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£25.10 for 12 issues U.K.
£26.00 for 12 issues Overseas Surface mail
£53.00 for 12 issues Overseas Air mail



APRIL 1987

Volume 52
Issue 615

ISSN 0001-9232

AERO

MODELLER



p.201



p.206

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Cover:

Winner of the Aeromodeller Cup at the 56th Model Engineer Exhibition was this splendid Bleriot XI rubber scale craft by Paul Briggs — especially deserving an award as the model was flown consistently well last season. See our M.E. report in this issue. Bright star at the last Aerobatic World Championships was the Sukhoi Su-26M, a fine model subject which appears as our latest Aircraft Described this month.

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Advertisement Offices: Argus Specialist Publications Ltd., Golden Square London W1R 3AB. Tel: 01-437-0626.

Postmaster: Send address changes to Argus Specialist Publications Ltd., P.O. Box 35 Wolsey House, Hemel Hempstead Herts HP2 4SS England.

Subscriptions: Direct subscription rate including index. Home £25.10. Overseas sterling £28.00. Overseas dollars (U.S. or equivalent) \$38.50 from Infonet Ltd., Times House, 179 The Marlowes, Hemel Hempstead, Herts. HP1 1BB. Tel: (0442) 48434.

Overseas Availability: Second class postage paid in the U.S. at New York, USA. Mailing Agent and distribution to news stand sales by Eastern News Distributors Inc., 1130 Cleveland Road, Sandusky OH10 44870. Distribution to North American hobby and craft stores museums and bookshops by Bill Dean Books Ltd., 166-41, Powells Cove Blvd., Post Office Box 69 Whitestone NY 11357 USA Tel: 1(212) 767-6632. USA Subscription agent Joseph D Daileda, Wise Owl Worldwide Publications, 4314 West 238th Street, Torrance CA 90505.

Argus Specialist Publications Ltd.

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

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HANGAR DOORS

Fly Fly-Rod!

One of the most enjoyable facets of the Model Engineer Exhibition at Wembley was the response to the indoor flying competitions and demonstrations. Notable amongst the latter were Laurie Barr's endeavours with EZB craft; and to give added impetus to the spectacle we were happy to announce news of Laurie's proposed 1987 Cardington competition for novices prepared to have a go with his Fly-Rod design. Now is the time to tell the rest of you! Fly-Rod, which provides a straightforward introduction to duration indoor flying, was first published in the July '83 issue of this magazine. Photocopies of the feature, which gives all details necessary to build and fly can be provided from *Aeromodeller* for £1.50. Anyway, to the competition, which is to be held at the famous Airship Shed on May 17th. Generous prizes are on offer; the winner will receive £100, second and third place contestants taking home £30 and £20 respectively — all for the sake of testing this delightful craft against the stopwatch. But are you a novice? Definition: a modeller who has not placed in the 'first three' in any nationally-advertised EZB or Microfilm competition (except AGM Trophy events). How do you take part? First, join the SMAE; — aeromodeling's national body. This will cost £7.00 if you are a Senior (over 18 years old); Juniors pay just £5.00. You can combine this with your application for entry, before the date of the contest, to Laurie himself at 4 Hastings Close, Bray, Berkshire, quoting your daytime and evening phone numbers. A small charge will be made for the use of the Cardington site; this will not exceed £2.00.

Then build your Fly-Rod, go out and enjoy yourself!

More Indoors

As a change from the great outdoors, get under cover for a change of pace, you scale enthusiasts. The SMAE Indoor Nationals takes place at the Alumwell Centre, Walsall on 26th April and a refreshing event it is too! If you haven't sampled the delights of small-scale flying in turbulent-free conditions, go along and see what's what. We bet you'll be entranced! Apart from the competition classes, the static display which usually contains an outdoor rubber scale

A wide variety of models was on show at the SMAE stand at the Model Engineer Exhibition. Dominant was the large Tiger Moth seen here brooding over Steve Philpott as he decides whether or not to invest in a SMAE tie. A prime mover behind the organisation of this display was Glenda Bracken who seemed to be on constant duty — perhaps she'll tell us if Steve made his purchase!



interloper or two is worth scrutiny in its own right. Interested? Contact Doug Sheppard on 0272 697595. See also What's On and Scale Matters.

Indoors and outdoors...

Equipping yourself for indoor or small-field flying is something of a specialist task. One notable supplier usually to be seen at major indoor events plying his wares is George Wallbridge of SAMS (not to be confused with the vintage group SAM 35!). The SAMS catalogue of goodies is to be recommended; indeed, we have just been looking at the latest one, which represents an excellent sixty-five pence worth. As expected, there are some new products to mull over, including kits from IMS (a splendid reduced-size 1939 Korda Wake is one of the offerings) and FAI (going outdoors again, the Potent P.30 looks a fine proposition, finished rolled-tube balsa fuselage and all). Our own Bill 'Scale Matters' Dennis has produced a range of — guess what — scale plans which appear therein including his O/400 twin and DH34; and not only is a full range of Telco spares on offer but there is a very handy adaptor for a Sodastream bottle which will enable you to enjoy

consistent and cheap — in the long run — CO₂ flying. But find out for yourself what SAMS can do for you by sending your 65p and a large SAE to 2 The Drive, Blackmore End, Wheathamstead, Herts AL4 8LF.

Go Golden Era!

Of course, you're all familiar with our own and much-loved ASP Old Warden Scale and Vintage Weekends. But there's another day at that hallowed site that could well provide the best of both worlds. We mean Golden Era Day, which is on 12th July this year. Go along and focus on the flavour of the 'twenties and 'thirties. There's always plenty of R/C but there's masses of room for all you free-flight and C/L enthusiasts too. Let's see heaps of super Scale models to suit — and don't forget, Vintage craft from those dates are more than welcome too! To be really in part, period costume is a must — so dress up and come along! There's more. The previous evening is the occasion of one of these super Shuttleworth Flying Evenings, this year with special emphasis on 'Women in Aviation'. Big band melodies from the hangars; many other attractions and the chance for a super, unforgettable weekend,

with camping arrangements, too. Don't miss it! Dust off the trilby and plus-fours now.

Got time for the F/F World Champs?

Martin Dilly, SMAE PRO, tells of a scheme whereby you can lend your help to this premier event, which takes place from 10-16th August at Noize, near Thouars, in France. More specifically this location is about 300km south-west of Paris, to the south of the Loire. Over thirty nations are expected to compete. But what can you do? What are the rewards? Well, you can have a better-than-grandstand view of the flying by volunteering your services as a timekeeper. You get to keep the stopwatch — and there's a free lunch! And don't forget the three-day F/F extravaganza which takes place immediately after the Championship at the same site. All you need to compete in this — if you're a SMAE member, of course — is an FAI licence, which will cost you just £1.00. The Third International Two-minute Contest for Coupe d'Hiver (F1G), A/1 Gliders (F1H) and 1/2A Power takes place on August 21; then, on the 22nd and 23rd takes place the 'Tenth Journees Internationales de Vol

Libre' — better known as 'Poitou' to the initiated. You could also help by timekeeping for these contests. Contact Michel Poussard, 78 rue La Fontaine, 791000 Thouars, France for entry forms and more information. These events are always most enjoyable — why not make them your introduction to the European circuit?

So — if you fancy France in August for the World Champs (and more) contact Martin Dilly at 20 Links Road, West Wickham, Kent BR4 0QW as you'll need to be included in the British entry form. Send an SAE!

SMAE Competition Newsletter

If you want to keep in touch with contest happenings and forthcoming events, £2.00 will bring you your own copy of SMAE Competition Newsletter, or rather about five of them per year. Send a cheque payable to SMAE, to Comp. News, SMAE, Kimberley House, Vaughan Way, Leicester LE1 4SE; and stay up-to-date!

Where are they now?

Rupert Harris sent us a favourite memento, and asked for help: 'The subject of the photo' is the wrote 'members of Regents Park MFC at Fairlop in the early 50s for the 'Damage' cup — you can see the strength of that wind! I don't think we did anything else that day, but oh! what lovely times we had in the following months — and years. ...

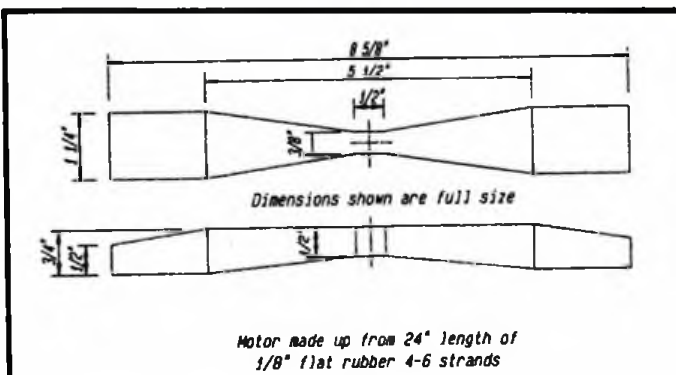
'You will see in the foreground a gent by the name of Bill Lunn, happily still with us, whom I often see at Old Warden and other such meetings. Left foreground is Ray Silver; like Bill, a designer for 'Premiers'. Left centre, with Soarer Minor is myself, sporting club name on wings. But where are all the others? One hopes, happily still with us, if only in spirit!'

Well — are you out there? Tell us. ...

Local fields and SMAE competitions

Pete Harris writes from the SMAE F/F Technical Committee to put us in the picture about the use of local fields for F/F Area Centralised competitions. During 1986, Pete tells us, the Tech Committee received requests

A slip of the computer meant that the prop blank shown on the Flying Aces Moth plan in February was mis-dimensioned. Here's the correct gen — and we take the opportunity to credit Herb Spatz, original designer of this immensely popular craft which was republished in the August 1941 Flying Aces after first appearing in August 1937.



from various sources seeking permission to fly Area Centralised events on local flying sites. Some of these requests were refused causing those concerned to feel that they were victimised whilst in other cases the committee felt that the conditions they had imposed when agreeing permission had been ignored.

Against this background it has been decided that the following criteria will be used when considering any requests this year:

Any site used should be designated as the 'Area Flying Site' for a particular event and as such must be available for use by

anyone in the Area wishing to fly in the competitions concerned (subject to the normal requirements, such as being a SMAE member). An area should be restricted to the use of only one field per meeting.

The Committee would like to offer any encouragement and help that it can in the acquisition of suitable flying sites but sees this as primarily an area responsibility for these events. Hope all is clear now. ...

Amendment and confirmation

Various snippets here. The Peterborough MFC control line Sport and Vintage Fun Fly day

will now take place on 31st May to avoid a clash with the similar Three Kings event on 14th June. Secondly, Pete Harris send us confirmation that the SMAE Mini-meeting on 26th April will be at Chetwynd. Lastly, Dennis Davitt from the Northern Area, tells us that the following meetings have been arranged for Driffield; further dates next month.

22nd March:	2nd Area meeting
12th April:	Vintage, Pannett, Kay
10th May:	3rd Area meeting
7th June:	4th Area meeting



Top: 'Where are they now?' asks Rupert Harris, who sent us this 'fifties shot of the Regents Park MFC. Where indeed... Right: The daily press enjoyed the M.E. too — this photo by Herbie Knott of the goings-on at the DPR Championships in the Wembley auditorium appeared in The Independent on 2nd January.

WHAT

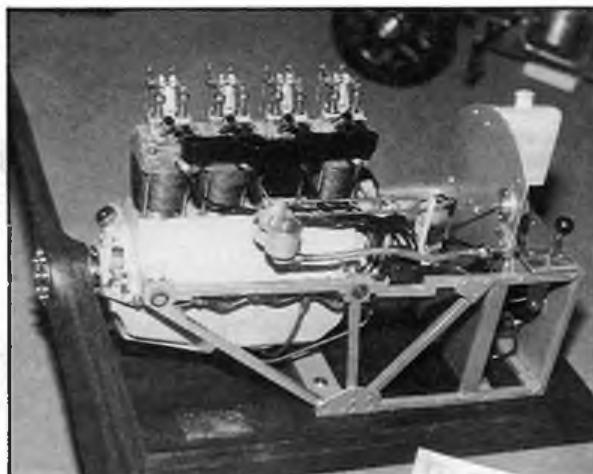


Aeromodelling at the 56th Model Engineer Exhibition, Wembley, 1st-8th January 1987

OVER FIFTY THOUSAND visitors in eight days enjoyed this annual modelling extravaganza; and there's no doubt that the model aviation enthusiast there will have been encouraged by the continuing growth of interest in aeromodelling at Wembley. Over thirty flying aircraft were entered in the M.E. competition classes, and with greater than that number of static craft to give a variety of scale and subject there was plenty to see. All were grouped together on a new, fresh stand which allowed the browser to walk right around and thus to examine the exhibits from all angles, the better to enjoy the prizewinning models — and to agree or disagree with the judges' choice... Club stands too added colour to the aeromodelling scene. Notably, SAM35 did their stuff again. With even more space at their disposal this year the result was a between-stairs concourse kaleidoscope of over 200 vintage models; a healthy demonstration of the continuing and lively interest in 'traditional' aeromodelling. The SMAE stand, apparently sheltering under the wingspread of a large Tiger Moth once again presented a variety of model types to illustrate the many forms that the hobby can take; competition winners and record-breakers were to the fore. The auditorium hosted a number of model flying demonstrations and competitions much to the interest not only to those familiar with aeromodelling but to members of the audience using the comforts of the Wembley seats to recharge after their foot-weary endeavours. But what appealed most of all?

Winners!

The subject of considerable comment — all of it favourable — was the Gold Trophy and RCM&E Cup winner, Peter McDermott's magnificent DH 9A. Several onlookers were of the opinion that this was a large static-display model; their astonishment when advised otherwise was considerable! From all points the bomb-dropping DH looked truly full-size, though to your reviewer the stunning view forward, taking in cockpit, gun and cowling detail was the most convincing of all. Equally impressive was the Aero-



AN EXHIBITION!

modeller Cup choice, Paul Briggs's rubber powered Bleriot XI, winner of Rubber Scale at the Nats and still immaculate after considerable airborne time. Scale models did well in the honours. Peter Noel's ducted fan Aviojet was surprisingly colourful in its jagged camouflage and the blue Miles Sparrowhawk entered by D. Rose captured crisply the flavour of 30s flying. Both were Highly Commended, as was Charlie Newman's next Nationals contender, a most charming Breguet 693 for twin rubber power. The Exhibition was Charlie's first opportunity to see the model complete and in on piece: a real late-night painting session had meant that final masking was not removed until the setting-up morning. Further research has revealed the need for some minor alterations but when all is done this curvaceous rarity will be set fair to amass bonus points with a vengeance. Flight reports are awaited with interest.

Sleek and smooth was Bill Cliff's latest,

a thoroughly modern Wake which was another Highly Commended; while the other end of the Wakefield spectrum was represented by Martyn Pressnell's neat red-and-white vintage Fleetwing, a Ted Evans cabin design. Pleasant to see this craft awarded a Bronze medal, especially as the achievements of Evans are presently undergoing something of a renaissance.

From approximately the same point in aeromodelling history came two of the Commended craft, Peter Lee's neat Zombie IV (a Ron Warring design) and Les Hoy's Gull, which is a real tour-de-force. One look at the plan - yes, it's in APS - is enough to deter all but the most enthusiastic but twin-prop flexi-drive flying boats hold no fears for Les whose two years of effort were much admired. Other models in the Commended category were the colourful and bang-up-to-date R/C aerobatic ship Magic entered by V Parish and the rigging-festooned Voisin Canard

Floatplane, a small-scale rubber craft by Lindsey Smith.

Variety was the theme of the competition entries, almost every class of model being represented (although there was no Coupe d'Hiver or F1C). Most unorthodox was Jim Morley's ambitious Harrier, an R/C extravagance driven by an inverted rotor system. There was photographic proof that sufficient lift is generated to support the main body of the craft, at least when restrained by human hand on fin, but so far it is a different story once wings are fitted and the Harrier let go...

More to see!

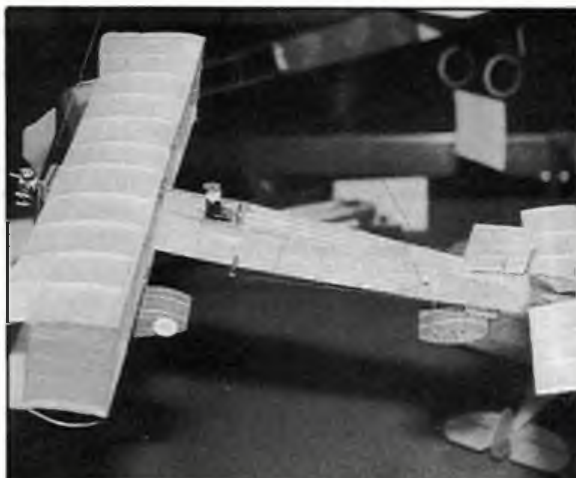
The work of the scratch-builder, plastic kit modifier and model engineer himself can also be inspirational as reports in our companion magazines will indicate. The fine SAM 35 display is more fully commented upon in Vintage Corner this month.

Heading: Close-up of the business end of Peter McDermott's magnificent DH 9A - a worthy Gold Medal winner which also carried off the RCM&E cup. **Right:** Not a flying model - but Tony Woollett's amazing Airspeed Courier could give many modellers a lesson or three when it comes to detail finishing.

Along the foot of page: Dave Rawlins of DPR Models was very happy with the success of his model flying Championships. Here he presides at the prizegiving. **Dave's mum presented the awards and goodies. Next right is L.W.**

Chenery's superb de Havilland Gipsy, ready to go on its test rig. At centre is Robin James with his radio-controlled CO2 model which made several impressive flights in the Conference Centre auditorium. Relatively flexible foam structure is a definite asset when the craft makes an arrival! Below: Lindsey Smith's Voisin Canard floatplane, an unusual subject if ever there was one, gained a Commended.

Foreplane looks vulnerable... Vintage model at far right was one of many to grace the SAM 35 stand - Noel Barker's Bill White Streamliner is a veteran of many fine flights. Gorgeous monocoque fuselage.





Model flying in the Wembley auditorium - always popular - was boosted this year by the opening-day DPR Model Flying Championships which was masterminded of course, by Dave and Janine Rawlins of DPR Models. Level of participation was high, and in the duration competitions satisfying flight times were achieved by Juniors and Seniors alike. Winner of the latter class was one John O'Donnell who despite taking things very seriously indeed was unable to break the one-minute barrier with his Cosmo R-1. His endeavours took on board the assumption that in order to win he would have to bounce the model off the ceiling-mounted sound baffles! Perhaps we have here the basis for intensive competition in the future; certainly, other F/F 'names' have expressed interest in having a go (maybe just to have a crack at John!). DPR's generosity in providing appetising prizes was commendable; winners in each class taking home radio gear, a kit and an engine. Robin James took advantage of the occasional lull in proceedings to demonstrate his Indoor R/C CO₂-powered



Top: Just part of the DPR Models Workshop. Intending competitors attack their Cosmo R-1 and R-2 kits with varying degrees of enthusiasm - participation was high, however! Above: Part of the competition model aircraft display - a layout that was bright, attractive and easy to browse through. Far left: Reg Parham about to delight his audience with another of his Indoor curiosities, this time a canard ornithopter. Left: A gentleman not unknown in the world of competition free flight - John O'Donnell prepares his Cosmo contest winner. Despite much effort he failed to break the minute barrier.



Above left: If you disagreed with the judges' choice, have a word with these gentlemen! Sid King, Tony Dowdeswell, Henry J. Nicholls, Ron Moulton and Ian Dowsett clearly enjoyed their duties. Left: The Gull, a 1943 design by A.K.E. Gylford, has always been a challenge. Les Hoy's handiwork resulted in a Commended - and created much discussion amongst Exhibition-goers familiar with the design. Main picture, right: Most unorthodox was helicopter enthusiast Jim Morley's ducted fan Harrier with underslung rotor for vertical lift. Model has 'flown' under restraint.



model which must be a Wembley 'first'. We hope to describe this mostly-foam craft in a future issue.

More demonstrations

It is always fascinating to see the true enthusiast enjoying his obsession. Indoor maestros Reg Parham and Laurie Barr mustered an impressive series of demonstrations which conveyed most powerfully the special magic of this form of aeromodelling. Particularly notable was Reg's penchant for the curious, including single- and double-wing ornithopters and a variant described by Reg as a 'teeter-totter', this being propelled by tandem centrally-pivoting oscillating surfaces - difficult to describe, so suffice it to say that in action it looks like a conventional ornithopter (if that's not a contradiction) but isn't! Laurie's exploits included a series of fine EZB flights, some exceeding ten minutes' duration and each one introducing the audience to the intricacies of model steering by pole. The existence of human-generated thermals was also clearly shown, lift and sink above

the spectators being most notable on occasion. Other enthusiasts flew indoors, John Lawson's efforts with his relatively heavyweight CO₂ Scram proving that its resemblance to the 'real thing' and the noise emitted by its motor attracted considerable interest, contrasting well with the gossamer stuff. Room for expansion next year? Each of the Indoor demonstrations was followed by a harum-scarum paper dart competition for the youngsters in the auditorium. The efforts put into this were considerable, as was the variety of paper aeroplanes that resulted. Very strict marshalling was necessary but it could fairly be said that the results were enjoyed by all (except those whose models 'hung up' on the lights!).

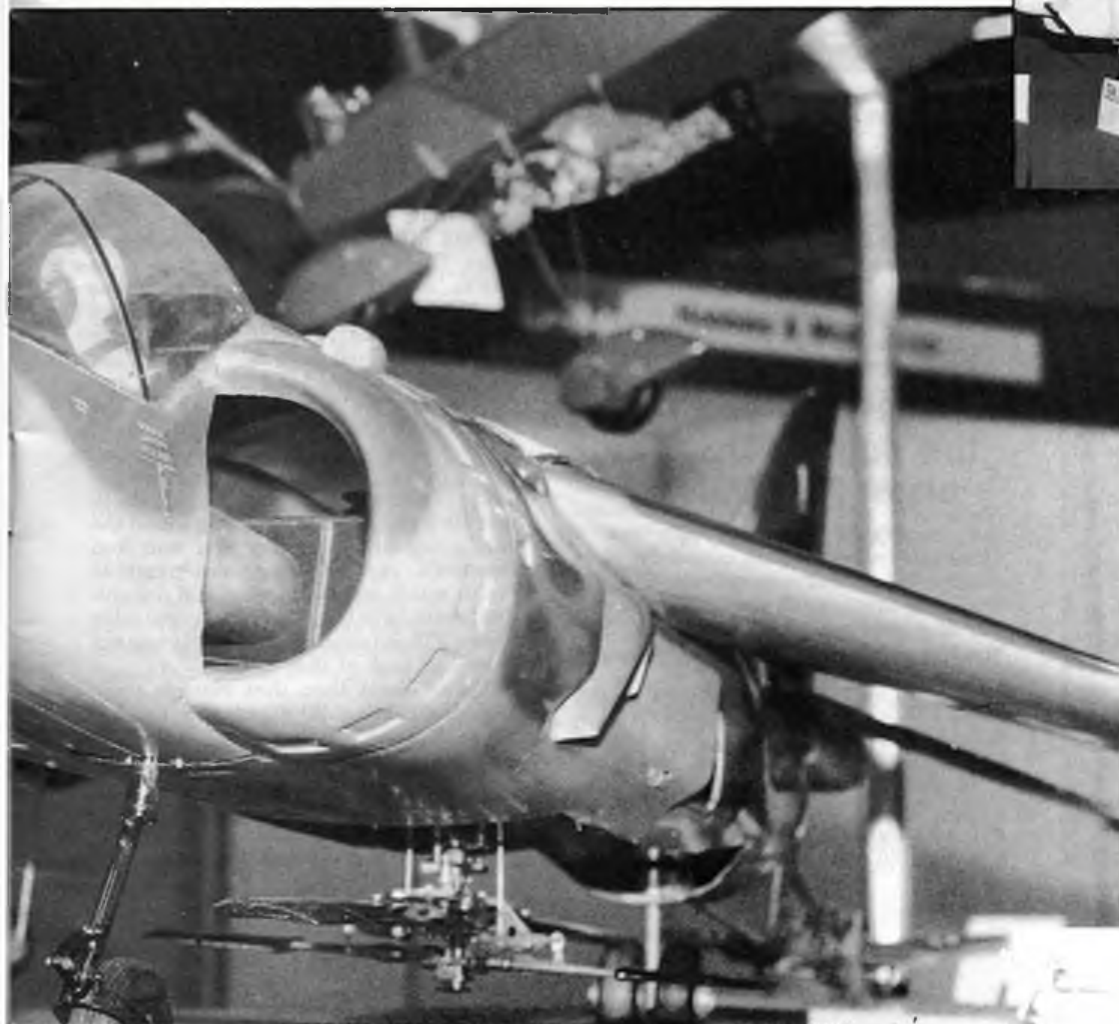
Of course, there was much more to see than we can cover fully in this account, including the Wembley-hosted SMAE Experts' Forum which receives its share of attention elsewhere. All we can say is that aeromodelling at the M.E. continues to thrive - so take note, take advantage and join in next year! We'd love to hear from you if you have any ideas of your own...



1986 Model Engineer Exhibition Flying Model Prizewinners

Peter McDermott (DH 9A)
Paul Briggs (Bleriot)
Martyn Pressnell (Fleetwing)
N. Cliff (Modern Wakefield)
P.G. Noel (CASA Aviojet)
D. Rose (Miles Sparrowhawk)
C. Newman (Breguet 693)
P. Lee (Zombie IV)
L.C. Hoy (The Gull)
V. Parish (Magic)
L.G. Smith (Voisin Floatplane)

RCM&E Cup and Gold Medal
Aeromodeller Cup and Bronze Medal
Bronze Medal
Highly Commended
Highly Commended
Highly Commended
Highly Commended
Commended
Commended
Commended
Commended



Above: The winners! At top, Peter McDermott looks pleased with the RCM&E Cup, while below, Paul Briggs, whose cover-subject Bleriot XI was awarded the Aeromodeller Cup, is caught by the camera as the trophy changes hands. Exhibition organiser Mary White did the honours at the prizegiving. Immediately above: Vic Parish's Magic R/C aerobatic craft in orange, black and white caught the judges' eye and was rewarded with a Commended. Sleek model has retractable and anhedral tailplane.

