

Aero ^{2,90} Modeller

SEPTEMBER 1968
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INCORPORATING
MODEL AIRCRAFT

AN **MAP** HOBBY MAGAZINE

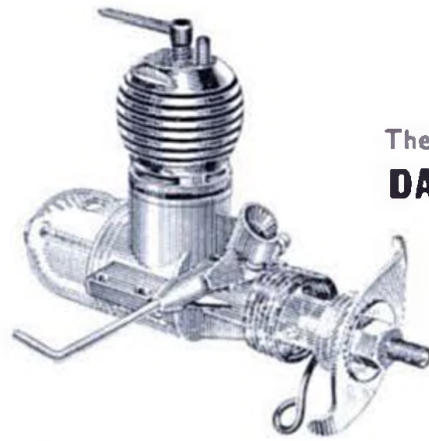
22" Control-liner plans
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Curtiss SBC-4 drawings
Contest glider
Gadgets · Engine test



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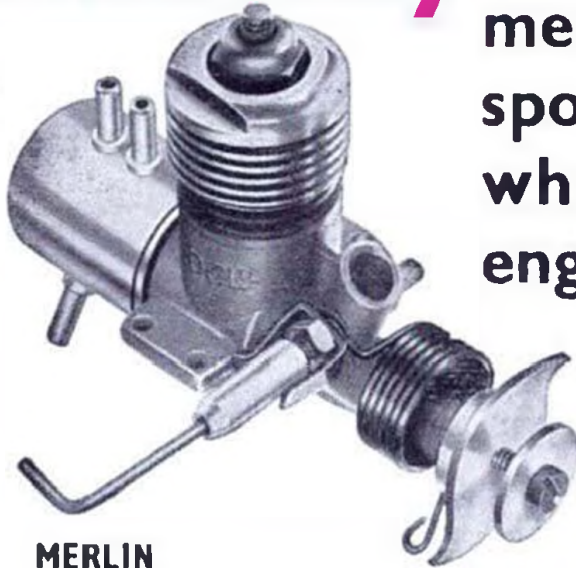


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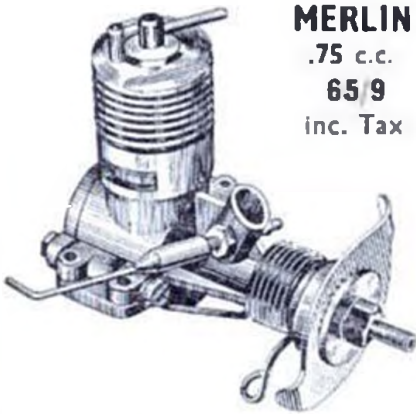
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MODEL AIRCRAFT

September 1968

VOLUME XXXIII No. 392

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COMMENT

Scale modellers are notoriously independent folk. They are not usually much interested in contests and they fly their intricate creations only as the mood suits, as distinct from all-weather diehards of the competition world. But given the opportunity to meet his fellow enthusiast at a central rally, our Scale model builder will travel the length of the nation, or so it would seem after the third *Aeromodeller* all-scale rally at the Shuttleworth Collection on July 21st. This memorable meeting, blessed with calm weather and supported by modellers of all ages will go into the annals as one of the happiest occasions in the 1968 rally calendar. Why so remarkable? Simply because the scale classes can no longer be considered numerically inferior. Hundreds of replicas, entertaining a crowd of 6,000 established this branch of aeromodelling as a category which has expanded more rapidly than any other, - and long may it continue to do so!

on the cover

Is it real? Bill Forrester's magnificent model of the Bristol F2b Fighter can easily deceive anyone. Already the winner of the Bristol Cup at the Model Engineer Exhibition and the Knokke No. 2 Trophy at the British Nationals, its latest success is the 'Shuttleworth Trophy' for best replica of a Shuttleworth aircraft at the Aeromodeller Scale Rally June 21st. Powered by Merco 61 it is rib for rib, has all controls, every single piece of structure and accessory reproduced perfectly in miniature to scale of 1½ in. equals one foot.

next month

Free full size plans for a radio control scale **Beagle Pup 150** to suit single channel *plus* up to date conversion of the popular **Gipsy Moth** plan for multi channels. The D.H.80 is by J. C. Bertola and is a replica of Sir Francis Chichester's first Gipsy Moth. Also for scale fans a superb drawing, measured from life by Pat Lloyd of the **Heinkel He 162**. Contest modellers have more **3 views** and for the control-liners, a full account of the **1968 World Control-Line Championships** by John Franklin, our man in Finland. On Sale September 20th.

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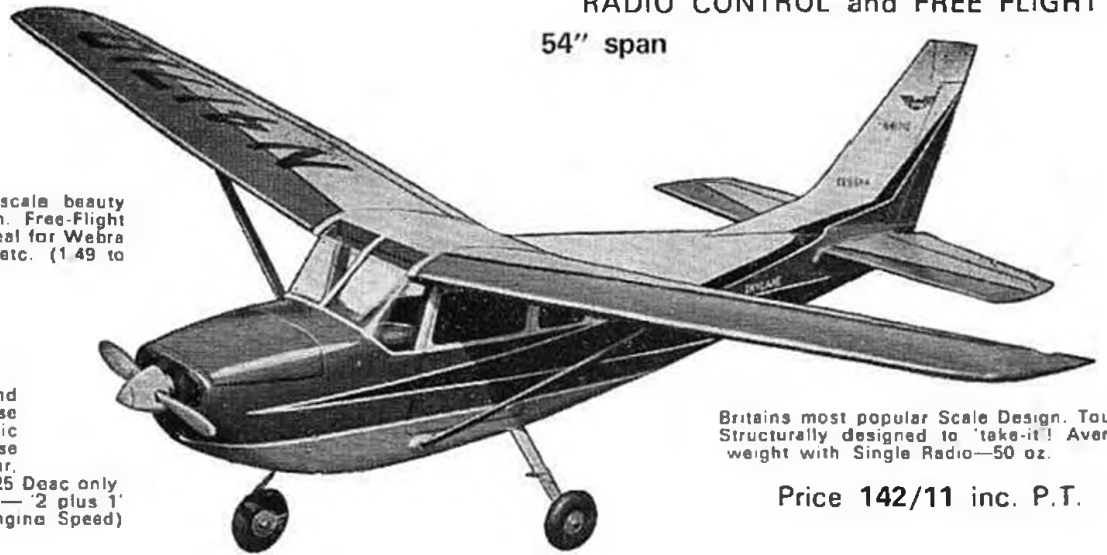
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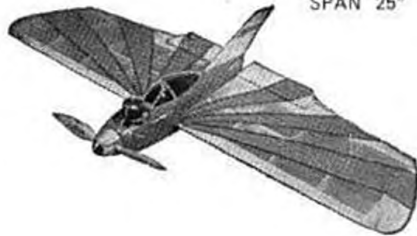
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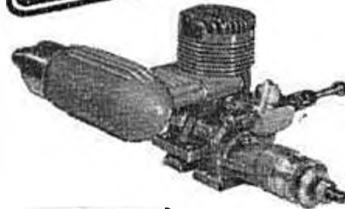
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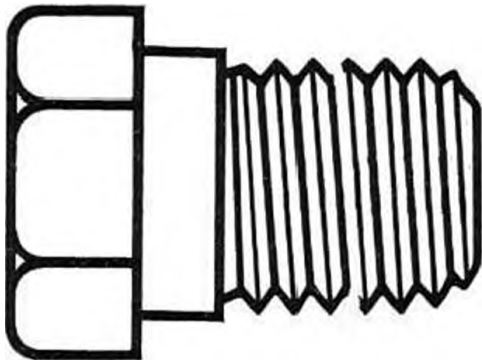
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Never mind about the models in the photos for a moment. Let's talk about nuts and bolts — or specifically a 3" long 9/16" steel bolt and nut. It weighs a little over 6½ ounces. Now that is heavier than the complete 8 ft. span wing in the left-hand model above which, like a bolt, was designed to be as strong as necessary for the job it has to do. It's all a matter of using the right material for the job . . . and Balsa is THE material for model aircraft construction.

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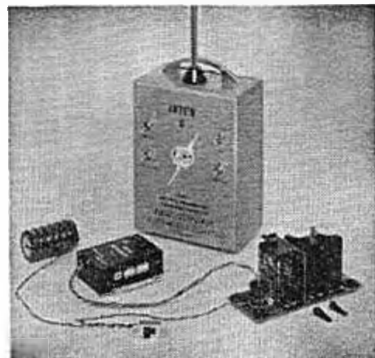
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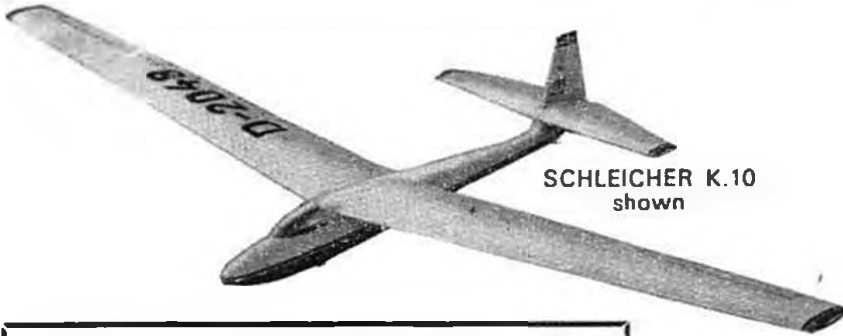
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SCHLEICHER K.10 shown

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**MODEL
BOATS**

August issue has a free booklet — Model Boats Radio Control Handbook — included with every issue. This answers many of the questions asked by the not-so-expert radio enthusiast. Regular contents include Topcat, 30 in. power boat, and Try-One, 36 in. trimaran, for readers to build, descriptions of a steam-powered trawler and a 9 ft. x 9 in. steam yacht, an explanation of tuned pipes and fitting out a glass fibre hull, drawings of an Iranian frigate, a xabec, a famous liner, and a Dutch aircraft carrier, reports on regattas, readers' letters, paddle steamers, customs and pilot cutters — a real mixture of interest to all.

4th FRIDAY MONTHLY **2/6**

**RADIO
MODELS**

September R.C.M. & E. will contain a full construction feature for the long awaited R.C.M. & E. Supertone single channel superhet receiver. Supertone is the culmination of a considerable amount of genuine development work, the object of which has been to devise a circuit which can be easily reproduced by the average R/C enthusiast. Consequently, the overriding factor has been reliability, and although the unit sets no new records for compactness and cheapness, it is a first-class workable circuit. The unit has been designed to operate in relay, relayless, and relayless galloping ghost models, the latter using the G.G. switcher circuit.

2nd FRIDAY MONTHLY **2/6**

**BUY
NOW!**



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**ON SALE SEPT. 6th.
FREE MOTOR BOOK!**

incorporating **miniature auto**

**NEW LOOK...
BIGGER & BETTER**

With this first, big, new-look Model Cars now incorporating 'Miniature Auto', we can at last offer the model car enthusiast all that's best in reading—every month, under one single cover! Here's how. Firstly, Model Cars will have more pages than ever (but still at the regular price of 2s. 6d.!) Secondly, we're going to retain all the articles, features, etc., which you enjoyed most—so you won't miss any old favourites. And thirdly? Well, more pages will mean more room to really cater for all tastes in models and provide something of interest for everyone.

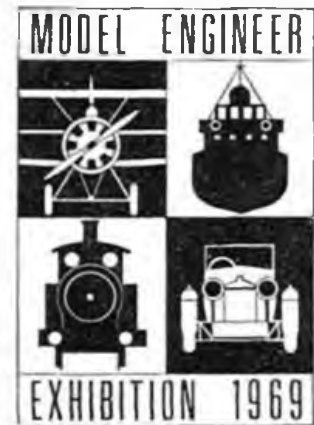
If you've enjoyed reading 'Miniature Auto' and Model Cars in the past as separate titles, we think

you're going to be thrilled to bits with this first bigger October issue of Model Cars. Just check this top reading line up: For a start, there'll be a free 32-page booklet on slot motors with every number, giving specs of all the mills plus tuning, building and maintenance articles. Scale plans will be for the F1 Matra and the Brabham BT24 with complete specifications and superb photographs; there'll be features for slot racers on motor winding, and for scratch-builders will be a winning endurance car in 1/32nd scale. In addition will be a corner for collectors and plenty of race reports with car specs plus, of course, Racing U.S.A. from Model Cars' U.S. Correspondent, Bob Rule. And much more... you know you can't afford to miss it!

**MODEL AND ALLIED PUBLICATIONS LTD.
13-35 BRIDGE STREET, HEMEL HEMPSTEAD, HERTS.**



A. F. Clements' Bristol Scout biplane, winner of a silver medal at the 1968 Exhibition in the non flying scale class. Typical of the many finely detailed entries, this model even includes a rotary engine!



**31st DECEMBER 1968
11th JANUARY 1969
SEYMOUR HALL W.1.**

38th MODEL ENGINEER EXHIBITION

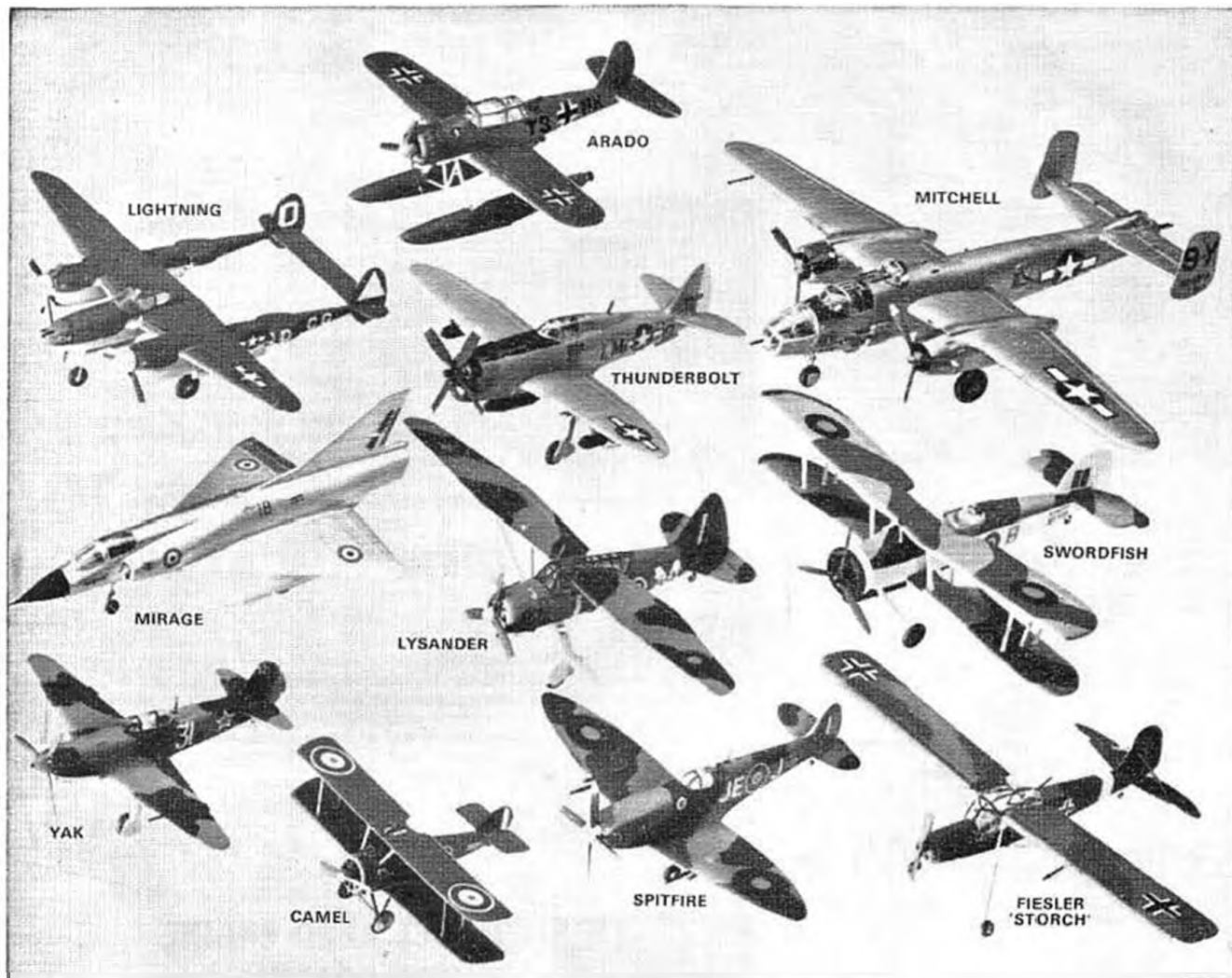
Once again provides the expert with an opportunity to exhibit his prowess. Prizes in all model classes totalling £300 (up to £14 per class). Enter your own or admire other peoples! Entry forms on request. Exhibits will include aircraft, cars, boats, locomotives—working and static. Passenger hauling locomotives, road vehicles under steam, model railway layouts, historic model toy collection on view. Trade and demonstration stands. Something for all.

