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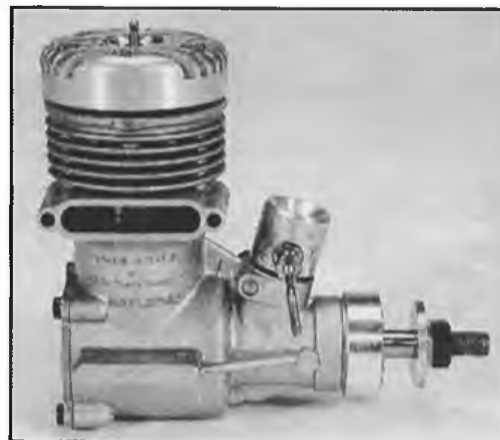
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MARCH 1987

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AERO MODELLER



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p. 142

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Cover:
Spring competitions approach, and with them your chance to amass points in the F/F league tables - see analysis in Free Flight Scene which starts on p.162.
In 'ninth equal' place, according to the Aeromodeller system, was John Cuthbert who flew in thirteen events with three victories to his credit. Here we see John with his mylar-tail F1A at the '86 Nationals. Photo: Steve Philpott.

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March 1987

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HANGAR DOORS

It wasn't him!

Hangar Doors readers who know what's what may well have been perplexed to see an apparent change of identity in last month's feature. Forsooth, 'twas not Roy Nudds presenting David Nicholls with his Merit Certificate at the SMAE Prize giving but - of course - Ron McCairn. An unforgivable example of editorial brain fade. We are glad to put the matter right! In fairness, the correct identification was made in the Prizegiving photo-report on the following pages. And for those of you who spotted a typo or two elsewhere, take a point each and take heart that we mean to eliminate 'em!

Events on

One of the most enjoyable of F/F events last year was the Dreaming Spires Gala; our heading picture this month gives just a flavour of a great day. Charlie Newman, contact man for the next 'do' on 26th July has reminded us that all fliers using Port Meadow must be SMAE members. You're not? Join up!

We've already mentioned French flying meetings for '87. Now we have news of an international get-together to be hosted by the Swedish Marks Modellflygklubb at Tostared on 13-14th June. We gather that this location is at a recreation centre, so there should be lots to see besides model aeroplanes; but one good reason for going along must be the advertised 350 metre runway. Camping facilities are there too. All categories of flying models, exclusively by R/C, we imagine, will be given a slot;

Here's a shot that summons up hazy, warm images of gentle preparation for flight. Actually, John Blagg is manfully trying to concentrate on winding his Gutteridge Trophy Winner whilst fielding a barrage of questions from a young onlooker at Port Meadow. Photo: Bob Wheeler.



and a look at the publicity material convinces us that this is an event meant to succeed.

If circumstances take you to that part of the world, or if you fancy going anyway, call the *Aeromodeller* office and we'll send you the gen.

Events off

Regrettably too late for our last deadline came the news that the SMAE Indoor Meeting at Crawley, scheduled for 1st February, had been cancelled. Instead, this will now take place on 5th April (see What's On). For absolute confirmation, and more details, contact John Dolding on 0293 510272.

One event that is particularly anticipated is the S.E. Area Spring Gala at RAF Odiham, regarded by many as a curtain-raiser for the season. This year, however, 'tis not to be: and (we stress) the Spring Gala which was to have taken place on 3rd May is now cancelled. Looking further ahead, the message is that the Southern Gala on 20th

September is yet to be confirmed. As soon as we know, we'll tell you.

Cardington Championships

When gremlins bite, they sometimes bite hard! An unfortunate combination of circumstances meant that our report on the '86 FAI Indoor World Championships was subject to an uncommonly long gestation period; and we owe our apologies to those of you who waited and wondered. Nevertheless, with a fine selection of photos to augment it, the news of this most friendly of Championships begins on p.136 of this issue. Thanks go to Bob Bailey, Jorgen Korsgaard and Ron Moulton for material received.

By any standards this was some meeting. Despite unhelpful conditions - on the last day, at least - there was a record number of 'forty-plus-minute' flights, with Jim Richmond winning his second Championships in succession - making it

four in all - by virtue of three fine flights (the best two of which counted) including a magnificent new World Record of 47:44! Just imagine it, you non-Indoor fliers; a model airborne for the whole of the first half of a football game...

Consensus was that this was a remarkably gimmick-free meeting, although the winning model was equipped with variable-pitch prop. The relative scarcity - long feared - of Pirelli rubber may give cause to wonder what comes next. But cheer up - do take a close look at that Cardington Banquet Menu on pages 138 and 139!

Where are they now?

Steve Watkin asks: 'With reference to the January Hangar Doors I wonder if it would be possible to find my old metalwork teacher from approx 1964. His name was Alan John Dorrell, and he was responsible for the Spartan plan for C/L and also the Hawk, an all sheet F/F model. I've seen a letter from him in an old RCM&E so I believe he moved

Left: After the Champs were over... Organiser Laurie Barr demonstrates the lighting of the Rushbrooke Trophy to Lady Chackfield while recipient Jim Richmond, F1D World Champion for the second time in succession, looks pleased with his achievement. Originally made by P.E. Norman this Trophy was refurbished in '86 by Laurie's own company. Right: No mistake this time! Here we see Ron McCairn (holding mike) at the SMAE Prizegiving. Ray Malmstrom, at right, offered a Trophy for meritorious help for aeromodelling and it boomeranged back to him as the first to be honoured.



away from Wandsworth, possibly back up North from where he originated. Alan was responsible for starting at our school (Wandsworth Comprehensive) a model aircraft club of which I was an enthusiastic member. He started me off on a life-long interest in aircraft. It would be great if I could get in touch with him again – even if only to say thanks for introducing me to a most rewarding if frustrating (sometimes!) hobby.

'It's hard to judge age, especially from that long ago but I guess he must have been 27 to 30 in 1964 so that would make him 60-ish now. I hope he is still with us and can be found somehow.'

Information will be forwarded.

Comps at North Luffenham

Phil Ball has written to advise us that there is a possibility that RAF North Luffenham may be used for certain – as yet unconfirmed – SMAE F/F events this year. One of the conditions is that names and car registrations should be notified (just as we ask you to do for the *Aeromodeller Coupe d'Hiver*). Here, then, is an advance notice to remind all prospective contestants that

once the events are confirmed, such details, including SMAE number, should be sent straightaway to Phil at 17 Heronswood Drive, Spondon, Derby to enable you to turn up and fly. Keep an eye on the What's On box, too.

And while we're on the subject, we can pass on the information that the Winter Meeting on 22th February, which appears on the SMAE F/F Calendar, is now confirmed as taking place at Bottesford. Event is for Open Rubber/Power Glider, and it counts towards the Senior F/F Championship Trophy.

Plans Handbook No. 3

Now available – that's the latest Plans Handbook, number three in the new series. This one, which covers Scale Drawings, and replaces the old 'number five', is an invaluable reference for all aeromodellers with a love of full-size craft. Subjects are happily grouped into categories such as 'Early Aviation', 'Aircraft of WWI' (with further sub-divisions into the Sopwith and Nieuport collections), 'Golden Age' (starring the Moth collection), 'Military Aircraft of the Jet Age' and so on. Civil and Military types

are treated separately, and as the aircraft are further split according to country of origin, substantial cross-referencing is possible. Furthermore, there is a side-view drawing of each machine, all the better to stimulate inspiration... and with over 120 types on show, there's plenty to choose from. Crying out to be modelled are the Druiene Turbi (such a change from the Turbulent), the Moeller Stomo 3, the Gloster IV and the Spad S.33 Berline, to name less than a handful. Latest additions are included in this handy volume which is available from Plans Service agents or from the Plans Service itself at 9 Hall Road, Maylands Wood Estate, Hemel Hempstead, Herts HP2 7BH. And if you're interested in tanks and howitzers, they're in there too...



Scale drawings galore in our *Plans Handbook No. 3*, latest in the new series, which costs £1.25 (refundable on first order). Why not draw up an original subject for Scale Weekend?

M.E. a winner!

As we write this the doors are about to close at the end of the 1987 Model Engineer Exhibition. A full report will appear next month, but we should say now that support for aeromodelling at Wembley was healthily encouraging. More and better entries, excellent work from those club stands whose

mainsprings felt compelled to put on an effort, and great enthusiasm for the auditorium competitions – notably the DPR Championship Day – and demonstrations. The media enjoyed the aeromodelling too!

What's on... plan your weekends, go and fly!

1st March
SAMS INDOOR FUN-FLY MEETING
Fly what you like from 11am-6pm! Venue: Watford Leisure Centre. Contact: SAMS. Tel: 0438 832011.

29th March
GRANTHAM GRAND PRIX
Open R/P/G, combined FAI, HLG Contact: Phil Ball. Tel: 0332 665361.

29th March
SOUTHERN AREA INDOOR ALL-SCALE DAY
Peanut, Open Rubber, Open CO₂. Venue: HMS Daedalus, Lee-on-Solent. Contact (essential): Derek Knight. Tel: Rowlands Castle 412058.

5th April
SMAE S.E. AREA ANNUAL INDOOR FLYING MEETING
Venue: Leisure Centre, Haslett Avenue, Crawley, West Sussex: 11am-6pm. Contact: John Doiding. Tel: 0293 510272.

12th April
PETERBOROUGH MFC DIESEL 'A' COMBAT
Venue: The Embankment, Peterborough. Contact: Mick Taylor. Tel: 0733 204484.

26th April
WHARFEDALE & DISTRICT A.C. 1/2A COMBAT
Venue: Dewsbury, W. Yorks. Contact: Jeff Smith. Tel: 0532 663432.

28th April
SOUTH BIRMINGHAM MFC SPRING FLY FOR FUN RALLY
General flying for all SMAE members. Fun Comps, including Midge Speed. Venue: Rubery Hill Hospital, Rubery Nr Birmingham. Contact: Peter Martin. Tel: 021 459 5520.

2-4th May
BRISTOL AND WEST WOODBURY WEEKEND
Champagne Fly-Offs O/R, O/G, O/P Vintage Rubber (sat 5-8 pm), also O/R, O/P, O/G, Vintage to SMAE rules (Sun 10 am start). Combined FAI and Vintage to South Bristol Rules (Mon 8 am start). Caravans welcome: Sunday evening barbeque. Contact: Elton Drew. 2 Downfield Close, Alveston, Bristol BS12 2NJ. SAE please.

17th May
SMAE N.W. AREA R/C FLY-IN
Hosted by Blackpool and Flyde RCMS. Bring the family. All flyers welcome. Venue: Blackpool Zoo Flying Site. Contact: Chris Bromley. Tel: 0253 25080.

23-25th May
SMAE F/F NATIONALS
Events as 1986 Venue: RAF Barkston Heath. Contact: SMAE Tel: 0533 518500.

31st May
TYNEMOUTH MAC RALLY
F1A, O/R, O/P, Combined Mini, Vintage, HLG 10 am start (11 am power). Venue: Albemarle Barracks. Pre-entry (no fees) – essential before 25th May. Contact: Tony Brown. Tel: 091 2362155.

14th June
PETERBOROUGH MFC C/L SPORT & VINTAGE FUN DAY
Includes informal Stunt and Midge Speed to SAM 35 rules. Venue: The Embankment, Peterborough. Contact: Mick Taylor. Tel: 0733 204484.

14th June
WHARFEDALE AEROBATIC COMPETITION
FAI and Novice Stunt. Venue: Ilkley, W. York. Contact: Jeff Smith. Tel: 0532 663432. This is a new Wharfedale annual event.

20-20st June
ASP 21st SCALE RALLY
Venue: Old Warden Airfield, Biggleswade, Beds. The annual pilgrimage for all scale enthusiasts! Informal R/C, F/F and C/L scale flying all weekend long plus the delights of the Shuttleworth Collection and – new for '87 – Band, Barbeque and Beer on Saturday. Camping too. Don't you dare miss it! Contact: Aeromodeller. Tel: 0442 41221.

21st June
WHARFEDALE OPEN MINI GOODYEAR
SMAE rules but with Open Models. Venue: Dewsbury, W. Yorks. Contact: Jeff Smith. Tel: 0532 663432.

4-5th July
NORTH YORKSHIRE FREE FLIGHT GROUP TWO DAY MINI-EVENT
A/1, CDH, CO₂, HLG, Mini-Vintage, maybe other small classes. Venue: York Racecourse. Camping and caravans permitted. Prizes and cash. Contact: John Pool. Tel: 0757 703060.

5th July
PETERBOROUGH MFC DIESEL 'A' COMBAT
Venue: The Embankment, Peterborough. Contact: Mick Taylor. Tel: 0733 204484.

12th July
MORLEY & OMACE SILENT AND VINTAGE DAY
Combined A/1 and CDH, Vintage Rubber (up to Wake size) and Vintage Glider (up to Nordic), P.30, Mini SOP (0.5cc diesel). Event sponsored by Finlux TV. Prizes! Venue: Heath Common, Nr Wakefield. Contact: Barry Judge. Tel: 0274 875976.

12th July
WHARFEDALE CLASS A COMBAT
Venue: Dewsbury, W. Yorks. Contact: Jeff Smith. Tel: 0532 663432.

12th July
ASP GOLDEN ERA DAY
Venue: Old Warden Airfield, Biggleswade, Beds. All the fun of the fair with a flavour of the 'twenties and 'thirties' Period aeromodelling on display – turn up and fly scale or vintage; dress up too and really look the part. This event follows the Shuttleworth Flying Evening on 11th July – an unforgettable chance to view all the rarities of the collection amidst classic Big Band Melodies. Other attractions too! Overnight camping arrangements. Do come! Contact: Aeromodeller. Tel: 0442 41221.

19th July
BLACKPOOL AND FYLDE RCMS SCALE FLY-IN
R/C Semi-scale to super-scale; all welcome. Grass runway! Venue: Blackpool Zoo flying site. Contact: Chris Bromley. Tel: 0253 25080.

19th July
COLCHESTER MAC VINTAGE DAY
Texaco, Flying Fifteen, Precision and fly-for-fun R/C only. SAE for details to Peter Grant, 2 Duncan Rise, GI Yeldham, Halesford, Essex. Tel: 0787 237967.

26th July
1987 DREAMING SPIRES GALA
Comps: Vintage: lightweight rubber (36 in. span max), Vintage glider (up to A/2), vintage HLG, CO₂ Precision, Rubber kit contest (36 in. span max, plastic props and D/T allowed). Scale events for F/F power (up to 1.5 cc), CO₂/electric, Rubber (15 in. span min) and KK/Veron Rubber scale Mass Launch. SMAE membership required for flying. Venue: Port Meadow. Contact: Charlie Newman. Tel: 086 77 3020.

1-2nd August
WOODVALE RALLY
Model flying, competitions and displays: full-size aerobatics, vintage and classic cars; R/C cars and much, much more. 9 am – 6 pm each day. Entry £6.00 per car, £8.00 two-day ticket, children and OAPs £1.00.

1986 COUPE CHALLENGE!

RAF Henlow hosted the twelfth Aeromodeller Winter Cup event on 7th December; weather, damp...



OF COURSE, WE BLAME the last Leap Year. Were it not for the fact that just to keep horologists, astronomers and women compelled to pop the question happy an extra day had been grafted on somewhere along the line, we'd all have had super weather for our '86 Coupe d'Hiver contest at the now traditional Henlow venue. The day before, Saturday, had been a classic blue-sky winter flying day; cold, yes, but with absolutely no drift whatsoever, much to the delight of Coupe enthusiasts everywhere, for here was the chance to indulge in some last-minute pre-competition trimming. Ask our French visitors this year (carefully looked after for the duration by Messrs Michel and Beaumont) most of whom took time out to visit Epsom Downs in order to prepare. But the forecast was dismal - could it hold, by a miracle?

The sad answer was - No! A gloomy, grey, overcast Sunday morning with a fair breeze set the tone for the rest of the day, and just to compound things a persistent drizzle established itself with few less-damp periods for relief.

A spot of full-size powered gliding was in progress when we arrived, but matters were only slightly delayed after a spot of control-tower negotiation brought the fliers back to earth by 10am. Thereafter, speedy control-tent and P.A. setting-up was followed by a healthy procession of aeromodellers' cars onto the hard-standing; a flight-line was decided upon (this fortuitously coinciding with a couple of marker flags - 'pins', we believe they're called - from the adjacent golf course) and the action began.



Early was best

First to record a flight time was Angus Tennant, fourth last year in '80 gram', whose first-round 71 seconds proved to be a reasonable average target for those who followed to aim at. There was a surge of activity as competitors realised that conditions were unlikely to improve and that the early air was as good as they were to experience all day. Significant first flights from Ian Davitt and Pete Harris marked them as likely to be amongst the top honours in the '80 gram' stakes, while in the '100 gram' class, ROG and all, those seasoned campaigners Dave Hipperson and John O'Donnell (who was again flying Frank Monts' perennial Chicken Coupe) were obviously headed for battle. However, John was unlucky to break a wing tip, and the time spent on repairs meant that the best of the weather had passed by the time he was ready to resume; and relatively low second and third flights were to push him down to fourth place, allowing John Bailey, who flew later than most but maxed out on his first flight, and Peter Carter, whose second-flight max was to boost his total, to overtake for third and second positions respectively. But it was Hipperson, concentrating hard on the 100 gm class, who proved unassailable. Perversely, although he maxed on his first and last flights he regarded these as 'jammy' and was most happy with the lower-scoring but honest second flight in which the model had to struggle after hitting sink early on. Dave's model is described in this month's Free Flight

Scene, so all we'll say here is that the use of Tomy timers accurately to set the dethermaliser was thoroughly proved by Dave's performance, the model plonking down happily at just over two minutes, a precision which kept the model within the confines of the airfield - thus preventing tiresome retrievals. Last year's winner in this class, John Cooper, was out of luck this time despite being first away; he finished in a depressing 13th place. John Bailey's travelling companion, Steve Philpott, flew late but was on course for fourth spot until let down by a low last flight. ROG techniques were interesting at least, and often spectacular. This Gallic speciality was treated with much brio by the contestants from across the Channel, each successful getaway being cheered delightedly; but despite this, highest-placed French contestant was Bernard Boutillier in sixth place; his fine last flight (given the conditions) being insufficient to pull him above Philpott.

Eighty-gram activity

Boutillier was also to be the highest-placed Frenchman in the hand-launch '80 gram' class, but top honours this year deservedly went to Pete Harris, last year's runner-up, who consistently exceeded 100 seconds on each of his five flights. Nevertheless, it was a close thing, for it was possible for Ian Davitt to overtake Harris if he could exceed 112 seconds on his last flight. Ian waited, and waited, and waited; at the instant of launch (too late!) he realised he had despatched the model

into bad air, an act which put paid to his chances; a power stall and resultant low 68 seconds keeping him down to third place, one place ahead of his father Dennis. The Davitt duo fly essentially similar models; but as Ian is sinister (that's 'left-handed' to you) his model is set up with opposite trim. Even the prop is carved the wrong way round to majority thinking! Dennis was disappointed with his own performance, his model having been set up in calm-weather trim; upon reflection he realised that a shim or two less tail packing would have suited the conditions better.

Second spot in the '80 gram' class went to Mick Chilton who has thus improved by one place since the '85 event. Mick's model, which was gradually getting more and more soggy, suffered a bout of wing flutter on his fourth flight which put him out of contention. This Coupe is a rare bird indeed, being equipped with a Tomy timer actuating not only auto-rudder but VIT, enabling the high-wind power burst at the beginning of the power run to be effectively tamed - that is, until the system philosophy is defused by damp wings, at which point the excess of power is an embarrassment... Nevertheless, Mick is very satisfied with his approach (the key being the use of lightweight triggers from aluminium welding wire) and past results, which include wins at the Nats and the Southern Gala, justify this. Watch out, competitors, for the model is now better-waterproofed! Also impressive was Derek Neil whose late chase of three straight maxes after earlier flights is downwind turbulence from the hangars was to lift him to eighth overall, while other top ten



Main picture: It was pleasant to welcome again participants from France this year. Donor of the 100-gram trophy, Bernard Boutillier winds in the traditional Gallic way - with prop attached and no winding tube. Across pages: Second in '85 and victorious this time round, Pete Harris proudly holds his 80gm winner. Left: Patience in competition - Ian Davitt waited ages before his last flight in the hope of leap-frogging into the lead but still chose the wrong moment... Above: Dressed for the conditions and with D/T lighter aglow, Frederick Nikitenko prepares to go again.

finishers generally had tales to tell of deteriorating conditons draining away those precious seconds.

Prizes!

A quick pre-prizegiving reconnaissance revealed that the doors to the station gymnasium were firmly shut and locked, but thanks to the efforts of local flier Bill Cliff, a rescue operation ensured that we had this welcome shelter to display the offered goods right on time. Dave Hipperson chose a large R/C model, uncharacteristically one might think, until one realised that the vast box was the attraction... To supplement the annual presentation of the Aeromodeller and Bernard Boutillier trophies, the prizegiving was enhanced this year by a special award from the French 4A group - a Vintage band of similar aims to our own SAM 35 - who felt it appropriate (as enthusiasts of elderly aeromodelling matters) to donate a trophy to the highest-placed junior flier; and so it was that Alan Cliff added to his haul of cups this year by virtue of his twelfth place in the 80 gram competition. As if this were not enough, your editor was delighted to be asked to present the Falcons League Cup to Russell Peers; F/F enthusiasts should note that after a successful first year the Falcons

League will again operate in '87. There followed an exposition of coming French events by Jean-Marie Piednoir (with the support of Michel Pierrard; 4A prime movers both) who told us much of the Maurice Bayet Coupe and 50th Anniversary French Wakefield events, both of which prompted plenty of individual discussion and a certain amount of forward planning.

Afterwards

Time to reflect, on the way home, on a meeting hampered but undefeated by the weather. The appeal of the Coupe d'Hiver flourishes; although several entrants had obviously been deterred from attending, the fact that nearly one hundred flew in both events speaks for itself. Special thanks go to Messieurs Beissac, Boutillier, Nikitenko, Levasseur, Pierrard (who proxy flew for Pierre Dupin) and Piednoir, all of whom had to dash for the ferry; the Coupe competition is given extra zest as an Anglo-French challenge and it was splendid to see you all.

Support for the event came from the following: ASP Plans; Argus Books; The Model Shop, Newcastle; DPR Models; Humbrol; Ripmax and The Balsa Cabin. Lastly, we must thank all at RAF Henlow

for hosting us so kindly; and to rubber enthusiasts everywhere we say, get building and practising - we'll do it all again this year!

100 gram results: Bernard Boutillier Trophy

		120	92	120	Total
1	D. Hipperson	120	92	120	342
2	P. Carter	87	120	69	276
3	J. Bailey	120	74	59	253
4	F. Monts ** (proxy J O'Donnell)	120	70	56	246
5	S. Philpott	79	90	54	223
6	B. Boutillier *	67	63	81	211
7=	J. Carter	53	93	56	201
7=	P. Ball	62	30	109	201
9	G. Ferar	65	70	55	190
10	A. Tennant	75	68	46	189
11	F. Sharp	91	85	10	186
12	F. Nikitenko *	69	65	59	183
13	J. Cooper	63	58	46	167
14	D. Carter	26	39	97	161
15	D. Roche	59	52	30	141
16	R. Peers	31	31	70	132
17	D. Beales	39	32	59	130
18	R. Peers	41	34	37	112
19	A. Wells	60	39	—	99
20	D. Tennant	34	35	7	76
21	R. Moore	27	40	—	67
22	L. Ranson	23	36	—	59
23	J.M. Piednoir *	—	20	25	45
24	P. Dupin * (proxy M. Pierrard)	38	—	—	38
26	R. Moore	36	—	—	36
28	J. White	2	—	—	2

* indicates French contestant
** indicates US contestant



Top row, left: Recognise this lot? Just back from a downwind trudge are John Carter, Russell Peers, Terry Dilks and Pete Harris. Fashion note: square-cut jackets are 'in'. Right: Seen here on his way to a last flight of 106 seconds, Anthony Ball finished 19th in '80gm' despite coming to terms with conditions as the day went on. Far right: Visitors Nikitenko and Boutillier show off their unmistakably French-styled craft. Note multi-spar wings - and damp tissue!



80 gram results: Aeromodeller Trophy

							Total									
1	P. Harris	120	120	116	103	111	570	37	M. Dixon	53	53	39	85	45	275	
2	M. Chilton	104	120	112	94	120	550	38	D. Beales	108	60	40	26	37	271	
3	I. Davitt	120	98	120	120	68	526	39	R. Hoff	51	38	31	57	79	256	
4	D. Davitt	103	108	96	87	120	514	40	M. Dilley	94	39	39	26	39	237	
5	D. Pavely	98	104	95	99	116	512	41	M. Dancer	39	53	52	55	36	235	
6	G. Ferer	75	120	120	117	65	497	42	P. Michel	64	48	120	—	—	232	
7	J. Dyer	120	79	120	88	83	490	43=	R. Rowe	51	47	48	30	55	231	
8	D. Neil	48	75	120	120	120	483	43=	L. Ranson	56	62	64	46	3	231	
9	W. Colledge	85	83	120	104	78	470	45	K. Fordham	104	120	—	—	—	224	
10	P. Ball	92	120	75	116	46	449	46	D. Tennant	32	48	63	39	36	218	
11	B. Boutillier *	76	88	120	60	106	448	47	D. Carter	70	38	35	42	42	217	
12	A. Cliff ***	79	66	81	120	91	437	48	M. Levasseur *	56	36	54	24	44	214	
13	F. Nikitenko	100	80	110	93	80	423	49	J.P. Beissac *	47	27	46	35	54	209	
14	S. Screen	67	106	71	97	81	422	50	P. Dupin (proxy)	31	47	55	31	40	204	
15	J. Walker	105	78	76	72	89	420		M. Pierrard) *							
16	R. Chilton	112	84	85	71	60	412	51	M. Brown	21	120	49	—	—	190	
17=	J. Carter	67	62	91	103	103	406	52	P. Gibbons	44	35	25	25	43	172	
17=	J. Cooper	58	90	61	77	120	406	53	M. Molton	115	56	—	—	—	171	
19	A. Ball	38	62	88	92	106	386	54	W. Cliff	53	46	43	—	—	152	
20	F. Sharp	92	88	78	54	70	382	55	A. Beales	46	63	42	—	—	151	
21	A. Tennant	71	76	74	49	104	374	56	D. Roche	61	34	52	—	—	147	
22	R. Alban	35	35	98	116	79	381	57	M. Stagg	22	41	35	—	37	135	
23	S. Dixon	98	66	59	62	70	355	58	D. Hipperson	44	58	—	—	—	112	
24	J. Sheppard	63	58	100	58	73	352	59	M. Francis	108	—	—	—	—	108	
25	N. Lee	120	38	63	70	57	348	60	R. Monks	63	—	—	—	—	63	
26	M. Howick	72	98	24	51	98	343	61	G. Beal	23	39	—	—	—	62	
27	S. Philpott	36	57	89	108	48	338	62	J. White	14	16	27	—	—	57	
28=	J. Bailey	71	60	47	84	74	336	63	B. Rowe	55	—	—	—	—	56	
28=	A. Wells	53	120	30	58	75	336	64	G. Pink	41	—	—	—	—	41	
30	J. Nash (Miss)	51	66	85	55	67	324	65	M. Lester	34	—	—	—	—	34	
31	R. Peers	69	51	99	53	45	317	66	K. Smith	2	—	—	—	—	2	
32	A. Gibbs	66	98	46	56	44	310									
33	J. Oulds	49	76	74	50	51	300									
34	A. Moorehouse	67	75	61	38	61	286									
35	R. Johnson	44	50	48	74	64	280									
36	J.P. Beissac *	65	64	72	41	34	276									

* indicates French contestant

*** A. Cliff was top junior and was awarded AAAA Trophy for one year

* indicates French contestant

*** A. Cliff was top junior and was awarded AAAA Trophy for one year



Bottom row, far left; Rubber aficionado Bob Wells casts a not unfriendly eye over his geodetically-surfaced eighty-gram model but this wasn't enough to put him in contention, although a second-flight max must have been some consolation. Centre left: it wouldn't be an Aeromodeller Coupe without John White who, true to form, turned up on bicycle despite having moved from London to the Isle of Wight. Immediate left: Andrew Moorehouse waits in the gloom for lift that didn't come... Right: How to remind yourself that you're in a foreign country - Jean-Paul Beissac's 'drive-on-the-left' reminder seems to have worked; Citroen was dent-free!



