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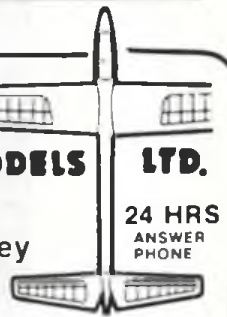
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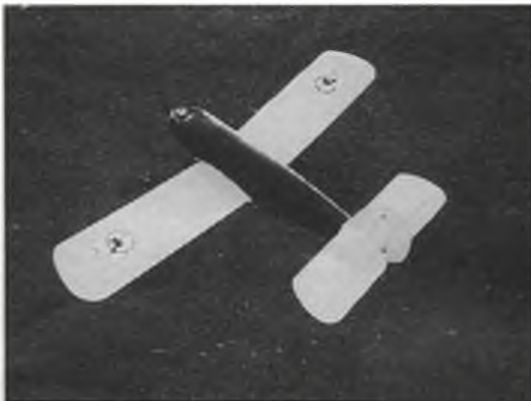
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MODELLER



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Cover:
 Simple elegance and straightforward lines of Peter Michel's Wattie, a 1942 design from these pages, convey all that's right about lightweight rubber models. More on this sleek Vintage subject in Andrew Longhurst's feature starting on p.358.

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HANGAR DOORS

Daedalus Achievement

Regular readers will recall our coverage of earlier achievement with man-powered flight culminating with the channel crossing by the Gossamer Albatross. That significant herculean effort by Bryan Allen in flying from Folkestone to the French Coast was at one time thought to be the epitome of human powered flight. It was during the celebrations at the Royal Aeronautical Society in London when the prizes generously donated by Henry Kremer were distributed, that several really great and, we might say, aeromodelling connected minds were brought together. Paul McCready collected the main prize, but alongside were Gunther Rochelt from West Germany and John Langford from the East Coast of USA. With them were many other aeromodelling enthusiasts who had turned to the great challenge of self propelled flight. The elevating inter-change of conversation during that prizegiving evening was eventually to generate this latest and quite fantastic success in recalling the mythical flight of Daedalus from Crete to Greece.

After many trials and tribulations the Daedalus project succeeded in crossing from Heraklion to the island of Santorini, a distance of 74 miles, in three hours fifty five minutes on April 23rd. Piloted by the Greek national champion cyclist, Kanellos Kanellopoulos, the MIT designed, 72lb, 112ft span machine proved without doubt that human powered flight is no longer a freak following. Daedalus encapsulates all the latest technology in composite structures and is the culmination of thousands of hours of design and construction effort. The successful machine was one of three taken to Crete in March to await ideal weather conditions. We have closely followed the challenge from its original course which was set from the North-Western tip of Crete to the actual mainland of Greece, through to the final attempt. This will be fully covered with drawings of the machine, photographs of the flight and an eye witness report in next issue with a special colour feature.

Meanwhile our congratulations go, in particular, to those champion aeromodellers John Langford, Hal Youngren and Mark Drela who spearheaded the design and construction of the three machines, and pilots Greg Zack, Glenn Tremml, Frank

Scioscia and Erik Schmidt, who were on stand-by and could no doubt have made the same achievement with this amazingly efficient design. Anyone who has worked with balsa, glassfibre and carbon fibre will immediately appreciate these basic facts and figures. Span 112ft, area 322 sq.ft. yet the total weight a mere 70 lbs, capable of carrying a 159 lb pilot! Airspeed 14-18 mph, duration seemingly unlimited, external bracing one single wire near to 15 swg, a controllable pitch propellor, a wing flex to natural dihedral, 108 prop rpm and an on-board environmental system which included a gallon of water and glucose mixture for



Top: Well under way, Daedalus is closely watched as steady progress is made. Above: Turbulence generated by volcanic rock tumbles the slender-wing machine at close of epic voyage. A new record for man-powered flight!

pilot refuelling! More, much, much more next month on this exciting project.

Europe's biggest!

What is? Why, the Control Line Radio Control and Scale Nationals at RAF Barkston Heath and Cranwell during August Bank Holiday Weekend.

Venue split is as in previous years. 'Silent' R/C categories will be flown at Cranwell with the main hurly-burly of activity at Barkston. Full trade support is set to augment the kaleidoscope of events from Speed to Scale via Aerobatics and Racing. Lots to see and do - and to inspire; so we're sure all enthusiasts from beginner to old hand will profit from seeing the best that UK aeromodelling can offer.

Spectator admission is £3.00 per day. Save money with a three-day pass for just £6.00. Under-16s and over-65s get in for £1.00 per day. Car parking is free. Need details of camping, or a competition entry form? Send



an SAE to: August Nats, BMFA, Kimberley House, Vaughan Way, Leicester LE1 4SE.

Put 27-29th August in your diary; come along and enjoy!

Hallo Peeps!

The People's Palace. That's what they call London's Alexandra Palace. And the reason this concerns you is that from 31st December to 8th January the 58th Model Engineer Exhibition will be held for the first time at this now superbly restored Victorian venue.

The switch from Wembley will bring many benefits including improved access, courtesy transport and car parking, and better catering arrangements. More on all this later, but we have to mention the sheer impact of the spectacular, airy loftiness of the Palm Court entrance and the Main Hall itself. Ideal places, in fact, to exhibit model aeroplanes...

Dave Rawlins of DPR Models doesn't hang about. He's already earmarked 1st January as the

date of his now familiar and much enjoyed Model Flying Day at this new M.E. site. To further the image of aeromodelling the aim is also to display indoor model flying in as many varieties as possible throughout the Exhibition. If you think you could add weight to this, call GC at the Aeromodeller office so that a comprehensive programme can be arranged in plenty of time.

And remember - the first ever UK model flying competition was at 'Ally Pally' in 1907. Support tradition, support the current scene and let's see dozens of models at the People's Palace!

*With acknowledgement to Stavros from TV's Friday Night Live...

Vintage Weekend approacheth!

The sunshine is booked, so come along to Old Warden Airfield on 20-21st August for the premier Vintage meeting worldwide. Even though we've expanded into a Weekend it's still busting at the seams with plenty for everyone. Fundamentally, of course, it's still the same fun-fly-and-chat as ever - but should you fancy a little spice of competition then we can offer the new Vic Smeed Commemorative (details on p.404 of this issue), the Fireball Trophy for pukka Vintage C/L, the Lancastria Cup for Midge Speed, plus the

Aeromodeller

usual cornucopia of SAM 35 attractions. Chart-Micromold will again oversee CO₂ goings-on, with prizes to be won; and there's even more! We here announce the Zaic Trophy for the best model built from any Frank Zaic Year Book (you'll have to prove that bit). How much more choice could you ask for?

Lots to do - so get ready for lots of fresh, fun flying at Old Warden. All F/F and C/L details will be posted at our control van.

Now the cautionary bit. When taking time out to enjoy the aircraft of the Shuttleworth Collection itself, remember this. No smoking is allowed in the hangars; and neither is behind-barrier photography without official escort. Common sense and good manners, really. Surely that's aeromodellers!



20-21st August at the famous Racecourse. R/C flying of all kinds, plus sideshow activities with boats, cars and full-size traction engines are but a fragment of what's on (and we haven't mentioned the bar yet!). A good family event. Contact Dave at 17 The Square, Tatsfield, Westerham, Kent TH16 2AS for all details.

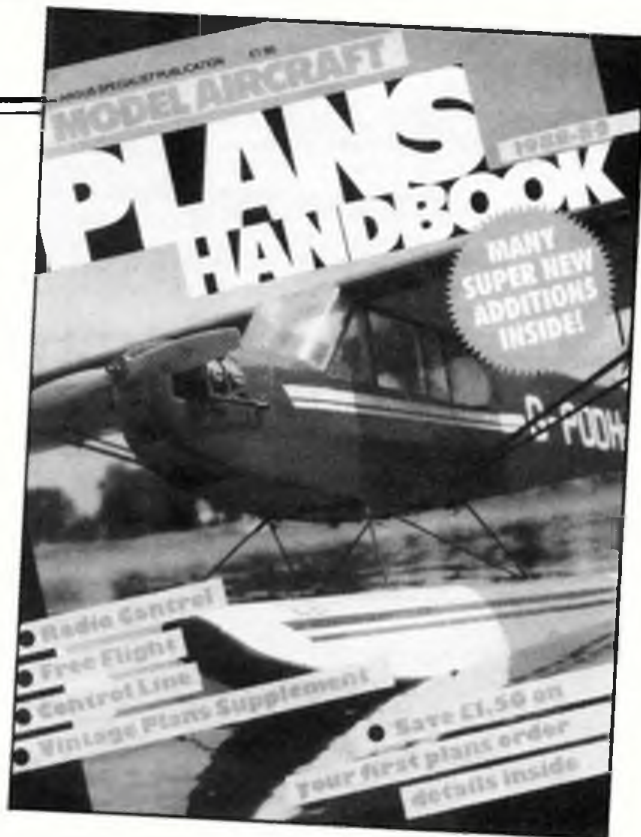
Lympne-Scale superlative?

Sorry if you've had to wait a bit longer than expected for details of your Lympne-Scale selection for Golden Era Day on 10th July at Old Warden. Fact is, demand has been outstanding, with - so far - over forty applications! Great - let's see the airfield teeming with Lympne models. And bring an unorthodox model for the Pterodactyl Trophy in memory of Howard Boys...

Plumpton awaydays

Once again, Dave Bishop of DB Sound announces a full range of attractions for Plumpton '88 on

Right: The Frank Zaic Trophy - our latest award for Vintage Weekend. Below: The superb Alexandra Palace, setting for the very next M.E. Exhibition. What finer showplace for aeromodelling?



Above: Just out - our latest plans Handbook costs £1.50, reclaimable when plans of £5.00 or over are ordered on the special form inside. Above left: Hoots! Scottish Nats gen appears in What's On; dates 14-15th August.

Metre friends...

Sigurd Isacson, the man who gave us the Sunnavind glider and airfoils with the modern look, is due here soon with a group of his aeromodelling chums from Sweden. Their first port of call will be the SAM 35 Vintage Championships at Barkston on August 7th when a special one-metre (40in.) glider contest will be laid on in their honour. Sunnavinds will not be mandatory, but will most certainly be viewed with approval by the CD...

Just a moment...

Self-explanatory letter recently received from Peter Michel: 'I claim your £10,000 prize plus all expenses-paid QE2 cruise to the Bahamas for two in respect of the mystery Vintage Coupe d'Hiver flyer in your excellent edition of June 1988 (Free Flight Scene, p.340).

'It is, of course, Hitler, wearing the latest David Beales fun creation - the 1988 Grey Can Be Beautiful wig.

Please send the money and tickets to my home address where they will be gratefully received.'

All right - but the booking is for an unspecified date in 2047. And now fight it out, you two - GC.

And again...

Next - Peter Whitworth... 'In answer to your question. The 'who' is David Beales. The 'what' is an 'A/2 Rubber Power' Coupe d'Hiver by H. Dore and C. Curry

from the 1951-52 Zaic Yearbook. As for 'when' and 'where': 27th September 1987 and Hemingford Abbots!

What a shame. No outright winner. Never mind - we'll divide the goods. On their way to Peter and Peter (hmmm) are wonderful prizes (yet to be decided)!

Go indoors, young man...

In this month's Free Flight Scene you will find a straightforward Vintage Indoor design (thanks, Peter Freebrey, for the drawing) which is to be the subject of Reg Parham's special competition at Cardington on 2nd October. We'd go so far as to say that anyone could build one of these - so why not have a go? Advised centre of gravity position is at 50% chord. What more help could you need? That craft is robust, too; an ideal introduction to Indoor flying.

Let's hear

...what your club or group is up to. We're looking for the praiseworthy, the unusual - or the just plain notable. A few words and a pic or two is what we need. It's not a bad PRO job, either. What is not needed is the club newsletter on its own (interesting though they are) but a purpose-written account. All sorts of interesting-sounding events appear in What's On. How about letting us know about what goes on?

I WONDER if you answered the detailed questionnaire sent out with *Aeromodeller* recently. Among the myriad of questions it was a pity our opinion was not sought on which model aircraft stands out as being the most elegant ever designed. I should think the odds-on favourite would be that magnificent sailplane, Fillon's Champ.

Unfortunately it could not be my personal choice owing to its one-hundred-and-eleven-inch wingspan. You see, my brain is rather limited in size and it is already full of smallish rubber-band jobs which buzz around like bees in a hive. Consequently my vote would have to go to the dearest and sweetest of those. Designed by Flight Lieutenant R. Watson and published in the December 1942 *Aeromodeller* as a double-page plan, it goes under the designer's nickname 'Wattie'. Not only is it pretty and flies like a bird (more anon), it also has a fascinating background.

Literary musings

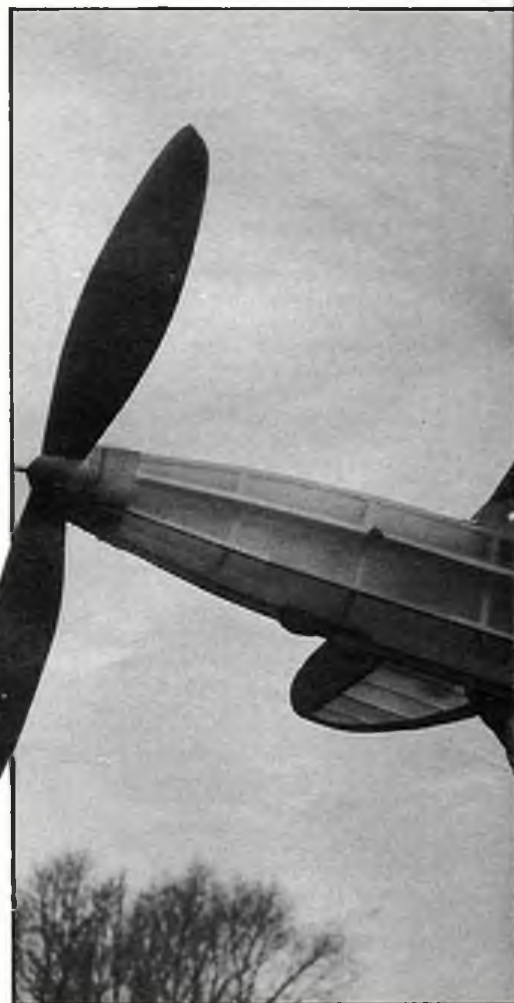
When I first saw the plan in an old *Aeromodeller* kindly lent to me by Ian Russell it sent bells ringing in the dim and muddy depths at the bottom of my mind. Clearly illustrating my usual speed of thought, the idea surfaced a whole year later that I had read about Flt/Lt. Watson in another place and at another time. It could only have been a book about World War II flying exploits so I set about a relentless search of the world's greatest libraries in a bid to find the elusive reference. Luckily I did not have to go further than just down the road to Pinner Municipal where the second book I picked up proved to be the one I had been looking for. Entitled *Arise to Conquer*, and written by Wing Commander Ian Glead, it was a smash hit bestseller of the early 1940s, describing in

the then highly graphic RAF vernacular the deeds of derring-do performed by 87 Squadron as they retreated through France and then fought the Battle of Britain over Southern England.

Ian Glead, then Squadron Leader and a DFC, took a keen interest in the modelling activities of one of his flight leaders known to all and sundry as 'Wattie'. The book was republished in 1975 and is well worth reading. There is a section covering the evacuation of France in 1940 which is too long to reproduce here but is highlighted by the article which accompanies the Wattie plan. It seems that in the rush to escape the tender mercies of the invading German army the prototype Wattie got left behind in France. Not even a chance to pop it in the back of the Hurricane. Talking of which, 87 Squadron flew both Hurricanes and Spitfires at various times; the influence of the latter is very evident in Wattie's elliptical wings.

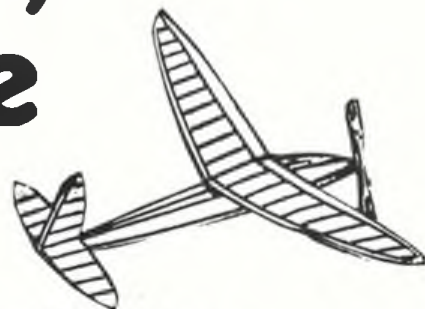
Setbacks...

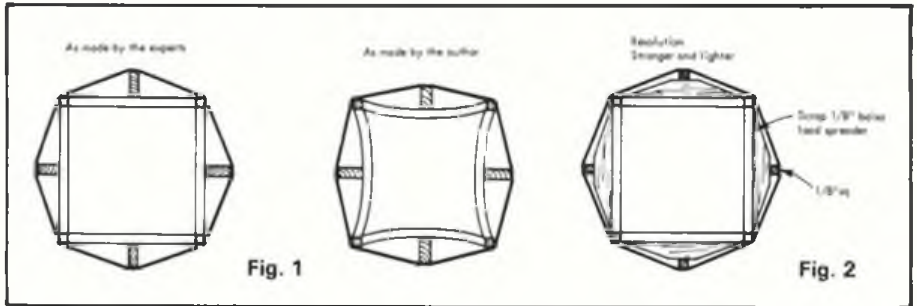
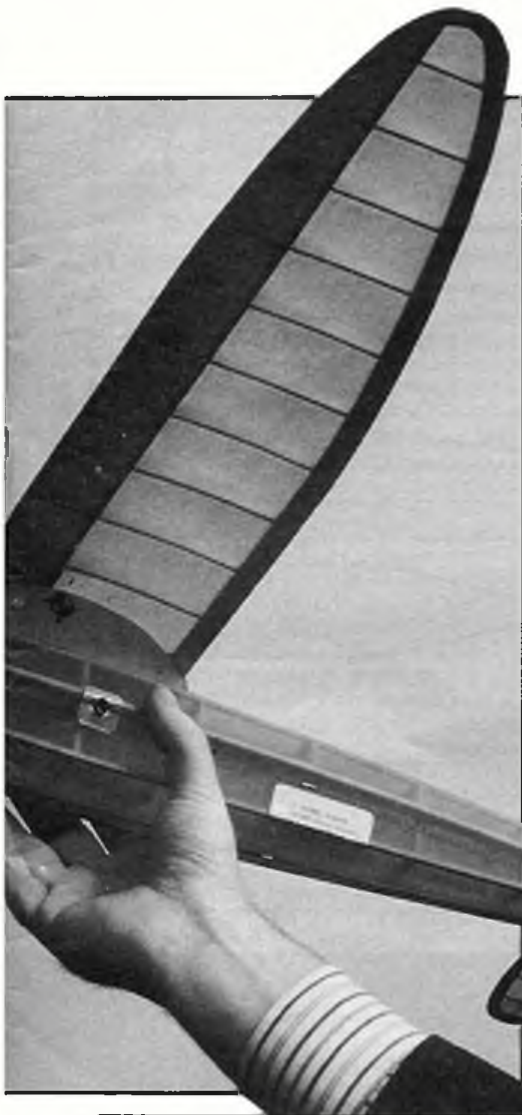
On my first attempt to make a Wattie I thought I was doing marvellously until I got to the very last stage, which was to glue the covered and doped pylon onto the similarly finished fuselage. I found to my dismay that whereas I had a perfect fit when it was barewood, it was now rocking about in a highly drunken state. I decided that the culprit was the wing mount. So, placing the fuselage at the back of the bench, I started building another pylon, wondering how such a substantial structure could have altered so drastically. I had hardly started when my attention was drawn to some dubious clicking noises coming from the fuselage; apparently all was not well within. Looking into the nose



ELEMENTARY, My Dear Wattie

Andrew Longhurst revives a lovely
lightweight with
literary connections





aperture expecting to come face to face with a good boring beetle, I found instead that the shrinking tissue had crushed all the cross struts (see Fig. 1).

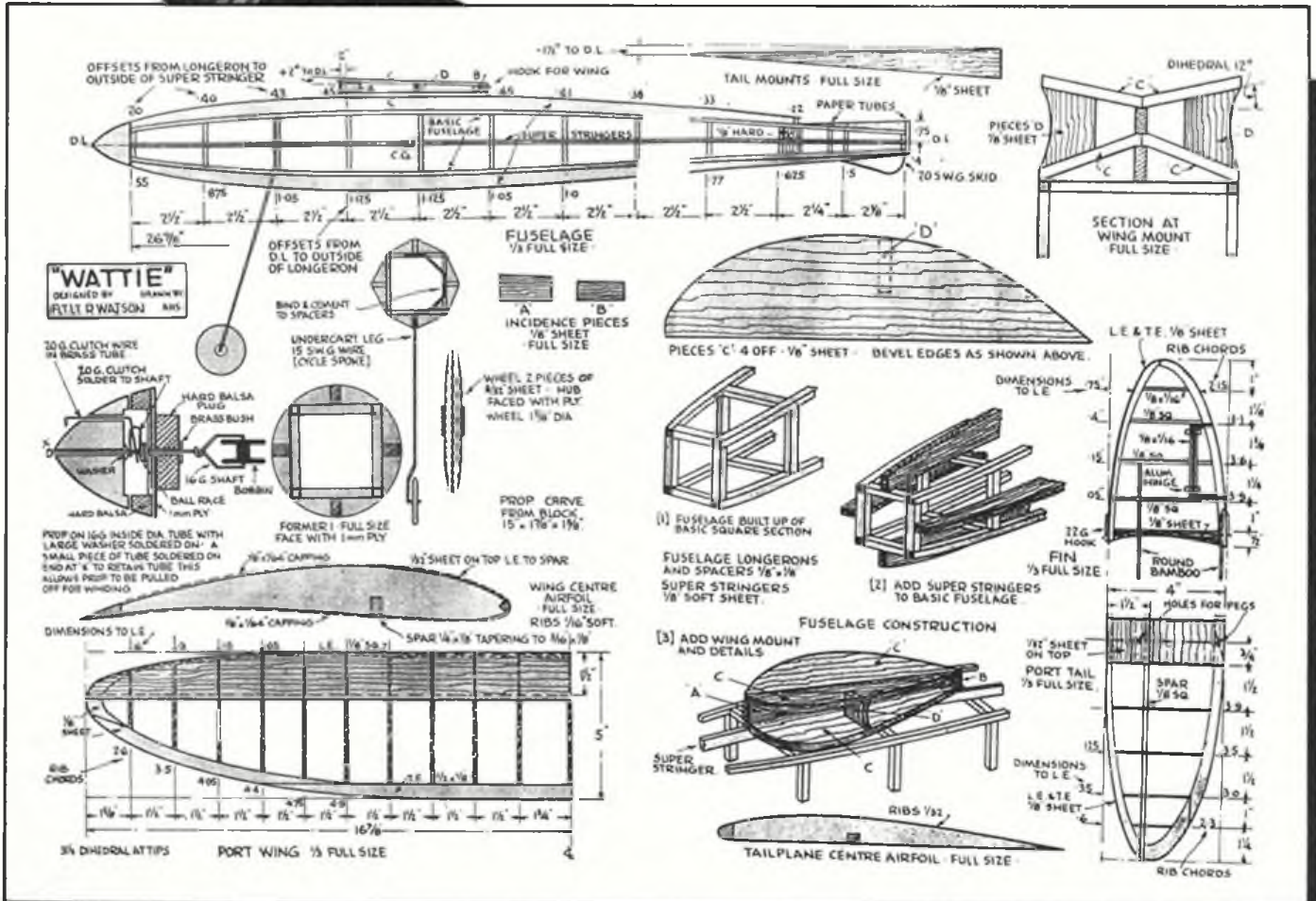
Expert modellers who can control their tissue shrinkage with exactitude can skip the next bit. For the rest of us I have devised a small variation illustrated in Fig. 2, with

1/8in. sq. outriggering stringers carried on scrap balsa load spreaders. I believe this to be both lighter and stronger than the original structure. Alternatively, choose some pretty hard wood for the cross struts. The same also goes for the central wing rib where I also ran into trouble. Extra undercamber appeared - again by using rather soft wood.

and success...

Building an elliptical model does raise the problem of producing a full size plan so that the curved parts can be pricked or traced out onto the balsa. An enlarging photocopier is a boon if you can get your hands on one; otherwise, full size plans are available from ASP who handle the Ben Buckle range of plans. Reference no. is BB217. It is worth the effort of expense to get it right as the Wattie will fly straight off the plan. The incidences in particular are spot-on for the CG shown. This is not true for many designs of this period where I always seem to end up with a tree trunk stuffed under the tailplane TE which doesn't do a lot for the appearance. On the entirely honest Wattie you will see that the tree trunk is built in so you can cover it with tissue and good looks

Heading: Another enthusiast captured by Wattie's charm is Peter Michel, whose version features a sliding-weight dethermaliser. Below: The Wattie drawing from December 1942, reduced to half-size.



are preserved. I always use a tickle of washout under the port wing and about 1/32in. right thrust to get a right-hand flight pattern on power and glide. This is in accordance with the Flight Lieutenant's orders. I have heard pundits claiming that only polyhedral models are really happy flying right/right, straight dihedral models allegedly preferring right/left. The only problem with the latter trim is that small models need buckets of right thrust to overcome a left rudder and then insist on flying miles downwind whilst deciding whether to potter off in the other direction. Meanwhile the little darling has flown out of the field and is over the neighbouring forest, briar patch or cliff. So whatever it might do for duration, 'right/left' does not do a lot for the necessary art of small field flying.

The big surprise about flying the Wattie is that it is a wonder of stability. I have convinced myself, no doubt erroneously, that this is due to a very high roll rate. Anyway it is so good that I love to fly in turbulence. It is a real thrill to see it riding the air behind the IBM factory when a west wind blows across Horsendon Hill. I should tell you that the IBM factory is a sort of fifty-foot-high biscuit tin of the square variety, and it is seriously ugly. It spoils the most lovely area of West London and whoever allowed it to be built ought, in my opinion, to jump off the top in a fit of remorse. The amusing thing is that the local plastic and foam brigade are convinced that the factory generates demonic radio waves which interfere with their transmissions.

As a result their valuable robots spread polystyrene granules over the grass like marmalade over toast. My mild suggestions to the effect that it might be turbulence, particularly on a Sunday morning, are greeted with pitying smiles suggesting that I am more than slightly dotty. I admit to being obsessive - but dotty, never! Anyway, they resolved the problem by keeping well away from the IBM factory at all times so that leaves the air clear for me to enjoy the sight of my Wattie rolling and squirming in the eddies. Prangs are surprisingly rare and the airframe is strong enough take the knocks.

Hints an' tips

To put the propeller in the same league of strength I carve or laminate from balsa and cover the front face of each blade with glass cloth. Whilst we are talking of props, the original article says 'the two blader is the type used by Mr. Rippon's "George" and suits the model well'. This design is reproduced in Fig. 3 but as you will see the 14in. blank is at odds with the 15in. one specified on the Wattie plan. Both Wattie and George are Flight Cup models, meaning that apart from area requirements they are designs for one ounce of rubber plus a four-ounce airframe. SAM 35 is likely to be running one or two competitions in 1988 for Flight Cup models so I shall have to try a smaller motor. I must confess that rightly or wrongly, I have been using eight strands of quarter FAI weighing a cool 50 grams (1.2/3oz) which on the blank shown in Fig.4 sends the thing careering upwards at a great rate. With this motor and the large prop, 600 turns gives a 50 second power run and thermal catching height. I suspect that a smaller motor would be happier on the fourteen-inch prop (or even a thirteen-incher) and this in turn would improve the glide. Not that the

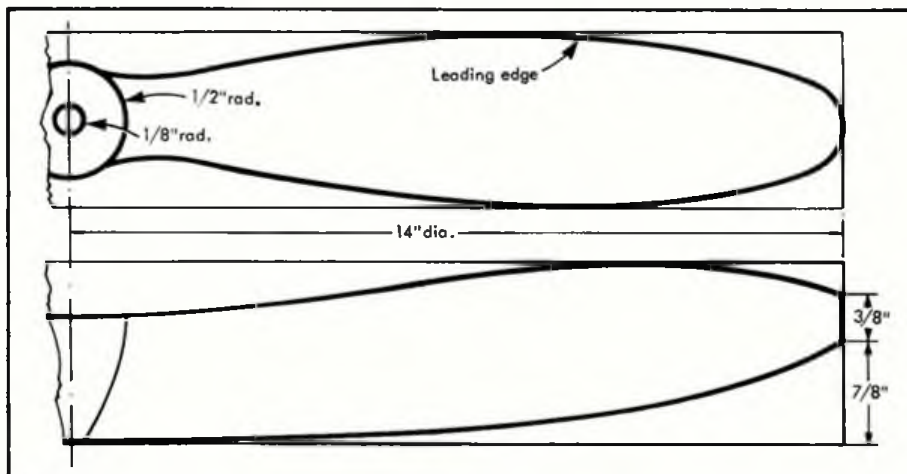


Fig. 3

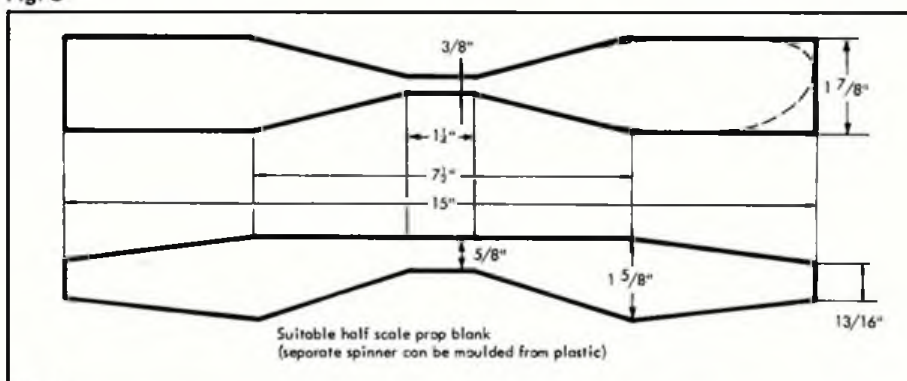


Fig. 4

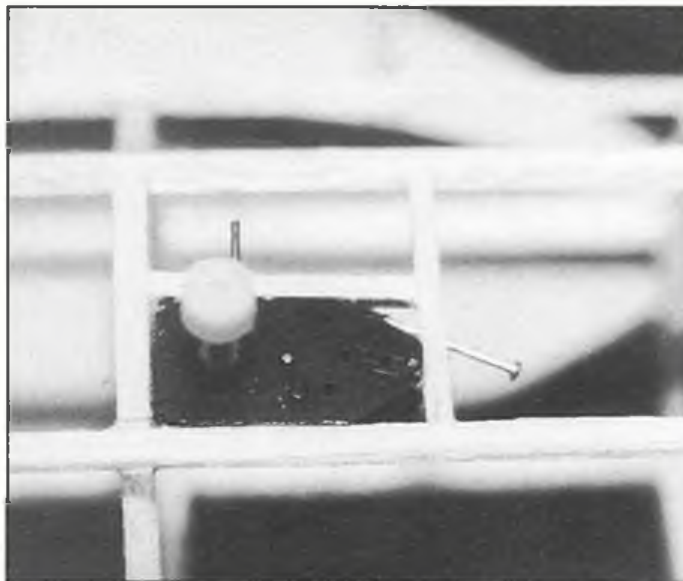


Wattie's straightforward but attractive lines are apparent here. This is the author's own model - 'vintage' prop blank is of slightly less chord than that chosen by Peter Michel.

glide is bad by any means but Wattie doesn't exactly float about like a Mick Farthing, being fastish and dead stable. The wing section seems very advanced for the period so it is quite capable of sauntering off in the most gentle of lift.