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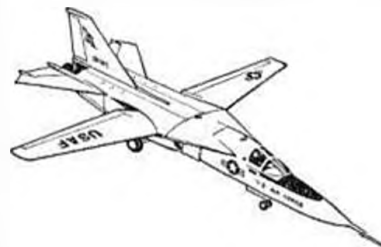
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F111A. This kit of the swing-wing aircraft is over 1 ft. long complete with transfers. Wings and tailplane are actually variable. Price 7/11d.

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ALL ABOUT MODEL AIRCRAFT

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Everything the novice aeromodeller needs to know in twenty-one informative chapters. Construction procedures, covering, doping, trimming and flying, how to operate model engines, carve a propeller or fly a control line model. It's all here in one handsomely bound volume, copiously illustrated with hundreds of photographs and sketches. A book to solve your problems and to make your hobby all the more enjoyable whatever your particular interest, free flight, radio control, plastics, solid scale, Jetex or control line. Special attention given to model engine care, mixing fuels, soldering and silk covering. 160 page, 8½ x 5½ in. Full colour hard cover library quality edition.

15/-



FLYING SCALE MODELS

R. G. Moulton

All types of scale flying models are described in turn – glider free-flight and control line; Jetex, Diesel, rubber or ducted-fan types. Much useful information is given on achieving highly realistic finishes and detailed parts, and there is a useful set of tables listing camouflage and insignia from 1914 up to date. Perhaps the most attractive feature is the very large number of illustrations including photographs, diagrams and scale plans.

This is certainly a book to inspire the scale aeromodellers, whatever type he may choose; free-flight control line, or radio

8½ x 5½ in. Hard bound. Chapter headings by cartoonist Roland. Over 300 diagrams, sketches, photo-illustrations. 74,000 words.

10/-



AEROMODELLER ANNUAL 1968/69 **Out Oct. 1st!**

21st editions!

A truly vintage edition brings no less than 47 of the World's most interesting model designs ranging from an actual size Indoor flyer to World Champs winners. 'Milestone' features include George Aldrich on Secrets of Speed, engine tuning and fuels; Theory of Model Flight; Aeromodellers who've made their own full size aircraft; Noise explained; the new Foam Plastic techniques by Erich Heimann; How to use Epoxy, and How to keep control line tension. Designs include Coupe d'Hiver, Wakelield, A/2, FAI & 3A Power, Open Rubber, Chuck Glider, Hydro, Team Race, Stunt, R/C Multi, Sport, Scale, Tailless – you name it and you'll find it here!

128 pages, size 8½ x 5½ in. Hard cover depicting American home-built 'Breezy'. Includes comprehensive collection of plans and model drawings.

10/6



CONTROL LINE MANUAL

R. G. Moulton

The manual represents the accumulation of 16 years' experience by the author in the flying of control line models including the pioneering of aerobatics, team racing and combat in Great Britain. He has condensed all the trials and tribulations of his long acquaintance with the subject in an informative and non-technical style that will be immediately appreciated by the experts as well as the beginner. It will be a constant guide and reference work for all who fly models by any of the many control-line systems.

8½ x 5½ in. Hard bound. Chapter headings by cartoonist Roland, over 300 diagrams, sketches, photo-illustrations. 74,000 words.

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MODEL AERO ENGINE ENCYCLOPAEDIA

All the known World's Engines are detailed in tabular summary with principal dimensions and advised propellers. Three extensive chapters deal with initial operation of a first engine whether it be ignition, diesel or glowplug. Advanced data on fuels. Horsepower, speed controls, silencers and tuning of racing engines. Fully updated and revised in new 1966 edition.

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MODEL & ALLIED PUBLICATIONS
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HERTS.



Heard at the HANGAR DOORS

The open doors reveal John Isaacs' man carrying model, now in 43 Sqdn RAF Markings with roundels and black/white checkerboards. Wheel discs and spinner are yellow. The Isaacs Fury is now in series II form with a 125 h.p. Lycoming replacing the 65 h.p. Walter Mikron. Our Plan Pack AH 2786 gives all scale data, price 3/- from the editorial offices.

PYLONS – not the power duration variety, nor the race around type are in the news. We refer to those hideous steel contraptions which progress demands we should have all over our countryside to carry the Electricity Grid network. In their time, these pylons and appendages have hit the headlines dramatically. Control-line fatalities, hooked up models and even the occasional full size aircraft crash have involved the power cables and their dangerous discharge. Latest 'incident' to appear in the National Press has involved a wayward Radio Controlled model, lodged in the power cables of Essex. According to the Press, we are told that 186,000 homes were 'in danger of losing their electricity supply' as a result of this. The model was recovered by the Electricity Board and returned to the owner with a note to emphasise the risk. Moral of this story is obvious – stay away from Power Cables whatever kind of model you fly – and especially if flying a control-line model.

RUMOUR hath it that prospects for the 1971 Free Flight are far more secure than for 1969! Austrian Model leaders in the O.Ae. C. have leaked their intention to hold another triple Championships on Europe's largest model flying field at Wiener Neustadt.

S.M.A.E. members have their opportunity to make sweeping changes at this year's elections (by postal ballot the month before A.G.M. on Nov. 16) as *all seven* of the Officer posts will become vacant due to rotation of duties, retirements or lapsed options. Thinking caps on, men! Nominations have to be made by Oct. 14th.

DEMONSTRATION of Radio Control at the well supported UHU glider contest for junior modellers,

West Germany was provided by the Graupner team of no less than 38 members! In one photo alone, 32 Graupner models can be counted – see R.C.M.&E. this month.

F.A.I. POWER specialist Sergio (Joe) Savini, back in his native Italy (though now a naturalised Briton) is making his mark in the Italian contests which go towards their Annual Championship. Winner of one event and second to Bruno Fiegl on June 16 for the Coppa Tevere, Joe could well carry off the honours, but he tells us that Fiegl has the fastest Super Tigre G15 he has ever seen – and that must be something!

GENK, once the centre in Belgium for International and World Championship events, is still used by the breakaway Federation Belge des Club d'Aeromodélisme (FBCA). An international R/C event is scheduled to be held there 23-26 August.

CONGRATULATIONS are due to Dennis Bryant, that popular model shop proprietor from Brockley Road, S.E.4 for doing what we've *always* wanted to see – produce a successful geared engine. His Gauntlet with 3:2 prop speed reduction on a McCoy 60 was an absolute joy to watch at Old Warden – results of which are given below:

AEROMODELLER SCALE RALLY RESULTS

OLD WARDEN, July 21, 1968

FREE FLIGHT SCALE 1 K. McDonough (*Douglas 0-38*), 2 J. Turvey, Lee Bees (*Bristol Scout*), 3 D. Banks, Finchley (*Blackburn Mono*), 4 D. Harbour (*Fokker D VII*), 5 C. M. Barnes (*B.E.2e*), 6 J. Archbold, Leicester (*Air Transport P.2*), 7 D. Neal, Leicester (*Bucker Jungmeister*), 8 J. Nicklin, Tudor Falcons (*Morane Parasol*), 9 E. J. Braisby, Leicester (*D.H. Tiger Moth*).

CONTROL LINE SCALE 1 M. Reeves, Wanstead (*Turbulent*), 2 N. Evans, Northampton (*Cessna 336*), 3 W. Forrester, Wanstead (*Bristol F2b*), 4 P. Brown (*Fokker D VII*), 5 P. Simmonds, Bilston (*Blackburn Mono*), 6 R. Ivans, Walsall (*Hawker Fury*), 7 A. J. Briggs, Esher (*Grumman Tigercat*), 8 W. Cordwell (*Gladiator*), 9 I. Peacock, Bletchley (*Messerschmitt Bf110*).

CARRIER DECK 1 M. Reeves (*Short Seamew*), 2 Woodrow (*Bell Airahonita*), 3 S. Perry (*Buffalo*).

RADIO CONTROL (Single) 1 Jeakins (*Blackburn Mono*), 2 P. Tranfield, Hatfield (*Fokker D VIII*), 3 D. Bate (*D.H. 82A Tiger Moth*).

RADIO CONTROL (Multi) 1 N. Butcher, Buckaneers (*Fokker D VIII*), 2 D. Brunt, L.A.R.C.A.S. (*Kawasaki Ki-63 Tony*), 3 F.v.d. Bergh, Bromley (*Hawker Fury*), 4 R. Upton (*Douglas Mailplane*), 5 K. Marsh, West Essex (*Fleet Finch*), 6 C. D. Wright (*NA Mustang*), 7 R. Nicholls (*Ast Shoestring*), 8 R. Crapp, Esher (*Kawasaki Ki-63 Tony*), 9 W. Neild (*D.H.60 Moth*).

STATIC SCALE 1 J. Chisman, Billericay (*Messerschmitt Bf 109G*), 2 T. Woollett, Wokingham (*Breguet 14*), 3 R. Adams, Castle Bromwich (*Mitsubishi 'Pete'*).

SHUTTLEWORTH TROPHY 1 W. Forrester for his *Bristol F2b Fighter*.



VETERAN MODELLER H. J. TOWNER'S

CONTROL LINE REPLICA

$\frac{7}{8}$ " equals 1ft scale for two .8–1.6 cc. engines
diesel or glowplug

THE 'DRAGON RAPIDE' holds more affection among British pilots and many air travellers than any other similar type. Now, alas, she is of a dying breed, irreplaceable due to present day requirements which demand more power, more weight in consequence, and far less sense of actual flying. There are many D.H. 89s still with us – in all quarters of the world, earning their keep in varied ways. We thought it ought to be preserved as a model subject – and who better to do so than that doyen of Scale modelling in Great Britain – Harold Towner? So here is his version, for control-line over to Harold:

In building a fully detailed model of this nature it is necessary to complete the interior at a very early stage.

Commence by laying down the top and bottom keels and joining together fore and aft. The respective formers then can be eased into their slots. It may be necessary to gently separate the top and bottom keels one end to

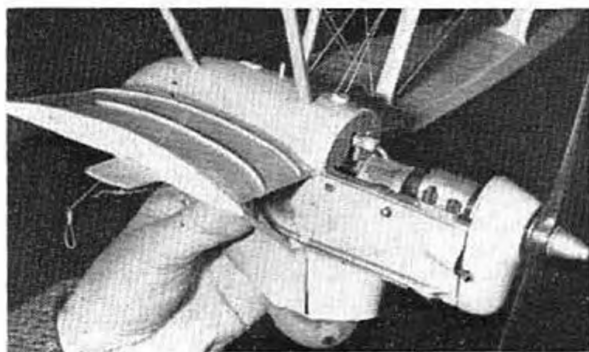


On the original model, Evostik Resin W was used as an adhesive throughout.

Window frames are now added out of scrap to line up with the inside of formers F3, F4, F5, F6, F7 and F8. Add the floor (1/32 balsa) with grain across the fuselage, resting on the lower keel. Use coloured art paper for the floor, sides and ceiling, covering the window frames to the outside of the formers using a polycell type of adhesive that does not stain.

The seats can now be made up of suitable material and glued firmly into position.

Window glazing can now be done using acetate sheet about 1/32 in. thick pressing in to the window openings

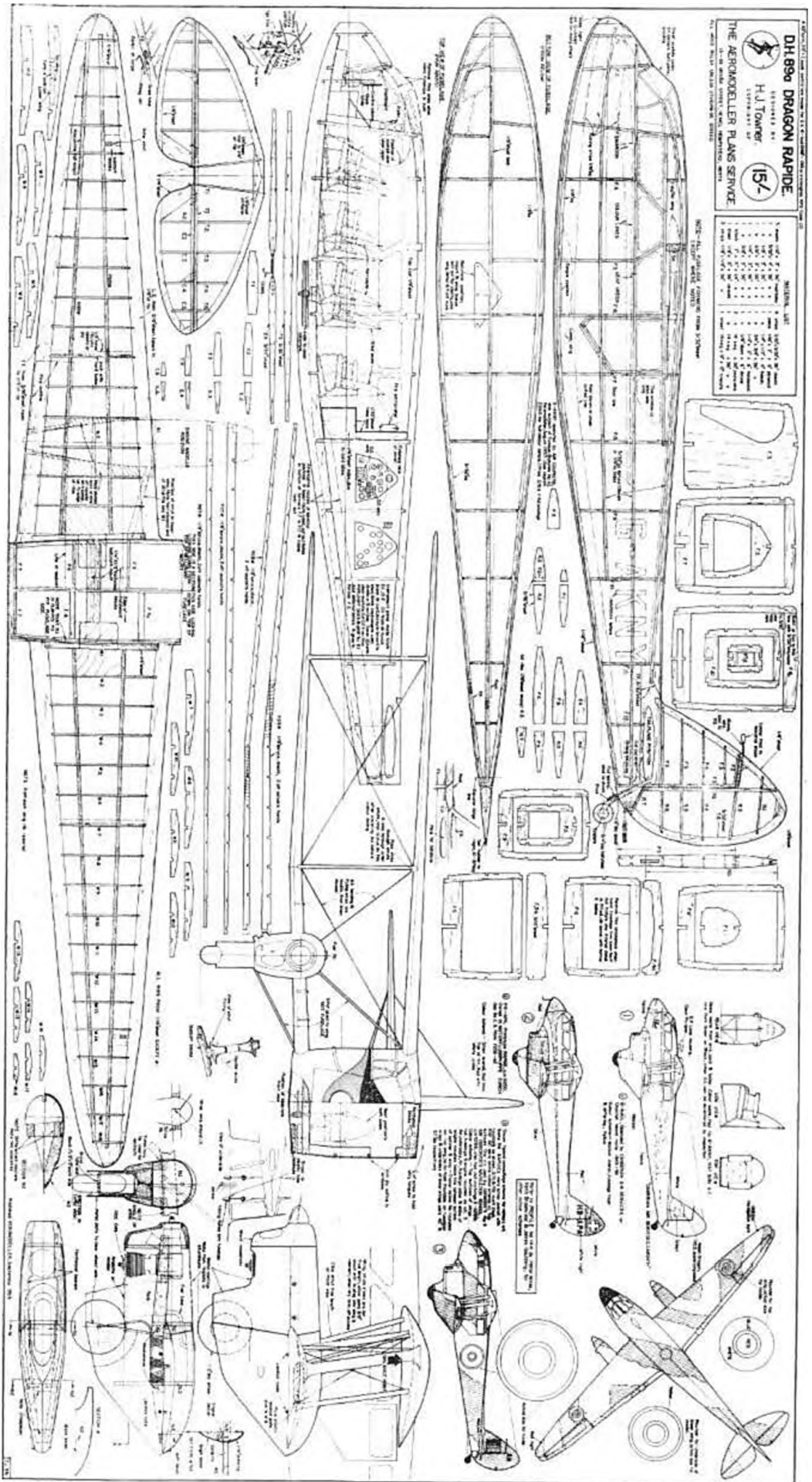


achieve this. The main longerons should now be added making sure that all is square. In order to bend the main longerons at the front end, gently rubbing the inside surface up and down on a 'not-too-hot' electric soldering iron should achieve this. Make sure that both the right and left longerons are the same curve. This of course should be done and longerons matched before assembly. Cross member F4a and the main wing beam F5a should be fitted and also the door frame.

