

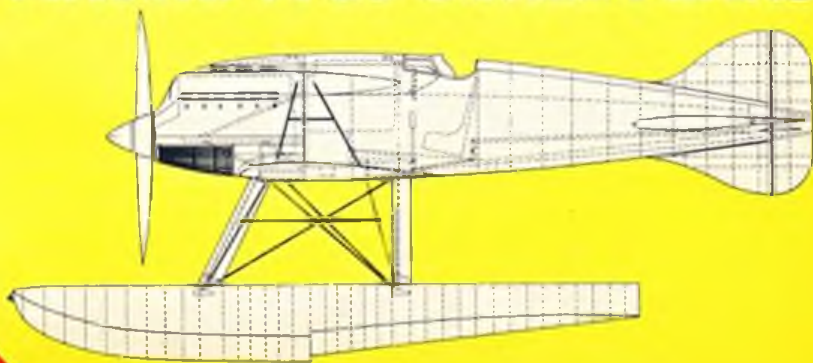
SEPTEMBER 1981 60p
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Aero modeller

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MAGAZINE

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SCALE DAYS

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Aero modeller

SEPTEMBER 1981

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EDITOR **COLIN RATTRAY**
Graphics **LORNA CULLEN**

MAP MODEL DIVISION MAGAZINE

Advertisement Director **M. GRAY**
Managing Director **RON MOULTON**

Comment

In this issue we start the first free competition of a series, to be continued in Aero-modeller over the next few months. See page 478 for the entrance form and all relevant details of how to enter this exciting

event which gives every reader an even chance to win. As you can see, we have a grand selection of radio control outfits to be won! Future prizes will include CO₂ motors, balsa wood and a host of other modelling goodies, to cater for all areas of aeromodelling. I look forward to receiving your entries and take this opportunity of wishing you all the very best of luck.

Editor



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NEXT MONTH

A full report on the European Control Line Championships held in Genk, Belgium. Full-size free plan is a rubber powered Wigan 70 competition model, companion to the Glider published in this issue. Plus!! Another free competition and the chance to win over £200 of modelling goodies. Engine tests on the Cox .09 and the Enya .09 by Peter Chinn. On Sale September 18. Price 60p

ON THE COVER

In the foreground Geoff Smith with his Short C-Class flying boat, winner of the Trophy for best F/F model at Old Warden All-Scale day. The model is powered by four Telco CO₂ motors, with the two inner and two outer motors connected in pairs. It has a span of 50 1/2 in., weighs 12 1/2 oz, and features papier-mache cowlings. Behind: John Blagg holds his rubber powered Farman Moustique and tandem wing DeLanne. Photo by Ron Moulton.



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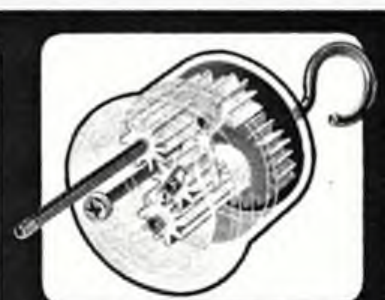
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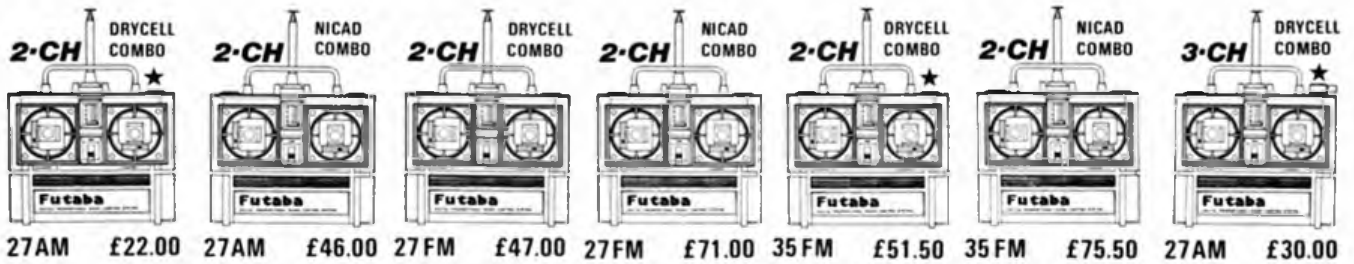
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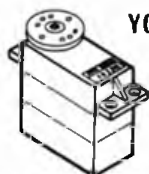


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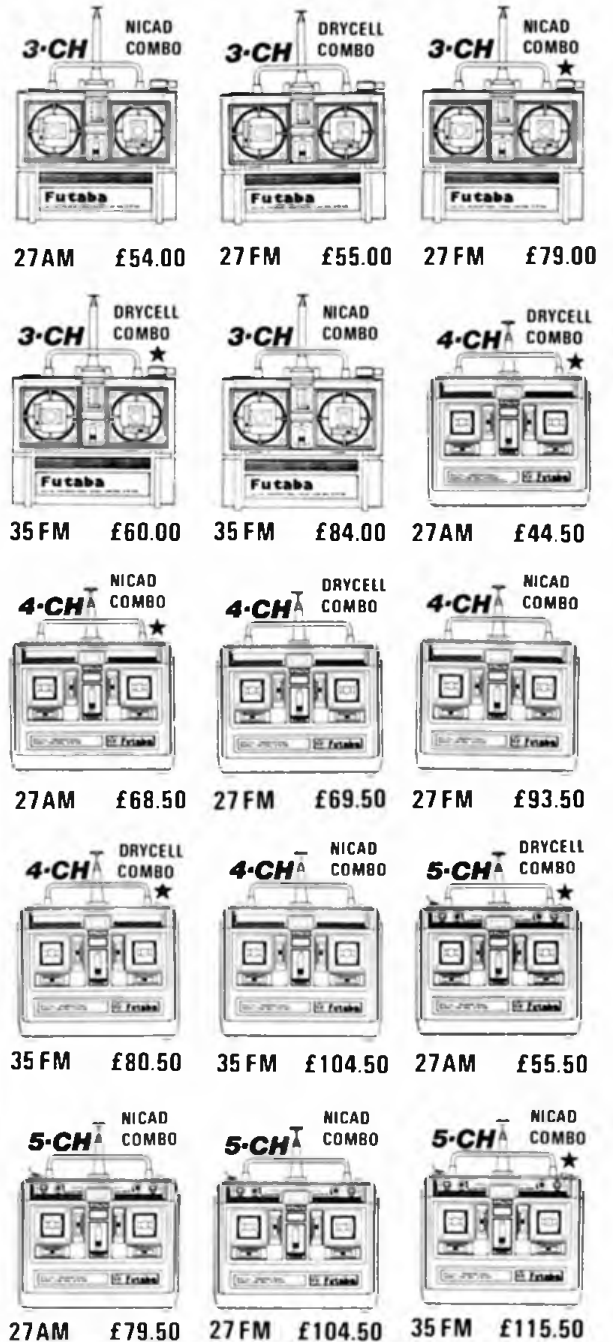
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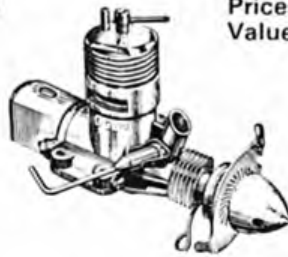
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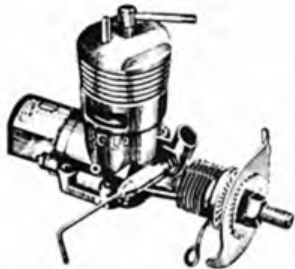
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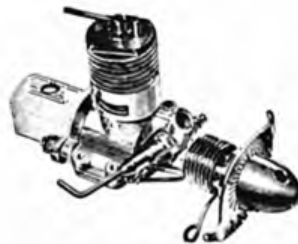
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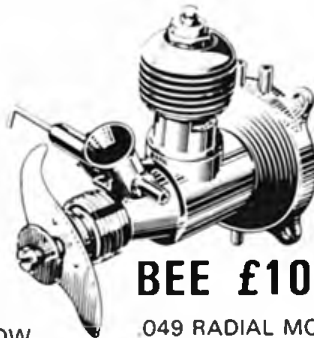
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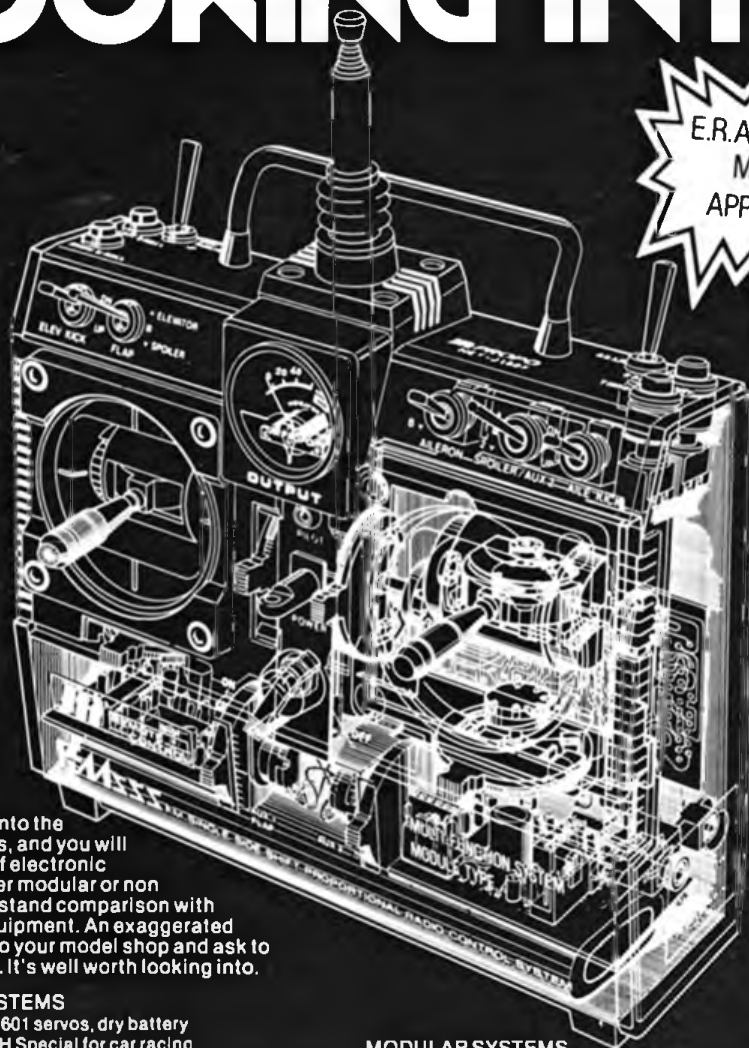
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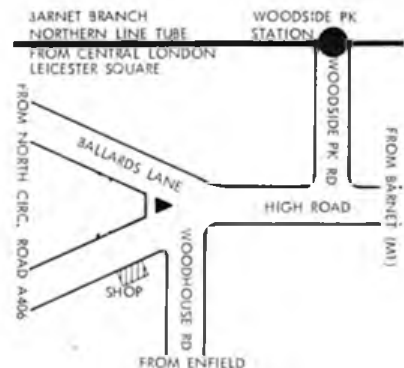
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This busy scale scene at a recent Old Warden model meeting was shot with the new Nova DX 5 on PAN F 135 monochrome film. The Nova Tele 330 captured enthusiasts readying this diminutive Nieuport (right) for flight at the same event. Both photos are by M.A.P. staff.

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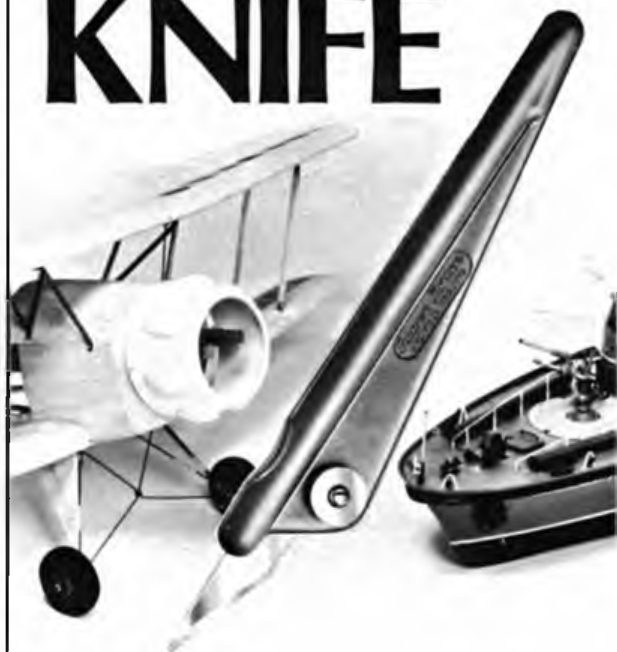
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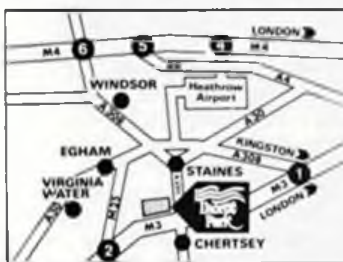
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Carlo Berqamaschi's beautiful Macchi M39 winner of the 1981 Coppa Schneider skims into a perfect landing in Gavirate. Hopefully it will compete for Italy at Calshot (see below).

F/F'er full of FIA, B. or C, you'll follow the excitement and drama *and* understand it, without knowing which way to pick up a handle.

SCHNEIDER RACER DRAWINGS

Given a unique opportunity to study about 150 original Italian design drawings, for the famous Macchi M39 racing seaplane, John Isaacs felt it his duty (and a privilege) to produce the scale drawings in this issue which, despite some incompleteness of source material, are certainly the most accurate yet to appear of this remarkable aeroplane. The M39 was an extremely advanced design for 1926, and had indirect influence on other Schneider races which followed. Its proportions make it an ideal subject for an R/C scale model and it is expected that at least one such entry will appear at the Calshot Spit celebrations.

SCHNEIDER CELEBRATIONS

The 50th Anniversary of the last Schneider Trophy (1931), is to be celebrated by the Southampton branch of the Royal Aeronautical Society in a glorious weekend at Calshot Spit, the scene of the actual races. The event is expected to include a unique display of British, Italian and American racers flanking the Schneider Trophy itself. The Supermarine S6A, Curtiss R3C-2, Macchi MC72, Sopwith Baby, and possibly a Macchi M39 as described in this issue will form the main exhibition along with Spitfires and other aeronautical associated with Southampton.

In the flying display, the Sea Tiger, Supermarine S5 replica, Battle of Britain flight, Red Arrows and privately owned Spitfires are going to provide a feast for enthusiasts with promise of the Italian MC 205 Veltro Fighter just restored, and even a fly-past by Concorde.

The Royal Aero Club has organised a Schneider Jubilee Air Race for September 12 with Calshot as a turning point.

Modelling interests will centre on the mini-Schneider contest with flying throughout the weekend as conditions permit. Many scale models of Schneider racers have been made specially for the contest and it is expected that a contingent from Italy will include the experienced participants of the now famous contest at Varese which is into its third year.

Racing seaplanes offer a particularly challenging design problem for modellers. Schneider racers are not known for large wings and then are frequently expected to travel as fast as racing power boats before they achieve flying speed. Spectators are guaranteed plenty of excitement over September 12/13 at Calshot where the entrance fee is £1 for adults, 50p for children.

INDOOR SPECTACULAR

The new town of Milton Keynes just off the M1 north of Bletchley has an ideal feature of a large hall right in the main shopping centre. Last year Middleton Hall was the scene for an inaugural indoor 'fly-in.' October 11 is the date set for 1981, so whatever your interest — make it a date, there's plenty of refreshment sources nearby and adequate parking.

CONGRATULATIONS

... to the whole Solar Challenger team for their fantastic achievement in making the flight from Cormeille-en-Vexin near Paris to RAF Manston, North Kent on July 7 after weeks of waiting for suitable weather. The flight took five hours, 23 minutes, with peak altitude of 11,700ft.

Overshadowed by the drama of riot reports and politics, this incredible illustration of low speed aerodynamics and acquisition of solar energy will go into the history books for later appreciation. Special congrats to our ex-editor Martyn Cowley who gave us the exclusive preview of the project in June issue and to Bob Boucher whose Astro motors derived from model experience provided the thrust power.

... to Ray Sibbald of Sidcup and Cosmo club on becoming the European Combat Champion at a memorable Criterium of Aces in Genk, July 7-11. It's no fluke to beat the best including reigning World Champ, Dorozcienko of Russia.

... to Sean Bannister who narrowly missed becoming World Champion in R/C Glider at Sacramento July 12-17. Like the well known car hire firm, he tried hardest but was pipped to second place at closing stages.

Jim Woodside gives a splendid word picture of the scene at Genk, next issue, such that even if you're a dyed in the wool

The Late Keith Hearn †

With the death of Keith Hearn on April 29, Australian model flying has lost one of its most popular personalities. He was 58 and had been suffering from leukaemia for five years.

Keith served as a pilot in the RAAF during the war, and immediately upon leaving the service in 1945 founded the Melbourne based Hearn's Hobbies Ltd., being joined by his brothers Jack and Bruce when they were released from the Air Force. Under their guidance, the business prospered, and soon became established as one of Australia's leading hobby stores. Keith and Jack between them produced an extensive range of simple but highly effective kit designs which served to introduce thousands of young Australians to the sport of model flying.

Keith was one of the pioneers of control line and radio control flying in this country, and remained an active and enthusiastic modeller throughout his life, one of the high points of his career being the setting of a world's altitude record for R/C models in 1961, with a height of 4,920ft. A more recent achievement was in 1978, when he built a 1/6 scale Quadra powered replica of the 'Southern Cross' and flew it on a 30 mile crossing of Port Phillip bay to commemorate the 50th anniversary of Kingsford Smith's Pacific flight. This project was carried through despite a period of hospitalisation for treatment to his illness.

Keith was a power and glider pilot of long standing, held the rank of Flight Lieutenant in RAAF reserve, and had served for many years as a voluntary instructor to the Air Training Corps. He is survived by his wife, Betty, his son Bruce, his daughter, Mrs. Anita Davis, his mother and his brothers Jack and Bruce.

Jim Fullerton

INDOOR NATIONALS

This major event is to be held at Cardington, Bedford, on August 29, 30 and 31. It is rather unfortunate that the R/C and C/L Nationals are held over the same period, but if you haven't yet experienced this side of our hobby, it is a venue not to be missed. Saturday 29 there will be HLG (Hand Launch Glider) for the 'Sweepette

Trophy' and also CO₂ Duration for the 'Sparklet Trophy.' We will be publishing a CO₂ Duration design by Dave Hipperson in the near future, so it is a good day to see just what can be achieved by this class of model. Sunday 30 will be for EZB and Manhattan class rubber powered models. EZB aircraft are simple, with open frame wings and stick fuselages, whereas the Manhattan models have built up fuselages

including a cabin. The 'Houlberg Trophy' will be presented to the winner of EZB.

The final day will be for the ultra light Microfilm type. These models are so delicate it is necessary for all occupants of the hangar to move very slowly so that the air is not disturbed too much. Why not go along and see them for yourself? An entrance fee of £1 has to be charged to cover the higher cost of renting the hangar.

Book Reviews

The Pathfinders - Published by Time Life Books Alexandria Virginia Size 235mm x 285mm 176 pages. Price £6.95.

This book gives a most fascinating account of the first aviation pioneers to attempt flying the Atlantic. The story starts in 1910 with Louis Paulham, a Frenchman, who successfully completed a flight from London to Manchester in a Farman Biplane. This won him the Daily Mail prize of £10,000 which had been given by the owner of the newspaper, Lord Northcliffe.

The feat of crossing the Atlantic was formidable, almost four times greater in distance than any aircraft had flown at that time over water. One of the main problems, apart from anything else, was the weather conditions; a hazard that seemed almost

insurmountable for any aircraft at that time.

There was also a further added risk, which was that the shortest distance lay North of the shipping lanes, making rescue unlikely in the event of a false landing.

The book relates in detail, descriptions of Alcock and Brown, Charles Lindbergh and other historic flights, and is beautifully illustrated with many black and white and full colour pictures. Altogether a most enlightening account of this period of aviation history.

Knights of the Air Published by Time Life Books Alexandria Virginia Size 235mm x 285mm 192 pages. Price £6.95.

As with most of Time Life publications, this volume is very well produced. The book gives a detailed account of World War I flyers and their battles in the air.

There are many photographs, full colour paintings, and cut-away full colour illustrations of aircraft, also uniforms and weaponry.

Of course, flyers such as Ball, Bishop, Mannock, and the famous ace flyer Manfred von Richthofen are to the fore, as well as many of the other heroes of the

time. Most interesting reading for the enthusiast, as well as the historian.

The Modelmakers Handbook by Albert Jackson and David Day. Published by Pelham Books Ltd., at £12.50. 32 pages, hardback, size 170mm x 240mm.

This is one of the most comprehensive books to have been published, covering most areas of modelmaking. Chapters showing modelling techniques, painting and finishing, improving commercial kits, dioramas, railways, engines, radio control aircraft, boats and cars. All sections are beautifully illustrated with two colour diagrams and photographs that give step by step illustrations on skilled operators. The chapter on dioramas, makes good use of the few full colour photographs that are reproduced.

We do have a slight criticism to make about the section dealing with rubber motors. There is no description of a folding propeller or free wheel mechanism, and the prop shaft arrangement shown would not even be suitable for a Peanut. Nevertheless, this type of book cannot be expected to offer more than a general description of a given area, as it covers so many subjects.

What's Happening?

For free flight venues see Free Flight Scene.

