

AERO

MODELLER

- A MANX TALE
- WINNING WINGS



scale

WHAT A WEEKEND!
Old Warden report

JUST JUNIOR
a jaunty mini-Vintage classic

AN ARGUS SPECIALIST PUBLICATION

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POSTAGE

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Southerner Mile

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1.49 DS3

1.49 Contest 3

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2.49 Contest 3

19 DS

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35 DS inc Sil

80 R/C

100 R/C

1.49 R/C inc Sil

2.49 R/C inc Sil

19 R/C inc Sil

29 R/C inc Sil

35 R/C inc Sil

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NEW!

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COX

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049 Black Widow

049 Babe Bee

TD 049

049 Glowhead

PAW DIESEL

80 STD

100 STD

1.49 DS 3

1.49 Contest 3

2.49 DS 3

2.49 Contest 3

19 DS 3

29 DS + Silencer

35DS + Silencer

80 R/C

100 R/C

1.49 R/C + Silencer

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AN APOLOGY

The Irvine Mills .75 has not yet reached our shelves and could still be several weeks away. We apologise for wetting your appetites too soon but we have a long waiting list and advise any customers hoping to obtain one of the first run to order NOW.

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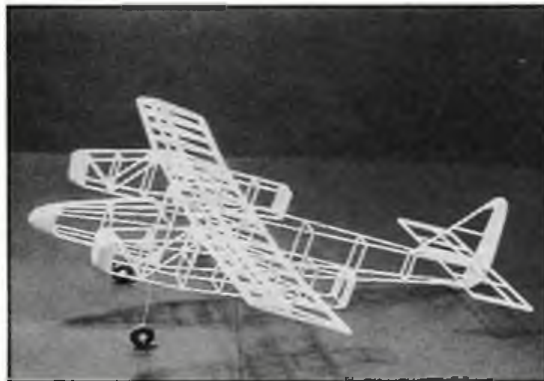
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AERO MODELLER



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Editor	<i>Geoff Clarke</i>
Group Editor	<i>Alec Gee</i>
Editorial Director	<i>Ron Moulton</i>
Art Editor	<i>Ron Cunningham</i>
Sales Executive	<i>Patrick Cree</i>

Cover:

An outstanding achievement by any standards - Dave Chinery's latest, this beautiful DH91 Albatross for quadruple-Accoms electric power is captured for the camera in front of the de Havilland hangar at Old Warden on the occasion of our 21st Scale Rally. What better way to commemorate the anniversary than to enjoy those elegant lines (the model we mean!). Our report is on 486.

Other ASP Model Titles:

Clocks - Military Modelling - Model Boats - Model Cars - Model Engineer - Radio Control Models & Electronics - Radio Control Boat Modeller - Radio Modeller - Scale Models International - Model Railways - R/C Scale Aircraft Quarterly - Sea Classics International

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**ARGUS
PRESS
GROUP**

Argus Specialist Publications Ltd.

P.O. Box 35, Wolsey House, Wolsey Road, Hemel Hempstead, Herts HP2 4SS



HANGAR DOORS



Proof that the computer age has reached the F/F Nats - Doug Bartle concentrates on the green screen as flight times are punched in. These efforts were rewarded by splendidly, frequently updated results sheets which added extra zest to the competitions.

All roads lead to...

...Barkston Heath for the 1987 R/C, C/L and Scale Nationals on 29-31st August - and 'silent' R/C at nearby Cranwell. Many of our top competitors will have also taken part in the C/L Eurochamps - just a few days away as this is written - so do go along, enjoy, and perhaps cheer an International winner.

Mind the Lines co-writer Andy Brough phoned to tell us that a Class 1 Vintage Speed event (which is effectively Midge Speed) will be held at the mini-Goodyear circle on Sunday afternoon, with prizes donated by Amerang and with SMAE plaques down to third place. Thanks...the editorial Javelin-

Midge, languishing in the office after a fastest-ever 77mph over a year ago, might well be revamped for this.

Congratulations

...to C/L speed record-holder Paul Eisner, who set up a new 2.5cc World Record of 194mph (313.475 kph, to be precise) on 27 June at the 3 Sisters circuit, beating the existing record, held by the Soviet Union, by 9mph (14 kph). Paul has been knocking on the door of this one for several months now and it is pleasant to report eventual success; though we bet Paul won't stop there! This achievement also made a paragraph on page 2 of the

following Monday's The Times. Same day, same place; and Peter Halman was another in the record books, lifting the National FAI C/L speed record to almost 176mph (283.24 kph) with his Irvine .15 powered craft. More details of both models to follow...

And that's not all. The Indoor Nats at Cardington the following weekend saw two more records - a new, domestic Novice EZB record of 14 min 56 sec from Pete Williams and, splendidly, a new EZB World Record of 24:43 set by Bernard Hunt on that hot and humid Saturday in Shed No. 1. Records are subject to confirmation; but we can say - well done, all of you!

Low-ceiling success

Flying at the International Butterfly Meeting at Nijmegen in the Netherlands on 6th June, Thedo André set a new Cat. 1 - that is, under-eight-metres-ceiling - Indoor Record of 28 mins 54 secs, beating by exactly one minute the previous record held by Ron Higgs of Canada. We'll feature model details soon; brief notes are that it was a standard F1D microfilm model with a long motor stick, hollow Kujawa-type wing spar and a boron propeller outline.

F/F Trials for the '88 Eurochamps

Phil Ball tells us that the latest Trials situation is this: the 1st

Trials, scheduled for 10-11th October, have been cancelled owing to the lack of a suitable venue. The 2nd Trials at Barkston Heath on 24-25th October now become the 'First'; a replacement '2nd' Trials will be held during November at Sculthorpe; exact date and venue confirmation to follow. Entry fee is £5+SAE to

Just out - Argus Book's latest. Following the success of Fifty Years of Aero Modeller, Vic Smeed has culled from worldwide sources to produce the same-format Model Flying - the First Fifty Years. Green-covered compilation costs £6.95. Look for it!



Mike Fantham took time off from F/F Team Training to marry Lauren Savage at Stoneleigh, Surrey in April. Forming the arch of F1A wings were SMAE London Area Secretary Dave Taylor (left), F/F Team Manager Martin Dilly (right) and Sue Coy and John Williams of Freebirds. In spite of the calm day, no-one got any trimming done afterwards - although Mike went on to win F1A at the US Champs at Taft in May! (Photo: Tony Fantham).

Aeromodelling Obituaries...

Ben Buckle

Aeromodellers were shocked to learn of the sudden passing of Ben Buckle on 9th June. Although he had been ill for a while, his hopes for a happier future were high as his many friends who chatted with him during the F/F Nats Weekend would testify.

Ben was always equipped with the courage of his convictions, and was brave enough to make an early commercial entry into the world of Vintage aeromodelling, fulfilling a need and thereby establishing a firm basis for sound endeavour. To many enthusiasts he was 'Mr Vintage' and his ever-increasing selection of plans and kits was responsible for introducing many to the

delights of traditional building and flying. His pioneering work in SAM 35 marked him as forthright and not easily swayed; qualities that imbued his efforts with drive and energy, particularly in the field of R/C Vintage which was always his real love.

He leaves a legacy of aeromodelling achievements which few have challenged; and the best monument of all is that under the guidance of Ben's wife, Sheila, and his family - to whom we send condolences - kit production is to continue, assuring us that the legendary 'Ben Buckle Kits' will remain on and above the flying fields.

GC

Phil at 17 Heronswood Drive, Spondon, Derby.

Wanted by the SMAE!

Since the early 1970s Ray Favre has handled hundreds of flying site protection cases as the SMAE's volunteer flying site liaison officer. The large majority of them have turned out well for those local model flyers who called on his expertise to help them. However, the demands Ray's professional work now makes on his time means that he must now give up this work which provides one of the SMAE's most important services to members.

The Society is now looking for someone who can take on this post; initially he or she would work with Ray offering guidance and briefing. Of course, Ray has done the spadework and the job is now far better-defined and simplified than when he took it on; the new volunteer ideally should be able to continue the work for several years, as the experience that continuity brings is important. Perhaps a job outline will help you to see whether this is a way you can help model flying.

The Flying Site Liaison Officer offers advice and direct assistance to SMAE-affiliated clubs having (or trying to avoid having!) problems with their flying site(s) - whether private, public or MoD; he works with the assistance of the General Secretary.

There are typically a dozen



Nats competitors shocked by the appearance of nattily-attired John O'Donnell in apparently brand-new waterproof gear (left) need look no further for the secret. Your editor discovered this tell-tale label (above) in a local department store recently. Chelmsford, not Cheshire? Well - what's in a name?

cases active at any one time. Most of these can be handled by telephone or correspondence, but a few each year need personal visits and perhaps one per year will include attendance (and usually presentation of the model flyers' case) at a Planning Appeal.

The Leicester office provides a good quality first line of filtering plus administrative support and also holds over 200 files of past cases for references, plus briefing papers for specialised items.

The important requirements of any volunteer are:

- a) A reasonable guarantee that continuity can be provided over a period of at least a few years.
- b) Considerable experience in dealing with 'officialdom' - not necessarily directly associated with local or central government.
- c) Ability to construct clear letters (frequently to laymen) in a style appropriate to a national body.

d) Ability to deal by telephone, letter and face-to-face as the need dictates.

e) Ability and willingness to pursue cases within a consistent, credible national policy line and to suggest development of that policy from time to time.

f) Ability to study essential legislative documents and to be capable of understanding their application.

g) Acceptance that the SMAE's reputation is affected by the Flying Site Liaison Officer's actions (or inactions).

An ideal volunteer would probably be an experienced modeller (not necessarily an expert flyer) well in touch with the typical club 'sport R/C' scene. An awareness of the needs of the other model flying disciplines would be an advantage. His/her daily occupation would involve frequent writing of semi-formal business letters, memos,

reports, and so on, and dealing with people in a professional and/or managerial sense.

Workload is not usually heavy; once the initial learning curve has been climbed (say within 18 months) an average week would involve no more than 2-3 hours, but there will be very occasional short periods when 10-15 hours a week may be necessary.

An SMAE budget exists for reimbursement of direct expenses, and clubs are usually asked to meet the costs of anything specifically for their own cases. The current Flying Site Liaison Officer will willingly provide initial briefing and will remain available for discussion and shadowing (or, if required, leading) Appeal cases.

Please contact the General Secretary on 0533 518500 if you are interested, and by all means phone Ray Favre on 0895 444410 if you wish to find out more first.

Pat Tranfield

Our hobby will be the poorer for the loss of Pat Tranfield on 14th June. He was one of the unsung 'Backroom Boys' - a master model maker who did all the research and original modelling that gave us the 1/24 scale Airfix Bf 109e, FW 190, Ju87 and Harrier, to name but a few. Latterly working for Space Models he continued to produce models of superlative quality, their excellence forever to be his memorial. But he was a keen R/C scale modeller - we remember his Fokker D8, published back in 1970 in RCM&E, and his splendid Typhoon which appeared shortly afterwards - and he also enjoyed Vintage aeromodelling, pain-

stakingly re-drawing from a few tattered scraps a crisp Frog Jupiter plan - a boyhood favourite - which has resulted in the reappearance of this elegant model at meetings in recent years. Our sympathies are with his family.

Al

Wally Nield

Lancashire lost one of its favourite sons on 14th July when that ever enthusiastic pioneer modeller Wally Nield finally succumbed after a series of operations at the age of 79. Life member of the Winsford Group, a founder of the LARCAS Group which was so prominent in the early days of radio control and a regular fixture at all the model meetings for flying scale radio control models, Wally was one of

life's great characters. Moths were his favourite and he made many. While maybe no two of them had the same outline, Wally was always strong in argument that neither were the full size which had the same degree of warp and twist. It should also be said that when Wally went out to fly, all heads turned not so much for the performance but to be aware of what might happen. He responded to his critics with a dry wit, full of enjoyment for he always savoured a verbal tussle and was widely respected for his persistence. The North west in particular will miss him but so too will the enormous number of friends he made through the hobby.

Your questions answered...

Elsewhere in this issue of *Aeromodeller* will be found a Readers' Survey aimed to help us produce an even better magazine in the future. A variety of questions, covering content, circulation and advertising matters will demand a few moments of your time - but your answers are important. Here is your chance to shape up *Aeromodeller* so don't rely on others to speak for you - use your voice, NOW.

Late F/F news.

We have just heard that the SMAE Southern Gala will take place at Little Rissington on Friday, 18th September. Free-flight events only are O/G, O/R, O/P, A/1, 1/2A, CDH and HLG. Contact Phil Ball on 0332 665361.

The

Messerschmitts and the rest; not to mention Jeremy Collins' TSR2 — yes, the BAC jet, not the Swordfish prototype... Perhaps we'll just let our pictures do the talking, and move on...

Free-flight frolics

Most notable spectacle on the first day of our weekend was the appearance of two large, rubber-powered Stinsons — both of Vintage origin — flown with mastery by Doug McHard and Vic Dubery. Doug's SR (from the 1936 Comet plan) was the more colourful, its red and yellow contrasting well with Vic's blue 105. Slow and stately is the only way to describe the performance of these two, and in the relatively sparsely-populated field they were at minimal risk. Electric power made an imprint this year; Doug Sheppard's fine Blackburn Bluebird went well on its Mabuchi A-1 unit, geared 4 1/2: 1 to drive a 7 x 4 prop; and Derek Knight's 'fun' air force included his well-known Avro 560 (which needed a spot of re-trimming to cope with the great outdoors) and a quick-built all-sheet Bristol Monoplane lookalike which not only demonstrated the capabilities of Derek's new motor (reported elsewhere) but foreshadowed Bill Dennis' own efforts on Sunday with his now similarly-powered M1D, a conversion from rubber which proved most flyworthy. Untried, but a charming subject which deserved better than to have tests postponed by the warp-including shower of rain on Saturday afternoon was Mick Osakey's Telco-powered Graham-White Lizzie, almost a 'caricature' biplane which may well need careful trimming to compensate for zero dihedral. Once again, many favourites from APS were seen, including Alan Thompson's Sopwith Triplane and Dave Johnson's SE5 — a happy performer on Merlin power, adapted for F/F from a past RCM&E full-size plan! But, as ever, it was the Sunday which really brought forth the models...

Well — we did it again! Despite an unhelpful forecast that insisted that only the first part of the weekend would be anything like presentable, Old Warden again came up trumps with only a single, sharp shower late on Saturday to mar a meeting that couldn't have suited the Scale modeller better. Even if it was a bit turbulent at times no one could really complain; and the direction of drift was — for once — away from the radio control flightline enabling free-flighters to indulge to their hearts' content. And this was a meeting as of old, with little non-scale activity to interrupt the cavalcade of miniature replicas, considerably more diesel-model interest than in recent years; and Jet-X and electric powerplants in some quantity too, perhaps to point the way, ahead... But before contemplating the future, let's look back on a super 21st midsummer scale rally.

Radio Control romps

Visitors from overseas (the States, South Africa, Australia, Malta, France and Greece were just some of the countries represented!) added to the enjoyment on the R/C flightline. Even without 'large' models this time — happily catered for by an earlier Old Warden event all to themselves — over eighty models were registered on Saturday, augmented by 120 on the second day; all pointing to the inescapable fact that the R/C scale scene is alive and thriving. For a full report on this facet of our weekend you should consult our sister magazines RCM&E and Radio Modeller, but we have to mention one or two masterpieces which made even the hardest control-liners and free-flighters look up! Top of the list must come Andrew Bolton's 126in. nine-pound-weight Rutan Voyager. Every time this twin-Enya 19 craft (yes, that's all that powered it!) took the air the field stopped to admire. This *tour de force* was built with the aid of Air Pictorial photographs; no drawings were available at the time but this Voyager is unmistakably like the real thing! No handling problems were reported; and from every angle the sleek twin-boom twin was a winner. Other dual-motor projects to impress were Tony Major's semi-scale Canberra for .40 power, a rather skinny electric Me110 by Peter Antram

and a simply great Meteor, accurate with props in twin-Trent-turboprop configuration by David Toyer. Even more impressive (to your reporter, at least) was Dave Chinery's lovely de Havilland Albatross airliner, a most elegant piece of work perhaps marginally underpowered by four Acoms electric units but a showstopper in the air nevertheless. Dave can be relied upon to come up with something special (remember his AW Atlanta last year) and his efforts gained him the Mole Technology award for best 'electric'. coveted is the trophy for best replica of a 'Shuttleworth' subject: this year Chris Hodgson's Hornet Moth, in 'as per' blue and white, was judged the winner although it must have been a close thing. There were one or two impressive Bristol F2Bs about... Enthusiasts of inter-war fighters could surely wish for no more attractive a subject than the Fairey Fantome. John Wright obviously thought so; his one-sixth scale G-AD1F was admirable.

What else? How to select from the myriad of favourites — the Spitfires, Sopwiths,



Glorious 21st

Our super midsummer 'anniversary' Scale Rally at Old Warden is reported by Geoff Clarke, Bill Dennis, Vic Dubery and Alex Imrie.



It was pleasant to see John Palmer with a Sopwith 1 1/2 Strutter and a Vought Kingfisher, the latter fitted with a throttled AM 15; twenty years old too but hardly flown as it was John's last F.F. model before the attractions of R/C became too strong...

Notable amongst the new Rubber models was Butch Hadland's Zero, large but a real lightweight; several attempts were made to twist his arm in order to get him to take it to the 'outdoor' Nats. Also impressive was Keith Ridley's large '1 1/2 times-Stahl' Spitfire which repaid careful trimming with gradually improving flights. Small CO₂ craft were much in vogue, as ever at Old Warden, and we thought young Paul Stockley's Blackburn Monoplane was such a spot-on performer that it deserved a prize. Out in the centre of the field Ken Rippengale from Chart Micromold was happily running a CO₂ contest which proved a victory for Tony Balding's Curtiss Robin from the Tern kit; although the 'best three from five flights' were meant to count Tony recorded just the requisite trio after a 'treed' final flight took over an hour to recover! Good stuff these Telcos (and the model was ten years old...). Back to power again — for we really ought to mention Mike Hall's large Phoenix D-1, a lightweight at twenty ounces which is fitted with a Mills 1.3; another subject that Mike has pinched from under Bill Dennis's nose (according to Bill!).

Bill Dennis and Charlie Newman witnessed fireworks as they arrived just after 9am, as they met one chap standing by a plume of smoke that — they were assured — used to be his Jetex model! Best of the 'fizzers' was Rob Millinship's Grumman Panther, beautifully finished and a lesson in aviation artwork, but other craft emerged rather fire-scorched; so the message is — don't skimp on the fire-proofing!

Throughout the day many R/C scale modellers came over to enjoy the fun, having filled and flown in the (often one and only) 'slot'.

Barry Hetherington had brought along two superb models to 3/4 inch to 1 foot scale; a blue-and-red Stinson Trimotor Model U with windmilling propellers on the 'outboards' and a golden winged Bellanca Aircruiser, both of which were business-like looking models in the best Hetherington tradition. Flyline Models are fine flying scale models of vintage subjects. One such warrants mention; a beautifully made 36in General Aristocrat modified from the basic kit by Nick Peppiatt of Camberley. It was attractively finished in orange and black and was powered by a dieselised Cox Pee Wee neatly incorporated into the dummy radial engine.

It was good to see Vic Driscoll from St Albans with his 15 year old Martinsyde Elephant. We remember with affection his fine Westland Wapiti that used to grace model meetings some years ago, for we could do with seeing some more models like that these days! Ian Harwood's DH53 was lovely; he used a scale aerofoil section, modified RAF 15, and in his scale type of construction he worked with balsa sheet of

Heading: Brian Harvey's thirty-inch Supermarine S6B looked great in silver and blue. This superb early '30s is from the Joe Ott rubber Sky Flier plan — but in the alternative size to the more popular 15in. offerings.

Far left: How up-to-date can you get! Here's Andrew Bolton's R/C Voyager — a showstopper in the air. This page, above: Best 'Shuttleworth' subject was Chris Hodgson's attractive Hornet Moth — a type of DH infrequently modelled. Maybe the complex cabin contours deter? This picture: Ted Horne's sixty-inch APS Lysander flew majestically to take the Fred Longbon Trophy for best Plans Service model.





1/80th inch thick and used stringers of 1/20th inch square. This model was powered by a horizontally-opposed twin cylinder Brown CO₂ engine and was superbly finished in black, white and 'natural'. Last year it was present but unpainted; the extra effort this time was well worth it.

Lindsey Smith had his wares on sale out on the field. These consist of vacuum-formed acetate pilots in 1/24th and 1/20th scale and wheels of various sizes from 2 1/2 inch diameter downwards. Sold as kits they are easy to assemble; and dummy engine forms are also available ready for painting and attaching to your model. These are extremely light and a real boon to modellers of flying scale models from yesteryear. It should be noted that the masters for the pilots and the large radial engine are from the hands of Doug McHard, the latter being that of the Wright Cyclone R-1820 that Doug made for his fantastic model of Al Williams' Gulfhawk, photos of which have appeared in this magazine. Lindsey also reported having found a source of genuine Japanese tissue which he hopes to make available at 60p per sheet. His little SIG 29-er in red and white used this material. Although a freelance design it strongly resembles a Fairchild 22 parasol monoplane. This one had the name 'Dolly' on the nose cowling, while the fuselage sides were marked with the name of the famous song 'Me and Jane in a Plane' ('to please the Missus', says Lindsey!).

A full-size diversion happened when the replica 1929 Pietyenpol Air Camper G-BMLT suddenly appeared in our air-space. An article describing this well made home-built by that father-and-son team, Frank and Richard Hawke was published in a sister magazine; and now modellers were able to see the real thing at pretty close quarters as it cavorted over the aerodrome.

Vintage Scale views...

Over to Alex Imrie:

Amongst Vic Dubery's host of plans are two from Joe Ott's Sky Flyer series (No. 3: Stinson SM-1, named City of Chicago and No.19: Supermarine S6B Schneider Trophy seaplane). I had anticipated numerous examples of models made from these plans that Vic has made available to vintage enthusiasts, but I searched



A trio of non-scale Vintage craft espied Old Warden. At left: This Bay Ridge Diamond Demon by Mike Callaghan of Irvine Engines was fitted with a prototype Irvine Mills .75 - a power-

in vain for the Stinson and only found one example of the S6B. This was a 30in beauty in blue and silver by Brian Harvey of Oxford who had only just finished the model on the previous Friday and was busy making trimming flights. Although a five-ounce target weight could have yielded good results, modifications to provide knock-off-ability meant that the weight of Brian's model had gone up to some seven ounces, so it was proving a difficult task that was eventually terminated when a float tore off damaging a wing. This model was described in Popular Aviation for December 1931 but I have no account of how the prototype performed. Why no one modelled the Stinson is hard to understand since its proportions are right; and if made in the Joe Ott manner, using, for example, the bamboo-outlined tail-surfaces covered on one side a super lightweight model would have resulted. This was one of Joe Ott's early flying scale models and it was described in his book published in 1931 titled "Model Airplanes, Building and Flying". Its lack of scale fidelity

This page, top: Vic Dubery's Hawker Fury was entered in the Maselfield Trophy, the event organised each year by Vic to challenge Vintage Scale enthusiasts with a bonus system to put everyone in with a chance! Above: Keith Ridley's enlarged Stahl Spitfire in 'Bader' colours was trimmed out and happily won a prize. This picture: Anthony Druce's remarkable Airspeed Fleet Shadower has geared drive to all props and promises much... Below: An evocative collection of P.E. Norman and Fred Longbon originals assembled by Alan Jupp and colleagues.



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plant soon to be available! Centre: Terry Rose holds aloft the MSS Lynx Wakefield that he has drawn from the original plan by A.Tindall - one of several drawings he offers for sale (more about

this in a future Vintage Corner). Right: Brian Ferrett's double-size Pinocchio is powered by an RD MkIII and flew well during the day, displaying a remarkably flat glide!



did not appeal to present day modellers, yet that design is full of character that I find most rewarding.

Mike Hetherington's example of SR Crow's blue and silver Leopard Moth was truly 'a thing of beauty and a joy for ever'. Its purposeful departure and rapid climb showed the spirit of this excellent design by one of our leading aeromodellers of the 1930s. The resulting sixty-five-second flight was thrilling to watch; absolutely Vintage in every sense of the word, it remains for me the most vivid impression of the meeting. The original 34-inch-span model was an exact replica of the prototype DH 85 G-ACHD to a scale of 1 inch to 1 foot. The only scale deviation was the use of an oversize propeller, and unusual for a British flying scale model at that time was the fact that it was a lightweight machine without gears weighing only three-and-a-quarter ounces. It had a long line of competition successes in the immediate pre-war years winning the Frog Trophy in 1937 and the Flight Challenge Trophy in 1938. On show at the 1937 Model Engineer Exhibition the model was to establish British records for its class of 62.15 seconds (hand-launched) and 109.35 seconds ROG, both of which stood for a number of years; so Mike's model has a proud pedigree to be proud of. The design was kitted by Cloud (Model) Aircraft of Dorking in 1939 and sold for 10 shillings (50p) including postage. Its span was then given as 36 inches; not 1/12 scale as the full-size machine was of 37ft 6ins span... A Rupert Moore-designed 42 inch rubber-powered Short Scion was present (this design was described in the February 1943 *Aero Modeller* and the plan is still available from ASP as FSR 193 for £4.55 including postage). Decorated in green and white and marked G-ADDT to represent the machine owned by Pobjoy Airmotors which crashed at Portcawl in 1936, this model was beautifully built by Anthony Druce of Brighton. It is no stranger to Old Warden for it had first flown there in 1980, finished in red and silver and carrying the registration G-ADDX. Then it was fitted with the complete Moore Drive from the fuselage rubber motors to the dummy Pobjoy Niagaras and managed flights of 20 seconds duration. Modified now by the use of bevel gear transmission shafts, the Moore device for releasing the motors is still being employed; however, a crash shock knocked the bevel gears out of mesh and the resultant sudden release of energy burst open the cabin roof preventing further flights. Anthony uses a similar method of power transmission on his unusual four Pobjoy powered Airspeed AS.39 Fleet Shadower which is at an early stage of trimming for powered flight, and this model employs opposite rotating propellers to counter torque, a method that he regrets not using on the Scion.

The sight of a modeller wearing the small insignia of the Golden 'C' in his button hole that

proclaimed his skill as a full-size glider pilot brought me to George Whitfield of Reading with his 24 inch span rubber-driven Comper Swift which was vintage indeed since he had made it from a Skyleada kit in 1950! Even older than the Swift was his unique geared winder complete with counter made from ancient Meccano parts in red and green.

