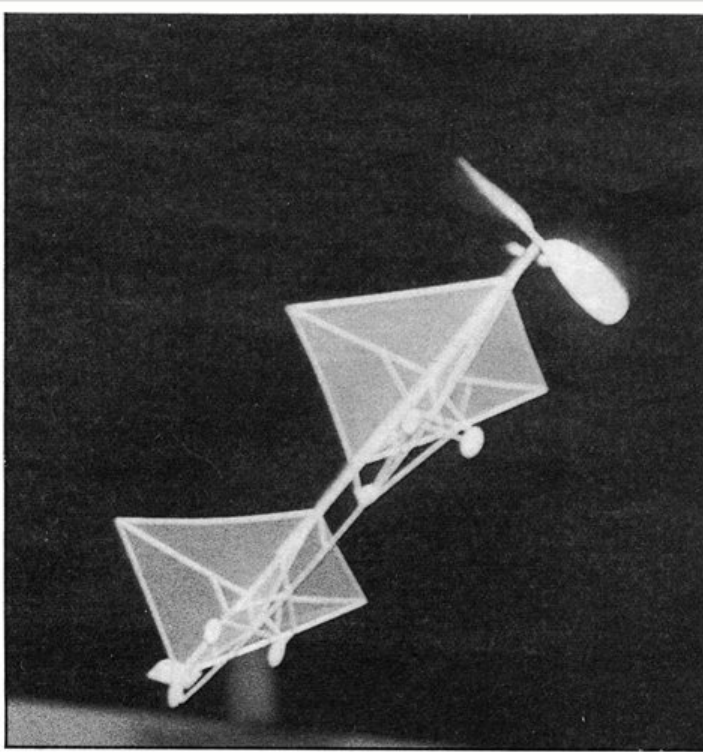
### 4th November F/F SCALE FLY-IN

Venue: Warwick Racecourse. General flying and competitions for Power, CO./Electric, Rubber and Vintage. Contact: Peter Martin. Tel: 021-459 5520.

### 27th January CRAWLEY INDOOR MEETING

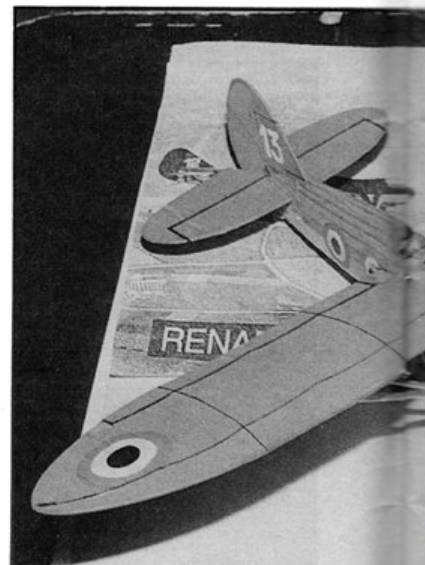
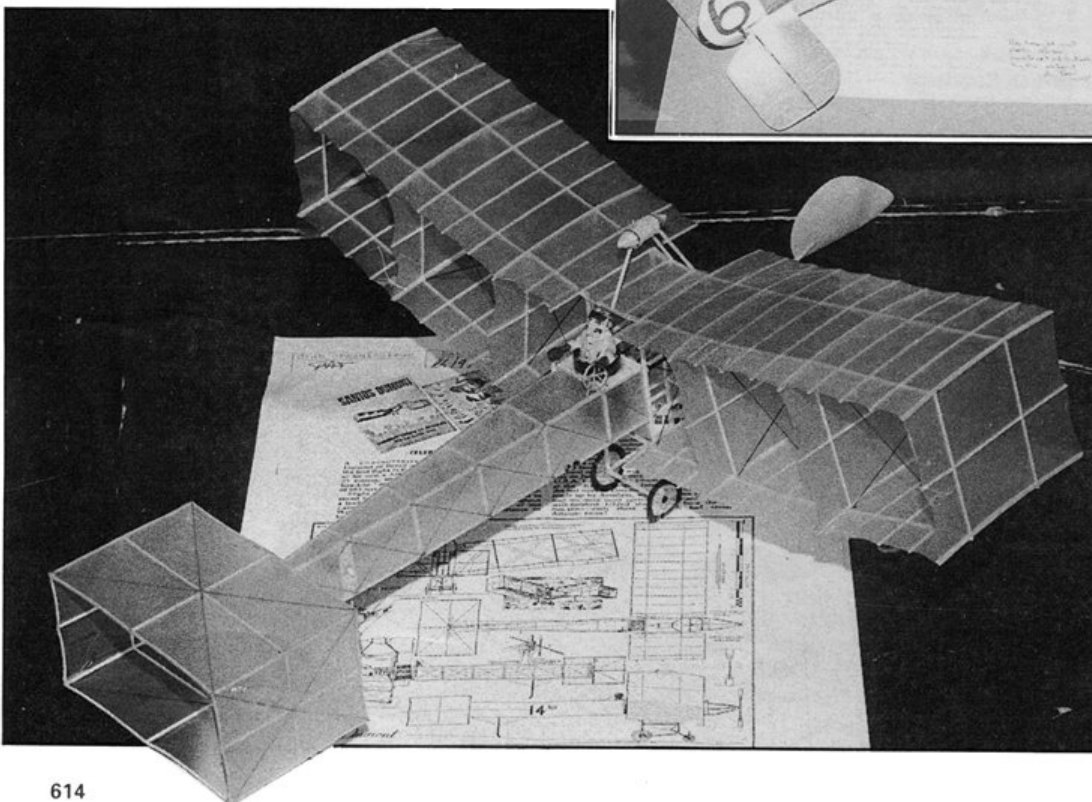
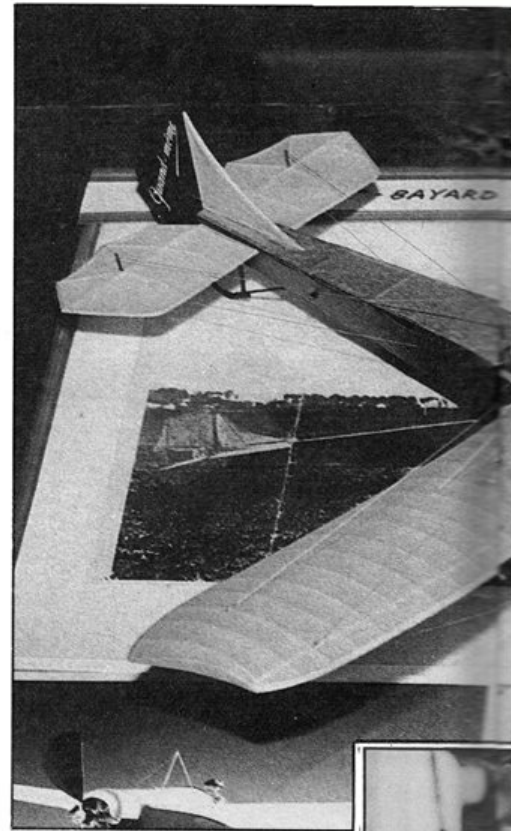
Venue: Crawley Leisure Centre. 11am-6pm. HLG, EZB, Peanut, Open Scale. Rearranged schedules to allow more fun-flying. Contact: T. F. Knight. Tel: 0293 36065.

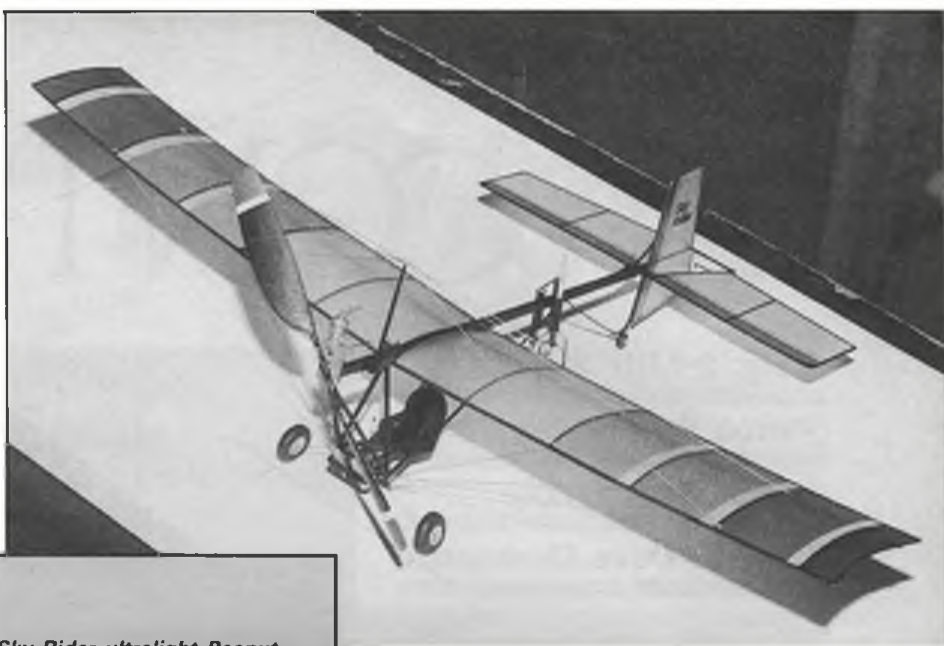
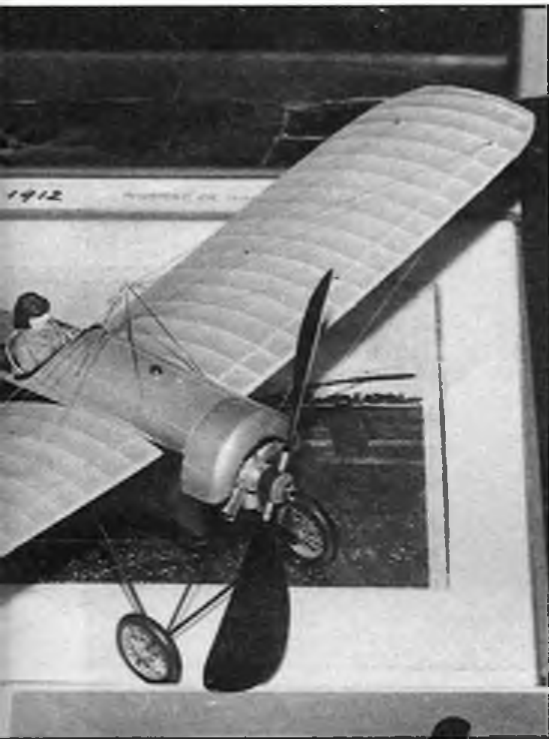
Club secretaries and pros! Don't forget to let us have full details of your 1991 events just as soon as dates have been arranged. In addition to event title and classes of models to be flown, please submit a contact name and telephone number. Special requirements must also be detailed.



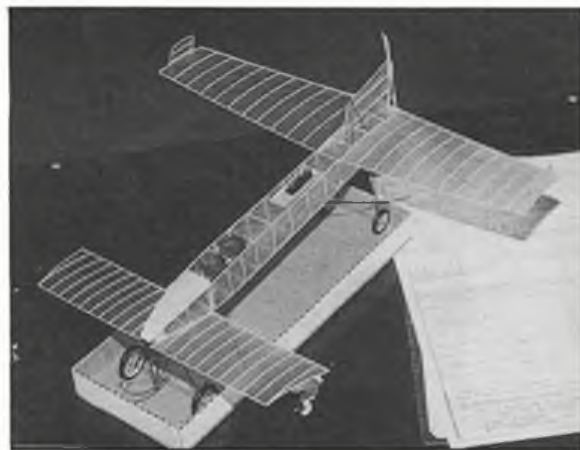
1: Rainer Lotz's Pistachio Windham Tandem won its category with a maximum flight duration of 149 sec.  
 2: Neat Clement-Bayard Peanut by Wijnand de Joode placed second. Super detailing!  
 3: Reg Boor's Avro 560 was proxy flown in Peanut.  
 4: Another from Rainer Lotz - Peanut Santos Dumont 14 bis, fourth in its class.

## The Flemalle Indoor Meeting: Tonda Alfery

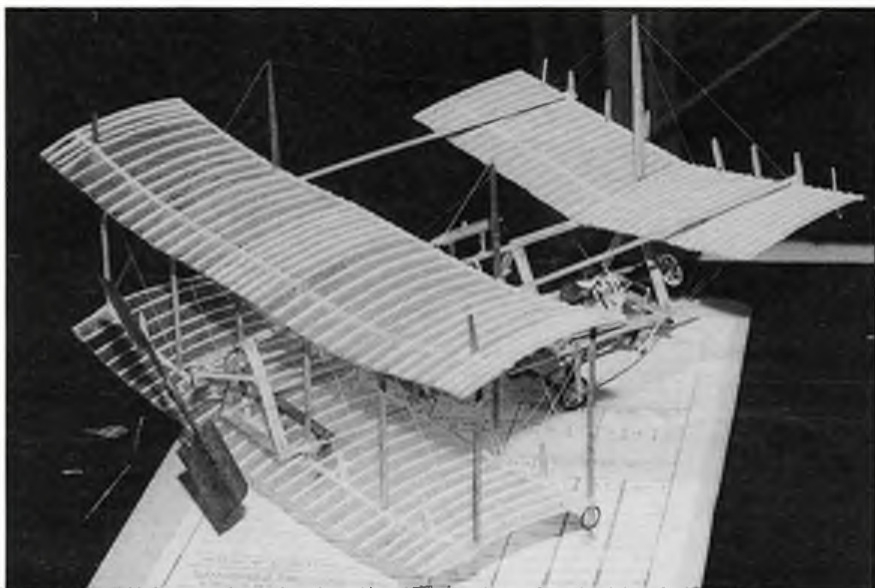




5: Sky Rider ultralight Peanut by Heinz Neumann, unlucky this year with 'no flight' but has flown 100 sec. 6: Sylvester Kojawa's Drzewiecki canard; best flight (in Peanut) was 115 sec! 7: Mike Green's Farman Carte Postale peanut. Mike's Flemalle report to appear soon! 8: Tonda Alfery's remarkable Chance Vought V-173 Peanut. Props are flexi-shaft driven via R/C servo gears.



9: Renard R-31 by Mike Green won the Alfred Renard Cup for models of full size aircraft by this designer. 10: Amazing Roe 1a by Benno managed 26 sec.



# 1990 CONTROL LINE

**Date: 9-14th July.**

**Venue: Blenod les Pont  
a Mousson, France.**

**Over to Dave Clarkson...**

**T**O my knowledge the French had never organised a Control line World Championships before this. They did well with an excellent site and gorgeous weather. Any criticisms are as a result of inexperience, not because those involved failed to try hard enough. Jean Paul Perret was able to raise 2.2 million French Francs sponsorship (almost £250,000) to create a reliable budget using his position in local government, and Bruno Delor administered this with expertise. Jacqueline Surugue sorted out excellent accommodation in the local hotels. As now always seems to be the case in the West, only committed modellers possess the desire to do the job for the most unreasonable customers in the world – committed aeromodellers. Of course many others helped to make this World Championships a success; if only one could mention them all...

Blenod is a suburb of the steel town of Pont-a-Mousson in the province of Lorraine in Eastern France. Like Wigan, which is the metropolitan authority controlling our only potential World Championships site (Three Sisters) Pont-a-Mousson has not a lot going for it; a river, a railway and a steelworks. The latter polluted the air so much that many suffered badly from streaming eyes. One could sympathise with Michel Disler from Switzerland who wished to organise a cementing party for the steelworks chimney. Despite (or maybe even because of) this, the local population accepted us with enthusiasm. The food was excellent (no wonder that Roland Surugue maintains that British food should carry a Government health warning...)

The site is a tennis complex, the courts themselves providing the F2A (Speed), F2B (Aerobatics) and F2C (Combat) circles. Local enterprises provided excellent practice facilities, all



*The British Team. Castrol supplied the natty tracksuits with white trousers.*

properly marked out. The F2D (Combat) facilities were just as good. On-site buildings provided eating, banqueting, drinking, cleaning and toilet facilities to a fine degree. I hope that the Wigan Metro Director of Leisure and the Three Sisters Arena Manager, both of whom attended with a UK C/L World Champs in view, took note of this. The on-site camping presented acceptable facilities and a great social scene. Truly enjoyable. My particular thanks go to the Bulgarians who threw the best-ever party on the campsite; and my admiration goes to Mohai/Nagy of Hungary who managed to get all their equipment from Pecs to the site in a Trabant car. My vote of no-thanks goes to the thieves who toured the campsite during the finishing banquet and stole many tasty items.

The opening ceremony, held in the town's football stadium, was a work of art. A plethora of politicians and ministers gave their blessings – some even in English. I was unable to discover what the gentleman sitting motionless for hours in a 30ft plastic balloon filled with smoke was supposed to be doing despite a

troupe of schoolgirls in arty attire going in and shining torches in all directions to dramatic music. Perhaps I should have waited until the vast, hot-air filled, plastic fish and lizard had finished their combat bout... We English just do not have the imagination to do this kind of thing. Still, the firework display was great, and the local population, who attended in large numbers, seemed impressed, and that is what opening ceremonies are all about. As I commented to a German colleague, this event was just so, so French.

## **F2A Speed: Dick McGladdery**

The facilities for the competition were very good. The contest circle was very smooth with a staunch chain-link cage and a line check compound adjacent. An open canvas/steel framed shelter was also provided here, much appreciated on the hotter days by those waiting their turn to fly, especially if any last-minute fixes were needed. In addition to this, there was a large marquee a short distance away with compounds for each competing nation, complete with workbenches, chairs and a fully boarded floor. Dotted around the site were sundry stalls selling all sorts of drinks and snacks, and a capacious indoor sports building served as the main dining hall.

Processing was straightforward, each class of model being checked by an ample staff of officials, supervised by someone experienced in the particular discipline. Practice facilities was one of the very few areas of *angst* – the practice circle, located a small distance from the main site, was very rough, and very few were prepared to risk their models on it. This inevitably led to pressure from competitors to use the contest circle for practice, but initially the organisers insisted on rigid adherence to the official practice schedule, regardless of whether everybody actually wanted to practice or not. Each nation was allotted thirty minutes, and unused periods were not allowed to be used on a stand by basis. We were then down in the end, though, and the usual free-for-all system was allowed to operate, and everyone got all the practice they wanted.

Rumours of practice flights by members of the USSR team of around 310kph were going round, but

*The site was beautifully prepared. F2A circle at left, F2C circle to the right and F2B circle centre background.*





# THE WORLD CHAMPS

World Champion Kalmikov was conspicuously absent. Carl Dodge (USA) was reported to be practising around 300kph, but with piston-wear problems. Peter Halman (UK) had carefully preserved the motor that did 302kph at last years' Mallorca international, but bench tests suggested that it had 'died in the box'!

## Round One

This started at 9am and although the weather was bright, it was very cool; however, as the day progressed it became quite warm. Peter Halman (UK) made the first competitive flight of 290.56kph, bettered a little later by Sergei Pitzkalev (USSR) with 296.05. Around mid-day, UK's second man, Paul Eisner squeezed in front of Halman with a personal best of 291.03. A bit of a lull followed, then it was Carl Dodge's (USA) turn. Although Carl's set-up can be a bit unpredictable, this time it worked first go, producing an unbeatable 302.01kph. At the end of the round, the top of the leader board had Dodge (USA) top, followed by Pitzkalev (USSR), Eisner (UK) and Halman (UK). USA led the team placings, Dodge being backed up by John Newton in seventh place with a personal best flight of 281kph, but UK was, surprisingly, lag-



**F2A Winner Carl Dodge (USA). Look carefully for the black tailplane against the tent interior!**

ging a bit, 20kph behind the UK, and with Hungary breathing down their necks, some 3kph down.

## Round Two

This started warmer than the first day, becoming quite hot by noon. The first few attempts produced nothing particularly noteworthy until Sergei Kostin (USSR) produced a flight of 300.50kph, a mere 0.06 seconds slower than Carl Dodge's first round/top place time. Dodge happened to be next on, but this time it didn't work, and he only recorded an attempt. The rest of the round was fairly uneventful, except the last half-dozen or so experienced strange engine problems, and all those who had reflights (second attempts) had the same. Whilst the reflights were still in progress, suspicion arose regarding the official fuel. Jean Magne (France) remembered a new bottle being opened to supply him for his first attempt, this being the point when the difficulty started. As notes and observations were exchanged, suspicions hardened, and the USSR decided independently that the fuel brew was wrong; official protests were lodged, sundry tests and analysis were carried out, and it emerged that the suspect bottle was incorrectly proportioned, quite severely.

Samples from other bottles, including practice fuel that had been issued to each nation's team, were also tested, and a considerable variation of mixture was discovered.

After much debate, the organisers decided to award one flight (two attempts) to the last six on the day's flying order, and one attempt only to all those who had reflights. This partial re-run produced a much better crop of results, Halman (UK) making 293.16 to ease in front of compatriot Eisner, but Schelkalin (USSR) made the most of the opportunity, improving on his indifferent first round speed (265kph) to

bers now recording over 295 kph, the USSR team had a comfortable lead, UK was second with Halman and Eisners 290+ each backed up by a 279 by myself after reflying on 'good' fuel, and Hungary was not too far behind with a rather more mixed bag of results. The first round team leaders, USA, were sweating on getting their third man, Billy Hughes, off the mark, but he was having lots of problems - like it just wouldn't work.

## Round Three

This was relatively uneventful, most being unable



**Billy Hughes (USA), who had more than his share of troubles, caught here in mid-investigation. Below: Japan's Masaru Hicki, just before his turn to fly.**



record 295.81.

At the end of this round, Dodge (USA) was still first at 302.01kph. In second place was Kostin (USSR) on 300.50, followed by Pitzkalev (USSR), 296.05, Schelkalin (USSR), 295.81, Halman (UK), 293.16 and Eisner (UK) sixth with 291.03. With all their mem-

to make any significant improvement on their previous flights. Exceptions were Sergei Schelkalin with a flight of 298.26kph to move up one place to third in front of team mate Pitzkalev, and myself with a 287.08 which hoisted me from 15th to eighth and, more importantly gave UK a secure second team place. Billy Hughes (USA) scored at absolutely the last gasp, giving USA third team place a mere 1kph ahead of Hungary. As usual, the end of the competition was anti-climactic - the last few flights were very unlikely to affect the top end of the results board and only the most avid hung around to watch. It takes superhuman concentration and tireless sifting of results data to keep abreast of what is happening, competitively speaking, in an F2A competition. Even when involved as competitors, most of us content ourselves with an occasional perusal of the results board, and in many cases the competition is individual, that is, each is principally striving to beat his own previous best speed. To enliven the whole affair, and to give a finale which is compact enough time-wise to provide a comprehensible and exciting climax to the competition which would draw spectators, why can't F2A have a final like F2C and D? I envisage the top three from the three rounds to go forward to a flyoff to decide their final placings, each being allowed, say, two official flights (two attempts per flight). It would place a little more emphasis on consistency, but is that not better than one-hit wonders? I have hawked this idea around in the UK and also at this World Champs, with varying reactions - how about it, speed fliers?

## Equipment etc

Models were predominantly 'sidewinder asymmetric' in layout, with front induction engines running on suction fuel systems. The trend to long-span wings is only limited by considerations of making them sufficiently stiff torsionally and accurate (not too much wander in the incidence angle) to obtain acceptable

flying qualities. Winner Carl Dodge, one of the individualists of F2A, was unique in using a rear disc instead of front shaft valve motor. This intrudes into the tank room, and his looked very small, 20cc at a guess, but apparently quite adequate. Carl's engines were the latest versions of his bar stock design in which the cylinder barrel is simply bored, the transfer passages being formed by slots cut in an intermediate sleeve between the barrel and cylinder liner. Workmanship is beautiful, and it's all done on basic machines - no CNC gear or other gizmos. I did not manage to see any of the USSR engines, but report has it that they were beautifully engineered as ever, with very smooth, highly polished cylinder bores; their cylinder liners are said to be made of beryllium - copper alloy (wicked stuff to machine, they say) and piston material is high silicon alloy produced by a rolling process. Carl Dodge was also using this material, having obtained a quantity on a trip to a competition at Leningrad earlier this year. Up to this event, durability was apparently a severe problem - like one good run per piston - but here, one had done three such and still seemed OK.