Fit the hardwood cross member, together with bell-crank and lower wing tongue boxes, bound with thread and cement before fitting into place.



FULL SIZE COPIES OF THIS 1/4th SCALE REPRODUCTION ARE AVAILABLE PRICE 15/- (POST FREE) FROM AEROMODELLER PLANS SERVICE QUOTE PLAN CL 981.



Top left, A step back to yesteryear with an airborne shot of a D.H. 89a in B.E.A. colours as used for the St. Just-St. Marys Scillies route. Most of the remaining examples are now on civil register charter work. With good slow flying characteristics this aircraft is a very popular type with skydiving clubs. Centre, The designer with the original model (flying wires etc. are faithfully reproduced). Below left, Port wings and nacelle removed, display tongue wing fitting which is an unusual feature on a control line model (who will be first with an R/C or F/F version?). Below right, this Rapide, which could be emerging from the hangar doors is in fact another picture of the original model. If it wasn't for those glowplugs and propellers, it would be very difficult to distinguish from the full size.

flush with the outside and a spot of Britfix or Evostik here and there to make firm.

The fuselage sides can now be skinned with 1/16 in. sheet balsa the window verticals being separate pieces with the grain running in the longest directions.

The door can now be cut out to be suitably hung on hinges after the roof is finished.

The ceiling is fitted in small sections, art paper on card let in from the top, strap hangers being previously fitted.

The open cockpit door and main door opening help to give access to the interior.

The upper wing boxes are now carefully positioned, the roof being finally fixed in position.

The cockpit can now be completed and glazing finished. The front and side panels are flat acetate, but the upper panels may want gently warming to fit snugly into place and butt joint with Araldite or Evostik.



Views on this page, show details of Pegasus, the Rothman Rapide used for the Airborne Regt. to practice skydiving and photographed for us by C. S. West at Blackbushe. Above: the shape of the nose, cabin external detail and the engine nacelle are helpful for modellers. Left, and Below, are more details of the nacelle and main undercarriage. Note from these pictures that the nacelles are not handed but identical, i.e. exhaust pipes and intakes on the starboard side whilst cooling openings are to port. The nacelles are only the intricate part of a D.H. 89A for model reproduction and present a problem through the sharp taper at the rear under the wing exactly where the engine bearers have to be mounted! (See sketch opposite.) Note also the cabin window frames, doubled drag and landing wires in inner bay and strut positions.

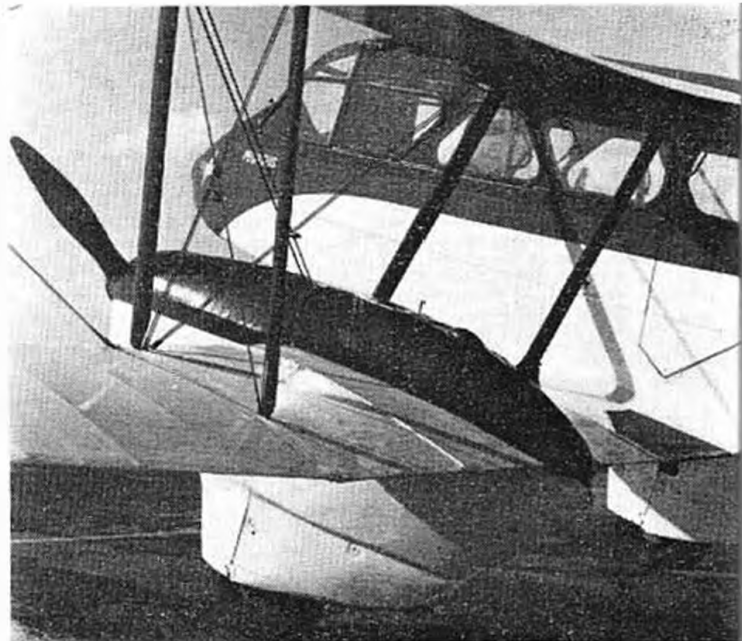
The tailplane can now be built up and the elevator horn made up of 18 and 16 s.w.g. wire. On the original model the horn complete was held in place against the stern post, and the tailplane slid into place. Then the horn bearings were bound and cemented to the tailplane main spar. The elevators were then added. There is just room to give sufficient movement for mechanism but it may be necessary to carve out quite a bit of wood to give freedom of movement. The author always cuts the elevator push-rod in two pieces somewhere along its length and joins together with a length of brass tube so that suitable adjustment can be easily made and then soldered up.

The wings are built up in a straightforward way using solid leading and trailing edge which give ample strength to a thin wing. Use a 1/16 in. thin file for cutting slots in the Obechi.

On the lower wing the leading and trailing edges should be scarf jointed and a strip of millimetre ply glued to their vertical surfaces.

The wing can now be fitted temporarily into position and wing struts fitted making sure that each pair of wing tips have equal dihedral and distances from the stern post. In other words everything must be square and true.

The Nacelles can now be made. The engine bearers may appear a little complicated but provided they are made in pairs there should be no difficulty. Note the



recess behind the motor in the plan view. This not only locates a commercially made tank but also enables the engine to be drawn out backwards and lifted through as the nose piece, carved in Obechi is fixed to the bearers and the bearer is the 'wrong' side of the engine mount.

The undercarriage legs can now be made but should not be too springy, otherwise the wheel will tend to yaw in its track.

It is suggested that the two ends of the wire meet in the centre of the wheel, enclosed in a tube which forms the wheel bearing.

The Nacelle is now built up of block and planking around N1, 2, 3. Mount the two propellers and make sure they both line up horizontally and vertically; small adjustments can be made by packing either engine slightly.

If possible a larger tank should be fitted on the inboard motor, so that the outboard should stop first, the inboard motor then tends to keep the lines taut.

Cover the whole model with tissue, slightly damped, dope, and colour.

Note scrap of wood around nacelles and wing strut fittings to enable the tissue to be attached.

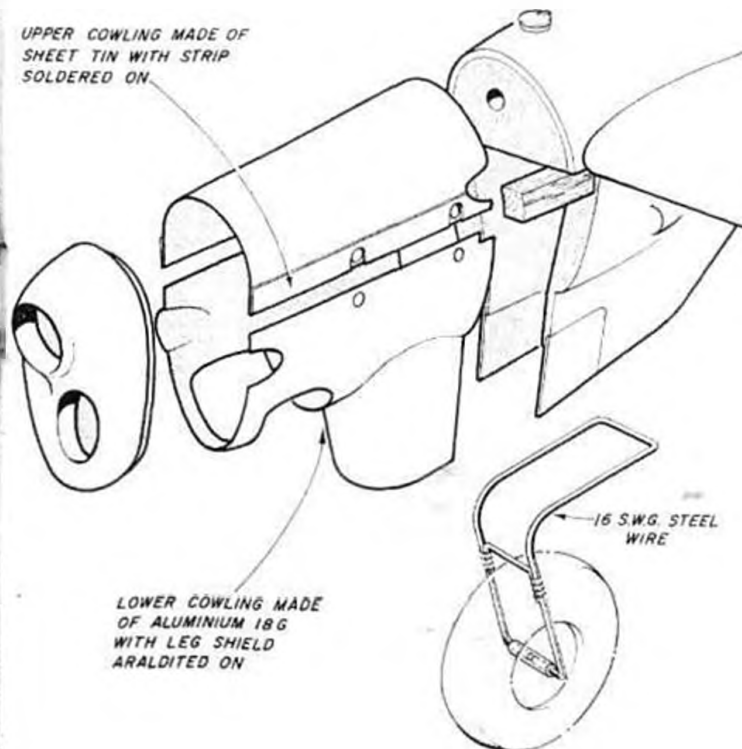


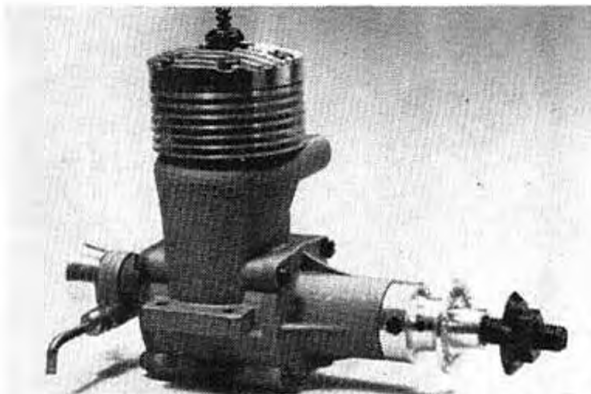
Above are details of the tail surfaces on the Rothman D.H. 89A. (Intricate Gold and Blue emblem for the more finicky types), whilst at left a black and white photo doesn't do justice to the colour scheme. Underside of flying surfaces, rudder and upper fuselage and nacelles are dark blue with lower fuselage and nacelles, fin and upper flying surfaces a contrasting white. The inter-fuselage strip in Airborne maroon; spinners are dark blue; registration, nose badge and name are white; registration in fuselage is black, behind large emblem just visible. This particular example forms a very attractive basis for a colourful model. Below, is the original model decorated as our scale drawing 2690 which is available at 1s. 6d. including post from the Aeromodeller Plans Service.

Completed, the model should balance 1½ in. behind the top L.E. at the root and no nose weight need be added. It may be found an advantage to add ¼ ounce weight to the starboard lower wing tip.

When starting, the motors can be choked through the air intake in the nose and two battery leads to a two-way switch on the battery box helps the life of the battery.

Various colour schemes are described on the plan and can be seen in the photographs in these pages - do a good job on finishing, for the 'Lady' deserves it and you'll be proud to fly your own private Dragon Rapide at the Scale rallies, fetes, or just for your own personal pleasure.





K & B and Veco Engines Available

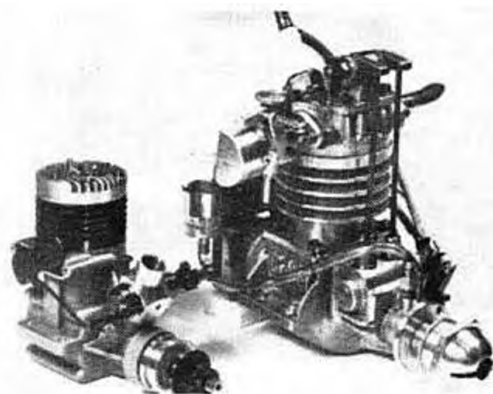
Some of the best of current American engines are contained in the present K&B Torpedo and Veco engine ranges. The K&B company have now appointed Irvine Engines (run by ex-speed flier Ron Irvine) as their sole agent for the U.K.

Last year, K&B took over the Veco engine and accessory range (Veco kits were, at the same time, acquired by Dumas Models, the boat kit people) from the Henry Engineering Company. This followed Henry Engineering's decision to quit the model field and devote their energies solely to the full-size aviation industry in which they were already engaged through sub-contract work for the Douglas aircraft firm.

Irvine Engines, therefore, are not only able to offer the complete K&B line of engines and accessories but also the Veco engines, plus Veco wheels, tanks and spinners. This adds up to one of the biggest model engine ranges now in production, numbering 20 different models in all, a variety that is exceeded, numerically, only by Enya, O.S. and Super-Tigre.

Two years ago, K&B dropped the manufacture of all their plain bearing motors and concentrated on the twin ball-bearing 15, 29 and 35 and 40 high-performance type Torpedos. However, popular demand has resulted in many of the older models being reinstated. These include the plain bearing Torpedo 19 R/C, 35, 35C, 35 R/C, 45 R/C and Stallion 35. Selling for a modest £5 9s. 6d. in the U.K., including purchase tax, the Stallion 35 is the lowest-priced engine in the range. It is a solidly made engine of orthodox design and is particularly good value at this figure.

At the other end of the range is the K&B version of the Veco 61 R/C, now priced at £30 0s. 0d., including purchase tax. This engine has a new piston with single Dykes type ring. A fresh addition to the range is the Veco 50 R/C. This is an enlarged version of



LATEST ENGINE NEWS

by Peter Chinn

Shown alongside a Merco 61 to give an idea of its size: an aircooled version of the Gannet 15 cc. OHV marine patrol engine which has been specially built for a large R/C model Blériot Monoplane. Further details of this interesting engine can be found in this month's R.C.M.&E.

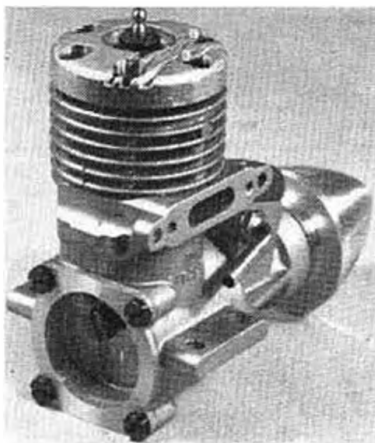
the Veco 45 R/C which was popular with multi R/C enthusiasts before .60 size engines became so widely used. In place of the lapped cast-iron piston used by the 45 R/C, the 50 R/C has, like the 61, an aluminium piston with single Dykes ring.

One of the K&B's most successful engines at the moment is, unquestionably, the Torpedo 40 Series 67 which is available in both standard and R/C versions. The standard engine is an obvious (and very successful) power unit for control-line racing: the R/C model is an equally popular choice for R/C Goodyear type pylon-racing. Torpedo 40's, in fact, powered both models in the final of this year's Nationals Pylon Race event.

Our photos show the standard Torpedo 40 Series 67 engine. This engine has not previously been included in these columns, although most of its predecessors have been featured, including the Torpedo 40 Series 66. The difference between the 66 and 67 series models is that the former are crankshaft rotary-valve engines, whereas the latter have rear disc valve induction.

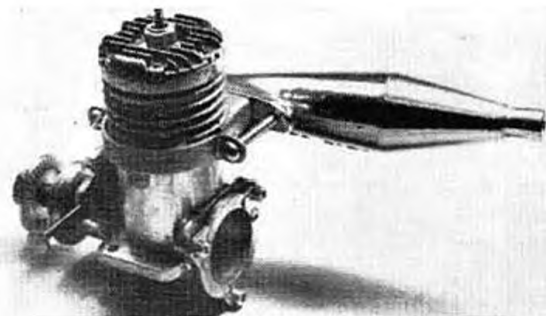
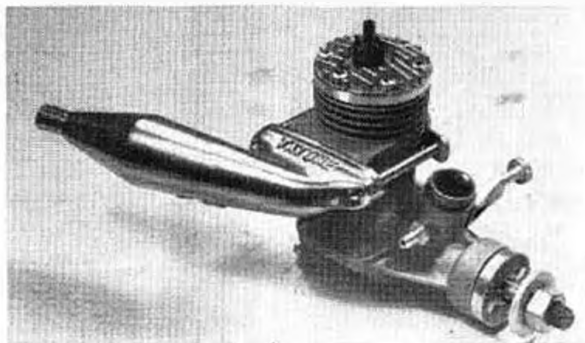
Many of the parts of the two engines are interchangeable. Indeed, the only completely new component in the Series 67 engine is the crankshaft. All the remaining parts, where not the same as those of the Series 66 unit, are derived from other Torpedo engines - mostly the 29R Series 64.