August 29/30
FIFTH INTERNATIONAL CONTEST CLUB DE PETITE AVIATION Sai F1D, EZB, Penny-plane Sun, Peanuts and "Saintes Formules" Day Prizes, cups and medals to all Venue Omnisports Hall "Andra Cools", Rue Beau Site, Flemalle, Belgium Contact F Van Hauwaert, Grand place 1 Route 52, B4110, Flemalle, Belgium

August 29/31 NATS
R/C C/L NATIONALS Venue Barkston Heath, Cranwell Contact Keith Watson 0533 412368 See August issue, p 431 for full details

September 6
PETERBOROUGH MFC 4th (FINAL) ROUND CLASS 'A' DIESEL COMBAT Venue The Embankment, Peterborough Contact Neil Gill, 4 Beech Road, Ginton, Peterborough PE6 7LA Tel P/Boro (0733) 252645

September 6
NORTHERN AREA RALLY ALL CLASSES F/F, C/L, R/C SMAE ONLY Venue Church Fenton Contact 0532 864026

September 12/13
Schneider Trophy celebrations R/C Scale, Calshot Spit, Southampton

September 13
C/L ALL FAI CLASSES (INVITATION ONLY) Venue Three Sisters Contact C/L Tech Comm Chairman SMAE MEMBERS ONLY

September 13
3 KINGS C/L SCALE DAY STAND OFF AND PROFILE SCALE Entry £1.00 Prizes and Trophies to 3rd place in each class Venue Old Croydon Aerodrome, Purley, Way, Croydon, Surrey Contact D Bird Tel 01 874 6394

September 20
T/S F3B SOARING LEAGUE Venue Maidstone SMAE MEMBERS ONLY Contact Geoff Dallimer 04626 78745

September 20
WOLVES 2nd FLY-IN (CONTROL LINE) F2B · NOVICE & JUNIOR STUNT CLASS II SCALE CARRIER SMAE OPEN & 40 PROFILE MINI GOODYEAR SMAE RULES BUT NO AGE LIMIT, CLASS A COMBAT (DIESEL) SLOW RAT RACE SILENCERS ESSENTIAL ALL CLASSES EXCEPT MINI GOODYEAR Venue Lucas Aerospace Sports Field, Stafford Road, Wolverhampton (A449) Contact C G Shelly Wolverhampton 330387

September 20
SMAE LONDON AREA MEETING - C/L SPEED ONLY Venue Old Army Parade Ground, Bicester Contact Paul Eisner Tel Lea Valley 760849

September 27
ROMANWAY MFS - VINTAGE & ELECTRIC FLY IN (R/C ASSISTED) ALSO CONTROL LINE Venue SAE to G Johnson, 37 Oxford Road, Kirtlington, Oxon

September 27
C/L F2C Venue Elliotts SMAE MEMBERS ONLY Contact C/L Tech Comm Chairman

September 27th
BATH MAC F/F, O/P, O/R, O/G ALL IN FAI ALL IN MINOR CO. AND HLG C/L FAI COMBAT · A COMBAT, TEAM RACE FAI & A POSSIBLY AEROBATICS Venue Merryfield, Nr Ilminster, Somerset Contact E Burles Tel 331126

September 27
R/C FAI PYLON Venue Fulbeck SMAE MEMBERS ONLY Contact Keith Hutson 0462 81270

October 4
AUTUMN KITE FESTIVAL Old Warden, Beds

October 4
R/C FAI AEROBATICS Venue Bullford Camp SMAE

MEMBERS ONLY Contact Geoff Franklin 0533 548313

October 4
SMAE SOUTHERN GALA F/F O/P O/R O/G A Cdh A1, HLG & CO, C/L F2B and NOVICES R/C SCALE STAND OFF AND STANDARD AEROBATIC Venue RAF Odham, Hants SMAE MEMBERS ONLY Contact N F Coutin, 7 The Green Walk, Willingdon, Eastbourne, East Sussex

October 4
ST ALBANS THERMAL SOARING CONTEST carried over from May 3rd BARCS League event Pre entry £2.50 SAE and Frequencies to J Powell, 7 Howland Garth, St Albans, Herts AL1 2NY

October 11
R/C FLY FOR FUN SMAE MEMBERS ONLY Contact Dick Hall 0705 593048

October 11
T/S F3B SOARING LEAGUE Venue Church Fenton Contact Geoff Dallimer 04626 78745 SMAE MEMBERS ONLY

October 11
SMAE NORTHERN GALA F/F OR R/P G C/L A FAI CL B R/C AEROBATICS for SMAE Trophies Plus other none SMAE events SMAE ONLY Venue Church Fenton Contact 0904 76794

October 18
SCALE AUTUMN MEETING R/C STAND OFF C/L SUPER SCALE SMAE MEMBERS ONLY Venue RAF Upwood Contact John Long

October 18
ELLIOTT AUTUMN RALLY - B TEAM RACE GOODYEAR FAI TEAM RACE A COMBAT SPEED AEROBATICS Venue Marconi Avionics, Rochester, Kent Contact Peter O'Neill Tel 732 57899

October 18
PETERBOROUGH MFC A COMBAT Venue The Embankment, Peterborough Contact Neil Gill, 4 Beech Road, Ginton, Peterborough PE6 7LA Tel P/Boro (0733) 252645



1



2



5

OLD WARDEN - Scale Days - 1981

1. Twin Mustang F82B built by Dave Kenny of the Blackburn and District MAC is now three years old. It has a span of 58 inches and is powered by two Merco 35 R/C engines. Third line operates throttle/flaps and with an all up weight of 5 $\frac{1}{2}$ lbs will still fly well on one motor.

2. Ron Truelove's C/L Hampden featuring retracts, flaps, bomb drop and closed circuit R/C system operating the working system.

3. 1/3 scale R/C Sopwith Pup making one of many impressive low passes. The model is powered by a four stroke Quadra motor built by John Day of Windsor.

4. K fir ducted fan R/C model by Larry Wolfe. The power plant is a K&B40 driving a Scozzi ducted fan unit. Fast fly-pasts were exceptionally realistic.

5. Geoff Burkett of Three Kings Aeromodellers flew this large Merco 61 C/L Gladiator for the first time at this meeting. Model handled well enough in strong wind to earn a prize.

6. A very accurately-built F-86 Sabre by Derek Knight was carved from solid balsa and hollowed out for Jetex 50 power. His daughter was carrying out some test gliding under Dad's watchful eye.

7. Pete Ball of Hornchurch built this very attractive CO: Fairey Flycatcher. Weighing 2 $\frac{1}{2}$ oz, the model is 1:18 scale at 18" span and is very well detailed. Broken tail-skid was the result of test-flying in strong wind.



8



9



12



13



8. Control Line Bristol Blenheim by Wal Cordwell powered by two Marco 35 R/C motors and featured retracts, bomb dropping and working flaps.

9. This Russian S.Z. Quadruplane No. 2 by Simon Rogers of Plymouth dates from 1916 and is built from information published in Air Pictorial. Spans 17" and weighing 44 grams, the model is Telco powered and flew well despite the strong winds. Simon travelled to Old Warden by long-distance coach, train, and by foot.

10. Only test flown the previous day, was this beautiful C/L Miles Satyr by Alan Cathaghan, to a scale of 1:6 and powered by an ST46.

11. Tim Cooper's rubber powered 'Curtiss Jenny' has a span of 24ins and features a Frog 2.5:1 gearbox. Peck Polymer spoked wheels, dummy engine and sprung undercarriage.

12. 1/2 scale version of Rupert Moores 'Viper', powered by a Telco CO₂ motor from the stable of Arthur Evans.

13. Mike Staple's C/L Miles Hawk with OS25 power and super dummy engine detail.

14. Nigel Robson, who is a member of the Hemel MFC and North London MFC, answering plenty of questions about his 82" span R/C Moth Minor.

15. Harry Perrens had a nice range of models which included a Telco powered Eindekker 1, a rubber powered Zero 6 AM built from a Peck Polymer kit and this Reartwin Speedster.



Engine Test Review

by Peter Chinn

THIS MONTH'S condensed test reviews are of two outstanding small engines first dealt with in the nineteen-sixties.

The Cox 'Tee-Dee' 09 first appeared in 1962 and was tested for the December 1962 issue of the old S.M.A.E. A journal, *Model Aircraft*. It quickly established itself as the most powerful 1.5cc engine available and is still in production.

The Enya 09-III (the 'Mk.3' version of an engine that had originated in 1954) appeared in 1966 and was reported upon in the AERO MODELLER June issue of that year, at which time it proved second only to the Cox TD09 in power output.

COX 'TEE-DEE' 09

Country of Origin: U.S.A.

Type: Glowplug-ignition, shaft rotary-valve with plain unbrushed main bearing.

Bore: 0.497 in. (12.65mm)

Stroke: 0.471 in. (11.96mm)

Swept Volume: 0.0914 cu. in. (1.497cc)

Weight: 78 grammes (2.75oz.)

The design and construction of the TD09 closely follows that of the Cox TD049 (previously dealt with in this series) which has long been the performance leader in the 0.05cu.in. (0.8cc) group.

One of the special features of the design is the induction system and its components. The counterbalanced crankshaft has a very large ($\frac{3}{8}$ in.) diameter journal, permitting a 0.266in. bore gas passage through it. This latter, and the 0.370in. long rectangular valve port, are uncommonly large for an engine of only 1.5cc capacity and undoubtedly contribute to the engine's above average performance. The shaft runs in a sleeve that is an extension of the crankcase, the whole being machined from aluminium alloy bar instead of being cast. A flat is machined across the bearing sleeve to expose a rectangular intake aperture matching the port in the shaft. This is then surrounded by a special moulded black plastic housing carrying a threaded boss into which the intake venturi is screwed. The housing is shaped to form an accumulator chamber between the intake and rotary-valve. It is a firm fit over the bearing sleeve and is held in place by a threaded locking ring at the front end.

The one-piece screw-in cylinder has two diametrically opposed ports of generous area and, between them, two diametrically opposed internal flute type transfer passages. The screw-in cylinder-head forms a shallow trumpet-shaped combustion chamber and has an integral glow element. The piston has a flat crown, is

case-hardened on its external skirt surface only and is permanently attached to the hardened steel connecting-rod by means of a ball and socket joint.

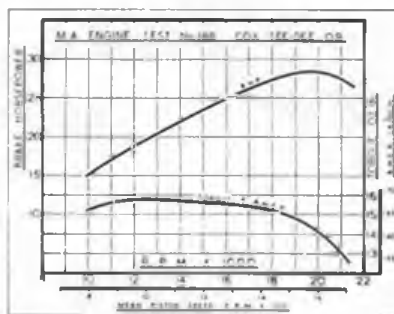
The 'Tee-Dee' engines were designed primarily for free-flight contest work using Cox Racing Fuel, or an equivalent blend, containing approximately 30 per cent nitromethane. The use of (now very expensive) high nitromethane content fuels is not a serious objection for small engines that run for the very brief periods required in F/F contests. Our tests were carried out on a mixture of 30 per cent pure nitromethane, 25 per cent racing castor-oil and 45 per cent methanol.

Two engines were used in the tests and, after a brief running-in period, these were found to average around 13,000rpm on a 'fast' 8x4 prop, up to 18,000 on 7x3 and up to 20,000 on 6x4 props.

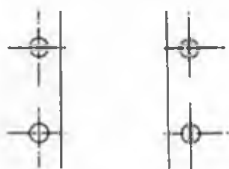
The Tee-Dee 09 obviously likes to be given its head. When loaded for speeds below 12,000rpm on the dynamometer, the engine tended to lose power on warming up from cold and torque dropped off abruptly as load was increased. The maximum torque indicated was just under 16oz.in. at between 12,000 and 13,000rpm, after which there was a very slight reduction in torque as load was reduced for speeds of up to 17,000rpm. Further reduction in load caused torque to drop off more sharply, reducing to 13oz.in. at 21,000rpm.

From the torque and rpm figures obtained, a peak power output of more than 0.28bhp at nearly 20,000rpm was determined: a most impressive result.

Cox 'Tee-Dee' 09 (full size)

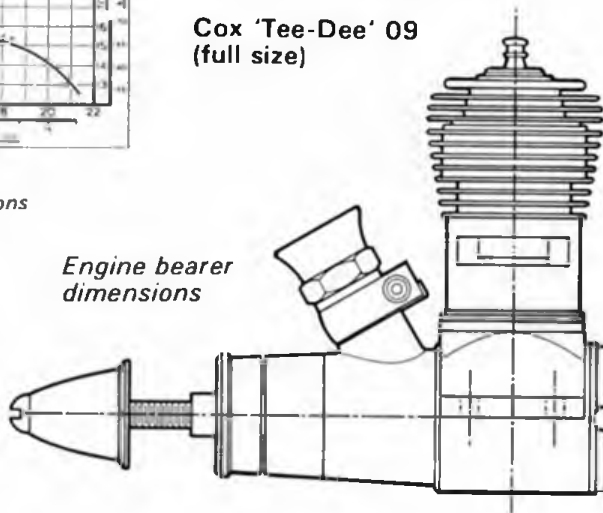


Engine bearer dimensions



Note in the photograph left: the timed pressure take-off nipple on the side of the moulded plastic housing

Engine bearer dimensions



Aeromodeller

Prop revs obtained on typical props of the period included 13,000 on an 8x4 Power-Prop standard wood, 13,600 on a 7x4 Tornado nylon, 15,200 on a 7x4 Power-Prop standard wood, 17,300 on a 7x3

P.A.W. wood, 17,800 on a 7x3 Top Flite standard wood, 19,500 on a 6x4 Power-Prop standard wood and 19,800 on a 6x4 Top Flite standard wood.

Handling and running qualities of the

TD09 were also very good. Starting was easy and while overloading could produce less steady running and an increase in vibration, the engine was impressively smooth at speeds above 15,000rpm.

ENYA 09-III

Country of Origin: Japan

Type: Glowplug ignition, shaft rotary-valve with bronze bushed main bearing

Bore: 13.0mm (0.5118in.)

Stroke: 12.2mm (0.4803in.)

Swept Volume: 1.619cc (0.0988cu.in.)

Weight: 105 grammes (3.7oz.)

Last year, the Enya 09-III was superseded by the 09-IV. This most recent version has not yet come our way, but there appears to be very little difference from the 09-III and it is reasonable to suppose that it will have a similar performance to the previous well-developed engine. Certainly it is highly unlikely that it will be in any way inferior to the 09-III.

The design features a pressure diecast aluminium crankcase/cylinder-block unit with a drop-in steel cylinder-liner and a detachable front housing secured to the crankcase with four Phillips screws. The front housing has a phosphor-bronze main bearing bush and an integral air intake into which is inserted a choke restrictor held in place by the spraybar assembly.

The very first Enya 09 motor had the conventional arrangement of opposed cylinder ports with the transfer passage between the outside of the liner and the inside of the surrounding casting. This was abandoned, in subsequent models, in favour of twin side-by-side transfer flutes formed in the inner wall of a very thick liner, diametrically opposite the exhaust, an arrangement that

has been copied by at least three other Far Eastern manufacturers of small glow engines.

The actual scavenging system is of the traditional crossflow type and the piston has a straight deflector on the transfer side, for which the bolt-on cylinder-head is suitably shaped to give adequate clearance. The lapped piston is of cast-iron and is fitted with a fully-floating 3.5mm dia. hardened tubular gudgeon-pin with brass pads. The connecting-rod is an aluminium pressure casting, but is of hefty proportions and has a bronze big-end bush. The counter-balanced crankshaft has a journal diameter of 8mm, a 4.5mm dia. crankpin and a 6.5mm bore gas passage fed from a relatively large rectangular valve port.

For our tests on the Enya 09-III we used Enya No. 30 platinum-rhodium element glowplugs. The engine was given a running-in period of one hour on our standard 5 per cent nitromethane glow fuel and this fuel was also used for the first set of tests.

The maximum torque obtained on this fuel was just on 15oz.in. at between 7,000 and 8,000rpm — a very good figure on a mild fuel — beyond which torque declined in a fairly smooth curve to produce a peak output of just under 0.19bhp at slightly over 16,000rpm.

The way in which the Enya pulled relatively large props was quite impressive. For example, it even tolerated being lumbered with a 10x3½ Top Flite wooden prop (something one would not generally

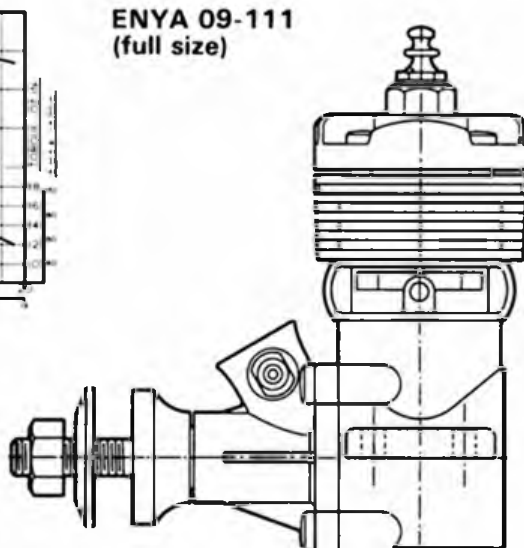
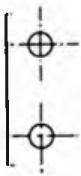
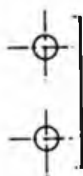
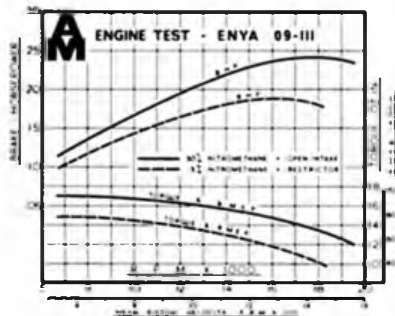
use on a glow engine smaller than twice the 09's size) which it lugged around at just over 8,000rpm, yet it was perfectly happy pulling a 7x3.

However, it was also obvious that, especially at the top end, the small choke area presented by the venturi restrictor was preventing the engine from breathing as freely as it might. We therefore decided to run a repeat series of tests with the restrictor removed and, just to see how near the engine might get to the Cox TD09, a 30 per cent nitromethane fuel was substituted.

As the performance curves show, these changes pushed the 09's maximum torque up to 17oz.in. and its peak bhp to just over 0.24 at nearly 18,000rpm. In other words, the maximum torque was slightly better than that of the Cox and, at speeds below 14,000rpm, the Enya was actually the more powerful of the two. The Cox's higher peaking speed, however, gave it the advantage at the top end.

The Enya ran very steadily with the choke restrictor installed and continued to do so with it removed.

The choice between the two engines will depend on the use to which the user wishes to put them. The high peak output and high power-weight ratio of the Cox would still make it the favourite for a 1.5cc contest free-flight model. The Enya, however, might be preferred for control-line stunt and R/C use. For the latter, the Enya, in both 09-III and 09-IV versions, is also available with a barrel throttle carburettor.



MACCHI M39

Described and drawn
by John Isaacs

AIRCRAFT
DESCRIBED
No: 250



JACQUES SCHNEIDER first offered his celebrated trophy for international competition in 1912 and the first contest at Monaco in 1913 was won by a Deperdussin at 45.75mph, the last at Calshot in 1931 by a Supermarine S6 B at 340mph. There were a total of 12 contests and participation became a matter of National prestige. The finest of the world's engineers were pitted against one another, a dozen pilots died, but some of the aeroplanes were among man's most beautiful creations.

First two places in the eighth Schneider contest at Baltimore in 1925 went to biplanes, Lt. James Doolittle's winning Curtiss achieving 232.57mph. Macchi's clean M33 flying boat took third place at 168.44mph while R. J. Mitchell's very advanced mid-wing cantilever monoplane, the Supermarine S4 had crashed beforehand.

For the 1926 event Ing. Mario Castoldi designed a monoplane seaplane. Its low wing improved the pilot's view compared to the S4. He installed low-drag corrugated-type water radiators over much of the wing which were so much less obtrusive than those of the earlier Curtiss machines as to be virtually unnoticeable. The wing was wire-braced giving a rigid structure and improving torsion resistance with consequently less possibility of the onset of the little-understood phenomenon of 'flutter'.

First drawings of the new design appeared in the Macchi workshops in January 1926 yet the first trainer aeroplane was flown as soon as the 6th of June by test pilot Romeo Sartori. Five machines were built, two intended for training and three for competition — the latter not being ready until near the end of August.

Due to shortage of time, Fiat's standard

12 cylinder 60 degree V A.S.22 engine of 590hp was installed in the trainers while the racers utilised the modified 880hp 31.4litre A.S.2 engines of increased bore, stroke, rpm and compression ratio.

Curiously, in view of normally bad stall characteristics, the aerofoil section of the slightly assymmetric-span wings had a sharply pointed leading edge. Each wing, swept back 2 degrees 24 minutes, was of traditional two-spar construction with three bays of wire-braced trusses. Spanwise stiffener members supported ply skins and surface cooling radiators which covered much of both upper and lower surfaces, clear chordwise strips being left where the streamline bracing-wires entered the wing to connect the spars to the top of the engine-bulkhead and to the floats.

Each spar was cleverly made up by hollowing out two wooden beams to form an open 'U' section between load nodal points where they remained solid. The open arms of the two 'U' beams were then joined together, aligned vertically, to form a hollow torsion-resistant box-spar. A third, smaller, false spar, into which were sunk the radiator water return manifolds, carried the aileron hinge attachments. The 40mm diameter metal aileron spar extended inboard to the wing root to act as a direct-action torque tube operated by a forward projecting lever linked to the control-stick via levers on the rocking shaft.