A confusion of identity

One lovely calm autumn day I took Wattie over the hill for a quick spin. The wind was almost of walking pace and a hazy sun was breaking through the morning mist. Proceeding upwind to the launch point I had to pass under some rugby posts. There on the crossbar glaring at me as bold as brass was an exquisite kestrel which berated me with 'peeping' noises. I set up my gear some distance further on and assembled the Wattie. For a first flight I thought 250 turns would be sufficient. Dave Hipperson will be pleased to learn that this model was equipped with a Tomy timer cyanoed between the stringers at the CG position. Taking no chances I set one and a half minutes on the clock which I calculated would drop it just in front of the trees in the prevailing conditions. Sure enough, Wattie climbed to fifty feet or so, picked up a gentle riser and circled lazily downwind just maintaining height. I had forgotten all about the kestrel until he came streaking in hell for leather. I wondered if he was going to set about my precious toy which was only on its second outing. But no, with an aerial screech of brakes he joined in the circuit adjusting his glide speed to keep exactly on the opposite station to that of the model. The two flying machines rotated silently in the thermal; one with flickering prop, the other watching steely eyed. It was now apparent what the interest was, for this particular model had dull orange flying surfaces with a yellow fuselage. The wing colour was very similar to that of the kestrel, as was the wingspan. I concluded that he found the Wattie as attractive as I do but probably for different



Tomy timer nestles nicely amidships on Andrew's Wattie. Added weight is negligible. Purists may opt for fuse and tube.



Above: Wattie on the rig and ready to go. Below: A fragment from Wing Cdr Ian Gleed's book Arise to Conquer, showing clear reference to 'Watty'. The same?

reasons. The magic was ended when the Tomy timer fired off the tail D/T. The sudden noise and initial stall caused a great deal of confusion of feathers and flapping. Directing a couple of plaintive mewing calls at the fast descending Wattie my feathered friend beat an undignified retreat to the shelter of the woods...

Incidentally, I would not recommend the orange/yellow colour scheme as I ended up losing this model to long grass, which is surely the most heart-breaking way for a

model to go. When they disappear upwards I always feel they are fulfilling their destiny in some way, but when you know it is somewhere near and you just cannot put a finger (or should it be foot) on it, that is pure torture.

Afterthoughts

Flt.Lt. Watson claims flights of two minutes in still-air using a one ounce motor and six to seven hundred turns. He goes on to say that on a heavier motor two-and-a-half minutes are possible. My own efforts are not much of a guide but I can put up a still-air two minutes on a 50 gram motor, and I am sure that the better rubber/prop combinations would push this up.

Mike Kemp, who has done as much as anyone for vintage rubber flying in this country, noted in a recent SAM 35 SPEAKS 'People tend to choose to build a design that could win rather than that interesting model they always wanted to own'. This remark concerned Wakefields but could easily apply to the heavy preponderance of Senators that take to the air for the lightweight freewheeler class at most vintage comps. The Wattie won't beat the Senator every time but with that climb and exceptional stability it's in with a chance. The prospect of some Flight Cup classes in 1988 is a further stimulus so I hereby promise to enter Wattie in one or two competitions this summer. Would anyone else care to join me in a Wattie?



getting... Hell, boys, e luck."
 "Hold this a second, 'Widge'; I want to give it full winds and see what happens." I hold one of "Watty's" models while he winds it with his drill. "Hey, steady, 'Watty'; if this damned elastic breaks I'll just about be murdered." "Watty" finishes winding, takes the model and launches it gently into wind; it rockets up in a steep climbing turn and starts drifting slowly down-wind. "Hell! somebody start running after it." One of the airmen starts plodding in pursuit. "Watty", as he is at readiness, can't chase it. At last, about half a mile away, the model comes to rest. "Two minutes—not bad," says "Watty". "Hullo! here come the boys—only two of them; I wonder where the other is? Good show! they have fired their guns. Wonder what they got?"—"Hullo, 'B' Flight! 'A' Flight here. Give us a ring as soon as you get the dope."
 Robbie wakes up. "'B' Flight have had a crack at something—a single recco 'plane, I think. Two of them have just landed now."
 "There's the..."



Mike Hetherington concentrates as the Mew Gull is released in the Air Racing event. Mostly-paper models flew well in tight circles but didn't make the final.

1988

Indoor Scale Nationals

Date: 26th April

Venue: Alumwell Centre, Walsall

We were there! Bill Dennis reports

THE BEST Indoor Scale Nationals yet? I certainly think so. Every inch of wall space taken up, lots of new faces and plenty of new, interesting models built and flown to a high standard, all point to the current healthy state of indoor scale modelling.

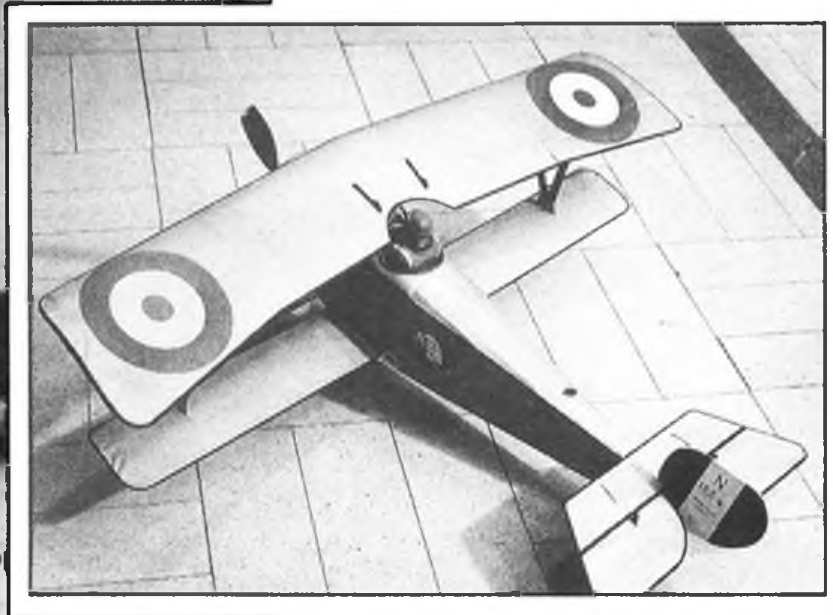
As usual, the bulk of this report will consist of photographs, so I won't waste any more space. Here's a brief run-down.

CO₂/Electric

The standard in this class showed a dramatic improvement over previous years: all the CO₂ motors seemed to be working well and I didn't hear the word 'humidity' mentioned once. A look at the results shows how close the scores were, although first and second places were fairly well clear of the pack. The popular winner was Ian Pallister with his Catalina, which in the past has seemed a little underpowered, but this time had plenty in hand. His final flight included a perfect lift-off from the dolly - you could almost see the water dripping off the hull!

It was noticeable that many subjects with little or no dihedral had been tacked - Harry Perrens' Fokker EI and Dave Causar's Nieuport spring to mind. Indoors this seems to pose no stability problem, although the turns are often steeply banked.





Above: Dave Causer's neat Nieuport placed fourth in CO₂/Electric. Left: Triumphant Air Race winner Malcolm Hall's Airacobra was from a Clarence Mather plan. Red and black craft looked to be in the money from the first practice sessions.



Above: Attractive Fokker Eindexker is the work of Harry Perrens who enjoyed his day despite a relatively low flight score.



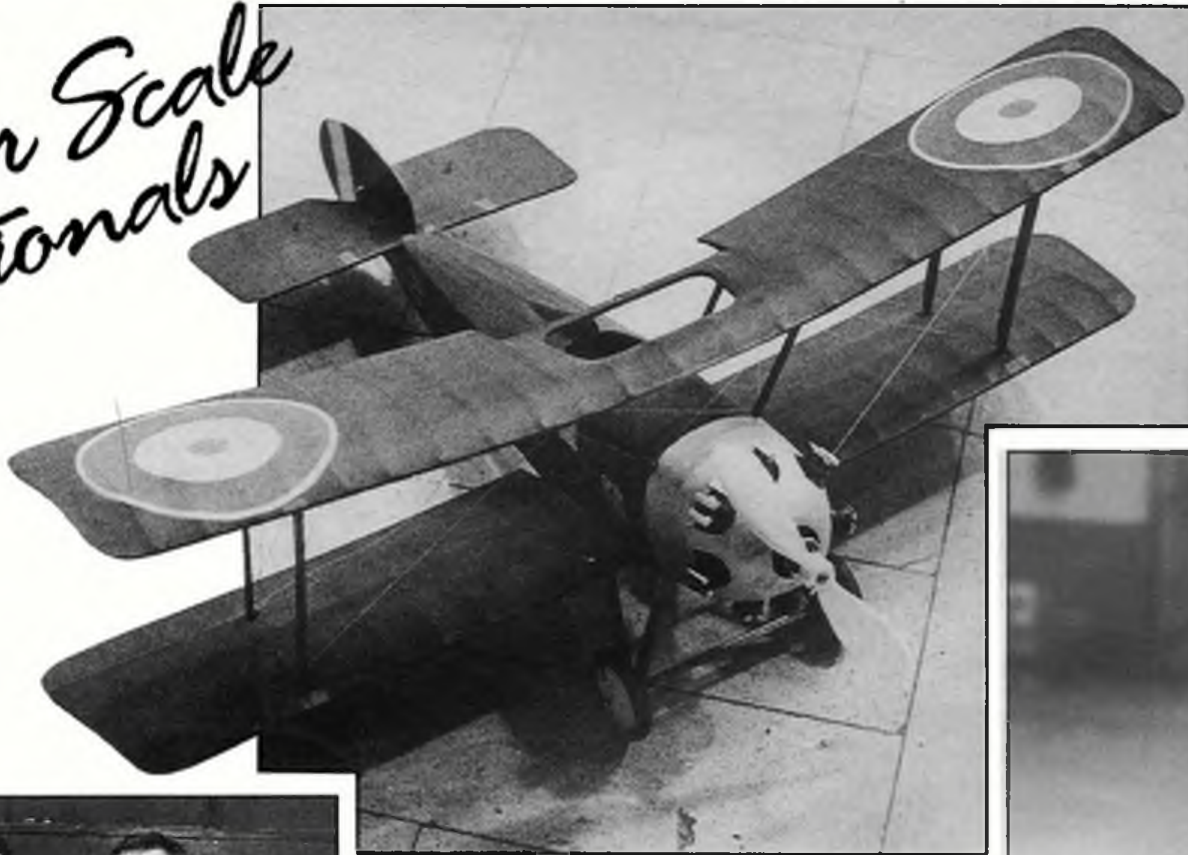
Left: A winner prepares. Ian Pallister's twin CO₂ Catalina was most impressive, achieving high-altitude circuits and a splendid landing on its final attempt.



Far left: Andy Sephton swept nearly all before him - just reward for concentrated effort at all levels of research, building and flying. His ABC Robin, an absolute gem, was runaway victor in Open Rubber and will appear as an Aeromodeller plan soon.

1988

Indoor Scale Nationals



Above: This neat Westland Wagtail was an unplaced but unusual CO₂ choice. Left: Flyoffs in Scale are rare but Chris Hutchinson and Andy Sephton had to go again to decide first place between the Farman Carte Postale and Lacey in Peanut. Below: Dave Wolstenholme put up a competent show in CO₂, Electric with his Morane L in 'Warneford' markings. Plywood fuselage panelling was simulated by door panel snippets from a DIY catalogue! Immediate right: Ray Johnson's Open Rubber Svenska SK8, completed at 4am on the day of competition, repaid careful trimming with steady flights. Plans are promised.

Second place went to Peter Smart's Taube, a very pretty model; other favourites were David Wolstenholme's Morane Parasol, Bill Brown's Thomas Morse Scout Replica and Simon Rogers' amazing Sopwith Bat Boat, whose CO₂ unit appeared not to have enough in reserve to keep this large machine in the air, although further trimming may make a difference.

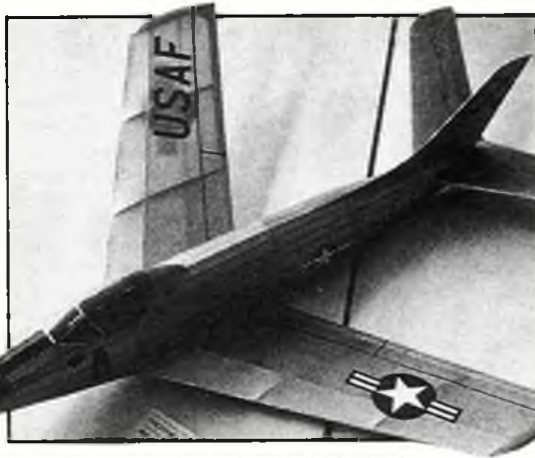
Open Rubber

In the past, I have referred to the abysmal state of documentation provided, but as it is obvious that no-one takes any notice I shall mention it not, save to say that we plumbed new depths. If the rules had been applied to the letter, half the entry would have been disqualified!

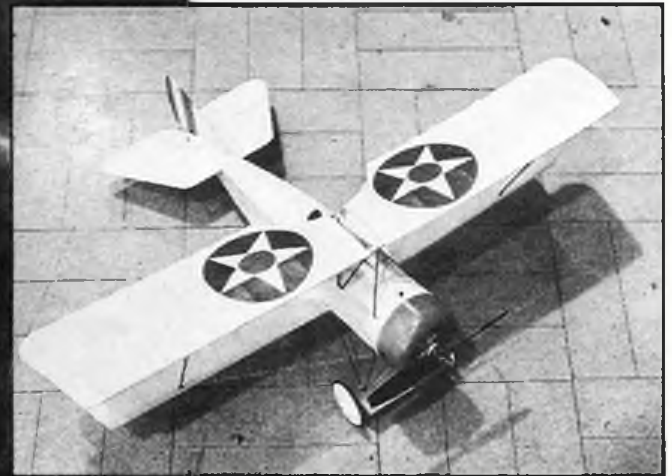
Exempted from this diatribe, of course, is Andy Sephton's new ABC Robin which, in fact, doubled up in both events by virtue of interchangeable noseblocks. All the details were nearly reproduced, and the fuselage was covered in air mail paper to give a realistic representation of the full size ply skinning. It won by streets.

A very unusual subject was Chris Hutchinson's Farman Carte Postale, with a vast wing of around 2:1 aspect ratio. According to the documentation, this was simply a length sawn off a Farman Goliath mainplane! Of the non-qualifiers, Barry Pursglove's new DH66 Hercules looks very nice; it still needs sorting out but shows great promise and should be a contender next year.





Left: On static display - Richard Granger's Jetex KK Sabre.



Top: Brian Roberts (at left) again flew his Family Cruiser to victory over Lindsey Smith's Spearfish in the Kit Scale Mass Launch. Above: Thomas Morse Scout by Bill Brown was a stable performer in CO₂.

Peanut

Even the Peanut class had a good entry this year with numerous new and interesting machines breaking up the procession of modern and homebuilt types. As Alan Callaghan said in his report on the Crawley meeting in May, flight times have become very high, and a score which only a short while ago would have looked respectable would now land you near the bottom of the pack. Still, it seemed a peculiarly quiet and serious affair for what was designed as a fun event.

Chris Hutchinson's remarkable Farman Carte Postale prevented a RAFMAA whitewash at these Nats, keeping Andy Sephton's Lacey at bay by the slenderest of margins after a flyoff. Most unusual. The only other contender to exceed a 100-point flight score was Peter Lee's fifth-place Lacey, although Mike Hetherington's familiar Fokker D8 - which he had the nerve to enter in Open Rubber too! - was not far behind on performance. Good appearance points (though none could top Lindsay Smith's Martin) lifted the tight-circling little monoplane to third overall, just ahead of cheerful Nick Peppiatt who did his bit to help prove that Scale law which decrees that red Farman Moustiques fly well, no matter what size they are.

A look at the results shows the variety of models. Amongst the new ones we admired Rob Porter's charming Fokker Spinne, untried before the meeting. A low flight score



We couldn't resist Mike Hetherington's delightful Fokker DVI which went well before the Peanut event but was sidelined after minor damage.

hampered its progress in the lists but look out for this one - the design has everything going for it.

Kit Scale

I wondered last year whether this novelty class had run its course, but this time there were ten entries and we saw some very fine, merry flying from all of them. These kits have been in production now for nearly 40 years, always with the same silly, inefficient propeller and elastic band motor. Do the manufacturers not know that replacing these items with more serviceable ones can improve performance, in terms of duration, by a factor of at least 20? The fly-off for first place was very close, with last year's winner Brian Roberts just beating Lindsey Smith into second place after the latter's Spearfish hit a wall.



Air Racing

Last year's novelty success was repeated to the same format, involving two-lap heats and a ten lap final. The heats did tend to drag on a bit. More timekeepers needed! The final was a second runaway victory for Malcolm Hall, this time with a Bell Airacobra in racing trim. Malcolm won much quicker than last time, needing to rewind only three times. I am in a position to pass on the secret of his success; he had spent the previous week practising! I know that the activity is frowned upon, but it does give you an edge! Seriously, if you want to have a go at this, forget about speed and build something that can fly ten laps in one go in tight circles.

Afterthoughts...

Returning to the official events, one problem which often crops up in static judging is how

to score the 'markings' section for a model of a subject with no markings. On several occasions when on the Scale Committee I tried to pin down my colleagues to give a definitive ruling on this, but to no avail. Do you give full marks because the builder has applied no markings perfectly: that is, there is no evidence of careless paintwork? Or give zero because he hasn't actually had to do anything at all? Generally the answer is to give it 'give it a few - maybe 3 or 4.' Not very scientific, is it? And it is quite a problem with Indoor where the Pioneer type is very popular.

On another matter, I understand it is the intention to make the Scale Nationals a two-day event next year. I have reservations about this, for I feel it may dissipate interest. The big advantage of Walsall as a venue is that it is a reasonable drive for most people, but it is an area short on overnight accommodation, which would greatly increase the cost of attendance anyway. There is plenty of time in one day if some of the slack is taken up.

Finally, the prizegiving was graced with the presence of SMAE Chairman Kath Watson, who spoke for all in thanking the organisers, and Doug Sheppard in particular, for their efforts. Richard Riding, editor of *Aeroplane Monthly*, presented the spoils, mostly to Andy Sephton. This gentleman's ABC Robin, as well as its competition success, deservedly won the *Aeroplane Monthly* prize for Best British Ultralight model.

A splendid meeting. Roll on the next!

Stateside spirit of the '30s - Barry Pursglove's all-red Lockheed Air Speed Express was one of many gems on static display.

Open Rubber

			Static	Best Flight	Total
1 A Sephton	RAFMAA	ABC Robin	940.5	970	1910.5
2 P Lee	Basingstoke	Lacey	616	960	1576
3 T Rees	CM	Cougar	720	710	1430
4 C Strachan	Impington	Baby Ace	331	1040	1371
5 C Hutchinson	CM	Farman	560	794	1354
6 L Smith	RAFMAA	Voisin	428	906	1334
7 M Hetherington	Nottingham	Fokker DB	452	876	1328
8 R Hetherington	Nottingham	Dewoitne	642	577.3	1219.3
9 G Hannah	Impington	Antoinette	562	648	1210
10 R Johnson	CM	Svenska	597	562	1159
11 R Boor	Wigan	SK 8			
12 K Bates	Cleemac	Henkel	480	655	1135
13 P Robinson	Cleemac	Piper	731	316	1047
14 G Bell	SAM 35	Tailwind	392	441	833
16 J Kew	CM	Puss Moth	0	432	432
		Ta 152H	408	0	408

CO₂/Electric

			Static	Best Flight	Total
1 I Pallister	RAFMAA	Catalina	1089	1122	2211
2 P Smart	CM	Etrich Taube	1059	1004	2063
3 A Sephton	RAFMAA	ABC Robin	1007	828	1835
4 D Causer	RAFMAA	Nieuport	836	958	1794
5 D Hanks	S Bristol	Eastbourne Monoplane	811	958	1769
6 N Peppiatt	CM	Tabloid	971	744	1715
7 C Newman	Oxford	Avro 504N	910	730	1640
8 B Hetherington	Nottingham	Stinson U	746	856	1602
- C Strachan	Impington	Bristol Prier	638	964	1602
10 G Spencer	Walsall	Tiger Moth	738.5	862	1600.5
11 D Wolstenholme	CM	Morane L	653	898	1541
12 D Knight	Portsmouth	Tiger Moth	964.5	436	1400.5
13 P Morgan	RAFMAA	Sopwith Triplane	838.5	336	1174.5
14 H Perrons	Walsall	Eindekker	670	376	1046
15 G Dimes	S Bristol	BE 12a	998.5	0	998.5
16 S Rogers	CM	Bat Boat	837	0	837
17 G Hannah	CM	Little Bird	585	216	801
18 W Brown	Impington	TM Scout	768	0	768
19 R Porter	Ass	SE 5a	760.5	0	760.5
20 L Smith	RAFMAA	Avro 560	512	0	512
21 D Woodward	RAFMAA	Sopwith Pup	465	0	465

Peanut

			Class	Appearance	Static Place	Flight Score	Flight Place	Score
1 C Hutchinson	CM	Farman	Golden Age	49.5	3	111	2	5
2 A Sephton	RAFMAA	Lacey	Homebuilt	49.5	4	112.8	1	5
3 M Hetherington	Nottingham	Fokker DB	WWI	45	5	39.36	4	9
4 N Peppiatt	CM	Moustique	Golden Age	41.5	7	93	5	12
5 P Lee	Basingstoke	Lacey	Homebuilt	38.5	10	102.49	3	13
6 L Smith	RAFMAA	Martin	Golden Age	59	1	56.56	13	14
7 R Boor	Wigan	Mustang	WWI	39	2	69.09	10	19
8 P Morgan	RAFMAA	Currie Woi	WWI	55.5	9	35.47	18	20
9 K Granger	Nottingham	Leseurre	WWI	35	13	82.81	7	20
10 R Johnson	CM	Baboon	WWI	43	6	50.09	15	20
11 C Strachan	Impington	Cub	WWI	32.5	16	85.4	6	21
12 K Bates	Cleemac	Widgeon	Golden Age	35.5	12	61.75	11	22
13 R Porter	ASSE	Spinna	Pioneer	39.5	8	46.52	16	23
14 G Hannah	Impington	Jenny	Golden Age	30	18	76.1	8	24
15 M Green	CM	Gradek	Golden Age	30	19	76	9	26
16 G Dimes	S Bristol	Vagabond	Golden Age	32	17	59.34	12	29
17 P Robinson	Cleemac	Tailwind	Homebuilt	34.5	14	44.86	17	31
18 C Jeffreys	CM	Demoiselle	Pioneer	24	21	53.52	14	35
- J Kew	CM	Andreasson	Homebuilt	33	15	20.5	20	35
20 D Kew	CM	Fokker	Golden Age	27	20	29.53	19	39



The coveted *Aeroplane Monthly* Trophy - a Michael Woodcock painting of the Hawker Cygnet at Lympne - is presented to Andy Sephton by Richard Riding.

HOLIDAY ON ICE

Summer break in mind? This'll cool you down! Mike Woodhouse flew

Wakefield at Gjovik in Norway on 26-27th March...



MY INTEREST in flying models over ice was first acquired 25 years ago when I saw photographs in *Aeromodeller* of Scandinavian modellers doing just that. According to my research, it all sounded very good. Air was apparently very buoyant and despite temperatures of around 0°C conditions seemed not at all unpleasant!

In January, during a telephone conversation with Gerry Pink about propeller construction, the idea of going to Norway came up. Gerry told me that Bernard Aslett was looking into the possibility and would like to go. Dave Oldfield was soon roped into the scheme and Bernard got on with the details. It appealed particularly because it counted towards the World Cup and would thus have a reasonably large entry. Final plans could not be made until about a week before the event when it was confirmed that the ice would be thick enough! Norway, like the UK had a mild winter with less snow than usual so there was a chance that the event might be called off. It had to be on ice or nothing as there were no suitable fields.

Left: Mike with his fifth-place F1B and - below right - apprehensive on snow-scooter. Below left: Svein Olstad prepares to launch.

What shall I wear?

In the last week before the event final details were arranged. Our main concern, or rather my main concern, was clothing suitable for the conditions. Bernard, who is a regular skier, gave advice; and careful scanning of photographs supplied by our Norwegian hosts also helped. The normal check list for a contest in the summer in France was useless! In the end I settled on thermal underwear beneath ski jacket and ski trousers. I also took along a balaclava helmet, thermal gloves and several pairs of thick socks. Footwear most worried me. I took



Holiday on Ice 1988			
Individual			
FIA	41 flew	Sweden	1260 + 240 + 199
1	L. Larsson	Denmark	1260 + 240 + 131
2	H. Nyhegn	Finland	1260 + 202
3	K. Henriksson	Denmark	1260 + 158
4	A. Westerman	Netherlands	1259
5	P. de Boer		
20	D. Oldfield	GB	1168
FIB	22 flew	Sweden	1260 + 240 + 244
1	B. Eimar	Sweden	1260 + 240 + 240
2	H. Broberg	Norway	1260 + 240 + 215 +
3	P.T. Skjulstad		242
4	K. Karhila	Finland	1260 + 240 + 215 +
5	M. Woodhouse	GB	1260 + 202
13	G. Pink	GB	1196
15	B. Aslett	GB	1112
FIC	3 flew	Sweden	1260
1	G. Agren	Sweden	1219
2	H. Lindholm	Norway	972
3	T. Bortne		
Team			
FIA		Denmark	3731
1		Finland	3675
2		Sweden	3627
3		Norway	3517
4			
FIB		Sweden	3741
1		Finland	3683
2		Norway	3433
3			
FIC		Finland	3031
1		Sweden	2575
2			

heavy duty hiking boots and my green wellies. Apparently the surface of the lake, although frozen, would be covered by a crust of lighter snow and ice and a layer of water above the hard, glassy 'steel ice'. This layer, although firm in places, might collapse elsewhere. Others in the party wore moon boots which were equally effective.

Thus kitted out, plus polaroid sun glasses, we met at Heathrow. Being more concerned about the model box I left my shoulder bag containing money, passport and cameras on the bus from the long-stay car park. A quick phone call by the terminal duty officer retrieved the bag intact...

Open the box!

At this stage Bernard came into his own. He had carefully laid plans earlier in the week, with phone calls to British Airways to ensure that our boxes would receive VIP treatment. Although they had to go into the hold, we would be allowed to carry them there. We were overweight (or, rather, my excess weight had used up the short-fall of all the others combined) but Bernard charmed the check-in lady and no excess charge was incurred. We then took our boxes through the Security for more fun and games. The young lady opened David's box and enquired the contents of a glass jar. Her eyes widened when David told her it was dope. A description solved the problem. My box was checked last, a tactic we were to employ for the rest of the week because of its size, weight and contents. Also, I could never keep up with the others when carrying it. The conversation proceeded along the following lines:

Security: 'Sir, you have a spear in your box.'

Me: 'Er, what?'

Security: 'A spear.'

Me: 'Ah! What you are referring to is a spike on the end of my winding rig.'

There was silence at this point so I gave a full and detailed description of how the winding system worked. Then:

Security: 'Open the box.'

Me: 'Have you a pair of pliers, please? The catches on the box are held closed with bent wire.' (My tool box had already gone off with the rest of the luggage.)

Security was now held up while someone went in search of pliers, without success. The box was re-run through the scanner with me pointing out the various bits to the Senior Security Guard. He gave up and we went through Customs and on board with the box still closed...

We left late, arriving in Oslo with little time to get to the station. The bus journey there was uneventful but we arrived with only 12 minutes left... Bernard searched out the ticket office while we proceeded slowly with our load. Time was running out fast; we found the station was being rebuilt so we had to transfer to a new terminus. We reached the train, Bernard negotiated the boxes onto the guards van and we boarded and collapsed with two minutes to spare!

We're here!

At 9 o'clock we arrived in Gjøvik to be met by Tor Bortne and Svein Olstad. Accommodation was at the Youth Hostel. We shared an excellent room and settled down to discuss details of the contest on the following day. Tor Bortne provided all the pre-contest information and filled us in with details. We then met Nils Schmidt Andersen who would ferry us for the next couple of days back and forth to the field.

The TV weather forecast predicted light winds and overcast with temperatures of -2°C rising to +2°C. The ice apparently was OK but the surface was rough and liable to fracture through the upper layers. We arrived at the lake to find a vast, flat plain somewhat like Mostaar in Yugoslavia except it was white, not green, and 2°C below freezing rather than 80°C in the shade! The contest was to be flown from the middle of the lake. A light drift was blowing parallel to the shore. The gear now had to be carried across. Local knowledge worked wonders at this point. The Finns set off with their model boxes on skies (or towed on sledges). I managed to thumb a lift on a snow scooter. This useful means of transport carried all the heavy items out to the start line.

Setting up camp began. A brace and bit borrowed from one of the Finns came in very handy to drill holes in the ice to fix the stoooges. Bernard, in his enthusiasm, drilled too far and struck water. He was, not surprisingly, somewhat concerned by this discovery! With the help of the Finns we fixed the winding rig and hammered in the pegs. Dave Oldfield was still not happy as he complained he could feel the blows travelling through the ice and into his feet... During the briefing a nice little touch was the suggestion that we shouldn't group together,

so as not to put too much pressure on the ice.

Our time-keeper was a very efficient and attractive Norwegian lady who stayed with us throughout the contest. All models seemed to fly well on check flights and I personally found no need to change the trim. At this point Gerry's rig collapsed damaging the fuselage. Repairs were quickly made and we were ready for the off. We were to fly five rounds on the Saturday and the final two rounds and the fly-offs on the Sunday (all classes together). This worked out very well in practice.