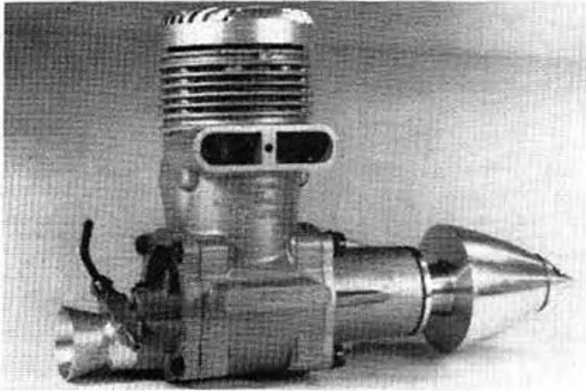
Standard Series 66 parts used include the cylinder/crankcase casting, cylinder-liner, cylinder-head and piston including ring and gudgeon-pin. All the other components are from the Series 61/64 29R and in some cases are common to the Series 61/64



Above: The new Super Tigre G.15 exhaust manifold. Below left: Irvine Engines import, the Veco 198B, shown here fitted with a Tatone Model 101 'Peace Pipe'. On test, we found the Veco 198B to be the most powerful engine of its capacity currently available.

Right: Tatone medium size (Model 102) silencer fitted to a Fox Stunt 35 engine.





Torpedo 35 as well. Undoubtedly, it is this rationalisation that makes it possible to turn out engines of such good quality and high performance as these K&B models, at prices that are not prohibitive.

A report on the shaft-valve Torpedo 40 was contained in the January 1968 issue. Using K&B Supersonic-1000 fuel, this engine bettered 1.0 b.h.p. at 16,000 r.p.m. on test. The disc-valve model, however, can be expected to improve on this impressive figure.

Full service facilities on these and other K&B and Veco engines are available from Irvine Engines.

'ABC' v. Dykes

Last year, Super-Tigre designer/manufacturer Jaures Garofali began experimenting with a new cylinder/piston set-up code-named 'ABC'. Briefly, this consisted of using an aluminium (A) piston, with or without rings, in a bronze or brass (B) liner which had been chromium (C) plated. The intention behind the exercise was, presumably, to devise a piston and cylinder combination that would avoid the excessive expansion differential inherent in the normal arrangement of an aluminium piston in a ferrous cylinder or liner. The idea is not new but this is the first time that it has been applied to a commercial model engine. Brass and bronze have coefficients of expansion much nearer to that of aluminium than have iron and steel, so that hot and cold clearances are much more evenly maintained. The chromium plating, of course, is to provide a hard cylinder wall surface to maintain adequate wear resistance.

The system has, by all accounts, proved successful. In Australia, Taipan engine manufacturer Gordon Burford has also tried out the idea and reports that it works like a charm. Meanwhile, certain racing-type Super-Tigres are now being delivered with this feature. We hope to report further on this, shortly.

It will be interesting to see which has the greater future; the ABC or Dykes ring set-up. Dykes rings have been attracting increasing attention lately and among commercial products, K&B, Merco, O.S. and Veco all have at least one Dykes-ringed engine in their ranges. George Aldrich, former U.S. stunt C/L champion, famous for his 'Nobler' stunt model and now engaged on racing engine development, has converted a Super-Tigre G.21/29RV from lapped piston to Dykes ring and with only three runs, the engine has already recorded 168.79 m.p.h. Incidentally, to convert the engine George used a normal liner and brazed a vertical

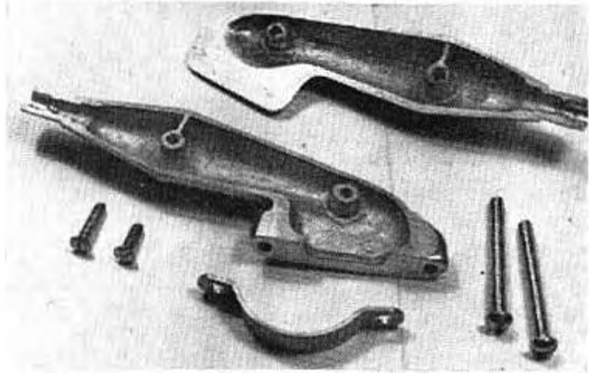
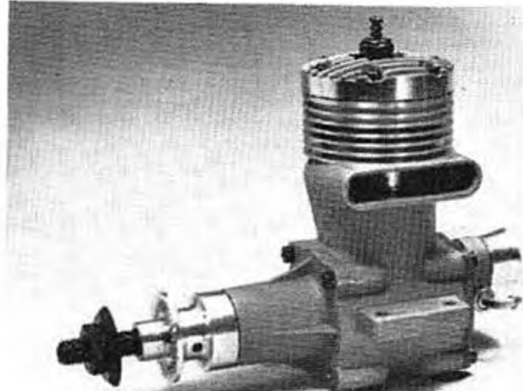
bridge into each port, pinning the ring. Another notable Aldrich achievement has been the conversion of a Super-Tigre Racing 60 to .65 cu. in. by increasing the stroke to .925 in. while retaining the same bore. (The production ST Racing 65 has both bore and stroke increased). George tells us that he has had four different cylinder/piston combinations in the engine which has done 192.43 m.p.h. *without* tuned pipe!

Tatone Silencers

The American A.M.A. (Academy of Model Aeronautics), which is the equivalent of our own S.M.A.E., does not require its members to use exhaust silencers. Nevertheless, there are many individual U.S. modellers who are sufficiently concerned about maintaining good public relations, to voluntarily use silencers - or 'mufflers' as they more accurately call them - and this spirit is encouraged by some clubs, particularly in the R/C field.

Since makers' silencers are obtainable for the majority of British, Japanese, Italian and German engines, this is no problem so far as most imported motors are concerned. American engine manufacturers, on the other hand, have not yet shown any great haste to follow up with mufflers for their own engines and it has therefore been left to accessory firms to supply modellers' needs in this direction.

One such firm is Tatone Products of San Francisco. John Tatone, for many years well known for his free-flight timers and radial engine mounts, has recently announced his 'Peace Pipe' muffler. This is made in three sizes and is claimed to fit most engines between .09 cu. in. and .65 cu. in. capacity that have a normal side exhaust.



This motor, unsurpassed in the 6.5 cc. displacement group for sheer power, is one of a large range of K&B and Veco engines now being imported by Irvine Engines of New Barnet, Herts. It is priced at £149s.0d. Right: Parts of the Tatone 'Peace Pipe'.

Despite its double cone shape, the Peace Pipe is not, of course, a tuned pipe but is a normal expansion chamber type silencer. It consists of two cast aluminium half-shells, split along the horizontal centre-line and held together with two countersunk screws. Attachment to the engine is by means of a steel strap and two long screws which screw into drilled and tapped lugs on the upper shell.

Normally, these Tatone silencers will fit free-flight and control-line type engines without trouble. Some modification may be necessary with R/C engines where the front mounting screw may tend to foul the carburettor on shaft-valve engines. This can sometimes be overcome by re-forming the securing strap and, perhaps filing the locating flange on the lower shell so as to move the whole muffler slightly rearwards. If this is done, it is best to leave any re-shaping of the exhaust opening until the exact location of the silencer on the engine's exhaust duct is determined.

These mufflers are mainly intended for engines with the normal right-handed exhaust but they can usually be fitted to engines having the exhaust duct on the left side (e.g. the K&B Torpedo range) after a little work with a file on the locating flange. They are available from H. J. Nicholls & Son, 308 Holloway Road, London N.7, at 49s. 6d. each.

Weights and dimensions for the Tatone Peace Pipes are as follows:

Model 101 (for .09-.19 cu. in. engines):

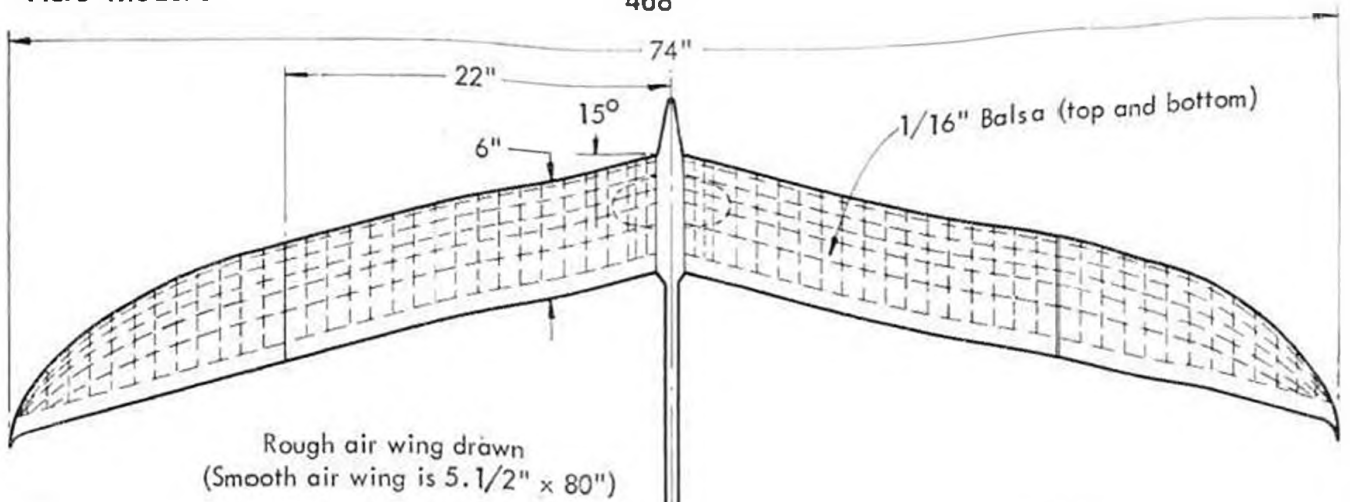
Weight 1.2 oz., overall length 4 in.

Model 102 (for .29-.40 cu. in. engines):

Weight 1.5 oz., overall length 4.5 in.

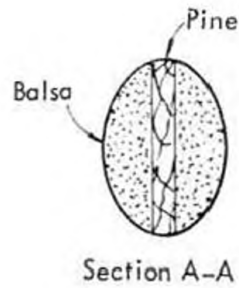
Model 103 (for .45-.65 cu. in. engines):

Weight 2.0 oz., overall length 5.25 in.

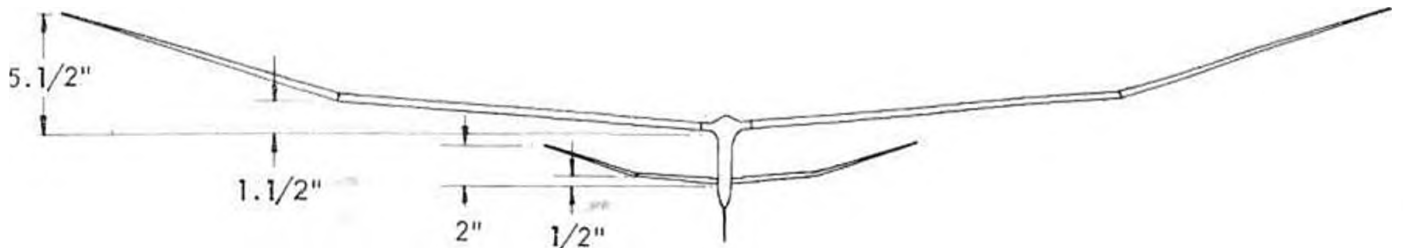
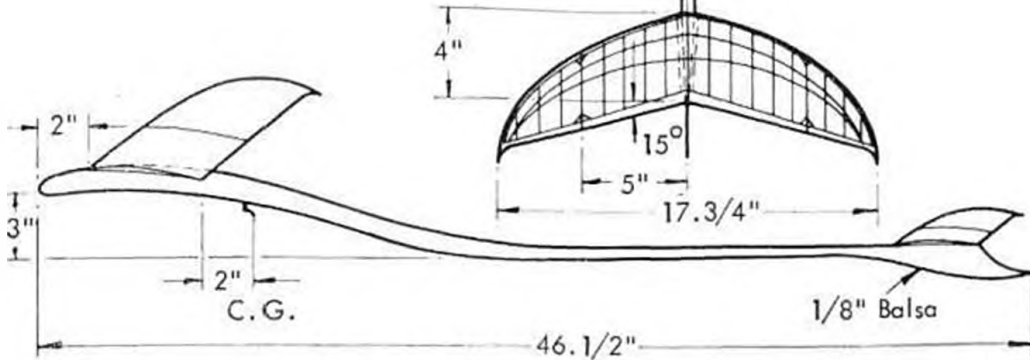


BLACK MAMBA

By George Perryman, Smyrna, GA.)

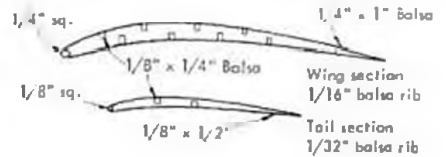


SCALE; One-twelfth



INTERESTING A/2 GLIDER FROM U.S.A.

FOR as long as we can remember, George Perryman has never resorted to convention in his model designs - and this applies to some very successful World Championship team models too! This A/2 glider is a mixture of aesthetics and design technique. It must surely look elegant in the air though some of our theorists will probably cringe at the shape of those tips! Drawing from the *National Free Flight Society Digest*, U.S.A.



N. Heights—One

Dear Sir,

I wish to request those modellers holding annual trophies presented by the Northern Heights M.F.C. to facilitate their return to the Club.

Trophy holders attending the South Midland Rally at Cranfield (September 15) are asked to hand in trophies at main control for collection. Where trophy holders are not attending this rally other arrangements can be made.

It would be considered a favour if all holders would contact me prior to September 15 at this address, 60 Sandhurst Road, Edmonton, London N 9, advising me of their intentions.

London N 9.

V. Botta
Secretary, N. Heights M.F.C.

N. Heights—Two

Dear Sir,

With the cancellation of the Northern Heights Gala for 1968 (announced in July Aeromodeller) this could well have been the second year running with no Helicopter contest held in the U.K. However, the South Midland S.M.A.E. committee have kindly agreed that a Helicopter event may be held at the South Midland Area Rally, at Cranfield on September 15th.

In addition, the Northern Heights Club will make the **Thurston Helicopter Trophy** available for this contest so it will be held to the standard Thurston Trophy rules.

These rules are in fact as simple as possible to allow most types of helicopter (rubber, jetex, reaction, power beam etc.) to compete:

1. No restriction as to design but all models to stand unaided on three or more points.
2. The duration in seconds to count as points. These points to be doubled if the model makes a controlled descent by auto-rotation.
Flights to be R.O.G. The aggregate to TWO flights to count.
3. Maximum engine run of one minute allowed for power-driven models.
4. The judges decision to be final on all points.

Judge for this contest will be Helicopter expert Mr. F. G. Boreham.

Although this is rather short notice modellers could build Sycamore and



Hoverfly (for 0.5 to 0.8 cc. motors, M.A.P. plan U/713) or Twiddler (for Jetex 50s, M.A.P. plan J/702) in the time available.

I shall be pleased to try to answer any queries anyone has concerning this helicopter contest.

R. E. Bail

28 Western Road, Aston Clinton,
Aylesbury, Bucks.

READERS' LETTERS

Thanks—One

Dear Sir,

I would like to congratulate you on behalf of the entrants and, I feel sure, all the spectators for another magnificent 'All Scale Meet' at Old Warden on July 21st. It is in my opinion, without doubt the most enjoyable meeting of the year and it would be good to see more of this type. The friendly atmosphere prevailing throughout the day makes it a delight to take part and for the family and general public.

D. Boddington

Wellingborough, Northants.

Thanks—Two

Dear Sir,

May I congratulate the *Aeromodeller* on organising what is no doubt the biggest get together of thoroughly practical flying scale models in Europe, and maybe the world, at Old Warden on Sunday last. A special thank you as well to the small band of overworked officials who toiled all day that we may fly.

If anything, the biggest trouble was the over-success of the day which made it a very long wait and a short fly for competitors; but we all enjoyed the day, and I am sure the crowd did as well, judging by the applause at each round.

Without reflecting in any way on the overworked officials I would like to refer to the small army of amateur cameramen who invaded the enclosed areas - there must have been fifty or more at one time - and trampled among the models. My own model suffered severe damage to the elevators just before flight time, and had my son not seen this in time, I might have taken off and crashed into the crowd with terrible results.