Have Fun...

FLYING FIFTEEN!

ONE OF THE UNHAPPIEST developments in aeromodelling since the great old days of the 1950s has been the progressive polarization of free flight and radio control into separate categories. When, in the 50s, a modeller appeared with a radio job he was welcomed as part and parcel of the free flight scene simply because there were no other radio fliers on the field. Then, as radio became simpler, more reliable and, therefore, more popular, the R/C fliers began to hive themselves off to form what we now recognise as 'the radio crowd' - a breakaway so complete that it is now the free-flighters who are thought of as the nonconformists.

The amazing growth of the vintage movement in the past five or six years has done a lot to close the gap by way of cross-fertilization - the vintage free-flighter often having no choice other than to fly R/C—assist locally, and the R/C man frequently reverting to free flight at the big meets while waiting for a peg! But (and there always has to be a 'but', doesn't there) after you've been chauffeuring your Junior 60 or Quaker Flash gently around the sky for a quarter-of-an-hour or so, perhaps even doing the occasional loop, what then? Is that it? Is that the be-all-and-end-all of radio-assist? Many R/C men will tell you yes, that is it, and that

they are quite happy for things to stay that way, thank you very much. Others, however, need the spur of a little gentle competition if their interest is to be maintained, and they *don't* all want to go in for twelve-foot monsters with magneto-ignition four-strokes.

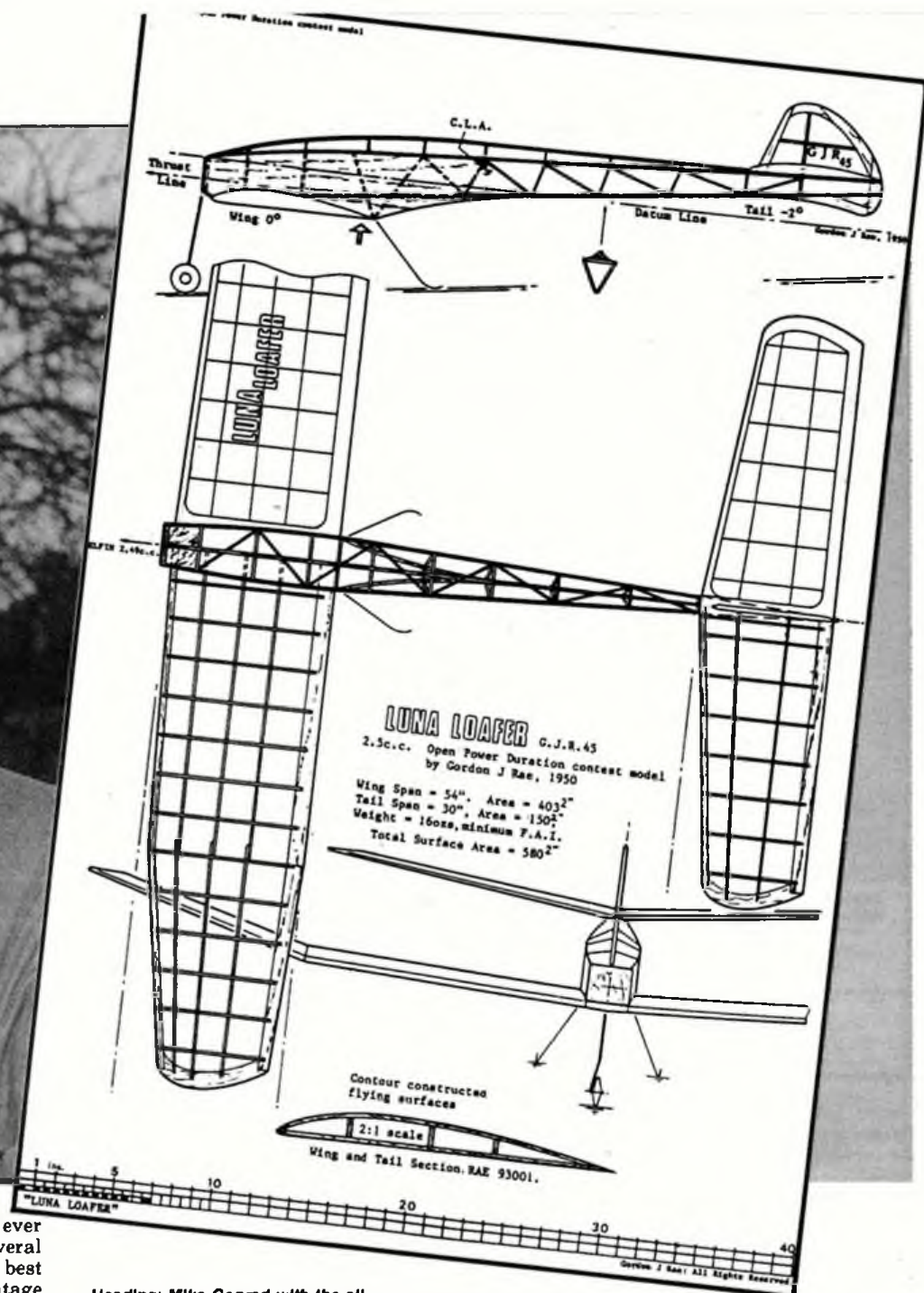
**Free-flight? Radio?
Bridge that gap with
this popular Duration
class. Peter Michel
explains how**

Beginnings with Brigadiers

So, until three or four years ago there was a partial state of limbo in the world of radio-assist. Then, out of the blue, came a brainwave from Scotland. Bob McGill, of Greenock, described in the first of the Yearbooks produced by the SAM 35 vintage organization (December 1982) how the old Berkeley Brigadier, a 54in.

cabin power job, made an ideal radio-assist flier on two channels with a 1.5cc diesel. But Bob went further: he instituted a duration class for Brigs and imposed a two-minute engine run. It was an instant success with his fellow clubmates. 'Man, those Brigs float about up there like hawks,' said Bob at the time.. How right he was. The story moves on a little to the Free Favingats in May, 1983. Inspired by Bob's enthusiasm I had built a Brig, installing my trusty old Mills Mk.I 1.3cc diesel, and flew it for the very first time on the afternoon of a SAM 35 Brigs-only contest. Having been occupied with free flight all day, I had no chance even to run up the motor before the contest flight itself. Wouldn't you know it? My Brig found the only good air of the day and won Ron Prentice's cup with an eleven-minute flight, much to my surprise and delight. That must have been the first recognizable Flying Fifteen contest, although it was not known as such at that time.

It was about then that vintage radio columnists Mike Whittard and Gordon Counsell (now chairman of SAM 35) discussed this interesting two-channel event and decided it was too good to limit to one design. It was certainly worth promoting. Mike recalls: 'I had felt for some time that we were getting away from



vintage and that people were building ever bigger and more complex models. Several of my chums were talking about how best to return to smaller models of the vintage period.' After throwing a few ideas about, Mike and Gordon suggested a 7.5cc fuel limit instead of Bob's two-minute motor run for the simple reason that 7.5cc Half-A team race tanks were then still readily available. Mike coined the phrase 'Flying Fifteen', punted the idea in his RCM&E column, and the new class was born. In just three seasons it has developed into a way of life for its devotees, many of whom regard it as an acceptable and much-needed bridge between radio and free flight.

What do you do?

But to business. To enter a Flying Fifteen contest - and there are quite a few on the calendar now, culminating in the famed Oktoberfest down in Wiltshire - you will need:

- (a) Any vintage power design; cut-off date, December 31, 1950;
- (b) Any straight (non-schneurle) diesel up to 1.5cc capacity. (Hence the name, Flying 15);
- (c) Any two-channel radio gear;
- (d) Any old syringe for measuring your

Heading: Mike Conrad with the all-conquering 'profile' Madcap. Century Systems receiver drives micro Futaba servos from a 100 mAh battery. Twenty ounces means just over 9oz/sq. ft. wing loading. Above: Another likely candidate for this class is Gordon J. Rae's 54in. Luna Loafer from 1950. Low-wingers are rare. Build one!

fuel. (Hospitals throw them away, minus needles, by the thousand).

Simple, isn't it? As for the flying part, the object is to stay up as long as you can with your fuel allocation. This, of course, means that you must know your engine really well; and it presumes a basic knowledge of thermal sniffing. Well, aeromdellers being a canny lot, Flying Fifteen contestants soon became very good indeed. On the 7.5cc of fuel originally allocated, models were drilling holes in the clouds, and on clear days climbing so high that they tended to disappear into the blue... Something had to be done, and last season the limit was reduced to 5cc. So what do you know? The experts were still flying little black specks in the sky! Mike Conrad, for instance, won each of the four events he entered in 1986 with flights of eleven-minutes-plus from his Madcap profile job, powered with a Mills 1.3cc Mk.II - a very potent combination, especially with a reworked carb that gives

the Mills a minute running time for each c.c. of fuel. The Madcap, a 1952 Aeromodeller design by Vic Smeed, is in many ways the answer to the Flying Fifteen's prayer. It has no frills, uses very little balsa, and has a minimal cross-sectional area, all of which produces a glide to be seen and envied. But wait a minute, you say. If it was a 1952 design, the Madcap must be illegal for Flying Fifteen contests. Well, technically, so it is. But Mike Whittard and his pals, who have done so much to promote vintage R/C work, view this sort of thing with a very benevolent eye. They would rather bend the rules than exclude a design that had the vintage spirit about it. Indeed, flexibility is the name of the game just now, and there is talk of extending the cut-off date to, say, 1955, to include the many small and small-to-medium designs that were coming along then, such as John Gorham's Lil' Aud, Norman Marcus' Hecklet and Gordon Rae's beautiful Luna

on a vintage Wakefield. Furthermore, you are in control and, unlike free flight models which really are at the mercy of the winds, your creations will always land like settling snowflakes. Won't they.

In the cause of gaining as much info as possible on motors suitable for the class, I asked SAM 35 free-fighter Don ("What's all this radio business?") Knight to do a few test runs with 5cc of fuel on a few of his small diesels. His findings appear below.

Motor	Propellor	Run
D.C. Spitfire (1cc)	8x4	2min. 56sec.
E.D. Bee (1cc)	8x4	2min. 23sec.
Frog 150R (1.5cc)	9x4	2min. 08sec.
Tailfun Hobby (1cc)	8x4	1min. 57sec.
Tailfun Hobby	8x4	2min. 10sec.
Russian Mk.17 (1.5cc)	9x4	1min. 40sec.

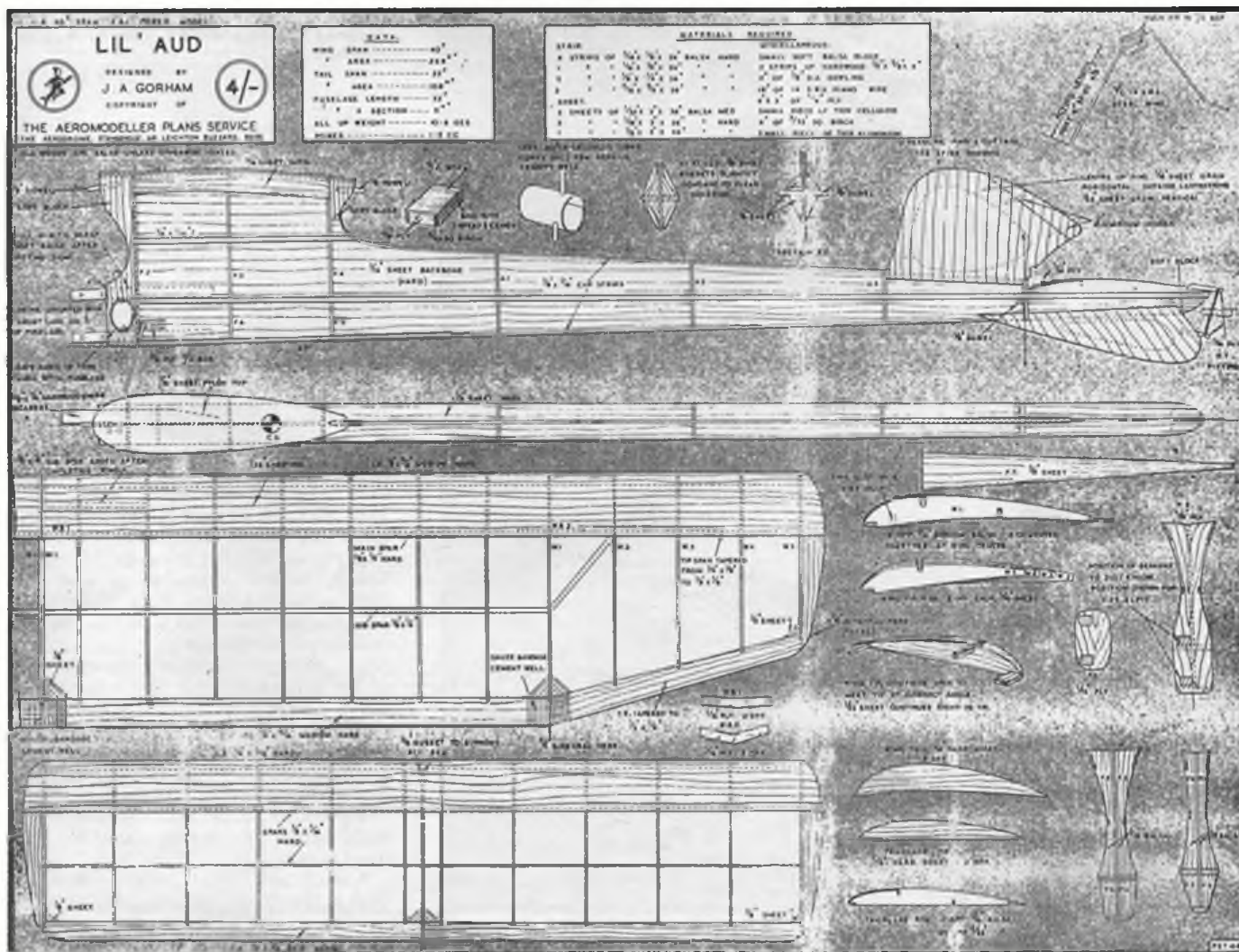
Don tells me that these runs were made with unrestricted venturis, and with the motors operating normally.

They were *not* under-compressed or excessively leaned-out. He considers that restricted intakes and over-propping could increase these times by at least a third, and tests of my own tend to confirm this.

I did a few runs on my lovely little PAW .8cc and on two Mills. 1.3cc motors, a Mk.II original and a 1984 Attachport repro. All were first run 'straight' - as bought that is - and then with tuned-down R/C carbs. Dunham Engineering supplied the carburettor for the Millses, and that for the PAW 80 came from its own manufacturer. In each case the carb arms were fixed at the 'tick-over' position which gives rather more revs for diesels than one would expect from equivalent glow motors. The test diesels were warmed up and adjusted to the leanest possible needle-valve



Opposite: Research will reveal many suitable designs. Choices from the Continent could be Lobet's Twist, a 1945 30in. French compact with plenty of area, or the Italian wedge-fuselage Zeus-64- This page, top: The original Luna Loafer was powered by an Elf 2.49 - but why not try a 1.5? Above: Pierre Dupin's version of The Kid has a PAW 100 and weighs 600gm. Below: Back to the UK for another possibility; John Gorham's Lil' Aud from APS.



setting. (If you were to open up the throttle at this stage, the motor would cut immediately). The '5cc tests' then commenced. It should be noted here that my tests were far from scientifically accurate. I have no metering equipment other than throw-away 5cc syringes, and

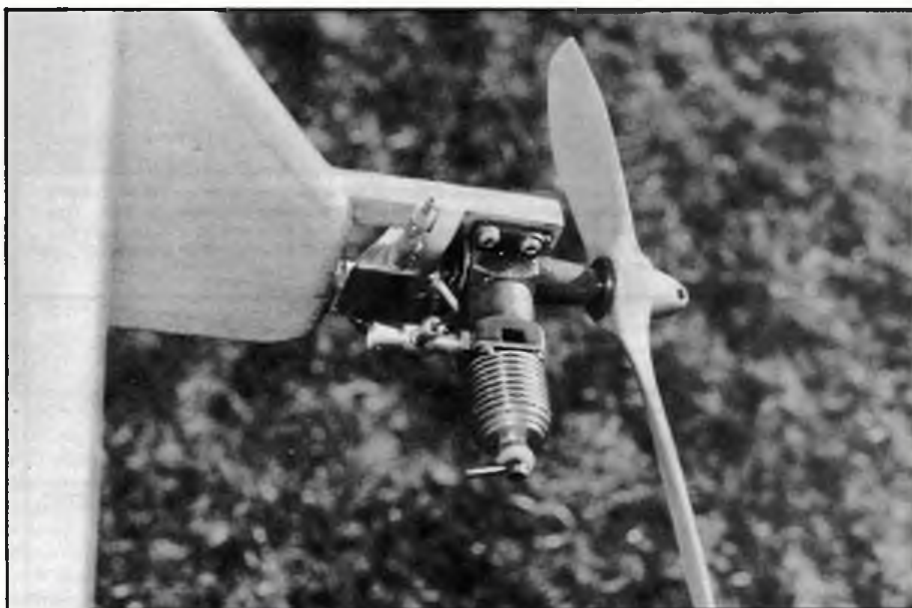
what's more it was two degrees below freezing in my garage at the time, so I didn't hang about. In fact, I chose the best two runs in each case. The results showed that the Mills rules OK! - but only just! I didn't bother to try my PAW 149. Here are my figures.

Motor	Prop	Straight carb	R/C carb
Mills Mk I repro	10 x 6	3min. 30sec.	4min. 55sec.
Mills Mk II (orig.)	10 x 6	3min. 15sec.	4min. 40sec.
PAW 90	9 x 4	2min. 21sec.	4min. 50sec.

Very encouraging! A little more tweaking in a warmer garage and we'll break the one-minute-per-cc barrier. With these long runs it is fascinating to see how slowly the 'end' of the fuel creeps along the fuel line just before the cut. It is also worth noting that the motors on test were kicking back plenty of useful thrust. None of your 'pop-pop-popping' with the compression way back.

Overseas too?

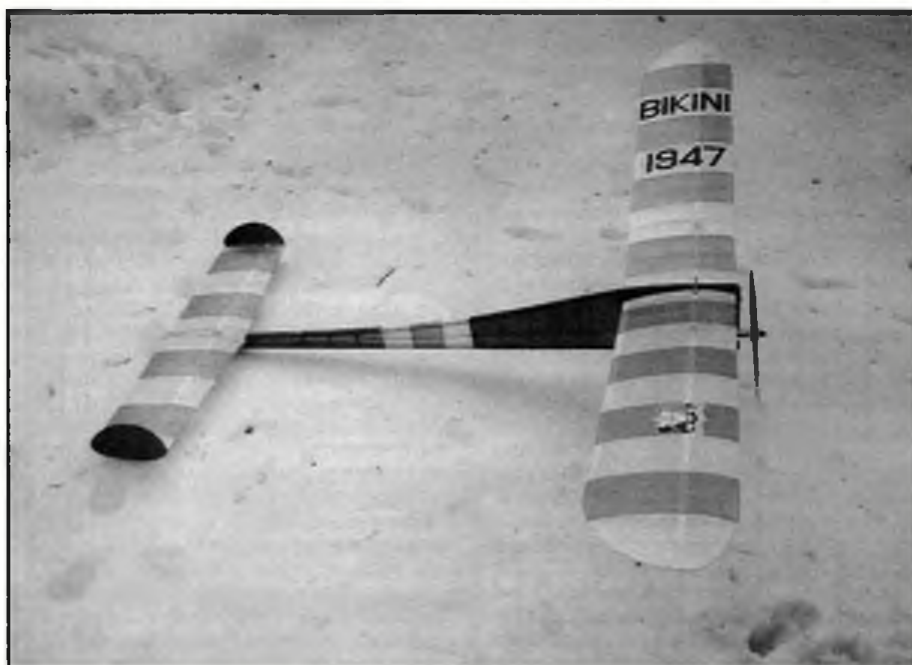
Hold on to your hats because the scene now switches to Paris, where vintage enthusiast Jean-Marie Piednoir has also become hooked on Flying Fifteen technology following (of all things) a visit by a French contingent to the Aeromodelleur's International Coupe d'Hiver meeting at RAF Henlow last



Left: Business end of Mike Conrad's profile Madcap shows the Mills 1.3 fitted with a .75 carb of reduced choke area to slip 5cc of fuel in five minutes at 4,500 rpm. Below: Peter Michel's favourite - the Bikini, originally designed for Allouche's 1.5 power by Jacques Morisset.

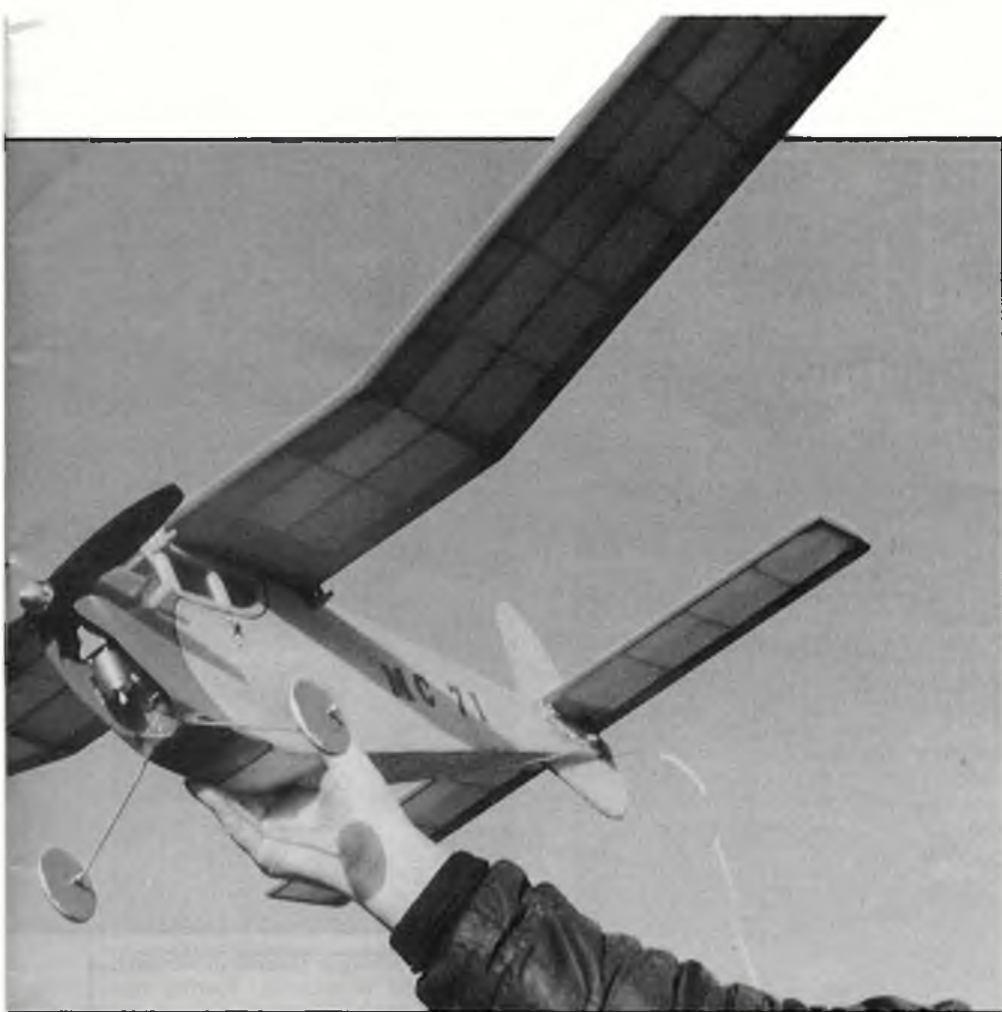
December. Jean-Marie is a former French hydroplane speed record holder, so he certainly knows his engines. These were the runs he obtained from his two repro Mills 1.3 motors:

Motor	Propeller	Run
Mills 1.3 repro, No 1	10x6	4min. 01sec.
Mills 1.3 repro, No 2	10x6	3min. 30sec.



Could this be the start of International Flying Fifteen? Certainly, the French have many famous old designs that would fit the bill admirably. One that springs to mind is Georges Bougueret's Kid from 1941, a craft that did so well Eaton Bray in the immediate post-war years. There there is W.Lobet's Twist, which dates back to 1945. But the French power design that beats the lot in suitability for Flying Fifteen is surely Jacques Morisset's Bikini, which appeared in the 1948 Aeromodelleur Annual. This model - far ahead of its time - has a profile fuselage, rudimentary undercarriage, and a span of 59in., (giving 385 sq.in. of wing area). Best of all is its incredibly low weight of 11 1/4oz. I have built a Bikini for free flight and was delighted to find that, given its head, it will glide into the next county. My repro Mills 1.3 takes it up fast. With modern ultra-light radio gear in the region of 23/4oz. all up, the Bikini should be well-nigh unbeatable in the class. We shall have to see...