The beautifully faired all-wood semi-monococque fuselage terminated in a

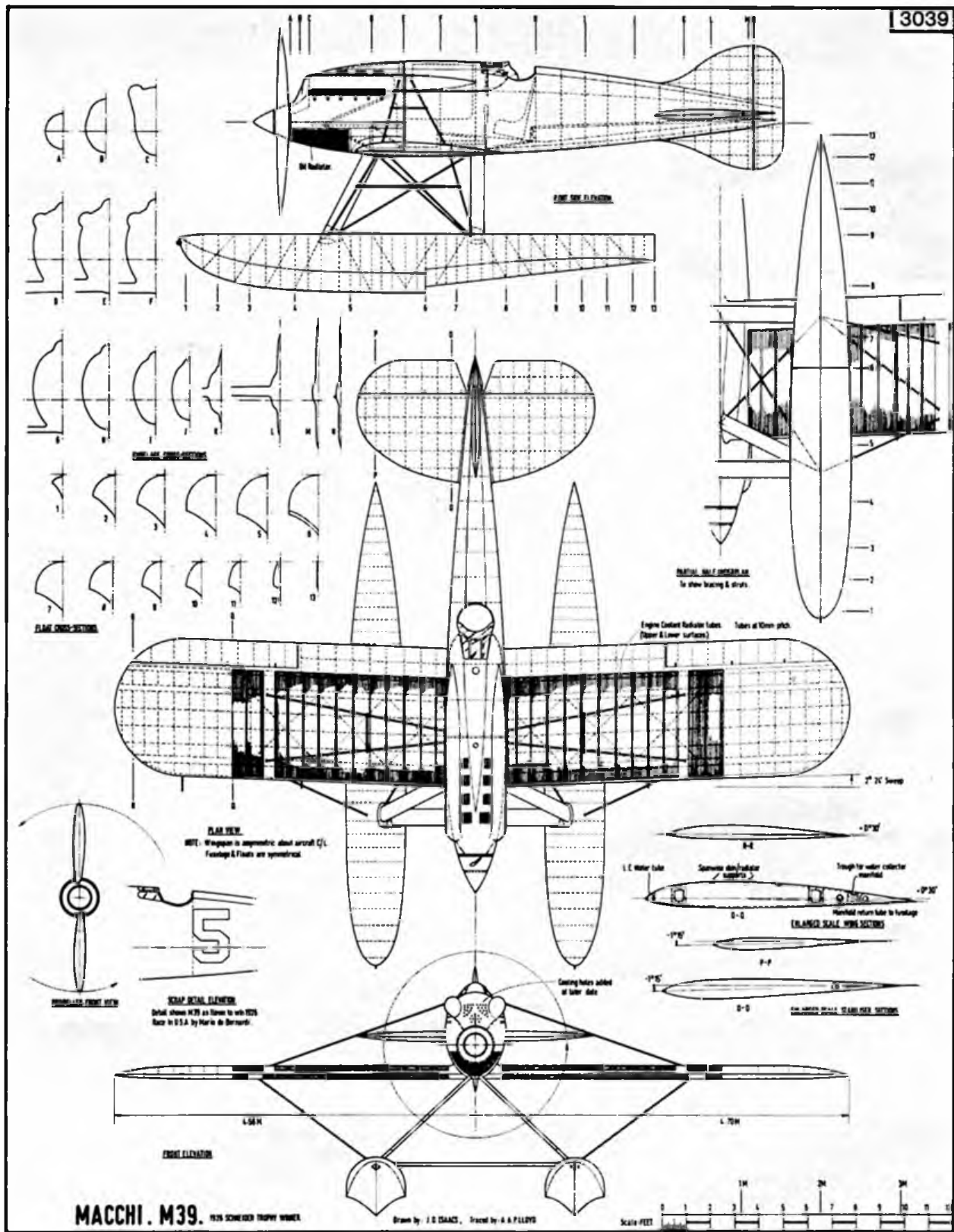
graceful dorsal and ventral fin with full depth rudder but at the forward end it was attached to a robust built-up metal tube framework incorporating the wing spar and float strut attachment points and two horizontal beams to which the big Fiat was secured. Since the head-on aspect of a 60 degree V engine forms, roughly, a triangle, the narrow crankcase being its bottom apex, the general fuselage cross-section approximated to this shape. It consisted of two circular arcs, the larger above the smaller, the two then being joined on either side by common external arcs.

Superimposed on this section the pilot's raised headrest continued as a dorsal spine the length of the fuselage. At the nose the projecting cylinder blocks and heads were close-cowled blending into the fuselage shape as it tapered to the large pointed spinner containing the ground-adjusted Curtiss Reed two-blade metal propeller. Behind this a surface oil cooler beneath the engine completed the cowl lines. A large fuel tank occupied the space between the engine-bulkhead and the rudimentary instruments consisting usually of airspeed indicator, tachometer, water and oil temperature gauges.

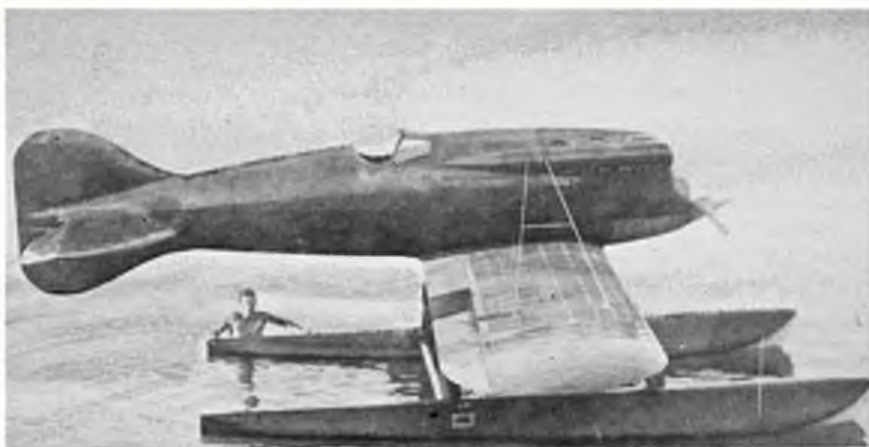
Continued on page 462

Small dimensions of the M39 are emphasised in the heading where Italian and U.S. Navy crewmen are bringing in one of the racers at Hampton Roads. Surface radiator detail (right) shows how the coolant flowed through small diameter pipes in strip panels on both surfaces of the wing.





Dyeline prints to the scale of 1/20th of these 1/72nd scale drawings are available as Plan No. 3039, price 95p inclusive of VAT plus 30p P&P from the Aeromodeller Plans Service, P.O. Box 35, Bridge Street, Hemel Hempstead, Herts HP1 1EE.



On test at Lake Varese, this M39 is already showing the quilted effect on the wing tip and tail surfaces due to thin ply covering over the box structure. All M39's were painted Italian Racing Red, apart from the brass finished radiator surfaces.

The cantilever wooden fins and the tail-planes (set at negative incidence of 1 degree 15 minutes), each with two attachments, appear to have been relatively easily changed since drawings indicate a variety of shapes which may have been tried out.

Single step V-bottom wooden floats were carried on two inverted-V struts and strut braced to each other, the 50mm diameter Vickers tubes being faired to streamline form. The float contour was well maintained by close-pitched frames about 6in. apart throughout its length.

The Regia Aeronautica's team of experienced pilots began training at Schiranna Air Station on Lake Varese, the same location is used for R/C model Schneider events today, and although the aircraft gave no serious flight problems the Fiat engine suffered from carburation troubles.

However, on 17 September Major Mario de Bernardi recorded 257mph which was 25mph faster than the 1925 race winner. Four days later team captain Commandant Centurione was killed when one of the practice machines stalled into the lake; in America Lt. Norton died stalling off a turn in a Curtiss.

At the end of October the Italian team startled the Americans when their four advanced-looking aeroplanes arrived at Hampton Roads, Virginia, to be readied for the 'duel' since there were no other contestants that year. Like the Americans, they had their problems. In practice de Bernardi was forced down, his engine on fire, and Ferrarin suffered connecting-rod failures. Engine spares demands meant cannibalising the reserve aircraft. But in clear weather on 13 November 1926 some

30,000 spectators watched each team get their three aircraft away for seven laps of the 50km course.

It was an exciting and dramatic race with an initial keen see-sawing of lap times but as it progressed the wake of dense black smoke foretold the failure of Ferrarin's rebuilt engine and the race became a battle between George Cuddihy's Curtiss R3C 4 and de Bernardi's M39 which appeared faster though its engine was also overheating. Entering the last lap Cuddihy's engine died of fuel starvation leaving de Bernardi to sweep home the winner at 246.49mph. Frank Schill's Curtiss R3C 2 was second at 231.36mph and Adriano Bacula's M39 third at 218mph with Bill Tomlinson last at 137mph in an outclassed Hawk. Coppa Schneider was en route to Italy. Four days later Major de Bernardi and the M39 set a new world speed record for seaplanes of 258.87mph.

Dr. Mario Castoldi's Italian artistry allied to logical thought created a classic aeroplane and perhaps its true significance was best summed up by Dr. Ing. E. Bazzocchi during his RAeS lectures in England in 1971 when he said "*the M39 set the definitive pattern to which all the subsequent racers were inspired.*"



COLUMBIA Space Shuttle

By
Ray
Malmström

THE LAUNCH OF AMERICA's first space shuttle was certainly a very dramatic milestone in space flight. Millions of TV viewers thrilled to the successful flight of Columbia. Those of us with experience of model gliders, felt an additional quickening of the heart beat when Columbia, on the final stages of the mission, assumed the role of a 75 ton glider! To celebrate this momentous flight, we felt we must try a simple space shuttle glider. Here then for your approval, and (we hope!) enjoyment, is Columbia 'in profile.'

Construction of Columbia is so simple that detailed instructions are unnecessary. However a few tips may prove helpful. Cut out the fuselage and nose doublers. Cement the nose doublers in place. Thrust

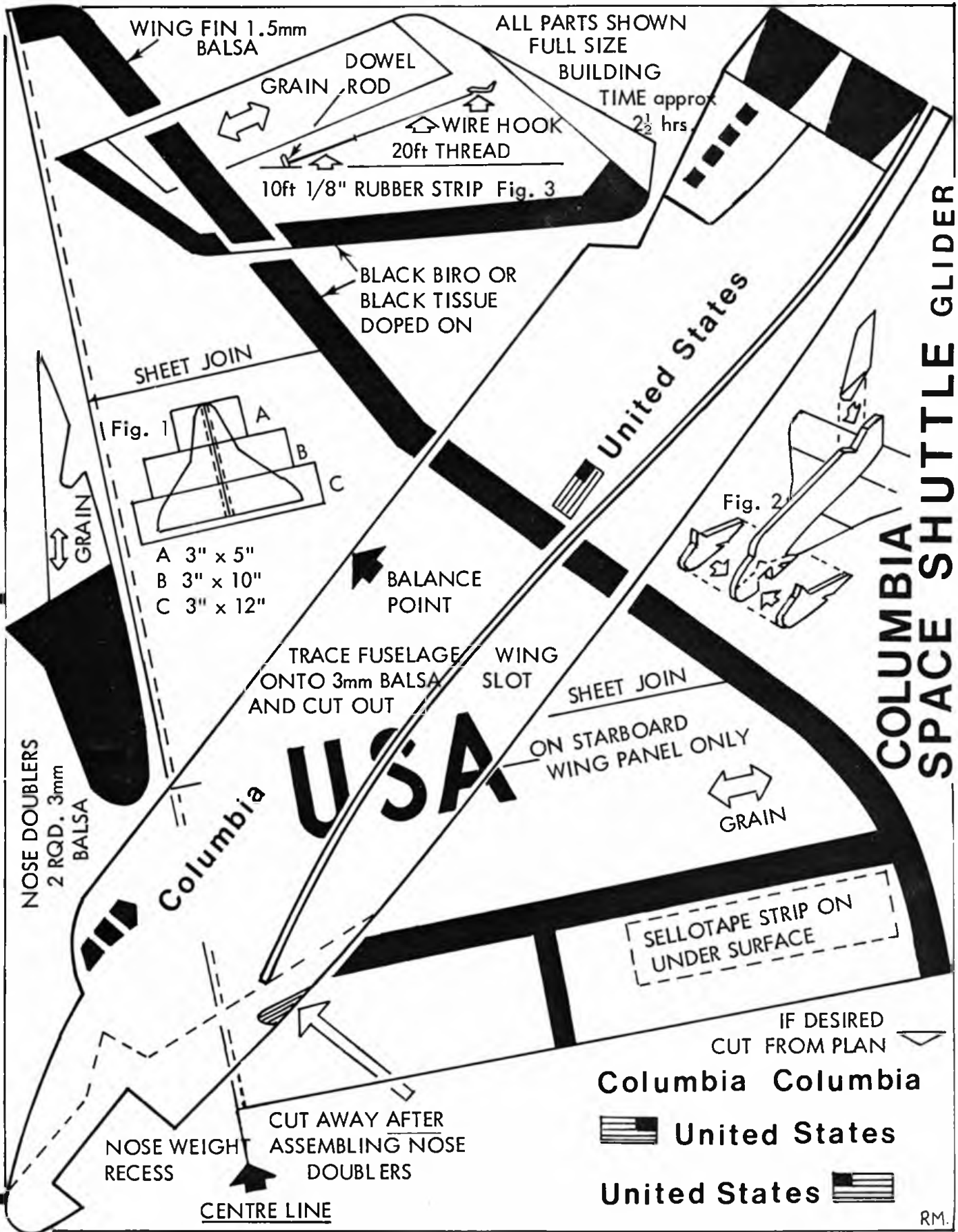
nozzles, window details, can be drawn with black biro. 'Columbia' and 'US insignia' can be cut from the plan and affixed to fuselage if desired.

The wing shape is traced onto 1.5mm medium balsa (Fig. 1) and cut out. Lightly sand round all edges. The black edging can be added with black biro or strips of black tissue doped on. Slide wing through fuselage wing slot, and cement. Check that fuselage and wing are at right angles to each other. Add the fin (Fig. 2).

Push a pin attached to a length of thread into the balance point. Place weight (lead or folded cement tube) into the nose recess, until the model hangs level, or slightly nose down.

Over long grass on a calm day, obtain

correct trim by test gliding into wind, varying the amount of nose weight, if required. Adding weight if Columbia tends to stall, and taking a little away if it dives. When trimmed to the best gliding angle, the model should touch-down about 30ft. from the launch point. If the model turns sharply, gently warp up the rear edge of the wing on the *outside* of the turn, slight fin trim can also be useful. Quite long flights can be obtained by hand launching with the wing banked to obtain a circular flight pattern. Good flights may also be achieved by gently hand launching into wind, from the top of a hill, or rising ground. You can also use the catapult/towline (Fig. 3). If you do, stretch back only a little for first tests with the model about 40ft from the dowel anchor. Always *bank* the wing before release for a circulating flight. Launching Columbia on a *level* keel at a height of about 2ft. above the ground will probably result in a spectacular loop! As you proceed with tests, you will find that pulling the towline back beyond a certain point does not always result in a longer flight.



WING FIN 1.5mm BALS

ALL PARTS SHOWN FULL SIZE BUILDING

TIME approx 2 1/2 hrs

DOWEL GRAIN ROD

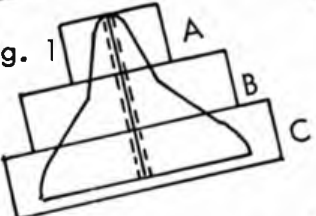
WIRE HOOK 20ft THREAD

10ft 1/8" RUBBER STRIP Fig. 3

BLACK BIRO OR BLACK TISSUE DOPED ON

SHEET JOIN

Fig. 1



A 3" x 5"
B 3" x 10"
C 3" x 12"

GRAIN

BALANCE POINT

TRACE FUSELAGE ONTO 3mm BALS AND CUT OUT

WING SLOT

SHEET JOIN

ON STARBOARD WING PANEL ONLY

GRAIN

NOSE DOUBLERS 2 RQD. 3mm BALS

Columbia

USA

United States

COLUMBIA SPACE SHUTTLE GLIDER

IF DESIRED CUT FROM PLAN

Columbia Columbia

United States

United States

NOSE WEIGHT RECESS

CUT AWAY AFTER ASSEMBLING NOSE DOUBLERS

CENTRE LINE

SELLOTAPE STRIP ON UNDER SURFACE

RM.

WIGAN 70 GLIDER

A small field competition glider. The article also includes information for a rubber powered model, which will be published in full next month. Design by Lawrence Gray.

THE WIGAN 70 class is specifically designed to be flown on small fields and is an ideal introduction to free flight model flying.

The rules are as follows:

1. Maximum projected wingspan 70cm (27.5in.)
2. Maximum length 70cm (27.5in.)
3. Minimum total weight 70g (2.47oz)
4. Fuselage must be of all-sheet construction.
5. Rubber power models must use an unmodified commercially available propeller.
6. Internal combustion engines limited to 0.49cc in. (0.8cc) and a seven second run.
7. Gliders to be flown from 50m towline.

The following construction notes are basically for the glider, although parts are relevant to the rubber powered model to be published next month.

The basic materials required are PVA wood adhesive, epoxy glue, balsa cement, several sheets of lightweight modelling tissue, dope, thinners, piano wire and a small amount of 1mm (or 1/32in.) thick plywood. For the rubber powered model a 10in. or 12in. diameter plastic propeller and bush will be required, plus a few other items. All these will be mentioned in more detail later.

grained. The 4in. wide sheet for the rubber-powered model fuselage MUST be soft, straight-grained and flexible as it is to be formed into a tube.

Wing and tailplane construction (both models)

Start by tracing the relevant wing rib outline onto a piece of 1mm (1/32in.) plywood — the grain of the outer laminations running from LE to TE (leading edge to trailing edge). A good method is to use carbon paper sandwiched between the plan and the plywood. Carefully cut this plywood rib out, using a modelling knife and checking that the outline is smooth, and the spar slots are the right size for the spars. (Slot the spars into the slots — no glue! just to check). This rib will be used as a template to cut out the balsa ribs.

From a sheet of medium 1/16in. balsa, cut off about 4in. Onto this piece, pin on the plywood rib template (again grain from LE to TE) and using a modelling knife with sharp blade (i.e. new!), cut round the template, being especially careful not to split the balsa wood when cutting across the grain (e.g. spar slots). Repeat this until the required number of ribs has been cut. Make sure

sure they are flush with the top of the ribs. When set, remove all the pins and remove the panel from the board. Take off the packing piece from under the TE and cut and sand flush the protrusions beyond the end ribs of the spar(s) and the LE and TE. In a similar way, over the plan, assemble the right centre panel. NB don't put in the centre rib (but make sure the LE and TE protrude beyond this point) and DO NOT add the spar(s) yet.

When set, trim the LE and TE flush to the point where the centre rib will be, sanding to the correct angle (see sketch).

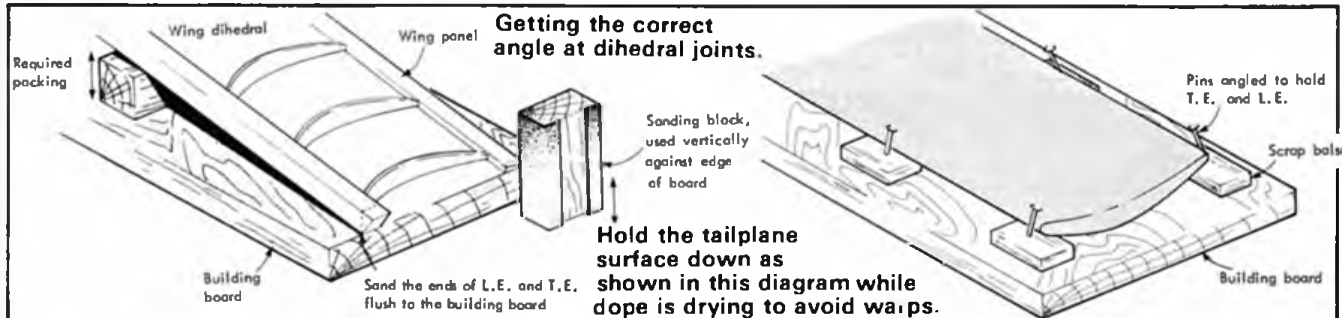
Pin the left centre panel onto the board and then butt joint the ends of the LE and TE of the two panels, propping up the outermost rib of the right panel by 1 1/2in. for the glider 1in. for the rubber model. Use pins to keep the panel in position, and an epoxy glue for the joint. When this has set, add the spars to the right panel (angle the ends to fit the spars of the left). Cut and sand flush the ends of the LE, TE and spars on the tip and of the right centre panel, when dry.

Assemble the two tip panels, (without spars or dihedral joint rib) with the LE and TE extending up to the position of the dihedral joint. Angle the LE and TE ends, only propping them up this time by 2 1/2in. in both cases. Glue the two tips onto the centre panels (one at a time!) to the correct angle. Add the spar. When dry, sand the spars, LE and TE flush at the tip rib and glue on the 1/2in. tip block (glider) or 1/32in. sheet tip plate (rubber model).

Sand the tip block and all the LEs to aerofoil shape, using a sanding block. Add the spar doublers and plywood braces, as shown, (simply cut extra slots in the ribs) and add the 1/16in. sheet gussets. Sand the whole airframe lightly overall to ensure all components are flush, being careful not to sand 'flats' on the curves of the ribs. The wing is now ready to cover.

Covering

Use lightweight modelling tissue (Modelspan or Jap tissue). This is air proofed, water-proofed and tightened by doping, using the following procedure. Give the whole airframe one coat of clear dope (use a soft brush) and sand lightly when dry. Don't attempt to cover the wing with just one



Wood list, sufficient for both models (balsa wood unless otherwise stated).

- 2 strips of 3/16in. x 3/16in. x 36in.
- 2 strips of 1/16in. x 3/16in. x 36in.
- 1 strip of 1/8in. x 1/8in. x 36in.
- 1 strip of 3/32in. x 3/32in. x 36in.
- 1 strip of 1/8in. x 3/8in. x 36in. pre-shaped trailing edge.
- 1 strip of 3/32in. x 3/16in. x 36in.
- 1 sheet of 1/32in. x 3in. x 36in.
- 2 sheets of 1/16in. x 3in. x 36in.
- 1 sheet of 1/16in. x 4in. x 36in. (rubber model only).
- Oddments of 1mm (1/32in.) plywood.

Wood selection

This is important, and frequently overlooked by kit manufacturers. Balsa ranges from very soft to very hard, with much variety in grain pattern.

All the stripwood should be straight grained. Avoid strips with severe twists or warps. They should be of medium density, apart from those for the wing spars (the 1/16in. x 3/16in. and 1/8in. x 1/16in. strips) which should be slightly harder. Make sure they are relatively flexible and not brittle. The two 3in. wide sheets of 1/16in. wood (and the 1/32in. x 3in. sheets) should be medium and straight

the spar slots in each rib are firm, but not tight. Take the wing plan, lay it on the building board and cover it with a sheet of clear polythene to stop the glue sticking to the plan. Build the left centre panel first.