As a professional news cameraman for television I have to get into the best possible position in the pursuit of my job. When I am off duty, as on Sunday, and flying my models I try to keep out of the way and not

Flashback - to the time when Rubber driven Helicopters were the vogue at Northern Heights Galas - this one being released by Ian Dowsett.

spoil it for others. None of the cameramen in the enclosure were professionals, and in any event a genuine professional will politely ask permission to enter a roped off area like this. All the press cameramen chose a suitable moment to take their pictures in a quiet corner and thoroughly behaved themselves.

The time has come to issue armbands to official cameramen, and keep the rest out. I hope the four cameramen who blocked my take-off run got a good picture before I went between them - they were extremely lucky my elevators had been repaired before I flew.

Finally, as a scale modeller of thirty years, may I say how pleased I am to see the Cinderella of aeromodelling finally make good, and establish itself as the top crowd attraction of the hobby.

Eric Fearnley

Hints and tips

Dear Sir,

Having read with great interest David Boddington's article 'Strictly Simple' in the July issue, I felt I had to write offering my own very simple solution to two of his problems raised.

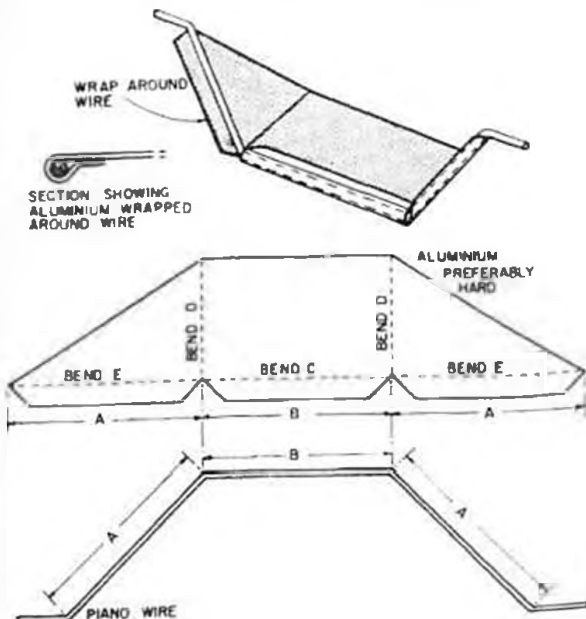
Preservation of the plan: cover it with polythene sheet, available in practically unlimited lengths by 6' wide and in at least two thicknesses, from a builders' merchant.

Construction of the undercarriage: assuming that the would-be constructor is not very proficient with a soldering iron nor has a ready supply of Dural (or heat source) may I suggest forming the main leg axle from one length of piano wire and wrapping around it a one-piece aluminium fairing. I hope the drawing makes clear. I have used this method for some years in models up to 4½ lb. weight - the latest model to use it being a Tyro modified to enclose an inverted 1.5 cc. Snipe (which does quite a lot for the appearance!).

I feel sure that 'my' solutions are not original but I haven't seen them in print and they might help someone.

West Hythe

R. Hayes





SURVIVORS OF 1940

1968 IS A VINTAGE YEAR FOR AIR SHOWS AND AIR MUSEUMS.

LESLIE HUNT DESCRIBES THE FEW AIRCRAFT STILL PRESERVED FROM THE BATTLE OF BRITAIN

CONSIDERABLE EFFORT has gone into producing suitable machines for the 'Battle of Britain' film and many who were in the Air Council in the years after W.W. II must wish they had taken greater pains to preserve more wartime aircraft - including such types as the Whitley, Hampden, Blenheim, Battle, Halifax, and Stirling - the

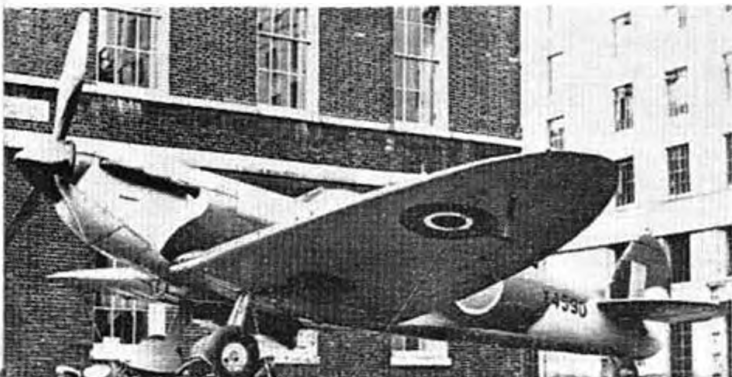
Whirlwind fighter, Miles Master trainer and others. As with 'The Magnificent Men' film which certainly sparked off enthusiasm for restoration of civil aircraft, so the B. of B. epic has caused much searching, alas without adding very much to what was known of the few surviving 1940 fighters (so far as the writer knows, there are no existing Luftwaffe bombers of that period). Let us look, then, at what does exist throughout the world, starting with those examples which, one day, will be on show in the Royal Air Force Museum at Hendon

In the hands of the Air Historical Branch, hitherto cared for by No. 71 M.U., Bicester, Hurricane I, P2617 certainly operated with 607 (County of Durham) in France and flew back to this country after the evacuation, though, with squadron records destroyed, no complete history exists, though it is believed the machine later served as a trainer until stored. Also in the Bicester hangar one normally finds two Mk. I Spitfires, K9942 of 72 Sqn. which was the late Wg. Cdr. J. B. Nicolson's a/c. 1939/40 before he left the squadron in 1940 to command a flight in newly-formed 249 Sqn, in which he gained Fighter Command's only VC, later adding the D.F.C. in Burma before losing his life. The other Spitfire,



Heading: Ju 87 alongside 72 Sqn Spitfire IA at Chicago Museum. Left: Blenheim IV at Jyvaskyla, Finland. Hurricane MI-G (Spurious letters for fictitious 406 Polish Sqn in 'B of B' film) actually G-AMAU, PZ-865, the last of the Hurricanes, but accurately coloured for 1940 unlike Hurricane AF-T, P 2617 which has peculiar Tropical azure blue undersides and Spitfire I RN-V, K9942 which is unhappily silver and black underneath with a silver fuselage band! RAF please repaint! At right, the Fiat CR 42 at Orfordness since repainted somewhat indifferently.





Above: Spitfire MK I, X4590 like many others unfortunately preserved in 1942 colours and roundels. Right, Messerschmitt Bf 109E at Johannesburg and below right, Hurricane MK I, KW-Z L1592 the best colour reference in preservation (at Science Museum London).

X4590 flew with 609 (West Riding) later 66 Sqdn, with 50 'Ops.' including many 1940 successes. In London's Science Museum hangs Hurricane I L1592 which began war with 56 Sqdn and, on 18th August, 1940, was forced down at Croydon in 615 (County of Surrey) colours. Alongside hangs Spitfire IA P9444 of 72 Sqdn, a Battle of Britain fighter, later flown at 52 OTU. Yet London's finest 1940 fighter is without question Spitfire I, R6915, on display Imperial War Museum, Lambeth Road, issued from No. 6 MU to 609 Sqdn 21st July, 1940 and, in the hands of 13 different pilots, chalked up five confirmed victories with two 'probables' and two damaged claims. On 7th October, 1940 it was sent for repair and later issued to 602 (City of Glasgow) then to 61 and 57 OTUs.

At R.A.F. Colerne (and used for the B. of B. filming) is another Battle of Britain survivor in Spitfire IIA P7350 which served with 266 Sqdn at Hornchurch, later with Nos. 66, 603 (City of Edinburgh) and 616 (South Yorkshire) Sqdns - only with us because a scrap-merchant generously donated it back to the Service after buying it for breaking-up. 'Flying' in pursuit of a Ju 87 in the Chicago Museum of Science & Industry is Spitfire IA P9306 of No. 74 'Tiger' Sqdn, piloted by P/Os Cobden and St. John from Hornchurch and Southend 1940/1 and loaned to U.S.A. by the R.A.F. That covers the known authentic 1940 Hurricanes and Spitfires but we often forget that other British-built machines were battling in areas far from Southern England and when the Italians attacked Malta on 10th June, 1940 the Sea Gladiator N5519, better known today as 'Faith' was one of the George Cross Island's gallant defenders and today enjoys an honoured place in the Palace Armoury, Valetta. Finland had been supplied with 8 Mk. 4 Blen-

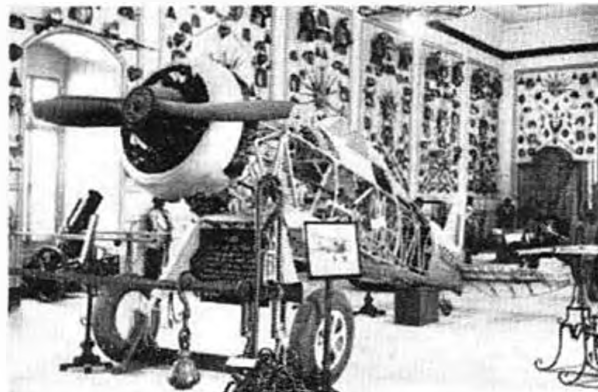
Hurricane MK I HC 452 preserved in Finland.



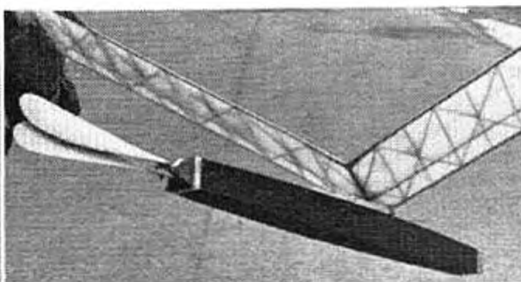
heims in January, 1940 (L9195-9203) and Lt-General Artola's machine (the Finnish Air Force's BL200) is preserved at Jyvaskyla. Bristol Bulldog IVa BU-59, which took part in the Finnish-Russian 1939/40 conflict is preserved in store, together with Hurricane I HC452 which, it is thought, is one of a batch sent to Finland early in 1940 (the R.A.F.'s HU band of serials.) Whether it operated is not known.

With perhaps two exceptions all the enemy aircraft brought down over these islands in 1940 were later scrapped or sent overseas (many to be scrapped by their recipients). The Messerschmitt Bf 109E at Biggin Hill is thought to be a late-1940 survivor (MS-240-6-11) used by the R.A.F. as DG200 and the Fiat CR 42, also normally housed at Biggin Hill force-landed at Orfordness 11th November, 1940 as MM5701, later marked BT474 by the R.A.F. Recently back from Canada, the remains of Bf 109E3 1190 shot down over Eastbourne September, 1940, will be restored for exhibition at Buckfastleigh's private railway and the last survivor seems to be another Bf 109E of J.G.26, brought down over Devonshire and, outside the Johannesburg War Museum, is badly in need of restoration. We wonder if readers know of any other genuine 1940 military aircraft which still exist?

Gladiator 'Faith' at Valetta Malta G.C.



LOOKING BACK AT THE NATS



pleased to report a profit that will keep the S.M.A.E. solvent throughout the remaining season. Our report was remarkable too! Not a word about Control-Line Scale! Apologies to the keen entrants who provided the finest crop of replicas ever seen on lines in this country. In fact we'd go so far as to say that the top six would more than match the the best three any other Nation could produce. Now over to one organiser for valid comments on running the FAI events:

IN RETROSPECT, the 1968 Nats appears to be even more remarkable than our report last month was intended to indicate. Statistics now show that less than 600 individuals participated in the contests. This means that supporters, sport fliers and spectators outnumbered the competitors by at least ten to one. Which emphasises how the problems of organisation are concerned almost entirely with crowd handling – the essential profit bearing side of the annual Championships. And we are very

'I cannot say how it looked from the competitor's viewpoint but there were only minor complaints, mainly concerning being unable to find control after we had moved and the enforcement of the rule requiring each card to be recorded after each flight under penalty of disqualification, although the meekness of the competitor who was told that his four max's were not allowable was very surprising.



Top left: Peterborough's M. Page had a 12 x 120 ins. plank in tailless weighing 32 oz. and with the Swiss S-1 airfoil. Winner of the event Ken Attwell flew rubber tailless with a pop-up 44 in. wing and rearward folding 23 x 26 ins. prop as in next photo. Top right is Doug McHard, releasing delightful Bristol Fighter indoor rubber scale to amazement of Comp. Secy. G. Lynn (check shirt) and other nonchalant onlooker. At left: Women's Cup winner Mary Day shows the way to launch, so too does Jennifer Edwards, test gliding (below) and Sue Miller with Climax power design at right. These ladies filled first three places in their event, Sue also placed second in the Open Power contest.



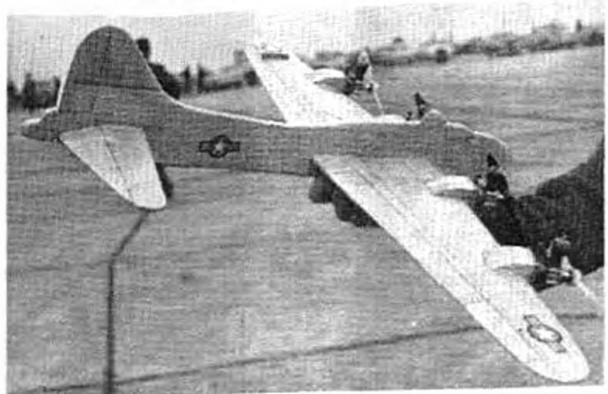
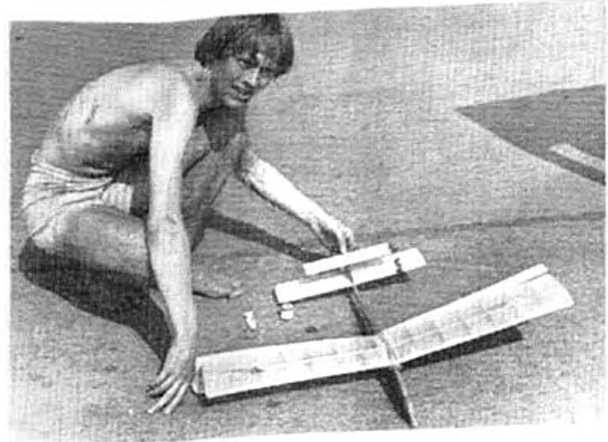
'From the organisers viewpoint everything (except the move) ran smoothly, but it would have been a different story if processing and fuel issue had been as carefully controlled as they should have been, competitors would be wise to insist on processing *before* flying: but it is just as well they don't and the fuel issue arrangement of the competitor filling his bottle from a gallon can seems to be both wasteful and easy to cheat. However it seemed to work, although some people reckoned that there was water in the fuel.

'It would be well worthwhile to make some signs and an equipment list, Free flight control is difficult to find on a crowded aerodrome even for seasoned competitors and an equipment list would help an inexperienced contest director to provide a supply of pencils and pens, boxes for the flight cards and money, notice board and scoreboard whether he is personally responsible for line check, scales, processing and if not, who is and so on. It was our impression that running a score-board and not just a score sheet was widely appreciated; but we would recommend that names are not entered on the board until a flight has been recorded - this saves a good deal of space when only two thirds of the competitors entered actually fly.

'This may surprise you, but I think that the layout of the events on the aerodrome was biased in favour of free flight to the disadvantage of everybody *including* free flight. We ended with models drifting over the combat and radio areas and I think it would have been better to put these at the south-west corner where free flight was least likely to overfly them. Of course, you would get some moans if the wind was due south-west but you can never win!

'The feeling of those I have spoken to since the Nats is that, in future, F.A.I. should be flown on Sunday *and* to F.A.I. rules though not everybody is sure about rounds. My view is that rounds would inconvenience the inexperienced and lone hands who have the most trouble finding timekeepers and thus at least partially lose the object of giving everybody similar conditions - unless we can find many more timekeepers, which is not very likely.

'Finally, I should mention that a jury was called by F./F. S./C. Chairman Ian Lucas to decide whether a glider flight should or should not be timed after a line break. It was decided that this was a non-scoring attempt (rule 5.5.2.3.). Correct according to the rule book; but surely a competitor should be responsible for his own towline!