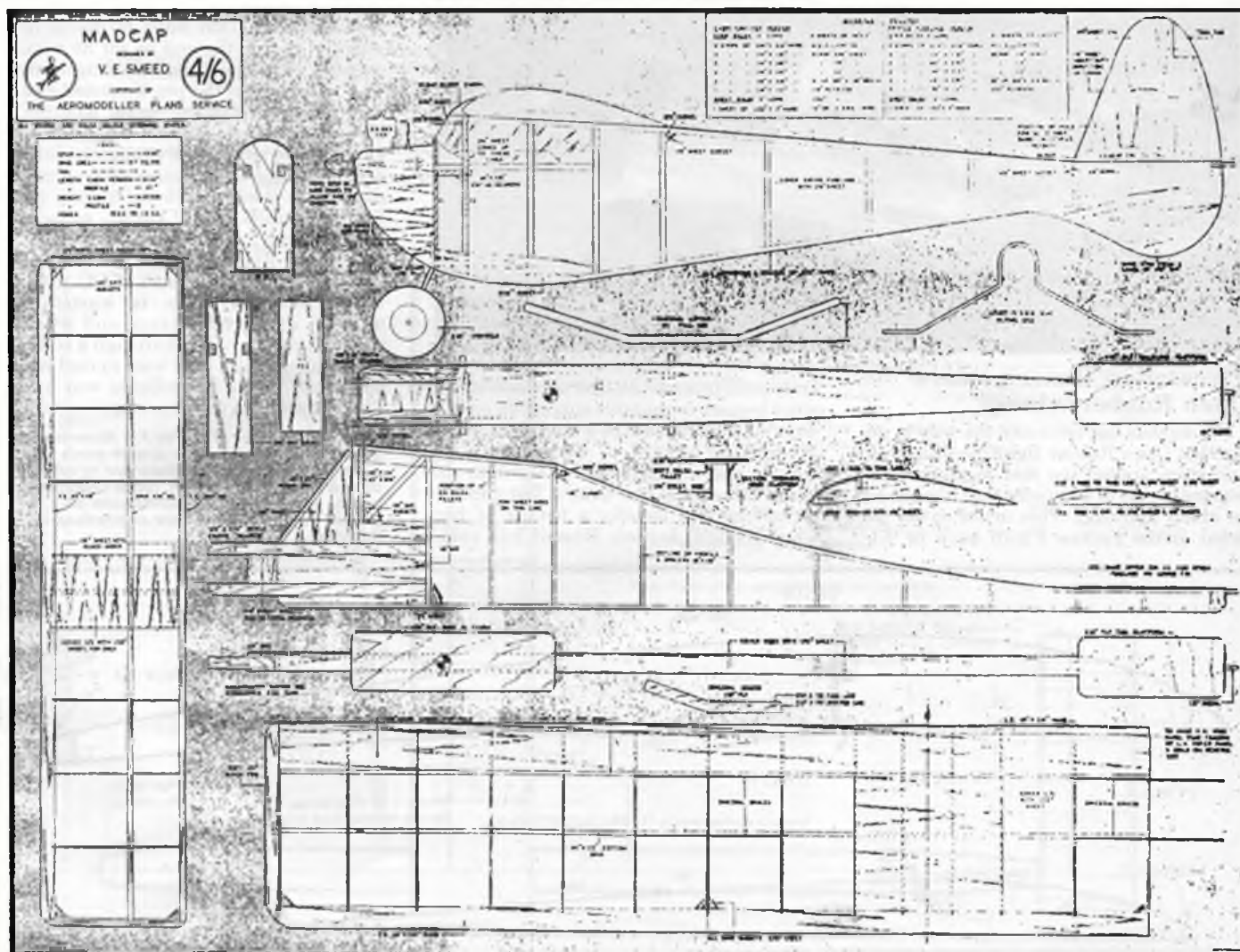
A word from Mike C., who is the man to beat in this business:



'It is obvious from the last few Flying Fifteen competitions that even a very light high-wing cabin job is no longer competitive. I think that the type of model that is going to win in 1987 is the vintage pylon model that closely approximates to a modern Half-A or Slow Open power type. Ultra light weight and minimal frontal area are much more important than super streamlining for this type of competition. But, of course, we must not lose sight of the original intention of the class - that models should be: 1:Vintage; 2:Simple and therefore cheap; and lastly, there is point No.3: The competition itself should be very easy to run.'

My own feeling is that it would be a tragedy if all those lovely old cabin jobs should be entirely banished by the pylons and profiles. Why not fly them in a separate class within the main competition, perhaps with original, undoctored carburettors? Let's hope something like this can be done. But whichever way the cat jumps, do please have a go at a Flying Fifteen if you are a radio-assister seeking pastures new - or even if you claim to be a dyed-in-the-wool, out-and-out free flyer. You'll never regret it!

Above: Standard Madcap, also by Mike Conrad, is attractive but no match for the profile version in Flying Fifteen competitions. Why not build the two and get the best of both worlds? Our plan, PET 470 - below - is still available; price £3.80 including postage.



FREE FLIGHT SCENE

Dave Hipperson's monthly miscellany for the thermal-seeker



Flycatcher: Russell Peers' Open Rubber winner

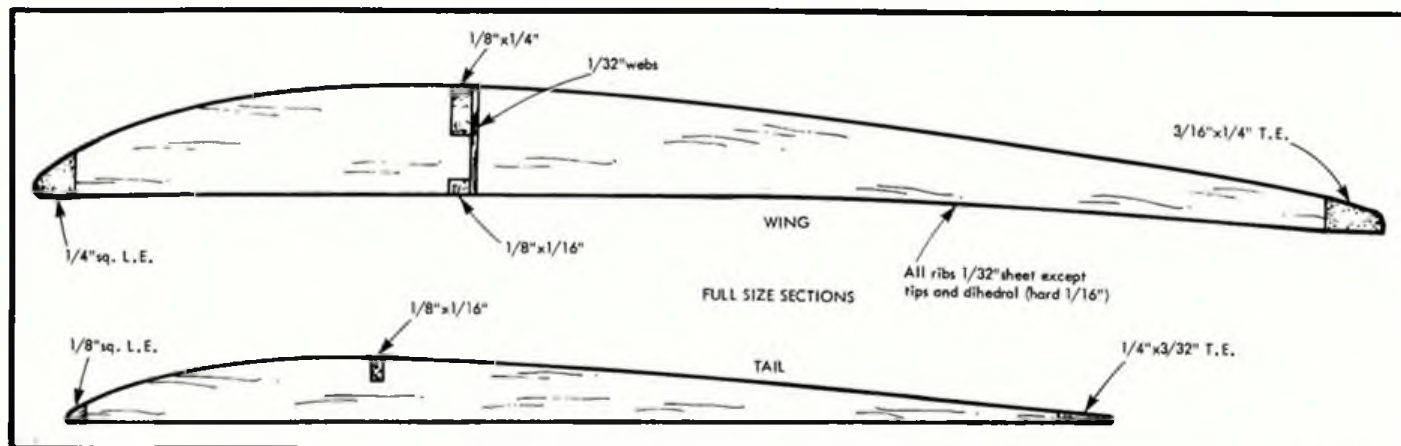
Big models are certainly the way to go for best Open Rubber flyoff performance and sizes around the mid to upper 400s (square inches of wing area that is) seem to be about optimum. This model made its debut at the Farrow Flyoff back in '83.

Only semi-trimmed on that occasion it has since become formidable opposition on the days when performance wins flyoffs. With a structure weight of little over four ounces, and with five ounces of rubber on board this model has quite a fast climb - something not usually a feature of big Open models. Indeed, Russell has even



considered a longer, thinner motor but has resisted the temptation, fearing motor bunches in the comparatively slim fuselage. He is very wise to be cautious here as a model that stalls, no matter how slightly, means the end as far as a calm evening's flyoff performance is concerned. The reliability of the pre-tensioned motor and freewheel/fold prop assembly arrangement allows him to get much closer to the 'glide stall' condition without fear of going over the brink when a motor distributes itself a little differently after full flyoff turns. I must admit - using as I do a long and fairly loose motor - I have to de-tune my flyoff models slightly so as to accommodate up to an inch of CG shift at times. Obviously this is wasteful of ultimate glide performance and what is worse, it can be risky. Although a stalling glide has actually only ever robbed me of one flyoff flight (a probable win at an Easter meeting a few years ago) it is worth

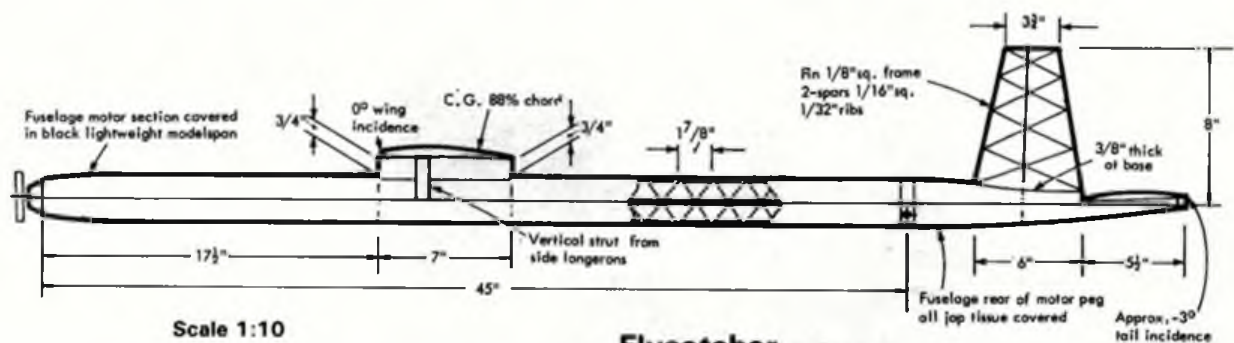
Above: A reminder of the '86 F/F Nationals as Stateside visitor Walt Ghio stretch-winds with a vengeance prior to the Wakefield fly-off; he placed 2nd to Brian Martin. (John O'Donnell photo). Above left: Large dimensions of Russell Peers' Flycatcher are emphasised in this view.





noting that it was Russell Peers who beat me then, flying in the same good air as me but without a stall!

Russell has done rather well to produce such a practical and robust model at these weights. The modest aspect ratio certainly helps here. The structure should be able to handle quite breezy conditions even though the model would be less likely to be used in those circumstances as the ultimate glide performance is less crucial in such air. This model probably represents Russell at his most competitive - certainly in rubber and probably in any other class, despite his well known preference for Open Power. The proportion, set-up and size of this model forms an ideal guide for anyone contemplating a big Open model for this season's flyoff. Believe me - when it's calm you will need one to win. If you felt that it might be interesting to experiment with a longer motor (and thus obtain a longer run) I would think that simply to use a bigger prop would be the most efficient direction in which to go.



Scale 1:10

Flycatcher by Russell Peers

Weights:	Wing:	15/8oz	46 grams
	Fuselage:	11/4oz	35.4 grams
	Prop:	15oz	26.5 grams
	Tail:	3/8oz	10.5 grams
	Motor:	5oz	140 grams

Prop assembly: freewheel fold type. Blades: 24in. diameter x 30in. pitch. Motor length: 50 - 60in. pre-tensioned with 35 to 40 turns on each half. Prop run: between 1-30 and 2 minutes depending on motor length.

Warps: Port tip: 3/16in. washout

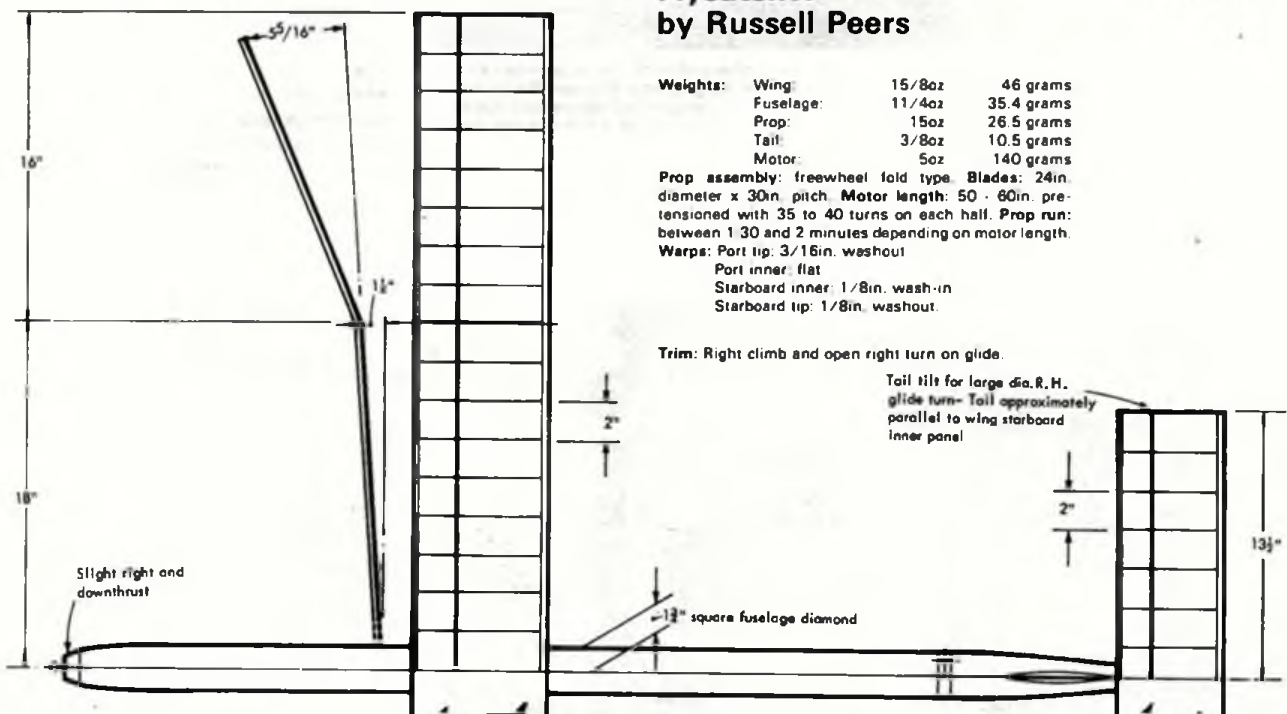
Port inner: flat

Starboard inner: 1/8in. wash-in

Starboard tip: 1/8in. washout.

Trim: Right climb and open right turn on glide.

Tail tilt for large dia. R.H. glide turn- Tail approximately parallel to wing starboard inner panel



The Falcons Championship Table

This award was first competed for in '86 and was run in parallel with the SMAE and *Aeromodeller* Championships reported last month. It was both a bold and expensive venture for a club to put on but the results are first class and have drawn to the top many names quite different from those who scored well in the other tables.

Contests to count were virtually everything flown that was not an SMAE event. Points were awarded down to fourth place in the ratio 8:6:4:2 - no matter how few flew in an event. Considering this was their first effort at such a complicated award system the Falcons Club got it uncannily right first time. Particularly significant (apart from the awarding of

full points no matter how many entered) was the ceiling limit of the best fifteen qualifying placings to count. Contestants were also limited to scoring in only one event per day's flying. Such rules encourage continual effort but don't eliminate those fliers unable to attend all the events.

As it happened only the winner, Russell Peers flew and placed sufficiently to have the luxury of a few throwaway scores. In fact he recorded 19 scoring events and hence had to discard his worst four. It is this that has led to a change in the rules for '87. Now only eight qualifying scores will count so helping still more those that can't get to so many events, but nevertheless not restricting the super-keen who will have more bites at the apple. Other modifications for this year include a reduction of points to be awarded in the

event of very few entries; proportionally less, but *never* zero points. Events with four or more scoring entries will be unaffected but events with only three will have the top points score removed so that the distribution becomes simply 6:4:2. This procedure would apply right down to the rare occurrence of only one entry in an event, who would still receive two points.

Such situations did arise a few times last year, usually at Champagne flyoffs when entries were all but eliminated by bad weather. As this is always likely to happen in a single-flight contest Champagne flyoffs will *not* count towards the Falcons award this year. Furthermore, as the reduced tally of eight scoring events is expected almost inevitably to produce a tie - maybe between several if the season's weather permits - then a tie-break will operate; the number of '1st placings' each competitor has scored in other qualifying events being counted. If that doesn't resolve it then '2nds' will be considered, and so on. This way there is an additional incentive to fly more than is necessary simply to simply collect the sixty-four points.

It will be clear from the table that the top two in last month's tables (the *Aeromodeller* and SMAE) swap places, Russell Peers holding the Falcons Trophy for a year and Phil Ball having to make do with second place this time. It is interesting to see Pete Watson so far down at 10th after so nearly topping the chart last month. Presumably he chose to concentrate on SMAE events whereas John O'Donnell and Chris Strachan are both well up in the Falcons league thanks to very successful ends-of-season, particularly in non-SMAE events.

It was another nice touch that the organisers could arrange for the Trophy award to be made at the last event of the year, the *Aeromodeller* Coupe contest at Henlow. Here Geoff Clarke himself kindly made the presentation, thus adding further prestige to the occasion. A good idea that had showed promise at the start of the season worked out well in practice and promises to be even more interesting next year.



More J O'D pics from the Nats, this time with the accent on power. Above: Ray Moore concentrates on tweaking that needle - but despite the effort, his modern F1C wasn't in the groove at Whitsun. Below left: Paul Rowledge was unlucky to land both his power models on the same hangar roof; hence four maxes and no fifth flight. Below right: Raymond King blamed a dropped last flight in F1C on a trim change after repairs to a broken-off wing tip.



1986 Falcons Championship Table

	Points
1 Russell Peers	110
2 Phil Ball	94
3 John O'Donnell	66
= John Carter	66
5 Chris Strachan	52
6 John Cuthbert	40
= Dave Hipperson	40
8 Terry Dilks	38
9 Stafford Screen	28
= Mike Chilton	28
= Pete Harris	16
13 Anthony Ball	24
14 Julian Hooper	24
= Mick Brown	24
= Ray Monks	24

SMAE Forum at the Model Engineer Exhibition

Despite the lack of advance publicity this year because of a hiccup over the venue these talks, held once again at Wembley on the first Saturday of the M.E. were well attended. Although it was anything but an ideal location, with noise interference from the adjoining suite, this was the most interesting and best organised forum yet. Mike Warren had to take over the reins as organiser and chairman at fairly short notice but nevertheless made a relaxed and professional job of maintaining continuity and keeping the programme on schedule, thus allowing rather more time for questions than has been available in the past.

Mike Fantham expanded his paper on model structures by examining load paths and weak points, and consideration was given to the factors encountered when stretching the aspect ratio of a design. John Buskell shed light on his F1C wing section development since his father Pete's successes in the 'fifties with the famous Slick Stick. John's stepped profiles appear to offer consistent turbulent flow without the parasitic drag inherent with threads and protrusions on the surface. Practical experiments showed the effects to be most marked with HLG models, probably because experiments could be repeated more often and in a better controlled way with such small test beds.

Stafford Screen then illustrated the developments in his foil covering techniques since the publication of the basic system in the June '86 *Aeromodeller*. He threw in some friendly 'digs' at some of John Buskell's interpretations of the Russian power sections, too. Bernard Hunt combined a light-hearted presentation with the advantages of computer access to illustrate his findings when analysing indoor model propeller design. Bernard's delivery of such a complex subject is always very absorbing. His collection of data involved hundreds of test hops which were made in his kitchen of all places, surrounded by all the hazards to be found there such as cooking activity, family and cats. His serious subject thus became most accessible to the audience.

Brian Spooner was another to make use of considerable computer time to produce detailed print-out drawings of the distortions likely with various wing structures under flight loads. His observations on the subject of International level Wakefield flying could quite easily have been expanded into another paper.

The afternoon was rounded off by John O'Donnell explaining the functioning of delay prop release mechanisms as applied to his very successful CDH and F1B models. John's visual aids were the source of much amusement and there was applause when what appeared to be a simple two colour sketch became a working model! In the absence of any of John's models - they are all lost - I myself was recruited to demonstrate a similar

system on one of my recent CDH models.

Altogether it was a very absorbing series of talks; advanced enough to tell nearly everyone in the audience something they didn't know but not so complex as to baffle the less experienced. With such a variety of subjects and bearing in mind the availability of these presenters - all with so much more they could tell us - it would appear sensible to think about expanding this to perhaps double the amount of time next year. Although the venue is hardly ideal it might be counter-productive to move the talks to a less accessible time and place. After all, looking around the audience I could see a good few who probably wouldn't have been there had there not been the attraction of the exhibition as well; and this observation might apply to a few of the presenters too. We should always be looking at ways of showing our sport to the public at large and the public at the M.E. are likely to be more interested than most. For this reason it might be worth incorporating a few basic talks just about competitive free flight in general with perhaps a few more examples and actual models present, which could better explain the finer points to the uninitiated. Definitely worth a visit next year.

1987 Free Flight Technical Committee

With a threatening flying field situation the efforts of this group are going to be even more crucial if the competitive side of our hobby is to continue. The '87 line-up is similar to last year with Martyn Gregorie, Ian Bracken and Dave Greaves continuing for a second year whereas both Phil Ball and Pete Harris stood again and were duly elected. The sixth man is me. I have been voted on for two years so hopefully, failing the Society itself being able to reinstate a proper newsletter, at least I will be able to keep you posted through this column as to the SMAE developments that affect Free Flight. Retiring members are Brian Lavis and Gerry Le Vey. Two go because last year Phil Ball was a 'seventh member'; he stayed in an advisory capacity to aid continuity. There should be no such problems this year; furthermore, three of the committee are ex-chairmen! Pete Harris was once again the overwhelming choice for this post giving him the unprecedented record of two consecutive years in an office that burns most people out in one.

As always your views and opinions, preferably in writing, are very welcome. Actually they are vital if we are to improve the scene. We would be particularly interested in your comments about future contest programmes and classes - remember, parts of the current calendar date back over twenty-five years. Ideas for rule improvements are always useful too but remember to be practical and think the consequences through carefully first. Please tell us if you spot anything you think is a loophole, omission or error in the current book. Quite recently there have

been some classic examples of the obvious getting through un-noticed. Always be on the lookout for what might be useable contest flying sites in your area. Let us know and we will follow them up if they look promising. If you really would like to study a subject that could absorb considerable time then how about starting from scratch with an entirely different approach to contest rules; the premise being to design a set of rules that would create a contest that might appeal to an adventurous television producer. Remember 'snooker' darts and bowls were hardly 'big league' until they made good television. More recently they have even managed to make clay pigeon shooting visually spectacular! See what you can come up with. This is the time to let your imagination do the work.

Coming more down to earth again: in addition to FFTC tasks I shall be continuing the Area results service. If you send me six SAEs of at least 9x4in. right away then I will forward you complete sets of each Area event as soon as they become available - usually a week to 10 days after the event. The more of you that avail yourselves of this service the better I like it as it makes it all the more worth doing. SAEs to Dave Hipperson, 35 Anthony Road, Borehamwood, Herts WD6 4NF. Have a good season!

To sign - or not to sign?

Those who have never qualified for a World or European Team may be unaware that before one is allowed to represent the country, albeit more or less at one's own expense, one is obliged to sign what is known as a 'Team Declaration Form'. This form has been the subject of much heated debate in the past - perhaps rather less so now. The main bone of contention used to be that flyers paying for their own way should hardly be asked to sign away part of their independence at the contest. In those days the overriding fear was of being told when to fly and what to do by an over-enthusiastic and inexperienced Team Manager. More recently the wording of this document in this regard has become a little more muted and of course the regular appearance of Martin Dilly as Team Manager has allayed most of those fears.

However, the form is still there so our governing body retains some control over teams representing it no matter how slight. This is probably how it should be.

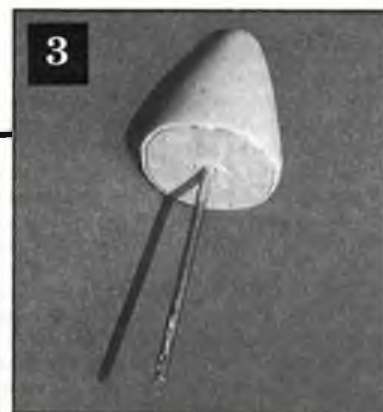
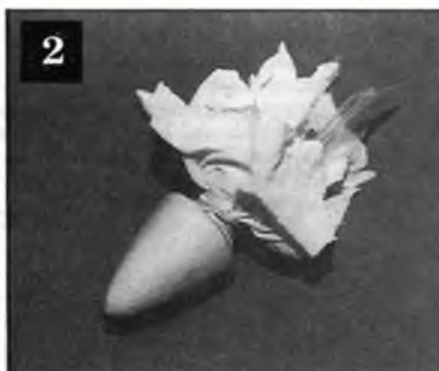
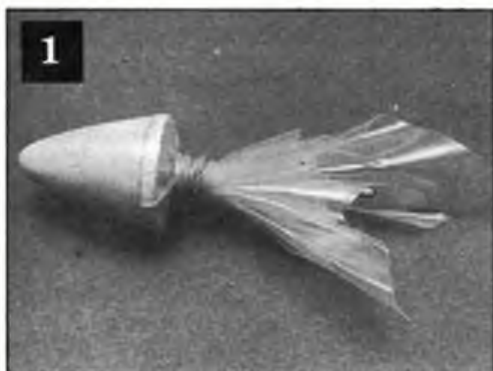
It is disturbing, therefore, to learn that whenever the SMAE sends a Team abroad up to half of them ignore one of its five requirements. The form insists that on their return team members will submit a short report of their experiences at the contest. Not all of them do. There have been valid criticisms that such reports can disappear into the bowels of the Society without a trace. Indeed, I made that very point myself a month or so ago in this column. However, those that sign the form have a responsibility to undertake what

they put their names to. To do otherwise is dishonest. Both John O'Donnell and myself have turned down Team place offers in the past because we didn't think we could accept the terms we were asked to sign.

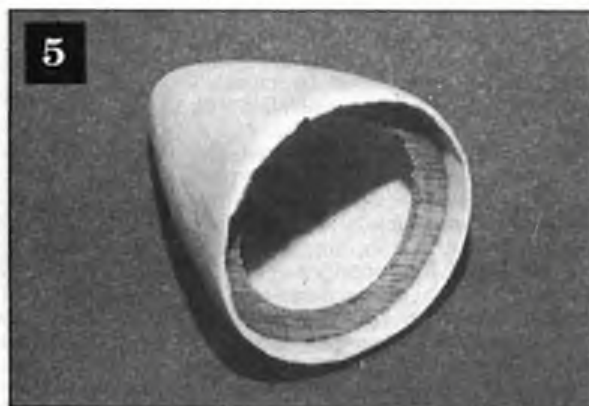
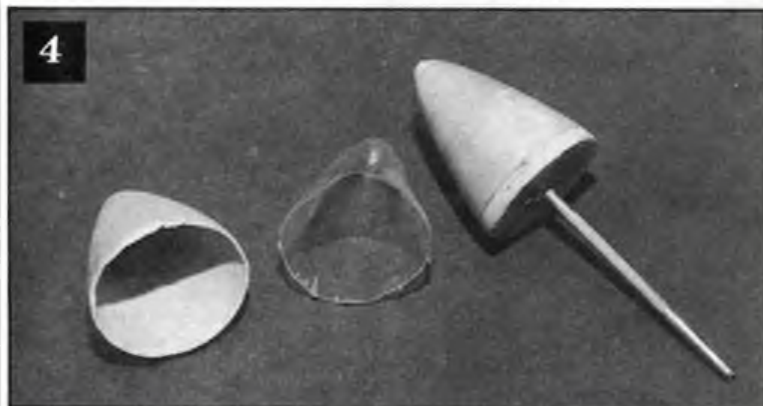
Of the ten attending European Champs last year only the Team Manager himself and five flyers have produced reports. Furthermore, although we won't name names here it should be said that at least two of those who have failed to submit have qualified for the next team to go to

France in August! I trust the SMAE will only ratify them when they have carried out their obligations from the last trip.

