



AERO

MODELLER



**SCALE AT
SHUTTLEWORTH**

Sunny Old Warden report

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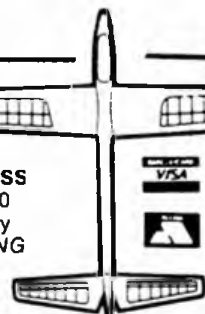
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p.501



p.506

Editor	Geoff Clarke
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Cover: Moth magnificent Neat trio of APS Tiger Moths - proving the type's continuing aeromodelling appeal - netted by our camera at Scale Weekend. Stable subject always impresses! From left to right are Alan Jupp, Vic Driscoll and Ted Horne; our Shuttleworth report appears on p506.

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ASP

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HANGAR DOORS

Shuttleworth safety

The only form of enjoyable model flying is safe model flying. Nothing else will do. And our events at Old Warden – Large Model Day, Scale Weekend, Golden Era Day, Vintage Weekend and so on – are the most enthusiastically attended rallies on the calendar. (We say so, anyway). Much reliance has always been placed on the commonsense and fair-mindedness of modellers there; and from an organisational point of view we have done our best to maintain a safe airfield without detracting from the informal, rally atmosphere which makes our meetings so special. A major change last year, which proved popular with all, was to create greater separation between the R/C and F/F disciplines, allowing greater airspace for both; this was possible thanks to Old Warden's own expansion. But even so, this is still a relatively small airfield, and with cheerful 1989 weather encouraging more to spectate and fly, we should now publish a few guidelines and indicate some minor changes of direction.

Below: Similarity of launch shot caused us to mis-caption John Bailey last month; to make amends, here he is with true identity and in Nats attire. **Right:** Water-powered 'jet' foam craft was seen on trial at Scale Weekend. Performance variable – but an interesting 'toy-shop' purchase. Anyone care to experiment further?



Phil Stubbs made an anonymous appearance in last month's Nationals report. Here he is at Old Warden with another of his distinctive sport models. Let's see more individual work like this!



First comes flight times. We have the use of Old Warden for model flying between 10am and 6pm. However tempting it may be to try in the early morning calm, no flying is permitted before this period in case of full-size aircraft movements. After six o'clock the responsibility passes to Shuttleworth itself, via on-duty members of the Collection's own Model Group; and in some case some informal, quiet F/F may be allowed. To avoid future confusion we will make such conditions absolutely clear at F/F Control at official, 6pm close of play. But we stress that ASP's own involvement applies only within the stated times.

As an experiment, F/F and C/L registration was tried at Golden Era Day. Access to the field is only via the control-tower gate, so here was our location to greet modellers and pass on news of aircraft movements, control site

and so on. Flight safety reminders may also be stressed here. In view of the scheme's success, we are continuing with it.

And it is safety that is the prime consideration for Shuttleworth free-flight. Please bear the following in mind... It is Power craft that pose the greatest risk. They are, generally, faster and heavier than other types, and possess a larger radius of action. They are no less safe, but care is demanded of spectator and flier. It would be pleasant to see a congregation of all Power fliers, rather than a scattering throughout the field – spectators should appreciate such a focus of effort, too. Spectators? How unwise to sunbathe or picnic in the middle of the field. And please keep a careful watch for flight activity as you enjoy the action.

Dave Hipperson reports on the again-successful Oxford Rally at Port Meadow in June. Notable highlight was attendance by a whole escadrille of French schoolchildren, marshalled by Jean Luc Drapeau. Much involved was Francophile, linguist and diplomat free-flyer Newham Beaumont, who account of activities is so entertaining we just had to share it with you. Over to Newham:

"Vite Benoit! Encore de la meche et un elastique!" What was I doing on a scorching hot day fitting D/T fuses to three dozen Open Gliders?

"Well, it all started at Azay le Brule last summer, when Jean-Luc Drapeau floated the possibility of bringing his school-kid aeromodellers to England. "Port Meadow!" I said. "The weather's



Two more caveats for fliers. Always look around to make sure all is safe before launching your model. Also, untrimmed craft have no place at Old Warden. Do test them first, and fly with confidence at our events!

There has been considerable leniency regarding types of model flown at each meeting. Don't get us wrong, for we understand how attractive it is to use every opportunity to fly there. But do bear in mind the nature of the event at which you are flying. Large Model Day is purely R/C; Scale and Vintage weekends for all disciplines, speak for themselves. Lastly, remember to take a merry tour around the Collection itself – after all, that's what you have paid for upon admission. The model flying is free!

Vive la France!

In Free Flight Scene this month

always lovely, the ambiance is great, and as it's Oxford you can call it a history lesson."

"Andy Crisp's eyes bulged a bit when I asked him if there were any spare beds at his girls' school. But in the end it all sorted itself out (they camped), and Saturday afternoon saw a Lacoste crocodile of brightly dressed French boys and girls (7-14 years) some carrying model-boxes the size of baby-grands marching purposefully through the cow-pats of Port Meadow."

"When they opened the boxes, more English eyes bulged. Serried ranks of wings, tailplanes, and fibreglass fuselages (in construction every Thursday since November) rapidly assembled into 36 large Jacques Delcroix-designed Jedelskey gliders. The kids lined up in numerical order – "Trois – Sebastian Savarit!" – and Jean Luc towed up their models for the very first test



flight, shouting trimming notes to a seated secretary - "Virage + 2, stabilo - 1!" - for each one. By the second flight he had them all floating impressively, just in time for the competition start at seven o'clock."

'Guillaume Gadreau won that one with 3:48 in two flights - his first flight sailed over the Isis and Terry Dilks and I were nearly stung to death by the nettles looking for it - (it was found in the morning by an Oxonian walking the dog). The next day it was Stephane Saboureau's turn with 3:38, after a late start by the team because Garaldine Apperce and Frederic Cresson went down with the measles overnight - (the French holiday insurers sent over an ambulance and it broke down en route). Jean Luc nearly broke down too, galloping alongside the tower on each and every flight, and Sigrid (Mrs B) collapsed in the grass from the strain of timekeeping. But really it was all down to Benoit Chataignier (seven years) helping me with the fuses - his selfless efforts brought him a modest place, but he was still exultant - "Je suis l'avant dernier!". He could have

been an Englishman.

'The next two days Andy showed them Oxford and I took them to the Tower of London. Everyone was impressed and inspired by the children's enthusiasm and good manners, and by the dedication and energy of their adult supporters - Jean Luc, Mr Pommier, their teacher from l'Ecole de Cerzeau, Mr and Mme Millet, experts on goats milk cheese, et al. I think they all had a good time, and when we parted Amerline gave me a soft, shy kiss, and Benoit a big wet one. But what the hell! Between aeromodellers, honi soit qui mal y pense...'

Read all about it

No advertisement here, but we couldn't resist a preliminary look at the long-awaited book **FROG Model Aircraft** by Richard Lines and Leif Hellstrom. With over 900 illustrations - nearly 200 in full colour, with superb reproduction - this 272-page hardback just has to be worth £25 of any enthusiast's money. Here is the full story of all FROG aircraft, flying and static, from 1932 to 1976,



Far left: Stacks of gliders from the youthful French contingent at the Oxford Rally. Left: Long-awaited, splendid volume by Richard Lines and Leif Hellstrom is highly recommended - see "Read all about it"



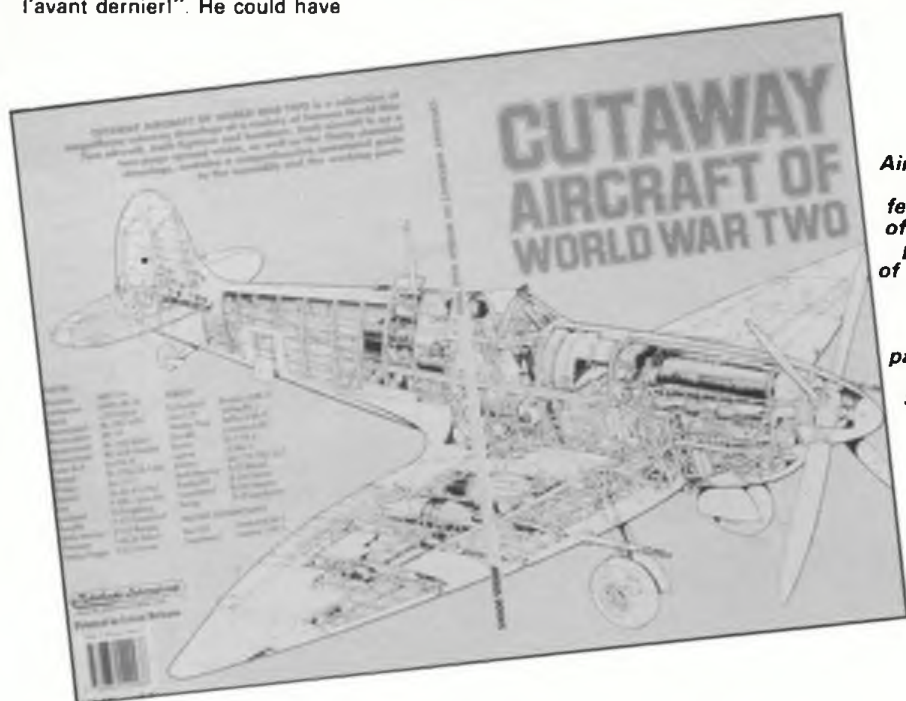
No Supernova here! John Cuthbert's new kit will actually be reviewed next issue; here, in company with John Carter and Nigel Dilks, he moves out to the Nationals F1C flightline.

a tale of commercial success to eventual eclipse. Mouthwatering images of early (and now eminently collectable) craft abound, linked by clear text. Although the book is on strongest ground when dealing with the multitude of plastic kits, from Penguin to

post-mould-sale days, the flying models and their motors, indicating of course the famous MkV and Interceptor family and derivatives as well as the classic rubber and power designs of the 40s and 50s are properly stressed, if in slightly less detail. Full annexes give listings of incredible detail, so here is not only a fine read but an invaluable reference work. Publishers are New Cavendish Books. Full review next month.

Sorry, John...

Circumstances forced us to omit our Kit Review by Jay Cee Aerokits' Supernova glider last month. Apologies to John Cuthbert, mainspring of the operation, who has not only produced a fine model, ideal for newcomers to free flight as well as for sport flying, but actively and enthusiastically promotes it on the flying field, as witness his straight-five-maxes in Open Glider at the F/F Nationals with this foam-surfaced design. Increasing numbers of Supernovas are to be seen, testimony enough to the success of the project. Fresh review next time.

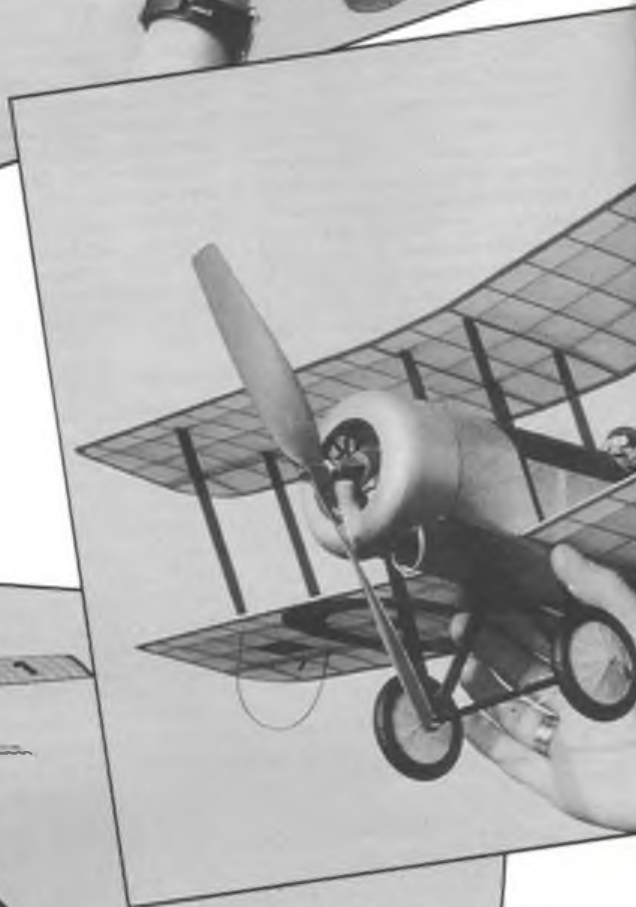


Hot off the Argus Books stocks - Cutaway Aircraft of World War Two features a series of splendid two-page drawings of thirty fighters, bombers and maritime subjects. 64 page volume on sale in September for £4.95.

CZECH POINT

OUR first contest for Models CO₂ - powered Scale models was in 1979 at the first meeting of the Memorial J. Smoly event for CO₂ duration. The models were adapted from rubber-powered designs of 1:20 scale, but these models were small and heavy, and flew for only about 50-60 seconds. At the other extreme were some larger models of about 800mm span (30in). These flew well - but only in good weather. Nowadays the majority of our models range from 600 to 750mm span and weigh from 85g to 100g. A few of them have even flown away...

More news of Czechoslovakian CO₂
scale models from Antonin Alfery



Above: Neat construction evident in the Scout. Far left: Beta-Major is polystyrene, sprayed with Humbrol enamel. Left: Miroslav launches attractive Avia BH-7b at spacious flying

Aeromodel

Left: Our correspondent's own Bristol M1C which was lost out-of-sight after many reliable flights. 'One of my best models...' mourns Antonin...



Above: Also for Modela power, Antonin's Hanriot HD-1 is a new addition to his fleet. Right: unusual pioneer choice to Western eyes - this Cihak-Rapid boasts home-made spoked wheels.



Above: Pavel Stranik's fine Albatros DII has a foam fuselage; surfaces are tissue-and-balsa. Left: All-polystyrene again - Antonin's Il-10 is crisply finished, again with Humbrol enamels. Armament carries a static bonus.



SPACE MODELLING in Western Europe is **S**increasing in popularity. Several international events are held each year, not to mention the contests held in the Eastern Bloc. The St. Leonhard Modellraketen Festival is probably the best, offering a selection of FAI disciplines, NAR classes, fun activities plus films and seminars. Contestants travel from all over Europe - Great Britain, Netherlands, Czechoslovakia, Yugoslavia, Switzerland and Austria, plus, of course, the host country of Germany to test their skills and enjoy the hospitality.

Great scenery

Photogenically the site is one of the best, boasting a picturesque village and open country. Even to a rocketeer the conifers do not mar the scenery. The local club - the Wonneberger Aeronautics and Space Administration - prepared the efficient rangehead and shared the contest management with the Münchener Modellraketenverein.

Lift off!

Nowhere is model rocketry growing faster than England now the laws have changed to allow the importation of space modelling supplies. Following good performances last year, the British Space Modelling Association was represented by Stuart Lodge and Charlie Braham whose trip was generously sponsored by CPA/Freewheeler - the country's leading rocket importer. Both came well prepared and sought to do their best.

The team was joined by Peter Mackenzie of Porteous Developments who came to observe but who was quickly co-opted to operate the results computer and worked harder than any of us. He too had a good time, nonetheless!

Cool climate

Only the weather forecast was mediocre, with overcast skies and some rain promised. The wind was never strong but the direction was unfortunate most of the time, drifting models into clumps of trees. Notwithstanding this, no-one stayed away and the field lacked nothing in quantity or quality.

Day one: Friday

A full international field, including a covey of Czechs and Yugoslavs promised a great start to the Festival and the first chance for many to fly the 'new' 350x30mm models, currently mandatory for FAI classes S3A and S6A (Parachute and Streamer Duration respectively.) All Yugoslav entries were powered by 19 Decembar black powder motors with the Czechs boosting on equivalent Delta propellants - it seemed that many of these motors were available to the rest of the entries.

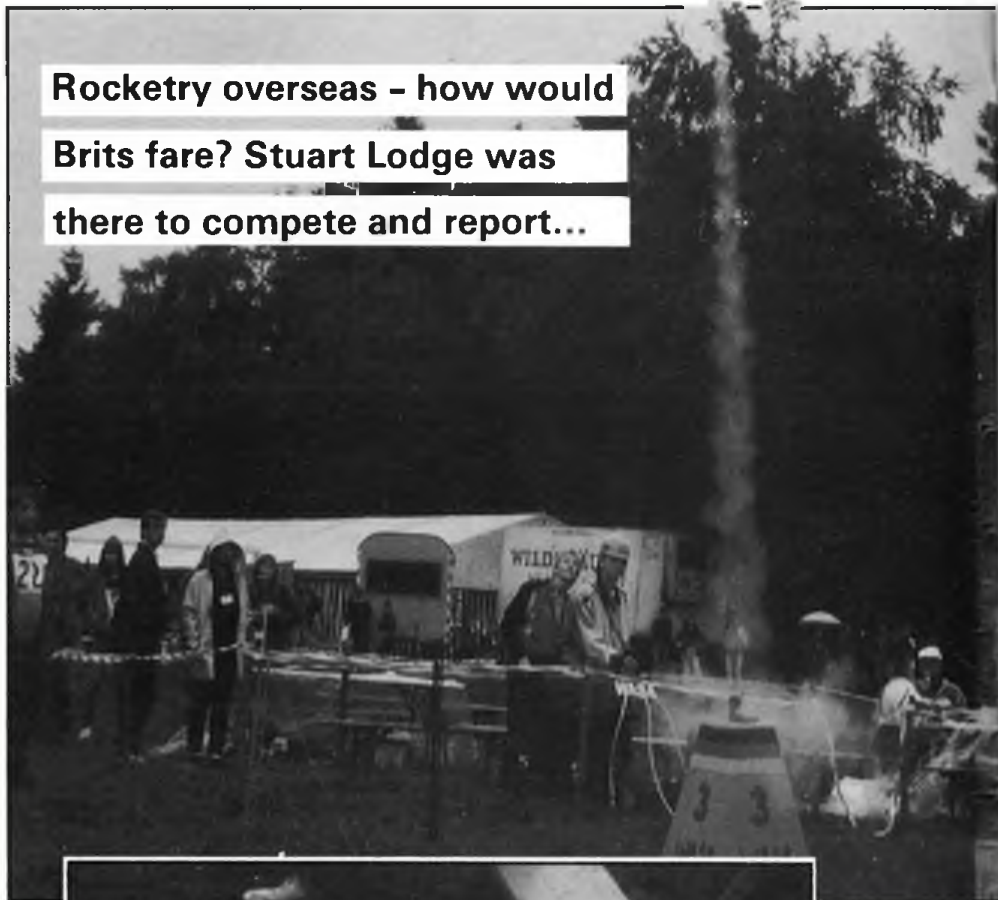


BOOGIE IN

Rocketry overseas - how would

Brits fare? Stuart Lodge was

there to compete and report...



Far left: 'Light the blue touch-paper' - Garfield aboard Stuart Lodge's Odd-Roc. Flight was short, but spectacular, as related in text. Left: A few of the Construction Competition rockets. Total entry was impressive.

BAVARIA



Heading: Our correspondent's Super-Roc streaks skywards on its way to third place in the class thanks to two fine flights. Results are an aggregate of two flights plus model length. Winning craft was 7.5 metres long but flew for only nine seconds at best. A case for rules revision? Left: Another quirky Odd-Roc entry - Karel Pecker's winning Flying Ladder.

St Leonard Model Rocketry Festival 16-18th June

S3A

1 J Ranik	Yugo	180	240	300	Total
2 V Peckova	Czech	180	240	300	720
3 K Pavles	Yugo	160	240	300	720
4 Z Ivancok	Yugo	180	240	300	720
5 S Lodge	GB	180	107	300	700
6 E Bulten	Hol	127	240	130	587
7 E Muntwyler	Switz	180	240	39	550
8 K-J Van Til	Hol	180	58	116	406
9 C Braham	GB	110	41	135	354
10 D Culinovic	Yugo	118	73	61	286
11: M Trjic, BRD: 114		0	81	123	252
12: A Hunziker, Switz: 100					204
13: A Avsenek, Yugo: 53					
14: A Ohmann, BRD: 51					
15: J Euringer, BRD: 46					

Super Roc

		Flt 1	Flt 2	Length	Total
1 H Stoll	Switz	6	9	750	765
2 E Muntwyler	Switz	13	28	521	562
3 S Lodge	GB	88	188	149	425
4 K Pecka	Czech	53	60	275	388
5 K-J Van Til	Hol	94	00	207	301
6 J Euringer	BRD	04	00	241	245
7 A Hunziker	Switz	21	52	151	224
8 P Hoelzel	BRD	63	00	103	166
9 J Hoffmann	BRD	20	10	114	144
10 C Braham	GB	0	0	0	0

S6A

1 M Sinigoj	Yugo	120	154	124	Total
2 A Sijanec	Yugo	120	137	137	398
3 K Grimm	Switz	120	118	117	394
4 V Peckova	Czech	120	141	80	355
5 H Stoll	Switz	120	111	106	341
6 K Pecka	Czech	0	120	101	337
7 E Bulten	Hol	120	42	40	221
8 D Culinovic	Hol	41	107	52	202
9 K-J Van Til	Yugo	120	48	0	200
10 A Hunziker	Switz	67	51	27	168
11 Z Ivancok, Yugo: 137					145
12 P Miladinovic, Czech: 136					
13 K Pavles, Yugo: 133					
14 S Lodge, GB: 111					
15 J Euringer, BRD: 101					
16 F Lozza, Switz: 81					
17 E Muntwyler, Switz: 68					
18 A Ohmann, BRD: 53					
19 A Avsenek, Yugo: 51					
20 C Braham, GB: 49					
21 M Trjic, BRD: 0					

Helicopter

1 S Lodge	GB	54	110	164
2 K Gum	BRD	54	40	94
3 C Braham	GB	16	31	47
4 E Bulten	Hol	7	12	19
5 J Euringer	BRD	0	11	11

Sportleiter Karl Gum scrutinises the S6A Streamer Duration model of Tone Sijanec which was good enough for second place.

leg were sure to block the timekeeper's view leading to sub-max, out-of-sight flights. Stuart Lodge's hopes were dashed by this problem and he paid the price for flying early in the round; Yugoslavians Ranik and Pavles and Mrs Peckova waited for the wind to die and were rewarded by the magic 300.

Fly off time

Jure Ranik had been boosting a shade higher than the pack and was able to get a mega-canopy to deploy cleanly to take the Gold. The parachute of Vendula Peckova took a little time to shake out but was good enough for Silver. Kresimir Pavles took the Bronze for Yugoslavia.

Although a disappointment, Stu Lodge's fifth slot was the highest performance by a Briton at an International duration event, the 19 Decembar A4-3 motor pushing a heavy model quite high. Charlie Braham was not too unhappy with 9th. It was interesting to behold that virtually all the good entries employed a balsa/card piston in the body tube to ensure reliable ejection gas pressure as it expands into the wide 30mm body section. A super start to the '89 Modellraketen Festival.