And we're away...

Gerry was quickly in the air; in fact, far too quickly. The model climbed away and then D/T'd at 20 seconds for a half-minute flight. His gloom and thoughts of how he was going to explain this to Sylvia when he got home soon changed to joy when he found that he had, in fact, launched before the contest had started. Dave was next away but he dropped a few seconds as his glider was turning a little too tight. I was next into the air and made a steady four-minute flight. Bernard, trying far too many turns, broke a motor and the model jumped out of the stoooge, breaking boom and tailplane. Repairs were made but the model was below its best performance and a sub-max flight was the result. The contest moved on steadily and we observed the fact that there was no lift; just nice, smooth, steady air. A high climb and good glide was sufficient for a Wakefield max, but a poor motor or duff launch would mean a sub-max flight as there was no lift to salvage the situation.

Should we use FAI or Pirelli? UK experiences had shown Pirelli to be superior in the cold, but FAI performed extremely well here. I tried it and found no apparent loss of power. Maybe it's the 'damp' cold at home which gives us problems. There was less stretch in the rubber but the power seemed the same. Nevertheless, Bernard and I settled on Pirelli; Gerry used both.

The air appeared to be absolutely perfect for circle towing, models holding up smoothly and buoyantly throughout. Although there was no real lift to be towed for, a max would result if a strong, positive zoom launch was made.

I have never seen so many contest flights of between 2:45 and 3:15. The three Dutch flyers were very happy and maxed steadily through the day.

Power was not well supported with only three entries. Tor Bortne quickly spoils his chances with a double overrun in the first round to make it an all-Swedish affair.

Retrieving through the thin covering of snow was no problem despite the occasional crash through the upper layer to the 'steel' ice underneath. The first time I did this I was somewhat chastened by the experience. The locals made light work of retrieving thanks to their skis. I shall have to learn next year! Models landed without damage and flying proceeded at a pleasant rate. Gerry and I progressed well until Gerry made a flat launch, lost vital height and dropped ten seconds. It was at this point we learnt that the Norwegian time-keeper also understood the finer points of the English language. Bernard was not having the best of days, but towards the end of the day a watery sun appeared and we were beginning to find our feet and enjoy ourselves.

After an excellent evening meal models were

produced from boxes and discussed; Gunnar Agren and Torstein Bjørnstad showed slides of the 1987 World Champs, the models of China and Russia featuring heavily. Sunday's forecast was similar to Saturday; more sunshine was promised so everyone was happy.

Day Two

In the morning we awoke to a light but steady fall of snow. Back on the ice things looked all set for another good day. We were now used to the conditions and flew on steadily. Fortunes altered dramatically. Peter de Boer dropped a second, Jan Somers gave the model too much stick, cracked a tip and was down for 71 seconds; and Cenny Breemann made a complete mess of things for a two-minute flight. In the British camp Gerry got ice into his prop stop, the blades hung out and he was down for just over two minutes. However, I was happy and through to the fly-off.

By this time small, regular snow showers were causing the models to become damp. In the fly-off I decided to wind quickly and launch early (in a light shower of snow). There were problems; 20 seconds into the climb the auto-rudder pin dropped and the model turned and flattened. The model hung on in good air but the snow continued and the model disappeared out of sight at 3:22 with Sverre Klemetsen on his skies in hot pursuit. Only two models made the four-minute flight. Had the snow not appeared I would definitely have placed third! The next round produced a result with Bror Eimar coming out on top. His model had flown very

impressively all weekend. Different to his famous Tilka, it features instant prop release with Russian-style feathered blades and a three-position auto rudder based upon the Jens Kristensen system. The tie-breaker was far more dramatic, the eventual winner being one of the locals, Per Thomas Skjulstad, who had crashed on his first attempt.

Aage Westermann of Denmark later admitted he was somewhat premature in his decision to launch the model in the Glider fly off. After the second round Lars Larsson came out on top, launching powerfully into pleasant, steady air.

Prizes and afterwards

Trophies at the prizegiving consisted of glass made to look like chunks of ice, presented in decreasing sizes down to fifth place. During ceremonies an audible crack

was heard from the ice upon which we stood! Incidentally, we had noticed several competitors wearing harnesses around their chests. These turned out to be quick-release bayonet systems to stick into the ice should it break, precipitating them into the water below!

After a long, last look at the lake we left for the hostel to pack our bags for the trip home and to reflect. A big 'thank you' to our friends in Norway for running such a super event and providing for our every need. As well as everything else, they ran the contest in the English tongue which helped immensely. British Airways must also receive a vote of thanks for allowing a great deal of freedom in the way our models were handled in the aircraft. Finally - will I go again? Would I recommend it to others? I think you can gather from this report that the answer is a big 'yes!'



Top: Bernard Aslett winds in unfamiliar surroundings. 15th in F1B. Far left: Easy does it! Gerry Pink drills the ice to accept his winding rig... Left: F1B winner, Sweden's Bror Eimar, about to launch in the flyoff. Below left: Fifth in F1A, Peter de Boer (Netherlands) steps forward at the prizegiving.

MOTOR MART

**Engines old and new, factory produced
and amateur-built on show this month...**

A MOST interesting engine catalogue dropped through our letterbox recently. CS Engines from Shanghai produce a fascinating range of motors including an ABC .049 Speed - which looks like a mini-Rossi and is allegedly capable of 35,000rpm) and a rear-exhaust R/C .60. In between are .061, .09, .15 and .21 glows. The only diesel in the range is the CSD 15 TR, an AAC .15 for Team Race. Plugs, props and pipes are also offered; in the absence of engine samples (soon to be rectified, we hope) here is some factory data...

Old engine affairs

It is not the intention to concentrate excessively on early motors but the fact is that they do arouse use a great deal of interest. Mention in the May issue of our recently-acquired 1066 Falcon generated correspondence, mainly because it wasn't a Falcon at all! John Reid sent a 1066 catalogue and wrote:

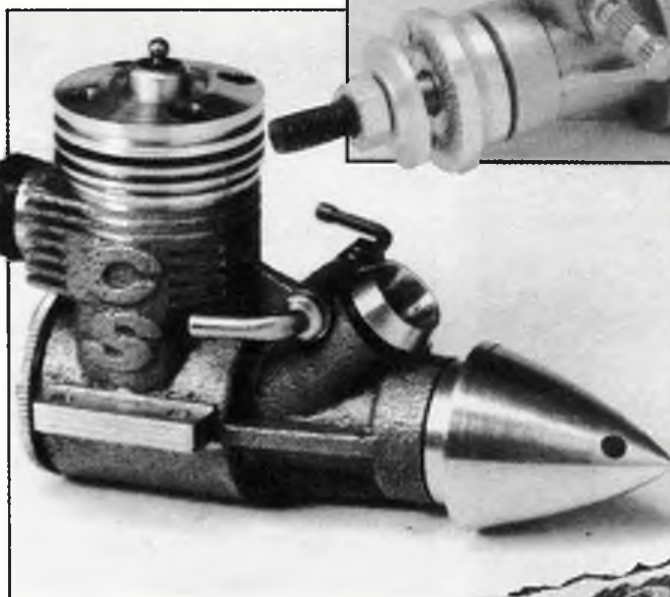
'I was interested in the photograph of your Falcon, as it does not look like either the Falcon in the catalogue or like the set of castings which I acquired recently. In fact it has more in common with the 5cc Hawk... Could it be that your engine was originally a Hawk, modified by the fitting of a different cylinder?'

Actually, the transversely-finned cylinder head should have provided the clue. In passing, John wondered if the motor might have been mounted in a car chassis. How true! Over to Jim Hampton:

'Your engine is an Arrow, a most powerful 5cc engine and the last designed by Mr Hastings. Intended for race cars it was sold only as castings. The more common 5cc motors in the range are the front-rotary Falcon I, sold finished or as castings, and the rear-rotary Hawk which was sold finished.'

Jim himself owns an Arrow in poor condition. Drawings are sought - by your Editor, too... Back for a moment to the subject of the GHQ, a marque recently discussed. Jim tells us that on his own example the piston crown goes way below the exhaust ports at BDC, giving an amazing exhaust period of 200 degrees and characteristic, woeful lack of power. A redesigned piston with cutaway skirt may solve the problem.

The trio of diesels in the photographs have just come to our attention. Of approximately 0.5, 0.8 and 3cc they were built in early post-war years by a talented instrument maker (who also indulged a passion for live steam locos and self-designed TV sets). The engines have passed into the safe keeping of an appreciative enthusiast to be flown ere long



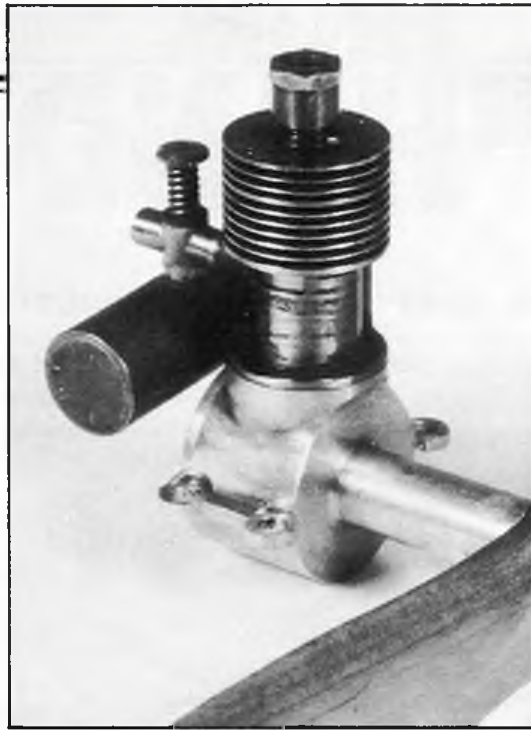
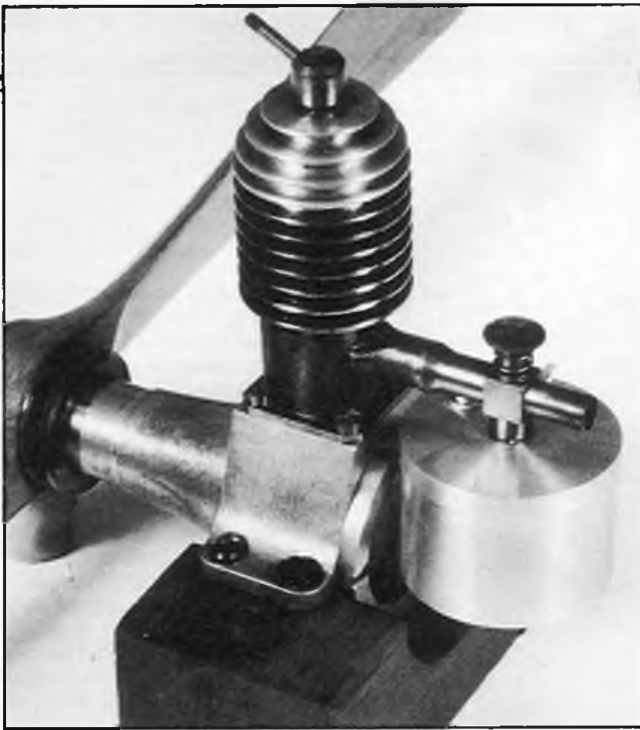
*Above and left:
Two from
Shanghai - the
CS 15P and 049
Speed ABC.
Below: The
editorial 1066
Arrow, now
correctly
identified!*

in an appropriate selection of British vintage designs. Beautifully made, they all run quite happily; the largest particularly sweetly. More news of interesting motors please!

**... and we hand over to
Jim Woodside for an
assessment of the
Irvine Mills .75**

EVERYTHING COMES to he who waits. Having waited and waited I was a little bemused by the enigmatic message left by my local model shop, Model World in Liverpool, stating: 'They're in!'. 'They' turned out to be the Irvine Mills. Six neat boxes in the show case was proof positive. Being first to arrive I had the joy of being able to pick the unit with the lowest serial number, No. 136. The first batch of motors is numbered but I believe later runs will not be given the stamp of authenticity. Another way of looking at the same situation is: you will be able to choose your own number! The retail price of the Irvine Mills is £29.95, which in fact is less than good original Mills.75s fetch at vintage swap meetings. For this, of course, you get a boxed, new motor made in

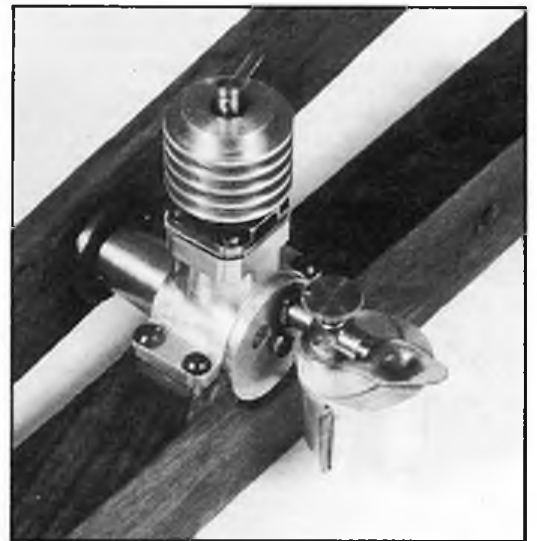
the best materials and to high standards on modern CNC machines. All in all, an irresistible bargain for the vintage buff. Once home I couldn't resist the urge to bench run my new toy. I followed my usual practice of removing the backplate and swishing the motor in clean cellulose thinners to make sure no 'grollies' were hiding in the crankcase. I need not have worried - all was well; and a particle of aluminium on the con-rod, just touching the crankcase, was quickly relieved with a swiss file. A quick shake dry; squirt in some 3-in-1 and replace the backplate and tank assembly. Having mounted the motor in the test stand it was running after literally a few flicks. Over the morning I amassed about twenty minutes running, after which the



Left and below: The trio of home-made diesels, 3cc, 0.8 and 0.5cc, referred to in the text. Smallest, below, is fitted with a 'flywheel prop' of zero pitch, meant for running-in but lack of slipstream causes overheating.



Spotted at the Sandown Symposium - the Irvine 15R. Can you wait?



motor was beginning to lose its 'as new stiffness'. After lunch a further thirty minutes were logged. First runs were done using a 7 x 4 prop, and later an 8 x 4. Fuel used was a traditional one-third-each castor oil blend, paraffin and ether, plus 2% IPN. At this stage I thought it would be interesting to make some comparison tests with some of my original Mills .75 engines; an original 'four bolt' type .75Mk I; an S.75; and a P.75, fitted into my APS Ironsides. The tests were quite simple; RPM and duration on one cc. of fuel. Results as below:

Engine	RPM	Duration on 1cc fuel
.75 Mk I	5,800	40 secs
S.75	6,500	75 secs
P.75	6,100	64 secs
Irvine Mills	6,200	57secs

Very promising, as you can see, for the Irvine. With less than an hour's running it is already performing in the same envelope as its well-run-in forefathers. Starting is superb, hot or cold; and really this is what vintage fliers want. Time to test the Irvine Mills in action...

The afternoon was rather windy but by the day's end it was calm enough to risk a flight. With the Irvine purring away Ironsides

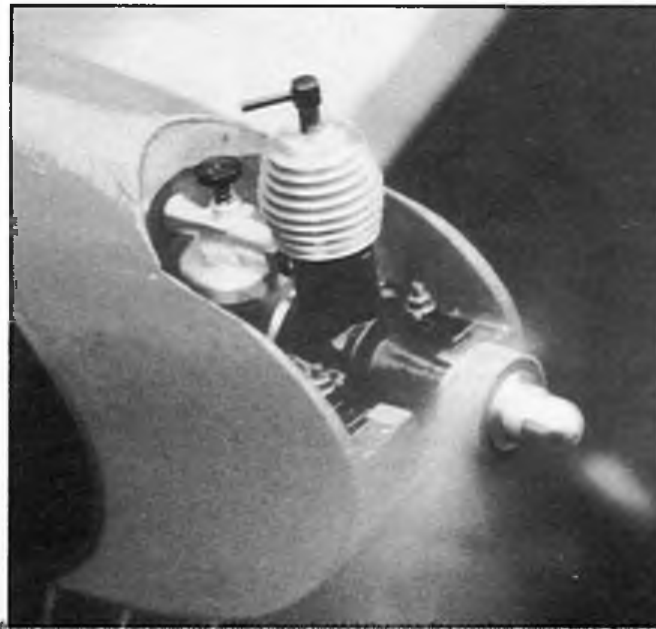
cruised off in its usual left-hand climbing power circuit before making a transition into a right hand glide and back to ground.

Conclusion: It has been a long wait but a worthwhile one. Buy one, or two...

Flyers will be pleased to know that this version has some welcome changes, namely: A screw-in tank, which means easy removal of both it and the associated tank

top should it be necessary to use a bigger tank. Second virtue is the machining of wider cut-outs in the liner skirt to accommodate the con-rod (hence no more chewed-up con-rods). Lastly, a more robust front housing where it meets the crankcase gives consequent better crash resistance.

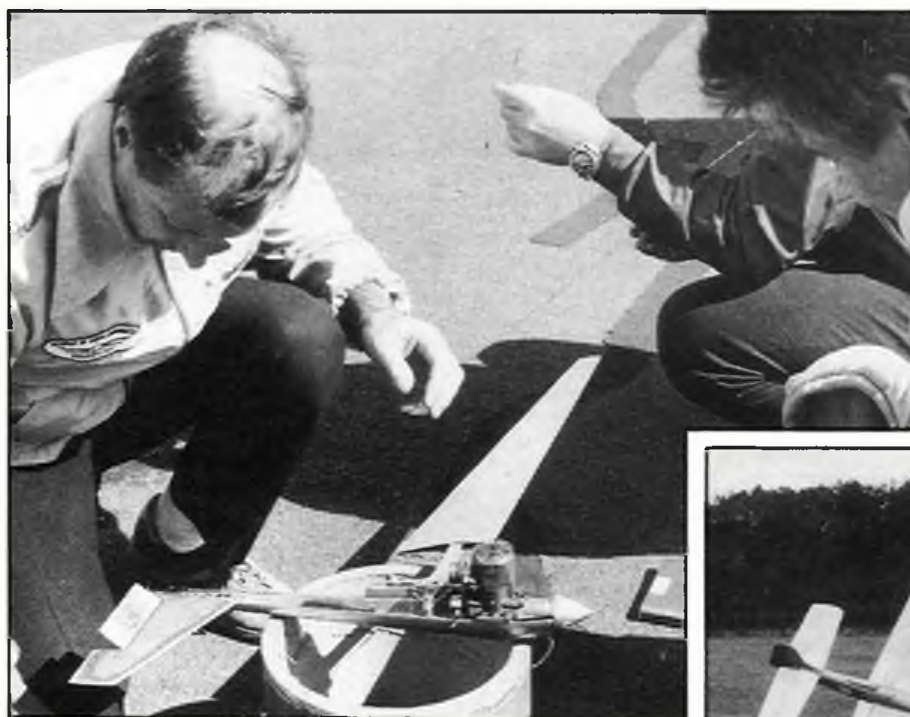
Congratulations, Irvine!



Purring happily - the Irvine Mills .75 all set to fly Jim Woodside's Ironsides...

FROM THE HANDLE

Dave Clarkson passes on latest control-line news including provisional SMAE T/R rules...



Top: Bill Draper prepares his Superhawk 32, genesis of which is described in text. Above: Speed fliers watch out - man to beat for absolute mph is Ken Morrissey, here shown readying the OS 61 in his all-conquering asymmetric model at the '87 Nationals. Right: A couple of Veco Chiefs. Mike Rolls (in the shades) holds his 1949 version; Tom Hughes has chosen the 1952/53 model. OS 40 and Veco 29 power. Straightforward design - ideal for Class 2 Stunt?

THE BRITISH 1988 C/L World Champs Team will be without John James who has declined his selection as Combat Mechanic. Mervyn Jones will take his place. It is now confirmed that the 1989 Eurochamps will take place at the 3 Sisters venue. National Contests this year (we do not yet know which) will be used for team selection in speed (F2A). Team Race (F2C) trials will be held in April/May next year; and Combat (F2D) selection depends upon the best four results at '88 Nats and SMAE Centralised competitions. It is also hoped to include Scale (F4B).

More news from the SMAE

Novice/Junior Aerobatics has been renamed Class 2 Aerobatics. Provisional rules for Vintage A and B Team Race have been adopted. In view of last month's feature by Terry McDonald we summarise them here. Of particular note is that provision will be made for the fastest non-Oliver Tiger vintage-motor powered A racer. A final note from the last C/L Tech. Committee meeting indicates that the price limit on Mini-Goodyear motors has been abolished. Any commercially-available motor, past or present, may be used, subject to the current motor modifications rule.

Vintage Team Race: SMAE Provisional Rules

Eligible Models: Any model published or kitted before 1st January 1957. Jan '57 magazines accepted! No modifications to outline. Strengthening permitted but no 'modern' materials to be used. Cut-outs advisable; but for emergencies only, or after race distance. No pressure refuelling or modern features; e.g. multifunction valves.

Motors: Vintage motors are of pre-January 1957 design and mark. Later motors permitted - but not twin ball-raced designs. No 'modern' props.

Tanks: 15cc maximum for A; 30cc for B.

Line length: A: 46ft 8ins from centre of handle to centre of model, 56ft for B.

Race distance:

A Heats	90 laps
A Final	180 laps
B Heats	75 laps
B Final	150 laps

Authenticity must be proved on demand. Details of Race Conduct, Flight Circle, etc. need not be summarised here.

Note: Provision shall be made for an award to the fastest A model powered by a Vintage motor other than an Oliver Tiger.



Safety in C/L

The SMAE is working on the subject of banned fuel chemicals. It is possible to distinguish between 'traditional' ingredients whose characteristics are known and acceptable, and those with definitely hazardous potential (notably additives). I would welcome specialist advice from readers - any model flying industrial chemists out there?

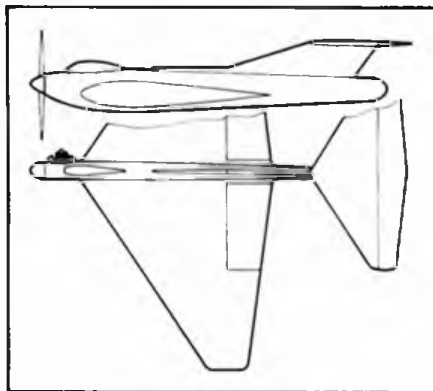
Speed it up!

Where to fly speed this year? Here's the list from June onwards. In all cases contact Dick McGladdery at 68 Silver Crescent, Chiswick, London, W4 5SE for details.

25-27th June	3 Sisters Gala
10th July	Bicester
31st July	Bicester
27-29th August	SMAE NATIONALS
18th September	Bicester
2nd October	Bicester

...and Bill Draper builds a new stunter

BUILDING NEW aeroplanes is something which I seem to do less and less. Certainly I obtain my pleasure on the flying field rather than at the building board and as my number or aircraft has grown so the incentive to build has reduced. Add to that the other demands upon time and you will understand that my building has fallen to



John Ash's Javolin for .35 power is an unusual stunt shape. Span is 42in; length 41.1/2 in and there is 520sq.in. area.

an average of about one plane every two years - all Superhawk variants.

The purchase of my first Enya Super Sport 30 in early '87 provided the incentive to build again, and a new fuselage was produced to fit the motor. Since I was using an existing wing which had been trimmed out to its own fuselage, I made no adjustments to the wing for trimming but made all adjustments for fine trim via elevator throw. The set-up served me well through the '87 season until I was finally stirred into building a wing to fit the new fuselage and provide a complete, new aircraft.

The new wing was identical to the earlier one, but it weighed about half-an-ounce less than the original. The wing was apparently warp-free, and was balanced as the first; flap throws, horns, and so on were the same. Thus I was confident that it would fit the new fuselage and fly exactly as the original. Imagine my surprise when I first flew the new set-up to find the handling so vastly different whilst outside turns were very lazy and lacking in tension.

This time I left the fuselage alone and pulled the trim in by wing adjustments. Some additional 'down' flap was applied with an additional twist of flaps to level up inside and outside tensions. Finally, the line length was shortened by approximately half an inch and after a couple of flying sessions the set-up again felt right. A touch of grease on the leadouts worked wonders for level flight.

How others do it. C/L Training. Russian style. High wingers are lively on the wires - anyone care to try?

The episode reminded me how carefully a model must be set up if one is after contest performance, even when starting from a proven design.

The new all model is designated the Draper No. 32. No. 31 model was still powered by the old faithful Enya 45, but now I was tempted to go all Super Sport 40. A new motor was purchased and the faithful 45 was removed from No. 31. As described in my previous article the new SS40 was slightly modified by slotting the mounting holes and silencer lugs so it should fit in place of the original and would take the earlier silencer. The motor and cowl fitted perfectly.

The silencer was decoked by boiling in a washing detergent solution (a tip passed on to me by Rex Landon) and we were ready for off.

The motor was very tight and reluctant to start so I resorted to the use of an electric starter for the first run. After the first tankful the motor was still rather tight but it started by hand and was put into the air. Now after a dozen or so flights, and after some funny runs due to dirt in the jet the motor is bedding down nicely for the new season.

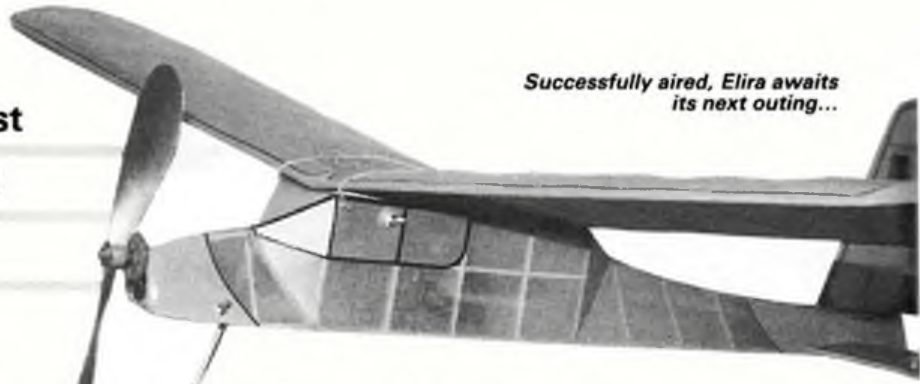
In case of accident I now have absolute interchangeability of motors, wings, fuselages and tanks on two competition class planes for the forthcoming World Championships in Russia.

An interesting competition was held at the last Nottingham Model Club dinner: guess the number of individual components which go into building a typical 40-45 powered stunter. Reg Lowe provided the guinea pig, a complete but uncovered stunter. Counting every piece of wood, and hardware (the motor unit counting as one piece) the official figure came to 340 items, less cowl and tank. I carried out a similar exercise on my Superhawk and counted over 325 components which had been cut, shaped or soldered into position to make the whole aircraft...



Successfully aired, Elira awaits its next outing...

Switch on to Roy Ashby's latest account of Indoor electric R/C exploits



INDOOR

MY FIRST excursions into electrics were with outdoor free flight models; then came indoor free flight, followed by a series of electric outdoor R/C gliders. The lightest of the latter was a smaller version of Gramps (span 39in, chord 7.1/2in, wing area 292 sq ins). The weight was 12 ozs so the wing loading was almost 6ozs sq ft. Power was supplied by 5x500 mA AH nicads driving a Mabuchi 380 with direct drive Cox 5x3 prop. This model flew very well, turning in flights of 9-10 mins, but I got over confident, flew it in too high a wind and wrote it off, the pieces packing nicely into a small carrier bag... Luckily the radio was OK even though the model had made a hole in the ground. 'Seems like a good time for a change,' I thought, 'how about radio control indoors? There's no wind there...'

Success!

And so it proved. My brother at the controls flew the craft up and down the hangar, executing beautiful banked turns at each end and landing in the centre after about a couple of minutes. (We usually fly as a team, each of us able to concentrate fully on the job in hand). At this point I should add many thanks to the other modellers present at that meeting for graciously allowing us flying time. Someone remarked that our model looked more like a submarine than an aircraft; that's how it became Nautilus II. This kind of activity usually inspires one to greater efforts and so I determined to build an even lighter craft for the Crawley Indoor meeting on 31st January 1988. Keeping to the same type of rigid construction, my target was now 6ozs.

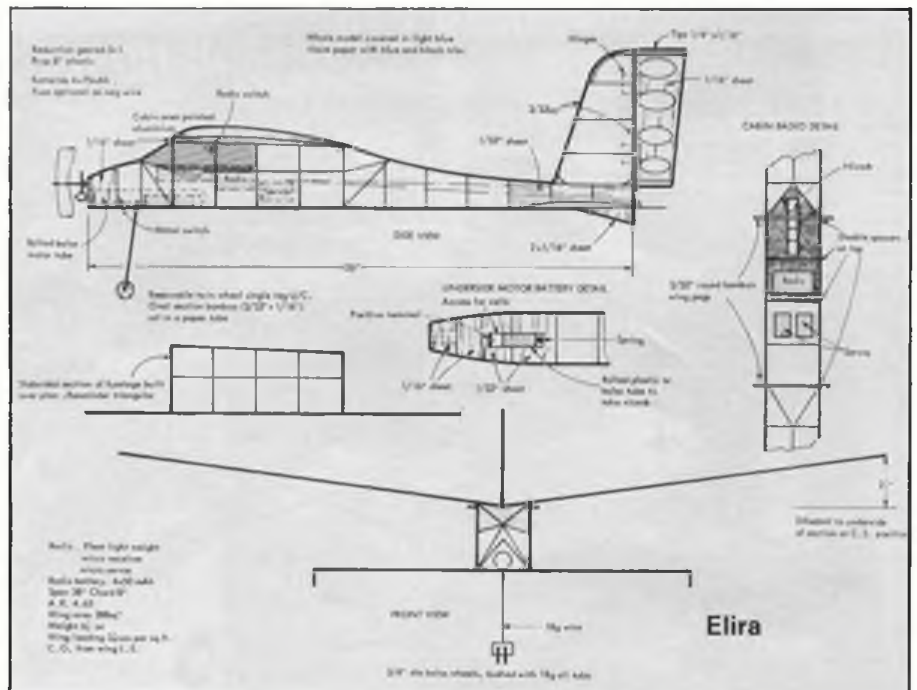
The new model was named while still on the drawing board: Electric Lightweight Indoor Radio Aircraft.