Team UK all used the Irvine 15R, and our second team place must be reckoned a remarkable achievement for a commercial production engine. Our engines are not factory specials - there aren't any; on the contrary, we each prepare our own, and all parts used are standard production items. A fair amount of mixing and reworking of bits is done, and a few simple mods are made, but the real key to our success is lots of test flying, and the accumulation of experience arising therefrom, with Pete Halman the undisputed leader in this department.

The Hungarians were, naturally, all Moki powered, with the genial Mr Moki - Zoltan Bimbi - standing in for the redoubtable Sandor Szegedi, who has apparently re-discovered women, or one in particular, with the result that model planes have become a subordinate interest for the time being! John Newton of USA also used the Moki to good effect, as did Jean Magne (France) and there were several hybrids using internals of other origin. The Rossi (Mks II and III) was still extensively used, one of the most successful being welded by Luis Parramon (Spain), though with Irvine 15 liner/piston, setting a new Spanish record of just under 280kph.

### F2A Team Results

	Competitor 1	Competitor 2	Competitor 3	Total	
1	USSR	296.05	300.50	298.26	894.81
2	United Kingdom	293.16	291.26	287.08	871.50
3	USA	302.01	267.86	281.47	851.34
4	Hungary	288.69	282.80	279.29	850.78
5	Switzerland	260.12	256.96	259.18	776.25
6	France	253.16	251.05	236.84	741.05
7	Spain	279.72	0.00	257.70	537.42
8	Italy	269.87	267.26		537.13
9	Netherlands	268.66	261.06		529.72
10	Sweden	261.25	256.41		517.66
11	Canada	258.44	256.23	0.00	514.66
12	China	285.49			285.49
13	Bulgaria	281.47			281.47
14	Poland	272.52			272.52
15	F. R. Germany	260.87			260.87
16	Denmark	232.86			232.86
17	Japan	224.44	0.00		224.44
18	Portugal	0.00			0.00



Carl Dodge's reserve model is prepared.

### F2A Speed Individual Results

		Flight 1	Flight 2	Flight 3	Best	
1	Carl Dodge	U.S.A.	302.01	263.3	50.00	302.01
2	Sergei Kostin	U.S.S.R.	0.00	300.50		300.50
3	Sergei Scheikalin	U.S.S.R.	264.71	295.81	298.26	298.26
4	Sergei Pitzkalev	U.S.S.R.	296.05	295.08	292.68	296.05
5	Peter Halman	United Kingdom	290.56	293.16	287.31	293.16
6	Paul Eisner	United Kingdom	291.03	286.62	291.26	291.26
7	Jozsef Mult	Hungary	288.23	288.69	286.85	288.69
8	Richard McGladdery	United Kingdom	0.00	279.07	287.08	287.08
9	Lianli Ba	China	285.49	276.71	280.81	285.49
10	Zoltan Bimbi	Hungary	0.00	282.80	0.00	282.80
11	Assen Tanev	Bulgaria	281.47	276.92	278.21	281.47
12	John Newton	U.S.A.	281.47	277.14	266.67	281.47
13	Luis Parramon	Spain	279.72	279.29	0.00	279.72
14	Lajos Nagy	Hungary	269.26	278.85	279.29	279.29
15	Andrzej Rachwal	Poland	0.00	0.00	272.52	272.52
16	Elo Zanin	Italy	0.00	263.16	269.87	269.87
17	Rob Metkermeijer	Netherlands	256.41	268.66	262.01	268.66
18	William Hughes	U.S.A.	0.00	0.00	267.86	267.86
19	Stefano Zanin	Italy	267.26	267.06	0.00	267.26
20	Ove Kjellberg	Sweden	235.76	261.25	0.00	261.25
21	Paul Rietbergen	Netherlands	242.59	261.06	247.25	261.06
22	Gunther Rosenhan	F.R. Germany	260.87	0.00	0.00	260.87
23	Walter Christen	Switzerland	0.00	0.00	260.12	260.12
24	Otto Urban	Switzerland	254.96	0.00	259.18	259.18
25	Chris Sackett	Canada	246.74	258.44	0.00	258.44
26	Jorge Benavent	Spain	253.88	244.57	257.70	257.70
27	Toni Borer	Switzerland	256.96	227.58	253.88	256.96
28	Per Starnesund	Sweden	0.00	256.41	0.00	256.41
29	Paul Gibeault	Canada	0.00	247.93	256.23	256.23
30	Rolar Jarry-Desloges	France	0.00	253.16	0.00	253.16
31	Jean Magne	France	251.05	0.00	0.00	251.05
32	Alain Lester	France	0.00	0.00	236.84	236.84
33	Niels Lyhne-Hansen	Denmark	0.00	232.86	223.46	232.86
34	Masaru Hiki	Japan	0.00	224.44	0.00	224.44
35	Pereira Da Costa	Portugal	0.00	0.00	0.00	0.00
35	Carlos Olive	Spain	0.00	0.00	0.00	0.00
35	Ron Peters	Canada	0.00	0.00	0.00	0.00
35	Takao Yaguchi	Japan	0.00	0.00	0.00	0.00

### F2B Aerobatics: Bill Draper

This event was blessed with fine weather and blistering sunshine although early practice saw some rain. The contest circle was excellent with smooth tarmac and plenty of room; it would have taken 90ft lines if required but the surrounding area beyond the tarmac was grit and gravel which would have caused problems with motors or wheel bearings had precautions not been taken to keep out grit.

The official practice circle was some four or five miles away on a swimming pool car park. Of rougher surface, it was adequate but could still only take one circle and was surrounded on three sides by high trees and buildings, so flying conditions were quite different to the contest circle which was much more open (although still subject to turbulence from buildings). The practice circle was useful for checking engine runs and settings; all the British team arrived early and were able to get some more serious practice in the contest circle before official practice day. Probably due to the heat, engine runs and setting were quite different to the UK, the glow motors needing a leaner setting and less fuel in the tank whilst Tony Eifflaender's diesel required changes in compression, besides mixture.

The weather pattern was almost identical each day, with very calm conditions until midday and variable turbulent wind in the afternoons. The two preliminary rounds to determine the final fifteen for the flyoff were originally planned for two days, but the high number of entries forced a commonsense change and the two rounds were spread over two-and-a-half days. The first round of the three-round flyoff was flown in the afternoon of Day Three and the remaining two rounds on Day Four. Even so, the revised programme resulted in a 7am start - an early hour for concentration for flyers and judges alike.

The UK team of Bill Draper, Tony Eifflaender and Barry Robinson were hoping for a good result after their team success in the '89 Europeans and had sorted



**1990 Stunt Champion, Xiandong Zhang from China, used his 1988 model with homebuilt 9cc motor.**

out their motors sufficient to avoid the overruns which were to prove common through the event.

## Round One

Boaz Trudler of Israel had the unenviable task of opening the competition using his well-proven ST46 set-up; Barry Robinson flew early in the number three slot, now using a slightly smaller version of his Northwind, called Boreas, with ST46 for power and Bolly 12in x 6in, cut to 11in diameter. The first really high score came from Anatoly Kolesnikov flying at number 13 slot, still using his Kiev model. Model spans 59 inches, weighs 60ozs and, powered by home built 9cc engine, set up the highest score of the preliminary rounds at 3280 points.

A few flights later (and still before 10am) US team member Paul Walker closed up to second place with 3236.5 points – note that the judges were all scoring using half points – using his Impact design. Model is powered by OS40 VF and uses a Hunt tuned pipe, running at high revs on 11.1/4in x 4in prop. It weighs 62ozs.

Just after lunch the defending champion Xiandong Zhang from China made his bid and closed up onto Paul Walker's tail to hold third spot in the round. He also used his 1988 Kiev model, powered by a home built front induction rear exhaust 9cc motor. Span 58in and weight 56ozs. Mid afternoon saw UK's next team man, Bill Draper, try his Superhawk with Enya SS40 to earn a place in the flyoff. Others who were pushing for a flyoff place were ex-World Champion Youhan Zhu from China, Luciano Compostella, who flew fast and with sharp corners but some bouncy levels with an OS48 Surpass four-stroke powered semi-scale Ambrosini SA1 403 fighter, and Bill Werwage, using his Junar with OHS40 and home built tuned pipe swinging 11.1/4in three-blade prop. Model weighs 56ozs for 700sq ins.

The round continued the following morning. Claus Maikis, flying first at 0700, was still half asleep when his handsome new ST60 powered aeroplane brushed the ground in the outside loops, damaging the top of the fuselage but leaving the main structure intact. Japan's Kaz Minato climbed into the top 15 with a big

and beautiful 65oz aeroplane, its ST60 swinging a 12 x 6 prop. Following Canada's Fred Tellier flying his HP40 powered Snowbird, the third Briton to fly was Tony Eifflaender with his PAW 35 powered Freebird with a typical quick sharp schedule but short of flyoff score. Jim Casale followed with his ST60 powered handsome Columbia spanning 58.5ins, weighing 64ozs and pulled by a 11x7 four-blade Bolly prop to move into fifth spot in the round. Last man in the round was Holland's Erik Janssen with his ST46 model to hold 15th place.

## Round Two

Peter Germann of Switzerland opened Round 2 with an ST60 powered kit built Sig Magnum. Erik Bjornwall from Sweden touched the ground in the eights, breaking the prop and causing a shaft run, but without structural damage. Kolesnikov and Walker continued their close battle, smoothness and consistent 5 to 6ft levels being the predominant feature of Kolesnikov's

flight. Bill Draper failed to improve his score but Barry Robinson, flying later in the afternoon, pushed up his score – just short of flyoff. Compostella had to call an attempt when his motor cut on take off and his second attempt flight was bouncy, with uneven pullouts. Some of Jim Casale's pullouts were low but he raised his score, and Xiandong Zhang scored the highest in the round, with a style very similar to Kolesnikov. Tony Eifflaender was troubled by turbulence and the top of the hourglass was badly affected, after which Tony aborted the rest of the flight, feeling the need for more engine power in the hot conditions. The round continued the following day with no major changes except for Oliver Charles of France, flying a four-stroke powered Berringer designed Caudron who moved up into the top fifteen to push Erik Hanssen out of the flyoff.

The Korean team had arrived on time but their models, being transported overland, had been delayed in the USSR. They missed the first round but their



**Jim Casale's (USA) stunter was the best finished of the lot. ST60 drives Bollenhagen four-blade prop.**



**Paul Walker (USA) flew neat F2B into third place.**

aircraft arrived in time for them to be allowed a flight after one of the flyoff rounds to give them a position. Fortunately no embarrassment was caused by anyone of them qualifying for the flyoff, but no doubt this would have been discounted anyway if that had been the case.

## Flyoff

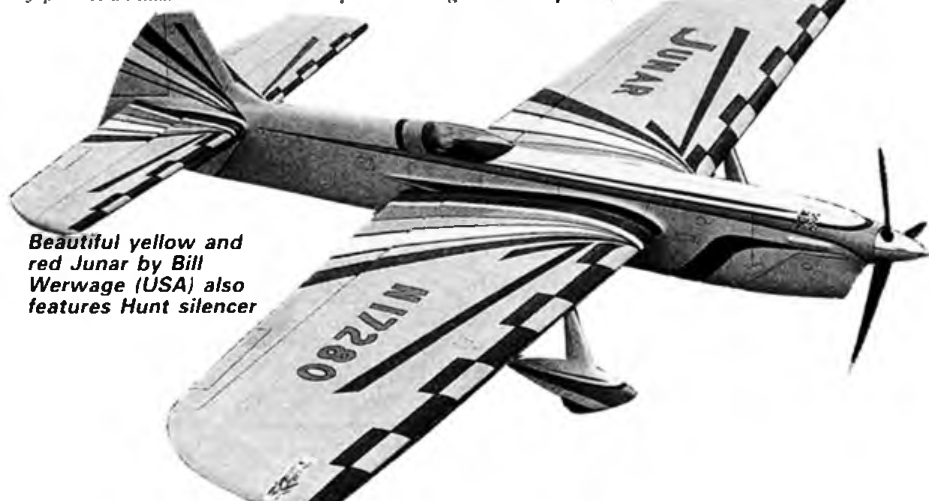
The flyoff was made up of full teams from China, USA and USSR, two flyers each from Japan and France, plus one UK and one Italian flyer. With flyers of widely different ability and styles flying over two-and-a-half days, there must be some element of luck in getting into the flyoff. Now, however, comparisons would become easier and the judges concentrate on small errors. The flyoff was to be a separate three-round event and previous scores were discarded.

## Flyoff Round One

Proceedings were opened by Shimichi Furukawa from Japan with his 70oz Dorafman, powered by a ST60. Even at this level flyers had their troubles. Vladimir Strukhov touched the prop on the ground on takeoff, reducing the diameter a little and with a consequently faster engine run, finishing with an overrun. Top scores were concentrating on smooth, not oversharp corners; consistent rather than low levels, and not too fast (5 to 5.3 sec) lap times. Xiandong Zhang called an attempt when his motor surprisingly failed to start and Kilenikov's motor suddenly cut, three-quarters through the clover, losing the manoeuvre and landing due to shortage of laps and leaving a lee-way to make up. Youhan Zhu was now making a determined effort to gain the title. He led the round for a while with Paul Walker close behind with a well controlled flight, but Xiandong Zhang secured the lead in the round with his second attempt. The round closed finding Bill Draper in midfield after a slightly slower flight than intended.

## Flyoff Round Two

This started early on Saturday morning with a nice flight from Philip Rampoux of France, flying fast and sharp but a little low at times. Bill Draper also flew early in second slot but still not quite awake and dropped marginally from the previous day. Kylehov of USSR flew a little faster than in the earlier round



**Beautiful yellow and red Junar by Bill Werwage (USA) also features Hunt silencer**

and pulled up a few points. The contest for top man was now very tight with another well controlled flight from Paul Walker, lapping at round 5.2 secs, followed by a full schedule from Kolesnikov who had spent time the previous evening sorting out his motor run, and Xiandong Zhang taking the round by a mere two-and-a-half points.

### Flyoff Round Three

With scores so tight everything now hung on the last round. Most flyers found a little extra to push up their scores. Flying half way down the list, Xiandong Zhang pushed up his score to 3327.5, a very high average of some 1109 points per judge for the three middle judges which must demonstrate the quality of the flying. Flying towards the end of the round, Paul Walker held off a big effort from Jiazhang Wang to hold third place with Anatoly Kolesnikov securing second spot yet again. Bill Draper consolidated his UK position in ninth place, just ahead of top Frenchman Philip Rampnoux.

So Xiandong Zhang continues as World Champion, a reward for the considerable effort required. Rumour has it that the top Chinese flyers are achieving 2000-3000 flights per year. The Chinese are very firmly in top spot with the USA team in second place and Russia third. Paul Walker and Bill Werwage were using the newly developed technique of high-revving 40s with tuned pipes, but sounding very quiet. The top Russians and Chinese are still using more traditional engine runs but with specially built motors. Line lengths were not excessive and most top flyers were using some three feet short of maximum.

The UK team finished in ninth, 18th and 29th positions individually and eighth team place, held down to some extent by Tony's unfortunate flight.

### F2C Team Race: Dave Clarkson

For many people, the Blue Riband event at any World or European Championship is the F2C Team Race event. This is perhaps because Team Race is the only event in any type of competitive aeromodelling where a team of two persons takes part. Each makes

		Flight 1	Flight 2	Best Flight	
16	Benedito Rodrigues	Brazil	2 887.00	2 983.50	2983.50
17	Erik Janssen	Netherlands	2 880.00	2 878.50	2 980.00
18	Barry Robinson	United Kingdom	2 769.50	2 958.00	2 958.00
19	Zolcan Wadovich	Hungary	2 953.00	2 888.00	2 953.00
20	Krzysztof Kowalczyk	Poland	2 950.00	2 930.50	2 950.00
21	Slavatore Barile	Belgium	2 924.50	2 852.50	2 924.50
22	Geza Dr. Egevary	F.R. Germany	2 911.50	2 841.00	2 911.50
23	Ove Andersson	Sweden	2 910.50	2 871.00	2 910.50
24	Gilbert Beringer	France	2 887.50	2 804.50	2 887.50
25	Lasse Aaltio	Finland	2 886.00	2 864.00	2 886.00
26	Fred Tellier	Canada	2 869.00	2 882.00	2 882.00
27	Tamas Tokai	Hungary	2 880.00	2 837.50	2 880.00
28	Henk De Jong	Netherlands	2 870.50	2 854.50	2 870.50
29	Anthony Eiffelaender	United Kingdom	2 852.00	2 326.00	2 852.00
30	Franco Balesio	Italy	2 848.50	2 829.50	2 848.50
31	Atae Yamasaki	Japan	2 834.00	2 727.00	2 834.00
32	Chon Yong Chol	D.P.R. of Korea	0.00	2 833.00	2 833.00
33	Attila Morotz	Hungary	2 811.50	2 785.50	2 811.50
34	Alessandro Nencioni	Italy	2 781.00	2 808.00	2 808.00
35	Paulo Gomes	Brazil	2 690.00	2 807.50	2 807.50
36	Willi Schmitz	F.R. Germany	2 600.00	2 802.50	2 802.50
37	Franz Wenzel	Austria	2 801.00	2 756.00	2 801.00
38	Luc Dessauzy	Belgium	2 699.50	2 793.50	2 793.50
39	Geoff Higgs	Canada	2 638.50	2 790.00	2 790.00
40	Toni Salathe	Switzerland	2 776.50	2 662.50	2 776.50
41	Georges Liber	Belgium	2 616.50	2 768.00	2 768.00
42	Sylwester Kubik	Poland	2 735.00	2 668.50	2 735.00
43	Peter German	Switzerland	2 718.50	2 722.00	2 722.00
44	David Wright	New-Zealand	2 719.00	2 658.00	2 719.00
45	Erhard Weinmann	Austria	2 510.00	2 717.00	2 717.00
46	Kim Ho Chol	DPR Of Korea	0.00	2 713.00	2 713.00
47	Claus Maikis	FR Germany	504.00	2 710.00	2 710.00
48	Boaz Trudier	Israel	2 655.50	2 709.50	2 709.50
49	Regis Blatyta	Brazil	2 622.50	2 703.00	2 703.00
50	Bruno Van Hoek	Netherlands	2 664.00	2 699.50	2 699.50
51	Eliezier	Israel	2 576.00	2 690.50	2 690.50
52	Walter Weinseisen	Austria	2 658.50	2 584.00	2 658.50
53	Javier Buenano	Peru	2 644.50	2 422.50	2 644.50
54	Staffan Ekstrom	Sweden	2 541.50	2 626.50	2 626.50
55	Aage Wiberg	Denmark	2 459.50	2 589.50	2 589.50
56	Sin Song Gun	DPR of Korea	0.00	2 589.00	2 589.00
57	Henrik Ludwigen	Denmark	2 136.50	2 537.00	2 537.00
58	Rafael Escribano	Spain	2 301.00	2 499.50	2 499.50
59	André	Switzerland	2 372.50	2 490.00	2 490.00
60	Antonio Rodriguez	Spain	2 314.00	2 462.00	2 462.00
61	Erik Bjornwall	Sweden	2 452.50	1 241.50	2 452.50
62	Somocurcio Ruiz De	Peru	2 247.00	2 041.50	2 247.00
63	Nuno Mota	Portugal	1 694.50	2 239.00	2 239.00
64	Fernando Segura	Spain	1 804.00	1 930.00	1 930.00
65	José Almeida	Portugal	1 175.50	320.50	1 175.50

### F2B Aerobatics Individual results

		Flight1	Flight 2	Best Flight	Fly-off 1	Fly-Off 2	Fly-Off 3	Total	
1	Xiandong Zhang	China	3 234.50	3 210.50	3 234.50	3 190.00	3 208.00	3 327.50	6 535.50
2	Anatoly Kolesnikov	USSR	3 280.00	3 151.50	3 280.00	3 288.00	3 205.50	3 233.50	6 439.00
3	Paul Walker	USA	3 236.50	3 093.00	3 236.50	3 138.50	3 197.50	3 212.50	6 410.00
4	Jianzhong Wang	China	3 189.50	3 187.00	3 189.50	3 032.50	3 169.50	3 222.50	6 392.00
5	Youhan Zhu	China	3 067.50	3 080.00	3 080.00	3 161.00	3 048.50	3 148.50	6 309.50
6	James Casale	USA	3 120.00	3 137.00	3 137.00	3 083.00	3 112.50	3 186.00	6 298.50
7	William Werwage	USA	3 039.50	3 149.00	3 149.00	3 026.50	3 152.00	3 136.00	6 288.00
8	Sergel Klychkov	USSR	3 016.50	3 082.00	3 082.00	3 073.00	3 132.50	3 137.50	6 270.00
9	William Draper	United Kingdom	3 013.50	2 899.00	3 013.50	3 020.50	3 050.50	3 145.50	6 195.50
10	Philippe Rampnoux	France	3 107.00	3 128.50	3 128.50	2 951.00	3 091.00	3 103.00	6 194.00
11	Kazuhiro Minato	Japan	3 028.50	3 050.00	3 050.00	2 982.50	3 065.50	3 118.50	6 184.00
12	Shinichi Furukawa	Japan	3 060.50	3 025.00	3 060.50	2 956.00	3 019.50	3 152.50	6 172.00
13	Luciano Compostella	Italy	3 045.50	2 946.50	3 045.50	3 055.50	2 995.00	3 059.00	6 114.50
14	Vladimir Strakhov	USSR	3 026.50	3 008.50	3 026.50	2 865.50	2 931.50	3 173.50	6 105.00
15	Olivier Charles	France	2 784.00	3 013.50	3 013.50	2 865.00	2 946.50	2 963.50	5 910.00

a different but important contribution to the result. It is also the only event in aeromodelling where fuel efficiency is critically important. Whatever the reasons, it was the F2C Team Race event at this World Championships, that drew the biggest crowds and required the most organising effort. The organisers did us proud with the site and the weather. However, problems were experienced in the heats which may have affected the final results. Many expressed doubts about the quality of the time-keeping early on and, similarly, some of the jury rulings seemed inconsistent or seemingly retrospective in the heats. These are not major problems; neither were the almost invisible 'warnings and laps completed board' or the very quiet PA system provided for the jury, but put together they did make for a less than perfect competition for the 44 entrants from 18 countries (which included 12 countries contesting the Team prize with full teams of three entrants).

Official practice revealed very little mainly because the practice facilities here at Blenod were excellent enabling all of the entrants to fly all the practice sessions they needed, so why do it in full view? What was obvious from the general pre-contest practice was

### F2B Team Results

	Competitor 1	Competitor 2	Competitor 3	Total	
1	China	6535.50	6392.00	6309.50	19237.00
2	USA	6288.00	6410.00	6298.50	18996.50
3	USSR	6439.00	6105.00	6270.00	18814.00
4	Japan	5561.00	6184.00	6172.00	17917.00
5	France	6194.00	5962.00	5910.00	17796.00
6	Italy	6114.50	5589.00	5678.00	17381.50
7	Hungary	5597.00	5717.50	5841.00	17155.50
8	United Kingdom	6195.00	5858.50	5363.50	16947.00
10	Brazil	5870.50	5325.50	5497.50	16693.50
11	Belgium	5384.50	5493.00	5777.00	16654.50
12	Austria	5227.00	5242.50	5557.00	16026.50
13	Switzerland	5440.50	5439.00	4862.50	15742.00
14	Sweden	5781.50	3694.00	5168.00	14643.50
15	F. R. Germany	5752.50	3214.00	5402.50	14369.00
16	Spain	4776.00	4800.50	3734.00	13310.50
17	Poland	5403.50	5880.50		11284.00
18	Canada	5751.00	5482.50		11179.50
19	Israel	5266.50	5365.00		10631.50
20	Denmark	5049.00	4873.50		9722.50
21	Peru	4288.50	5067.00		9355.50
22	D. P. R. of Korea	2713.00	2589.00	2833.00	8135.00
23	Finland	5750.00			5750.00
24	Portugal	1496.00	3933.50		5429.50
25	New-Zealand	5377.00			5377.00



**F2C finalists, from left to right: Pirazzini (Italy), Ivanov (USSR), Shabashov (USSR), Voghera (Italy), Magli (Italy) and Rossi (Italy).**

that the Russians and Italians were in a class above the rest with the most impressive being Voghera/Rossi doing 17.0 sec/10 laps for two-stop range. The Russian entrants were not far behind in the high 17s for similar range with much less critical sounding settings for Barkov/Suraev (runners-up at the 1988 World Championships) and Kramarenko/Kuznetsov (1982 World Champions). The first time I saw Valeri Kramarenko flying at a World Championships was in 1972 in Helsinki. Eighteen years so far at the highest possible level. It gives hope for us all!