Day Two: Saturday

Stow the FAI Code Sportif and open the NAR 'Pinkie' for Day 2. Super-Roc and Helicopter Duration were tabled for the second day - the former a parachute duration class for very long rockets, the latter a demanding technical class testing many modelling and flying skills.

Super-Roc

Sportleiter Karl Gum was busy with his tape for half an hour before the start measuring the lengths of ten models. Some were short at approximately 1.5 metres - Arthur Hunzinger (Swiss), Jane

S6A - Streamer

The ante-post favourites in this opening class seemed to be Tone Sijanec, Kresimir Pavles, Vendula Peckova - a very attractive lady competitor - and Miran Sinagoj; the West had good entries in Kurt Grimm and Hans Stoll of Switzerland. Round 1 saw Grimm, Sinagoj, Sijanec and Peckova make the 120sec. max together with several others. For Britain both Stuart Lodge and Charlie Braham 'blew it' there and then - the former getting a bad streamer deployment and the latter with a very low boost on an Estes Mini-motor.

120 was max!

Worsening weather and a capricious wind meant that the maxes ended here - yes, no further maximums were posted in Rounds Two and Three but the main bunch kept the pressure up with decent scores. Pavel Miladinovic (CSSR) blooped badly after maxing in Round One and Vendula Peckova lost her chance of a medal with a poor Round Three flight. Things got slightly better for Equipe GB but realistically a medal was beyond

reach in this class after a bad start. Reasonable last flights annexed the medal positions for Miran Sinagoj, Anton Sijanec and Kurt Grimm who were awarded Gold, Silver and Bronze respectively.

S3A - Parachute

The wind eased very slightly for the start of S3A and over half the entry found a max in Round One. Charlie Braham did well with an opening flight of 118 seconds and Stu Lodge found lift, but lost the model, for a welcome max. Other strong contenders after Round One were Vendula Peckova (CSSR) and Yugoslavians Kresimir Pavles and Zdravko Ivancok, both of whom were using 19 Decembar propellants.

Great Western performances

Ernst Bulten (Holland) and Edgar Muntwyler (Switzerland) moved up with competent flying in Round Two. Five people made the 240 second max in this round including Stu Lodge and so the contest was well balanced by the time Round Three came round. Wind drift was a factor by this time - 300 seconds is a long time and the trees in the downwind

Hoffman (BRD), Patrick Hoelzel (BRD) and Stuart Lodge using this approach, all hoping to make up the score with high air time. The 'long' approach was epitomised by Hans Stoll (Swiss), entering a superb GRP device some 7.5 metres long; many people had never seen a model rocket as long as this! Its parachute was draped over the nose rather than packed within. Edgar Muntwyler (Swiss) had a fine model of some 5.2m. length.

The wind in the willows

The wind drift was directly into the trees at the start of the event and anyone adopting the 'performance approach' of a high boost and long duration was risking losing the model before Round Two. Klaas-Jan Van Til (Holland) and Josef Euringer (BRD) risked all in Round One and sat out Round Two whilst their models entertained the squirrels!

Charlie Braham had problems with a non-deploying recovery system and crashed spectacularly whilst Karel Peckar followed the good example of his wife Vendula with a competent 53 seconds. Stu Lodge of GB used a streamer to recover in the opening round from a high boost and was rewarded with 88 seconds and a model to fly in Round Two.

Going for broke

Those electing to fly the 'performance' route had no choice now - to have any chance of a medal high air times were essential. Stoll's enormous creation was mustered and in the opening round he was leading by the proverbial mile. Stu Lodge prepped with a parachute this time and a 'long-burn' 19 Decimbar C4-3 to record a sound 188 seconds which was good enough for Bronze behind Stoll and Muntwyler (Switzerland).

A very interesting class this year with the wind direction adding a tactical ingredient to the flying, but it's a pity the really long models have hardly to fly. Maybe a reduction to 5Ns power from 10 would change the approach?

Helicopter Duration

For one reason or another this event did not come up to expectations after a very good start last year; only five people started and this is a shame since the class is great fun using models which are much more demanding to design and build than the typical model rocket. Designs are available - Rotaroc and Rose-a-Roc to name but two, so why no more interest?

The contest was designated for 5Ns motors (B) and seemed to be between Charlie Braham and Stuart Lodge with Stu-Art designs (the author's version of Art Rose's marvel) and Karl Gum. The latter started well with a tidy 54 seconds and this looked more dangerous as Charlie's model struck auto-rotation problems for only sixteen seconds. Stuart confidently chose 2.1/2 Ns power to ensure missing the trees before putting the event beyond doubt with a full-power boost in Round Two which tickled into the low cloud for 110 seconds duration - a British record in 'B' helicopter. Charlie Braham improved very slightly in Round Two despite more trouble and strife but was glad of the Bronze in his first international. Karl Gum's rogallo-rotored model moved him into second place behind Lodge's lightweight Stu-Art. Gold and Bronze for Team GB can't be bad...

Day Three: Sunday

As last year, Sunday was Fun Day with the Construction Competition and Odd-Roc being flown. It's always loads of fun but hard work nonetheless.

Construction Competition

Scrum-down for the best bits in the sponsor's crate and off you go! Enthusiasts this year came along with some good ideas - Rocket Fighters, Space Vehicles and more besides were all ready for flight within two-and-a-half hours. The MiG '43' fighter of Stu Lodge, Jane Hoffman and Pavel Miladinovic's futuristic Space Vehicle and an attractive design by Klaas-Jan Van Til looked good bets. Reasonable flights gave Dutchman Van Til the Gold, Jane Hoffman the Silver and Stuart Lodge the Bronze. Who cares about the results though - it was lotsa fun!



Main picture: Dramatic lines of Stuart Lodge's flight-of-fancy 'MiG 43', his Construction Competition entry. Inset: Karel Peckar ready to go in Super-Roc.

Odd-Roc

Odd-Roc or Odd-People? Seemingly intelligent modellers can lose all sense of reason when presented with a free hand and a blank sheet of paper! This year we saw a Flying Ladder by Karel Peckar - surely Europe's leading flyer of unusual objects (last year it was Grandma's Stove), Garfield in Space by Stuart Lodge and a heavily censored device portraying the risks of unpleasant topical diseases by Karl Gum to name but three.

Surprising to recount, most flew and posed little risk, although Peckar's four-motored ladder tipped-off when only three lit and all hell broke loose when Garfield's rocket had its stick and fins removed by the falling ignition wires. Garfield parachuted to safety!

The prizes were as follows:

- | | |
|----------------|---------------|
| 1 Karel Peckar | Flying Ladder |
| 2 Karl Gum | Safer Sex |
| 3 Stu Lodge | Garfield |

A great time was had by all.

Reflections

A super weekend; there's little better to do than fly rockets all day and then relax with Bavarian beer. Our hosts Peter Wolff and Claudia Namberger were magnificent and provided sleeping quarters

and breakfast.

What of the flying? Most classes were well contested, particularly S6A and S3A which was dominated by Eastern Bloc experts. However, good motors available in the West now - 19 Decimbar and Delta - and the performances of the Western Europeans was quite encouraging. Super-Roc is a testing class to fly and for the past two years the event has been won by very long missiles with virtually no flight performance. I'm not sure whether this is really where the rules should be taking us, although Hans Stoll's model was marvellous. A pity Helicopter Duration was badly supported and a shame also the weather caused the contest to be truncated from three rounds to two; it was fun, nonetheless.

These are minor criticisms though when laid against a backdrop of tremendous organisation. Münchener Modellraketenverein and WASA were slick but sympathetic throughout. Karl Gum, Oliver Missbach, Pavel Miladinovic and the co-opted Peter Mackenzie deserve special mention.

Charles Braham and Stu Lodge must thank Freewheeler/CPA for sponsoring their trip, as must an anonymous BSMA donor who fed the coffers. In fact, several BSMA members offered help during the preceding months and are worthy of thanks.

We must go again!

BALSA CUTTINGS

Is Vintage here to stay?

On club nights we have sole use of the Drambuie Conservatoire at the McGillicuddy Commercial Hotel so that we can spread out plans, examine models and shoot lines without let or hindrance. Well, there's Mad Ray making everybody nervous because it looks as though at any minute he's going to flick a motor into life and get us all chucked out, when in comes one of our blokes who is right up to date and really-really contest-orientated. He sees this wallowing great Sunspot, and of course, he roars! Hum, all right, in the air Roy Yeabsley's old glider might for some chaps murmur the true language of aeromodelling-as-she-is-spoke, but at close quarters it could be said to amount to ten feet of yesterday's news. Anyway, he proceeds to assume it belongs to Dick, who is a mite vintage-inclined and happens to be standing beside it. So we get — 'Aha! The Old Flugelmeister himself! Still trying to recapture the lost youth, eh, Richard? Well, from what I've heard about your lost youth, my boy, you'd best leave it that way and get on with building something that flies. Oh, dearie, dearie me, what a load of medieval rubbish!' Then off he goes for a jar in the bar, leaving Dick blinking behind his bins while the actual builder of the model, a newcomer of about seventeen, stands there completely fazed. He had quite thought that Sunspots and their like were just what aeroplanes ought to be.

Now don't panic, Mr. Mainwaring, don't panic. If there's one thing this column wants to see more than strip-tease in Gilbert & Sullivan, it's progress. (Even if we have been told that to succeed in chuck gliding we should employ a fishing-rod top, micrometer and positive thinking.) It's interesting nonetheless to reflect how some youngsters taking up the hobby go straight for designs which flew when young Cyano could recognise a Short Stirling at a single glance, and eagerly scanned the skies for his first glimpse of a Long one, which the Observer Corps solemnly assured him was really something. These days in the breaks between comps, even yer supermen will leave off the plastic and foam in favour of the ancient stick and tish — just for relaxation, of course. Could it be that those middle-aged meanderers now retracing their steps have something worth returning to? In our headlong dash for said progress, did we gallop unseeing through the pleasantest pastures of all?

Nine out of ten owners say they prefer it

When a decorously legal model powered by a new Jetex fizzed smoothly overhead it evidently stirred memories of the Bad Old Days when not all model aircraft driven by simple reaction motors flew within the law. The general principle was that a shilling rocket on its own was all right, and a shilling rocket with wings on was all wrong. That was what the magistrate said, anyway.

Cyano de Bergerac nose what's what

(That, and 'Fined five shillings'.)

'Of course,' said one spectator of mature years who has done a bit in his time, 'when I was a lad we used to make our own units, and it's quite true that the more sophisticated you got, the less successful you were. In the end, if you just ground your ingredients finely enough, you couldn't beat a rolled paper tube and rammed gunpowder. Had some great flights, but my Master Plan never came off. In those days my mother used to buy at the corn-chandler's rock-hard sulphur to put in the dog's drinking bowl because it was supposed to be good for him. And amongst his mixed biscuits there were always some black ones, because charcoal was supposed to be good for him too. You can't imagine the effort I spent trying to get saltpetre into him as well.'

And now — culture!

It had to happen — that old army tale about the recruits fit to drop after staggering round and round the parade ground in full kit and blazing sun has been re-mustered, and turned up again in Air Force Blue. This time it's at Halton that a weary voice comes from the ranks — 'How sweet a thing is Death!' and in answer to the W.O.'s outraged scream of 'Oo said that?' replies, 'Shelley.'

Ha! Me proud beauty!

At first sight, June Vintage Corner just contained a misprint. But did it! Amongst all his talk of Miss Philadelphia and Miss San Diego, did Alex Imrie make a Freudian slip? The truth is that he is secretly writing a

pantomime, perhaps the first in what will become a successful series of Argus House Productions. Come on Alex, let's hear more of these ladies and your desperate villain, Douglas Dauntless!

Eggstraordinary radio interference

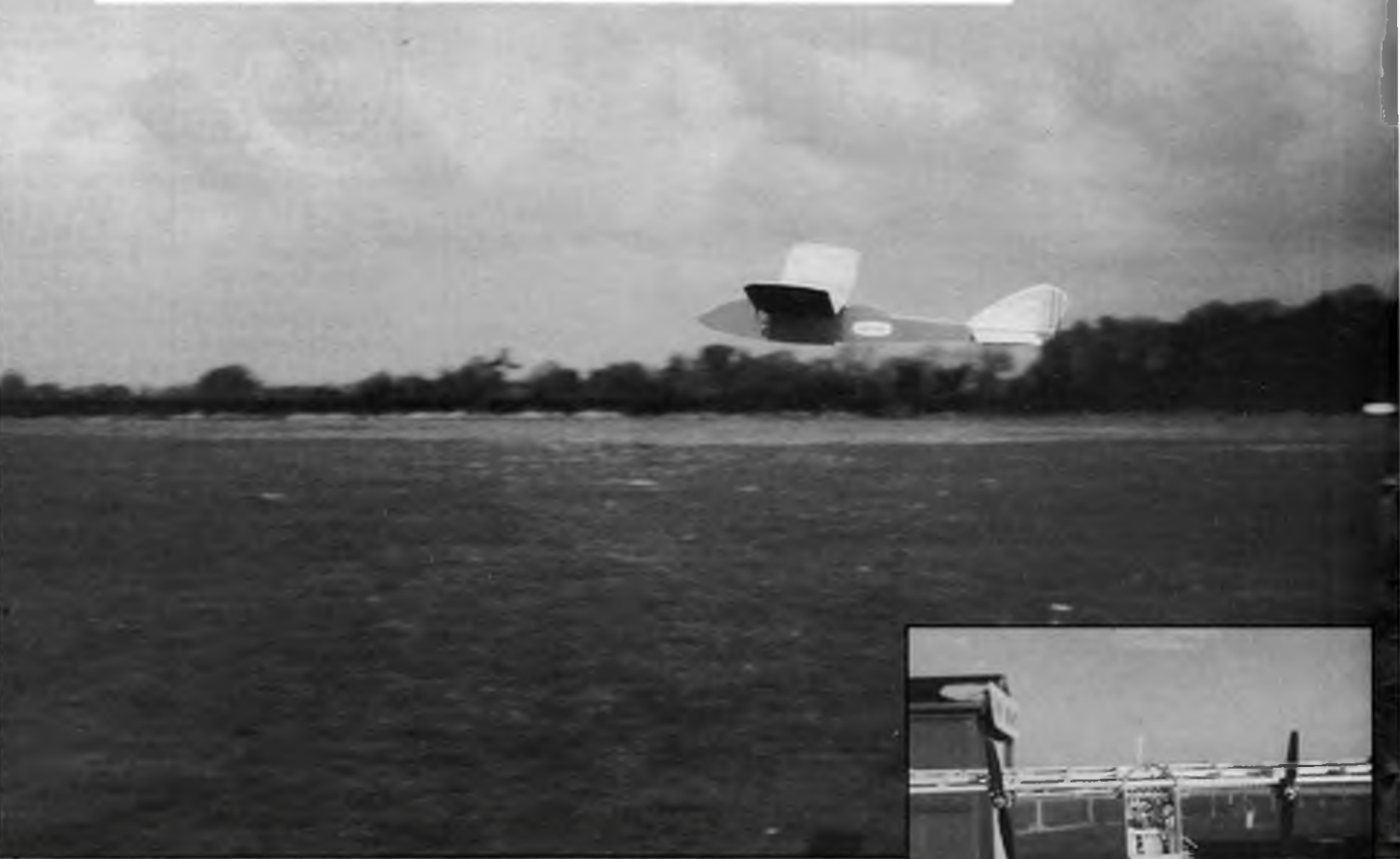
Breakfast was on a G.I.Y. basis, and our Sam had got his egg dancing in the pan. 'You'll crack that egg, the water isn't deep enough,' said George, helpfully leaning over with the kettle and pouring in some more. Of course, it all promptly went off boil, and Sam angrily demanded how he was now supposed to know how much longer he should give his egg. With the knowing smile of one whose transmitter comes with two hundred pages of instructions on how to work it, George whipped out the expensive, flat little multi-function programmable timer which is his constant friend and adviser when he is flying in R/C contests. It tweeted electronically as his key-board-skilled index finger poked in the commands via the tiny buttons. 'Use that,' he said simply. So Sam used it, and when it went 'peep' he took his egg off. Only as he slashed off the top and the spurt of yuck ran down his last clean shirt did he remember that if there's one thing that ruins old George's scores, it's his habit of under-flying his slot times.

Fun for the future fetchhermites

The Grand Old Duke of York,
Applied ten thousand turns,
And won the Coupe d'Hiver,
As every schoolboy learns.
Your Grace the Duke of York!
Your models don't 'arf go!
Where do you buy your rubber?
That's what I'd like to know.



**Electric flight is no problem, says Clive Bunyan,
who has built the models to prove it...**



HOW does electric flight work - and can I do it? I am asked these questions frequently during the flying season because, as a member of the Old Warden Model Group, I come into contact with many enthusiasts who wish to learn more about this fascinating branch of model flying.

My answer to 'Can I do it?' is always 'Yes!'.

When I first started electric flight back in 1976 I asked the same questions. At the time, unfortunately, fewer modellers flew Electric so answers were less forthcoming.

Pitfalls - and the avoidance thereof

During the last thirteen years I have discovered many of the pitfalls, and some of the answers to them. The following bits of advice apply equally to radio control and free flight:

- (a) Build models as light and strong as possible.
- (b) Use good cells, such as the Sanyo 'Red' type. Never be tempted by cheap packs!
- (c) Choose motors fitted with brushes and springs rather than trip contacts. If you must use one, do fit a freewheel prop device so motors and cells are not loaded when stalled.
- (d) Fit a fuse in the system - car-type for preference, for ease of access.
- (e) At the design stage allow for the possible need to move battery position for CG adjustment.
- (f) Cells in free-flight models may be encased in polystyrene sheet for convenience; as motor run duration is comparatively low they run relatively cool.
- (g) For your first model choose a high-wing, cabin type of 24 or 36 inches span. There

are many suitable prototypes in the APS Plans Service.

(h) Experiment with propellers - the 'make or break' of many a model and motor combination.

(i) Always use a timer in the charging circuit.

(j) Code the wires!

Cell sensibility

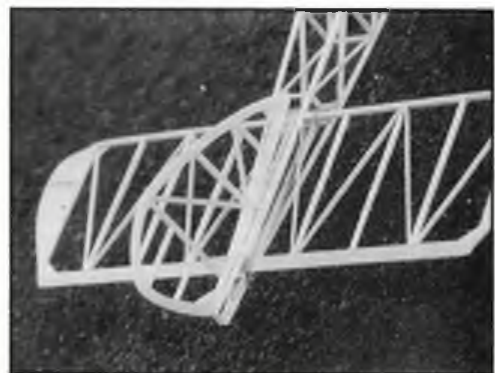
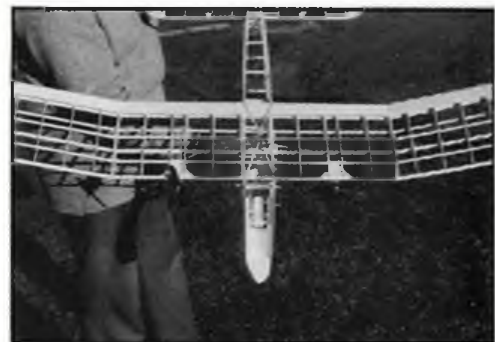
No advertising; but I have to stand by my own experiences. I always use Sanyo 'Red' cells. I have tried many others but have yet to find any as good as these. Choose cells with tags both ends; this makes for easy assembly into packs. Eight-strand wire of 0.008in diameter, in lengths as short as possible, will suit motors up to Mabuchi RE 280 size.

Motor matters

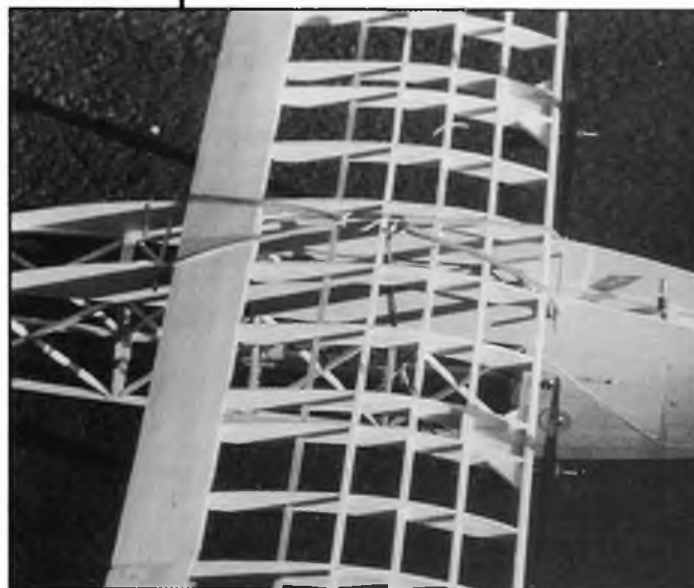
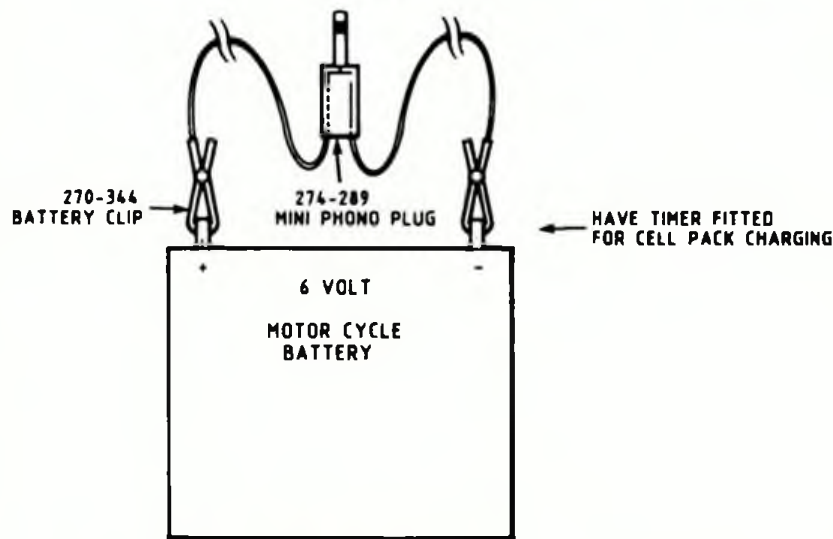
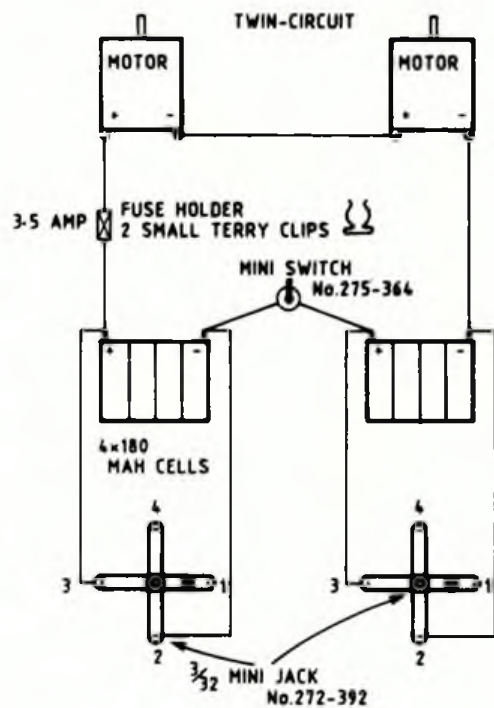
The Mabuchi range is recommended, but be careful. Some motors below 280 size are fitted with copper beryllium contacts which are not so good as the more robust 'brush and spring' assemblies. Look around electrical shops or Proops Bros. Motors from movie cameras are excellent - if you can find them. My 'twin' is fitted with Buhler motors which are first class - and I have some spares, if anyone is interested... (Letters via the Aeromodeller office, please, GC).