We are forever told we should be improving our performance at these major internationals. The first step might well be an exchange of information from those with the experience of such events. Now this year I see that our Team Manager has done his best to circulate the few reports that he has been sent. Let us hope those others appear soon so we can all benefit from the opinions expressed.



Mass-produce those spinners! Simple technique explained here could lend itself to the creation of other 'expendable' components - wing tips, for example... Any more hints and tips of this sort?



Simple Spinner Construction

CREDIT HAS TO GO TO Mike Evatt for this idea. It's a very simple and quick method of producing a satisfactory spinner for the front end of Coupes and Wakefields. Any size and virtually any shape may be produced.

Simply fashion a male mould of the size and shape you require from balsa. This can be hand carved and sanded but for greater speed and accuracy it should be rough cut and then turned in an electric drill against a sanding block. The initial rough-cut balsa blank should first be fitted with a wire spigot of 14 swg or so - this is simply cyanoed in. Not only does this allow turning to take place but it also offers a convenient way of holding the spinner during construction.

Mike waxes his former but I prefer to cover mine with thick polythene. This is done by warming a small sheet of thick

polythene until it is nearly at the point of ignition, then boldly pulling it over the finished mandrel and banding it tightly behind. See photo 1. The spinner itself can then be constructed over the now-covered former. Mike uses pieces cut from a pair of ladies' black tights as it is a black finish that he wanted for his F1Bs. I prefer to use white; and I have found that the best material is the one-size very stretchy type - it's also the cheapest! One layer of this is pulled tight over the mandrel in the same way as was the polythene; it is then banded down behind it. Next step is to smear the spinner with balsa cement or thick dope. I used the latter with a little talcum powder in it to fill the holes. When dry, further layers can be applied in exactly the same way. I went to five layers with the CDH spinner shown in photo 2. Photo 3 shows the spinner still on the

mould after it has dried and the waste material has been trimmed off. The formed spinner - egg shell thin - and the polythene protective skin push off easily.

It can be seen that the rear of my spinner is reinforced with a little 1/64th ply bulkhead, which strengthens it greatly. The surface can be either further filled and sprayed or, as my example, simply covered with wet jap tissue to match the fuselage colour.

The weight of the finished example seen here was about one gram. It was my first effort; and it turned out perfectly suitable for its purpose. With practice - they are very quick to make - a very high quality item would be possible, and of course it would be to the exact dimensions and profile you require; much easier than proportioning your fuselage to suit commercially-available units!

mini WEDGY

Here's a lively half-size Vintage classic for CO₂. Full story by John Meaney

IT WAS IN THE early seventies that Butch Hadland, a colleague and friend at RAF Brize Norton, showed me a prototype of the Telco, a motor which he was then helping to develop. This was the first CO₂ unit I had seen: I was immediately hooked. As soon as they reached the market I bought a couple. My aeromodeling career had begun at the age of nine (in 1944) but I had flown only radio since the mid-sixties, and was just beginning to a return to free-flight. Very quickly I was producing CO₂ models and having a wonderful time.

As the vintage movement got under way, I realised this was the branch of aeromodeling which really interested me, particularly vintage Wakefields which are still my main love; but I still kept building CO₂ models. In the last few years I tried many that have appeared in *Aeromodeller* as well as a few kits.

Early last year I decided I wanted a model a little different from the usual cabin job so I began browsing through my old magazines - and there it was! On the front cover of one of the early SAM Speaks reposed a fully dimensioned plan of the Wedgy, a Leon Shulman design from 1940. This was just what I wanted; easy to build, certainly different - and a surefire flyer.

The plan was drawn up and the model built over a period of about a month. This was because Gulf Air insisted that I put down the balsa knife and do what they pay me to do! (*John is a Flight Engineer with that company: GC*). It would be easy to complete the model in a week of evenings without any undue hassle. The finished model was taken back to England, as the flying of model aircraft is completely forbidden here in Bahrain.

This mini-Wedgy proved an instant success, needing no trimming at all,

honest! I just gas-charged it, chucked it and away it went. On a gas charge and at about half revs it will do two-and-a-half minutes regularly. If there is any lift about, get your running shoes on, for I have nearly lost my model on a number of occasions. Its best flight so far was just under fourteen minutes at Odiham last November.

Go ahead and build it as per the plan, using only light wood except for the tailplane spar, which should be hard, and the upper longerons, which are medium 3/32in. sq. Using balsa supplied by 'The Balsa Cabin' and making no particular effort to build super light, mine weighs 1 1/4oz. Perhaps the best advice is to go easy on the dope and have fun.

Fuselage

Build two sides to the side view as shown on the plan. It is important to soak the bottom longeron to prevent it from pulling down the top longeron when the structure is removed from the plan. Make sure the bottom longeron is pinned-down to match up with the top 3/32 x 3/32in. longeron (see front view). When dry, remove from the plan, gently sand the outlines and separate the two sides.

The rear uprights are from 1/16in. sq. so don't forget to build a left and right side.

Pin the three 3/32in. sq. underwing spacers down on the plan view and glue the sides into position upside down. Using a couple of set squares and the front triangular former, which is cut from medium 1/16in. sheet, join the two bottom

The eagle-eyed will spot that John's original has a Brown CO₂ motor but a Telco is ideal too! Odd shape to modern eyes conformed to the then-fashionable 'low centre of lateral area' design theory.

longerons together and sight along the bottom longerons to ensure they remain straight. Join the sides at the rear, remove from the plan and fit the remaining top 1/16in. sq. spacers. Sand excess glue from the joint of the curved bottom longerons and add the 3/16 x 1/16in. cap strip. Slightly round the longeron edges. The result is a very strong and accurate fuselage.

All that remains to be done is to fit the 1/16in. ply engine mount. Ensure that the RPM adjuster just clears the front former. It is advisable to mount the tank at this time, placing it under the CG and feeding in the supply pipe and charging nozzle ahead of the wing position. Note that the area between the leading edge and the engine is covered in 1/32in. sheet, the tubes emerging through a couple of small holes. The tank is spot epoxied to a couple of 1/8in. sq. crosspieces. I always leave the charging nozzle 'waving in the breeze' as I feel CO₂ models are generally too fragile to withstand the loading forces.

Fitting the mono wheel (I used an old Trexler but a plastic or balsa one is just as good) and adding the tailplane mounts completes the fuselage.

Tail assembly

Obtain an old grocery box, and cut a complete tailplane shape to the 'inner' dimension. Rub a candle round the edges and also over the building surface. Cut four 1/8 x 1/32in. strips slightly longer than the complete outline and soak in hot water or ammonia solution. When they are pliable wipe off excess water and laminate using white glue; an aliphatic type is best. Pull round the pinned-down cardboard former and allow to dry for 24 hours.

Remove from former, sand carefully and pin down over plan, making a scarf joint at the trailing edge. Pin down the hard 1/16in. spar followed by rectangles of 1/4 x 1/32in. light balsa fore and aft. When dry, sand to shape and round off the outline, but don't try for knife-edges. The result is a very light and rigid tailplane. Fit the front D/T hooks, reinforcing as shown. Upper and lower fins are very simply constructed from medium 1/16in. sheet, rounded slightly at the edges.

Wings

A completely conventional structure. 1/20in. balsa for the ribs is obtained sanding 1/16in. quarter grain before cutting-out.

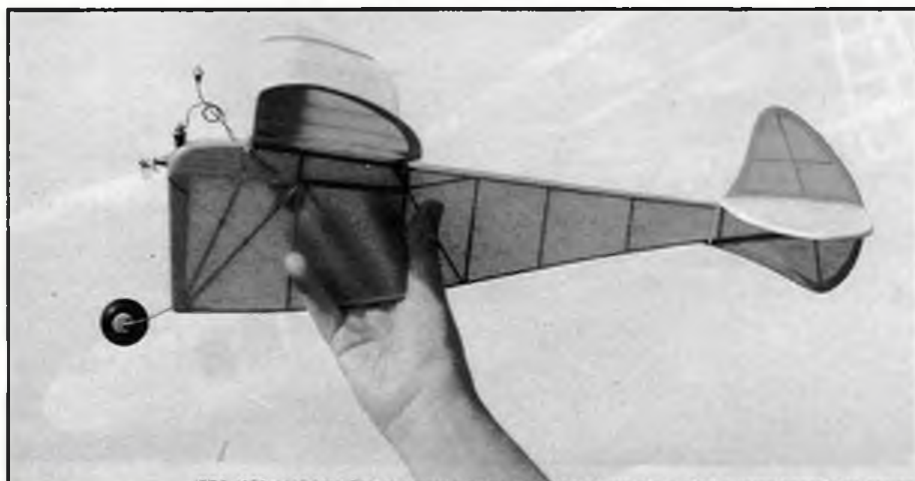
Pin down leading and trailing edges (raising the front of the latter by 1/32in.) and insert ribs, followed by the spar and the soft leading-edge sheeting. Tips are built in the same fashion.

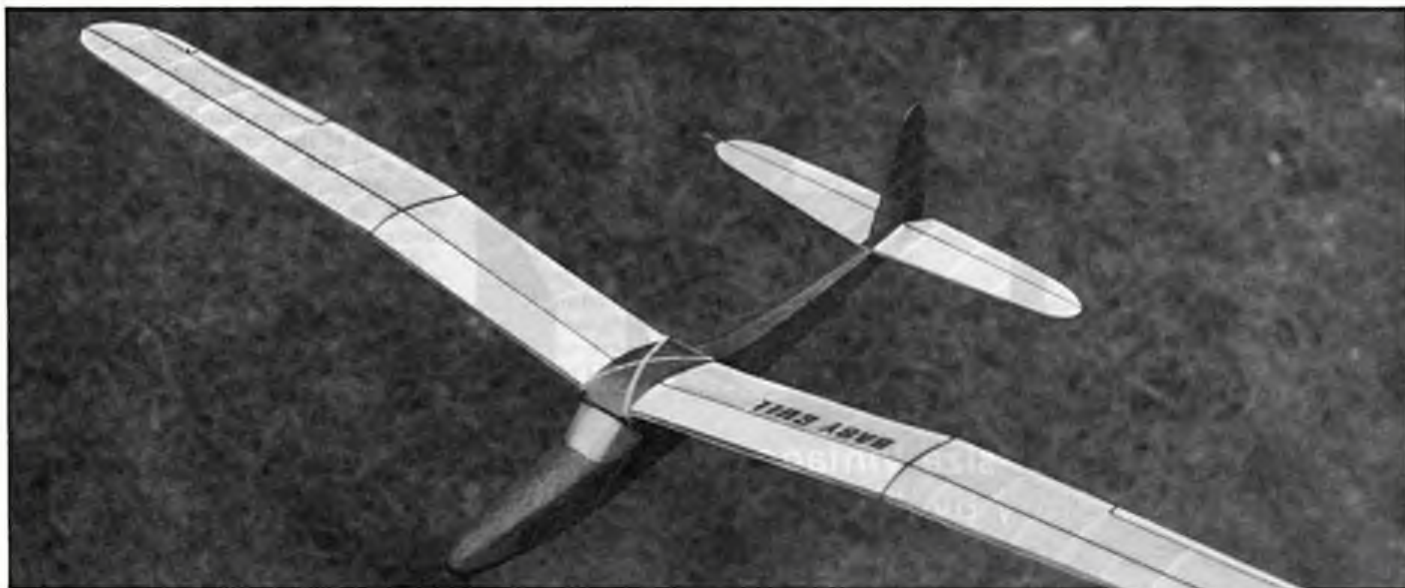
This time, sand T.E. and tips to a knife-edge. I always do this after wing is built - it helps stop that nasty bowing of the T.E. Sand smooth and give joints a final 'shufti' to make sure all are good.

The wrap-up

Use lightweight jap tissue, which is easily available now from Mike Woodhouse. Steam or gently spray with water mist and allow to dry, pinned down overnight. Give fuselage and wings two coats of 50/50 dope/thinners; tailplane and fins receive one coat of 50/50 banana oil/thinners. Glue the top fin to tailplane and the bottom fin to the fuselage.

Check C.G. is approximately correct and you're ready to go. Don't forget to fit a D/T!





BABY GULL

Build Gordon

J. Rae's compact and

attractive towline glider from

our full-size plans

I SAT THERE, a sixteen-year old, contemplating the dog-eared remains of my Minimoa glider. Although it didn't look too good now, following a number of unscheduled arrivals, this forty-inch Keil Kraft kit had given me some good flights; but the time had come to build a replacement and despite the stability problems I had experienced with the gull wing layout, I did so like the graceful sweep of their lines; so a gull again it would have to be. It was from these beginnings in 1946 that the Baby Gull was born. The main criteria dictating its general layout were that its lines should please my eye and that the model should provide information to enable the construction of a larger version at a later date. The original Baby Gull has long since passed away so far the purpose of this *Aeromodeller* project a replica was constructed over a copy of the rather tatty original drawings. The general construction is quite straightforward, but there are some small sticks in there so care needs to be taken. The effort, I think you will agree, will have been worth while when you finally look upon your version of this attractive little vintage glider.

Fuselage, fin and tail

Just the main points will be covered, together with areas of special note. Use good medium hard strip for the fuselage longerons and construct an identical pair of sides, allowing glue to set thoroughly between operations. Proceed by joining sides together with F2 and F3. Follow this by pulling in the nose to F1; then taper the insides of the longerons at the tail end and glue together. Now fit all cross pieces to top, front and underside before pulling together the top at point X and glueing that lateral member. When this is set glue in the small gussets to the underside corners of this cross piece and add the final

laterals. Finish this part of construction by adding the dorsal spine.

The formers can now be glued in place and the stringers added. Ensure that each stringer adopts a pleasant curve. The formers on the fuselage underside and top of the nose may have to be trimmed slightly to achieve this. Soft 1/8in. planking is then added between nose stringers. I use balsa cement for this because it sands nicely when you shape the whole thing. Add nose block (previously been cut to plan and side outlines) then shape in situ.

The fin and tail are built directly over the plan. Note the tip construction; this employs straight pieces of wood which are cut and sanded to outline shape when completed. The same procedure is followed for the wing tips.

Wings and finishing

Cut ribs using sandwich method and notch the tailing edge for a good fit. Noting undercamber, add bottom spar followed by top spar and the leading edge. This

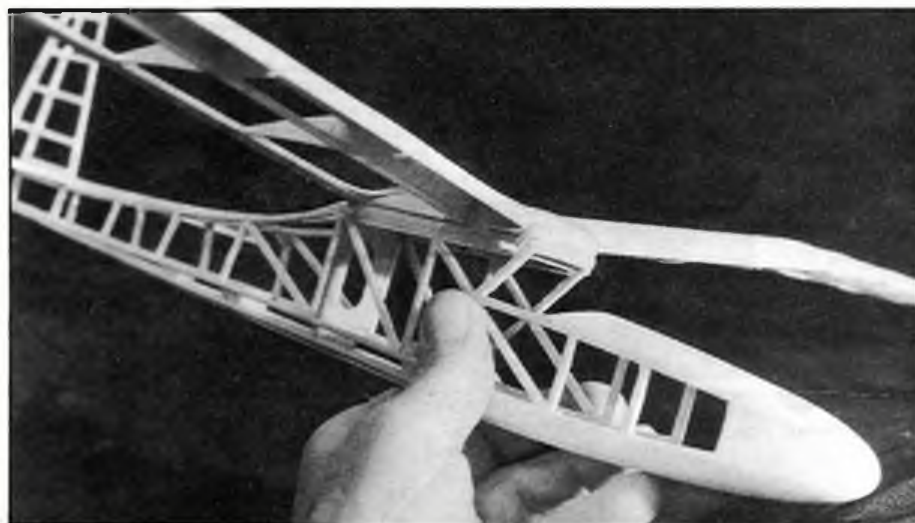
Gull-wing layout adds distinction to what is otherwise a straightforward layout. Construction is light but robust.

assembly can be done in the hand and then placed on a flat surface to dry. When set join at centre and add inner dihedral bracing. Construct outer panels and when completed attach to inner with the 1/16in. hard balsa braces. Set things up to the correct dihedral. Lastly, add the riblets and 1/32in. top sheeting. It's worth noting that the small pieces of sheeting required can easily be produced by sanding down soft 1/16in. sheet.

Finish airframe by lightly sanding all over, followed by covering with lightweight tissue which is water shrunk and doped with a 50/50 dope/thinners mix. The original had blue fuselage and fin with white wings and blue tissue letters. The final job, after covering the fuselage, is to add formers F2A and F2B; these will provide a basis on which to glue, with contact adhesive, the thin celluloid windscreen.

To the Flying Field!

Before that initial step into the realms of flight, check that Baby Gull balances where indicated. Add weight to the forward nose compartment if necessary. All-up, my replica weighed in at 1 5/8oz,



half-an-ounce of which was nose weight. Next job is to check the wings for equal washout. A small amount of heat from an electric fire or hair drier applied while holding corrective twist to an offending wing will remove any unwanted warp; the wing must be allowed to cool while still being held.

With flying surfaces and balance correct your Baby Gull is now ready to fly. Launch from shoulder height straight ahead and

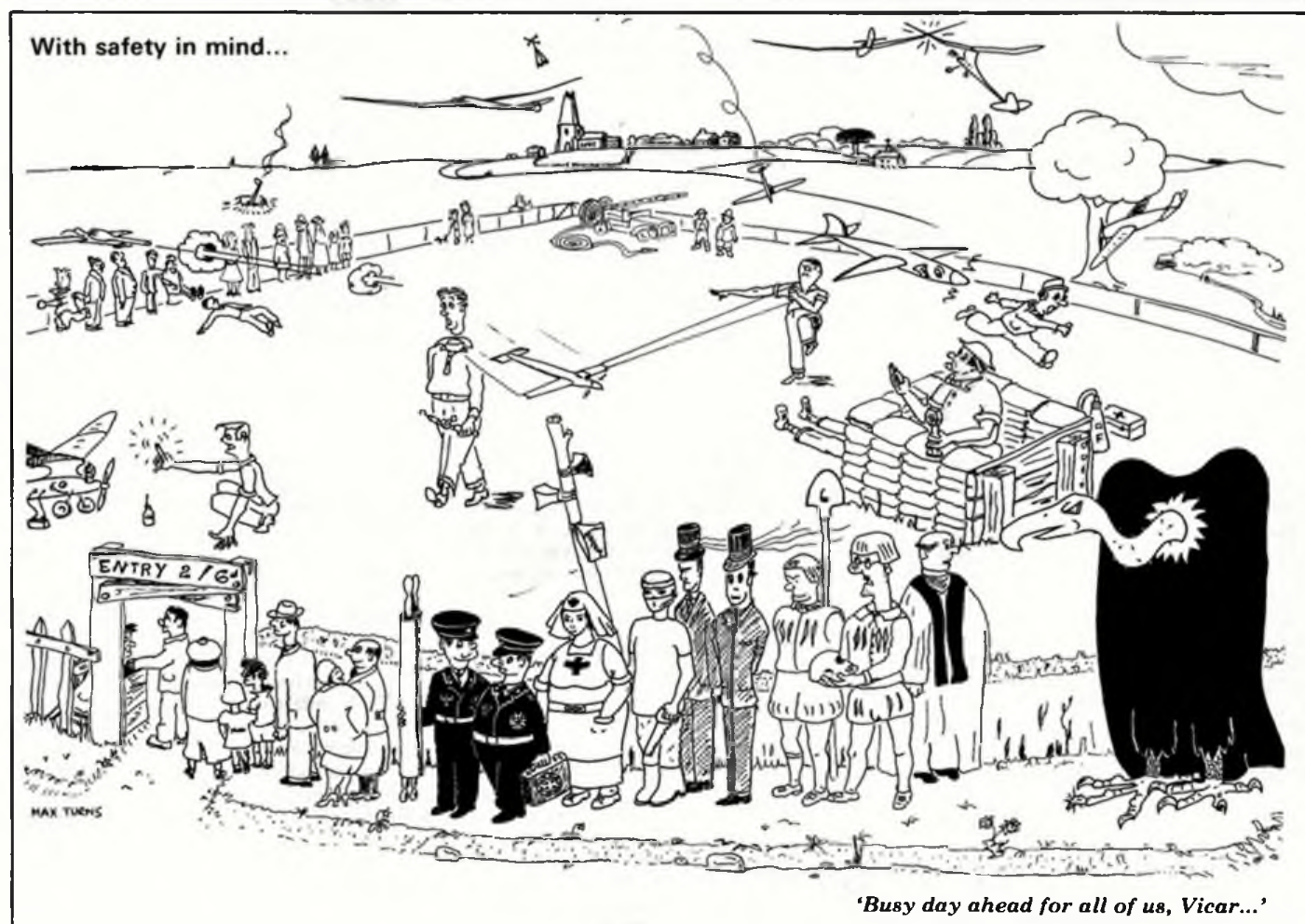
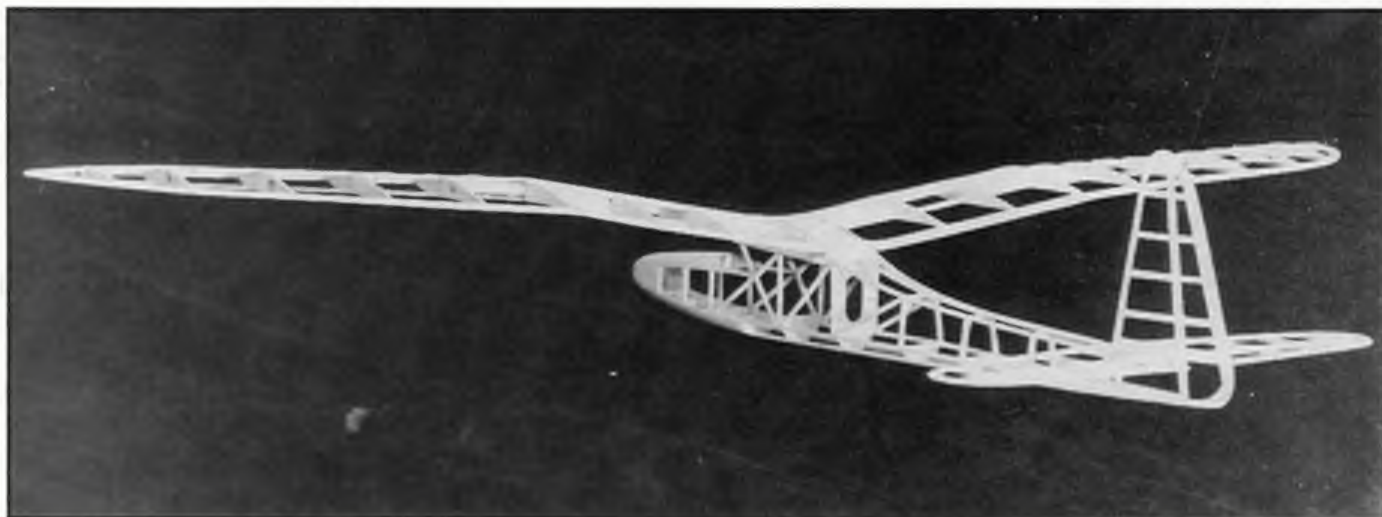
slightly nose down. If this is done at the correct speed the model will glide flat and true to a landing some 50ft away. If a right-sided tow hook has been fitted, the glide should now be trimmed into a shallow left turn by setting a small amount of twist into the fin. As the turn is developed some nose ballast may have to be removed.

Now is the time to try a tow launch. Use strong button thread or nylon for the tow line; about 15 to 20 yards should be enough to start with. First towline tests should be at just slightly more than flying speed. As Baby Gull climbs, control the model's direction by speed of tow. With a little practice it will be found that a faster tow

will cause a right turn and vice versa. Rudder warp should be adjusted to allow a brisk tow to the top of the line. Finally, extend the line to achieve maximum height. Now with the tow turn established make final adjustments to the guide by small changes in nose ballast; less of which will result in a tighter turn.

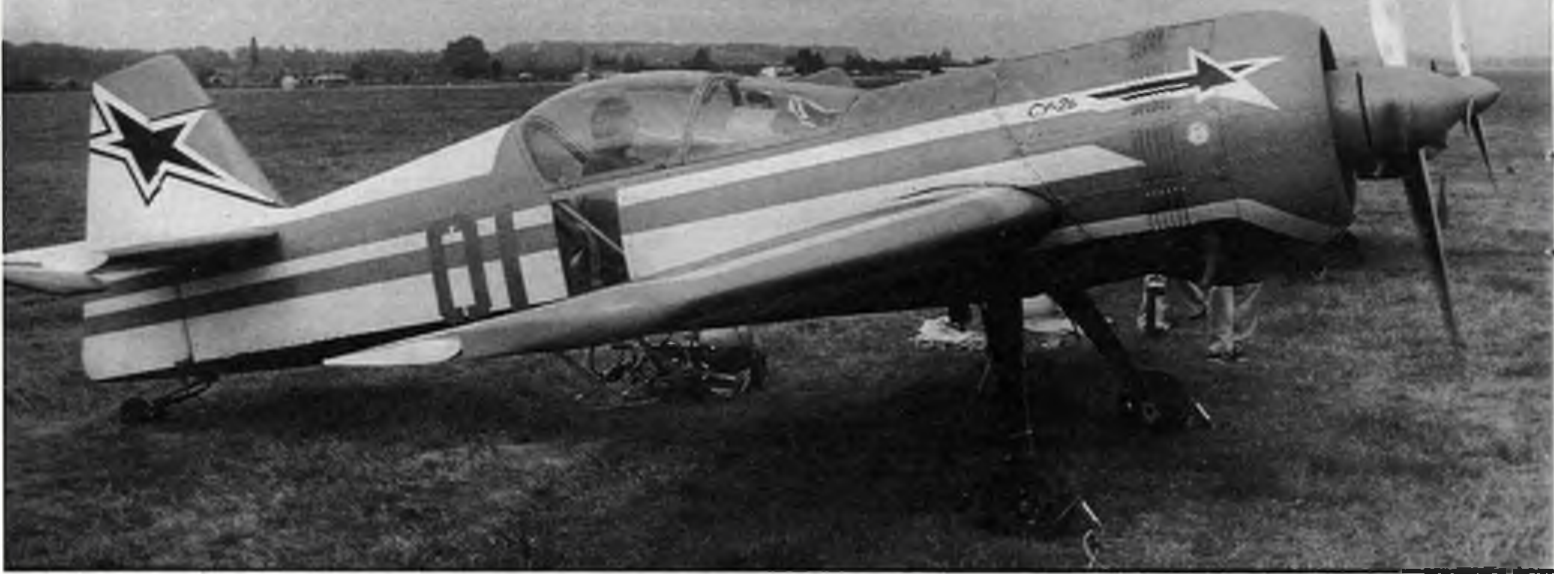
If you like experimenting you could try the alternative tail units shown on the plan, or if you are prepared to deviate from authentic vintage, try a polyhedral wing layout for increased stability. This was used on Baby Gull's bigger brother, the 1949 70in. span eight-and twelve-foot versions of the 'Gull' so your little Baby Gull will be in good company. Build one!