What next?

I had decided on a wingspan of 37ins. and a chord of 8ins. Wing area was 2sq ft, giving an aspect ratio of less than five which was ideal for my purpose. Therefore a very strong, light wing, with a highly undercambered section and a thickness to chord ratio of 16, or 6.1/4%, would be possible. The undercamber would help the strength if two 3/32in spars were let into the section top and bottom with webs between the sections where the greatest stresses were present. Ribs could be drilled, enough weight being

What to build?

I considered a large polystyrene model on the same lines as Gnohm, my largest indoor F/F craft. Proposed span was 40in; chord 9in, and wing area 350sq ins. Four 75 mA AH cells would power the Mabuchi 260. A lightweight receiver and one servo would control the model by warping the wings, much as on very early full-size aircraft. Target weights were: receiver and servo 1.1/2ozs, batteries 7/8ozs, motor 1oz, airframe 1oz. Total weight 4.3/8ozs; giving a wing loading fractionally over 1.3/4oz per sq ft. After half-building it, I began to have second thoughts, especially about the possibility of the wing flexing when it wasn't meant to. Looking around in confusion my eyes lit on the wreck of my previous motor glider. Eureka! I would rebuild it much lighter, substitute the Mabuchi 380 for a geared 260, discard the five 500 mA AH nicads, and use instead 4x150 mA AH cells. Keeping to the same dimensions as before but with these modifications, the weight came out at 9ozs. This was still rather heavy, but the model was very controllable and it was hoped to try it out at the Biggin Hill Indoor meeting in October 1987, where the size of the hangar ought to allow it to fly OK.



Right: Lightweight Fleet R/C gear fits easily into Elira's cabin. Below right: A geared Mabuchi 130 (left) was originally fitted but the more powerful 260 unit is now on board.

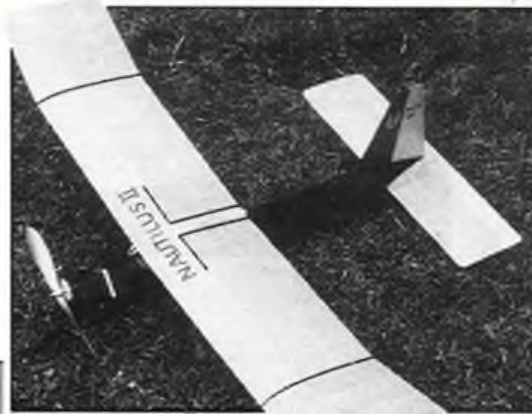
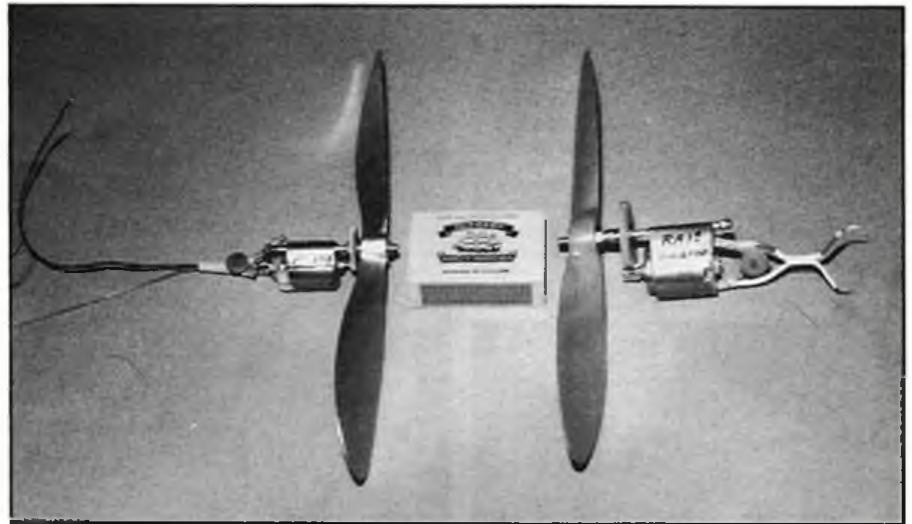
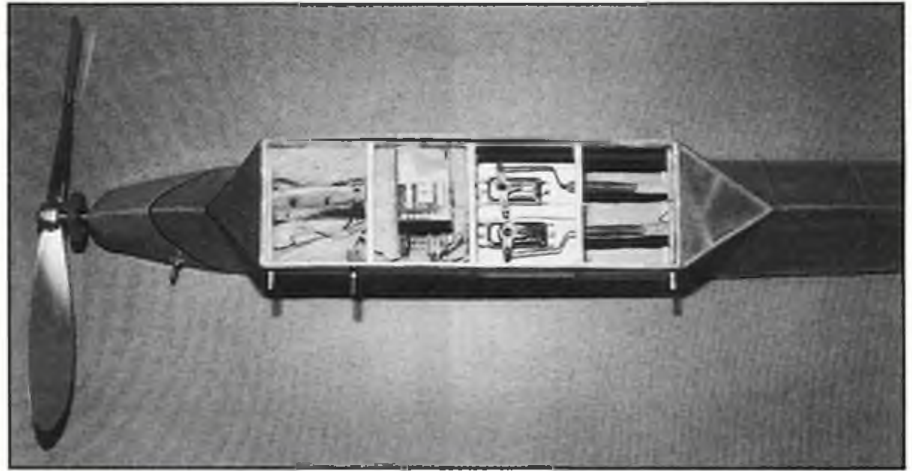
undercarriage leg, which was really just for landings. Anyway this gave a wing loading of 3.1/4ozs per sq ft, which, it was hoped, would not be too much when coupled with the highly undercambered wing section. As the motor run was only about a minute, no means of switching it on and off in flight was considered necessary.

The clan at Crawley

On January 31st the clan McAshby, consisting of my brother, two nephews and myself (modellers all) descended upon Crawley, where many types of craft were to be seen circling lazily (and not so lazily) under the ideal, girderless ceiling. After some enjoyable F/F practice with rubber, CO₂ and electric an approach was made to the organisers to see if we could be spared a few minutes to try out Elira, so far unflown. We were granted a slot at the end of a free flight period. Everything was fine. The time arrived! My brother was at the radio, my nephews were clicking away with cameras and I launched with, I must admit, some trepidation. One mistake and we would probably have a write-off on our hands...

The model flew gently around the hall, the motor slowing after about 50 seconds resulting in an uneventful landing, so everything had worked. The aircraft, probably a bit underpowered, had been flying near the stall, but fly it did. We left feeling satisfied, but there is always room for improvement and so modifications already under way include a more powerful motor-gear unit (this unit with four 150 mAH cells weighing 2.7/8ozs will fly a model of 10ozs all-up weight) and a change in cells from four 75 mAH units to three 150 mAH. A little heavier perhaps, but the speed at which the model flew suggests that it will be well able to cope; and so to the next indoor outing. Oops! Sorry about that.

Nautilus II flies well outdoors on a reasonable day, so I am hoping to try Elira too as soon as the weather permits. Perhaps then I ought to change the name to Elora!



At left: Nautilus II displays its large-area wing and tail. Below: Next in line is this 30in. F/F Avro 558. A Mabuchi 130, geared 3.4:1 and driven by three 50mAH cells will power the as yet untested 3.1/2oz biplane.



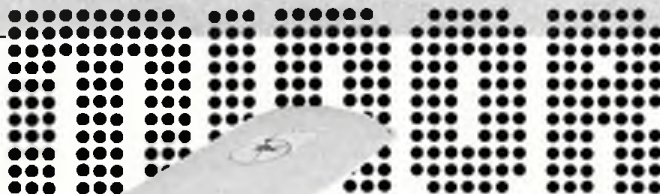
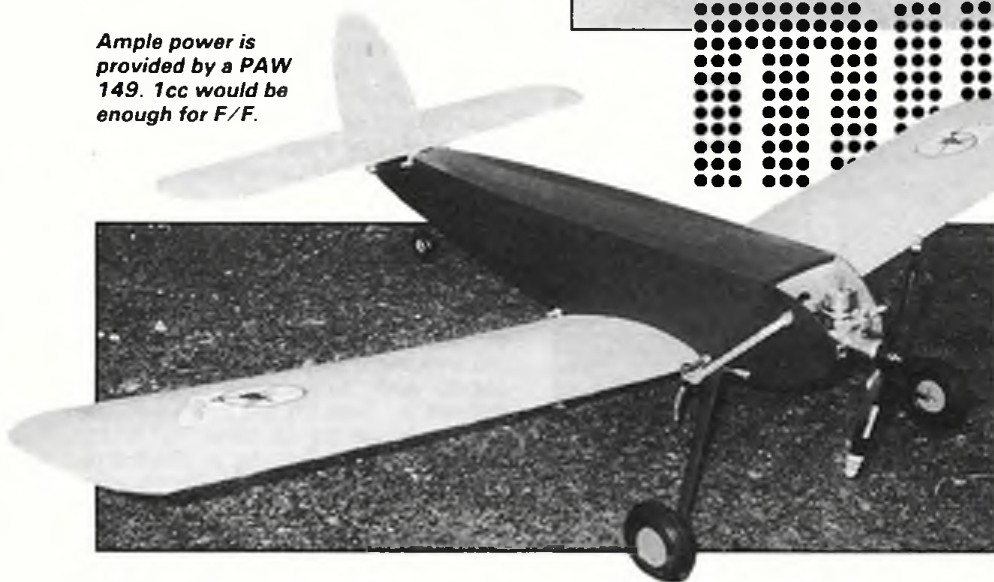
**Mike Whittard's 46in.
vintage-style sportster
is ideal for F/F or R/C**

BUILD
FROM OUR
**FULL SIZE
PLANS!**



Meadowlark

Ample power is provided by a PAW 149. 1cc would be enough for F/F.



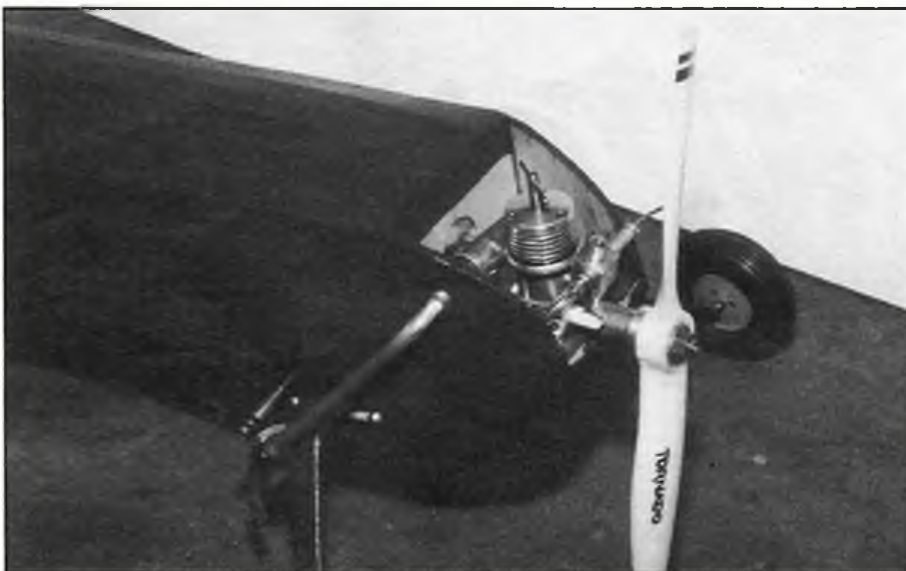
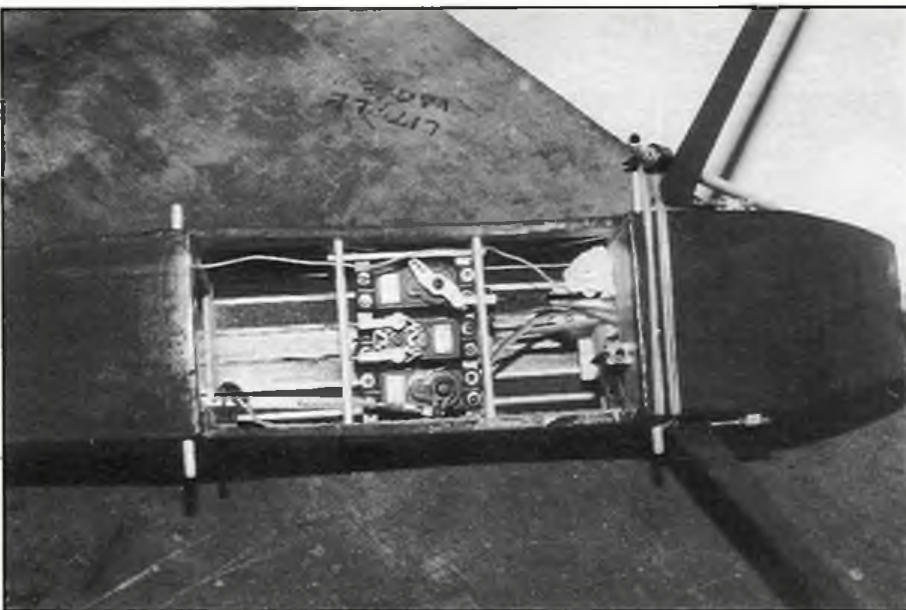
Repairs took a while because I had to replace the complete tail. Solartex bags of bits are not too good as stabilisers! Nonetheless, the model was flying a week later.

Selected your wood yet?

Meadowlark Minor is neither difficult nor time-consuming to build. Mine took me a couple of weeks of evenings. It is just the same as any normal built-up free flight sports model, or indeed any vintage model. After all, it was designed to be representative of the 1930 to 1950 period. As the fuselage is the most labour-intensive item, it's as well to get this done first. Start by cutting out the three 1/8in. ply formers and the two trapezoidal pieces that carry the undercarriage. These should be drilled as a pair - stick them together with double-sided tape to ensure that all holes match up. The formers can be fitted when the two flat sides are built over the plan 'in the usual manner'. Before removing the sides from the plan, lightly mark the positions of the side-stringers onto the uprights. The fuselage is erected upside-down over the plan (that's why the top longerons are straight in the side elevation) by means of the plywood formers. Note that all the spacers from F1 through to F3 are the same length (I'm basically a lazy b... b... builder!). Draw in the tail and make sure the sternpost is truly vertical. After adding all the cross-pieces the basic structure can be lifted from the board. Add the four side-stringers. Note that the top edges of the lower ones are flush with the top edges of the 1/8in. balsa wing seat pieces. The tail of each stringer curves into the rearmost bays so that the extreme

THE MEADOWLARK series is the result of an idea I proposed in the October 1986 Vintage Era column in RCM&E, Aeromodeller's companion volume. Briefly, the idea is an extension of the pre '51 Wakefield concept; that is, to design an R/C power model using the pre '51 technology, apart from engines and radio equipment. As one or three (!) modellers rose to the bait, I felt that I should at least have a go myself. The result was the first Meadowlark of 62in span and 3.1/2lbs weight. Controls were rudder/elevator/throttle, with power provided by an elderly Saito 30 four-stroke. The model proved stable, responsive and rugged, albeit very slow. In my haste to get it built, I managed to incorporate a little more incidence than originally intended. Reduction - in easy stages - to the designed angle (a process known as 'trimming', Brian) improved handling and also allowed the machine to be flown in winds above 5mph! I was toying with the idea of building a new thin, flat-bottomed 'high-speed' wing(!) when

GC spotted the aeroplane and suggested a smaller version would be acceptable for R/C, F/F - and *Aeromodeller*. Well, who can resist such a charming, delightful, suave, debonair, handsome young chap - especially when he mentions money! Out came pencil, paper and calculator, and Meadowlark Minor was born. This one does indeed have the 'high-speed' wing, and I must admit that it does seem just a bit quicker, but so far, the opportunity to fly 'hen and chick' has not arisen, so comparison is subjective. Both are delightful to fly - and that's not just my opinion, but also that of my clubmates. Both are rugged. The large one spiralled into the runway when a rudder cable came adrift on its first flight. Damage was confined to a broken prop, LE and spar at the wing-root. It was repaired in less than two hours. The Minor suffered a mid-air with a Chilton DW1A and lost its tail in the process. Sid King said 'You've got to land when de-tailed.' Hmm. Result was a broken fuselage where the servos shot through the top on impact.



Top: Fitting radio? Plenty of room for three servos. Centre: Engine installation is straightforward. Silencer extension takes exhaust clear of airframe. Above: Meadowlark Minor at right in company with 62in. Saito-powered original.

tips are flush with the basic structure. At this stage, mark out, drill and fit the tail dowel tubes. If you have a drill press, this is easily accomplished by turning the fuselage upside-down and drilling from the bottom (that flat top again!). Cut out and glue the outer wing-seat laminations. These are best left a little oversize and trimmed back when the glue is dry. If you add these one at a time, you can drill all the holes from the ply inserts. Drill from, say the left side through the outer right lamination; then add the left lamination, drilling from the right hand side. That way all the holes match up. For holes in balsa, I use a piece of tube with the end sharpened - this gives nice neat holes of

exactly the right size. Fit the engine bearers at this stage whilst there is still some room to get you fingers through the top! Drill the bearers for a Paxolin engine plate; I fixed it with blind nuts. The cowl can now be finished. Cut all the top deck formers to length, then cut the radius around a suitable template (I used a dinner plate). All the radii are the same (told you I was a lazy builder). Add the top deck; and we're almost home and dry. The wing-seat outer laminations are now planed or sanded to a triangular section. The front ends (together with the stringers) are blended into the cowl sides. The undercart is easy. At the tail wheel leg use the brass joiner tube as an axle, but don't solder it until

the model is complete. You can adjust the balance by using a heavy or light tailwheel as required.

The rest is just as easy

There's nothing fancy with the wing but note the F/F wing has greater dihedral. The capstrips lap over the TE and the underside of the LE. Top sheeting is more to preserve the aerofoil shape than anything else. The same goes for the tail. If you don't feel up to laminating the fin/rudder outline it could be made from small pieces of sheet, but the laminated outline is much stronger. Drill for the dowels very carefully. Use double-sided sticky tape (again) to hold the tail in place, then drill through the tubes in the fuselage. Use aluminium tubes through the tailplane and cyano in place. The aluminium can be flushed down to the surface easily with a sanding block. Temporarily install servos and rest of the gear, then cover the model. I chose Solartex for the wings with Polytex fuselage. The CG position should be no further aft than the mainspar. Control movements are 1/2in. up and down; one inch left and right. You may need a touch of sidethrust and/or downthrust depending on the engine in use. Weight is 2 1/4 lbs or a shade less.

Flying R/C? Get on the controls!

Take-off is surprisingly straight. I've suffered a swing only once - and that was my own fault. Once trimmed out - the model, not the transmitter - fly straight and level at cruising revs. With the trims in neutral, try a few Unusual Attitudes. A shallow dive gives enough speed for a nice easy loop. Rolls are easily achieved. Build up speed as before, but don't apply too much elevator otherwise the speed drops off a bit quick! Stall turns are a delight, and spins in either direction are without problems. Recovery, which takes no more than half a turn, is effected by centralising the controls. There is just one peculiarity. Try this. When trimmed straight and level, turn right. Neutralise the controls and the model will continue turning right quite stably. Turn left and neutralise - and it will continue the left turn! This oddity persists despite an increase in dihedral on the Minor. My 24in. CO₂ version has even more dihedral, yet still exhibits the same tendency. No problem of course; it's just a quirk of handling which makes the model respond rather like an aileron machine.

Free flight fun

If you want to try free-flight, I've shown a modified dihedral brace. The only other modification is to make the tail without hinged surfaces, although a directional trim tab would be a good idea.

I did say at the beginning that the Meadowlark had developed into a series. Plans are afoot for a 37in. free-flight version; I believe a larger than standard version (1.1/2 times!) is being built elsewhere; and I am toying with the prospect of a control-line version. There are structural differences and one or two small aerodynamic differences between each version, but each one has given me much satisfaction. In particular, the CO₂ version flown round-the-pole is great fun.

So there it is. A fun model that looks 'vintage' but flies like a well behaved modern R/C sports model or stable free-flyer. Wonder what a biplane version would be like?

BALSA CUTTINGS

Cyano de Bergerac cultivates sense, considers
the pleasure factor and contemplates the point of lunacy

Pig in the middle

There are four kinds of aeromodeller and to find out which is which, you ask them about wheel collets, those round brass holey things with grub screws and very loseable little Allen keys. The Optimists say they are for keeping airwheels on. The Pessimists tell you they are to prevent them from coming off. ('I say, I say, I say, why does the Kaiser wear blue braces?' 'To keep his trousers up.' 'No - to stop them falling down.' 'I don't wish to know that; kindly leave the stage.') But it is the Realists who have the right answer - wheel collets are for chaps who can't solder. That leaves just one more category, that of State Registered Fat Head. You don't have to ask questions to pick them out - they are the idiots who stand chatting well into the central part of the hall at Indoor meets. Now if you are launching, trimming, steering, catching, retrieving, etc., it is fair enough for you to be there, temporarily, but why do a few who are not flying, taking photographs or helping to put down a riot place themselves in stupid singles or moronic pairs about one-third of the way out from the wall? Observations at two successive indoor meetings (Crawley and Watford, if you want to know) revealed that in no case were the bods concerned (a) remotely ornamental (b) worth listening to, or (c) aware of their surroundings. It is painful to labour the obvious, gentlemen, but it must be said - that space you were occupying was *flying* space, where your room is better value than your company. Whilst you stood there talking, pretending not to notice when models proceeding on their lawful occasions flew into

you and then fell to the floor, what do you suppose others were thinking about you? Well, according to one of B. Cttngs' on-the-spot surveys, they thought that if an extra large model came along and took your silly heads off, you wouldn't notice the loss until you wanted somewhere to put your hats. O ye who stand in the fairway, we beg you not to make yourselves conspicuous. Pray do not expose yourselves to ridicule and the stares of the vulgar. Just cultivate a bit of sense, and get out of the way!

Pure rubbish

In those branches of aeromodelling which are still developing, innovation marks you out as a trier, a bright spark, a go-er. (Or a nutter). But in Vintage, the whole laudable idea of which is to stay put, departure from what was established before about 1950 will get you into hot water. And serve you right. If you really must build a Dorland or a Rocketeer out of expanded polystyrene, have some regard for other people's feelings and do it furtively. There is even some uneasiness over chaps now producing their own vintage-style designs. Quite understandable - us doan't want no wurzels 'mongst ower taters. However, whilst one does not wish to appear insensitive, it is not so easy to understand the pain caused to the purists by the mere scaling-up or-down of old favourites. In this, they refuse to be placated by reminders that 'twas ever thus, accompanied though they be by examples of truly classic jobs which came in small/med/large off their own designers' boards. Even though St. Paul, that tireless commentator on the shortcomings of

others, advised us that unto the pure, all things are pure, The Pure (or at least, The Very Pure) won't have it at all when it comes to scaling. They even forget that There was a Young Man of Devides. (Who had Slickers of two different sizes. The one that was small, Was no use at all, But the other won dozens of prizes.) Well, generally speaking, it is not good business to mess with the purists. They usually have Right, if not always Reason on their side, and a single blast of enthusiasm of their ka-lyber can carry away the rigging of lesser vessels such as we.

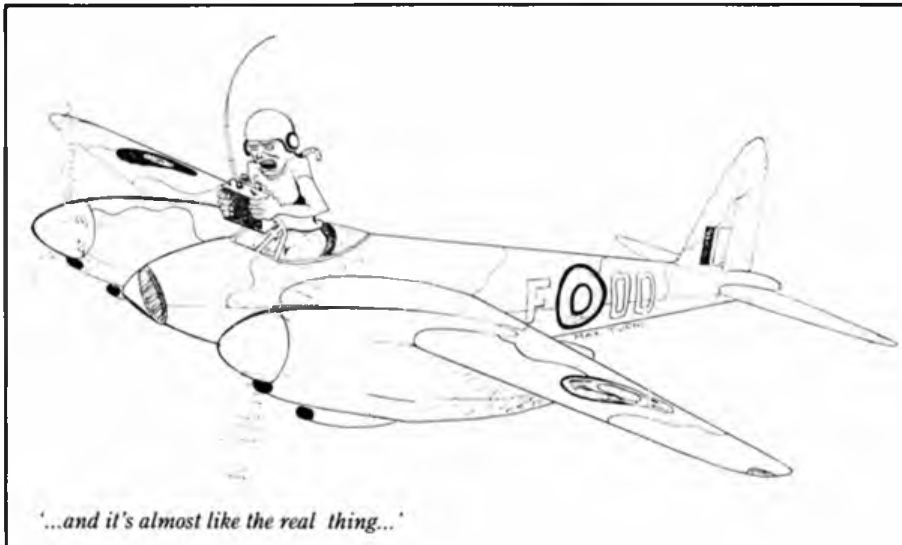
But is it all so very terrible? Suppose you, like a lot of others, fall a bit in love with the Simplex. Right - when you've made one, then unless you somewhat mindlessly build a couple more, that, to coin a phrase, is that. But if you go on to do a little one for CO₂, followed by a big one for majestic sailing, have you not multiplied the pleasure factor by at least 3? More probably by the *power* of 3! A couple of old cronies strolling round a display passed about five Achilles without noticing them. Then they came upon one eight feet across. Neither exclaimed 'Stap me vitals, how very irregular!' Instead it was 'Well, *that* takes you back! D'you remember those flying evenings in Palace Park; and old Elsie Bracegirdle? Really must build another Achilles one day.' Q., as they say, E.D.

Pot bites kettle

Not long ago there was a decided poke taken at modellers who go in for the larger variety of jobs, partly on the grounds of safety. Okay, no quarrel with that. The sooner safe flying of models of all sizes in this country is recognised as something which requires a lot more effective attention than it gets at present, the better for all of us, and with the same breath it is only realistic to observe that Big is Breakable. At both the giving and receiving ends. However, in his approach to the subject the poker suggested that devotees of the large model are a bunch of loonies wanting to fly real aeroplanes yet who are scared to leave the ground. Gorsh! Somewhere between 1/72nd scale solids and 1/3rd scale monsters there must be a cut-off point where you stop being all right and start being loony. Anyone know where it is?

Don't hesitate

In passing, those of you who are taken with the ideals of the Large Model Association and would like a free plan for building a full-size Spitfire Mk.XIV should write to this column enclosing a stamped addressed envelope 36ft. 10ins. x 32ft. 8ins.



VINTAGE CORNER

Alex Imrie sparks your interest with notes on petrol motors and a look at Tailless success

WHAT A LOT of disappointments, unnecessary hard work attempting to get a start, and bad running afterwards, are caused by so-called economy on coils, bad design of contact breakers and poor joints in ignition wiring. In fact, a perfectly good engine and an excellent aeroplane may be, and often is, completely ruined by poor ignition.' So wrote C E Bowden in one of his early 'Petrol Model Aeroplane Topics' (*Aero Modeller*, March 1936). Today, over fifty years afterwards, we are still plagued with the same problems for enthusiasts apparently still find difficulty in running spark ignition engines. Although we don't have much choice over coils these days (having to make do with what we can get our hands on) and though we must accept, of course, the type of contact breaker fitted to the engine regardless of its design features, we can do something about other factors that influence the running and ease of operation of these ancient motors, whose very names are liable to bring on acute attacks of nostalgia to the 'mature' modeller. Without Brown Juniors, Baby Cyclones and Ohlssons of various sizes we probably would not have had that active spark ignition era from 1934 onwards which many of us now endeavour to recapture.

The following points reflect the writer's experience with spark ignition engines of various types. Hopefully they will ease the lot of would-be 'petroleers', ultimately helping to increase the numbers of vintage models powered by petrol engines. It is particularly satisfying to fly a vintage model which is fitted with an engine that could have powered it in its heyday. Vintage engines are available; modellers who are determined to acquire such old engines can find them by keeping an ear to the ground, advertising and mixing generally with enthusiasts of similar persuasions. It pays to have some idea of the type and size of petrol engine desired. A study of advertisements in magazines of bygone days is time well spent to get to know the oldies. When about to purchase such a delicacy it might help to ask along a friend who may be able to advise on the completeness and condition of the available hardware and comment on the price being asked. Such a figure need not be as astronomical as is often hinted at; complete, ready-to-run ignition engines can be obtained for much less than those exotic new four-strokes that seem to find their way into so many vintage models these days.

Bought one? Run it!

Having obtained an engine which one assumes is complete and mechanically



The writer and son running up the 8.5cc GHQ fitted to their King Burd on an almost deserted Old Warden at Vintage Day ten years ago! The model is still in flying trim, having logged over 200 flights since then. Alasdair Imrie is now over six feet tall...

satisfactory, a coil, condenser and propeller are needed to run it. This should be on the bench in order that starting and running settings and procedures can be perfected before building the engine and its accessories into an airframe.

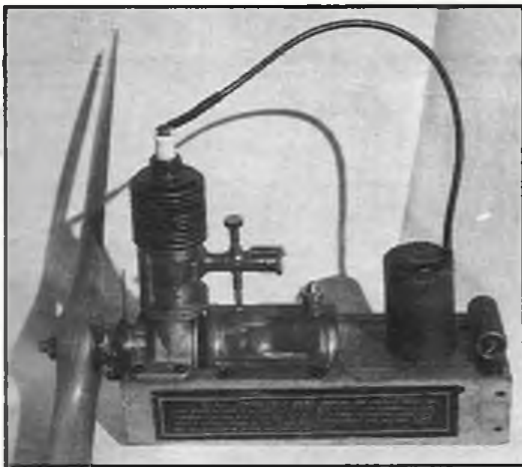
Mount the engine firmly on a block of wood with nuts and bolts (wood screws eventually work loose). Fit a tag at one of the mounting holes for earthing. Make sure this is tight and firm, or the intermittent earth that will result can lead you a merry dance. Wire up coil and condenser as per the wiring diagram given here and use two 2 volt batteries in series. Cells must have a good amperage. The 2 volt batteries for glow-plug operation are ideal. Don't mess about with dry batteries or doubtful connections; use multi-strand flexible wire and ensure that all connections are soldered.

Contact breaker points should be clean. The cam must lift the moving point cleanly to give the desired gap of 0.015in; about the thickness of a visiting card (*Got lots of those, have you? GC*). When this happens an energetic spark will occur at the plug points. Plugs must be clean, so scrub the points with carbon tetrachloride or invert the plug, fill it up with carbon-tet. and leave for 30 minutes before using the toothbrush. Check the points gap. Champion gaps were 0.012 but some makes may be slightly different. Make sure

that the spark plug gasket is flat and smooth, and tighten the plug with a proper plug spanner. There must be no leak here. Your old engine probably has little enough compression as it is so you can't afford to lose any more.