Prop it up

You must experiment with prop diameter and pitch. On my direct-drive twin I have tried Top Flite and Master props from 4x4 to 6x4, and have found that a 5x3 Top Flite is about right. With motors turning at 6,500rpm the model climbs to about sixty feet



Heading: Clive's twin climbs out at Old Warden, two Buhler motors providing the urge. Trio of photos above show framework details. Note light but strong construction, and relatively large-area wing.



Multi-spar wing is light and efficient. Note undercambered section.

edge saves weight. Favoured covering is Litespan, which I found to be very robust and impact-resistant. Make sure the model's CG is well forward and do spend plenty of time getting the glide just right. This is the key to many hours of trouble-free flying.

Useful bits

The following components are all recommended, and are available from the nationwide chain of Tandy shops.

(a)	Micro mini switch	275-624	Price: 99p
(b)	3/32 mini jack	272-292	99p
(c)	3/32 mini phone plugs	274-289	79p
(d)	Car battery clips	270-344	79p

Diagrams at left show twin-motor layout and charging unit.

WHAT'S ON

13th August
THREE KINGS 20th ANNIVERSARY FLY-IN CL
Venue: Old Croydon Airfield. General flying plus Carrier. Contact: Wal Cordwell. Tel: 01-764 1661.

19-20th August
ASP VINTAGE WEEKEND RC, CL, FF
Venue: Old Warden Airfield. The annual pilgrimage. Two days packed vintage fun. Informal awards, ASP and SAM 35 competitions. More news to come. Don't miss it! Contact: Aeromodeller. Telephone: 0442 68551.

19-20 August
PLUMPTON MODEL SHOW
Venue: Plumpton Racecourse. 10am - 6pm both days.
Everything from Chuck Gliders to jet R/C models.
Many more attractions including full-size Crr-Crr demonstration. Cars, boats and planes; trade stands, bar and fair ground. Live band of Saturday evening. Return coach trips to Brighton. £20 family ticket (after 6pm, Friday until Monday morning) or £2.50 per day (adults); £1.50 per day for children and senior citizens. Contact: Dave Bishop. Tel: 095 977550.

27-29th August
BMFA RADIO CONTROL, CONTROL LINE AND SCALE NATIONALS
Venue: Barkston Heath. Contact: BMFA.

26-27th August
BMFA INDOOR NATIONALS
Venue: Cardington Airship Shed.
Saturday: (a) EZB for Houlberg Silver Trophy - best 2 from 6 flights
(b) Index for Manhattan Cabin, Flyrod (Novice only), HLG, Pennyplane, Novice Pennyplane, CO₂ Duration and PND. Best single score from 6 flights.
(c) CO₂ Duration for Sparkiets Trophy. Best 2 from 6.
(d) CO₂ Duration for Sparkiets Longest Flight. Best flight from 6.
(e) Fun flying.
(f) Sweepette Trophy for Indoor HLG - now an Index event for (i) Special rules models: 18in min spar, 22in max span, 10gm max weight; and (ii) 12in max HLG (iii) Open HLG
Sunday: (a) F1D for Aeromodeller Trophy. Best 2 from 6.
(b) 1990 F1D W/Champs Trials - first three flights; best 3 from nine to count.
(c) Fun flying.

Contact: Bob Bailey. Tel: 0438 723642.

17th September
WALSALL MAC F/F SCALE DAY
Venue: Essington. Contact: Geoff Spencer. Tel: 021 556 3376.

17th September
INDOORS AT CARDINGTON FF
Venue: Cardington Airship Shed. F1D W/Champs Trials - second three flights, best 3 from 9. Fun flying too. Contact: Bob Bailey. Tel: 0438 723642.

17th September
BMFA C/L SCALE WORLD CHAMPS TEAM TRIALS
Venue: RAF Hullavington. Entry fee: £10. Contact: Eric Coates, Arosa, Liberty Road, Newtown, Fareham, Hants.

24th September
HERTFORD MAC VINTAGE FLY-IN RC, CL
Venue: Throcking, Nr. Buntingford. R/C and F/F only. Proof of insurance needed. Contact: Steve Wheeler. Tel: 0920 830147 (7-9pm).

1st October
EAST COAST MODEL AND LEISURE EXHIBITION
Venue: Richmond Hotel, Richmond Drive, Skegness. All types of modelling on display. Contact: C. Firth, 7 Laythorpe Avenue, Skegness, Lincs.

1st October
THREE KINGS C/L SCALE DAY
Venue: Old Croydon Aerodrome, Purley Way, Croydon, Surrey. FAI Scale and Profile classes: Best WWII. Silencers and proof of insurance essential. Contact: Wal Cordwell. Tel: 01-764 1661.

8th October
BMFA INDOOR SCALE MEETING
Venue: Alumwell Centre, Walsall. 8.30 to 5.00 Peanut, Open Rubber, CO₂/Electric and Air Racing. Experimental rules revision - see Hangar Doors. Contact: Doug Sheppard. Tel: 0272 697595.

15th October
BMFA MIDLAND AREA FLY FOR FUN RALLY
RC, CL, FF
Venue: Barkston Heath. Informal flying for R/C, C/L, F/F. Trophies and prizes for best model (Hemswell Trophy), best flight, top Junior.
Comps for A/1, (PAMAG Trophy), CDH (PAMAG Trophy), SOP (GD Shield), Vintage (Butlins Cup). Contact: Brian Perks. Tel: 0858 63829.
Essential to ring to confirm R/C frequencies.

22nd October
MORLEY & DMAC ANNIVERSARY MEETING FF
Venue: Driffield Vintage Power Duration. Vintage Plus 10 Duration for 1950s power models. Other events too. Free entry. Prizes. BMFA members only. Contact: Stan Horne. Tel: 0532 610429.

22nd October
SOUTH BIRMINGHAM MFC VINTAGE CONTROL LINE RALLY
Venue: Rubery Hill Hospital, near Birmingham.
10am start. General flying for all SAM 35 and BMFA members. Speed and Stunt comps to SAM 35 rules. Contact: Peter Martin. Telephone 021-459 5520.

Come on, youngsters – celebrate
25 years of the famous display
team with Andrew Longhurst's...

BUILD
FROM OUR
FULL SIZE
PLANS!

RED ARROW

Essential features of the BAe Hawk are well captured; model is a stable flier, too.

AFTER being deafened at an air show featuring the Red Arrows I was the target of much vilification from my two offspring concerning my predilection for ancient rubber models. Much impertinence was aired concerning my ability or otherwise to design them a proper jet model, like the British Aerospace Hawk.

I was caught in a quandary, half-wanting to foster this unusual burst of interest in model planes and half-fearing the effect of hot Jetex exhaust on small tender fingers. Further negotiations ended up with my offering to build a proper jet but with Rubber Band power. 'Absolutely no problem,' I assured them, airily closing my mind to my last, disastrous attempts at flying low-wing rubber models.

When they had gone to bed I quickly enlarged the Hawk three-view drawings helpfully provided in the display programme and made a small profile glider to test the aerodynamics. I quickly discovered, to my chagrin, that the wretched thing had a fatal desire to fly sideways. I chopped the fuselage about to no avail and finally sought assistance from my hero Bill Dean's F86 Sabre plan

(part of the plan Octet U657 from ASP). By grafting on the highly-swept Sabre wings the missing stability appeared as if by magic.

The next thing was to evolve a really simple wing structure, suitable for youngsters to build, which would avoid the stall sensitivity of the flat plate section. I remembered Martyn Pressnell's article on wings in the September '87 *Aeromodeller*, and its exhortation to try leading edge droop. Guess what – it really works! In fact, we ended up with a quite sophisticated little wing which is very stable and yet simple enough for my ten-year-old to build with only a modicum of supervision.

Get building!

Build the flat part of the wing, the tailplane and fin over the plan as usual. Add the leading edge 'droop keepers' to the wing so that the high point exactly coincides with the 2mm sq leading spar. Remove the flying surfaces from the plan and glue the leading edge drooper onto the wing, allowing a little overlap at the ends. When dry, carefully sandpaper the two wing roots so that they will joint perfectly at the required dihedral angle.

Cement together with a 13cm block under

one wingtip. Cover the top surface of the wing and tailplane and both sides of the fin in Red tissue using thinned down PVA as an adhesive. Choose the kind of tissue that has a glazed surface; it is not too porous. When dry, lightly spray with water to tension the tissue. Check for warps, recover if necessary. RAF roundels can be added by colouring discs cut from self-adhesive labels.

Next - the fuselage

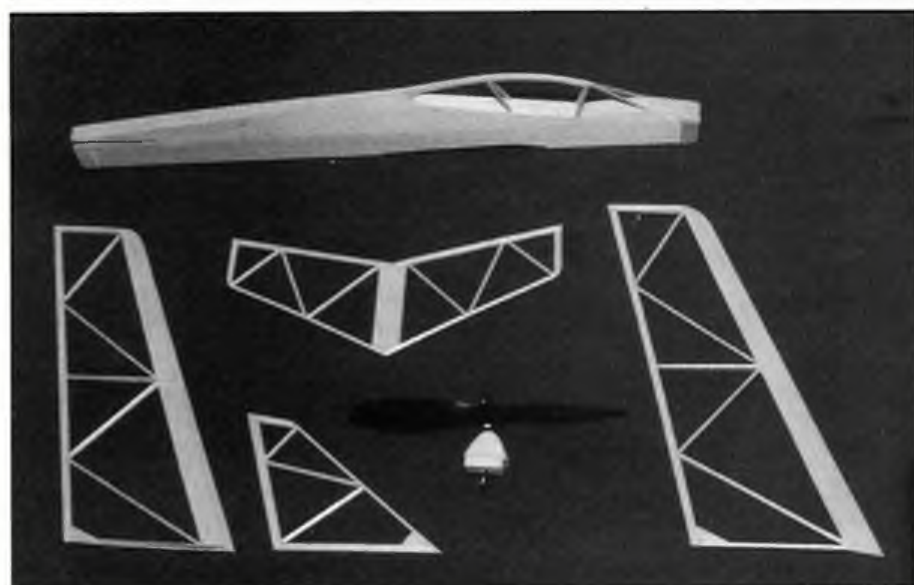
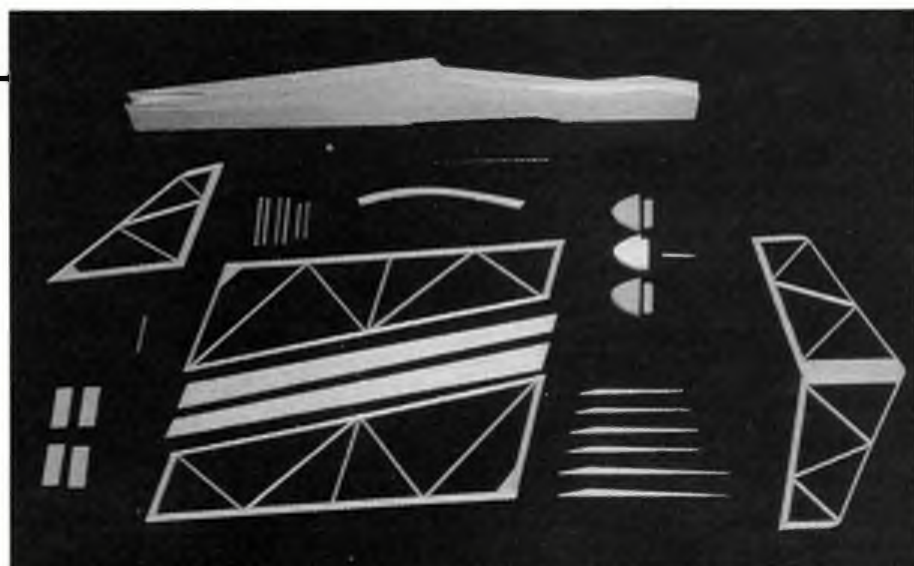
Use light 1.5mm sheet for the fuselage sides, which should be cut round the under sides, which should be cut round the edge of the cockpit. Take one of them and surfaces and the central spacer, making sure they are vertical. Glue on the other side of the fuselage to form the motor tube. When completely dry close the top of the fuselage together at the rear of the cockpit, inserting the top spine F5 as you do so. Next fill in rest of the fuselage top and cockpit floor with F1 to F4 and cut the cockpit top F6. This is supported in place by V-shaped struts to form the divisions of the cockpit. Glue on the tail, fin, the front and rear fuselage doublers and the air intakes. These should be sanded to shape beforehand except at the bottom where they meet the wing. This is carved later to fit the wing and provide a firm mounting. If the tailplane is a firm push fit in the fuselage slot it can be left removable, but if loose it will need to be glued in. If the model is to have a hard life, bind the front of the fuselage with some cotton thread smeared with balsa cement to prevent splitting on impact.

Prop assembly

The fuselage is rather narrow so it is essential that the noseblock seats perfectly and does not wobble from side to side. It is formed from a central core of 6mm balsa with two layers of 3mm either side. Carving from block would do just as well. All you need for the propshaft bush is a small length of brass tubing which is a clearance fit on the 18swg shaft. Drill a hole in the noseblock, roughen up the tubing a little and glue it in with Araldite or cyano. When complete and sanded to shape bend the diamond-shaped hook and check it will clear the fuselage sides. Add bead and prop and bend the end to form a winding hook which will engage in the clutch of the prop. Check very carefully that the downthrust is as shown on the plan and that you have no sidethrust. Remember that although the noseblock should be a firm fit, it still must knock out on landing otherwise you will be in trouble with bent prop shafts.

Finishing

The best advice is to keep it light. Therefore just colour the fuselage red with a felt marker pen and add go-faster stripes from self-



adhesive labels. I would not varnish, dope or paint any part of the Red Arrow, but consequently would not recommend flying in a rainstorm. You could cover the cockpit with transparent plastic, but it looks and flies just as well without. Lastly, attach a small rudder trim tab to the fin. Clear plastic is best but use an impact adhesive for this material such as 'Bostic Clear'.

Full thrust!

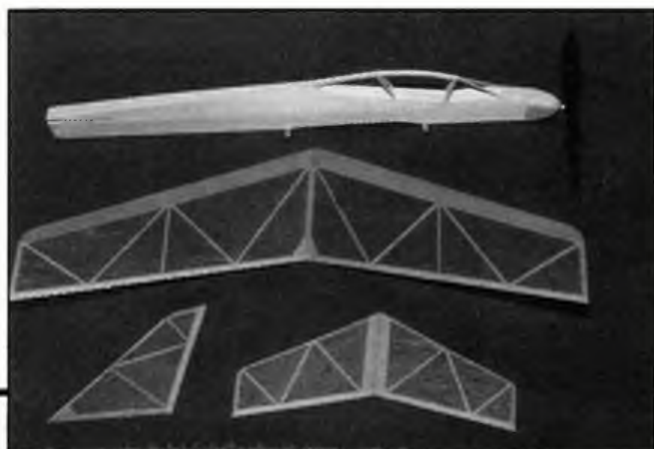
Choose a day when the wind is light. The 40cm loop of rubber specified on the plan is rather shorter than the distance between the hooks in order to keep the noseblock in place. You may therefore need a length of wire with a hook bent in the end to get the motor in. This system is nice and simple but prevents the freewheel clutch moulded into the prop from operating correctly. This is not impor-

tant, but for best appearance in the air, use a 45cm loop of rubber and hold the noseblock in with an external rubber band of similar device.

Try a few test glides. You may need to add a little plasticine to the nose or, more likely, the tail to get this right. Make sure the glide is flat but with a barely perceptible turn to the right. Use the trim tab on the rudder to achieve this if required. Crank on 200 turns and launch gently into wind. If the Red Arrow flies in a wide right hand circle with a steady climb, increase turns in stages to a maximum of 400 on 'finger' turns or 500 stretch wound.

If you encounter problems make only temporary adjustments to the thrust line until you have convinced yourself that the glide is perfect. If the model stalls on power try packing the noseblock 1mm at a time to increase the downthrust. If it dives in fairly straight, try some packing underneath the noseblock to reduce the downthrust. When perfect, sand your adjustments into the nose of the model with a sanding block to make them permanent. If the model starts to climb but then drops its right wing and spirals in, check that (a) you have no wing warps; (b) you have no right thrust built in and (c) that you have not put on too much right rudder. If all appears in order, but the model still piles in to the right, ease on a bit of left rudder tab and try for a right turn under power but left on glide.

Avoid tight turns and you will find the Red Arrow a very forgiving and excellent flyer.



Construction shots on this page show components, part-assembled and part-covered framework. Model must be coloured red!



Just right for one-point-five motors – Frank Smart's Half-A Combat challenger will be a firm favourite

THE ORIGINS of Spare Ribs lie in the mid-seventies and with first Combat models using engines below 1cc. Recent observation reveals that design and construction techniques have generally changed very little since then.

Tried and tested methods are very hard to resist, but one or two alterations were brought into play. Fuselage, bellcrank and wing construction were targeted areas.

Radial or beam-mounted engines are both quite suitable. Note the removable wedge tank. Micro-Mold tanks were originally used, but it is simple to construct duplicates from scratch. Test models were flown with Webra Rekord and PAW 1.5 motors.

Quick-setting glues and other materials are available to speed model assembly these days, but here the aim was to produce a cheap to-build craft. In any case, the time lost in using slow-setting PVA adhesive is easily offset by the much quicker assembly time afforded by the use of polystyrene tiles as the major construction medium.

In addition, standard, commercially available parts have been used, not only to save making them but to eliminate faults such as leaking tanks, jamming bellcranks and control horns, engine nuts working loose, and so on.

Clear book film is a practical solution (although not an economical one!) to covering the wing, as these light, polystyrene models

may bend or warp on final shrink using Solarfilm. Even so, a light model is easy to achieve.

All aspects of producing a first-time, reliable and inexpensive model have been considered to eliminate as far as possible early disappointments. Whilst considerable costs can be saved in making parts (true modelling) our first objective is to retain interest and get out there flying!

Get the wing over

Four 500 x 500 x 8mm polystyrene ceiling tiles are needed for two models. The following procedure is recommended for speed and economy. Put tiles back to back in pairs as shown in Fig 1. Hold together with two bits of masking tape. Lay inboard wing over plan and mark off centre line of model on both edges. Transfer to cutting board and trim off surplus waste using a planed wood straightedge and double-edged razor blade held at 90 degrees along the straight-edge. Repeat for outboard wing.

Separate panels, then PVA glue each together; press together butt joint and hold with masking tape both sides. See Fig 2. Keep the offcuts for use later. We now have top and bottom panels for two wings. Fig. 4.

While waiting for the wing panels to set make a 1mm thick cardboard template to the total wing area, and mark on all the details from the plan, such as: centre line of model, outboard and inboard tips, bellcrank position, leadout rake, pushrod hole, tank position, spars, sanding areas; in short, anything which will prevent you from having to work on the original plan. I always have the main plan Blu-Tacked to a nearby wall for reference.

Use small dabs of masking tape to hold the template in position on to one polystyrene sheet at a time. Fig 3. Ensure the butt joint is central at engine position. Cut out model profile, using a sharp balsa knife held vertically, to make two panels. Keep waste polystyrene for packing the tail jig later.

Now fit wing spars by cutting both top and

SPARE RIBS



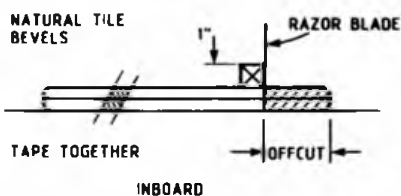
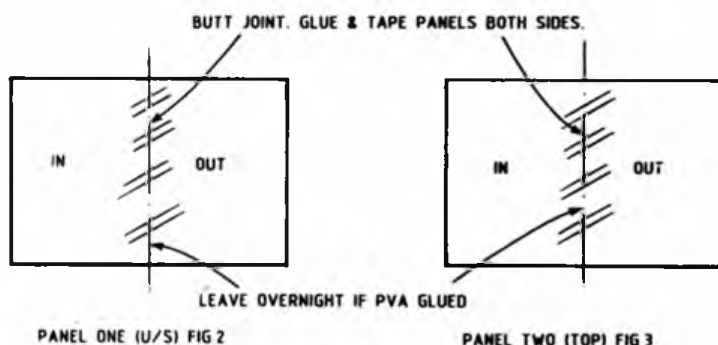


FIG. 1



PANELS TOP & UNDERSIDE BROUGHT TOGETHER DRY TAPED AND CUT OUT TWO COMPLETE MODEL WINGS.

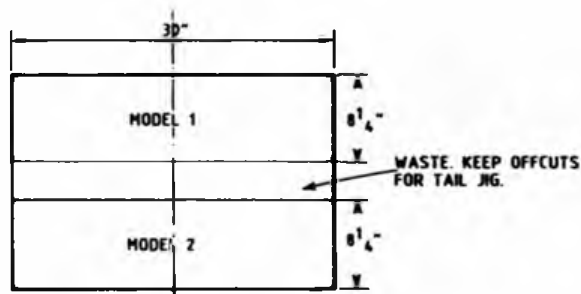


FIG. 4

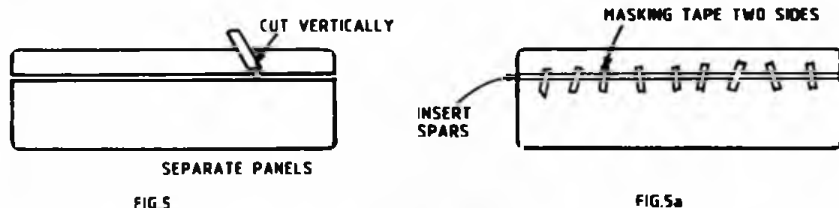


FIG. 5a

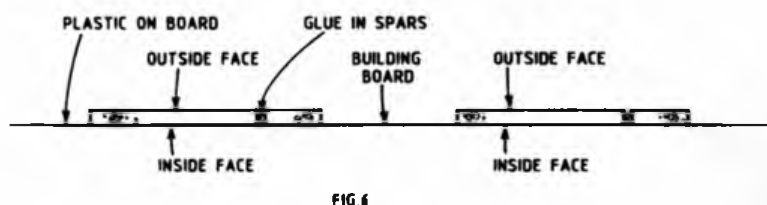


FIG. 6



FIG. 6a

bottom panels in turn to full span. Fig 5. Glue the hardwood spar on two surfaces and the polystyrene and bring the panels back together holding with masking tape as in Fig 5a. Keep spar against the inside face of panel (Fig 6). As before, lay flat on board, weighted till dry. Pre-shape spar tips prior to gluing in position to take final tip chamfer. Fig 6a. Lay top side panel face down on to flat building board and PVA glue both polystyrene and spars over full length. Hold in position with masking tape dabs. Fig 7. This ensures a straight wing. Apply a weighted, flat board on top. Fig 7a.