To the contest itself. With 15 heats in each round, not including re-flights, space does not allow for a race-by-race account. Instead I will concentrate on the notable events in each round of heats.

### Round One Heats

The contest started poorly when mis-timed warm-up and cool-down periods meant a re-fly for the first race – a bit of luck perhaps for Sladdin/Gardner who were in this race, for no-one likes opening the contest in front of a 'cold' jury. Race 2 saw Austrian veterans Fischer/Straniak three-stop a 3:00.0, running short at the end so having to glide the finish. No official or scorer seemed sure of how far they glided so there was a lot of controversy about this. In Race 3 French stalwarts Delor/Surugue had a real stroke of luck for Roland Surugue missed two catches and then were granted a re-run because of an accidental shut-off caused by an opponent; they did 3:30.8 in their re-run. Barkov/Suraev did their usual relaxed (Vladimir Suraev) and dominant (Victor Barkov) act in Race 4 with a crackling two-stop setting to record 3:21.8, doing 17.8 sec/10 in traffic. Five-second penalty was awarded to the Chinese team of Ren/Zhao in Race 5 for trying to start their motor before the start signal. Amazingly Voghera/Rossi Retired part-way through Race 6 with a hopelessly cooked motor. Meanwhile Langworth/Campbell were performing a perfectly judged race to finish well cooked from a really clattery start in 3:30.7.

They could not have recorded a quicker time. Race 7 saw little of note, as opposed to Race 8 where Magli/Pirazzini two-stopped a 3:30.6 using their OPS powered APS Red October model. Both of their pitstops were slow so quicker times were possible for them. In Race 9 the Chinese team of Zhao/Zeng made a catalogue of errors to get the DQ, quite the opposite to Race 10 in which 'the old men' Kramarenko/Kuznetsov had a lovely run to record the fastest time in Round One at 3:18.1. In the same race one team was disqualified for pitting without a safety hat – I was astonished that they were allowed to enter the circle since safety should have been the prime concern. Smith/Brown flew with 'rubbish' to record 'rubbish' in the Race 8 (using Steve's own words). Enough said! Onto Race 12 in which the Russians Shabashov/Ivanov surprised no one by recording the second quickest time in this round at 3:21.4. We had to wait until Race 15 for another good time. In this last scheduled race of Round One Pennisi/Zana from Italy recorded a 3:36.5 despite running short at the end and having to pit on lap 98 – they had been doing 18.0 sec/10 laps in the traffic. This was not the last race in Round One for the re-run of Race 1 was still to happen. Now it happened, resulting in a 3:40.8 for Sladdin/Gardner, a faultless race for them but with no real airspeed.

### Round Two Heats

Another scorcher of a day. With Dave Campbell I had counted the entrants who had bettered 3:30 in the past and who had done poorly, by this standard, in Round One. We counted at least twelve such teams so it was obvious that this could be quite a dramatic day. The only ones included in this category who made the grade (the semi-finals) in Round Two were the Italians Voghera/Rossi in Race 3 who four-stopped a 3:27.4 with blinding airspeed. Right for them but their potential was much better than this. Similar grade-makers were ex-World and European Champions, the Metkemeijer brothers from Holland. The first time

they flew at a World or European Championship was in 1967 when they turned up as teenagers on their bicycles! More than 20 years at the top and still going strong; there is hope! This time in Race 13 they three-stopped (having had to sideline their two-stop motor thanks to damage) a 3:31.8 to squeeze into the semis. Others improvers in Round Two were Delor/Surugue with a 3:29.5 in Race 14, third-placers at the 1989 Championships, Euro Champs Bodurkov/Popov – the BP motor men from Bulgaria – with a 3:34.4 in Race 15, Gustavsson/Harne from Sweden with a 3:36.5 in Race 5, the Austrians Nitsche/Kuhnegger with a 3:37.6 in Race 9 and Mata/Pastor from Spain who returned a 3:38.2 (the only remaining sub-3:40 heat) also in this race. The highlight of this round was a world record 3:17.9 in Race 6 by Shabashov Ivanov (USSR) – marvellous teamwork and a lovely sounding motor to two-stop such a time and yet they didn't look to be rushing. This wasn't a good round, except for the Brits – for in Race 3 ex-World Champions Smith-Brown improved to 3:44.7 (still 'rubbish' by their high standards). But in Races 9 and 12 Bernie Langworth and then Martin Sladdin got the big DQs right towards the end of their races for whipping. Ian and Martin were particularly disappointed for they had been hard at work finding more airspeed, with success too, for at lap 50 they were seven seconds ahead of their Round One race at the same stage of the race. I heard it said that both pilots received special attention from the jury because it had been felt that both had got away with too much in Round One. I hope that this is not



**Britain's Ian Gardner making one good Nelson out of two wrecked motors for Mervyn Jones. Teamwork!**

true for if so it reflects very poorly on the jury. Judging is an objective, not a subjective job.

So the heats were over with three Russian teams at the top of the heap. The best performances in the heats had been top quality for the semi cut time was 3:31.8 but the usual crush knocking at the door of the semis was not as large as in the past. Towards the bottom of the list the performances were poor. Of course the Russians had the team prize, trailed at some distance by the Italians, and followed by the Austrians who benefitted to a big degree by Fischer/Straniak's controversial Round One time. Sadly for the Brits we were not in the top three the first time this has happened for some years. We were short of airspeed and quite a lot of work needs to be done.

For the nine teams in the semi-finals the contest would start again the next day. Those involved were three teams from the Soviet Union, two from Italy and one each from France, Holland and England.

### Semis: Round One

This round opened with Langworth/Campbell, Voghera/Rossi and Kramarenko/Kuznetsov in the circle. All had troubled races, experiencing compression trouble. The latter two teams had a few attempts



**Colin Brown alters compression during the race – it had to be done too often! Ex World Champions Smith/Brown were the slowest Brits this time. Very unusual...**

to get it right. Bernie and Dave finished first, cooked solid, in 3:38.8. Fast motors are touchy motors; the Brits had by far the slowest so it was no surprise that it was the least affected by the conditions. Race 2 consisted of Barkov/Suraev, Delor/Surugue and Fischer/Straniak. Only the Austrians had an OK race. Victor Barkov made an amazing mistake for just like in the semis at the 1985 EuroChamps at Three Sisters he cut his motor only half a lap out from his pitman and Vladimir could not take the catch so their model ran-in leading to their disqualification from the trace. Even triple World Champions and reigning World and European Champions can make a mess of things – so reassuring for us mere aeromodellers. Delor/Surugue had compression trouble and the attendant slow stops.

The final race saw the Metkemeijers against Magli/Pirazzini and Shabashov/Ivanov. The Dutch brothers motor cooked whilst the other two had faultless races – the Muscovites crackling to a 3:20.8 and the Italians in seventh heaven with their 3:22.3, a personal best. Happy Italians spread their happiness to all near them. It was a pleasure to be near them.



**Dave Campbell catches in F2C. Without a doubt Dave was the fastest pitman of the Champs.**

### F2C Team Race: Individual Results

			Heat 1	Heat 2	Semi 1	Semi 2	Final
1	Y. Shabashov/V. Ivanov	USSR	3:21.4	3:17.9	3:20.5	3:28.0	6:45.8
2	M. Magli/E. Pirazzini	Italy	3:30.6	3:41.7	3:22.3	DISQ	7:01.8
3	G. Voghera/A. Rossi	Italy	0:00.0	3:27.4	3:44.9	3:18.5	7:32.1
4	V. Kramarenko/S. Kuznetsov	USSR	3:18.1	3:25.8	3:41.4	3:35.8	
5	V. Barkov/V. Suraev	USSR	3:21.8	00.0	DISQ	3:29.9	
6	J. Fisher/H. Staniak	Austria	3:29.0	DISQ	3:31.6	3:40.5	
7	B. Delor/R. Surugue	France	3:30.8	3:29.5	3:41.8	3:40.8	
8	B. Langworth/D. Campbell	United Kingdom	3:30.7	DISQ	3:38.8	3:34.2	
9	R. Metkemeijer/B. Metkemeijer	Netherlands	3:36.3	3:31.8	3:58.3	3:38.2	
10	Sun Xiaoxin/Li Lanpeng	China	3:33.5	3:36.4			
11	G. Bodurkov/R. Papov	Bulgaria	4:03.9	3:34.4			
12	J. Gustavsson/G. Harné	Sweden	3:55.4	3:36.5			
13	R. Pennisi/A. Zana	Italy	3:36.5	DISQ			
14	H. Nitsche/F. KUhnegger	Austria	3:45.0	3:37.6			
15	F. Mata/A. Pastor	Spain	4:33.7	3:38.2			
16	P. Usounov/V. Milev	Bulgaria	3:40.7	3:41.1			
17	M. Sladdin/I. Gardner	United Kingdom	3:40.8	DISQ			
18	Zhao Zhigang/Zeng Wenge	China	DISQ	3:32.3			
19	W. Reinisch/M. Brandl	Austria	3:43.8	3:46.6			
20	S. Smith/C. Brown	United Kingdom	4:19.1	3:44.7			
21	B. Samulesson/K. Axtelius	Sweden	3:44.8	3:47.4			
22	J. Ahling/H. Andersson	Sweden	3:45.7	3:47.7			
23	Meijer/Jordean	Netherlands	0:00.0	3:50.4			
24	H. Marschall/F. Kuckelkorn	F.R. Germany	3:51.4	3:51.1			
25	M. Saccavino/V. Saccavino	Switzerland	3:51.7	4:23.8			
26	P. Sousa/L. Sousa	Portugal	5:22.6	3:51.8			
27	L. Dessaucy/J. Dessaucy	Belgium	4:01.8	3:53.5			
28	C. Iotov/L. Kolev	Bulgaria	4:51.8	3:54.1			
29	C. Thorhaug/J. Rasmussen	Denmark	0:00.0	3:55.2			
30	I. Mohai/Z. Nagy	Hungary	DISQ	3:59.2			
31	C. Brownhill/L. Mac Lean	Canada	3:59.9	4:08.9			
32	L. Floris/P. Crespi	Spain	0:00.0	4:04.1			
33	J. De Ridder/F. Schot	Netherlands	0:00.0	4:16.8			
34	Ren Manguo/Zhao Yaotang	China	4:19.8	DISQ			
35	S. Willoughby/R. Oge	USA	4:20.2	DISQ			
36	B. Fairey/R. Fairey	Canada	4:27.8	6:01.2			
37	W. Christen/C. Saccavino	Switzerland	DISQ	4:42.0			
38	J. Hollfelder/T. Gillott	USA	0:00.0	4:42.6			
39	H. Borer/R. Muller	Switzerland	0:00.0	4:47.8			
40	J. McCollum/C. Rudner	USA	DISQ	4:52.9			
41	P. Da Costa/L. De Sousa	Portugal	5:01.9	6:08.6			
42	J. Sanchoy/C. Olive	Spain	5:57.8	:00.0			
43	A. Mortinho/J. Goulao	Portugal	DISQ	:00.0			
44	T. Ougen/P. Constant	France	0:00.0	DISQ			

### F2C Team Results

	Competitor 1	Competitor 2	Competitor 3	Total	
1	USSR	3:21.8	3:17.9	3:18.1	9:57.7
2	Italy	3:27.4	3:36.5	3:30.6	10:34.5
3	Austria	3:37.6	3:29.0	3:43.8	10:50.4
4	United Kingdom	3:30.7	3:40.8	3:44.7	10:56.1
5	Sweden	3:44.8	3:47.7	3:36.5	11:09.0
6	Bulgaria	3:34.4	3:54.1	3:40.7	11:09.2
7	China	4:19.8	3:33.5	3:42.3	11:35.6
8	Netherlands	3:31.8	3:50.4	4:16.8	11:39.0
9	Switzerland	4:47.8	4:42.0	3:51.7	13:21.5
10	Spain	3:38.2	5:57.8	4:04.1	13:40.1
11	USA	4:42.6	4:52.9	4:20.2	13:55.7
12	Canada	3:59.9	4:27.8		8:27.7
13	Portugal	5:01.9	3:51.8	0:00.0	8:53.7
14	France	3:29.5			3:29.5
15	F. R. Germany	3:51.1			3:51.1
16	Belgium	3:53.5			3:53.5
17	Denmark	3:55.2			3:55.2
18	Hungary	3:59.2			3:59.2

### Semis: Round Two

This round occurred a day after the first round of semis. This was a relaxed-schedule contest! The round opened with Delor/Surugue, Shabashov/Ivanov and (again the first race of the day) Langworth/Campbell. The result was much the same as in the first race of the previous day, only less so. The Russians and the French needed a compression adjustment each and the Brits finished cooked.

Race 2 was the dramatic one in this round for Voghera/Rossi opened their needle to three-stop a 3:18.5. Inconsistency is their name but do they have airspeed. Barkov/Suraev needed a comp adjust and the Metkemeijers just couldn't stay with the pack (neither could the Russians, on reflection) 17.0 sec/10 laps airspeed in a three-up race, is a very rare, if not unique, experience.

The last semi-final couldn't live with this stuff. Magli/Pirazzini were disqualified for whipping (why not try in their position). The two K's needed one comp and two needle adjusts at their tree-stops. The Austrians were also in trouble.

So the final was to feature one Russian team and two Italians. Who could have expected that at the end of the heats? And none of them were ex-World or European Champions for a change. Is there something new happening in F2C Team Race at last?

### The Final

It has been customary at every World and European Championships that I have attended (and there have been many) to permit one practice tank before the final to check their motor setting – after all it is in everyone's interests competitors, officials and spectators to have a good, fast, close and therefore trouble-free final. Shabashov/Ivanov requested their tankful and to the astonishment of many were refused. Perhaps wisely under the circumstances the Italians kept quiet. I just could not understand the justice of this decision and felt deeply for the Russians.

To the final itself. Voghera/Rossi were going like a storm but in their second tank prior to yet another overtaking manoeuvre, Gino came up to Shabashov's back and his motor died the death. That was in effect the end of Voghera/Rossi's race for Carlo never got the compression right after that despite many attempts – their motor was just too touchy. Shabashov flew on, seemingly reluctant at times to overtake despite now having the fastest model in the air, perhaps leading to a quick comp adjust by his pitman Ivanov. Meanwhile Elvis Pirazzini also had to reduce comp at his third stop but they just didn't have the airspeed to beat the Russians. At their 200-lap mark Ivanov started jumping and whooping for they had won in the remarkably fast time of 6:45.8. Shabashov cut the motor, landed and sank to the ground to kiss the tarmac. They had won – and I have never seen two more satisfied people. Not far behind were Magli/Pirazzini and they were almost as happy with their result. Team racing at the top level involves an incredible amount of time, money and effort, and when it all comes good with a result at the World Championships, the pleasure cannot be contained.

## F2D Combat: Dave Clarkson

With 46 entries from eighteen countries, and thirteen countries fielding full, three-competitor teams, this was a true World Championships. Thanks should go to the F2D Jury, consisting of experienced international officials Michels (Belgium), Larsson (Sweden) and Olivije (Holland) assisted by Mac Henry (USA) who is the most experienced Centre Marshal in the world at this level of competition. The site was a well-maintained football pitch complete with permanent wood barrier around the perimeter and permanent terraced seating at one end protected by high, wire mesh safety netting. The scorers and officials were seated across the pitch from spectators and competitors; and an excellent result and time display enabled everyone to know what was going on without hampering the officials. Behind the competitor model parks (one per nation) at one side of the pitch barrier was a grassed area, shaded by a row of trees with a small



**No trouble communicating in F2D. Beliaev (USSR) and a pile of assorted Brits, Danes, Canadians and Italians find it easy.**

stream at the rear. Given the intense sun and high temperature (over 30 degrees) experienced during the contest, this proved to be life-saving. The local football club offered practice facilities on their even better pitch about a kilometre away.

Pre-contest practice revealed how far the 'Russian Revolution' has spread. Only the fliers from China, France, Holland, Belgium, Denmark and the USA – and our own Mike Whillance – were not using clones of the Soviet models. Russian motors have spread a long way too, with the Swedes, Swiss, Finns, Germans, Poles and Bulgarians all using them in addition to the Russians themselves. All except the Chinese, who chose wood props for their Rossi MkIII motors, were using GFRP props, many of which looked to be of Russian origin. Howard Rush's models were notable for the use of carbon fibre everywhere including the leading edge, trailing edge, ribs, tailboom, prop and mini-pipe – and yet they proved rather fragile; he ran out of them in his re-runs marathon with John James. All the American used carbon fibre mini-pipes which worked well in straight flight but seemed to give no benefit in tight turns. However, remember that in a year or two, all FAI C/L classes will require exhaust attachments in an attempt to reduce noise emissions. Also notable, but for different reasons, were the Chinese models, heavy, tough, battered foamies that flew slow and wide.

To the contest itself. Thanks here to Tony Frost for his report.

### Round One

This was the usual 'warm-up' round in which all the Brits won and all the Americans lost. Remarkably, the reigning World Champion, Boris Faisov, lost by two cuts to one, and ground time, to TV pop-show host Roland Forstner. Like Boris, many showed their nervousness by taking all of the opponent's streamer in one go.

### Round Two

This time all the Americans won. Howard Rush gained a deserved win over Igor ('call me George') Zholnerkevich (USSR). Many had thought that Howard's large craft, with Mylar covered foam LE, balsa spars, ribs and TE elevators at the end of long, flimsy-looking carbon fibre booms looked rather too tempting. All of the Dutch team lost, including ex-World Champion Loet Wakkerman who lost to Qian Zheng from China who flew inferior models very effectively.

Mervyn Jones had to re-fly against Oliver Segouin (France). In the re-fly the Frenchman was too slow at launch and suffered poor motor runs, giving Mervyn an easy win. The British supporters were starting to get into their stride for it had been noticed that the scorers were missing small cuts taken at the far side of the circle. Positive demonstration was a wise move which provided much amusement for the other spec-

### Round Three

Mervyn Jones lost in the air by two cuts to one to Roura Jordi but was awarded a re-fly because the Spaniard's pitcrew were penalised for sitting inside the circle. Their protest was to no avail; and Mervyn went on to take the bout 2-1. John James removed all of Loet Wakkerman's streamer, leaving plenty of time for Loet's small, typically Dutch, USE 15 powered model to score the two cuts needed. Mike Whillance clearly lost – to all but the scorers who made it one cut each until Segouin's French colleagues protested, when the score was corrected to 2-1. The Brits protested on the grounds that the scorers' result must be final. A hard protest to judge, but the Segouin's victory stood, and Mike became a tourist. Others who lost were ex-World Champion Tom Fluker (USA), the popular Swedes Hakan Ostman and Ingvar Abrahamsson, and Rich von Lopez (USA), thus removing both countries from team prize contention. Pat McKenzie, the best North American flier, lost his first life, as did Michel Disler (Switzerland) and Roland Forstner (FRG), leaving only Beliaev (USSR), Jones (UK), Forbech and Shou (Denmark) and surprise man Janssens (Belgium) with two lives.

### Round Four

All fliers with two lives retained them in this round, so out went quite a few including ex-World Champion Loet Wakkerman (Netherlands) and 'Colonel' Howard Rush (USA) who lost to Mervyn Jones and John James respectively, also out went the rest of the Dutch team. John's victory over Howard Rush came only after a spate of much-protested re-flies which dragged on well into the evening. Not a very pleasant experience.

### Round Five

Twelve competitors were left at the start of this round – three Russians, two Brits, two Danes and one each from France, Finland, Poland, Belgium and Germany. Mervyn Jones flew really well to beat Faisov – a result that pleased the British supporters immensely. Forbech and Janssens retained their two lives – Forbech at the expense of John James who took all his opponent's streamer in one go in the first half-minute of the bout. Three and a half minutes is too long a time to defend a full streamer against a flier of Henning Forbech's ability.

### Round Six

Only seven competitors left. Beliaev had to fly twice in this round because he had a bye in Round Six. First he flew against Janssens but this ended at 2-2. In



**Roland Forstner (Germany) destroyed Boris Faisov, USSR's reigning F2D World Champion, by taking two cuts in thirty seconds using Lithuanian LST models (and motors from the same country).**

tators. It almost goes without saying that our own Dave Rudd had something to do with this. The bout of the round was between Mike Whillance (runner-up at the 1989 Eurochamps) and Viacheslav Beliaev (1989 Eurochamp). As might have been expected, it was a bout full of line tangles. Mike was ahead by two cuts to one when 'Slava' caught this line and held them behind his head. Mike crashed – and lost. Clearly Beliaev had learned some naughty tricks for he had done the same to Hakan Ostman (Sweden) in the first round. There is a case for awarding disqualifications when this happens – maybe the rulemakers ought to think about this if F2D is to have a future.

the re-fly he beat Jean Claude 6-2 with a magnificent display of cut-taking. Next up was Mervyn Jones, taking it very cool against Forbech. He took two small cuts, then one big one, victory then being confirmed when Forbech removed all of Mervyn's streamer... Jari Valo gained a DQ in his bout with Forstner, leaving Beliaev to fly against the excellent Bjarne Shou (Denmark). 'Slava' was on the top of his form, winning 4-2. Meanwhile Ian Gardner (UK F2C team member) was working overtime assembling one good rear-induction Nelson for Mervyn Jones from the wreckage of two which had suffered a broken rear ball race and a dropped plug element respectively.





# FREE FLIGHT SCENE

## Dave Hipperson on the Poitou Open FAI International: 18-19th August

Notwithstanding the fact that Poitou is 400 French miles south of Calais this contest draws more participation from the UK than any other of the European circuit, most of which are far closer. It actually draws more support from GB than any other country including France! Perhaps there is something the French know about it that we don't? Weather this year was the usual entertaining mixture of early calms then later heat, wind and weirdness. It is easy to forget that not so long ago this event was regularly quite wet and windy. Perhaps those days are over for good.

On the Thursday before the mini classes the edge of the low pressure system that brought so much rain to Britain clipped Moncontour, so hopes were not high for the following day. Miraculously the wind cleared by morning and the day was flyable, if patchy.

A look at the CDH and 1/2A results might suggest that the event was being staged solely for the British. The complete domination of Power by all our well-known names culminated in a two-way flyoff between Screen and Baggett, both of whom launched into positive sink. Similarly, the CDH finale, missing the threats of Ruyter and Zeri, both of whom had dropped a flight, was also held in unhelpful air. Mike Evatts's over-enthusiastic launch folded the wing on his number one model and he had to fly a virtually untried reserve (remember, attempts are allowed for sub-20 sec. flights in FAI Mini events). Stringer, a regular from Ashdown, and whose model had been flying well all day was a little short of Frenchman Allais. The latter flying quite a small design with the short run popular in this part of France.

British representation in A/1 was not quite so successful although Phil Owens and Gerry Le Vey brought up the rear of the flyoff - Gerry having achieved this with a straight tow model after his number one was lost on the first round.