SWINGING 60



**Development of a winner — Phil Ball tells
the story behind his Slow Open Power
design. Build one and beat him!**

IN NOVEMBER 1985 I decided it was about time to make a start on the Slow Open power model that I had been planning since the class had been introduced two years previously. During this time I had always meant to start the project 'next week' but, of course, next week never comes ... Anyway, I took the bull by the horns and ordered a PAW 249 rear exhaust contest diesel. I had decided to use a diesel for two reasons: firstly, I didn't want the cost and trouble of starter, batteries, leads, and all the clobber associated with glow engines, but really fancied flying in a power class where the only thing I would need besides the model was the dethermaliser fuse, matches and a can of fuel. The second, more important reason was that the rules allowed a twelve-second diesel engine run against the ten seconds specified if you used a glow.

My complete lack of contest power experience meant that I really was starting from scratch, but then again at least I hadn't any preconceived ideas to cloud my judgement. The first thing I did was to rough out a design. What size should I go for? I decided that a model of FAI dimensions was a good compromise - bigger than the immortal Dixielander but capable of being built at a weight of twenty ounces, as compared to the FAI minimum of approximately twenty-seven ounces.

The proportions would be similar to the 'non-system' FAI models of the early 'sixties. This meant a search through of that model mags period - and the 1959-61 Zaic Yearbook, which just happened to include every one of the five joint first-place winners from the famous Cranfield World Power Championships of 1959.

If you don't remember - or your model flying experience doesn't go back that far - let me remind you that the five models flown by Conover, Guerra, Pimenoff, Hagel and Shepherd all made five three-minute maxes to reach the fly-off and then proceeded to max a further thirteen times until the time keepers either got fed up or it got dark; at this stage they were all declared joint world champions. All models were of approximately 60in wing span with eight-inch chord, a 35% tailplane and a 'three-times-chord' moment arm. Most had undercambered wing sections; none was equipped with auto rudder or variable-incidence tailplanes. These parameters were adopted as the basis for the design and they proved to be a good starting point.

Having decided on the proportions and size of the design, the next consideration was the fact that I was starting another class to add to the six or seven in which I was currently flying. This meant that the model would need to be rugged and maintenance-free, a target which has been successfully achieved. Only one minor repair has been necessary - to the wing, caused by a landing in a tree. There was also a small amount of superficial damage to the light mylar-covered tailplane. The fin, which was originally a lightweight open structure covered with mylar, was soon replaced by the 1/4in. sheet version shown on the plan.

Because I hadn't any experience of power model flying and trimming I decided that any adjustments should be easily effected, so the engine was radially mounted on a plastic radio-control type mount, which would enable any combination of side and down thrust to be

Aeromodeller

incorporated.

The Centre of Gravity was to be as far forward as I dared make it, with a figure of 70% the target. If this proved to be too far forward less weight would be required on the tail to bring the CG back than would be needed on the nose to bring it forward (I didn't realise at this point just how useful this would be).

To aid trimming I decided that an engine-cut timer system that would allow the model to D/T shortly after the motor had stopped was a necessity. I would recommend this system because the first power-on flights can be made with slightly

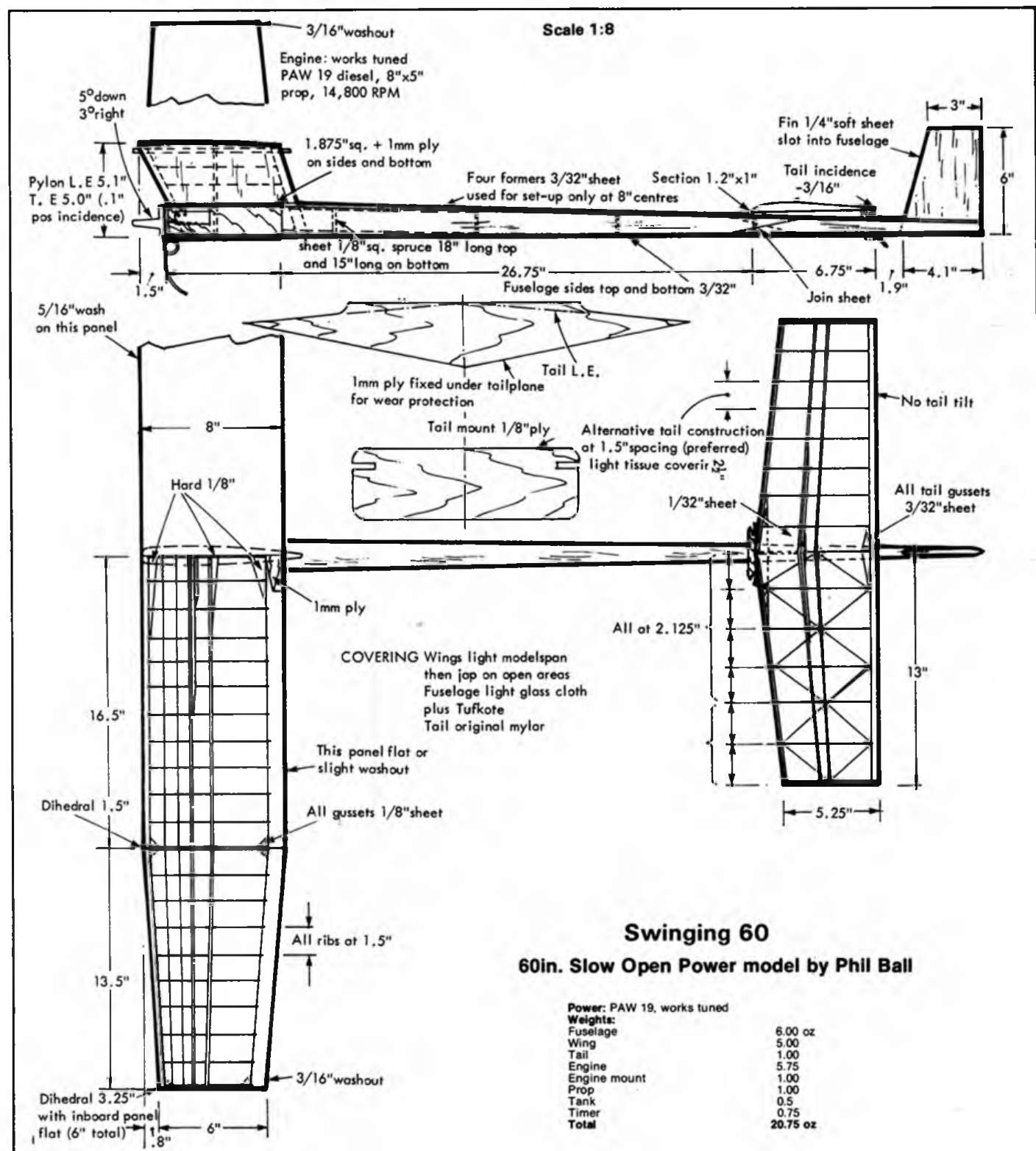
less worry than when relying on the model performing a successful pull-out after a short engine run. Because I was not sure of fuel tank design I determined that this component should be removable; this would enable changes and repairs to be carried out with the minimum of trouble. The tank would be made to fit flush into a 3/32in. sheet box built into the fuselage side and all feed and fill pipes would exit on the tank side.

Construction had to be simple and strong. Thus the fuselage was a simple tapered sheet box built from the bottom upwards, the base sheet also acting as a

datum for incidence measurements and rigging angles. The engine mount bulkhead is made from 3/8in. ply and is attached to the fuselage with 1mm ply doublers which not only bind the engine mount bulkhead to fuselage but also give a good, firm surface on which to locate the timer and engine cut out.

Construction points

Because the basic construction is simple and straightforward I will highlight only the important details. The fuselage is constructed from medium 'C'-grain 3/32in. balsa; a three-inch wide sheet of which





should weigh approximately 27 to 30 grams. Mark out the sides approx 1/4in. oversize and leave them for a couple of days to allow them to settle down before cutting to final size. Follow the same procedure for the top and bottom; leave for a couple of days but do not cut to final size until the construction is completed.

Pin the oversize bottom sheet to a flat board. After marking the outline build the fuselage on this datum base, angling the front former to give approx five degrees downthrust and three degrees right thrust; then add the 1mm ply doublers. Leave the pylon until last, positioning it to give an 82% CG position. The location shown on the drawing will put the CG at approximately the correct place providing the component weights shown on the plan are achieved. The fuselage is covered with 'one ounce per square yard' glass cloth which is 'Tufkoted'. This not only greatly improves the strength but also gives very efficient fuel proofing.

The wings are straightforward. The 1/4 x 1/8in. spruce top spar is doubled for nine inches on each side. It also has double dihedral braces. Long gussets at the centre help to spread the loads out evenly. Cover

the wing with lightweight modelspan, give one coat of dope then cover all open areas again with lightweight jap tissue. This covering is very tough and surprisingly light. It also uses very little dope. The tail is absolutely standard. Ribs are made by the sandwich method; the spars should be the hardest balsa available and the leading edge is made from firm wood. Although the original was covered with heavy grade mylar, future versions will be covered with lightweight modelspan. The tail leading edge ply reinforcement should be added after covering. This helps to protect the tail centre section from damage caused by tail hold-down bands.

Flying and development

The first test flights took place at Barkston Heath on a very cold winter day. The initial set up was as follows: CG at 70%, the wing incidence was +3 degrees; the tail was tilted at the same angle as the inboard wing panel; there was two degrees of downthrust and no sidethrust. The glide was adjusted by hand launching, which revealed the need for no less than 1/4in. packing under the tail TE to counter the forward CG. The first flights were made on

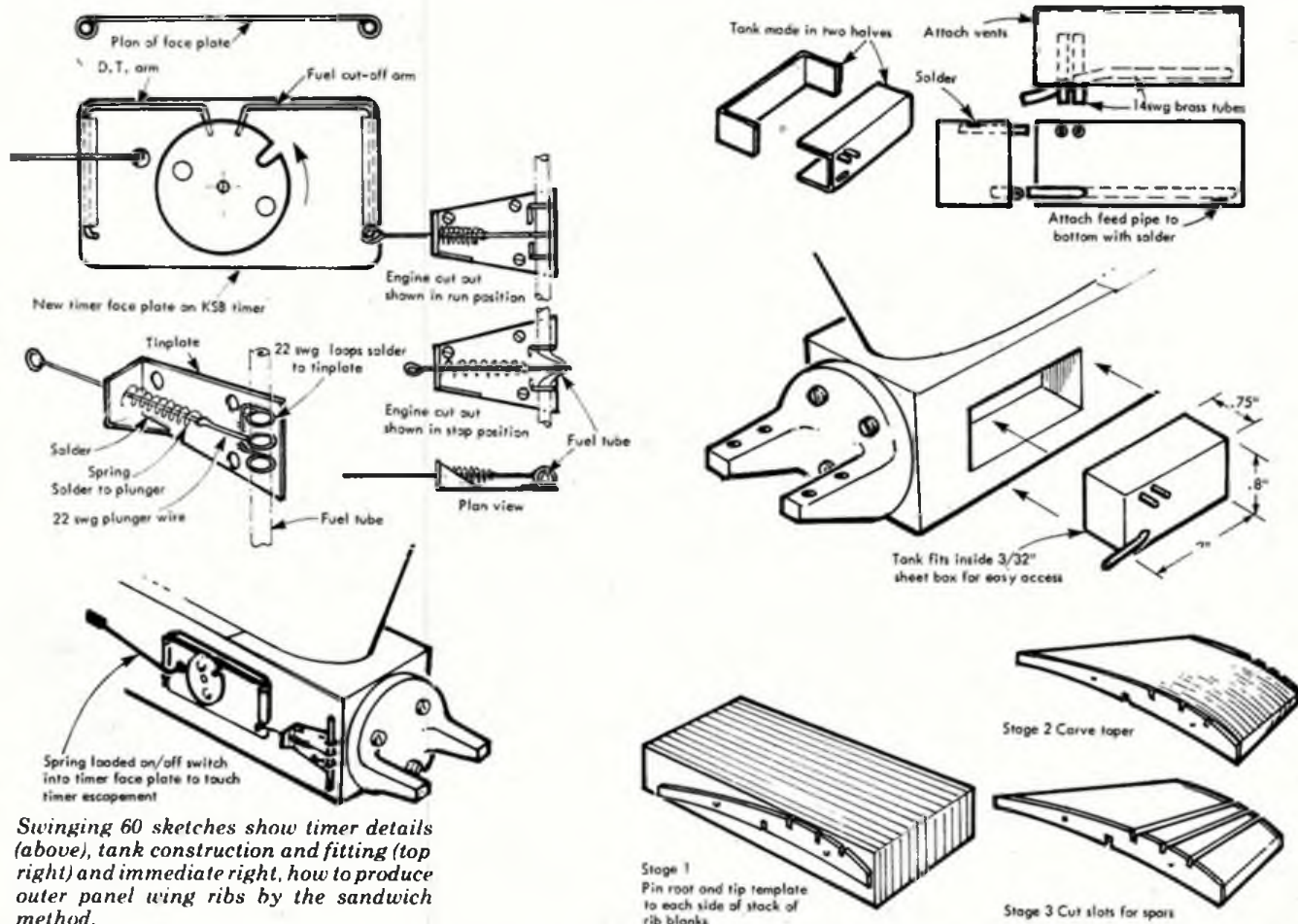
Port and starboard front-end views show valuable details of engine, tank and timer. Curious projection on pylon accommodates wing further forward than originally designed - compensated for on drawing (Dave Hipperson photos).

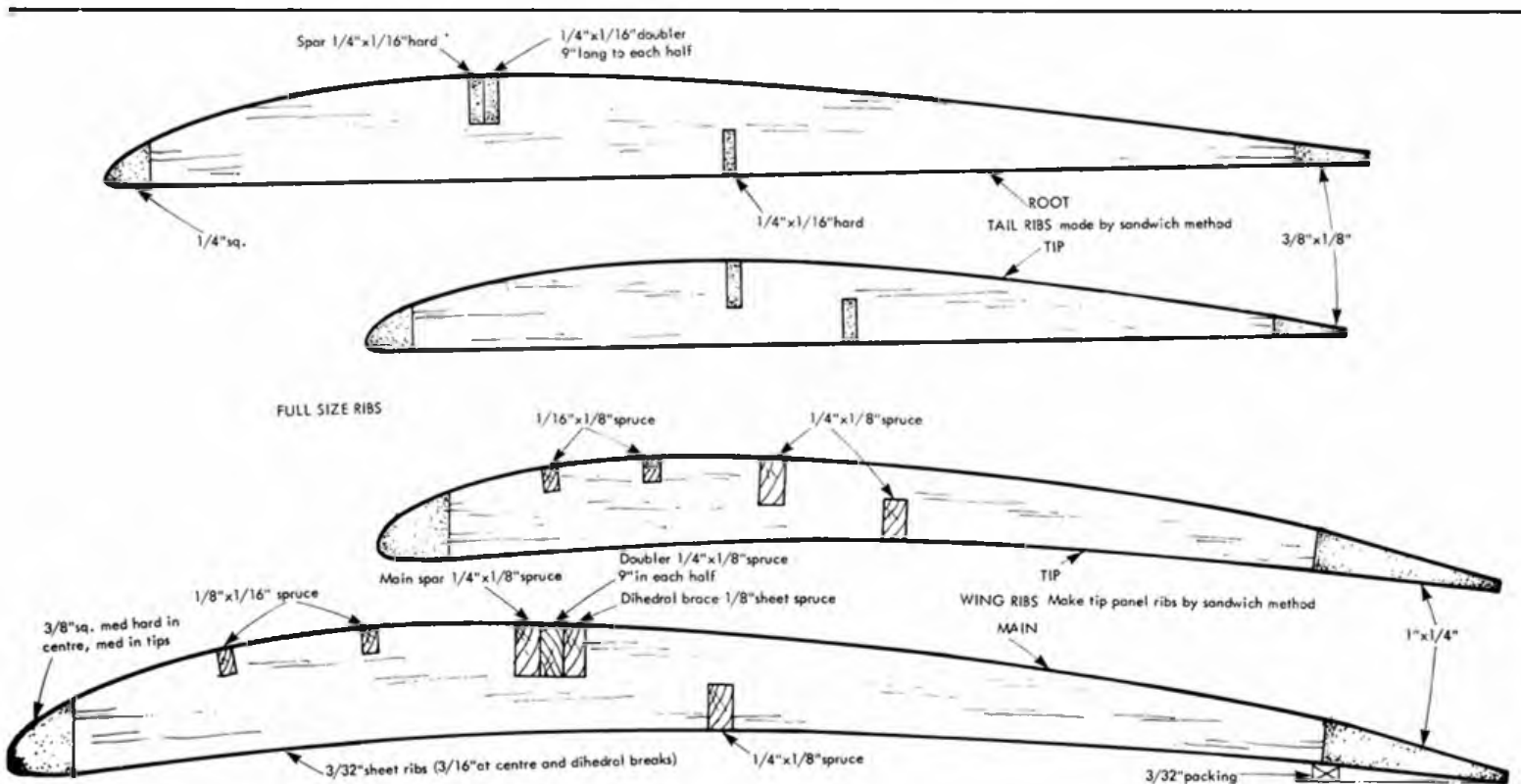
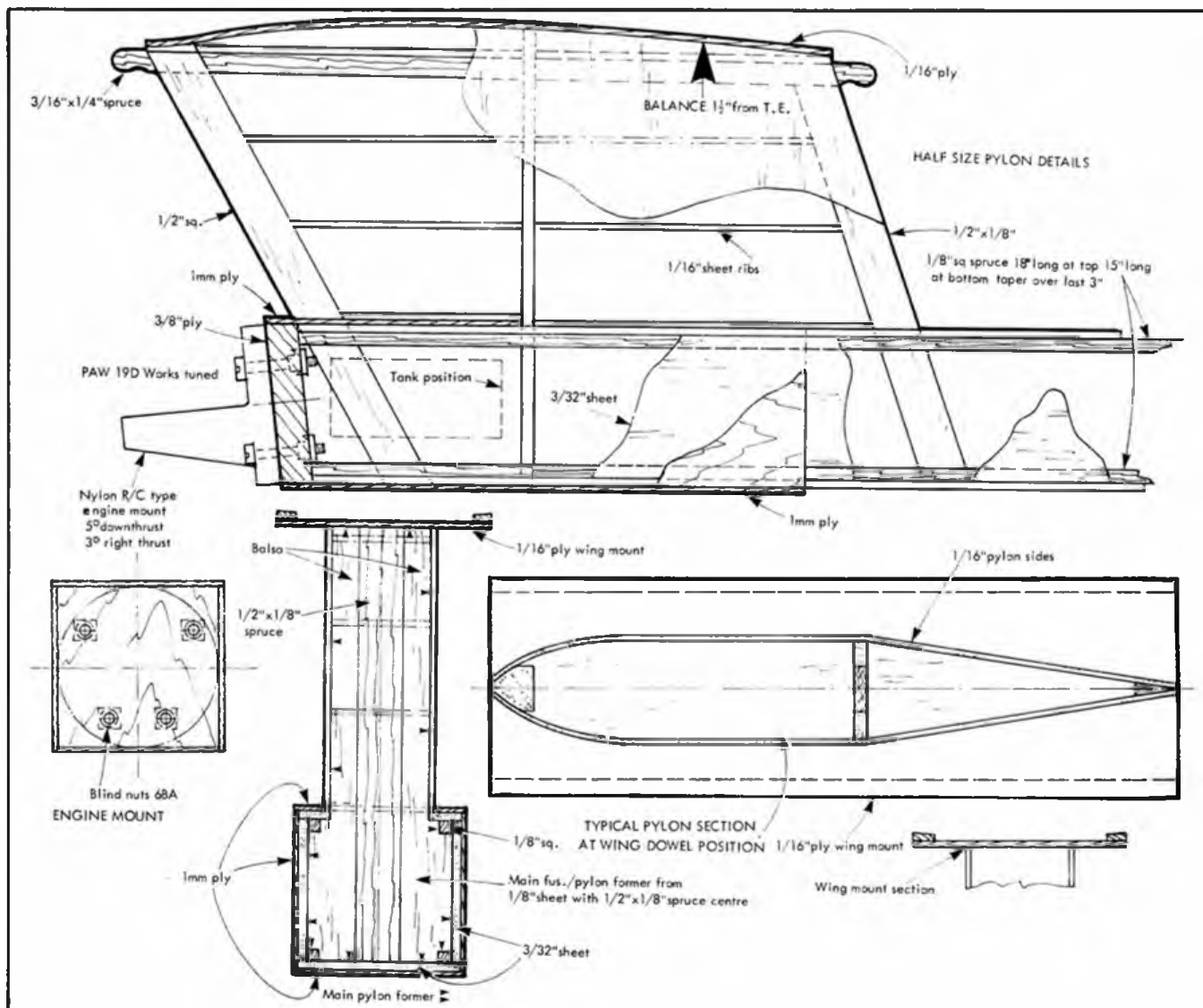
a four-second engine run with the engine under-compressed and rich. Also, the 9 x 4 prop was on backwards to minimise the thrust. The resulting climb was about what would be expected from a docile vintage R/C-assist job; very straight and safe. As the model had been set up to D/T two seconds after the engine cut this maiden flight was untroubled.

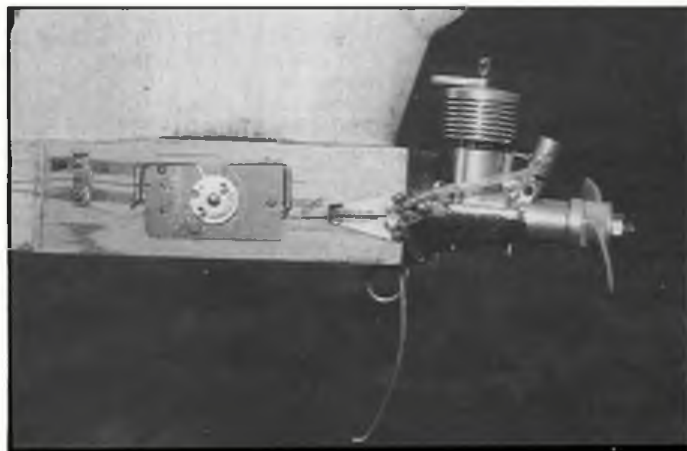
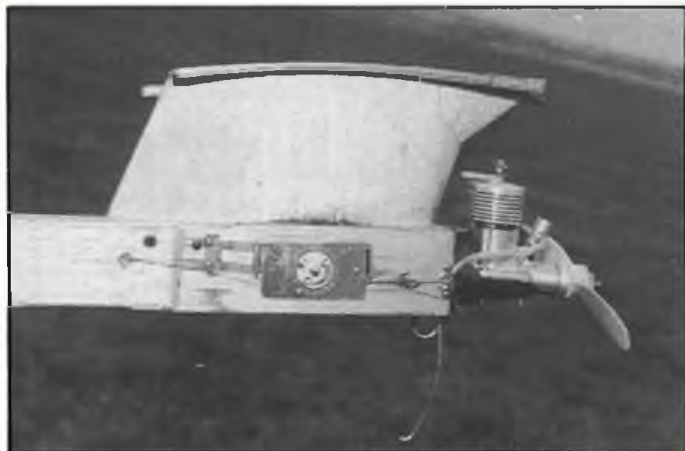
For a second flight the engine run was extended to ten seconds. Again a safe slow climb resulted; so far, so good.

Next the prop was put on the right way round, the engine was tuned for maximum revs and the model launched on a four-second run. At this stage the extra packing under the tail started to make its presence felt, as the climb was now very 'loopy' - and a fair amount of roll was also present. As the climb was still safe an extra two degrees of downthrust was added and the engine run extended to twelve seconds in two-second increments.

Although the climb was still loopy with







Left: A clear view of the engine cut-off system. Spring-loaded plunger pushes against rigidly captured tubing and constricts fuel flow, as seen in photo at right. (These pics and heading photo: David Redfern).

Swinging 60 Continued from p.132

lots of roll, the pull-out was very good, as would be expected with the forward CG and large incidence difference between wing and tail. The glide was very tight but stable; obviously the tail tilt was excessive and would need to be removed.

As a result of the following test flights lots of weight was added in stages to the tail end of the fuselage to bring the CG rearwards. At the same time a progressive reduction of the tail packing and the removal of the tail tilt opened the climb up and also improved the glide; but by this time there was at least one ounce of lead attached to the rear fuselage. This just had to go, not only to reduce weight but also to reduce the inertia effects on dethermalised landings which would surely result in damage sooner or later.

Back home in the workshop I measured the CG movement caused by the added weight. This amounted to 15 per cent. I then moved the wing forward by this amount, cutting about 1 1/4 in. from the back of the wing mount, sticking this to the front of the wing mount and then fairing it with scrap balsa; a process which has resulted in the strange forward pylon shape evident in the photographs but rectified on the plan. A side effect of moving the wing mount forward was to reduce the wing incidence to just under one degree from the original three degrees.

This new set up opened up the climb from a very tight spiral to a wide-sweeping circle. The glide was still tight but the performance at this stage was very acceptable.

The next stage of the development was

to increase the power of the engine. A telephone call to Tony Eifflaender of PAW for advice resulted in a part-exchange deal involving a tuned PAW 19D for my PAW 249. The 19D is tremendous, being at least 3000 rpm better than the 249 on an 8 x 5 in. Graupner nylon prop. I would advise anybody to fit one of these engines to this model!

After fitting this new engine the thrust-line needed adjusting to five degrees down and three degrees right. Less right rudder was used. The final trim is a fast, open spiral climb of approximately one-and-a-half turns in twelve seconds. Because of the reduced right rudder the glide is very open and responsive to lift.

Future developments towards better performance could include a slight increase in size, say 10% on all dimensions, and there ought certainly to be reasonable reduction in weight to about seventeen ounces. A large light glow motor of 5-6cc could be fitted with no weight penalty but all of these changes would contradict the original motive for building this model; that is, to create a tough, rugged, maintenance-free model which fits the concept and spirit of Slow Open Power - the maximum enjoyment for the minimum of added work.

Epilogue

Looking back on the success of the exercise certain things seem to have been more important than others. Listed in no particular order, they are:

- (a) The R/C-type engine mount which enabled the thrust line to be modified at will until a good combination of down and sidethrust was achieved.

- (b) A timer which allowed the model to D/T soon after the engine cut, which made trimming a much less nerve-wracking experience.
- (c) A reliable fuel cut-out.
- (d) The use of a good, powerful diesel which allowed a twelve-second engine run against the ten-second allowance for a glow engine. It's surprising how much extra height is gained in those last two seconds.
- (e) A strong, reliable airframe which holds trim from contest to contest.

Finally - the contest record!

Unfortunately the first three SMAE comps entered were all early in the year when the model's trim was still being developed. The results were:

- | | |
|------------------------|-----------|
| 1. SMAE Winter Meeting | 3rd place |
| 2. SMAE Spring Meeting | 4th place |
| 3. Nationals | 5th place |

Hard work over the summer to improve the trim had the following effect:

- | | |
|-----------------------------|----------------------|
| 4. London Area Gala | 1st 3 1/2 min flyoff |
| 5. Midland Area Fly For Fun | |
| | 1st 4 1/2 min flyoff |
| 6. Brumfly | 1st 5 1/2 min flyoff |

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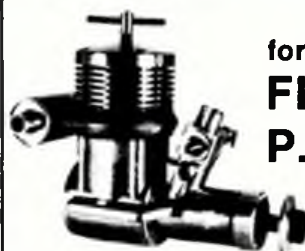
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READERS' LETTERS

Opinion, controversy, praise ...
what's on your mind? Don't keep it
secret — let's all hear what you
have to say

Ben Twyre biography

Quite by coincidence we have received a number of enquiries about the origins of that early post-war Aeromodeller character Ben Twyre, he of the skeletal frame and perky manner. Who better to ask for biographical details than his creator, J.H. Maxwell...