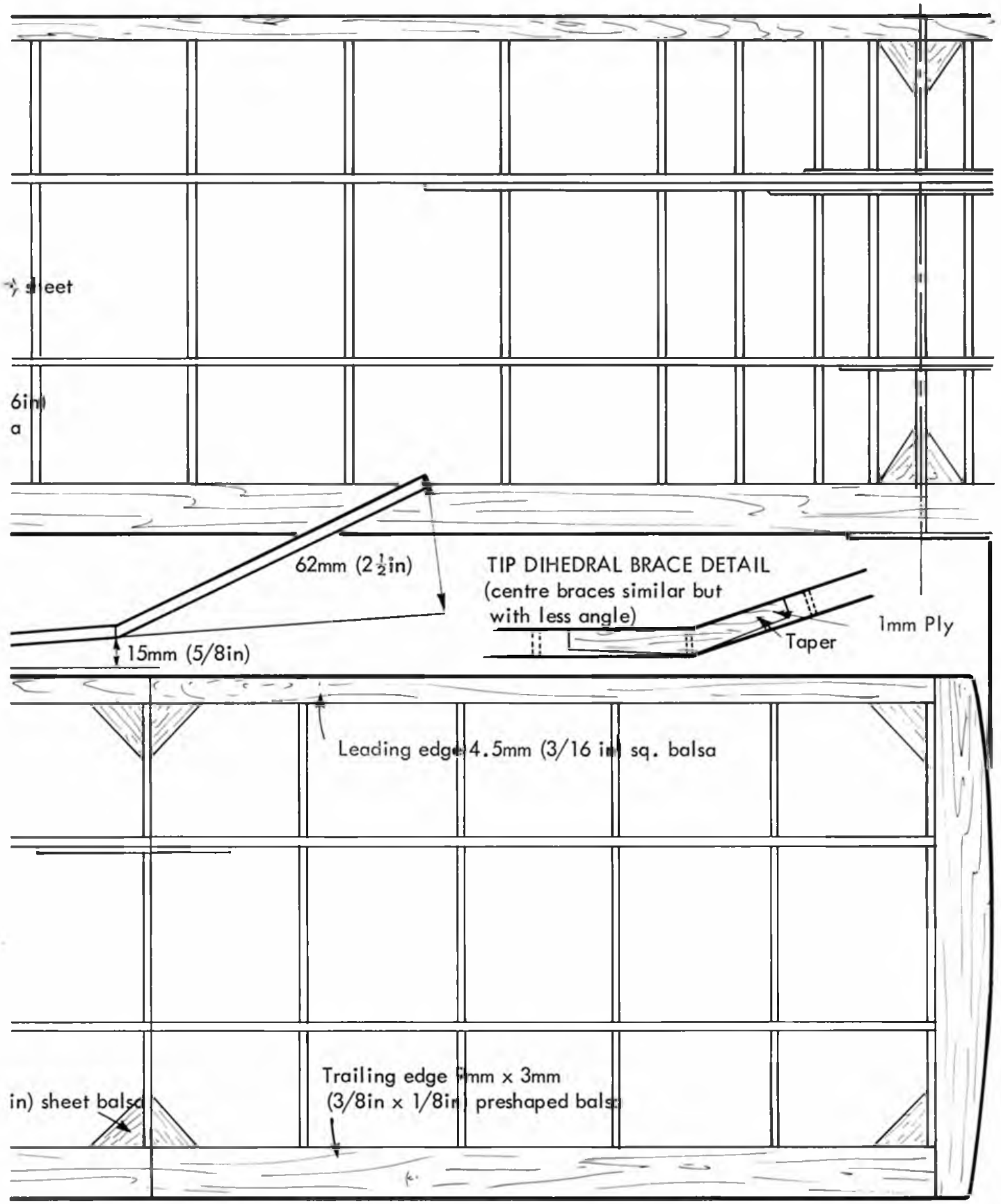
Cut a piece off a 1/16in. square strip, about 1/2in. longer than the centre panel and pin this in place over the leading edge of the left centre panel on the plan. Cut a similar length of wood of the relevant size for the trailing edge (e.g. 1/8in. x 3/8in. for glider, 3/32in. x 3/16in. for rubber model). Pin this into position over the TE on the plan — note it will be necessary to add a packing piece at the front of the TE so that it will fit into the aerofoil section (use a strip 1/16in. thick for the glider and 1/32in. thick for the rubber model). Make sure that the ribs are a good fit in between the LE and TE and then, using PVA, glue the ribs into the positions shown on the plan. Note that the centre rib and the rib at the dihedral joint are glued in at this stage.

When the glue is dry, cut from the stripwood the necessary lengths for the spars (slightly longer than the panel) and check that they fit snugly into the rib slots. Glue the spar (or spars in the case of the glider) in place with PVA making

piece of tissue. Cut eight pieces, each slightly oversize for the top and bottom of each panel, with the tissue grain running tip to tip.

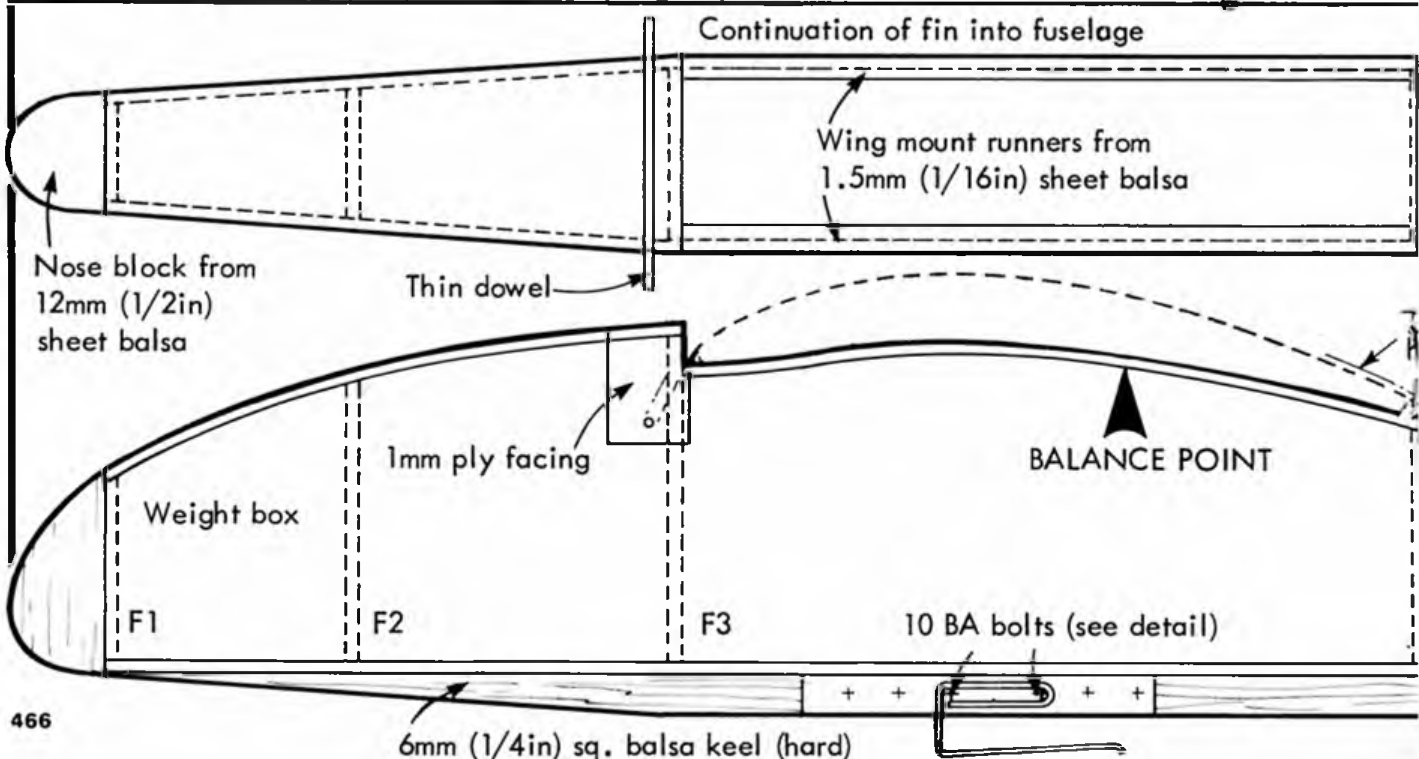
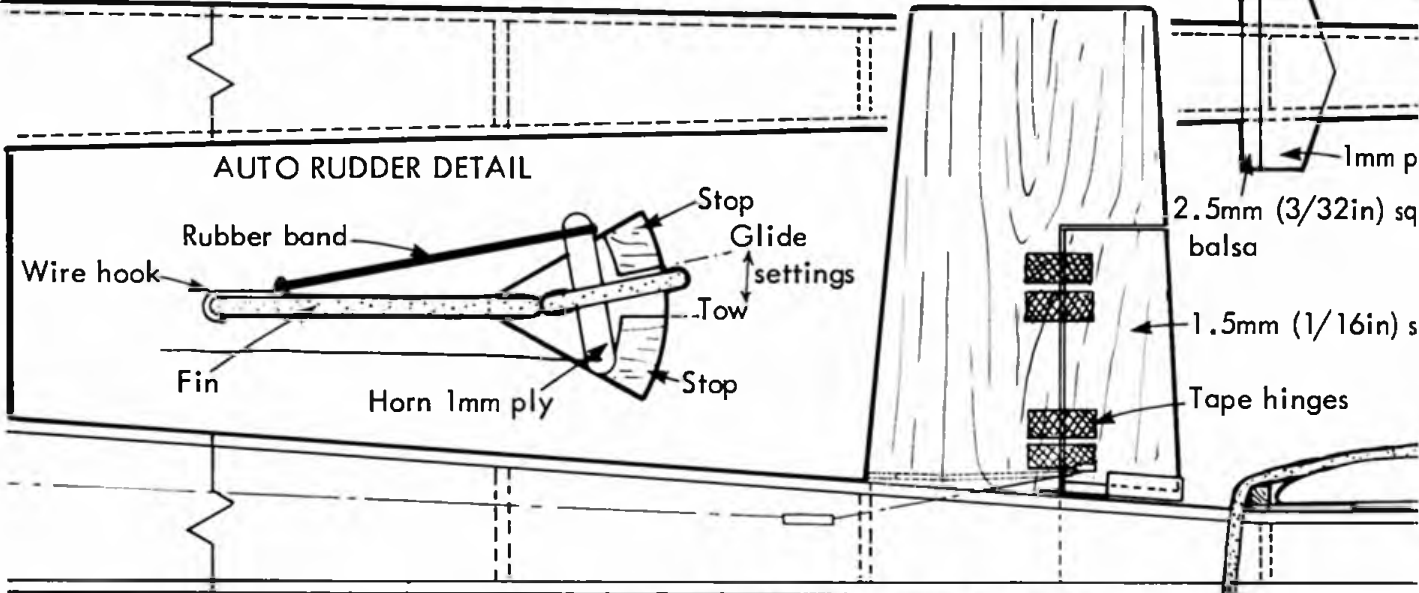
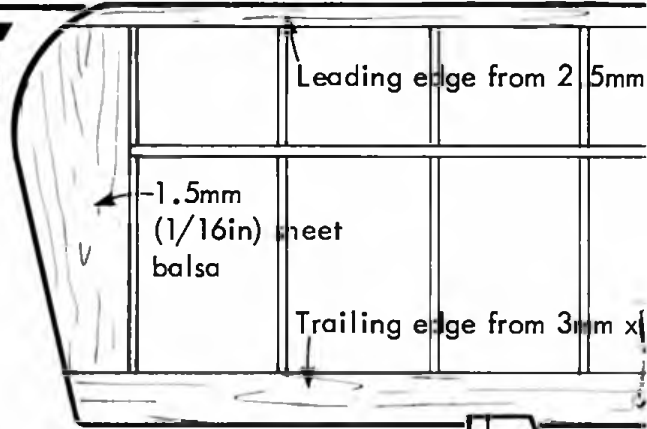
Start by covering the underside of one tip panel. Dope the underside of the airframe and place the relevant piece of tissue over the panel, press onto the ribs, LE and TE before the dope dries. This will have to be performed quickly. Brush thinners through the tissue onto the ribs and LE and TE and carefully rub it in with a finger, so that the tissue sticks to the frame. Pull out as many wrinkles as possible. Repeat this procedure using just dope, to ensure that the tissue sticks to the ribs, and so follows the undercamber of the wing section. It is also important that the tissue is stuck down well, as it adds strength to the structure. Cover the remaining undersides of the panels in a similar way.

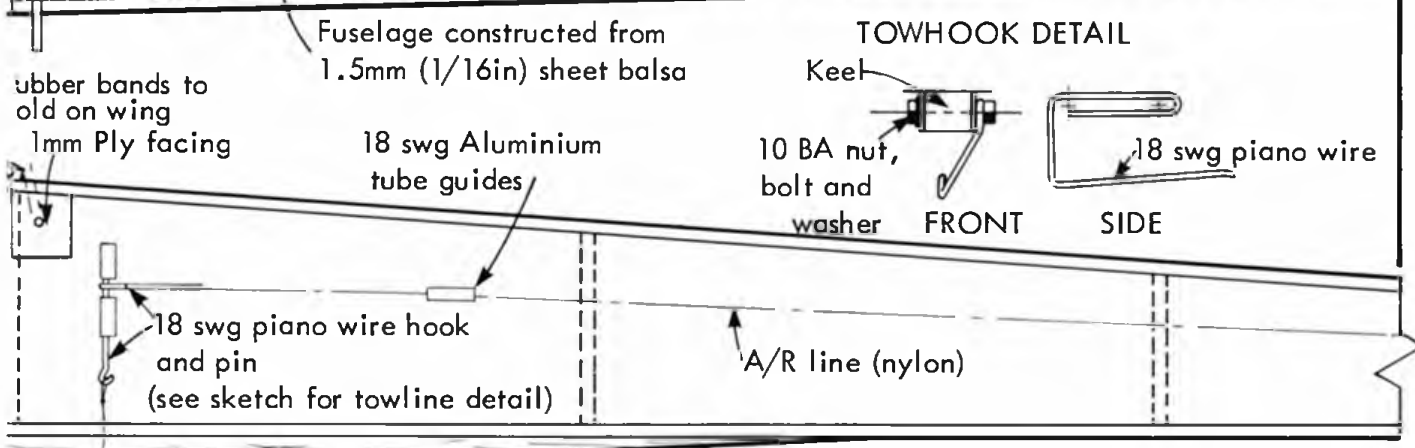
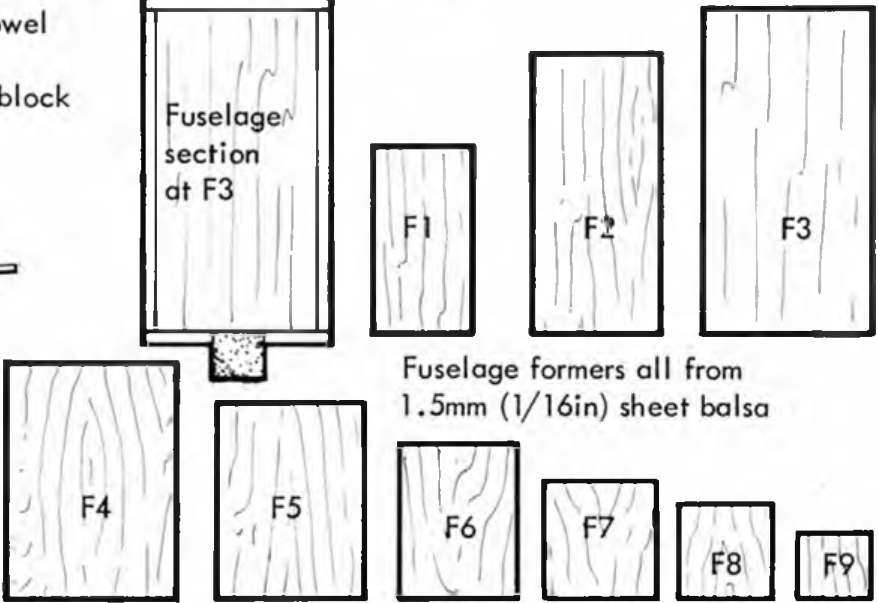
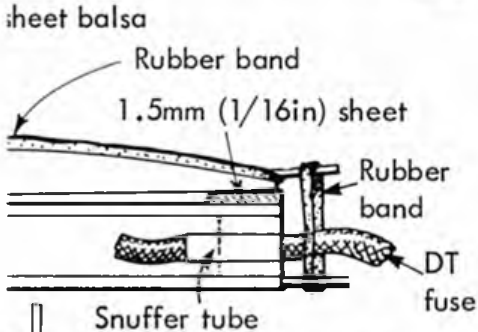
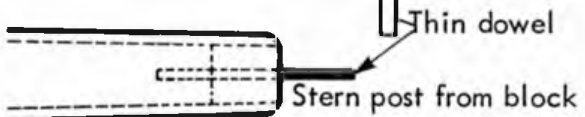
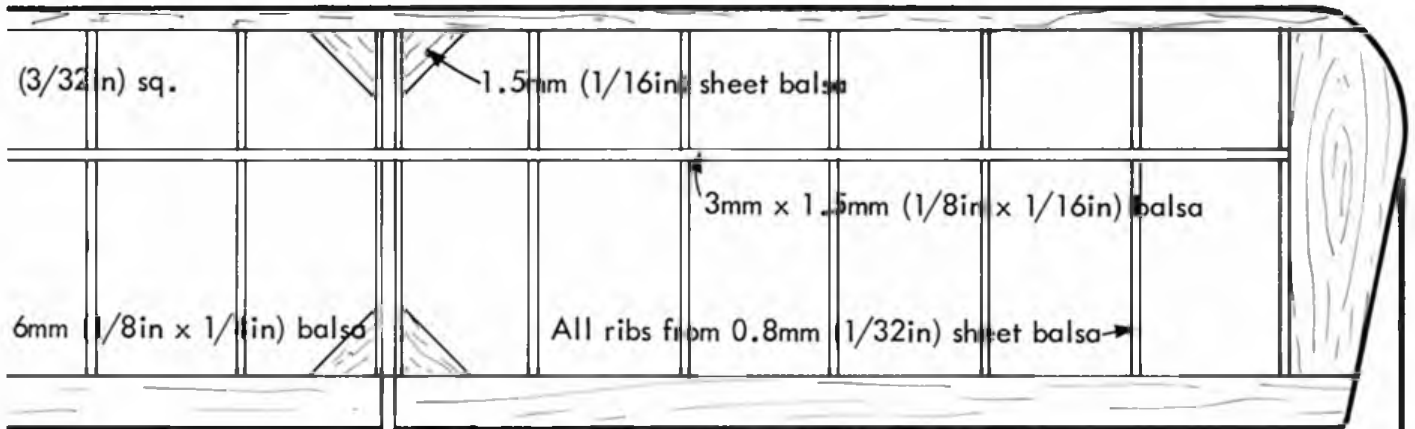
Trim off the tissue protruding over the edges of the wing and cover the upper surfaces in a similar fashion, again pulling out as many wrinkles in the tissue as possible. Again, trim round the edges (using a modelling knife) and then brush and rub in some dope round the LE and TE to make sure the tissue doesn't curl up at the edges. When the dope has dried, the tissue needs water shrinking.