The main events started with glider and a pleasant bright and sunny westerly breeze - a little chilly at 7am (6am UK time). Immediately a problem arose all too familiar to British flyers. Early retrievers found themselves traversing a melon field. Now the drought had been so severe in this part of France that melons were about the only crop that hadn't failed. This field in particular was ripe and about to be picked and here were a couple of dozen foreigners running around in it. French farmers in this



*John Carter (left) helped everyone. Here he surveys the scene with F1B winner Mike Woodhouse.*



*Matthew and Mike Chapman enjoyed their first trip to Poitou but were often a bit pressed for time to fly with up to six modellers on each pole.*

mood are hardly renowned for their tolerance and word came quickly that one more step in the field and permission to use the area would be withdrawn. The arrival of the police may well have been as much for the flyer's protection - a few days later a group of farmers down the road at Thouars besieged a UK truck carrying 500 living sheep and burnt most of the contents alive!

For the next flight, after a respectful pause, Roux the CD re-jigged the line to avoid the hazard and with a little more care on the part of the contestants there were no further incidents.

The day grew quickly breezy. Despite the British being relatively 'mob-handed' in the retrieving department (certainly compared to other countries) organisation and direction was poor. Too many found themselves hanging around early on and had gone off to do something else by afternoon when numerous long flights were not being covered well enough. Models were lost when they needn't have been. Last year's British domination was also completely overturned. The reigning champion Chris Edge dropping with a 39 second disaster in round four. Best performances came from Mike Fantham and Jim Baguley (8th and 11th respectively) having dropped a little on one flight each.

Towards the end of the day it became windy but lift was clear to detect and performances were mostly maintained. Very few spoiled their scores at this stage apart from Martin Gregorie whose 90 second flight cost him 20 places! The flyoff was quickly decided on one flight with the ever popular Cech Ivan Horjsi, a few seconds better than Peter De Boer.

The second day for F1B and C dawned (and remained) much calmer; very warm and humid. If those that were present at the start thought it felt early then Zeri and Ruyter had been there an hour already to flyoff a still unresolved Dutch F1B Championships final. They got set up, with flight line, timekeepers and all,



*Mike Woodhouse's winning Wakefield rests in its jig just before final flight.*

and flew unlimited, Zeri taking it with nearly five minutes – that really was at dawn. But the air is often thick and steady at these hours and then degenerates. So it was that earliest flights in the contest proper had the best of Round One. Then the climate had another trick up its sleeve. We should have suspected from the excessive humidity at the start. What appeared to be a threatening rain cloud downwind turned out to be a floating fog bank which approached upwind and then descended on the flight line for the second part of the round. Although this affected the Wakefields little apart from making the air very dead and unhelpful it was impossible to fly power on a full run and many late flights slid straight into cloud at the top of the climb and were gone. A quick decision was required – and it came. The first flight in F1C was cancelled. This was a blow for those that had maxed early but wonderful news for Pete Watson. His flight had been just high enough to scrape the four minutes when it DT'd a few seconds early, so he was back in business.

The low cloud persisted for a while – really on and off most of the morning. Just before lunch the sun broke through and the temperature shot up into the 80s and conditions became much more sudden. Lift was difficult to pinpoint in the ominous calm and when it came through it was often treacherous and sharp edged with swirly turbulence beneath the rising bubble of air. Certainly the 4th through to the 6th rounds were the most trouble. Ivan Taylor, after good air, rescued a tight F1B power pattern on the 3rd flight got pushed out in the four to be down in two minutes. It was his only drop. Both Peers and Woodhouse each had a close flight around this time when models looked hopeless and tantalizingly out of range of flapping teams who often worked most effectively. All the owners and supporters could do was to steer the models by will power. Both aeroplanes responded with long straight downwind legs and then acceleration into good air. In Peers case the most was at almost catchable height at two minutes and it got away! Most contestants suffered one such flight.



**Pym Ruyter with very clean F1B. Inner panels are sheeted but that didn't stop them folding in the flyoff.**



**Feel the heat! Ubiquitous John Carter waits for thermal with Ivan Taylor in F1B.**

The temperature seemed to increase all day with nearly continual sunshine reflecting off the hard ground now carpeted with flattened and bright yellow stubble. The heat came from below as much as above. The nerve wracking seventh flight was now no problem for a very 'in the groove' Woodhouse. His model was away and miles high circling in the good company of Polla, Haacken and Seja, clear against the blue sky and in enormous lift. Peers last flight was not quite so sure but successful nevertheless to take the second of the British into the seven-man flyoff.

The last flight had been a disaster on the F1C line. Both veteran Hans Seelig and East German Tietz blew it. Tony Cordes had a clean sheet but tragically failed to re-set his DT timer. He realised as the model climbed for the last time into good air. It DT'd at 40 seconds! Tony took this very well in the circumstances. Only Pete Watson therefore retained a perfect score from the British entry of eight. Stafford Screen had been the victim of a patch of air that started as a thermal and degenerated into huge sink on his fifth flight to score 17 seconds short. Former World Champion Mario Rocca, whom we haven't seen for a while, joined the four others in a flyoff for Power.

Before this finale the breeze freshened and it was perhaps this that prompted the organisation to dither slightly. To be correct they should have flown off soon after the final round. This year they waited and then stepped somewhat out-side the strict confines of the rule book by calling together contestants to ask them what length max they would like. This, of course, started a debate; and debating skills are not what the contest is there to test. The rules clearly state a four-minute max. However it only

takes one dissenting voice to stop all this nonsense and both the British participants in F1B insisted correctly on the four-minute round. The poles were allotted and the contest started again.

This max proved no problem for the power models although Rocca mislaid his model and would be in trouble for the next flight. In rubber it was close. Still breezy; 10mph, maybe more and still very sunny. All were wound and waiting. Pym Ruyter last year's winner launched first and folded his wing with the over enthusiastic throw. Haacken followed then Seja Cheneau and Woodhouse all as quick as that. A few seconds later – Peers and Polla. The first flight was already in the model having landed intact and therefore to count. The next two had the worst air. Peers and Cheneau made similar flights the Frenchman climbing a little quicker at the start making better use of the marginal air whereas Peers didn't quite make three minutes. However it had been the two that had flown from furthest apart – from the extreme ends of the line – who had maxed. Both Polla and Woodhouse outclimbed the rest of the field.

The second round in Power saw Rocca without a model and hence unable to continue. Stabler had an overrun and as he too was using only one model was unable to re-fly in the round and therefore also posted a zero making a tie for third place resolved later by a token flight when his model came back. Pete Watson picked good air but had an untidy climb and dipped on transition allowing Roux who flew last in the best air to pip him by maxing.

During this time the F1B combatants had been waiting for each other to wind. This went on through half the period. Polla broke the ice first and was ready to launch as Woodhouse



**Verena Greimel from Vienna was one of the few lady fliers. Assistance comes from Klaus Salzer. Verena dropped time only in the first round, and finished highest of the non-maxers at eighth.**

came to the line. Polla by this time was down to his reserve having lost his best on a partial DT hang up on the last contest flight. (This was located just before dark many miles downwind thanks to the radio location beacon). However, Pollas's second choice aeroplane is still a startling model and his climb was perfect and in good air. Woodhouse followed seconds behind him and climbed very well. There was little between them both looked capable of five minutes. Woodhouses model drifted slowly downwind losing height gradually whereas Pollas fine trim pushed the model upwind not through the edge of the thermal but hunting an even better patch. When it circled gain (nowhere nearly as far downwind as Mike's model) it was doing so under Roux's thermalling and winning F1C flyoff flight! Incredible that such a floating glide trim can hold such a large diameter turn without a trace of a stall. Mike Woodhouses's model continued to descend, but five minutes still looked possible.

One of the endearing things about Giancarlo Polla is that he never seems to have a noisy retinue. In fact he seemed to be quite happy flying totally alone on this occasion - the few of his countrymen there being downwind spotting the model so what happened next did not cause the widespread groan that it might have. As Pollas's model circled gently hundreds of feet up and broke the four minute mark it DT'd!

November 1990

An illustration of how high it was comes from the eventual time down - it took over 30 seconds to descend. All the time Mike's model was hanging on. Five minutes wasn't necessary now - Polla landed at 4:33 and Mike made 4:48!

There have been previous British winners of the major French FAI meeting. Dave Greaves at Trebod in '75 and then Newham Beaumont here, a couple of years ago. Examples of men hitting top form on the day. This year's success by Mike is something entirely different. Mike has been grinding away at this for 20 years or more and at the same time diluting his efforts in the interests of his fellow com-

petitors world wide by running his supplies business. For the last few years he has had very competitive models and only Mike himself stood between them and regular large scale success. Towards the end of the last season I sensed that those days were coming to an end and this year's record has proved it. He has placed 4th, 6th and 7th in his first three World Cup events and now this. It puts him into 2nd position in the league, and well ahead of the rest of the field. More than that - it stamps him, at last, as one of the World's leading F1B fliers: as good as anyone in western Europe. His chase in the World Cup will require him to overtake the very man he beat in the flyoff at Poitou - Polla. Polla has the extraordinary record of having flown in three events and made 1st, 3rd and 2nds. In the normal course of events that could win him the World Cup even if he didn't fly again but say Mike can win again?

These protracted but most satisfactory flyoffs had of course delayed the carefully laid down plans for the prizegiving and dinner. However, just before dark when most had had time to clean up the ceremony took place in Moncontour in the warm outdoors. With the recently fine weather it may benefit the organisers to consider holding this banquet, or 'ending lunch' as the programme so quaintly puts it, outside rather than the somewhat austere and echoey confines of the adjacent assembly hall. The floodlit football pitch would appear the ideal place. The quality of the food was very poor by French standards certainly for the money but the ambiance and especially drinking red wine from Horesji's glider trophy more than made up for these small deficiencies. Lifting what must have been at least five bottles of wine in a huge cup with a heavy marble base was every bit as difficult as downing a yard of ale, and much messier!



**Pierre Chassebourg is still at it - and still flying this Bob White-inspired design.**

**Poitou Open International  
F1A (119 flew)**

1	I Horesji	CZ	1260+206
2	P de Boer	NL	1260+199
3	F Wilkening	D	1260+177
4	K Salzer	A	1260+165
5	S Rodriguez	SP	1254
6	J Vosejcka	CZ	1246
7	C Trouve	F	1220
8	M Fantham	GB	1216
9	R Champion	F	1213
10	D Stezalski	P	1211
11	J Baguley	GB	1202
27	J Carter	GB	1141
31	C Edge	GB	1119
34	D Oldfield	GB	1083
37	C Williams	GB	1055
40	P Owens	GB	1036
46	G Turnbull	GB	967
50	P Tribe	GB	939
51	C Chapman	GB	913
52	L Brambley	GB	930
55	S Oldfield	GB	913
58	W Colledge	GB	878
60	S Marriot	GB	875
70	G Le Vey	GB	746
75	A Cordes	GB	630
80	S Simms	GB	540
89	A Flynn	GB	458

95	M Cook	GB	410
96	D Barla	GB	409
98	J Cuthbert	GB	373
99	J Flynn	GB	285
102	J Williams	GB	350
109	K Proctor	GB	285
115	M Warren	GB	128

**F1B (47 flew)**

1	M Woodhouse	GB	1290+240+288
2	G Polla	CH	1290+240+273
3	J Cheneau	F	1290+209
4	R Peers	GB	1290+172
5	F Seja	D	1290+139
7	P Ruyter	NL	1290+125
8	V Ereimel	A	1255
9	A Koppitz	A	1232
9	F Rapin	F	1232
12	J Taylor	GB	1221
17	H Howick	GB	1196
24	R Wilkes	GB	1093
27	C Chapman	GB	1038
32	G Stringer	GB	993
33	G Turnbull	GB	963
35	M Chapman	GB	930
38	A Stringer	GB	923
39	R New	GB	732
40	D Hipperson	GB	694

42	S Marriot	GB	682
43	K Proctor	GB	545
45	D Morley	GB	423
47	M Evatt	GB	274

**F1C (21 flew)**

1	A Roux	F	1080+240+300
2	P Watson	GB	1080+240+289
3	R Stabler	D	1080+240+0
4	M Rocca	F	1080+240+0
5	T Oxager	DK	1080+200
6	G Briere	G	1071
7	R Monks	GB	1070
8	S Screen	GB	1063
9	H Hubler	D	1049
10	K Faux	GB	1036
13	R Baggott	GB	1012
15	A Cordes	GB	957
18	R Johnson	GB	294
20	F Chilton	GB	190

**F1A Junior (9 flew)**

1	S Apati	H	
2	S Godicho	F	
3	M Bucazar	R	

# 40 Up - A Scale Renaissance

John O'Donnell

reports on a revived

F/F event

**T**HIS prestigious trophy celebrated its fortieth anniversary this year. Presented by Aeromodeller to the Northwest area, in memory of E J Riding, the trophy first appeared at Woodford in 1950 - and continued there until the demise of this meeting in the late 1970s. More recently the event has been part (albeit a very minor part) of the Woodvalve R/C extravaganza. Interest from both fliers and organisers lapsed to the extent of the contest not being held at all for the last couple of years.

Times change however. 1990 saw the event reappear - very largely due to the efforts of Eric Clark, secretary of the NW area. He did the pre-arrangements, solicited entries, judged and played the sponsor as Martindale's Printers. All this produced an encouraging response to the tune of eleven entries.

## Demanding

The contest was all-in, but otherwise was run to the SMAE Scale rules. The static side demands a good deal from the judges as well as the competitors. A complete lack of documentation cost three entrants their static scores (apart from nominal workmanship points), and effectively put them out of contention. This procedure might appear harsh, but it is correct. So also was what followed on the flying side. Judging the rest took from noon until five o'clock! It looks very much like overkill, particularly compared with the mere one-and-a-half hours spent on the flying. I wonder just what would have happened with say, double the entry! All these preliminaries took place in the main trade marquee, with a good strong breeze blowing outside.

Flying was scheduled for the evening, and commenced at six o'clock. It also involved a trek to the opposite (upwind) side of the drome. By duration standards the breeze was by now quite acceptable, if patchy and liable to be turbulent thanks to the woods upwind. The scale flier is notoriously sensitive to a breeze - but even so, out of the top eight in static I saw



Dave Sawyer his launches his winning - and own design - Bucker Jungmann. Mills 1.3 power.



Mike Colling proxy flew the late Walt Mooney's Aeroport Quail for CO<sub>2</sub>.



Familiar Peanut scale P-51 Mustang by Reg Boor.

Left: Bill Dennis's Be2b gets away - but hit turbulence and was damaged...



▲ Above: Unmistakable lines of John O'Donnell's Peanut Fike; flew well during a lull out-of-doors! Left: Neat Curtiss P-1 for CO<sub>2</sub> by local modeller Bill Harwood.

and hence had short (too short) flights in consequence.

Perhaps Dave realised he had been lucky. He took his second entry, an original Mills MkII powered Bucker Jungmann well away from the trees before trying a flight. The model handled the conditions well, climbing away quite positively to a safe height on its moderate fuel allowance, before gliding down to land on the crosswind runway. A very impressive 45 seconds of contest winning flight!

There was only one other flight score – from my indoor rubber powered Peanut Fike. It is not the first time that I have used this model outside – but it was the first time in wind! The



▲ Above: The Eddie Riding Trophy and DH60 painting by John D Jones. Right: Splendid Douglas O-38 by that man Dave Sawyer qualified with ease.

all but one in the air at some stage.

However, conditions were such that flying long enough to qualify was another matter entirely. Twenty seconds might sound nominal, but it proved difficult to achieve with underpowered and marginally stable scale models with no performance to spare. The flying is vital as, by the rules, the static score cannot stand alone!

### Take-off – and turbulence

First to fly was Bill Dennis with his well known Be2b. He was the only one to ROG and accomplished the actual take-off most successfully – despite practically throwing it onto the

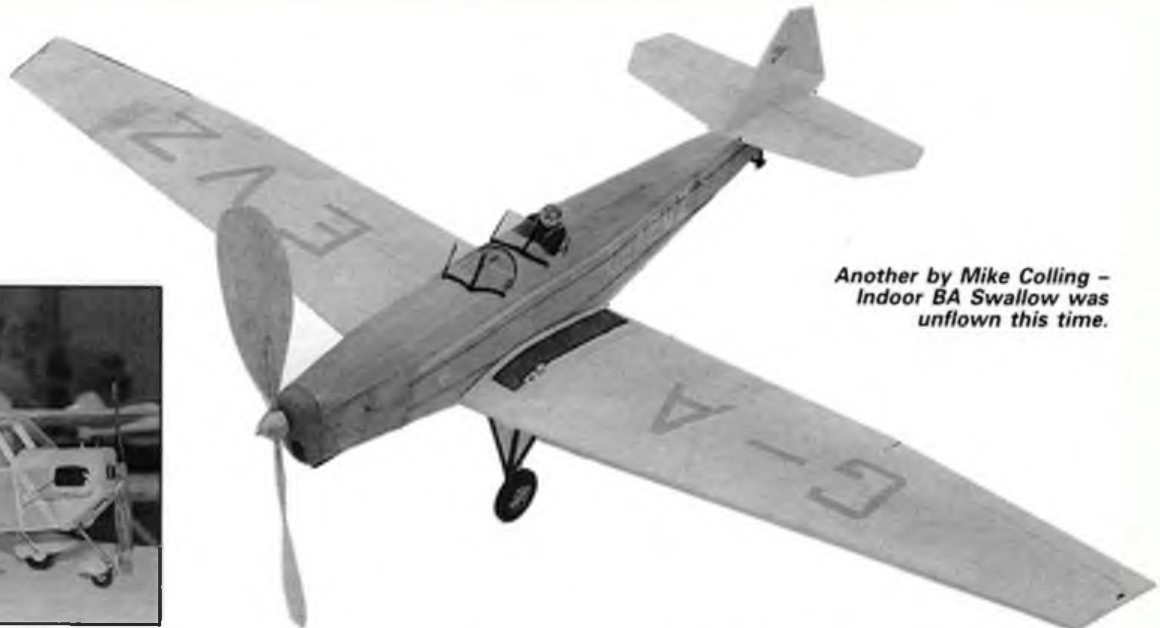
ground once he had the engine running! The initial climb out was good but the model hit turbulence as it started to turn. It appeared to stall, drop a wing tip and dive at which point the tarmac intervened! As this all took only 15 seconds, the flight did not qualify with damage far too excessive for quick field repair. Bill was out of the running.

Local flier Dave Sawyer made an early attempt with his Douglas O-38B rubber powered biplane – launched from the temptingly calm area in the lee of the woods, he got away with a 25 second flight and secured a respectable and useful flight score. Others who tried the same approach found far too much turbulence

first launch showed that the model tightened in turbulence, and lost height in the process. It also landed roughly, and needed minor repairs as a result. Waiting for these to dry (the tissue tears needing balsa cement!) meant my second flight would be the last of the contest.

### Technique

Eventually it was fly or else. Lulls in the wind were obvious, but usually short lived. Picking a long lull was a necessity – and achieved by having an upwind helper. When we both had felt the wind drop, then I launched! The technique worked and the flight qualified. I would hardly describe the flying as elegant, but the



Another by Mike Colling – Indoor BA Swallow was unflown this time.



Above: A closer look at the quirky Aerosport Quail. Trust Walt Mooney...



Brian Faulkner's Taylorcraft Grasshopper shows its age.



Above: Knight Twister by Bill Harwood is a sleek looker.



Above: Attractive Wittman Tailwind for rubber power from Paul Sawyer's building board.



Prizes – and a handy sponsor's sign... Good organisation!

judges liked it sufficiently to award the same points as given to Sawyer's rubber model – and nearly as many as he got for his power flight. The Fike was undamaged, and I felt quite pleased. Then I discovered that I had beaten the Douglas on static points, and hence was in second place rather than the third that I had expected.

The prizegiving was held back in the marquee. By now the public had disappeared – and I could have done my flying inside! The prizes had been on display all day – and were presented by Kath Watson on behalf of the organisers.

As already indicated the Jungmann had proved a worthy winner, and Dave Sawyer must have been very pleased with his efforts. He must also have been pleased with the awards themselves. Apart from the E J Riding itself he also received a framed original oil painting donated by the local aviation artist John D Jones. Scale pundits there will not need me to tell them that the painting showed Amy Johnson's famous DH60 'Jason'. Engines donated by the trade were well received by the other prizewinners.

All-in-all the contest response and results must bode well for the future. Eric Clark is already talking of next year – are you going to support him?

BUILD  
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**Dave Platt's perky sportster is simple to build and a delight to fly**

# PALMETTO BUG

**'H**AVE I got something for you!' Such an enthusiastic greeting, delivered in transatlantic twang, was guaranteed to make your Editor look up and take notice, even though knee-deep in R/C transmitters during first booking-in at the Vintage weekend control tent. For here was Dave Platt, one-time Wanstead Flats noteworthy long since happily resident in Florida, and as a break from top class scale models merrily enjoying a renaissance of interest in free flight aeromodelling, over to enjoy the Nats as well as the best that Old Warden can offer. But what had he to offer? Just about the cheekiest little sports model we've seen.

Palmetto Bug can be built in a week of evenings and will take any motor up to 0.5cc. 'Tell you what', said Dave, 'I'll fly the model today, then leave it with you to put in the magazine - minus the engine, of course - as thanks for all the Aromodeller team's efforts over the years'. Which is exactly what we've done.

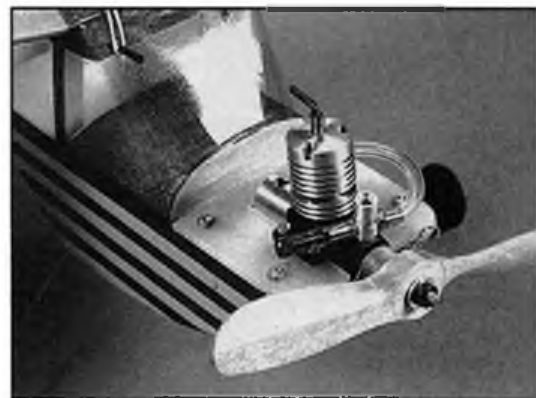
Why 'Palmetto Bug'? Bit of a story here, as Dave explained. Even the swanky Palm Beach condominiums, peopled by the rich and retired widows of Florida, are not immune to certain creepy-crawlies at various times of the year. Not for the blue-rinse brigade the common cockroach, though. Palmetto Bug is its high class, high rise soubriquet, although what can be the difference when it stalks across the plush drapery is difficult to imagine. However, our version is a real charmer, as all will agree - and capable of flighty performance. Later that Old Warden day we bumped into Dave again, in the middle of the airfield, and looking a trifle, well, agitated. 'Three miles!' was all we could get out of him at first. 'Three miles!' Eventually we got the story. Seems the Bug had decided to take a break from circling flight and headed

off downwind, coming to rest beyond the crossroads most of the way back to the A1. Old Warden regulars will know the feeling... However, the flyaway Floridian was recaptured, and is now presented for your delight. Irvine Engines provided a replacement AE 0.2, as fitted to Dave's original, and we can confirm Palmetto Bug's perky performance. Building, or what there is of it, is perfectly straightforward. Just one or two points need an extra comment or two. So clear a corner of the workbench and let's go!

## We're off!

Choose well-matched wood for the fuselage sides to avoid building-in unevenness. Key to an accurate fuselage is the F1, F2 and bearer sub-assembly so make sure all the angles are correct. The undercarriage is bent to shape and carefully epoxied to F4. Mounting plates from scrap 1/32in sheet locate the undercarriage, and a further plate epoxied on top of everything ensures nothing will move. This method will suffice for all but the most disastrous landing. No doubt the wary among you will add a binding thread to be doubly safe. One-inch wheels are fitted. The tailskid is bound to F9. Carefully draw the fuselage sides together at the tail, aligning the whole assembly over the fuselage plan view. Punch accurate holes with a sharpened aluminium tube and glue retaining dowels in place. The 1/16in sheet cabin top must give the correct angle of incidence for the wing. Check against the plan and make adjustments to the top of F3 or F4 to suit. Scrap block and sheet infill below the bearers allows the nose to be gently rounded to a pleasing shape. Wings and tail are straightforward. Care expended in accurate rib cutting will be rewarded by warp-free surfaces. Ensure the

tailplane end ribs are truly at right angles to the rest of the structure or unwanted fin offset will result. Cover with lightweight tissue. Use a non-shrinking dope on the fins (or thin down ordinary dope at least 60/40 with thinners) to prevent warps. Modellers unlucky not to possess an AE 0.2 may care to try a Cox 020, a modification which will involve construction of a suitable radial mount from 1/16 ply, slotted to accept curtailed bearers. Take care when glazing the cabin, for this is a prominent feature of Palmetto Bug and should be executed neatly.