Dear Sir,

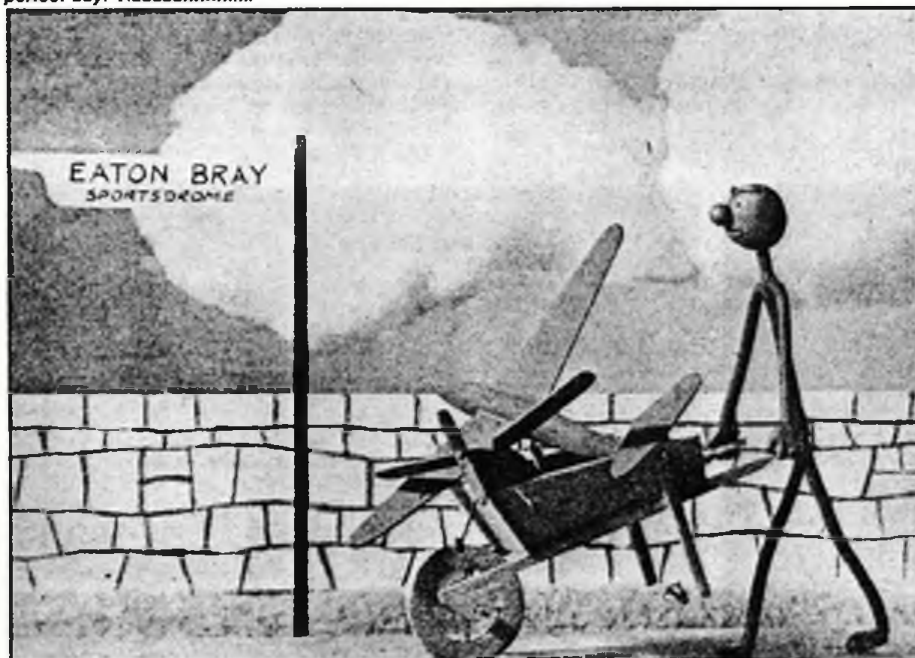
It surprised me that anyone should remember Ben Twyre, as it is 40 years since he bowed out. However, I am happy to supply some background information, as follows:

Ben Twyre had his origins in an article 'Chuck Glider Design' which was published in the March 1946 Aeromodeller. I wanted to illustrate the two very different styles of hand launch glider then in use, so I made up a little wire mannikin and photographed him in the act of launching two appropriate miniature models.

About this time, the cinemas were showing 'puppetoon' films in which puppets replaced the more usual drawn cartoon characters. This gave me the idea of making photo cartoons combining my wire man, in an aeromodelling setting, with a humorous verse. I prepared three pilot cartoons and sent them to D A Russell. Much to my surprise, he liked them and commissioned me to do a dozen, if I could incorporate certain suggestions, such as making the man's structure a bit thicker. The fee was to be three guineas for each cartoon, which was most generous, being equal to nearly half a typical weekly salary.

Certainly it was worth going to a lot of trouble for, and of course there were troubles. Just then, at the end of the War, photographic materials were almost unobtainable. The only film available was 35mm and I did not have a 35mm camera —

Ben Twyre, from the July 1946 issue of this magazine. Original caption reads: 'A well-designed and tested "kite"/A summer sky, and a wind that's light/The road that leads to Eaton Bray/A formula for a perfect day.' Aaaaaahhhh.....



few people did. So I used a larger format lens in a cardboard box camera with the film cut into single frames. All loading and unloading had to be in total darkness. The prints were produced using the same lens in a home-made enlarger.

After a lot of fun with the table top scenes, the twelve cartoons were sent and they duly appeared during 1946. I don't think CS Rushbrooke ever really approved of Ben Twyre (perhaps it was the awful pun in the name!) because he shoved him at the back beside the small ads. Then, when the year was up, he decreed that Ben should be 'rested'. It is interesting to note that the end of Ben Twyre coincided almost exactly with the demise of McGillicuddy. Was there some connection? Perhaps a change in editorial policy? We shall never know...

Stirling, Scotland J.H. Maxwell

Ariel — the designer replies

Aeriel — the designer replies

Dear Sir,

Many thanks for the copy of Aeromodeller which I found most interesting. It brought back memories when I saw Ariel — Doug McHard's replica — flying at Old Warden. I was rather surprised at the various problems Doug mentioned in that October issue, as I had none of these with the original which was very docile. Incidentally, I am not Australian! I only went to Australia after I was demobbed from the RAF after World War I, and joined up with a wartime friend who had started commercial flying in the 1920s in Victoria.

I was also interested in the article on the revival of interest in Jet-X. While at Eaton Bray I built a semi-scale model which flew very well and I think looked rather nice. I still have it stowed away in the loft. As far as I remember one wing is not too badly

damaged; some tissue repairs are required but otherwise it is OK. If it would be of interest you could certainly have it on loan. Perhaps some vintage enthusiast would like to repair and fly it for me! At 91, sadly, I am past chasing models...

Leighton Buzzard,
Beds

Tim Hervey

To Argus Books...

Dear Ron and Vic,
How did you ever manage to put so much about model aviation into one book? I couldn't lay the book — 50 Years of Aeromodeller — aside until I had perused every page. Each vignette brought back memories of every phase of aeromodelling even including my favourite, compressed air. There was a drawing of a 1914 vintage model of the quiet, clean compressed air ships. My pulse quickened at every turn of the page. You have covered the 'works' from actual models of most interesting types to construct, to humour, to the war years' problems, to magnet or compass steering — you name it the book has it. Being about the oldest modeller is the USA I have participated in so many phases of the development of model aviation that I appreciate your 50 Years of Aeromodeller all the more. It should be required reading for all aspiring aeromodellers!

Longmeadow, Mass,
USA

Bert Pond

Rebores, anyone?

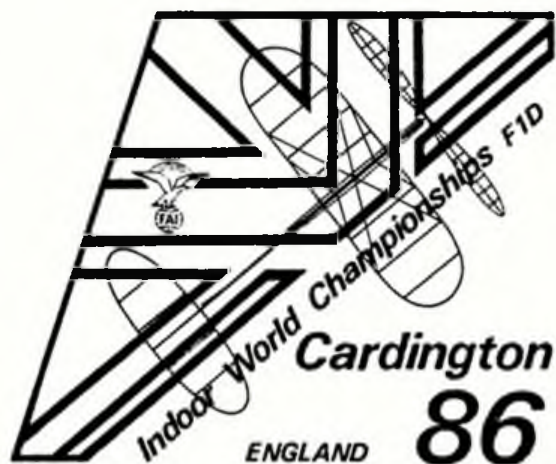
Dear Sir,

Can I make a plea for a series in Aeromodeller on reboring a diesel. Most enthusiasts, including myself, are stuck with worn-out motors which you cannot get repaired for love nor money as it is uneconomic for anyone to tackle such work. I appreciate that it is difficult to put over lathe techniques in a modelling magazine but I would have thought it would be worth a try, and it might stimulate people to have a go. Most enthusiasts either know someone with a lathe or have access to a local technical college. Even better, why not republish the plans for the Sparey 0.8cc and get Doug McHard to do a series on building one! It is a smasher — a bit like an Amco 0.87cc and of a most popular size. I know this has been done before with a dreadful-looking little motor called Topsy but the time must be ripe for a repeat because of the small diesel supply problem.

Orton Longueville,
Peterborough

Mike Farrell

(If there is enough interest in the subject of reboring motors we'll see what we can do. Any takers? GC).



1986 INDOOR WO

Gremlins away — here's the report!
Victory for the USA; four new National
Records; three 45+ min flights ... Bob Bailey
was there with notepad, Ron Moulton with camera.

RIGHT UP TILL the last moment before the practice day, the choice of shed for the event was not clear cut. No. 1 Shed, now owned by Airship Industries was by far the cleaner in terms of floor obstructions. However, precise timing of the airship movement (which means opening the main doors) was not well enough established to enable the decision to be made in favour of this location. No. 2 Shed, on lease to the Fire Research Association via the Building Research Establishment, was guaranteed and other equipment needed for research work on the combustibility of such things as domestic furniture and bedding. The decision was finally made to go for No. 2 Shed, which is currently more weather resistant than No.1, being more airtight. The poor weather forecast for the later part of the weekend may have played a part in the decision!

Everyone associated with the Championships was housed at the Training Centre, a mere ten minute walk from the shed. Rooms were very comfort-

able and the meals were of a high standard with the waitresses always willing to be of service wherever possible; an excellent complement to the Championships.

Practice Day: 23rd August

The weather was sunny and warm with a steady breeze, guaranteeing generally good conditions, and it wasn't long before the air seemed to be filled with models. From what I was able to see in between fixing up the Dataflex computer scoring system for output of scores and helping with miscellaneous other jobs, drift seemed to be generally low.

The Americans were using half-length motors (with ballast to suit) much of the time whereas the British team were practising on full length motors but with generous back-off to reduce risk to the models from hazards such as steering damage. Paul Masterman, as team manager, was monitoring model performance using a flight simulation programme written by Dave Pymm and developed further by Bernard Hunt to monitor model performance. This programme can assess the effect of varying model mass, motor mass and motor cross section (mass/unit length) to optimise predicted performance.

Jim Richmond tried his variable diameter prop - so successfully used at Nagoya - early in practice, but then discarded that model/prop combination in favour of a somewhat stretched model with a smaller prop. It may be that getting altitude with the variable diameter prop was a potential problem.

It was a busy day for all involved with running the Championships; in particular, Laurie Barr, as well as being in

overall command, was helping to steer errant models. Quite a few were saved this way. Mick Smart, the rigger, was up and down the stairs like a yo-yo. He performed the job of rescuing hung models with rare ability and very little damage was done on retrieval.

First Contest Day: 24th August

Test flying in conditions which were cold to start with carried on right up to the last minute before the scheduled 11am start when there was a pause - but not for very long. With sixteen countries competing there was soon a queue at processing, a task which was very ably carried out by Ian Dowsett with my help as and when required. Few problems arose once an extra anti-draught screen had been put up to shelter the models during weighing. Inevitably, one entry had so long a fuselage that the balance had to be jacked up to a considerable height and re-levelled before this model could be weighed! With each round being two-and-a-half hours long, there was little time to be wasted.

An indication of how the contest was going to unfold came in the first round when Cezar Banks, closely followed by Bob Randolph for the US both cleared 41 minutes, with 34 minutes achieved by Larry Cailliau - an excellent start. By stark contrast, none of the UK team was able to get a flight in, due mainly to hang-ups in parts of the shed inaccessible to balloons because of the location of buildings and attendant power lines. After the Americans the next best flight in the first round was a useful 38 minutes from Dieter Siebermann.

Main picture: Aeromodeller 1! An appropriately-identified Jim Richmond displays his winning model. A long fuselage...

Across page, from below: Frank Dahlin of Denmark (37th) ruefully surveys wingtip steering damage; concentration at motor fitting by Nicu Bezman of Romania, who placed 24th; Switzerland's Rene Butty (13th) flew a model with many successes to its credit. Note small area and high-aspect-ratio flying surfaces. Far right: Great Britain's Bernard Aslett was out of luck this time. His best flight, set in Round One, was 36:36.



RLD CHAMPIONSHIPS



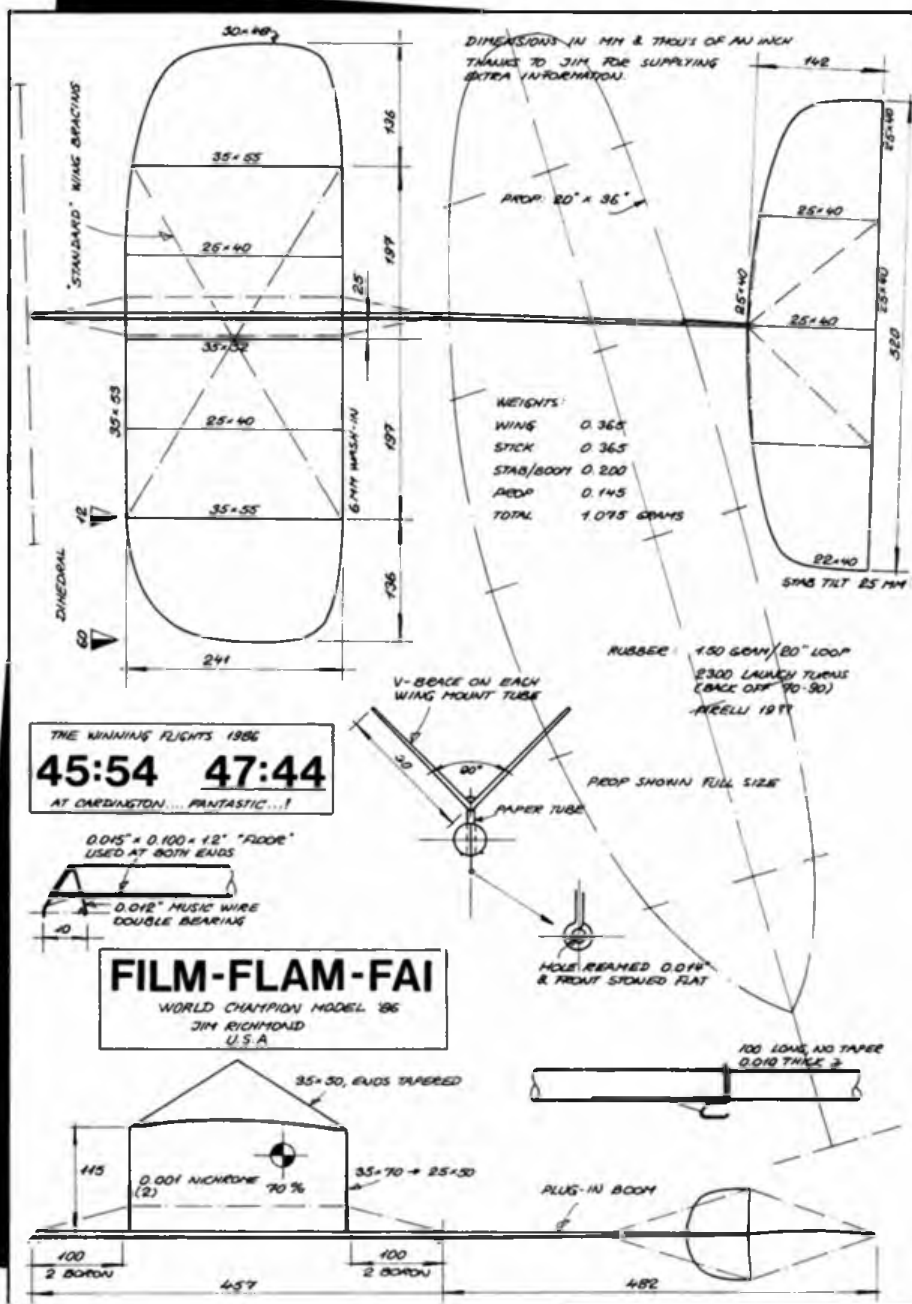
My principal job was to produce the computer output for team and individual scores. The computer itself was installed in an office at the far end of the shed for the purpose of recording all flight scores, but this was too far away to be of practical value. The process of recording fifty-one scores per round was too slow! When the machine - which behaved faultlessly throughout - was positioned close to the control desk, recording and checking of scores was made more easy with valuable

co-operation from extra effort at Control in passing scores to me as they were recorded. The second round saw Dave Pymm show his potential with 41:57, and Pentti Nore, an experienced campaigner achieved 41:36, a new Finnish record which didn't last long! The Hungarians, flying for the first time in a surface site started to feature in the proceedings with Deszo Orsovai setting a new record of 40:36.

Bernard Hunt's model looked on course for a good flight, barring accidents; but

many a slip... One of these came quite soon afterwards when the model spiralled in with a prop blade apparently tucked under the port wing panel. A steering casualty due to bending the prop with the balloon line? No; as was revealed soon after, the prop had caught a tough cobweb a long way from the girders, and this in turn had snagged on a wing bracing wire - an incident without precedent as far as we all knew, but it marked the end of the second round for Bernard.





The third round, as is usual for Cardington, brought the best conditions of the day. Bernard Hunt, with his long tandem model got going this time (but not as well as earlier in the year) with a 41 minute flight and Dave Pymm showed admirable consistency. Bernard Aslett was out of luck and not able to produce the form of which he is capable. Later in the round, things really hotted up. Jim Richmond, having had to steer the model several times to avoid the side of the shed, set the pace with a superb 45:54 - a new FAI record for the longest flight at a World Champs. Times of 40-44 minutes came in a steady stream. Deszo Orsovai had a mid-air collision and elected to re-fly later in the round. His model was the last airborne and thus became the focus of attention. The computer was all ready to receive the result when it came. An excellent let down in the very smooth air gave him 43:37. Penthi Nore and Thedo Andre produced identical flight times of 44:01 to set new National records.

Second Contest Day: 25th August

Hurricane Charley was approaching the UK and the day started off cold and damp with steady rain drumming on the shed. Most unpromising. The first major surprise of the day came with Cezar Banks' fourth flight which went right to the top, into the side, hung up, came off, and got a fortunate nudge while there; otherwise it would have been lost and gone for ever. The result was an amazing 45:48; a time which had seemed impossible in conditions so cold and damp. A motor of at least 1.5 grams seems necessary - it is interesting to reflect that seven or eight years ago Derl Morley used motors of 1.7 grams to very good effect when most others in the UK were down to 1.2 grams or less.

Cezar's flight put him into the lead. He must have thought he'd cracked it this time, having placed second in Nagoya behind Jim Richmond. Bob Randolph was

the only other person to improve his score with a remarkable 43:17.

The rain was torrential by this time and what looked like a waterfall was pouring through a hole of considerable size in the shed roof. The computer power supply, provided by extension leads, had to be protected by polythene bags to avoid water getting into the connecting plugs and sockets! All was kept dry enough and no mishap occurred.

Top left and right: The unmistakable style of Jorgen Korsgaard captures all the details of Jim Richmond's winner (and new FAI record holder) and Rene Butty's well-known Miracle 86. Top centre: Banquet programme contained some splendid culinary treats - how about 'Rosbif Sir Barr du Bray et Yorkshire' or 'Pommes en Croûte avec Oiseau jaune'; yes, 'yellow Birds'... Take a close look! Below centre: On parade... Champs organiser Laurie Barr, Sir Bernard Chacksfield, Ron Moulton and SMAE Chairman Ron McCalm had plenty to enjoy. Right: Medal winners Jim Richmond (centre), Cezar Banks (right) and Penthi Nore (left). Far right: Laurie Barr explains the finer points of Aurel Popas' model to Lady Chacksfield.

TOASTS

HER MAJESTY THE QUEEN
AND HEADS OF STATE

Proposed by
Air Vice Marshall Sir Bernard Chacksfield
KBE CB C Eng FRAeS RAF (Ret)

THE SOCIETY AND THE COMPETITORS

Proposed by
Ron Moulton Editorial Director, Argus Specialist Publications Ltd
Response by
Ron McCairn Hon. Chairman, S.M.A.E.

AWARDS

C.S. RUSHBROOKE MEMORIAL TROPHY
Individual World Championship, Indoor Models

LANGLEY CUP
National Team World Championship, Indoor Models

ERNEST KOPECKY TROPHY
Longest single flight in the World Championship

FEDERATION AERONAUTIQUE INTERNATIONALE
Gold, Silver, Bronze Plaquettes and Diplômes

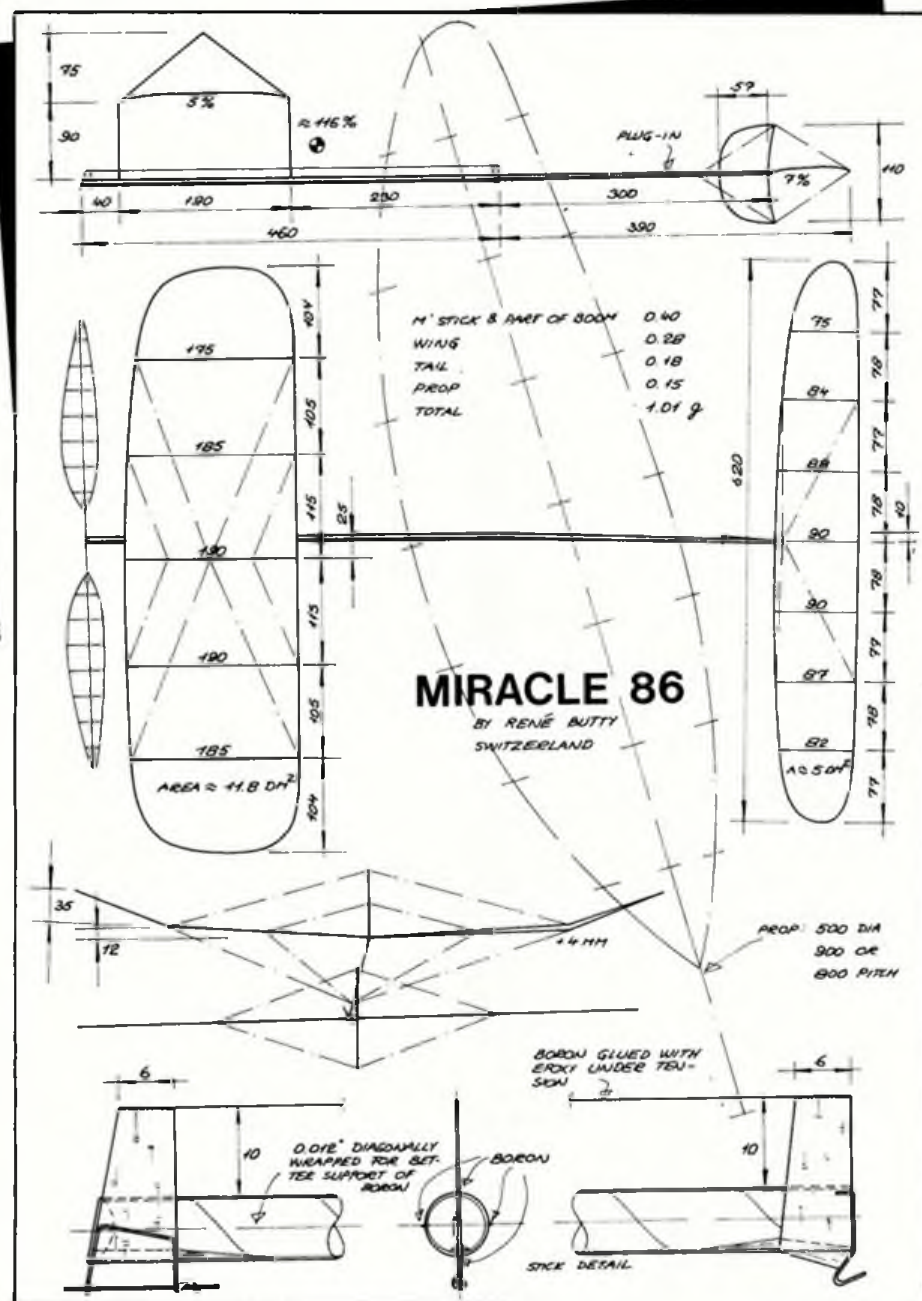


Jim Richmond launched for his fifth flight with an incredible 2300 turns on the motor. The model hit a chimney stack when at about forty feet but fortunately the impact was with the better side of this structure, otherwise it would have hung up (which is my usual luck!). As it was, the model carried on and on. Several excellent steering retrievals helped to keep the model aloft for more than fifty minutes - a most amazing flight. After deducting

steering time, a new Championship record flight of 47:44 was announced. By now conditions were deteriorating to such an extent that even getting a model away was very difficult. The problem was caused by strong draughts and turbulence at ground level. Models were being blown sideways or were pushed into a stall (with consequent tailslide) and there was a high risk of hitting buildings whose presence rendered the open floor areas relatively

small. Nobody else managed an improved flight in this round.

The last round was even worse, being characterised by strong lift currents and turbulence. Some models climbed at a spectacular rate, to go where no one could predict. A common occurrence was for the wing to be wrecked by the turbulence which tossed the models around like leaves in a gale. The Championship closed with twenty flights of over forty minutes and





Theo Andre (Holland) flew this long-moment-arm model to good effect. His third-round 44:01 was equal to Pentti Nore's best but he finished in seventh place overall.

three of over forty-five minutes having been accomplished. This Indoor Championship was probably the toughest yet, being held in conditions ranging from excellent to so impossibly bad that the sixth and last rounds had been effectively wiped out; but the event produced the highest flight scores witnessed so far. Many competitors exceeded their previous best times, with new National records being set for Hungary, Finland, Holland, and of course the USA.

Afterwards

The presentation banquet was held in the Training Centre and the dining room was filled to overflowing. This was a convivial and memorable occasion, particularly with the presence of six World Champions - Bud Romak, Ryzard Czechowski, Jim Richmond, Aurel Morar, Erv Rodinsky and Pete Andrews. Lady Chacksfield presented the medals and trophies after an eloquent and masterly speech by Pierre Chaussebourg had expounded the virtues and purpose of flying indoor models. Finally, Reg Parham presented a commemorative pewter plate from all the Cardington regulars to Laurie Barr for all his efforts over the years and for a magnificent job in running the Championships.

Many thanks are due to Jorgen Korsgaard for providing the drawings of Jim Richmond's and Rene Butty's models. The text of Pierre Chaussebourg's speech is taken from issue 3/86 of Indoor News, a recommended publication available from Jorgen at Ahornweg 5, D-2397 Ellund-Handewitt, W. Germany. Three issues are published per year.

1986 FAI World Indoor Championships Individual Results

			Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total: best two flights
1	J Richmond	USA	41:05	32:15	45:54	17:51	47:44	—	93:38
2	C Banks	USA	41:36	13:06	41:37	45:38	3:58	1:40	87:25
3	P Nore	Finland	30:35	41:36	44:01	7:36	8:38	—	85:37
4	B Randolph	USA	41:40	34:17	39:36	43:17	1:09	1:33	84:57
5	D Orsovari	Hungary	31:20	40:36	43:47	—	24:04	—	84:13
6	D Pym	GB	19:02	41:57	42:03	38:00	—	0:53	84:00
7	T Andre	Netherlands	32:59	39:19	44:01	21:25	9:41	—	83:20
8	D Siebenmann	Switzerland	38:08	11:48	42:33	20:00	27:04	—	80:41
9	B Hunt	GB	17:25	13:42	41:27	37:00	—	0:29	78:27
10	A Ree	Hungary	35:57	8:33	42:06	28:40	14:55	—	78:03
11	O Rodenburg	Netherlands	32:22	36:27	37:34	40:11	—	0:04	77:45
12	L Englund	Finland	35:27	36:58	37:56	8:51	37:39	1:45	75:35
13	R Butty	Switzerland	32:55	42:30	31:37	15:39	14:47	12:39	76:25
14	A Popa	Romania	37:55	30:18	38:48	10:43	3:10	74:43	—
15	Liem	Netherlands	38:34	37:47	36:41	26:08	6:21	—	74:28
16	L Cailliau	USA	34:01	19:33	39:16	11:36	3:02	0:46	73:17
17	S Kujawa	Poland	35:10	30:05	37:54	32:18	—	6:37	73:04
18	E Ciapala	Poland	25:11	35:03	37:55	23:48	16:51	1:01	72:58
19	H Enomoto	Japan	35:14	36:33	34:50	25:00	35:54	—	72:27
20	P Keller	Switzerland	30:50	34:54	16:00	16:53	37:08	3:47	72:00
21	B Aslett	GB	36:36	15:38	27:02	30:49	34:17	7:30	70:53
22	L Ree	Hungary	35:12	35:27	28:36	33:35	28:24	2:18	70:39
23	R Champion	France	32:07	32:18	31:51	25:34	37:21	16:58	69:39
24	N Bezman	Romania	33:42	33:24	34:28	22:08	—	—	68:10
25	J Korsgaard	Denmark	18:39	31:40	36:19	—	18:05	4:14	67:59
26	I Zegar	Yugoslavia	34:55	33:00	32:34	31:38	—	32:31	67:55
27	M Mastnak	Yugoslavia	26:14	28:55	36:36	31:08	27:25	10:28	67:44
—	W Nimpsch	E. Germany	26:04	24:03	38:19	29:25	17:20	0:18	67:44
28	K Kihara	Japan	25:11	29:52	37:00	15:07	16:56	1:39	66:52
30	C Cotugno	Italy	32:39	33:06	32:54	25:59	—	—	66:00
31	C Schueler	Canada	36:18	29:15	8:06	21:30	2:06	6:08	65:33
32	M Thomas	Canada	29:11	32:02	31:35	0:18	13:53	0:09	63:37
33	G Cognet	France	25:35	33:08	30:26	19:41	1:28	0:57	63:34
34	R Czechowski	Poland	28:45	7:27	26:01	36:19	15:19	16:08	63:04
35	R Higgs	Canada	27:04	—	6:29	34:26	21:56	14:57	61:30
36	E Grippo	Argentina	29:38	26:37	30:58	14:34	16:38	0:11	60:36
37	F Dahlin	Denmark	18:48	28:22	31:43	24:22	19:22	33:49	60:05
38	J Chabot	France	13:43	28:57	30:32	16:28	20:50	—	59:29
39	O Velunsek	Yugoslavia	28:57	26:37	30:06	13:34	9:48	0:54	59:03
40	R Lotz	E. Germany	35:17	20:37	19:15	22:50	8:16	8:00	58:07
41	S Pontan	Sweden	28:15	27:44	14:43	21:29	—	11:27	56:59
42	P Comet	Sweden	19:14	21:58	25:53	13:35	29:46	10:11	55:39
43	N Begiatti	Argentina	15:19	26:28	26:56	16:50	12:50	1:30	53:24
44	A Moraru	Romania	12:33	15:30	37:15	10:39	12:40	—	52:45
45	G De Angelin	Italy	23:30	—	—	2:39	27:25	—	60:55
46	B Miehe	E. Germany	7:04	24:52	25:25	13:33	3:22	—	50:17
47	H Ernst	Denmark	11:49	20:24	29:24	7:42	3:40	—	49:48
48	K Ohta	Japan	17:21	20:42	—	28:04	—	—	48:46
49	C Edmundo	Argentina	28:30	15:33	22:02	8:40	—	0:30	48:32
50	H Erofejev	Finland	1:24	1:28	26:14	14:16	—	2:57	40:30
51	L Masciullo	Italy	12:29	25:16	13:33	13:10	4:22	0:09	38:49

Team Results

1	USA	254:39	10	France	192:42
2	Netherlands	235:33	11	Canada	190:40
3	Great Britain	233:20	12	Japan	188:05
4	Hungary	232:55	13	Denmark	177:52
5	Switzerland	228:06	14	E. Germany	176:08
6	Poland	209:06	15	Argentina	162:32
7	Finland	201:43	16	Italy	165:44
8	Romania	195:38	17	Sweden	111:38
9	Yugoslavia	194:42			

Ernest Kopecky Trophy for longest single flight

J Richmond USA 47:44

The spirit of Indoor flying: Pierre Chaussebourg's Banquet address...