Build and finish with care - Baby Gull is a neat miniature which will reward you with some pretty flying. Try It!



AIRCRAFT DESCRIBED

SUKHOI Su-26M



No. 267: Pat Lloyd's notes on this Soviet showstopper augment superb scale drawings to help you create a fine replica

FROM MY EARLY control line days, I recollect that constant modification was an essential to progress. That same progression follows for many fields; in particular, full-scale competition aerobatic aircraft. It is most evident that in World class championship circles any last year's champion has to polish his performance. The machine is constantly modified, even being changed in shape or aerodynamic trim.

Most recently, aerobatic 'stars' have adopted the monoplane for perfection in manoeuvres. The Zlin 50 was one step ahead for a while; then at the Hungarian World Champs two newcomers arrived from the USSR - the Yak 55 and Sukhoi 26. Obviously, these very new machines had their teething problems and the cycle of modifications started. The Su-26 seemed to have had a smoother passage and more examples appeared.

For some time I had been collecting information with a view to producing a three-view, but some could best be described as 'speculative'. At about the time that the 1986 World Championships was announced to be taking place in the UK, the USSR magazine *Kryla Rodin* published a comprehensive drawing of the Su-26. Being armed with this, coupled with the prospect of actually getting close to one in the UK was the clincher in my deciding to proceed with this drawing.

Quiet power

I have shown the basic differences between '01', '02' and the three aircraft which came to the championships - modification being still very evident.

Although very capable and workman-like, the Su-26s at South Cerney were poorly finished, especially when compared with the ever-immaculate American entries in their Butyrate gloss and perfect making of colour lines. As one observer pointed out, the Su's were so amply powered that any gain in speed caused by a 'glass' finish would be unnecessary!

The Sukhoi Bureau based their design on the 360 horsepower nine-cylinder M-14P radial engine, which although now elderly provides all the requisite power for continuous vertical manoeuvres. As a power unit it is almost unmatched for its constant output with moderate exhaust and prop noise. This noise factor I believe adds greatly to the polish of a well-flown pattern, that of the Su contrasting favourably with say, Kermit Weeks' Pitts derivative howling through some of its patterns. Perhaps the most impressive factor of the Su-26 is that it looks absolutely 'right' for the job, yet not all that revolutionary, until one makes a study at close quarters.

All-round strength

Most of the competition carries extensive glazing nowadays - but the fuselage space frame of the Su is an immensely strong truss on which panels are attached in a non-load-bearing manner. Thus the glazing at the cockpit can continue through 360 degrees, marred only by the wing root fairings on '06', '07' and '08'. Incidentally, the fuselage 'under forward' truss can be removed to facilitate wing removal. All the fuselage panels are of sandwich construction with dural

outermost. This construction method allows the entire fuselage inner workings to be readily exposed - very desirable in a machine constantly forced into positive and negative 'G' situations. Construction of the detachable wing is also unusual, in that it is of two-spar configuration, the main spar having a box section with carbon fibre caps and fibreglass sides, the hollow box being then foam filled. Wooden bosses are built in to accept the mounting of metal parts. The rear spar is also carbon fibre of a channel section with metal inserts at the aileron hinge points.

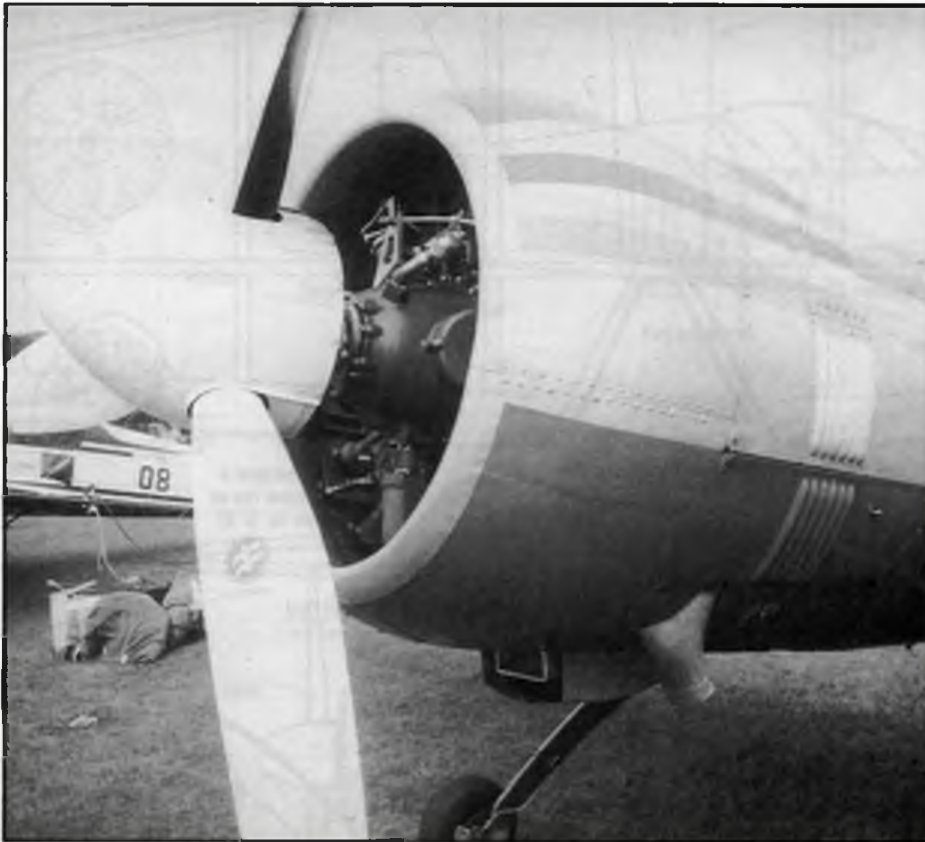
Much of the technical chat at the champs centred on the Su's almost ribless wing, which has a skin made up from a three-ply sandwich panel of glass fibre/foam/glass fibre. Fuel tanks are situated in each wing root between the spars, and are of fuel resistant fibre/foam construction, integral with the wing. The areas in front of, between, and to the rear of the spars are foam - much like contemporary model technique.

Ailerons mirror the wing construction, with a leading edge 'spar' of box section again having carbon fibre booms. The skin contains no ribs, just the foam infill. Hinge attachments are epoxied to the spar.

Each aileron has a pair of 'spade' triangular attachments suspended below the aileron leading edge, slightly in front of and about nine or ten inches below it. These reduce control column loads considerably.

Tail unit, fin and stabiliser all follow the construction of the wing; that is, they are foam filled, sandwich skinned components.

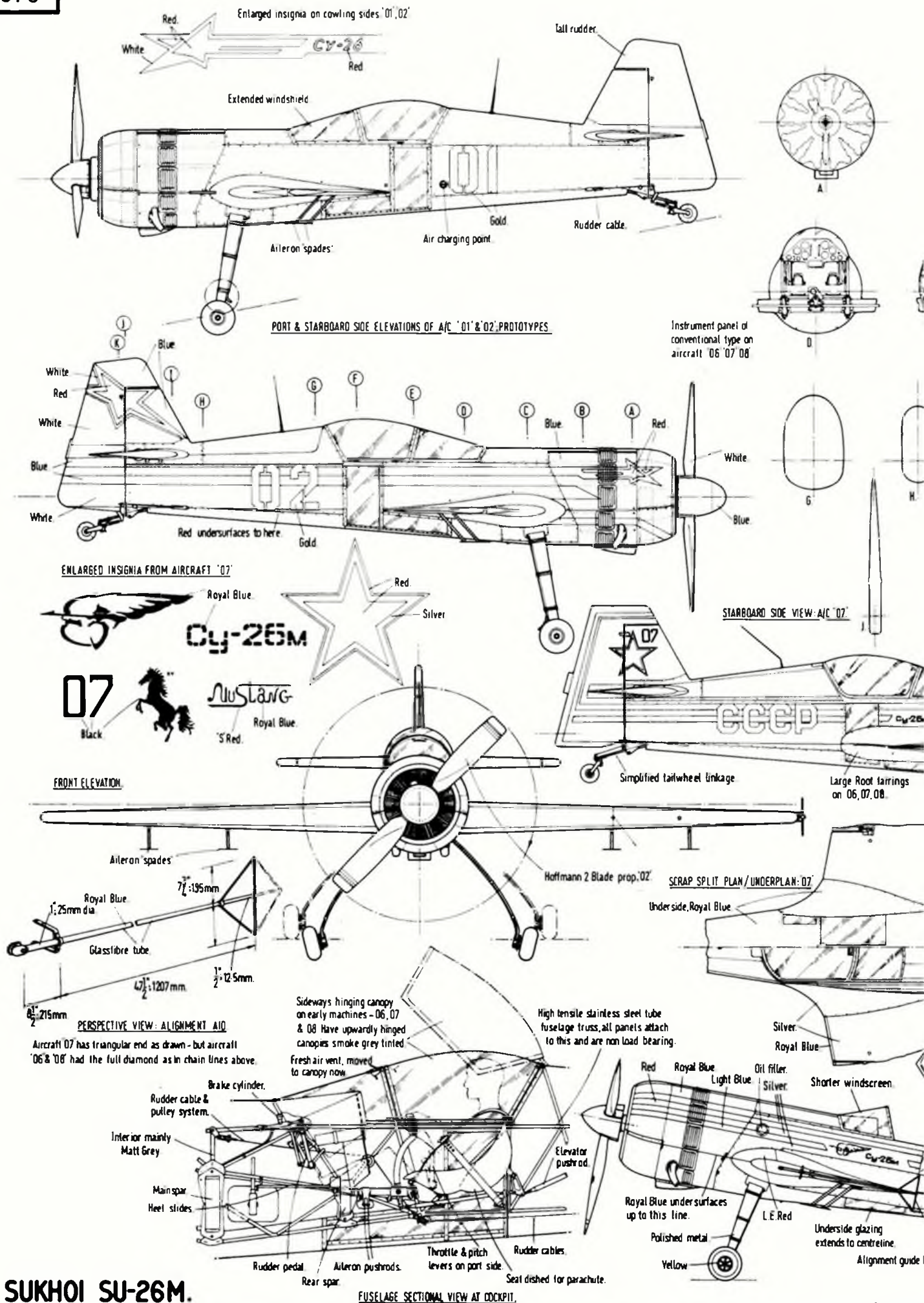
The landing gear is a conventional one-



Su-26 detail to help the modeller. All photos are of '07', captured by Pat Lloyd at South Cerney. Left: Vest cowling reveals the powerful M-16P radial, geared down to drive that broad-blade prop. Below: Triangular aileron attachment reduces stick load. Significant roll rate was reported by observers of this aircraft. Middle left: Disc brakes are prominent; single-leaf undercarriage is from titanium. Middle right: Wing fillet is the only obstruction to all-round vision. Attached to the port wingtips is a positioning guide. Bottom left: Rear-hinged canopy opens to reveal Soviet Team member Nikituk checking his Aresll aerobatic programme. Bottom right: Steerable tailwheel assembly is another robust fitting.



Heading shot depicts '01' running-up at the chocks with stick hard back. Note clutter of support equipment by cockpit - and prominent space-frame member within. Efficient lines of the Su-26 would translate well into model form...Photo by Otokar Saffek.





Cockpit shots indicate differences between '01' (main picture) and '07' - joystick and instrument panel, for example! Photo at top left reveals common mounting of throttle and prop pitch control - throttle inboard. Note also shield for rudder cable fitted to diagonal tubular member. Photos: Otokar (01) and Pat Lloyd.

Although the individual award at the 13th World Aerobatic Championships at South Cerney was won by Petr Jirmus of Czechoslovakia in his Zlin50, Team victories in the Men's and Women's sections went to the Russians. In the latter category, Liubov Nemkova took the individual honours; highest-placing of the Men's Team were Smolin (3rd), Nikituk (4th) and Boriak. Lighter and more powerful than the earlier Su-26, the 26M was most impressive to watch. ... A 1/24th scale dye-line print of the 1/48th scale drawing accompanying this feature is available from ASP Plans Service, 9 Hall Road, Maylands Wood Industrial Estate, Hemel Hempstead, Herts HP2 7BH. Price is £1.80 plus 55p postage and packing. Please quote Plan No. 3079.



piece spring leaf type, in polished titanium, bolted to the stainless fuselage space frame. Small wheels with asymmetric tyre treads each have disc brakes, the hydraulic lines continuing up the spring leaf legs to the brake master cylinders above the rudder pedals to be operated by toe pedals. Other controls are conventional. Elevators and ailerons are linked by rigid rods, the rudder having a loop circuit of cable, which additionally steers the tail wheel.

Comfort of the pilot has not been overlooked. As can be noted from the fuselage cutaway, the pilot reclines at something like 45 degrees. His seat is bulged to accommodate a type PLP-60 parachute. Harness anchorages are linked to the fuselage frame. Early model canopies hinged open to the right and were restrained by a wire, but those on '06', '07' and '08' lift upward. All are quickly detachable.

The future...

In years to come, we'll hear much more of this impressive aerobatic design - and not only in the full scale field. It's proportions are ideal for control-line or radio model scale and we can expect to see many models, freelance and kitted, at events in the year ahead.

We should conclude by expressing thanks to Karl Plocin for translations, Kryla Rodiny for groundwork, and Volkswagen GB for providing access to South Cerney on the occasion of the 13th World Championships on 1st-17th August, 1986.

SUKHOI Su-26M

Major dimensions, measured from drawing. All details apply to '07'

Wingspan	
(excluding alignment guide)	25ft 10ins
Wing root chord	5ft 4ins
Overall length	22ft 10ins
Tail span	9ft 6ins
Tail chord	3ft 6ins
Prop diameter	7ft 10ins
Undercarriage track	8ft 9ins

READERS' LETTERS

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

Southern Gala clarification

Dear Sir,

Dave Hipperson's report on the 1986 Southern Gala at Odiham, which appeared in the January *Aeromodeller*, should not be allowed to pass without comment as he is in error on two points.

First, the restrictions placed on participants not being allowed to drive onto the airfield was an RAF requirement. The organisation (SMAE SE Area) knew nothing of this until arriving at Odiham early on the Sunday morning.

RAF Odiham is a fully operational station and I understand that written into the PSA licence needed to use the site is a directive that civilian cars are not permitted on the airfield. This has not been enforced by the RAF in the past, but this last year the regular CO was not present and his stand-in decided to enforce this ruling, only allowing officials, vehicles on the airfield. This was later relaxed slightly to allow a convoy of vehicles led by an 'official' car to convey models, equipment etc. to the flying area, returning to the designated car park after unloading.

Had we known about this restriction beforehand, participants could have been forewarned and possible arrangements made. Fortunately the weather was fine and we had a beautiful sunny day, nobody was terribly inconvenienced and the whole free flight circus took on a Garden Party atmosphere, reminiscent of the rallies of yesteryear, when fewer people had their own transport.

Second, the two vintage events, run as additions to the Society Programme were not organised by SAM 35. They were run by Keith Miller, SE Area Treasurer, with the sanction of the Area, entirely on his own and all credit and thanks are due to Keith for what has become a regular and popular feature of the Southern Gala.

The SE Area have thankfully good relationships with the Odiham personnel and wish to maintain this despite the restrictions which may be inevitable on an active airfield in the current international climate, as it is the only site available to us suitable for such an event as the Southern Gala.

Dave's Free-Flight Scene is I am sure the first section in *Aeromodeller* turned to by many readers, so he really should make sure of the facts before putting pen to paper.

Heathfield, M.G. Richardson
East Sussex (Sec. SE Area, SMAE)

Plans presentation

Dear Sir,

I am pleased to see the continuance of contest reports in *Aeromodeller*, but I can't resist a comment on reduced plans.

I thought *Aeromodeller* was immune to

the disease of plans bleeding off the edge of the page, but then I opened the December issue and found pages 686-7. My point is: what is the use of descriptions in the text when we can't see the relevant components on the plan?

I have read *Aeromodeller* since 1946, continuously. It is always a 'good read' and has helped and pleased me frequently. I'm pleased to see that *Readers' Letters* is back; it was strange without it. Also, I think you should consider more sport R/C.
Cook, Australia Stan Hinds

Dear Sir,

An infuriating article layout was that of the Hawk Moth in the December '86 issue where not only was the plan titled, but part of it was quite unnecessarily omitted. This has the same effect on the hapless reader as would the removal of the last page of a detective novel. I am sure that most readers, like myself, would have been more than willing to forego the Christmas Quiz in order to enjoy the Hawk Moth plan in full.

High Wycombe,
Bucks

James F. Smith

Dear Sir,

Perhaps this letter will not have significant effect on the subject because I'm from across the pond; but as a long-time subscriber to *Aeromodeller* I would like to express my feelings on a very important and aggravating problem.

There are many good reasons why I look forward to having *Aeromodeller* in my model library.

Besides building scale R/C models, my main enjoyment is purchasing and collecting well detailed scale drawings. Why must your reduced-size construction drawings appear in such a manner as they do? Is this your new advertising method, having the plans falling off the bottom of each page, showing just enough to realize it's a model airplane plan? Are all drawings going to be listed as classified material?

It's getting ridiculously hard to accept what value a good detail construction drawing is.

Many of my AMA friends are concerned about this type of drawing limitation, and I'm sure many of your builders feel the same way. This hobby means a great deal to us and we don't like this type of plan advertising in a magazine we all enjoy.

Methuen, Mass
USA

Anthony Costanzo

No - it's not R/C, but the transmitter lends scale to the Australian half-size Poppet described in A. Mackenzie's letter. News of other miniaturised APS designs would be most welcome.

(Fair comment in each letter. We accept that incomplete drawings may irritate enthusiasts who like to browse before buying. Plans are of enormous interest to us all — indeed, they are the very cornerstone of our hobby. Wherever possible, future *Aeromodeller* plans will be presented in their entirety, and we hope that this will encourage more potential builders to get airborne in the months ahead. GC).

That's OK!

Dear Sir,

I write to tell you of the super service I recently received from Argus. As a reader of *Aeromodeller* since 1948 I was disturbed to not receive the December '86 issue from my newsagent. The wholesalers had slipped up, and no amount of phoning or chasing could get a copy from them, so I was stuck. Eventually a phone call in desperation to Margaret Middleton at ASP brought an immediate response. Within forty-eight hours I received a complimentary copy and a promise of help with the wholesaler in the event of future failures. I feel that this sort of service should not go unnoticed.

Southampton

John Harvey

Pretty mini-Poppet

Dear Sir,

A friend back in New Zealand (who is looking after my model) urged me to send you over some shots of my little machine. As you can see it looks just like a full size APS Poppet but it is in fact a half size replica of this Vic Smeed design and is fitted with a Brown A-23 Campus CO₂ motor. The span is therefore 16in. and it weighs just half-an-ounce or 14 grams. It is finished with red jap tissue on the fuselage, with white jap for the wings and tail, and black trim. As you can see I have called it Poppette and just like its bigger relative its flight performance is flawless. It will regularly exceed one minute fifteen seconds on any warm summer's day.

Tennant Creek,
Australia

A. Mackenzie



April 1987

WORLD NEWS

Down-under activities form the major part of our scan this month

Moffett Gold

In October's Hangar Doors we made the announcement of this fiftieth anniversary event, arranged by the NZ Auckland MAC to commemorate Vernon Grey's victory in '36 Moffett International. What, we wondered, would be the results of such a venture? First notice came from a globe-trotting Bert Pond, proxy flier of the winning model in Detroit fifty years ago, whose picture postcard of Auckland Harbour vouchsafed the following news:

'Norma and I made it here for the 50th anniversary of Vernon Grey's winning of the Moffett Trophy...Forty-four replica models of Grey's original ship were entered in a competition as part of the celebration. Grey built one too, but lost it OOS in a test the day before. There were about six from outside of NZ requiring proxy fliers. A replica of the original trophy was given to the winner...'

World News, indeed - Bert is a resident of Longmeadow, Massachusetts, and thus made a round trip of over 20,000 miles in order to fly!

Further confirmation of the success of this meeting followed smartly from John Poletti of the organising Auckland MAC. Over to our reporter:

The Moffett Memorial Trophy took its name from Admiral Moffett, who, with 72 others perished when the United States airship Akron crashed in the Atlantic on 2nd April 1933. The Trophy, intended for rubber powered models, was competed for annually until the early 1940s, and was awarded for the longest single flight in a series of three rounds. On July 2 1936, the Trophy was won by Vernon Grey of New Zealand, when Bert Pond proxy flew Vern's model to a magnificent flight of 44 mins 14 seconds.

The Auckland Model Aero Club, which was formed in 1928 and which was Vern's home Club in 1936, staged the international Moffett Gold Commemorative Contest, an event spread over two days, with trimming processing and a social evening on November 22, and the contest proper on the 23rd, followed by a fly-for-fun afternoon and a formal prize-giving and dinner in the evening.

Models were displayed and processed in the Mangere Hall on the Saturday night amidst a display of vintage models of all types, going back to an original Twining A-frame. A good selection of early gas models began with a genuine vintage KG built and flown in 1936 by Fred Macdonald of Auckland, and included a Thermaleer, Toughie and Loutrel Sportster along with some own-design late 40s models. Also displayed were collections of documents and memorabilia relating to the early history of the Auckland Club.

The contest proper took the same form as the original Moffett Contest, except that all models were replicas of the Vern Grey 1936 winner, and that a bonus multiplier factor was awarded to each model for fidelity to the original. Some modifications, such as the fitting of a dethermaliser, were permitted but all models were worthy copies of the original. Of the 44 entries received, 39 arrived and 23 produced flight times better than one minute.

The weather for the contest was overcast with a strong northerly wind which made ROG take-offs and retrievals a problem for the fliers. Several rows of tall trees in the downwind area also added to the difficulties of model recovery.

The leader at the end of Round 1 was Brian Stanish, who managed to hook a small thermal with a model which was making its first real flight to yield 172. Bill McGarvey was second on 151 with Paul Lagan (proxy Rod Lewis) on 113 lying third.

Round two began with the weather still looking threatening, and a few odd drops of rain from time to time, but without any great increase in the wind speed and little prospect of strong lift. However, a small improvement in times was made during



round two so that, by the end Rod had raised Paul Lagan's time to 173, pushing Brian down to second place, with Jim Fullerton (Ron Magill) who had returned 169 then in third position.

The third round changed things completely after Bill McGarvey picked up some lift after a magnificent take-off to register 265; and Stephen Moore (John Poletti) returned 184 to take second, leaving Paul Lagan, whose model could not be retrieved in time for the third round, still on 173. Jim Fullerton made fourth place on his second round time, and Brian Stanish's model, having suffered trim changes after a heavy landing in the first round, was unable to return any further times but still took fifth place on the strength of its first flight.

The magnificent efforts made by the proxy fliers must not go unrecorded. The fact that proxy-flown models filled three of the first five places speaks for itself, particularly so when it is noticed that one flier achieved better times with his proxy model than with his own. Please spare a thought too for those builders in the USA who had built models for the contest, but were unable to get them to New Zealand in time. Again, one of the Australian models was damaged in transit, but was carefully repaired by local modellers in time for the contest. Clearly the spirit of the 1936 Moffett contest, as recorded by Model Airplane News in September 1936, was strongly in evidence at Karaka in November 1986.

This spirit was also present at the Prize-giving and Dinner at which Vern Grey and Bert Pond were guests of honour. To live again those early days through the recollections of Bert Pond, Vern Gray and Bill Mackley, to realise the difficulties faced by modellers sending models overseas, and to see the long-time friendships forged during international model contests of 1936 still firm and strong in 1986 was a heart-warming experience indeed. A descendant of the 1936 Snake-In-The-Grass was referred to by Vern, who was tempted by this individual (who wishes to remain anonymous, but whose initials are Bill McGarvey) into test flying at Karaka



five days before the contest and lost his model OOS on its second flight!

Both Vern and Bert were given an XOS size engraved goblet in honour of the occasion, after which Vern presented Bill McGarvey with the winner's prize; a magnificent bronze replica of his own 1936 miniature of the Moffett Trophy. So ended one of the really great week-ends in the history of the Auckland Model Aero Club. Of the organising committee it can be truly said "They wrought better than they knew.."

Main picture, left: This jolly group were competitors in the Moffett Gold Commemorative event reported in the text. At the front are Vernon Grey (with model) and Bert Pond, whose proxy flew for Vern - and won - in 1936. How about this for a one-model contest! Above: Winner of the event, Bill McGarvey lets go.