Brian Downham seemed to have forsaken his R/C vintage and scale WWI subjects for he had a nicely-made model of the H Parrish design for the Fokker FVIIb 3M Southern Cross (described in the September 1951 *Aeromodeller*). Technically speaking it is just out of the so-called Vintage period. The plan for this model is still available from ASP as FSR 445 at £3.80 including postage. The original used a Kalper .32cc diesel in the centre position with windmilling propellers on the other two engines and Brian uses the same system but has substituted a Derek Giles .3cc 'Mills' which causes the 40 inch span model to tip the scales at 6 1/2 ounces. The adventures of the full-size aeroplane flown by Kingsford-Smith are a fascinating catalogue of aviation history, first to fly the Pacific Ocean from USA to Australia,

then from Australia to UK, across the Atlantic and the American Continent, and so back to Oakland, thus completely encircling the globe.

Fred Longbon and P.E. Norman Trophies

Alan Jupp and Mike Holloway, trustees of the PE Norman and Fred Longbon collections of models brought along some examples of these fine flying scale modellers' art that were displayed in the R/C compound during the day. Two awards have been organised to perpetuate their memories. The Fred Longbon Trophy is to be given for any flying scale model made from an ASP design and the PE Norman Trophy will be awarded for any outstanding free flight power scale model adjudged as reflecting the true character of the style of model indulged in by 'PE'. Doubtless finding a suitable recipient for this last award will not be easy since,

New to the Scale C/L circuit is Wal Cordwell's delightful DH 90 Dragonfly which features many control 'options'. More details in a future issue...





(remembering the high speed heavyweight models that were pendulum controlled and gave the fantastically realistic free flight aerobatic performances that this artist specialised in) at the present time there does not appear to be any enthusiast who pursues this branch of the hobby; nor, indeed, in F/F ducted fans. Not only did PE Norman's building techniques require



deft application of hardwoods, cane, bamboo and carpet thread lashings to make models that stood up to crashes of the worst kind, but to fly them at all needed nerve and not a little skill. They were aeroplanes in miniature with high wing loadings and not at all like the lightweight variety of models that are generally made today. Nevertheless, we have people quite capable of

doing these things successfully, and this award might provide the impetus needed to get them to work. It will be a shame if modellers do not rise to the challenge.

Unanimous choice for the 'Longbon' was the 60in. APS Lysander painted up as the 'Strathallan' machine by Ted Horne of Oxshott. This PAW 249-powered beauty made some very impressive, majestic circuits of the field. Let's see more like it next year!

Above left: *The Cyano Kid (Dave Johnson) with his Merlin-powered APS SE 5 caught in a rare break between flights.* **Top right:** *Superb Jet-X Grumman Panther by Rob Millinship is one we hope to capture soon for this magazine.* **Above right:** *Doug McHard's 60in. Stinson-Reliant Airliner and Vic Dubery's slightly smaller Stinson 105 - Megow kits both - delighted with majestic flights on Saturday.* **Below:** *'A pussycat' was how Bernard Sexton described John Roberts' splendid, large C/L Bristol 77 after a session at the handle.* **Bottom:** *'One-two-three' in the kit Mass Launch madness were Ron Brownson, Charlie Newman and Brian Faulkner.* **Below right:** *David Toyer's large Gloster Trent-Meteor was unforgettable in the R/C circuit.*

1987 Masfield Trophy

Vic Dubery reports:

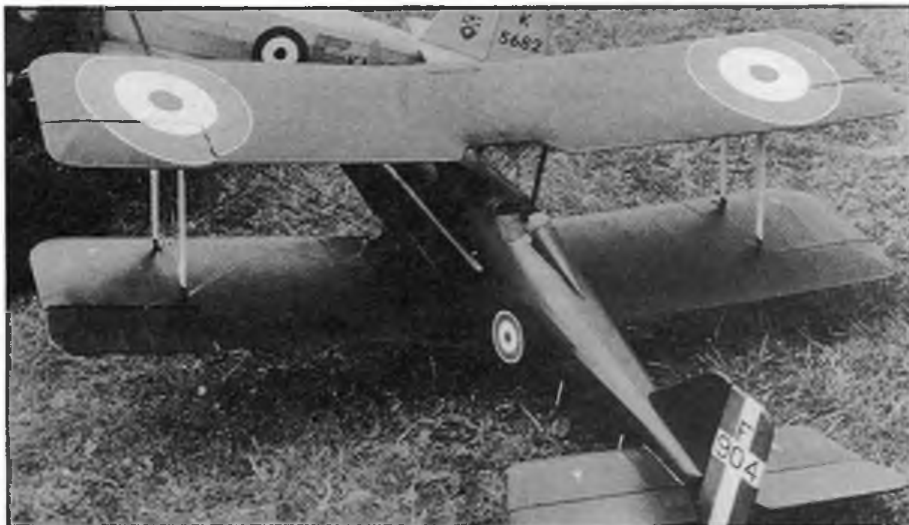
On the third occasion of this contest for vintage scale models the weather was at last suitable for rubber-driven free-flight, even allowing five maxes (sixty seconds) to be scored. Previous entrants plus some new faces made this year's total up to 15 models. The winner was Bob Walden (who took 1st and 3rd place in 1985) very closely followed by Ron Brownson, last year's winner, who achieved two maxes to Bob's one, eventually to trail by just three points out of over 200. Battling Lindsey Smith took 3rd place with his well-worn Comet floatplane which had been swiftly repaired after a serious prang the previous day!

Should anyone doubt that the contest scoring system gives all types a chance, this year's event should put them right. I have no evidence that the Magister is inherently superior, nor even that Earl Stahl models generally are. The



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Above: Best C/L biplane this year was judged to be this SE 5 by Geoff Burkett who thus took home the Jack Carter Memorial Trophy yet again. Top right: Built from an enlargement of the Putnam drawing - with considerable photographic help - Doug Sheppard's Blackburn Bluebird III is another to point a way ahead - it's electric powered. . . Right: Snapped on Saturday were scale supremos Mick Reeves (left) and ex-pat Dave Platt who was over from Florida. Bottom of page: In this touching end-of-meeting ceremony, regrettably witnessed by few, your editor was presented with a scorched and motorless Jet-X KK Cub by Oberleutnant Paul Briggs. Model now occupies place of honour at the Aeromodeller office.

winner's model was from a Veron kit, beautifully finished as one would expect. Mike Hetherington's Leopard Moth, with no bonus, was in contention for some time, and eventually had the highest flight score. In addition to the winners there were other small kit models making scores that would have been considered excellent in previous years.

There was some bad luck around, notably for Ken Fordham whose rather nice Earl Stahl Mustang soared on its first flight to score a max but was unrecovered from impenetrable jungle. A sad 'air to air' put Trevor Simpson's Curtiss Racer out of action, together with Brian Harvey's very nice Joe Ott Supermarine S6B...

Control-line circuitry

Once again, out came the faithful band of C/L Scale enthusiasts to delight us all. Bruce Kopasz almost had the field to himself on Saturday and was happy to demonstrate his Volksplane, a conversion from the Chart Micromold R/C kit. Despite the claim that more noseweight is needed it seemed steady enough to us. Undeterred by troubles with his PAW 19s Geoff Spriggs pressed on and was rewarded with a fine flight from his mostly metal A.W. Whitley. Litho-plate construction allows minimal internal structure; an idea worth copying?

New to the competition scene is Wal Cordwell's latest, a most elegant DH 90 Dragonfly for twin OS 40 power, finished in the silver-and-red of short-term Old Warden resident G-AEDU, now in the States. That crisp rib-for-rib structure was deceptive, as the wing is a balsa/foam/ply composite for strength. The dainty Dragonfly was delightful in flight and Wal was understandably chuffed with his efforts. Much help came from other Three Kings stalwarts, notably Geoff Burkett who sported an

'I'm with this Wally!' tee-shirt. Hmmm..... Geoff was in the points too, his new SE5 taking home the Jack Carter Memorial Trophy for best C/L biplane. Best overall was judged to be John Roberts' super - and large! - Laser-powered seventy-four inch Bristol 77 (a subject suddenly popular again). The red racer flew most impressively, although John's comment was that it weighs 'a hernia'. John's son Patrick again demonstrated his powers at the handle, flying Dad's Fokker D-8 this time; and reliable performers Mick Staples (Avro Avian) and Ron Truelove (Heinkel 219) enjoyed themselves too. Vic Westmuckett's remarkable Constellation also turned a few heads, although we didn't witness any circuits on all four motors.

A reasonable C/L display at this meeting. More in '88, please!

After the fun was over...

We trust everyone enjoyed this 21st celebration (even if we were amazed at the survival rate after Saturday night's barbeque!). On this evidence scale aeromodelling is as powerful as ever, and it was most encouraging to see reasonable efforts made to fly safely, to the benefit of all. Nevertheless, we deplore the horizontal flights, bungee-assisted, of one modeller's 'jet' craft; and it did seem odd that another enthusiast started his Tiger's motor in a spectator-free area, only to run yards to the point of maximum crowd density to throw the unsuspecting Moth at someone's head!

This aside, we thought this a vintage (not Vintage) Scale Rally. Come again next year - you'll really miss it if you don't!!

Old Warden Scale Weekend: 20-21st June 1987

Jack Carter Memorial (Best C/L Biplane)	Geoff Burkett	SE5
Best Shuttleworth Collection Subject	Chris Hodgson	DH87 Hornet Moth
Radio Control	1 Gordon Whitehead 2 Andrew Bolton 3 John Carpenter 4 R. Hester	Avro 504 and Robin ATL Voyager Ju87 Stuka Tauba
Control Line	1. John Roberts 2 Mick Staples 3 Wally Cordwell 4 Ron Truelove	Bristol 77 Racer Avro Avian DH90 Dragonfly Heinkel 129 Uhu (Owl)
Free Flight	1 Keith Ridley 2 Doug Sheppard 3 Paul Stockley 4 Anthony Druce	Spitfire Blackburn Bluebird Blackburn Monoplane Airspeed Fleet Shadower
Outstanding Achievement	1 David Chinery 2 J. R. Wright 3 R. Bye/Dave Ainsley 4 Mike Hetherington	DH Albatross R/C Fairyr Fantome R/C Boeing B-28 C/L DH Leopard Moth F/F
Mole Technology Best Electric Model	David Chinery	D. H. Albatross
Fred Longbon Trophy (Best APS F/F Model)	Ted Horne	Lysander (80in)
P.E. Norman Trophy	Not awarded this year	
Chart/Micromold CO; contest (12 entries)	1 Tony Balding 2 Tony Rushby 3 Bill Kitching	Curtiss Robin Luscombe Silvaire Piper Cub

Masefield Trophy (15 entries)

		%	3-Flight Score	Final Score
1 Bob Walden	Veron Comper Swift	40	148	207.2
2 Ron Brownson	Earl Stahl Magister	30	157	204.1
3 Lindsey Smith	Comet Navy Racer	80	102	183.6
4 Mike Hetherington	S.R. Crow Leopard Moth	0	158	158.0
5 Ron Brownson	Earl Stahl Skua	30	114	148.2
1 Ron Brownson	Piper Family Cruiser			
2 Charlie Newman	Ercoupe			
3 Brian Faulkner	Nieuport			



WINNING WINGS

To turbulate, or not? Will invigorators pep your performance? Aerofoil affairs discussed by
Martyn Pressnell

LISTENING TO the conversation of aeromodellers in the club room or on the flying field, the topic will frequently turn to aerofoils. It is clear that the free-flight modeller takes this subject very seriously, and that he is acutely aware of the performance potentials of the wing sections currently in use; yet there are aspects of the subject not clearly understood and some very suspect explanations on record. Some years ago when my book 'Aerofoils for Aero-modellers' was in print I tried to offer a simple explanation of some of the terminology, causes and effects. Although the book was not widely available in this country, many modellers who saw it have kindly expressed their pleasure. However, there have been advances in knowledge in the meantime and I believe there are prospects for new families of advanced low speed aerofoils.

I must say at once that advanced aerofoils will not be handed on a plate to the aeromodeller because there is little mathematical or experimental development in hand at the low speeds appropriate to model aircraft. At a recent International Conference on low speed aerodynamics, Professor Eppler referred to flight below a Reynolds Number of one million as 'Illegal'. This was because he and other researchers are unable mathematically to model the flow which arises. However, wind tunnel experiment certainly shows the remarkable results which can occur at these low speeds. In the graph shown at Fig. 1 the maximum lift generated near to the stall is shown in relation to Reynolds Number, and the box termed the 'Free-Flight Window' shows the rapid variations of lift attainable in our regime of flight for several aerofoils. It is as if by some Divine Intervention our free-flight models are obliged to fly in this 'illegal zone'; and this surely represents one of the great challenges in model flying. Perhaps an explanation of 'Reynolds

Number' would be in order at this point...

Reynolds Number

This is a non-dimensional number, comprising the product of airspeed, and chord length, divided by the kinematic viscosity of the air. This latter term relates the viscosity to the density of air, and is therefore influenced by temperature. It is the fundamental variable which is found to govern the nature of the flow over an aerofoil.

Consider two identical aerofoils, one of which is used on a scale model aircraft with a chord of 6in and flight speed of 10mph; the other on the full-size counterpart where the chord is 6ft and the velocity is 100mph. Flying in the same air the full size machine has a Reynolds Number 120 times that of the model. As these machines are brought to the stall, the model stalls at, say, 8mph, while the full size machine stalls at 50mph. The nature of the stall might also differ appreciably.

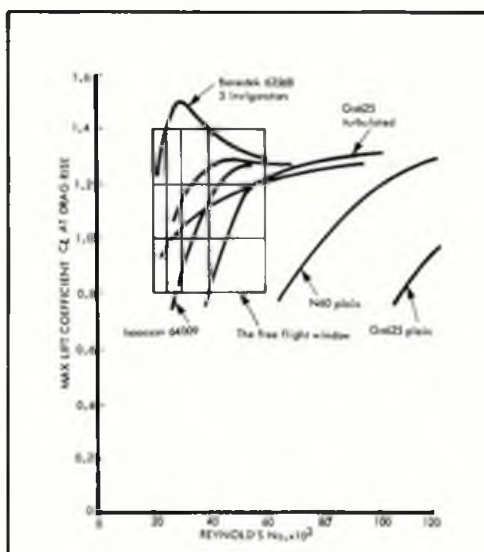
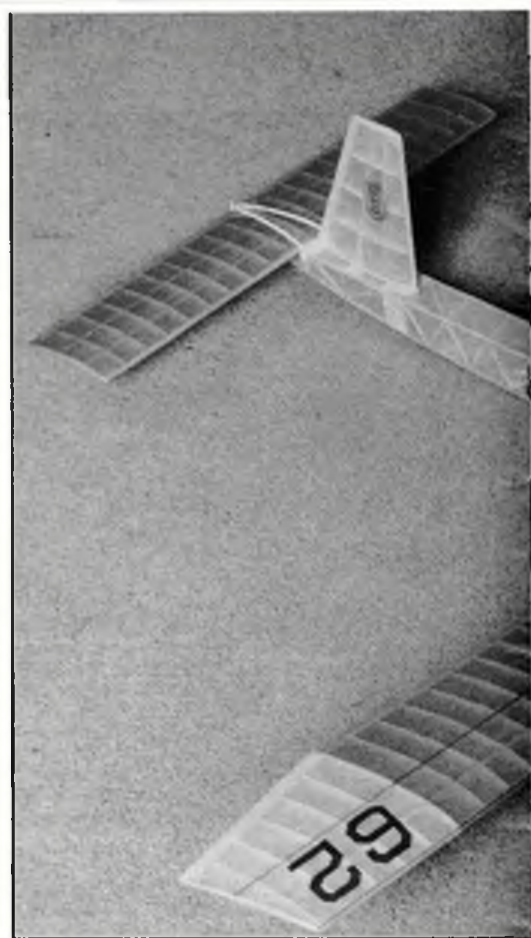


Fig. 1: Wing section behaviour: Influence of Reynold's No. on maximum lift coefficient



Onset with the model may be sudden, with a plummet, while the 'full-size' machine might stall gently, the nose dropping gradually until the airspeed is restored. Other striking differences could be shown, such as variations in take-off distance, rate of climb and gliding rate of descent. Of course, in practice the relative shortcomings of the model are compensated by its operating at a lower wing loading, and by the installation of more power in terms of bhp/lb. All of this is attributable to the influence of Reynolds Number.

The table at Fig. 2 shows typical Reynolds Numbers for model aircraft. The air flow about the aerofoil is subject to inertia (or pressure) forces, and also to viscous (or friction) forces. Higher Reynolds Number (RN) indicates that the inertia forces are dominant, while low RN indicates that the viscous forces assume importance. In wind-tunnel testing it is difficult to achieve the appropriate RN in relation to full-size, and pressurised tunnels or water tunnels are sometimes used to increase RN. In investigating the response and handling of the Gossamer Albatross man-powered aircraft, Paul McCready utilised small models tested in a swimming pool. Most wind tunnel testing has been carried out at RN greater than 300,000 which is beyond the critical range in which models operate. Some tunnels will run at model RN values, but measuring the forces, particularly drag, is difficult to achieve with accuracy because the forces themselves become so small.

Boundary layers

The flow in very close proximity to the aerofoil is retarded by the viscous forces, and is completely arrested at the surface. If layers of air slip over each other without mixing the boundary layer is said to be 'laminar'. Low RN is helpful to laminar flow, but it is easily disturbed by (for

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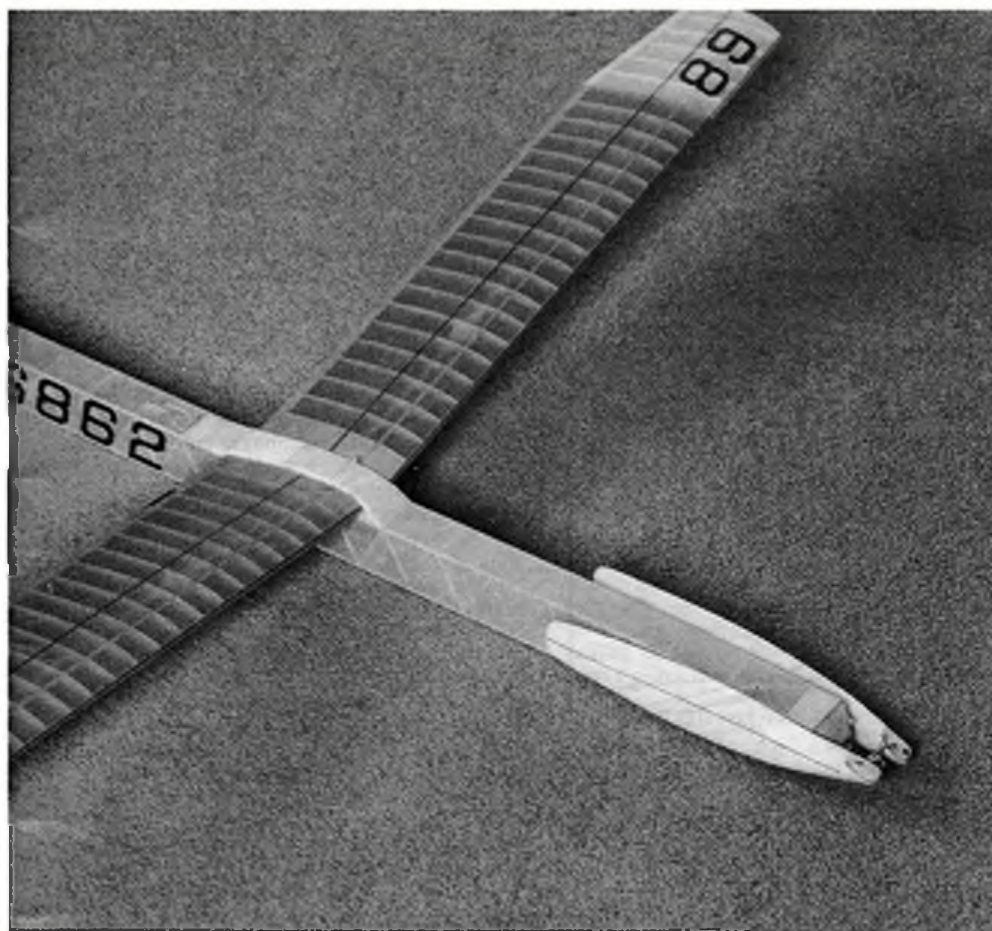


Fig. 2: Model typical wing loadings and Reynolds Numbers

Model type	Wing loading lb. sq.ft.	Reynolds number
Coupe D'Hiver	0.11	24000
A-1 Glider	0.29	40000
F1B Wakefield	0.30	40000
Open Rubber	0.23	41000
F1A Glider (A-2)	0.29	45000
100 S R C Glider	0.46	84000
F1C Power	0.54	90000

example) a rising pressure gradient or some surface blemish or irregularity. Once mixing of the air in the boundary layer commences, it is said that 'transition' has occurred, and the boundary layer becomes 'turbulent'. A turbulent boundary layer grows in thickness quickly and reaches a condition where it 'separates' from the surface. Beyond separation the flow forms a wake, which is a region of general turbulence drawn along with the aerofoil. At model RN this wake can have a thickness approaching the thickness of the aerofoil itself.

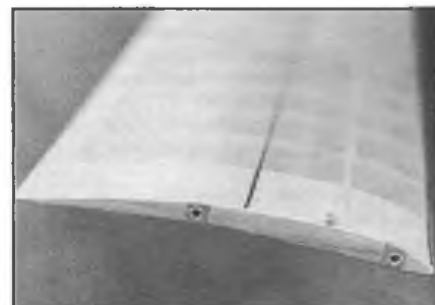
At higher incidence (or greater angle of attack) a further development arises. It is possible for the laminar flow to separate from the surface before transition to turbulence occurs. The turbulent boundary layer thickness grows rapidly and is able to reattach to the surface, so that a 'bubble' of recirculation flow is entrained with the aerofoil. A leading edge turbulator strip secures this effect but it can occur naturally on some thin aerofoils. Thin boundary layers give rise to 'short bubbles' which hardly change the aerofoil pressure distribution, although a region of constant pressure does occur within the bubble. Long bubbles are associated with a thick boundary layer, and can extend over most of the chord of the aerofoil, considerably influencing the pressure distribution. Bubbles grow in length with aerofoil

incidence, and a 'short bubble' can grow into a 'long bubble' at a critical incidence, dependent on Reynolds Number. Free-flight models operating below RN of 50,000 are within the conditions for long bubble formation.

It is the behaviour of these 'bubbles' which cause the dramatic curtailment of lift arising in the 'Free-Flight Window'. Three types of stalling have been identified, are illustrated in Fig.3 and may be described as follows:

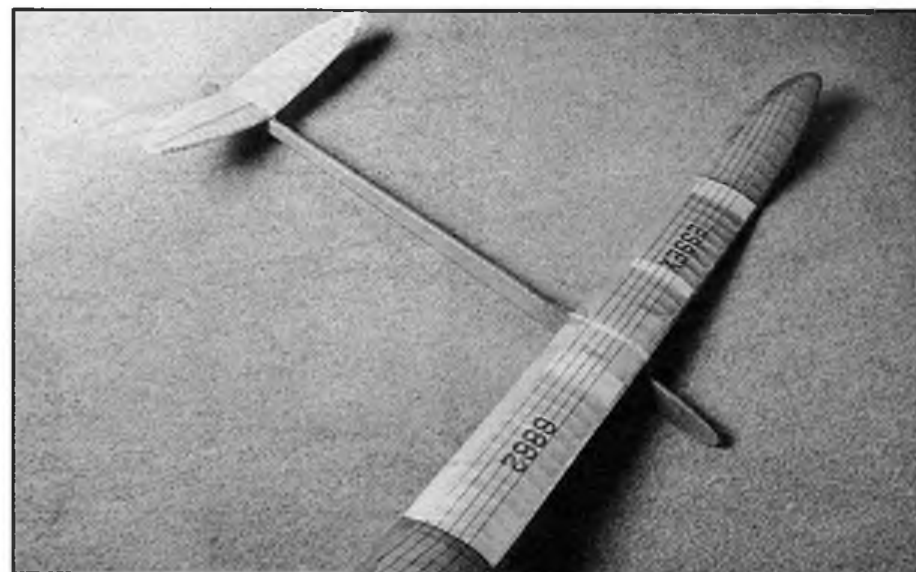
- Trailing edge stall**, where there is a gradual loss of lift at high incidence as turbulent separation moves forward from the trailing edge.
- Leading edge stall**, in which a sudden loss of lift arises due to the collapse of a short bubble which fails to reattach.
- Thin aerofoil stall**, with gradual loss of lift at lower incidence due to the lengthening of a long bubble.

Thus the control of bubble activity holds an important key to the development of aerofoils for free-flight models.



Heading: A new Open Rubber model by the author, fitted with single invigorators on the wing and prop. This column, top: Rubber model wing fitted with a turbulator and invigorator. Sharp, raked tip is intended to concentrate the tip vortex flow. Below that: The very thin aerofoil of the rubber model makes a two-piece, straight-dihedral, strut-braced wing necessary. Halves are banded together in storage to prevent warps. Two photos above: These props, fitted with invigorators, are for experimental flying.

Below: The author's F1A glider fitted with five wing invigorators.



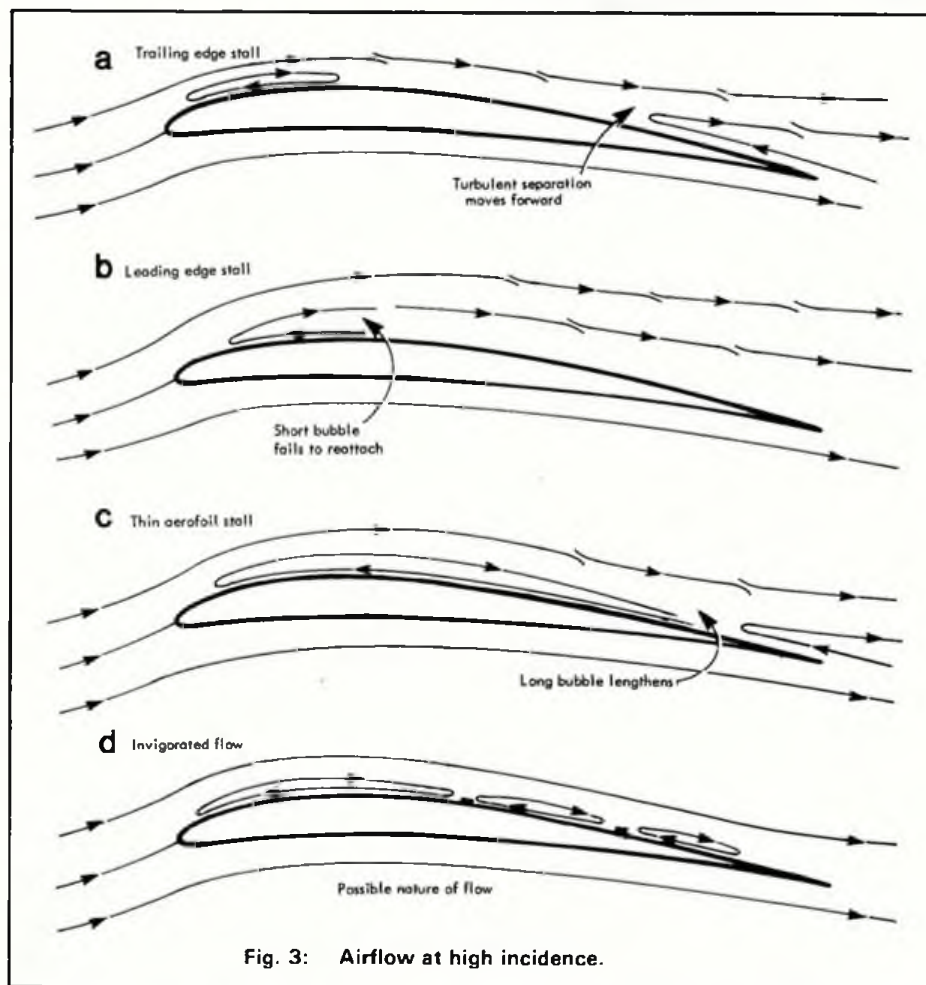


Fig. 3: Airflow at high incidence.