Sir Bernard, Ladies and Gentlemen,
In the good old days, there has been a Gliding World Championship in England, not far from here. At the opening ceremony, Lord Brabazon of Tara said, 'With their intelligence men do what birds do with their instinct'. Indoor models fly like butterflies, but with so much more intelligence in their flying: the intelligence of their builders. They fly the way we have trimmed them to fly.

So many times I had the opportunity to explain what Free Flight is to spectators, the way we build the models, the way we fly them, our competition rules... At the end the question comes always the same, 'Is it useful?' or 'What does it prove?' Nothing. It is not useful. It does not make money. It proves nothing. They would be disappointed if we do not add that this is life. There are still people who spend thousands of hours; putting together small pieces of balsa wood, microfilm, small wires, and winding rubber bands, just to meet in old balloon hangars, salt mines or famous halls, only for the pleasure to be there and fly their models together.

Yes, it is a sport: 'Our old medallists are the aviation's Olympic Champions', said Erv Rodemsky in Ron Williams' book, but when a sport reaches such a high level of

skill it becomes an art.

On behalf of FAI and the FAI jury I want to thank the organisers for such a successful World Championships. I want to thank the competitors for their sportsmanship, for the very high level of flying, for the improvements noticed since the last World Championships in Cardington, 1978. Thanks to the timekeepers and their chief George Lynn. Thanks to Ian Dowsett at the processing and thanks to Butch Hadland, the contest director, for a very well run competition and an excellent team managers' meeting. Thanks to all those who did their best at all levels to make these World Championships so successful. I want also to add a special thanks to Mike Smart and Bob Smith for the very dangerous rescues in the catwalks.

Now, there is another one I want to mention. You have met him everywhere during these days, carrying boxes, teaching steering during practice days, rescuing models, doing so many things for everyone, with all his best and all his heart.

Laurie, I'll not thank you for that, it is impossible to thank somebody for doing so much and so well. Simply, I'll say, 'Please, sometime, do it again!'

FLYLEAVES

An occasional look at books of interest to the aeromodelling and aviation enthusiast



SAM 35 Yearbook Number 4

Available from Ron Knight, 14a Enmore Gardens, London SW14 8RF; price £4.00 which includes postage. Cheques to be payable to SAM 35.

The appearance of this Yearbook is an event eagerly looked forward to not only by members of the UK Chapter of the Society of Antique Modelers who produce it, but by vintage modellers everywhere. When Number 4 did not appear at the end of 1985 as might have been expected there were long faces amongst enthusiasts, some even suggesting, because of the excellence of the previous three issues, that the SAM 35 Yearbook was too good to last! They were right about it being good but obviously they did not recognise the painstakingly high standard demanded by Peter Michel, the editor. It was because of an imbalance of material that Peter refrained from publishing on schedule. His plea for additional material on various seemingly neglected subjects was made known amongst members and the grand way that they responded is evident in the content of the present Yearbook, which in my opinion is the best yet. Les Hoy does his thing on the front cover with a pleasingly accurate presentation of a control line Nancy complete with Frog 100 diesel, and inside every taste seems to have been catered for. The plans (over thirty in number) are well chosen and reveal a source in Air World that although known about has never been seen by this reviewer; and while some of the plans have appeared in other, better-known publications, the many that are 'new' can only add to the enjoyment that the pursuit of such goodies gives us. The compilation on Ted Evans by Mike Kemp, with all the cross-references that he could reasonably

obtain, gives a picture that future model aero historians will have cause to be grateful for. After reading this piece even non-Wakefield modellers will look at Jaguar in a different light.

Apart from the enjoyment of reading about free flight slope soaring, trimming free flight power and indoor metric power and stripping balsa there is a wealth of information in these articles too; and this will make the Yearbook a reference book and not just one for the bookshelf. Pylonius, as is his wont, raises some laughs and at the same time brings attention to some interesting topics, and a number of modellers relate their own experiences against a background of particular interests like vintage C/L stunt, Sunnavind gliders, the Bowden Mouse, Newbury Club and Wimbledon Common.

Just how competitive the flying of Old Timers has become in USA is borne out in 'Build Light and Fly Right' by two American modellers. This is a completely different ball game to our 'fly for fun' approach in SAM 35, although our rubber enthusiasts are tending in this direction, especially Wakefield. It is difficult to reconcile some of the content with the SAM Official Rule Book, but doubtless the keen contest flyer's interpretation of the R/C Assist Rules will be 'in the character of the original ship'. They can scale up or down to suit their motor and also add 'lightness', these being just two instances of what is not allowed in SAM Basic Events. The name of the game is competition, which means that a different attitude is used by such participants from the word 'go'. A model design is chosen because of it meeting the required criteria, some of which are listed in this article. In the UK we mainly decide on a particular model for other reasons; speaking for myself, merely because I love the old shape and getting it to fly at all might prove a major undertaking!

Readers will enjoy EW Twining's writings about the first Wakefield Cup model in 1911. When he did the drawing that accompanies the article he was seventy-four years old (indeed, he was still contributing to Practical Mechanics into his eighties). It is fitting that his story is included since it serves as a starting point for Wakefield history that is now receiving attention from some enthusiasts.

It's a sobering thought that SAM 35 has been going long enough to warrant looking back at its early journals, and this is done here. We are also reminded that Yearbooks Nos. 1 and 2 have now become collector's items, a fate that I prophesy will rapidly befall the present offering. My advice is to get one now - if you miss out you will ever regret it. Excellent value for all aeromodellers, and a *must* for those concerned with models from the past. AI

The Encyclopedia of Aviation

Edited by Paul Beaver (Octopus Books, £12.95).

With such an enormously varied subject as aviation, it is difficult to believe that a worthwhile encyclopedia could be crammed into only 224 pages. Neither are the contents listed in alphabetical order as the title might imply; but having criticised this, there is very little else to complain about.

This book is very well presented with eight chapters covering aviation from its earliest beginnings up to some of the latest developments in aircraft and space craft. Each chapter is written by aviation experts in that field and traces the growth and technical achievements that have resulted in today's - and even tomorrow's - designs.

The index has nearly two thousand entries giving just some idea of the vast amount of information that is included. The text, although originated by different authors has a coherent style; and it gives the reader a wealth of information which is extremely easy to read and understand.

Chapter headings include: The Pioneer Years; Military Aircraft, Airlines and Airliners; Helicopters; Rockets, Missiles and Space Craft; General Aviation and a well thought out section on Technical Terms and Explanations. There are a host of excellent photographs and drawings, many in colour and the general presentation and layout go hand in hand with the easy style of the text.

There are of course many books written on specialist aviation subjects, but if you can afford only one book, then this must rank as one of your first choices. Read and absorb what is between the covers and you could well be mistaken for an expert yourself!

PDF



MADE ONE TOO!

Next in line with a tale of engine building
is Jim Woodside, who tried an Atom Minor

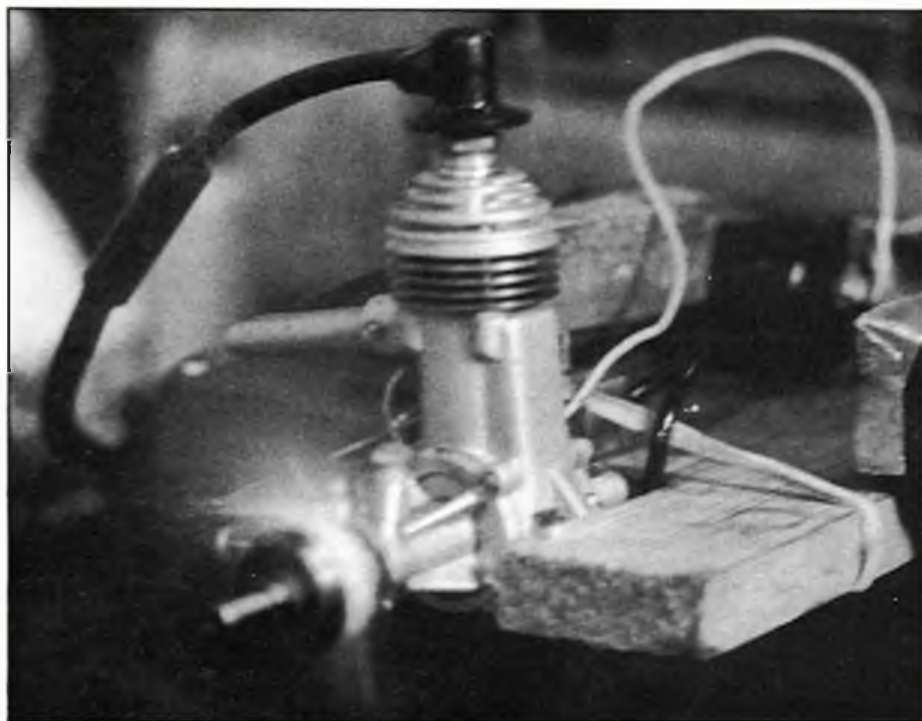
WHEN THE EDITOR and myself were having a chat a while back he mentioned that an article which had brought forth a great deal of interest from the readers had been John Whiteside's feature 'I built an Engine' (in the August 1986 issue). Apparently the country is full of closet machinists. As casually as possible I murmured that I had just finished making a 'sparks'. The rest is history. At this point the truly skilled may wish to skip on to the next article so that they may avoid feelings of nausea!

Although I had owned a lathe for some years most of its use had been in 'bodging-up' parts for team racers - certainly for nothing as challenging as a motor. Apart from this I also lacked the confidence to have a go. The turning point was a visit to the 1985 Midlands Model Engineering Exhibition in Birmingham. A nicely restored example of Westbury's famous 6cc motor was on show and I was very taken by its appearance. Browsing through the books on the Tee Publications stand turned up the reprint booklet on making said motor. Two pounds and ninety-five pence had this gem in my grasp. By the way, the clarity of explanation and quality of the English alone make this

book worth buying. I spent Christmas reading its fascinating pages. Finally, a chance remark to a friend that I wished castings were available revealed that they were, from Woking Precision Models. Needless to say a cheque was on the way a couple of days later.

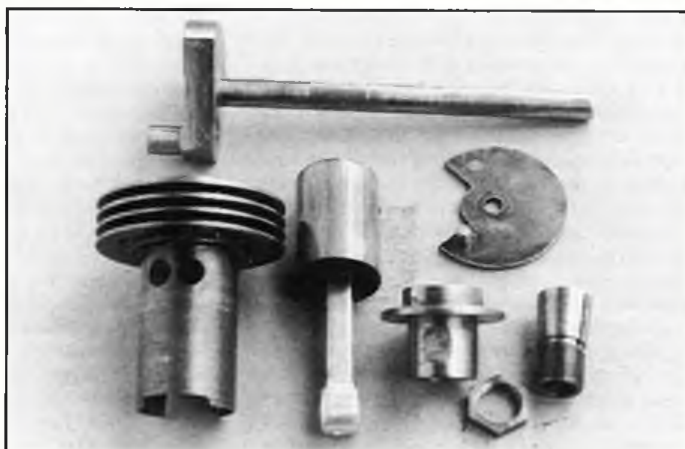
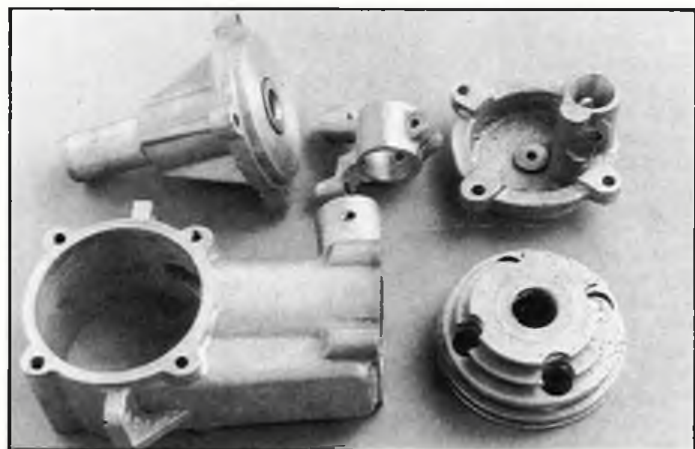
Cut that metal!

The basic kit from Woking comprises five separate castings of good standard plus cast iron for the piston/cylinder and a



Classic lines of Edgar Westbury's design are seen in the heading photo. At right: It works! Six cc of spark ignition crackle away. Components shown below; castings, after machining and vapour blasting at left and internals at right.

Opposite page, top: A fragment from the drawing, available from ASP Plans Dept. as PE13 (£2.35 including postage) with original artwork and details of a later glow conversion - from Model Engineer magazine, 1st March 1964 - below that.



piece of H.E.15 for the con-rod. A more expensive option includes the materials to make all the other items.

The good Edgar's book will tell you all you need to know about machining the parts. The only advice I can give you is think twice (make that thrice) and machine once. By the way, there is a misprint in the book regarding the crank-web thickness which is shown as 9/32in. overall but should be 7/32in. I found out the hard way - does anyone want a fat crank? (No play on words intended). Do check dimensions before you start, although I think I have found this is the only error in the text.

Machining up the castings is good fun; they quickly take form and you really feel a sense of progress. Just wait until it is time for the crankshaft. The web is 1 1/4in. diameter but the shaft only one-quarter of an inch. Slow is not the word! The item I found hardest to make was the conrod as it needs so many separate individual operations and really must be accurate. The most satisfying item to produce was the draw collet and prop driver.

Connect up...

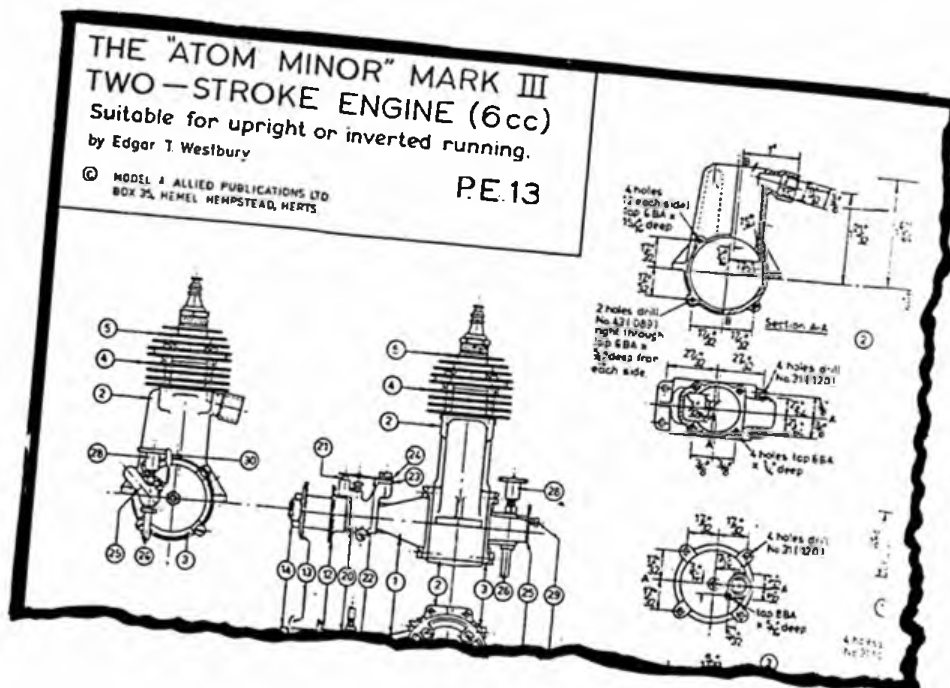
By now some ten months have trickled by, representing perhaps fifty hours of lathe time; and the big day is to hand. Will it run? The motor turns over with a promising 'plop' so it is down to friend Ron's Honda agency to borrow a coil and condenser. All is hooked up to a battery and there's a great spark at the plug. Three hours later, still not a peep! Doom! Temper. Anger. What can be wrong? Two days later the penny drops - an ancient design like the Atom, which has such a low compression ratio, will not run on methanol. A change to petrol has it running in a few flicks. Ever felt like a dummy? However, let me tell you that it is a great, great feeling when your own engine bursts into life.

For those of you who like a touch of jaundice with your reading then I'll tell you that your first home build is likely to be the most expensive engine you ever own. See account, below:

	£
Second hand Myford	500
New tools needed	50
Castings	23
Material	10

Only ... £583

Of course, the second one will just cost £33.



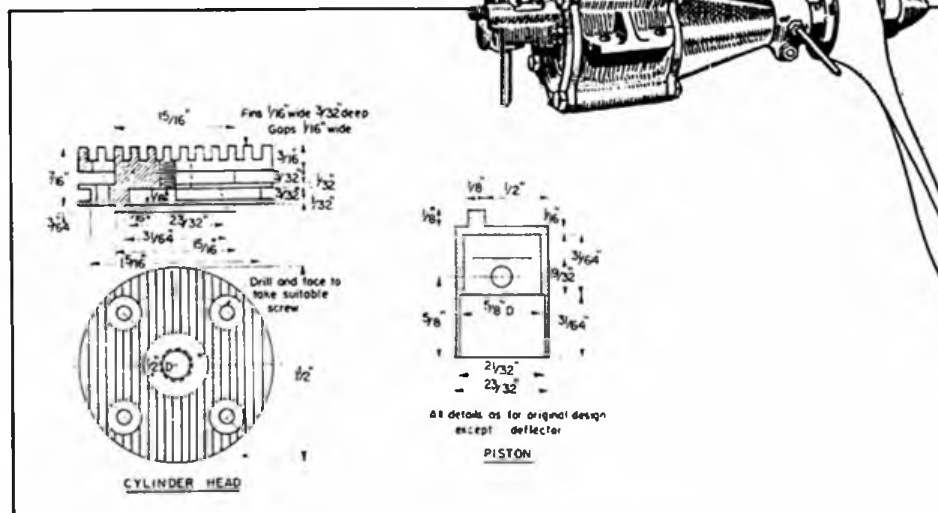
Reference

The Atom Minor Mark III by Edgar T Westbury. Available for £2.95 plus postage from Tee Publishing, 216 Coventry Road, Hinkley, Leics LE10 0NG.

Drawings also available from ASP at £2.35 inc. postage. Quote number PE 13.

Castings

Basic set of five pieces and some materials: £23 from Woking Precision Models, 10 New Street, Oundle, Nr Peterborough, PE8 4AE.



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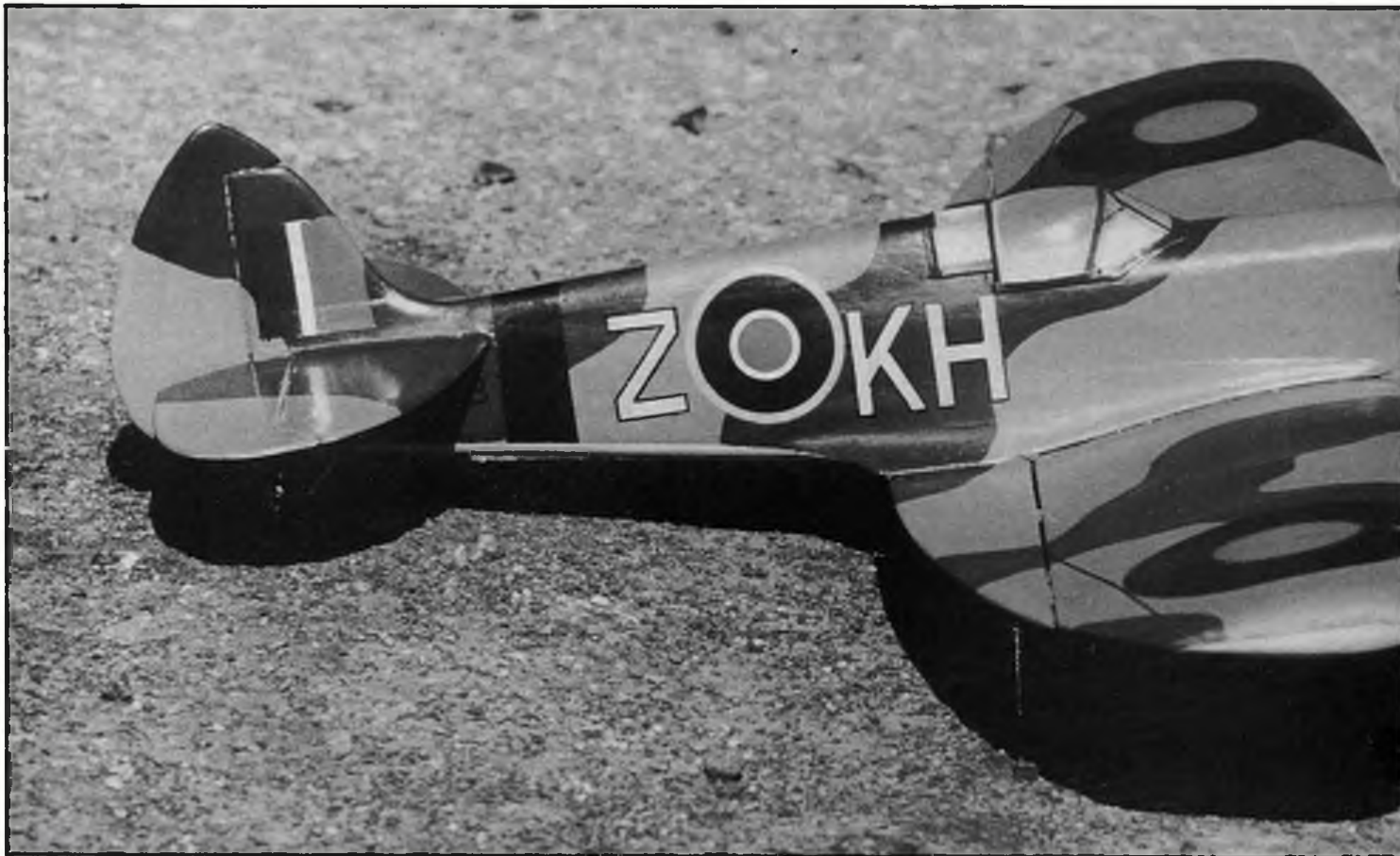


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THESE LITTLE MODELS are the latest in a long line of small stunts which began in 1976 with a very successful model based on a Spitfire Mk14 and powered by a PAW 1.49DS. This model has (yes, it's still flying!) a sidewinder engine, and fixed wing and undercarriage.

Subsequent models have come closer and closer to scale. The current versions have true scale outlines (different scales for wing, tailplane and fuselage, of course, *à la* Rabe); the engine mounting has been changed to 'inverted' and engine and tank bays are totally accessible via a large lower cowl. The wing has been made removable and a detachable undercart allows operation over grass as well as tarmac.

All these developments were carried out while retaining the primary requirement of excellent flying performance. The result is tough, easily maintained models which dismantle into a very small space for storage and/or transport; which can be operated almost anywhere, and which draw admiring comments wherever they are seen.

Perhaps surprisingly in models of such graceful lines there are no areas requiring advanced or complicated building techniques, only a little extra care and patience here and there. A word of warning! These are not models for the absolute beginner either to building or flying, but anyone with a little experience of scratch-building will find no difficulty in producing models which will give more 'fun per penny' than any others they own.

The plans allow almost any Spitfire Mark or variant to be modelled. Even the hybrid Mk 12 can be reproduced by grafting the front of the Mk 14 on to the rear of the Mk 9, which is roughly how the full-size Mk 12 was produced! However, do not

attempt to shorten the nose to represent more accurately a Mk 1 or Mk 2, for this is perilously short as it is!

Construction (the technical bit)

No! Do not get out the balsa and glue just yet! The very first thing to do is to spend an enjoyable couple of hours digging through all the Spitfire literature you can get your hands on and decide exactly which version you are going to model. If possible, work from photographs of the full-size machine and try to obtain some which give a good view of the upper engine cowl with its subtle curves. This is the most mis-modelled area of the Spitfire and a little extra care here will pay dividends in realism. Once you have made up your mind as to which to go for, do not change it later. Build another model instead; they are cheap!

As this model is intended for the builder with a little experience, I won't insult your intelligence with blow-by-blow building sequence but will give a little more detail on the trickier bits. All balsa wood is medium or soft grade.

One point which must be emphasised now is that every effort must be made to ensure that the final CG is on or forward of former F2. If it is not, the model will be unpleasantly twitchy to fly, or will require large quantities of lead in that short nose. So, write in large letters on the top of your building board 'KEEP THE BACK END LIGHT!'

Above: Ready to enter the fray - the Spitfire Mk16 with OS 10 FSR-S is a sprightly performer. The 'real' aircraft is preserved at RAF Manston. Right: here's a MkVc; note earlier national markings. This one is PAW 149 powered. Our plans enable you to make variety of Marks.

SPITFIRE





I usually start construction by cutting out all the components... that is, making a kit! I find that this allows easy matching of wood grades for fuselage sides and spars, resulting in a considerable saving in both weight and materials.

Adhesives (the sticky bit)

24-hr epoxy (Araldite) is used for highly-stressed areas such as engine mount assembly, undercarriage spar and bell-crank mounting plate (I find that 5-minute types become rubbery with age and lose strength). A contact glue such as Thixofix is suitable for attaching the fuselage doublers to the fuselage sides. Cyanoacrylate is ideal for assembling the rear fuselage formers and top and bottom blocks. For all other construction use a normal white glue such as Borden or Resin-W.

Fuselage (an important bit)

Assemble the fuselage sides/Mirrallyte doublers/former locator strips and put aside to dry. Now complete the engine mount assembly (1/16in. ply plate, engine bearers and formers F1, F2 and F3/rear wing mount fitting). It is vital that all

these components should be square and vertical. When dry, fit the engine to the bearers, adjust for sidethrust and drill the holes for the engine bolts. Epoxy the blind nuts for the engine bolts to the top of the bearer joining plate.

Following a dry fit to ensure that everything is properly aligned attach the fuselage sides to the engine mount assembly using generous amounts of epoxy. Clamp up well and put aside to dry for at least 24 hours.

Pull the ends of the fuselage sides together and tack glue or pin only. Now assemble the fuselage formers on the locator strips and when properly aligned fix them to the locator strips with a drop of cyano. Now pull the fuselage sides to the curve of the formers and glue with cyano. It should not be necessary to damp the sides as the curve of the formers is quite gentle.

Tack glue a piece of scrap 1/8in. sheet in the tailplane position and tack glue the fin and rear fuselage top and bottom blocks in place. Assemble the front fuselage upper decking and upper nose block. Tack glue the lower nose cowling block in place. Now spend a happy and dusty hour sanding the

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FIRE STUNTERS



whole thing to shape. Be especially careful in blending the fuselage upper block to the base of the fin. This area is critical to get that 'Spitfire look'. If you are building a Griffon-powered version you will now be struck by your creation's resemblance to a Supermarine S6B!