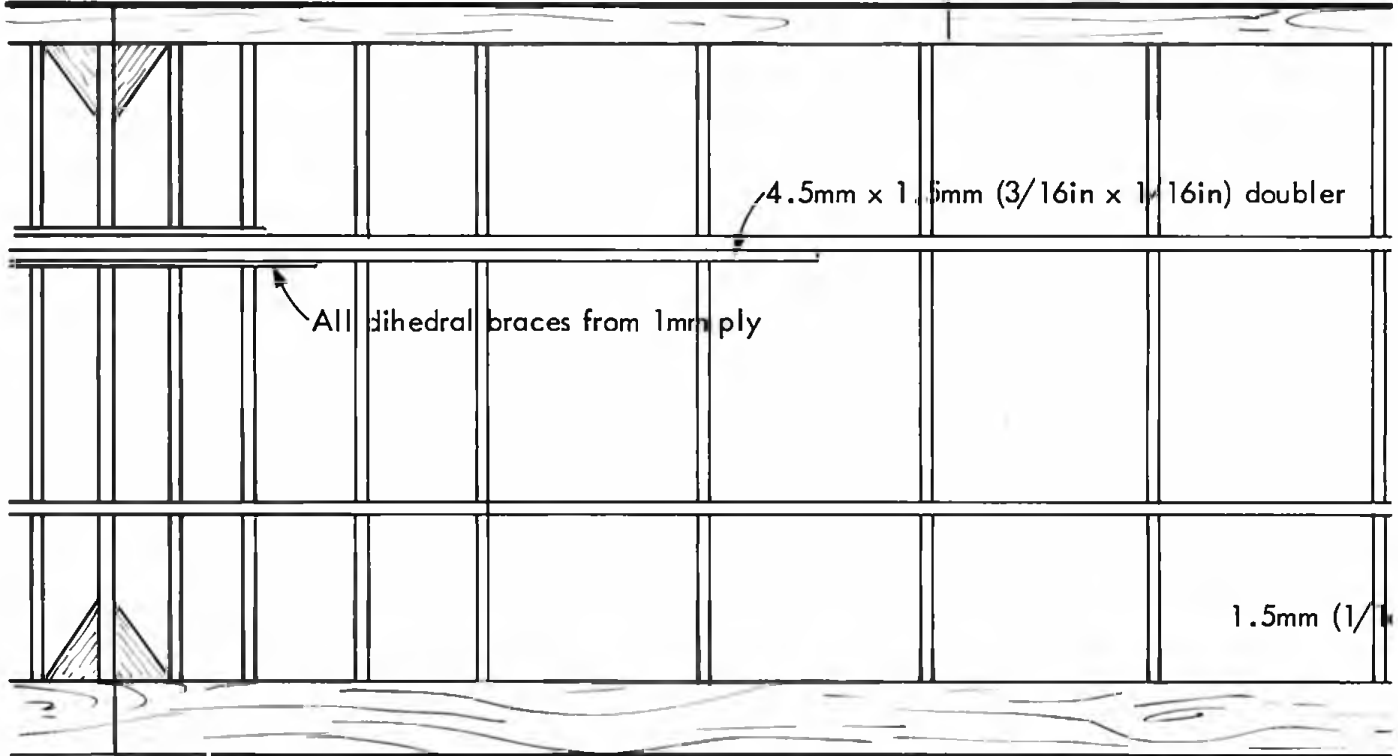
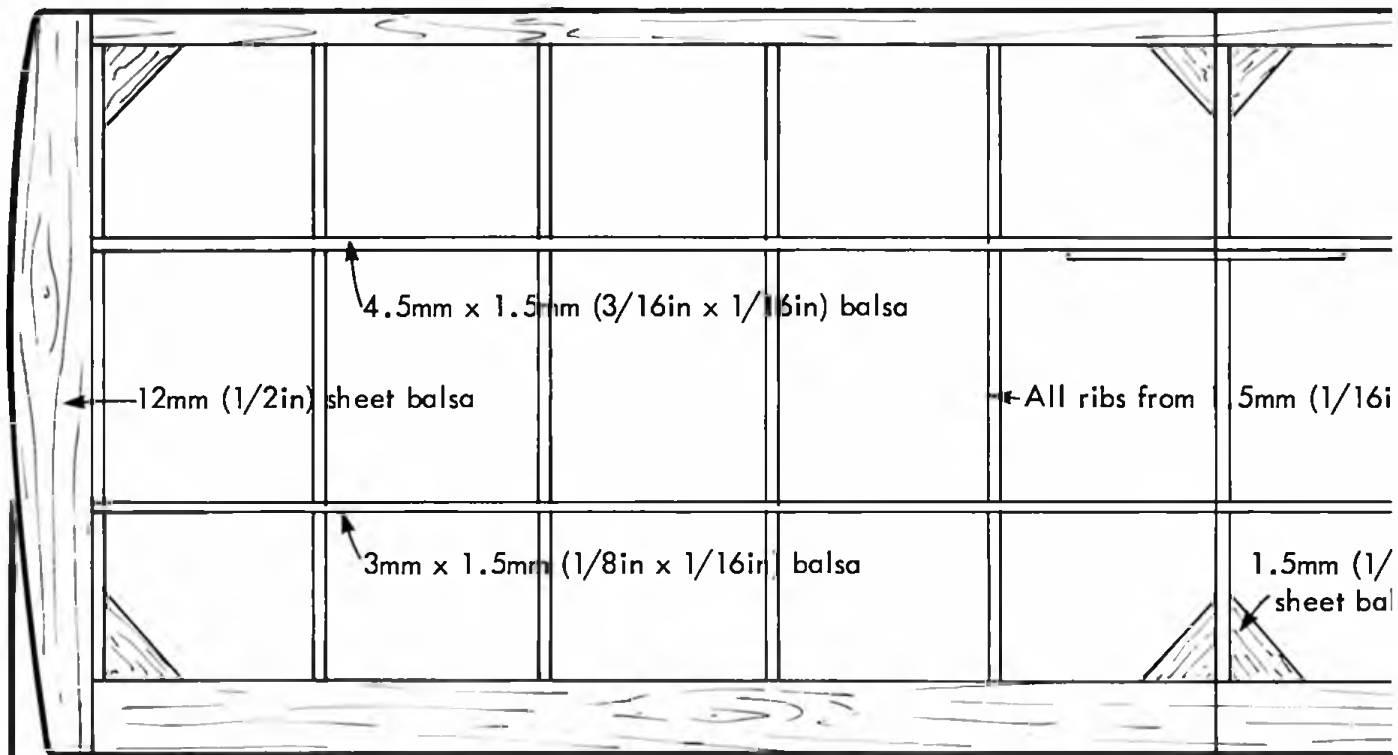


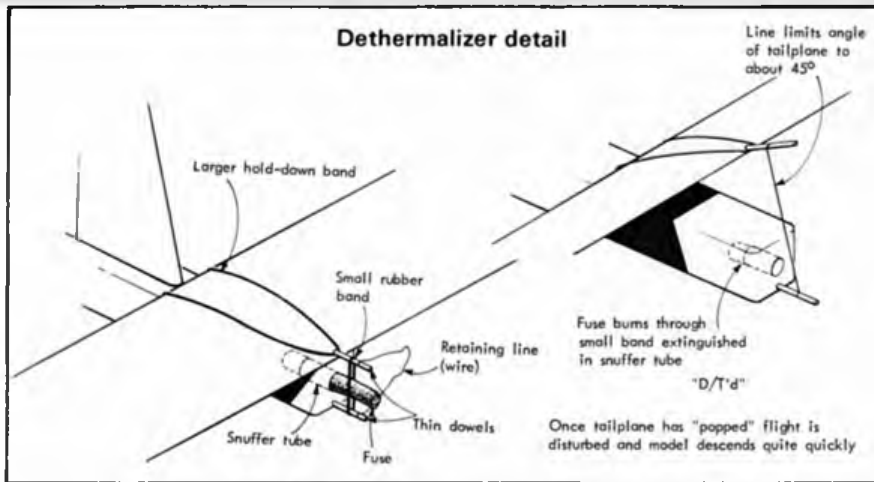
WIGAN 70' GLIDER

Designed By Lawrence Gray









This is done by holding the wing in steam from a kettle or spraying with water, until the tissue becomes damp and slackens. When thoroughly dry, brush in two coats of clear dope/thinners mixture (about 50/50). Allow several hours' drying time between each coat. To avoid warps, pin the wing down on the building board while dope dries (see sketch). This will fill the pores, strengthen and finally tighten the tissue. Depending on the type of tissue, a third coat may be necessary, as the tissue grain should be filled. Avoid overdoing as this can cause severe warps. However, some international 'warps' are necessary to add to the stability of the models. Thus, for both models, the centre panels should be flat and the tip panels have about $\frac{1}{16}$ in. - $\frac{3}{32}$ in. of 'washout' (with slightly more on the left tip panel).

Washout, as opposed to washin, is where the tipmost end of the TE is higher than the same end of the LE, so the tip of the wing appears to dip downwards. To correct, or add, warp, the affected panel should be 'steamed'. Hold it in a jet of steam from a kettle until the tissue is damp and slack and then while it dries out, hold it in the correct position (i.e. with or without warp) until completely dry. To correct a severe warp, it may be necessary to twist the wing the opposite way while the tissue dries out.

NB Do not use colour dope — it is too heavy and less effective at shrinking the tissue.

The tailplane is built and covered in a similar way, and is much easier, only more delicate. It is built and covered as a single panel over the plan, and there is no need to put packing under the TE during building. It should be flat and given no more than two coats of thinned dope. The thin dowel (glider) or thin wire (e.g. pin) hook (rubber model) are added before covering. In the case of the latter, affix the hook with epoxy and a small patch of material, to add extra strength.

The glider fuselage

Start by cutting fuselage formers (F1, F2, etc.) as shown on the plan from medium $\frac{1}{16}$ in. sheet. Mark a vertical centre line on each former. Cut a length off $\frac{1}{16}$ in. sheet (medium) an inch wide and slightly longer than the fuselage. Mark on a longitudinal centre line, and then mark on the positions of each former (see plan view of fuselage). Pin this piece flat onto the board, glue into position, F3 and F4 ensuring they are vertical. Use PVA glue and pins to hold the formers in position.

Meanwhile, cut out two fuselage sides from medium $\frac{1}{16}$ in. sheet. When F3 and F4 are set in position, glue and pin on the two fuselage sides to these formers and to the bottom sheet. Pin and glue into position the other formers and the stern post onto the bottom fuselage sheet. When dry, pin and glue the fuselage sides onto these formers and the bottom of the fuselage. Ensure that the formers are flush with the top of the fuselage sides and then pin and glue into position the top sheeting, in three pieces, each oversize. Note that in the two forward most sheets the grain runs across the fuselage to allow them to be

bent to shape. Remove the fuselage from the board when dry and sand off the excess sheeting.

Fin and rudder

Cut out the fin and rudder from $\frac{1}{16}$ in. sheet, allowing for the part of the fin within the fuselage. Attach the rudder with material hinges (e.g. linen bandage) with each hinge going from one side of the fin to the opposite side of the rudder, alternating the side of attachment on the fin with each hinge, to hold the rudder on evenly. Use balsa cement to affix the hinges. Add the ply rudder horn as shown. Cut a slot in the top of the fuselage and insert and glue into position, making sure they are vertical. Add the ply base for the rudder stops and then the stops themselves ($\frac{1}{16}$ in. sheet balsa) so that the left one keeps the rudder straight and the right one allows some deflection to the right. Then add the tail

Give the whole fuselage one coat of dope, sand lightly when dry and then cover the fuselage with lightweight tissue (there's no need to cover tail mount, rudder horn etc. just dope these). Bend from 18swg piano wire the towhook and bolt on with 10BA bolts. Add the aluminium guide tubes (use epoxy), and then the auto rudder line (thin nylon fishing line) and small wire hook as shown.

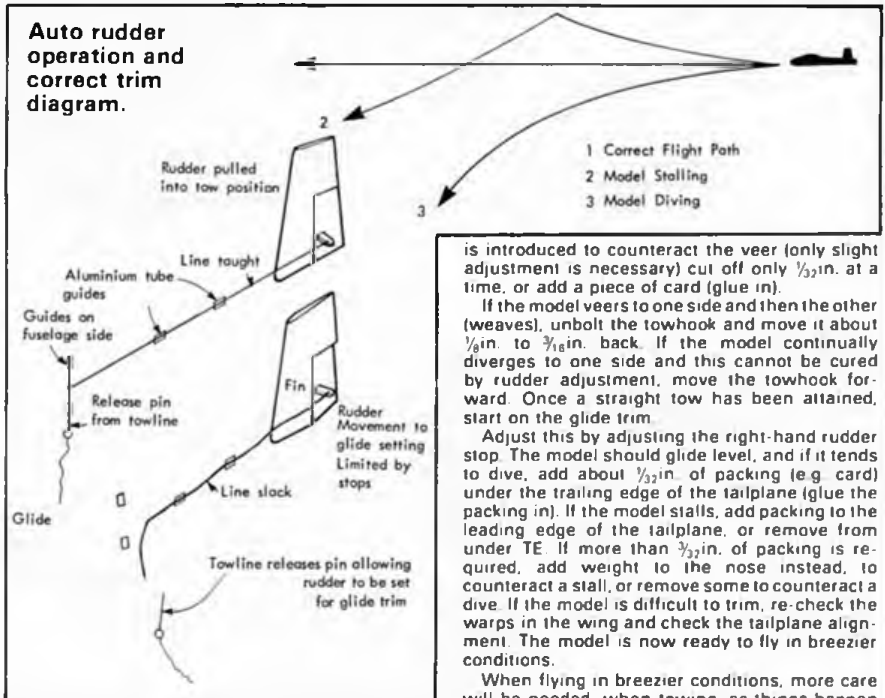
The wings and tailplane are held on with small bands (see sketch for D/T [dethermalizer] detail). Finally, with the model assembled, check the balance point. The correct position is shown on the plan. Balance the model with the fingertips supporting the underside of the wing. Add weight (eg plasticene) to the weight box as necessary to achieve correct balance.

Flying

The flight pattern ('trim') of the glider should be as follows: straight when being towed up on the towline and to glide down in right-hand circles about 50 to 75ft in diameter, after release from the towline. Trimming should be carried out in calm, preferably thermal free air (e.g. evening or early morning). Start by adjusting the towing pattern of the glider. Using a line from about 100-120ft of mono filament nylon. Hook the tow ring onto the tow hook and push in the A/R release pin, so that it pulls the rudder over to the straight (tow) position.

Extend the towline, and with a helper to launch the model, gently run forward into wind (or the drift in calm air). Watch the model carefully as you tow it up. It is unlikely that you will be able to get the model vertically above you on a first attempt before it is fully trimmed. It will probably veer off to one side and you must release the model before it 'tows in'. To release, quickly pull the line taut then slack by 'throwing' line at the model — exact technique will come with practice. There is no need to worry about the glide on the model yet, just concentrate on the tow.

If the model has veered to one side, adjust the left hand rudder stop, so that more or less rudder



is introduced to counteract the veer (only slight adjustment is necessary) cut off only $\frac{1}{32}$ in. at a time, or add a piece of card (glue in).

If the model veers to one side and then the other (weaves), unbolt the towhook and move it about $\frac{1}{16}$ in. to $\frac{3}{16}$ in. back. If the model continually diverges to one side and this cannot be cured by rudder adjustment, move the towhook forward. Once a straight tow has been attained, start on the glide trim.

Adjust this by adjusting the right-hand rudder stop. The model should glide level, and if it tends to dive, add about $\frac{1}{32}$ in. of packing (e.g. card) under the trailing edge of the tailplane (glue the packing in). If the model stalls, add packing to the leading edge of the tailplane, or remove from under TE. If more than $\frac{1}{32}$ in. of packing is required, add weight to the nose instead, to counteract a stall, or remove some to counteract a dive. If the model is difficult to trim, re-check the warps in the wing and check the tailplane alignment. The model is now ready to fly in breezier conditions.

When flying in breezier conditions, more care will be needed, when towing, as things happen faster. Also, it will be necessary to always use the D/T fuse to stop the model possibly flying off the flying field or away in a lift. With some practice, you may be able to detect thermals by a slight rise in air temperature and a lightening of the wind — if you find a good way, please tell me! Even without thermals, the model is capable of 1.30 flight.

Next month we will publish the Wigan 70 rubber model plan and its construction.

Vintage Corner

By Alex Imrie

Vintage get-together

The first of what is hoped will become a regular feature of the vintage scene has been arranged for Sunday 13th September at 1500 hours at the Downs Farm Youth Centre at Hatfield, Herts. Enthusiasts are invited to come along and bring any engines, plans, magazines, books, kits and models to either swap or show. This meeting will be very much what those attending it make it, so let's see that partly built model or rare engine that you have been keeping quiet about! There is no entrance fee, a film show is laid on and refreshments will be available. Further information can be obtained from Malcolm Baird on Hatfield 62187.



David King with his father's T. D. Gospe (E.D. Competition Special) built from plans and description in Model Airplane News from October 1936.

permission to use this field again as soon as possible. Due to hay-making there is not generally a meeting on this site in any case between the months of May and September. This limited availability and the curtailed use of Old Warden Aerodrome has a definite retarding effect on vintage modellers who want to fly regularly during the summer months. A flying field for the vintage movement is urgently needed, preferably situated to the west of London (to save as many modellers as possible the tiresome nausea of transiting the Metropolis) that would be available most Sundays . . . Any offers?

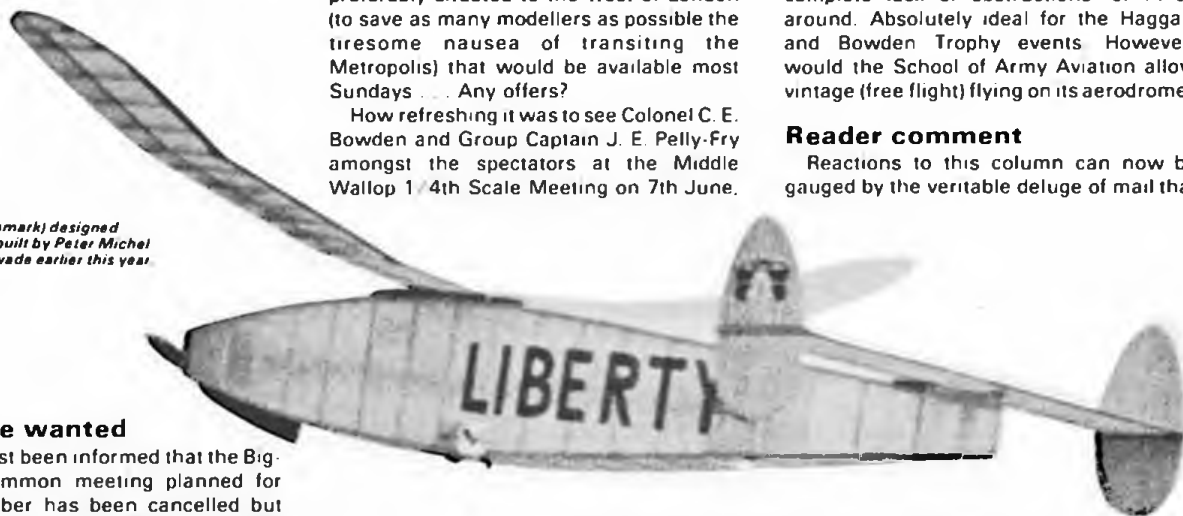
How refreshing it was to see Colonel C. E. Bowden and Group Captain J. E. Pelly-Fry amongst the spectators at the Middle Wallop 1/4th Scale Meeting on 7th June.

both of them still ardent aeromodellers after all those years. One must congratulate the organisers on a well run function, the public address system used for passing information, instructions and enforcing discipline was well handled. Vintage meeting organisers could well take a page from this club's book. What a splendid venue for a vintage meeting with its tarmac and mown grass take-off areas plus the complete lack of obstructions for miles around. Absolutely ideal for the Haggart and Bowden Trophy events. However, would the School of Army Aviation allow vintage (free flight) flying on its aerodrome?

Reader comment

Reactions to this column can now be gauged by the veritable deluge of mail that

John Larsen (Denmark) designed 1940 Wakefield built by Peter Michel flying at Biggleswade earlier this year.



Flying site wanted

We have just been informed that the Biggleswade Common meeting planned for 20th September has been cancelled but negotiations are proceeding to obtain

Left, Brian Ferret, a regular attendee at all SAM flying meetings hand launching his Ohlsson 23 powered Bowden Contest This design (still available from the Aeromodeller Plans Service) continues to be built in number and is a strong, stable good looking flying machine

Right, Jack Frost, hand launching his GWW Harris designed Miss Farnboro' at Biggleswade Common This 72 inch span design was described in Aeromodeller July 1947





Left: can any reader identify? A "still" from an early 1930's American film. Who is that carefully making up his white gasoline and SAE 70 oil? What kind of engine is it? Must be at least 30cc capacity. Photo kindly sent in by K. Malcolm of Manchester.

This 1948 Bill Winter Skybo built by reader Peter Miller was made from an American kit that came to this country via New Zealand! Model is R/C assist on rudder and throttle and is powered by an old 2.5cc Jena diesel.

descends upon the Editor's desk. The enthusiasm for the old type model that pervades these letters is aptly summed-up by Peter J. Elmer of Cardiff, who writes: "... more and more modellers are trying to recapture the days when model flying was a very pleasant way of spending the warm sunny windless Sunday afternoons we used to be blessed with in the late '40s/early '50s. I am sure that if model flying today was run as it was in that era we wouldn't be so desperately short of somewhere to fly... model flying was *fun* — even the comps were just simple events of duration — and who cared who won really? The thing was to participate and *enjoy* yourself. I am sure that people will tolerate the vintage type model pottering around... I've recently joined SAM 35 and sincerely hope that many do likewise and bring back the sanity of bygone days, so come on chaps get in touch with Peter Michel and swell the ranks of the 'Society of Sane AeroModellers' — SAM for short! (SAM, means, of course, Society of Antique Modellers!)

In case some readers missed the first 'Vintage Corner' here is the SAM 35 Treas-

urer's address again: 56 Lynwood Grove, Orpington, Kent, to whom application for membership should be made enclosing the £5.00 annual subscription.

Reader W. Young of Bolton is attempting to reproduce Stentor 6cc petrol engines, but requires a cylinder head and timer frame to use as patterns, can any reader help this worthwhile cause? Mr. Young has a sharp eye for detail and points out that Tony Penhall's Kanga Kub has raked wing tips while Colonel Bowden's original appears to have semi-circular tips. Can any reader loan an original Kanga Kub drawing from pre-war days in order to confirm this and other points that have arisen with this design? Any loaned material will be carefully looked after and returned after use.

Some readers would like to see this column sport both gadget reviews and vintage engine news, Peter Montgomery of Norwich asks about timers suitable to work Mills cut-outs and a host of other questions. Readers are asked to send in details of any gadgets, hints and tips relevant to vintage modelling... if you send it we will print it!

Here is the first one:

Take a hint

The following tip comes from Mr. A. F. Marshall of Camberley, whom we thank for bringing it to our notice, this is a particularly important item and I am sure that there must be many vintage modellers who will be able to use this idea and so benefit from it.

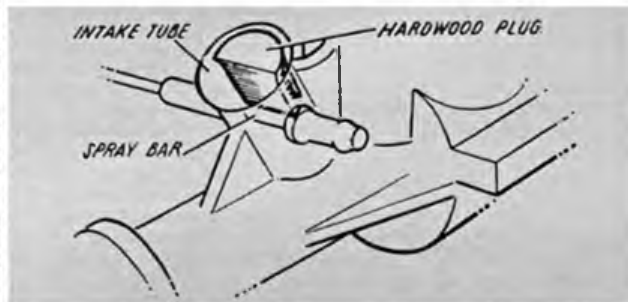
"Generally vintage models require slow revving, large diameter propellers to look realistic. Engines designed in the late 50s and 60s, as many present diesels were, when over-propped, tend to be poor starters, run inconsistently and be very sensitive to fuel tank position or even aircraft attitude.

Quite often these problems can be overcome by blocking half the air intake tube. The increased air velocity gives better suction across the spray bar at low speeds. The spray bar should have a single hole facing away from the plug".

Mr. Marshall goes on to say that he has a Keil Kraft Scorpion flying very well using an M.E. Heron diesel modified in this way. He also points out that while the idea is not new it may not be familiar to many readers, and that in fact he has never seen anyone else use this modification. He also kindly brought our attention to the illustration reproduced here, which originated in Ron Moulton's Model Aero Engine Encyclopaedia. Many thanks again, this is the stuff we need to make this *your* column. So send in any contributions that you think might interest the readership.



Mike Beach's Baby Cyclone powered Toughie. This 60 inch span design by Alan Orthof was described in Flying Aces, August 1938.



KIT REVIEW



Flying the model as a glider from a slope, is probably the best way for a beginner to R/C flying to learn. A good firm launch into a steady breeze is required, using small control movements to keep the model into wind. The advantage of the slope is, the immediate height gained from the launch gives time for adjusting trim and learning to fly.