While it's drying...

Turn your attention to making up miscellaneous parts, such as elevator, engine mount, bellcrank and leadouts.

Elevator: Also horn support; drill out horn to suit pushrod; boil pushrod horn and keeper to relieve stresses; make ply elevator plates to support horn; sort nuts and bolts.

Engine mount: Cut bearers; ply backing; infill nose block; make gussets and ply fairings; sort out suitable nuts and bolts (or blind nuts). If you have the facilities, add formica to engine bearer instead of using plates.

Bellcrank: Cut leadout wires to length, drill out bellcrank to suit wires bolts and pushrod, solder leadouts to bellcrank. Cut ply strip for central fuselage, cut leadout guide from plastic cable sleeve; finally, sand to relieve rough edges.

Tips: Cut 1/16in plywood. Note - outboard tip to fit snug between spars (not to be fitted until two panels have been jointed and centre spars fitted). Tip parts cut to length.

Transfers: Cut out numerals and prepare decorations generally. These are put on model prior to covering. Make Solarfilm hinges for elevator.

Tail: Cut out 1/32in plywood top and bottom fuselage panels, and hole for pushrod in top, cut out balsa tail. Note that the balsa side infills are fitted when in place on the model.

When spars are dry, shape as shown. Using water-thinned PVA glue fit the centre sandwich and 1.5mm polystyrene spacers shown dotted on plan. Locate and epoxy the 1/2in sq, (15mm), 1mm thick plywood



Trio of motor installation pics to help builders. Inverted view at bottom left. Unusual construction techniques make for speedy assembly and a strong model.



bellcrank mount plate. Drill a small pilot hole in centre. Also epoxy the large bore plastic leadout tubes in position with spruce end gussets, then add ply tip and pre-cut the pushrod slot in polystyrene top panel.

Test assemble bellcrank and leadouts. Leadout tubes and bellcrank are masking-taped to wing inside panel. Also tape the leadouts to the outside of the wing, keeping them in tension to prevent accidentally gluing them when both panels are brought together.

Spread neat PVA glue all over spacers and spars. Glue bottom panel to top panel, making sure perimeter is well fixed. Bring panels together with masking tape at regular intervals and lay on weighted flat board overnight.

When dry, slit polystyrene and slot in vertical ply engine brace tight behind flat

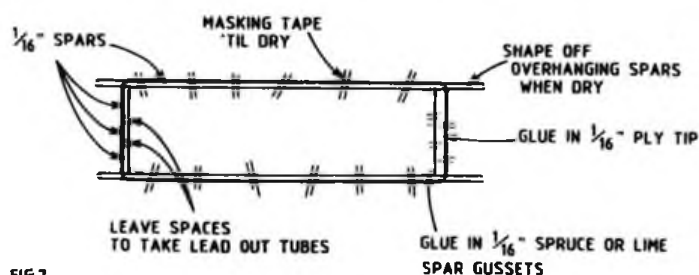


FIG.7

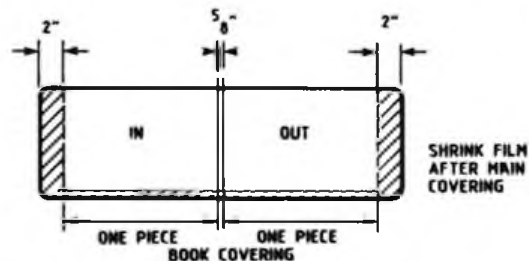


FIG.9a

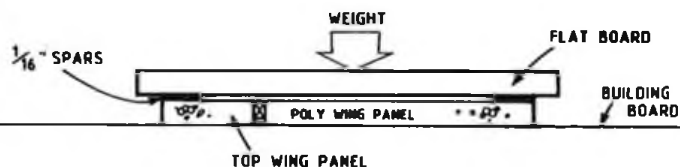


FIG.7a

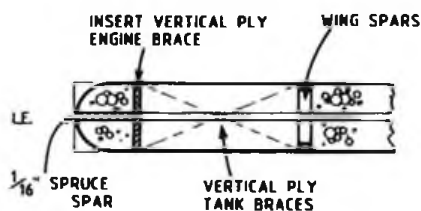


FIG.8

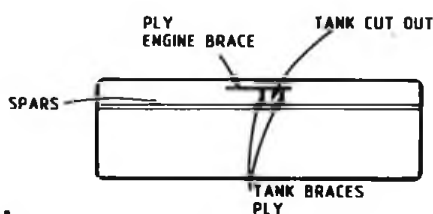


FIG.8a

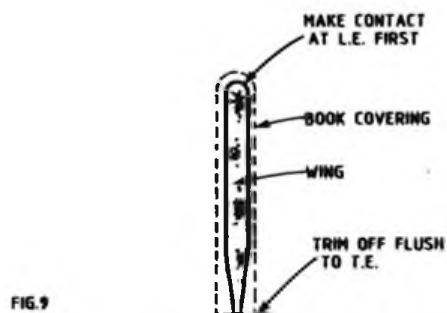


FIG.9

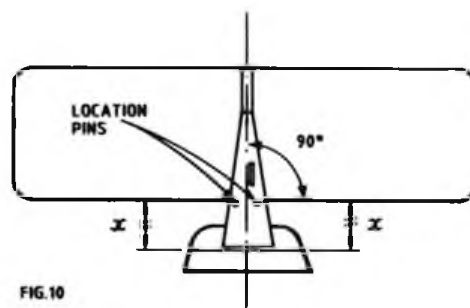


FIG.10

wing spar. Fig 8. Slot in ply tank braces. Fig 8a.

Opening time

We now open up the model by cutting a portion of polystyrene out at the underside panel as shown dotted on plan. Use a sharp balsa knife to expose the concealed, loose bellcrank. Add bits of masking tape to leadout wires to prevent pulling through and lift out bellcrank, which is then mounted following the procedure shown on plan.

At this stage the model is shaped to wing section. This is done by using by using medium sandpaper glued to a flat piece of wood. At first it does not seem possible, so practise on some scrap first! Mark the areas to be sanded in ball pen.

Cut tank aperture and test fit. If epoxy glue in place unless you choose the removable option. Ensure sufficient space for nylon bolt in this case. (See drawing for details). Add all transfers to wing, and oil bellcrank. Cover in two pieces of clear plastic book covering; one piece for the outer and one for the inner panel. See Fig 9. Exclude tips and 5/8in area at centre. Wrap round wing. Trim at trailing

edge without overlap. Do not use shrink film except at tips and to seal trailing edge - see Fig 9a.

Tail assembly

The whole tail/fuselage and elevator assembly is fitted as one unit. It is best to pre-cover with shrink film, except for the inside surfaces.

Offer up tail to model, mark and cut holes for push rod and bellcrank bolt head, and tail. Square up on model. Fig 10. Mark with ball pen lines each side to indicate glue area. Remove tail and cut away plastic covering, allowing half-an-inch to run under the ply.

The next part is the most difficult, as it has to be accurate and can only be done with the aid of a simple jig. See Fig 11. Dry-assemble several times until you are confident it is correct! The main point is to keep dimensions equal each side of the tail. The jig will ensure true line up of a tail and wing. If you have any doubts use PVA or a slow-setting epoxy and leave overnight. Don't over-tighten cramps; use only sufficient pressure to hold everything together. When set, infill sides with scrap, then shrink film over. Seal ply wing joint with shrink film, overlapping trim to four edges. Bend pushrod with set for field adjustment. Connect to horn. See Fig 12.

Motor mount

Finally build up mount in two stages.

First, the bearers, ply backing and packings are made. Fit engine to bearers, then hold with masking tape to top of model, moving assembly backwards and forwards to determine balance point shown on plan. Mark leading edge position on ply backing and cut out wing slot, which must be a tight push fit. Remove covering from engine mount area, roughen up both ply surfaces and glue in position with five-minute epoxy, complete with motor held by two bolts diagonally.

Remove engine once glue has set. Epoxy 1/16in ply mount brace in place, then build up to wing thickness with soft scrap balsa. Sand to aerofoil section, then add 1/32in ply cappings, made from template on plan; the underside first. Do this in stages: wing region first; when dry, glue remainder and bend it over, holding in place with masking tape while epoxy sets. Repeat top and trim off overlap by sending. Apply epoxy fillet around mount between 1/16in and 1/32in ply, smoothing when nearly set with a wet finger...

Finishing

Fuelproof engine and tank areas with two coats of Tufkote. Seal all edges of covering, elevator hinges and so on with one coat of proofer. Final weight of the model should be around ten ounces including PAW 1.5cc motor, 7 x 6 nylon prop and metal wedge tank.

Go flying

Nothing but a flat calm day will do for test flying *any* model. Keep away from trees, which cause turbulence. Most of all, don't fly in fields with overhead power cables. Concentrating on flying can may cause you easily to wander and power will jump to your lines (you don't have to touch)! Check all controls are free and lines are equal in length. The second hole down on the horn is advisable to start; certainly no further down. Check that the wind is coming from your right-hand side for launching.

Don't try anything too fancy at first. Fly level for several tanks, gradually getting used to the motor run, line tension and general response. Look also for a high or low outboard tip which will indicate the need for some trimming. Beware line lengths which may be unequal, even though you thought you had them correct on the ground.

Good flying!

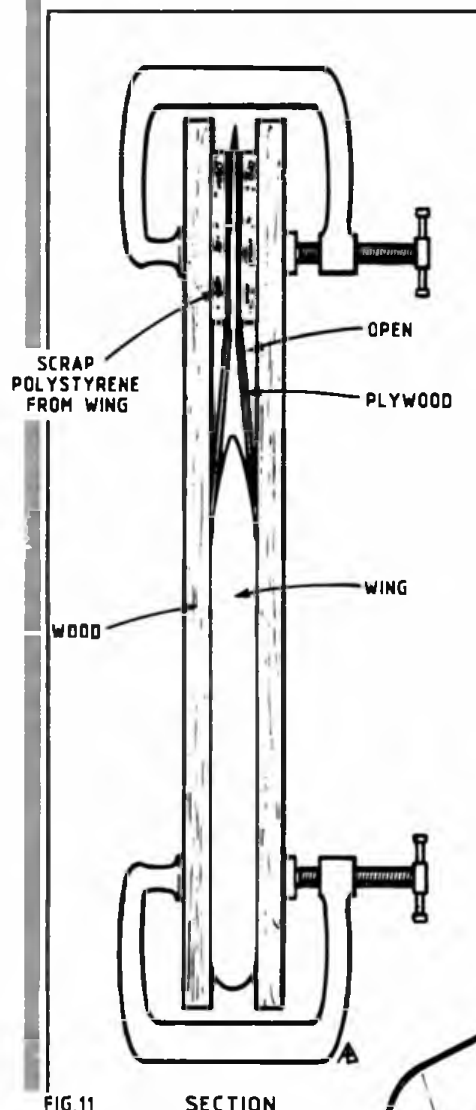


FIG. 11 SECTION

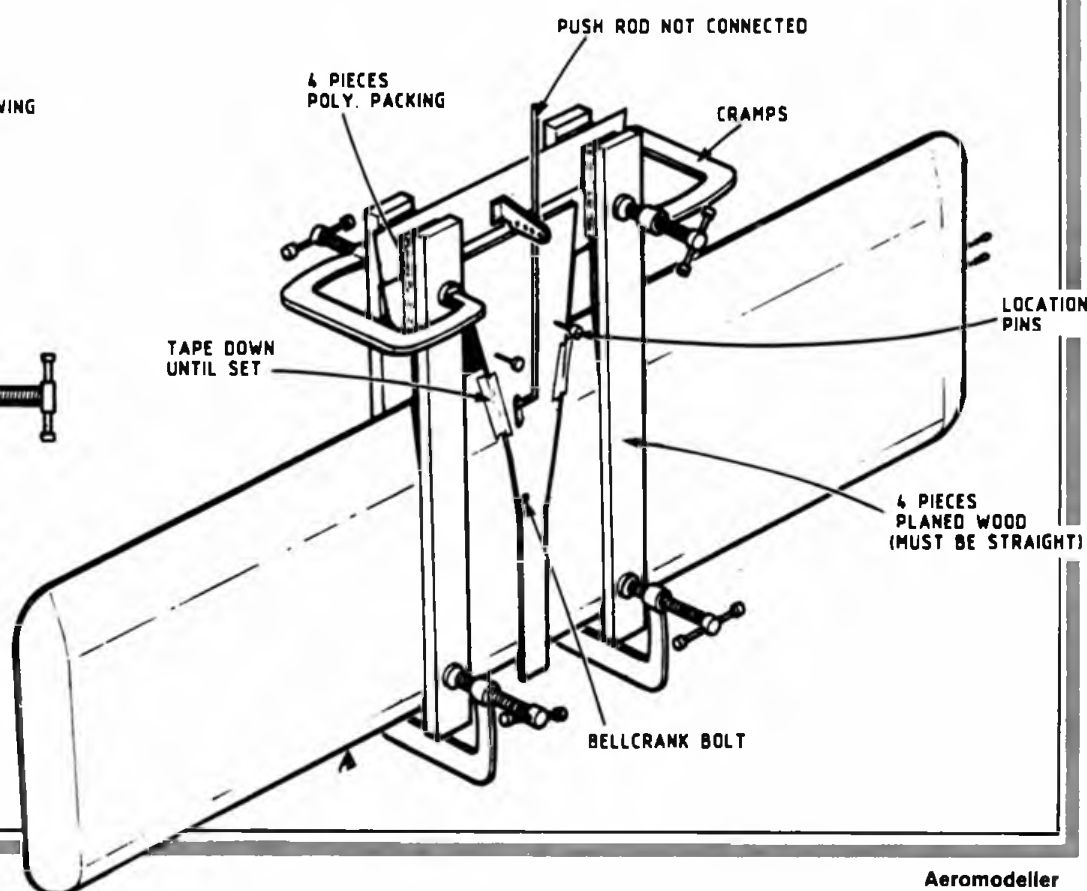


FIG. 11a



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Bright and breezy at Shuttle

ONCE AGAIN, we managed a full quota of Scale Weekend sunshine, drawing dozen upon dozens of enthusiasts to the annual pilgrimage. Radio flyers had the best of it, with constant activity all day, both days; while free-flighters who attended on the Saturday found conditions at their kindest. The breeze was then flyable; by Sunday lunchtime it was too intimidating for all but the most stable, faithful models. But with such a variety on show, so many friends to meet and the Collection's own attractions just a runaway's length away. The weekend passed in a flash, leaving us to reflect on the strength of Scale modelling in the UK, and to ponder improvements for our 1990 event. But let's look around each sector in turn.

Radio control marvels

Almost any subject you care to name seems now perfectly attainable as an R/C model. Sometimes it's difficult to avoid being a touch blasé about this, but the result is that realism in flight is sought as a target of excellence. Our companion magazines Radio Modeller and RCM&E give their own views, but we enjoyed John Siddall's Fokker DVII which looped and sideslipped just like we think the real thing would. But Ryan's L39 Albatros provided ducted fan dash (once or twice a bit low, hmmm...) and John Deacon's Hawker Cygnet was just gorgeous, with slightly nervous flight characteristics which seemed spot on. The OS Gemini twin powered ultralight was the result of painstaking research and measurement of the real thing at the RAF Museum. Even a dodgy out-of-wind landing which rendered the Cygnet *hors de combat* with fractured undercarriage was a small obstacle to excellence; and we look forward to seeing the gentle Hawker at the Nats.

Large models impressed as ever. Arthur Searl's Halberstadt DII sported the most realistic weathered finish on the field and Terry Bridle put his brutal Corsair through everything, Saito radial and all. Electrics go from strength to strength. Aficonado Dave Chinery's latest, a one-seventh scale Miles M20 carved the air well, and son Mark's Avro

560 was another neat ultralight for Astro power. But the award for Best Electric went to Peter Wedlake who brought a fine selection of subjects including that splendid WWII fighter, the Ta 152. Shuttleworth Trophy recipient this year was Gordon Beveridge whose 1/5 scale DH 60 represented Shuttleworth's own machine. But from Pioneer to Jet, individual choice was as difficult as ever.

Free-Flight fantastic

Saturday's relatively quiet weather, plus a less cluttered airfield, allowed more room for manoeuvre, so those enthusiasts whose commitments allowed them to attend enjoyed a healthy spell of Scale endeavour. Epsom fliers Alan Jupp and Ted Horne tried a variety from their stock in between describing the variety of P E Norman and Fred Longbon designs they had brought for display. Later in the day they were joined by Vic Driscoll to form a trio of APS Tiger Moth fliers, as our cover shows. Vic also gave first airing to his enchanting Hawker Audax in Persian colours, powered by an Acoms unit which might benefit from oomph - presumably an extra cell will be fitted before the Nationals, Vic's aim for the Eastern beauty. For his DH 82 efforts, we awarded Vic the Longbon Trophy for best APS model.

The breeze on Sunday meant that many of the interesting, new models spotted on arrival had disappeared to the sanctuary of the car park. Michael Smith had the right approach. Having retrieved his Spitfire-powered Sopwith 1.1/2 Strutter from the loft, whence it had slumbered for five years, he flew it constantly to gain our approval at the prizegiving.

One spectacular, but grounded, aircraft was an enormous Thomas Morse Scout for

Skies were blue, the sun

shone - and the wind

blew! An invigorating

mixture at Scale

Weekend...



Right: New APS Tiger Moth by Ted Horne, also seen on cover, represents the Tiger Club's flagship G-ACDC. Centre right:

Just part of the P E Norman/Fred Longbon collection mustered by Alan Jupp and colleagues. Third right: Alan himself, refuelling the ex-David Deadman Udet Flemingo. Far right: Delightful Reid and Sigrist Desford by Doug McHard features miniature flexi-drive system to props.



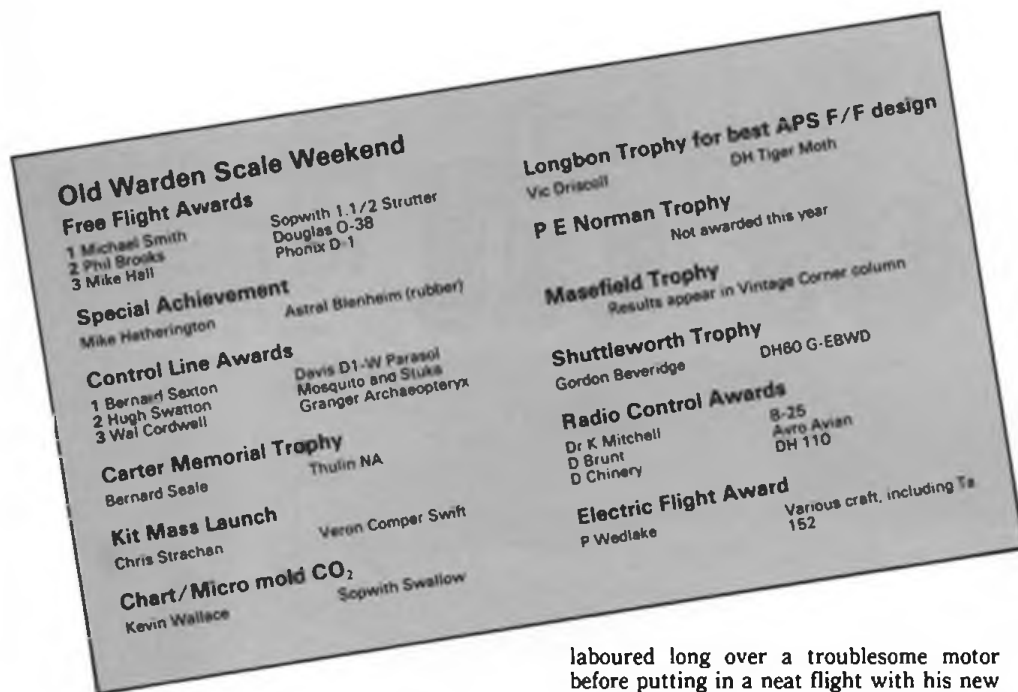
Littleworth

Below: A trio of R/C stars. John Deacon's lovely 3.1/4in: 1ft Hawker Cygnet was measured from the full size craft at Hendon. Below left: brisk performance from Barry Richard's Harvard; Saito radial power. Below right: Dr Keith Mitchell fielded this pugnacious B-25.



rubber power by Bill Brown. Very light at 28oz all-up-weight including rubber, this sixty inch, large-shord biplane has a wing loading of 3.1/2oz per sq ft. Definitely a candidate for a dethermaliser – and one which we anticipate seeing aloft soon.

Bill Dennis made a few flights with his APS Fokker EIV and was pleased with the results. The model is perfectly stable in left-handed turns despite the smallest amount of



dihedral, and seemingly unruffled by the breeze. Very confidence-boosting, as far as other, similar types are concerned...

That most colourful of Austro-Hungarian designs, the Phonix DI, was again aired by Mike Hall who seemed to have gained more urge from his Mills 1.3. Rather more battle-scarred these days, the Phonix flies reliably and with much better realism. Many more craft of the Vintage Scale variety were seen, as Alex Imrie reports after our colour section.

CO₂ and Mass Launch

Chart Micromold again ran an informal competition for CO₂ craft, rewarding successful fliers with a trophy and Telco goodies. Kevin Wallace was tops with his Luscombe, but pursuit was close. The annual circus of Mass Launch proved as hilarious as ever. Frantic winding and anxious launches are the ingredients; this year's winner being Chris Strachan, his spectacular Comper Swift keeping the high-wingers at bay this year.