**AE 0.2cc diesel drives a cut-down 6in wood prop - maybe not so neat as a nylon equivalent but it works fine!**

As for flying, just test glide to establish trim (our Bug needed 1/32in packing under the tailplane TE), put a drop of fuel in the tank and you're away! Our Bug preferred left turn. Adjust sidethrust if necessary to achieve this.

You simply can't go wrong - so try this Bug that's not so ugly for some carefree, fun flying. And don't forget that name and address...

# ANTIQUUE ATTRACTION

ORGANISED by SAM1066, with David Baker at the helm and Fred Chapman in charge of the event at the Army Air Corps base Middle Wallop, this was one of those memorable meetings that will linger as long in the memory as has the original Wakefield contests.

There wasn't of course, a Wakefield in 1940; but that was of little concern. Far more important were the ingredients for bringing together the vintagents of SAM Italia, UK and USA at the finest grass field in Britain on one of our most beautiful days in the midst of a superb summer. Add to that, the excellent administration and the 'Battle of Britain' rubber scale comp. for Hurricanes, Spitfires and Me 109s plus the Taylorcraft Auster event, and the reader begins, we hope, to get a picture of modelling bliss!

## International

A strong Italian contingent came just for the Wakefield. The Americans were starting a Bakertour that was to take in Old Warden Vintage weekend and the Nats. With such a

## Ron Moulton visits a splendid Wakefield Anniversary meeting

fine International flavour (someone questioned why it should be that Italy, UK and USA modellers are the only nationals who build each other's designs) the atmosphere was almost back to that of Cranfield, except that Mario Gialanelli's climbed at a rate that would have astounded onlookers at the '49 event.

It was a well deserved win. When Aarne Ellila, then a student in England, became the lone Finnish eagle with a model he'd made in '39 and won the Trophy against 18 other Nations in fierce windy conditions his was a surprise performance. Using return gears for a very long motor run, no DT and a simple free-wheeling prop he was the hare among grey-



Ever popular Mick Mikkelsen won the Earl Stahl through very consistent flying with a Spitfire in BofB Middle Wallop colours. Best flight, 46 seconds.

tive. Nunez was topping the minute with his Spitfire for highest score but despite handicapping for deviation, was awarded one of the many fine prizes rustled up by the dynamic DB.

Don Knight proved best in the Army Auster event, showing that those old AM designs can be made to perform incredibly well with today's techniques.

It was one of those days when the only disappointment was the time to return home. As Fred Chapman (who timed Ellila's flights at Cranfield in '49 and which we witnessed as envious participants) was to say 'Those old Wakefields go even better today' - and long may they do so.

Here's to the next time.



Bob Copland presents the Chester Lanzo Memorial Trophy to worthy winner Mario Gialanelli, Italy as the Brigadier in charge of the Army Air Corps base at Middle Wallop adds his congratulations.



Above: Big Jim Persson didn't win with his Spitfire but was second in 4oz Wakefield. Below: Contemporary Aeromodeller drawing of the Ellila's winning return-gear system.



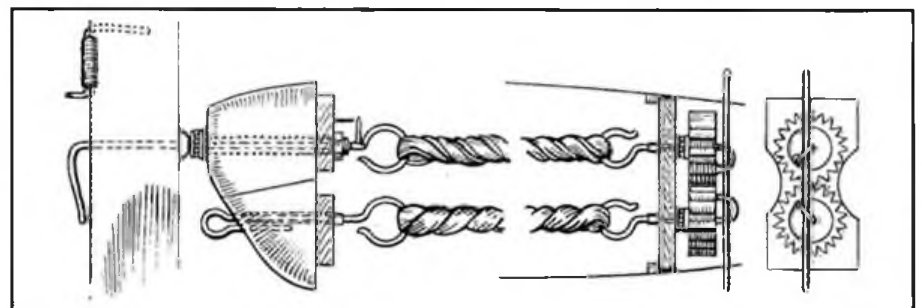
Al Heinrich flew a Henry Struck Flying Cloud. Fast climb on a short run ended with a collapsed nose.

hounds. The victory was repeated (with a different model) in '50 to prove he was no fluke.

Now Mario has shown the power of 'tan' rubber, a few more eyes have been opened to the Ellila technique. But let's not overlook Michael Turner and his equally well-made Korda. What a way to get into competition after only 18 months of aeromodelling! He made the fly-off and lost by only 13 seconds.

In the 4oz class, Chris Byth's Lanzo was another appropriate winner with American Jim Persson in second place.

A foam tailplane replacement and lack of u/c spoiled Doc Martin and G. Nunez's chances in the Earl Stahl Battle of Britain commemora-







**Far left: THE CAKE!** Made by Mike Hetherington of paper model and other fame, apart from superb enlarged rubber scale models and Wakefields (he flew a Bob Jeffrey's design in 4oz); the icing resisted cutting for the contest then was enjoyed by all.



**Left: Dedicated John White, a constant aeromodeller, happy to achieve a half-max or even a quarter-max with his Alex Houlberg Isis.**

**Centre left: Classic planked fuselage on the Cahill Clodhopper 1938 winner by Volveno Pecorari placed 7th in 8oz, was a classic reproduction, to Concours d'Elegance standards.**



**Left: Mario Gialanelli flew the Aarne Ellila 1949 Wakefield winning design (actually designed and built in 1939) with two skeins of rubber geared for 1 1/2 + minutes motor run on the freewheeling prop. This is his 'reserve' 2nd model, seen with team manager Alberto del Chicca.**



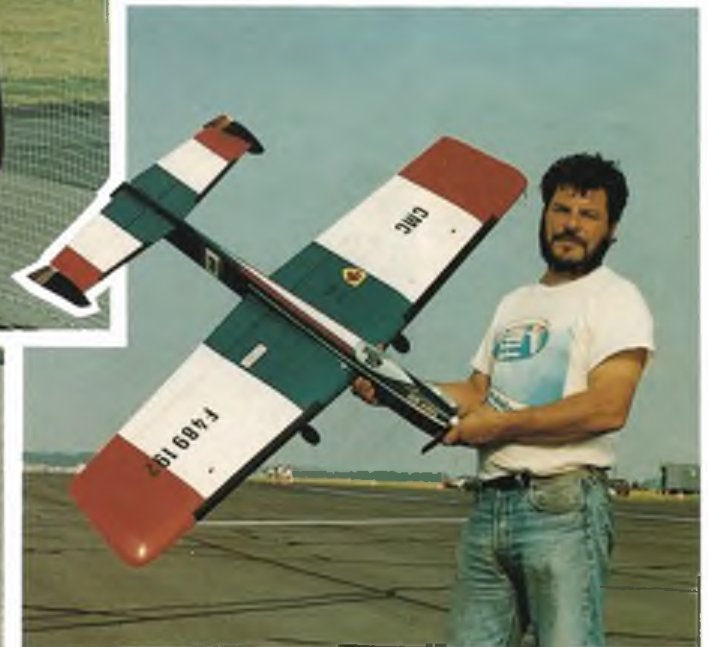
**Far left: Mike Hetherington flew the 'opposition' in the Earl Stahl; placed 2nd. Some models were penalised for changes from original design.**

**Left: Runner-up in the two man fly-off after three maxes was relative novice Michael Turner and the 1939 Korda design. Michael has only 18 months aeromodelling behind him. What a super start - and a wise choice for rubber duration. He lost by 13 seconds.**

# Colour at the Nationals!



**Our first look at the Nats action – full report next month!**



*Top left and then across: Evans/Horwood, top in Vintage A T/R with this Time Traveller, also placed third in B. Mike Whillance was victorious in FAI Combat with familiar 'foamie'. Chris Bradford's trusty Nieuport fought through to take C/L Scale. Monique Wakkerman – enthusiastic as ever, and F2D runner-up. Centre left and then right: Cheery Dave Smith, fastest in Handicap Speed. Vintage Combat finalist D Willis (left) and winner Steve Malone. 1/2A T/R winners Heaton/Haworth were nearly a minute ahead of the opposition. Above: Gerard Billon, French representative in C/L Aerobatics. Bottom left and then right. Loet Wakkerman and Richard Herbert, runner-up and 1/2A Combat winner respectively. Mini-Goodyear finalists – Round/Round and Bending/Darke dead-heated; Whitehouse/Whitehouse placed third. Cracking Double Dice, McCoy powered, took Vintage B for Taylor/Yeldman/Banks.*



Top left: Charlie Havis's Kangette for ED Comp Special. Top right: Mike Hetherington and now-famous Mosquito. Above: Colourful KK Gipsy - one of many at this Weekend. Above right: Stylish Italian I1 Moar for R/C by B Horncastle. Right: Andy Crumpholt flew this Tom Thumb with Saxby 'Mini-Mills' 0.13cc diesel. Far right: Andy Crisp at close of play. Below: Curious APS Ladybird Special, minus lower wing and u/c - see text. Below right: First day out for Paul Lidster's Utility with Indian Mills.



# A Great Old Time!

Below: R/C elegance with an international flavour- this HS100, a pre-war German design, was the work of Ingvar Claesson from Sweden. OS 40 FS power.



## Alex Imrie visits Vintage Weekend on 18-19th August...

THE weather makes or breaks any model meeting and this is especially true of Vintage Weekend, although it could be argued that having two days there is always a chance that one of them at least will be flyable. This year the TV weather forecasts for both days were poor, but Saturday's weather soon cleared up into fine flying conditions and resulted in an enjoyable day's activities, and was well attended. Many modellers that I spoke to decided to come on Saturday only after noting the improved weather conditions - it was a good thing that they took advantage of this since Sunday was windy, and wet too, for much of the day. Sunday always seems to be the more popular day, but the weather obviously put some people off this year and many regulars were conspicuous by their absence. Some enthusiasts come long distances regardless of the expected weather, since even if flying is not possible, the annual get-together is something that they just cannot afford to miss. Apart from renewing acquaintances, one tends to meet all those people who have previously only been names and the talk of their models and experiences, told first hand, is always interesting. Even though this can be time consuming, it is time well spent, and the enthusiasm that pervades such conversations has to be experienced to be appreciated. This is the secret of true vintage - outsiders will never understand how grown men can wax so eloquently over a few sticks of balsa and some doped tissue! During Vintage Weekend the pace is fast and the scene vast, so all sorts of happenings cannot easily be observed by any one person - what we really need is a full Vintage Week! The following account is thus only a record of

what I personally saw.

### Collectors' Corner

A new feature this year was the officially approved Collectors' Corner, and a surprising number of cars eventually congregated on the pitch allocated to such activities and car boots disgorged all the usual paraphernalia that vintage modellers delight in - old books, magazines, engines both ancient and modern, kits and even complete models were going for a song. Miles Patience, who was in my party, bought a DC Dart powered Plecan Humming Bird for £10 and

needed only to buy a can of fuel to enjoy some flying with his acquisition. The Flying Aces Gas Flea (also designed by Paul Plecan) that he had brought with him, was, despite father Mike having burned the midnight oil for some days previously, engineless. The replica Elf built for it was still unfinished and did not have its contact breaker. The engine had been run on glow, and had the weather been better the Gas Flea could have flown but the aforementioned Humming Bird gave an immediately airworthy model, and allowed Mike to concentrate on the old engines for sale or trade that were in abundance, and add a few rare specimens to his collection.



November 1990

## Overseas visitors

For many years now, enthusiasts have come from far and wide to add their accents to those usually heard at Old Warden, and this year there were modellers from Australia, France, Holland, Italy, Sweden and USA; and, I am sure that there were visitors from other countries too that I was not aware of. Dave and Hilda Baker again hosted a large American contingent; it was interesting to meet them and to see Danny Sheelds again (without whom no Vintage Weekend would be complete) who, as is his wont, had brought some choice old engines to sell and whet the appetites of those of us who collect such hardware. A Swedish group brought some engines of more recent vintage that had been made by one of their competent model engineers. A motor cycle enthusiast, 70 year old Karl-Erik Olsryd has produced ten original multi-cylinder model aero engines over the last few years, and some of them were demonstrated during the meeting. The seemingly giant Wright Whirlwind was breathtaking, and had actually been removed from a 1/4 scale model of the Spirit of St Louis in which it flies regularly in Sweden. It is, of course, impossible to make such an engine an exact scale motor. Some things just can't be miniaturised. I noted, for example, that no attempt had been made to fit dummy magnetoes; these are an essential physical feature of the Wright J5C Whirlwind since they are located on top of the front crankcase, and the engine looked bare without them, although their lack would be of no account when installed in the Ryan NYP



**Deep in thought before the A-Frame Pusher flyoff, David Baker aired those knees as well as a variety of vintage craft.**

since a cowling hides them from view. I was even more impressed by the 1/5 scale Bentley BR 1 rotary which the demonstrator, Thomas Nathanson intends to fit into a Lanzo Record Breaker enlarged to 3.6 metres span, in order to learn how to fly a rotary before the engine is installed in a suitable flying scale model. Thomas realises that he will have his hands full coping with the torque and gyroscopic effects of the spinning Bentley, and initially at least, will fit a modern type R/C carburettor, since trying to control the engine's 'Bloctube' carburettor which has a fuel needle and an interconnected air slide, but also requires an additional control for fuel fine adjustment appears at present to be difficult. However, such is the tenacity of the scale enthusiasts that no doubt this obstacle will eventually be overcome. Thomas had to trade his own HRD motor cycle in order to acquire the engine, for which the drawings have been destroyed; it is thus a 'one-off' which will not be duplicated.



**Neat Stahl Hurricane by Jonathan Taylor was being trimmed out in the relative calm of Saturday.**

## Large Scale Rubber

One sees so many fine models in this glut of model aeronautica that it is difficult to record what really impressed one most - Danny Sheelds probably summed up Saturday's flying by stating 'Mike's Mosquito and Doug's Stinson Reliant and Rearwin Speedster made the trip all the way from Baltimore worthwhile'. He was referring, of course, to the large 1930s rubber driven kit models by Doug McHard that have already featured in these pages, and to the giant rubber powered yellow Mosquito by Mike Hetherington. The Mosquito, although not vintage was really 'something like' - built as an experiment, having the same wing area as Mike's 54 inch span Spitfire, the Mossie (due to its sharply tapered wing) spans 60 inches, and is powered by two geared eight-strand motors 24 inches long in each engine nacelle. Preparing this monster for flight is quite a procedure. Mike uses a special stooze and has a twin-hook winder to wind both nacelle motors: a device on the nose prevents the wound motors from unwinding, and rather akin to Rupert Moore's release system on his twins, has to be deftly withdrawn when launching without imparting any undesirable force on the model which is released at the same instant. This is a definite technique that requires not a little practice as Doug McHard explained and demonstrated to us last year when flying his Rupert Moore designed Short Scion.

The model flies sedately and is slower than the Spitfire; as regards realism, it does not appear to fly fast enough, but there is no denying Mike's achievement, nor mistaking that outline - oh, for the sound of its Merlins! Both the Spitfire and the Mosquito have the same wing loading, and thoughts are already afoot to see what aerofoil wing section will be best for Mike's next venture into giant rubber scale.

## Radio Control

Due no doubt to the prevailing conditions the number of R/C vintage models seen on the Sunday was the fewest that I have seen at such a meet for a long time. There were seven models in the pound, 13 on the flight line and five in the air, although at that particular time some models were still in the safety of their owner's cars. The majority of these models remain radio models of vintage shape, usually powered by sophisticated modern motors whose silencers and unlikely shaped cylinder heads and manner of mounting and cowling almost always results in a re-shaped nose outline that detracts from the style of the original design. Many are now made in greatly enlarged sizes, and powered with lawnmower engines, they make good R/C sport models, but what has been lost sight of is that the whole character of the original design has been lost. Their constructional changes and other modifications all combine to take this branch



**Dick Goward's PAW 249 powered Thermal Thumber; very few vintage contest designs seen this year...**



**Dave Platt, over from Florida, with fine Warring-designed Voo Doo finished in black and orange.**

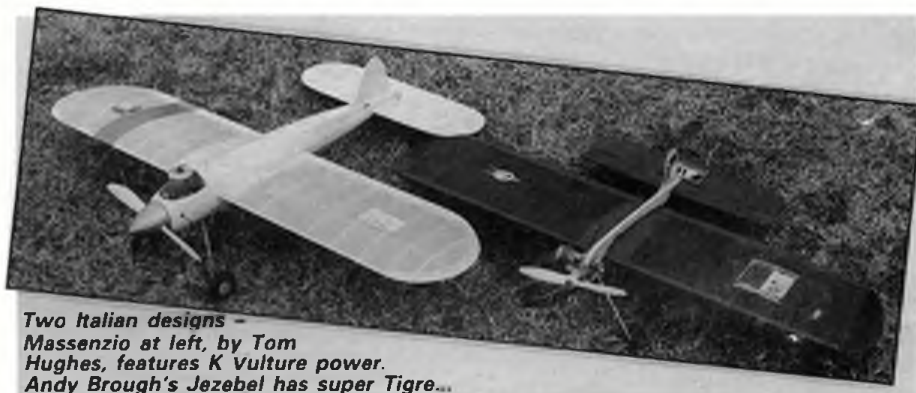
of modelling out of the vintage class.

Two well-made models in their original sizes were the HV 450 and the HS 100. Builder of the former is unknown but the latter was with the Swedish group. Both models looked like the free flight article, yet both were in fact radio controlled. There was also a small high wing monoplane in the pound; its shape looked familiar – was this really Modelcraft's Miss Tiny? The nose had lost its Barney Snyder streamlined form, and square cabin windows instead of the exquisitely curved outlines of Tiny's transparent panels made it look different.

Seems that the modeller wanted a small R/C model and used the currently available commercial kit as a vehicle for this purpose paying scant attention to the features that make Miss Tiny the beautiful thoroughbred she is. Maybe I am pernickety about such points since I invariably take a discerning view – the R/C vintage builders will doubtless hurl abuse at my head, and in this fly-for-fun age maybe theirs is the right approach – if it is, why bother with vintage designs at all? You don't find this sort of erosion in vintage flying scale or vintage Wakefield – why is it that the non-adherents are always the vintage radio brethren? I know that they have a difficult task trying to hide silencer and controls but it can be done. I just wonder why more of them don't do it...

I did not actually witness the two flights made by Arthur Fox's version of Gems Suzor's famous Milkilo model, the second one of which resulted in a crash.

Arthur builds a rare model every year. Remember his Bishop's Endeavour last year? The problem that he faced in recreating Gems Suzor's tandem winged model this year lay in the lack of real constructional information on the original, only a few photographs



**Two Italian designs – Massenzio at left, by Tom Hughes, features K vulture power. Andy Brough's Jøzebel has super Tigre...**

and a rough three-view drawing being available to him. Thus his model can only really be termed as a look-alike. In the Endeavour's case, that model was fully described in two issues of English Mechanics by the designer J W Bishop, hence Arthur's very convincing

replica. However, tackling models like the Milkilo means that despite the serious lack of information, this is probably the only way that the present generation of modellers will every become aware of what went before. I wonder what Arthur has up his sleeve for next year?

## Competition Rubber

The Wakefield mass launch this year had some 10 contenders, when in better weather conditions between 30 and 40 entrants is the norm. Some modellers did not participate when they learned that the launch point was out on the exposed aerodrome where the gusting wind obviously made the actual departure hazardous. One of those who declined was Dave Platt who had a superb RH Warring VooDoo finished in orange and black, and in all seriousness no one can blame anyone who refused to fly. In the event half of the launched Wakefields crashed on take-off while those that got away drifted rapidly downwind in the direction of Biggleswade. Winner was adjudged to be the VooDoo flown by Ray Alban who is one of our keenest vintage rubber fliers. If readers wonder how it is possible for Ray to select a model from his fleet, assemble and fly it immediately on full turns with perfect abandon (and success) without resorting to check trimming flights, they should look at Ray's system of model storage. His models are contained in custom made cardboard model boxes; not just laid in, but with the flying surfaces rubber-banded to jigs complete, not only with dihedral-keepers but also incorporating the washout/washin settings that extensive test flying has revealed as necessary for

good contest flights. Those of us who put the model on top of the wardrobe or suspend it in our den for long periods, then take it out when suitable flying weather arrives and wonder why it does not perform like last time, should take a leaf from Ray's book. Varying climatic conditions and the ongoing shrinkage of dope and cement can warp anything; – try an Alban jig – and scrub those intermediate trimming flights that waste so much time, fly full turns every time with complete confidence.

The other Wakefields in the mass launch were mainly colourful examples of Bill Dean's Keil Kraft Gypsy, although I saw one 1932 Gordon Light complete with spats, but could not see whether or not this model used the motor stick of the original. This machine was made by Colin Essex and before the mass launch was the subject of a major retrieval operation from the Old Warden jungle when it lodged in the branches some 40 feet up.

## Models galore

There was a good cross section of all types of vintage models plus the usual Stahl designs flown in competition and an event for the Elite Glider No 1 for which I saw both Peter Michel and John Meaney engaged in trimming flights on the Saturday. The Twin-pusher mass launch was an eye-opener and it is amazing how well these ancient designs performed. I was unable to follow and record these competitions undertaken in far from ideal conditions, but made a few notes on some of the unusual models seen during the two-day meet.

Two 'Mayo-Composites' were seen in the model



**Old Warden regular Butch Hadland with beautifully finished Stahl Spitfire.**

pound. Phil Smith's original Stentorian which was built in 1946 and re-covered in 1984, resplendent in its well known yellow with black trim finish, sported the prototype Veron Martinet (a half-size Stentorian that could also be flown control-line) of 1948 as the 'upper component': also from Phil was his red fuselage Brooks Comet II from 1936 with the little Telco powered version, of more recent years, perched on top. These four machines were arranged 'pick-aback' fashion, where both small models were held by their undercarriage axles to the larger machines' wing holding rubbers - not to be flown like that, but to prevent them from being blown away!

A model that I failed to identify turned out to be HJ Pridmore's Ladybird Special powered by an ED Bee. This aircraft was described in the 1950 Aeromodeller Annual. The model had a modified tailplane, and was without lower wing and undercarriage - since they detracted from its performance! Bill Langley had two models that I had not seen before, the Curtiss O-52 designed by Sydney Struhl and Frank Ehling's Timer's Nightmare. Both Mills powered and both from the



**Bob Walden shows his Elite No.1 and Achilles - both entered in relevant competitions.**

was the EJ (Joe) Weathers towline glider. First made in 1933 Joe eventually built four of them since they had a tendency to fly away. Described in the 1938 Zaic Yearbook it also was published in August 1939 Flying Aces, but it was from a reproduction of the plan for this 30 inch model that was in Vic Smeed's

compilation 'Model Flying - The First Fifty Years' that Gosta Leijon, one of the visiting Swedish group made his fine performing model. Derek Ridley was flying a 42in Miss Trenton III powered by an Irvine Mills, impeccably finished in the original colour scheme of red and white used on the 75in original Miss Trenton III (which was also known as the Trenton Terror) from which his model is a descendant. Doug McHard always brings a bevy of models, and apart from his big rubber models also flew his Model Shop Hawker Demon and when his CO<sub>2</sub> powered Bf 109 'sprung a leak', he treated us to some spectacular flights of his compressed-air powered 40in Piper Super Cruiser. The articles in April and May last issues of this magazine don't do justice to the realistic flights of this model. Nor is pumping up any problem. Doug effortlessly put 100psi into the transparent tank which is almost invisible through the cabin windows. But it is the actual flying that is the show-stopper. The whirr of the plastic engine as the Piper goes upstairs is just right, after cruising around the decreasing pressure introduces a transition to a powered descent just as if the pilot had reduced the throttle setting and the Piper comes in at the correct attitude to make a perfect landing. This is aviation in miniature and quite the most realistic performance that I have ever seen.