Fuel should be ordinary two-star petrol mixed 3 parts to 1 part of heavy gear oil (SAE 70 or 80). This old basic '3 to 1' mixture is still the best for general use, although on large capacity slow-revving engines this amount of oil will probably be too much resulting in it accumulating in the crankcase. Oiling-up of plugs and generally messy running may also occur, so experiment will show whether or not a thinner mixture of up to 8 to 1 should be used. Old, worn engines sometimes need extra oil to secure good compression when running so there is no hard and fast rule.

Needle valves must work properly! Blow through a piece of fuel tubing and make sure that the needle valve cuts off the air completely and that it allows air to pass when opened up. If several turns are needed to open the valve, the valve body or needle will get a bit wobbly, so the locking device must be capable of holding the setting. Finally, make sure that there are no holes in the fuel tubing. Engines with poor suction may run only if you raise the tank and run on gravity feed; if you do this make sure that you turn off the fuel afterwards or the mixture will be



The Brown Junior Model B was the first mass-produced petrol engine for model aircraft. 15,200 examples were produced between 1934 and 1941. 9.82cc motor developed 1/5 horsepower.



The final's mid-1939 version of the Ohlsson Gold Seal. Bolted-on transfer, exhaust and inlet manifolds on this 9.25cc motor could be a source of leakage and the system was discontinued on later engines.



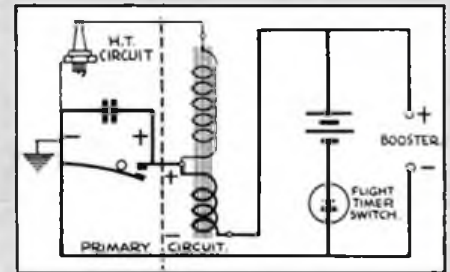
Dr. Forster's book is still an invaluable reference on two-stroke petrol engine operation, all couched in simple language for the benefit of an earlier generation of 'petroleers'.



The 6cc Baby Cyclone rotary valve engine, produced from 1935 to challenge the near-monopoly of the Brown Junior. This is the 1937 E model.



A 1948 Ohlsson and Rice 60 Special sits on a neat mounting in the late John Haggart's Corsaire, a van Wymersch design from the 1938 Zaic Yearbook.



The standard electrical circuit from Dr. Forster's book. His treatise on locating engine troubles is a masterful diagnosis.

forever rich! Remember that for combustion a fuel to air ratio of around 1 : 16 is needed; if you fill the crankcase with liquid fuel no amount of cranking will get a start. Crankcase covers and cylinder bases need a gasket. These are easily made from thin jointing material or thick brown paper. Screws at these junctions must give gas-tight seals.

Fit the propeller so that at the 'ten o'clock' position the piston is over Top Dead Centre. It will then never hit your finger and you will get a good hearty swing at it which makes for easier starting. Vibration upsets all sorts of installations so check the propeller. Not only should the blades be balanced, but the tips must track truly. Align each tip against a fixed object, with the spark plug removed for ease of turning the engine.

Ready for running! With fuel in the tank and all connections made (but with the battery disconnected) open the needle valve and choke with your finger over the intake by flicking the propeller until fuel on your finger shows that the engine has drawn fuel into the crankcase. Make the battery connection and with the ignition slightly retarded flick the propeller smartly. If all is well, a start should result after a few flicks. If the engine races and dies, open the needle valve and repeat the procedure; if it starts sluggishly and eventually stops, close the needle valve a little

and try again. When running, the spark can be advanced and the needle valve closed until even two-stroking results. Any change in the ignition setting will mean that a change of needle valve setting will be required to obtain continuous running. Don't advance the ignition too far, and accept a power setting that is somewhat less than 'full bore'.

All this is merely an outline of what is needed to get the engine running. Only experience with the settings will give you reliable starting and running. I would particularly recommend that modellers read and study the 1943 Harborough book *Petrol Engines for Model Aircraft* by Dr J F P Forster, secondhand copies of which are still to be found amongst the literature sold at our vintage meetings. No better guide on the handling of the vintage types of model aeroplane petrol engines for aeromodellers has yet appeared.

Tailless at Hayes

Josh Marshall has been a member of the Hayes and District MAC since 1934. He started modelling in 1931 after being initiated into the hobby via a card model presented with *The Modern Boy* (as recounted last month). He is not only President of the club but still an active modeller, having engaged in every aspect of the hobby over the last

fifty-seven years, concentrating often on tailless designs, one of his favourite model configurations. His tailless interest stemmed from another Hayes club member, Freddy Finch, who made a successful rubber powered tailless model in 1937 that was an excellent performer, capable of regular flights of around 90 seconds. This design became popular with club members and a number were built. Plans no longer exist and unfortunately details of the model have not been recorded, but it was not a duration design, being rather of the sports variety. Freddy Finch made an unsuccessful attempt to establish a tailless record with this model at the 1938 Northern Heights Gala. Either the model did not like the weather or the rubber was not up to the task; in the event Howard Boys did the necessary that year at a Northampton MAC Club meeting with a model which was described in *Aero Modeller*, November 1938. It featured a large, 15in. diameter slow-revving propeller with a long motor run in the Allman fashion; its flight of over two minutes put the record beyond the reach of the Hayes modellers and their interest in this type of model rather declined until after the war.

It was mainly the 1945 Handley Page Tailless Contest (and its prize money) that caused them to tackle the problem again. The model that Josh produced earned top marks for

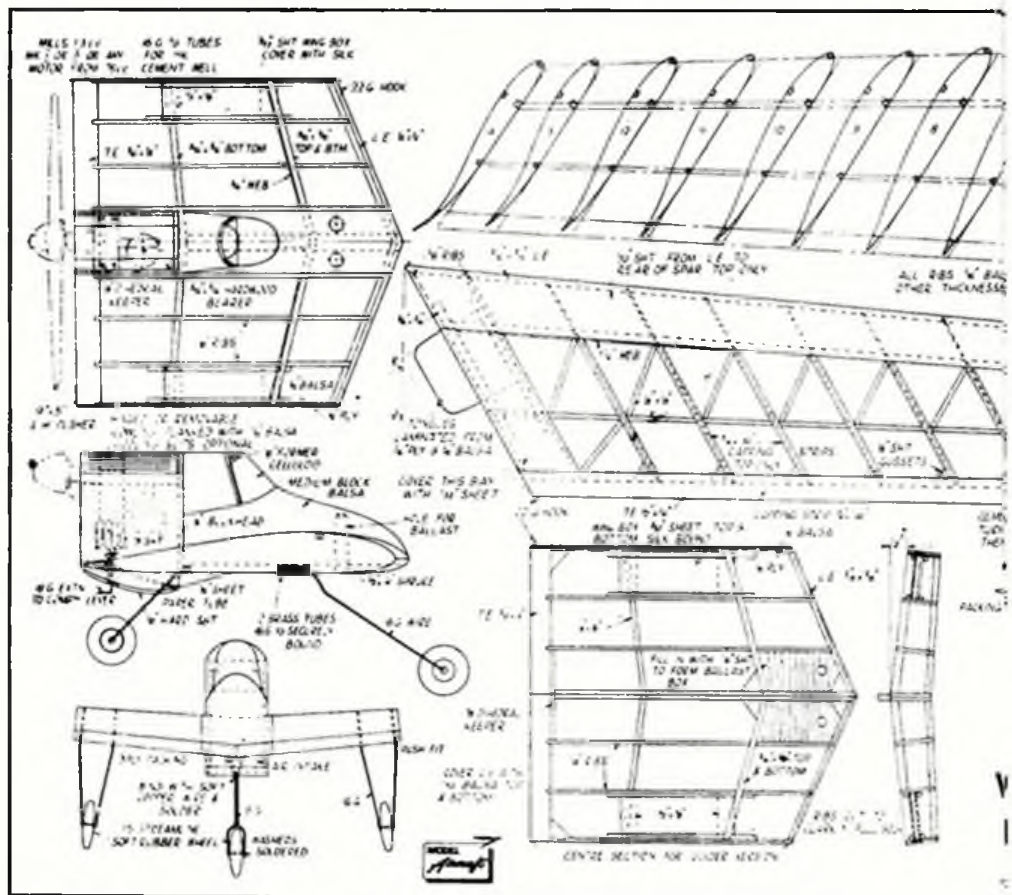
design but was a poor flyer, so did not place in the competition. Nevertheless, it encouraged fellow Hayes club member Alec Wilson, long an enthusiast of tailless designs, to make a nine-foot version powered by an Ohlsson Gold Seal petrol engine. Josh did not expect this model to be very successful, since against all the generally accepted rules of tailless construction (which tended to favour reflex aerofoils) Wilson had employed one of the so-called laminar flow sections; namely, LDC-2. Josh considered that the only way to resolve the situation without making a new wing was to fit oversized elevons and change the undercarriage design to place the wheels close to the centre of gravity. These modifications were incorporated; the model was quite successful and managed a lot of flying before being written-off in September 1946 at Eaton Bray.

The experience gained led to the famous Manx Queen which Alec Wilson flew in the 1947 Bowden Trophy where, although it did not place, it gave a beautiful performance that captured most of the limelight with its vertical climb and stable flight. Tailless models do not need as much power as fuselage models of the same wingspan because of their lower weight and less drag; further reduction of drag was important and Alec Wilson's next model, known as Manx Queen II, used a carefully streamlined nacelle for this reason. The undercarriage was shortened with the nosewheel half-buried in the front of the nacelle. As this meant that there was less propeller ground clearance than normal a smaller diameter four-bladed propeller was used to absorb the power of the Forster 29 petrol engine. Manx Queen II was flown in the 1948 Bowden Trophy and performed well, although once again the model was unplaced. Its spiral stability was noticeably less effective than the previous year's model, no doubt because of the fact that the streamlined nacelle had removed the flat keel surfaces that promote such a desirable property.

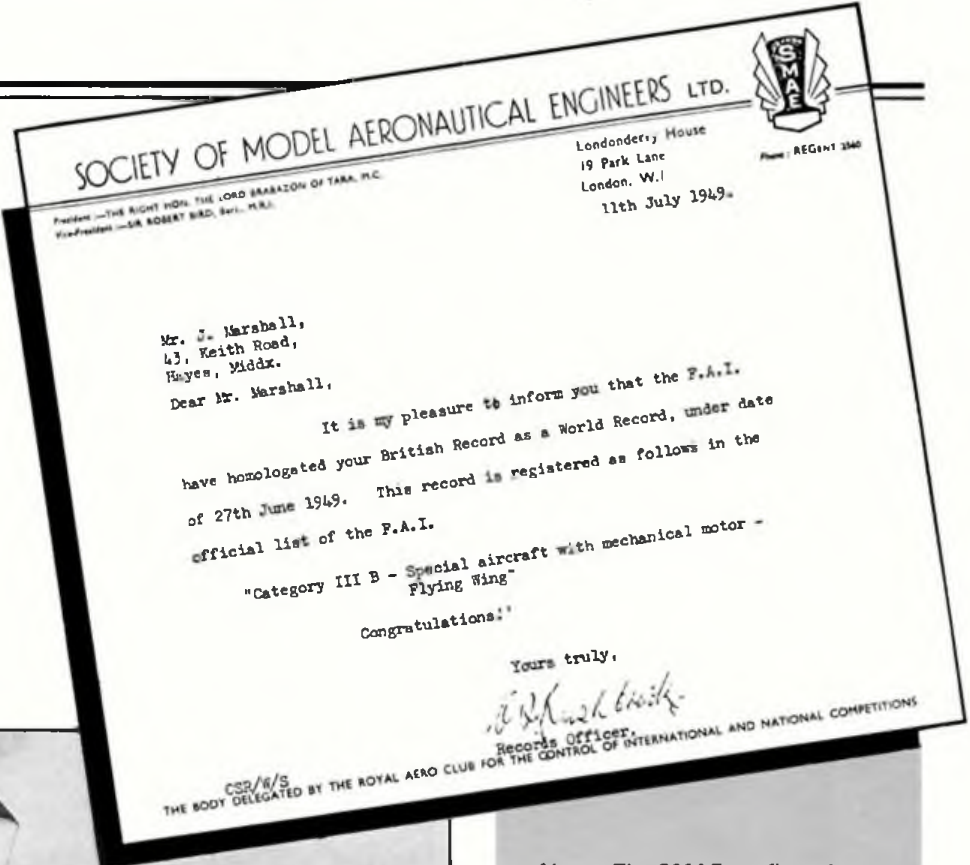
This activity encouraged Josh to try again. His first powered tailless model was also a pusher, but fitted with a .5cc Ace diesel. This engine was extremely powerful, and when later a Mills .75cc diesel was installed the model did not perform nearly as well as with the lower capacity Ace. Flown at the 1948 Northern Heights Gala at Langley the model flew away and Josh spent the major part of the day looking for it. When he did find it late in the evening he was able to record a flight of 1 minute 30 seconds, so creating a British Power Driven Tailless Record. He then produced a 40in. model powered by the Mills 1.3cc diesel, but this was difficult to trim since the engine seemed to be too powerful for it. (High power/weight ratios on tailless models cause aerodynamic instability because of high air speeds, and both torque and gyroscopic effects make high performance trimming a touchy operation; yet reduced power usually tames the situation to result in perfect behaviour.) Later this model placed 3rd in the SMAE Tailless Contest in 1948, and in September of the same year at the Isle of Man Rally the model took first place in both the Phillips and President's Cup competitions. The following year it not only broke the British Power Driven Tailless Record but also qualified for, and subsequently held, the World's Power Driven



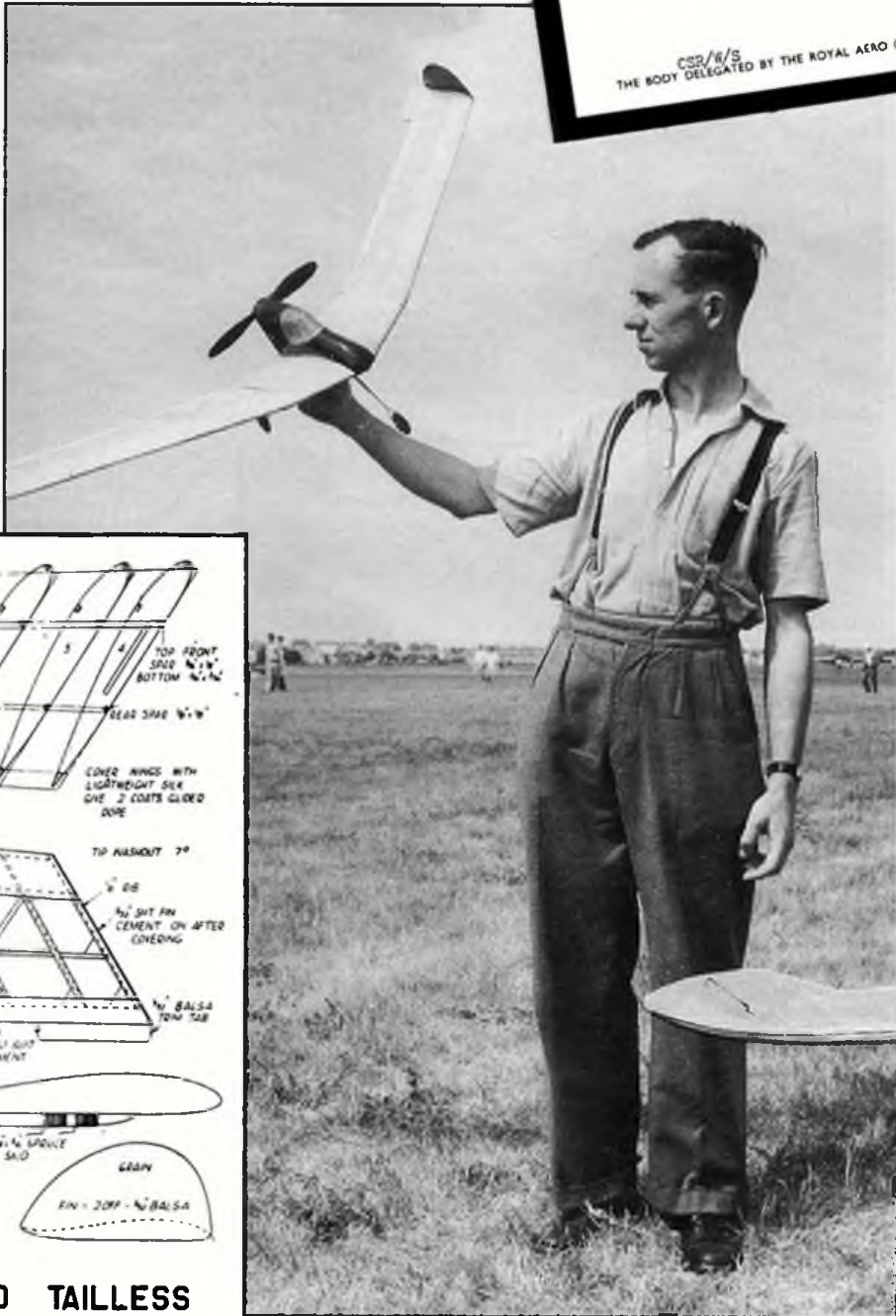
Above: Alec Wilson of Hayes starting the Forster 29 in his Manx Queen for the first flight in the 1947 Bowden Trophy. Placed 5th. Model also won the SMAE Tailless Contest and the Eaton Bray Pterodactyl Cup the same year. Plans are available as MA 39, price £6.35 including postage. **Below:** the plan of Josh Marshall's Record Breaker, described in the October 1949 issue of Model Aircraft and still available as MA 64 for £4.85.



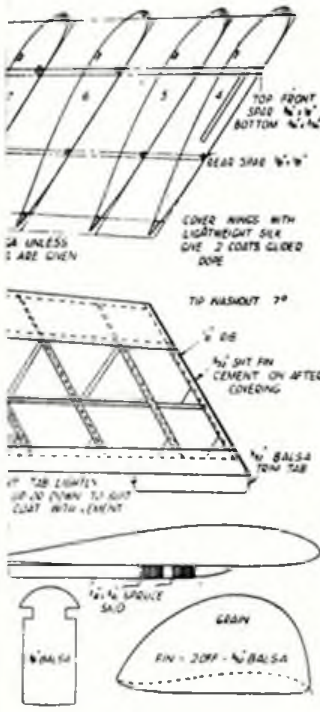
Tailless Record. This flight took place on Hounslow Heath on 13th February when a flight of 1 minute 50 seconds resulted from a 30-second engine run. C S Rushbrooke, then the SMAE Records Officer, knew that new FAI records were about to be formulated and got Josh to apply for the World's Record. Josh did not think that he stood much chance since FAI records used unlimited engine runs, but application was made and the record was eventually granted in Category IIIB. Josh's design was published in the October 1949 Model Aircraft where it was presented with both a power (Mills 1.3cc diesel) centre-section with tricycle undercarriage and a glider centre-section fitted with two tow hooks on a central spruce skid and no undercarriage. The original model, flown with the wings on the glider centre-section, placed 3rd in the 1950 Lady Shelley Cup - and was lost.



Above: The SMAE confirmation, signed by C S Rushbrooke, showing that the FAI 'homologated' - a word to conjure with! - the record flight on 27th June 1949.



Left: World Record Holder. When this photo was taken at the Northern Heights Gala on Langley airfield on 26th June 1949 Josh Marshall little knew that the following day he would hold the FAI Category IIIB title...

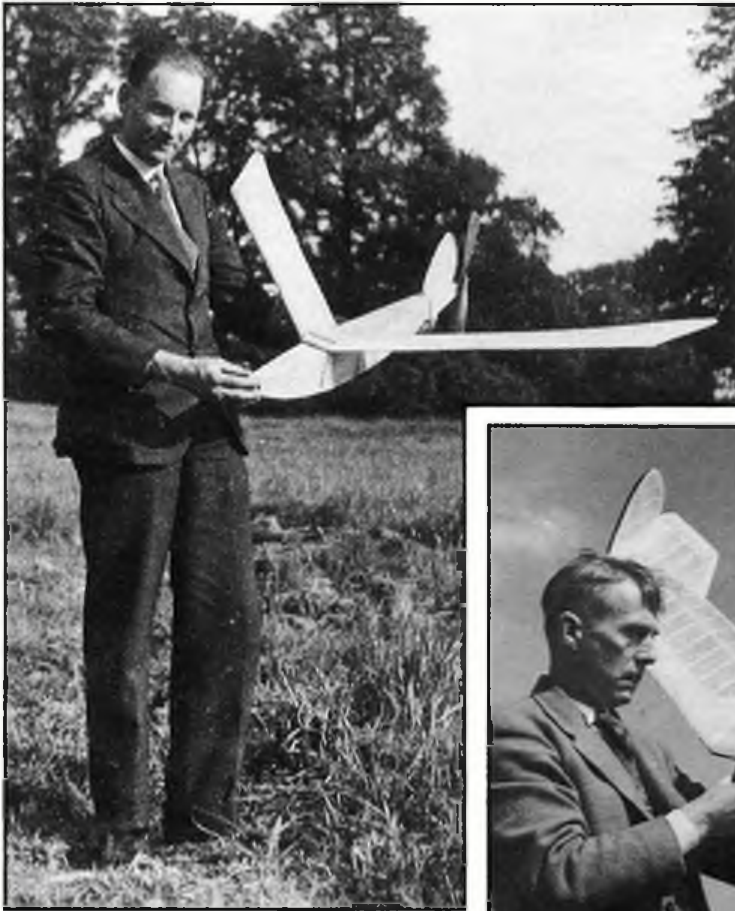


WORLD TAILLESS RECORD HOLDER

BY - J MARSHALL



Above: John Wilkins of Chesham with his fine wing at Old Warden two years ago. This eight-foot beauty, designed by Bernie Gross, was described in the January 1948 Air Trails.



Above: Howard Boys with his record-breaking model in 1938. The SMAE accepted his suggestion that the Pterodactyl class should henceforth be known as Tailless. This model still exists in the Alwyn Greenhalgh collection.



Top right: Josh Marshall at Eaton Bray in 1947 with his 6ft entry from the Handley Page Tailless Contest.

Above: The low-drag Manx Queen II at Langley for the 1948 Northern Heights Gala. This model ended its career by flying OOS near Brighton. The Forster 29 drove a small-diameter four-bladed prop. Note Alec Wilson's SMAE registration, AW 4.



Right: Joe Marshall with the glider version of his tailless at Fairlop in August 1948. And don't forget the Pterodactyl cup is to be fought for at our Golden Era Day on 10th July! All unorthodox models welcome...

Josh Marshall's tailless activities did not stop at the end of our vintage period. His designs kept placing in the Lady Shelley Cup during the 1950s. He was 2nd in 1955 and won the Cup in 1956, 1957 and 1960 with different models, one of which was a return gear rubber-powered model.

Alec Wilson's models were beautiful flyers which always caused a lot of interest whenever they were flown. He considered that his 9ft. 6in. radio-controlled Manx Monarch which appeared in 1950 (described in *Aeromodeller* in August that year) to be quite the best flying machine that he ever built. This model was still using the now quite worn Ohlsson Gold Seal petrol engine, which had nevertheless ample power to fly the Monarch's seven pounds. A reversion to a flat-sided nacelle had been made and the stability was such that the model showed absolutely no tendency to spiral-in in either direction under power. In recent years we have been pleased to see replicas of Alec Wilson's designs at our vintage meetings, and they never cease to attract considerable interest from both modellers and spectators alike. There is room for plenty more tailless models so why not try a spot of research?

FREE FLIGHT SCENE

Dave Hipperson kicks off with a look a Chinese rubber for the competition flier

FOR RUBBER fliers one of the high spots of the SMAE Easter Meeting was Mike Woodhouse's very low-key announcement of a new source of contest rubber - this time from China. Mike's patience in opening up this new 'Trade Route' must be admired. It involved nearly two years of negotiation, not helped by the considerable language barrier. Mike is also to be congratulated on managing to keep the whole operation dark so as not to raise our hopes unrealistically. It would appear that his efforts have been worthwhile. The rubber strip is packaged very much like FAI. That is, it is loaded into a cardboard box out of which it comes freely. Sizes available will be 4x1mm, 2x1mm and 1x1mm. It has a smooth surface finish, once again more like FAI than Pirelli, and it smells not unlike the old Dunlop but stronger. A box left open indoors will quickly have the whole

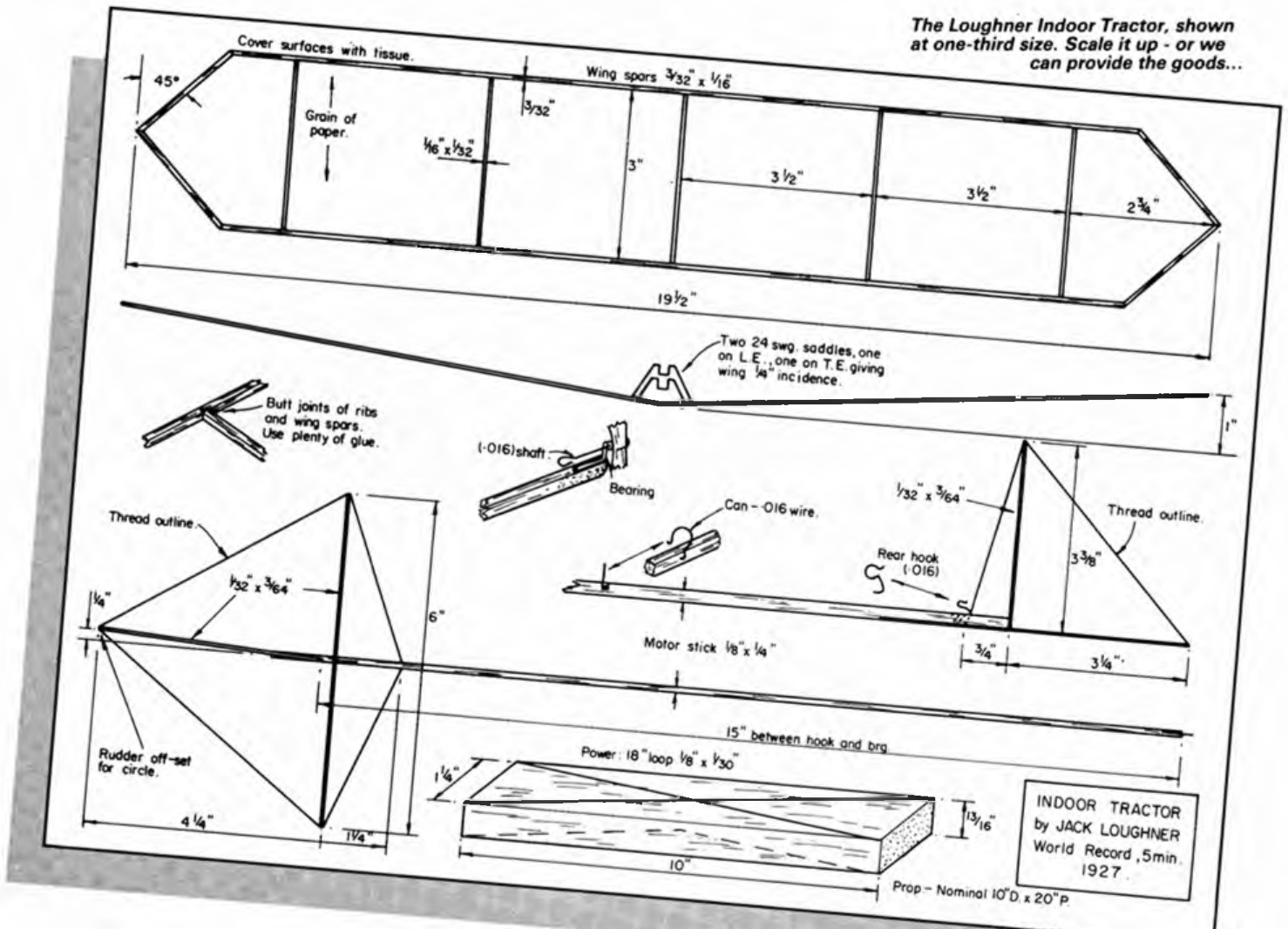
room smelling like an automobile tyre shop! Once lubed the rubber becomes translucent although still very dark. Probably a minimum of carbon filler is used. Very promising. My test box of 2x1mm bought at random from Mike suggests that this is a very high quality product indeed. It hasn't just 'happened'. Performance on a test rig in ten-gram samples was excellent. It possesses the torque output 'shape' of our beloved Pirelli and is better than any of my old Pirelli apart from (perhaps) the very special Dowsett/Miller batch. Peak torque was around 75% of what would be expected from the best FAI rubber; there was nearly double the power level during the cruise! Test pieces exhibited an unusual characteristic when the run-down was stopped to take a reading. The torque figure would *climb* quite a bit! This could be something to do with the small cross section of the strands - but it's certainly no bad sign. Overall energy storage levels were between 25 and 30% better than FAI. Others, also testing similarly, have reported even better figures for their batches. There is little doubt as to the quality of the product. What there has been insufficient time to determine is whether it has limitations in use on the field. Consensus of opinion is that energy storage is of uniform quality but there are patches that break easier than others. It is not clear whether this is just a product of the small cross-sections or if there are faults in the curing. Few have reported complete motor failures

at low turns; some have, but mostly in cases when the rubber had not been broken in. It would appear that running-in may well be very beneficial. The small cross sections are not as frightening as might be first imagined. Millimetres, when quoted, mean very generous millimetres. Those using 2x1 and (even more so) 1x1mm should be warned before removing any of it from the box. In the box it isn't tangled. Once you get it out it probably will be. I am discovering ways to minimise the fiddle. I should be in a position to offer some advice next month after making up some 130 gram Open Rubber flyoff motors from 1mm square. That means 500 ft of strip!

Vintage Indoor Event

If you have always wanted to attend Cardington as a competitor, or perhaps you have never been there before and wonder what it's like, now's your chance - particularly if you are interested in Vintage flying. Reg Parham is, to give him one of his official SMAE titles, Historian for the Indoor Technical Committee. In this capacity he has been instrumental in initiating the first ever Vintage Indoor Duration event. At Cardington on 2nd October he is putting on a contest for the Loughner Indoor Tractor, a model originally designed and built in 1927 by Jack Loughner, and a record holder in its time with a flight of five minutes. It weighs in at a colossal 3.2grams. Note the flat wing

The Loughner Indoor Tractor, shown at one-third size. Scale it up - or we can provide the goods...



and carved propeller.