Control line circuits

Despite a few notable absentees this year, C/L scale was eventful. Bernard Sexton

laboured long over a troublesome motor before putting in a neat flight with his new Davis D1-W Parasol, resplendent in white and gold. Good to see Hugh Swatton trying hard with Mosquito and Stuka; and we just had to give Wal Cordwell a prize for his efforts, the Archaeopteryx aviating happily even if his whirly Cierva autogiro went a bit F/F to retire with smashed blades. A great effort, though! John Emmett showed his electric Heston Racer, as published in this magazine last month; but – apart from Chris Bradford and the worthy Dakota, where were the multis this year?

Bravery was rewarded for Bernard Seale who aired his now well-known Thulin biplane to such good effect that he received the Jack Carter Memorial Trophy for best C/L biplane. This four-stroke-powered craft sometimes presents heart-stopping moments (it being the opinion of at least one fellow biplane control-liner that with a .60 two-stroke the Thulin would happily loop!) but again, the effect is totally 'right'. We'd like to see more C/L next year. Why not take a look through our Plans Catalogue – there are plenty of worthy subjects to choose from...

Conclusions

Flattering sunshine couldn't quite camouflage the worst of the breeze. Certainly, F/F suffered, particularly as the weekend

progressed; but new subjects throughout proved the healthiness of Scale modelling. Well done, all – come again next year!

News from the collection

Of course, no-one visiting Old Warden should miss the opportunity to look around the Collection itself. Remember what you pay at the gate is your admission to the Museum. The model flying costs nothing! Its status as a flying Collection means that Old Warden's aircraft maintenance offers many chances to acquire gems of scale information.

Currently engineless are the SE 5a and Fury, affording priceless glimpses of airframe detail. Routine work involves detached panels and cowlings, revealing fascinating bare bones to all. Check on restoration, too. The Desoutter – an overgrown model as ever was – proceeds apace; and next in line is another fine aeromodelling subject, the Blake Blue Tit – as yet still rather hidden away, but watch out for it. Leading the work on this is ultralight enthusiast and aeromodeller Ian Harwood, whose fullsize plan for the DH53 Humming Bird graced our May '88 issue.

No grouse about it!

Early Saturday arrivals at Old Warden for Vintage Weekend on 19-20th August will be treated to a fine period piece – the pre-ten-o'clock departure of a cluster of DH Moths of all types as part of the Famous Grouse Moth Rally. The Moths will be clear of the field by that time to allow Vintage Weekend to begin. Fastest types will leave first, and take-offs are scheduled for approximately one-minute intervals. An opportunity not to be missed – so come early and bring your camera!

This yours?

At the editorial office we are currently looking after a 'profile' Fokker D7, seemingly from John Watters' Aeromodeller plan, lost at Scale Weekend. Give us a ring, identify fully and it's yours again!



Unusual choice but a fine flyer – this Farman 200 was sealed up from an Emmanuel Fillon Peanut plan.

Colour page, opposite: Top left: Nick Peppiatt prepares Jetex 50 powered Opel Hatry rocket plane from Model Aircraft drawings; and away it goes, immediately below. Beneath that: Close-up of rubber drive on Doug McHard's Desford. Foot of column: Hugh Swatton's C/L Stuka in tropical colours was impressive. Top right: Heston Racer by John Emmett one – of last month's full-size plans. Centre right: Elegant DH Mosquito is another of Hugh Swatton's creations. Bottom right: Richard Granger and Charlie Newman produced Cougar and Sabre subjects for Jetex power.



A man with light brown, wavy hair, wearing a blue short-sleeved shirt and dark shorts, is crouching on a green grassy field. He is looking towards the camera with a slight smile. His hands are near a model airplane on the ground. The model airplane has a yellow fuselage and a propeller with green, white, and red segments. The number '202' is visible on the propeller. In the background, there are trees and a clear sky. Another person is visible in the distance.

Main picture: Vic Driscoll enjoyed the relative peace of Saturday at Scale Weekend to make first trials with this exquisite Hawker Audax in Persian colours. Acoms electric unit may be replaced by a more powerful system; model awaits final details. Opposite page: Top left: Butch Hadland's charming Westland Widgeon amongst the picnic goings-on in the sunshine. Top right: F/F winner Michael Smith with faithful Sopwith 1.1/2 Strutter. Below left: Alex Knight displays dad Derek's Supermarine Swift for rubber power. Alex's hat was airborne as often as many models during the weekend! Bottom right: Bernard Section (left) keeps hold of his C/L Davis D-1 W parasol as Chris Bradford tends to the motor. Patience was rewarded with a fine flight and top C/L award.



win

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VINTAGE CORNER

Swifts Scale Weekend

Alex Imrie takes notebook and camera to Old Warden to capture items of old-time interest



ON SCALE Weekend Sunday there must have been record attendance since it took me thirty minutes to get in, thanks to a two mile tail-back from the aerodrome entrance. I have never experienced that before. From the road that gay collection of cars and caravans glinting in the sun acts like a magnet to passers-by, and I heard of some visitors who came in because they thought this was a furniture sale! A goodly number of Vintage free flight models were present, since enthusiasts find the availability of a flying field too good a chance to miss and there is no longer the outcry that there used to be when non-scale models were flown at a scale event. Some chaps won't do this (tradition dies hard!) and either make a scale model specially for the event or merely come along to spectate.

It's a long trek from the windsock up to the car park (especially if you are in the far one) and more and more people are bringing wheeled trolleys that they trundle out loaded with everything but the kitchen sink. This makes sense, of course, for these enthusiasts are entirely self-contained and can stand a solid eight hours or more on the field having stocks of food and drink – some of them even having tools and building materials with them, so when the wind is too strong they

Heading: Doug Mchard's 27in Keelbird Hawker Demon in flight. One can almost hear the crackle of the Kestrel! Plans for this fine model are still available from the Model Shop, Newcastle-upon-Tyne (see text). Inset: The builder with his model.

can utilise the time working on that next model, and major repairs under such conditions are the proverbial piece of cake. Although the wind caused enthusiasts to camp along the boundary there was still a lot of obstruction of the 'manoeuvring area' and many people took root in the middle of the field, especially the sun worshippers who stripped off and became prostrate for several hours. Not only did they not appear to have a model with them, they also didn't seem to take any interest in the proceedings. When they become the point of contact of an errant oily power model they might choose their next sunbathing spot with more consideration!

The segregation of R/C and Free Flight worked well; and in the free flight area one could not hear the continuous commentary that went on over the PA for the benefit of the crowd of spectators that always collects where the concentrated action is. The R/C flying was well handled and there were no excursions by the radio models into free-flight

airspace. The small rubber models took a beating during launching but those that rose out of the ground turbulence generally flew well but were rapidly borne downwind, some of them inevitably ending up in the trees. Of all the small Vintage flying scale models surely the most built type was the eighteen inch Veron Gipsy-powered Comper Swift which was designed by Phil Smith. I counted over a dozen, seen in all colours and in varying standards of construction and finish. One thing all had in common was the fact that they flew well. Many participated in the two mass launches for kit models; viewed from a distance these looked like showers of confetti – beating downwind, many models were forced down prematurely, while those that rose above the lower levels were well and truly away, and the highest and furthest that eventually disappeared behind the tall Old Warden trees was such a Veron Comper Swift. Modellers who know, say that the proportions of this model were exactly right, it is easy to build and fly, and the numbers at Old Warden certainly underlined its popularity.

Masefield Trophy Event

Thirteen entrants fielded nineteen entries for this annual competition which consists of three rounds whereby the flight times are factorised depending on the model size, number of engines, and layout – low-wing, biplane or floatplane. Two machines were scratched and did not fly; one of these was Bob Walden's Keil Kraft Globe Swift for which Bob had high hopes, but *en route* from his car to the check-in desk near the northern boundary, which was manned by Alan Wiggs assisted by Ron Knight, he managed to lose the complete nose piece and propeller. Later the rudder fell off; so this model was really fated not to fly! He still made amends by finishing in third place with his Veron Comper Swift. (I rather suspect that the high flying Comper in the kit model mass launch was Bob's machine). Lindsey Smith's Comet Navy Racer is always a hot contender, its fine flight performance being enhanced by a 1.8 factor thanks to its small biplane span and twin-float undercarriage. He won last year, but bad luck this time put him out of the competition at the end of the first round with float damage. So all eyes were on seventeen-year-old Simon White who was flying a similar machine. In the event Simon's seaplane did not produce the goods, but he was able to repeat his previous year's performance with his Stahl Rearwin Speedster with three maxes and this gave him



Above: 'In her wood and metal is the spirit of the air capable of resurrection'. Remains of P E Norman's original Fokker Dr I triplane shown with many other such craft at Old Warden by Alan Jupp.



Top: This PE Norman-designed MiG 15 by Alan Campbell has a highly efficient home-made impeller and ample thrust to fly well. The lack of windscreen allows even more air to enter the fuselage. Above: Alan reaches for the starter motor with its extension shaft the MiG's OS FSR. 15.

second place. His model unfortunately was badly damaged when treed on his final flight. Despite a third round of 54 seconds after two maxes, upped by the slightly increased factor of 1.3 over the Rearwin's 1.2 because of its low wing, Ron Brownson flying his faithful Stahl Miles Magister was ten points ahead of Simon and so took first place.

Mike Hetherington had 'souped-up' his Astral Blenheim which had new propellers this year, but his times were low and serious damage sustained on his third attempt terminated his activities. The prevailing wind from the north-east persisted during the whole day and in the later stages was prone to gustiness which considerably affected the times achieved in rounds two and three. Most popular were the Earl Stahl designs of which there were eight in the competition. The larger models like the Taylorcraft (Paul Barford) and the Interstate Cadet (Brian Faulkner) must really perform well to stand

a chance of placing, since their times do not benefit from any bonus percentage. Mike Hetherington's Astral Blenheim, on the other hand, with its factor of 2.7, would have to have averaged 28 seconds per flight to have bettered the winning time. This is not easy, but Mike is working towards it; maybe next year he will show us how! In recognition of his endeavour this magazine gave him a special award which was presented by the Editor. Now, how about all those other Astral twins we mentioned last year?

PE Norman Collection

Alan Jupp was there again with some two dozen original P E Norman models, some of which he has painstakingly restored, and these are always a pleasure to see. However, this time he also had a number with him than can only be unkindly described as carcasses; broken, with parts missing, for the most part oil soaked and almost bereft of

covering, except for a few shreds of rotting silk. Some people might think that there is a certain ghoulishness in displaying these woebegone wrecks, but I was grateful for the opportunity of being able to examine them. There was the spirit of the air in their wood and metal, and it was nostalgic indeed to survey these machines, the descriptions of which, in bygone days, had caused a quickening of the pulse and infused an enthusiasm to imitate P E Norman with cane, ply and carpet thread.

Of particular interest to me were the blackened remains of the Fokker Dr I triplane, a copy of which I laboriously made while living in West Berlin thirty-five years ago. Well do I remember scouring the hardware shops with a ruler until I found an aluminium saucepan of the right diameter and profile from which to fashion the engine cowl. Although not strictly Vintage, the reader should not take it amiss if I recount briefly the story of my Norman triplane. I built it exactly to plan except that I did not use the pendulum operated elevator, since my beady eye was fixed on one of the then new-fangled R/C outfits. It was covered with Graupner silk and camouflage painted under the supervision of Willi Gabriel, a man who had flown the full size article in the famous Richthofen Circus in 1918. The radio was the Graupner Variophon, whose receiver had plug-together filter blocks — it was 'bang-bang', of course, no proportional stuff then. I wanted full-house and that meant four Bellamatic servos with all the hook-up harnesses, batteries and linkages that went with them. When finally finished, I could hardly lift the model from the ground, and I optimistically expected an OS Max .15 to fly it! OS sold a kit of parts complete with a drill and a tap to convert the OS Max .15 to R/C, so this I did. The do-it-yourself butterfly venturi valve with interconnected exhaust barrel worked very well, but I really needed a bigger engine or a lighter radio installation and did not have the heart to even try to fly the model. So it became a decoration in my den. I moved to UK in 1968 and in that year my son, Alasdair, was born. He, being a 'chip off the old block', eventually took up modelling; R/C cars at first, then aeroplanes. One day he ran out of airframes to fly and began to look at the old triplane (relegated for years to the roof of my garage), so we got it down, patched up the holes, some of which Alasdair had himself inflicted with a bow and arrow only a few years before! A greenhead K&B Torpedo .19 R/C was fitted and Skyleader proportional installed working throttle, elevator and rudder.

While I handled the cine camera, he flew it in August 1983. Take-offs were hairy with that all-moving rudder and the low power of the Torpedo, but in the air it looked satisfyingly great as he drove it around at what looked a scale speed. The complaint was that it was very touchy, so flying the triplane needed his constant attention. This was a



Top left: This Earl Stahl Taylorcraft Grasshopper by Paul Barford has all the ingredients of a fine flyer, but receives no bonus help in the Masefield Trophy. Above: John Sidall's quarter scale R/C Fokker D.VII is decorated in a red-and-white scheme that has been a modellers' favourite for 30 years. Accredited to Ernst Udet, intensive research has so far failed to confirm those colours. Left: Another model of a vintage warbird. This electric-powered, own-design Fokker Dr I triplane decorated in the black and yellow markings of Jagdstaffel 19 is checked for alignment by builder Mike Hall of Wallsall.



Above: This Douglas O-38 (a Ken McDonough design) flew well for Phil Brooks, who had to keep the turns down on the windy conditions at Old Warden. Above right: Rudders in the propeller slipstream of his H J Townner designed Hampden will, hopes Colin Young, reduce the directional stability problems that afflict single-rudder rubber-driven twins. Plans (first produced in May 1941) are still available from Authentic Scale of Eastbourne. Right: Harry Perrens of Walsall with his nicely-made Comet Stinson Reliant.





Left: Happy Lindsay Smith with his Veron Spearfish. Stockinged gentleman in the background checking his Comper Swift is our own tame cartoonist, Terry Rose. Below: Bob Walden poses with his Veron Comper Swift.



feature of the full-size machine which had to be 'flown all the time' as Gabriel used to say often enough. After some twenty flights, Alasdair refused to fly it any more (he probably had a more modern airframe lined up!). Thus the old triplane went back into the rafters where it still hangs today to remind me of an acute attack of enthusiasm for P E Norman's models, brought on by reading the November 1951 *Aeromodeller*, that only became airborne some thirty years afterwards because of the spirit of a younger generation.

So it was with knowing eyes that I looked inside that tattered hulk at Old Warden and noted how P E had sprung the undercarriage, produced his perforated zinc Spandau guns and the multi-ply wheels with balsa spokes. My copies of these had caused smiles of amusement to the Berlin model shop staff when I used to take the model along to show them during construction. Thank you, Alan Jupp and colleagues, for taking me back down memory lane. I wonder how many others saw your collection and could tell similar tales?

Another P E Norman original on show was the ducted-fan MiG 15 which was described in the 1955 *Aeromodeller* Annual; and by good fortune this model was represented on the flying field by Alan Campbell's example. Last year he had a Fox 15 for power, driving a beautifully made impeller enclosed by a stout, peripheral ring to prevent the loss of an impeller blade becoming a dangerous projectile. This year he has increased the power by fitting an OS FSR.15 and the blast from the jet pipe has to be felt to be appreciated. Originally Alan's model weighed twenty-two ounces, as did the prototype, but the new engine installation has increased this by a

couple of ounces. Unless one is a P E Norman or a model boat man with experience of cord starting, getting the engine going can be a protracted business, not without danger to the model. Nowadays, the way to start such an inaccessible engine is via an electric starter motor, poked into the generous air intake. Alan's starter has an extension shaft for this purpose, the rubber drive of which acts on an ordinary plastic propeller spinner at the impeller. With the engine primed, needle valve set and glow clip attached, the electric starter takes all the aggro out of starting. The bulky fuselage makes the model difficult to hand launch, especially if slippery with oil, and this plus the gusty wind prevented the model from getting cleanly away so the premature, firm arrivals caused some airframe damage, but Alan is a trier and is bound to succeed with this most intriguing model. Being used to the sudden

cessation of noise when a model hits the ground, when the MiG 'came in' it was comforting to hear the reassuring howl of the engine still running, which indicated that, at least, all was well in the powerplant department!

A quick survey of the radio models did not reveal any of the Vintage variety, but mention must be made of John Siddall's quarter-scale Fokker D VII which was painted in a colour scheme said to have been used by Ernst Udet and is based on published information. I can personally assure readers that despite this colour scheme of red and white being a firm modellers' favourite for the last thirty years and the fact that at least one Fokker D VII replica flown in the USA is so decorated, its origin has not been authenticated in any official German documentation that has yet come to light. John's model is a fine well-built machine that represents the high standards that one has come to expect of this branch of the hobby. To return to vintage scale — quite the finest that I saw was Doug McHard's new Keelbild Hawker Demon marked as K4500 and decorated with the red and yellow interlocking triangles of 604 (County of Middlesex) Squadron, Auxiliary Air Force. Doug says that his original Demon became too brittle with age and just wore out! He is full of praise for this excellent flying scale design, especially when one remembers that it is over 50 years old. This splendid model is indeed a tribute to the designing ability of Tommy Kennedy who designed so many of the models produced by The Model Shop, most of which are still available as plans — that for the Demon costing £5.00 which includes the printwood patterns. All vintage scale enthusiasts should have the current MS list of available drawings, so send an SAE with your request to The Model Shop, 18 Blenheim Street, Newcastle-upon-Tyne, NE1 4AZ.

Flying scale has always been a strong interest of mine and at such a meeting where so many fine models abound it is a difficult job to restrict one's interest to pure vintage types, so I make no excuse for mentioning some designs that are post-December 1950. This includes two excellent rubber powered machines whose flights were a joy to behold; Phil Brooks' Douglas O-38 (now in its fourth flying season) and Bill Dennis' DH 75 Hawk Moth, which, after flying the length of Old Warden, came to rest in the uppermost branches of the tallest tree in the place...

Masefield Trophy: Top Ten 19 entries; 60sec max

	Type	Factor	1	2	3	Flight total	Score
1 Ron Brownson	Stahl Magister	30					
2 Simon White	Stahl Rearwin Speedster	20	1.3	60	60	174	226
3 Bob Walden	Veron Comper Swift	40	1.2	60	60	180	216
4 Simon White	Comet Navy Racer	60	1.4	60	26	31	117
5 Ray Jenyon	Stahl Curtiss Scout	30	1.8	34	24	19	77
6 Brian Faulkner	Stahl Interstate Cadet	30	1.3	44	30	29	103
7 Andy Crawforth	Keil Kraft Me 109	NIL	1.0	60	30	24	114
8 Chris Strechan	MAN Wittman D-12 Racer	50	1.4	20	22	19	81
9 Paul Barford	Stahl Taylorcraft Grasshopper	40	1.4	8	29	28	65
10 Terry Rose	Veron Comper Swift	NIL	1.0	37	25	12	74
		40	1.4	20	19	14	53

FROM THE HANDLE

One enthusiast's path to speed success

- Ian Mander's candid account



We will run a future on jet speed soon. Meanwhile here's Alan Lee's Dynajet craft recently seen at 3 Sisters - the only venue where jets may be flown. 3 Sisters Gala report next time.

THIS is a short account of my endeavours to become a reasonably competent Speed flier. Pitfalls, and how to avoid them, will be highlighted.

How did it start?

My decision to re-enter Speed (I had previously only dabbled a few years before) was made in 1985, and prompted the purchase of a Rossi MkIII. Mistake number one! I'm sure there was nothing wrong with the engine, but even on the bench it did not obey the rules as I understood them. I mean - who (other than a hardened FAI flier) would expect to run a .15 on a 6x4 prop to make the pipe resonate? After much head-scratching I sold the engine. A similar brief excursion with a Picco .40 forced me to approach the problem in a much more logical way. Just as I was considering this, lo and behold - *Aeromodeller* arrived with a feature about Peter Halman's 5cc World Record holder powered by the Irvine .21 of his own design. I was absolutely sold. This engine seemed to fulfil all the criteria I had set at this time, namely:

- (a) The engine should be freely available - spares too;
- (b) It should be of such a size that I, as a novice, could cope with its power output;
- (c) Others involved in Speed flying should be using the motor so I could pick their brains.

Not only did the *Aeromodeller* article help me get back in but there were full details of the model, including the all-important tank and control system. The motor was ordered and commitment made.

The right track

I was delighted to find that, when running on an OPS .40 pipe (the only one I possessed) the Irvine blew my 30,000rpm rev counter right off the end of the scale!

A visit to a Speed competition at Bicester gave me the chance to see my proposed set-

up in the flesh. At the same time I bought a pan and the correct pipe - so it was back to the workshop, and on with Project 21N. Here I should make clear that I then had no such facilities as a lathe. The model was produced only with the tools found in most modellers' workshops. A silver-soldered tank was an out-of-reach luxury.

The airframe was made from a mahogany offcut, courtesy of the local double glazing firm. The tail came from a piece of 3mm lime which had origins in a packing case. When it was all finished in clear polyurethane varnish it looked quite good.

But what about the wing? By this time I had befriended Dick McGladdery who gave me much helpful advice (some of which I absorbed, some I didn't - mistake number two). Dick actually gave me a wing - not the archetypal long, thin wing, but one about two feet span and not very pleasing to my eye; but I was happy to use it. Long wings can be very difficult for the beginner to manage. After the gift of a set of lines from Pete Halman I was ready!

The crunch

The day of my first competition arrived. Off we went to beat the world. With Pete

on the needle and Dick on the starter, how could I fail? That's two-thirds of the UK World Champs squad...

My flights started at a disappointing 105mph. As the year passed I realised that my standards were just not good enough. This culminated in a Nationals where I did not even record a time. The lesson was learned.

New outlook

That winter a new model was built around a new pan, with a wingspan of three feet. I received much thoughtful advice - and when Peter or Dick told me something was wrong, I now listened - and listened good. Two fortunate purchases came along; an old but serviceable lathe, which has allowed me to machine several components difficult (but not impossible) to fashion by hand; and a pre-production Irvine .21, brand new and unrun! The model was completed in January '87. For the rest of the winter I built all the special tools needed to service the model, such as a propeller pitch gauge from an Aeromodeller article (*we'll cover this in a future article. GC*).

A much humbler attitude was now adopted. Thanks to this, the new model broke the 21N record not once but three times during the 1988 season, culminating in a run of 164.4mph at the Three Sisters Gala and sixth place at the first Mallorcan International (this with my newly acquired Irvine .15). A very successful season.

What lessons?

Thinking of trying Speed? Here's a few tips. (a) Speed flying can be expensive in terms of time and effort. To achieve reasonable success requires not only one's own commit-

Top UK jet enthusiast Ray Cox's Dynajet model. Hotter fuel mixtures being tried this year...





ment but the backing of one's family.