With such happenings, and many more free-flight models to feast my eyes upon I never made it to the control-line circles. Mike Patience had his DC Wildcat powered Wildcat control-line model with him, but with his other activities did not have time to fly it although the model was placed on show and doubtless Brother Prentice will mention it in his writings since I understand that the model is a bit of a rarity. It is the vintage modellers' enthusiasm and industry that makes all Vintage Weekends the success they are, and this year's meeting was no exception despite Sunday's weather.



**The Mills is tuned up as Alan Thompson prepares the Scorpion.**

book Air Age Gas Models which every serious vintage enthusiast should have on his bookshelf. The book contains 21 plans and many associated articles for designs up to 1944 and is still available from The Aviation Bookshop 656 Holloway Road, London, N19 3PD for £9.45p post free.

Rolie Lelliott showed his splendid ten-foot span Celestial Horseman sailplane designed by LG Temple, the plan for which is still available from ASP as G118 for £6.00p plus 60p postage. Rolie's model had fifteen coats of red dope on the fuselage, and when removing the masking tape from the cockpit canopy it pulled the last coat off! However, the small blemishes that resulted certainly did not spoil his fine construction.

Arthur Bailey was a Lancs MAS member with Phil Smith many years ago, and like Phil is still wielding the balsa knife to good effect. He brought along his 68 inch span CE Bowden designed Big Stuff, a large rubber driven model described in Aero Modeller, December 1941, whose wings and tail unit were later used on a slabsided fuselage powered by an Ohlsson 23 to become the well known Bowden Contest. Arthur's Big Stuff uses 16 strands of 1/4 and has an all-up-weight of 40.1/2 ounces and is radio controlled carrying two Futaba Mini servos to operate rudder and elevator. Because the wing position is fixed the nicad batteries are stowed under the nose to get the CG in the right place. Plans for this model are still available from ASP as G114X, price £5.25p plus 60p postage. Another model that I had not previously seen

#### Franc Zaic Trophy

John Blagg Thermic 70

#### Lancastria Cup

B. Lister

#### Fireball Trophy

Ron Prentice

#### Johnny Hall Cup

M. Bennett

#### C A Rippon Memorial Trophy

Chris Strachan Cruiser Pup

#### Achilles Competition

Senior 1 Chris Strachan

Junior 1 David Toyer

#### Chobham Trophy (Wakefield Mass Launch)

Ramon Alban Voo Doo

#### Danny Sheelds Trophy (A Frame Pusher)

Reg Parham Simmers

#### Control Line

1 Bill Darkow Curtiss Cox Texas Wildcat

2 John Roberts Midget Mustang

3 Andy brough Various - plus Midge enthusiasm

#### Free Flight

1 Butch Hadland Jetex MiG 15

2 Doug McHard Burd Rearwin  
3 Dick Skerrett Stahl Mustang

#### Radio Control

1 Dick Guntrip Pteranodon

2 K Grant Own Design

3 Arthur Fox 4 Milkilo

#### Rolie Lelliott Trophy (Jetex)

John Nesbitt KK Starjet

#### Earl Stahl

Low Wing Dick Sherman (proxy Don Knight) Skua

High Wing Butch Hadland Waco E

Special Award Trevor Simpson

#### Old Tyme Stunt

Dave Day

#### Keil Trophy (Best KK R/C model)

B Deniel Super Scorpion

#### 4A Trophy (Best unorthodox R/C model)

Dick Guntrip Pteranodon

#### Elite No1 Competition

John Meaney (3 maxes!)

Concours Peter Lee

**Next month: All the C/L news - and more on rubber!**



# BALSA CUTTINGS

## Cyano De Bergerac on wires, fires bikes and Mikes

### Wire we doing this?

The August issue carried a free full-size plan for Vic Smeed's .8 power 38in Majorette and suggested that when you build it (you can hardly not!) you simplify the u/c process by bending the axle ends only after the legs are bound in place and the rear wires are soldered up to the front ones. Then you just finish the job using two pairs of pliers. Good idea, but if you want an alternative, try pre-bending the whole issue against a mock-up from incredibly easily-formed welding rod. Mother is sure to have some odd lengths in her work-basket, and when you've finished your model they can quickly be made into very small coat-hangers for your friends at Christmas.

### Give us your answer, do

It was reported that at the F/F Nats, Jonathan Walker's model in HLG was clocked off 1 sec short of a max after hitting a downwind bicycle. Is this hazard going to be sorted out, please, or does B.Ctngs have to start campaigning for bicycles to be flown upwind of the launch area?

### It martyr've happened

Some while back the punning headline came under attack by *Radio Meddler's* pundit of good taste, Rollon Groundsheet, who probably mistook it for the Large Model Association. The suggestion has been made that this sensitivity may have been caused by his having been exposed at some time to the worst pun in aeronautics, and since the B.Ctngs archives can of course supply the Authorised Version, here, for the record, it is. Not a pretty sight. In the year 1170, King Henry II of England was leading a small loose formation of an early form of Druine VW-engined homebuilts on patrol over Canterbury, the other aircraft being flown by his trusty followers Sir Hugh Goo, Sir Will the Pill and Sir Sidney Kidney. They were discussing over their early form of radio the troubles caused by the Archbishop hundreds of feet below them when the motor of the King's machine cut, and he exclaimed 'Hugh! Will! Sidney! This Turbulent's ceased!' Sir Hugh lifted the visor of his helm and banged his early form of earphone with a mailed palm. 'Wossat?' he demanded. Sir Will replied, 'I think he said *Who will rid me of this turbulent priest?*' Whereupon the three knights peeled off, landed on the Cathedral Green and rubbed out Thomas a Becket.

### Still there on the wing-tip

There's poor old Mike Whittard worried because his tissue goes brittle and his doped nylon crazes. There's Alan Walker, Martin Dilly and Harry Campbell all saying yes we know and have you tried a little castor oil or a lot of castor oil or tri-cressyl phosphate and does ultra-violet absorption have anything to do with it? (Do you remember Lily the Pink, whose Medicinal Compounds were Most Efficacious in Every Case?). We've heard of black wire

corrosion being explained away as electrochemical action of the dark pigment in the insulation. We've been told that when a brand new skein of rubber snaps clean across on quarter turns as though cut with scissors it's due to a function of the material's modules of elasticity called eccentric stress distribution.

All very scientific, tell yer mum. Next month, B. Ctngs features an exclusive interview called Confessions of a Retired Gremlin, which contains bad - and unscientific - news for all of us.

### But darling...

'Look - it's in your writing, and it clearly says "Argus Specialist Pubs. Balsa stripper." Oh, my mother was right about you.'

### Oh, it takes yer back!

To judge our Peanut Evening we had this elderly gentleman over from a club about 20 miles away, and he gave Phil's Fairey Battle bonus points for realism because when it was getting up the floor it took a long time about it, and its let-down was pretty gradual, too. (There didn't seem to be a bit in between.) Well, as not a soul in our club could recall ever having seen a real live Battle take off or land and most of us conceded that by now we had just about lost our chance anyway, we were content to take the man's word for it, especially as you can hardly ask a bloke to come to judge your contest and then start arguing with him. Nevertheless, realism is a wide field. Mad Ray's Tempest overturned on landing and of course he wanted bonus points for realism too. Ruefully stroking a decided furrow which showed

through his thinning hair, the visitor solemnly agreed.

### In case of fire, FIRE!

When you remember that our one-time principal interceptor, the Hurricane, made a big hole in ten minutes getting to twenty thousand feet, present-day Top Gun fighters seem pretty smart, and it's chastening to find them totally out-classed by a type which first took to the air in 1783. With the kind of summers we've been having, those of us with no desire to set the entire country ablaze fight shy of dabbling with hot-air balloons made out of two bin-liners, but of course you don't run the same risks with the butane-fired full-size ones, and whilst we were flying over our golden-brown desert, trying to recall what colour grass used to be, some dozen of them came drifting across just above the trees. You can hear conversation from lo-flying gliders and balloons, and one intrepid aeronaut said distinctly 'We'll go over those fellows and land in that hayfield.' Old Dick must have been in his kitchen with the window open. He was out of that cottage with alacrity and a twelve-bore before you could say Montgolfier. He went bang to the right, bang to the left, and *you've* never seen a rate of climb like it.

### Fun for future fetchermites

Mary had a little Scram,  
It went on CO<sub>2</sub>,  
Like Mary, it was overweight,  
But she knew what to do.  
Some personal elastic  
Round the undercart she slipped,  
Then bungeed off. Away it went!  
But when she ran, she tripped.



'How did your new trimming theory work out, dear?'

# High

# potential

## Chris Coote's look at electric power – mainly for free flight

FIRST of all, a couple of photographs of Ray and Wendy Millard with some of their first electric models. After having flown free flight competition models for some years the Millards have decided to fly electrics together for sport purposes. Wendy says that she really does not want to know other forms of power now, having been seduced by the convenience and cleanliness of electrics. The first picture shows some small models for the KP01, an own design vintage type and a scale Piper Vagabond. Both fly well outdoors. How about some drawings, Ray? The other model is a small, fast R/C job for Astro 02 power. More relevant to the gentler side of electrics is the model held by Wendy in the second picture. This again is Astro 02 powered and contains two channel R/C. However the model is allowed to fly mainly free-flight with only a few control inputs to get it back into the flying field. Truly a radio assist for retrieval convenience. The excellent Astro 02 is unfortunately no longer available in its original lightweight form. However, do not despair. The motor is equivalent to a 360 size Mabuchi with heavy windings. One such motor is still available from Hi-Line in America. This company is run by electric enthusiast Don Srull (among others) so you can be sure of a good, useable product. Regular readers will remember my review of Hi-Line products in previous articles, but for newcomers the address to write to is:

Hi-Line Ltd  
PO Box 1283  
Bethesda, Maryland 20817, USA

The claimed advantage of the Hi-Line Imp motor, as it is known, is that it will give good performance on only three cells. This is in contrast to the Astro and similar units which need four or even five cells for good urge. I have now had time to try the Hi-Line motor in several models and can confirm its three cell suitability. However, current drain is very high for small lightweight cells, and Hi-Line themselves recommend at least 150mAh cells. I have tried these, and obtained some good but very short flights. My own opinion is that 270mAh cells are really the practical minimum, unless you are really going for a lightweight duration 'climber'. Even then I suspect that the 270mAh cells would give a better performance on part charge (to limit motor run) due to their inherently lower internal resistance, despite the increase in weight. Note that Hi-Line also produce a nice, simple 31in span sports model kit for the Imp motor, which is a well proven Srull design.



Above: Ray Millard's KP01 powered fleet – a healthy mixture.



Wendy Millard displays Ray's F/F-style R/C assist craft for Astro 02 power.

### No Cano worms

As regular readers of this column will know by now, I am always on the lookout for useful sources of equipment or expertise and advice related to electric flight matters. I have a somewhat catholic interest in all sorts of modelling and associated creative activities, so I make no excuse for including information from sources apart from traditional aeromodelling. Electric flight is well established in the R/C area and much useful equipment is available from specialist suppliers in this field which can be of use in free-flight applications as well. In fact, most of the larger motors and batteries I use come from this source. A reader from my area of the West country wrote some time ago with details of a gentleman supplying electronic kits for electric speed controllers and chargers.

This all arose out of discussions on indoor electric R/C and the use of lightweight speed controllers based on what is known as the 'Cano' design. The chap to contact if you are interested in this type of thing (and the speed controller must be easily modifiable to act as a speed trimmer for us free-flight types), is Gordon Tarling on 0895 51551. The chargers look particularly interesting since they work on either voltage peak sensing or temperature rise. This means they should be suitable for fast charging a wide range of cell types and numbers with little or no modification. Gordon Tarling also says he is prepared to give advice on such aspects of electric flight if you care to telephone him at reasonable hours of the day. Most of the products available from him come in kit form, with the difficult components supplied. The standard electronic bits such as resistors and capacitors, can be easily obtained locally or from established mail order houses such as Maplin's (I have mentioned this very useful firm before; their mail order department is in Rayleigh, Essex (Tel: 0702 554161).

I always have great pleasure in featuring other people's efforts in this column. For one

thing there is a limit to what one can find the time to produce, fly and report on oneself, and it is particularly satisfying to see the fruits perhaps of seeds sown by yourself in other models. I think that the news from reader Tony Trent is therefore worthy of wider circulation, and I make no excuse for including it in this month's offering. So to pose a question: what is smaller than a 'mite'? The only thing I can come up with is a 'midget'. Thus the picture of Tony Trent's version of the well known vintage free-flight duration model, 'Slicker', is really a Slicker Midget. To explain what this is all about we have to go to the series of Slickers designed by Bill Dean for the Keil-Kraft concern in the late 40s. They were among the first kits for the then latest fashion of pylon power duration models, and were amongst the most elegant too. So

successful was the original design that it was scaled both up and down to produce the Slicker Major and the Slicker Mite. Years later when the vintage movement was in full swing, that doyen of vintage kit and plan producers, the late Ben Buckle, produced a further scaling down of the Slicker Mite for CO<sub>2</sub> power. This 24in span charmer is what I have called a Slicker Midget; it is shown in the enclosed photograph. Although designed for a Telco CO<sub>2</sub> motor or similar, this one was originally powered by the well known KP01 geared electric unit. Unfortunately the slim nose of the scaled down model would not accommodate the gear system neatly, and the elegant lines of the little model were somewhat disfigured by exposed 'go roundy bits'. Being, as he says himself, an avid reader of High Potential, Tony noted my comments on the direct drive performance of a standard Mabuchi 140 motor

details in previous High Potentials, many of my own efforts fall into this category. The conclusion is that electrics form one of the few remaining challenges in alternative forms of power for aeromodelling, and we all like a challenge! Aeromodelling allows us to develop our own ideas and test them in a very immediate way. A model either flies or it doesn't. This development aspect is certainly the attraction for myself, Tony, and, I suspect, many others.

### Practicalities

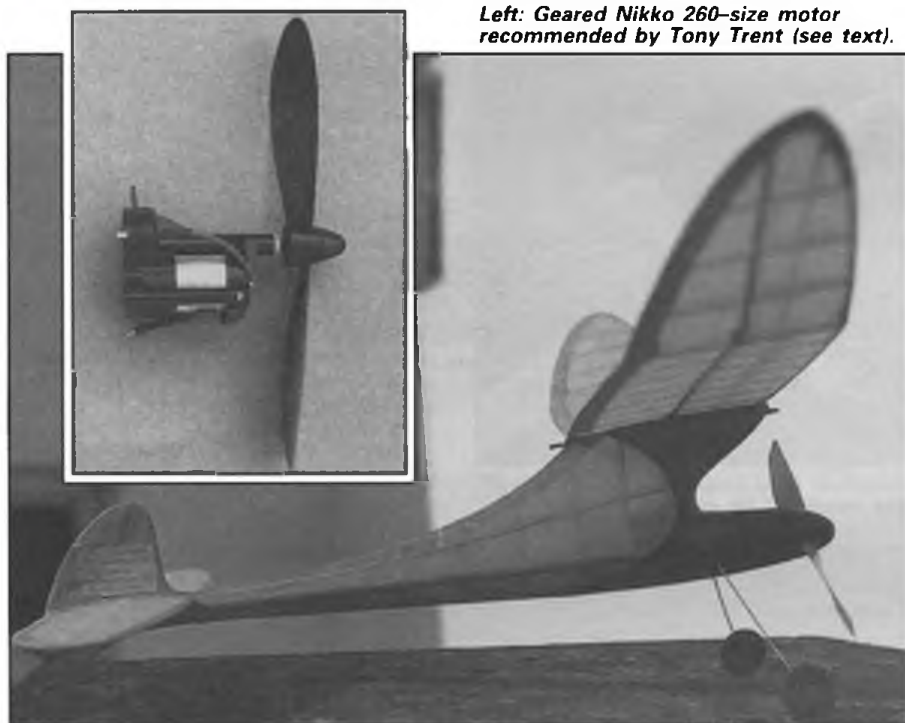
Enough of the philosophical musings. Let's move on to more practical considerations. A vintage model of elegant proportions, convenient size and excellent flight performance comes next in the form of the Halifax Hermes. This is also one of Tony's models. It was originally designed as a high performance

such a power unit in the nose of Doug Sheppard's vintage sport model shown in the December 89 issue. Amerang are the suppliers of these units (complete with special prop) so I suggest you get your local dealer to order one direct from them if you are interested in following Tony's lead. The model itself is built light and power comes from a small, 4x 100mAh battery pack. In its original form some unmarked 100mAh cells were used and performance was marginal. A later change to new branded yellow Sanyo cells proved to be a change for the better with much improved climbout and duration of motor run. It just goes to show what I have advocated for a long time; that economies in choice of nicad quality for flight packs are not a good idea. You need the best that you can get, which (since they also last longer) is actually economical in the long run. Electric flying, once you have the basic equipment, must be one of the cheapest forms around, so do not be tempted into economies in the initial stages, since you will surely replace the cheap cells later on and probably throw them away. Better to buy the best straight away and then look after them to ensure a long and useful life.

The final contribution from this same source is another useful sized geared motor/prop unit discovered in a range of Japanese ARTF R/C kits once again. The design of this motor assembly is very similar to the Union standard offering, and may even be from the same source. In this case the motor is an in between size from the tiny Union free-flight unit found in the all foam ARTF kits, and the type used in the Halifax kit design as described above. The unit is available as a spare from the importers. The address to write to if you wish to obtain one direct is:

Nikko Service Dept.  
Tasco Hobbies Ltd.  
Unit 4  
Hambridge Lane Ind. Estate  
Newbury, Berks RG14 5TU. Tel: 0635 30172.  
Finally I want to end with a plea for help. Sources of supply for small nicads seem to be

**Below: Tony's Halifax Hermes features Union 'Stickplane' power.**



**Above: Two-foot version of the classic Slicker, also by Tony Trent. Direct-drive M140 motor used.**

on a KP prop. For those who have forgotten, the Mabuchi will turn such a prop only a little slower than the geared KP on the same battery pack of three 50mAh cells. The disadvantage of the simple Mabuchi is its greater weight and short life due to its crude brushgear. However it will fit neatly into a Slicker Midget nose, and this is what Tony has done, a most neat solution as you can see from the picture. Flight performance is down on the KP version, but still adequate to cross Epsom Downs on a full charge. Prop is now a Telco CO<sub>2</sub> type, and Tony reports that the motor gets rather warm on a full-charge run. Still, with replacement motors at £1.55, I do not suppose that will worry him for too long. The comment is made that one of the appealing aspects of electric of electrics is the development and challenge nature of the exercise. Due to the limited power available and the relatively poor power to weight ratio, model design and construction has to be light and efficient. This is just as it was in the early days of vintage free-flight power. Engines in those far-off days were not the power houses of today, and good flight performance was never guaranteed by an abundance of horsepower. It is for this reason that vintage designs are so suitable for electrics, and why we can still learn much from them. Indeed, as you have seen from



sports model for the Mills .75 and similar diesel motors. The use of electric power enables a more elegant cowl and nose arrangement than the original with its i.c. engine cylinder sticking up like a sore thumb! The geared unit is neatly enclosed in a Gypsy Major style inverted cowling which suits the lines of the model very well, as can be seen from the picture. In this case inspiration for the power unit has come from pictures and reviews of the larger Union geared units, sold as spares for the R/C ARTF Stickplane which have appeared in this column. Readers may remember the pictures of just

drying up. A recent visit to a Sanyo retail distributor revealed only a few odds and sods of small cells left in stock, with seemingly little hope of being able to re-order. This was not through want of trying to get hold of the main UK distributor. It seems that stocks of the sizes we use mostly are a bit variable in the UK. So if anyone out there knows of sources of such items, or if any shop proprietor reads this and has any stock to offer, I would be most pleased to hear about it. You can contact me at home on 0272 877149, or write to me at 55 Edward Road, Clevedon, Avon BS21 7DX.

# SOVIET STARS



Reviewer Glen Lewis looks pleased with the results of his efforts!

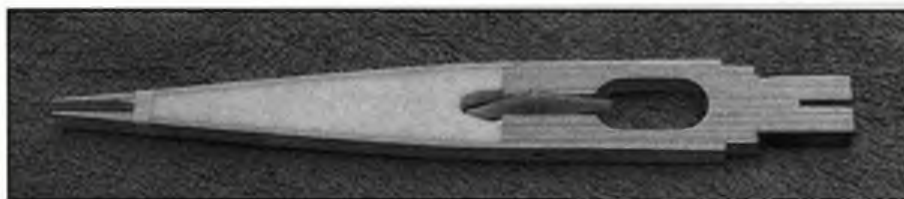
## Dave Clarkson on the Lithuanian LST F2D kit..

ONE of the surprises at the recent C/L World Champs at Blenod in France was to learn from Hakan Ostman from Sweden that he was flying models built from kits produced in Lithuania in the F2D Combat competition. Hakan was very complimentary about the ease of assembly of these kit models and their flying characteristics. It has been a long time since there has been a model kit giving competitive performance in any FAI C/L class and here was one for F2D Combat – the event in which construction time is a major deterrent to competitor involvement because of the number of models needed.

The Lithuanians appeared as a team flying for Lithuania (are we modellers ahead of the World in recognising Lithuania as a separate country?) in Holland recently at the Dutch Combat International flying this kit model and with very many kits for sale. New Zealander Glen Lewis purchased a bag containing five kits for DM 100 (about £35) and returned with us to Stockport to build then to enable him to fly F2D Combat at our Nationals. This gave me an ideal opportunity to get a good look at these kits and to observe how a modeller, who until Blenod had never seen a Russian-style Combat model, succeed in building and flying five of them. Who better to judge a kit than a good modeller who was ignorant of the design and construction principles involved?

### Components

First: the kit components. Note that the tricky bits, the leading edge and the centre rib are completely pre-assembled. **Leading edge** – EPS foam core with glued in tapered softwood spars and leading edge. Complete with balsa half-ribs each side of the centre rib slot and fully paper covered.



Centre rib comes fully assembled with nylon bellcrank in place.

**Centre rib** – Softwood front core and EPS foam rear core. Glued together with softwood cap strips and complete with copper covered GF board facings to take motor bearers, moulded nylon bellcrank and pivot tube, and thread binding in front of the TE slot.

**Ribs and Gussets** – Cut balsawood ribs. Printed balsa sheet for all gussets.

**Tips** – Cut softwood outboard tip and balsa inboard tip. Inboard tip GF cloth covered around leadout locations.

**Trailing Edge** – Softwood strips, joiner and extension all cut to size but not assembled.

**Elevator** – Cut balsawood with rounded edges complete with aluminium reinforcing sheets, moulded nylon hinges, pivot tube and hinge wire. Not assembled.

**Hardware** – Leadout and motor safety cables. Leadout guides (springs). Bladder compartment components.

This is a very full kit requiring only covering materials, pushrod, control horn, glue, leadout connectors, motor bearers and fuel bladder to be added.