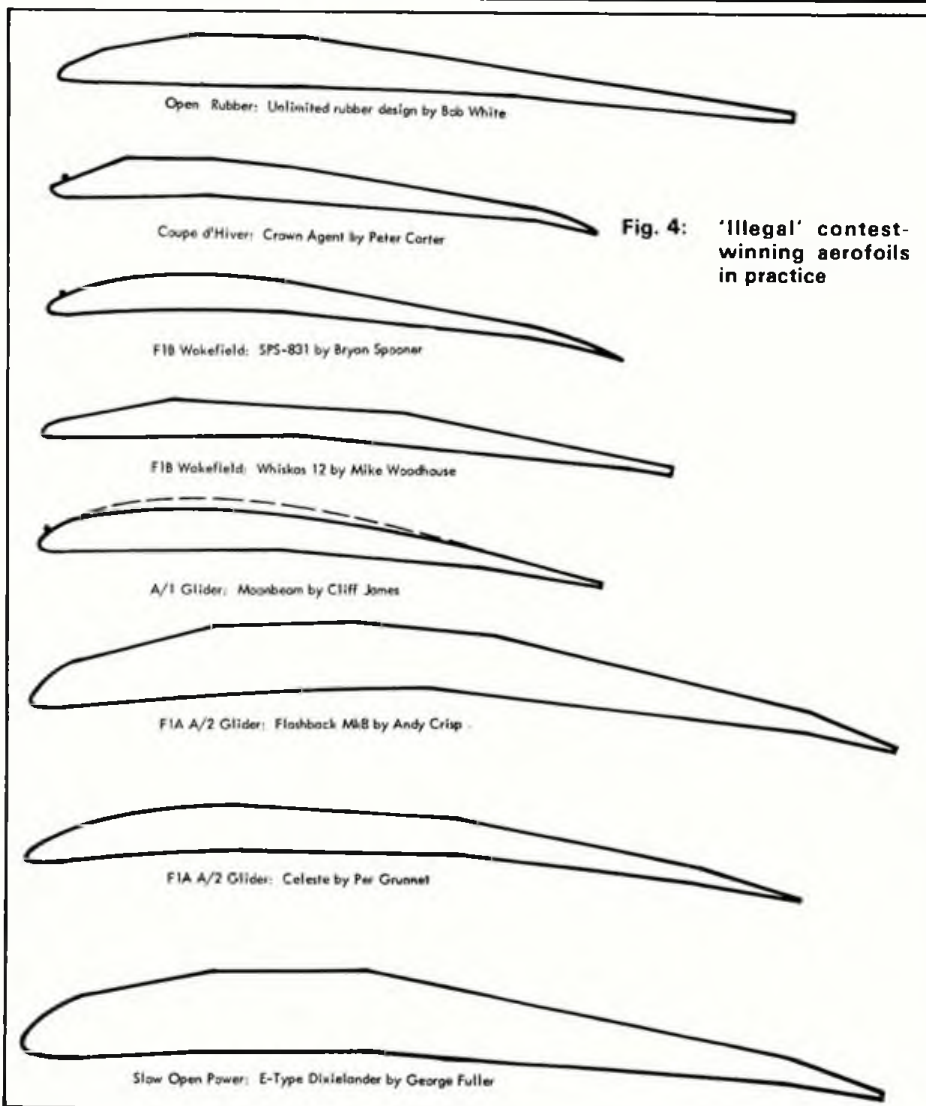


Fig. 4: 'Illegal' contest-winning aerofoils in practice

Invigorators

Where gliding performance is paramount modellers will use thin cambered wing sections such as Benedek 6356b type. Without additional assistance the lift of the section at the stall diminishes with the reduction of RN, and below RN 50,000 the decline is rapid. This is usually due to the onset of thin aerofoil stall with the dominance of long bubbles in the boundary layers.

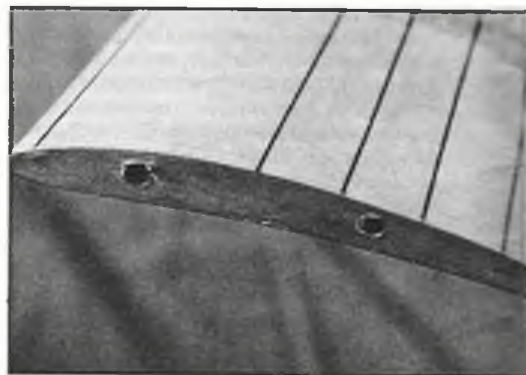
The application of invigorator strips behind the bubble has been found to have important effects, although the precise mechanism is not clear. It seems that as the stall is approached, the growth of the long bubble across the chord of the aerofoil can be arrested. The final separation is thus delayed and lift improved. If the bubble jumps past the invigorator, a further invigorator can re-arrest it, and thereby the use of several seems to be advisable. The best size and location of these devices is not certain, although it seems they have no useful effect ahead of 30% chord. Invigorators can be made from thin strips of adhesive tape, which permits easy removal and repositioning. There seems every reason to suppose that invigorators would be useful on tailplanes and propellers for rubber driven models, as well as on wings.

I must emphasise that whilst there is good evidence for their potential effectiveness, it will not necessarily be successful to slap invigorators on everything, anywhere. Some simple systematic experimentation should be tried. Having satisfied myself about their application to thin wings for open rubber models, I am trying a season's flying with invigorated propellers in 1987.

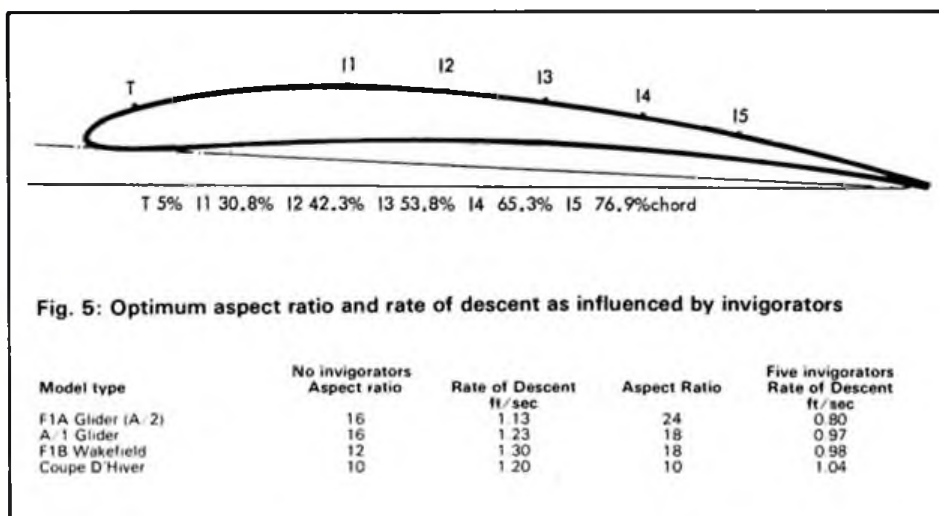
Gliding performance

For free-flight competition models, low gliding rate of descent is a design objective. The optimum trim condition is found quite close to the stall, at a point below which the aerofoil drag rises rapidly. Some models can be trimmed too close to the stall and 'mush' or descend rapidly without entering the stall properly; not recovering from it. My own A/2 glider, shown in the photos, would do this if not launched smartly from the tow. The application of five invigorators has corrected that problem, and made a discernable improvement to duration.

One of the principal influences on gliding duration is the aspect ratio of the wing. Whilst increasing aspect ratio will reduce the vortex drag of the wing, the effect of the smaller chord reduces Reynolds Number. Once this enters the region where it severely limits maximum



Aeromodeller



lift an optimum aspect ratio is reached. For an F1A, or A/2 glider this is usually found to be about 16. The effect of invigorators in delaying the deterioration of lift with RN can enable a higher optimum aspect ratio to be used, and it is in this direction that I believe invigorators will have their most effective application. This is not to say that some improvement cannot be attained by adding invigorators to a wing already optimum without them, but the gain in terms of duration is likely to be modest.

To assess the potential of invigorators some computational analysis has been undertaken, using test results obtained in a wind tunnel for the Benedek 6356b aerofoil. The results are given in the table at Fig.5. The optimum aspect ratio using invigorators is seen to be increased to 24 or possibly more in the case of the F1A glider, which might lead to some practical difficulties in design and construction. The improvement in rate of descent however is very significant, and if achieved would give a gliding duration of more than three and a half minutes from a fifty-metre launch.

In the case of smaller models the optimum aspect ratios are less, so there is less difficulty in construction. Indeed, in attempting to achieve very high aspect ratios in the F1B Wakefield, some designers seem to be going too far. For the F1B and A/1 glider, which are of similar size and wing loading, the optimum aspect ratio is at about 18 if invigorators are used. Wakefield duration could exceed five minutes, allowing that the advantage is effective in the climb as well as the glide, and thus double significance is assumed.

The Coupe d'Hiver operates at the lowest Reynolds Number of the principal outdoor free-flight competition classes and has an aspect ratio optimum at about 10, with or without invigorators. This type of model

owes its performance very largely to its low wing loading, and at the typical RN value of 24000 the use of invigorators seem particularly worthwhile.

Power duration models

When talking about gliding performance, one must not lose sight of the conditions pertaining for power models, where the choice of wing section is a delicate compromise between the requirements for climb and glide. For Slow Open Power and 1/2A models sections are usually thicker and less cambered than for gliders. The thickness choice is related to the achievement of adequate strength at light weight. Sections 9% thick (or more) frequently seem to benefit from top surface irregularity caused by the wing spars. It is not clear if the aerodynamic mechanism is the same as for invigorators. Of course in the near-vertical climb phase, wing lift (and hence drag) is not required so it is trimmed away by using variable incidence tailplanes and other means. The pitching moment of a cambered wing does require equal and opposing wing and tail loads for trim, so a limitation of camber has some justification.

The F1C power model highlights most the compromise problem. As very high speeds must be attained in the steep climb thin, low cambered sections are usually chosen. The problem of torsional stiffness being adequate to prevent flutter is critical, and some experts now adopt aluminium alloy foil-covered wings. Although the glide RN at about 90000 is

favourable, the high wing loading and small camber imply a severe penalty in gliding rate of descent. This has led some fliers to experiment with trailing edge flaps, deployed through a small angle of about 10 degrees for the glide. This elegant solution is not without its drawbacks in terms of mechanical complication, trim unreliability and reduced wing torsional stiffness.

The F1C power model has a phenomenal performance, and it is questionable as a matter of principle if one should seek to better it. However as a World Championship Class, the individual competitor must seek improvement. The leading edge flap does seem to have some possibilities. It is as effective as the trailing edge flap, but would need more angular movement. As there would be less effect on wing pitching moment it could prove more consistent and reliable in operation. Indeed, a fixed leading edge droop could be adopted as on some full size aircraft.

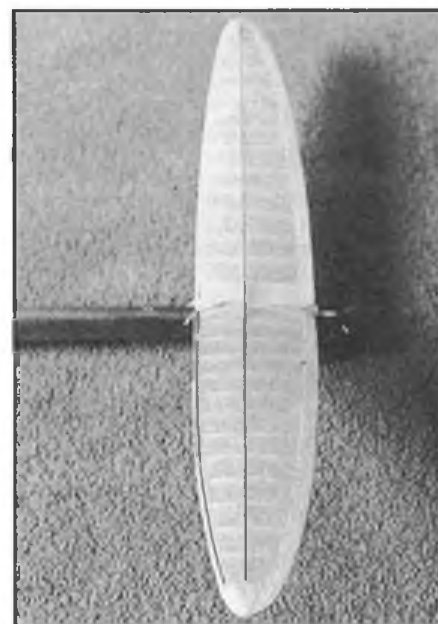
Which section?

Whilst it is obvious that the right kind of section needs to be chosen in terms of camber and thickness, it is becoming clear that the actual surface shape and treatment is equally important. Aeromodellers are aware of this and try to take advantage.

Tissue covered wings can have sections very different from the theoretical shape. Where the spars are closer together than the ribs, tissue covering will become essentially flat between ribs. The sections which result from some typical construction techniques are illustrated in Fig.4. Where close spars are used at the surface, the effective section is formed by series of straight lines. These are all 'successful' sections as used on contest winning models.

The forward upper surfaces is a most important feature of the section, and curvature can be assured by close pitch ribs or riblets. If one accepts the reality, then very workable sections can be drawn, using some straight lines, with structural weight saving, and simplified construction. The boundary layer and wake thicknesses occurring also throw question on the need for sharp trailing edges. Of course these are 'illegal' thoughts!

Left: Benedek 6356B wing section, showing location of turbulator and five invigorators. Centre: Wing-tip position of turbulator and five invigorators. Right: Tail turbulator and single invigorator.



FLYLEAVES

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



Bentley BR2

by L. K. Blackmore (published by Yalanga Pty. Ltd., P.O. Box 141, Buderim, Queensland, Australia. Available from Beaumont Aviation Literature, 656 Holloway Road, London N19 3PD. Price £11.95 plus £1.90 p&p).

The impact of Lew Blackmore's Bentley Rotary running at full tilt in the Hampton Room at Wembley Conference Centre during two Model Engineer Exhibitions has already stimulated world-wide interest in this remarkable aero engine. Lew described, and Professor Chaddock provided a finishing touch to all the mechanical info in a long series of articles for Model Engineer, and many working models have been made from the drawings through the Plans Service. Now Lew has published the whole story in this 96-page hard-cover book. It is complete with an introduction to the full-scale BR2, revealing the basic cross-sectional drawings which were all he had to work with then undertaking the formidable project which earned a Gold Medal in 1981 and the Duke of Edinburgh Challenge Trophy in 1982.

The story is all the more remarkable when one considers Lew's background, which he would readily confess to being more pastoral than technical. This, together with his location in Queensland and truncated connections with any reference sources in the UK, makes the effort all the more admirable. The book incorporates all detail from the component parts to propeller, a three view drawing of the Sopwith Snipe for which the engine was originally designed, a reproduction of

the original Air Publication with maintenance and operation of the full size and excellent photographs which make the model very difficult to distinguish from the full scale. To be thoroughly recommended as a project book or simply for the internal combustion enthusiast to browse through with delight. **RGM**

Ultralights - The Early British Classics

by Richard Riding (Patrick Stephens Limited, £19.95, ISBN 0 85059 748 X.)

Ultralights - the very word evokes lazy thoughts of low-powered 'motorcycles of the air' puttering around in summer sunshine, perhaps with some gentle competition indulged in at the end of the day. True only in part, for here in just over 250 pages is the reality; the story of the intense motivation to get aloft on minimal power, or to succeed at the Lympne Trials explained in type-by-type chronological (and sometimes heartbreaking) detail. Richard Riding's Aeroplane Monthly series British Pre-war Ultralight Aircraft provided the nucleus of the idea for this book, but this is no mere rehash of existing material. Ninety aircraft from the well known DH53 and Pou du Ciel to the strange and obscure Salmon Tandem and Lowe Marlburian are enthusiastically portrayed, many for the first time from this pen, and a wide selection of photographs and drawings plus a section on engines for ultralights add depth to the account. The importance of the Lympne Trials is properly stressed, and the rules for these events are given in full, the better for the student to understand the reasons for the creation of the more freakish machines.



With a volume of such scope the dilemma has clearly been what to leave out, so the result is a packed concentration of effort. Tantalising too - for hints are given that more than one craft may well still exist, rumoured slumbering until rediscovery...

The aeromodelling reader will be enchanted by Ultralights, for he will then dream of future projects galore. If he embarks upon his own research he may well discover more pieces to add to the jigsaw; and if the study of this labour of love results in such a reward then that is to the benefit of all. Unreservedly recommended. **GC**



International Peanuts and Pistachios: Volume Number Two

compiled by Bill Hannan (available directly from PO Box A, Escondido, CA 92025, USA at \$3.95 plus \$1.25 surface mail; \$2.75 air mail to Europe. ISBN 0 9611652 4 3).

Hard on the heels of Volume One (reviewed in April's Flyleaves) comes the next in Bill Hannan's slim-volume series for the small-scale Rubber enthusiast. The pot-pourri approach to content is well suited to the subject's charm, and this time a couple of full-size plans substantiate the froth of comments, helpful hints and subjects for consideration as future projects. Drawings are well-chosen. We particularly liked Harry Robinson's artwork for the Caudron Type N Monoplane - its chordwise-rigid/flexible flying surfaces a challenge to any builder;

while the mini-Max ultralight with upright single-pot Rotax engine is essentially no more than 24 feet of model aeroplane! This lively look encourages the builder to photograph his subject, too; and who knows, your latest choice could end up in the photo-gallery feature of Volume Three! Great fun... GC

De Havilland Aircraft since 1909

by A. J. Jackson; revised and updated by R. T. Jackson

Gloster Aircraft since 1917

by Derek N. James (Putnam: £20 and £18 respectively). ISBN 0 85177 802 X and 0 85177 807 0).

The depth of research contained in the Putnam reference series is remarkable. Any aeronautical reference library worthy of the name should contain the full set. Good news is that since a relatively dormant period, during which time the second-hand price of early Putnams has marked them as appreciating classics, many are being re-issued by new overlords Conway Maritime press. De Havilland Aircraft and Gloster Aircraft are the first to come back to our attention. Both are admirable, the vast quality of facts and figures being happily welded into readable text supported by compelling photographs in approx 450 and 550 pages respectively. The Gloster book appears totally unchanged from its original form;

nevertheless, the myriad of still-born Meteor and thin-wing Javelin projects are fascinating to examine, and the momentous tale of the test programme of the TC33 'Gloster giant' - surely a candidate for quadruple electric power - is something to read twice! And how an aircraft company of such output came to be absorbed into an industrial group manufacturing vacuum cleaners and drinks vending machines is a sobering consideration which should be pondered by every reader.

Revisions to De Havilland Aircraft show

the mushrooming interest in preservation and replica building. It is mentioned that the DH88 Comet overhaul to flying condition, begun in 1976 'would take eleven years to complete'; a pre-restoration-flight prediction that deserves an award for confidence!

A fine selection of photographs is adequately reproduced in each volume though it is a pity that the original standard seems gone forever. Traditionalists will dislike the new dust covers; that for the DH book is, frankly, an unfortunate daub, but the contents of both books is matchless. GC



What's on...Next month, the full end-to-year list

22-23rd August
SCOTTISH F/F NATIONALS
Venue: Newbiggin, Nr Carnwath.
Campsites nearby. 22 August F/1 Day each class five rounds. 12 noon start. 23 August: O/R, O/G, O/P, All-In Mini, Vintage. 10am-5pm. Contact: Ron Sabey. Tel: 0698 429170.

23rd August
INDOOR AT CARDINGTON
Fun Flying and All-In index (best single flight). Contact: Bob Bailey. Tel: 0438 723 642.

29-31st August
1987 SMAE RADIO CONTROL, CONTROL LINE AND FREE FLIGHT (SCALE) NATIONALS
Venue: RAF Barkston Heath. Contact: SMAE. Tel: 0633 518500.

6th September
SMAE 5th AREA CENTRALISED MEETING
Team Power for Neil Trophy; F1B Gutteridge Trophy, A/1 (no trophy). All at Area Venues. Contact the SMAE Comp. Sec or Area Comp. Secs.

6th September
SHUTTLEWORTH MODEL GROUP SILENT DAY
Old Warden Airfield, Biggleswade, Beds. 9am-6pm. No i.c. engines to be run. Contact: Mike Staples. Tel: 0223 241978.

6th September
TEESSIDE MFC SCALE & VINTAGE MEET
Visitors welcome but Comps restricted to TMFC members. Contact: Stuart Smith. Tel: 0642 764842. (essential as no further details given)

13th September
INDOOR AT CARDINGTON
1988 W/C Team Selection Trials (third three flights in rounds). Fun flying if no interference with comp flights. Contact: Bob Bailey. Tel: 0438 723642.

13 September
WINTHORPE R/C MFC SCALE FLY-IN
Venue: Winthorpe Showground.
Contact: J. Shaw, 68 Macaulay Drive, Balderton, Newark NG25 3QJ.

13th September
SCOTTISH AEROMODELLERS' ASSOCIATION T/R COMP
Open Goodyear, Class II Goodyear, 1/2A, T/R, FAI T/R. Venue: Newhouse, Contact: Neil Munro, 30 Lamberton Court, Pencaitland, East Lothian EH34 5BL.

13th September
TOWNER TROPHY FOR THERMAL SOARING
Venue: Golden Cross, Sussex. Contact: N. Couling. Tel: 0323 503116.

20th September
INTERNATIONAL R/C SCALE EVENT
Venue: Odiham. Contact: Pete McDermott. Tel: 025126 3216. Note: NO other events at this venue!

20th September
THREE KINGS C/L SCALE DAY
Old Croydon Airport, Purley Way, Nr Croydon, Surrey. FAI Scale and Profile classes. Silencers and insurance essential. Contact: Derek Bird. Tel: 01-874 8394.

20th September
INDOOR AT CARDINGTON
Fun flying; reserve date for 1988 W/C Team selection Trials if required. Contact: Bob Bailey. Tel: 0438 723642.

27th September
DOUG BLAKE TROPHY C/L STUNT COMPETITION
Venue: Slip End, Luton. Contact: Glen Alison. Tel: 0923 772675.

27th September
SOUTH MIDLAND AREA THERMAL SOARING RALLY
Venue: RAF Weston-on-the-Green, BARCS League and R/C Chuck Glider. Pre-entry £2.00 + SAE. Contact: J.H. Shaw, Alvere, Wirney Road, Freeland, Oxford. Tel: Freeland 881350.

28th September
HUDDERSFIELD ANNUAL THERMAL CROSS-COUNTRY EVENT
To be held over a 10-mile course. Teams of four eligible. Start from Birdsedge flying site. All frequencies. Entry £2.00. Contact: Ian Roebuck, Keips, Dunford Road, Holmfrith, West Yorks.

27th September
ROLLS-ROYCE VINTAGE FLY-IN
Optional R/C-assist, Texaco and flying fifteen events, optional C/L Old Time Stunt and Midge Speed. Venue: Rolls-Royce airfield, Hucknall, Notts. R/C Contact: P. Thompson, 8 West Terrace, Hucknall, Notts NG15 7GD. C/L contact: T.P. McDonald, 351 Uttoxeter Road, Mickleover, Derby DE3 5AH. Tel: Derby 511273. SAE with enquiries please.

27th September
WHARFEDALE 1000
Class B T/R, including Vintage. Venue: RAF Dishforth. Contact: Jeff Smith. Tel: 0532 663432.

27th September
HEMINGFORD ABBOTS VINTAGE MEETING
Vintage Lightweight Rubber, 36in max. span; separate comps for Free-wheel and Folders, Achilles comp, Senior and Junior if more than three Junior entries, Jetex/Jet-X 50 duration event. Modern designs permitted. Also F/F power sport flying, vintage R/C (possible informal comp for 'most authentic model'), Vintage Stunt and Midge Speed. F/F Contact: Chris Strachan. Tel: 0480 66815. R/C Contact: Robin Gowler. Tel: 0480 83509. Nominal fee for use of field.

4th October
CROOKHAM F/F GALA
Open Power, Open Glider, Open Rubber, All-in FAI, 10am start. Venue: Beulieu Old Airfield. Contact: David Cox. Tel: 01-397 6438.

4th October
HESWALL MAC OPEN C/L COMPETITIONS
F2B Aerobatics, Novice/Junior Aerobatics (10% advantage to Juniors). Competitions sponsored by Neston Computers. First prize in F2B is a telephone; plaques for top three in both comps plus top Junior. Silencers and insurance essential. Entry: £3.50 (Seniors and Novice Adults); £2.50 (Juniors - under 18). Contact: C. Humphreys. Tel: 061 639 1453 (Mon-Fri, 9am-5pm) or write: 249 Rake Lane, Wallasey, Wirral L45 5DJ.

10-11th October
RAFMAA INDOOR 1
Venue: RAF Upavon, Pewsey, Wilts. Informal competitions on Sunday for Portsmouth Duration, Scale Pylon Race, Indoor Helicopter Climb. SMAE membership and prior contact essential. Details from: Andy Sephton, 3 Bury Mead, Codford, Warminster. Tel: 0985 50576.

11th October
LONG MAN TROPHY (ROUND TWO)
R/C Slope Soaring. Contact: T. Parris. Tel: 0323 643630.

11th October
EASTBOURNE MAC THIRD R/C VINTAGE MEETING
Venue: Golden Cross, Sussex. Contact: D Marchant. Tel: 0323 504538.

11th October
SCOTTISH AEROMODELLERS' ASSOCIATION T/R COMP
Open Goodyear, Class II Goodyear, FAI T/R. Venue: Newhouse. Contact: Neil Munro, 30 Lamberton Court, Pencaitland, East Lothian EH34 5BL.

11th October
HUDDERSFIELD OPEN VINTAGE RALLY
F/F Vintage F/F Vintage C/L, R/C Assist. No formal contests. Non-vintage F/F limited to 0.8cc diesels; silencers not required on vintage models with appropriate engines. Venue: Whiteley Common. Contact: essential for frequencies; Colin Thompson. Tel: 0484 850422 or 851433.

MIND THE LINES

Andy Brough picks up the vintage control-line handle



Back in the late 40s one of the few British control line stunt models notable for good looks was Cyril Shaw's Dervish (not to be confused with the French biplane of the same name). Cyril's Dervish was designed around a Mills 1.3 (what else?) and with an all up weight of eight ounces the 28in. span model had a wing loading of only 8.6oz./sq.ft. - a remarkably low figure even for its day when light wing loadings were vital for performance.

The design was published in Ian Allan's Model Aviation series. A reduced drawing was accompanied by some full-sized parts. A copy of the original article would enable a replica to be quite easily built and performance would be guaranteed if a modern 1.5cc diesel is fitted. Where a Mills is used the inevitable problem of prop sizes is with us; an 8 x 8 being quoted in the 1949 Aeromodeller Annual. These high-pitched props are required to compensate for the slow rpm of the Mills when compared with the modern diesels, although some vintage diesels run very well on props with low pitch; Elfins, Javelins and the ED Hornet for example. At a pinch an 8 x 6 would probably do because my 8.1/4oz Small Fry flies OK on 40ft. lines, its Mills thus equipped.