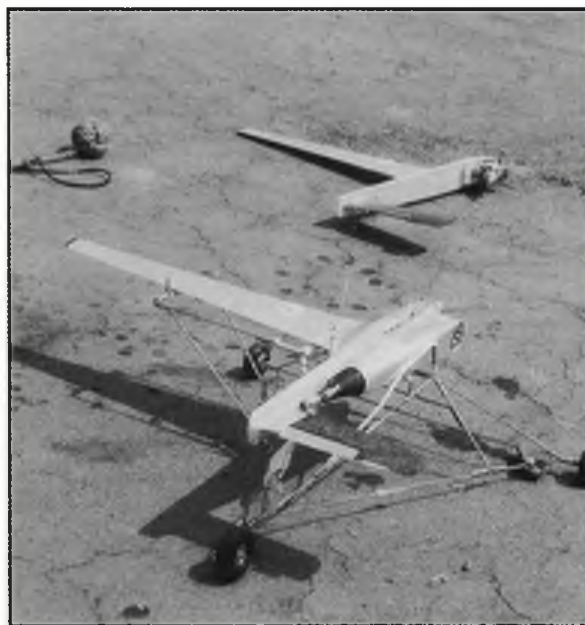
(b) Don't try to go it alone. Visit Speed competitions before spending time and money. The help you receive will be invaluable.

(c) If the local model shop can't get the bits, don't give up. Ask other enthusiasts for advice.

(d) Find out who else uses the equipment you propose to try, and talk to them.

(e) Don't build anything exotic. The chances are you won't have the skill, or knowledge, to make it perform.

Above: Des Ratcliffe is trying hard this season. Here's his OPS 21N model. Right: Pat Rose's Super Tigre X-29 with, in the background, Tim Charlton's Taipan 15 speed trainer.



(f) Speed models are sometimes very difficult beasts to get to function correctly. Don't give up - take a deep breath and try again. It'll be worth it when your British Record certificate drops through the letter-box!

And incidentally, for my own Record achievements I must thank not only Peter Halman and Dick McGladdery but my wife Karen who has cut the lawn and weeded the garden for the last two years...

Claus Maikis discusses man, motivation

- and stunt models...

CURIOSITY is a characteristic of all highly-evolved creatures, including Man - and control-line flyers. It's one of the strongest motivations we possess. Curiosity is probably the reason for all creative thinking and actions. We are certainly indebted to it for the invention of C/L; remember, radio control already existed when Jim Walker (or Oba St. Clair, or your favourite candidate for the early Number One spot) tried to control his airplane with strings. Curiosity has caused the present state of Stunt development, and it provides a constant challenge in the name of improvement. There's a saying which goes, 'Change is one half of life.' The need for change is a natural one and it provides much satisfaction and fun.

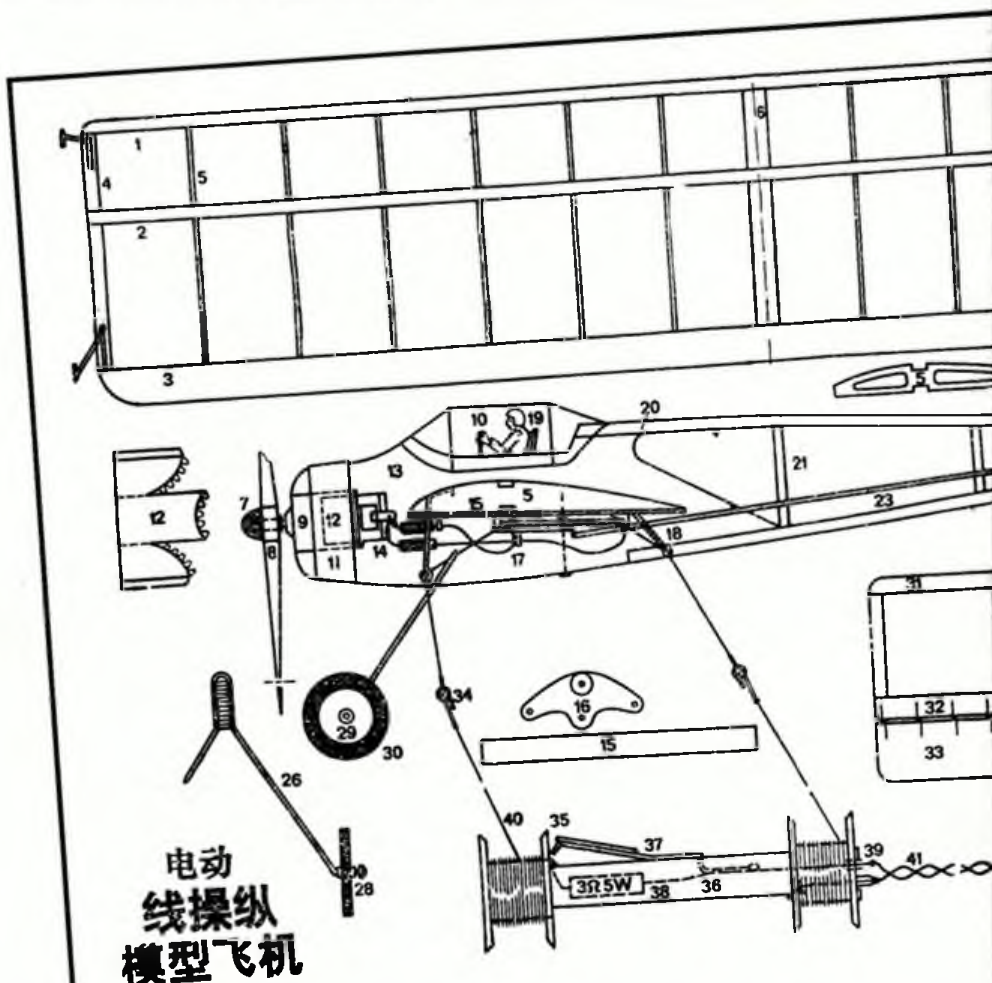
Frightening

When talking to Stunt flyers the conversation always circles around different engines, other propellers and better airplanes. Some enthusiasts - including me - even try out new items just for the sake of it. Obviously, curiosity and change have their place here, too. However, the Stunt schedule itself is hardly ever a matter for discussion. Generally, Stunt fliers are satisfied with the rules and see no reason for a change. Basically, this is a healthy situation. It proves the soundness of our rules, but still provides room, and time, for subtle improvements to our craft. Repeated changes would drastically increase the efforts necessary to stay com-

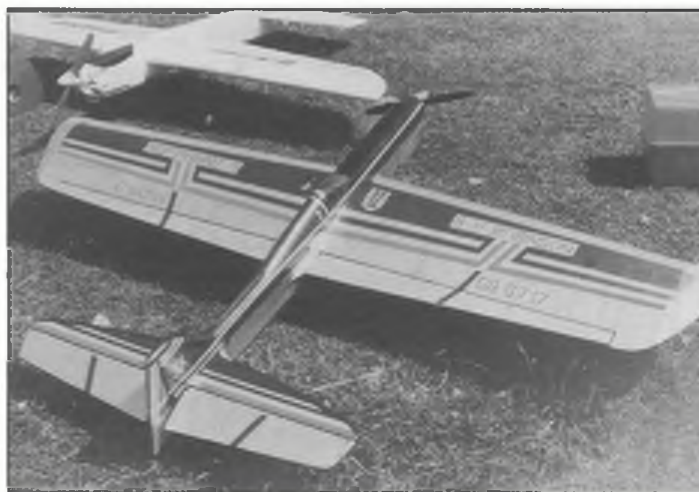
petitive - and would probably frighten away modellers with less time, money, experience and willingness.

New feel

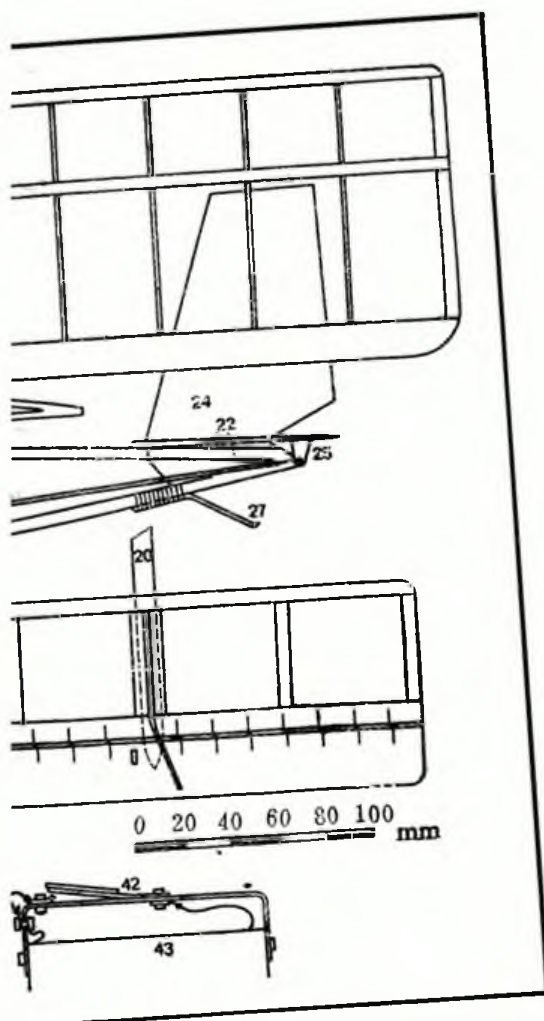
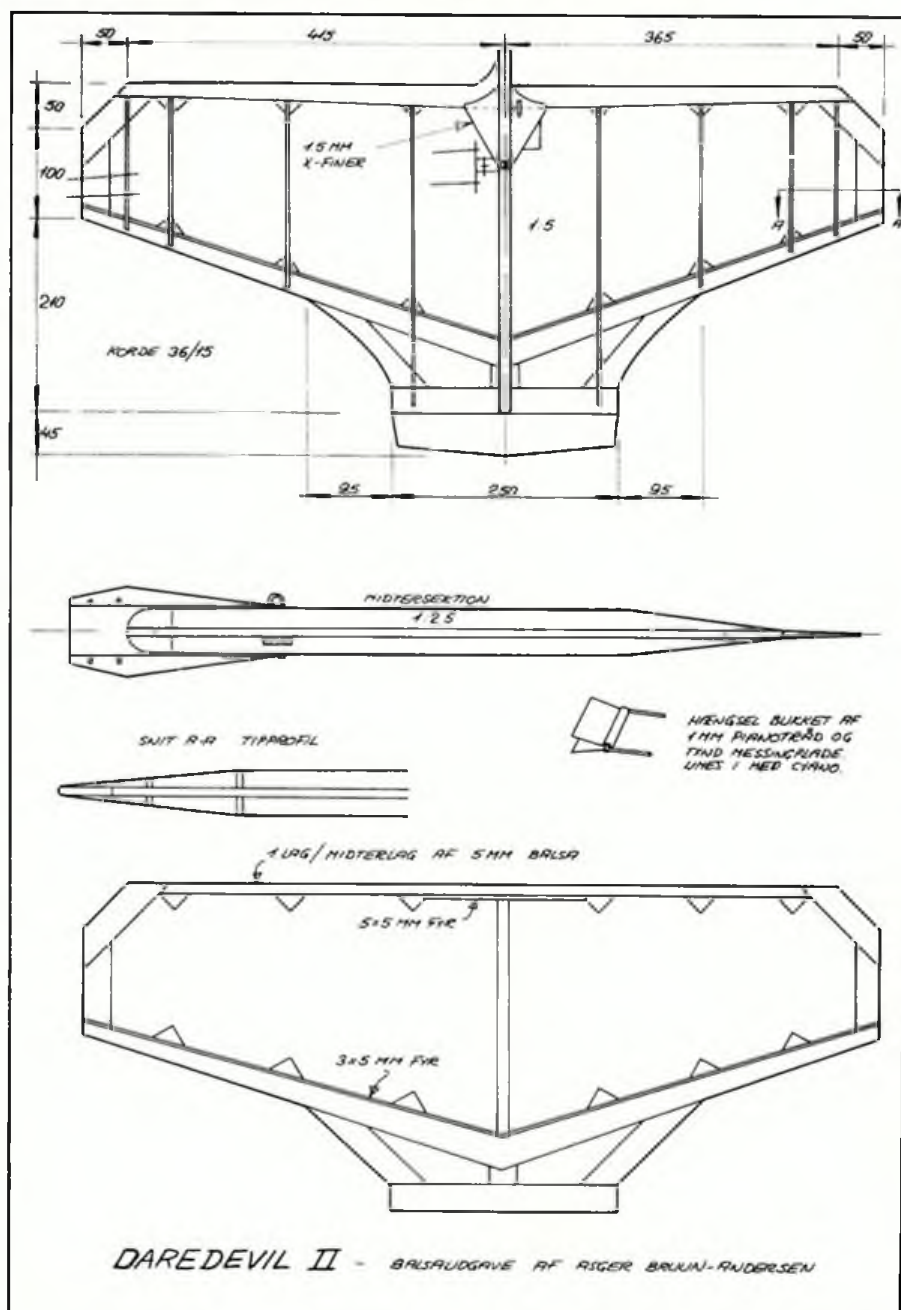
Nevertheless, there's occasional mention of boredom, stagnation, or desire for change.

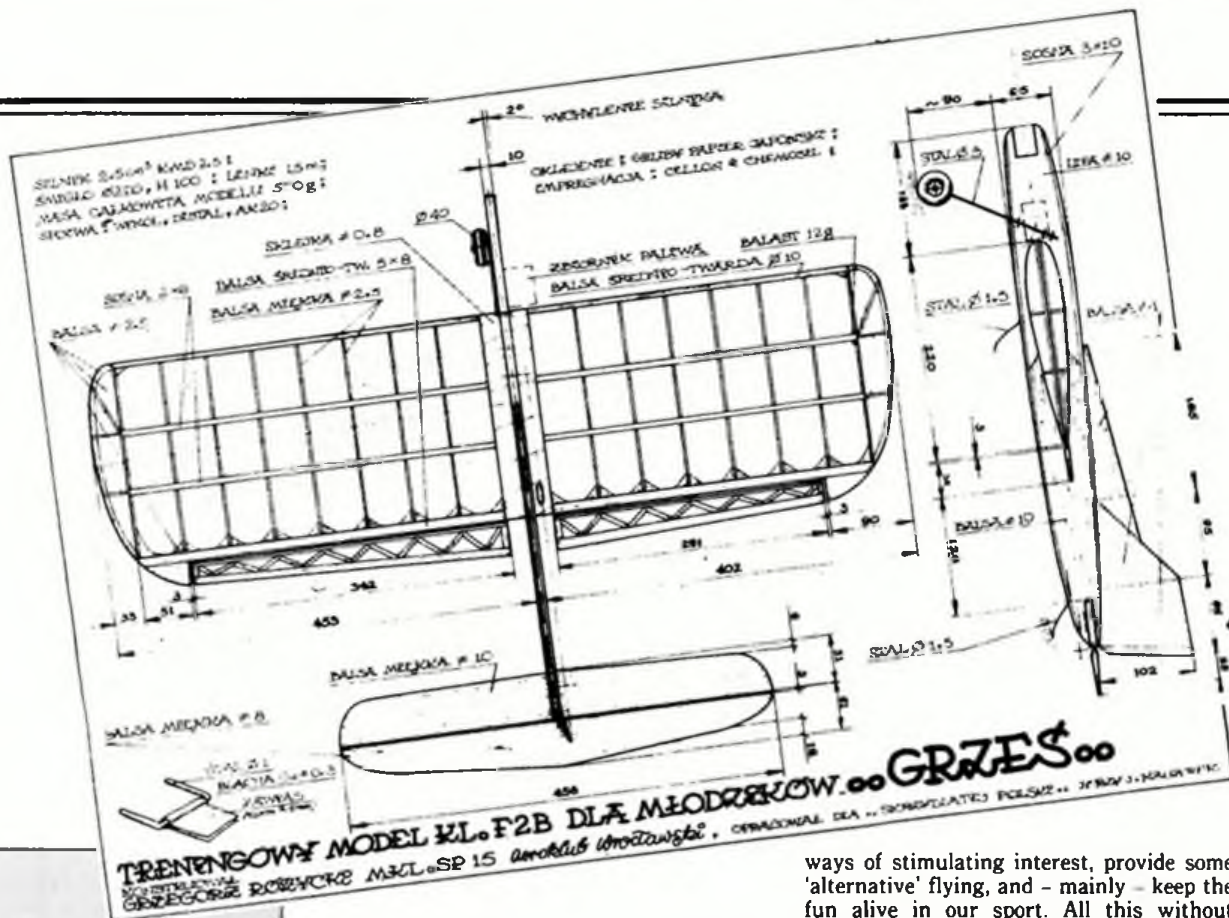


Below: Simple profile C/L job, from Hangkong Moxing magazine, for electric power - quaint!



Left: Latest Northwind 9 (alias Boreas) by Barry Robinson maintains sleek lines. Below: Daredevil II - a straight forward combat wing from Denmark.





John Kergon favours the APS Superhawk, Bill Draper's winning design. Super Tigre 46 power - and CLAPA decal on near fuselage!

Beauty and harmony

The point is, just changing manoeuvres is really no change at all. A good pilot will master a new manoeuvre within fifteen minutes (provided the manoeuvre is actually flyable). After a few practice flights the situation will be the same as before. It's difficult, if not impossible, to develop manoeuvres which are essentially different,

given that our airplanes are elevator-only controlled. Easy manoeuvres will be mastered at once, and extremely difficult ones will probably be beyond the abilities of pilots and airframes. No sense here. The present pattern is a well-balanced compromise between difficulty, pilot ability, and flyability. As long as world class pilots make mistakes when flying the schedule, there's no need to increase the difficulty.

On aspect shouldn't be forgotten. The whole presentation should possess a touch of beauty and harmony. Enthusiasts in other events may smile sardonically about this but the majority of stunt flyers agree with this view. We like a beautiful airplane flying a smooth pattern. Square manoeuvres are the most extreme that should be accepted. Such fancy shapes as 'double inverted triple hourglass leaf with quadruple seven-angle below twenty-five degrees' may excite a cartoonist, but not the eyes of the beholder. It's my experience that most onlookers cannot even detect the hourglass or cloverleaf shapes, even when they are perfectly executed. We do need square manoeuvres to differentiate between the performances of fliers, and thus provide competition. But if new manoeuvres are thought necessary, they must be rationalised very carefully.

And don't overlook the problem of getting capable judges for a contest. Even now, many clubs are happy if they find anyone willing and able to judge the present pattern. How often are the flyers unhappy with the judges' performance! Increasing the difficulty of the manoeuvres (or the scoring system) will only make the situation worse.

Enemy of change?

All this sounds as if I'm an avowed enemy of change. Those flyers who see me with a new aeroplane each year (sometimes a new model at every contest!) will know that I'm not. Actually, in company with some other stunt flyers, I'm always trying to find new

ways of stimulating interest, provide some 'alternative' flying, and - mainly - keep the fun alive in our sport. All this without increasing time and money spent. Possibilities may be discussed. The basic consideration is that the rules must not be changed. No-one would accept this. Furthermore, on the continent we have fewer contests than in the UK. Many are International events where different rules cannot be used. That leaves just a small number of local contests to try out other approaches. To have to adopt another procedure, provide better-qualified judges, and complicated score calculation would be beyond the abilities of most organisers.

Alternative contests

Unofficial events are the only means for running alternative contests. So what to choose? America goes for Half-A Stunt and the Old Timer class. We might consider Scale Stunt or small-capacity classes. There's room for one-design classes, for flying wing, canard, or a biplane.

You might remember our own Laser project of two or three years ago. All competitors had to design an airplane around the same basic configuration. Special goals or design features may be required. All these ideas require announcement in good time - maybe even one year ahead. But what a challenge! No-one need ever talk about boredom again. Of course, all these projects would have to be discussed with event organisers. Maybe even the normal three-flight contest could be reduced to two flights (the Americans do this, anyway) to allow for an additional competition.

There are a whole number of possible ideas which can easily be adopted without too much extra work, or excessive demands. Don't forget - we are a small group, and need variety to increase participation. Fun is not increased by uprating difficulty. You can set your own targets as high as you wish; you can find new goals within the existing rules. Creativity sets no limits and allows for endless excitement - but don't change the rules!

NZ JUBILEE

THE INAUGURAL meeting of the Auckland Model Airplane Club was held in November 1928 under the chairmanship of Fred C. Macdonald, who was to make an outstanding contribution to the club until his death in April 1952. The club's colourful history reflects the rapid changes which took place in aviation world-wide during the late 1920s and early 1930s, and so we see the club becoming involved in full-size gliding, then becoming affiliated to the Auckland Aero Club (also celebrating their 60th Jubilee this year, incidentally) as the model section, and finally emerging about 1935 in more or less its present form with its present name.

Initially affiliated to the English SMAE, the club was one of the founder members of the New Zealand Model Aeronautical Association, formed in 1932, and has continued to play an important part in model aviation to the present day, being many times the Champion Club of NZ. Latterly, the main interest in the club has been centred on vintage models and motors, but nearly all types of models are being built and flown by our members, with vintage CO₂ replicas being strongly supported.

The club has always taken an interest in international contests, being represented in Wakefield on many occasions, culminating in the second place by Brian Marsh in 1948. Earlier, in 1936, club member Vernon B. Gray won the Moffett Contest in the USA when Bert Pond proxied Vern's model for him, and thus achieved notoriety as 'snake-in-the-grass Pond', a name by which he has been affectionally known in the US ever since!

Highlights and celebration

The present committee arranged a series of contest and nostalgia flying events to mark the Jubilee, in which Vintage events played a prominent part. Highlights were the A-frame contest for a prize of \$100, won by Roger Left, who flew happily at one of the club's old flying fields at Lake Saint John, and the special one-design indoor contest flown with 1938 Modelair Trainers, won by Vernon B. Gray! Incidentally, Vern also took second place in the A-frame event, and recorded an eleven-minute flight with his A-frame the day after the contest. Hasn't forgotten, has he?

A major feature of the Jubilee celebrations was the Model Exhibition and Dinner held in the Logan Campbell Room at the Vacation Inn Motel in Campbell Road, Auckland, on the weekend of 25-26th November. The theme of the exhibition was 'A Cavalcade of Modelling, 1928 to 1988', and the centre-piece featured the actual Kovel-Grant KG-1 built for a Brown Junior by Fred C. Macdonald and first flown by him in January 1936.

The display was arranged so that as the public entered the hall they saw models hung from the ceiling in time sequence, beginning around 1928, 'flying' towards the centre-piece, flowing around it and re-combining to reach the exit door by 1988. The Cavalcade theme was echoed by models on tables around the walls. These models were chosen to

Maurice Poletti tells us of an Auckland anniversary

illustrate all the various types; Peanut Scale, Rubber, A/1, Wakefield, Quarter Scale, and so on. Our sister club, Roskill Modellers, assisted with a splendid display of their Radio, Radio Scale Vintage and Quarter Scale models.