### Get on with it!

Construction by Glen proved to be quite straightforward. The first act was to glue the centre rib into the leading edge. The fit here was very tight so needed a little easing to get the centre rib fully home. Then the trailing edge was assembled and the tip ribs glued to the tips of the leading edge. The tip ribs had to be notched to accept the spars projecting from the leading edge and these notches had to be adjusted to get the tip ribs accurately aligned with the centre rib. Now the inboard wing was marked (since this is 15mm longer than the outboard wing) and the trailing edge glued into the centre rib and to the tip ribs. With this done, the ribs, gussets, and bladder compartment ends were glued in place followed by the tips. Note that the inboard tip was drilled and the leadout guides inserted, and the inboard wing ribs drilled for the leadouts before this assembly stage. It proved a bit tricky to get these holes in the right places. Having them pre-drilled, or at least marked, would have been a good idea. One other missing item was some sort of reinforcement for the rib/leading edge butt joints. Standard Russian practice is to use 10mm wide, 1mm ply spreader plates here but Glen opted for strips of 6 x 6mm balsa triangle which proved more than adequate. Minor criticisms since Glen was able to overcome these shortcomings very easily. The glue used was

blue-bottle Resin W, but thin cyano was used to secure the leadout guides inside the inboard tip, and thick cyano to glue the Mylar sheet provided over the bladder compartment ends and the leading edge spars. The non-mylar inside surfaces of the bladder compartment were fuel-proofed with Tufkote before this step. The final acts before covering the model were to bind and solder the leadout cable loops through the bellcrank and to glue, using thick cyano, the elevator hinge tube to the rear edge of the trailing edge extension. Reinforcement was added in this area by binding with strong nylon thread and securing this in place with thin cyano. The final reinforcement items were, first, to wrap sticky tape around the bladder compartment and along the front of

the leading edge, and second, to thread bind the centre rib immediately to the rear of the bellcrank slot to hold the centre rib cap strips in place in the event of a vertical 'landing'.

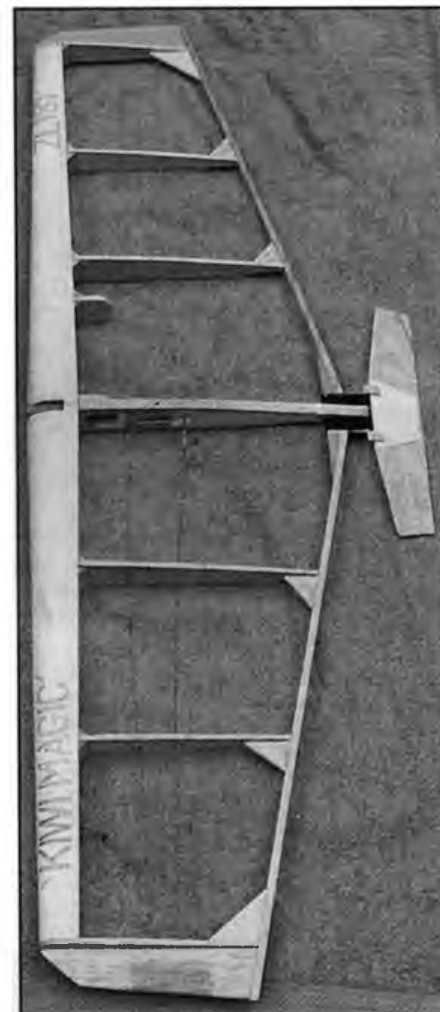
Covering was 35 micron Mylar obtained from Ken Miles, after writing identification information on the leading edge with a stencil and a fibre-tipped pen. Following consultation with experienced Mylar users, Glen used EvoStik Contact Adhesive thinned 50/50 with cellulose thinners as the covering adhesive leaving it at least 30 minutes to fully dry before ironing on the Mylar. I must say that having in the past used both Balsarite and Balsaloc as Mylar covering adhesives, I judge Glen's results much superior.

It does appear to be the standard Mylar

substitute and since the hole in the moulded nylon bellcrank provided was 3mm ID, this size of knitting needle was used to give an easy moving, slop-free connection. The pushrod was inserted through the covering after sticking a strip of sticky tape onto the covering at the pushrod entrance location and then cutting a 6 x 25mm slot through the covering at this location.

It took Glen 4.1/2 hours of work to assemble and cover each of the five models including fitting them out to take the motor - a STELS 15 AAC held in place using machined aluminium bearers, both items of Russian origin and obtained in the UK from Engines from Russia. The finished models with motor in place all weighed exactly 400gm (914oz). The relevant dimensional data are as follows:

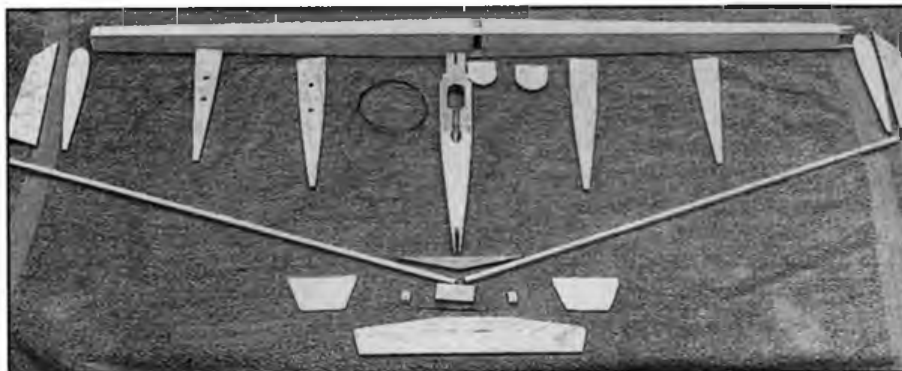
This aeroplane is a little smaller, shorter, thinner and lighter than a Beliaev model - making it ideal for those not totally familiar



**Basic assembly complete. Inboard wing is of 15cm greater span than outboard.**

with these products of the 'Russian Revolution'.

So off to the flying field to find out how this Lithuanian kit toy flew. The first flight was hairy - CG too rearward - so Glen's AAC STELS was swapped for a heavier ABC version. The model became flyable, but was still too touchy for Glen. Since Glen wished to use his STELS 15 AAC at the Nationals,



**Spread of components. All the tricky bits are pre-assembled.**

covering adhesive used in the UK by combat model builders and I must say that this would appear to be for very good reasons. With the covering applied, it was shrunk drum-tight using an electric paint stripper gun. Mylar needs lots of heat to shrink, but

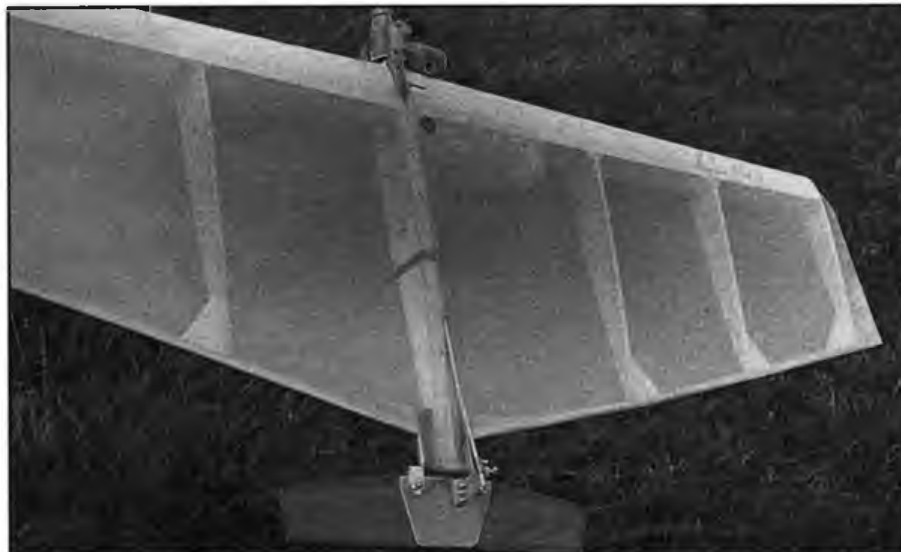
Total wing span	1095mm
Root chord to hinge	330mm
Centre rib section	13.5 per cent
Tip rib section	13.9 per cent
Wing area	26.4dm
Total area incl elevator	27.6dm



**Leading edge features foam core, softened spars and wrap-around sheeting and balsa ribs, and is paper covered.**

a paint stripper heat gun has more than enough power for the job. After shrinking (and correcting the inevitable warps (for Mylar pulls the structure very hard indeed) access and drain holes were melted into the bladder compartment using heated metal tubing and then to fuel proof all of the Mylar edges and around the motor bearer locations using Tufkote.

Glen covered the elevator with transparent Solarfilm and then stuck the aluminium reinforcement sheets top and bottom using thick cyano. The moulded nylon hinges and horn were screwed in place, after drilling through the finished elevator for these, using 3/8in No4 panhead self-tapping screws. The horn used was a moulded nylon item of Russian origin but any really meaty nylon horn can be used; a throw of 25mm is needed. The pushrod was bent from a 2.8mm OD knitting needle. It is Russian practice to use aluminium rod pushrods of 3mm OD using wire recover from their bent wire clothes hangers. In the UK knitting needles are an expensive but adequate



**Straightforward and tough elevator hinge seen to advantage here. Mylar covering used.**

this meant some work to get the models to balance at what now seemed to best place for Glen – that is, at 22mm behind the rear of the LE at the tips. It turned out that reducing the elevator span to 240mm and its tip chords to 25mm, and reducing the trailing edge extension down to 4mm projection did the trick perfectly. Our conclusion is that if a light motor, like a STELS AAC or a USE 15, is chosen then these modifications (small though they may be) are essential. It is probable that with a heavier motor like the Nelson 15 SE FI AAC, the kit will fly perfectly unmodified. We will shortly hear from Glen how his (modified) Lithuanian kit models flew; however, he is still recovering his breath. It is typically Russian in flight – stable enough to fly continuous inverted laps low down with confidence but with incredibly fast and tight turning capability.

The kit is produced and sold by

Gintaras Kashuba  
LST Co-operative  
V Grybo 3a-21  
232050 Vilnius  
Lithuania.  
Tel: Vilnius 749149  
Fax: 010 7 122 751836

Get writing, you enthusiasts, for no other F2D Combat model kit comes near to this one in terms of prefabrication, completeness, price and flight performance.

## ...and examines the CYCLON 15T FAI motor...



Points of note include four-point mounting, flood-off arm and crankcase pressure nipples. Prop brake indicates F1C intentions.

WHEN two Russian F2A Speed fliers of repute establish a co-operative manufacturing company for aeromodelling items, then their products are worthy of attention. When these two fliers are Aleksander Kalmykov (ex-world and European F2A Champion) and Sergey Pitskalev (4th at the 1990 World Champs in F2A) then any opportunity to examine one of their products should be grabbed with both hands. By means of some trading, I have acquired one of their CYCLON (Cyclone) 15 T purpose built F1C power motors (the same

motor as used by the current F1C World Champion) together with an official price list covering all of their products. This article is the result.

### Purpose-built

The first thing to note about the CYCLON 15 T is that it is a purpose built F1C motor complete with an integral prop brake and is fitted with flood-off and crankcase pressure nipples, and an integral flood-off arm. To my knowledge, no other commercial production motor is so fitted and so it must be of particular interest to F1C fliers. No doubt the other CYCLON products, the 15 S F2A speed engine with tuned pipe and prop, the VISH expert Wakefield prop assembly (with variable pitch, starting delay and torque auto-stop), and the VMS Standard Wakefield prop assembly (with just torque auto-stop) are similarly adapted to their competition purposes and therefore should be of serious interest to fliers in these events. The second thing I noted was that this motor has 'quality' written all over it. I showed the crankshaft to a graduate mechanical engineer who works at Rolls Royce on aero engines and he commented that it was the best he had ever seen – impeccable machining and surface grinding obviously done using the highest specification machine tools. All of the other components were finished to a similarly high standard and these are described below.

**Crankcase:** Judging by the intricacy and fineness of the detail this is an investment casting in aluminium and sandblasted prior to finishing. Extensively cored for the transfer and exhaust passages and with external lugs for mounting (one pair immediately behind the front race and one pair immediately in front of the backplate) and for the fitted bend wire flood-off arm, the flood-off nipple and for mounting a cylinder cowl. The front bearing housing is internally threaded for a bearing retainer ring and externally for the screwed-on brake body.

oil collecting gallery cut in rear of induction passage under the crankpin and connected to the crankpin drilling by a drilled hole through the crankweb. The crankpin drilling is sealed with a pressed-in aluminium plug. Crankweb symmetrically cut away for counter balancing and shot peened for strength and with an anti-corrosion coating. The shaft journals are a light push fit into standard metric dimension ball bearings 8 x 16mm at the front and 12 x 21mm at the rear. Main journal bored 8mm TD to large induction port (8.5 x 18mm) in journal and gas-flowed at exit in crankweb.

**Piston-Liner Assembly:** ABC metallurgy. Single boost and exhaust ports in liner conventionally cut. Two main Transfer ports cut steeply inclined upwards and towards the boost port. Liner OD tapered starting immediately below the ports to a sharp edge at the bottom. (Presumably to assist the liner remaining straight as the crankcase gets hot). Liner OD very tight



Rear bearing is housed in shrunk-in ring.

fit in crankcase above its OD taper. Piston fully machined from 28% silicon content sintered aluminium bar with two oil holes drilled in underside to gudgeon pin bore. 4mm OD blind-drilled hardened and surface ground steel gudgeon pin retained in piston with conventional bent wire circlips. Machined aluminium alloy con-rod of substantial section and 27.5mm between journal centres, no bushes or oil-holes in con-rod.

**Head:** Machined aluminium with Trumpet profile surrounded by 2.5mm wide flat squish band. Takes non-standard bottom sealing plug retained into head using a gland nut. Head retained in crankcase by peg-spanner operated machined and externally threaded aluminium clamp ring. Squish clearance set by fitted shims at 0.35mm (measured). Geometric compression ratio measured at 14.7:1.

**Backplate:** Light weight machined aluminium incorporating screwed-in machined brass pressure nipple. Attached to crankcase by four M2.5 steel screws.

**Spinner:** Machined aluminium of conventional design. Prop driver not knurled for prop; rather, a locating peg is used. Steel ringshrunk onto OD at rear of prop driver for prop brake Spinner shell not cutaway for prop.

**Venturi and fuel feed:** Machined aluminium venturi incorporating integral capillary fuel feed to axis of mm bore. Venturi fed by conventional thimble-lock needle valve assembly

The rear bearing housing incorporates a shrunk-in steel ring of substantial dimensions to take the rear bearing. The top of the cylinder housing is threaded M22 x 0.7 internally for the head clamping ring.

**Crankshaft:** Machined and hardened steel with main (12mm OD) and minor 8mm OD for front race and 6mm OD for prop driver and prop) journals surface ground. Front journal threaded M6 fine for prop nut. Integral crankpin surface ground 5mm OD and internally drilled to connect with crankpin oiling hole fed from

positioned to its rear in the crankcase. Crankcase also incorporates screwed-in machined brass flood-off nipple to feed flooding-off fuel into induction duct. Venturi severely sprung into crankcase to locate.

**Prop brake:** Machined aluminium body screwed onto front housing of crankcase. Body internally grooved to hold wound steel wire brake of verbitski type. Fixed end of brake wire retained in body, movable end free to move in circumferential slot in body. This movable end connected by a flexible cable (not supplied) via an external bobbin, attached to the body using a steel screw, to the flood-off arm.

**Data**

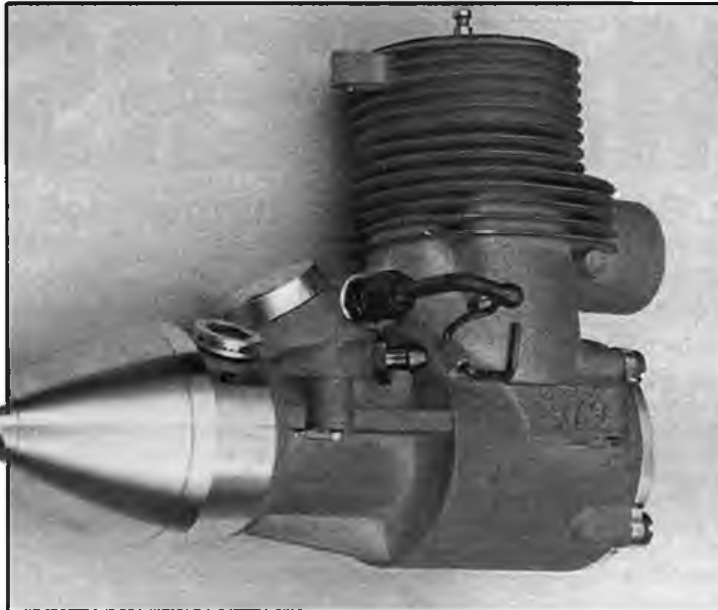
The manufacturer's data for this motor are as follows:

- Bore** 15mm
- Stroke** 14mm
- Capacity** 2.48cc
- Weight** 180gm
- Peak Power** 1.1bhp at 32,000rpm

Wow! That is an awful lot of power at an awful lot of revs for an open exhaust 2.5cc motor and for the obvious quality and the completeness of the motor for F1C use, the ex-works price of US Dollars 200 is reasonable.

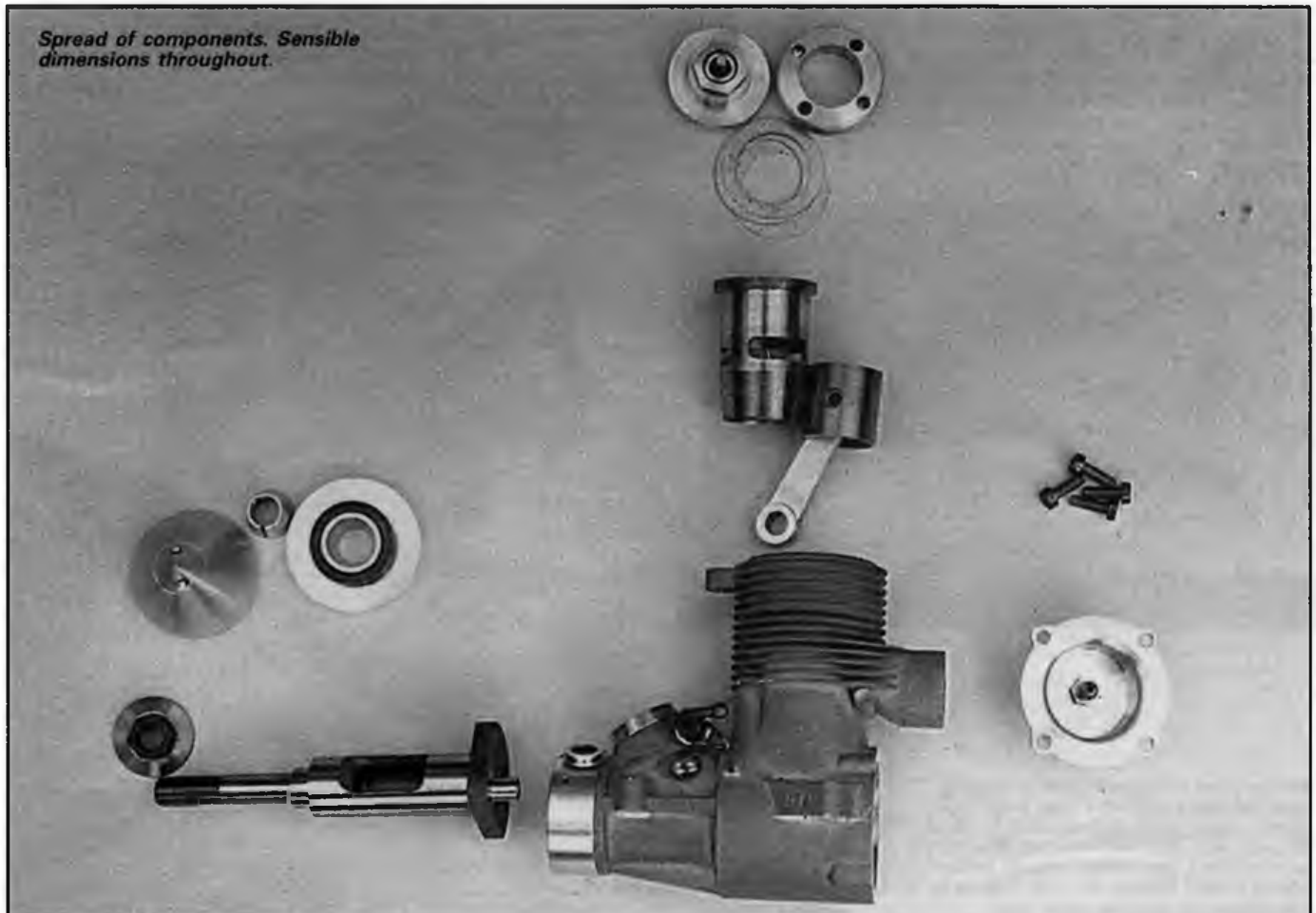
Even though the price list does not include them, I assume that metal pans are obtainable for these motors from Cyclon because of their unconventional mounting lug locations. In addition I assume that they can supply carbon fibre folding prop assemblies for F1C use. The relevant contact information is as follows:

Manufacturing Company - Cyclon  
 USSR, 630081,  
 Novosibirsk, Krasny Prospekt 72  
 Tel: Novosibirsk 205823/205891/266459  
 Additional information concerning payment, delivery and technical explanations are available from this address.



*Quality of casting is remarkably high. Over one horsepower is claimed for this motor.*

<b>F2A Motor Cyclon 15 S:</b>	Price	\$210
	Capacity	2.48cc
	Peak power	1.8bhp @ 38,000rpm
	Weight	180gm
<b>Tuned pipe Cyclon 15 S:</b>	Price	\$30
	Revs	38,000
	Weight	32gm
<b>Carbon prop Cyclon 15 S:</b>	Price	\$15
	Revs	38,000
	Weight	7gm
<b>F1B prop assembly VISH:</b>	Price	\$80
	Weight	45gm
<b>F1B prop assembly VMS:</b>	Price	\$25
	Weight	30gm



# SCALE MATTERS

## Interscale '91 update – and a further look at new Czech projects

### What is Interscale '91?

If you read your *Aeromodeller* thoroughly each month you may already know the answer but the following might clarify any questions in your mind, writes Dave Hanks.

Regular readers of this magazine cannot fail to have been impressed by the photos that appear from time to time of beautiful rubber powered scale models – many from foreign lands where true aeromodelling skills obviously abound!

Indoor scale is probably the last widely flown class for which no truly international competition has been organised.

Doug Sheppard, the organiser of so many successful scale championships over recent years, has been considering this and decided to do something positive.

With the help of a few fellow enthusiasts, and with the approval of the BMFA Scale Tech Committee and Council, he has been busy for some time formulating plans for this first event which, if successful, he would like regarded as a precursor to a World Championship.

Four classes of models will be flown at this event. Rubber scale and CO./Electric scale will be flown to basically the same rules as currently used in our own National Championships.

Peanut scale and Pistachio scale are the other two classes. I'm sure you're all familiar with Peanut scale; and Pistachio, which is very popular in several other countries (especially America) is basically scaled-down Peanut. That is, a duration orientated scale event. Unfortunately every country seems to have chosen different rules!

For this reason new rules have been drawn up for Pistachio which, hopefully, embody the best bits of everybody else's. Because of their size, 8in span or less, Pistachio models are very easily posted and therefore it has been decided that proxy entries should be allowed for this class.

The definitive rules for all four classes are now available. Hopefully, this will give prospective participants time to build and trim their entries in plenty of time for the event which is scheduled for the 21st and 22nd of September 1991. These rules have already been distributed to the model associations of 39 countries!

The competition will be held at Nottingham University – this should be an ideal venue. For those not already familiar with this venue I can tell you it has two very nice sports halls. The largest (approximately 38 x 35metres) will be used for the rubber and CO./Electric classes and the smaller rectangular hall will provide two 'circles' of approx. 17 metres diameter for the flying of the Peanut and Pistachio classes.

Single accommodation will be available within the university complex, as well as food. For those requiring family accommodation or wishing to find suitable caravan/camp sites we are hoping to be able to provide information about local facilities at a later date.

So, if you fancy your chances as an international champion or if you would just like to pit your model and expertise against fellow enthusiasts from around the world, check the rules and start building!

Even if you don't want to compete, put the

date in your calendar so you don't miss this chance to see some superb models and maybe pick up some tips and a little inspiration for the future.

I can supply sets of rules if you drop me a SAE stating which class(es) you are considering entering. Send to: Dave Hanks, 90 Forest Road, Kingswood, Bristol, BS15 2EH.