Assemble the tailplane/elevators/control horn/pushrod. Separate the tack-glued blocks (rear top and bottom, front lower) and remove the 1/8in. scrap from the tailplane slot. Fit the tailplane, using a straightedge across the wing mount at F3 to give alignment, and cyano in position. Complete the idler assembly, attach to the elevator pushrod and epoxy in place so that the idler is vertical when the elevators are at neutral. Ensure that the controls are free throughout their full range of travel (the elevators should droop under their own weight).

Fit the tailwheel (fixed or removable) to the lower rear block then permanently cyano the fin and top and bottom rear fuselage blocks in position.

Bolt the engine in position and, using the 'fit and try' method, hollow out the lower cowl block to clear the engine and make the cooling duct behind the cylinder head. Get this bit right or you'll be plagued by an over-heating engine. Remove the engine and fit the cowl latch and cowl locating strips.

Wing (the elliptical bit)

As in any model, the wing is the heart of this aeroplane and the greatest care should be exercised throughout to ensure correct profile, alignment and freedom from warps.

Assemble the mainspars over the plan and attach the spar joiner. Build the wing panels one at a time over the plan, packing up the spar/other wing panel to maintain dihedral. Do not install the upper and lower tapered spar flanges just yet. Make the undercarriage spar and undercarriage assembly. The undercarriage is designed to bend in the event of a heavy landing, thus avoiding damage to the wing centre section, so do not be tempted to 'beef it up'.

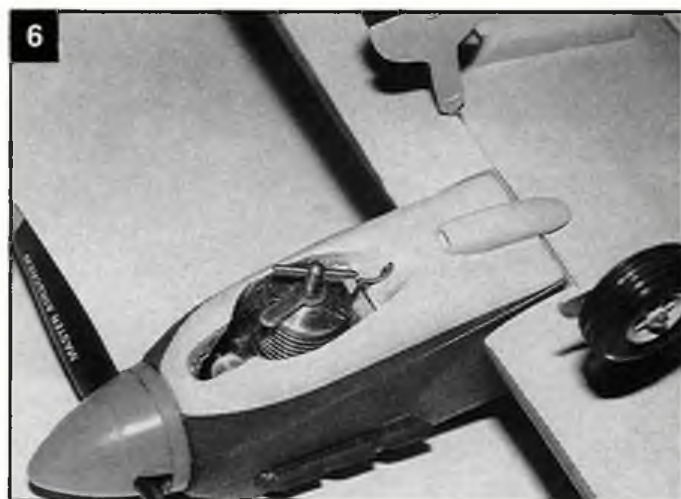
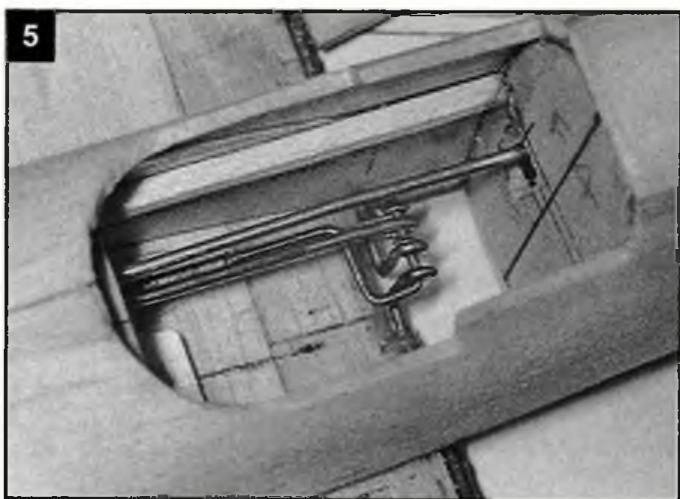
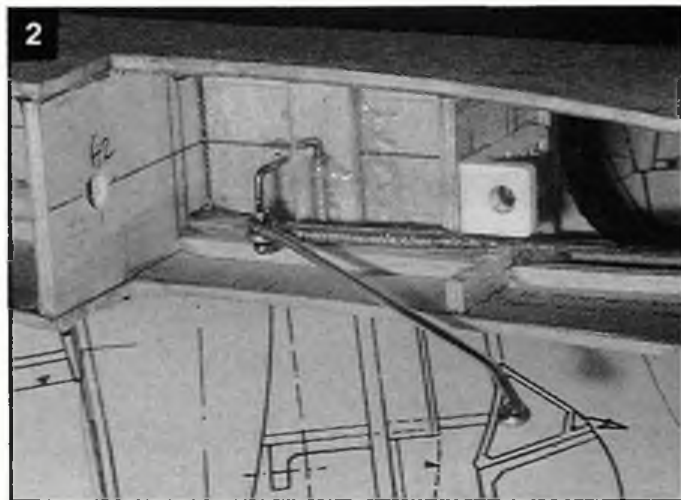
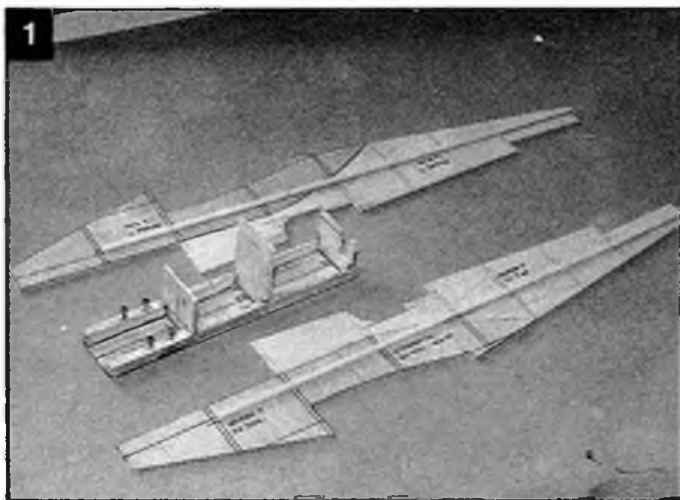
Remove the wing from the board and install the undercarriage spar, followed by the control system and flaps. The bellcrank operates in a slot cut in the mainspar and requires clearance slots to be cut in the root ribs. The front leadout actually goes through the mainspar, which requires to be reinforced fore and aft with 3/32in. sheet (vertical grain) to retain structural integrity. It is essential that the control system should be absolutely free throughout its full range of movement. Steam the upper tapered spar flange to match the dihedral and glue it in position. Fit the 3/16in. filling between the root ribs leading edges. Now complete the upper leading edge and upper centre section

sheeting and sand lightly to remove any ridges.

Tape a sheet of heavy writing paper to the wing upper surface to represent the thickness of the covering and offer up the wing to the fuselage. Sand the fuselage (carefully!) to ensure correct alignment. Spot through F2 to mark the front dowel position and through the wing fixing (attached to F3) for the rear bolt. Drill through the undercarriage spar for the front dowel and the rear wing sheeting for the rear bolt. Fit the front dowel in position, ensure that it clears the bellcrank and epoxy in position. Fit the lower spar flange, lower leading edge and lower centre-section sheeting. Do not sand in the 'gull-wing' effect just yet. Fit the lower wing fairing block and drill through for the rear mounting bolt.

Assembly (the complicated bit)

Still with the writing paper taped to the top of the wing, bolt the wing into position and check again for correct incidence and alignment. When all is correct sand in the 'gull-wing' effect at the wing roots (don't go crazy here; there is only sufficient sheet thickness to give a hint of the full effect. A good paint line will make it more prominent). Build the wing-root fairings,



ensuring that they do not foul the flaps. 3/32in. clearance is about right. Make the air intake from very hard balsa so that it retains the undercarriage and glue it in position on the lower cowl.

Now dismantle the whole thing for finishing. No, I haven't forgotten that the rudder and control connecting rod are not yet fitted! The rudder should be decorated separately and is the last thing to be fitted, while exhaust stubs, cockpit canopy, radio mast and other small details are added in the very final stages. The connecting rod is best fitted when all decorating is complete, to compensate for any small variations due to thickness of covering, and so on.

Finishing (the dusty and smelly bit)

Everybody has their own favourite method; mine is as follows! The first step is to give the inside of the tank and engine bays and the whole of the lower cowl a thick coat of epoxy or polyester resin. The fuselage is then given the traditional treatment of a thorough sanding (remember what I said about keeping the back end light) followed by doped-on Jap tissue and a coat of sanding sealer, followed by more sanding.

The wing is covered in Solartex (I've not found anything better...usual disclaimer)

and given one coat of 50/50 clear dope to improve weatherproofing.

All my models are finished with one THIN coat of Humbrol enamels, markings are hand-painted and after at least two whole days drying (MOST IMPORTANT!) each craft is given one brushed coat of Tufkote matted with Humbrol matting agent.

Final assembly (the nerve-wracking bit)

Make the best guess you can as to the length of a connecting rod and form one to this length from soft wire. Attach the con-rod to the idler, then to the flap horn assembly and swing the wing up into place. Fiddle around, bending the con-rod, fitting and trying until elevator neutral coincides with flap neutral. Take out the soft wire con-rod and make the proper con-rod to the correct length. Fit this bolt the wing in place and check for full and free control movement. If you haven't already done so, attach the rudder now, using fairly heavy gauge 1/2 x 1/4in. tinplate 'hinges'.

Now check the CG. If it is on or forward of F2, one or more of the following has happened;

- (a) You have read the instructions *and* followed them.
- (b) You are using a heavy engine.
- (c) You have discovered a source of 1950s

quality balsa.

If the CG is aft of F2, get out the lead.

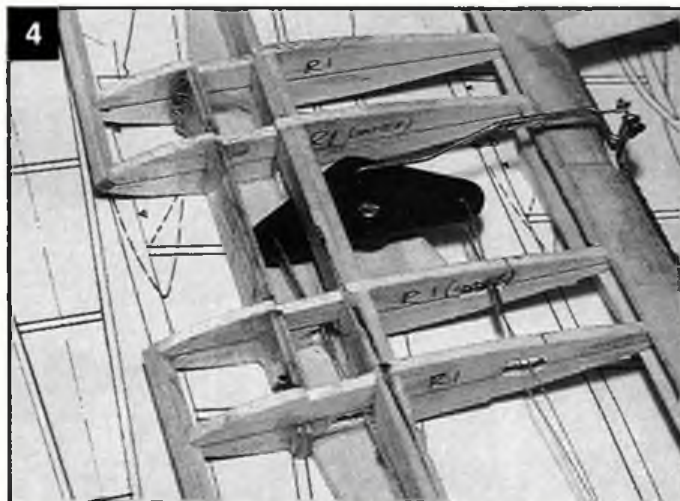
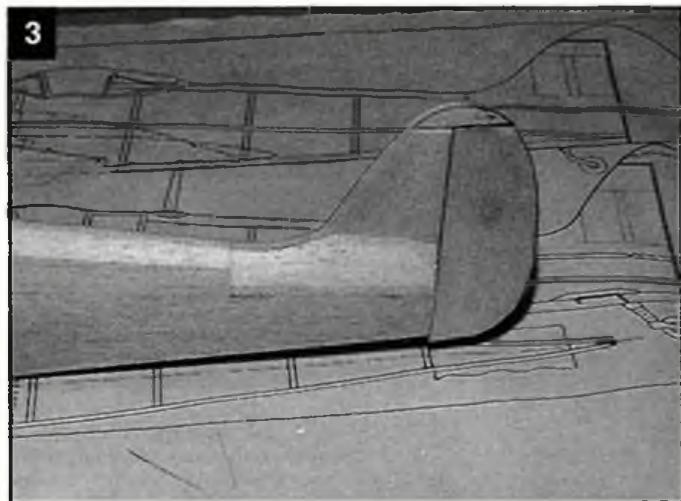
Weights (another technical bit)

These models fly best at all-up weights (dry) of 13-16oz with PAW 149s, although an 18oz version with an OS10FSR-S does quite well. I have built them down to 10oz (OS Pet), but while the flying was brilliant, the models were very fragile and quickly became very shabby due to frequent repairs. A 14oz AUW represents the best compromise between durability and performance.

Flying (the best bit)

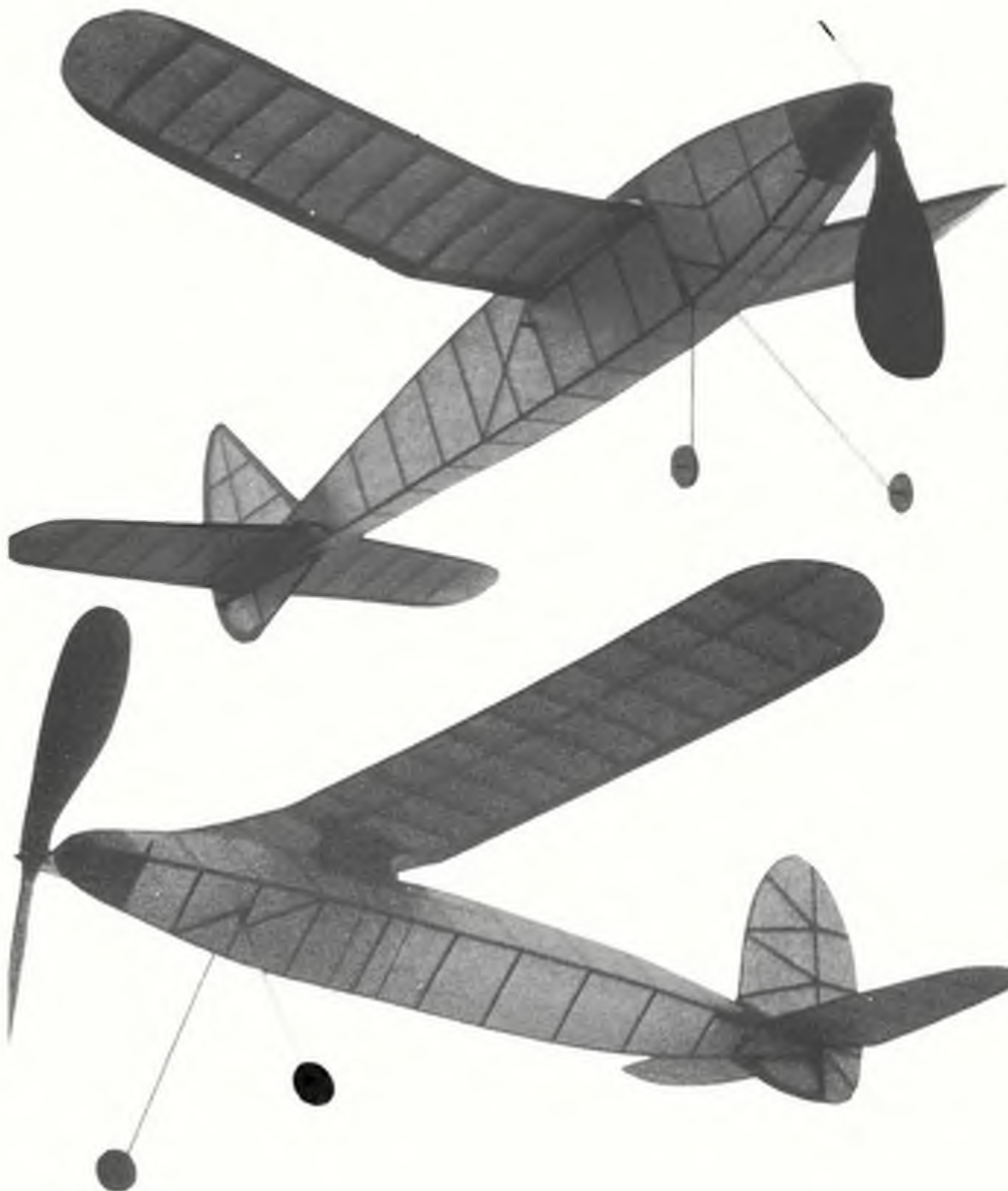
As previously stated, this is not a model for the raw beginner, as an AUW of 14oz with a PAW 1.49 gives the model (at the very least!) a Novice Stunt capability. The aforementioned 10oz version was capable of a good shot at the full FAI schedule and triangular loops on 40ft lines are not for the faint-hearted!

Instructions are simple; 40ft lines, full revs on the engine, handlaunch on anything except tarmac or velvet-smooth grass. In keeping with the prototype, performance is of the fast-and-furious variety. I suppose reducing the control throws and getting the CG further forward might make life a bit less breathless, but then you wouldn't have a Spitfire, would you?



Construction shots to spur you on!
 Photo 1: Main sub-assemblies. Engine bolts are already fixed; and marked former positions aid alignment. Photo 2: Idler assembly and con-rod (or pushrod, if you like). Photo 3: Fuselage/fin junction. Scrap 1/8in. sheet occupies tail position. Care in shaping pays dividends. Photo 4: Key area - the wing centre section. Flanged joint between mainspar cut-back leading edge. Photo 5: View through cockpit shows flap linkage. Photo 6: Underside of nose. Note cowl retaining clip, engine ducting and smart paintwork!
 At right: 'KH-Z' again. Standard OS silencer has since been replaced by less-conspicuous Daniels unit.





Two wartime rubber lightweights are sampled by A.J. Longhurst

Aeromodeller; or balsa wood, which would have to cross the torpedo-strewn Atlantic; and how about rubber from Japanese occupied Asia. But not a bit of it; the *Aeromodeller* seems to have been published throughout on quite nice paper and instead of being chock full of gliders made out of old waste paper baskets, lo and behold, every couple of months a little beauty. Yes, a delightful LRM, not for the Plans Service you understand, just reproduced as a one-third-scale drawing. They vary from the most beautiful (Wattie, 1942) to the most bizarre (George, 1940). Many are charming but typical slabiders with the wing on top (like Fooz, 1942; Skyrocket, 1941; Maybug, 1943 and Orion, 1939). But all in all they are priceless heritage and I couldn't start peeling off the strips of 3/32nd square fast enough - so I started to build Jumping Jive (by Peter Brown - November 1943) just pausing long enough between fuselage sides to dash off a letter to our new editor to tell him of this amazing find of spiffing plans in case he didn't know. Half a pair of wings later back came the reply that he would republish a couple of the plans if I would build them up and say if I could persuade them to fly.

So that's how such a non-expert person comes to be writing for the *Aeromodeller*; and in case you just think I am being modest, I thought that Edina had eight longerons and even started to build it like that! In fact, Edina is a fairly simple diamond fuselage design (by HA Wardell, published in February 1945) which I selected for its interesting pylon mounted swept wing. This I thought would make a contrast to Jumping Jive which is a slabider with shoulder mounted wings and a very early folding propeller of unusual design. (When was the folding propeller invented I wonder?).

Fuselages

Enlargement of the plans is made easy as offsets from the fuselage centre line are provided. Construction is very straightforward apart from the undercarriage. That of Edina is simple enough but as I hate big clumsy gussets I provided reinforcement for the tubes in 3/32in. square. With Jumping Jive I was at a loss to understand how the undercarriage box worked, so I just replaced it with two lengths of slightly ovalled aluminium tubing instead. All one needs to do then is double over the undercarriage wires at the end and they will push fit into the tubes.

Wings

JJ's wings are of fairly typical sparless construction. No reinforcement is shown at the dihedral breaks so I wrapped them in a little piece of bandage soaked in PVA. Anyone making one of these wings for the first time should note that they warp like mad if the covering is too tight. I used 'Light English Tissue' from SAMS

DURATION DURATION

I LAST WROTE FOR *Aeromodeller* in 1968, the subject being 'B' Combat. At the time I could fairly claim to be an expert at this branch of the hobby. However, on the topic I am now writing about I have to admit to being a bit of a wally. It is just that on coming back to aeromodelling after a fourteen-year break I find I am completely obsessed by lightweight rubber models. They flutter through my dreams, appear doodled half

way through reports I am writing and as I build them at work they will probably get me the sack. So you can imagine my feverish excitement when my old friend Ian Russell offered to lend me his wartime *Aeromodellers* which he said were stuffed full of smallish rubber-band jobs.

Now I am probably amazingly dim but I thought that there were certain shortages during the war. For instance paper on which to publish such frivolous items as

Indoor and Outdoor supplies (mail order) as I know from experience that this does not shrink too much and the red has terrific visibility which is an added attraction on these small models.

Edina's wing is straightforward until it comes to building in the pylon. I tackled this by building the saddle first. This was from scored and cracked 1/16in. hard sheet which was then bound to the fuselage with rubber bands. PVA was then run into the crack. The 1/16in. hard sheet pylon core was next let into the wing which previously had been completed except for the spars.

When the spars go in, the pylon and dihedral angle sets quite rigidly. Next I glued the wire band hooks into place on the fuselage. When dry it was removed, and the wing and pylon glued to it, with wing tips propped up to make sure all was square. More drying time elapsed before the pylon fairings could be carved from soft sheet (I used 1/4in.) with the grain opposed to that of the core.

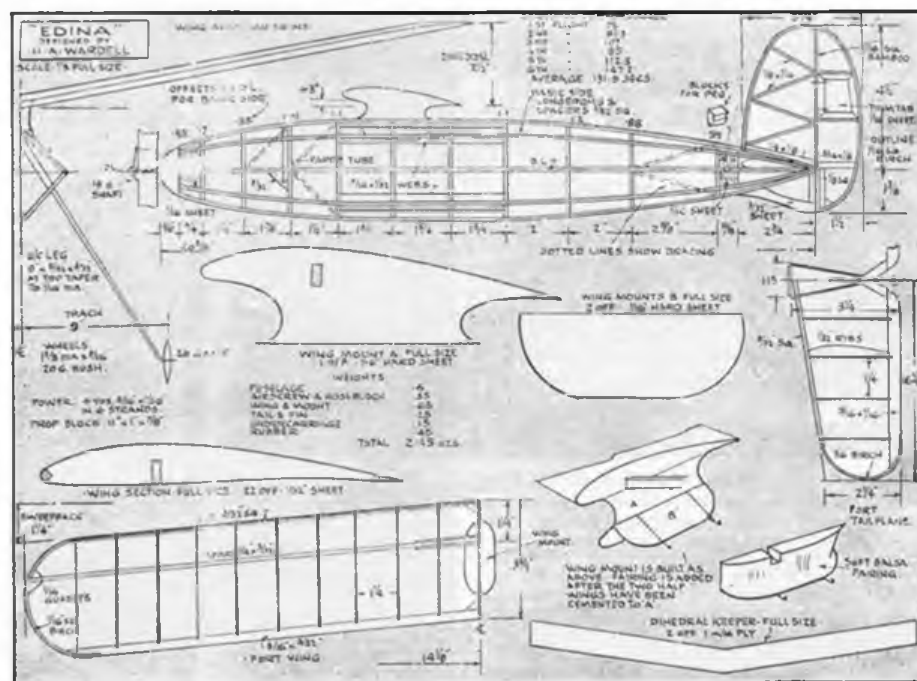
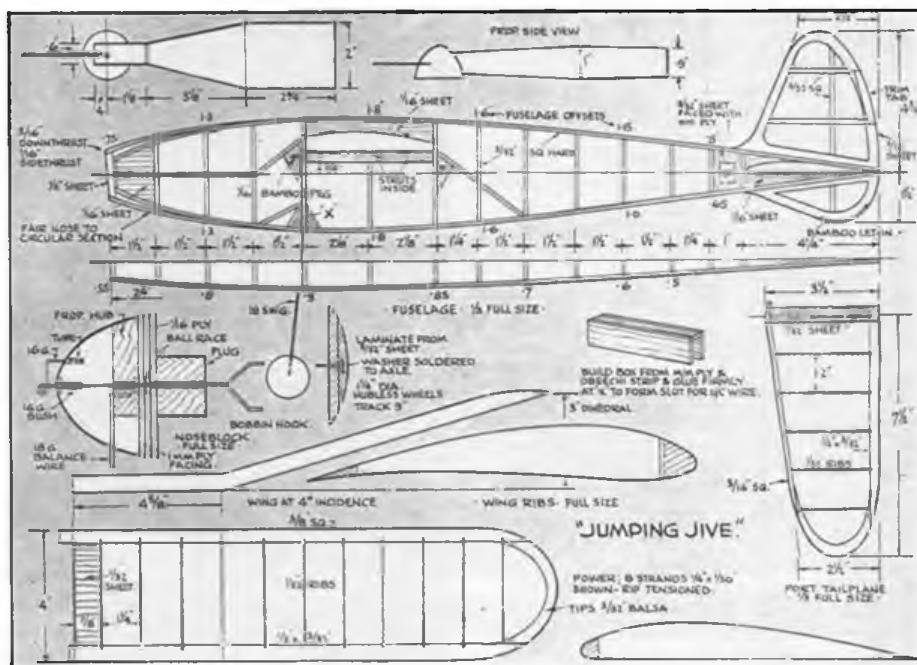
Tails

Jumping Jive's tail is very simple; the only tiny unspecified area is how to mount the fin onto the fuselage. I filled the top and the bottom of the rear fuselage with hard 1/16in. sheet and glued the fin directly to it.

Edina is much more fuss. The tailplane/fin assembly is built as one (it took me ages to work this out) with the fin projecting below the tailplane to make up with the subfin on the vertical line. I just love working with cane so the fin is a real delight, the cane bending naturally to that Gloster Gladiator shape. The tailplane is easy enough to build, it being best to provide a full-span trailing edge at first and to cut out the notch only at the last possible moment. The loss of strength caused by interrupting the trailing edge at the middle is appalling and makes warps inevitable. This structure cries out for a mid-chord top spar but I thought such an addition would be going a bit outside the normal minor variations that are permissible. I eventually resorted to de-working it every evening for a week using gentle heat. Eventually an equilibrium was reached with about 5 degrees dihedral but no twist.

Props

The Jumping Jive plan includes details for a fascinating folding prop and spinner. By contrast Edina calls just for any old eleven-inch freewheeler. Like many others I am not very good at carving props from block balsa. When they are thin enough to satisfy me, I usually am so clumsy that I split or snap them, so I always laminate props from 1/32in. balsa over a former using two or three sheets with grain at a slight diagonal. No further comment is called for on Edina's prop so you can proceed as you wish. By contrast, JJ's prop is very awkward. The designer does not include any stop for folding the prop on the port side of the fuselage (as is common practice). I gaily thought I would pop one in at a later stage in construction without realising that the spinner makes this a



watchmaker's job. As JJ's entry is more streamlined than a space shuttle it follows that its entire *raison d'être* lies in its appearance. Now this is greatly spoiled if the spinner is more than 1/16in. or so from the noseblock, so any spring-powered withdrawal system has to work within a minute space. After some mental turmoil I decided to build it exactly as the designer intended to see how and if it would work. One thing to note is that if the prop 'grows' a little in construction as mine did, it will foul both the undercarriage and the forward wing band pegs.

Flying

Very good conditions prevailed at Chobham for the test flights. Wind speed was about 5mph and a hazy sun provided plenty of gentle lift. First to fly was Jumping Jive with eight strands of 3/16in.

aboard. My reward for a warp-free structure was a glide that was dead straight but rather steep. Having wedged 3/32in. packing under the TE of the tail, which was all the space I had available, it still would not stall so I resorted to the removal of the undercarriage which brought the CG back to 60-70% of the chord. (It transpires on re-examining the plan that there is a tiny little note on it which says 'wing at 4° incidence' which of course I had missed completely). Anyway, at last I had a glide and with a bit of right rudder trim it was time to crank on some turns. Now Peter Browne in his original article insists on left turn under power and right on glide. This is why such a lot of downthrust is specified. As my model needed right rudder for the glide it proved impossible to persuade it to turn left under power. I quickly decided that the model

knew best and let it turn right under power and was instantly rewarded with a devastating performance. Yes this is the long rumoured, but until now, undiscovered RAFF V beater. It is immensely stable, has a very flat, fairly fast glide and a deceptively wicked climb. I did not dare put on more than 375 turns for fear of losing it altogether. This is only about half-maximum but quite enough for flights of between one and four minutes from the thirty-second motor run. After half a dozen flights the model had to be grounded as it was obvious that it was guaranteed to fly off even on reduced turns in the very good conditions prevailing. (As I write the model is being converted for a wing pop-up dethermaliser system).