WHEN CLIVE COOTE of Ripmax, offered a 'Sportavia' for test you can imagine how quickly the answer was given. Not only are these foam jobs virtually ready built but this one even comes with a Cox Black Widow screwed in place! Putting the radio in takes no time at all and the most difficult part is sticking on the self-adhesive trim. Whilst the purest 'do-it-all-yourselfer' might scoff at such a scheme, it does have almost irresistible attractions for beginners. On this assumption we have tried to look at this model through their eyes and assess its suitability. Secondly, the model was put through its paces to judge how satisfied a more experienced modeller might be with his purchase.

The fuselage is completely assembled

and tray are secure and fully home as otherwise they can foul the wing when it is fitted. We glued the tray in place and packed out the servos with thin card to make them a good tight fit. Control rod length was carefully adjusted to give neutral and checked by laying a ruler along the control surfaces. The receiver switch fitted neatly in place after easing the hole a little to give free movement. The receiver and batteries fit into a foam block which is then wrapped in more foam and pushed up to the nose of the aircraft, batteries first. Two pieces of dowel are needed to hold on the wing which is secured finally by elastic bands. The gear we fitted is Futaba Medallion two channel, twin stick. Vast quantities of this and similar gear is now

and to run in the engine with a few tanks of fuel first (on a rich setting), our tester went out on his own. This is what he had to say.

"Having chosen a moderately sized field, flanked by a fairly high hedge, I started the engine a few times as instructed. This is the first 'Black Widow' I have used and it seems to have more urge than my Baby Bee and to be slightly more touchy to tune. After a final check that all was working correctly and assembled true and square, I started up and launched off for my first flight. Following a rather too gentle straight and level throw, the 'Sportavia' dipped slightly then flew level for about 50 yards before slowly turning to the right. Slight left rudder did not seem to do much so I gave it more. Immediate steep left bank; the nose



Left, the component parts of the kit require very little work to complete.



Right, three different size foam servo trays are supplied. The servos simply push fit in place, and the tray is glued in position after finding the correct location.

and it takes just a couple of minutes to fit on the fin and tailplane and check that the control surfaces move freely. The wing halves plug together with a 10swg wire peg and, are held together with sticky tape. The outrigger wheels plug in and the main wheel fits on with a single screw. A choice of three different servo mounting trays is provided as are all the fittings to install the radio gear and switches. The two control push/pull rods are of different lengths, so do not bend the long one before you realise it is not necessary. Make sure the servos

being sold for R/C cars. Most of it is not very dear and is ideal for models of this type.

The first person to try out the 'Sportavia' was one of our regular contributors whose experience with R/C flying is effectively zero. We maintain that because he is too mean to buy radio gear, he pretends he does not like it. The enthusiasm with which he took the aircraft when offered tends to bear that out. In fairness to the chap it must be said that the kit makes up into such an attractive model that anyone would find it hard to resist. With a promise to be careful,

dropped and the engine note indicated an alarming increase in speed. Full right rudder to get out of this resulted in what looked like my first stall turn. These classic symptoms of over control continued for what seemed like an age, with me performing miracles using full control to avoid the ground. Eventually the engine run finished after a hair-raising flight which did not get above 50 feet. At least it landed back in the field.

A few more flights were a bit better but disorientation and overcontrol still proved



Left, shows the single 10 swg wire wing joiner. We did fit a ply face to the end of our wing, as the trailing edge corner is prone to damage.



Right, tail assembly showing rear wheel fixing and adjustable control connectors.

difficult to overcome. On the final flight that day it zoomed behind the high hedge out of sight and hit the ground at full bore. I climbed over the gate and picked up an engine and quite a lot of little pieces of expanded polystyrene. Back home I stuck it together with an epoxy glue putting on a few pieces each day like a jigsaw. Trying to do too many at once gets unmanageable. Where there were some pieces missing I filled the holes with Bonda Filla SL; it is ideal stuff for this and many similar tasks. To add more strength to the damaged area I also covered it with ordinary medical bandage stuck on with PVA glue. After a quick coat of white, fuel proof paint it looked as good as new from ten feet away. Consultation with a more experienced flyer revealed that all the problems are of my own making. If left alone the Sportavia will usually fly itself. Stable flight can be achieved using the trim knobs only. With this firmly fixed in my mind, the next session was much better. The simplest scheme for my level of skill seemed to be to

penetrate the high wind, perform spins and stall turns. A screaming dive was followed by loops which bent the wings into a U shape with the tips almost parallel. The demonstration proved that in the right hands 'Sportavia' can cope with adverse conditions and perform some basic aerobatic manoeuvres. Clive tells us he has had flights of over 20 minutes from a standard engine run so it can take advantage of thermals too.

The last piece of information gave us the idea of trying it on the local slope soaring site. After calming the regular fliers, who showed signs of stress when they saw the prop, we launched it off the hill with a dead engine. Whilst we cannot say it was the best glider there, we can certainly say it was not the worst. In all but very calm conditions 'Sportavia' will give you a day's quiet fun on a slope. We did not break it whilst we were there but I doubt if it would have survived some of the heavy landings we saw other models suffering.

In conclusion, Sportavia is child's play to

put together and has the flying characteristics of an absolutely first class trainer. That is not to say it is child's play to fly, although it does get close. An inexperienced pilot can crash the sweetest, most docile R/C model ever made, which means the perfect R/C trainer does not exist. In the hands of the more experienced it will cope with slope soaring, use thermals and do some interesting aerobatic manoeuvres. The only reservations we felt were in the field of damage resistance. Whilst flying there seems to be no danger whatsoever of a structural failure. We saw it come through tests we did not think possible or likely by any sane owner. Polystyrene is very easy stuff to mend with the correct glue but in retrospect we think that an inexperienced flyer would be well advised to strengthen the fuselage before putting it at risk. If neatly done it does not detract from the appearance or performance.

Thin glass fibre or medical bandage put on with PVA should do the trick and we would recommend three areas; the nose back to about mid-wing chord and including the front dowel, around the rear dowel and under the leading edge of the tailplane. We realise this means you will have to buy the model the day before you intend to fly it but that is a penalty you will have to bear for not being an experienced flyer. For a price of £48.75 including engine, you get a model which looks great, has impeccable flying manners and is suitable for a wide range of sport flying.

Finally if you are a learner, do not be too proud to get the help of an experienced flyer. You will increase the chances of learning to fly without destroying your model on its first flight.



ignore the elevator and fly on rudder only. Whenever the nose drops and speed builds up — let go of the stick and let the model sort itself out. With slight elevator down trim in, it was as simple as that. A heavy landing trying to avoid a tree damaged the nose again outside the original repaired area. It damaged so easily I think it must have been the result of the first terrible crunch, but had gone unnoticed. A repair by bandaging was again quickly carried out using bandage both inside and out. I look forward to more fun with the Sportavia."

The next session we held was a demonstration by Clive Coote himself. Operating out of a small field in a howling gale he showed us just what can be done. It could

Above left, make sure all the air is excluded from beneath the decals, by rubbing with a soft cloth. Above, the clean engine installation, check all screws have been fully tightened.

Right, repair using medical bandage and PVA glue.



Free Flight Scene

Results 1981 Holland International June 7/8th Report by Martin Dilly

This was held for the second year running on the newly-reclaimed polder at Almere, on the south west shore of the Zuider Zee. Last year's contest, when the surface was loose and very sandy, had obviously deterred a number of Wakefield and F.1.C. flyers who did not relish washing grit out of their propeller assemblies and Rossi bearings after each landing. However, thanks to the expertise of Dutch soil engineers and seeding specialists, the ground had firmed up a lot and is becoming quite green with vegetation, it is already generally firm enough for running, with none of last year's sensation of wading through custard, and it looks as if the site will be excellent for next year's contest.

In F.1.C., although he flew against only one other competitor, Ken Faux retained his title and maintained his current good form by dropping only four seconds over the seven flights, and not D.T.-ing early on any of them. Runner-up was Cohen of Israel (sorry, we didn't get your first name, Mr. C.), who is working in the Netherlands: he flew an elliptical-tipped aircraft with tissue-covered wing and a centre-less skeleton pylon. Cohen was the magic meter reader for the Israeli team at Taft in 1979, but the Dutch air clearly had him foxed. There was a fair amount of lift, and a stiffish breeze, which took models towards crops, though the fields were crossed by regular irrigation ditches, about 25 metres apart and luckily dry, which made location and recovery fairly simple.

Wakefield also had a low entry, but the winner, Zeri of Italy, flew consistently and dropped under a minute in total.

The second day, for F.1.A., started dull and fairly still, with a touch of drizzle and only four maxes in round 1 out of the 26 flying. It was possible to tow for a quarter of an hour and still find no sign of lift in the first couple of rounds, after which the wind increased and swung towards a wide canal. This led to a move of launch line to a better area of the huge flat space of what was sea bed a few years ago.

Although the air seemed smooth, rather than turbulent, quite marked shear was apparent, even at towline height, and thermals were not easy to find. Finn Bjerre, of Denmark dropped only 6 seconds on his first two rounds, but then scored a zero after towing in and put himself out of the running. After working up to fourth place after four rounds, I had an un-spotted hook unlatch, which must have occurred during an aborted run-up to a release, and the model fell off the line for 38 seconds as I started to circle tow again, which put me out of contention, too. Martin Gregorie, flying a pair of his short moment arm gliders, persevered after a disappointing start to finish in fourth place, just behind a Dutch junior flyer, Allad van Wallene, who started on the same launch pole as the three flyers from Britain.

F1C winner Ken Faux of Freebirds at the Holland International Second in F1A at Holland International was Geoff Higgins, whose glider is covered in red, white and blue checks.

Tony van Eldik, F1A winner at the Holland International.

but then somehow migrated to another one, where he presumably had more of each round to himself.

Dave Oldfield, the third flyer from the U.K., had three sub-two minute flights, and suspected sand in his circle hook, which kept behaving inconsistently. Having flown on the site last year, both Martin Gregorie and I looked for a way to keep the stuff out of our hooks and hit on using thin rubber of a type normally bought not at a model shop but at a chemist or barber. Carefully de-lubricated, the material was used to cover the timers and towhooks, and certainly reduced the grit problems, but did give parts of the models a rather odd appearance.

Geoff Higgins did not repeat the early D/T which cost him a place in the British Nationals fly-off a couple of weeks previously, and took second place, using a glider with a standard John Cooper Pink Elephant wing mounted on a typically Dutch high pylon. He favoured an all-moving fin, which had a spring-loaded stop, held forward during tow, to allow the fin to move to a tighter turning setting with a slack line. On release the stop sprung rearwards to limit the turn to that needed for the glide. Geoff also used a dihedralled and semi-symmetrical sectioned tailplane, and the aircraft was finished in a distinctive red, white and blue large check colour scheme. In the breezeier late rounds both Piet de Boer and Tony van Eldik had 20 minute tows, and Tony's patience was rewarded with a win for the second year running.

Results

F.1.A.		
1. A. van Eldik	NL	1108
2. G. Higgins	NL	1073
3. A. van Wallene	NL	1061
4. M. Gregorie	(Freebirds)	1047
11. M. Dilly	(Croydon)	922
12. D. Oldfield	(Watton)	313

F.1.B.		
1. A. Zeri	I	1204
2. — Hoffmann	D	1131
3. J. Kristensen	DK	1121

F.1.C.		
1. K. Faux	(Freebirds)	1256
2. — Cohen	IL	815

DAVE HIPPERSON REPORTS

Pannett + Kay Trophy Meeting

Church Fenton June 6th

Coinciding with the Crookham Gala in the South — reported elsewhere — this year's premier non S.M.A.E. Open Power event for the Tony Pannett Trophy was augmented by another award this time for Open Glider in the form of the Jack Kay Trophy. With light winds and warm sunshine for most of the day it was hard to understand quite why the organisers opted for a shortened 2.30 max for the Open events. As a consequence the fly-offs were rather larger than necessary and times were expected to be enormous. There were surprises to come.

Run alongside these two major attractions were a Vintage and Mini event — this latter being quite the hardest of the day requiring five flights with nearly as long a max as open! The K factor proved useful for Peers who scraped into the fly-off on it and went on to win with a rather anticlimactic 1.30 against Ian Davitt's similarly 1.22 flown in the same virtually dead calm bad patch. Dennis Davitt had better luck in Vintage winning with his Lanzo Stick — the model to be seen with in Vintage these days — and John Godden did well to take second with his Contestor. Dennis had 'the' lucky break on his last very long official flight when his son searching many fields out for his last Coupe flight and in waist high corn looked up to see fathers Lanzo D.T.-ing down a few yards away in what would have been impossible retrieving country!



In Open Power the big guns lined up for the fly-off and Julian Hopper reversed the Nationals position on the top Smith, Tony, who stalled down all the way for a little over 3½ minutes. However none of the fly-off flights were what was expected as all but one launched into terrible air. The lucky one, Pete Harris, had damaged his 40 model minutes before the fly-off and was left with a hastily assembled ½A. The delay allowed the bad patch to pass and won him the contest as he found beautiful lift to clock over 10 minutes, proving once again that it is usually not what you fly but when you fly it. This pushed Julian Hoppers ordinary 4 minute plus flight to 2nd — a position that he has achieved in every event he has flown this year! These fly-offs were flown together in one 15 minute period most of which was sink, hence the poor times. Glider however had its own 5 minute period a little later. This short time gave Phil Owens trouble. He had difficulty locating his timekeeper and then over ran the slot by 30 seconds. The flight that would have placed him 2nd was disallowed. This left Steve Fielding 2nd in one of his first glider events but the winner of the Jack Kay Trophy by a huge margin was Cuthbert with an 18 minute plus flight which was rumoured could have recorded more had the timekeepers not clocked off when it was obviously unnecessary to continue!

Information supplied by Ian Davitt, results by John O'Donnell.

Results

Jack Kay Trophy Open Glider 18 flew 9 in fly-off		
1. J. Cuthbert	Grantham	7.30 + 18.22
2. S. Fielding	NYFFG	7.30 + 5.23
3. J. Le Vey	NYFFG	7.30 + 3.15

Tony Pannett Trophy Open Power 13 flew		
1. P. Harris	Birmingham	7.30 + 10.34
2. J. Hopper	Stanstead	7.30 + 4.39
3. A. T. Smith	BAC	7.30 + 3.33

Vintage

1. D. Davitt	Leeds	7.30 + 3.34
2. J. Godden	Leeds	7.30 + 2.44
3. W. Newton	Leeds	7.30 + 2.09

Mini — Combined with K factor 8 flew

1. R. Peers	Falcons	10.00 + 1.30
2. I. Davitt	Leeds	10.00 + 1.22
3. R. Sheen	Nantwich	10.00 + 1.14

Russell Peers has taken up Coupe d'Hiver this year, and won the Mini fly-off at Church Fenton on 21st June.





Left: Chris Chapman lost his No. 1 aeroplane on his 3rd flight in the Crookham Open Rubber, and had to use this reserve model in the fly-off. Far left: George Sharp unlucky at Crookham Gala, dropped his 3rd Open Rubber flight, re-entered and lost his model in a huge thermal on this launch. Right: Pete Jellis missed the lift in Open Glider fly-offs but still managed to gain second place. Below: Encouraging hardware at Crookham Gala.



S.M.A.E. Summer Mini Beaulieu 28th June

What this event lacked in attendance it certainly made up for in standard, despite the rather unseasonable chilly Northerly which then blew all day. Those that were patient and waited for the calm — sometimes very calm — spells were almost always rewarded with lift. At times this proving rather too strong particularly early on when there was still some sunshine. Bailey, Screen and Hipperson all losing aeroplanes — the latter's first Coupe flight eventually landing yards from the edge of the sea the other side of Lymington some 10 miles away. John Fletcher had an off day in $\frac{1}{2}$ A which included a spectacular off trim check flight with jammed timer which ended in a vertical power dive into the ground with surprisingly little damage. He went on to make a good start in Coupe only to have one 1.05 flight ruin a perfect score.

In the absence of any of the Free Flight Tech Committee, the days proceedings were ably handled by Tyson, the local area comp sec and at the prizегiving he was notably embarrassed by the SMAE's omission of a full compliment of plaques — particularly in CO₂ which had none despite an exciting finish decided by a fly off. John Ashmole had been persuaded to repair his broken wing after a five flight total of 9.46. His sixth flight maxed and the model stayed intact long enough to comfortably oust Hipperson who had siezed a motor in the fly-off.

The only other event needing a fly-off was $\frac{1}{2}$ A — a three way affair. Screen, with a virtually untried model which he admitted had not been glided off the top of the run before, contrasted with John Bailey's 14 year old smart black and yellow veteran and Pete Buskell's stylish all sheet design which had been going well all day. The air was rather less

Crookham Gala Beaulieu June 21st

Traditionally the season opener in February, this year the host club Crookham were without a venue so their Gala was re-scheduled on the longest day in mid-June and at the very Southerly site of Beaulieu. Their past record of good weather was maintained and it introduced entrants to the delights of flying in nearly continual sunshine for the first time this year. Attendance was down on usual because of the rival attractions at Cardington and in the North. The latter particularly affecting power as it was the Pannet Meeting at Church Fenton which understandably drew most of the country's power flyers.

Hence the only class with a poor entry at Beaulieu was Open Power which Taylor took with what looked and sounded like an FAI model. Combined FAI however turned into a completely glider dominated event and contestants in this and Open grappled all day with colossal thermals that had the nasty habit of decaying into equally impressive downdraughts well before maxes were recorded. The steady 10-15 mph northerly wind gave vast expanses of health for retrieving, but combined with the powerful lift, models often went so far and fast that their owners were simply unable to keep up sufficiently to pin point them in the gorse. John Fletcher lost both his open rubber models this way and was unable to fly in the fly-off as a consequence. George Sharp and Chris Chapman also had very long flights, seen down but not recovered. Despite all this and the lurking downdraughts which sucked down such notables as Norman Marcus for a sub max flight — there were fly-offs in Rubber, Glider and Combined FAI. Three had managed a perfect 9.00 in Open and in FAI Brian Lavis pushed Pete Stuart to a fly-off after Brian succeeded in making his fifth max quite late on in the day.

The organisation seemed both keen and knowledgeable of the site which was useful for those with lost models who were not so well acquainted with the geography. It was also refreshing to fly to a proper max and be encouraged in ones endeavours by the array of hardware on display all day at control.

Perhaps the fly-offs came rather early for a day which was still light until nearly 10 p.m., but it resulted in the loss of only one model. The three Rubber qualifiers and the five various gliders in Open and FAI all went away in a period between 6.15 and 6.30 to simplify the 'hooting' if not the reporting!

Of the gliders only Bailey found anything useful which was most surprising as it was decidedly warm and sunny. Nigel Lee blew a motor in Open Rubber and suffered substantial rear fuselage damage. When he eventually got away late on in the period it could have been this that caused the pile in at 5 seconds. Chapman launched early and

looked to be in good air but must have suffered a decaying thermal as he was down in little over 5, but not before his initial climb had prompted Hipperson to fly on something like 18 minutes of fuse. The theory behind this was to clear the far woods but stay in the Country! It nearly came off as the model contracted light lift from launch and got high but then descended slowly on the glide to land in the very woods he was trying to avoid at a little short of 10 minutes. The model was never found but it had a lucky run — it was 15 years old and ready for retirement!

Results

O/Glider

1. J. Bailey	Biggles	9.00 + 3.26
2. P. Jellis	Croydon	9.00 + 1.49
3. E. Tyson	Crookham	9.00 + 1.46

O/Rubber

1. D. Hipperson	Croydon	9.00 + 9.34
2. C. Chapman	B&W	9.00 + 5.03
3. N. Lee	East	9.00 + 0.05
	Grindstead	

O/Power

1. R. Taylor	East	7.58
	Grinstead	

Combined FAI

1. B. Lavis	Biggles	15.00 + 2.16
2. P. Stewart	Crookham	15.00 + 1.20
3. K. Smith	Croydon	14.29

HLG

1. P. Buskell	
2. J. Buskell	

Right: John Bailey with consistent 14 year old $\frac{1}{2}$ A model. John gained 1st place in A1 at the SMAE Summer Mini with a total of 9.41. Below: John Ashmole came first in the CO₂ fly-off at Beaulieu.





Pete Buskell won the 1/2A event at the SMAE Summer Mini.

than helpful for anyone. Bailey climbing well and then dropping like a stone. Screen having a slightly hesitant motor run and a terrible transition from what was a useful height, leaving Buskell's modest 2.18 to win easily.

Results

A1

1. J. Bailey	Biggles	9.41
2. R. Woodruffe	Swindon	9.03
3. C. Pudney	Southampton	7.50

HLG

1. J. Buskell		4.39
---------------	--	------

Coupe d'hiver

1. D. Hipperson	Croydon	9.41
2. N. Marcus	Croydon	9.09
3. J. Fletcher	St. Albans	9.05

A Power

1. P. Buskell	Crookham	10.00 + 2.18
2. J. Bailey	Biggles	10.00 + 1.33
3. S. Screen	Birmingham	10.00 + 1.19

CO

1. J. Ashmole	Grantham	10.00 + 2.09
2. D. Hipperson	Croydon	10.00 + 1.28
3. G. Brown	Wharfedale	9.33

Cardington May 17 1981

This was the first meeting of the new season, the Technical Committee was somewhat apprehensive as to the numerical quality of the attendance on which we are dependent if we are to 'pay our way.' The weather did little to encourage us, being somewhat chilly and windy with intermittent heavy showers of rain! There was also the inevitable clash with a London club gala at Everleigh, but I for one certainly preferred to be at Cardington on that sort of day!

The turnout was very encouraging, albeit with one or two possible 'names' not present and the charge levied was £3 per flyer and £1 per adult spectator. As paying customers now instead of being 'hangers on' (no pun intended) we were accorded certain advantages such as being allowed to bring our cars in instead of having to carry all the gear by hand. Also there was of course no trouble with the doors being opened; all rather more civilised than has been the case for the last couple of years.

Despite the variable weather outside, the drift was surprisingly low; this is a great boom for the flyers. The variable weather also meant considerable lift at certain times, usually while a weather change (for the worse) is taking place.

EZB was fairly hotly contested; we were flying to the official SMAE one gram minimum weight rule (as will appear in the next issue of the rule book eventually). The very soggy conditions required strong models early on and it wasn't easy to get good times. My main problem was with a motor stick, which twisted too much; this coupled with a very stiff wing meant that the wings warped too much and the model rolled too much to the right. The maximum usable torque was therefore limited.