Also located in the centre-piece was the display of over a hundred Vintage engines, from the Brown Junior to diesels and glows. Major engine contributors were Rees Jones, Terry O'Meara, Arthur Pearce, Maurice Poletti and Dave McKinley. A selection of control line, Jetex and Indoor models completed the centre-piece display.

In one corner, sheltering beneath Evan Pimm's huge FW Ta52, his larger Heinkel He219 and Angus Macdonald's one-third (!) scale partly-built Gypsy Moth, several TV screens were displaying videos of Club model flying from the early 1930s (from old movie film by Harry Reynolds), and a number of general-interest model videos, which proved to be very popular with the public.

Your questions answered

Club members, wearing identifying labels, were on hand to answer questions and to provide information about the club and the exhibition. We found that this service was much in demand, and these members were kept busy explaining to our visitors the details of the club or the models displayed. This little public relations exercise has already resulted in several new members.

The dinner on the Saturday evening actually began with the prize-giving, during which President Reg Fleet presented prizes

for those who had won the special Jubilee events. Of special importance was the model-building contest for Juniors, which was won with a superb scale Tiger Moth by Philip Mauer. Prize-giving was followed by an address presented by Allan Rowe (of R6-B fame) who was a junior in the early days of the club, and who provided a fascinating glimpse of the club as it was in the early 1930s. Allan concluded his address with an account of the very recent re-discovery of Les Wright's first successful powered radio-controlled model, found still hanging safely in the ceiling of a house which had had several changes of ownership! The refurbished model was due for public appearance at the 1988/89 NZ Nationals at Carterton.

The smorgasbord dinner was adjudged a great success by those attending, and there was dancing afterwards for the more athletic, and groups yarning about the 'good old days' for the more sedate. It was good to see old friendships being re-cemented, and new ones being made, as some of the old-timers came back to the club for the Jubilee.

The right spirit

Impressions remaining? The great spirit shown during the Jubilee contest events; that unforgettable morning at Lake Saint John; high-flying A-frame pushers; the large number of models at the exhibition (well over two hundred); the centre-piece; the amount of work put in by the club members; the worries about whether it would all work out all right; the determination of the club members to make sure that it did; that wonderful feeling at the end when we knew that the exhibition was a great success; the congratulatory comments from the public; the smile on Treasurer Mike Fairgray's face at the close on Sunday night!

I feel sure that Fred C. Macdonald and the other founder-members of the 1928 Auckland Model Airplane Club would have approved of the Auckland Model Aero Club's 60th Jubilee celebration in 1988...

Just part of the Jubilee celebrations...



FOAM? Oh yes—you buy it in big blocks and cut it with a hot wire. This is what most people will say when you ask what they know about expanded polystyrene foam.

This series of articles is not about that type of foam but is intended to introduce you to using the other form in which expanded polystyrene foam is generally available — as a roll of 2mm thick sheet — sold in most DIY shops under the title 'Wall Veneer' and intended to be pasted on to walls for thermal insulation.

A 30 feet long roll, nominally 600mm wide will cost you a little more than £1.00 (!) and is sufficient to make as many as forty Peanut-sized planes, as reported in *Foam Fun* in August.

It is not a new idea; indeed, I have found reference to it as early as 1982, and you may know of earlier ones. However I am sure that it could be used much more than it is, and so, at your editor's request, I report on some experiments that I have made and techniques developed, which have led to a growing range of successful models for indoor and calm outdoor conditions.

Floppy

The foam itself is very soft and floppy, and except for very small flying surfaces, does not have sufficient strength for use without some form of strengthening.

Even with reinforcement the assembly has limited strength and the construction methods described should normally be limited to wing spans of, say, 450mm (18 inches). Initially intended for rubber power, the system can however be extended to cover CO₂ and electric, but added framing will be needed to withstand the loads involved.

The question was: How to gain the necessary stiffness with the minimum weight addition?

For the fuselage it was found that a simple box framing of 1mm or 1.5mm square balsa glued to the fuselage sides gave sufficient strength to withstand the motor tension and torque. Further constructional details will be given later, and although it is somewhat different from anything you have probably done before, is very simple, quick, and amazingly light.

To keep the weight down, and for simplicity, I use only a central, straight, box frame. Above and below this the foam is self supporting and makes a 'semi rigid' structure. You can, of course, make your reinforcing strips follow the curves of the fuselage if you wish.

The flying surfaces needed some experiment to find a reinforcing system that gave sufficient (yet not too much) strength for a minimum weight add.

Brainstorms

After a brain storming session, I made up a number of equally sized pieces of foam and reinforced them by a variety of treatments which included:

(a) Soaking the foam in several types of glue, also painting with various paints and varnishes. The idea was to fill the spaces around the 'cells' of the foam to create a honeycomb-type structure — a Good Idea. It did not work!

(b) Tissue covering top and bottom surfaces.

(c) Various patterns of balsa strips added to the top and bottom to make a balsa-foam-balsa sandwich.

(d) Balsa strips glued to the edges, and as



FOAM

Steven Midson begins a

close look at foam techniques

for sport and scale models

fun fol



Heading: Our writer's Koodavbeen is an ideal semi-scale subject. Plans to follow. Above: Almost any prototype can be built from foam. Chance Vought Corsair flies well; a few design compromises — but can you notice them? Plans for the Tucano appeared in the August issue.

2mm wide ribs glued in the middle of the sheet.

(e) Double layers of foam to give wing thickness.

Some of the arrangements are shown here.

To test the strength gain of each method, a simple apparatus was made up which clamped the sample and the number of 'nails' that had to be added to the weight box to deflect the treated foam by 5mm, was recorded and used as a measure of strength. Untreated foam required five nails; the strongest, 373!

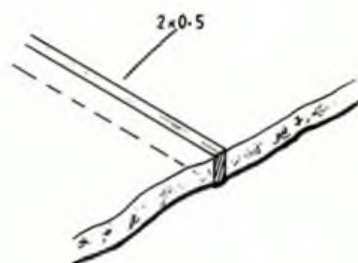
The ratio of 'nails' divided by the weight added gave an immediate indication of the optimum method.

The answer quite clearly was the use of strips of balsa (2mm wide x 0.5 thick) glued edgewise to the foam; and with the addition of similar top and bottom sandwich strips, a close second. See Fig. 1.

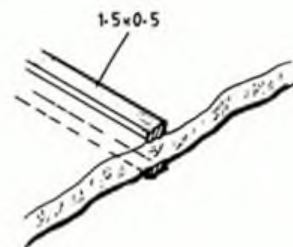
This then is the proposed method for single thickness, minimum weight wings as may be used on biplanes or foam-winged versions of EZB or P15 models.

However, a decision still had to be made as to where and in what pattern the strips were to be glued into or onto the wing. Simply edging the foam only, and/or square chord-wise strips, does not give adequate torsional rigidity although it is sufficient if you are building a wire braced wing.

For an unbraced monoplane wing some form of diagonal reinforcement is required as shown in the diagram. Although it looks complicated it is easy to build up, particularly if you bend a sheet of soft metal to the shape



THE WINNING ARRANGEMENT



& THE SECOND BEST

Fig 1

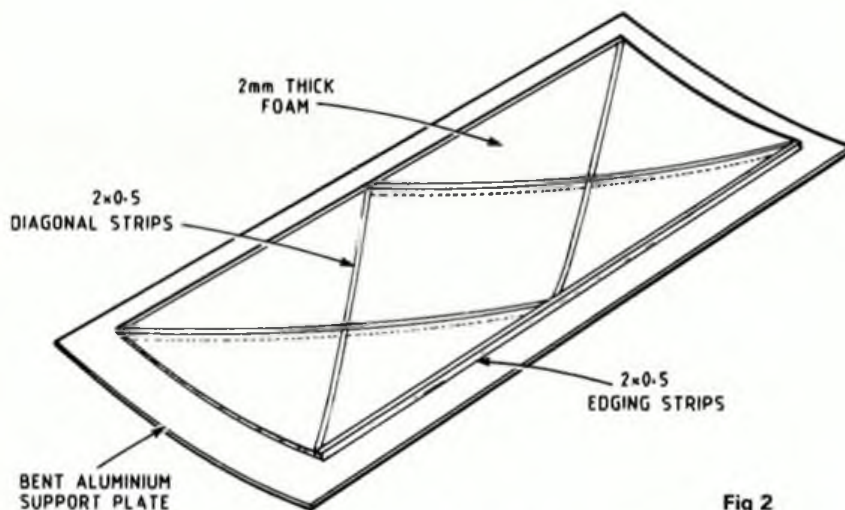
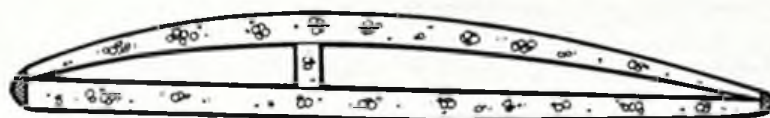


Fig 2

DIAGONAL & EDGE REINFORCEMENT OF A SINGLE THICKNESS FOAM WING



A TYPICAL DOUBLE SURFACE WING SECTION WITH BALSA EDGING FRONT AND REAR

Fig 3



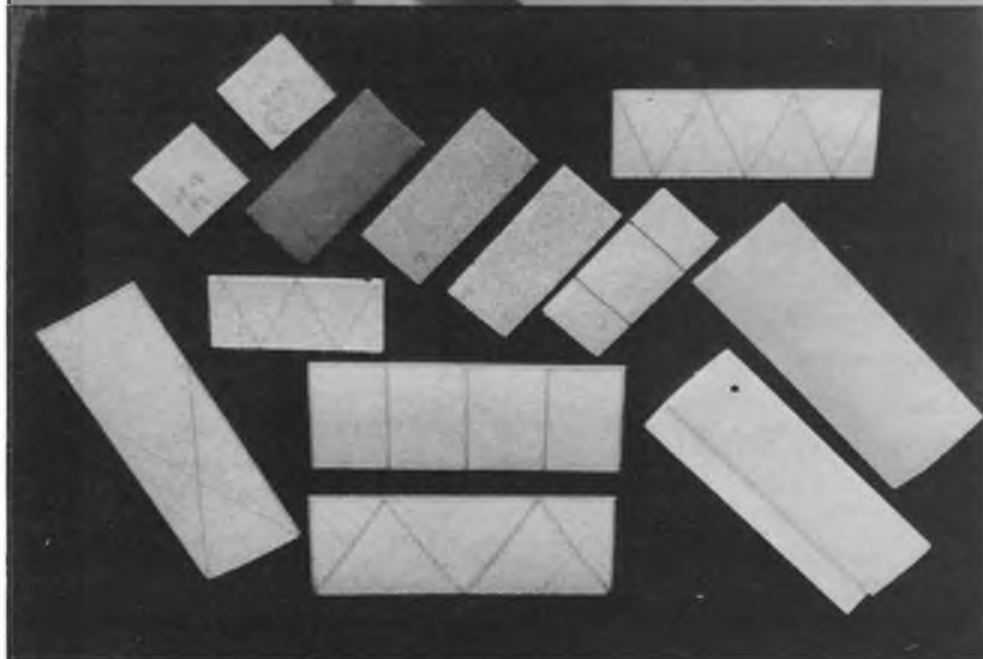
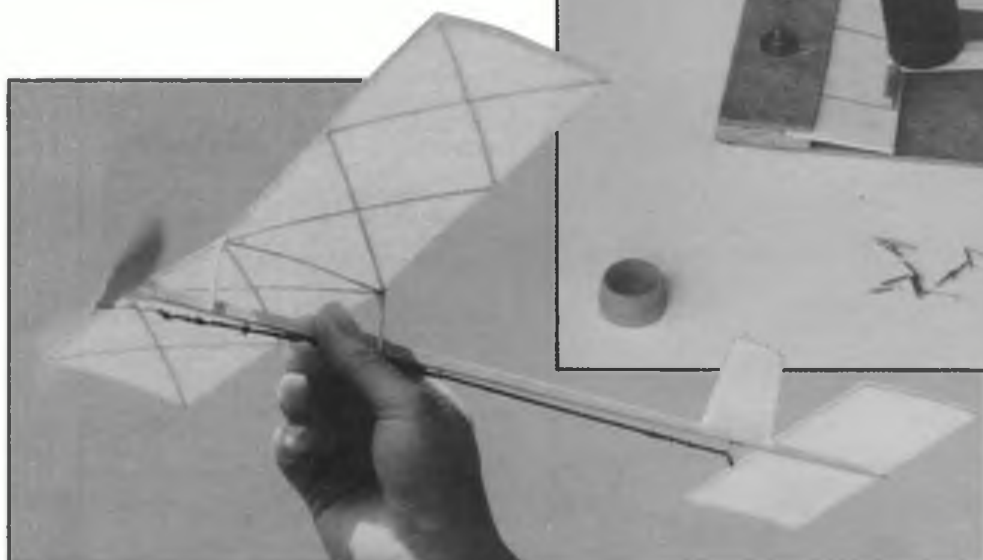
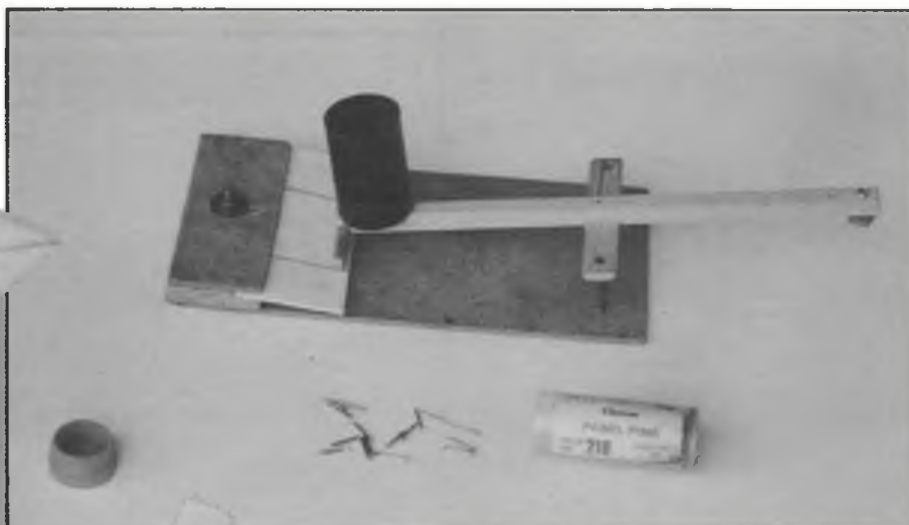
AN EARLY, NOT VERY SUCCESSFUL ARRANGEMENT OF WING SECTION

Fig 4

LOW-UP



Right: Test piece of structure in the stress jig, suffering under the weight of 230 nails. Below: P15 craft with diagonally-reinforced wing.



required and use it to support the wing during assembly. **Fig. 2.**

For 'nearer to scale' wings, with ten to fifteen per cent chord thickness, the answer is to simply make a wing with upper and lower foam sheet surfaces separated by one or two foam spars. The glue lines at the leading and trailing edges, also at the spars, plus the curvature of the upper surface, give sufficient strength without further balsa strips.

However to make a neater leading and trailing edge, and also to increase the tensile strength of the leading edge, the addition of balsa strips are suggested for spans over thirteen inches (330mm) – weight added is minimal. **Fig. 3.**

My first experiments with this wing form used a lower piece approximately two-thirds the chord leaving a 'flap' of single thickness beyond. This was inconsistent in flight and so a wing section with both top and bottom pieces of full chord is recommended. See **Fig. 4.**

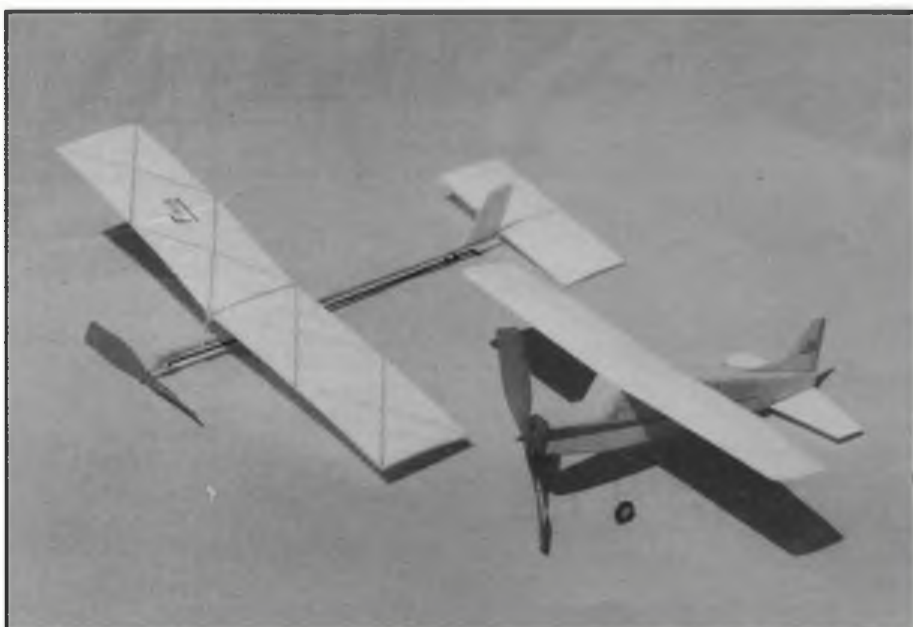
Easy!

You should note that it is easy, provided the foam is adequately supported, to sand it to shape with fine glasspaper, and that material can be removed to give a thin trailing edge, and smoothly curved leading edge. Any edging strips should be glued on oversize and sanded down with the foam. More details are given in a later article.

The tailplane and fin being smaller can be single or double layer, with or without balsa reinforcement. However the addition of strips improves the consistency of trim.

Even with the addition of reinforcement the whole structure is very light and quite flexible (just like the real thing!) and makes the models amazingly crash resistant. Further, any tears in the foam can easily be glued up and "operations" carried out through a flap cut in the foam are almost invisible.

The next articles will cover what shapes you can make with foam sheet, plus some more manufacturing and finishing techniques...



Centre: A selection of test samples and complete wings. Results described in text. Bottom: The P15 and Koodavbeen, ready to take the air.

FREE FLIGHT SCENE

Dave Hipperson examines a new Power contender and reports from overseas

TREVOR PAYNE believed that his '40' models were too heavy at 42 ounces; and faced with the new seven-second engine run, set about designing a model six ounces lighter!

The design shape is stretched slightly from the original Forte layout, with extensive use of very small balsa cross sections (just look at that trailing edge) and much carbon reinforcing. All joints are made either with epoxy or cyano. Although using carbon externally detracts slightly from the conven-

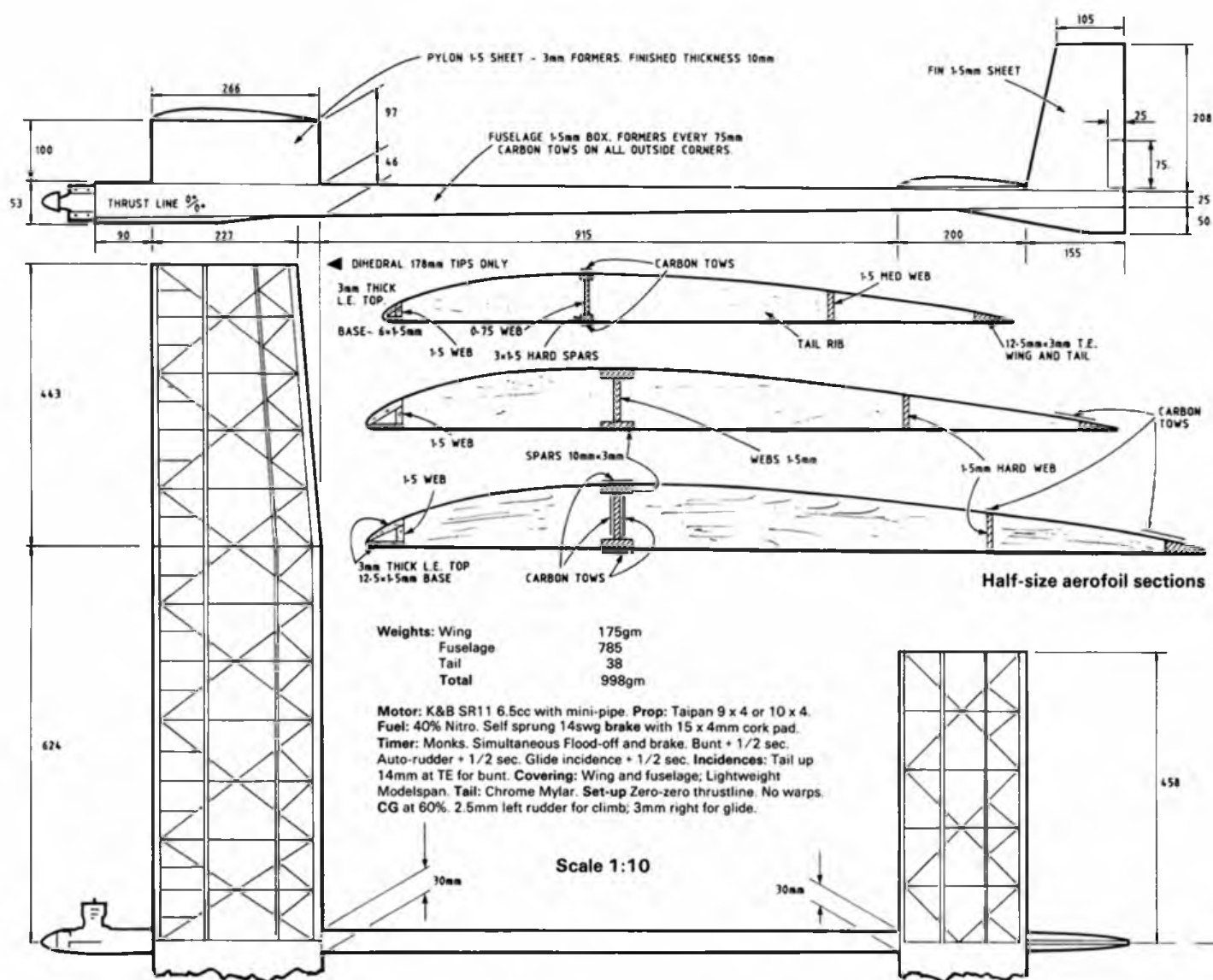
tional tissue covered appearance, it is, of course, the most efficient place to use it and hardly notices when the model is a few hundred feet up!