Top right, Martin Yates converted a Veron 'Cirro-Sonic' into an A/2 glider by adding a wing and extra tail surface to qualify, having lost his 'Inchworm' for fly-off. Next, of several Flying Forts entered in unorthodox, this one by young C. Badger of Cornwall was only one to resemble an aircraft! Glider close up shows how Chris Batty of Bath arranged for fuse to release clockwork d/t timer for fly-off. At right J. Wright of Debdenaires reads his 'Fort' - note drawbridge elevator! At left, a second place was taken by J. Hopper of Stanstead, also 20th in Glider. Left is Dave Hipperson with his big Fox Combat Special 30 oz. model used in fly-off - placed 10th with 2:33 last flight.



TOPICAL TWISTS

by "Pylonius", illustrated by "Sherry"

The Magic Touch

The other week I was looking at what I thought to be a most unlikely model; one that would make a pathetic flutter of a flight and then plop briefly and ignominiously on to the hard, unyielding earth. But what happened? A few deft passes on the part of the flyer, and the not-too-impressive model shot up like a scared rocket.

Naturally I was aghast.

'No need to look so aghast', said a bystander. 'That was so-and-so'.

'Oh,' I said, 'That explains it'.

Needless to say 'so-and-so' was a top flyer. One of those exasperating people who have the magic touch. You, as a common or airfield modeller, might be beset by those horrid accidents and mischances which prey on this fair hobby of ours, but not so the gifted ones. They do not suffer from collapsible wings, damp d/t wick, fly off prop blades, unstartable engines and sticking escape-ments; for them its roses – or rather risers – all the way.

They also get a pretty clean bill of health on the aerodynamic side. That bug that gets into your dream model, which causes it to do things unheard of in any of the learned treatises on aeronautics, never quite insinuates itself into the model boxes of the top flyers. That extra bit of downthrust, which converted your horrible stall into an even more horrible spiral, gives them just that happy medium for a nice, equilibrious flight. And that bit of right rudder, which laid your building secrets open to public view, gives them exactly that right amount of thermal climbing turn.

The gifted ones also seem to have a device which might be described as a tree de-magnetizer. Be sure if there is even a solitary shoot of arboreal growth in the flying area your model will unerringly seek it out, there to lodge tantalisingly unreachable in the deepest entanglement of the foliage. However, had you the magic touch the tree would not have had the same irresistible appeal. Again, you might frustratingly search for hours on the very spot where you saw your model land a couple of hundred yards downwind, and enviously watch one of the gifted ones return successful from a two mile retrieving sortie in densest countryside.

It's not a case so much of the fault lying in your stars, as the Stars getting away with the faults.

Soar Point

I was much intrigued by the series of articles on magnet steered gliders, but couldn't quite get the drift of the whole thing, if you see what I mean. However, I think it to be my bounden duty to let the practitioners of this inscrutable orientating art into a little secret.

I recently went to a slope soaring meeting, though this sort of thing is usually above me. But what a revelation it was. I could only gasp – and I had a job to do that after climbing to the top of a cloud puncturing peak. Standing proudly on the summit I said to my companion, 'Now I know how Hillary must have felt'.

'Don't be silly,' replied the wife, 'You know she wouldn't be seen dead up here'.

Anyway, to come to the point; the flying was all very marvellous. No sweat or strain winding motors, starting



"Excuse me - is this the way to the model flying meeting?"

engines or towing lines; just a gentle heave into the flanking air and you were in business, or rather the model was, unless you tripped on a rock and followed it. And the secret I was talking about seemed to have something to do with the little switch boxes the glider operators were using. Each of the little boxes had a long metal wire sticking out which was waved in the direction of the model. I'm not sure but I think I heard the word 'Radio' used a few times, though, whatever it was the models behaved quite remarkably under this strange influence, executing the most amazing evolutions and soaring like birds.

I hope this revelation has not caused any disappointment, but it does seem that whilst the magnet boys have been developing their charming Jules Verne gadgets someone has invented a superior system of control. However, there remains the hope that the magnet steering idea may come in useful to some round the world yachtsman.

Vicious Streak

Speaking of Radio, there are, sad to say, people in this happy realm of ours who are so lost to all that is beautiful and poetic in life that they are not only indifferent to the sight of an 80 m.p.h., radio model in full acrobatic cry over the clothes line but actually abhor these gentle, cavorting craft. Indeed, one such gentleman described them in his local paper as 'vicious' toys, and angrily demanded that the owners of same grow up and pack up.

Now, I think he's going a bit far, although I admit to getting a bit ruffled myself after an attack of the screaming spirals. It's not that the model is to blame, it's just that it is operating in the wrong environment. It's like taking a tiger for a walk down Oxford Street; you'd create pandemonium, but see the same tiger trotting through the Indian bush and people would throw it the odd goat or two just to show their appreciation of the wonders of nature.

I've no doubt that the gentleman letter writer would raise no protest if the model he so strenuously objects to were to go through its evolutions over an airfield embedded deep in the heart of the countryside and not doing victory rolls past his bedroom window or going inverted over his doggy walk route.



Why not join this grand junior Aeromodelling Club?

GOLDEN WINGS CLUB

Dear John,

I enclose a photo of my green and white Enya .19 powered Super 60, which was originally built for free-flight, but is now fitted with a Macgregor Terrytone Rx kit.

I am writing to ask your opinion on the following combination for learning with: Goldberg 'Junior Falcon', Cox QZ .049, and the R.C.S. Guidance System Mk. III. Also, could you tell me whether to cover this model in silk, nylon or tissue.

I am 14½, and have made several F/F models, including a half-completed A.P.S. Cessna 172E Skyhawk, which is powered by an O.S. Pet 1.62 c.c. glow engine.

A few months ago I flew my A.P.S. Japp, powered by a Cox Tee-Dee .010 engine. The engine started first time and the plane climbed rapidly to about 50 feet, when it levelled out, and went o.o.s. with the engine still running. I had a brief search on my own, before going out in my grandfather's car on a search. We eventually found it, about two miles away in a tree nursery. It was not the worse for its adventure, other than a bent undercarriage. I did not fly it again that day, but a few days ago I went to Chobham Common to fly it.

The engine started all right, but the plane banked sharply, and cartwheeled, breaking the wing in half. I was disappointed in this, after the first flight, so I hope you can help in telling me what was wrong. Please help on the other matter also.

Weybridge. *Michael Furby.*

The Super 60, although large, is docile and would make a good R/C trainer in itself.

The Junior Falcon is also an excellent trainer and for extra strength could be nylon covered. The Cox .049/RCS Guidance combination should prove perfectly satisfactory. From what you tell me regarding your Japp it would appear that a warp in the wings or fin could have developed to cause the crash. It is also possible that you are using too much power and that there is not enough side thrust to counteract torque - throttle back a little.



Michael Furby's Keil Kraft Super 60 looks very well built and finished. With single channel rudder-only this combination makes a good trainer.

Dear John,

I recently built the Wee-Wun from the plans given in *Aeromodeller*, January 1968.

On June 29, 1968, this aircraft completed its 100th flight, after being rebuilt and covered seven times! It also forces away from the hardest prangs without hardly flinching. It has taught three people to fly and although they did all they could to it, it is still in one piece!

I would like to extend my sincere thanks to M. B. Ashby, on designing this tough and practicable little model.

I hope to build the model called 'Japp' (October 1967 *Aeromodeller*) and wonder if you could tell me if it is possible to put in an R.T.P. with a Cox Pee-Wee.

Battersea, S.W.11 *J. F. Steer*
We are pleased to hear of your success with Wee-Wun, it makes a fine little simple starter.

Japp is not really ideal for R.T.P., but could be converted. The dihedral on the wings should be almost removed and the line attached with a tip guide to the C.G. position - watch out, it'll be fast!

Dear John,

I have just built a Keil Kraft Champ with a

TIP OF THE MONTH

For glazing cabin windows, an Impact adhesive (i.e. Evostik etc.) is an effective answer. The windows etc. can be cut to exact shape, glue applied to the framework and then all that remains is to apply the glue to the windows, suggests H. M. Campbell of Glasgow. This is not such a problem as it sounds, for the area to be glued can be marked out in black dope with a fine brush using a chain line just inside the line of the framework and then by masking with Sellotape the adhesive can be applied most accurately. So long as the tape is removed soon after the glue is on it leaves a good clean line and it only remains for the window to be stuck in place and the dope marks removed with a little thinner. In practice the whole process is quick and with no problem of cement etc. being squeezed out on to the 'glass' it makes this tricky job straightforward. It is particularly useful for wrap round screens; just attach one edge, pull into place and press home the other side. Pins, clips, tape etc. are quite unnecessary.

Bantam .8 cc. engine. I am having one difficult problem: everytime the plane rises up in the air at an angle, the engine slows down and stops. Could you please tell me what might be wrong?

Newton Hall, Durham. *Paul McManus*
Your trouble could well be in the type of tank you are using. If using the Bantam integral tank it would help if you rotate the tank slightly so that the feed pipe goes well toward the right-hand side. Otherwise centrifugal force of flight will cause fuel starvation. Alternatively, fit a special control-line tank.

Dear John,

I have tried your idea on my tailplane (about it not being straight in the front view) but it seems to be straight with the wings at least. I have also tried banking it to one side so as to counteract the turning motion, but it didn't work. Please, would you name any number of ways that would work on it as I'm getting R/C soon? Also, would you tell me the next best thing to rudder on a large glider with single channel, either elevator or ailerons? - thanks.
Heathfield.

Simon Bowles
Tilting the tail of a model does have an effect on the glide performance. If you raise the tip (say, right) of the tailplane a right turn should develop. I would suspect that you have a warped wing, for which you should carefully check. As second controls on single channel are 'trip' type on compound escapements, up or down elevator is the only really practical proposition.

Dear John Bridge,

I am between 10 & 16 years of age and would like to become a member of the "Golden Wings Club". With this application I enclose postal order (International Money Order) for 2/6d. to cover cost of the enamel club badge, two coloured transfers and membership card.

NAME IN FULL

ADDRESS

YEAR OF BIRTH SCHOOL

NAME OF ANY OTHER CLUB OR CLUBS TO WHICH I BELONG (if any)

SEND TO:- GOLDEN WINGS CLUB, AEROMODELLER, 13-35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS

9/68 2d. in the 1/- Rebate
plan purchase coupon
for Golden Wings Member
G.W. No.

L.E. 1/4 x 3/8

W2

Washer soldered on

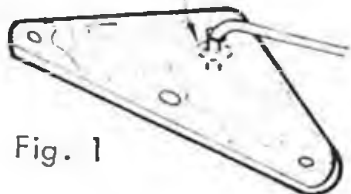


Fig. 1

W2

STAGES OF WING CONSTRUCTION.

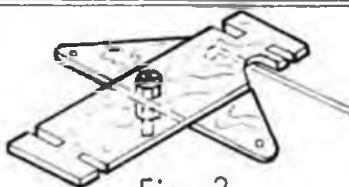


Fig. 2

W2

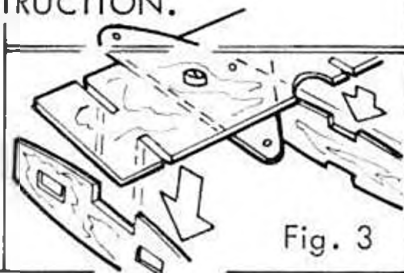


Fig. 3

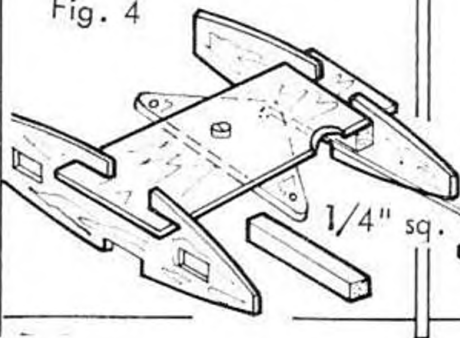
W2



Top and bottom mainspars 3/8 x 1/8

Brass tubing

Fig. 4



1/4" sq.

L.E.

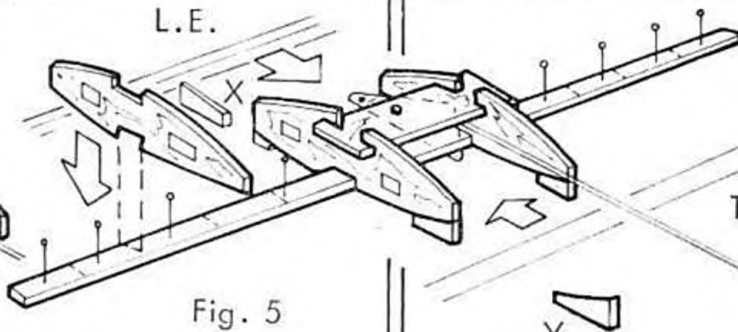


Fig. 5

22 s.w.g.

T.E.



T.E. 5/8 x 5/16

Ray Malmstrom's SWEETHEAP sheet two

Fin 1/8 sheet

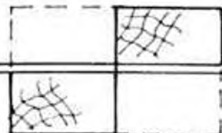
Fin slot



C/L

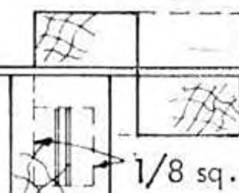


Bellcrank mount 1/16



Sand edges to section

Cut

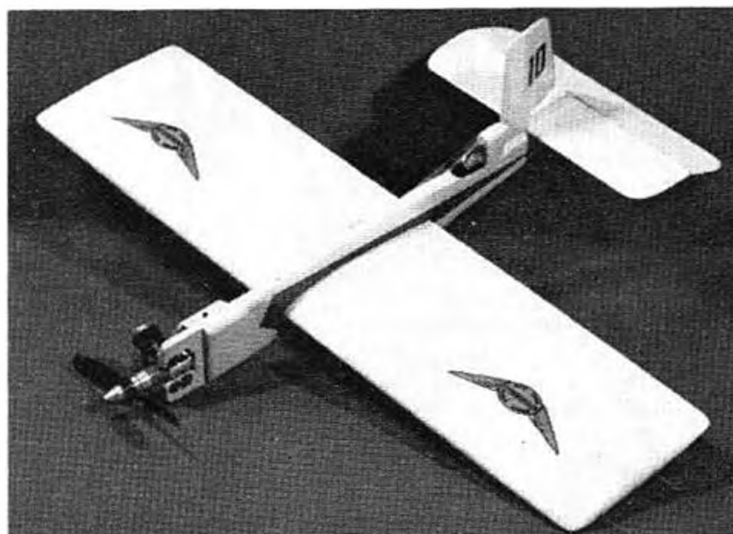


Control horn slot

Tape over control horn

Your FULL-SIZE Plan of the Month

A 22 inch control-line stunter for the novice modeller to suit a range of engines. .8-1 cc



SWEETHEAP

by Ray Malmstrom

OUR MUCH-RESPECTED EDITOR sent us by his most reliable (rubber-powered) carrier pigeon a demand, 'Get going on a stunt-combat job for the .049-1 c.c. diesel or glow engines - and make it the best!' We heard, marked, and inwardly trembling got to work! 'Sweetheap' was the result. We think you'll go for this bundle of action.

Designer Ray Malmstrom (left) and Test-pilot Ken Radford (right) of the Impington College M.A.C. in happy mood after Sweetheap's highly successful maiden flight.