Dave Pymm was flying a very long moment arm model with an enormous 16in x 20in propeller; this revved very slowly (less than 80rpm) and gave a magnificent cruise and let down. His main problem was in getting altitude and that for the moment limited his flight times accordingly. Ron Green was also flying a long moment model, with a small prop altitude was no problem but the number of turns was.

I put in two reasonable flights, the second being in lift and just missing the girders. It looked as if that would be good enough to win but eventually Dave persuaded his model to climb high and produced a magnificent 18:41 just at the right time to clinch it. By this time (4.45pm) the weather had settled down somewhat; I tried a long moment arm model and its flight pattern showed me that I should have used it earlier, but it was too late.

Manhattan saw only Laurie Barr enter, one other well-known flyer who shall remain nameless, decided it wasn't worth entering despite

having a very potent model. This was a pity; with low competition entries I am sure we need to set an example to encourage the others to have a go and foster more interest.

CO₂ saw Dave Hipperson's model race away with two magnificent flights of over seven minutes whereas Ian Dowsett's never really fired on all cylinders to be left some way behind. Graham Davitt settled for third with one flight. May be he thought he couldn't come second!

HLG and Bernard Hunt soon found out how easy it is to break models in Cardington. One bum launch and the girders can provide an instant kill! John Buskell showed his ability with some very good flying but Bill Simms gave him a good run for his money.

Speaking of which, the contest was concluded with the award of prizes and plaques; not a usual feature but will become the norm from now on. We are very grateful to Bernard Aslett for his efforts in obtaining goodies from Ripmax, Humbrol, SAMS and Solarbo. Laurie Barr has also very generously donated some goodies.

All in all, an enjoyable competition with some very good flying despite the inclement weather outside. I think I can safely say that we can expect to get very flyable conditions with plenty of room for everyone. Each meeting will have prizes and plaques donated, so if you haven't already been to Cardington, come and have a go. I am pleased to say that we have covered our expenses for the first meeting, so a most encouraging start.

Results

EZB (five entries) 1. D. Pymm 15:2 + 18:41 = 33:53; 2. R. Bailey 14:50 + 16:29 = 31:19; 3. R. Green 13:46 + 14:01 = 27:47; 4. A. Barr 7:50. HLG (three entries) 1. J. Buskell 61 + 59 = 120; 2. W. Simms 51 + 57 = 108; 3. P. Buskell 32 + 35 = 67. Manhattan (one entry) L. Barr 5:05 + 6:45. CO₂ (three entries) 1. D. Hipperson 7:20 + 7:07 = 14:27; 2. I. Dowsett 3:42 + 3:06 = 6:48; 3. G. Davitt 3:10.



Right: Graham Davitt's promising 24 gram tissue covered model. Best flight to date nearly 5 minutes.

Left: Ian Dowsett's model. Throttled back CO₂, indoor models are capable of up to two minute flights below head height.

Right: Dave Hipperson winner of CO₂ at Cardington.

Far left, EZB winner Dave Pymm who had a total of 33:53.





Junior prizewinners look pleased - 1 to R David Arnott (10 yrs old) Humbrol Dragonfly 5th Mini, Fraser McKay (16 years old) AP S Climax 3rd Power with diesel! Richard Anderson (11 years old) Performer 3rd Rubber

Below left, Ivan Taylor won Wakefield with new model incorporating all the latest Continental imports. Solid high A/R wings, negative incidences, hardwood prop blades.

Below, Dave Hambley, now settled North of the Border, won A/2 with conventional-style (+ brand-new) model.



1981 Scottish Free Flight Nationals

Report and photographs by John O'Donnell

The free flight side of the Scottish Nationals took place at Newbigging — a vast stretch of open moorland only a few miles outside Lanark. Despite good weather during (and before) the weekend, attendance was disappointing to say the least — particularly from the native Scottish modellers. The 'reasons why' must surely be a worry to S.A.A. Not surprisingly the results were dominated by the English contingent (including a couple recently moved North of the Border)

Saturday was FAI day — with breeze, brilliant

sun and lots of strong and obvious lift. The wind varied in direction and occasionally took models over nearby woods. Apart from such instances, retrieval was straightforward — even if hard on the feet! FAI was flown 'properly' with rounds and a launch line. Scores were high even though no-one did five maxes. A/2 was topped by Dave Hambley (now living 40 minutes drive from the site) after the main opposition. Sabey and Sheen, launched simultaneously into sink on the final round. Brian Baines was runner-up despite (or because of) parking his best model in the trees overnight — and taking most of the next day to locate it.

F1C was a flyer for Ray Moore, and nearly a very expensive one at that (with his model in the

woods for a while). In comparison Wakefield was a game of small numbers and high scores. Eventual winner was Ivan Taylor (or maybe Russell Peers who retrieved at crucial moments) flying a very impressive model in the latest Continental fashion — solid, high A/R wings, negative incidences, hardwood prop blades etc. — but flown right/left with gadgets. I was second with the complete antithesis — an archaic relic that (fortunately) flies better than it looks. Brian Martin 'dropped' two flights but still managed third place.

Sunday was overcast but with less breeze (and lift) Mini was flown as a three-hour contest with the open events not commencing till noon. With this schedule there was little time to waste — and some entrants failed to finish. Winner proved to be Ray Moore flying a remarkably heavy 1/2A that nevertheless had a good, and thermal sensitive, glide. I was a few seconds behind flying A/1, whilst third placed Russell Peers started with 1/2A before changing to Cd'H.

Russell also collected Open Power with a treble, half a minute ahead of Ray Moore. Glider went to Richard Sheen, flying much earlier than runner-up Dave Hambley. Perhaps the lift was deceptive but scores seemed low. Final event, open rubber, at last saw a Scottish winner, when I dropped half-a-second on my third flight. This left Tom McLaughlin in top spot without needing a flyoff. No doubt these results compensated for the previous day when both Sheen and McLaughlin failed to place in FAI despite doing four maxes out of five.

The prize-giving saw trophies given out by Ron Sabey (obviously responsible for the contest in every sense) and extended to awards for the best placed juniors, Fraser McKay being notable for flying several events. Finally, mention must be made of the reappearance on the contest field of a very famous name from the past — one J. H. Maxwell — a regular contributor to this magazine when I was new to the hobby! Dare I mention that the Scottish Nationals was his first contest for 30 years! Welcome back, 'Joe'.

Results

F1A (A/2) (10 scores) 1. D Hambley 14 07; 2. B Baines 13 57; 3. R Sabey 13 28; 4. R. Sheen 13 04. **F1B (Wakefield)** (6 scores) 1. I. Taylor 14 17; 2. J. O'Donnell 14 02; 3. B Martin 13 44; 4. T. McLaughlin 13 32. **F1C (Power)** (1 score only) 1. R. Moore 6 00. **Mini** (11 scores) 1. R. Moore 9 09; 2. J. O'Donnell 9 00; 3. R. Peers 8 38. **Open Glider** (11 scores) 1. R. Sheen 8 06; 2. D. Hambley 7 56; 3. F. McKay 7 15; 4. D. Hearn 7 14. **Open Rubber** (9 scores) 1. T. McLaughlin 9 00; 2. J. O'Donnell 8 59; 3. R. Anderson 7 17. **Open Power** (6 scores) 1. R. Peers 9 00; 2. R. Moore 8 34; 3. F. McKay 7 04.

October 11th

Indoor Spectacular Milton Keynes 1981. Venue: Middleton Hall, Milton Keynes (in shopping centre). Contact: Bob Bailey. Tel. Stevenage 723642.

October 18

The Open Rubber Trophy, Hemswell. O/R only in rounds start 10am plus Champagne Fly-off later. Details from D. Hipperson, 35 Anthony Road, Boreham Wood, Herts. Encluse and SAE.

October 18

Northern Area FAI Meeting, Church Fenton. F1A, F1B and F1C. Two flights before 1pm. Contact 0653 2580.

October 25

Witchford FAI and Mini Meeting. F1A, F1B and F1C plus A1, 1/2A and Coupe D'Hiver. Details from M. Dilly, 20 Links Road, West Wickham, Kent. Encluse SAE.

November 8

Anglia MFC Wakefield Contest. (a) Models to 1953 Wakefield rules including freelance designs. (b) Published 'Vintage' Wakefields to pre-1951 rules. (c) models to current F1B rules. Venue: RAF Watton. Contact: Bob Wells. Tel. Hornchurch 40859.

What's Happening?

August 22/23

Pierre Trebod, Marigny Le Grand, Nr. Sezanne, France. F1A, F1B, F1C.

August 29/30/31

Indoor Nats. Cardington. All classes. (SMAE Event). See Hangar Doors.

September 6

Northern Area Rally, Church Fenton. O/R, G.P. Combined FAI, Combined Mini and Vintage. Contact 0532 864026. (Jim Moslev).

September 6

Indoor Microfilm Team Trials. Cardington. FAI Microfilm only (SMAE Event).

September 13

5th Area Event. Area Venues A1, Wakefield Gutteridge Trophy and Team Power for Keil Trophy (SMAE Event).

September 13

Bath MAC Colerne, Nr. Bath. O/P, O/G, O/R all

in FAI, all in Mini with CO₂ and HLG. Also usual area events available. Contact E. Burles. Bath 331126.

September 20

Midland Area Rally, Barkston Heath. O/P, O/G, O/R. Combined Mini, HLG, CO₂ and Vintage duration. Contact G. Ferrer. 0533-886519

September 20

Indoor CO₂ and HLG final events. Cardington. (SMAE Event).

September 27

6th Area Event. Area Venues. 1/2A power, A2 for SMAE Cup and Team Open Rubber for Farrow Shield (SMAE Event).

September 27

Bath MAC O/P, O/G, O/R. All in FAI, Mini, CO₂ and HLG. Also usual Area events available. Contact E. Burles. Bath 331126.

October 4

Southern Gala Odiham O/G for Thurston Trophy, O/R for Flight Cup, O/P for Short Cup, 1/2A power for Quickstart Trophy, CO₂ for Sparklet Trophy A1, Coupe D'Hiver and HLG. (SMAE Event).

October 11

Northern Gala, Church Fenton. O/R for Caton Trophy, O/G and O/P plus other non-SMAE events. Contact 0904 76794. (SMAE Event).

Find the balance point MODEL COMPETITION

The great
Aero
modeller
Give away
contest
£250 of
prizes must
be won



*This month
Six radio
control systems
must be won . . .*

NEXT MONTH
... another
great contest
for our readers

35 MHz FM Futaba
L Series (4 servos)
Plus two 27 MHz
Futaba Medallion
M Series (2 servos)

35 MHz Sanwa AM
STAC-4 (4 servos)
Plus two 27 MHz
Sanwa GC2-2B
(2 servos)



RULES

1. The competition is FREE and open to all Aeromodeller readers.
2. The model has been erased from this picture. Use your skill and judgement to determine not just the position of the model in the picture, but its exact balance point.
3. The six entries with the centre of a cross nearest the correct balance point will be judged the winners of this month's prizes. If you prefer not to cut the picture from this page a same-size facsimile (photo-stat) is acceptable.
4. Any number of entries may be made, but each entry must be accompanied by a separate entry coupon, clipped from the page. The coupon must be the original — photocopies are not accepted.
5. Only one cross per entry.
6. Entries in this September edition competition close after first post on September 14th 1981. Results will appear in Aeromodeller November '81 edition.
7. The Editor's decision is in all cases absolutely final and no correspondence will be entered into nor responsibility accepted for late, mislaid or lost entries.
8. Employees of MAP Ltd. and their families are not eligible.

To Aeromodeller Magazine. Please accept my entry for your SEPTEMBER 1981 "Find the Balance Point" competition. I understand the rules of the contest and accept the editor's decision as final.

Signed.....

MODEL COMPETITION, PO BOX 35, BRIDGE STREET,
HEMEL HEMPSTEAD, HERTS HP1 1EE

NAME

ADDRESS

NB: Coupon must be original — not facsimile copy
Entry Coupon
Aeromodeller
Find the Balance
Point Contest
'81

FROM THE HANDLE

RACING Jim Woodside

Change of Address

Woodside has moved house — my apologies to those of you who have tried to contact me over the last couple of months when we have not had a permanent base. New address is 29 Calderstones Road, Liverpool 18. Phone 051-724 1442.

Dave Clarkson

I had a letter recently from Dave, who is now living in South Africa. Dave has teamed up with long time enthusiast Basil Menges to fly FAI and Goodyear. The impact of European technology has rather startled the locals for Dave and Basil recorded a 3.48.6 heat and 7.52.3 final in FAI at the S.A. Nats. These times are minutes faster than anything done previously and should prove a shot in the arm for South African keenness, which has long suffered under the assumption that the high altitude meant speeds would never match those in other parts of the world.

Dave has promised to send some photographs and I hope to publish these in future columns.

FAI proposal concerning F2C Final

In the July edition of the AEROMODELLER I touched on the 1980 Control Line World Championships and the changes which had been made to the Sporting Code. At the December 1980 CIAM meeting, some discussion centred on the apparent contradiction that finals of 200 laps carry the same number of warnings before disqualification as 100 lap heats and semis. The view of the CIAM was that juries should exercise a discretion to work to a five warnings system for finals i.e. two offences might be mentioned but not officially punished. If the system meets with general approval then it could become an official rule, beginning in the January 1983 cycle.

Juries have, of course, exercised this discretion for years and in this sense the proposal is a regularising of custom and practice. Competitors and officials should make their views known at the appropriate time to their FAI delegates.

There is however, a body of opinion who hold that the warnings system only encourages gamesmanship flying. Infringements should be directly punished with time penalties. There is a logic in this as a law which is not enforced is no law. However, if time penalties were used, the pressure on juries to make only impeccable decisions would be greatly increased. Any views you have and would like to air in the column would be most welcome.

F2C Rule Change Up-date

Rule 4.3.14 amend paragraph (h) to read: (h) if a mechanic services the model outside a designated pitting area.

As a result of this it will be necessary to amend the paragraph lettering as follows: previously (h) becomes (i); previously (i) becomes (j); and so on through to previously (r) becomes (s); previously (s) becomes (t).

Aeromodeller

Right: three versions of the Nelson 15 engine from top to bottom: R/C type with FAI head, FF/CL model with plug insert head, and FF/Speed with FF head



Nelson 15 Glow

In the July column I mentioned the introduction of the new Nelson racing glow engine. More details and photographs are now to hand and so without further ado to the details.

From the photographs the family heritage can be clearly seen — the deeply finned case and rectangular exhaust.

The Basic Specification

- Glow ignition employing various head inserts.
 - Glow head with integral element for FAI fuel;
 - Head insert employing a glow plug. Two types are available (i) 15-30% nitro, (ii) 50-70% nitro.
- Liners: ABC piston-liner assembly. At the moment all liners are standard timing. Pipe timed liners will be available. An exhaust adaptor for tuned pipes adds \$10 to the basic price.
- Crankshaft: 12mm diameter for high strength with a large gas passage. The rear bearing is 12 x 4 mm — a race proven in many high performance engines of up to 7.5cc.
- Crankcase: investment cast in A356-T6 alloy. The mounting pattern is the same as the diesel. The rear cover screws into the case and the cover incorporates a pressure fitting.
- Venturis

Bore diameter	Designation
235in 5.9mm	Suction
285in 7.2mm	Suction
315in 8.0mm	Pressure
345in 8.7mm	Pressure
375in 9.5mm	Pressure

(ii) Spare venturis are \$10;
(iii) A Perry carb is available for use in Quarter Midget Pylon racing etc.
- Engine weighs 165gm - 5 3/4 oz.
- Prices: (a) Free Flight / C/L Racing \$159.95, (b) R/C or Tuned Exhaust: \$169.95

All prices quoted are direct from the factory and so do not include any duties payable on delivery to customer.

Tests conducted to date showed that using a head insert, Glow Bee plug and 70% nitro revs up to 30,000rpm caused no plug failures. The FAI head (Rossi type) and 80.20 fuel yielded 28,000rpm with acceptable element life.

Overseas orders should be sent direct to Henry



Nelson, 729 Valemont Drive, Verona, PA 15147, USA.

USA/Canadian orders: Kustom Kraft, P.O. Box 2699, Laguna Hills, CA 92653, USA.

Postage is \$9.00 extra for overseas customers.

If one will be particularly interested to see how this engine performs. If the glow engine establishes relative norms of operation as much in advance of the opposition as did the diesel over its contemporaries, then we could be in for some interesting contests!

NEWS

Three Kings Aeromodellers 'Profile' Scale Meeting

THIS BEING the first time that 'Profile' scale has been tried in a competition event, we thought readers would be interested to hear the results obtained. First of all it was run in conjunction with 'Full' scale models and formed a separate part of the event, having its own trophies etc.

Considering that there was no advertising or previous information other than the words 'profile scale' in the Aeromodeller contest calendar, we think the response was encouraging and will be including it in our next C/L scale day at Croydon Aerodrome in September.

The rules are simple, just ten laps to do for a qualifying flight and the judging on a very simplified Class 2 basis, just a drawing or picture will do for documents. We hope by these methods to attract some of the younger modellers who would like to make scale models and compete in what we hope are enjoyable and friendly scale get-togethers.

Bank Holiday Sunday (May 24th) dawned with the customary 'bright sunny intervals' and of course windy. After setting up our rope and bunting around the tarmac we waited to see how many would brave the elements and come along and compete, and by 11 o'clock we had a total of eight scale models and five profile models. The 'contest' was run on Old Warden lines, fly when you like with no hassle. Judges just walked about and observed, then made their scores as the day developed. It was pleasing to see that at least three people had made some considerable effort (and distance) to attend in spite of the adverse

weather forecasts, Ron Truelove, Ron Bye and Derek Bird last year's NATS champion.

Flying of all types was pretty consistent until about 4 pm when most of us decided that we had been blown about enough, but our spirits were still high and at least we didn't get wet — well, most of us didn't! One unfortunately did get stuck aloft with an unthrottled motor and a big tank during a 'rain squall'.

Watch out for our main Scale Day on September 13th and come along and enjoy yourselves with "all the fun of the air", full scale and profile, good prizes and trophies. The object of this report is to let you know there is C/L scale in the South of England. We are sure there must be many more of you who just don't show yourselves, so come along and join us in September, and indeed in any events that Clubs or the SMAE organise. "You'll get more fun in '81" if you share it with others.

Results:

Class 2 Scale: 1. W. Cordwell Waco CU6; 2. K. Gardner Tom-Tit; 3. K. Gardner Me109

Profile: 1. W. Cordwell Fokker D21; 2. Anstey Hurricane; 3. M. Rolls Chipmunk.

U.S. and Canadian news

Report by Paul Smith

THE CONTEST season has got off to a good start with a meeting at Centennial Park in Toronto. Although the only official events were four different classes of Combat, there was considerable activity in the practice circle with Speed, Aerobatics and Team Race models.

It seems that the forthcoming World Championships to be held in Sweden in 1982 has sparked new interest in the FAI Team. Flyers from the States and Canada have traditionally competed together and entered each other's



Nationals. This year's US Nats is in Seguin, Texas, about 3000km southwest of the centre of modelling activity, so most of the Americans in my area are planning to enter the Canadian Nats in Huron Park, Ontario. This is also the site of their FAI C/L team trials. Some of us have been enlisted to form an impartial jury.

The Royal Oak Cloudbusters, a Michigan club that specialises in sport scale and free flight held their Annual 'Bloody April Dawn Patrol' at the crack of noon on May 3rd this year. It seems that the club is slowing down just a bit.

Although the meet was tardy, a good crop of winter building was evident. Especially noticeable were two new multi-engine bombers by Joe Baranski, a Vickers-Armstrong Warwick, and a Savoia-Machetti tri-motor. Both are powerful by unmodified, unthrottled Fox 35s.

The Cloudbusters usual squadron of biplanes was joined by Jim Swanson's new SE-5

Left: Joe Baranski with the Savoia-Machetti tri-motor bomber. Below: Jim Swanson's SE-5 sport control line model with a 60 motor. Bottom: another new model by Joe Baranski, a Warwick bomber. All the visible structure is added onto a sheet balsa inner core.



BACK AGAIN

Dear Sir,

May I through your column, thank everyone who made last year a memorable one for me. Initially I was embarrassed by the attention and stares of curiosity at my re-appearance at free flight contests after a 25 year lay off. However the meeting of old friends (and new ones) soon made me feel at home again. And I was intrigued to see that some of my earlier designs were still being built and flown for fun and in the vintage events.

My 25 year old small rubber model which caused so much interest is alas no more, being shredded to pieces whilst being rescued from the trees at Old Warden. The old A2 that 'dive-bombed' many people last year was used as a test vehicle for developing my 18g wire circle tow hook. It did win one contest with 1st prize of a Hatschek hook!

I have built several new models and in spite of Pylonius' remarks, I would state that their construction is rather different from the the 25 year olds. Perhaps though, they don't fly any better! The new A2 with an improved wire hook is good, but I'm not sure that I have the ability or fitness to circle two correctly into a thermal each time. My open rubber models — we'll have to wait and see how they perform.

Regarding last year's Editorial comments on Sport flying — I feel the free flight side of aero-

modelling will slowly die if contest flying (as well as 'sport' flying) is not actively supported by model flyers, the trade, and the model press. Man is a competitive animal. Very few people take part in sport, play games etc. because they just want to be there. We all like to win sometime and you can't win if you don't enter.

Which brings me onto the present contest scene. I think there is too much pre-occupation with the FAI scene. The models are too complicated. Modelling should be fun and competing should be more fun, with the chance of the occasional lucky win. That's why I always enjoyed the Open events and present rules of 3 x 3 minutes and the fly-off lottery appeal to me.

Another reason for this letter is to try and encourage a few of my 50 year old contemporaries out of their shell. If like me, the kids are grown up, the house nearly paid for, and the TV is beginning to bore, come on and have a go! You won't regret it, and the aches of chasing are no worse than gardening.