One look at the plan will show that such a duration may well be quite an achievement but because of the model's generous wood sizes and weights there should be little difficulty for those even with no previous Indoor model experience. Presumably, as with any other Vintage event, models will be expected to have been built using the dimensions of material shown on the plan.

Bernard Aslett has sent me some information that might help those not experienced with such models - just the people that will be most welcome at Cardington in October. The tissue covering quoted is Jap but to avoid warp trouble with temperature and humidity changes this should be ~~doped~~ first. Hold the tissue on a frame, lightly dope and allow it to dry before attaching to the flying surfaces. The 'can' shown on the plan is simply a device to minimise the motor's 'skipping rope' effect and hence reduce boom deflection. Vintage enthusiasts who fly single-bladed models will be conversant with the effects of the skipping rope antics of a long rubber motor. In the case of Kordas and Challengers it punches holes in the covering and sets up the shakes. They too could do with such a system.

The original model flew a left-handed pattern but wash-in on the port wing would be essential with such a trim. There appears no reason why the model could not be trimmed to fly 'right'. About 2 grams of rubber is enough. A cross-section of 2mm x 1mm would be the best starting point. A single loop of around 20in should take over 2000 turns. Advisory rpm levels are 200 - 300 (average speed when the model is hand held). Theoretically this should give a potential of over five minutes - so there is the first challenge.

Bernard recommends some test hops on cruise power in your own lounge before you make the trip to Cardington. Check that you have sufficient cruise power just to maintain altitude. I would go further, especially for beginners, and recommend at least one high-ceiling flying session before you attend the contest. You will be surprised how much you learn on just one outing. If you have a model light enough you may be able to 'fine trim' by reducing the power and increasing the run length. I am sure all modellers will receive any advice they require from Reg Parham if they write to him, c/o Aeromodeller.

SMAE Easter Two Day Event: Salisbury Plain Area 10, 2-3rd April

This was one of the best attended SMAE Easter Meetings for years. A somewhat adventurous programme too with the first four rounds of FAI being flown on Saturday; the final three, along with the usual Open events, scheduled for the Sunday. For those who had made a good start in FAI but also wanted to try in Open the second day provided a quandary. Most with a high overnight position elected to carry on with that class. A very wise move but not without temptation, bearing in mind the enormous time between each FAI flight.

It was a warm but firm 20 mph southerly that dominated the first day. Blowing rather



Above: Jim Baguley's large and 'floaty' Coupe seen at the SMAE Spring Meeting. Jim was busy, making full set of flights not only in this class but in A/1 and Vintage too!



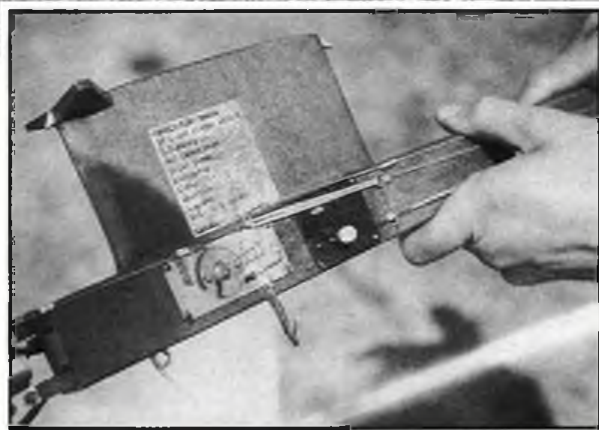
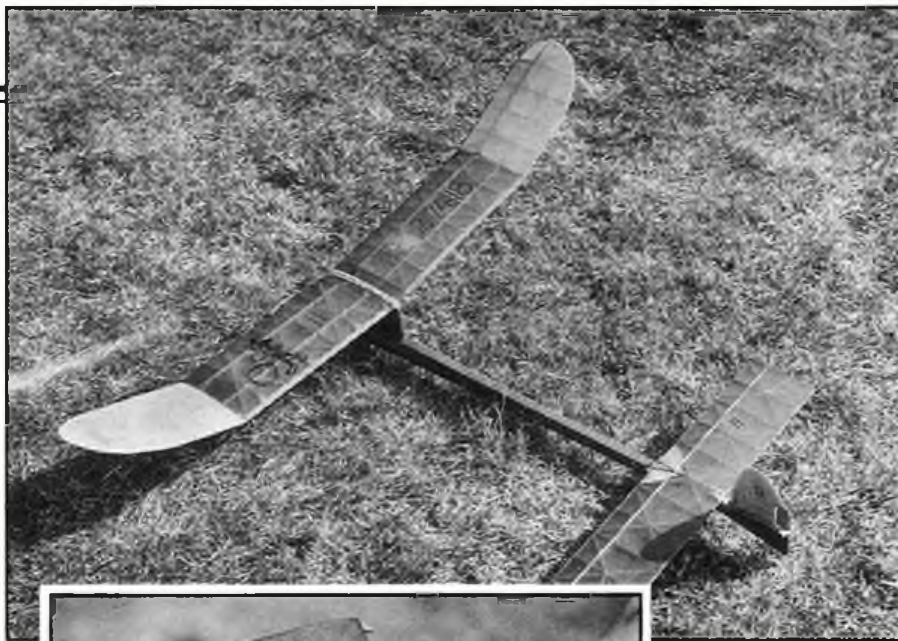
Right: George Sharp's highly competitive Open Flyoff model was trimmed out in a few flights at Easter. Wing area is around 400 sq. ins.

Below: Ho-Chi Monks? Ray looks up from preparing his new F1C. Does the headband celebrates the new Chinese rubber referred to in text?



Right: Pete Watson's hot 1/2A - note carbon/glass fuselage.





Russell Peers's new 1/2 A, the first we've seen with a Tomy-timer - actuated dethermaliser. No problems reported.

London Area Mini Gala		Easter Monday
A/1		
1 J Carter		(11 flew)
2 K Smith		8.42
3 D Allman		7.15
		7.09
Coupe d'Hiver		
1 M Dixon		(7 flew)
2 G Ferrer		7.50
3 A Cliff		7.41
		6.20
1/2A Power		
1 P Harris		(11 flew)
= R Peers		10.00
= A Wells		10.00
		10.00

well up, even after rather too short a run, for some two or three minutes by the time most of the remainder had launched. Of this pack only Hipperson seemed to get anything out of the air with a long steady climb from a new medium sized model which had had its first flight only an hour before. Too new, for an out-of-adjustment prop stop allowed the assembly to dangle from the nose, but miraculously it did not fall off. Somehow the model glided on in left-hand circles until reality caught up with it and a high flight was abruptly terminated with a series of sharp glide stalls - the prop flapping inelegantly. Cliff's early flight won by virtually a minute but as he went no further than the rest of the top few his air must have been moving much more slowly. Ball was down at a little over seven minutes - something like par for the course.

Power was last. Pete Harris produced a fine effort after a disappointing and damaging weekend in FAI. Monks and Peers launched later, very close together, followed by Trevor Payne. Harris' early flight was just bettered by Peers in what appeared to be virtually neutral air. Payne and Monks managed to tie at a minute less.

across the hills and valleys it upset thermal picking but was never turbulent. Fifteen flew in FIC; more than at some recent Nationals! The soft, forgiving grassland stretched in every direction, tempting even Ken Faux to return to competitive flying after a couple of years' layoff. Ken and half a dozen others had full four-max totals at the end of Day One. Glider was more difficult and everyone had dropped time - most on the deceptive second round which gave poor flights in F1B as well. However, the final winners were already in the lead. Chris Edge in Glider was just 30 secs. down and Peers had lost a mere 18 secs on his first Rubber flight. Peers was already closely followed by clubmate Dilks using a similar design but flying quite separately.

The drift had lessened considerably and had backed to easterly by morning, allowing the use of Training Area 10 in its best direction; not its largest dimension - probably only a mile and a half to the perimeter road - but certainly the flattest. With warmer, summery weather the second day was a delight. FAI took on the appearance of a summer's comp. with clouds of models departing *en-masse* into the same thermal. In one round the entire Power entry managed to get away in less than five minutes. Most impressive. All the leading FAI flyers maxed on to require flyoffs in FIC.

The Open events had respectable entries too and more than half qualified for a final flight. Partly because of a control move during the morning and partly because of the low drift the FAI rounds now seemed hopelessly too long and far apart to maintain any flight-to-flight concentration. One flyer likened it to making your first flight over and over again! Peers sensibly elected to finish F1B the winning total - before he turned to what we all knew he would much rather be flying

anyway. In fact his last Wakefield max was still in the air when he announced his intentions to 'fly the .40 jobs!' Then, admittedly with the help of the Nigel Dilks rapid retrieval service, he set about three textbook maxes in Open Power in the time it took your reporter to make one rather over-long and leisurely hop test with a rubber model. Russell deserves to win with determination like that.

As the flyoffs approached, drift reduced steadily. Although often some 10 mph at altitude it could hardly be felt on the ground. After such a poor spring for flying it appeared no-one on the field could resist the temptation to make some test flights. With so much safe, open country the chances of loss or damage were minimal. Hardly typical of an Easter meeting!

The FIC flyoff was decisive right away. Ray King and Roy Collins put up 3. 1/2 minute flights and Stafford Screen, who could so comfortably have maxed, D/T'd catastrophically early to manage little over two minutes. This left Faux's return even more remarkable, for he walked away with a win from a perfect score and a single flyoff max. A pity, given the fine weather, that we didn't see a longer tussle in this class.

Martyn Gregorie, the first to launch in Open Glider, appeared to be in helpful air as the model edged out slowly over a slight valley. However, it was Mike Warren, flying at the other end of the thirteen-strong group, who made best contact. His flight held line height for some time before the lift died away just short of four minutes. Cliff James' model had followed the path of Gregorie's across the valley but for a quarter of a minute less than the winners.

Even more flew for Open Rubber. Neil Cliff and Phil Ball got away early and in good air. Phil's tapered - surface model could be seen

Easter Two Day Meeting		Salisbury Plain Area 10, 2-3rd April
FIA (26 flew)		
1 C Edge		20.30
2 J Cuthbert		20.02
3 A Cordes		19.32
4 C P. Williams		19.24
5 E Drew		19.21
6 J Carter		19.19
FIB for the Duce Trophy (18 flew)		
1 R Peers		20.42
2 T Dilks		20.24
3 G Pink		19.43
4 M Howick		19.39
5 P Uden		19.24
6 D Greaves		19.13
FIC (15 flew)		
1 K Faux		21.00 + 4.00
2 R King		21.00 + 3.29
3 R Collins		21.00 + 3.24
4 S Screen		21.00 + 2.18
5 P Watson		20.41
6 P Rowledge		20.40
Open Glider 24 flew - 13 in fly off		
1 M Warren		9.00 + 3.58
2 C James		9.00 + 3.42
4 M Gregorie		9.00 + 3.37
5 J Cuthbert		9.00 + 3.33
6 G Madelin		9.00 + 3.19
Open Rubber 22 flew - 15 in fly off		
1 N Cliff		9.00 + 8.01
2 P Ball		9.00 + 7.05
3 D Hipperson		9.00 + 6.45
4 A Cliff		9.00 + 6.38
5 J Carter		9.00 + 6.34
6 D Wain		9.00 + 6.26
Open Power 10 flew		
1 P Peers		9.00 + 8.41
2 P Harris		9.00 + 6.38
3 T Payne		9.00 + 5.46
= R Monks		9.00 + 5.46

SMAE Spring Mini/Vintage Meeting: Barkston Heath, 24th April

This was the contest blessed with such fine, summery weather at Chetwynd last year.

The '88 Barkston version just had to be colder but it was dry and sunny all day. Such continual sun on the very well-drained ground seemed to combine to create thermal generation of almost continental type. That is, there were regular calm spells while the lift built up before it broke away. Flying too early in one of these lulls (and they often continued for several minutes) was usually disastrous unless the model climbed high enough to reach the real lift developing above. It was undoubtedly this that precluded a flyoff in CDH, which had seemed inevitable from such a large entry of good fliers. It still produced a tremendous finish despite the famed Chilton pair putting themselves out of the top three with small mistakes on their fourth flights. It was King, Sharp and Gaunt, all with four maxes up, that went for their final, crucial flights in the cooling but still breezy early evening air. There was a sudden wind shift as Sharp launched and the resultant crosswind get-away almost didn't. The score was practically as close to the max as is possible, despite the abbreviated climb. Pete King was then over-cautious and held on too long to pick duff air; he was down for a little over a minute to plunge to seventh place. This left Gaunt with a chance. He was flying the same model as he had used to win the *Aeromodeller* 100 gram Coupe event but with the extra ballast removed. His air picking was good enough - just! His model scraped in ten seconds or so over the max to decide the first event of the day half an hour before the close of the contest.

HLG produced an exciting finish although the leader, Mick Page, was not dislodged. During the closing hour both Phil Ball and Andy Crisp made late entries. Ball had four maxes from the first six throws, the other flights being 40-seconds-plus. Three more ordinary flights could have won it for him. Instead he stuck one model on the roof of a nearby hangar that shouldn't have been downwind; and his surviving model just wouldn't come down from its seventh flight - another max. He had run out of time when he needed so little more.

Andy Crisp's flying wasn't quite so spectacular but he did make all his flights - enough to place sixth. With HLG contest run as they are now - sudden death with all nine flights to count and no attempts - it would be inconceivable that we shall ever have another HLG flyoff. Good rules.

The top places in Slow Open Power were once again the province of half a dozen competent flyers with models all very much within the spirit of the rules. Steve Fielding's Beatnik produced the only full score; even that was not without a hiccup when one flight held a very tight power pattern. Still, there was no sign of this domination by .40 models that we are told is the threat - despite loads of entries, too!

A/1, 1/2A and Vintage all needed flyoffs. They were run in that order from a little after 6pm under a clear sky with that cold easterly drift still at around 10 mph, and stronger higher up. Cuthbert was towing immediately and released first in A/1. Philpott, who had been clever enough to station himself downwind was quick to recognise John's good air. Both models were soon circling off, gliding quite fast but gaining



John Cuthbert with his pair of A/1s at the Spring Mini meeting. Striped-wing model was used to win in the flyoff; the other was reserve.

height rapidly. Both D/T'd at the fringe of visibility, which was lessened by the setting sun shining directly into timekeepers' eyes. Most of the rest found no help apart from Madelin who just brushed the edge of some lift to hold on long enough for third place.

Three very experienced 1/2A flyers lined up for the Power finale along with John Cooper who, it has to be said, has not recently been at the forefront of this class. In fact John pointed out that he hadn't flown in a power contest since 1976-and he was still using the same model! He took himself somewhat away from the crowd and flew practically down the main runway. A tactical move that was to prove effective for others later on. Peers, using a new and promising model with a very hot Andrew Cordes tuned Cox, and Watson suffered slightly messy launches. Peers was too 'right' and Watson a little too steep. It cost them both a lot of height. Baggott did better but suffered a period during the early part of the glide when the model simply fell out of the sky. It held on for a good two-minutes-plus but Cooper's earlier flight had topped them all, much to his surprise.

No one can still accuse Vintage of being a Lanzo benefit. The only one in the final ended way down the list. John O'Donnell and Gordon Beal made very astute tactical moves to the far upwind corner of the drome which not only avoided a hangar off to the left but gave them flatter ground and more tarmac to fly over. It worked a treat. JO'D's Challenger finally got too much for the timekeeper at a little over eight minutes, by which time it was probably on the fringes of Grantham itself. Beal's second place came in the same air as O'Donnell but with a Climber. This is a design of which quite a few people have spoken of recently. It is obviously highly suitable - as was John Carter's Apex. In his first ever Vintage flyoff John took himself off to the far edge of the aerodrome to fly past the other side of the hangar. This was partially successful, as was his air picking. Over five minutes is quite something from a model with a short prop run and not much over 200 sq.ins. wing area. Ball's later flight with another Challenger was in reasonable air but he lost time behind the same hangar that had cost him the HLG event! His luck had been on the launch, when the tightly-wound model escaped from his grasp due to cold fingers, and 'helicoptered about a bit' before miraculously re-establishing itself to level flight. These antics probably cost him third. The times were that close.

It was encouraging to see some new faces at the contest. One very promising flier was Sizer who claimed he had no contest

experience and then produced four maxes out of five flights in 1/2A with a very impressive looking all-red model showing Ken Faux influence. Hopefully we will see him again, as well as those unfortunate enough to lose models. Many were the stories of flights just not responding to D/Ts. Both Pete King and JO'D suffered flyaways and were then lucky enough to have their models returned very promptly by the public from many miles distance. Others had no such luck. I cannot remember a day (except in much stronger winds and higher temperatures) when the lift built to such ferocity over an airfield. Saddest story of them all must have been Tim Gray whose appearances are fewer these days. He came out mainly to announce his new range of thrust bearings (details next month) and lost both his Coupes! He was contestant number 13 and he placed 13th!!

SMAE Spring Mini/Open Meeting: Barkston Heath, 24th April

Mini Events: 5 x 2 mins

A/1	(19 flew)
1 J Cuthbert	10 00 + 8 48
2 S Philpott	10 00 + 5 35
3 G Madelin	10 00 + 2 43
4 G Le Vey	10 00 + 1 31
5 N Parry	10 00 + 1 03
6 M Walker	10 00 + 0 52

Coupe d'hiver	(25 flew)
1 P Gaunt	10 00
2 G Sharp	9 58
3 M Chilton	9 50
4 R Chilton	9 45
5 A Ball	9 09
6 G Ferer	9 08

1/2A Power	(14 flew)
1 J Cooper	10 00 + 2 28
2 R Baggott	10 00 + 2 16
3 R Peers	10 00 + 2 03
4 P Watson	10 00 + 1 53
5 E Redfern	9 23
6 J Sizer	8 56

CO2	(4 flew)
1 S Philpott	10 00
2 P Gibbons	8 39
3 S Rose	8 27

Vintage	(20 flew)
1 J O'Donnell	9 00 + 8 02
2 G Beal	9 00 + 7 11
3 J Carter	9 00 + 5 14
4 P Ball	9 00 + 5 10
5 M Lester	9 00 + 4 39
6 R Peers	9 00 + 3 53

HLG 9 x 1 min	(14 flew)
1 M Page	7 37
2 J Walker	7 30
3 J Hopper	7 27
4 P Davies	7 24
5 E Burge	7 06
6 A Crisp	6 54

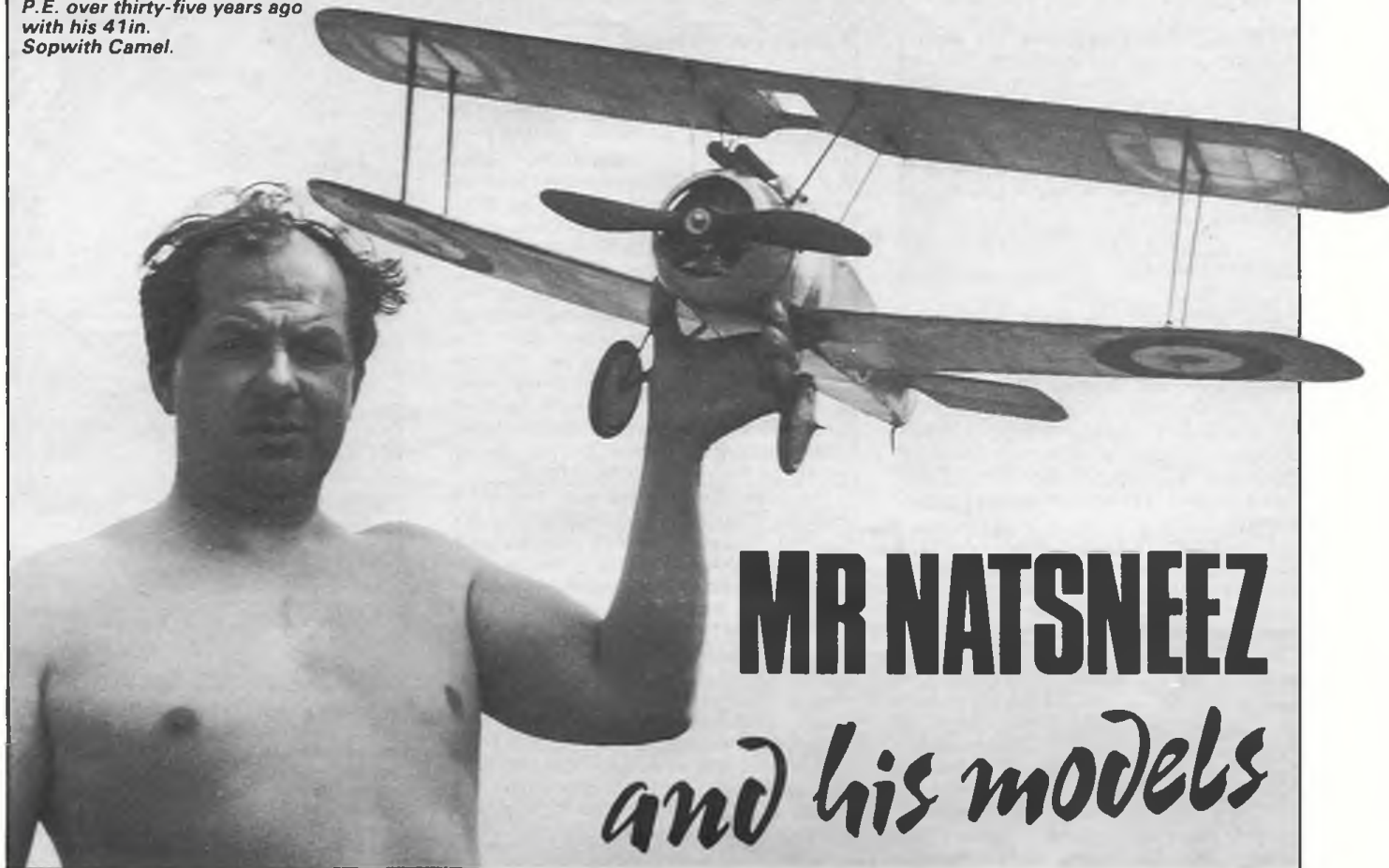
Slow Open Power	(16 flew)
1 S Fielding	9 00
2 G Bryant	8 44
3 D Campbell	8 24
4 E Redfern	8 09
5 C Harris	7 48
6 G Turnbull	7 35

What's Happening SMAE Free Flight

11/12th June
FIA, B, C, Team Trials
Venue: Barkston Heath
Contact: Phil Ball on
0332 6653661

26th June
FIE Team Trials
Reserve date.

In characteristic, shirtless attire - P.E. over thirty-five years ago with his 41in. Sopwith Camel.



MR NATSNEEZ

and his models

DURING THAT golden era of aeromodelling from the end of the war to the late 'fifties one name featured regularly in the aeromodelling press. Articles on midget accumulators, making airwheels and 'small petrol models' made Percival Edward Norman a well-known character even before the appearance of his world-famous F/F power scale models.

'P.E.'s' modelling career started in 1925 inspired by visits to the Lympe Trials, and by the influence of his two older brothers, both RFC pilots who had flown Pups, Camels, Snipes and Brisfits.

After experimenting with pendulum elevators on rubber powered Camels and SE 5s in 1927, he developed pendulum aileron controls for a Comper Swift. Petrol models in the 30s developed, in turn, to the monocoque fuselage, sprung-tail and engine 'Nats' series, of which Natsneeze (published in *Aeromodeller*, November 1944), Nats Byte, Nats Whiskas, Nats Pants and Nats Nippa were displayed along with the gliders Old Nog (Jan '46) and Nimbus (Nov '48) at the Dorland Hall National Model Aircraft Exhibitions.

The 'Nats' family gained a special award in 1946. Also on display was a tiny diesel model of less than 2ft span and weighing 5.1/2oz. The 0.6cc engine was made entirely without a lathe.

The Nimbus glider was an excellent example of P.E.'s eye for design. On 20th April, 1946 at Eaton Bray's opening event Nimbus flew from the Modeldrome to Fulham, 40 miles away. This was quite an event at the time, and coverage appeared in the *Evening News*.

Percy's Ants Pants design was kitted by Paramount in 1947, but it was a little fast and too heavily-loaded for the average modeller of the time.

Fast scale fighters

The Bees Neez series followed, powered by home made Frog or Allouchery hybrid motors. These were low-wing aeroplanes that led, via experiments with pendulum elevators and ailerons, to the Typhoon, Tempest, FW190 and Spitfire high-speed stunt F/F models. Aircraft were as scale as possible with large propellers and little dihedral.

With Scale Weekend in mind Alan Jupp re- examines the classic designs of P. E. Norman

Monocoque fuselages, immensely strong wings and scale wing loading all contributed to exciting days at Epsom Downs and the various Galas. The fighters did not glide very well; the reasoning being that if the real plane had engine failure the pilot would vacate rapidly, so as long as the model survived the crashes all was fine. Anyone who has flown fast low-wing models will know the difficulties, but perhaps this is not an ideal approach in these crowded times.

In 1948 PE entered the Bowden Contest with one of the smaller Typhoons. It had

pendulum elevators and ailerons and a retracting undercarriage. A larger Typhoon was published in the March 1950 issue of *Aeromodeller*.

Art and the sartist

By this time P.E. was well established as an expert Scale enthusiast. When not building aeroplanes at a prodigious rate he taught sculpture, wood-carving and silver-smithing. An accomplished painter in oils and water colours, he regularly exhibited at the Royal Academy. He received numerous awards for his violin and viola playing, in which he was often accompanied by his wife who is a concert pianist. He made his own instruments, of course!

Amongst other accomplishments P.E. carved the murals in the main lounge of the liner Queen Elizabeth. His book *Sculpture in Wood* was considered one of the best on the subject. It is not widely known that he designed and crafted many of aeromodelling's trophies and awards. He would lock himself away in his workshop for days to emerge with a new model. Trips away from home were made more productive by taking balsa wood with his personal effects; but he relaxed at the cinema watching Westerns.

Percy Norman's artistic nature and his use of many different materials led to aeroplane construction methods which seemed radically unusual to most aeromodellers. Myths and legends abound concerning his construction; most are incorrect!

Balsa, bamboo cane, spruce, plywood, fibre sheet and block, wire, thread and strip gummed paper were the main materials; adhesive were balsa cement, Cascamite and papra.

The use of binding and hardwoods in

highly stressed areas gave his models immense strength and longevity. The fact they exist today bears witness to this as they are well-flown in the extreme. Basically unstable aeroplanes need to be resilient to survive trimming, and P.E.'s models were expected to perform in all weathers; that is, when he wanted to fly, not when Mother Nature dictated.

Scale stunters

Spectators and fellow flyers soon became used to scale models stunting in the sky. The Gamecock, published in the Jan '51 *Aeromodeller* and the 41in. Camel (Model Aircraft, Oct '51) were part of a series of famous fighters which included a number of Bulldogs of various sizes, a large Siskin for the ED3.46, a Fokker DRI (*Aeromodeller*, Nov '51), a Hawker Fury and a 40in. Spitfire with retracts.

The famous Mew Gulls for ED 3.46 and Elfin 1.8 power were flown at this time, and through the '50s he produced many wonderful scale models that flew at scale speeds in a very realistic manner. Bill Dean's column in *Model Aircraft* often included snippets about P.E.'s activities. The magazines also reported on his performances at the Northern Height Galas and other meetings where his flying was either favourably reported or not depending on which one you read. 'Mr Beefcake' was one nickname he earned, thanks to his seemingly permanent shirtlessness. 'Dennis the Menace' was another for obvious reasons. Hurling around models weighing two or three pounds at well-attended rallies was becoming anti-social.

Fans everywhere!

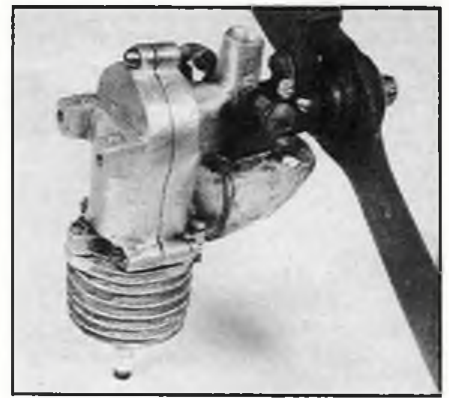
The early '50s heralded the Jet age and with it P.E. took to ducted fans. Elfin 1.8 and 2.49 powered MiG 15s led to the Boulton P120 and P111, a Yak, a Mystere and a Cougar. A cine film of some of these models in action was reported in *Model Aircraft* in 1955. Where is it now? A fabulous article on all these can be found in the 1955 *Aeromodeller Annual* in which the MiG 15 was published.

At the same time the Rapier tailless was being developed from a 'Skyrayish' prototype with a view to R/C at a later date. The difficulty factor of D/Fs deserves an article to itself but suffice to say that weight, wing area and power must be carefully balanced for optimum performance. All the D/F models were developed through prototypes, ironing out all the bugs with extensive flying.