Moffett Gold Commemorative Contest

		1	2	3	Factor	Score
1	Bill McGarvey (Auckland)	151	95	265	1.040	275.6
2	Stephen Moore (Proxy John Poletti) (Christchurch)	83	103	184	1.095	201.5
3	Paul Lagan (Proxy Rod Lewis) (Australia)	113	173	-	1.090	188.6
4	Jim Fullerton (Proxy Ron Magill) (Australia)	70	169	-	1.070	180.8
5	Brian Stanish (Auckland)	172	-	-	1.050	180.6
6	Bruce Keegan (Auckland)	76	-	130	1.050	136.5
7	Roger Gibbs (Torbay)	50	45	124	1.035	128.3
8	Stephen Wade (Auckland)	-	119	75	1.070	125.0
9	Ivan Treen (Levin)	-	107	-	1.070	114.5
10	Angus Orchard (Proxy Vernon Gray) (Australia)	60	105	84	1.075	112.9
11	John Poletti (Christchurch)	59	98	96	1.090	106.8
12	Trevor Martin (Auckland)	70	-	95	1.065	101.8
13	Merv Buckmaster (Proxy Dave Ackery) (Australia)	96	-	-	1.035	99.4
14	Colin Bruce (Whakatane)	48	87	-	1.100	95.7
15	Eric Rose (Wellington)	84	43	56	1.085	91.1
16	Wynn Craven (Havelock N.)	71	65	81	1.085	87.9
17	Joan Buckmaster (Proxy George Curliiss) (Australia)	43	78	83	1.030	85.5
18	Carl Cogar (Proxy Trevor Bundock) (USA)	-	74	82	1.035	84.9
19	Alan Douglas (Alwyn Graves) (Gisborne)	-	-	69	1.085	74.9
20	Chris Murphy (Proxy Dave Ackery) (Dunedin)	63	-	36	1.080	68.0
21	Bill Harold (Auckland)	41	64	60	1.060	67.8
22	Dave McKinley (Auckland)	-	43	57	1.097	62.5
23	Clive Gardner (Auckland)	57	28	60	1.030	61.8
24	Neil Molloy (Proxy Rex Bain) (Australia)	53	-	-	1.075	57.0
25	Terry Magee (Auckland)	-	50	-	1.070	53.5
26	Len Perry (Auckland)	50	-	-	1.065	53.2
27	Reg Truman (Auckland)	36	43	42	1.075	46.2
28	Noel Hewitson (Auckland)	-	-	39	1.090	42.5
29	Ernie Brooks (Auckland)	-	-	31	1.090	33.8

Also flew
Arnold Curtiss (Fielding)
Stu Rogerson (Hamilton)
Rees Jones (Whangarei)

John Chant (Auckland)
John Sheppard (Papakura)
Peter McKinley (Auckland)

Bruce Radford (Auckland)
Terry O'Meara (Auckland)
Bert Pond (USA)

Greetings from Australia

'I haven't seen or done any aeromodelling for quite some time now,' wrote David Anderson (ex-Aussie F1B team member) 'and I have forgotten what a piece of balsa looks like - especially the price. South Australia is holding the Nationals at Wacherie in April; the location is the Gliding Club Aerodrome where the full size World Champs were held over the New Year in 1974-75, I am going up there to help out with the free flight events, a full week of flying. The reason that the event is being held so late is that it gets so stinking hot in the Adelaide area (and elsewhere) in the middle of summer. April is Autumn down here so it could be warm or wet, cold or windy. It will be interesting to see how many people turn up for the F/F

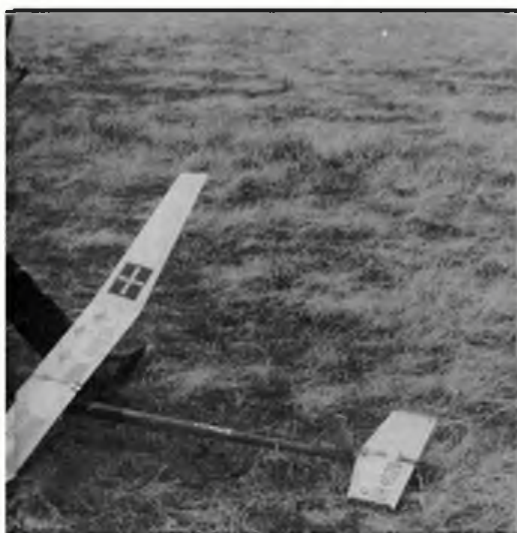
events. The Australian F/F Champs are being held over the Easter weekend; during the weekend before there will be an elimination contest to sort out who is to go to France for the World Champs later on. The blokes might not be too keen on risking their models! This contest is to be held at Canawindra, about 150 miles west of Sydney. Balloonists use the area because it is the calmest place in Australia. Again I hope you have a prosperous year in '87 and best regards to all at *Aeromodeller*. I have been reading it since 1946; a long while. . .'

And just to give a flavour of free-flight Australian style, we present a selection of photographs of last year's Nats taken by UK visitor Bob Bailey. Now - how about news from Asian countries?





Far left: At the last Australian Nationals Bob Bailey captured this shot of a pensive-looking Peter Lloyd with his F1A. Peter was one of the prime movers of a very well-organised Nats. More pics from this event follow: above, Ivor F and son rebuild John Pond's Gordon Light Wake - an effort rewarded by a last-flight max in Vintage Rubber. Left: Bruno Chinchilla prepares in F1B. Placed second. Below: Stu Sherlock, third in F1C, waits for the sun to come out. Model shows signs of past repairs to wing...



While the innocent sleep. . .

We are happy to print some pictures which show the ultimate in macho modelling - free flight by night. You don't believe it? Neither did we until Jim Adams, editor of the US vintage magazine 'SAM Speaks', sent us these dramatic pictures of an attempt to set up a twenty-four hour duration record at Taft, that oilfield flying site in Southern California. Night-fly models are equipped with strobe lights or, as on the job flown by Charles Pierton, a chemical glow-tube. These tubes, taped to the side of the fuselage, emit a bright phosphorescent green which can clearly be seen in the night sky as a point of circling light. Weird. Launching is accompanied by swirls of desert dust - a spectacular performance if ever there was one. The aim of the exercise is to get the highest total duration from twelve two-hour rounds. The flier, if he has any sense, makes consecutive flights at the end of one round and the beginning of the next so that he can get some sleep in. Needless to say, such deeds of derring-do can only be accomplished at places like Taft, where still air can be virtually guaranteed at night, and where there are no neighbours to complain of the noise. Even so, things can go amiss. While these pictures were being taken, another model equipped with a strobe decided to spiral in. Well-known Californian modeller Mike Meyers took one look at the bleeps in the sky getting rapidly closer...and closer...and closer - and dived under a trailer, to find three others already there. Did Pierton get that record? Frankly, nobody could stay up long enough to find out...

Above: Night-flier Forest Staires looks happy at the prospect of casting his model into the Taft darkness. That white disc just ahead of the wing is the moon! Below: Charles Pierton of Bakersfield is about to release in a cloud of dust. Guess what motor he uses...



And photos from France...

Models at the French 4A group's Grand Prix de Motomodels, held at Persan-Beaumont last October, included (far left) Jean-Marie Plednol's Corsaire, a Robert Chabot design from the 1945 Record Days. This one is Taifun Zykton powered for R/C. Left: Another Record Day craft was the DAD (Distance, Altitude, Duration) by Jean Guillemand, who built this replica and the Jige Nyou shown at right. Both are in original colours: red/silver and blue/silver respectively.



SPECIAL SCALE MATTERS

Bill Dennis tries his hand at a Chilton conversion

IONCE HEARD a definition of the difference between fixed wing aircraft and helicopters as being that the former want to fly while the latter want to crash. I suppose that the F/F scale low-wing model comes close to bridging both viewpoints and this is, of course, the reason why you don't see many flown outdoors. Indoors, flying is less of a problem because there is little or no air movement to upset a marginally-stable subject.

The trouble with the low-winger is that the centre of gravity is near or even above the wing so that if the model becomes unbalanced it tends to tip over. In contrast, the high wing model has its CG well below the wing, hanging there like a pendulum and very difficult to upset.

There are two things we can do to improve matters, other than to use pendulums, an approach which I have discussed before; and these are to lower the CG and increase the dihedral. The latter will make the model more laterally stable

and less likely to get into a position where the unfavourable CG location could prove damaging, but if done to excess it can ruin the appearance of the model.

More useful is to lower the CG, and everyone knows the dodge of using a heavy pair of wheels. This, together with care taken to keep the upper structure light, can make all the difference to the stability of the model. Unfortunately, WWII fighters look very odd flying around with dangling U/C legs, and in these cases I think it is best to leave the wheels off and accept the fact that the model may be tricky - at least it will look good while it is flying!

I once saw the original P.E. Norman Mew Gull - a massive device weighing several pounds, seemingly hewn from oak, and with pendulums moving microscopic tail surfaces. I suppose the technique was to hurl the thing into the air and then watch it from a bunker. This approach won't go down well at Old Warden, I'm afraid! (Heavyweight power models of any

type may well be unsuitable for small, busy fields but it must be accepted that P.E. Norman and others of his school had little to learn about the F/F control of apparently impossible and scale subjects. GC).

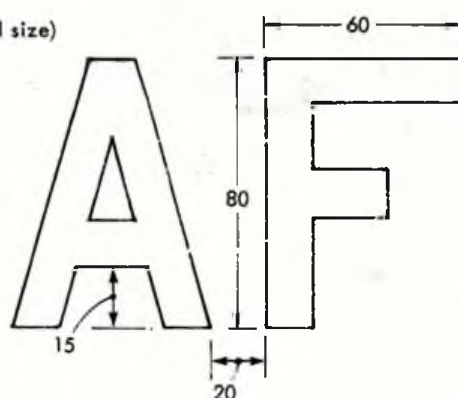
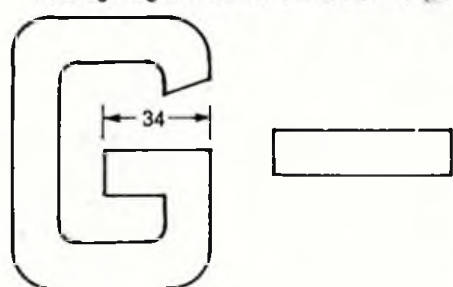
A better way in the environment-conscious 80s is to build as light as possible, within certain constraints imposed by considerations of realism, so that the model has as much chance as possible of staying in the air. This means adopting the knock-off principle to avoid damage to lightweight components. The usual method for fixing low wings is the tongue-and-box, but the disadvantage here is that anything other than a fore and aft impact can knock the wing box through the surface of the wing. A better way is to fix the wings with 1/4in. balsa dowels in aluminium tubes. The dowels will break in a crash, so be sure to have something in your toolbox with which to extract the remains!

My first low-winger, many years ago, was an APS Dart Kitten, which performed

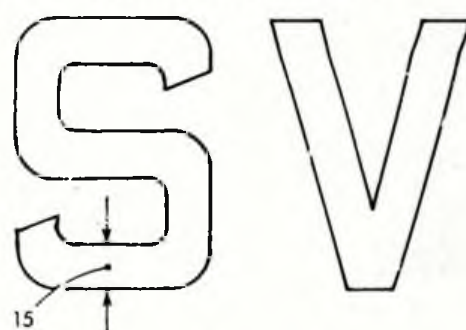
The generally crisp appearance of the full-size craft is notable. Racing number adds character - aren't those '9s' difficult! Aeroplane Monthly photo. Registration letters at bottom drawn to suit fuselage. Actual-size conversion drawings at right tell all you need to know - have a go at your own DW1A!

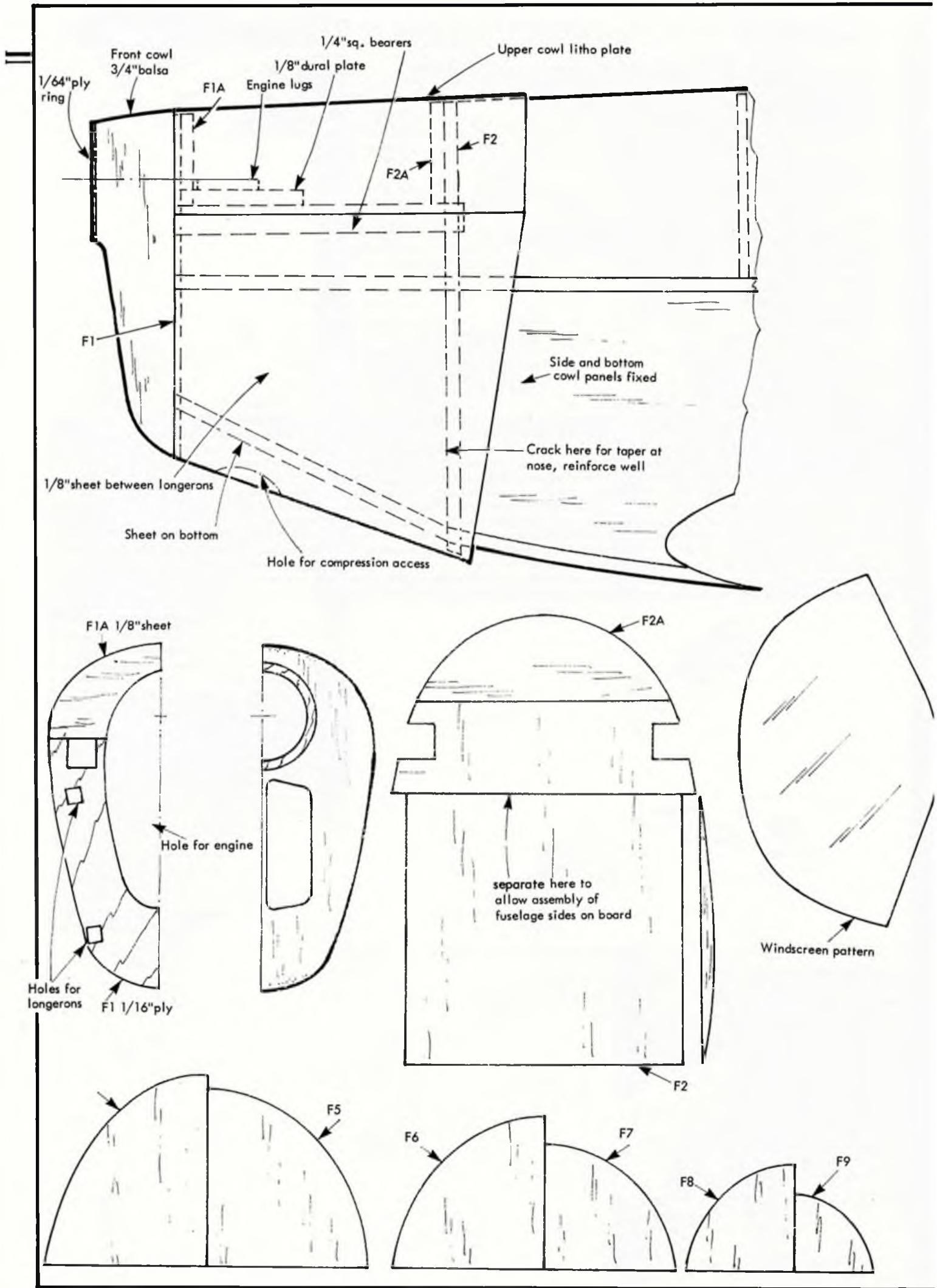


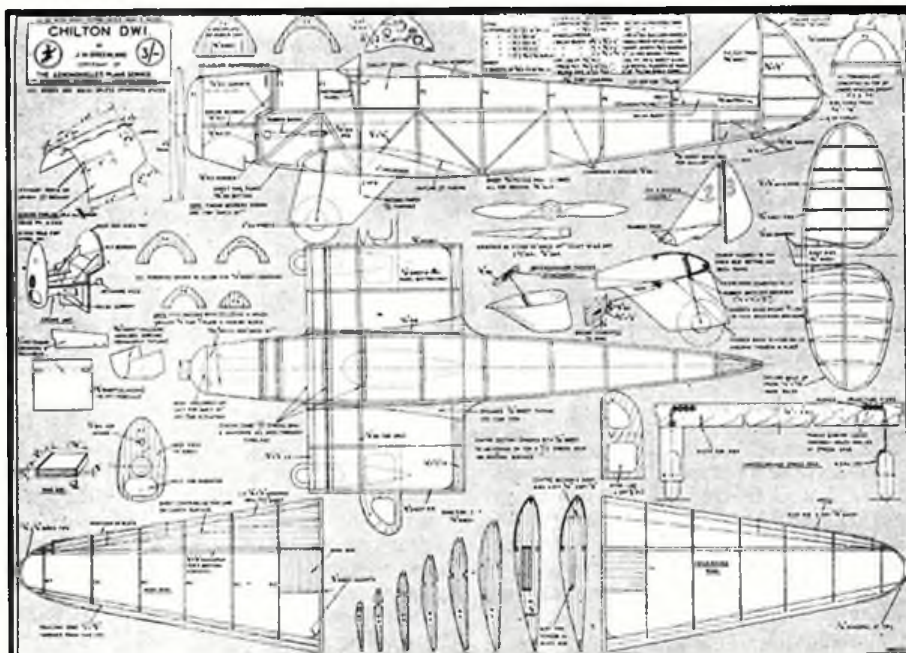
Fuselage registration for Chilton DW1a (actual size)



Dimensions in mm. for wing registration







consecutive loops under the power of a Cox .020. The wheels weighed more than the airframe, and it was super-stable. Next was a B.A. Swallow which looked very stately, and flew well, but was less stable because it was very short-coupled. My latest model of this type, pictured here, is basically Greenland's Chilton from the Aeromodeller Plans Service offering, but it has been converted to a DW1a. I met John Greenland at an Indoor Nationals two or three years ago and was able to ask him about his original model which first appeared in 1947. I had always considered this to be an attractive aeroplane, particularly the DW1a version with its inverted engine and black/white colour scheme, but I had been put off by the pointed wings and tiny tailplane. However, John recalled that his model flew well, with a good take-off, so thus encouraged I went ahead and built my version.

I have reproduced the relevant parts for the conversion, plus the corrected top decking formers which should be semi-circular and not domed. Since this was intended as a sport model only, I did not bother too much about accuracy, which in any case seems quite reasonable. One area that does require attention, however, is the wings; it was not until I had completed both panels that it struck me that they seemed even more pointed than I had imagined and true enough, the chord was about half-an-inch under scale at the tips! Since the aeroplane doesn't have much wing to begin with, I felt I had to do something about it. Luckily the missing area was all at the trailing edge, so I simply grafted on some extra trailing edge, built up the rear of the ribs and sanded the whole mess to section, scalloping out some excess wood from the inside!

Apart from that, the model was built largely to plan, with minor modifications, as follows. The entire fuselage, with the exception of the rear underside, was sheeted with soft 1/32in. along with the centre section and first rib of the wings. The latter were built with 1/8in. washout to prevent tip stalling.

The U/C was fixed - the plan shows rearward springing, but does not explain how this is achieved when the wheels are enclosed by spats. On a light model a fixed

U/C should be practical. The tailplane was carved and sanded from very soft 1/4in. sheet, scooped hollow on the underside while the elevators and rudder were built on the usual 1/32in. core principle with 1/16in. sheet outlines sanded thin. Since the tail is flat bottomed, the elevators are built up on one side only.

I covered the model with lightweight Modelspan, ignoring the possibility of punctures and tears. The wings were given a couple of coats of white from car aerosols in the region of the registration letters, which were masked off with Frisk film, available from drawing office or art suppliers. The whole model was then aerosol sprayed with black gloss, the fuselage registration applied with Trimfilm decal, and the trim painted with white enamel.

I fitted a Mills .75 mainly because it is easy to get into in a confined space. All up weight is ten ounces, which is a couple of ounces more than I had hoped.

If you want to include extra detail, I believe the original aircraft still exists, although recent photos show it in an horrendous red and black scheme with white 'go-faster' stripes. No doubt there is also a pair of furry dice hanging from the dashboard! Furthermore, the rudder and cowling have been changed and tiny wheels substituted— shame.

Since penning the above article I have

had my arm greatly twisted by your editor to go out and fly the thing. This evening I managed to find a relatively clear and soft area of Dartmoor, and carried out a few test hops. The first power attempts resulted in fast flick rolls to the left - not very promising at all. I corrected this with about ten degrees of right rudder, although the long-term remedy may be a now engine plate with more sidethrust. However, for the present all I was interested in was to see if the model was fundamentally stable.

By now the Chilton was flying straight ahead but diving to the ground so I moved the CG back to 2 3/4in. behind the wing leading edge. On the next launch it drifted away in the dreaded right-hand turn, but instead of the expected crash the Chilton

Basis for the conversion is the plan of the Chilton DW1 available from our Plans Service as ref. no. FSP 340. Price is £3.80 including postage. Above: Bill's pristine conversion from John Greenland's 1947 plan looks good! First flights have shown excellent stability. Below: Evocative shot of the full-size 'FSV' straining at the chocks as the flag is about to fall at the Southend Air Race meeting in August 1947. Tension plus... Decor note: we think those spats are natural metal finish. Photo via Aeroplane Monthly.





climbed away into the distance, passing between neck-high boulders and gorse trees. The most encouraging aspect was the model's evident stability in fairly turbulent conditions.

Having been lucky so far I left it at that. Not a comprehensive trimming session perhaps, but I had seen enough to convince me that the model will happily fly; and I must admit to a little surprise! Trim details: CG: 2 3/4 in. behind LE. Rigging angles as per plan. No down-thrust; three degrees of sidethrust. Tip washout of 1/8 in.

More Scale Matters

Indoor Nationals

This event is now a regular fixture at Walsall, under the direction of Doug Sheppard. There will be the usual three events of CO₂/Electric, Rubber and Peanut, plus another Keil Kraft/Veron rubber scale mass-launch event to give some light relief. This will be to the same rules as used in previous events, with a minimum model weight of 25 grams. Entry for the latter will be on the day, but the main events must be pre-entered by 31st March. Contact: Doug at 13 Luckington Road, Monks Park, Bristol BS7 0UT. And don't forget the date - 26th April!

Once again I must say that this has become the premier scale event of the year and is thus not to be missed. As last year, there will be a series of talks, and possibly a static exhibition of models. Refreshments are available, and if you are a beginner to Indoor modelling, there will be trade stalls where you can get all the materials you will need, and which are not available in your local ready-built model emporium. Best of all, the weather is guaranteed to be good.

Still on the subject of indoor, it has often struck me as surprising that no FAI International contests have evolved for indoor scale. I am sure that worldwide there are far more indoor scale enthusiasts than for example all the F1C, team race and speed enthusiasts combined, and yet the only International activity has been the occasional Peanut Postal Proxy.

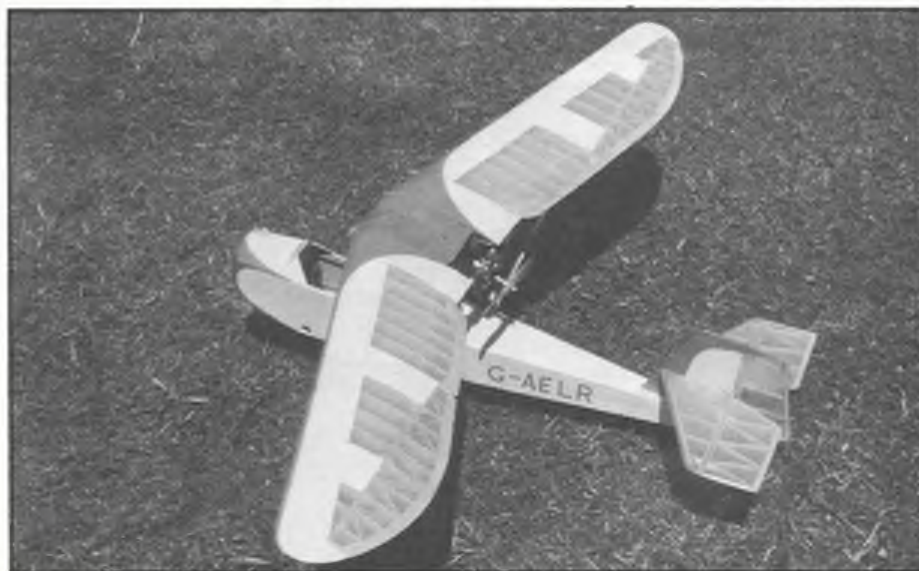
The problem is, of course, that there is no common scale event flown around the world. Peanut is fairly widespread, but interest is waning as far as I can see, and it is not really a scale event to be taken seriously as an FAI class, even if everyone could agree on the rules.

I don't know of any other country which flies a 'proper' indoor scale class like the SMAE rubber and CO₂/electric events. Here we have models that are judged

statically to the same schedule as the FAI R/C scale aircraft, and then judged solely on flight realism. Such classes surely have more appeal to the scale modeller than Peanut, and the trends of entries and variety of new models support this view. While CO₂ seems too troublesome for indoor use, rubber would be an ideal class for international competition. I would welcome any information from other countries that fly such a class.

Finally, having mentioned the mass-launch events, I hope to run another one at the Old Warden Scale Day this year. I was talking to Vic Dubery at the M.E. Exhibition and he told me that although all the KK and Veron scale kits may not be vintage according to the SAM 35 definition, they will be allowed to compete in the Masfield Trophy event on the same day, which is all the more reason to build a model.

Below: Jim Fullarton's neat APS Dart Pup hails from 'down under'. Modifications to the plan include hinged control surfaces and scale rib spacing. Spiral instability was cured by the addition of slight dihedral. Missing outline-style wing registration is beyond Jim's artistic abilities, he says. Bottom: And for the very last time - our Scale Matters columnist launches his DH 34 on its fatal flight at Port Meadow last year...



VINTAGE CORNER

Vintage models at Wembley and safe flying in the season ahead are just two of the topics advanced by Alex Imrie

Model Engineer Exhibition

The area allotted to SAM 35 seems to grow year by year, and at the 56th show held early in January at Wembley it encompassed 120 feet of curved display above the entrance to the foyer. Therein were some 250 models of every description, the majority of them, of course, being vintage. These ranged from a small card replica of the Rigby Swallow to giant power models like the Willis Monoplane built by Mike Barton from Enfield. Many of the models had been seen at previous ME Exhibitions and in action in the field but some were newcomers, albeit immediately identifiable, having graced the pages of the various model magazines of the period that are our staple diet. It is only possible here to give impressions of a few of the models on show. To do the display justice would require much more than the complete space allocated to this column. The mania to build models in sizes other than the original manifested itself in two giant rubber-powered models, both Earl Stahl designs made twice size — a Spitfire by Peter Michel and a Miles Magister by Don Knight. I wonder if they will fly as well as the original article, but with these two at the controls it certainly won't be for the lack of trying if they don't. On the subject of large models, a portion of Dave Baker's double sized Sal Taibi Powerhouse wing was on show looking for all the world like some full size aeronautical relic. Years ago I saw this model under construction; now, all too soon it seems, parts of it have become museum pieces. Was this model really finished and flown? Maybe Dave will tell us about it.