Fuselage

This is simple and straightforward. Cut the basic shape from medium $\frac{1}{8}$ in. balsa sheet, carefully removing the wing cut-out and the cut-out at the rear of the fuselage. Cut notches for receiving the fin and engine mount. Make engine mount from $\frac{1}{8}$ in. ply and drill for the engine you intend to use. Cement this into the cut out at front of fuselage. Cement filling pieces A in place and finally $1/16$ in. ply pieces B. (See fuselage construction sketch). Cover cockpit with thin acetate sheet, installing a 'profile' pilot, if desired. Add $\frac{1}{8}$ in. piece C, and the $1/16$ ply skid. Carefully sandpaper fuselage to section shown. Cover the rear cut-out area with tissue and water shrink. Construct tailplane making sure the elevator moves freely on its linen or tape hinges. Do not install the control-horn at this stage. Give tailplane two coats clear dope. Cement to fuselage, checking that fin slot on tailplane and fin slot cut in rear of fuselage coincide. Cut fin from $\frac{1}{8}$ in. sheet, and carefully off set rear portion as shown. Dope as for tailplane. Cement fin firmly in place, the lower front edge fitting into the slot already cut at the rear of the cockpit fairing and the tab into the slots cut in the tailplane and fuselage. Give the completed fuselage two coats of clear dope, sanding lightly between each coat.

Cut bellcrank from $1/16$ ply (or use a commercial bellcrank of the same size). Connect the control rod to the bellcrank. Solder a small washer on the control rod as shown (Fig. 1). Cut the bellcrank mount from $1/16$ ply and assemble bellcrank and control rod to it, soldering the lower nut on to the pivot bolt as shown on plan (Fig. 2). Cut two ribs (W1) from $1/16$ ply and assemble bellcrank mount unit to these ribs. Check that the ribs are at right angles to the mount (Fig. 3). Add $\frac{1}{4}$ sq. blocks (Fig. 4). Now pin the lower $\frac{1}{8}$ in. x $\frac{1}{8}$ in. mainspar, that runs the whole span of the wing, over the plan. On to this spar is lowered the bellcrank - centre ribs assembly. Cement accurately in place. To keep the ribs correctly aligned you can use the jigs X and Y cut from $\frac{1}{8}$ sheet. Use modelling pins to hold everything in place while cement dries.

remove plan pages & join centre ➡

X

W2

W2

W2

Tips 1" sq

SWEETHEAP

22" WING SPAN

C/L STUNT/COMBAT MODEL FOR BEAM MOUNTED ENGINES

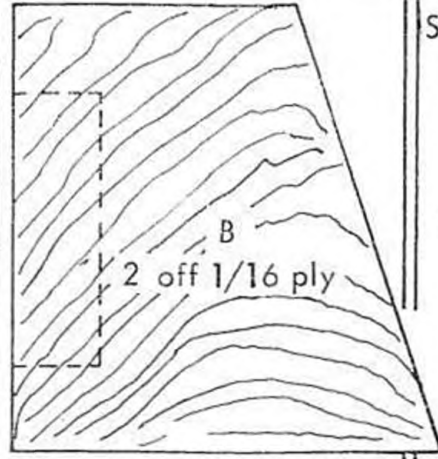
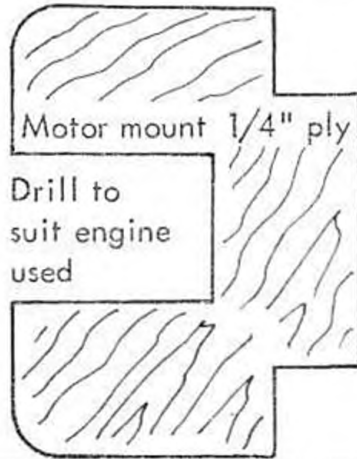
.8 cc - 1 cc (.049 - .06 cu.ins)

by Ray Malmström

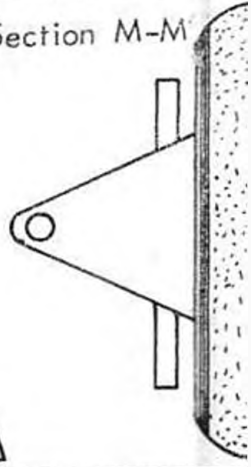
Cut recess:
block and
Approx. 1
wing tip v
(starboard
importan



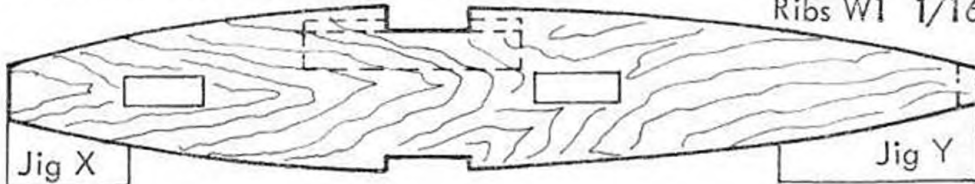
1/8" sheet 2 off



Section M-M



X



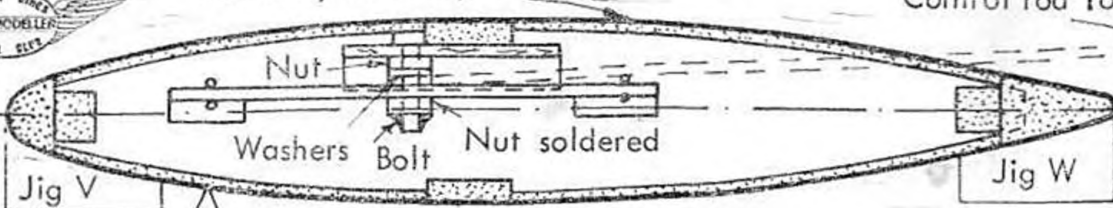
Thin acetat sheet

Profile pilot 1/8"

Sand top and bottom of fuselage to section
Cut away to accept wing

Jigs 1/8
X, Y, V, W

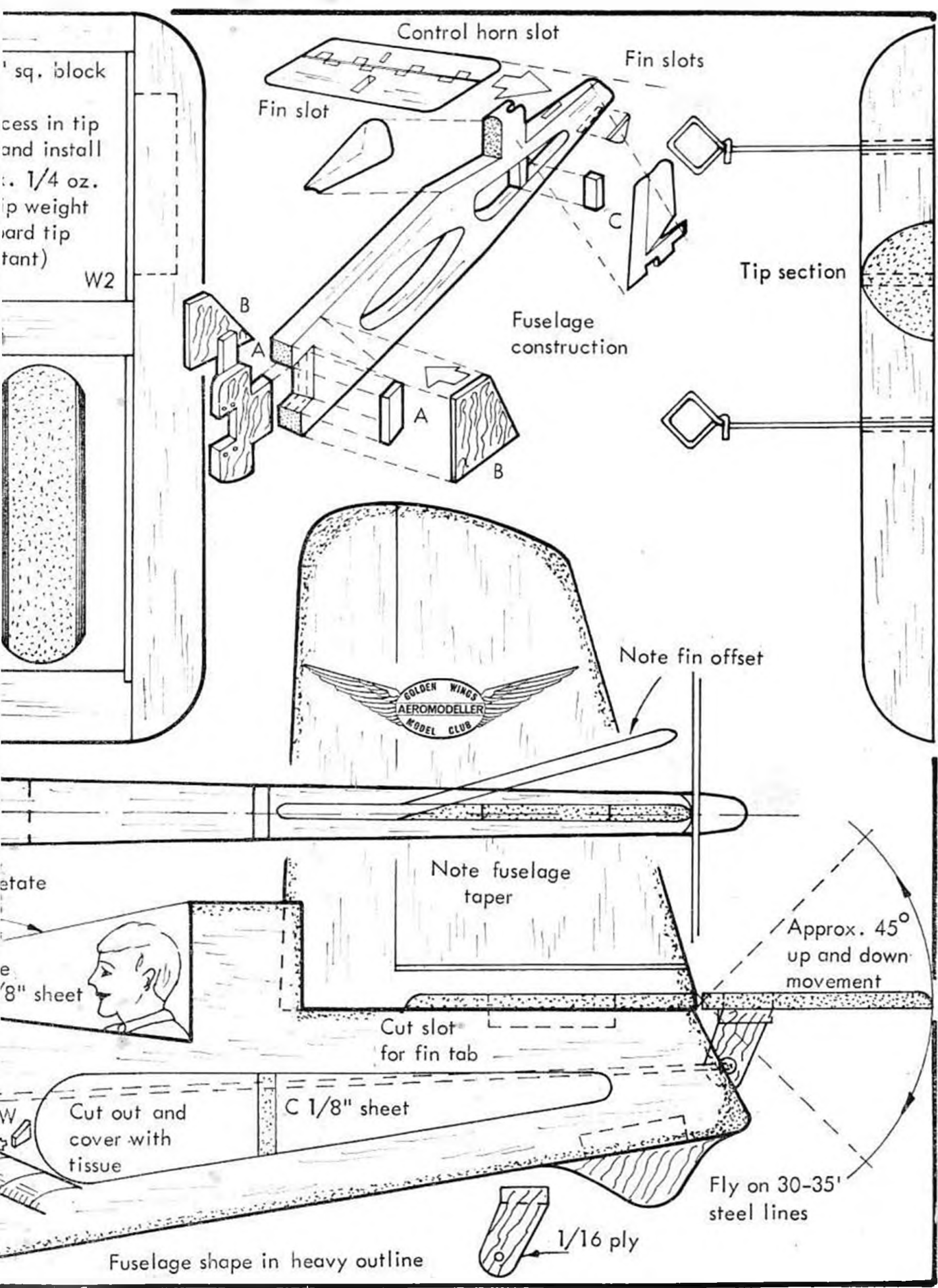
Control rod 16 s.w.g.



Balance point

Fuselage 1/2" sheet

X



Control horn slot

Fin slots

Fin slot

Tip section

Fuselage construction

Note fin offset

Note fuselage taper

Approx. 45°
up and down
movement

Cut slot
for fin tab

Fly on 30-35'
steel lines

1/16 ply

Cut out and
cover with
tissue

C 1/8" sheet

Fuselage shape in heavy outline

sq. block
cess in tip
and install
1/4 oz.
tip weight
ward tip
(tant)

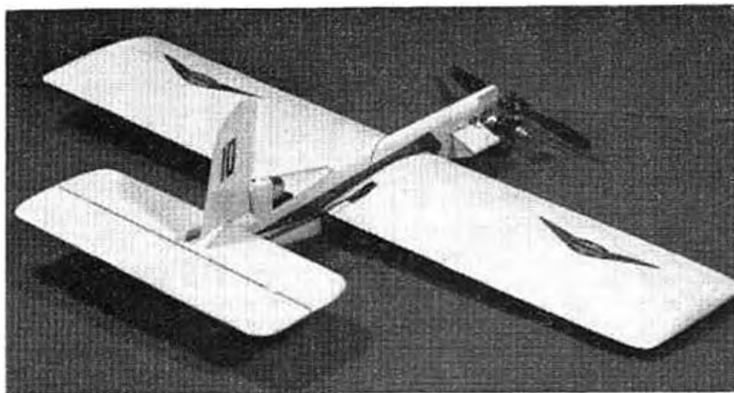
W2

etate

1/8" sheet

W





Slender profile is misleading, this 'Sweetheap' is tough though simple, flies through most manoeuvres like its bigger brothers. Original has a Cox .049.

Take care with this important part of the wing construction (Fig. 5) Add the other balsa ribs (W2) noting that all port ribs have cut-outs to accommodate the lead-out wires. As you slot ribs W2 on to the lower mainspar you can check that they are correctly positioned by using jigs V and W in the same way as you used, jigs X and Y. Add upper mainspar and finally leading and trailing edges. Wing tips are cut from lengths of medium 1 in. sq. block, carved and sanded to shape, the port tip being drilled and bushed with brass tubing for the lead-out wires. These should now be installed (cut over-length) through the tubes and ribs and connected to the bellcrank. (Fig. 6). With bellcrank in the neutral position, cut the other ends of the lead-out wires off level, and form hooks. Cement $\frac{1}{4}$ in. sq. lengths of balsa between centre ribs (W1) reinforcing the leading and trailing edges (Fig. 7). Finally cover the top and bottom of the centre-section with 1/16 in. sheet noting cut-out in the top sheeting to allow free movement of the control-rod. Lightly sandpaper the entire wing and cover with Modelspan tissue. Water shrink and give one coat of clear dope. The wing can be pinned to the building board supported on leading and trailing edge jigs V and W as shown in the small sketch on the plan. This keeps the wing true and prevents warps (most important) while firstly water and then the dope dry.

Assembly of wing to fuselage

The wing can now be installed pushing through the wing cut out in the fuselage. When in position and at right angles to the fuselage it can be firmly cemented. Add about $\frac{1}{4}$ oz. weight to the *starboard tip*. Now cement the tailplane 1/16 ply control horn into its slot in the elevator

and connect up to the control rod. Check that when the lead-out wire hooks are level the elevator, is at neutral (flat). You can adjust this before the cement holding the control horn sets. Then cement $\frac{1}{4}$ sq. pieces either side of the control horn as reinforcement, and cover the top surface of the tailplane, where the control horn slot was cut, with a small piece of linen or nylon tape. Solder a small washer to the end of the control-rod after it has passed through the control-horn to retain the control rod in position. Araldite a Mercury commercial stunt tank in position as shown.