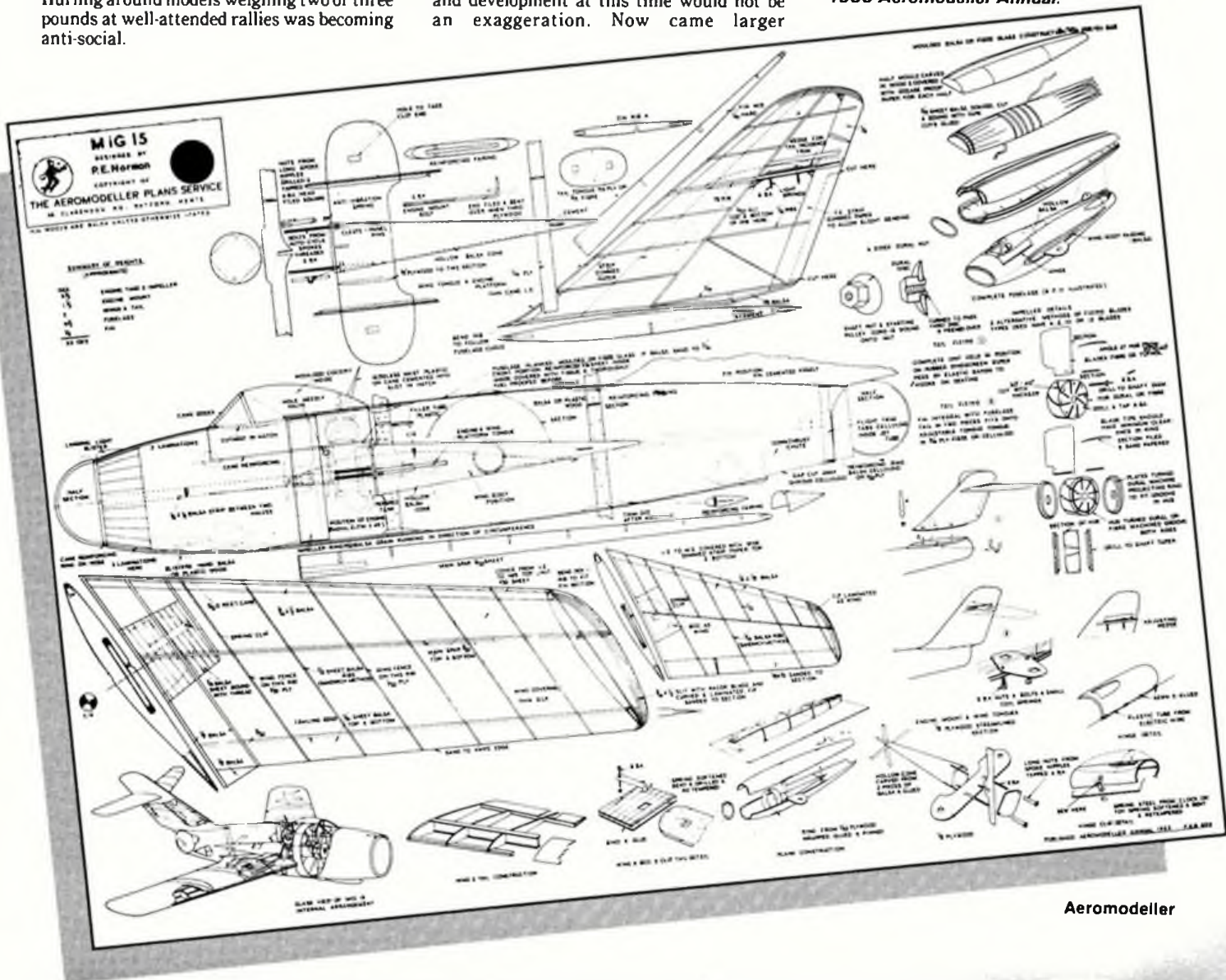
Fuselage construction was the main problem. Planked balsa (to achieve the scale shapes) tended to absorb fuel and oil, decreasing performance and strength. Fibre glass was tried but proved too brittle in practice. It was not so sophisticated a material as nowadays. This led, in the late 50s, to plywood-ducted models, including a smaller Rapier, a semi-scale Scimitovish and then to Javahawk. The superb performance of this model resulted in smaller, faster versions and a scallish Scimitar.

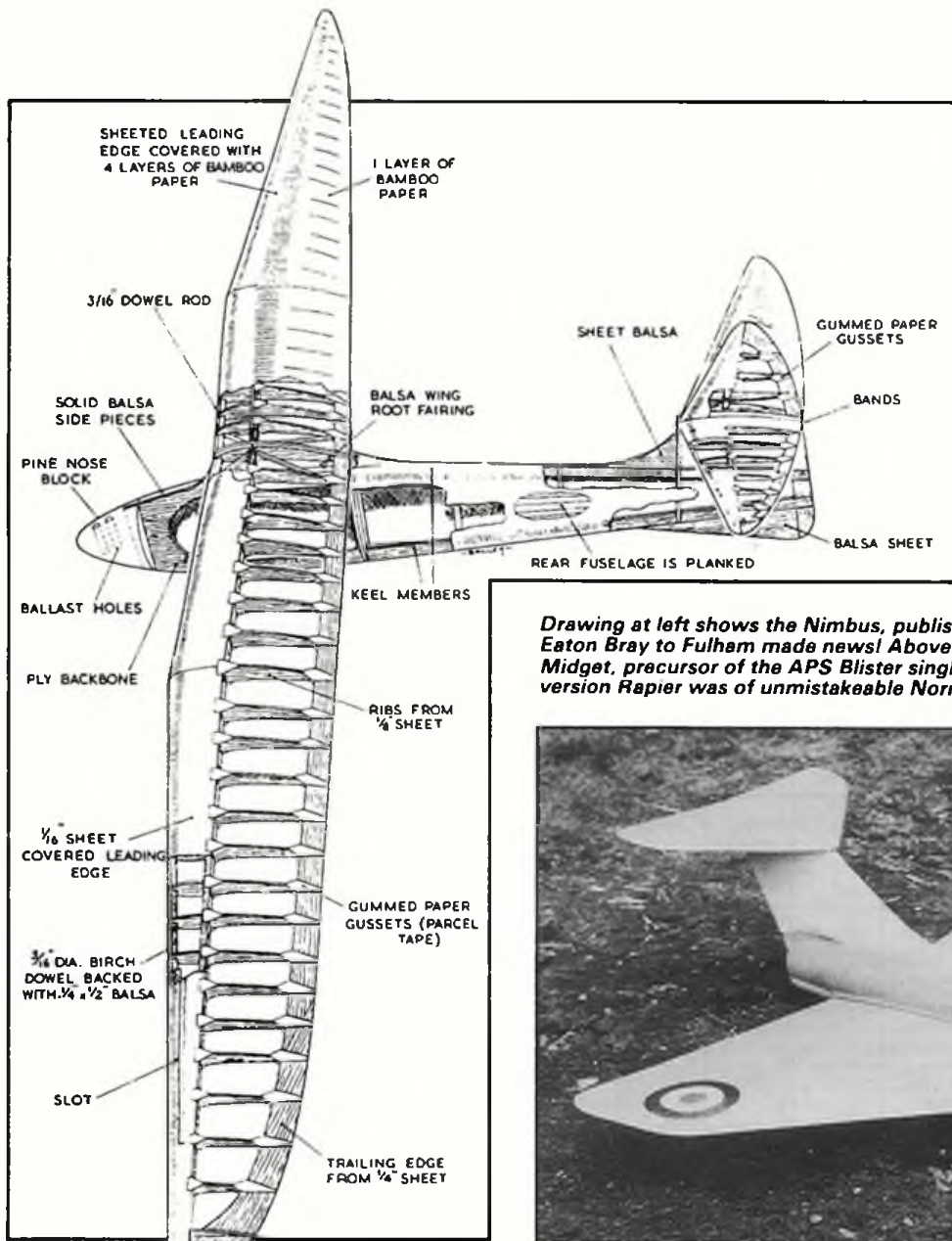
Javahawk was stretched and lightened to produce the world's first R/C ducted fan model. In August 1959 these models were featured in an *Aeromodeller Experts Forum*.

To say P.E. led the world in D/F technique and development at this time would not be an exaggeration. Now came larger

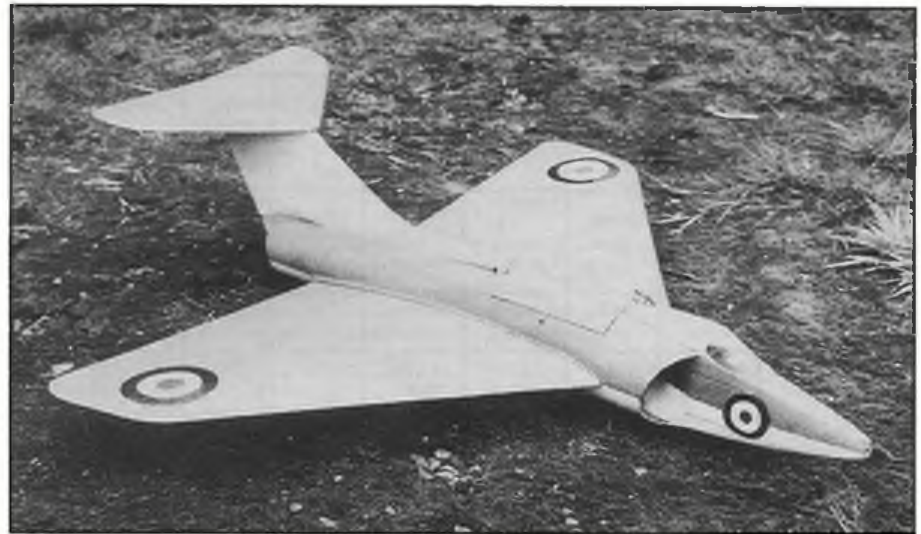


Top: The home-made petrol engine from P.E.'s famous Natsnee (a model so-called because of P.E.'s flying-field appearance!). Crankcase is carved from solid. Above: The stocky Gamecock was capable of F/F aerobatics. Below: The most famous F/F ducted fan model? Plans for the MiG 15 appeared in the 1955 *Aeromodeller Annual*.





Drawing at left shows the Nimbus, published in Aeromodeller in 1948. A flight from Eaton Bray to Fulham made news! Above right: P.E. in the early 'sixties with his Long Midget, precursor of the APS Blister single-channel racing sportster. Below: The larger-version Rapier was of unmistakable Norman ducted fan layout.



Below: The ED 3.46 fires up and soon the Mew Gull will cleave the air at Epsom Downs... Below that: This unpainted, single channel Javahawk won the R/C event at the 1959 Northern Heights Gala!



Javahawks, a Fox 35 Lavochkin and the Rapier for 2.5cc published in American Modeller in June 1962. All these were, of course, single channel with the escapement running through the fuselage top spine.

Whilst developing these, P.E. was also busy converting early F/F scale models to single channel, like the Bulldog and a Comper Swift.

A Long Midget was built with a view to publishing a single channel racing-style sportster but it proved too hot to handle so Blister was developed (*Aeromodeller*, March 1962).

By this time P.E.'s health had deteriorated and he suffered several strokes, but he continued building and flying despite restricted use of his hands. Indeed it was whilst flying at Epsom Downs that he suffered a further stroke which led to his death in July 1964. Plans for Cox .010 and .020 powered ducted fans were published posthumously in *American Modeller*, Nov/Dec 64.

...and today...

This article is of necessity lacking in detail and chronological depth. Each model requires study and appreciation in these nostalgic days. 80 models survive, a tribute to their construction and design. When I was given custody of them the late Marcus Norman was

of immense help both materially and for anecdotes and information. Having flown some of the restored aeroplanes (which requires an article of its own) I can only say that the man was a genius...

Numbers of P.E. Norman's surviving aircraft models are regularly displayed and aired at gatherings such as Scale Weekend at Old Warden, and to further the name of this most enthusiastic designer the P.E. Norman Trophy was inaugurated last year for the scale F/F model best capturing the 'spirit' of P.E.'s distinctive style.

It is hoped that readers who did not see P.E. in action will now be more aware of his idiosyncratic approach to aeromodelling. And, no doubt, enthusiasts from the 1950s and 60s will find a memory or two astir...

Thanks go to Mrs. Phyllis Norman for permission to delve into family photo albums.

P.E. Norman ASP plans

Model Name	Length	Power	Scale	Code*
Nimbus	96in	Glider	G 304	E
Natsneeze	31in	Power	PET 221	*
Typhoon 1B	26in	Scale	FSP 372	F
Gamecock	36in	Scale	FSP 410	G
Fokker DRI	40in	Scale	FSP 453	F
MiG 15	34in	Scale D/F	FSP 603	E
Javahawk	27in	D/F	U 740	E
Blister	42in	R/C	RC 815	H
Siskin IIIA	36in	Scale	MA 314	*

*denotes currently available

Wing

Fuselage

Designer and model	Section	Span mm.	Chords mm.	Tip style	Dihedral	Weight gm.	Covering	Nose Length mm.	Tail Moment Wing TE - Tail LE	Hook	Hook position ahead of CG	CG	Fin Area Sq. cm.
J Bailey Revolver	Bene 6356 b	2096	150 Tips taper to 100	Straight taper	Poly	205	Double Light-weight Modelspan Single on tips.	135	693	Modified Isaenko	18mm	46%	50
W. Colledge	Horejsi 811	2169	150 tapering 140. Tips taper	Straight taper	Tip 140mm	190	Lt Modelspan Jap on tips	90	700	Isaenko	18mm	55%	60
J. Cooper	Bene 7457d (top) 6356b (bottom)	2057	146 Tips taper to 127	Straight taper on LE	Tip 152mm	190	Salzer Polyester. Lt. Modelspan on tips	140	686	Russian-type Circle tow	20mm	55%	58
A. Crisp Tchip Tchop Mk 4	Bene 6536b Thickened by eye to 8%	2083	150 Tips taper to 108	Straight taper	Tip 140mm	160	Double Lt. Modelspan Single on tips.	117	698.5	Own Swing-arm impulse release	16mm	55%	75
J. Cuthbert Uprising	Chinese Thinned	2160	145 Tips taper to 90	Straight taper	Tip 140mm	196	Double Lt. Modelspan Jap on Lt. Modelspan on tips.	110	720	Own. Commercially available	20mm	55%	56
I. Davitt Blackadder	Shoaf modified	1829	146	Round end only	Tip	Heavy!	Heavy-weight Modelspan	127	686	Conventional wire hook.	25mm	52%	52
C. Edge Carbon-Ate	Quarstrom (sharp nose)	2180	146.5 Tips taper to 107	Straight taper then Hoerner	Tip 125mm	170	Mikolento	110	689	Own Russian type	15mm	50%	41.28
E. Drew Lively Lady	Own	2080	148 tapering to 130 at tips	Taper and rounded LE	Tip	172	Heavy-weight Esaki Jap	90	705	Maxaid	20mm	56%	48.4
A. Gibbs	Shoaf thinned	1930	152.4	Elliptical	Tip	200	Hwt Modelspan	89	648	Isaenko modified	22mm	55%	52
B. Lavis	Hawsen AH-6-40-7	2000	150	straight taper	Tip	210	Lt. Modelspan and Lt. Jap (Dilly)	112	650	Own-Isaenko style	12mm	54%	58
M. Fantham Robin Mk2	Wichita Mk1 slightly modified	2155	147	Straight taper Radius tip	Tip	178.6	Hwt. Modelspan Lt. Modelspan on tips	100	700	Own. All adjustments on hook	27mm	56%	56
D. Hearn	Shoaf 4738DF	1930	152.4	Parallel chord Semi-circular tip	Poly	165	Hwt. Jap Lt. Modelspan on tips	114.3	685.8	Conventional wire hook - straight tow	25.4mm	54%	59
G. Madelin Soft Machine No. 19	Wichita Mk1	2050 projected	142 tapering to 108 at tips	Tapered	Poly	216	Double Lt. Modelspan Jap at tips	130	700	Hatschek	16mm	51%	56
P. Owens Turning Point No. 8	Quarstrom	2140	150 tapering to 100 at tips	Straight taper	Tip	190	Hwt Modelspan	110	660	Own Lepp-style	19mm	55%	60
J. Oulds	Benedek 8356B	1930	152.4	Parallel chord Semi-circular tip	Poly	190	New type Modelspan	127	680	Tony Cordes type May 85 AM	22mm	60%	57
C. Sharman	Bene B 7437	2400	150 at root. 120 at break. 100 at tip	Straight taper	Tip	190	Glass/Epoxy	100	720	Modified CRHA	18mm	54%	58.4
K. Smith	Burrows. Untapered TE	2032	146	Parallel chord Square	Tip	?	Hwt. Modelspan	89	736	Own	22mm	60%	58
P. Stewart	Bene 8356b	2080	145	Tapered	Poly	206	Hwt. Modelspan Jap on D-box and TE	120	680	Own Russian-style from brass sheet	18mm	50%	84
G. Turnbull Pink Elephant	Pink Elephant	1930	150	Parallel Semi-circular tip	Poly	170	Lt. Modelspan	102	705	Wire for straight tow	22mm	58%	45
P. Williams	Own	2132	139.5	Tapered	Tip	196 excluding joiners	Glass 20gm. cloth. Lt. Modelspan on tips	140	697	Own circle unit Adjustments on hook	17mm	55.5%	57

Tail

Miscellaneous

Section	Span mm.	Chord mm.	Weight gm.	Covering	Timer	Towline	Winch	Warps, etc	Published
7% flat-bottom	500	90	7	Mylar	KSB	Dacron	Ray Inker (Flies detached)	Rt. Centre: 1.5mm WI Rt. Tip: 2.0mm WO Lt. Centre: Flat Lt. Tip: 4.0mm WO	
Flat-bottom	500	90	8	0.005in. Mylar	KSB	50lb mono-filament	Maxaid		
8% flat-bottom	508	89	8.5	O'Donnell Mylar	Seelig	50lb Dacron	Converted Woolworth grindstone		
10% undercambered	508	89	10	Lt. Modelspan	KSB	Elton Drew 40lb braided nylon	Elton Drew	Rt. tip: 1.6mm Lt. tip: 4.75mm Designed to Imperial measures	AM 2/88
Clark Y	500	90	7	Aluminised Mylar	KSB	80lb Dacron	No winch		
Flat-bottom	560	95	8	Lt. Modelspan	KSB	50lb Dacron	Modified Grinder	Designed to Imperial measures	
Quarstrom Flat-bottom	460	98-72	7.5	Clear Dowsett Mylar	Van Wallene Electronic	Milward Searanger 50lb, or Maxaid	Maxaid and own design	Dihedral tailplane	
10% flat-bottom	512	87.5	8	Lt. Esaki Jap	KSB	50lb Maxaid braided nylon	Maxaid		
8% flat-bottom	533	95.25	10	Dilly Ltwt Jap	KSB	60lb mono-filament	modified grindstone	Designed to Imperial measures	
Flat-bottom	520	90	7	O'Donnell Mylar	KSB	Stren	Maxaid		
8% Clark Y	500	90	8.2	Jap	KSB x 2	50lb Stren Fluorescent	FAI Supplies	Both tips: 2mm WO Rt. inner: 1.5mm WI Lt. inner: Flat Glides Right	FFN 6/86
Unknown undercambered	508	101.6	8	Ltwt. Jap	KSB	50lb Dacron	Maxaid	Some dimensions designed in Imperial	
6% flat-bottom	500	90	11	Melinex	Seelig	Graupner 19kg mono-filament	Maxaid	Both tips: 4mm WO Rt. inner: Washed-in with ply shims to suit catapult launch	FFN
6% flat-bottom	510	92	10	Dilly Lt wt Jap	KSB	Waxed-polyester whipping twine	Maxaid	Both tips: 8mm WO Both inner: Flat Glides left	AM 1/86
Thin with undercamber	508	89	7	Jap	KSB	30-50lb Dacron	Towmaster converted Woolworth grinder	Designed to Imperial measures	AM 7/88
Thinned Clark Y	520	80	8	Transparent Mylar	Koster digital	60lb mono-filament	Maxaid	Model has higher aspect ratio than usual for this designer	
6% undercambered	533	102	14	Lt. Modelspan	KSB	120lb Dacron	Shuco	Designed to Imperial measures	
Bene 8356 b	485	88	8	Jap	Own electronic	55lb nylon	Maxaid		
Pink Elephant	508	95.25	14	Lt. Modelspan	KSB	Mono-Filament	converted grindstone	Designed to Imperial measures	John Cooper's Pink Elephant
	457	100	11.7	Lt wt	KSB	Stren mono-filament	Elton Drew modified Larger drum and quick-release line		

Dave Hiperson's compilation of all available gen on state-of-the-art competition models! See how the experts do it...

The Aeromodeller Glorious Glider Guide

Ron Prentice takes a close look at Vintage control line down under

IN THE October 1987 *Mind the Lines*, I mentioned a letter from Australian enthusiast Jeffrey Currie, in which he spoke about the gradually awakening vintage control line scene 'down under'. Since writing that article I have received several other letters from the Antipodes and the loan of a 1951 copy of *Model Hobbies*, Australia's only model aircraft magazine at that time, from SAM 35 member Ray Gordon. The competition reports and adverts gave an interesting insight into the control line scene then. It would appear that the most popular sizes of motors for stunt were 5 to 10cc, with the Frog 500 and Super Cyclone, Atwood Champion and Anderson Spitfire the most favoured. Although the complete range of British diesels were advertised they were not popular for stunt flying, unlike speed or team race, where they were used extensively. Most British kit manufacturers were represented in the adverts, as well as a sprinkling of Aussie firms. Hobby Den of Melbourne produced the Wolverine, a nice looking team racer for an Elfin 2.49; Hearn's Hobbies kitted a useful little stunter called Jitterbug for Frog 150 or Elfin 1.49 power. Control line plans published with building instructions included the aforementioned Wolverine, a Class A team racer called Firecracker and the 50in All American Senior stunter designed by Hal de Bolt. This model, meant for .29 to .35 motors, was for years a best selling Dmeco kit. Unfortunately, because of the economic conditions at the time, the kit was not available in Aussie, but Dmeco provided all the necessary measurements. The same conditions would have precluded the sale of American engines as well, so I suppose these were obtained by swapping with pen friends, which is the way that I got my Super Cyke and Atwood in those days. If anyone would like photo copies of those plans, drop me a line, care of GC at *Aeromodeller*.

Among *Model Hobbies'* contributors was Monty 'Zilch' Tyrell, who not only described the activities of the Victorian Model

Aeronautical Association but featured in many photos and competition results with his Anderson Spitfire powered models. Readers who recall the October 87 column will recall the mention of an Aussie Mercury Monitor complete with inscription 'Righto you bar-studs, where's the bloody beer', a sentiment attributed to Henry J. Nicholls. I'm glad to say that a photograph of this model

has now come to light. Model and caricature were produced by none other than Monty Tyrell himself, still a pillar of the vintage control line movement in Australia and recalled by many who met him during his UK 'tour' of 1953.

More from the land of the 'roo...

Former co-columnist Andy Brough has passed on to me a letter from Ian Griffiths, an ex-control line enthusiast from down under who has recently returned to modelling after a fourteen-year layoff. He makes the point, with which I am sure all vintage

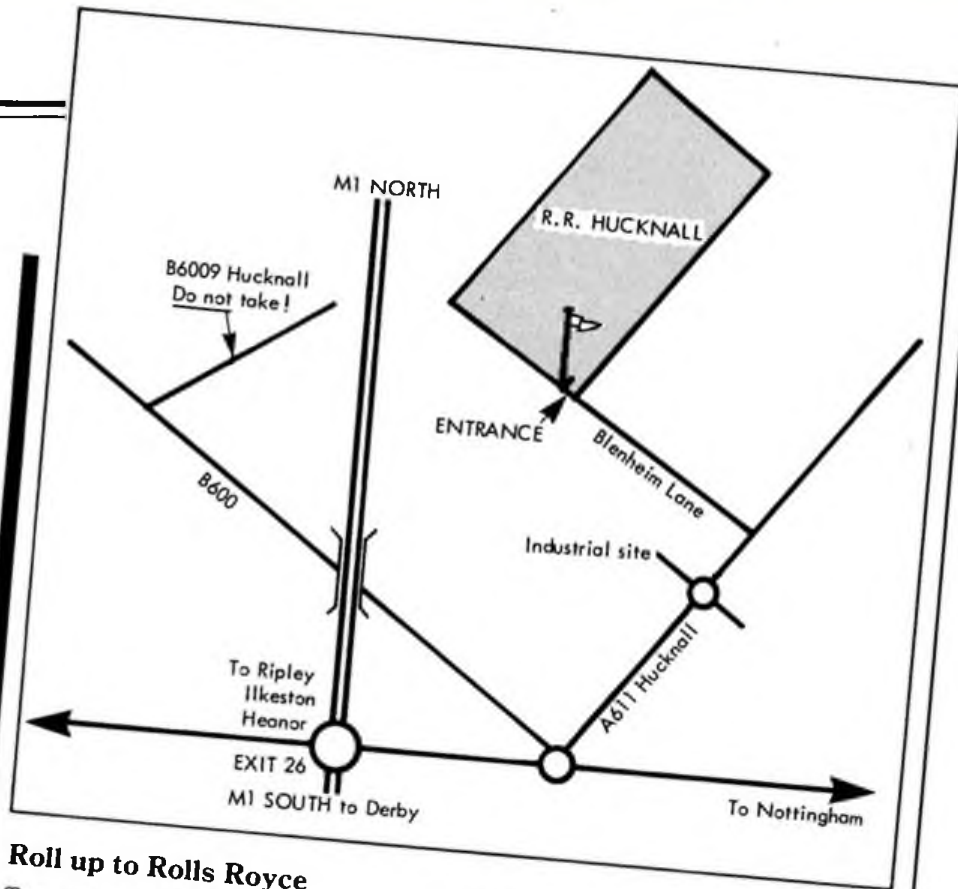


Top: Truly Aussie - the Buckjumper dates from 1950. Above: Alan Beggs' Smoothie, a classic Bob Palmer design. Right: Straightforward Hearn's Hobbies Demon built by Ian Ferris.





Above: The Demon is popular! With their models, front to rear, are Alan Beggs, Ian Ferris and Chad Harrison (who was second in Junior Stunt at the recent Victoria Fly for Fun Day). Below: Sleek Montgomery Models Ramrod referred to in text. Below that: Distinctive fin adornment on Monty Tyrrell's Mercury Monitor!



Roll up to Rolls Royce

Terry MacDonald, who wrote that splendid piece on Vintage T/R last month, tells of the Rolls Royce MAC vintage control line event on 25th September. Venue is the RR airfield at Hucknall where they really do have excellent flying facilities. There will be fun flying over tarmac or grass, vintage A & B Team Racing, plus competitions for Midge Speed, Old Time Stunt and a Concours d'Elegance.

It really sounds terrific. I must see if I can afford the petrol to make the long trek from the Wild West Country. (Is this a hint? GC). Terry says it's only ten minutes from the M1, but difficult to find without a map, so

we'd better include one...

As a direct result of John Perry's alteration to the SAM 35 Old Time Stunt rules, in which he deletes the bonus points for an engine of the correct era and substitutes points for using a motor of up to 2.5cc, I noticed at Peter Martin's Rubery Hill meeting on the 17th April a surfeit of Ambassadors (not diplomatic representatives, I hasten to add). Last year was the Chinese Year of the Dragon but this year looks to be the SAM Year of the Ambassador! I am not going to succumb to the lure of this model. Instead, I'm looking for a pre-1948 biplane with no flaps, powered by a spark ignition 2.5cc motor that will do the complete F2B Schedule. Any bright ideas?

aficionados will agree, that he finds vintage models and engines interesting because they have a special look and feel about them that puts fun back into modelling. He is as present building a John Coasby Icarus Junior (for a Fox 35) which, he says, may not be vintage, but looks old enough not to be out of place; and it's one of the prettiest designs he's ever seen. Ian sent some interesting photographs taken at the Fly for Fun Day mentioned in the October 87 column, at which - in addition to fun flying - an old time stunt competition and a payload event took place. The Buckjumper was designed by J. Brehaut with plans drawn by (guess who) Monty Tyrrell. It features the Polywog wing section used by Bob Palmer on his original Veco Chief. The Ramrod is interesting, for the kit box lid states that it was designed by J.L.Hooper, the Victorian Stunt Champion, but gives no details when. Perhaps one of our readers could enlighten us?

Ian Ferris, President of the Knox Model Aircraft Club, tells us that a number of modellers are taking up the handle again, looking back to their earlier days for ideas and to reminisce a little. Sounds a great reason for going into vintage modelling, Ian, for many in the UK look upon it as another field of competition to be won at any price! Ian writes, 'At KMAC we have been using

our own set of rules, which vary slightly from those in New South Wales, in an attempt to encourage a wide entry and the 'resurrection' of some of the early Australian designs. To do this we relaxed the scoring for Aussie models by allowing designs up to 1960; we also graded the scoring for engine points, so that those without the exact engine (as on the original) were not heavily penalised'. Photographs of KMAC activities show three Hearn's Hobbies Demons by Alan Beggs (who later won the stunt comp. with a Bob Palmer Smoothie), Chad Harrison and himself; and the straightforward pre-1960 All Australian, originally designed for the Frog 500.

I have enjoyed preparing this feature on early control line flying from the other side of the world. I must confess that until now, I knew nothing about it at all. Many thanks to those who took the trouble to send me details; do keep writing and sending photographs! As a footnote perhaps I could quote my wife who said: 'They say that the bathwater drains out in an anti-clockwise direction in Australia; do you think all the Aussie modellers fly control line the opposite way round to us?' (And inverted? GC).

Vic Smeed

Commemorative Event

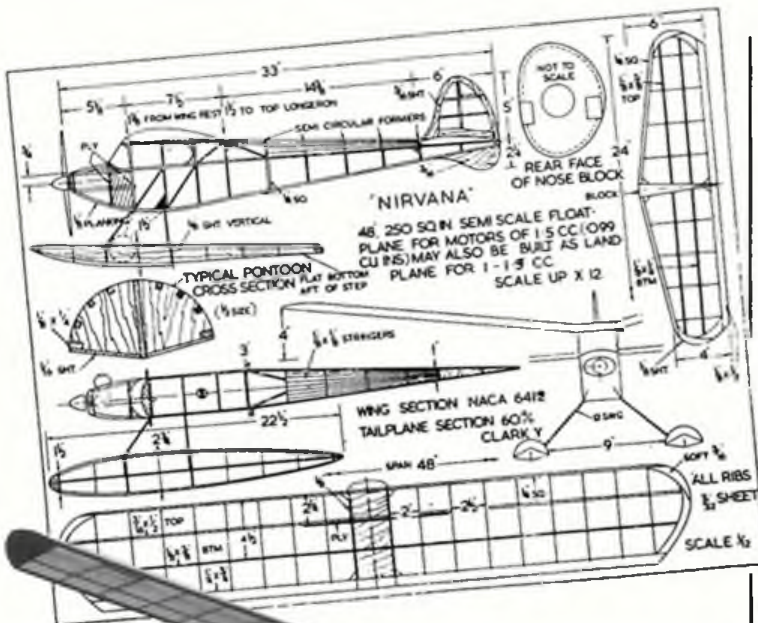
Coming to our Vintage Weekend at Old Warden on 20-21st August? Of course

you are - so bring a Vic Smeed model!

INFORMAL and fun! That's our latest aero-modelling brainwave for Vintage Weekend - an event to commemorate those stable, viceless designs of Vic Smeed, sport enthusiast *par excellence*. And what better cause to celebrate?

Examine our list. All the favourites are there - but there's nothing to stop you researching the many projects, such as Straight Line Special (Sept '52) or Samba,

Rumba, Tango and Conga (Oct '52). And how about those full-size plans - Scatterbrain and Pomilio for example? So have a go and bring your Vic Smeed design to Old Warden on Sunday, 21st August. Informal judging decides the winner - but only after you have been asked to fly the model... But then, who really needs any such excuse?