The bubble canopy looks quite modern so a visit to one's local model shop would probably provide a suitable sample

without having to resort to moulding. A nice touch is the (typical for the era) optional or drop-off plug-in undercarriage.

If the reduced drawing whets your appetite then I can supply (for an SAE) a copy of the original article from which a model can be built.

Letter from down-under

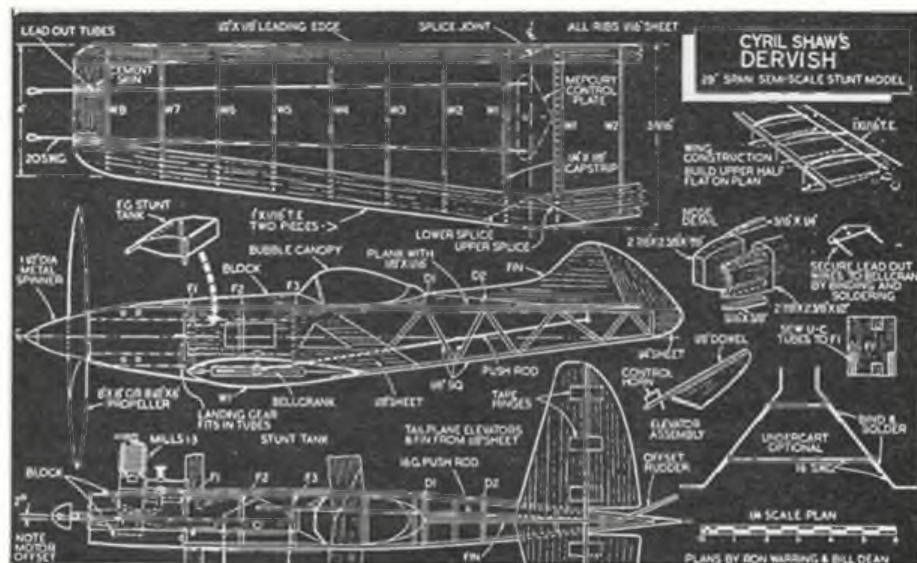
Correspondence is always welcome, particularly when it illuminates a facet of our hobby unfamiliar to the majority. Overseas news falls into this category, so John Tidey's letter from Broadmeadow, N.S.W., Australia is of interest to all... Over to John:

'While reading through some of last year's *Aeromodellers* (yes, I finally have found time to read them more thoroughly) I was particularly interested in Andy Brough's vintage control line column 'Mind the Lines'. As an 'old' aeromodeller from the early fifties I recalled many of the designs and models mentioned in the magazines for it was with these machines that my fellow club mates and I learnt to fly and compete. The models were mainly from APS plans but I remember my first C/L trainer was a KK Champ with a Mk II

ED Bee which I still have. Our club was the Debdennairs MFC and our flying field was at Grange Farm near Debdenn (now a health resort I believe). I used to travel to the field by bus every Sunday to fly my control line and free flight models. Models with names like Skystreak 26, with a Sabre 1.49; Ranger, Stunt Queen, the APS Rascal (one of the Ron Moulton's excellent designs), APS Pedro, and many more which I designed myself. All long gone but not forgotten. I also built an APS Sword with an AM 35 up front which I flew in the last of the Enfield C/L Rallies circa 1959. My last control line built in the UK was a Mercury Monarch. I won the kit for being the best junior in the club for 1959 but I had to leave the model behind when my family emigrated to Australia. I still remember the model - although it's funny how they always seemed bigger in those days.

However, since being a foundation member of SAM-Aussie I am happy to report we have now formed a control-line Vintage section. Our set of rules is based on our first MAAA control line stunt rules compiled by 'veteran' stunt flyer Monty Tyrell. Rules are very similar to the ones shown in the May 1985 *Aeromodeller*. Our problem here in Australia is one of obtaining suitable engines for vintage models. Replica types such as the PAW or ED 2.46 are very expensive and genuine vintage engines are rare, usually hung onto by collectors; so we are limited as to what we can use.

'At the moment I have a Veron Combateer (circa 1955) built from an original kit with a PAW 249D, which I purchased in England in '78, up front. I also have an American stunt biplane called a 'Foxy Special' designed around 1950 by Dick Ormiston. Mine has a Webra 61 as the original had a Fox 59 but it is a bit too strong and pulls like a Mack truck! However, the model is fitted with a 'J'



Roberts throttle control system so most of the manoeuvres are done at two-thirds power, and it's nice to be able to land if your arm gets tired.

'My next C/L project is to be an APS Thunderbolt recently acquired from the excellent APS. This model was always a favourite of mine as a youngster with the Debdenairs. Our then club president Eric Allan made a magnificent job of one finished in yellow tissue with red trim (old 'blood and custard' as an Aussie mate of mine used to say). I hope to do as good a job as Eric did. It will be in his memory as unfortunately, like so many of our mates from those days, he has left us for wider flying fields...

'If anyone can help out with obtaining plans or engines I would much appreciate it as there are many designs that I cannot trace, such as the Veco Chief and early Thunderbird, or the little KK Scout biplane. If anyone out there has an old diesel or early glow engine they are willing to part with please drop me a line and we might be able to arrange a trade or something.

'Thank you for bringing back old



Heading shot is of Andy's Merco-powered APS Thunderbolt - a Bill Morley design also favoured by Aussie John Tidey. At left: This neat Dervish - our Model of the Month - was seen at the last, wet, C/L Nats. The owner isn't smiling but is gritting his teeth during the worst of the downpour. Below, centre: John Tidey's PAW19D Veron Combateer was built in 1980 from an original kit. Bottom: This is unusual John's Foxy Special biplane is a design originally used by a touring Stateside stunt team of Dave Elsey, Ted Lecurev, Dick Ormiston, Andy Sherber, Bob Waroway, Joe Ziomek, Don Gaskell and Don Munroe - the 'Livonia' Rib Crakers Demonstration Team'.

memories. Keep up the good work especially from an historical point of view. It would be a shame to lose it all to the past; and I am sure some of our younger modellers find vintage-type C/L as fascinating as I did all those years ago.'

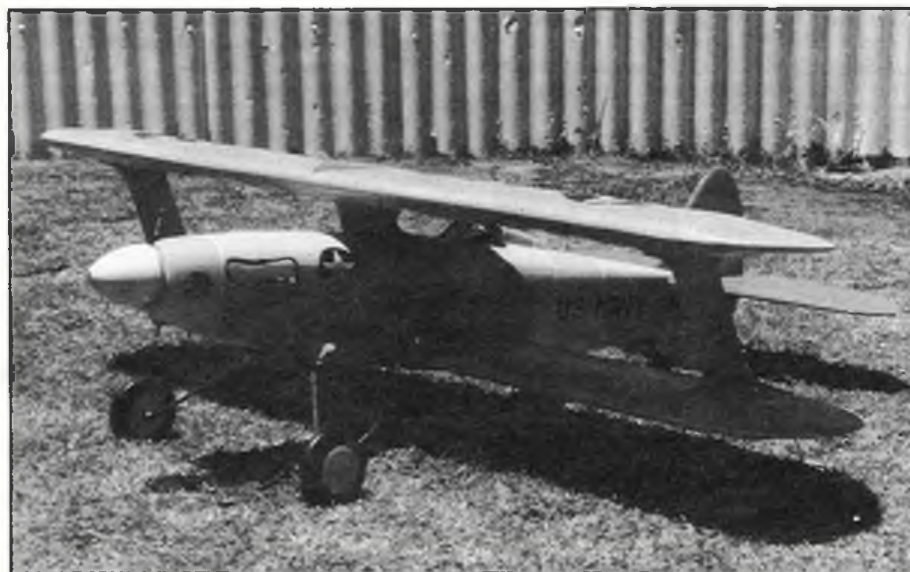
I'm glad John likes the Thunderbolt, as I think it was one of the better stunt designs of the 50s; 1953, I think. In fact it's still competitive today - in Novice Stunt, at least. I flew mine fitted with a Merco 29 in a SMAE event and came 2nd. As I recall, Bill Morley, the designer, and Frank Checksfield used the model as a test bed for their own-designed .29, the now famous and aforementioned Merco 29. This name stood for Model Engine Research Co., but as far as I know it was always produced by D.J. Allen Engineering, the home of AMs. Now of course, Mercos are produced by Forest Engineering.

Beautiful Barkston

Sunday May 10th saw a gathering of aeromodellers at Barkston Heath on what may well be remembered as one of the best days' outings this year. It was a little breezy earlier on but by the mid-afternoon it looked as though someone had shot the windsock, as it hung down quite still. What was the occasion, you ask? It was in fact a perfect example of harmony amongst aeromodellers involved in three separate areas of activity but spaced only a few yards apart. These were: an SMAE F/F area event, a vintage F/F fun-fly and ratio comp plus a vintage team race and general vintage C/L fun-fly. We all flew from the C/L (i.e. western) end of Barkston and whilst we all respected each other's patch, by the same token one could see and appreciate everything else. One wonders if the same would have been true if R/C had been involved - and indeed whether the C/L Nats shouldn't be amalgamated with the F/F Nats. There seems to be an affinity between all non-R/C modellers, or is it my imagination?

My actual involvement was with F/F vintage but I had a good natter to most of the C/L lads, most of whom were the 'usual crowd'. One disturbing sight was Mick Taylor, winner of most vintage stunt comps, practising and looking as impressive as ever. Sickening, isn't it! Still, Ray Gordon brought us down to earth, literally, as he thumped his new Ambassador; but it's repairable, I imagine. The sound of a roaring sparky turned a few heads as Gordon Counsell flew his McCoy powered Zilch with style.

A good day!



THE FIRST MEETING of the season at Cardington started off with a change to the normal route to the sheds. Because of the purchase by Airship Industries of No. 1 Shed, in which the meeting was held, the customary route to the sheds no longer exists! The sketch published in *Aeromodeller* to show the way is unfortunately out of date; the new way is to go past the main gate of the airfield in the direction of Hitchin for 400-500 metres and then turn in at the double gates. Direction signs will be on site to indicate which shed is being used.

The weather, which had been very good the previous day (for the Cup Final and SMAE Council Meeting!) regrettably took a turn for the worse with almost continuous rain from midnight onwards. This was particularly unfortunate for the tissue-covered Fly-Rod models which were competing for the main prizes of £100, £30 and £20 very generously donated by Laurie Barr. The tissue covering soaks up the moisture as does the wood structure, and the air soon became very cold and damp with a temperature of about 11°C - the same as the salt mines at Slanic!

Attendance was very encouraging despite the weather with 15 entries in the contest and many others flying for fun or participating in the All-in Index contest. This type of contest works in the same way as Handicap Speed at the August Nationals, with the flight time of each class of model being measured against either a target time or the current UK National record. Best percentage score wins.

The Fly-Rod event soon hotted up with people generally improving their scores as they got to grips with the conditions and with actually flying under Cardington's 150ft. ceiling which poses its own problem with the need for plenty of height to achieve good times; a complete contrast to low-ceiling EZB.

Who did what?

Well known names soon came to the front; Vic Dubery and Ted Buxton (who was over from LA for a week) vying with Brian Roberts who had been second in the last Fly-Rod event. Brian took the lead immediately with very consistent flying (two flights of 10:20) but the damp must have taken over eventually for he wasn't able to improve. Vic Dubery who had been five seconds behind got it all together with

CARDINGTON CAPERS



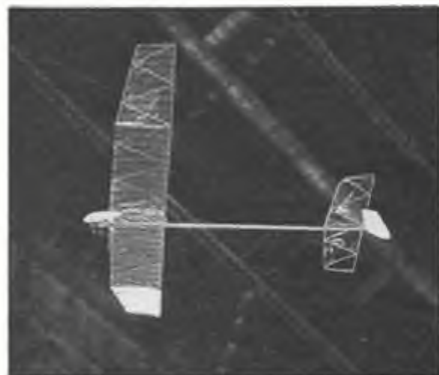
Bob Bailey reports on the first, chilly Cardington Indoor meeting of '87

a very fine 11:15 for the highest time, winning with one attempt to spare. Brian was thus second again. Third was Ted Buxton who had an up-and-down day, his best flights being the second and fifth. Once a loose tailplane mounting had been identified (this had prevented his model from climbing effectively) Andrew Wheddon went from strength to strength with two excellent flights to take 4th place. No mean achievement for a Junior flyer.

Index was relatively poorly supported but there was a good variety of models. Brian Roberts reached 72% with one of his 10:20 flights, Don Reece, flying a very elegant Peanut Duration, got 3:45 for 67% on his first Cardington visit, and close behind again was Ian Dowsett who had a mixed day with his CO₂ Duration but

managed a creditable 7:45 in the inclemently cold conditions to gain 60%.

A few stalwarts, including myself, stayed on to do some trimming with EZB, F1D and Peanut Duration but the damp caused droopy tailbooms and a collapsed motor stick on my EZB - the stick had seemed perfectly OK at home! Nevertheless a good day's flying - hope the cold didn't put too many off!



Indoor mixture! Heading: Mark Benns happy with his EZB at the Indoor Nats. Below: CO₂ contrasts - Ian Dowsett's Duration model and a delightful quintuplane by Robin James.

17th May

All-in Index: 4 entries

1	Brian Roberts	Fly-Rod	10:20	72.3%
2	Don Reece	PND	3:45	66.6%
3	Ian McDermott	CO ₂	7:45	59.9%
4	Ken Bates	Fly-Rod	6:54	48.3%

Fly-Rod event: 15 entries

1	Vic Dubery	10:19 + 11:15	=	21:34
2	Brian Roberts	10:20 + 10:20	=	20:40
3	Ted Buxton	8:29 + 9:50	=	18:19
4	Andrew Wheddon	8:22 + 8:50	=	17:12
5	Ken Bates	5:58 + 6:54	=	12:52
6	Dennis Bird	7:00 + 5:47	=	

Weather: Very damp and cold (11°C)

DOUBLE TOP



Embryo Endurance is popular Stateside — here's Dick Howard's twin to fit the rules

HERE IS a simple to build, easy to fly twin for modellers eager to get into the realm of multi-engine free flight.

Double Top was designed to fly in Embryo class events to show their feasibility. Actually, because the rules limit wing area to 50sq.ins., a twin, with its added drag and extra weight, is at a definite disadvantage; but over the past three-and-a-half years, I've had many flights of over a minute, and a 2nd and 3rd place finish with the model shown here.

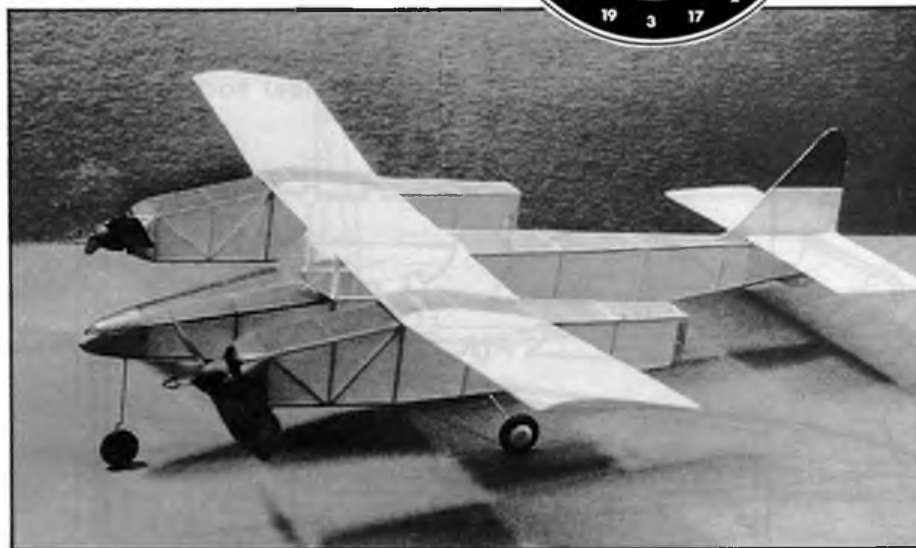
Building Double Top follows conventional procedures, so rather than step-by-step instructions, suggestions and options will be given.

If the model is not intended for competition, the addition of one bay to each outboard wing panel will improve performance. It is important to note that the upper longerons for the fuselage and nacelles follow the same outline at the point of wing attachment thus ensuring easy alignment upon assembly.

The use of doublers at stations C & E strengthens the fuselage in critical areas and helps to obtain a 'square' frame.

Wing construction using conventional ribs could be used with very little weight penalty, but I prefer the 'cracked rib' method as shown. It's both easy and strong. A stronger wing will result from notching the trailing edge and main spar by 1/16in for the top and bottom of each rib.

My first model was built with tricycle U/C gear, and will thus take off readily from a ten-foot runway, but one of the Embryo rules states 'the model must ROG from a card table, from a 3-point rest' and the nose-down attitude of the trike-gear model makes this a bit 'hairy'. Weight savings and increased performance would be obtained by the tail-dragger



mode, as shown in the framework photos.

Commercial plastic props can be used by adding a little downthrust to the right hand prop, but I prefer to make my own contra-rotating propellers with blades cut from plastic dairy food (cottage cheese) containers. Blades are cut at a fifteen-degree angle, right or left depending on rotation. ('Left' for normal rotation and 'right' for opposite). Blades are set in 45-degree slots in balsa spinners with cyano adhesive.

Wind 'em up!

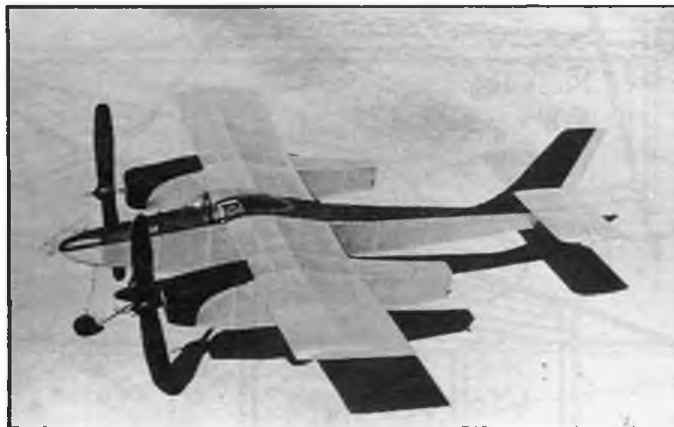
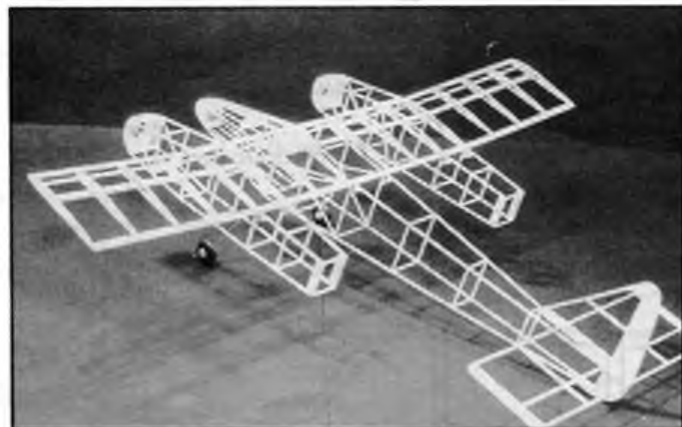
Two loops (four strands) of 1/16in. FAI rubber 20in. long (each motor) should give a prop run of 40 seconds on 1100 turns. Flights of 50 seconds to four minutes have been timed, but the average is 1 minute.

The best way to hold the wound prop while applying turns to the second is to run a bamboo skewer through the winding hook and under the fuselage. To remove the skewer, rotate the prop against the turns and let it drop out. To launch the model, hold both props with one hand spanning the fuselage nose and release in normal fashion.

Go on - build your Double Top and tell us your highest-timed flight!

Fancy Embryo Endurance? Here are the rootin', tooting Stateside rules...

- 1 Not over 50 sq. in. of wing area for monoplanes or 70 sq.in. for biplanes; 45 sq. in. max for largest wing area. Tail area not to exceed 50% of wing area.
- 2 Fuselage volume to enclose a space of $1\frac{1}{4} \times 1\frac{1}{2} \times 3$ in or larger.
- 3 Wing and tail to be built up, covered on both sides with Jap tissue or equivalent.
- 4 No folding props. All models to be rubber powered only.
- 5 Model must ROG from a card table top *unassisted* from a three-point rest.
- 6 Landing gear legs must have 3/4in. diameter wheels, or larger.
- 7 Four attempts for three official rise-above-table-top level flights.
- 8 Highest flight total plus bonus wins. Flyoff to break ties.
- 9 A bonus for the following details will be given: 5 sec. for a raised cabin or windscreen with open cockpit and headrest; 3 sec. for three dimensional wheel pants; 1 sec. for three-dimensional exhaust pipes.



Heading: Purposeful lines of Double Top look set for sharp performance. Can you beat a minute with yours? Tell us if you do! Left: Alternative tail-dragger configuration makes for better ROG's. Here's another 'twin' approach to the rules. Experiment!

Soft sheet spinners

1/32"ply facing

3/8"sheet
hollowed
Plastic
bearing plug

Noseblock
3/8"sheet each side

DOUBLE

Weight
(less rule
50sq. i

BY D

Soft 1

TOP

Soft
she

1/8"x3/

Centre

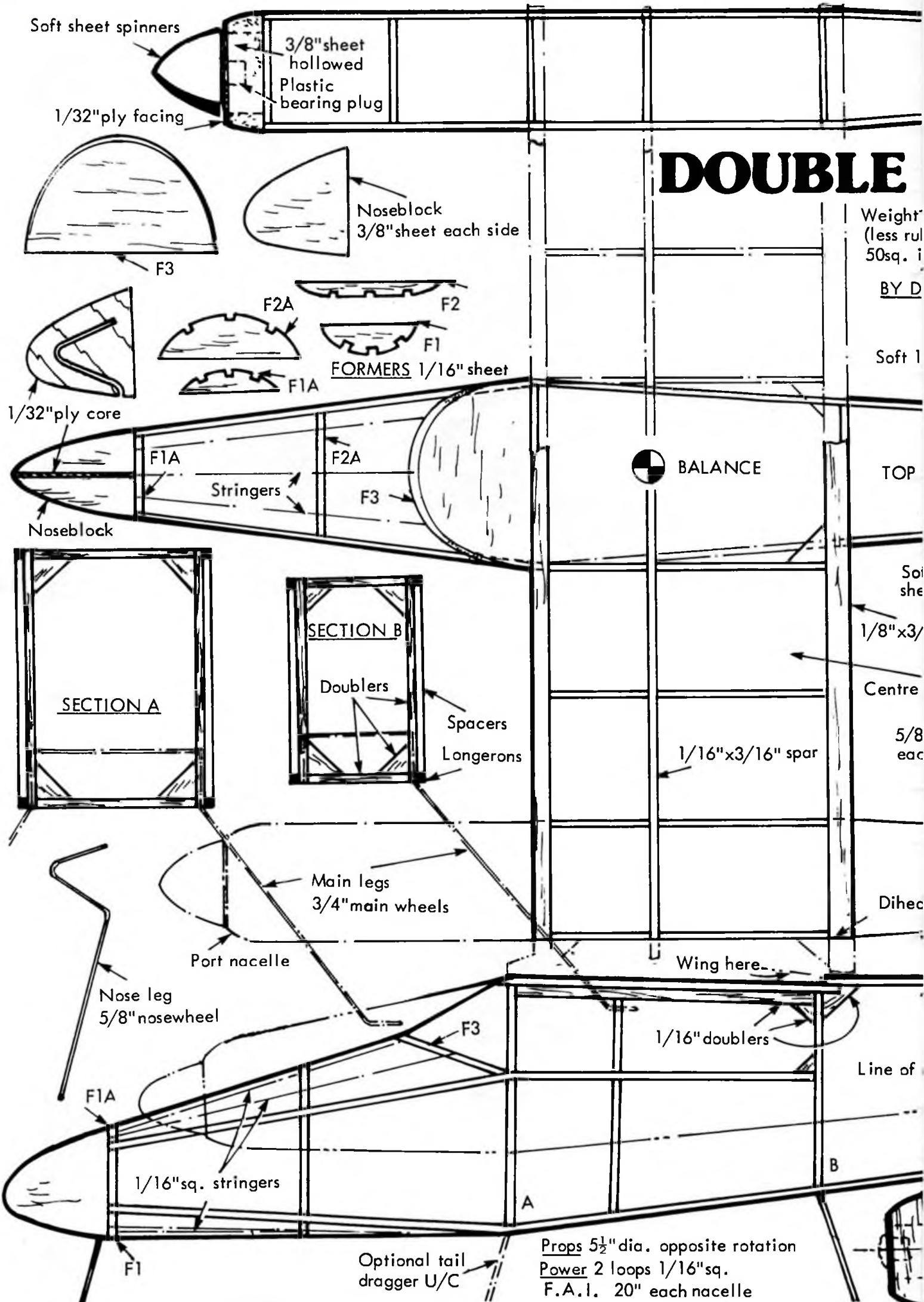
5/8
each

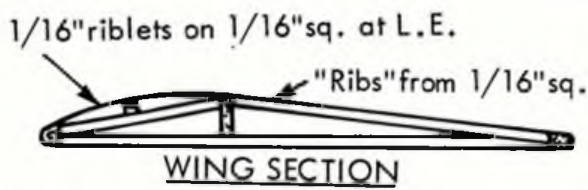
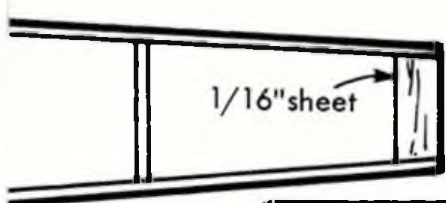
Dihec