Trevor brought the model out at the first meeting this year and it was evident that the fuselage needed further stiffening. It was bending and causing under-elevation on the climb; hence more carbon tow reinforcing at all four corners. At the time of writing the model is still not fully trimmed. Realising that the process usually requires a few flights

Trevor uses them to run in the new motor. Theoretically the model comes on song just about the same time as the engine does.

Unusual features (apart from the super light weight) are the flat centre-section to the one-piece wing and the use of bunt transition system. This is not yet very common on Open models but most certainly will be within a few years. Once mastered it conveys a clear advantage, particularly if things go a little haywire on the climb.

Time will tell if this model can hold together on the climb when the motor is on full power. At 35 ounces it is very light. At least you know when Trevor's about - his models always have distinctive fluorescent green tips!



Trevor Payne's 1989 Forte



Trevor Gray holds Mike Lester's Coupe before the Oxford fly off.



Mike Chilton prepares to wind his Coupe at the same event.



To complete a trio of pastoral Coupe scenes, here's Gordon Cornell launching his enormous 250sq in Coupe; bad air and turbulence had the model down in less than a minute.

SMAE Fourth Area Event: 11th June

Flyers, glider flyers in particular, were popping out of holes in the ground right across the country for this traditional, post-Nats area event. Glorious weather meant entries far higher than usual, yet again. At Barkston in particular participation was quite extraordinary; more than 60 flew. The local club, Grantham, rather in the doldrums with competitive flyers thin on the ground of late, suddenly produced no less than three glider teams! Only Bristol & West at Merryfield had more.

A controversial departure from the usual menu had been the substitution of Slow Open Power for the Astral Trophy in place of F1C. Entries were large and so was the flyoff, although not everyone who qualified was able to compete in it. George Fuller had lost his PAW-powered model on the last max and poor Ray King had to sit it out at Church Fenton thanks to a full-size take-off; an aeroplane involved in a medical mercy mission. Encouraging, too, to see the names of Clarkson and Needham of Three Sisters control-line club well up in the results in this class. Steve Philpott's win at Barkston was with the same model as he had used at the Spring Meeting. Phil Ball, flying with him, had a slightly over-compressed motor grind to a halt at the end of the climb so John Hook, finding a calm patch at Beaulieu, managed to squeeze between them.

Coupe d'Hiver was the worst-supported event, presumably because of the draw of the other two. However, lift was proving tricky

to spot accurately from the ground at most venues. Dennis Davitt dropped time on his last at Driffield but the rest of the top half-dozen or so flew at Barkston with only George Sharp making no mistakes.

Of course, with the Model Engineer Trophy for Club teams and Plugge points at stake it was inevitable that the glider entry would be large. Nearly two dozen qualified for the flyoff. This included all of Grantham 'A',

Falcons and Birmingham 'B' teams - all at Barkston. Top individual efforts came from Barkston too with Dick Staines clear individual winner and the other two of his team, Anthony Ball and Paul Chamberlin third and seventh respectively mopping up the Model Engineer Trophy with a comfortable six-minute lead.

The Bristol & West Plugge challenge, with a dozen of their flyers in action and Gerry Pink's fine - if D/T'd down - effort of five-minutes-plus, pushed them closer the top of the list, but above them still are Crookham and Birmingham - the latter of whom added to their leading total with places on the top twenty. This event could have a very tight finish with only 100 or so points separating the top three teams and two events still to go.

Perhaps the most extraordinary result of the day was not a win but a sixth place. Russell Peers missed the Nationals for the first time to fly F1B in Argentina. His very encouraging first performance against the world's best and the necessary travel hassles would have left most people slightly out of step with domestic flying. Not Russell. In the past he has never done well at the Fourth Area date. It is usually the day he fails to score any SMAE Senior Championship points. Not this time. This time he placed sixth in glider - top of the Falcons team and in so doing has reached this point in the season with the astonishing record of having scored SMAE points not just on every day he has flown but in *every event* in which he has flown. Never out of the top six! He is moving into another league of competitive

aeromodelling – and you guys had better believe it; even the ones that think they are safe in other countries...

SMAE Fourth Area Event: 11th June

Open Glider (94 flew: 24 in flyoff)

1	R. Staines	Barkston	7:30-7:03
2	J. Cooper	Barkston	7:30-5:57
3	A. Ball	Barkston	7:30-5:20
4	J. Bailey	Barkston	7:30-5:17
5	G. Pink	Merryfield	7:30-5:14
6	R. Peers	Barkston	7:30-4:44

Coupe D'Hiver (24 flew)

1	G. Sharp	Barkston	10:00-2:54
2	G. Ferer	Barkston	9:56
3	D. Davitt	Church Fenton	9:44
4	J. Baguley	Barkston	9:19
5	S. Dixon	Barkston	9:11
6	M. Dixon	Barkston	9:04

Slow Open Power for Astral Trophy
(32 flew: 11 in flyoff)

1	S. Philpott	Barkston	7:30-3:51
2	J. Hook	Beaulieu	7:30-3:47
3	P. Ball	Barkston	7:30-3:42
4	J. Mayes	Merryfield	7:30-3:05
5	C. Chapman	Merryfield	7:30-2:52
6	E. Jones	Mount Huly	7:30-2:37

Open Glider for Teams:
Model Engineer Trophy (28 teams)

1	Grantham A	Staines, Ball, Chamberlin	22:30-16:50
2	Falcons	Peers, Carter, Cuthbert	22:30-10:02
3	Birmingham B	Cordes, Gibbs, Williams	22:30-5:18
4	Richmond	Fantham, Warren, Williams	21:52
5	Biggles A	Bailey, Cooper, Lavis	21:17
6	Grantham C	Campbell, Clark, Clark	21:03

Plugge positions after four events

Birmingham	1034 pts
Crookham	938 pts
Bristol & West	914 pts
Vikings	788 pts
Biggles	738 pts
Anglia	723 pts

Oxford Rally: Port Meadow, 17th June

Once again the hottest day of the year so far coincided with Andy Crisp's Oxford Rally. Even better, it had been obvious from the forecasts that such would be the case, so contestants turned up in their hordes. Nevertheless, it was still incredible that entries actually exceeded last year's record levels as it was hardly a calm day. Initially drift was slight but already in that awkward direction, east to west, carrying models towards the river. By the end of the first round in A/1 and CDH maxes were so close to the water that the remaining flights in these classes were flown to a ninety-second max; hence the unusual eight-minute totals in the results. The Open events could not be adjusted so those flying Mini-Vintage and Tailless had (more often than not) lengthy walks to the nearest bridge; and numerous models were mislaid in the high crops on the other side of the river.

The meadow was very dry so thermals were often strong, small and very turbulent. As the wind rose the upwind ridge and houses further aggravated the air flow. Often models



Left: Oxford CD and organiser Andy Crisp (at left) prepares the splendid prizegiving. Below left: Mike Chilton took the Coupe prize at Oxford despite this nasty, crosswind launch.



been invalidated home with measles! Their 'coach' made a little speech of thanks before presenting Andy with bottles of wine. Most polite. It quickly became obvious that all those 'Jim Baguleys' flying during the day were the same person; and for his efforts he became the worthy winner of the Gala Championship award exceeding some twenty-six minutes contest air time! No HLG, Jim?

The wind didn't abate for the flyoff and with the flight line sited at the very most upwind edge turbulence from the houses was now to prove a crippling factor to all flights. The CD deliberated as to whether to go for one unlimited flight or the traditional progressive max which usually works so well. Bearing in mind the wind and turbulence the 2:30 he chose was a good target and proved just tough enough in the conditions.

Chilton, Davitt, Peers and Ferer got away early and close together in what looked like reasonable air but all models were soon buffeted down. Mike Ball waited longer and made a fine climb only to have an even more vicious hole drag the model from the sky in a minute. Cornell did a similar time the other way – a very long run, with the prop hardly folding before the model landed. Last to release was Mike Lester who, it must be said, had by far and away the best pattern. His model flew like a good Wakefield and from its speed and trajectory it would appear to have VIT (and probably auto-rudder as well). The contest looked wrapped up. However, the model had been slightly damaged on the previous flight and now it refused to turn on the glide just long enough for it to fly out the side of the good air and back into the sink. It went down in 1:25. Despite the sub-max flights there was still a tie for top spot! Dennis Davitt and Mike Chilton had both flown 1:32. There were no retrieval delays and the re-fly took place half an hour later. These flights were still upset by turbulence but less so than the early ones. Davitt picked helpful air and looked home and dry, especially when Chilton – flying a few moments later – muffed the launch to release left and too steep. The loop nearly came in and when the model eventually settled into a climb it was well off to the right of Davitt's, suggesting that Mike had indeed been fooled by a sudden wind shift on release. It was also flirting with good air and although never getting it high held on to win by five seconds as Davitt's sank quickly at the end.

Despite the breeze and the dangerously high crops around the field, entries had been colossal, with many events attracting as much participation as they do at the Nationals. Along with the attractive venue, centralised location and convenient amenities the contest illustrates perfectly how the

would be dumped suddenly out of good air; conversely, models that appeared to have missed lift would be bowled along into it low down. Very continental.

The breeze, and risk of lost models, seemed to upset the SAM element in Vintage Rubber more than the contest-hardened competitors. Jim Baguley – unruffled by the excitement of events in Argentina at the World Champs a week or so before – recorded the only full score with his Filibuster backed up with a Scream when the former model went missing in the crops for a while. Adam Beales, last year's winner, dropped a few seconds this time. Scores were encouraging in Vintage Glider too, where – once again – Jim Baguley appeared in the placings.

By the day's end the massive entry in CDH – virtually as many flew as flew at the Nationals – resulted in a seven-way flyoff. To be realistic, these full scores would have been considerably depleted had the full two-minute max been possible all day. There was, however, a result in A/1. After a close contest, with clubmates Elton Drew and Colin Sharman neck-and-neck on full scores, Elton dropped a vital second on his last flight. Results further down couldn't have been closer with a second between each place down to fourth; and who was fourth but Jim Baguley again!

Rather fortuitously, bearing in mind the stiff breeze, only CDH required a flyoff. This was delayed as long as possible for the wind and thermals to die down because at the close of the contest, a two-minute flight in lift would have been way across the other side of the river. Sensibly the prizegiving for all the other events was held without further ado. The promise of a complete class of French school children, all armed with something to fly, had indeed materialised, although at least two of their number had

correct formula of classes blended by an organisation that is determined to *run* the competition rather than just let it happen (and has the perseverance to stick with it year) after year can create a prestigious contest.

Oxford Rally: Port Meadow, 17th July

A/1 Glider (25 flew)

1	C.Sharman	8:00
2	E.Drew	7:59
3	G.Smith	7:58
4	J.Baguley	7:57

Coupe d'Hiver (43 flew)

1	M.Chilton	8:00+1:32+1:57
2	D.Davitt	8:00+1:32+1:52
3	M.Lester	8:00+1:25
4	R.Peers	8:00+1:15
5	G.Ferer	8:00+1:10
6	M.Bull	8:00+1:02
7	G.Cornell	8:00+0:54

Vintage Rubber (24 flew)

1	J.Baguley	6:00
2	A.Beaes	5:54
3	M.Pressnell	5:48

Vintage Glider (10 flew)

1	B.Harvey	5:36
2	R.Woodruffe	5:25
3	J.Baguley	5:12

Tailless (7 flew)

1	R.Peers	5:50
2	A.Longhurst	5:23
3	T.Thorn	4:19

HLG (23 flew)

1	P.Ball	4:24
2	B.Collidge	4:12
3	M.Page	4:05

Gala Champion:

J. Baguley over 26 minutes total time.

models, are illegal in Holland) - nothing limited how late into the evening we flew nor how early the next morning we started. Nothing that is apart from daylight; not even eating, drinking and sleeping. Facilities for all these functions were there on the site!

The venue was large enough to facilitate two or three separate launch and landing areas for the full-size activities at once, but was rather awkward in shape for us. It was also domed more than somewhat, and had a liberal sprinkling of woods, mostly cedar trees, on and around the field. As the weekend progressed one became aware of the advantages of the place. Right away it felt hospitable. All the contest paperwork was available from a desk in what looked much like a golf clubhouse. Tables and chairs arranged outside complete with sunshades. All it lacked was the 18th green - it had the 19th! After a few beers here, studying the paperwork and renewing old acquaintances as more competitors arrived and checked in, one could either pop off down the road to Ede for trimming on a large flat public site or sit in front of the clubhouse watching the full-size activities.

As our start time approached, the gliders, obviously in the hands of extremely proficient pilots (this, after all was the centre of Dutch gliding) were being brought back in. Most landed out in the field, were packed away into their transporters and were driven out. The brave ones came in low, slowly and slightly crosswind to drop on the spot just in front of us and the hangar doors. Very impressive.

Holland, like the UK, had had little rain for months before and the dry sandy ground gave off considerable dust as we conveyed out around the earth peri-track. We had to carry gear for the final half mile or so to where the organisers had set up the line. Glider and Rubber were of course being flown together and not just F1A and F1B but CDH and A/1. This - from a short line, with many on each pole - inevitably resulted in a certain amount of tangling of lines on winding jigs and parked models where the disciplines met.

Against this was the obvious benefit of upwind, circling gliders under which to fly. (It's still surprising how many glider flyers tow upwind when their circle facility should allow them to go downwind and avoid giving lift away to others.)

Three flights were scheduled for that evening - the last one of which, and similarly the first one the next morning, had one minute added to the max. This extra time would be used in the case of a tie at the end of seven rounds. (The total time above the standard max is shown in an extra column in the results - they are not flyoff times.)

Casualties were immediate. The breeze was still about ten knots and the trees rather close if one did not get straight 'down the fairway'. British interests in A/1 were Madelin, Cuthbert and Carter, only the latter of whom duffed this first one. Surprisingly, no one British was flying CDH. In F1B Ron Pollard found an enormous hole, hardly to break one-and-a-half minutes; and continental notables who should have had good flights were also in trouble. Hacken suffered a timer malfunction to dive the model in vertically from the top of the climb, and Zeri connected something up the wrong way around and had an uncharacteristically wobbly climb to drop time. As the rounds progressed it grew calmer and lift was more gentle. The wind direction became less co-operative, taking some flights into the cedar trees. Thankfully these were not enormous - neither were they very close together and the undergrowth was minimal, so searching was comparatively pleasant.

The last flight of the day was made between nine and 10pm, and as ever created some mythical flights. Some glider flyers, from the UK in particular, were over-impressed with the performances of the Breeman and De Boer gliders. They were indeed masterpieces of construction, almost good enough to eat, but even this late there was lift - certainly enough for four-minute flights, and many were made including the German lady flyer Schmitt and the last two years' World Cup holder, Stefan Rump. Pride being what it is, many who had already

The Midsummer Night Trophy: Arnhem, Holland: 24 and 25th June

From some distance out, full-size contest gliders could be seen stacked up to a dozen deep in a standing thermal above Terlet, the site we were to use for this contest. This at least helped locate it, for a few weeks before a new road had been opened nearby and the old access re-routed and partially blocked off. Even some locals were getting lost! The Dutch organisers can use this site on the understanding that free flight starts when the full-size gliders finish at about 6pm; it stops again before they begin the next day just before lunchtime. This forces a rather tight programme but, as compensation, condenses flying into the least-thermally hours. With no possibility of creating a noise nuisance - this weekend is purely for Rubber and Glider (unsilenced, and hence F1C



Ruppert prepares his distinctive F1B at Arnhem. Dropped only a few seconds in one of the four-minute rounds.



Top: Carbon-and-Kevlar prop blades of Ruppert's winning model. Above: John Carter steadies clubmate John Cuthbert's winning A/1. More Midsummer Night pics next month!

dropped time tried for four minutes...

In F1B both Ruppert and Pola of Switzerland, flying almost identical balsa-less creations, were very impressive and managed long flights-although Ruppert's did not quite make the four-minute max. Seja's much-Hoffass-inspired model did, as did the Italian, Kusterle. With Hipperson's max made at almost 9.30pm there were four overnight leaders with a clean score in Wakefield and half a dozen in A/2. Both Cuthbert and Madelin made good attempts at three minutes in A/1 and Zeri made up for his troubles in F1B with a full score in CDH, including the three minute flight.

The convenience of the venue now became apparent. No matter how long you to look to pack up, clean up or retrieve your model from the trees there was still food available at the restaurant. Not only that but everyone was there and they weren't shutting! Food came quickly and was delicious - prices were sensible and there was a huge selection of drinks to choose from. All very civilised. The atmosphere was similar - if more international - to that at a Woodbury Weekend.

The literature confidently promised breakfast in this same establishment from 4.30am. One wonders if the staff slept at all. Breakfast there certainly was, with plenty of everything you could require that early in the morning. As a thick mist hung over the field the start was delayed by an hour; and by the time it got clear enough to see the sun was quite warm. Boldly the contest director placed the line in the fog and before the drift could be felt. When the fog lifted the drift established itself absolutely perpendicular to the line. They had done this before! First flights in the dew thermals fared well - later flights

in the first round had more difficulty with the max.

The day got very hot, quickly, reaching at least 75 degrees by 9.30, so the final three rounds were thermal affairs and some times tumbled in the sink. Altogether, though, the wind was slight and turbulence not a factor. Lift seemed more benign than, say, at the British Nats. Quite comfortable patches with columns of rising air rather than the vicious bubbles encountered further south in Europe, despite the very dry terrain which of course was most uncharacteristic of this contest.

During the late and early rounds it was possible (for the first time I can remember) to get an idea of some models' potential performance. As always, the best model doesn't necessarily win the contest; but one couldn't help but be impressed by the Dutch gliders - De Boer's in particular, with its foam and carbon wing covered in Kevlar and glass; stiff as a board despite looking so delicate. This was mounted on a high metal pylon protruding from a carbon fuselage encasing a very complex multi function circle hook that allowed the usual glider towing antics plus VIT on launch. This consequently permitted a more rearward CG set-up, something approaching 70 per cent I heard, as recovery off the zoom was not such a problem. A staggering calm air time was claimed for it; probably far-fetched, but there was no denying it was an extraordinarily good glider flown by a very experienced man. Other versions were seen being used to lesser effect. Perhaps less is expected of the flyer and more of the model on F1B. Here it was obvious the three-position VITs of Zeri, Pola and Ruppert produced a very high and smooth climb. Always far away from the power stall and flying very fast indeed. Arno Hacken's new aeroplanes were similarly impressive and simply climbed as if they only weighed about four ounces! In contrast, Zeri's CDH model which eventually won with the nearest thing to a perfect score that any rubber model recorded all weekend was a delight of simplicity. Very much the ideal, practical solution. A huge model with a mylar cover Wakefield sized wing weighing only 20 grams, tail covered with condenser tissue and an incredibly thin fuselage with a prop big enough to hold back the motor to a nearly sixty-second run. No wonder it required a ninety-degree D/T angle to bring it down.

Even the two four-minute flights had not resolved the flyoff problem in Glider. Germans Schmitt and Rumpp were tied for first place. Sadly this could not be finalised, as the host glider club quite reasonably wanted their aerodrome back and we were already an hour late. A/1 was a clean sweep for the UK with Cuthbert and Madelin way out in front of the general standard. F1B went to one of the best models - Ruppert of Switzerland having dropped only thirty-four seconds on the evening four-minute round.

As one would expect from such a well-run affair the prize ceremony was also excellent. It was held on the 'lawn' in front of the clubhouse. The only criticism here being that their excellent scoreboard was now hopelessly out of date apart from the top few placings and even some of them were in the wrong final order. However, there was much kissing and waving from podiums as trophies

and flowers were awarded down to fifth place in all events. The special awards for best lady and top Junior meant that the F1A winner received another ovation and young Ruppert who had taken first in F1B got another prize. It was quite noticeable how numerous both lady flyers and Juniors were at this contest. Presumably they now have a larger selection of models from which to choose!

This was a delightful contest, run very well; but it didn't all just 'happen'. It involved a big team, even on the day. A stock of capable timekeepers, a CD who knew what he was doing and, of course, the man on the hooter. All through the contest this man sat at his little van, hooter and public address system, staring at his watch. Announcements in four languages came halfway through the round, warning of thirty minutes left. This was followed by four language announcements five minutes before the end of each round and three hooter blasts to signal the end of the round. Four language announcements came between rounds during the five-minute interval; then a hooter blast to start the next round. One of the reasons we don't have contests run like this in the UK isn't so much lack of sites - it's that no one is willing to do that job, even in English! I shall go again.

Midsummer Night Trophy: Arnhem, 24 and 25th June

F1A

1	Schmitt	Germany (L)	1260•120•300
2	Rumpp	Germany	1260•120•300
3	De Boer	Netherlands	1260•106
4	Nyhegn	Denmark	1260•101
5	Helbing	Germany	1260• 75

F1B

1	Ruppert	Switzerland (J)	1260•106
2	Sitz	Germany	1260•95
3	Seja	Germany	1260•89
4	Pola	Switzerland	1238
5	Monninghoff	Germany	1237
6	Woodhouse	England	1208

F1H

1	Cuthbert	England	840•88
2	Madelin	England	840•52
3	Liem	Netherlands	833
4	Brinker	Germany	833

F1G

1	Zeri	Netherlands	839
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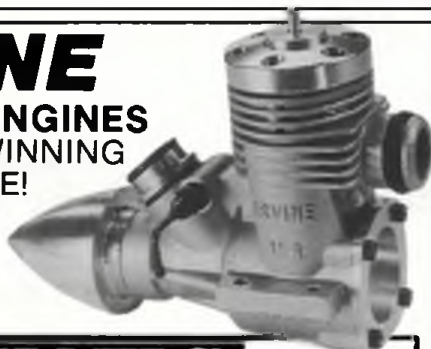


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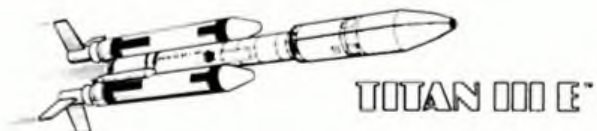


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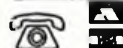
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ASE

LINKS TO THE PLANS

The issue comes with two free plans (Red Arrow, Spare Ribs) printed Front/Back on a pull out banner of four sheets. The banner is not included in the document.

Shrimp by G.D. Pike

Presented in SATISFACTION GUARANTEED as choice for electrification. Original model from September 1948.

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Red Arrow by Andrew Longhurst

FF Rubber semi scale

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Spare Ribs by Frank Smart

CL Combat A/2

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Simple profile CL electric

From Hangkong Magazine. Presented in FROM THE HANDLE

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Dare Devil II

A CL Combat from Denmark presented in FROM THE HANDLE.

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CL F2B model for training "GRZES"

Supposed from Poland. Presented in FROM THE HANDLE

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1989 Forte FF Power by Trevor Payne

Presented in FREE FLIGHT SCENE

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