Big power models are always impressive, and there were a number on show; Noel Barker's Goliath wing ribs looked like fuselage sides; his Miss Philadelphia and Bill White Pylon looked good, as did Tony Penhall's Brooks' Skyrocket, and the Miss America, Lanzo Bomber and Premier Lion — and there were many others.

Some original models were on show, foremost amongst these being three Ted Evans Wakefields. There was the Astral Blenheim, a wartime design by H J Towner. This example will be refurbished by Mike Kemp who was responsible for bringing it out of its hibernation whence it had rested for some forty years. Noted too was the Handley Page Halifax by George Hollingdale. Commented upon last year, this model is now nearing completion and news of its flights are eagerly awaited. Many scale models were to be seen and surrounded by these Vic Dubery (whose own workshop was currently packed away during a house move) laboured long hours on his Earl Stahl Blackburn Skua, one of the few types that he did not operate on as a Fleet Air Arm aircrew member in WW2.

Unorthodox models are always of interest and it was pleasing to see Bob Woollett's original Gander as well as Les Hoy's beautifully built Velivole canard designed by Belgium modeller A Watteyne and described in the June 1946 *Aeromodeller*.

A nice assembly of control-line models included Ron Parson's Dynajet-powered racer and Fred Deudney's 1950 ETA 29 powered speed model that did 107.1mph. These were surrounded by an array of replica C/L kits, the very mention of whose names is enough to create the desire to build them all again: Boxcar, Super Zilch, Calamity Jane... I liked the looks of the two Stanzel P-60 Sharks in traditional blue and yellow with old time American insignia complete with the red 'meatball' which was to disappear after Pearl Harbour...

At either end of the display well drawn placards drew visitors' attention to the fact that many goodies are still reposing in lofts and attics uncared for and forgotten. Let's hope that their messages were absorbed by the many thousands who 'described that arc' admiring the handiwork of UK vintage modellers: hopefully, on their return home they would dig out that old literature, those engines and that warping balsa and would be moved sufficiently to start again on the hobby.

The competition models in the various Classes of the Aircraft Section were more easily accessible this year, being on an 'island' table. Most were beautifully built examples of the modeller's art. It was

encouraging to see a replica of Jim Fullarton's 1935 Wakefield model, possibly made from plans and information given in this column last July? Despite the excellent layout some catalogued items were hard to find; I made several circuits but searched in vain for Harry Boyd's non-flying Halberstadt CL II.

Safety in flight

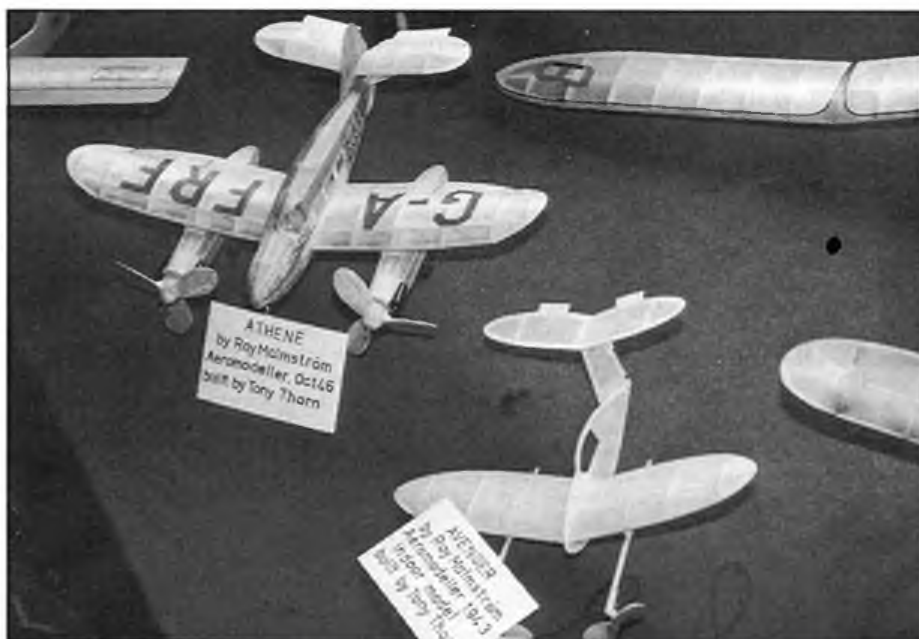
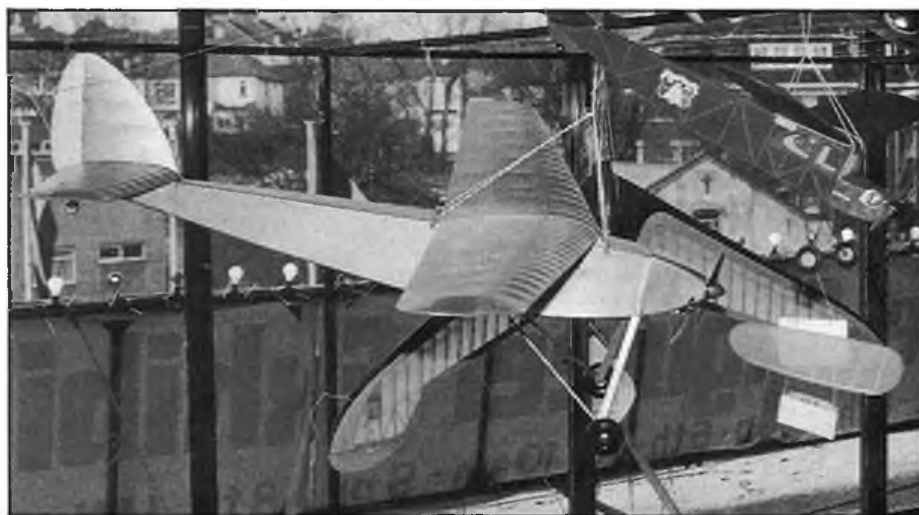
The writing has been on the wall for a number of years concerning the free flight of big heavy power models at meetings attended by large numbers of the public. There has really been a large question mark as to whether or not such models should be controlled by radio. Organisers of model flying meetings can define the type of model that may be flown there, and if a limit is placed on engine capacity or model weight, modellers will have little choice other than to comply. Now, all model aeroplanes are liable to get out of hand; even the most controllable of R/C models can sometimes go astray, due to radio interference, pilot error or structural failure, but it must be admitted that such occasions are in the minority. However, when such machines get away from their pilots they are lethal instruments indeed; heaviest of the model aeroplane class, if they descend into densely populated areas the effect of their arrival can be deadly in the truest sense of the word. I have personally witnessed the vertical dive of nothing more sinister than a six-foot span Fournier RF4 which came down about



twenty feet away from law-abiding citizens. The impact was actually felt through the soles of the feet and the engine finished up a good twelve inches deep in the hard ground.

Control-line models might be claimed harmless by their supporters. All one needs to do, they say, is to stay outside the circle. However, large heavy models and those of the speed variety build up a hefty centrifugal force that can cause line failure at either bellcrank or handle; or even the lines themselves can part, especially if they have a history of kinking, the projectile then flying off at a tangent to the 'safe tethered circle'. I have seen this happen too, and the car door that took the impact was damaged beyond repair. It could just as easily have been someone's head. Nor is the public safe from the lighter free-flight model. A sailplane going downwind takes some stopping, depending on the part of your anatomy used to arrest it. Even a Wakefield rubber model can poke your eye out, because it is the prop shaft that arrives first. Chuck gliders too have obnoxious noses that won't do you any good if they score a 'bull's eye'...so the flying of model aeroplanes except possibly microfilm indoor models entails, due to the nature of their

Main picture, below: Vintage miscellany - part of the impressive SAM 35 display at Wembley. George Hollingdale and Ron Hughes are in charge behind the counter; David Baker looks on at far left. This page, top: Scale Corner at SAM 35's included this fine Earl Stahl Defiant, a fifty year-old design constructed by Rex Oldridge. Twice-size Stahl Spitfire just behind is by Peter Michel. Next below: Impressive Willis Monoplane is by Mike Barton - look out for it this season. Right: Unorthodox in the extreme - Bob Woollett's Gander may not be strictly vintage but who cares! Bottom: These two classic Ray Malmstrom Aeromodeler designs by Tony Thorn aroused much interest. Note elevator trim tabs.



operation, a certain amount of risk. This has always been so: and to strike an historical note, at one time twin pushers had a circular wire, bamboo or cane loop affixed to the apex of the A-frame or the end of the T-frame. This was to prevent injury to any person who might by collision terminate the flight of the model. Properly called 'protectors' their use was mandatory in the old Kite and Model Aeroplane Association contests before WWI.

Safe free flight

The large free flight power has come in for a lot of attention yet, if operated properly, it could be the safest of the lot! The modeller with such a machine does not wish to crash or lose it so he fits a time switch which will either cut the ignition or strangle the fuel supply, the model then becoming a glider to descend to a safe landing. That is the theory anyway, but what sometimes happens in fact is that weather conditions at the meetings, especially the wind speed and direction, are not carefully enough allowed for and the flight pattern becomes such as to hazard parked cars and spectators. Another factor is that often models are flown for the first time at such meetings, there being no other availability to do this, and the untried model gets the upper hand, either flying for too long on power and/or possessing an unplanned flight pattern that puts it in the menace category.

A responsible model flyer, will adjust his engine run and flight pattern to predict where his model will end up, depending on the wind speed and direction, and will thus fly perfectly safely. However, when the flying ground is densely populated with '...the dreamy sort of pedestrians who are not even galvanised into activity by the roar of an open exhaust' (to quote the late Colonel Bowden) the most carefully thought out flight plan can be just as dangerous as that of the haphazard model aviator, who hurls his creation into the air hoping for the best! Unfortunately we are rather limited when it comes to flying field availability and many of our meetings are held at Old Warden, where the pure shortage of space and the proximity of trees curtail the choices for flying. Although the organisers map out an area on the aerodrome for free flight, some models, because of their performance (or the lack of it) fly beyond its perimeter, which often means conflict with other users. Another aspect is the sheer amount of aerial activity in recent years. Out on the aerodrome one has to keep one's wits about one and be forever on the lookout, since regardless of location one could be confronted by a model at any time. It would appear that a limit will be placed on the size of free flight models that can be flown in future at such meetings, and by doing this the organisers hope to reduce the risk to everyone. However, it is worthwhile remembering that small free flight models, especially those of high performance are not necessarily safer than the lumbering giant models. When a Zipper or a Banshee decides to 'come in' it



does so with a vengeance, so where should the line be drawn?

Even safer free flight

It is worth noting that while circling flight is necessary under power, this should also be aimed for in gliding flight, and although this means that the model will land on one wheel, with subsequent wear and tear on that side of the undercarriage, this is preferable in the interest of safety to straight glides and their smoother landings.

The trimming procedures advocated by many prominent pre-war modellers was to first obtain a flat straight glide by flying surface adjustment, then to trim the power flight by thrustline changes only; a method formulated for use on large flying grounds with little application today unless vast areas free of obstruction are available to test big F/F models. It is virtually impossible to forecast when in the power flight pattern the engine will stop. Straight glides, geometrically speaking, would be tangents of 360 degrees, the whole business requiring a very large area for flying. On the other hand, knowing that a circular gliding pattern will follow when power ceases, means that the two factors concerning us are length of engine run, and amount of drift. These are related because if there is a lot of drift, you must keep the duration of power flight down. Foolproof if you are metering your fuel for this purpose, but with spark ignition what is necessary is a reliable flight timer, airdraulic or clockwork; and these require frequent checking to ensure reliability. As a 'belt and braces' back-up don't let that big model go with a full tank. A Brown Junior will run for fifteen minutes on the maker's horizontal

tin tank; a Baby Cyclone, whose tank has about the same capacity, even longer. Although it means additional work, smaller tanks should be installed to prevent runs in excess of say, thirty seconds. Remember that a flyaway is always a possibility, even with an R/C-assist vintage model.

Safe flying rules

Accidents in model flying, like any other accidents require a number of factors to combine to make you a statistic. Do your utmost to upset this combination so that you are not the proverbial 'accident about to happen'.

1. Look before you launch.
2. If in a congested area, only launch if you know your model's flight pattern.
3. Trimming, experimenting or generally 'playing to the gallery' should only be done in an open area.
4. Always check the wind conditions before taking-off (full-size pilots always do).
5. Remember if your engine speed is varied your flight pattern *will vary*.

Safety is no accident

In the old days model events were safer because there was less concentrated activity. When a model flew, all stopped and watched it; if it misbehaved and came your way you could take evasive action. People did not wander about on the flight area, or if they did they were swivel-necked types who expected the odd model to adopt wayward ways. Certainly no old ladies, small children or perambulators would have been tolerated in model flying areas. The electric types, who are pleased to have



Above: Test your identification powers - what's this model? Give up? Turn overleaf to 'Mystery Model' and find out!

overcome the noise problem that has so long been an aspect of anti-flying lobbies, have actually introduced a factor that might in time become a hazard...the lack of noise! It is a fact that the hearty roar of a power model is often the feature that draws attention to it. If you hear it, you can usually see it and so avoid it. The whirr of an electric-powered model that can't be heard behind a newspaper, will make this class of model one of the silent brigade, joining rubber, glider and gliding power models to increase the number of quiet missiles that can arrive without warning.

Is radio safer?

In recent times the control of R/C models at meetings has greatly improved. Flyers are told not to fly over the car park or spectator areas and this rule is strictly enforced. However, at Old Warden these models do fly over the aerodrome, which at such meetings as Vintage and Scale Days is a densely populated area. The effect of a plummeting model fitted with an industrial sized motor of lawn mower proportions could be catastrophic, because these are truly the blockbusters of our hobby. I would remind the organisers of Pathfinder

A trio of Dick Stouffer pics from the 1984 US SAM Champs to inspire vintage power fliers. Top is Joe Beshar's Fox, airborne in Glow Class B Pylon R/C. Below that: H. Ochsner's Forster-powered Brooklyn Dodger gets away; and then we see Bob De Clercq's Telbi Powerhouse with Super Cyke up front. Immediate right: This Doc Nichol shot shows Al White's Comet Mercury taking the air as the Arden .19 crackles. Look at that flying field...

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Bennett's words, 'Eternal vigilance is the price of safety'; and to the pilots who perform such wonderful gyrations of aerobatics, I would ask them to ensure that they do these manoeuvres facing open country, because when the wings fold up they will have no control over the model's trajectory.

In all honesty the numbers of modellers flying large free flight models are in the minority. Many have already gone over to radio control. Now that the writing is on the wall, if we want to fly at such meetings we will have to join them. In fact this is not such a problem anyway, for our models can tolerate a bit of weight, so fitting simple radio to operate a rudder tab should not be difficult (we all know it's not authentic!). It is possible to take advantage of the experience gained by others in this direction. Remember that merely fitting a small rudder tab to a big slab-sided like the KG-1 might not provide sufficient control, especially if the model has strong directional stability and a lot of rudder is needed to get the turn. Although ideally we would wish to fly the model free flight and to use the rudder only to direct the model to a place of safe landing, we may not be able to get away with this simplistic approach. As we are flying a radio model we would have to obey the rules set by the radio co-ordinator at the meetings mentioned, which means observing the same strict discipline with our radio frequency that is required of other radio users; so we must accept that we will lose some of the freedom that we previously felt we had. This loss can be tempered with the knowledge that henceforth we can fly in winds that would previously have kept us grounded (but that rudder area and movement must ensure that we do have control in breezy weather) and just think...no more tree climbing!

Mystery gas model

This machine, built before the war, was found in an attic at Great Glen near Leicester and was brought along to the Nationals in 1985 where its tattered silk-covered wings, deflated MS airwheels and grimy 6cc Wasp petrol engine created a lot

Looking back: At right, Basil Brooks lifts a restraining hand to let go his semi-scale Tiger Moth in the '48 Bowden Trophy. In the background Father Amlard checks his watch under the keen eye of a shirt-sleeved C.S. Rushbrooke. Below left: Into the teeth of a gale rises A. Gurdon's Contestor Wakefield at the 1948 Irish Nationals. Below right: Super shot of man and model; Holland's de Kat proudly displays his 1947 Bowden Trophy entry. Has anyone further details of this attractive model?

of interest. The design itself initially defied identification since it appeared to possess features of several lightplanes of the time. The engine with its neat aluminium cowling shown in the photo does not in fact belong to this model, but is Tony Penhall's own Wasp motor which is presently fitted to a Kanga Kub. This engine is mounted on a maker's cast aluminium backplate to which the aforementioned shapely aluminium cowling is attached with several screws. It is shown here because the original Wasp was not available at the time John Kemp took the photograph. The low thrust line from this installation could give a trimming problem for the original model usually employed the high thrust line common to the inverted four-cylinder in-line aero engine which was normal on this kind of aircraft. It is of interest to note that the cantilever undercarriage legs are sprung internally but not in the backwards direction so necessary on model aircraft, but more in keeping with full-size practice the movement is cross-wise. The model, now owned by Vince Redfern of Market Harborough is in fact a Popular Aviation Gas Model Rearwin Speedster said to have been designed and built by Paul W. Lindberg. A description appeared in the June and July issues of that magazine in 1936. The 73 3/4 inch span model was available in kit form for \$16.50. Fitted with an early fixed ignition model of the 6cc Baby Cyclone which builders found difficult to run inverted in that scale type cowling, it was suggested that modellers could use the motor 'right way up' when,

despite changes to looks and trim, the model reportedly flew well.

Bits and pieces

All model engine enthusiasts are forever grateful to those who devote their time and expertise to providing parts to keep the old mills turning. I understand that splendid replica fuel tanks and cylinder heads for the Frog 500 engine are available from RSmith, 6 Pentree Gardens, Romford, Essex RM7 8HT. Petrol engines are often subject to particular needs; contact breakers especially are sometimes missing, this loss being the aftermath of the impact of glow plug ignition in the late 1940s. Modellers then thought that contact breakers were just so much dead weight, and many, especially those who had been for years infuriated with dirty points and related maladies took their revenge on this component and threw it away!

Tony Penhall of 62 Gordon Street, Little Paxton, Cambs is able to supply very clean timer castings in zinc for Baby Cyclone and Stentor engines. They need only two holes to be drilled and tapped for the moving point and timer arm before fitting to your engine. Price is £6.50 post paid direct from Tony.

We would welcome news from other producers of similar parts or service providers especially for the older engines, since it has always been our contention that these ancient motors should be used for the purpose they were designed for instead of the decorative or paperweight roles into which many of them seem to have slipped.



FLYLEAVES

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



International Peanuts and Pistachios: Volume Number One

Compiled by Bill Hannan (Available directly only from P.O. Box A, Escondido, CA 92025, USA at \$3.95 plus the following postage: \$1.25 surface mail to anywhere; \$2.75 air mail to Europe; \$3.50 air to Australia, Japan, South Pacific).

This slim volume is packed with the philosophy of building and, especially, flying these small scale models. Peanuts? Pistachios? the uninitiated may ask. A full history is given of the evolution of these compelling miniatures which are classified in terms of wingspan; thirteen inches (a handy size encompassing many early kit and magazine designs) and eight inches respectively. With the aid of drawings, photos and written comment for enthusiasts world-wide the pros and cons of small-scale work are debated, and the impartial reader might well gather that it is a combination of paradoxes, a short-term complexity of construction and finishing, if not flight, that intrigues. There is no denying the charms of the small replica; and if the twin photo-galleries, which include a 1/72 scale DH9 (a flying model, remember) and a remarkable Peanut Junkers G-38 - yes a four engined one - are not enough to sharpen the appetite as well as the balsa knife then a selection of likely projects surely will. Besides the Pistachio-scaled Gee-Bee R1, Corben Super Ace and other delights there is one so startling that we just had to share more details - the quirky 1926 Farman Sport 'La Carte Postale' - a combination oddity with Farman David fuselage and part of a Goliath wing. Remarkable proportions give oodles of wing area and when flown indoors the tiny tail has presumably little turbulence

to trouble it. But if you fancy one of the published designs there is work to be done, for structural details are your own to manage. Perhaps it's a pity that there's not one drawing that could be pinned down and built from, but bearing in mind the book's final works 'Caution - Peanuts and Pistachios may be habit forming' perhaps there's incentive enough.

It is left to other authors to explain how to match rubber and propeller, although the improved quality and greater availability of today's materials is acknowledged; and in essence fun-flying aficionado Bill Hannan has produced just what the cover says: an 'inspiration for builders of small scale flying models'.

We are told that this is a limited-print booklet. Our advice? Buy now! **GC**



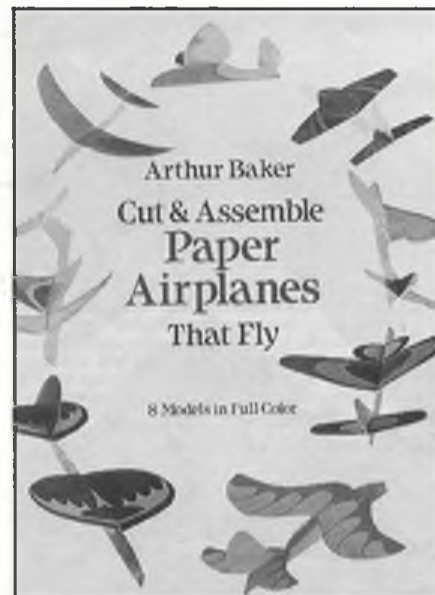
Aeromodellers' Handbook

by Les Netherton (published by Patrick Stephens Limited, £4.99).

For a more thorough assessment of this paperback it is necessary only to look back to Flyleaves in the July 1986 issue of this magazine, for here we have the hardback 'Aeromodelling' under a change of title to go with its new presentation. Between the covers the content is identical. For those without the original review to hand, we can say that on the whole, here is a competent aid to getting started in aeromodelling, handicapped by confusing graphics - particularly when attempts are made to illustrate aerodynamics - and let down in part by inadequate photographs.

It is hoped that the revised title does not cause much needless duplication of text on modellers' bookshelves. The cover is

powerful, even if the pilot of the monoplane Fly Baby is headless; but we have to make clear that there is no connection between this re-styled volume and a monthly publication of not-dissimilar title. **GC**



Cut & Assemble Paper Airplanes that Fly

by Arthur Baker (published in the UK by Constable and Company Ltd, £4.05).

If the procedure is fully explained there's no doubt that the paper aeroplane forms an excellent introduction to model flying. The youngster will find that trimming adjustments are easily carried out, and the basic nature of the construction lends itself to experimentation with minimal risk of disappointment.

This American publication contains eight colour-printed designs of varying shapes and performance which rejoice in names ranging from the graceful (Songbird, Icarus) to the starkly efficient (Baker F-399 and X-411). All that is needed to get underway are scissors, glue, paper clips and a penny for balance - a Stateside penny, that is, but the British alternative will do.

Striking colour combinations are used. To be pedantic, some of these could be improved by the incorporation of a black separation line but then the book would rise in price; and it is doubtful if the tyro aeromodeller would care. Instructions are clear and are happily augmented by frill-free flying guidance of a clarity to be applauded. As to the models' flying ability: 'The stratosphere is their home!' exults the back cover, but even at a more mundane level there's plenty of fun to be had. We tried a couple and had a whale of a time for an hour or two. So will the young beginner. Value for money! **GC**



IN A CLASS OF ITS OWN...

**The background story to Peter Halman's 5cc control line
World Speed Record. Dick McGladdery reports**

PETER HALMAN'S 5cc control line Speed record of 312.228kph (194.02mph) is a splendid achievement. He has generously supplied a good deal of technical gen for publication. The previous record of 183mph was held by Anatoly Kohaniuk of the USSR who used his F2A model with an overhored edition of his own motor. Peter adopted much the same approach, by using his F21 (3.5cc) model, which is virtually an F2A in any case. Layout is the usual sidewinder-asymmetric, with a moderately long wing formed from a sheet of 0.3mm L72 alloy

sheet folded at the leading edge and glued together at the trailing edge. A wooden spar keeps the two skins apart so that the skins act similarly to the flanges of a beam (with the spar as the web). The wing is attached to the alloy half-pan via an alloy stub spar which also houses a conventional triangular bellcrank with piano wire line connectors. The fuselage is made from laminated bass with a tailplane of the same timber, all securely attached to the pan by three substantial (4/40) bolts giving rapid removal for access to the motor and tank, which is

frequently necessary. F2As and comparable models give phenomenal performance, but only at the expense of constant attention to the mechanical health of the engine. Stripdowns may be needed as infrequently as half-a-dozen flights, but sometimes as often as every flight, so accessibility is of great importance.