Line of

B

A



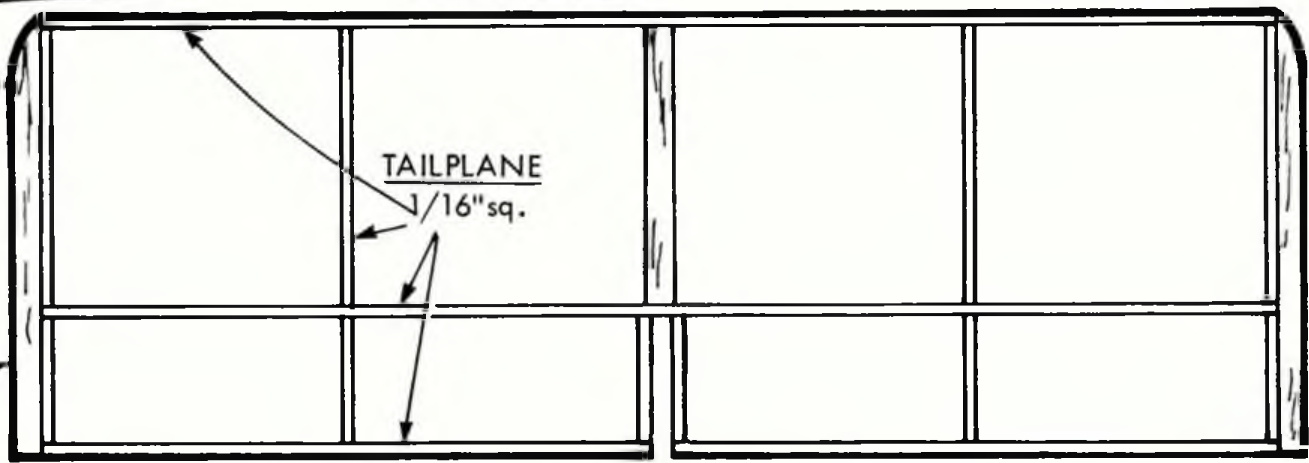


FULL SIZE

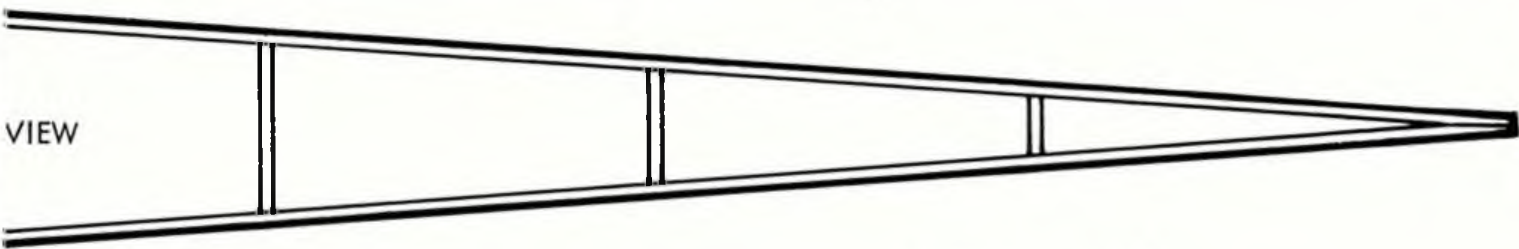
TOP

21grams
ober)
n. wing area
ICK HOWARD

1/16"sheet tips



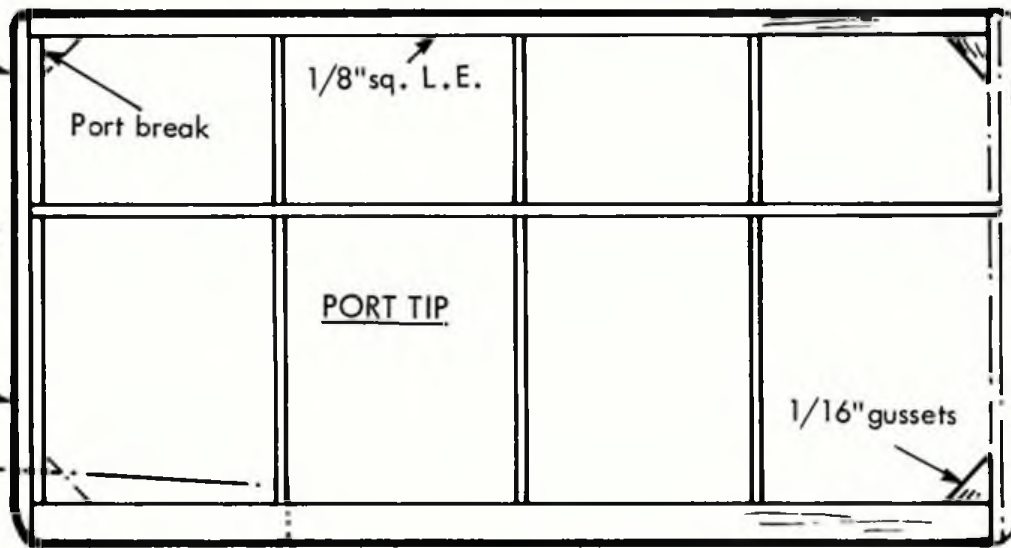
VIEW



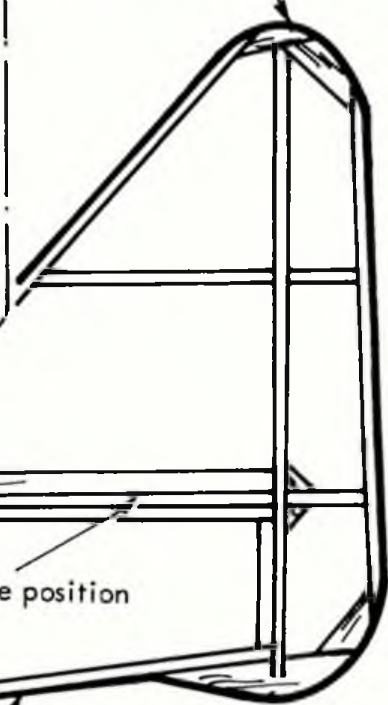
ft 1/16"
et tips
16" T.E.

panels flat
"dihedral
h tip

ral break

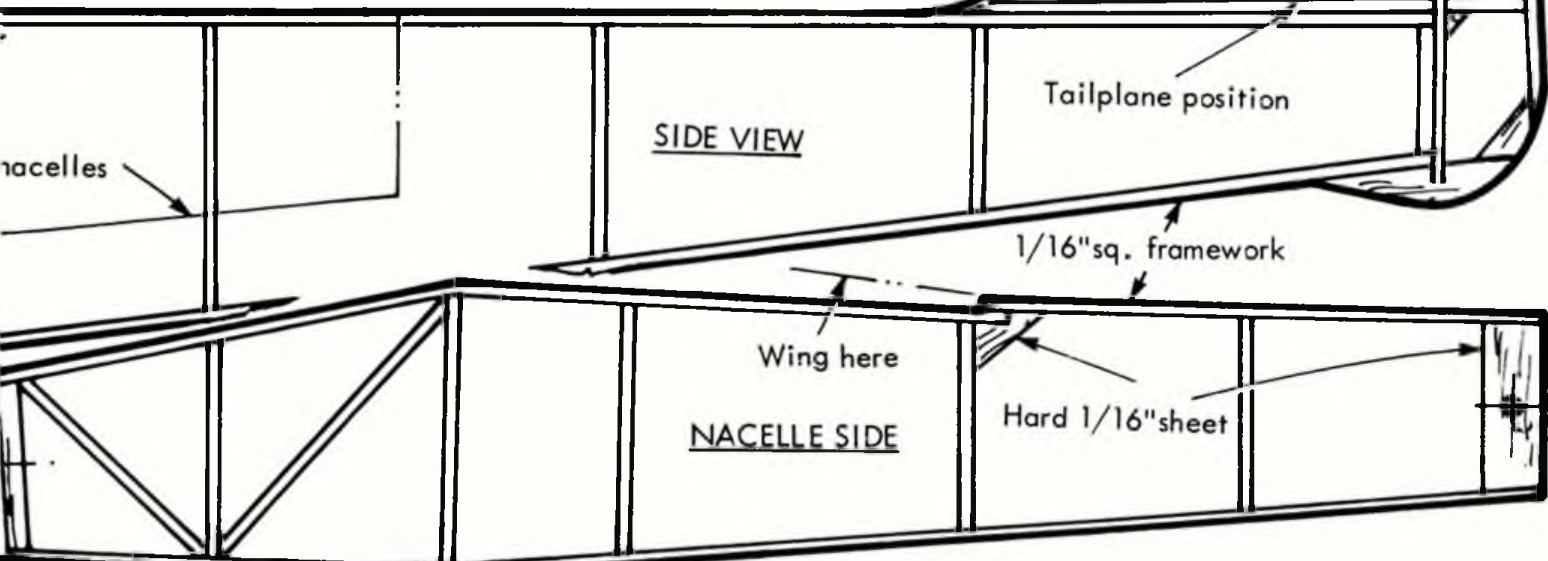


Starboard tip
1/16"sheet tips



nacelles

SIDE VIEW





EARLY IN 1986 I built a Majestic Major — an enlarged Junior 60 — powered by a Laser 61. Between them Messrs Hatfull, Buckle and Tidey produced a most remarkable combination of aircraft and engine. It therefore seemed logical to build a reduced-size version for an Elfin 1.49cc engine that my father had passed on to me. This engine couldn't have been run for at least 20 years, but no problem; it started almost instantly when tested. Plans were drawn up and the original was built over a two-month period with the constant encouragement of Richard, my four-year-old son who was hoping I would teach him to fly. It seems the norm for the writers of articles relating to plans to acknowledge that readers skip the construction details and turn to the flying report. If this is so, and I'm no different to anyone else, let's move straight to the interesting bits!

Flying field fun

The original was test flown on a damp, overcast day which led to a somewhat dramatic first flight. After test glides and radio checks to establish that all was reasonably well, the engine was fired up and the maiden flight commenced; this being where the problems really began. The take-off was rapid to say the least; the ensuing climb out being a steep upward spiral to the left despite down elevator being applied with increasing panic. As the model went up I swear the clouds descended. Fortunately the engine cut just as the model was about to be engulfed.

Subsequent flights have exploited this lively performance, an average flight time of five minutes being obtained from a 100-second engine run. Richard, to his delight, is learning to fly the miniature Junior. He is making good progress and should soon be landing it without my intervention. We tend to fly it as a 'guided free flight' model which in itself demonstrates the stability of the design and its ability to handle a surfeit of power. A Mills 1.3cc would be absolutely ideal.

Back to the basics

Now that your appetite is whetted there seems little to say other than construction is very straightforward, but I am rather making the assumption that readers of *Aeromodeller* know how to make a traditionally-constructed airframe. I

JUST JUNIOR

Go mini-Vintage R/C or F/F with this month's full-size plan! Over to Paul Hoey...

always purchase most of my wood from the Balsa Cabin, using their excellent competition-grade balsa as much as possible. Only the fuselage longerons, tail-plane and wing spars need to be medium-hard balsa; wing ribs are cut from quarter-grain sheet. The strength of this kind of open construction lies in good joints! It is important to keep the tail end light. The original needed no nose weight to balance but this may not be the case if you choose to fly without R/C gear. Modern glues are excellent; the use of one of the new flexible cyano glues will save weight, should speed construction and probably will be as strong as any other glue except where epoxy, which should be used where specified.

The difference between an average model and a good one is usually 'attention to detail'. It is worth spending extra time making a nice cowl and sanding the nose to a well-rounded shape. Trexler airwheels with the hubs sanded, polished and then fitted with recessed washers improve the appearance, as do window frames which also add to the strength of the cabin.

I finished the original in Solartex adding cellulose spray trim in the same pattern as my Majestic Major. The complete model was fuel proofed with Aerokote, sprayed on. The engine bay is sealed with SP113 epoxy resin which is definitely well worthwhile; whilst on the subject of the engine bay it is worth mentioning that it is possible to solder up a 7.5cc fuel tank and hide it completely under the cowl. Radio gear is two-channel Futaba (27Mhz); micro servos are powered by a 150 mah battery which gives two hours' flying time. There is a real advantage in using single-axis sticks (as on many two-channel sets) when teaching to fly. If the trim is right then elevator is hardly necessary and 'rudder-only' can be used without the fear of mistakenly feeding-in elevator. The

art of trimming a radio model so that it free-flights is often forgotten by the radio fraternity who prefer to trim the transmitter rather than the model. This is all very well until the transmitter is needed for a second model which is guaranteed to have different trim requirements... Because diesel engines exude seemingly more oil than is contained in the fuel I chose to keep the radio switch inside the cabin. This does mean that you have to remove the wings to gain access, but it is preferable to a switch malfunction.

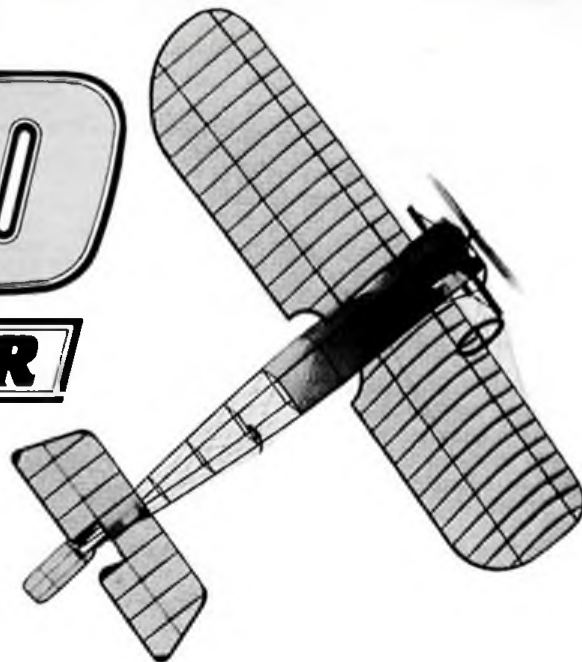
The Junior 60 is probably the most popular vintage model currently flown in this country — but is it any wonder when it is such a remarkably stable and reliable aircraft. Just Junior gives an opportunity to sample those qualities in miniature. I hope you enjoy it too, whether in free flight or under radio control.

Jaunty lines of the famous Junior 60 reduce happily on our 42in. version. R/C original uses a vintage Elfin 1.49 but for F/F any 1cc motor would provide ample power.



AERO

MODELLER



READERS SURVEY 1987

Dear Reader,

This questionnaire has been devised to help us find out what you think of *Aeromodeller*, for we want to give you the magazine you wish to read and make it better than ever – but we need to hear from you! It won't cost you a penny as postage is paid so let the dope dry for a few moments longer and pick up that pen. . .

Many thanks for your help.

Geoff Clarke, Editor.

1. Which of these regular columns do you read? Please tick.

	Always	Sometimes	Never
Hangar Doors	☐ 1	☐ 2	☐ 3
Scale Matters	☐ 4	☐ 5	☐ 6
Free Flight Scene	☐ 7	☐ 8	☐ 9
Vintage Corner	☐ 10	☐ 11	☐ 12
From the Handle	☐ 13	☐ 14	☐ 15
Mind the Lines	☐ 16	☐ 17	☐ 18
Balsa Cuttings	☐ 19	☐ 20	☐ 21
Kit Reviews	☐ 22	☐ 23	☐ 24
Shop Talk	☐ 25	☐ 26	☐ 27
Aircraft Described	☐ 28	☐ 29	☐ 30
World News	☐ 31	☐ 32	☐ 33
Model News	☐ 34	☐ 35	☐ 36
Readers' Letters	☐ 37	☐ 38	☐ 39
Flyleaves (Book Reviews)	☐ 40	☐ 41	☐ 42

2. Would you like to see more or less of the following – or are you happy with present coverage? Please tick.

	More	Less	Satisfied
Scale	☐ 43	☐ 44	☐ 45
Vintage	☐ 46	☐ 47	☐ 48
Control Line	☐ 49	☐ 50	☐ 51
Radio Control	☐ 52	☐ 53	☐ 54
Free Flight	☐ 55	☐ 56	☐ 57
Unorthodox	☐ 58	☐ 59	☐ 60
Competition models	☐ 61	☐ 62	☐ 63
Sport models	☐ 64	☐ 65	☐ 66
Electric Flight	☐ 67	☐ 68	☐ 69

3. Would you like to see more or less of the following – or are you satisfied with coverage as it is? Please tick.

	More	Less	Satisfied
New AM Plans Service designs	☐ 70	☐ 71	☐ 72
Full-size model plans	☐ 73	☐ 74	☐ 75
Kit Reviews	☐ 76	☐ 77	☐ 78
Trade News	☐ 79	☐ 80	☐ 81
Club News	☐ 82	☐ 83	☐ 84
Full-size Aviation news	☐ 85	☐ 86	☐ 87
Scale References, including drawings	☐ 88	☐ 89	☐ 90
Contest Reports	☐ 91	☐ 92	☐ 93
Constructional Advice	☐ 94	☐ 95	☐ 96
Engine news	☐ 97	☐ 98	☐ 99
Beginners' features	☐ 100	☐ 101	☐ 102
Overseas News	☐ 103	☐ 104	☐ 105
Features by Experts	☐ 106	☐ 107	☐ 108
Humour, including fiction	☐ 109	☐ 110	☐ 111
Competitions	☐ 112	☐ 113	☐ 114

4. Would you be prepared to pay more for *Aeromodeller* in order to have:

	Yes	No
More Editorial pages	☐ 115	☐ 116
Colour pages	☐ 117	☐ 118

5. Would you be happy if regular features were printed in smaller type to make more room for other features?

Yes	No
☐ 119	☐ 120

6. Have you ever built (or do you intend to build) a model from our full-size plans?

Yes	No
☐ 121	☐ 122

7. Which other aeromodelling magazines do you read?

	Regularly	Occasionally	Never
RCM&E	☐ 123	☐ 124	☐ 125
Radio Modeller	☐ 126	☐ 127	☐ 128
RC Model World	☐ 129	☐ 130	☐ 131
Scale Models	☐ 132	☐ 133	☐ 134
Model Aviation (US)	☐ 135	☐ 136	☐ 137
Model Builder (US)	☐ 138	☐ 139	☐ 140
Flying Models (US)	☐ 141	☐ 142	☐ 143

8. How long have you been modelling?

Less than 1 year	☐ 144
1 to 2 years	☐ 145
3 to 5 years	☐ 146
Over 5 years	☐ 147

9. Have you ever competed, or do you intend to compete one day in a model flying competition?

Yes	No
☐ 148	☐ 149

10. Does anyone else read your copy of *Aeromodeller*?

No, just me	☐ 150
Yes (how many?)	☐ 151

11. Do you belong to

SMAE	☐ 152
SAM 35	☐ 153
CLAPA	☐ 154
BARCS	☐ 155
BMPRA	☐ 156
BRCHA	☐ 157
Local club	☐ 158

12. Are you aware of scheduled publication day?

Yes	No
☐ 159	☐ 160

13. If the answer to question 12 is yes, do you attempt to purchase the magazine on that day?

Yes	No
☐ 161	☐ 162

14. Do you normally obtain your copy by:

- Chance purchase ☐ 163
Newsagent home delivery ☐ 164
Newsagent shop collection ☐ 165
Subscription ☐ 166

15. If you are a subscriber on which date did you receive this issue?

☐ ☐ ☐ ☐ 8 7

16. If you do not obtain your copy by subscription, is it due to one of the following?

- Subscription too expensive ☐ 167
Not every issue required ☐ 168
Have subscribed previously, but lapsed ☐ 169

17. If you do not subscribe, from which type of newsagent do you most often obtain your copy?

- High Street Shop ☐ 170
Estate Shop ☐ 171
Travel point ☐ 172
Corner Shop ☐ 173

18. Do any of your children follow your interest in free-flight and control-line aircraft?

Yes ☐ 174 No ☐ 175

19. Approximately how much do you spend on your modelling hobby in a year?

- Up to £50 ☐ 176 £251-£500 ☐ 179
£51-£100 ☐ 177 £501-£750 ☐ 180
£101-£250 ☐ 178 Over £750 ☐ 181

20. Which of the following daily newspapers do you read?

- Daily Mail ☐ 182
Daily Express ☐ 183
Daily Mirror ☐ 184
The Sun ☐ 185
Today ☐ 186
The Guardian ☐ 187
The Times ☐ 188
The Daily Telegraph ☐ 189
Financial Times ☐ 190

21. Which of the following Sunday newspapers do you read?

- The Sunday Times ☐ 191
The Observer ☐ 192
Sunday Mirror ☐ 193
News of the World ☐ 194
The Sunday Telegraph ☐ 195
Mail On Sunday ☐ 196
Sunday Express ☐ 197
The Sunday People ☐ 198

22. Do you read? TV Times ☐ 199 Radio Times ☐ 200

23. With regard to advertisements in **Aeromodeller** do you:

- Read most or nearly all the ads ☐ 201
Read some of the ads ☐ 202
Read only the occasional ad ☐ 203
Very rarely/never look at the ads ☐ 204

24. Thinking specifically about the advertising content of **Aeromodeller** would you please rate the three types of advertising matter - Display, Classified, or Shop Guide - in terms of usefulness (please tick one box against each type).

- | | Display | Classified | Shop Guide |
|-------------------|------------------------------|------------------------------|------------------------------|
| Very useful | ☐ 205 | ☐ 206 | ☐ 207 |
| Useful | ☐ 208 | ☐ 209 | ☐ 210 |
| Not very useful | ☐ 211 | ☐ 212 | ☐ 213 |
| Not at all useful | ☐ 214 | ☐ 215 | ☐ 216 |

25. Have you ever bought products after reading an advertisement in **Aeromodeller**?

- Regularly ☐ 217
Occasionally ☐ 218
Never ☐ 219

26. If the answer to question 25 is yes, what was the last item you purchased this way, and what was its value?

27. How long have you been an **Aeromodeller** reader?

- For more than 5 years ☐ 220
For 2 to 5 years ☐ 221
For 1 to 2 years ☐ 222
For less than 1-2 years ☐ 223

28. How long do you spend reading or referring to **Aeromodeller**?

- Over 2 hours ☐ 224
1½ hours ☐ 225
1-1½ hour ☐ 226
Less than ½ hour ☐ 226

29. How long on average do you retain your copies of **Aeromodeller**?

- 1 month ☐ 228
6 months ☐ 229
1 year ☐ 230
2 years ☐ 231
More than 2 years ☐ 232

30. How often do you refer back to issues of **Aeromodeller**?

- Once a week or more ☐ 233
Once a month ☐ 234
Once a quarter ☐ 235
Once a year or less ☐ 246
Never ☐ 237

31. Including yourself, members of your family, friends and visitors; roughly how many people do you think usually look at each issue of **Aeromodeller** you receive?

☐ 238

32. Apart from yourself, which other members of your household usually read or look at **Aeromodeller**? (Please record the age and sex of each person, other than yourself, who reads the magazine).

Person 1 Person 2 Person 3 Person 4

SEX:

- Male ☐ 239 ☐ 240 ☐ 241 ☐ 242
Female ☐ 243 ☐ 244 ☐ 245 ☐ 246

AGE:

- 9-14 ☐ 247 ☐ 248 ☐ 249 ☐ 250
15-24 ☐ 251 ☐ 252 ☐ 253 ☐ 254
25-34 ☐ 255 ☐ 256 ☐ 257 ☐ 258
35-44 ☐ 259 ☐ 260 ☐ 261 ☐ 262
45-54 ☐ 263 ☐ 264 ☐ 265 ☐ 266
55+ ☐ 267 ☐ 268 ☐ 261 ☐ 270

33. Please tick the box which represents the annual total of your net income (after tax, national insurance, pension, contributions etc).

- Under £4,780 ☐ 271 From £4,781 - £5,970 ☐ 272
From £5,970 - £7,470 ☐ 273 From £7,471 - £9,340 ☐ 274
From £9,341 - £11,680 ☐ 275 From £11,681 - £13,470 ☐ 276
From £13,471 - £15,970 ☐ 277 Over £15,970 ☐ 278

34. What is the approximate value of your home (or principal residence if you have more than one?)

- More than £100,000 ☐ 279 £75,000 - £99,999 ☐ 280
£50,00 - £74,999 ☐ 281 Less than £50,000 ☐ 282

35. How many rooms does your home (or principal residence) have?

	1	2	3	4	5	6
Reception rooms	☐ 283	☐ 284	☐ 285	☐ 286	☐ 287	☐ 288
Bedrooms	☐ 289	☐ 290	☐ 291	☐ 292	☐ 293	☐ 294
Bathrooms	☐ 295	☐ 296	☐ 297	☐ 298	☐ 299	☐ 300
Other	☐ 301	☐ 302	☐ 303	☐ 304	☐ 305	☐ 306

36. Please indicate below when you last did any of the following:

	IN LAST WEEK	IN LAST MONTH	LONGER AGO
Ate out in a restaurant	☐ 307	☐ 308	☐ 309
Entertained at home	☐ 310	☐ 311	☐ 312
Went to the theatre/opera/ballet	☐ 313	☐ 314	☐ 315
Went to a music concert	☐ 316	☐ 317	☐ 318
Went to the cinema	☐ 319	☐ 320	☐ 321
Attended a sporting event	☐ 322	☐ 323	☐ 324
Visited an art gallery/museum	☐ 325	☐ 326	☐ 327
Went to a pub	☐ 328	☐ 329	☐ 330
Had a short break in a hotel	☐ 331	☐ 332	☐ 333

37. Which, if any, of these sports and activities do you play or take part in nowadays?

Cricket	☐ 334
Fishing	☐ 335
Golf	☐ 336
Rugby	☐ 337
Soccer	☐ 338
Sailing	☐ 339
Skiing	☐ 340
Shooting	☐ 341
Swimming	☐ 342
Squash	☐ 343
Tennis	☐ 344
Weight training	☐ 345
Windsurfing	☐ 346

38. Which of these stores listed below have you been shopping in during the last 6 months?

Boots	☐ 347
W H Smith	☐ 348
John Menzies	☐ 349
Dixons	☐ 350
Currys	☐ 351
Laskys	☐ 352
Rumbelows	☐ 353
Burtens	☐ 354
Austin Reed	☐ 355
Hornes	☐ 356
Next	☐ 357
Fosters	☐ 358

39a. Which of the following do you drink regularly (at least twice in an average week)?

Beer	☐ 359
Lager	☐ 360
Wine	☐ 361
Sherry	☐ 362
Port	☐ 363
Brandy	☐ 364
Gin	☐ 365
Rum	☐ 366
Vodka	☐ 367
Whisky	☐ 368
Liquers	☐ 369
DON'T DRINK	☐ 370

39b. Where do you buy MOST of your drink from?

An off-licence	☐ 371
A Supermarket	☐ 372
A Public House	☐ 373
Other (PLEASE SPECIFY):	

40. Do you smoke...?

Cigarettes	☐ 374
Cigars	☐ 375
Pipe	☐ 376
Don't smoke	☐ 377

41. Do you own a:

Stereo/Hi Fi system	☐ 378
Tape player/recorder	☐ 379
Video Recorder	☐ 380
T.V.	☐ 381
Home Computer	☐ 382

42a. How many days a week do you usually watch T.V.?

7 days	☐ 383	3 days	☐ 387
6 days	☐ 384	2 days	☐ 388
5 days	☐ 385	1 day	☐ 389
4 days	☐ 386	Less often	☐ 390

42b. On a day when you do watch television, about how long do you usually spend watching commercial channels (ITV & Channel 4)?

Less than 1/2 hour	☐ 391
Up to an hour	☐ 392
2 hours	☐ 393
3 hours	☐ 394
4 hours or more	☐ 395

43. Do you listen to commercial radio stations?

Yes ☐ 396 No ☐ 397

If YES please specify stations:

.....
.....

44a. How many of the following items do you buy, on average, over a month?