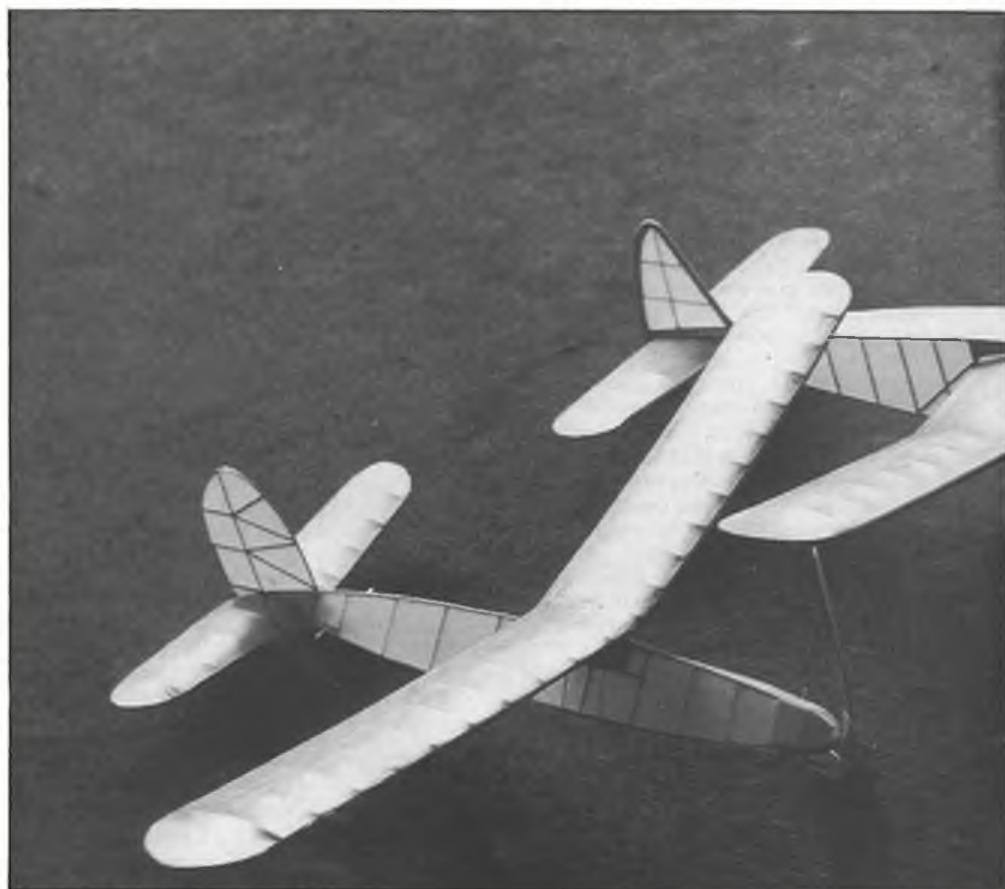
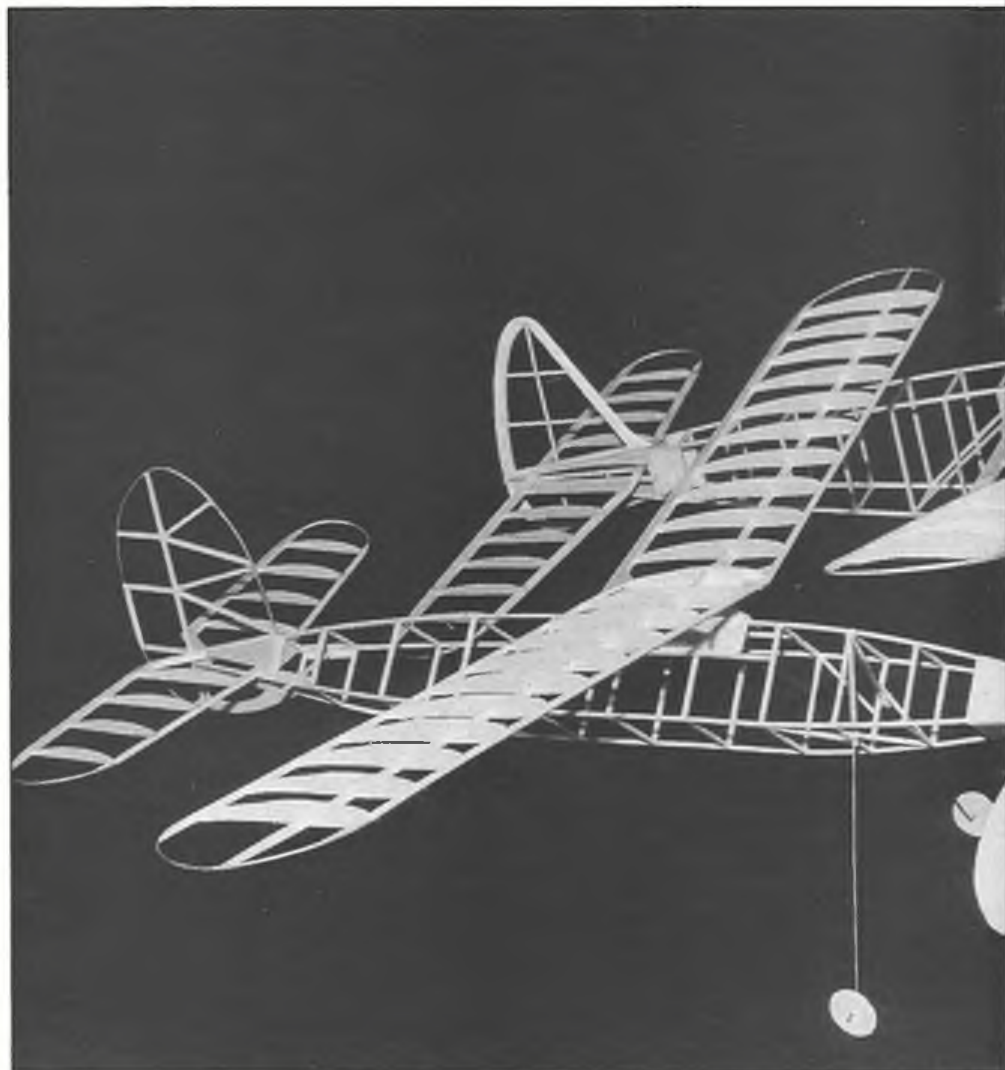
Incidentally, the prop gave no trouble at all and folded on the port side of the fuselage every time, not exactly snap action but effective enough.

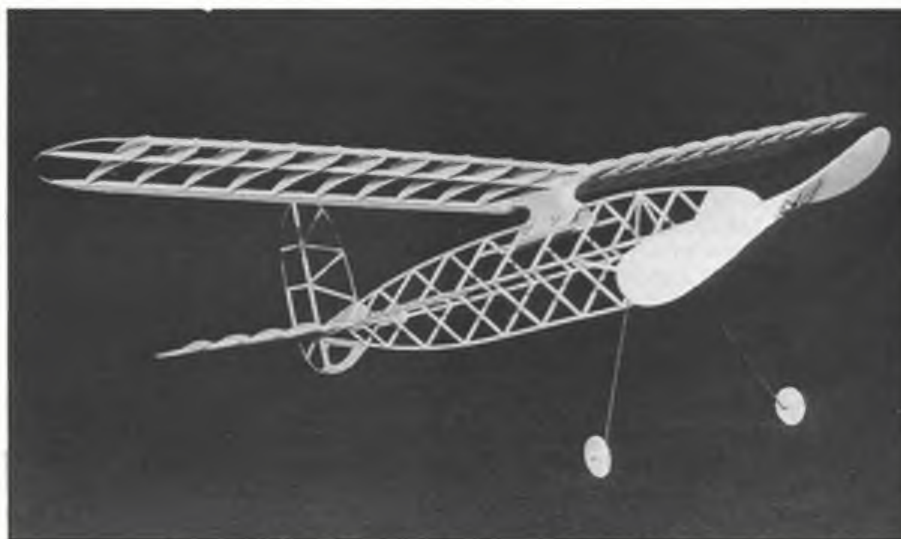
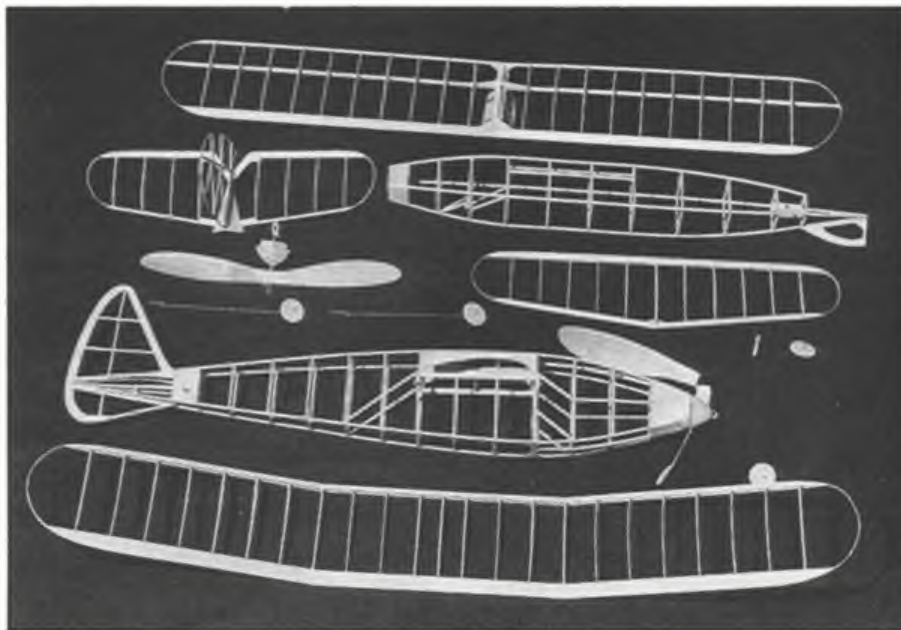
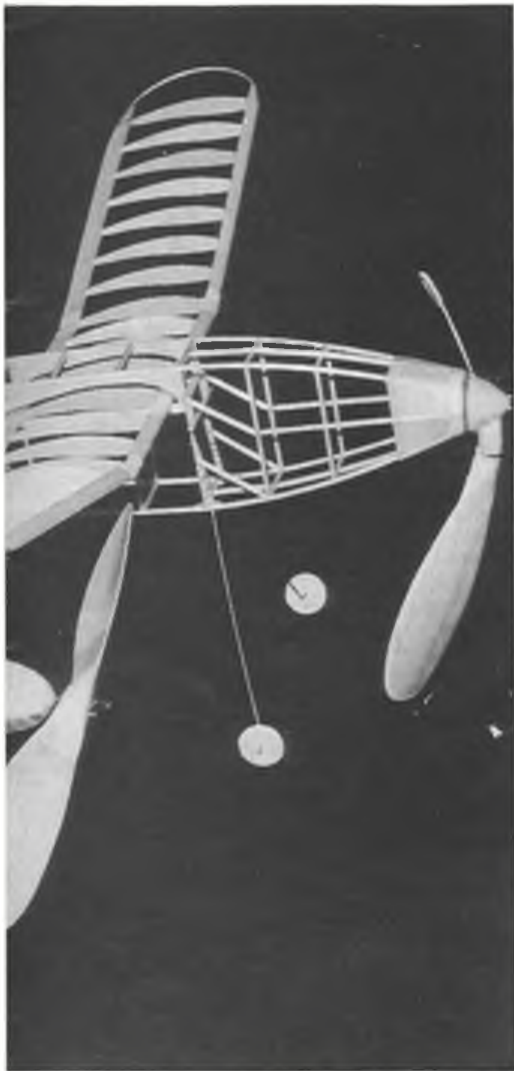
Having satiated myself with this sublime flying instrument I turned to Edina which soon punished my inexperience. One glance at Edina and you can't help feeling that the tailplane is a bit on the small side. It therefore follows that if the wing is a bit far back one is in trouble, so I had made a bad mistake when I decided to leave off the undercarriage. In fact the model just would not fly without it, and it took some time and several heart stopping spirals before the penny dropped. The undercarriage duly installed and the wing moved consequently half an inch forward saw us flying at last. Using four strands of 1/4in. weighing the specified 12 1/2 grams, it is still very difficult to catch a balance between a spiral dive and a power stall but 1/8in. of down and right thrust eventually got things under control. 500 turns gave a thirty-three-second motor run and some rather dodgy flights of about one minute. I began to get the feeling that it was overpowered and remembered having read somewhere that wartime elastic was a bit feeble. I therefore dragged from my capacious bag a 10 gram P30 motor comprising four strands of 3/16in. This worked wonders, 500 turns giving a lovely gentle 40-second motor run and flight after flight of 80 seconds duration. If you would like to make an Edina I would recommend carving the prop from teak or somesuch, as keeping the moment arm as long as possible seems a vital factor with this little flittermouse. I would count myself unlucky if I lost Edina, for at any sign of a thermal it drops a wing and makes an undignified exit. A bit like a Duchess encountering graffiti.

So there you have it; they are as opposite as chalk and cheese. One is a thermal-hungry thoroughbred and the other a very feminine and lovely little model, ideal for small fields and sunny days.

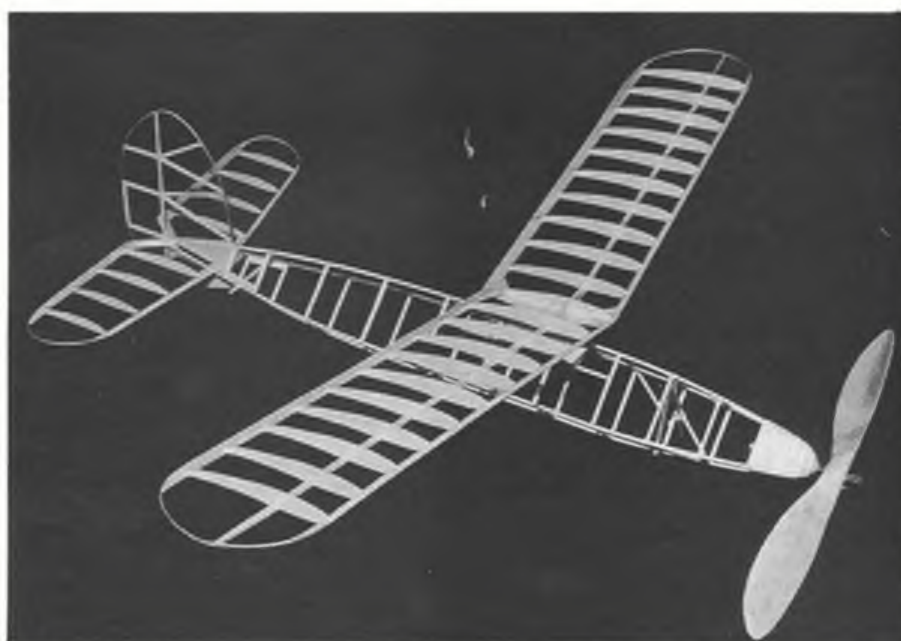
Postscript

I was so impressed with JJ's performance that I returned on another day with a Peck Polymer 9 1/2in. prop and 10 grams of 3/16in. four strands to try it as a P30. The conditions were cold and windless with no lift at all. 500 turns on some very old elastic gave twenty seconds of power and total times of around one minute. When I put 600 turns on the motor it burst so I think those figures are quite encouraging. It certainly has a cracking glide even with the windmill slowing it down visibly. Why not try one - or both?





Main pictures, left: Both lightweights shown uncovered and ready to go. Jumpin' Jive - the slabster - appears the more robust and straightforward. Drawings on previous page are at half the original reproduction size; that is, at one-sixth scale. This page, top: A mass of components to cover and assemble! Above: Edina's skeleton looks most attractive. This craft will test your cane-bending techniques and - with its twin-blade freewheeler - your prop-carving abilities (see also photo below). Note those wing and tail tips.



Got your Jetex (or Jet-X) handy?
Have a go at David Binns' fun flying wing!

SIZZLE

MY APPRENTICESHIP ON Jetex lasted from the twin-50 Helicopter to the 350 Magnum; and I really enjoyed using these motors, particularly their lack of torque effects - and there was considerable entertainment from the shrieks of those who had forgotten to let the engine cool before reloading!

I kept a 50 unit complete as a memento, but when I heard production was resumed, and had even been improved, it *had* to be used.

Now the easiest of all designs to me is a tailless, as you really have to get it wrong for it not to fly, so I drew out the wings on a piece of 1/8in. balsa, cut out the fins and elevons from some 1/64in. ply and with a piece of 1/16in. ply cut up to make a laminate mount, glued it together with white glue. The next day I tried it, and had

to move the engine forward 3/4in. but then it flew.

It might fly better if you lengthened the centre section, or shortened it. 1/16in toe-in on the fins might or might not help. Who knows? In other words, you can alter this one in minutes to suit whatever ideas you may have. I sprayed mine half blue and half scarlet, with black spots, using car aerosols I had in my garage, but this treatment is definitely optional! The best of luck...

Building (if so it can be called)

Cut out the wings from 1/8in. medium soft balsa and cement together, making sure all is flat. Rub down with gloss paper, merely rounding off the edges. Cement the elevons in place, packing them 3/8in. up at

the tips, and cement on the fins. Build up the engine mount from 1/2 x 1/16in. plywood and screw the motor mounting in place.

Cement in the mounting making sure it's square, and add the under fin.

Aerosol finish to taste and add name and address! Fit an unloaded motor and bend elevons up or down until a satisfactory glide is achieved. Do not alter position of the fins or change the balance.

Jet-X explain better than I can how best to use the motor and its effects (see also the review in the October 1986 *Aeromodeller*).

This is either a beginner's model, or one for the experts to modify to their own taste. It's quite fun as it is!

Building time is just one hour. What's stopping you?

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NOTICE!

Now, before all you old-timers start to scream, consider this: In 1952, ten pellets of fuel cost just over 10 pence - with inflation that's the equivalent of £2.50 today for 10 pellets or £10 for 40! That makes our current price of £5 for 40 pellets look cheap!

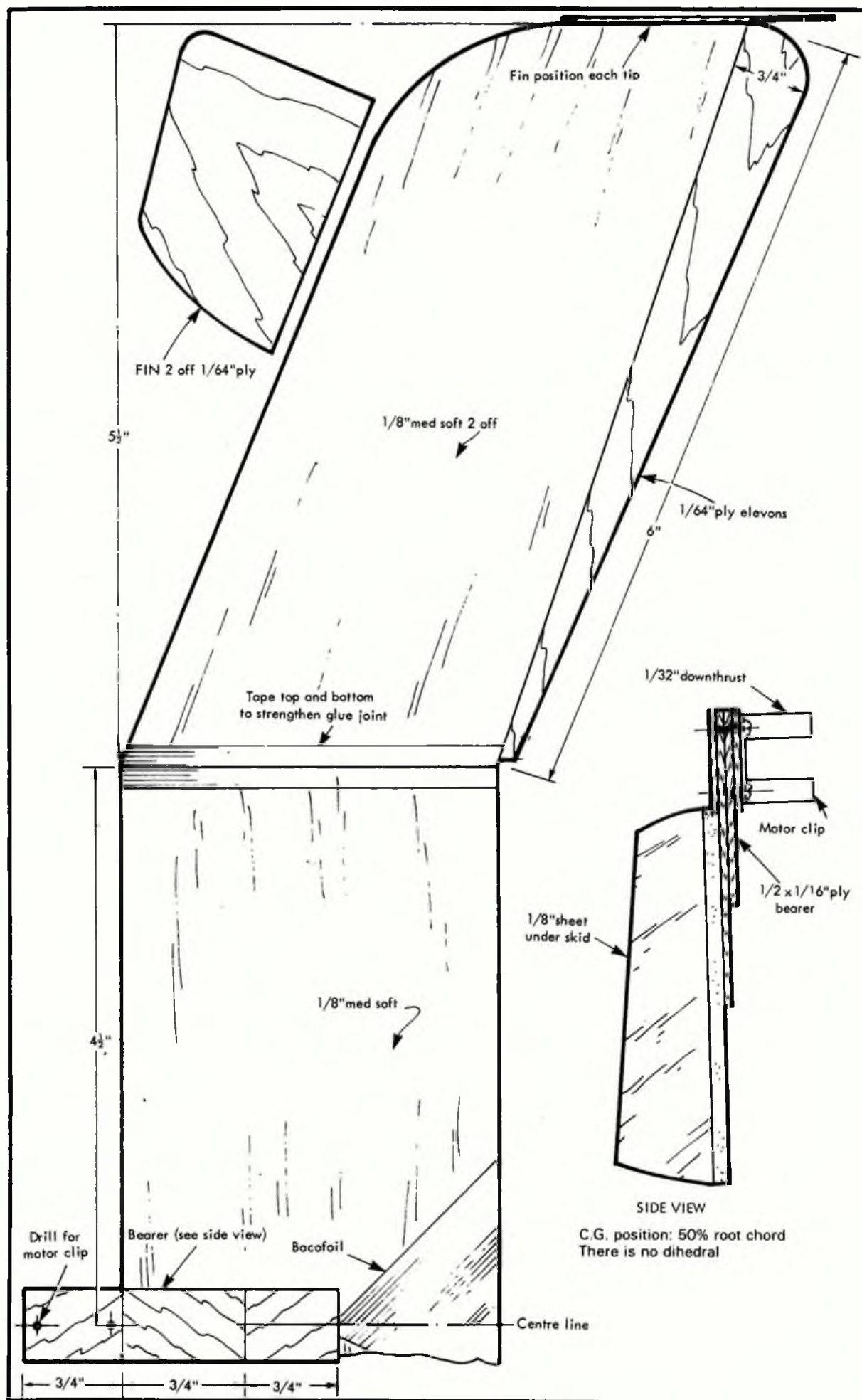
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Galaxy Models, Ipswich



FREE FLIGHT SCENE

with Dave Hipperson

Coupe d'Hiver No. 11 - Dave Hipperson's 100 gram winner

This is the first change of design for my Coupe d'Hivers since the original Artoo appeared in 1979. I have retained only the sections and wing construction from the original models. The design, which is just over a year old, was the start of a development programme which went in two directions at once. This particular model, No. 11, follows the long run/large wing/floating glide approach - a CDH version of the SST Open Rubber model. Later models have been built with more emphasis on a fast initial climb essential with FAI rubber.

The intention was for No. 11 to be a calm-weather 80 gram model. It was actually built down to that weight despite the enormous wing of some 50in. span. A miraculously light fuselage of a mere twenty grams levelled things up, although it now weighs twenty-five grams after some use and the fitting of a timer. The two-piece

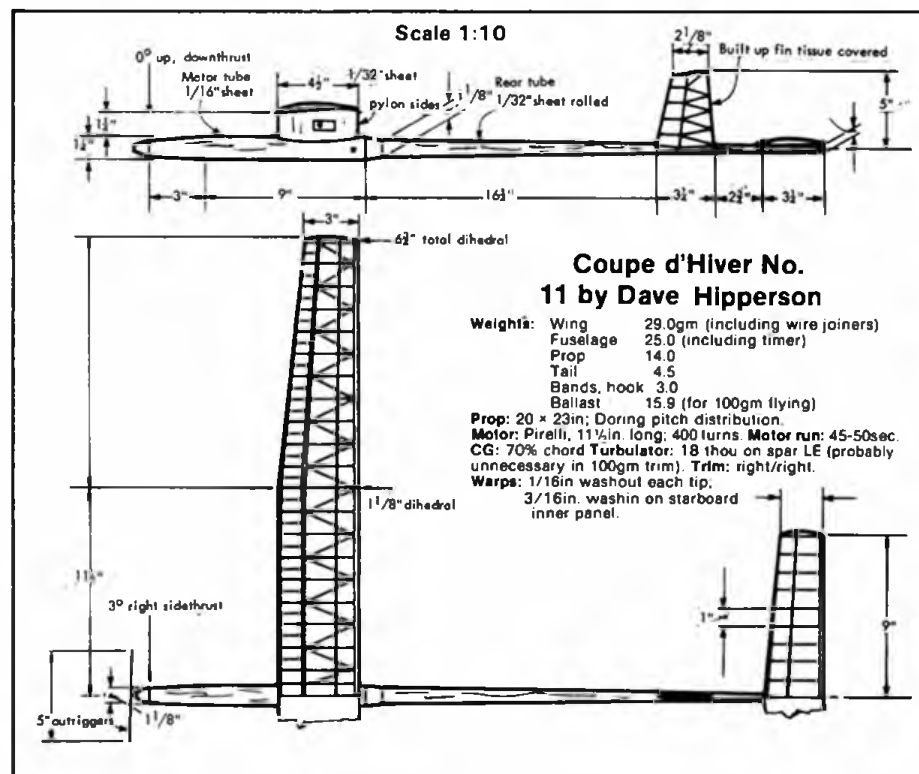
wing was for portability and convenience but some weight was sacrificed, this component weighing thirty grams. The prop was my first experiment with Doring-style pitch distribution on a CDH after experiencing considerable improvements with the same system on F1B. However, actual size and pitch was taken from George Sharp's very successful models, as was the idea and arrangement of the outrigger blades.

Initial tests on calm winter days proved most encouraging but occasionally despite, or perhaps because of the huge area - nearly 230 sq inches - there seemed something hesitant about the pattern of both climb and glide. I have since begun to think that the very extreme taper on the tips might not be such a good idea; I am not planning to follow this design style any further, preferring to come back to smaller and less-tapered tips. Various turbulator stations were tried with little visible improvement. Short, powerful motors were very wasteful; the best height was usually

obtained with 11 - 12in. motors and a fifty-second run.

Tests continued through '86, the model's only contest outing being the Port Meadow event where - still in 80 gram trim - it let me down with one very poor climb in conditions that would have appeared ideal.

Like any large, lightly-powered rubber model it looked impressive in light lift and hopeless in light sink. Indeed, it was very difficult ever to ascertain whether the model was actually on trim as it flew so slowly! Late in the summer it was equipped with a timer and experimentally loaded to 100 grams. It broke my heart putting fifteen grams of lead in the pylon after managing to get that fuselage so light, but the result was a transformation! The model became far more consistent on the climb with no appreciable change in height reached, and the glide was *better!* A few more encouraging test flights on some reliable 1/8in. Pirelli the night before the 1986 *Aeromodeller* Coupe convinced me



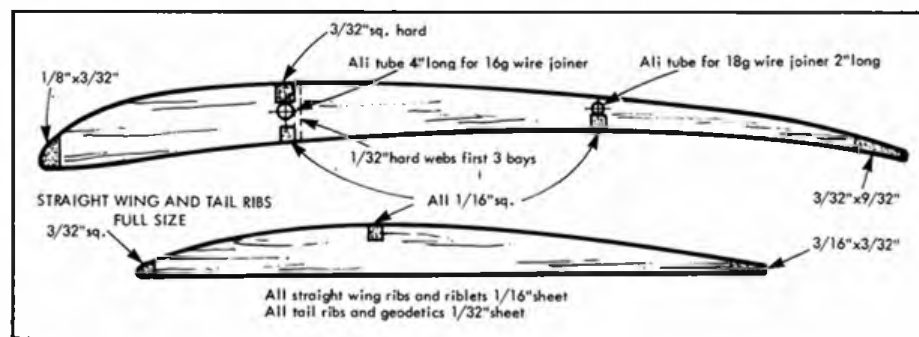
In its winding jig - Dave's Coupe No. 11, the subject of our drawings at left and winner of the Bouillier Trophy at Henlow on December 7th.

that it would be worth chancing in '100 gram' if it stayed calm.

How I came to be flying it in 15 - 20 mph winds, turbulence and drizzle - and moreover, how it survived will always be a mystery to me. Flying very early certainly helped catch the more predictable air - after lunch lift became less and turbulence much more even though the windspeed actually reduced; but I was very lucky. The experience certainly brought home to me just how the French could have had so much success in those early days of the *Aeromodeller* event with their big 100 gram models. Sadly, such a model is now limited to one contest per year so unless you have some Pirelli rubber available development in this direction looks something of a blind alley. The model really does require a long steady run to fly efficiently - to try to haul such a wing up in a few seconds would be very counter-productive. Of course, one of the redeeming features of CDH is that you really don't need that much good rubber!

The '86 Aeromodeller Championships

The popularity of league results tables is increasing. Last year, in addition to Aero-



modeller's round-up the Falcons Cup ran in parallel for all the non-SMAE events - their results to appear next month. Understandably the SMAE Championship has not been without controversy. Their new scoring system has not pleased everyone, if recent correspondence in this magazine is anything to go by. For this reason we have retained our usual system of scoring down to third place only but awarding points even for the small-entry events. It would appear that this is an attitude also shared by the FAI who will be running a similar World Cup system for the FAI classes next year! (See elsewhere in this column).

Having said that, it is perhaps fortunate that the top five are coincident in both charts. Only further down the list do the placings start to jump about. Our last column shows the SMAE points for comparison. Let's look at the top half of the table...