Entry and accommodation fees have not yet been finalised but details will be circulated to all those requesting rules once they have been decided.

### More news from Czechoslovakia

Lubomir Koutny has sent an update on the Scale contest scene in Czechoslovakia – a country with notable interest in development of this branch of aeromodelling. (But surely not the only one; how about more news from overseas?). Over to Lubomir:

The 1990 contest began in the North Moravian town of Zabreh. The scale jury, composed of local fliers, found many splendid, new models demanding their quota of marks, all to the popular scale of 1:20. Paul Stranik aired his new Auster successfully; its second flight score 120 seconds in the contest; its third, a remarkable four-minutes-plus for top place. Paul's friend Peter Mikulasek brought along a totally new Ki-61 Tony. Maiden flight was excellent, followed by a thermal-assisted ascent to 150 metres and disaster – the model hung on the prop, made a swift descent and a heavy landing after 70 seconds.

Lubomir Koutny's new Bolchovitnov's best flight exceeded three minutes but, thanks to a second flight of 81 seconds was pulled back to third place. Victor Kunert's large Aichi Grace lost a wheel after just two seconds but made amends with an out-of-sight flight after the contest was over.

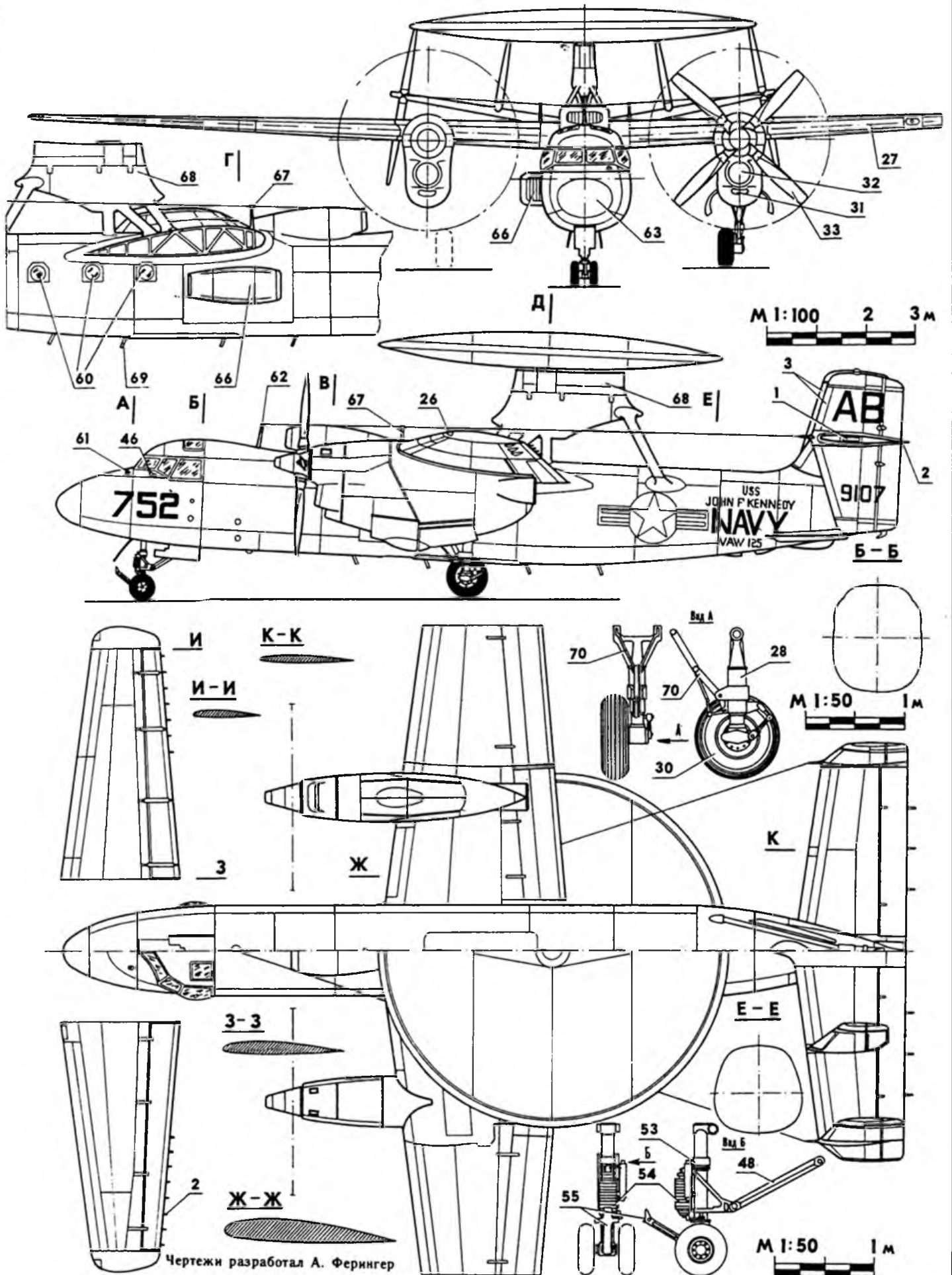
### Brno brewings

Lubomir also reports on a breezy meeting at Brno on 3rd June. Excellent static scores all



*Above: Fiat G-55 built from a Koutny plan by Milos Jahudka flies very well. Above right: Neat Auster AOP by Paul Stranik won the first contest in which it was entered CO, power. Right: David Merta's new Dornier Do 435 has to be a candidate for longest nose ever!*



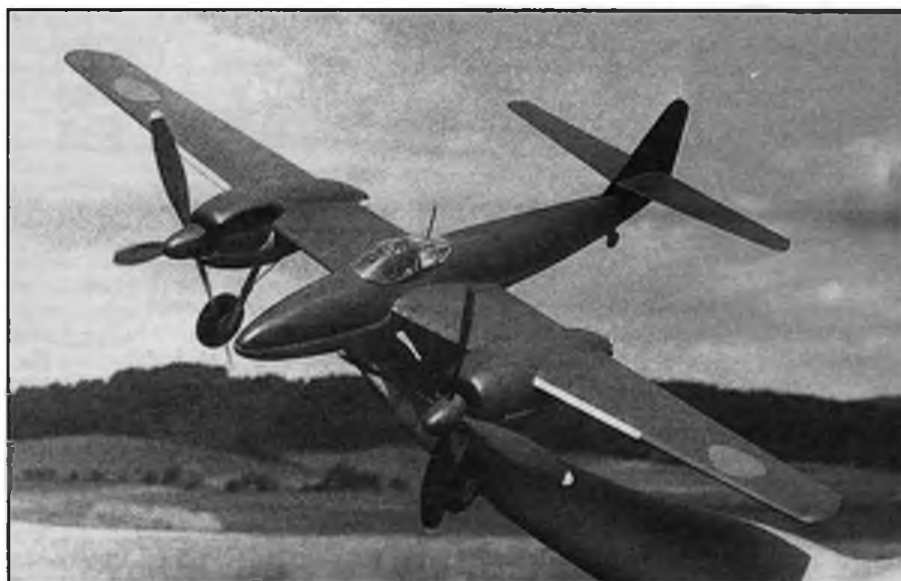


«М-К» 7'89

Neat drawings of the Grumman Hawkeye appeared in a Russian publication. Printed here at 1:50 scale. Would make an interesting rubber twin - that radar dish could be used as an additional lifting surface.



Above: On go the turns as Tom Heini prepares his neat SFAN, a French craft of ideal F/F layout. Below: Vladimir Kunert's beautiful Ki-83 which weighs 90 grams. Span is 780mm. Bottom: Interscale humour by Hanks junior.



too often failed to be supported by good flights. Zdenek Poduska entered three new models built from foam; rather heavy, they failed to score. Indeed, his superb Ki-61 was destroyed; he damaged his P-51 and decided not to chance his Arsenal (if you'll pardon the expression...). Best performance came from Koutny's Bolchovitinov with 124 and 89 seconds. Second place went to Mikulasek's Ki-61, and third was young Vladimir Kunert's neat Ta 152H, which flew away on its last flight. David Merta's beautiful Dornier Do 435 was just one of several mouthwatering, but untried subjects.

The day before this contest a gathering of Scale enthusiasts confirmed the following developments. A new association the European Association for Small Models will be open to all. Czechoslovakia will offer its own rules for Peanut, 1/20 scale, CO<sub>2</sub> and pistachio via FAI delegate Otakar Saffek as a basis for International rules. (Interesting, in view of the impending Interscale '91. GC). Lastly, a new twice-yearly publication entitled Special Scale News will appear. We await more information...

### Dummy rigging

David Smith sends news of a useful scale aid. 'Many R/C scale models, and some free-flight models, of pre-WWII aircraft require their main lift and landing wires to be functional but there are usually many wires which do not need to be load-carrying. My 1/8th scale Curtiss JN-4D 'Jenny' is a good example. Lift and landing wires are made from nylon covered stainless steel fishing trace of appropriate strength but until recently she has relied on many yards of hat elastic for all the other wires which require to be represented. But hat elastic does not really look the part - it tends to look 'furry', is only available in black or white, neither of which look like steel, and my attempts at dyeing it grey have not worked! My early attempts with cotton on smaller rubber powered models were not very successful either - it always sagged.

'Now I have found a much better answer - the rubber strip supplied by Tim Perry of PP Models. This is normally sold in packets at model shops specialising in 1/72nd and similar static scale models where it comes in flat ribbons about a foot long from which individual strips can be torn. The contents of these packets may be of use for smaller models, but are too short and much is of too small diameter for the larger model. But Tim Perry is happy to provide the larger sizes in ribbons about an inch wide and one metre long - I now have some of about 1/32nd, 3/64th and nearly 1/16 inch diameter which looks very much like steel and seems to be stronger than hat elastic (very easy to fix with a drop of cyano too). My 'Jenny' is looking much better.

'If, like me, you like biplanes with lots of struts and wires, you can get this rubber from Tim Perry at PP Models (Hambrook), 8 York Close, Stoke Gifford, Bristol BS12 6NU. Phone Bristol (0272) 793419. The cost is about £2.50 for a metre ribbon about an inch wide but check your own particular requirements with Tim.

Interestingly, David tells us that it was he and his sister who provided D.A. Russell's Lysander's wooden, 'artist's model' pilot with his flying gear back in 1940.

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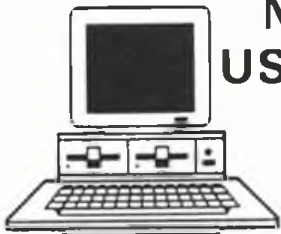


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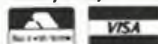
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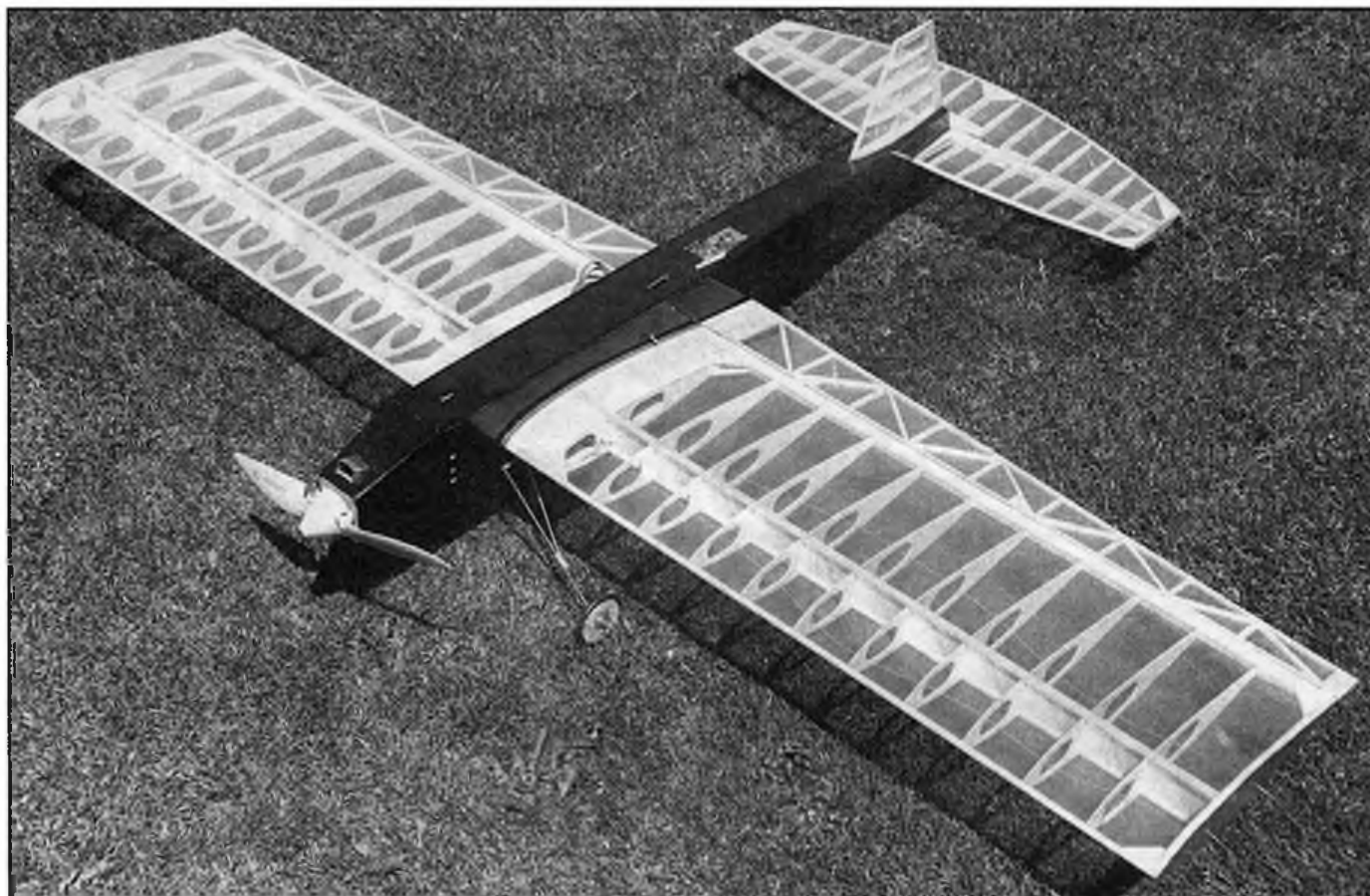
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# FROM THE HANDLE



## Electric control line

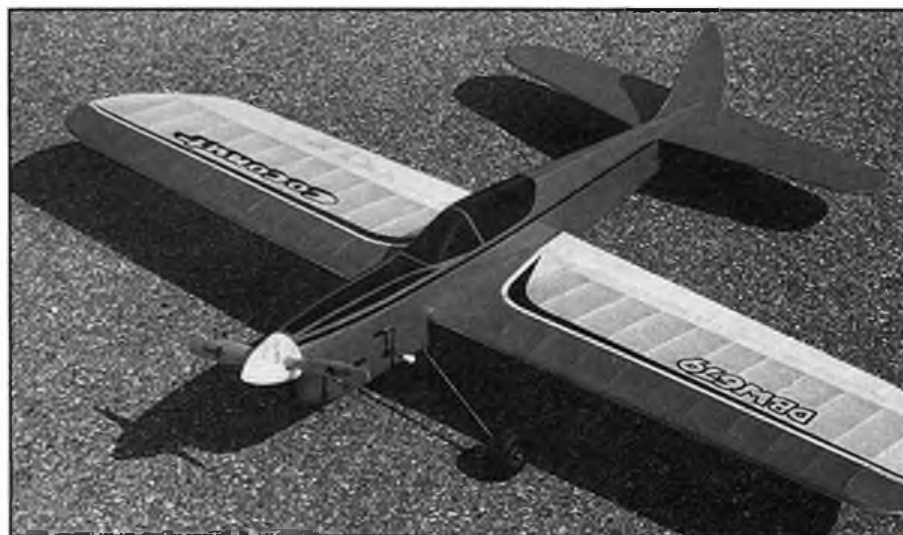
### - Claus Maikis

**I**N history modelling has experienced many currents. At present the current is electric. The idea of having no starting problems, clean aeroplanes, and clean fingers is fascinating. Most of all, the lack of noise is a prime consideration in these noise sensitive days. Alas, electric flying has not widely caught on in control line circles. The reason for this is probably that the majority of control line enthusiasts are competition oriented. These people tend not to play around with things which don't fit into any of the competition classes, so we don't have the large 'hobby' scene as in R/C. For those lonely souls who tried to fly electric it was mostly a case of merely going round and round, relying on a paved runway to get the model into the air – and with several 'ground' laps required. In the USA some kind of stunt event was organised but no information has been received as to what 'stunts' were actually performed. Talking to experts and manufacturers didn't help, since our (aerobatic event is much too far from the popular electric scene. General opinion was that what we do cannot be done the 'electric' way. Only a simple trainer aeroplane with lifting aerofoil was considered possible. So, what was left but to take a deep breath and jump into the deep water...

### In we go!

That's exactly what Urs Stalder of Switzerland did. Always a man with a creative

*Above: Urs Stalder's electric model. Note ultra-light construction. Below: Claus's interpretation of Nostalgia stunt. Coconut is fitted with an Oliver Tiger, spans 41in and weighs 23 ounces.*



mind (his interests include free flight, control line, and R/C) he chose to try electric control line aerobatics. To his own surprise he succeeded. Of course he didn't use the 'cut and try' method. His approach includes some very clever thought out solutions.

For urge he chose a very powerful motor, a Graupner Ultra 1000. With the desire to use as many commercially available items as possible a Graupner 10 x 6 folding prop – with spinner included – was fitted. A battery pack of ten cells with Sanyo cut off provides the 'juice'. To

carry this weight (motor 10oz, battery 17oz) with a conventional aerobatic model seems impossible. Urs used a purely functional approach – no fancy finish, of course – in an aeroplane which clearly indicates the hand of an experienced free flight flyer. The airframe is the size of a typical .40 size stunter and is built ultra light. Material thickness and size have been reduced to the bare minimum. Because Urs wanted the undercarriage to be removable, the battery is placed above the wing. Wheels are turned from thin plywood, with soft



**Above: Walter Weinseisen (Austria) with beautiful, all-silver semi-scale YAK stunter, ST 60 powered. Model features two-part, removable wing. Below: Urs Stalder's craft again. Fin incorporates lifting section.**

balsa 'tyres' glued on. The fragile structure is covered with Mylar foil, which obviously gives enough strength. With the addition of a 30 amps micro switch and a Seelig free flight timer the final weight is an astonishing 1410 grams - 49 ounces!

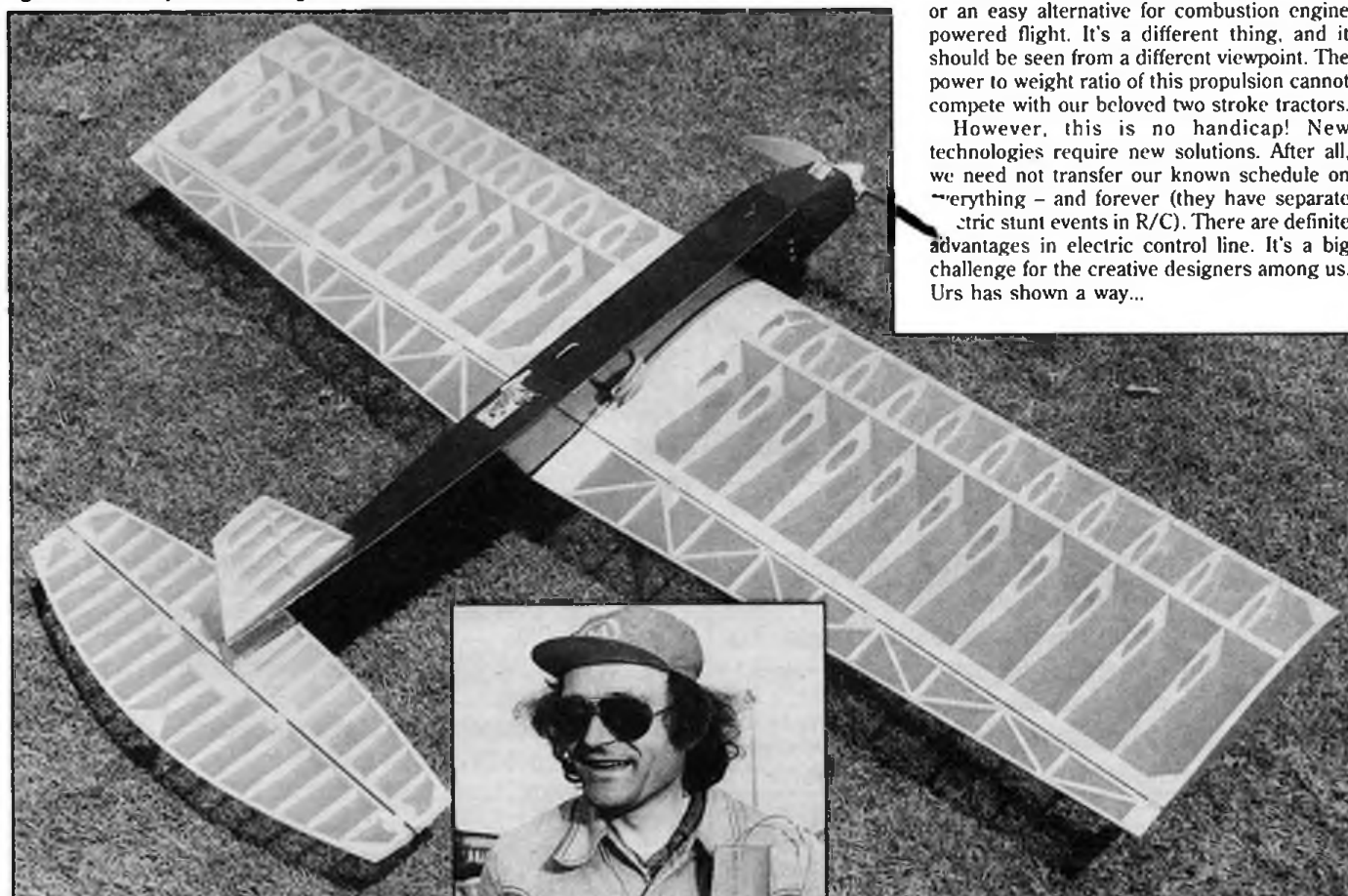
### Amazing!

Urs's demonstration flights at a recent contest were amazing. With the battery fully charged he could fly manoeuvres for about four minutes. Not being a stunt flyer Urs did some loops even a few 'soft' squares. On 15 metres (50 feet) line length, line tensions apparently was enough for these manoeuvres. After four minutes running time power decreased rapidly, and by 4.1/2 minutes the aeroplane landed smoothly with the prop just turning slowly. For the last flights the timer was set for four minutes, so manoeuvres could be flown till the end of the flight.

Although Urs's demonstration was quite convincing, it seems quite obvious that - at least for the moment - our way of flying cannot be duplicated with electric power. However, I feel there's no need to so do. Besides the added bonus that you won't have to worry about oily fingers any longer, the possibility to eliminate all noise problems is a fascinating outlook. Not all of us are died-in-the-wool aerobatic flyers; some may be just happy with the execution of some round manoeuvres. Also, there are those who do not like to drive hours to the next flying field. Especially for beginners, it might be interesting to be able to fly at the school yard around next corner.

Electric power cannot be seen as a substitute or an easy alternative for combustion engine powered flight. It's a different thing, and it should be seen from a different viewpoint. The power to weight ratio of this propulsion cannot compete with our beloved two stroke tractors.

However, this is no handicap! New technologies require new solutions. After all, we need not transfer our known schedule on everything - and forever (they have separate electric stunt events in R/C). There are definite advantages in electric control line. It's a big challenge for the creative designers among us. Urs has shown a way...



**Right: Albrecht Reichle's vest-pocket**

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## Appendix - Links to the plans

The issue comes with a free plan (Palmetto Bug) printed front/back on a pull out banner of four sheets. The banner is not included in the document.

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