	LESS THAN 1 /MONTH	1 or 2	3 or 4	5 or 6	MORE THAN 6	NEVER BUY
A book	☐ 398	☐ 399	☐ 400	☐ 401	☐ 402	☐ 403
A record	☐ 404	☐ 405	☐ 406	☐ 407	☐ 408	☐ 409
A tape	☐ 410	☐ 411	☐ 412	☐ 413	☐ 414	☐ 415

44b. Are you a member of a book club? Yes ☐ 416 No ☐ 417

44c. Are you a member of a record club? Yes ☐ 418 No ☐ 419

45. Which of the following do you have?

Bank current account	☐ 420
Bank deposit or savings account	☐ 421
Life assurance policy?	☐ 422
Any stocks or shares	☐ 423
Access card	☐ 424
Barclaycard (visa)	☐ 425
American Express	☐ 426
Diners Club	☐ 427
Unit Trusts	☐ 428
Private Medical Insurance	☐ 429
Personal accountant	☐ 430
Building Society account	☐ 431
A mortgage	☐ 432
Any HP agreements	☐ 433

46a. Do you have any of the following cards either yourself, or jointly with another person?

Cash dispenser card/slip ☐ 434
Store card/Retailer card ☐ 435

46b. If cards owned at 46a, which ones?

47. Do you...

	Yes	No
Rent your own home	☐ 436	☐ 437
Own your own home	☐ 438	☐ 439
Live with your parents	☐ 440	☐ 441

48a. Do you own a car?

Yes	No
☐ 442	☐ 443

48b. How many cars are there in your household?

None ☐ 444
One ☐ 445
Two ☐ 446
Three or more ☐ 447

48c. How often do you tend to change your cars?

Once a year or more often ☐ 448
About every two years ☐ 449
About every three years ☐ 450
Less often ☐ 451

49. Into which of these age groups do you fall?

9-14	☐ 452	35-39	☐ 457
15-19	☐ 453	40-44	☐ 458
20-24	☐ 454	45-49	☐ 459
25-29	☐ 455	50+	☐ 460
30-34	☐ 456		

50. Are you...

Male ☐ 461 Female ☐ 462

50b. Are you...

Married ☐ 463
Single ☐ 464
Divorced ☐ 465

51. Are you...

In full-time employment ☐ 466
In part-time employment ☐ 467
Not employed at present ☐ 478
Retired ☐ 469
Student ☐ 470

Occupation

Children

Marital Status

Name ☐ Mr ☐ Mrs ☐ Miss

Address

Postcode

Finally, in not more than ten words, what single change would you most like to see in Aeromodeller?

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A

A sunny day, Heathrow's best bacon and eggs for breakfast - and the chance to visit Quickstart Products on the Isle of Man...

The late arrival of your flight is due to an aircraft substitution', came the enigmatic announcement at Heathrow's Gate Four. 'We are sorry for any inconvenience this may cause'. Your Editor, all set to visit Quickstart Products on the Isle of Man was in no tearing hurry but he had wondered which Manx Aircraft would convey him to the land of the three-legged cat (is that quite right?). Saab, Shorts or even BAC had seemed likely to oblige but in the event it was faithful Viscount G-BFZL which stood ready to go. Luckily for passengers many Viscounts are now enjoying a new lease of life on short-haul journeys. 'Luckily?' you ask... indeed so, for in an age of sometimes too-sharply styled passenger cabins from which little is visible, the Viscount's comfortable layout and coffee-table-sized windows are without equal. Airscrew resonance? Hardly at all, sir... During the rock-steady flight there was time to reflect on a previous voyage to 'DC' - or 'Dav-Cal' as it was then about to become - some eight years ago. At that

time hopes had been high that use of newly-installed high-tech machinery would enable production of the much-loved and reliable range of the Dart, Merlin, Spitfire, Sabre and Rapier diesels, plus the Wasp and Bee glows, to continue unabated; but before long, much equipment was auctioned and deliveries became sporadic... Bearing in mind this uneasiness but encouraged by the enthusiasm of the new regime at Quickstart - as the company is now to be known - which culminated in this invitation to visit, your editor was keen to see at first hand what was going on. How would their good intentions measure up?

Firm foundation

In short, very well indeed. A fast journey to the home of Ewdec Technology - the new parent company - bought opportunity to discuss matters with Stephen Woods, Mike Crellin and Alan Griffiths before a close look at the Lake Road factory where



'Quickstart' diesels are being reborn. But let's not get too far ahead. First, just what has the shake-up meant?

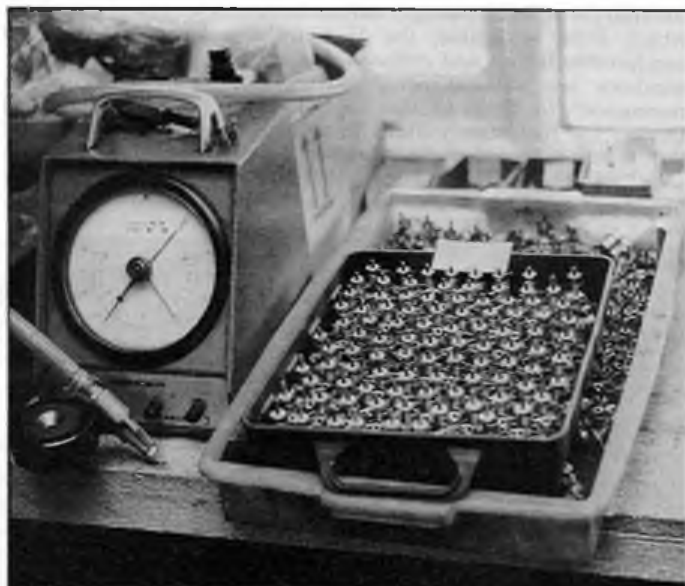
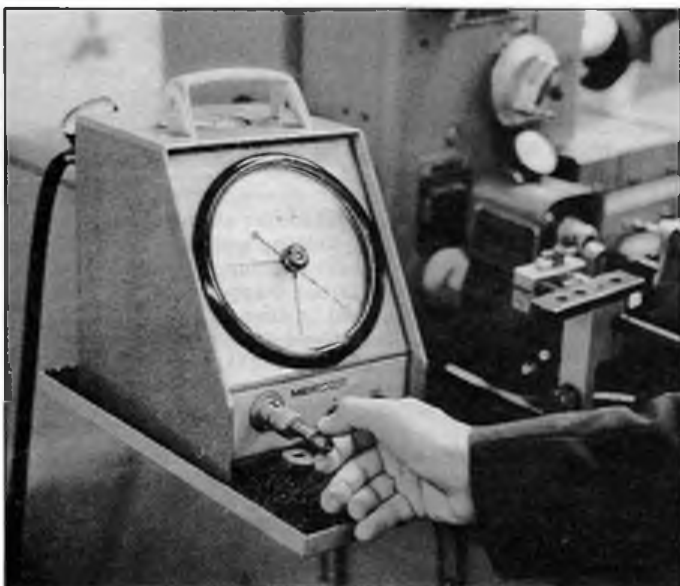
The already mentioned Ewdec Technology is the father company of a number of associated businesses all well established on the Island and each catering for a specialised market sector. Ewdec Manufacturing produce a most impressive servo-controlled robot-arm mechanism which is used for in pipeline work for checking and relieving side connectors. A variety of electronic gadgetry is also produced with the aid of state-of-the-art computer work, helped by Ewdec Communications who are much involved with computers, as well as competing with Telecom in the field of phone systems. But it is Ewdec Precision Engineering who are in immediate control of Quickstart affairs. When Ewdec took control of Dav-Cal last August, the intention was to use the facilities presented to help produce equipment needed by the associate companies - the universal joints for the robot arm, for example - as well as to manufacture parts under contract for other

Above: The Witches' Mill - part of Ewdec Technology's IoM Headquarters site - is under restoration for future public viewing. No engines made here! Left: Stephen Woods and Alan Griffiths leave for a brisk car ride to the Lake Road home of the Quickstart diesel.

A MANX TALE

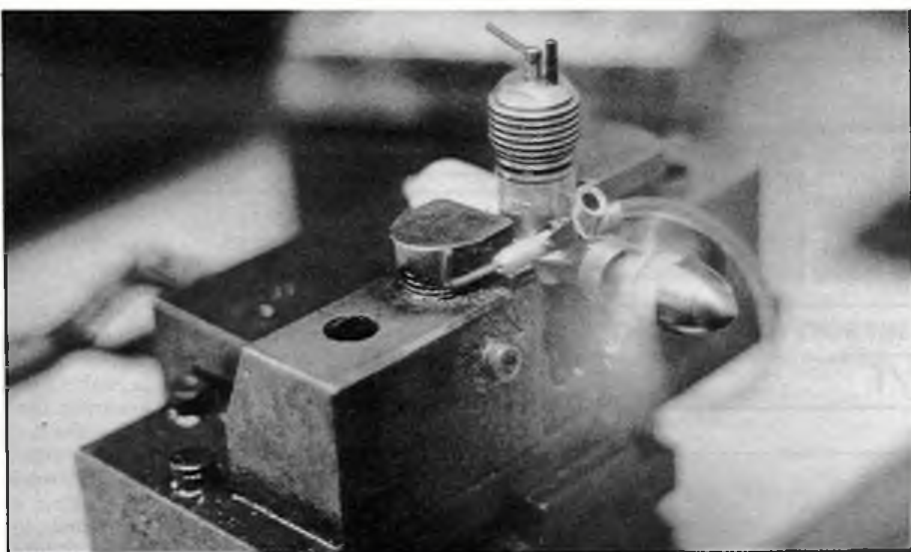


companies (mass production of numerous bits for Horton Sports' crossbow was well in hand on the occasion of our visit). It was soon realised that a vast stock of components and half-completed engines galore represented not only an asset but a challenge, and after thought it was decided to resume production — with customer satisfaction very much in mind. Quickstart have decided — for the time being, at least — to concentrate fully on Dart manufacture, knowing that this motor is currently unique as the only freely-available 0.5cc diesel in the country. Although this intention contradicts previously-published (and out-of-date) Dav-Cal advertising, the Quickstart crew report that they wish to build good public relations enthusiastically — but slowly and surely too. Next in line will probably be the Merlin — but for the moment it's Darts only. Coupled with personnel changes and changes in advertising format, the intention is clearly to progress. A look at the files soon revealed that customer satisfaction was to be a crucial issue. To this extent, all outstanding



commitments taken on board by the new Quickstart organisation have been honoured as far as possible with offers of Dart engines as compensation for motors ordered but presently not in production. This arrangement is working well, for such an offer recently made to a New Zealand customer resulted in an immediate order for two-dozen more, out went the Old Delapena honing machine to be replaced, just four months ago, by a brand new Sunnen 1804 — an impressive machine with the facility for auto-sizing, control to within limits of one-tenthousandth of an inch — and the ability to repeat *ad infinitum* to this margin.

Top: Stop pins galore; Alan Griffiths displays some of the day's quota. Above left: A Dart liner is checked for accuracy — vital to get this right on small diesels where tolerances really matter! Above right: A tray of metalwork. Dart crankcase assemblies await fitting to cylinder units. Far Left: Cheerful Dave Fletcher stopped matching pistons and liners long enough to have this picture taken. Left: Steven Small finishes liners on £14,000-worth of Sunnen honing machine.



Top: We tried some new Darts - here's one merrily turning a 7x4 Top Flite. Above: Open the box and that's what you find. Always popular for the smaller model. Darts are in regular supply again...

As we watched Steven Small carefully finishing liner after liner - (the whole machine-floor crew recently attended a full manufacturer's course of instruction) - it was explained that a target of fifty engines per day should be easily achieved. And here were Darts, packed up and ready to send. What were they like?

Start that Dart

Next came a reunion with Dave Fletcher who has been responsible for quality control since the days of Davies Charlton. On the test stand was a newly-finished Dart; half-a-turn on the starting spring, release; and an instant, short burst promised well. Seconds later the newly-minted point-five was singing lustily, a performance verified by your editor who supplemented this display with a selection from the freshly-packed batch ready for

dispatch, each of which proved equally willing on its Model Technics D-1000 test brew. Following the Hefin Davies philosophy, Darts are set up fairly tight to allow for adequate running-in and an engine with subsequent long life. Nevertheless, flick-starting is no chore with new Darts - which will come as good news to Scale modellers everywhere! New Darts are being shipped out with gold anodising, but a return to the classic 'deep red' - and the familiar, shapely cylinder head - is promised.

Although direct-selling from the factory is at present the only way to buy your Dart, future thinking involves distribution through traditional avenues. The importance of getting the product onto model shop shelves is fully appreciated!

The impression of Quickstart today is of a young, enthusiastic group keen to recover ground by sensible, quality production. To choose the Dart as the medium for success is brave - the Spitfire, or even the Merlin, is easier to manufacture - but on the evidence of our visit the skill, and equipment, is there. What matters now is the performance on the flying field, and user response. Time will tell, but the signs are good...

A happy Manx tailpiece that we had to share. One teenage customer, who had accumulated the complete range of DC engines, was unhappily involved in a motorcycle accident and lapsed into a coma in hospital. Nothing made any impression until he was handed a motor, whereupon he began to turn the crankshaft back for forth... His recovery, we are told, is now 90% complete.

Who said aeromodelling isn't therapeutic?

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FREE FLIGHT SCENE

Thermal-up with Dave Hipperson's latest look at the world of competition F/F



Free Flight Technical Committee News

On 12th September the SMAE Council meets to consider possible rule changes for 1988. The FFTC have finalised their suggestions for this meeting so you have plenty of time to register your approval or objection; as you read this you should still have a clear four weeks to voice your opinions. However you can rest assured that nothing has been rushed without thought or debate. Indeed, much is just a detailed tidying up of loopholes. For instance, our rules have for a long time failed to refer to 'projected' surface areas when detailing FAI specifications. The FFTC are suggesting that rather than leaving the matter open to argument and possible embarrassment for someone on the field our domestic interpretation of the FAI rules should be closer to the originals, thus specifying 'projected' areas too. They are also suggesting that pre-entry for SMAE centralised events is abolished except for the Nationals and Trials where the revenue is vital and the time-saving for the contestant most convenient. At the moment the pre-entry rule can be waived (and usually is) but such notification has to appear with the announcement of the event. Sadly, it rarely does.

Pics from the Nats. Top: Tom Smith about to release his latest Super Nog. Centre left: Gerry le Vey readies Lolita XII in the F1A flyoff while Pete Harris prepares the CB. Left: Also in F1A, Mike Cook prepares with help from Ian Davitt. Right: George Sharp - whose Coupe is described opposite - adds a turn while waiting in the F1B flyoff.

After some trouble at an Area meeting last season the FFTC are also suggesting a loosening of the rules governing the return of flight cards at Area events, making the competitor responsible for ensuring that his score is entered on the master sheet at control after each flight and not having to rely on the CI being there. The CI's work load, including critical decision-making, is hopefully to be further lightened by allocating a fixed time for Area flyoffs; that is, one single fifteen-minute period starting a quarter of an hour after the close of the contest. Apart from making things more fair from area to area it will also avoid the temptation for the CI to benefit either himself or his club mates by delaying or bringing forward a flyoff period.

The use of sites other than official Area sanctioned ones is also being dropped after so much confusion and unfair treatment over the past two years but those interested in the Senior Champs will be pleased to learn that FFTC are now suggesting that points be awarded no matter how few fly - but on a reduced scale pro-rata with low entries. This is much more likely to encourage contenders to travel to distant events even when the weather is bad.

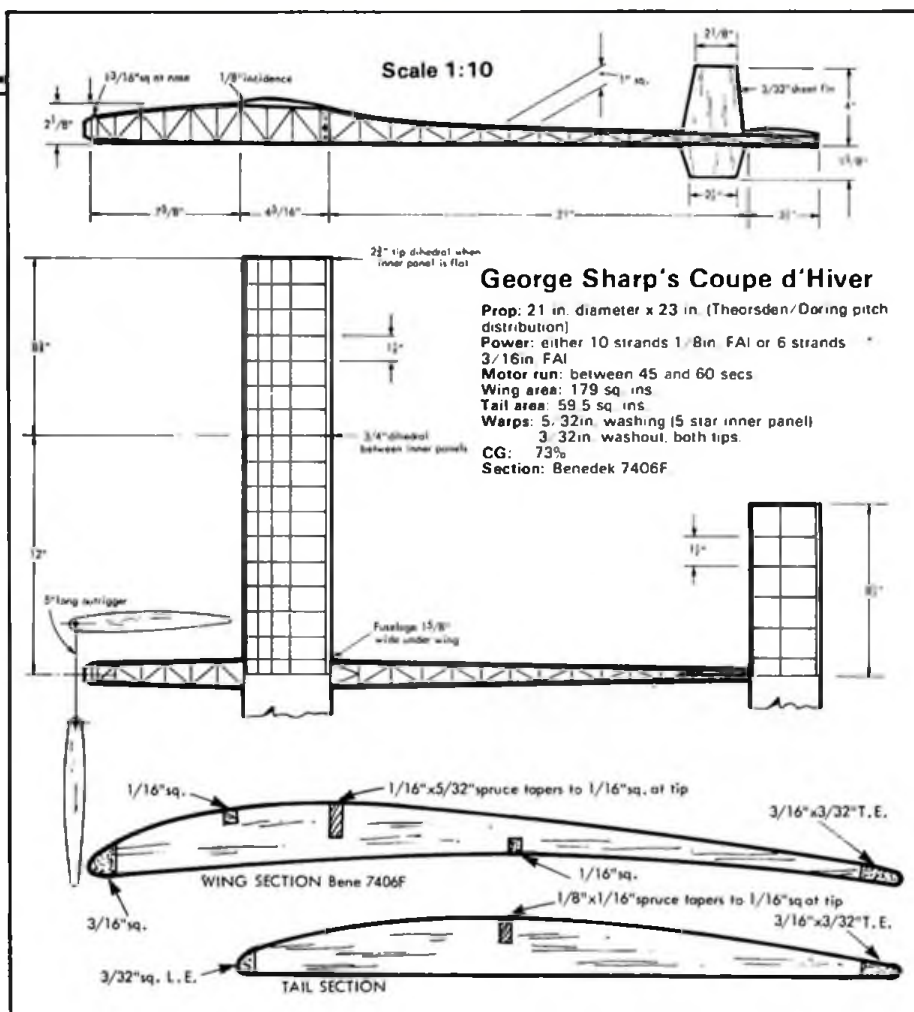
For some time now 'attempts' have been allowed in CO₂ Duration and so it was proposed - particularly after such a large percentage of the entries reached the flyoff at this year's Nats - that the 'throw away' flight be dispensed with. In future CO₂ will be scored just like the other Mini events CDH, A/1 and 1/2A Power.

Finally, probably the most controversial idea is to reduce the Open Power engine run to seven seconds. It was argued that Open Power flyoffs were too large (although hardly larger than Open Rubber). My solution to both problems would have been to increase the max from the 2:30 norm. level but this did not meet with favour. The suggestion is thus to cut three seconds off the engine run.

It must be stressed that these are only FFTC proposals. The Council will vote on them as you want but you must make your voice heard if you disagree. Your line of communication is through your Area Committees, either directly or via your club. It may also be worth reminding your local committees that the exact wordings of these proposals are available from SMAE head office as they are part of the minutes of the FFTC Meeting.



Aeromodeller



George Sharp's Coupe d'Hiver

We should have featured this model long ago. That's not to say it's old or out of date but it began life back in '81 and has had a consistent contest record ever since winning just about everything at least once.

It was always to be flown on FAI Supplies rubber and was designed with the 'peaky' power characteristics of this make in mind. That prop is very large for a model of under 200sq.ins yet it is the crucial component. With pitch distribution as per Doring - which I am convinced contributes to performance on any rubber design - and large blades on long outriggers that first burst of torque is completely tamed; so much so that I have seen the model execute close on a minute of climb when George has picked a slightly longer motor and crammed on full turns.

Like many, George's early CDH models (built around the mid-sixties) were small, often with flat-bottom wings. When he returned to aeromodelling ten years later he quickly realised that models of this type needed better glides to win. He also came to realise that long-running models are actually more consistent in windy weather than short, fast-climbing ones. This shouldn't be true, but with ground turbulence playing such a large part in CDH duration it has been found beneficial to keep the prop going; hence an upset can ruin only a small proportion of the climb rather than most of it. Actually, for our turbulent but gentle thermal conditions in the UK I think this theory can be extended to Wakefield too even though their power-to-size ratio is far greater.

This model's contest record over the past six years speaks for itself. Last year its sister ship, a 100-gram sheet fuselage version was unlucky not to place very high at Henlow. Certainly the extra weight seems to affect the design very little.

Apart from the large prop the only other unusual feature is of course the built-up fuselage - a type rarely favoured this side of the Channel. Although much more fiddly to build than the conventional sheet-tube version it has proved rugged enough - and is so light that all versions have to carry ballast to bring them up to weight. Perhaps it is partly to compensate for that huge prop that George has chosen such a vast tail area. Doubtless this also makes a contribution to its all-weather stability.

SMAE Fourth Area Event, 7th June

Temporarily retitled "The day they ran FIC and nobody came!" To be strictly accurate, seven people, one more than the SMAE minimum, did record scores but it's hardly impressive. Even in the FAI power heartlands at Barkston Heath only John Bailey completed his flights despite relatively clear fields downwind and quite pleasant conditions from lunch time. Surely had this been an Open Power event for such a prestigious trophy as the Astral we could have relied on quite a few top men in that class making a fight of it.

That said, there was nothing half-hearted about Fred Chilton's efforts in the class at Beaulieu. His total - only a couple of minutes down - was enough to hold off John Bailey. The Astral will doubtless look well between the twin marble trophies he took in the same class and with similar

enthusiasm at the Woodbury Weekend.

It would seem that the combination of Plugge points and a chance of a club trophy does bring the flyers out in force. The Model Engineer cup for Team Glider received good support from all Areas but cold and lifeless conditions everywhere limited flyoffs to a very modest number. Scotland actually got away with light winds all day but the North of the country had it worst - the wind never falling much below 15mph and the temperature holding in the low fifties. No-one maxed out in glider at Albemarle, Driffild or Barkston but at Merryfield in the West both Audley and Bunney managed full scored followed by flyoffs of around six minutes to take the top two places nationally. Although Audley's flight was hardly needed to help him and Bristol & West clubmates Drew and Sharman take the Team award it certainly improved their Plugge standing. At Sculthorpe the Vikings pulled up too with fine flyoff efforts from Barry Halford and Neil Willis moving their club into second place.

Despite the worst of the weather Ian Davitt emerged well ahead in CDH at Driffild with determined flying throughout the afternoon - the best part of the day there too, but hardly calm. His only dropped time came from an early D/T when squeezing in the flights was thought to be a higher priority than finding the lift. Hipperson was rewarded with second place from a score of a minute less after a comparatively leisurely afternoon in the rapidly-calming, though cold and difficult Barkston air. Ray Pavely, obviously escaping the glider press gangs at Sculthorpe took third with a model possessing a very zippy climb; the same design that he flew at the Nats.

SMAE 4th Area event, 7 June

Open Glider:- Individual scores (55 flew: 6 in fly-off)

1 R. Audley	Bristol & West	7:30 + 6:38
2 G. Bunney	South Bristol	7:30 + 6:35
3 B. Halford	Vikings	7:30 + 3:15
4 N. Willis	Vikings	7:30 + 3:14
5 P. Stewart	Crookham	7:30 + 2:15
6 D. Hambley	Lowland	7:30 + 2:14

Coupe d'Hiver (16 flew)

1 I. Davitt	Morley	9:55
2 D. Hipperson	Grantham	8:48
3 R. Pavely	Anglia	7:50

F1C for Astral Trophy (7 flew)

1 F. Chilton	Crookham	10:38
2 J. Bailey	Biggles	10:10
3 D. Cox	Crookham	9:15

Team Glider for Model Engineer Trophy (20 Teams)

1 Bristol & West	A. Audley, Drew, Sharman	20:27
2 Crookham A	Steward, Smith, Cox	19:59
3 Biggles A	Bailey, Cooper, Lewis	19:56
4 Lowland	Hambley, Hearn, Sabey	19:22
5 Tynemouth	Jones, Gibson, Brown	19:13

Plugge points after four events

Bristol & West	993
Vikings	786
Anglia	751
Crookham	735
Birmingham	654

Oxford Rally, 21st June

Even the most hardened contest flyer has to admit to enjoying his flying more in pleasant surroundings; so when a regular event at such an attractive site as Port Meadow coincides with calm for a number of years it follows that entries grow. However, even contest organiser Andy Crisp could hardly have predicted the response this year. In defiance of a dismal wet-and-windy forecast he was swamped, not by rain, but with entries. By early morning more than a hundred cards had been issued! A huge crowd of contestants had come to fly the appealing mixture of classes and to have a crack at the considerable array of prizes which again included the famous hand made earthenware produced by Andy especially for the occasion.

The rain never came and the sun shone for most of the day. Even when the breeze rose it was rarely enough to take models out of the field. The traditional mini classes were flown in one-and-a-half-hour rounds with a more relaxed 'flights all day' approach to Vintage which allowed rubber models of up to 34in span and gliders of unlimited size. Although strong, lift was extremely erratic - not least for the early part of the morning - and this, along with a tight rounds schedule, led to some hasty flying from some competitors who wanted to keep their options open in a couple or more classes. There was a resultant crop of dropped maxes. As the day progressed the breeze picked up a little but lift became less strong and more predictable under an increasing overcast.

Actually the early part of the last round was disturbed by a much breezier spell and a strong patch of lift which caught a few models, taking them off the eastern edge of the field and into houses. Most were located eventually. Rod Audley actually managed to land his last A/1 'max' in a canal; and Dave Hipperson wasn't quick enough to stop his CO₂ model from being snatched indoors by children. When eventually they read the notice requesting the finder to place it in a prominent position they put it out in the middle of their garden rather than back on the village green where they had found it!

Flyoffs were of a sensible size, with a very small percentage of the entry - just two or three people in each event apart

from HLG which was won by John Walker as he had done at Chetwynd some weeks before.

As usual, in order to reduce unnecessary risk to models these deciding stages were run off to a progressive max. Indeed just before the close it looked as if model loss could certainly be a factor but by the first start signal the breeze had dropped again and swung back more lengthwise, down the meadow. Thus the emphasis was shifted onto consistency and reliability and away from single patches of lift deciding the results. Rounds of a mere five minutes with short breaks between maintained the pressure on the contestants and interest for the considerable crowd which had stayed on to watch. It turned out to be a most visually exciting way to finish the day.

The first flights in CO₂ between O'Donnell and Hipperson for a 2:30 target were a formality. A/1 on the other hand was decided immediately as John Carter just cleared two minutes which was enough, by 20 seconds, to beat Audley. Vintage had four participants - all rubber models. The first round eliminated John Bailey but the other three maxed easily.