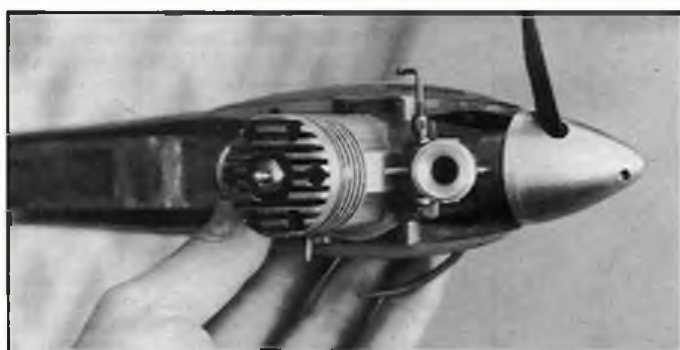
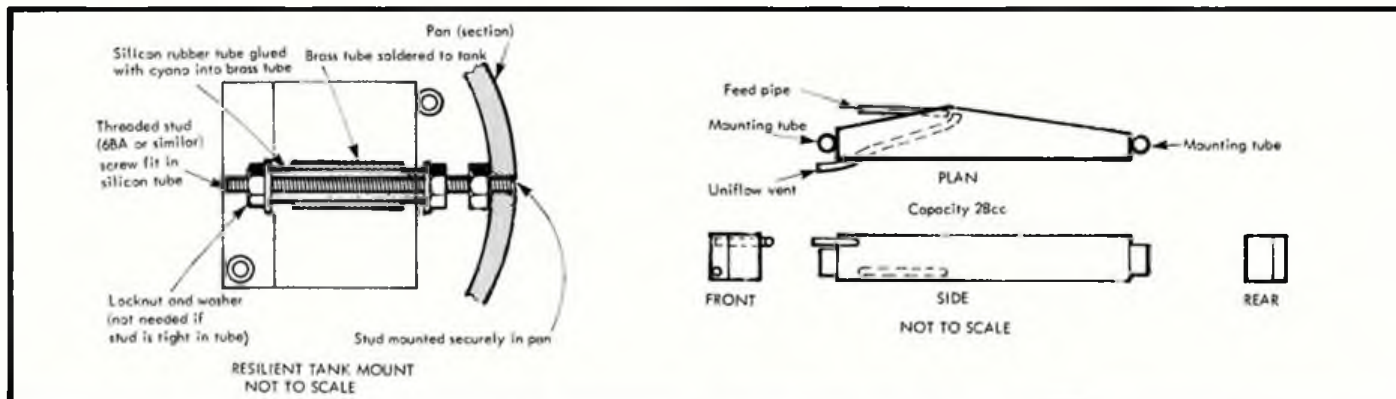
Motor matters

Peter's motor is the Irvine 21R, designed and developed by himself, which follows the classic layout and construction of current F2A motor design. The crankcase/shaft housing/cylinder barrel is a monolithic alloy casting with separate cylinder head and rear crankcase cover secured by bolts. Induction is via an intake on the shaft housing and a passage in the ballrace mounted shaft; and the piston/liner is ABC with a dural conrod. The standard motor timing is suited for operation with a minipipe, induction being 200° (40° ABDC - 60° ATDC), with transfer of 130° and exhaust of 170°. For use with a full tuned pipe, the exhaust timing was raised to 190°. Apart from chroming the crankpin, the motor is as sold off the shelf. The intake choke is 7mm and the cylinder head, which is of conventional squish pattern, is fitted with a Taylor long reach 1.1/2V plug.

The tuned pipe is a bit special, being turned in two pieces from solid alloy on a computer-controlled lathe, both then being brazed together at their maximum diameter. The front (divergent) cone is multi-tapered with an integral exhaust connection socket. The throat is 12mm and maximum inside diameter is 34.6mm, which occurs some 195mm from the plug terminal. The rear cone has a bulbous appearance resulting from design-based radiused curves - the initial convergent section follows a radius of 150mm which then flares neatly into a tailpipe of 6.5mm I.D. by a divergent radius of 125mm. The length of this rear section is only 95mm (including the tailpipe) but the design gives a higher-than-usual volume. Peter reckons it's no more powerful than his previous steel pipe, which was based on the TZ Yamaha design, but gives a bit more torque, enabling slightly more pitch to be pulled. According to bench tests, the record motor/pipe develops approximately 1.9 bhp at 34,500rpm on the 20% nitromethane fuel used for the attempt. This is reckoned enough to make the motor flexible without frying the insides when the pipe is really doing its stuff.

Fuel and propellor

The fuel system is conventional 'suction', a 28cc silver soldered 0.3mm brass 'uniflow' pattern tank being installed in the pan on resilient anti-vibration mountings which also serve to adjust the position of the tank to the optimum relative position of tank to carburettor. The resilience is essential to obtain a satisfactory, non-frothing fuel supply, and the ability to adjust the tank position is important in order to get a good compromise between the radically different fuel requirements for take-off, transition and full power and speed. As flown, the model is rigged to fly 1.7° (that's what the notes say) 'nose out', in which state the tank feed pipe is some 2mm inboard of the centreline of the venturi. I



This 3cc World Record, which was ratified by the FAI just as we went to press, is all the more remarkable when you consider that it was achieved by a motor of just over 3cc; that is, thirty per cent smaller than the maximum size that could have been used. A fine achievement! Peter has every reason to look proud as he displays the model for our benefit, opposite. This page: Drawings above show tank and mount details, with tuned pipe and prop data below. Line connector button meets with Dick McGladdery's approval.



Mighty Irvine .21R kicks out nearly two brake-horsepower at 34,500rpm. Propellor tip is nearly supersonic at this speed, travelling at almost 650mph! Casting robustness is apparent, as is the elegant and highly efficient tuned pipe. Note the welded seam. Dural spar for wing attachment is another strong assembly. Counterweight for the single-blade prop is contained within the OPS spinner.



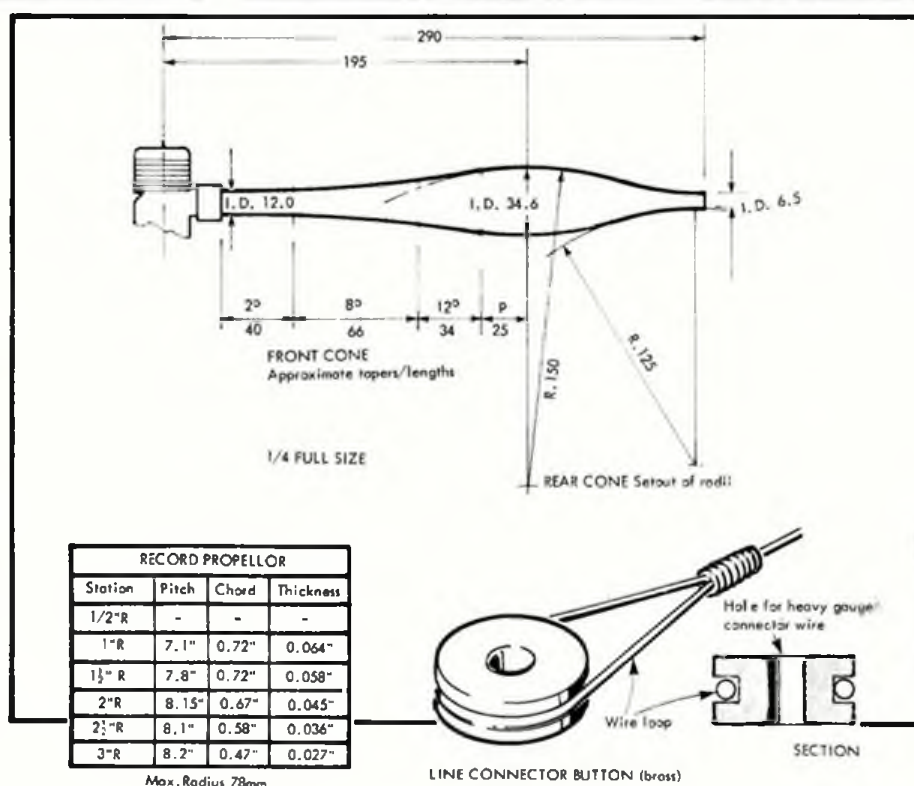
reckon the position of the vent is the criterion in this matter, which in this case gives the same answer since the vent is approximately in line with the feed pipe. The carburettor, which is carefully fitted to a plenum base formed in the front cowling of the model, has an orifice of 15mm diameter.

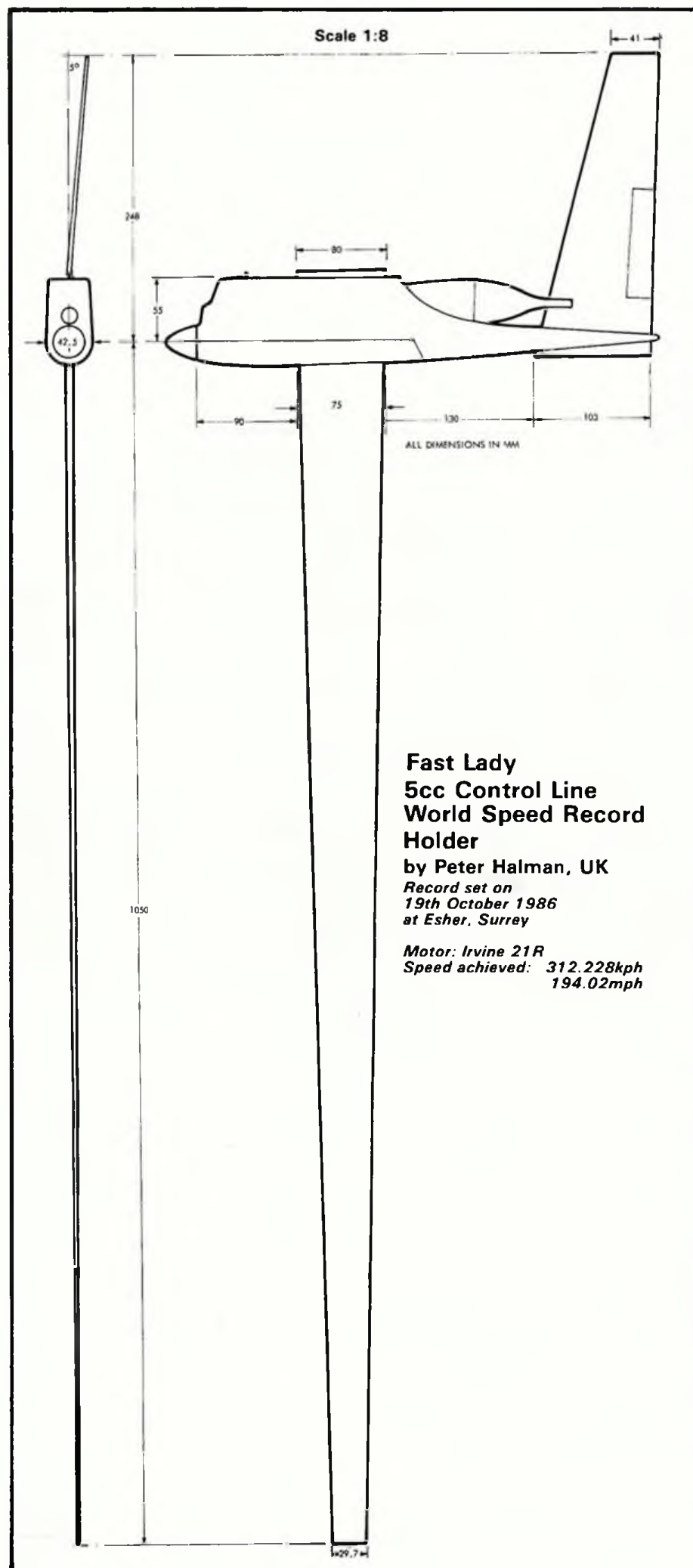
The single-blade propeller is a carbon fibre/epoxy resin moulding, again of Halman manufacture, of approximately 78mm radius - see the chart for other details. A lot of careful tweaking went into the propeller to achieve the final result, and balancing has to be checked with the counterweight, backplate and spinner cone as a complete assembly, otherwise significant imbalance can occur. Peter used an OPS fan and spinner which is somewhat larger than the usual Rossi item, and this made it possible to fully enclose the counterweight in the spinner shell. The blade emerges from the cone as a true blade rather than accompanied by the usual stump.

Record attempts

The rules for the FAI world C/L speed classes (1, 2.5, 5 and 10cc) are somewhat quirky when it comes to the 3cc class, in

April 1987





that the model may be flown only 15.92m lines - the same as F2A and 2.5cc. Peter tried the old SMAE Class V (5cc) length of 17.68m, as he was worried about the rate of rotation on the shorter wires, but tests on these long wires were not encouraging so it was back to the 15.92s. For the official attempts Peter used a pair of 0.4mm wires with 69 groupers. The latter are six-millimetre lengths of hypodermic needle tube threaded onto the back wire and sellotaped to the front wire with the tape ends arranged 'weathercock' style, at intervals of approximately 75mm from the wing tip inwards. With these the model was marginally slower than when equipped with a pair of 0.35mm wires with 50 groupers; this was the arrangement used for the record run. At these speeds and line lengths, and in circumstances in which it is permitted to use wires of the minimum diameter that will do the job, great care has to be exercised. Wire strength is a subject fraught with variables such as fatigue life and weakening due to the bending and soldering of loops for connections. The latter is specially difficult to assess, and Peter used what is probably the best engineering solution; eyed brass buttons which prevent the wire loops drawing any tighter than a radius of about five times the wire diameter. The eye of the button is threaded onto the much thicker wires (18swg or thereabouts) on the handle and bellcrank.

The occasion of the attempt was favoured by dry and calm - if rather cool-conditions, with a bevy of assistants and officials in attendance, all mustered by the SMAE Records Officer Neil Lunam. Neil has put a lot of energy into ferretting out any GB fliers who might be able to crack a world record, encouraging and badgering them along, and laying on all the officials and paperwork required. The clutch of the world records achieved this year is due in no small parts due to Neil's enthusiasm and hard work. So, thanks to Neil, congratulations to Peter; and to Ken Morrissey we say - get cracking on your 10cc World Record challenger!

Neil Lunam managed to catch Peter in action during the record-breaking flight itself. Blurred right foot denotes high-speed rotation!



Aeromodeller

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

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

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

29th March
ST ALBANS MAC VINTAGE DAY
Venue: Bulls Mill. Carefree comps for Flying
Fifteen and R/C Spot Landing. Possibly F/F
HLG and Scramble (R/P/G, Jetex Electric,
Power up to 1cc) SAE for details and free
entry (£1 on the day) Contact: D.M. Barton,
133 Friern Barnet Road, London N11 3DY
Tel: 01 368 5085

5th April
SMAE S.E. AREA ANNUAL INDOOR FLYING MEETING
Venue: Leisure Centre, Haslett Avenue,
Crawley, W Sussex 11 am-6 pm. Peanut
HLG, Open Rubber and CO₂ Scale EZB
Entry to hall: £1.50 SMAE seniors, £3.00 if
non-SMAE. Juniors 50p. Soft shoes
compulsory. Contact: John Dolding Tel:
0293 510272

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

18-19th April
SALISBURY MODEL ENGINEERING EXHIBITION
Venue: City Hall Salisbury Saturday 10.30-
6pm Sunday 10.5pm. All profits go to the
Sarum Centre for the physically and
mentally handicapped. Contact: Anne Yates
The Burrells, 33 Tidworth Road, Porton,
Salisbury SP4 0N3

18-19th April
SMAE EASTER TWO-DAY MEETING
Venue: Training Area 9, Salisbury Plain
O/R, O/P, O/G, F1A, F1B (Duce Trophy)
F1C. Contact: Phil Ball. Tel: 0332 665361

26th April
SMAE INDOOR SCALE NATIONALS
Venue: Alumwell Centre, Walsall
CO₂/Electric, Rubber and Peanut Scale,
plus Vorn/KK Rubber Scale mass launch.
Pre-entry for main events by 31st March to
Doug Sheppard, 13 Luckington Road,
Monks Park, Horfield, Bristol BS7 0UT. Tel:
0272 697595

26th April
WITHAM CUP C/L STUNT COMPETITION
Venue: Slip End Luton. Contact: Glen Alison
Tel: 0923 772675

26th April
SMAE SPRING F/F MEETING FOR MINI CLASSES
Venue confirmed as Chetwynd. Contact:
Pete Harris Tel: 0562 741443

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

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

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

10th May
THREE KINGS C/L SCALE FLY-IN
Venue: Old Croydon Aerodrome, Purley Way,
Croydon, Surrey. Stand-off and Profile Scale
Classes. Silencers and insurance essential.
Contact: Derek Bird Tel: 01 874 6394

10th May
KEITH HARRIS VINTAGE COMMEMORATIVE EVENT
F/F Radio (power glide), C/L Team Race,
Stunt and Midge Speed. All vintage!
Venue: RAF Barkston Heath. Contact: Keith
Harris (F/F), Dave Campbell (C/L) Tel: 0623
842167

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

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

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

31st May
PETERBOROUGH MFC C/L SPORT AND VINTAGE FUN FLY DAY
Includes formal Stunt and Midge Speed to
SAM35 rules. Venue: The Embankment,
Peterborough. Contact: Mick Taylor Tel:
0733 204484. Note: This is a date change
from 14th June.

14th June
FIRST N.W. VINTAGE SWAPMEET
Venue: Lostock, Alkali, Social Club,
Northwich, Cheshire. 10.30 am start. Tables
available at £2.00 each. Contact: David
Lloyd-Jones Tel: 056589 3170

14th June
THREE KINGS C/L SPORT AND VINTAGE DAY
Venue: Old Croydon Airport, Purley Way,
Surrey. Vintage Stunt, Midge Speed and Fly-
for-fun. Silencers and insurance essential.
Contact: Derek Bird Tel: 01 874 6394

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

20-26th June
ASP 21st SCALE RALLY
Venue: Old Warden Airfield, Biggleswade,
Beds. The annual pilgrimage for all scale
enthusiasts! Informal R/C, F/F and C/L
scale flying all weekend long plus the
delights of the Shuttleworth Collection and
- new for '87 - Band, Barbecue and Beer on
Saturday. Camping too. Don't you dare
miss it! Contact: Aeromodeller. Tel: 0442
41221

21st June
LUCAS-BILSTON C/L FLY-IN
Venue: Lucas Aerospace Sports Field,
Fordhouses, Wolverhampton (close to
Junction 2, M54). Aerobatics, Vintage
Aerobatics, Slow Rate and Class 1. Vintage
speed to Andy Brough rules. Silencers
essential for all classes except Speed Gates
open 10 am. Contact: Keith Garbett Tel: 021
558 0115

21 June
BLACKBURN AND DMAC SUMMER FLY-IN
Venue: Pleasington Playing Fields,
Blackburn. Scale, semi-scale or unusual
model rally. A fun day for all. Excellent
prizes. Entry fee: £1.00 payable on the day.
10 am start. Contact: Michael Windar, 27
Belgrave Road, Darwen, Nr. Blackburn,
Lancs BB3 2RP

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

27-28th June
THREE SISTERS C/L GALA
Stunt, Novice Stunt, Open Speed, Midge
Speed. FAI T/R, Goodyear Class 2, Open
Goodyear (1985 rules), Diesel Combat FAI
Combat Vintage T/R Classes A and B.
Contact: J.A. Noble Tel: 061 790 4056

28th June
CHILDREN CUP C/L STUNT COMPETITION
Venue: Slip End, Luton. Contact: Glen
Alison Tel: 0923 772675

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

6th July
SMAE C/L AND F/F SCALE COMPETITION
Venue: RAF Abingdon, near Oxford. 10 am
start. Contact: Charlie Newman Tel: 08677
3020

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

11-12th July
HARROGATE MODEL CAR CLUB MODELLING EXTRAVAGANZA
Venue: Newby Hall, Ripon, North Yorkshire.
C/L competition, Helicopter and fixed-wing
fly-for-fun Helicopter Workshop and tuition
on the Saturday. Also R/C cars, slot cars,
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Robert Thorn. Tel: Harrogate 501970

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

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

12th July
ASP GOLDEN ERA DAY
Venue: Old Warden Airfield, Biggleswade,
Beds. All the fun of the fair with a flavour of
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41221.

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

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

26th July
FACCT THERMAL SOARING RALLY
Venue: RAF Weston-on-the-Green, BARCS
League and R/C Chuck Glider. Pre-entry
£2.00. SAE SMAE members only. Contact:
NG Webb, The Bungalow, 13 East Street,
Fritwell, Oxon OX6 9PX

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

1-2nd August
WOODVALE RALLY
Model flying, competitions and displays:
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two-day ticket; children and OAPs £1.00.

16-16th August
ASP VINTAGE WEEKEND
Venue: Old Warden Airfield, Biggleswade,
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nostalgia! Contact: Aeromodeller Tel: 0442
41221

16th August
FACCT MINI-GLIDER COMPETITION
Venue: Weston-on-the-Green area. 60in
span. 20 oz max. Bungee launch. Pre-entry
£1.50 + SAE. Contact: NG Webb, The
Bungalow, 13 East Street, Fritwell, Oxon
OX6 9PX

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
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£2.00 + SAE. Contact: J.H. Shaw, Alvere,
Winney Road, Freeland, Oxford. Tel:
Freeland 881350

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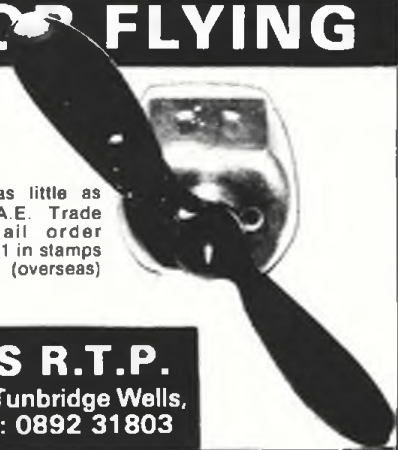
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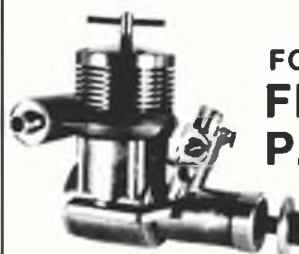
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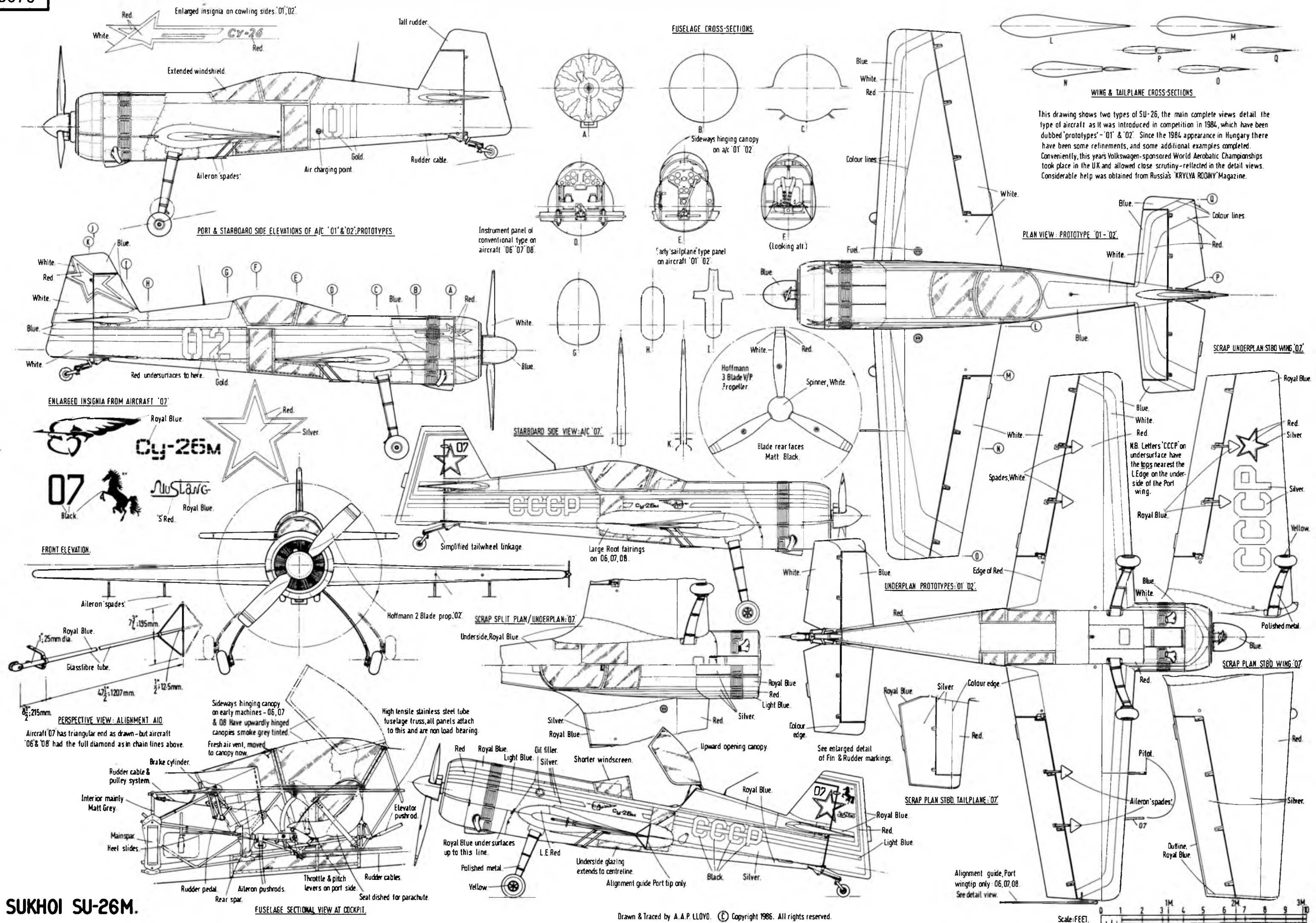
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Appendix - Links to the plans

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The issue comes with two free plans (Mini Wedgy, Baby Gull) printed front/back on a pull out banner of four sheets. The banner is not included in this document.

Luna Loafer by Gordon Rae

Radio Control from 1958 presented in HAVE FUN FLYING FIFTEEN

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Zeus-64 by Adolfo Rappini

RC Model presented in HAVE FUN FLYING FIFTEEN

[Document Page: 12](#)

Twist by W. Lobet

Rc Model presented in HAVE FUN FLYING FIFTEEN

[Document Page: 12](#)

Lil' Aud by J.A. Gorham

RC proposal presented in HAVE FUN FLYING FIFTEEN. Revisited from Aeromodeller September 1951

[https://outerzone.co.uk/plan_details.asp?ID=1992 ...](https://outerzone.co.uk/plan_details.asp?ID=1992...)

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Madcap by Vic Smeed

RC proposal presented in HAVE FUN FLYING FIFTEEN. Revisited from Aeromodeller April 1952

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Flycatcher by Russell Peers

FF Open Rubber Presented in FREE FLIGHT SCENE

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Mini Wedgy by John Meaney

FF CO2 Vintage 1/2 size

[https://www.hippocketaeronautics.com/hpa_plans/det ...](https://www.hippocketaeronautics.com/hpa_plans/det...)

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Baby Gull by Gordon J. Rae

FF Glider for small fields

[https://outerzone.co.uk/plan_details.asp?ID=2008 ...](https://outerzone.co.uk/plan_details.asp?ID=2008...)

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Chilton DW1 by John Greenland

Presented in SCALE MATTERS revisited from Aeromodeller November 1949

[https://outerzone.co.uk/plan_details.asp?ID=1624 ...](https://outerzone.co.uk/plan_details.asp?ID=1624...)

Fast Lady by Peter Halmann

CL Speed Model 5 cc.

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Sukhoi SU-26M Union Page

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