Tied at 13th place are five well-known flyers. John Bailey flew often and had two second placings in F1C - at the Nats and the Easter Meeting - as well as Slow Open

Power at the Spring event. Ian Davitt (another unlucky to win nothing, apart from Overall Rubber Champion at the Nats) took '2nds' in CDH at the Nats, the Southern Gala and the 4th Area event. Andy Crisp who won HLG at the Southern Gala placed second in the same event at the Nats and backed this up with a couple of Glider '3rds' at Easter. Steve Philpott won both SMAE CO₂ events convincingly, including one in sub-zero temperatures, when it should have been an impossible achievement; and he also took Open Glider in the Spring.

Two tie at 11th. Dave Hipperson, last year's winner, had a much less active season taking all year to earn one point less than he won on the first day of the '85 season! His only win this time was in Open Rubber at the Spring Meeting and a couple of close '2nds' in the same class at the Southern Gala and 1st Area events. By contrast, but with the same points total, Bill Colledge continued his steady improvements in Glider winning the Club Champs and taking second place in both the 4th Area events and the Southern

Falcons Gala: 15th November

Open Glider (8 flew)	
1 J. Carter	5:18
2 G. Le Vay	5:13
3 J. Cuthbert	4:32
Open Rubber (9 flew)	
1 J. Carter	7:06
2 A. Ball	6:48
3 J. Dobson	6:34
Open Power (5 flew)	
1 R. Peers	7:10
2 P. Watson	6:44
3 C. Plant	3:43
Vintage (4 flew)	
1 C. Strachan	6:58
2 D. Davitt	6:36
3 T. Dilks	6:24

Bottesford Mini Meeting: 9th November

All events to 30 sec max	
A/1 (10 entries)	
1 G. Mannion	5:33
2 J. Cooper	5:14
3 J. O'Donnell	4:34
CDH (8 entries)	
1 I. Davitt	4:03
2 M. Lester	2:19
3 A. Ball	2:16
HLG (5 entries)	
1 P. Ball	5:03
2 J. Bailey	3:41
3 G. Percival	3:34
1/2A Power (3 entries)	
1 R. Peers	4:18
Champagne Flyoffs	
A/1 J. Cooper	3:02
CDH I. Davitt	1:28
HLG G. Percival	15 secs
1/2A R. Peers	

Gala. Although his only F1A place was a '3rd' it undoubtedly came when he most would have wished it, qualifying him for his first glider team at the Sculthorpe Trials. He and Stafford Screen are the only two of the nine qualifiers to appear in this list.

Together at ninth, Mike Chilton and John Cuthbert had very similar seasons. Flying a dozen or so events each they both managed to win three. John was victorious in F1A at the Nats and then Open Glider at both the Northern and Southern Galas, resulting in three lovely SMAE trophies, and Mike won the Weston Cup for F1B at the windy 3rd Area event and then both the Nats and the Southern Galas in his favorite class, Coupe d'Hiver, at which he is the undisputed master.

John Cooper is the highest placed glider-only flyer at eighth. He won Easter's Open event and went on to take a '2nd' in F1A the following day. At the Nats John took second spot in both A/1 and F1A, this contributing towards his Overall Glider Championship award at the event. He also took second in A/1 at the 5th Area meeting.

There should be a special award for people like Julian Hopper. After a late start to the season Julian flew on only five occasions but placed every time. He took the White Cup, Sir John Shelley and Hamley Trophy, all for Open Power and in that order, before he dropped to second at the Southern Gala. His '3rd' was in HLG on the same day. To be seventh in this table after having flown only five times is an achievement little short of incredible.

On the other hand John Carter's approach is rather the opposite. The only thing limiting his activity on the flying field seems to be the time available during the day. Second busiest of all flyers he was at his best when the weather was at its worst. All his wins were on windy days: F1A and Open Rubber at the Easter Meeting and Open Glider at the 3rd Area event. He was also second in the Gamage and Open Glider at the Club Champs - another horrible day. Just watching him fly can be exhausting. Sometimes it looks

Championship contenders. Below left: John Cooper does fly in other classes besides Glider, especially when it helps his club - Biggles - to amass Plugge points. Here he launches his F1B in the Weston Cup. Below right: John Carter puts everything into winding at the bleak Easter Meeting. Bottom left: Russell Peers, looking almost tidy, with his very successful Wake. Bottom right: Ian Davitt's successes were all in CDH - he and his Dad, Dennis, placed 2nd and 3rd at the Nats.



as if he would be happiest if he could throw all his aeroplanes in the air at once!

Look at all these power flyers in the top five. Pete Harris - ever unflappable - produced a consistent and very similar result to last year with two wins; 1/2A at the Winter Mini and Open Power at the Spring meeting. His '2nds' were: Open Power at Easter and the 1st Area event, and CDH at the Winter Mini. Through all this he was of course the Chairman and hinge pin for our Free Flight Technical Committee - and was overall Nationals Power Champion for 1986.

Fourth place in the table would have to be regarded as the product of an 'off' year for Stafford Screen who in the past three has been either first or second. Nevertheless it's a pretty good off season that nets four major SMAE Trophies! Despite a little less of the usual Stafford sparkle he won the Eddie Cosh for FIC at the Nats, the Astral for the same class at the 4th Area event, the Short Cup for Open Power at the Southern Gala and of course the A.M. Power Bowl for topping the FIC Trials yet again. This time of course, he made it look a little more difficult by spinning the model off the top on the last flight when a really big clang could have taken him out of the Team! At least it kept the pulses racing. Stafford also won Open Power at the bitterly cold Easter Meeting and managed a '3rd' in the same class at the 1st Area event.

It was a close run thing for second place, with two on 20 points. Russell Peers, flying a little less often than usual but as effectively as ever won Open Power - the Frog Senior at the 1st Area event, the Lady Shelley for Tailless at the Nats, and Open Power at the Club Champs. He was second in the following events: Vintage and 1/2A power at the Winter Mini, Open Rubber at the Spring Meeting, 1/2A Power at the Nats and Open Power at the Northern Gala - what a mixture! Russell's two '3rds' were also in Open Power (his favourite class) and they came at the Spring Meeting and Southern Galas. Of course Russell flew extensively outside the SMAE circuit as well, as we will see next month in the Falcons League Table.

This really has been a very good year for Pete Watson. To get in above his club mate Screen is no mean achievement and when one considers the scores one can see how close he came to actually topping this list. He had a win in each of the Power disciplines and did particularly well at Area events. FIC at Easter, Open Power at the 5th Area and 1/2A for the Quickstart Trophy, again at the Southern Gala, were all victories. His '2nds' came in FIC at the 4th and 2nd Area events, Open Power at the 3rd Area and Open glider (yes, Glider) at Easter. He was also third in Open Power at the Northern Gala.

As he had hoped, Phil Ball came back up those four places dropped the year before last to top the table and win the SMAE Championship for the second time. Like last year's winner he made a good start at the Winter Mini with a win in Vintage and '3rds' in both CDH and Slow Open Power. He went on to win Open Rubber at the 1st Area event and was then third at the next, flying for the elusive Gamage Cup. He took a brace of '2nds' at Easter in Open Rubber and FIB and then was second in the Nats



Falcons Gala pics. Top left: Mick Brown actually looks as if he's enjoying himself. Assistance is being offered by Alan Gibbs. Above: John O'Donnell gets a clean release with his Challenger in Vintage but moments later the model was back on the ground, the victim of horrendous turbulence. Left: A wet Woodpecker after retrieval by Russell Peers (again!). Below: The reason for all this activity - Incredible prizes are here being looked after by Rob and Kath Carter. Would you believe-thirty-piece dinner services for first place in each class?



flyoff for CO₂ against his old adversary Steve Philpott. A couple of days later he took a well earned third place in FIB on an atrociously turbulent day, although further success in that class eluded him for the rest of the year. He won Open Rubber at the Club Champs yet again but in totally different circumstances to that epic

flight the year before - this time in pouring rain and high winds. He finished off the season with second place in HLG at the Southern Gala while his son Anthony was left to look after the family's prestige in Open Rubber by lifting the Flight Cup in one of the largest flyoffs of the year.

The weather proved to be a great leveller



John O'Donnell prepares his Challenger. It's a tense moment...



Above: One-handed and at speed, Ray King cycles past after retrieval. Note motor protection. Below: Pete Watson prepares for his first flight in Open Power.



this year compressing the top scores into a very close contest spanning just a few points. Phil's total, for instance, represents far fewer points than has been necessary to win it in the past. In fact Phil himself is the points record holder, gaining 35 points when he won in '83. It is interesting to notice how much wider the gap

becomes when one applies the SMAEs scoring system; that is, eight, six, four, three, two and one point for places down to sixth - and no points if the class registers less than six participants. For a complete SMAE chart contact Phil who has copies of the computer print out. An SAE to 17 Heronswood Drive, Spondon, Derby should do the trick.

Phil's computer list prints an incredible 137 names; it helped enormously in the collation of our table, too. Scanning it we see that to have scored even a single point (one sixth place and nothing else) would have placed you 123rd in a fourteen-way tie; but the bottom man actually managed less than that. Ties split the points available so to score less than one you need a tie for sixth place, then great care must be taken for the rest of the year so that you don't score again! Gerry Le Vey had this distinction. He tied with Alan Gibbs for sixth place in Glider at the Spring Meeting. Alan went on to score in other things so he finished way up. Gerry managed to stay out of the money for the rest of the year to finish with the grand total of half a point at 137th! Maybe we will award a prize next year if anyone can 'better' this, in which case we would be looking for a three-way sixth-place tie, giving one third of a point!

The World Cup

Later this year it could be that the European and World FAI Circuit comes to life in a whole new way. The CIAM Free Flight Sub-Committee of the FAI have proposed that points should be awarded for the top fourteen places at selected FAI Open Internationals each year throughout the world. The total of each contestant's best three performances will constitute the basis of a league table, similar to the *Aeromodeller*/SMAE one. Each year a World Cup shall be awarded to whoever heads this table.

How's that for an incentive to get stuck in and try a few of those much vaunted European events - or even to go further afield if you have the resources!

Every continent is invited to run up to

two qualifying events. European countries are limited to one each. The events to count for this year - on an unofficial basis as the idea is still experimental - will be notified on the FAI Calendar. However, at the time of the proposal it was foreseen that typical contests might be: Taft (USA), Maniago (Italy), an event in Hungary, Poitou (France), Sezimovo Usti (CSSR), Eifel - Pokal (W. Germany), the Scandinavian Open, Mostar or Livno (Yugoslavia), Berne International (Switzerland), Sacramento (USA), Trans-Tasman and Pacific Open (Australia/New Zealand) and so on. Contests in other countries would be welcome. How about it, UK?

The CIAM's aim in this, and I quote from the proposal, is: "To encourage participation in open internationals by attracting competitors to attend more events. Also to give added interest to open internationals and to open up new possibilities for achievement for those people who have not been selected for their National teams".

With points being awarded down to 14th place *no matter how many compete* the CIAM seem to agree with my point about the current SMAE system. I quote them again - "To encourage increased participation in the smaller contests". Bravo!

I had idea of suggesting such a system but have always thought it would have been laughed out. We are indebted to those who brewed up this idea. From what I can gather this means Ian Kaynes and Thomas Koster - 12 out of 10 for both of them.

I cannot imagine the idea receiving anything but enthusiastic support. Perhaps it is too early to say yet, but if it proved popular there is no knowing where the idea might end. After all, contests quickly gain important in proportion to the enthusiasm for them, no matter what they are called. There is no knowing how much prestige such a league event could eventually engender. More than the World Champs, even?

All enquiries to: Ian Kaynes 7 Ahsley Road, Farnborough, Hants GU14 7EZ. England.

1986 Results Analysis from SMAE events

		Events flown	1sts	2nds	3rds	Aeromodeller Points	SMAE Points
1	P Ball	27	3	4	4	21	74
2=	R. Peers	21	3	5	2	20	56
	P. Watson	18	3	5	1	20	51
4	S. Screen	9	5	0	1	16	51
5	P. Harris	15	2	3	0	15	38
6	J. Carter	22	3	2	0	13	33
7	J. Hopper	5	3	1	1	12	37
8	J. Cooper	15	1	4	0	11	37
9=	J. Cuthbert	13	3	0	0	9	35
	M. Chilton	10	3	0	0	9	30
11=	D. Hipperson	13	1	2	1	8	27
	W. Colledge	14	1	2	1	8	17
13=	S. Philpott	10	3	0	0	7	22
	A. Crisp	13	1	0	2	7	27
	I. Davitt	13	0	3	1	7	26
	J. Bailey	19	0	3	1	7	18
17=	G. Foster	3	2	0	0	6	18
	G. Farrer	5	2	0	0	6	19
	C. Plant	6	2	0	0	6	19
	T. Dilks	12	2	0	0	6	19
	J. O'Donnell	11	1	2	0	6	22
22=	A. Cordes	5	1	1	0	5	17
	R. Audley	6	1	1	0	5	20
	A. Wells	8	1	1	0	5	20
	D. Wain	10	1	1	0	5	25
	E. Drew	8	1	0	2	5	20
27=	M. Page	2	1	0	1	4	13
	C. Parry	7	1	0	1	4	13
	C. Strachan	12	1	0	1	4	17
30	B. Lavis	10	0	2	0	3.5	15



ONE IN A MILLION

by David Wilkinson

I REMEMBER REACHING home that fateful evening, utterly spent, and with trembling hands pouring a stiff drink to calm my jangled nerves. Unless I were to reject the evidence of my own eyes, I could not believe what I had seen on that moonlit heath. Later, and linking together the events leading to that waking nightmare, I knew that however it was analysed, the lessons of that innocent Sunday would remain with me always.

In those days, I was a member of the local model aero club, and like all model clubs, we enjoyed our hobby. We had the

usual cross-section of members; we had some of the best. Many of our lads had competed in, and won, major control-line events up and down the country, for this was the time before Radio became really popular.

In the midst of our 'hot shot' combat and stunt lads, we had a small but dedicated band of scale enthusiasts, and the best - the very best of these was Jamie. Sensitive-faced and whippet-lean was Jamie. Not for him the entering of competitions - his pleasure was the reproduction in miniature of the full-size machine. The nearest

the rest of us got to scale modelling was the indulging in mock 'dog-fights' with aircraft that bore only a passing resemblance to the real thing.

We marvelled at his creations; delicate and precise, yet fully functional. Somehow, they seemed almost too beautiful to fly; you imagined them preserved under glass, like precious butterflies. Oh, he was a perfectionist all right. You rarely saw his sensitive face in repose - only with one of his machines in flight would something akin to bliss transform those habitually tense features. He built only models of elderly craft, mostly biplanes, and always for free-flight. Not for Jamie the harum-scarum of the control-line circle, the mock dog-fight, stunt and combat. I swear I saw him wince visibly at some of our antics, as we threw our models around the sky in cavalier fashion.

Even his more serious colleagues would join in the fun, saving the more sedate scale flying until we had written off our aircraft or exhausted our fuel, both of which often happened. Jamie would only watch, appearing to enjoy; he was one of us, and yet apart.

Control-lining over for the day, Jamie would prepare and fly his models, and as I have said, we could only admire. Trimmed to perfection, they flew in gentle circles, in precise flight patterns, mutely speaking wonders for his artistry. Oh, they were a joy to behold, reminding us of those halcyon days when free-flight was the thing. Not for Jamie the good-humoured, insulting banter that we all thrived on. His hobby was his obsession. A cracked rib, ripped tissue, any damage at all was almost a major calamity. Whereas we would perform *in situ* field repairs, any damage, however slight, resulted in Jamie's model being withdrawn for proper workshop repair.

Most of us could never quite understand why he did this; very often the damage was so superficial that the aircraft was still flyable. We overlooked, not surprisingly - we were modellers, not psychologists - that Jamie was a rare breed; one in a million. Perhaps his hobby was all he had, the only way he could compete on equal terms with the rest of us.

All we knew was that he didn't seem to want to be involved. He seemed content just to be there with us and with his models. If we commented on and admired them, which all of us did, his face would broaden into a beam of pleasure, and it seemed enough.

It's only with hindsight, when during a lull in proceedings I glanced from the control-line circle, and saw on fleeting occasions what I can only describe as a yearning in those haunting eyes, that I sensed the isolation he must have felt. Isolation even among those who shared his interest in scale modelling.

That particular late summer evening was perfect. Not a breath of wind, pleasantly warm - conditions which model aircraft enthusiasts dream about. The flying field wore a carpet of aircraft, models in profusion. As always, Jamie was there, patiently waiting for us to get the control-lining out of our systems. A new model, which on closer inspection proved to be a truly superb Fox Moth, rested on the grass. Jamie had excelled even his standards with this beauty, and we all looked forward to the Moth's maiden

flight. In retrospect, I wish we'd let him fly first, but the lines were out, and the 'magic circle' beckoned. . .

The Fox Moth was forgotten as we performed our usual Sunday antics. On such an evening, we tended to lose track of time, and the shadows were lengthening as the other lads began to pack their models away. But there's always one last flight, and egged on by the rest, I was persuaded to fly once more. I'd had a particularly good session, and flushed with success, wanted to finish the evening on a high note. Jamie was still waiting to fly, but a few more minutes wouldn't matter, surely.

So I hooked up the lines, examining neither these or the model's attachment to them in my eagerness and haste. The most elementary check of all control-line fliers, novice or expert, and I failed to do it.

Off went the aircraft, fast away and climbing, three straight circuits, up into a loop; and on the descent, both lines broke free. I remember now with what dreadful fascination I watched, realising the inevitability of it all. The free-flying model lurched drunkenly towards Jamie's beautiful Fox Moth. Did I shout for him to look out, or did I remain mute? I could never afterwards remember. Either way, it would not have mattered. Jamie's back was momentarily turned and he was unaware of the danger. My errant aircraft ploughed full-tilt into the new biplane, his pride and joy. A dull 'whump' sounded even over the engine's strident note; the sickening sould of ripping tissue and splintering balsa, all this followed by a deadly silence, a silence more dreadful

than the awful wreckage upon which I gazed, sick and horrified.

He stood transfixed, looking blankly at his ruined model. He didn't say anything, just stared at me with those reproachful eyes. I would have run to him, said I was sorry - though I knew well enough that 'sorry' was inadequate. Destroying a model of Jamie's was almost like defacing a church; how on earth do you apologise for wrecking a work of art?

I watched helplessly as he picked up the pieces and walked away. Simple as that. I would have felt better if he'd bawled me out, ranted and raved, called me an irresponsible idiot - anything but that awful stare.

Heedless of the other lads' condolences, I watched him disappear from view, heedless of their reassurances that he'd be back next week with the model as good as new. No amount of commiseration would do, and I soon found myself alone with my guilt.

Dusk had given way to semi-darkness, my ruined model still lay where it had landed, and I began mechanically to pick up the rest of my gear. Savagely, I threw the offending lines into the undergrowth, and as the moon began to rise, prepared to leave the scene of destruction.

Then, unbelievably, I saw etched by the moonlight, the Fox Moth I had so recently wrecked. There was absolutely no mistaking that distinctive outline. The aircraft was eerily describing large circles in the night sky - I say eerily because there was no engine sound, nothing. Yet I had seen with my own eyes the neatly cowed diesel

only a few hours before.

But my nerves, stretched as they were, snapped when I saw him. I saw Jamie - an incandescent wraith on that dreadful heath. The apparition turned, fixing me with that same reproachful stare - and then smiled its smile of quiet satisfaction, looking skyward to the gently circling model. With a wild cry I ran from that place, my lungs bursting, senses reeling, mind in turmoil.

We learned of Jamie's illness soon enough. Apparently, a neighbour, calling at his terraced home and finding him semi-comatose, had called an ambulance. As he slowly recovered, a heart condition was revealed, a condition that could be aggravated by a traumatic experience or similar upsetting event. What I had seen then, on that Sunday evening was Jamie as near death as he would ever be.

He returned among us in due course, paler and leaner than before; and when I, hesitantly offering apologies for my crassness, was rewarded with a warm handshake and gentle smile, it seemed I had been through fire and emerged unscathed.

Jamie never did rebuild that Fox Moth but he flew with us contentedly for many years afterward. The only difference being that it was we who waited and watched admiringly while he got the free-flying out of his system. . .

Let's have more 'clubroom' tales please
- true or fictitious, recent or long ago. . .



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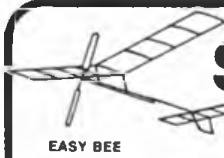
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Sorry No Callers

It's Andy Brough's turn to pick up the vintage control line handle this month

Midge comps '87

Way back in 1983 when I dreamed up the Midge Comp I never thought that in 1987 we would still be running the event, let alone to much the same rules. I must have got it right! In fact the event is more popular than it was two years ago. In the January issue I gave you my thoughts on the rules for '87 and now I am presenting them in full for reference. Here goes.

1987 Vintage Class 1 Speed Event (including Mercury Midge)

Model

a) Any Class 1 speed model which was kitted (or the plan published) before 31st December 1950.

b) A miniature of any class of speed model, to a minimum span of 12in. the design to have been kitted or the plan published before 31st December 1950. The motor cowl may be reduced from scale size to fit the motor used.

c) Any model not a Mercury Midge will be checked against a drawing (reduction or full size) to be supplied by the entrant.

d) Models must be as near to the original design as possible.

Motor

a) Any 1.5cc motor in production before 31st December 1950.

b) PAW 149DS, DC Sabre, ME Snipe, Frog 150, AM 15, ED Hornet, JB Atom and Kingcat.

Event

a) 35ft lines of 0.015in. stranded steel wire.

b) Models may fly anti-clockwise or clockwise.

c) The timing is for six laps. This will begin on the lap after the pilot raises his hand and the handle is on his chest. However, if in the timekeeper's judgement the pilot is 'whipping', no time will be taken. A re-run will be allowed.

d) Two flights may be flown with an attempt each, the best flight to count. The contest may be flown in rounds (two off) or with two flights flown consecutively.

e) A 15% bonus will be added to the speed of a model powered by a vintage engine.

f) A further 10% will be added to the speed of a model powered by a Mills 1.3: i.e. a total of 25%.

g) Non-vintage motors must be fitted with commercial thermo-plastic props. Vintage motors may be fitted with wooden props, commercially produced or hand made.

h) For Vintage Weekend, the fastest model will be the winner of the Lancastrian Cup and the fastest non-Midge the winner of the Johnny Hall Cup (both may be the same model!).

Let's hope this year's comps are as good as or better than last year's.

Peter Williams of 13 Southminster Road, Cardiff, South Glamorgan, CF2 5AT kindly sent me a plan of the Stingray. All the information is there, so if you want to build one, send £1.75 to Peter. The Stingray was brought to our attention in the November '86 issue by Peter Hill, who at that time only had a reduced drawing but now he has a full sized plan and intends to build one...now that will be worth seeing. The model, if you recall was described as a futuristic 'T' tailed speed model, and it was kitted by Jagra in 1950.

By the way, Peter Williams also has

many other vintage plans for sale so it may be worth dropping him an SAE for his list.

More competition matters

As a columnist I get letters from, and have many contacts with fellow vintage enthusiasts. Also, as I write this column every other month I am forced to reflect on what others are doing or saying. John Perry, SAM 35 C/L rep, is not so well placed; therefore it is essential to contact him if you wish to influence the way the competition side of the hobby will develop.

There has been some upset in the past over the apparent lack of consultation before rules are set. I don't accept this as justified, but do note that any proposed competition organisers should contact John. However, the speed rules will still be set by myself; John will concentrate on the stunt event and any other comps you may have ideas about.

Just to open the debate on stunt rules, I would like to suggest a few changes for you to think about. I made a few comments in the January issue regarding the lack of entries in stunt comps. There are always several times more models present than actually fly in Old Tyme Stunt events. There may be three reasons for this:

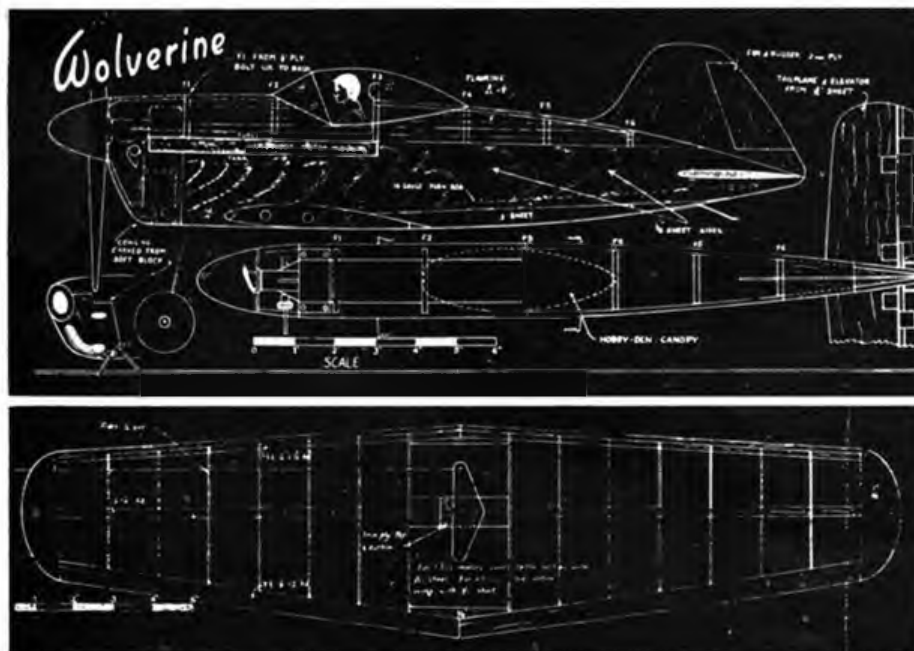
- a) the flyer is not interested in comps
- b) the model is not capable of flying the present schedule, or
- c) the pilot cannot fly the present schedule. The first is perfectly understandable and needs no further comment, but to fall into the second and third categories is a great pity. Those whose models or flying capabilities are not up to the full schedule could be encouraged by reducing the number of manoeuvres required.

Let's have a look at the present schedule, which consists of starting, take-off, level flight for two laps, climb, dive, wing-over (a single manoeuvre), inside loops (5), outside loops (5), inverted flight for two laps, horizontal eights (3), vertical eights (3), overhead eights (3), square loop (1) and landing.

Let us suppose that the take off, level flight and landing are compulsory, and that of the remaining ten manoeuvres we only require seven, to be chosen by the competitor but to be flown in the correct order and nominated before the flight. We then have a competition of ten manoeuvres, which if selected carefully should enable any early stunt model, or any inexperienced pilot to compete.

The marks would remain as before, so those who nominate the more difficult manoeuvres should get a better score. Even a Kandoo can manage all but the verticals, overheads and the square loop so it could stand a chance of placing in a 'nominated stunt' event.

I've talked to several flyers who like the above scheme. John Noble is considering running such a comp at Three Sisters. I believe the idea could increase the number of entries, because concentration could be made on performing simpler manoeuvres better.



Another benefit is the shorter flight required. Several of the old models, such as the Vandiver, cannot carry enough fuel for the present full complement of manoeuvres and hence would need to refuel part way through. Although refuelling does not carry a penalty (not in SMAE rules anyway; and I have done so in an F2B contest flight) it may result in the hot engine being reluctant to start, quite apart from considering the extra time involved.

Model of the Month: Wolverine

I came across this super-looking team racer in the December 1951 issue of the Australian magazine called Model Hobbies. The model was designed around the Australian Class A1 rules which require a wing area of 75sq. in. and a maximum capacity motor of 2.5cc. Tank size is quoted as 1 cu.in. or 16.5cc. This would conform nicely to the old Class A rules of 70sq. in. and again 2.5cc, but the tank would need to be reduced in size to 15cc.

The enclosed drawings should enable replicas to be made into what appears to me to be a very pretty model. The built up wing should be covered in 1/32in. sheet; everything else should be clear from the drawings.

The balance point is quoted as being half an-inch behind the leading edge of the wing; as this component is tapered I assume they mean at the junction of fuselage and wing.