Coupe d'Hiver was a very close race. Dave Greaves climbed quicker and higher than Chilton but with a shorter motor run. Their times reflected what would be expected of such good models in still air. Pete Carter was unlucky not to do better after his model had been going so well (and on such a long run) all day.

By 6.30 the two CO₂ contenders were out on the line again and launching almost together. Hipperson's model climbed positively for at least a minute before settling into a gentle cruise whilst O'Donnell's, some way below it, never got properly into its stride and despite a claimed four-minute run the model sagged down in just over two. Hipperson's continued to make the 3:30 max and was said to be still running even on D/T descent some time after that. This was the same model that had won the Nationals.

The finale of the evening was the second (and this time unlimited) round of the Vintage flyoff. Drift was down to less than 5mph; and Hipperson had switched from his aged Bazooka to the more temperamental but potentially better-



performing Senator. He launched first and was well into the cruise when Peter Michel released his RAFF V; Chris Strachan following a few seconds later with his Buckeridge which delivered a 1:30 run to equal the Sanator's climb. However, at the moment the prop folded, a glide stall - the fear of all Vintage flyers - developed. Luckily it was nothing too serious; and from the height gained on the climb it didn't look as if the undulations would matter. The Senator was down at a little under 3.1/4mins. Michel's model was gliding well but somewhat lower. Incredibly, as it drifted across the meadow it seemed to sink more and more slowly; the Buckeridge, much further downwind was almost down. The RAFF V was hanging, almost defying gravity even in its last seconds; when the watches were compared it was clear that Michel had piped Strachan's higher-climbing model by seconds.

Needless to say, after such a day the CD had a jolly appreciative crowd at the prizegiving. This year he was assisted in the distribution of cash, wine and pottery by the Chairman of the Oxford Club who seemed delighted with the way the day had turned out. He had explained to me earlier that quite a few previously Radio-orientated club members had gone over to free-flight thanks to Andy's example. Long may it continue!

Oxford Rally, 21st June

A1 Glider (24 flew)

1	J. Carter	10.00 + 2.04
2	R. Audley	10.00 + 1.45
3	D. Wain	9.55

Coupe d'Hiver (39 flew)

1	D. Greaves	10.00 + 2.21
2	M. Chilton	10.00 + 2.20
3	P. Carter	10.00 + 1.53

CO₂ (6 flew)

1	D. Hipperson	10.00 + 2.30 + 3.30
2	J. O'Donnell	10.00 + 2.30 + 2.19
3	R. Gibbon	9.31

Vintage (21 flew)

1	P. Michel	6.00 + 2.30 + 3.47
2	C. Strachan	6.00 + 2.30 + 3.43
3	D. Hipperson	6.00 + 2.30 + 3.13

HLG (15 flew)

1	J. Walker	4.23
2	M. Page	4.22
3	P. Buskell	3.49

Highest placed Junior: Miss A. Gibbon
Overall Rally Champion: Brian Lewis

More from the Nats. Top: Andrew Moorehouse's models are always distinctively finished - this is his AM-powered Slow Open design. Far left: Neatly finished Adonis F1A by G. Archer finished down the list despite a trimming-session duel with Mick Page. Left: Pete Harris lets go his familiar ST.35 Slow Open model.



Latest Senior Champs Positions

Russell Peers has now failed to score massively on only one outing in the season so far, up to and including the 4th Area Meeting! His efforts in Glider and Coupe d'Hiver at the 4th Area event were not quite enough to place him in the top six there. Pete Watson has consolidated his position but could have lost the chance of the Championship simply because he didn't carry on in F1C at the same event!

Ball and Hipperson are close together, both having scored in the latest event but they are out of striking distance now. Dilks is up with them too - it's a close race for 3rd without a doubt. Philpott jumps in level with Screen at 6th after a tremendous Nats and all square at 8th are three of the most consistent all-weather flyers in the country.

Senior Championship positions up to and including 4th Area Meeting

1	R. Peers	75.5 points
2	P. Watson	86
3	P. Ball	41
4	D. Hipperson	37
5	T. Dilks	36
6	S. Screen	30
7	S. Philpott	30
8	J. Bailey	25
=	J. Carter	25
=	J. O'Donnell	25

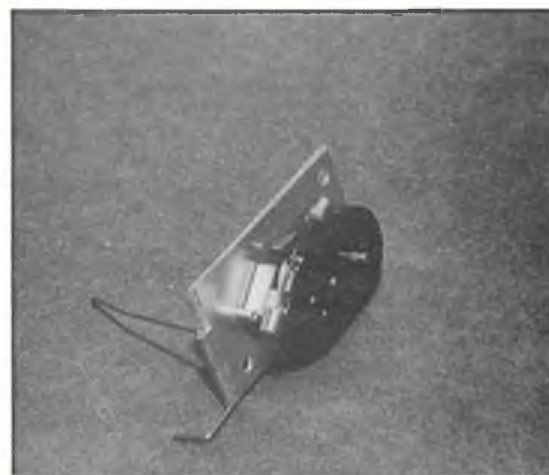
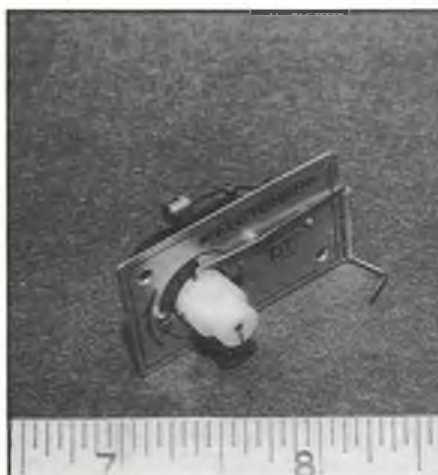
Falcons League Championship positions - up and including the RAFMAA Champs

1	J. Cuthbert	36 points
2	R. Peers	36
3	P. Ball	26
4	J. O'Donnell	22
5	J. Carter	20

Fletcher Timers

John Fletcher has been producing these timers for sale in Australia for some years. They are based on that old favourite, the Tomy motor although it would appear that John has a source of supply of the basic units as the drive mechanisms don't look to have been previously mounted in anything else. John's miniature engineering has always been impressive and these timers are no exception. They are very neatly made. Two types are available; a single-function D/T unit for operation up to 4.1/2 minutes and a dual-function model that includes a Seelig-like release plate at the bottom of the scroll for VIT/AR, or whatever else takes your fancy, to run between 0 and 50secs.

The governor ballast weights are neat and very compact, being glued into place. The ali face plate allows screw mounting without fear of squeezing the timer and possibly restricting or stopping it altogether. What is more the motor itself is attached to the plate by two tiny brass bolts tapped into the usual mounting holes in the body but - once again - not running right through, so there is no unforeseen end load on the moving shafts of the mechanism inside. The pivots for the release arms are bent integrally with the faceplate as per Tatone. Originally I remember John listing the lack of an on-off



switch as a selling point, arguing that without one you couldn't forget to switch it on at launch! Now I see he includes a stop/start pin with the unit. This runs in a slightly crimped guide tube to give a friction fit and positive location on one of the governor weights.

The actual scroll that releases the lever is very cleanly machined and is of such a small diameter that even quite substantial loads on the D/T line cannot labour the motor. John has also included a very visible mark on the end of the scroll so that one can see exactly where the release point occurs when setting. Actually, the scroll exterior is so smooth that it might be quite difficult to grip firmly enough to wind with cold or oily fingers; this is understandable I suppose - no one ever gets cold fingers flying in an Australian summer! The dual-function unit is better in this regard as it has a nut on top of the scroll for adjustment between 50 sec and full D/T run down.

As shown here the units weigh about five grams, giving nearly fifteen grams of weight saving when compared to conventional all-metal units, but with all the same facilities and at a much reduced size. Of course the scroll system abolishes the need to wind the release line around the spindle (and consequently to have to allow sufficient stretch in the lines). However, one is limited to a D/T of four-minutes-plus whereas such good motors as these would otherwise be capable of nearly twice that time if required.

Of course, that would be rare.

The Fletcher Timers sell at \$15 and \$18 Australian (£6.25 and £7.50) plus \$1 Australian (42p) postage and packing from John Fletcher, 4 Candowie Crescent, Baulkham Hills, New South Wales, Australia.



Top left: The Fletcher D/T timer, seen also in photo beneath with ruler to give scale. Top right: Front and back of timer. Note the neat stop/start pin. Next below: Close-up of rear of timer shows very neat 'waggler' weights and guide for stop/start pin. Two photos immediately above: Very smart Tomy timer installation on the latest Gaunt F1B. Timer is semi-recessed into pylon; start switch on opposite side in a spring of fine wire which may be held 'in'.

Cyano troubles?

Have you been experiencing trouble with cyano curing?

Mine seems not to work nearly so well now as it did a few years ago. I had long since ceased building specially-strong models for rough weather, working instead on the principle that it is better to maintain lightness (and hence performance) and simply cyano the bits back together again. This scheme worked particularly well on Open Rubber models at least until a year or so ago when setting became very erratic. I put this down to shelf life expiry - then became suspicious that the manufacturers had actually changed the formula of the stuff! In fact, it got so bad that I was seriously considering going back over to balsa cement - at least that would set eventually! A short talk with Mike Coomes of Loctite encouraged me to think again and primarily to suspect the activator. He has now furnished me with glues and activators to test and offered guidances as to the types of CA we should be using.

Hundreds of types of cyanos are being made commercially for thousands of different industrial assembly jobs. The glues we are offered at the model shops are what they think should be best for us. I have found many to be very poor (and the activators quite useless). For the past few years I have found the best curing came

Left: The recommended Loctite Xtra activator shown in front of type 401, 406 and 493 cyano adhesives referred to in text. Right: Still available from Henry J. Nicholls, the Zap cyano and kicker have been popular for years.



from Loctite Activator T. Other specially-prepared activators from model shops worked satisfactorily too - until a year or so ago. It emerges now that it was around that time that their formula was changed. The old activator really cured cyano only by accident - it wasn't intended for that purpose. When they changed its composition there was no difference in its effect on the adhesives for which it was designed but it became useless with cyano. (A pity as I have got bottles of the stuff!).

Loctite now have two activators on the market which are specifically designed for cyanos. Loctite Xtra activator and Tak-Pak activator are Freon based and believe me, they work. Unfortunately you won't find either of them in Woolworths or your local model shop so you will have to go to one of Loctite's many trade outlets to buy the stuff.

Of course, as far as the glues themselves are concerned the best is the one that rarely needs activator anyway. I have invariably found these to be the thinnest, for they make best contact with the joint, and I now avoid any model shop glue that claims to be a gap filler unless I have adequate supplies of activator. They usually need plenty. The best Loctite glues are 493, a super-thin penetrating grade; Loctite 406 which is similar but formulated for they make best contact with the joint, plastics; and a new line, Loctite Prism 401 which is slightly thicker and perfect for porous surfaces such as wood, foam, paper and fabric. Try glueing two sheets of paper together with standard thin cyano and all you will usually get is a greasy smudge on both sheets. With 401 it is an instant bond.



Very useful for repairing or tidying-up coverings where paper might be peeling. Also available (apart from the standard little tubes of Super Glue in hardware stores) is Loctite Xtra 409. This is a gel which definitely needs activator but it is very useful for 'bodges'. It is about the viscosity of thick balsacem but of course it doesn't shrink when it cures. 493 grade is available only in 50-gram bottles - if you prefer smaller quantities (it is advised that you buy no more than six months' supply at a time) you can get virtually the same effect from 420 which is available in 20-gram bottles.

As a rule I found that the thicker the glue - whether it was designed that way or had just 'gone off' with age - the more it needed activator. On the other hand, the thinnest Loctite I tested (493) would often glue two pieces of 1/32in. balsa edge-to-edge as quickly as you could move along with the joint. Activator was needed here only to ensure that any surplus glue on the surface had hardened and wasn't waiting to stick the wood to you on picking it up.

Loctite are not the only cyanos I can recommend. Happily the magic name of Zap is available again from Henry J. Nicholls (they assure me that it always has been). Various viscosities and amounts are on offer but what is particularly helpful is that they also have available a Freon-based activator or 'kicker'. It smells revolting and you are warned not to inhale it; but it works just as well as the special Loctite products.

Experiments have shown that the Loctite Xtra, Tak Pak or Zap activators will set just about any cyano (in any condition) eventually. My tests were to arrange large drops of glue - each about the volume of a small pea - on a metal plate and to spray on the activator. I considered the activator successful if the glue had set into a clear glass-hard bead within one minute. Under some conditions (for example, if very small amounts of glue are tested) this was accelerated to a few seconds, accompanied by puffs of smoke and crackling noises. Although very reassuring to see it set so quickly, remember that best strength is not obtained from a crazed glue so to check your joints if they smoke. You may have overdone it!

If you are using very little glue remember you will require correspondingly small quantities of activator. Hold the can further away when spraying. I know it's wasteful but you don't want your joints 'cooked'; they will be weaker. You will usually notice considerable heat generation around a good setting joint, particularly if you have used a large quantity of glue.

In its thinnest form, Zap is probably the best cyano I have ever used. In no application (apart from the hardening test itself) has it needed activator. It is available only through HJN but I can recommend it and the Kicker without reservation. Loctites are available country-wide; you will save yourself time if you contact Loctite UK for their vast of

distributors.

They are at Watchmead, Welwyn Garden City, Herts AL7 1JB; their telephone number is Welwyn Garden (0707) 331277.

A further Nats round-up. Right: Chris Strachan was 6th in CO₂ after a day of mixed fortunes. Below left: John Down flew this Elfin-powered APS Pylonius in Vintage - seen here just before maxing-out.

Below right: Trevor Payne had his work cut out before the Open Power flyoff after his motor lost power, necessitating substantial pit-work on his familiar model. Bottom: Ray King's attractive geodetic, triple-fin SOP model gave him a well-deserved third place after performing consistently all day.



Stretch winding

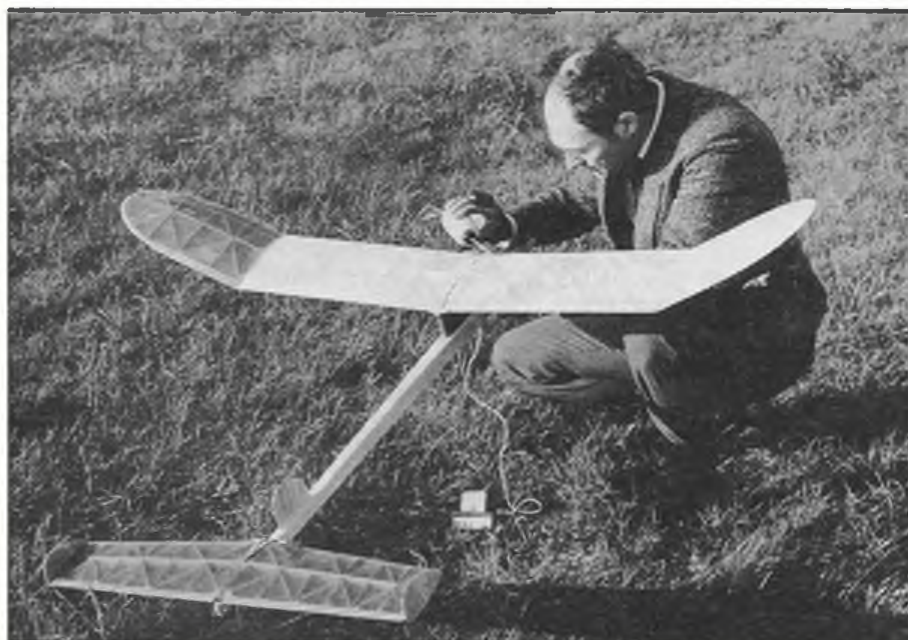
Since my stretch-winding suggestions a year ago - in particular, discussion of how greater stretching could increase the number of turns possible on a given motor and lessen the wear on the strands - there have been quite a few accidents; not least of all mine.

Winding FIBs in this way - of course, this is where the exercise was thought most beneficial - can be hazardous. Loads become tremendous beyond four-times-stretch; hooks straighten, couplings break and jigs pull out of the ground! I myself have compromised with a stretch factor of 4.1/2, but as a guide I ran some pull tests the last time I was out trimming and came up with these figures for end pull exerted by a motor of 40 grams stranded to 18.1/2in. long. That is, the sort of motor which could be expected to take 400 turns as a practical maximum.

Stretched '4 x natural length' it pulled 15kg (32 lbs);

Stretched '5 x' the pull was 20kg (44 lbs).

Most jigs and hooks and linkages should be safe provided that they can withstand 50lb. pull, or more. You can now test this indoors without the aggravation of stretching the rubber. Remember - you shouldn't need such tough equipment for CDH or even Open Rubber; it's the FIBs that test the weak links.

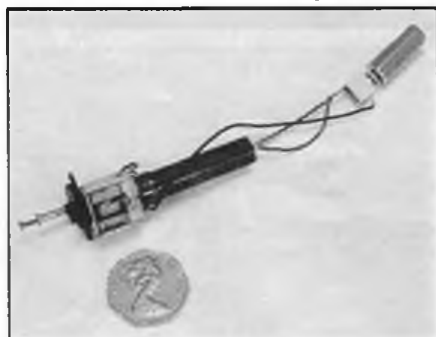


SCALE REVIEW

Bill Dennis examines some new products
aimed at the Scale modeller

Electric Power

Until recently there has been relatively little interest in electric propulsion for F/F models in this country because, of course, suitable units have been scarce. Motors are available in the USA, where electric power is very popular, but by the time you have imported one it becomes a rather expensive proposition. The only electric Scale models I have seen have been the efforts of 'do-it-yourself' experimenters. The late Alan Palfrey's Airspeed Ferry,



equipped with three Mabuchi A-1 units, was a dramatic and noisy performer which sounded like an industrial vacuum cleaner! In this case I believe Alan had to do considerable reworking of the motors, including armature rewinding.

The good news is that a new British product is now available from Derek Knight. This has been under development for some time and Derek has shown its potential in the best possible way by using it to win the Scale Electric/CO₂ classes at the Outdoor and Indoor Nationals. Derek has sent me a sample of the production motor to test.

The electric motor is mounted in a

Heading: Lindsey Smith, happily rebuilding his Fairey Spearfish at our Scale Weekend, has entered the world of component manufacture. Moulded pilots, wheels and engines are available. Left: Derek Knight's long-awaited electric motor unit impressed your reviewer...



cleverly-moulded plastic body which incorporates propeller shaft bearings and a flange for a radial three-point attachment to a bulkhead. The shaft itself doubles as an ingenious on/off switch. The propeller is pushed back when charging whereupon a collar on the shaft opens a pair of contacts. When ready to launch, the flier pulls the propeller forward to make the circuit. Power is supplied from three 50mAh rechargeable cells carried in a moulded tubular extension at the rear, with a jack plug and socket for charging. In addition, the sample I have just received incorporates a small variable resistor to act as a speed controller. The propeller is geared down in the ratio 4:25:1. Although a Telco type is presently supplied, an improved version - more rigid, yet with thinner blades - is being developed.

It is not considered necessary to fit a fuse in the wiring circuit to protect the motor. By the end of a flight the batteries are discharged and in any case the fore-and-

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aft 'switching' movement of the shaft means that it should get knocked 'back' on landing, breaking the circuit.

Inevitably, comparison will be made with CO₂ power. The major drawback with CO₂ is its variable power output at any given throttle setting because of changes in temperature and humidity. At Indoor meetings it is common for power to drop right off and for icing-up to occur, while equally disconcerting outdoors on a warm sunny day is the tendency for a motor to run on and on until the model is a speck in the distance! Also, the cost of CO₂ bulbs is not inconsiderable. With electric power performance can be repeated again and again; and running costs, after the initial outlay for the charging system, are effectively zero.

Derek's motor weighs 32.5gm, which is about one gram heavier than a charged Telco 6000 and about twelve grams more than a standard Telco. The electric motor delivers somewhat more power than the Telco and will be suitable for slightly larger models.

The example sent for test arrived in a neat and compact plastic case designed to survive the rigours of a trip through the post, since initially the motor will be available only direct from the makers. There is a specification sheet with operating instructions and a circuit diagram for the matching charging system, which at the moment is not quite ready; but all that is necessary is a six-volt rechargeable battery plus an ammeter and rheostat from a radio component supplier. In my tests I used a YUASA NP6-6 motorcycle battery.

The first run was at full speed. Performance seemed to match that given in the specifications; namely an initial speed of about 4000rpm falling very gradually after approximately 35 seconds to around 3000. Thereafter the power drops off very quickly and the motor stops within seconds. A quarter-turn on the variable resistor resulted in a slower run of 2 1/2 minutes with thrust levels fairly low. In between was something like the ideal power setting, with a run of respectable power for just over a minute. This degree of

speed control is very useful and indeed, almost essential indoors where there is a fine line between burbling around three feet off the ground or hitting the ceiling. As yet, Derek has not decided whether or not his choice of potentiometer will be included as a matter of course because they are not rated for the level of current used here and tend to break down over a period, giving a 'jagged' response. However, for the record, it is Radiospares part No. 8336.

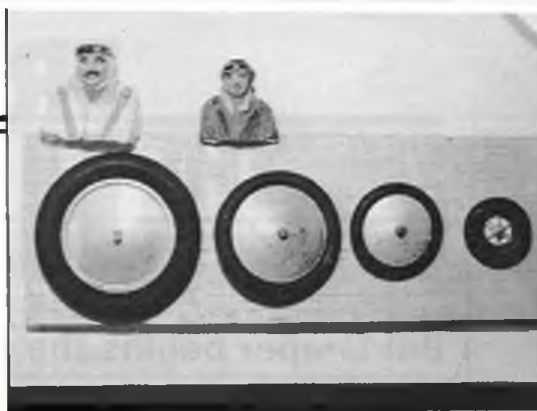
To try the motor in the air I made a rapid and unsubtle conversion of my Bristol Monoplane, featured in the May issue, which I thought would be a suitable model, if a little small. The overall weight remained similar to that in its previous existence as a rubber model since the motor simply replaced the rubber and the hefty lump of nose ballast. Flight tests were entirely satisfactory, and at Old Warden Scale Day the model made twenty flights of around 30-40 seconds duration, attracting much favourable comment.

In conclusion, this is an excellent product, and I am sure it will be very successful; even more so when an off-the-shelf charger is available. It has the major advantage over CO₂ of being entirely consistent and cheap to run. Its compact frontal aspect and geared motor make it very suitable for scale use. It is heavier than the Telco which will limit its application to the shorter-nosed subject, although as the battery holder is removable the battery pack could be relocated to achieve correct balance with little difficulty. As for size of model the recently published Bristol MID matches the motor perfectly, so you could use that as a guide, adding a little for a cleaner monoplane, and going rather smaller for a biplane!

The price is £19.50; very reasonable indeed.

Small Scale Custom Services

Lindsey and Jane Smith have started producing vac-formed items for the scale modeller under the name 'Small Scale Custom Services', and their range was on display at Lindsey's trade pram(!) at Old



Top left: Here's what to look for - these Small Scale Custom Services packs contain wheels and a transparent pilot! A more-easily distinguishable selection appears at top right. In all, four pilots and four types of wheel, plus dummy Wasps in 'CO₂' and 'Peanut' sizes are on offer. Above: Look out for Lindsey's latest - this Blackburn Roc is fitted (naturally) with one of his radials...

Warden. The moulds are from Doug McHard, and comprise pilots, wheels and dummy radial engines. The mouldings, which are supplied made-up or in the raw state, are excellent value. The average modeller would be hard pressed to produce these items in traditional fashion at the same weight. Lindsey will also produce mouldings from customer's blanks; for a price list of his services contact him at The Red House, Oxborough, Kings Lynn, Norfolk PE33 9PS.

We recently saw some cockpit canopies freshly produced for Butch Hadland; accurately and crisply moulded they really looked the part. Lindsey's new venture deserves support - launched under the wing of the government's Small Business Scheme it will, of course, depend for survival upon consumer demand. Give him a call...

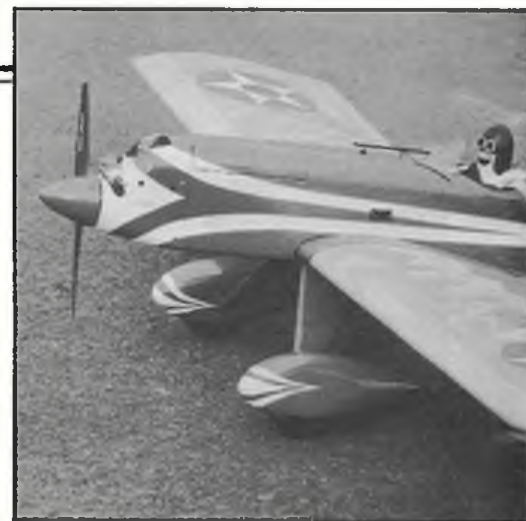


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FROM THE HANDLE



Bill Draper begins the schedule with stunt competition news...

Stunt at the 2nd Centralised C/L Meeting: Hullavington, 3rd May

The entry was down to a disappointing five, perhaps because of the unpromising weather forecast, but there was high-quality participation. Most flyers had travelled long distances to compete. The practice flights (plus two warm-up flights for the judges) tested the contestants' mettle; high speed, high stress manoeuvres were going to be the order of the day.

First official flight in round one was by Barry Robinson with his Merco 61 powered Northwind. He flew a forceful schedule in the wind until the inboard wing cracked during the square bunts, taking on ten degrees anhedral. Fortunately the spar held and Barry was able to fly level to use up the fuel and land without further damage. This mishap could be viewed as a stroke of good fortune since Barry intends using the model in the European Champs and this weakness, caused by an old injury, was best found now before a total write-off while representing Great Britain. Barry was philosophical about it, but he had brought no back-up model and was thus out of the contest. Next came Tony Eifflaender with last year's 650sq. in. Freebird and PAW 40. He flew his usual fast, sharp style for a good looking schedule but lost points on landing, the light plane lacking glide penetration to bounce into wind. Nev Dickinson was using a revamped version of his Windy I, nee Smoothy, now finished in white with OS 40 up front. Nev chopped his prop size from his usual 12x6 to an 11x6 to cope with the wind but he too lost points on landing with the breezy bounce. Bill Draper used a nine-year-old Superhawk, repainted last year, with Enya 40 and 11x6 Kavan prop. The jet picked up a little dirt and the motor ran fast and lean, speeding up the manoeuvres to a frightening degree; but the model certainly wasn't lacking in penetration. Last to fly in Round One was Bristol flyer Terry Taylor now using his big, all sheet design with Enya 40. He completed his schedule OK despite being blown around a lot, but was another to lose points on a ragged landing.

Round Two, flown after lunch, found the wind still strong but not quite so violent as in the earlier round. Nev opened with an improved score, perhaps as his reflexes

adjusted to the wind, moving into the lead ahead of Bill. The Superhawk followed, the now-clean jet and much better controlled engine run giving an increase in score for Bill to regain his lead. Terry Taylor decided to keep his model for another day, and with Barry out of the event Tony completed the round with another quick flight from the Freebird. After landing the aircraft was found to have a stress split along the rear half of the fuselage and Tony wisely withdrew.