Vic Smeed's Plans Service designs

F/F Power

	Span in.	Type	Engine cc.	Plan No.	Price
Ethereal Lady	48	High wing cabin	1.1-5	PET 291	E
Coquette	30	Biplane cabin	1.0	PET 384	D
Tomboy	36 or 44	High wing cabin	0.5-1	PET 398	E
Hell's Belle	60	Contest	1.5-2.5	PET 438	D
Harpie	50	Contest	1.0	PET 439	D
Hussie	40	Contest	0.5-0.8	PET 440	D
Popsie	31 1/2	High wing cabin	0.5-1	PET 460 X	E
Madcap	45	H W cabin/pylon	1-1.5	PET 470	E
Cherub	30	High wing cabin	0.5-0.8	PET 485 X	D
Debutante	40	High wing cabin	0.5-1	PET 493	D
Paageboy	42	H W. Payload	1.0	PET 552	D
Pushy-Cat	44	High wing pusher	0.5-1	PET 528 X	D
Sea Nymph	36	Flying boat	0.5-0.8	WP 542 X	D
Mam'selle	37 1/2	High wing cabin	0.5-1	PET 612 -X	D
Chatterbox	30	High wing cabin	0.5-0.8	PET 715 X	C
Miss 38	37	High wing cabin	0.8	PET 1413	F

R/C

Electra	54	High wing cabin	2.5-3.5	RC 506 X	D
Ohm 8	47	Biplane	2.5	RC840X	E

Scale

Pander EG 100	36	Biplane	0.8	FSP 738 X	F
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C/L

Virago	30	Stunt	2.5-3.5	CL 350X	D
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Rubber

Junior Miss	20	Sport		D449	D
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Glider

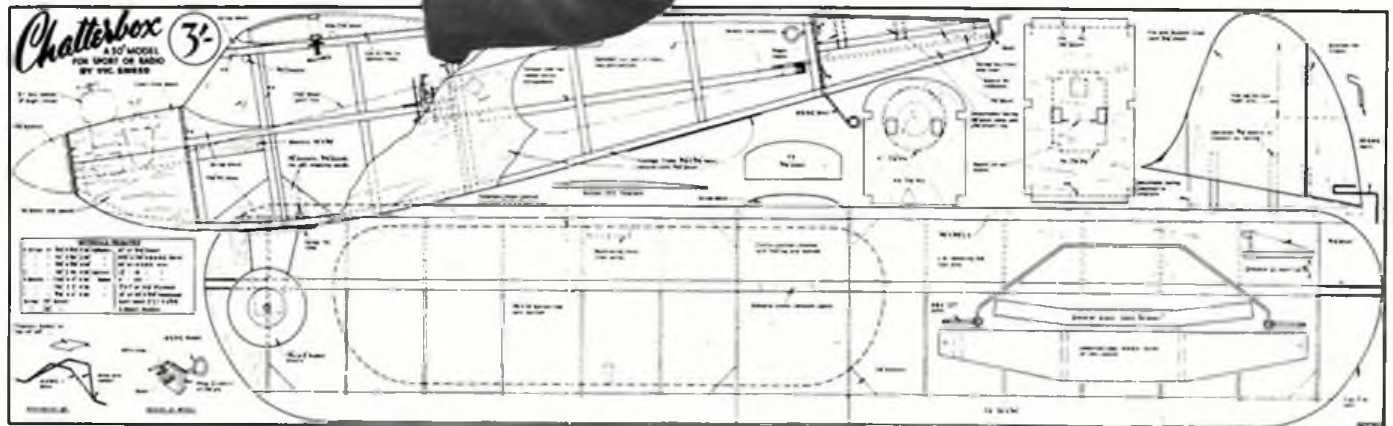
Golden Wings	44 1/2	A/1		G 594	D
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Price Codes as follows:

C: £2.25; D: £2.75; E: £3.50; F: 4.25.

Postage on orders up to £6.50 is 60p, above that, 70p.

Plans available from ASP Ltd, 9 Hall Road, Maylands Wood Estate, Hemel Hempstead, Herts HP2 7BH.



READERS' LETTERS

The insoluble solved?

Dear Sir,
May I make a suggestion re the escalating vintage/radio controversy? As you know we have made a determined attempt at Old Warden to ensure that the Fireball Trophy is still given to the best vintage model achievement in C/L. The whole problem of vintage integrity, flying models in a modern environment and a need for historical accuracy is close to insoluble and, most important, could be self destructive. It must be realised we are all modellers doing what we enjoy and nobody is right or wrong - it's only a hobby!

This idea may clarify exactly what is a vintage model. It could neatly gather in all the various types. A transfer on the model stating that it is 'a pre-1950s Flyer' could be the answer.

Models that fit into this class are:

- Any class, F/F, C/L, rubber, glider or R/C.
- Model must be made from materials that would have been available in a model shop pre 1950, i.e. balsa, ply, tissue, nylon, balsa cement. A similar period engine must be fitted.
- No scaling up or down permitted.

That's it! Modellers would apply for a transfer and registration for their model which would then be on a listing and eligible for whatever competitions were envisaged.

Twickenham, Middlesex Mike Beach

Spring in the air

Dear Sir,
I wonder if your rocketry correspondent was a little harsh in his assessment of the Jetex Space Ship of the 1950s. (In the April issue Paul Clark ventured that this device relied considerably on the energy from launching springs, as opposed to motive power. GC). The Aeromodeller review of the model (Trade Notes, March 1955) warns not to try firing it without the motor running as it will '...reach all of 15 feet, the chute may not have time to work...'. If one looks at the specification, the first advert I found (January 1955) gives its all up weight as 2oz, while the double-spring Jetex 50R produced 5.1/4oz of thrust for three seconds when loaded as described in the Space-Ships kit (Aeromodeller, April 1955, Motor Mart). This gave a thrust-to-weight ratio of 2.625 to 1.

Now, to catapult the inert model to 15 feet requires an initial velocity of around 31 feet per second, and even if our advantage of thrust over weight can't produce any further acceleration the model should still reach 90 feet at the end of the three-second burn.

Having said all that, I never actually saw one perform. 47/6d (£2.37p) was way beyond the reach of our social stratum! Perhaps someone can give us a first-hand account of what the Jetex Space-Ship could do?

Weston-Super-Mare Ken Jones

F/F Nats and the World Cup

Dear Sir,
I am writing to correct the comments in May's Hangar Doors concerning the FAI status of the

Free Flight Nationals.

The proposal was made that the F/F Nats FAI events be submitted for the FAI Sporting Calendar and I understand that this was passed by the SMAE Council at the meeting on 16th January 1988. Since this was earlier than the required three months before the event, there was then no obstacle to the Nats being submitted to the FAI for inclusion on the FAI 1988 Calendar in the Open International category (although some of the value is lost when there is a late submission, like this, and the event is not listed on the initial calendar published at the start of 1988).

The real question that arose was not so much the submission for the calendar but the inclusion of the Nats as one of the events eligible for the FAI Free Flight World Cup. Since competitors making a bid for the World Cup will want to plan early in the year which events to attend, I deemed it desirable to finalise the list of eligible events at the time of the initial publication of the FAI Calendar. This meant making the decisions at the CIAM Bureau meeting in early December. At that time the list was indeed drawn up, subject to some doubt with regard to one competition. An Italian delegate at the meeting reported that the Trofeo Italcantieri would be held in 1988 but the date had not been fixed. This was a popular event which had counted for the World Cup in 1987 and so I agreed that it could be included also for 1988 if I received details of its submission to the FAI by the end of December. This deadline was not met and so the event is not included for 1988.

It might have been feasible to have included another competition (for example, the UK Nats) when an updated World Cup events list was distributed. However, during January applications were received for inclusion of at least two other events as well and it became obvious that if this number of additions were allowed then the World Cup events list could become the source of much confusion. Moreover, competitors would have valid grounds for complaint if there were so many late additions - the news would slowly filter through to their National Aero Clubs and magazines with publication well into the year (such as the May Aeromodeller, when three events of the 1988 World Cup have already taken place) and this would penalise those who could not make last minute plans to attend events.

In future it is intended to continue to be absolutely rigid in applying the rule of selecting events at the December CIAM Bureau meeting, without even the hint of later admission like this year. There is certainly no problem with the number of events (and no "excess"); indeed it will be very welcome if more F/F competitions are submitted for the FAI Calendar and may then be selected for World Cup status.

Thank you for your support of the FAI World Cup by marking the events in the International Calendar in Aeromodeller. Please note that the Izel Kurtalic competition in Yugoslavia should also be shown as counting for the World Cup.

Farnborough, Hants Ian Kaynes

A spirit lifted

Dear Sir,
I became interested in model rocketry many years ago. A friend brought me a kit and some rocket motors along with a book on the subject



An Estes Honest John blasts from the launch pad. Watch for more rocketry in '88...

back from the States. I flew the model (when no one was looking) until I had exhausted my supply of engines. The book was the Handbook of Model Rocketry by G. Harry Stine.

However, countdown for further launches was halted by the 1875 Explosives Act. Both book and kit were put away to gather dust and my contact with the hobby was lost, but not the interest.

The X-15 on the April Aeromodeller caught my eye and I noticed the caption 'Blast off for UK Model Rocketry'. It stopped me dead in my tracks and I bought the magazine.

Well done to all the members of BSMA who have helped the hobby to achieve lift off here at last.

Lightwater, Surrey A. Perry

Awestruck

Dear Sir,
I thought you might be interested to know that Yeabsley's Sunspot is flying out here in the



Hup! John Tysoe's Sunspot on the bungee...

colonies. It is attracting a lot of favourable attention. Most of the 'old guard' recognise it instantly, and it is without doubt the nicest thing in the sky around here. Personally I was awestruck at the first flight, and have remained that way ever since!

Built from an ancient yellowing plan supplied by Jack Humphreys (who also took the photo) the glider has been modified slightly to include a bit of spruce in the wing to withstand hi-start launching, a touch of radio to force it back to earth when I've had enough, and a rudder three times the size of the original, with which I can usually manage a turn before reaching the US border.

Ontario, Canada John Tysoe

INTERNATIONAL WHAT'S ON

Contact SMAE at Kimberley House, Vaughan Way, Leicester (0533 518500) for details of all Championships.

World Championships

5 - 11th August
WORLD CONTROL LINE CHAMPIONSHIPS
Venue: Kiev, USSR. Organising body: FAS of USSR.
Classes: F2A, F2B, F2C, F2D.

8 - 15th August
WORLD JUNIOR FREE FLIGHT CHAMPIONSHIPS
Venue: Leszno Poland. Organising body: Aero Club of Poland.
Classes: F1A, F1B, F1C.

14 - 19th August
WORLD ELECTRIC R/C CHAMPIONSHIPS
Venue: St. Louis, USA. Organising body: AMA.
Class: F3E.

5 - 11th August
WORLD CONTROL LINE SCALE CHAMPIONSHIPS
Venue: Kiev, USSR. Organising body: FAS of USSR.
Class: F4B.

3 - 11th September
WORLD RADIO CONTROL SCALE CHAMPIONSHIPS
Venue: Gorizia, Italy. Organising body: Aero Club d'Italia.
Class: F4C.

European Championships

3 - 9th July
FREE FLIGHT EUROCHAMPS
Venue: Zrenjanin, Yugoslavia. Organising body: Aeroklub Zarko Zrenjanin.
Classes: F1A, F1B, F1CV.

25 - 31st July
RADIO CONTROL AEROBATIC EUROCHAMPS
Venue: Norrköping, Sweden. Organising body: Organising body: SMFF.
Class: F3A.

30th August - 4th September
SPACE MODEL EUROCHAMPS
Venue: Suceava, Romania. Organising body: Federatia Aeronautica Romaniaa.

13-18th September
RADIO CONTROL HELICOPTER EUROCHAMPS
Venue: Eibergou, The Netherlands. Organising body: G. Nijhuuis.
Class: F3C.

21-24th September
MAGNET SLOPE SOARING EUROCHAMPS
Venue: Banska Bystrica, Czechoslovakia. Organising body: Ustredni Modelarsky Klub CSSR.
Class: F1E.

Open International Events

(Generally non-R/C only listed here)

26th April - 1st May
WASSIL DEMIREVSKY - JULIU CUP
Venue: Stanke Dimitov, Bulgaria.
Organising body: Ikar Aeromodelling Club, 2600 Stanke Dimitov, POB 50, Bulgaria.
Class: S3A, S6A, S4B, S7, S8R.

30th April - 1st May
CUPR OF LORRAINE
Venue: Marville, France.
Organiser: Jean-Paul Perret, 22 Rue de Mousson, Alton, 54700 Pont à Mousson, France.
Classes: F2A, F2B, F2C.

7 - 9th May
CONTROL LINE INTERNATIONAL
Venue: Hradec Kratove, Czechoslovakia.
Organising body: Ustredni Modelarsky Klub CSSR, Opletelova 29, 116 31 Praha 1, Czechoslovakia.
Classes: F2A, F2B, F2C.

12 - 15th May
14TH INTERNATIONAL MILITKY CUP
Venue: Pfaffikon/ZH, Switzerland.
Organiser: Emil Gietendanner, Feldstr. 25B, 8330 Pfaffikon, Switzerland.

12 - 16th May
1988 INTERNATIONAL FESSLFLUG CUP
Venue: Kraiweisen - Salzburg, Austria.
Organiser: Johann Niederwimmer, Bessarabier Strasse 39, 5020 Salzburg, Austria.
Classes: F2A, F2B, F2C.

20 - 21st May
MEMORIAL FULOP SANDOR
Venue: Domsod, Hungary.
Organising body: Modell Klub Budapest, PG-614, 1374 Budapest, Hungary.
Classes: F1A, F1B, F1C. World Cup points.

4 - 5th June
AKRO 88
Venue: Nafels, Switzerland.
Organiser: Modellfluggruppe Glarnerland, Elmer Kaspar, Lowengasse, 13, 8570 Giterau, Switzerland.
Class: F2B.

11 - 12th June
CRITERIUM MIDDEN NEDERLAND XX
Venue: Utrecht, Luchtvaartvereniging De Kempharen, Eduard Verkadealaan 123, 3584 Gt Utrecht, The Netherlands.
Classes: F2A, F2C.

12 - 13th June
7TH INTERNATIONAL COMPETITION OF ORLEANS
Venue: Orleans, France.
Organiser: Jacques Delcroix, 7 Rue de Foucembange, 45000 Orleans, France.
Class: F1D.

18 - 19th June
LOIRRAINE CUP
Venue: Eblange, France.
Organiser: Jean-Paul Perret, 22 Rue de Mousson, Alton, 54700 Pont à Mousson, France.
Class: F2D.

25 - 26th June
MIDSOMERNACHT TROPHEE
Venue: Tarlet (Srnhem), The Netherlands.
Organiser: T.V. Eeden, Vermerlaan 15, 3764 WB Soest, The Netherlands.
Classes: F1A, F1B, F1G, F1H. World Cup points.

13 - 14th July
17 HERI KARGL CUP
Venue: Karneralm, Sibg, Austria.
Organiser: UMSC-Kolibri, Ober-Grafendorf, Felix Schobel, sen, 3200 Ober-Grafendorf, Austria.
Class: F1E.

15 - 17th July
EUROPACUP-AUSTRIA
Venue: As above.
Organiser: As above.
Class: F1E.

28 - 27th July
1988 SCANDANIVIAN OPEN
Venue: Revange, Sweden.
Organiser: Thomas Kostler, Harlosevej 184, 3400 Hillarod, Denmark.
Classes: F1A, F1B, F1C. World Cup points.

27th July
29 SOKO CUP
Venue: Mostar, Yugoslavia.
Organiser: Aeroklub N.H. Ljubo Bressan, Kpicas 8, 7900 Mostar, Yugoslavia.
Classes: F1A, F1B, F1C.

30th July
12 MEMORIAL IZET KURTALIC
Venue: Livno, Yugoslavia.
Organiser: Aeroklub Izet Kurtalic, Dure Pucara 3, 71300 Visoko, Yugoslavia.
Classes: F1A, F1B, F1C.

World Cup points

19 - 21st August
POITOU INTERNATIONAL
Venue: Thouars-Noize, France.
Organiser: Michel Poussard, 78 Rue La Fontaine, 79100 Thouars, France.
Classes: F1A, F1B, F1C, F1G, F1H, F1J. World Cup points.

28 - 28th August
VAR CUP
Venue: Gyula, Hungary.
Organiser: Istvan Gombocz, Pf 614, 1374 Budapest, Hungary.
Classes: F2A, F2C.

28th - 28th August
12TH INTERNATIONAL INDOOR MEETING: FLEMALLE
Venue: Flemalle, Belgium.
Organiser: Fernand Van Hauweart, Grand Place 1, bte 52, 4110 Flemalle, Belgium.
Classes: F1D, beginners' F1D.

27 - 29th August
19TH EIFEL POKAL
Venue: Zulpich, W. Germany.
Organiser: Hans-Peter Gatzweiler, Kolnstrasse 52, 5352 Zulpich, F.R. Germany.
Classes: F1A, F1B, F1C. World Cup points.

3 - 4th September
1988 MBZB CUP
Venue: Breitenbach, Switzerland.
Organiser: Christian Gafner, Genn. Wedmullerstr. 12, 8804 Au/Wadeswil, Austria.
Class: F2B.

3 - 4th September
INTERNATIONAL AROSER CUP
Venue: Arosa, Switzerland.
Organiser: Peter Glur, Feldstrasse 23a, 5442 Flisibach, Switzerland.
Class: F1E.

16 - 18th September
2ND CARL NEUBRONNER CUP
Venue: Gerzshofen, W. Germany.
Organiser: L. Gunther Jordan, Schweinfurter Strasse 120, 8719 Schwarzach/ Main, F.R. Germany.
Classes: S4, S6, S8E.

23 - 25th September
NOGRAD CUP
Venue: Salgotarjan, Hungary.
Organiser: Istvan Gombocz, Modell Klub Salgotarjan, Pf. 614, 1374 Budapest, Hungary.
Class: F2B.

1 - 2nd October
OPEN DE VUELO CIRCULAR
Venue: Mallorca, Spain.
Organiser: Club de Aeromodelismo, Mallorca, C/Tomas Rullman, Num 64 5º Basrtolomé Dey a Bllon, Spain.
Classes: F2A, F2C, F4B.

2nd October
EUROPA CUP
Venue: Utrecht, The Netherlands.
Organiser: Utrechtse Luchtvaartvereniging De Kempharen, Eduard Verkadealaan 123, 3584 Gt Utrecht, The Netherlands.
Classes: F2A, F2C.

8 - 9th October
14TH CALIFORNIA FAI
Venue: Taft, California, USA.
Organiser: Juan A. Livotto, 13212 Lake Street, Los Angeles, California 90066, USA.
Classes: F1B, F1C.

15th - 16th October
12TH SIERRA CUP
Venue: Roger Simpson, 2625 Queenswood Drive, Ranch Cordova, California 95670, USA.
Classes: F1A, F1B, F1C. World Cup points.

21 - 22nd November
JIM PATTERSON FAI CHALLENGE
Venue: Taft, California, USA.
Organiser: Bill Hartill, 7513 Sausalito Avenue, Canoga Park, California 91307, USA.
Classes: F1A, F1B, F1C.

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WHAT'S ON

18-19th June OXFORD MODEL FLYING CLUB FREE FLIGHT COMPETITION

Venue: Port Meadow, Oxford.
Champagne fly off contest for Coupe d'Hiver
and A/1; also 5 flight H.L.G. event.
Contact: Andrew Crisp, 30 Portland Road,
Summertown, Oxford OX2 7EY. Tel: 0865
53800.

18th-19th June ASP SCALE MODEL WEEKEND

Venue: Old Warden Airfield, Beds
Contact: Aeromodeller. tel: 0442 41221.

19th June INDOOR FLYING AT CARDINGTON

All-in Index and fun flying.
Contact: Bob Bailey. Tel: 0438 723642.

19th June CHILTERN CUP C/L AEROBATICS EVENT

Venue: Slip End. Open, Novice and Vintage
C/L Aerobatics
Contact: R. Landon. Tel: 0525 713472.

25-26th June THREE SISTERS C/L GALA

Venue: Three Sisters Site, Manchester.
Goodyear Class 1 and 2.
Open Speed, FAI and Diesel Combat. FAI
and Novice Stunt. Vintage - Midge Speed,
A and B Team Race. Contact: John Noble.
Tel: 061 790 4056.

2-3 July EAST TILBURY AEROMODELLERS FLY FOR FUN EVENT

Venue: Bata Sports Field, East Tilbury,
Essex. Licensed bar, children's attractions,
possible parachute display, static microflight
display.
Contact: Geoff Harris, School House,
Princess Margaret Road, East Tilbury, Essex
RM18 8SB.

3rd July PETERBOROUGH MFC DIESEL 'A' COMBAT

Venue: The Embankment, Peterborough.
Contact: Mick Taylor. Tel: 0733 204484.

3rd July SMAE F/F SCALE MEETING

Venue: RAF Abingdon. Power, rubber, CO₂/
Electric Scale. No flying before 10am.
Contact: Charlie Newman. Tel: 086 77 3020.

3rd July INDOOR FLYING AT CARDINGTON

Novice fly-Rod and fun-flying.
Contact: Bob Bailey. Tel: 0438 723642.

3rd July TENTH ANNUAL WALSALL MAC VINTAGE DAY

Venue: The Airport Aldridge, Nr Walsall
West Midlands (Junction 7, M6).
Comps. for classes 1, 2, 3 & Texaco, also
fly for fun. Free Flight comps and fly for
control line. Entry on day, proof of insurance
required. SAE for details and map to:
Malcolm Taylor, 270 Walsall Road, Great
Wyrley, Staffs WS6 6DY.

3rd July SMAE SOUTH MIDLAND AREA VINTAGE RALLY

Venue: RAF Henlow. Rubber, Glider, Power
F/F and R/C (All Vintage). Contact: Pete
Harvey. Tel: 0462 816980.

10th July ASP GOLDEN ERA MODEL DAY

Venue: Old Warden Airfield.
Contact: Aeromodeller. Tel: 0442 41221.

16-17th July SMAE INDOOR NATIONALS

Venue: Cardington
Programme
16th July: E2B for Houlberg Silver Trophy
(best 2 from 6); Index for Manhattan Cabin,
Novice, Fly-Rod, HLG, EZB, Pennyplane,
Novice Pennyplane, CO₂ Duration, Peanut
Duration (Best single score from 6); CO₂
Duration for Sparklets Trophy (best 2 from
6); CO₂ Duration for Sparklets Longest Flight
Trophy (best flight from 6 on 16/7); fun
flying.
17th July: Index for F1D, 35cm Microfilm,
Open Microfilm (Best from 6); F1D for
Aeromodeller Trophy, Fun flying.
Contact: Bob Bailey. Tel: 0438 723642.

16th-17th July INTERNATIONAL WINGS & WHEELS SPECTACULAR

Venue: North Weald Aerodrome, Essex.
Junction 7 from M11.
Contact: J. Woodley. Tel: 04024 71494.

17th July SHUTTLEWORTH MODEL GROUP DAY

Venue: Old Warden Aerodrome.
9am-6pm. Everyone welcome for general
flying.
Contact: Mick Staples 0223 241 978.

17th July BLACKPOOL AND FYLDE SCALE FLY IN

Venue: Blackpool Zoo flying Site. Semi-
scale to Super-scale, all welcome. Good
grass runway.
Contact: Chris Bromley. Tel: 0253 25080.

17th July KNAVESMIRE FREE-FLIGHTERS ANCIENT AND MODERN SILENT MINI- EVENT

Venue: York Racecourse.
Events: Coupe d'Hiver, A/1 Glider, CO₂,
Mini-Vintage Rubber (34in span max.), Mini-
Vintage Glider (54in span max.), H/L Glider,
Kit contest. Best Junior and other
impromptu small classes. 9.00am start in
rounds, variable max.
Contact: John Pool, 8 Sycamore Road,
Barlby Selby, N. Yorks YO8 7XB. Tel:
703060.
Prizes - Specially commissioned
commemorative mugs and cash, NB - please
phone before travelling far.

17th July WHARFEDALE CLASS A COMBAT COMPETITION

Venue: Dawsbury
Contact: Jeff Smith.
Tel: 0532 663432.

24th July COLCHESTER MAC VINTAGE DAY

Venue: Buras, R/C Vintage Model fly-In plus
Texaco, Class 1, Class 2 and Class 3 Ratio
competitions to SAM 35 R/C rules. 10am
start. Proof of insurance required.



Spectators welcome. There will be a BBQ
and refreshments. SAE for full details inc
map to: Peter Grant, 2 Duncan Rise, Gt
Yeldham, Halstead, Essex CO9 4QE. Tel:
0787 237967.

24th July OXFORD MFC DREAMING SPIRES GALA

Venue: Port Meadow. Scale events: up to
1.5cc Power, Rubber, CO₂/Electric, Jetex.
Vintage: Chuck glider, Lightweight Rubber
(folders and freewheelers), Glider (up to
A/2), Flight Cup Rubber. Open Tailless (no cut-
off date). SMAE insurance required. No
power models except for Scale, above.
Contact: C. Newman. Tel: 086 77 3020.

31st July FACCT THERMAL SOARING RALLY BARCS LEAGUE EVENT

Venue: RAF Weston-on-the-Green.
Pre-entry £2 + SAE + Frequency.
Contact: Mr H.G. Webb, The Bungalow, 13
East Street, Fritwell, Oxon OX6 9PX
SMAE members only.

31st July DEVON RALLY

Venue: Woodbury Common, near Exmouth.
O/R, O/G, O/P, All-In FAI, All-in Mini: 10
am start. Contact: Chris Chapman on 0209
212902 or Alan Parker on 0404 822861.

7th August INDOOR FLYING AT CARDINGTON

All-in Index and fun flying
Contact: Bob Bailey. Tel: 0438 723642

7th August NEWBURY AND DMAC VINTAGE MEET

Venue: Newbury Racecourse. Vintage R/C
and C/L. Proof of insurance required.
Contact: Mark Richards. Tel: 0266 841273.

7th August THREE KINGS C/L PROFILE CARRIER & VINTAGE STUNT EVENT

Venue: Old Croydon Aerodrome, Purley
Way, Croydon, Surrey. Silencers and proof
of insurance essential.
Contact: Wal Cordwell. Tel: 01-764 1661.

13-14th August SCOTTISH FREE FLIGHT NATIONALS

Venue: Newbigging, Lanarkshire. Entry
details from Ron Sabey. Tel: 0387 52285.

13-14th August SCOTTISH CONTROL LINE AEROBATIC NATIONALS

Venue: Fife Airport, Glenrothes. Entry
details from Ian Galt. Tel: 0505 683873.

20-21st August ASP VINTAGE MODEL WEEKEND

Venue: Old Warden Airfield.
Contact: Aeromodeller. Tel: 0442 41221.

21st August FACCT MINI GLIDER BARCS RULES

Venue: RAF Weston-on-the-Green. Pre-
entry £2 + SAE and 2 frequencies.
Contact: Mr N.G. Webb, The Bungalow, 13
East Street, Fritwell, Oxon OX6 9PX.

28-29th August INDOOR FLYING AT CARDINGTON

Team Trials for 1989 Indoor Eurochamps
(best 2 from 6) and fun-flying.
Contact: Bob Bailey. Tel: 0438 723642.

28-30th August SMAE SCALE AND R/C NATIONALS

Venue: RAF Barkston Heath
Contact: SMAE. Tel: 0535 518500

11th September SMAE NORTHERN GALA

Budapest Trophy for 1/2A T/A. Wharfedale
Trophy for FAI T/R. Venue: RAF Dishforth.
Contact: Jeff Smith. Tel: 0532 863432.

11th September SHUTTLEWORTH MODEL GROUP SILENT DAY

Venue: Old Warden Aerodrome.
9-6pm. Everyone welcome. No i/c engines to
be run.
Contact: Mick Staples. Tel: 0223 241 978.

18th September WALSALL MAC VINTAGE MEETING

Venue: Newtown, on A34 between
Bloxwich and Cannock. Take J11 off M6.
Classes 1, 2, Texaco, Flying Fifteen.
Contact: Tony Proggatt, SAE to 12 Tower
View Road, Landywood, Gt. Wyrley, Walsall
WS6 6HE
Tel: 0922 415883.

18th September INDOOR FLYING AT CARDINGTON

All-in Index and fun-flying.
Contact: Bob Bailey. Tel: 0438 723642.

18th September THREE KINGS C/L SCALE DAY

Venue: Old Croydon Aerodrome, Purley Wy,
Croydon, Surrey. FAI Scale and Profile
Classes. Best WW2. Silencers and proof of
insurance essential.
Contact: Wal Cordwell. Tel: 01-764 1661.

16th October SMAE INDOOR SCALE MEETING

Venue: Alumwell Centre, Walsall. Two
minutes from M6, J10. Peanut, Open
Rubber, CO₂/Electric, Kit Scale and Air
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Lockington Road, Monks Park, Bristol BS7
0UT.

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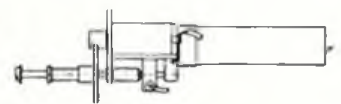
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Classified Advertising Tel.no.01-437 0626

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CAMBS. PE18 6LY
Barclaycard - Access - American Express
- Diners Club

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BROOMFIELD
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MAIDSTONE
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ASHFORD MODELS ★
68 KENT AVENUE
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KENT

SWANSCOMBE Tel: 0322 843182
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9.15 am-5 pm Sat
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33 COOMBE ROAD
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SUSSEX

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E. SUSSEX BN21 3HA
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ADVERTISERS PLEASE NOTE THAT ADVERTISING RATES ARE SUBJECT TO REVIEW FROM THE SEPTEMBER ISSUE. NEXT COPY DEADLINE FOR SEPTEMBER IS 8TH JULY.

Appendix - Links to the plans

The original issue comes with a free plan (Meadowlark Minor) printed front/back on a pull out banner of four sheets. The banner is not included in this document.

Wattie by R. Watson

FF Rubber revival from December 1942 revisited by J.Longhurst

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Meadowlark Minor Vintage Style by Mike Witthard

FF Power

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Mig 15 Ducted Fan from 1955 by P.E. Norman

FF Power

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Chatterbox from December 1958 by Vic Smeed

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