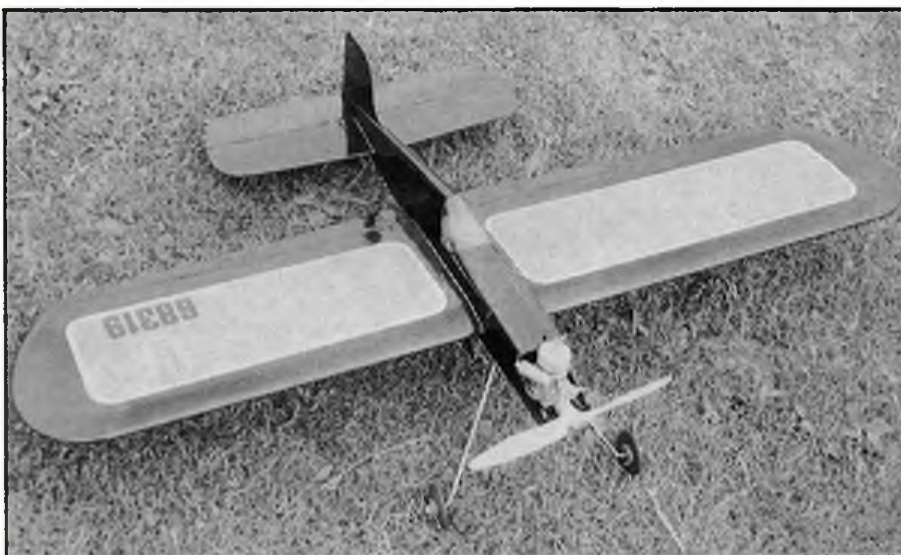
So there you are; a different team racer for once, or should I say team 'speedster' to use correct vintage terminology. I don't recommend that you follow the flying suggestions, though, as even the most lenient judge would give you a warning. Read this: 'it is a good idea to fly with your model in a line parallel to the body, that is, with your arm out sideways - not out in front of you. The reason for this is that when your lines slacken you do not move backwards into the path of other pilots, but rather move outwards away from them'. Fancy flying with your arm stuck out sideways!

Lastly...

R/C flyers amongst you will know of the Rolls Royce annual vintage do which up until now has been an R/C only event. This year, thanks to the efforts of Terry McDonald the event will be open to C/L. Certainly Midge Speed and C/L racing will be organised; details will be published as soon as I know more. Terry's address if you wish to contact him, is 351 Uttroxteter Road, Mickleover, Derby DE3 5AH or ring Derby 511273. Stay tuned...

Opposite page: Andy's Model of the Month choice is the Wolverine team racer, described in the text. This page, top: Who's 'MW'? Step forward and identify yourself - and tell us about your model, snapped by Andy at Old Warden. Below that: Neal Foxstunter by John Kergon is finished in original style, though PAW powered. Another Vintage Weekend craft. Next: Mike Rolls releases John Perry's Taurus at Rubery Hill; and at bottom, we have one of Mike's own favourites, his Magician - a popular design from 1948. Note the variety of club insigniae!

March 1987



SCALE MATTERS

Bill Dennis has thoughts on retract gear — and looks ahead to 1987 events

Tuck up your gear

No doubt, many scale modellers will have had their imagination stimulated by Dave Hipperson's description of the possible applications of the clockwork motors from a variety of mechanical toys (see *Aeromodeller* for November and December 1986). The possibilities for various in-flight options are enormous, and the light weight of the units - Dave states that they tip the scales at around five grams - makes their use even with indoor models entirely feasible.

We have in fact already seen one of these devices in a scale model, for Paul Briggs arranged for the undercarriage on his Hurricane to retract and detract. Unfortunately, trimming problems have prevented us from seeing the system working in flight, although static demonstrations showed it to be quite practical.

If you are a contest modeller looking for an extra edge over your competitors, you may be disappointed to find that there is only a small bonus for the undercarriage option. Nevertheless, there is no reason why other functions such as flaps or bomb drops should not be used because properly done these will be rewarded by increased 'realism in flight' marks.

Having said that, the main reason for going down this road would be for the pure interest of doing something different. If it is just more points you are after, most modellers would be best advised to spend the time on better accuracy and trimming.

I haven't yet tried such a system myself, but I am considering installing a rearwards-retracting U/C on an indoor rubber scale model. Refer to the sketch of the mechanism I shall use. The motor will be mounted so that the winding knob protrudes through the bottom of the fuselage, and the shaft points vertically upwards. The U/C legs are joined in the fuselage in such a way as to lightly spring the legs in the 'down' position. For retraction and detract, this lever is moved through ninety degrees and back again by an egg-shaped cam mounted on the timer. The speed of rotation of the cam and the length of the section which is circular around the axis will determine both the delay between model release and retraction, and the period of retraction before the legs come down again. The cam must impinge against a stop otherwise the procedure would continue with the model rising and falling on the ground!

Obviously such a system will need a lot of development on the 'cut and try' principle, but it should work. Note how the timer can be mounted well forward, so its adoption would mean that you will be replacing nose ballast to some extent.

SMAE Scale Committee

The Scale Committee for 1987 comprises Eric Coates (Chairman), Dennis Thumpston, Mick Reeves, Doug Sheppard, Peter McDermott and Charlie Newman. In effect, Charlie has replaced myself; no doubt he will be mainly involved with matters affecting outdoor F/F Scale. Doug and Mick will be responsible for Indoor and Control-line respectively.

We are lucky in that the Scale Committee is very well balanced, and all interests are catered for by people with great experience in their particular field. I say 'luck' because there is no mechanism in the election procedure to ensure that, say, all six members don't turn out to be R/C Scale modellers!

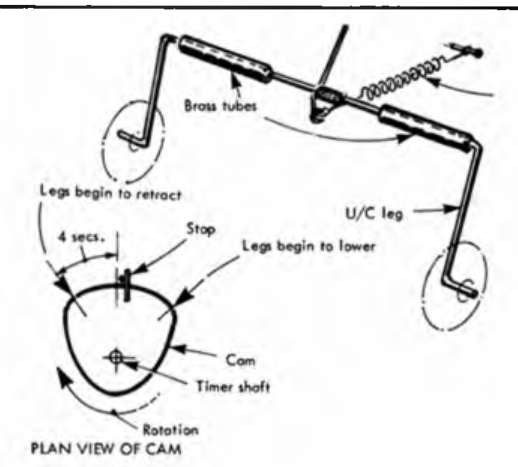
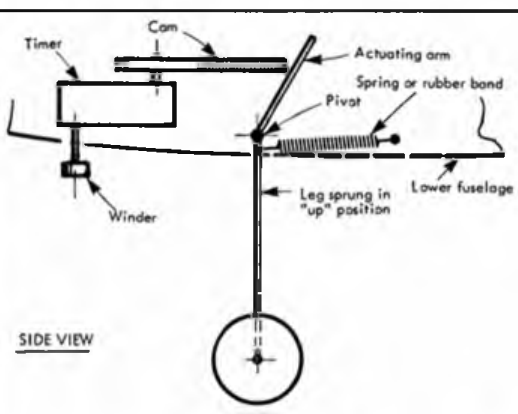
The SMAE Scale Calendar is reproduced below (omitting R/C) and I have inserted the Old Warden Scale Weekend too. The



usual advice to check on each event nearer the day applies more than ever, particularly in these days of security alerts affecting the use of RAF airfields.

New Year's Resolutions

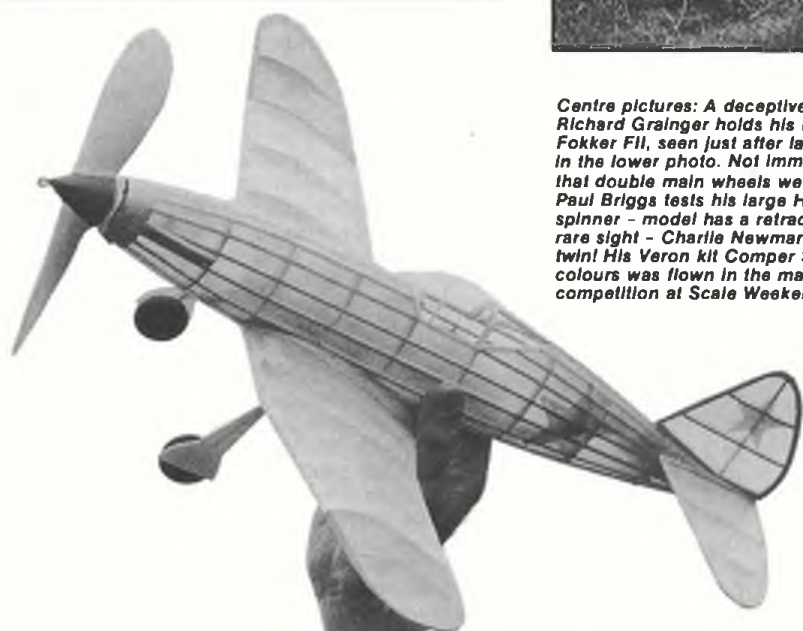
Writing this just before Christmas, I am looking forward to the next season. Coupled with this is the realisation that after the last season's cull of models (Argosy, DH34, Pup, Avian and Halberstadt) I need to do some building. Unfortunately, as I get less and less time to build, I seem to be coming interested in more classes of model aircraft - both scale and non-scale. No sooner do I start an Open Rubber model than I realise I should be thinking about the Indoor Nationals, and so on. Hence I am surrounded by many half-built skeletons, but few completed airframes. I envy those people who seem to spend their entire aeromodeling career specialising in one field, building nothing but A/2s or C/L aerobatic models. Can anyone suggest a cure?



Date	Venue	Events	Details
26 April	Alumwell, Walsall	Indoor Scale Nets	Pre-Entry via Doug Sheppard on 0272 697595
3 May	RAF Odiham	Spring Gala F/F Scale	Charlie Newman
20/21 June	Old Warden	Scale Day	Aeromodeller
5 July	RAF Abingdon	C/L & F/F Scale	P McDermott 025 126 3216
29/31 August	RAF Barkston Heath	C/L & F/F Scale	SMAE Office
1 November	Alumwell, Walsall	Indoor Scale	Doug Sheppard 0272 697595



Centre pictures: A deceptively grim-faced Richard Grainger holds his rubber-powered Fokker FII, seen just after launch at Old Warden in the lower photo. Not immediately apparent is that double main wheels were lifted. Top right: Paul Briggs tests his large Hurricane sans spinner - model has a retractable u/c. Above: A rare sight - Charlie Newman without a rubber twin! His Veron kit Comper Swift in Guards colours was flown in the mass-launch competition at Scale Weekend.



As popular as ever are the Earl Stahl Vintage Scale designs. The MIG-3 is a fine performer, as Ron Knight will be happy to tell you; a well-trimmed example should manage forty seconds easily.

March 1987

VINTAGE CORNER

Alex Imrie focusses the old-time telescope on a miscellany of topics from home and abroad

Comet III

Latest design to be drawn up into full-size plan form is this typical British pre-war shape, so if you liked the look of Skyrocket (90in. span) or the 72in. Comet II designed by A.E. Brooks and W.J. Forster, examples of which have graced our vintage meetings (and have been shown in these pages) when fielded by Tony Penhall, Mike Parrott and Phil Smith, here is the baby of the family. Babies in 1937 were a lot bigger than the insects that rejoice under that name today... This is what the advertising blurb said at the

time: 'The smallest baby petrol model ever produced. Fitted with the new 'Spitfire' engine, the model is a replica of the famous 'Comet Skyrocket' with its wonderful performance, short take-offs, realistic flying, very slow glides and gentle landings which make it the Petrol Model for the Millions. Span 58inches. Weight ready to fly 2lbs. The complete kit, with finished engine, propeller, coil, tank and all materials to build to a finish... only £5. 15s0d. Full Scale Plans, post free, only 5s6d.'

Phil Smith, Veron's designer from 1946

until 1982, had a natural interest in the products of that company's forerunner, Model Aircraft Stores, and we have related how he researched and drew up his Comet II plan by actually measuring an example owned by Noel Crane of Poole. Phil's fine plan of that model contains a wealth of historical information that helps explain the numerous variants that appeared at the time... he knew, of course, about the smaller version, but initially could not find enough information to create a worthwhile plan. Now, by dint of careful research he has produced the drawing for the Comet III.

The plan states 'Ideal for vintage radio assist for 2.5 up to 5cc diesel or glow, this design first appeared on April 18th 1937 and was later kitted by Model Aircraft Stores (Bournemouth). In the absence of any authentic plans, this drawing is therefore collated from references in the MAS archives and a complete series of highly detailed photographs of A.E. Brooks' original model taken by the late Col C.E. Bowden.'

The price of this plan (which contains a detailed side view of the pre-war 2.5cc Spitfire petrol engine and side and plan views of the gabbon mahogany propeller especially made by MAS for this engine) is £4.50 plus 25p postage. Order direct from Phil at 32 Verwood Crescent, Southbourne, Bournemouth, Dorset BH6 4JE.

When is a Stick a Fuselage?

Newcomers to the vintage hobby might find the nomenclature confusing, and there is a real need to go back in time and define some of the original terms since they are still used today. In the dim and distant past most model aeroplanes were of the true stick type: that is to say, their 'fuselages' consisted of a mere spar of wood, but when built up fuselages began to appear in the mid-1920s, these were of such varied shape, that in competition work obviously the slender ones had an edge on the more bulky examples because of their reduced drag and weight. One of the first National bodies to examine this problem was the SMAE, that introduced its 'Fuselage Formula', which limited the fineness ratio between the cross-sectional area and the length of the fuselage. One of the first definitions of a fuselage indicated that it should completely enclose the rubber motor, and when modellers turned up at competitions with 'vener tubes of about one inch diameter and three feet in length which were deemed by their designers to be fuselages', the SMAE decreed that the cross sectional area should have a reasonable and definite relation to its length, so that a model would at least have some resemblance to the full-sized machine. The largest cross-sectional area of the fuselage had to be not less than the amount given by the expression $(1/10 \text{ length of fuselage})^2$, so for example, a



Above photos: A.E. Brooks' original 58in. Comet III which was fitted with a 2.5cc Baby Spitfire petrol engine. Despite its name this was really a reduced-size Brooks' Skyrocket. Left: Close-up of the engine installation. Note the flexible needle valve extension, meant to keep fingers away from the propeller. See also this month's opening paragraph.



fuselage thirty inches long would need to have a cross-sectional area of nine square inches. This definition was used in the Wakefield Cup rules.

In America, where almost all flying models were of the stick type fuselage models began to appear, these were called 'commercial' models but were really only variations of the 'flying stick' in that a single motor stick was used inside the built-up fuselage to carry the rubber motor; a practice which was to persist for some time.

At the American Nationals in 1930 a new event was sponsored, the Stout Outdoor Fuselage event which was intended to develop models for competition in the Wakefield Cup, and thus used the SMAE fuselage formula mentioned above. It was won by Joe Ehrhardt who came across as a member of the American team and won the Wakefield Cup. Curiously his model did not have the internal motor stick referred to above, but Gordon Light's 1935 Wakefield-winning model certainly did.

The Americans used a Class designation depending on wing area to group models into similar sizes, and adopted the fuselage formula as a measure. Since most of these models were of the cabin type, the term 'Cabin Fuselage' came into use, when in fact some of the models in this Class did not have a cabin at all! Inevitably the use of the word 'Fuselage' was often dropped, so we find the class called 'Outdoor Cabin'

both by the modellers and sometimes in official documentation; thus we have, for example, Henry Struck's diamond fuselage parasol model from 1936 named 'Contest Cabin'.

By 1939, according to the US Nationals Winners list published in September of that year Model Airplane News, the word had gone out of use and the class was merely called 'Outdoor Cabin'. The same thing applies to the indoor models; the structure built around the motor spar was really a fuselage, although one could argue that being covered in transparent microfilm it was a cabin as well!

The thought that we started with is much easier to define, and from the early 1930s a 'Stick' model was one that had a body composed of a single stick, or open framework rather than a fuselage, although models using tubes to enclose the rubber motors, and models that did not meet the fuselage formula requirements were classed as 'Stick' models. In this last regard there are many examples, in fact the majority of models competing in the 'Outdoor Stick' events in the 1939 and 1940 US Nationals had built-up fuselages.

Nothing new

Most of us pursuing the vintage hobby have a number of books on aeromodelling. When we first obtained them, which may have been many years ago, they were read or scanned and put on the bookshelf,

More Comets! Noel Crane's Telco-powered mini-replica of the Comet II - all of 28in. span - nestles under the wing of Phil Smith's six-foot original-sized replica, plans of which are available from the builder. The little 'un was described in the December 1984 Aeromodeller.

which is where most of them have probably stayed, since we tend to devour current offerings in glossy magazines, finding them more appealing. However, there is a great deal of valuable information lodged in these old books - they deserve to be re-read, studied even, and it is a safe bet that your aeromodelling will improve as a result.

All vintage enthusiasts know (or if they don't know they should be made aware) of the vast amount of useful practical material contained in the Zaic Yearbooks, Aeromodeller Annuals etc. If you are lucky enough to possess back numbers of magazines, they too are worthy of study. The information that they contain should be absorbed - don't just look at the plans or illustrations, read the printed word and you might discover a whole new world. So this winter, when the snow is piling up against the window frames, and the wind howls in the chimney, draw a chair up closer to the fire and take a journey back in time. You will soon find that even the most elementary textbooks have something to offer, possibly first read long ago and forgotten over the years; facts and figures, methods of doing particular jobs, secrets of covering, decorating, trimming and so on



Main picture, top: Early days! Over twenty years ago, these modellers, who played an important part in the UK revival of interest in Vintage aeromodelling display their machines for the camera. Left to right are: Ron Hughes (Bowden Meteorite), John Haggart (Flying Aces Slick), Noel Barker (KG-1) and Ron Raddon (Flying Quaker). This page, above: The unidentified large petrol engine referred to in the text. What is it? Below: Rolle Lelliott's Silver Patrol 1a heavyweight high-efficiency sailplane, an Ian Haynes design which was described in the December '47 *Aeromodeller*. Bottom: The same builder's Vindskreenviper has flown under Jetex 350 power thanks to another enthusiast's kindness (see 'Success Story').

will doubtless make more impact at a second reading against the background of experience with vintage models that these last few years have brought.

We are not trail blazers. There is nothing new about vintage; most of the mistakes we make were first made many years ago by an earlier generation of modellers, and what is more, many of them put pen to paper and told all who were prepared to listen about their troubles and how they surmounted them. Their writings are just as valid today as they were then. As only one example, those of you who have experienced baffling behaviour of ignition engines due to oil on the contact breaker points should have a postcard cut into strips in your field kit, for such a strip passed between the points a few times removes the oil, and in many cases your engine will run as sweet as a nut again; so there was really no need to tear the model apart to check the wiring or replace the flight batteries. We have seen this happen more than once only recently, yet there was the cure in an 'old' book written by Dr Forster over 40 years ago!

Mystery engine

I have just rediscovered a letter of some-time ago from Merv Thompson of Christchurch, New Zealand, which to my shame I did not action at the time. He gives the following description of a (then) recent acquisition and wonders if anyone can



identify the engine: '...bore, 7/8th inches; stroke, 1 1/8th inches; cylinder head, jacket and crankcase in sand cast alloy; jacket enclosing a thin steel liner. Deflector type piston in alloy has two cast iron rings, free to rotate. The gudgeon pin has brass end pads and the con-rod's big end is bushed in phosphor bronze; it also has the number 609 stamped on it. The crankshaft runs in two bronze bushes, and the carburettor and exhaust pipe are brass. Since the photo was taken a 3/8th inch Champion model type spark plug has been fitted, and the engine runs well, turning an 18 by 6 propeller at just over 4000 rpm.' Commenting on the scarcity of four-stroke model engines in NZ Merv went on to say that he would trade the engine for any modern 4-stroke except the OS FS-60; doubtless this last comment has been overtaken by events, but if any reader can throw any light on the possible identity of the engine we will put him in touch with Merv.



Enlarge or reduce?

When a vintage model is presented in a size other than it should be, its mass, like the properties of the magnetic poles, 'attracts or repels' depending on the taste of the beholder. Andy Brough summed up the situation in last November's issue of *Aeromodeller* when he wrote 'To scale a model alters its characteristics... the name of the game is to build an old design and fly it...'

It has always been my contention that vintage models should be built in the original sizes - a few designs appeared at the time in different sizes, but the vast majority were a 'one-size' model.

The vintage bug has bitten the CO₂ modellers pretty severely and this means that their old-time models have to be of the reduced size variety, while at the other end of the scale are the R/C modellers, who



Above: The model pound at Old Warden during the 1978 Vintage Meeting, taken from the top of the control tower. Below: Gerry Tideswell demonstrates an ROG with his Gulleridge Trophy Winner at the Northern Area Gala on 25th September 1966. John O'Donnell photo.

now agree (Oh, it took so long for the penny to drop!) that large size models provide the most realistic flight. The philosophy 'big is beautiful' is really taken to heart now and automatically extends to vintage, so many of these R/C modellers 'see double' when looking even at six or seven-foot span vintage models and relate the designs to industrial-sized engines that are really out of the model range.

It is actually a whole new ball game, and the size war is a conflict that could be easily added to the 'atmosphere' comments recently made in this column by Mike Beach. It is not stretching credulity too far to suggest that soon, with the numbers of enlarged and reduced examples of vintage designs around, one turning up with the real thing will be accused of making a middle-sized version!

Success story

Even before Rolie Lelliott's copy of December's *Aeromodeller* had arrived, he received in the first mail following publication a package from W Lewis of Gosport containing a gift of the Jetex 350 that I had made mention of in that issue, being sought by Rolie to power his Vindskreen-viper. Thanks to this generous donor the model has now flown in the approved style. Mr Lewis had first obtained this engine almost forty years ago and he has memories of discussing its properties with A V Roe at Thorney Island in 1950, but despite the obvious sentimental value of this motor he immediately reacted in this grand way. Rolie is a one time motor racing driver; for quite a while he has had to use a respirator several times each day to keep his emphysema in check, but he carries on with model building in a most prodigious manner. His list of building projects stood at forty not so long ago, but now he has reduced this to twenty-seven; although these figures don't mean much

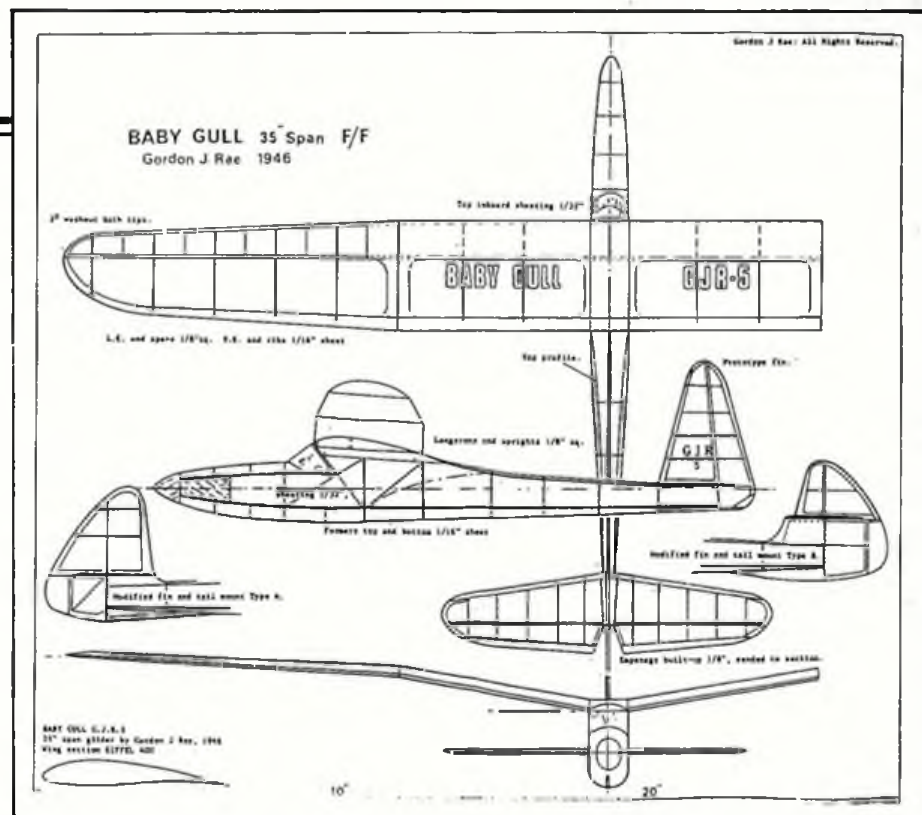


since he is continually adding to the list! Rolie is currently building a Frog Cirrus and his next model will be the Wee Sea Bee. Visitors to the M E Exhibition two years ago may remember seeing some of Rolie's models there; amongst others he showed the rubber-powered Dryad flying boat (described in the February 1946 *Aeromodeller*) and H J Towner's control line DH 89a Dragon Rapide, finished in the handsome black and yellow scheme of the Automobile Association. Also shown was the Silver Patrol Mk 1a sailplane which was described in this magazine in December 1947. As can be seen, Rolie builds any type of model (usually vintage) that takes his fancy, and he comments that 'Life does not seem long enough to an aeromodeller, does it?' Long may he continue to churn them out, transforming those inanimate plans into working examples to be appreciated by all enthusiasts.

Baby Gull

Gordon J Rae, who is a follower of Vintage Corner, has been an *Aeromodeller* reader since the early 1940s. His first published design was Snorky which appeared in the June 1951 issue. Now he writes with details of his Baby Gull glider of 35in. span, and feels with the upsurge of enthusiasm for vintage models and in particular, gliders of yesteryear, that there might be some interest in this model, which appears to have been his fifth own design. Dating from 1946, its layout and general lines were drawn-up to satisfy Gordon's desire to, hopefully, create an aesthetically pleasing and distinctive outline, with gull wing and a bold fin. This was in contrast to the functional duration models that he had made up to that time. The alternative empennages shown on the drawing were experimented with to determine their effects on performance. Initial sensitivity on the line was improved by the addition of wing-tip washout, and Gordon can remember many a pleasant hour spent flying this little model (*hopefully soon to be a full-size plan in this magazine, GC*).

Later in 1949 when he was serving in the RAF he produced a double-sized version, the Gamma Gull, and this model took top



honours in the RAF 23 Group Championships. It was re-published in January 1986 *Model Airplane News*, modified for two-channel R/C. Plans for the Gamma Gull are available from MAN; it has also been featured in the latest SAM 35 Yearbook. Which brings us to...

SAM 35 Yearbook Number 4

This excellent publication (the best of the series yet!) is now in stock and is available from Ron Knight, 14a Enmore Gardens, London SW14 8RF at £4.00 inclusive of postage. Make cheques

payable to SAM 35. See Flyleaves, elsewhere in this issue for comment on its content.

Help!

Can any reader tell me when the following pioneers passed away: D A Pavely, F J Camm, E W Twining, D Stanger and R T Trevithick? I am currently researching Joe Ott and would appreciate the loan of any Ott material like plans and photographs. I particularly require sight of one of his Ott-O-Tube kits from around 1943-44.

Above: Thirty-five inch Baby Gull glider, designed by Gordon J. Rae, dates from 1946. See text. **Right:** From the past... At the Southern Counties Rally at Thorney Island in September 1949 B.A. Yeaxlee used a four-bladed prop on his spatted and fully cowled power entry. **Below:** Seen at the last Vintage Weekend was this fine black and yellow HV 450 built by John Kay of Bourne End. Plans for this design are still available from ASP as PET 262 - price £6.65 including postage.



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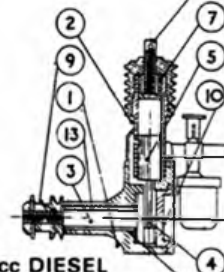
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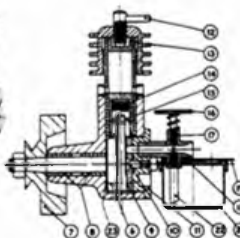
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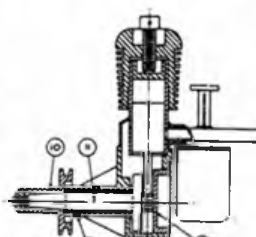
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Links to the Plans

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Swinging 60 by Phil Ball

Phill Ball's Slow Open Power winner

[Document Page: 11](#)

Spitfires Mk. 9 & Mk. 14/8 by Noel Stephenson

CL Near to scale Stunters

[https://outerzone.co.uk/plan_details.asp?ID=15213 ...](https://outerzone.co.uk/plan_details.asp?ID=15213)

[Document Page: 24](#)

Edina by H.A. Wardell

FF rubber model from February 1945

[Document Page: 29](#)

Jumping Jive by Peter Brown

FF rubber model from November 1943

[Document Page: 29](#)

Sizzle by David Binn

FF Jet-X

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Coupe D'Hiver No 11 by Dave Hipperson

FF Rubber Model Coupe D'Hiver. Presented in FREE FLIGHT SCENE

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Wolverine

Vintage CL Team Racer. From December 1951 issue of the Australian magazine 'Model Hobbies'. Presented in MIND THE LINES

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Baby Gull by Gordon J. Rae

Presented in VINTAGE CORNER. A 35" glider from year 1946.

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