Because of this, Bill Draper found himself opening the last round; he improved his score slightly. Nev then also decided that enough was enough so the contest ended abruptly with only that single flight in Round Three. The result was a win for Bill Draper with Nev holding onto second place and Tony in third.

Many thanks to the judges for standing out in the chilling wind, to the flyers for making a contest in rough conditions and to Cathy and June for doing the sums.

Novice Aerobatics

Only two novice entries braved the wind. Father and son, John and Christopher

Wing re-engaged a long-standing battle. John made the opening flight with his PAW 2.5 powered Midi Slow but was bounced around badly. His motor died in the vertical eights so John made a hurried refill and restart but he lost tension in some hairy overheads and hit the ground, fortunately without damage. Christopher used more power in his Peacemaker, still equipped with a PAW 2.49, but he too had trouble keeping his lines tight and had to abort his second overhead eight.

In the second round John used more power for a better flight up to the vertical eights but again ran into trouble with line tension and met the grass during the overheads — still with no damage but too late to restart. Christopher again had to abort for the same reason but was comfortably ahead of Dad to take home the pot.



Heading: New from Coverite - the 56in. 5lb. Black Baron Peashooter is for .40 or .46 power. More news to follow...
Right: Bill Brown's super Spitfire for Merco .61. More pics like this please!



2nd Centralised C/L Meeting: Hullavington, 3rd May

F2B Aerobatics

Weather generally dull but with some periods of bright sunshine and an occasional short, squally shower. Winds fresh to strong throughout the day.
Three rounds flown with the best two to count.

		1855	1918	1932	Total
1	C.W. Draper	1855	1918	1932	3850
2	N. Dickinson	1732	1870	-	3693
3	A.C. Eifflaender	1759	1766	-	3525
4	T.G. Taylor	1477	-	-	1477
5	B.P. Robinson	610	-	-	610

Judges: Doris Dickinson and Bob Giddings

Contest Director: Bill Draper

Novice Aerobatics

		299	Total
1	C. Wing (Jnr)	299	269
2	J. Wing	219	233

Judge: Bill Draper



...and Rex Landon keeps the lines tight with a report on a favourite Southern event...

Elmbridge Stunt Competition: 7th June

At the Elmbridge Club's superb tarmac site, Fairmile Common on a cold and blustery day there was little encouragement to fly competition stunt. However, a few stalwarts turned up and in the Open event Terry Bradley started things with his Merco 35 powered SIG Chipmunk. He was followed by Gerry

Pearce with his elegant ST.46 Stiletto. Another SIG kit was flown by Kim Jones: his Twister was slightly modified and with an OS35 up front. Eventful, this, for he lost line tension many times but always recovered just before hitting the tarmac. John Ash from Dagenham flew his own-design craft, powered with an Enya 45, which handled the wind very well, not winding up much in the loops. Glen Alison flew his old rebuilt Stilomag, now re-engined with a ST.46 on its first outing and last but not least was Mike Rolls with an



Top: Contestants at Elmbridge. Back row, left to right, are Vintage winner Steve Crawford (Ambassador), John Ash (winner of 'Open' with this own-design model), Terry Bradley (Chipmunk and Stunt Queen) and Glen Alison (Stilomag). Kneeling at front is Mike Rolls (Palmer Chief). John Ash's son holds the trophies. Above: Martin Radcliffe's large profile stunt Curtiss P-40 is powered by an OS 35 and should inspire similar creations...

OS.40 'own-design'.

In the second round Gerry Pearce had the misfortune to crack the wing of the Stiletto in the square loops which resulted in the model gaining about 3in. of dihedral, but he managed to land it safely.

In Vintage Steve Crawford had an Oliver Tiger powered Ambassador; very fast and smooth. Mike Rolls flew a Palmer Chief and Terry Bradley brought out of retirement a real vintage model - his Stunt Queen that he built as a boy 'x' years ago. Complete with Frog 500 and balloon tank, it flew quite well although the motor run was rather variable.

Judge for the day was Bob Giddings; all the entry fees were donated to the Hatchford Park School for the Physically Handicapped.

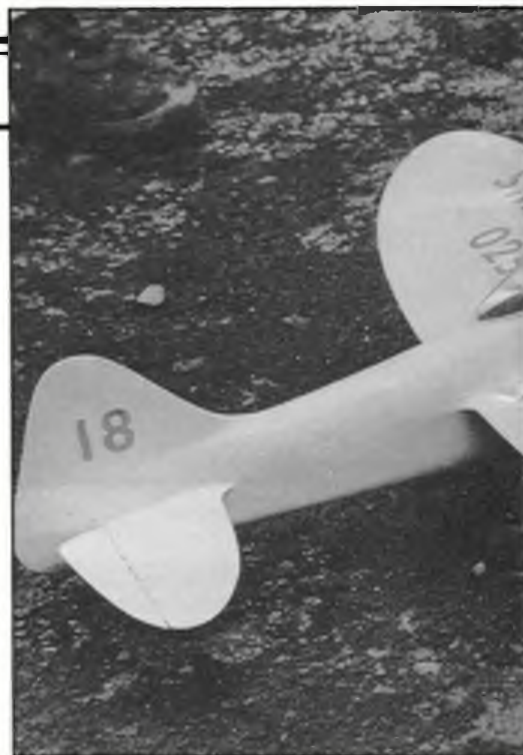
Elmbridge Stunt Competition: 7th June

Open

1	John Ash	1932
2	Glen Alison	1810
3	Terry Bradley	1396
4	Kim Jones	1303
5	Mike Rolls	1077
6	Gerry Pearce	951

Vintage

1	Steve Crawford	520
2	Mike Rolls	435
3	Terry Bradley	287



...while new T/R

columnist Derek

Heaton considers

Vintage revitalisation

Vintage Team Race - Event or Competition?

Talking to Dave Campbell - originator of the Vintage T/R concept - would reveal that the original intention was to promote an event that would have a broad-based appeal and encourage a new focus into control-line. To date all Vintage T/R events have been run on similar lines to our normal racing competitions; that is, two rounds of heats followed by a final. This inevitably gives the most experienced teams with the most modern engines a distinct advantage. We should now take stock of our experiences so far and think hard about the direction that Vintage T/R should take.

It is my opinion that as we already have plenty of 'pure' racing competitions (1/2A, Open Goodyear and FAI) it would be a mistake to allow Vintage to follow the same specialist track. We should be aiming to encourage as many newcomers as possible to come and fly. Having attracted them to the circles then their own enthusiasm should spin off into the other Racing classes. There is no doubt that we are in drastic need of a new influx if numbers of entries at recent SMAE centralised competitions are a true indication of the level of interest in C/L racing in Britain.

I suggest that the final be dropped and replaced with a third round for all the entrants. In order to retain a competitive element (it's always nice to do better than



Elmbridge close-ups. Above: Glen Alison's stylish - and rebuilt - Stilomag was second in Open Stunt. A ST.46 now provides the urge. Below: Winner of Vintage Stunt was Steve Crawford with this red and yellow APS Ambassador, Oliver Tiger powered. This attractive design by Alan Hewitt - a former Gold Trophy winner too - is available from our Plans Service as CL 457 for £3.80 including postage.





- (a) significantly different outline i.e. U/C in wrong position, cowl not built to suit spinner
- (b) substantially different construction techniques employed i.e. thinner wings, hardwood spars, epoxy coverings, wooden cowls in lieu of metal originals.
- (c) Non standard tanks, i.e. unflows.
- (d) Modern o-ring or plastic sealing vales. valves.
- (e) Fuel shut-off systems.

Entrants should be prepared to prove the validity of their model by producing an appropriate plan.

When a model has been checked for authenticity this will naturally remain a fixed result from event to event. Again, it may be controlled through the central co-ordinator.

Concours should be judged by a three-man jury drawn from the list of competitors by the event organiser. This gives the advantage of making the task much easier, for it puts the responsibility

for results back on the shoulders of the entrants. The winning model would be awarded 100% and each successive place would be 5% lower. What if the jury is unable to split two models? Considering third place, for example, both models would be awarded 90% and the next model would be effectively fifth with 80%.

The final result would be obtained by multiplying the three individual results together, the highest mark deciding the winner. Below is a sample score sheet.

As can be appreciated each entrant - either an individual or a team - could enter more than one model. Every combination would have its own personalised target time to compete against. This should encourage more flying to take place throughout the day; and isn't this exactly what we want to achieve?

It is hoped that these thoughts will prompt some of you to put pen to paper or to bend an ear at the Nationals. The more comment you voice then the better will be the resulting competitions...

the other guy!) the 'winner' is decided after judgement of: (a) Flying, i.e. racing time, (b) Authenticity, (c) Concours, thereby creating areas of speciality within the event that will attract their own particularly interested group of fliers. The committed, competitive type will concentrate on improving his race times; the C/L flier with the true Vintage spirit will just want to fly his models amongst with similar types; and finally, the connoisseurs who enjoy building and finishing models as much as flying them will stand a chance too.

How would all this work in practice?

The flying section would be organised as now. Each 100-lap heat - with two or three teams taking part - would be timed. The essential difference is that each competitor would be competing against his own personal target time and not directly against his other competitors. An individual's target time would be his best recorded race time from any previous event, and his result on the day would be recorded as a percentage of this. When either a new team or new model is entered then it would be allocated an initial target by the event organiser, based upon such considerations as the fliers' experience and the achieved target times of other, similar models. This artificial target time would be valid for all three flights on that day; thereafter the best actual time recorded would become that competitor's target time at the next event entered. For this system to work each organiser needs to forward the results to a central co-ordinator so that they can then be forwarded to the next event organiser. I am prepared to act in this capacity to help get the system operating.

Authenticity would be judged by the event organiser and would be awarded a percentage mark with 10% being deducted for each significant deviation from the original. It is not intended to change this into a Scale judging section; instead, each deduction would be based on broad principles only:

			Target	Heat 1	Heat 2	Heat 3	Race %	Authen. %	Concours %	Total
1	G. Isles	Mew Gull	5.10	5.29	5.40	5.10	100	100	100	100
2	D. Campbell	Ranger	5.30		5.20	5.50	103	95	95	92.95
3	D. Edmunds	T. Traveller	4.50		4.45		102	100	80	81.60
4	G. Yeldham	Voodoo	5.20		5.22		99	90	90	80.19
5	D. Court	Mac	5.55		6.05		97	85	85	74.2
6	L. McDonald	Texan	6.00		6.20		95	100	75	71.25
7	J. Noble	T. Traveller	5.30			5.10	106	90	70	66.78
8	D. Heaton	Scout	5.50	6.20	7.10		92	90	70	57.96



Classic Vintage T/R shapes. Top of page: This elegant Scrambler looks purposeful. Above: Gordon Isles' lovely Mew Gull - surely just the type of model that T/R was meant to attract? - and below, an ETA-powered Sorcerer is prepared for the 'off'.



KIT REVIEW
ONE FOR THE
VINTAGE FRATERNITY

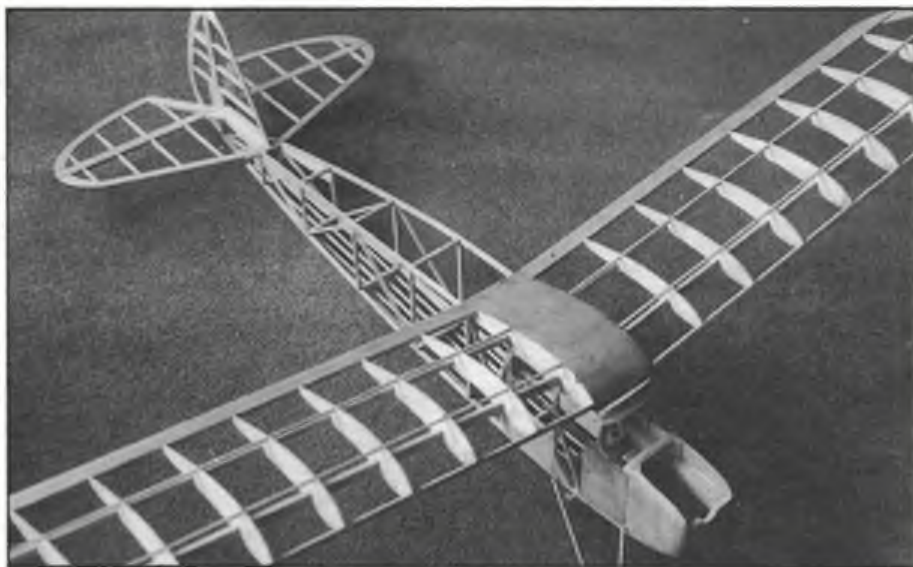
Ben Buckle Kits UTILITY

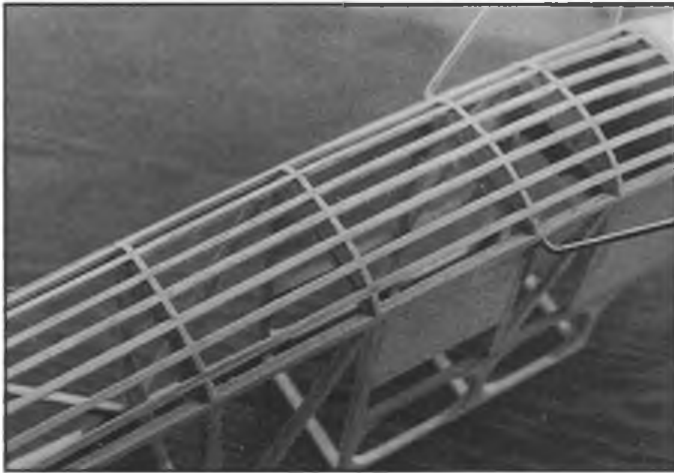
Jim and it! 1941 is the date of the original publication; and the Utility is number eight in the Woodside series of vintage models. At bottom: the completed structure. Jim sheeted the centre-section with 1/64in. ply to prevent crushing by wing bands, and two extra light wingspars on top surface prevent tissue sag. Not for purists!

The name
belies the
charm - at least,
that's Jim Woodside's
opinion. . .

A GREAT MANY performers in the world of professional entertainment go to considerable trouble to choose a name which (it is hoped) will prove memorable and meaningful to the general public. Certainly the fantastical Rocks, Clints, Marilyns and Jaynes are testament to this objective. And within our hobby who would deny the appeal of such hallowed names as 'Slicker' 'Cloud Cruiser' and 'So Long'. But 'Utility'? This is a name guaranteed to keep a model gathering dust - doubly sad as the completed kit is, in my opinion, very much a well styled model in the classic late 1930s/early 1940s cabin contest style.

Let me now backtrack a little. Construction of my own Utility began in early 1985, when the original intention had been to fly it on three-channel radio control. The power was to have been provided by an Oliver Tiger Mk IV which had been fitted with a factory carb. However, my preparations for the 1985 European Control Line Championships meant that after the wing and tail had been built it was sidelined until early 1987. The series of team race motors constructed by Don Haworth, which Derek Heaton and I have used in various forms since 1984 have crankcases cast by that doyen of engine manufacturers, Gordon Burford. When Gordon let it be known that he was to make a replica 2cc Deezil I ordered one straightaway. Its arrival prompted me to bring down the part-built Utility. Although the kit box labels state that the models in this extensive Vintage range can be flown free-flight, it is a reasonable assumption, I guess, that most are built to join the R/C guided group currently so popular. I plumped for the original concept and decided to go for F/F. A major benefit of this decision is an amazing saving in





construction time; it is surprising just how much is taken up in the fitting of all the R/C paraphernalia linkages and hinges.

Build it up!

Utility is a model of entirely conventional construction. No-one should fear any unexpected problems. The stringered fuselage underside adds an air of grace to the normal box fuselage and I find the side profile much to my liking. In retrospect the only change I would make to the fuselage would be to make the tailskid a two-sided item as a single-wire skid is too easily bent.

The wing was built 'as per' except for sheeting the centre section and adding two $1/8 \times 1/8$ in. spars to support the tissue but, of course, the tail and fin were without hinges — a simple trim tab being built into the upper part of the fin. By the way, assuming a tail-heavy situation with no batteries to move around up front I sanded the tail and fin to give sharp, thin structures. Then I had to add one-and-a-quarter ounces of lead to the tail to balance out the rather chunky Deezil!

With the framework complete it was time to cover up all the handiwork so out came the last of my genuine heavyweight Modelspan — yellow was not only Hobson's Choice but an effective one for this type of model. I am not so sure the re-acquaintance with dope was a popular domestic event, but the tissue covering has proved durable and is very much in keeping with this type of model. The black trim lines were obtained by using tape sold for the purpose of car decoration. This will follow sharp bends providing it is first warmed through by a fire or radiator before application.

At the field...

Having built in two degrees of down and right thrust, balanced up to the indicated CG and checked alignments, it only remained to wait for the right day. This turned out to be an evening in April. Test gliding a large-ish model is quite nerve-racking and that rare commodity — KeilKraft long grass — was not available. However, a bit of $3/32$ in. under the tail and a tweak of right trim tab brought a gentle, curving glide. There being no further time-wasting ploys to hand, the Deezil was cranked up. Being a long-stroke side—port motor, setting a steady low-revs run is no problem. Utility floated away from a hand launch into a gentle right climb (and

Top left: The stringered fuselage underside adds character. Top right: Here's Gordon Burford's fine 2cc Deezil handles just like a Comp. Special. Right: Brrrrmm! A 10x6in. Graupner nylon prop gives good results. Just a sip of fuel in the tank means about ten seconds' run. Below: Utility partners another Ben Buckle kit, the Hepcat — this one built by Dave Campbell for F/F with a DC Spitfire.



somewhat tighter right-hand glide). Subsequent trimming flights have established a nice balance in this pattern. I took the model to the May Free Flight Nats where other Vintage fans were surprised to learn the name of the model, thus bearing out my opening remarks. From my experience I would say that any engine of between one and two cc capacity will fly Utility; an E.D. Bee would be just about perfect from 'the weight and power' point of view.

Utility comes with an excellent plan containing all necessary building instructions. Balsa and ply parts were accurately and clearly cut out, with adequate materials provided for either F/F or R/C versions.

I am having great fun with my Utility, especially as I do not have to wait for a frequency peg! I hope you enjoy the one you will build, too.

All the gen

Utility is a Ben Buckle Kit, available from model shops at a recommended retail price of £29.95.

Distributor: Irvine Engines.

Deezil 2cc replica diesel: details on current price and delivery from Gordon Burford, 86 Tierney Drive, Currumbin, Queensland 4223, Australia.

Wheels, covering materials and sundries added about £3.50 in all.

READERS' LETTERS

Eaton Bray memories

Dear Sir,

As you are always requesting photos suitable for publication, I hope the enclosed is of interest. It was of course taken at Eaton Bray Sportsdrome in 1946/47. The model being launched is an Ajax with modifications; that is, folding propeller and spreader bar on the undercarriage. Something for Alex Imrie to ponder over! Note the Box Brownie camera and clothing of the period; I have no idea who the modellers are.

As a reader of *Aeromodeller* from No. 1 and a modeller since 1933 (I was a founder member of the Luton Club) I look back with enjoyment on Eaton Bray and on the wonderful times we had. In 1951 as South Midland Comp. Sec. I ran the South Midlands Rally there. On this day Harry

Hundleby called over the Tannoy to the full size sailplanes overhead to ask them to do some aerobatics for us, which they duly performed!!

Fred Chapman Sundon Park, Beds

Wrong Walrus

Dear Sir,

How I look forward to my copy of *Aeromodeller* each month! The July issue was particularly thrilling with the Indoor Nats report and pictures.

I was very proud to see my Walrus had been included among the pictures but how disappointing to read that it had been credited to Derek Knight - shame on you! After reading Bill Dennis' last report of the Nats at Alumuwell Centre I decided to attend this one myself to see the best in

modelling. After chatting to my friend Butch Hadland, he suggested I fetch the Walrus and give it to Paul Briggs for his static display. The model by the way is scratch built from a plan I purchased from Stan Cole and is modelled on the Matchbox plastic kit: it is powered with a Telco CO₂ motor.

Stan Hunt West Wickham, Kent

(Delighted to put the record straight - but here's a note to exhibition organisers everywhere - display cards are an enormous help...GC).

Ridiculous?

Dear Sir,

I am writing to comment on Jim Woodside's letter on Slow Open Power (*Readers' Letters*, July).

I agree with him that engine size should be limited: say 2.5cc for glow engines and 3.5cc for diesels. I think it ridiculous that engines like the plain-bearing OS Max 40S should be allowed and yet engines like my old Super Tigre G15s are not. I do not think it matters greatly who flies in the competitions provided that honking great '40' models are not used.

It is a great pity that the rules were not formulated better in the first place as it would be rather hard on people who have built large models to have them outlawed now. Nevertheless, I feel that if things stay as they are the attraction to such a power class will wane dramatically. A very great pity when it seems that more people are being attracted into power classes because of it.

Gorden Bunney Bristol

(Nevertheless, interest in SOP remains high and it was a much-enjoyed event at the Nats. What do other readers think? GC).

Fred Chapman's magical Eaton Bray photo is a true period piece. Note the bespectacled youth at the flier's elbow!



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European Championships

25-30th August
FIRST INDOOR EUROCHAMPS
Venue: Wrocław, Poland. Contact: Aero Club of Poland, Krawskie Przedmieście 55, 00-071 Warszawa, Poland F1D

7-13th September
MAGNET SOARER EUROCHAMPS
Venue: Spitzbergen, Austria. Contact: Aero Club of Austria, Prinz Eugen-Strasse 12, A-1040 Wien, Austria. F1E

Open International events

21-23rd August
VAR CUP
F2A, F2C. Venue: Gyula, Hungary. Contact: Hungarian Association of Modellers, Rosenberg Hazaspár utca 1, Budapest V.

21-23rd August
INDOOR INTERNATIONAL
Flemalle, Belgium F1D, F1D beginner, E2B, 35cm paper, Peanut, Pistachio, Savinette. Contact: F. Van Hanwaert, Secrétariat, 1 Grand Place 852, 4110 Flemalle, Belgium. UK contact is Bob Bailey. Tel: 0438 723642

21-23rd August
POITOU 1987
F1A, F1B, F1C, F1H, F1G. Contact: Michel Poussard, 78 rue La Fontaine, 79100 Thouars, France

22nd August
28 SOKO KUP
Venue: Mostar, Yugoslavia. Contact: Aero-klub N.H. Ljubo bresan, Krpica 8, 7900 Mostar, Yugoslavia. F1A, F1B, F1C

5-6th September
MBZB-CUP 1987
Venue: Breitenbach, Switzerland. Contact: MBZ Basel, Toni Salathe, Hardstr. 13, 4132 Mültenz, Switzerland. F2B, F2D

5-6th September
1ST CARL NEUBRONNER CUP
S1A, S3A, S4A, S6A, S8A. Venue: F.R. Germany. Contact: Deutscher Aero Club E.V. Postfach 710243, D-6000 Frankfurt/Main 71 F.R. Germany

6th September
TROFEO CANSIGLIO
F1E. Venue: Pian Cansiglio, Italy

9-13th September
EUROPA CUP AUSTRIA
F1E. Venue: Spitzberg/NO Austria. Contact: Aero Club of Austria, Prinz Eugen-Strasse 12, A1040 Wien, Austria

19-20 September
RUHRPARK CUP
F2A, F2B, F2C. Venue: Bochum, F.R. Germany. Contact: Josef Frölich, Unterstrasse 62, D-4630 Bochum, F.R. Germany

25-27th September
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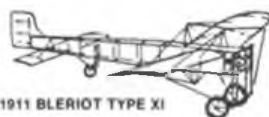
10th October
23 KUP REPUBLIKE
F1A, F1B, F1C. Venue: Zagreb, Yugoslavia. Contact: Zrakoplovni savez Hrvatske, Dalmatinska 12/11 41000 Zagreb, Yugoslavia

10-11th October
13TH CALIFORNIA FAI
F1A, F1B, F1C. Venue: Taft, California. Contact: Juan A. Livotto, 13212 Lake Street, Los Angeles, California 90066, U.S.A.

17-18th October
11TH SIERRA CUP
F1A, F1B, F1C. Venue: Sacramento, USA. Contact: Roger Simpson, 2625 Queenwood Drive, Rancho Cordova, California 95670, USA

31 October-1st November
5. INTERNATIONALER FREIFLUGWETTBEWERB BERN, F1A, F1B, F1C
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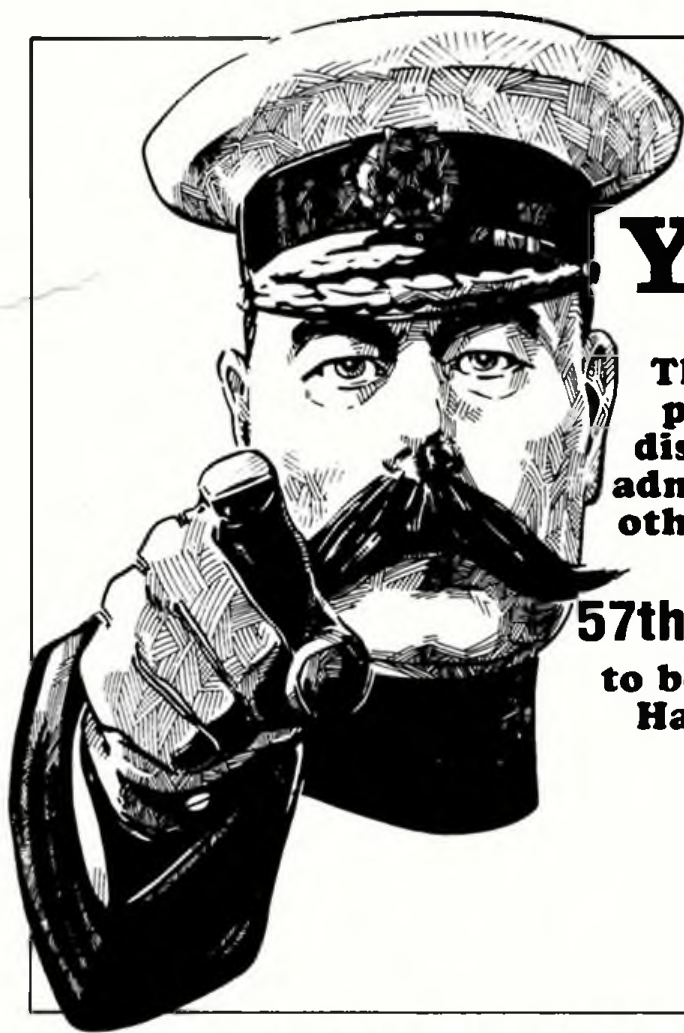
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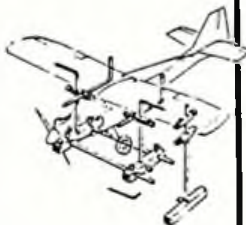
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