West Byfleet, Surrey. Norman Marcus
Glad to have you back Norman, and your pertinent views on FAI contest sophistication - you're not alone in this - Ed

SWOPPING AROUND

Dear Sir,

I, like many others, have for some years been trying to collect many back issues of Aeromodeller magazine. As a result of an advert I placed in the Exchange and Mart I had an answer from Welsh Book Publishers of Northampton who offered Vol. 1 to 6 of the Aeromodeller for £65. I rang them and checked, all seemed in order. I lost my £65, never received the magazines and am at the moment in contact with a firm of solicitors who are acting for the firm (a great number of other people have been 'done' as well, which leads to the point I wish to make). Would it be possible through the pages of the Aeromodeller to unite all the persons who wish to increase their

collection of the Aeromodeller. In other words instead of advertising as individuals, form a group and we can exchange magazines or comment who has what and at what price. I am quite willing to print off a sheet or two of what people have for sale and the numbers of the magazines, and send the sheets around all those interested. I think we could exchange many of our seconds with some that we require. I have been thinking about this for a long time but never done anything about it. Well, the loss of £65 has capped it. If we wait longer, the back numbers will decrease in numbers and the price will go up. Would you mention it in the Aeromodeller and quote my address. No subscriptions or anything like that, just to exchange what we have for sale or swap on a sheet of paper.

1 Chestnut Drive, R. C. Armstrong
Holme on Spaling Moor, York YO4 4HW.

COMMENT

Dear Sir,

In your August comment you ask for a voice from the non-competitive aeromodeller. Well I think for a long time now (years) it hasn't been productive to write to the 'Aeromodeller', owing to the type of control on the production side. Nevertheless look at a few old issues and see the varied contributions, competitive as well as sports types, in fact all types that make up the readers.

I notice you have brought back some of the designs, that for a few years have not been listed in the profuse numbers of MAP catalogues. Would it not be possible to also resurrect Rupert Moore's 'Jackdaw' rubber powered cabin duration design (1940 44) or D. A. Russell's pre-war large low wing petrol model and perhaps his 1/5th scale Lysander.

Leicester D. Young
Point taken! Forget the Lysander - we might do G-ADAR and the Jackdaw if many more feel as you do - Ed

PLANE CRAZY

He was a club member who just enjoyed flying model planes. This irrational urge came upon him when, as quite a small boy, his paper dart flew through the schoolroom window and out into the clear, buoyant air. Some say he landed on his head in trying to follow it, but it is doubtful if this had anything to do with his quaint obsession. From then on it was model aeroplanes all the way. After finding out that the one's you buy seldom fly he began to build them himself much to the detriment of the domestic routine. Friends tried to console his distraught parents with stories of famous men who had been model crazy in their boyhood days such as Leonardo Da Vinci, the Wright Brothers and almost every big name in aviation. They further pointed out that there is nothing more unforgivable than for someone to take up model flying in childhood and not to turn out to be one of the great aviators. But our model hero had no pretensions to greatness, to carve out great empires in the sky — he just wanted to fly model planes. Not exceptional model planes, no adventurous depar-

membership who just couldn't understand what anyone could see in flying model planes.

UNKNOWN QUANTITY

When you think about it, we model flyers are a pretty anonymous lot. I mean we don't go in for celebrities and all that sort of thing, although we do have our prima donnas on the flying field. If you were to ask the average layman to give you a well known flying name he'd say something like Keil Kraft or Graupner, vaguely remembered from Christmas shopping for nephews' presents. Of those who had performed great feats of derring-do on the flying field, or toiled endlessly to produce the sort of masterpiece which we modellers hold in such awe, he would have only the profoundest ignorance.

Not that other hobby and sporting activities are not equally neglected from the publicity angle. For instance I, for one, could not recall offhand who was the 1980 Croquet Champion of West Humberside — for which I hope he does not bear mallet — and most

TOPICAL TWISTS

by Pylonius
illustrated by Sherry

tures in design, nor to turn out world-beating craft. He did not dream of one day leading a British model team to international victory, otherwise he would have put money in his piggy bank to pay for his fare instead of spending it all on balsa wood and such.

From a model aeroplane obsessed boy he smoothly graduated into a model aeroplane obsessed adult, doing very much the same thing on the model club field. Not that he lacked encouragement at school; he was encouraged to play football, cricket, and even basket weaving — considered by his teachers as a suitable diversionary interest for anyone feeble-minded enough to play with model planes. In the model club the other members just couldn't make him out. Every Sunday, rain or shine, he'd be over the airfield flying the same simple type of model, and watching it circle the field for hours on end. Usually the model got tired of this somewhat monotonous procedure and crashed out of sheer boredom. But undeterred, our hero would pick up the pieces, glue them all together again — not an easy job in the pre-epoxy, pre-cyanoacrylate days — and just carry on flying.

Some of the club members felt sorry for him, particularly those committed to those aspects of model flying where the actual model flying was something quite incidental. The free-flyer gave him glowing accounts of the sense of achievement in locating the elusive thermal and of finding the model in the depths of the countryside. Control line enthusiasts extolled the virtues of two-dimensional flying in which you could look hopefully towards a future when such unnecessary features as wings could be discarded. Radio flyers who indulged just for the sheer relief of bringing their 100m.p.h. craft down in one piece, tried to win him over with stories of quik-build kits and overnight fame — one member even giving him a year's supply of foam wings as a gesture of sympathy. The vintage enthusiasts, who did not believe in the existence of modern flying life, tried to lure him into their enchanted world of yesteryear.

All to no effect. In spite of the overtures from the committed members he just flew and flew. I think in the end they asked him to leave the club. For one thing he menaced the very existence of the club field; the continued availability of which depended very much on it not being used. Also his dogged persistence in flying week in and week out had a demoralising effect on the eighty per cent of the



“AEROBATIC CONTEST BE BLOWED, THAT'S C.B. INTERFERENCE”

people would be hard put to name the current holder of the Marblehead All-Comers Trophy, general opinion holding to the view that it is some sort of sculptural award. But, of course, in these days of instant fame, it is to the media we look — particularly television — for national recognition. Sometimes we are able to bask in the reflected glory of some model acquaintances who, in a fleeting appearance on the box, had valiantly tried to explain a lifetime's enthusiasm before being ruthlessly cut off to make way for 'Marquetry for the Under Fives'.

Generally, though, our prodigious feats of building and flying go unrecognised and unpublicised.

"He builds and flies model planes," says wifey to Auntie Jane, by way of explaining the naturised garden and the peeling paintwork.

"And very nice, too," replies Auntie, "I always said your elder boy was clever, but don't you think he's rather old to be playing with model planes now that he's almost fifteen?"

STING IN THE TAIL

Seeing that vintage plan of an early all-balsa model for a small petrol engine, gave me quite a pang of nostalgia, for I remember seeing the same plan in a model book many years ago — back in the days of our modelling innocence, in fact. We really thought that nirvana or earthly paradise could be reached with a small engine to replace the inevitable and archaic rubber motor. This, we thought, is the ultimate in model flying, as near to the real thing as anyone could wish. It created a nice sort of dream which was far better than the reality.

What we didn't realise at the time was that small engine was the precursor, with the accent on the curse, of that modern technology which has swamped aeromodelling and contemptuously pushed it to the end of the toy counter. It is a readily observable fact that since the model aircraft became a toy the amount of actual flying has diminished almost to vanishing point. In fact there are teenagers living today who have never seen a model aeroplane in flight — many of them club members.

Now what shall I fly this week-end if the wind drops? The P.30 Rubber Model or the Wigan 70 Glider?

Club News...

THE GREATEST ATTRIBUTE of the model flying hobby, it's diversity, is also it's major problem. If we all did the same thing life would be much easier if that much duller, but within the hobby there are now so many interests to cater for, from highly technical projects such as helicopters and aerobatic models through to something as simple as a chuck glider, yet each as challenging as the other in its own particular field. What each interest clamours for, whether at club or national level, is due recognition. This also spills over into model literature where newsletter editors and the model press strive to give a fair representation to a bewilderingly wide range of interests.

However, is it necessary to be stuck with just one obsessive interest to the exclusion of the other equally fulfilling aspects of the hobby? It is not suggested that we become jacks of all trades nor brilliant all rounders, but an interest in, and an occasional dabble at, some of the things other club members like doing can add a welcome bit of variety, particularly when you hit one of those stale periods. It always makes for the more enjoyable reading of general modelling literature.

Our first report, from Mr. A. E. Sweetland, P.R.O., of the **Crawley & D.M.A.C.**, gives an insight into the sort of advances made into what is now aeromodelling's most popular sport, Thermal Soaring. The event described in the report was to BARCS rules: 150m line, hand towed, 10 min slot time, and held at Bowbush on the 14th June. Entry was a staggering 78, drawn from all over the south of England, and the weather equally staggering, hot and sunny. Heavy CB activity was registering on the monitors as the event got under way, but no one suffered as a result. A marvellous day's flying with the lucky — or rather highly expert — winners being amply rewarded with cups, plaques and quite fat cheques. What intrigued me though was the accompanying photo. The span of some of those models! All to do with the Reynolds Number factor I am told — the bigger they are the better they fly, and, judging by the graceful lines, small has no monopoly of beauty.

Still on the Soaring scene there are those flyers who, harried from once open spaces, have taken to the hills. In the uplands around Stoke-on-Trent you will find the members of **H.O.R.S.E.**, doing all those clever things with gliders along the crests. Since the generating air on the high ridge is such an ongoing thing, particularly in Breezy Britain, sheer duration has no particular competitive value, and so the models are put to other forms of comparative excellence, such as cross country runs and spot landings. A competition on these lines was run on May 3rd, the Bagnall Trophy. Getting a very wet initiation into typical model flying weather was a whole Boys Brigade Company, invited along in the interests of public relations. They probably all earned their Survivors Badge, but enjoyed the flying in spite of the appalling weather. Ed Cook, an inveterate fell walker, was the worthy winner. In less serious mood the club got together for a good old Chuckie ding dong. Every one who could wield a right arm, from 6 to sixty, joined in. The winner was 14 year old Matthew Cook, son of Ed Cook, who wasn't prepared to let Dad hog all the trophies. Plenty of other comps to come, but the big event is scheduled for July 26th, an Open Day in aid of Leukaemia Research. It is hoped to offer disabled persons a chance to experience at first hand the joys of model flying.

More C/L news from Jeff Smith, P.R.O., of the **Wharfedale & D.M.A.C.** Surprisingly, the model flyers have at last got a toehold on that most elusive Greater London site, North Weald. A Centralised C/L meeting was held there in May. Weather was at its bleakest, strong winds and rain, no doubt contributing to the rather thin entry. But what do expatriate control line flyers do in the more rigorous outposts? From Saudi Arabia comes the answer: you can't take off from sand, so you have to play with toys: to wit, Radio models. Not quite true you can get fifty lashes for using Methanol but it does contain alcohol. Jeff has sent along a copy of **Northern Area News** for us to read the latest comments on the 'you cannot please everybody' aspects of model publishing.

Coming to that now venerable newsletter, **Northern Area**

News, we find it somewhat out of date: the March/April issue, in fact. So to that piece on model publications, it is a response from David Parker, Editor of the S.M.A.E., who finds no real fault with this journal, but feels that it suffers, as indeed does his own journal, from the diversification within the hobby. Even so, if Mr. Parker can skip through this journal in a highly selective way in 12 minutes, other people, including myself, are interested in aspects of the hobby outside their own particular passion. Following the Vintage 20 event at the **Morley Sports and Vintage Day**, there is discussion of the relative merits of Rubber/Glider/Power models of this later 1961 vintage. Opinion is that the rubber model was fully 'modernised' by then whilst the Power model was still very much in the development stage. It is always difficult to match models of different classes, particularly since, on paper, one class should out perform the rest, it does not always happen that way on the contest field. **N.A.N.**, in its role as contest organiser ran a 'Silent Rally' for small field models and Vintage at Heath Common on July 12th. It appears that there was no absolute ban on power models, but their omission appears to go heavily in favour of a clearance request from the Council. Flying power does seem to be getting more and more difficult outside the private club flying fields and the S.M.A.E., only airfields. This is a good thing and a bad thing. Very restrictive to the hobby in many ways, but does mean that the model clubs have control of the situation.

From the **Leicester M.A.C.** newsletter comes a plea for a more scrupulous concern over litter. It can lose airfields just as surely as excessive noise, and is so unnecessary, since with a little care it can be avoided. It is well to remember that tidiness is equated with success: the expert modeller is the one with the meticulously ordered equipment. We are reminded in a little story about the fate of a chuck glider that cattle are a mixed blessing. Were it not for the cows on the pasture that piece of territory would not be flyable, but friable — under the plough that is. Even so, they are not over scrupulous about their sanitary arrangements, always congregate in the part of the field you want to use, and, with four stomachs, can ingest most parts of a model. Which is what happened to the chuck glider, dayglo, ronytube and other edible portions. About this time of year come the reminiscences of the Nationals. Not a strong Leicester representation, as John Birch recalls, with Gerry Ferer holding the club's end up with a third place in Coupe D'Hiver and a place in the Vintage fly off. But that weather! At least it was flyable in parts. The



result of the Winter Building Competition was a win for M. Russell, whose Eidelweiss had led throughout. Generally, the top 'Concours' models came through the flying test with, well, flying colours. There were sixteen entries, slightly below average, yet still a good turnout, making the event well worth while.

From the **South Bristol M.A.C.**, newsletter comes the latest thing in indoor models, 'Weenut'. Not yet an established class but the name was inspired by Dave Hanks' 7in span model of the Eastbourne Monoplane. Other members have shown an interest in these tiny scale models, and it is hoped that these minnows of the air will be swarming around the rafters during the next indoor season. Indoor scale has now quite a following, not only in the South Bristol Club, but all over the country and even abroad. The absence of wind, and therefore turbulence, gives scope for a whole variety of flyable designs, and what I like about it is the way it emphasises the creative aspects of our hobby, something ever desirable in these pre-packaged days. Emerging somewhat apprehensively outdoors, it would seem the West Country has had its due share of this very anti-model cycle of weather, particularly affecting the free flight programme. Seems like the club has had 6 consecutive contests ruined by the weather culminating in the much looked forward to Nationals. To make matters worse the South Bristol members were just not on form over that stormy weekend, with stalwarts such as J. Mayes and Gordon Bunney having all the bad luck going. On the subject of weather, we really have cause for grievance, for I recently spent two weeks in mid France, and almost every day was calm. South Bristol is not just a free flight group, though strong in this field, it also has considerable radio and control line sections, all getting a fair crack of the whip in a very full club contest programme.

Noise sensitivity and space limitation are very conditioning factors today, giving emphasis to the environmental desirability of the CO₂ motor. In the newsletter of the **Hemel Hempstead M.F.C.** we read of the club being treated to a 'teach in' on this form of small power package on their June club night by CO₂ expert Ian Peacock. Dave Day, the assistant Editor of RCM&E, also graced the occasion with a number of fetching CO₂ Scale models, plus a promise of the future in a tiny motor for Peanut models. By way of a bonus the wind had dropped after the coffee break to allow for a demonstration of Roger Warrington's twin Electric Pegasus model. Another memorable occasion was a visit to the Middle Wallop Scale Rally. The Hemel Hempstead convoy consisted of three caravans and a large frame tent, the latter taking some erecting in the disheartening wind on the Saturday. By Sunday, however, the wind had lost some of its fury, and the Hemel Hempstead visitors were able to fly their impressive array of models, including the 1/4in Scale Zlin of John Aris. Enjoyable as such meetings may be they can be a bit mortifying to the



'These rubber powered models should carry a Government Health Warning'.

It seems that most of our readers were following the example of Naftali Kadmon from Israel shown asleep in our caption photograph. The photograph was first published in Aeromodeller, December 1955. July issue's winning caption came from Gilbert Lawrence of Kent. Runners up, Geoff Green from High Wycombe with 'These Kamikazi models are sure getting accurate' or 'Dreaming of Jeannie with a light brown ale?' From R. Wilson of Stockport. Finally Len Auckland assures us 'The Count will resume flying at dusk'.

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old ego. The quality of workmanship is quite out of this world, and the 'paint job' artistry of the highest order. At Middle Wallop all the big stuff was doing spectacular things. You could see such airborne delights as a 1/3rd Scale Sopwith Pup and a 1/2 Scale Pitts Special powered with a 97cc motor cycle engine. Success for the club came in a special plaque to Nigel Robson for his Highly Commended D. H. Moth Minor. The meeting was recorded on film and slide for some future club night delectation. I see that the Hemel Hempstead newsletter is following a current trend in reprinting pages from modelling and even full size magazines. This seems a reasonable way of bulking out a club newsletter, and one which is viewed favourably by most magazine editors. It does help to resurrect from the back number file some of those gems of info which may otherwise be forgotten.

Club displays are very much a feature of what little summer graces these islands, and very much involved is the **Buckaneers Model Club**, a number of display notices featuring in the Scimitar newsletter. There is also a general directive on the purpose of such displays and the tenants of good radio flying thereto. Naturally, safety is the watchword at these events, calling for careful organisation and a strict briefing for the pilots. Flying field news is that Finmere is closed until after the crops are cut, and that the club's own exclusive field lies off the Grand Union Canal — looks to be a useful piece of pasturage. Mention is made here of the weather being more like November than June, although I have often found November more flyable than the breezy summer months. Even so, the continual high winds have certainly affected the hobby overall, with possibly less flying activity than for a number of years.

The newsletter of the **Enfield M.F.C.**, underlines the ghastliness of the current weather cycle. Mike Roedel, the Editor, becoming the fact that May was a complete flying write off as far as he was concerned, but not to be outdone the club, with opportunist flair, slotted the club R/C Power Comp into a rain free ten minutes. Mark Hewitt exploited the inevitable windy wind by hovering his slow flying bi-plane down on the landing spot, much to the chagrin of others who had modified their undercars in the attempt. No excuse for blaming all those crashes on CB interference now that the club has its own radio trainer. It is a QB 15H powered by an O.S. Max 20.

Main news in Flying In-Formation, the newsletter of the **Northampton M.A.C.**, is perhaps a little dated, for it hails the coming of spring and enjoins us to start flying. Such optimism — but at least we have had the hail. There are, however, other obstacles to flying than mere weather; there are the inveterate complainers whose saucer shaped ears can pick up the noise of a model engine over immense distances. The **Enfields Club** has one such very much on their backs. They have done everything possible to appease him: cutting the flying periods, restricting the number of models in the air at one time, and generally keeping sound output well inside the permissible levels. All to no avail, so, perforce, the club has decided to fight him in the Council chambers. Rightly so, we cannot let the hobby go by default to a few trouble seekers. Let us hope for a resounding win in this case.

The things people do with radio models. At one time it was enough just to get a model to fly, but reading through the newsletter of the **Banbridge Aeromodelling Club** we came across a piece about a radio flyer who had attached a coat hanger to the top wing of his model so that he could pick things off the ground whilst inverted. Unfortunately, the hanger got caught up with the prop, startlingly reducing its diameter.

Still in Ulster, 'Omnibus', the journal of the **Ulster M.A.C.**, is very much radio orientated, and is full of splendid action photographs, whilst 'nitro', the **Belfast M.F.C.**, newsletter presents the control line side of things in the province.

The photos in the National Association of Zimbabwe Aero-modellers newsletter clearly indicate that our Southern African friends are as well advanced in model technology as we in the Western world. The radio gliders can match ours foot for foot in span, and the aerobatic models are every bit as sleek in design.

Finally, we have Free Flight Down Under' and 'Torque', we find New Zealand still very much involved with Free Flight, and finding local councils just as restrictive. **Clubman**



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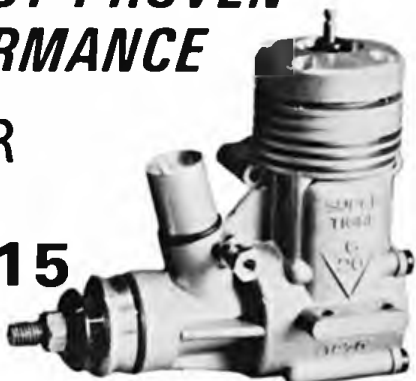
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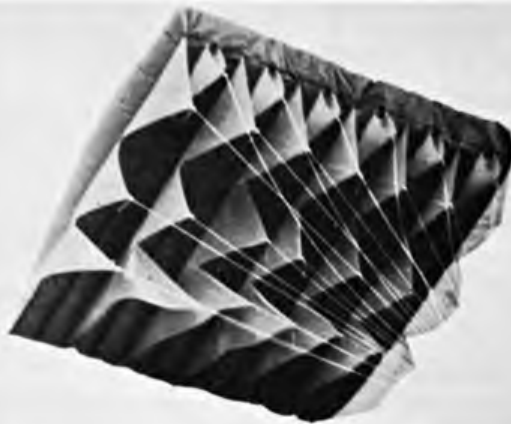
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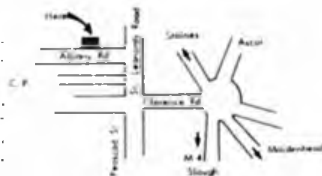
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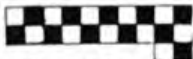
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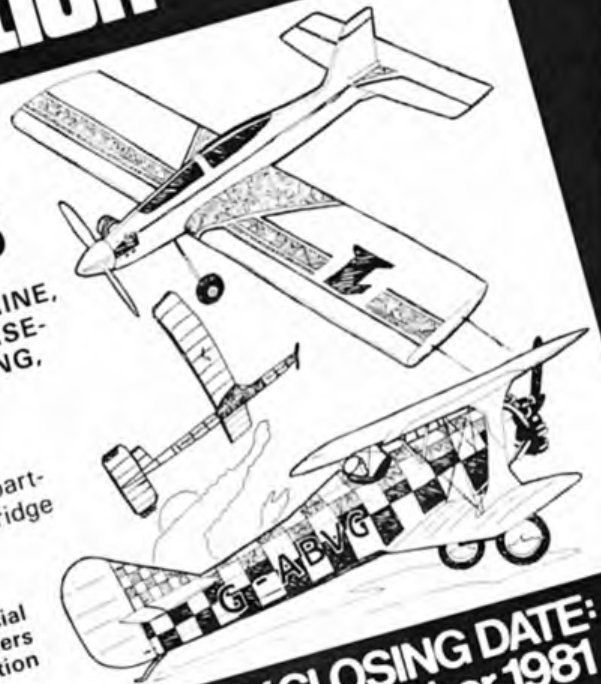
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