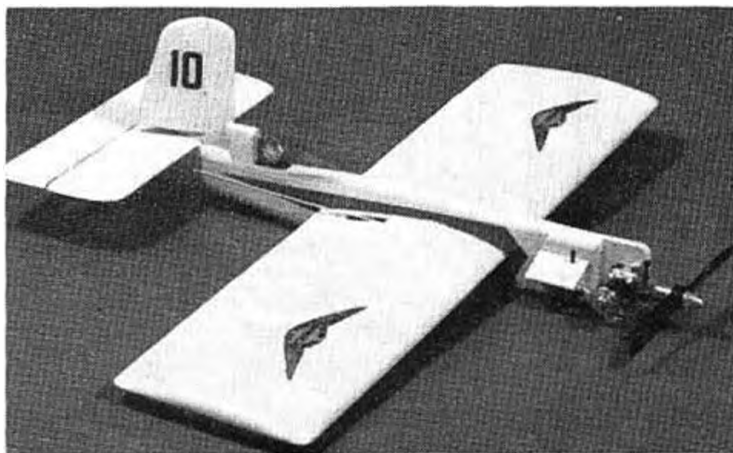
Decoration

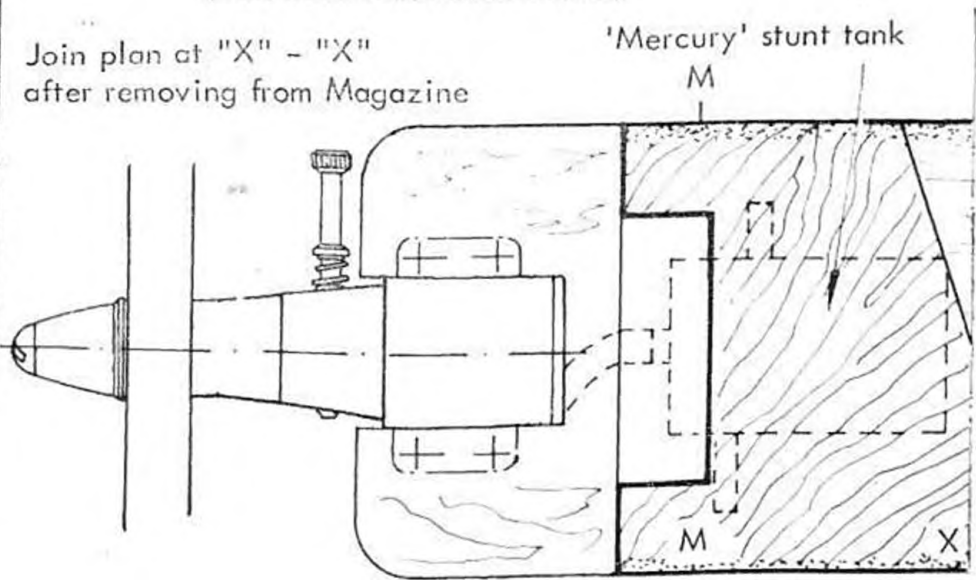
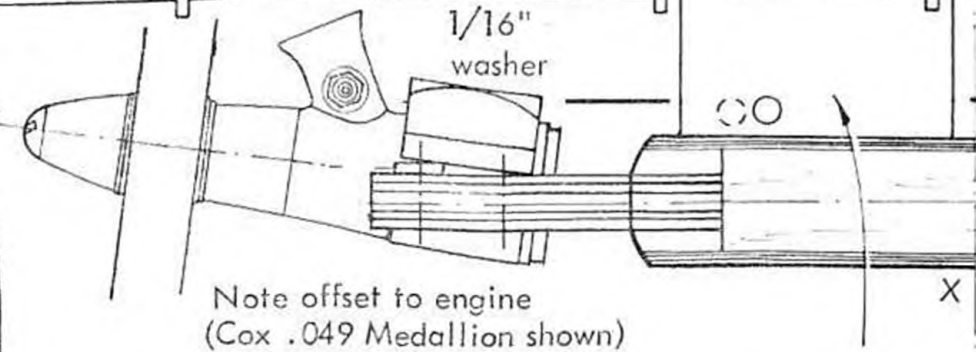
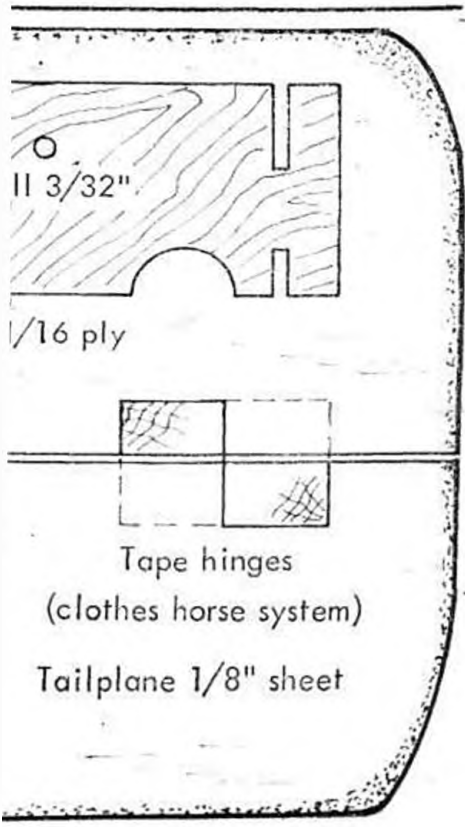
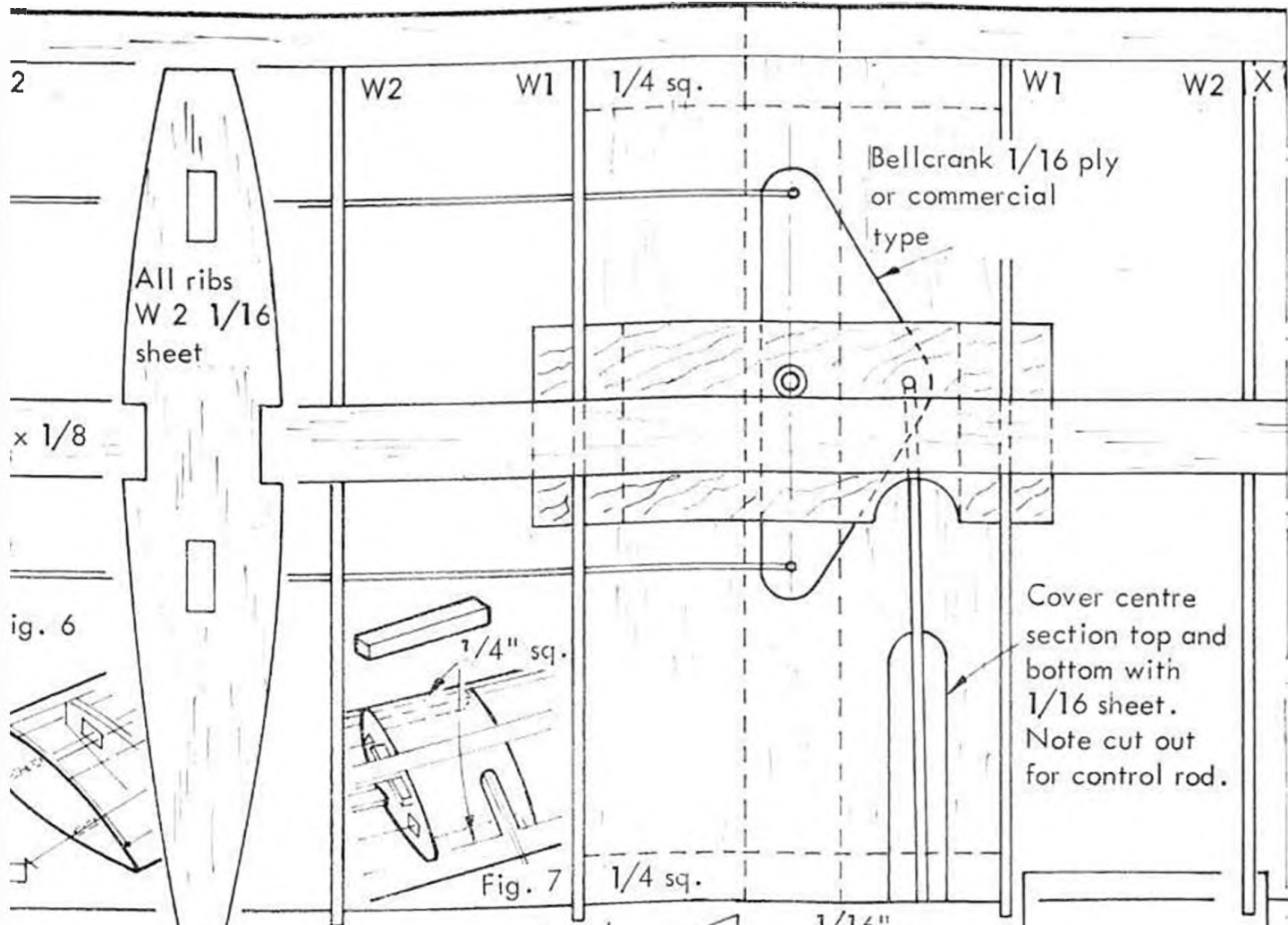
Go over the whole model carefully with a fine grade sandpaper and eliminate the 'bumps' before application of your final finish. You can now paint your 'SWEETHEAP' and decorate it to your own scheme. If you use Humbrol enamel paint you need not (for all normal fuels) fuel-proof your model. Any transfers you may use, must of course, be protected by fuel-proofer. Bolt your engine to the engine mount, noting the 1/16 thick washer, which gives the engine the necessary offset. See top view on plan. This offset will help to get you out of trouble if those lines ever go slack, so be sure you incorporate it as a safety factor!

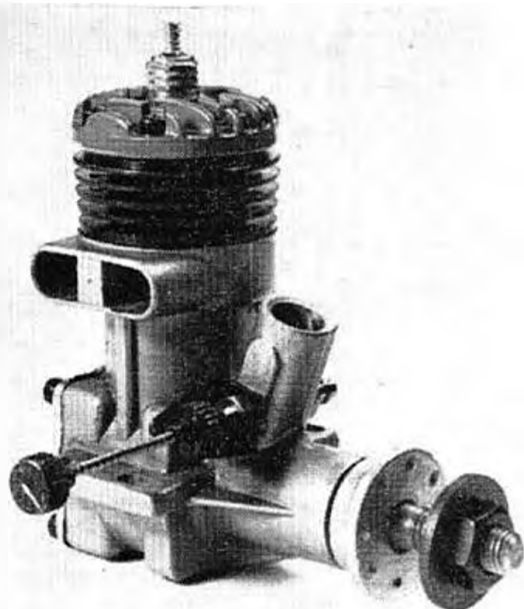
Ready for flight

Connect the engine to the Mercury tank with a length of neoprene fuel-tubing and your SWEETHEAP is complete. It should balance on the FRONT lead out wire. You may need a small amount of nose or tail weight to obtain correct balance depending on the weight of the engine you use. Fly on 30-35 ft. steel lines. Good luck - and be seeing you - *inverted* of course!

Ready for action! The Golden Wings Club transfers signify how suitable 'Sweetheap' is for the novice or junior modeller especially those wanting to learn how to do their first loop or to fly inverted.







ENGINE TEST

by Peter Chinn

McCOY CUSTOM 19

Construction

The main differences between the new Custom 19 and the previous model are internal rather than external but the newer engine is quite easily identified by its revised main casting. This, which comprises the crank chamber, lower cylinder and main bearing unit, now has a matt grey surface, instead of the previous tumble-polished finish and the vertical 'McCoy' lettering, on the transfer passage, is now flanked by a 'lightning flash' device on each side.

Apart from the purely decorative aspect, the casting is stronger by virtue of having the beam mounting lugs extended forward where they are joined by triangular webs, each side of the crankcase nose. Improved crankcase stiffness is provided by the addition of a vertical rib between the exhaust duct and the crank chamber wall, just above the right hand mounting lug. The mounting lug front bolt holes, incidentally, are now elongated into slots, thereby allowing any fore-and-aft bolt hole spacing between $\frac{1}{2}$ in. and $\frac{7}{10}$ in.

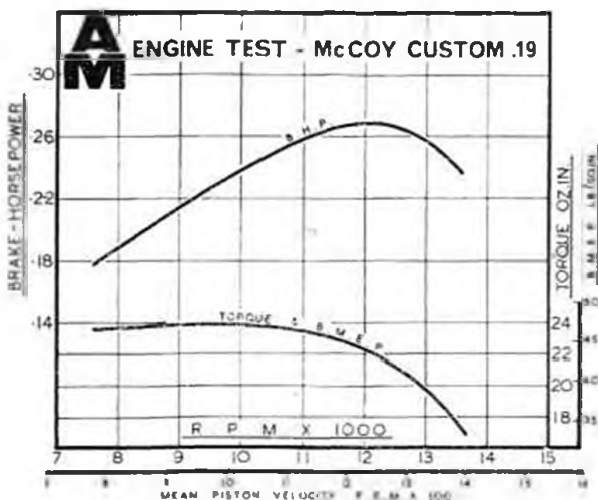
As on the previous model, the crankshaft has a generous $\frac{7}{16}$ in. dia. main journal, but now runs in a bearing material of porous bronze instead of the sintered iron bush of the original Red-Head 19. Extra shaft counterbalancing is also effected by having the circular crank web cut away each side of the crankpin to supplement the existing machined-in crescent counterweight.

A longer induction period, with later closure, than in the original 19, is now used, the rotary-valve being timed to open at 35 degrees after bottom dead centre and to close at 45 degrees after top dead centre for a total intake period of 190 degrees. The induction pipe is bored $\frac{5}{16}$ in. and has a sleeve type restrictor held in place, in the usual way, by the spraybar. The aperture through the main bearing registers with a rectangular valve port in the shaft

THE McCOY 'Red-Head Stunt' series engines were introduced ten years ago to supply the needs of the countless numbers of ordinary 'fly-for-fun' modellers in the United States who required medium sized motors - i.e. around 3 to 6 c.c. - at the lowest possible prices. It is a sign of the times, as well as a consequence of the devaluation of sterling, that McCoy's are no longer cheap, especially in the U.K., but they are still just about the lowest priced of current American made engines, in their size groups.

The 'Custom' series McCoy's were announced at the end of 1966 as a revised and improved range for 1967-68. The 19 and 35 models were the first to go into production in the Spring of last year. The 40 has just become available and will shortly be followed by the 29. All these are made in 'Blue-Head' R/C versions as well as in the standard Red-Head Stunt models, making eight types in all.

Our test model was the Custom Red-Head Stunt 19 which is the cheapest motor in the range, listed at \$9.95 in the U.S. or approximately £4.3s. No fixed price appears to have been established in the U.K. but it will, of course, be inflated by customs duty and purchase-tax.



journal. The shaft is bored 0.306 in. for the intake passage.

The unhardened steel cylinder has integral finning, as before, but now has smaller port areas. Port timings, measured on our test engine, were 68-68 degrees (exhaust) and 57-57 degrees (transfer). Instead of single exhaust and transfer ports, each is now sub-divided, by vertical bridges, into four exhaust, and three transfer, ports, as though for a ringed engine.

The piston, in fact, remains a lapped type but is now hard-chromed. It has a slightly domed crown and a low baffle. It is coupled to the forged aluminium connecting-rod by means of a fully-floating 3/16 in. dia. tubular gudgeon-pin having brass eyelet type end-pads. At the bottom end, the conrod is positively located on the crankpin by means of a button-ended nylon retainer which is pushed into the hollow crankpin and bears against the crankcase backplate.

The red-painted, finned, cylinder head is of pressure diecast aluminium alloy. It has a shallow hemispherical inner contour, interrupted by the usual slot for piston baffle clearance and a centrally located plug. The head gasket is now of 15 thou. soft aluminium instead of the composition material formerly used.

The complete cylinder assembly is tied to the crankcase by two long screws. Four shorter screws secure the head to the cylinder. There is a composition gasket between the cylinder base flange and the casting.

Performance

The manufacturers of the McCoy engines, namely the Testor Corporation's Duro-Matic Products Company Division of Culver City, California, do not offer silencers for their engines and all our tests were therefore carried out on the 19 with an open exhaust.

Prior to testing this model of the McCoy Custom Red-Head Stunt 19 engine, we tried two examples of an early production batch which did not have chromed pistons. These early production motors had shown a tendency for the piston to pick up (both our samples had, in fact, suffered this fault), hence the reason for the manufacturer's switch to hard-chroming.

The chromed piston also appeared to improve piston seal, although we still found it helpful to give the engine an oil prime for better starting compression. The test unit was a little tighter than the previous models and, when new, would slow and stop if not kept to a rich, four-stroke, setting. A generous percentage of UCON polyoxide lubricant was therefore added to the fuel, after which running-in was quite quickly completed.

For the performance tests we used a mild fuel containing 5 per cent nitromethane. On this fuel, the McCoy delivered its best torque at around 9,500 r.p.m., where a figure of 24 oz. in. was recorded. Peak power came out at just over 12,000 r.p.m. with a maximum of just under 0.27 b.h.p.

Typical propeller speeds included 7,700 r.p.m. on a 10x6 Tornado nylon, 9,200 r.p.m. on a 10x3½ Top-Flite nylon, 10,200 on a 9x5 Top-Flite wood, 10,800 on a 9x4 Top-Flite nylon, 11,400 on an 8x6 P.A.W. Trucut wood and 12,500 on an 8x4 Tornado nylon. Under the lighter loads, the McCoy picked up three or four hundred r.p.m. as it

SPECIFICATION

Type: Single-cylinder, air-cooled, loop-scavenged two-stroke cycle, glowplug ignition. Crankshaft-type rotary-valve induction and bushed main bearing.

Bore: 0.642 in. **Stroke:** 0.617 in.

Swept Volume: 0.1997 cu. in.—3.272 cc.

Stroke/Bore Ratio: 0.961 : 1.

Weight: 8.0 oz.

General Structural Data

Pressure diecast aluminium alloy *crankcase/main bearing unit* with porous bronze main bearing bush. Hardened steel counter-balanced *crankshaft* with 0.437 in. dia. journal, 0.306 in. gas passage and 0.218 in. dia. tubular crankpin. Domed crown, lightweight, hard-chromed *piston* with fully-floating hardened steel 0.187 in. dia. tubular *gudgeon-pin* having brass pads. Forged aluminium alloy unbushed *connecting-rod*. Non-hardened steel *cylinder* with integral cooling fins and blued on all non-working surfaces. Finned pressure diecast aluminium alloy cylinder-head with 0.015 in. soft aluminium gasket. Pressure diecast aluminium alloy *crankcase backplate* secured with four screws. Pressure diecast aluminium alloy *prop driver* engaging 30 degree taper on crankshaft. Steel prop retaining washer and hexagon nut. Brass spraybar assembly. Steel needle-valve with flexible extension. Beam mounting lugs.

TEST CONDITIONS

Running time prior to test: 1 hour.

Fuel used: 5 per cent pure nitromethane, 25 per cent Duck-hams Racing Castor-oil, 70 per cent I.C.I. Methanol.

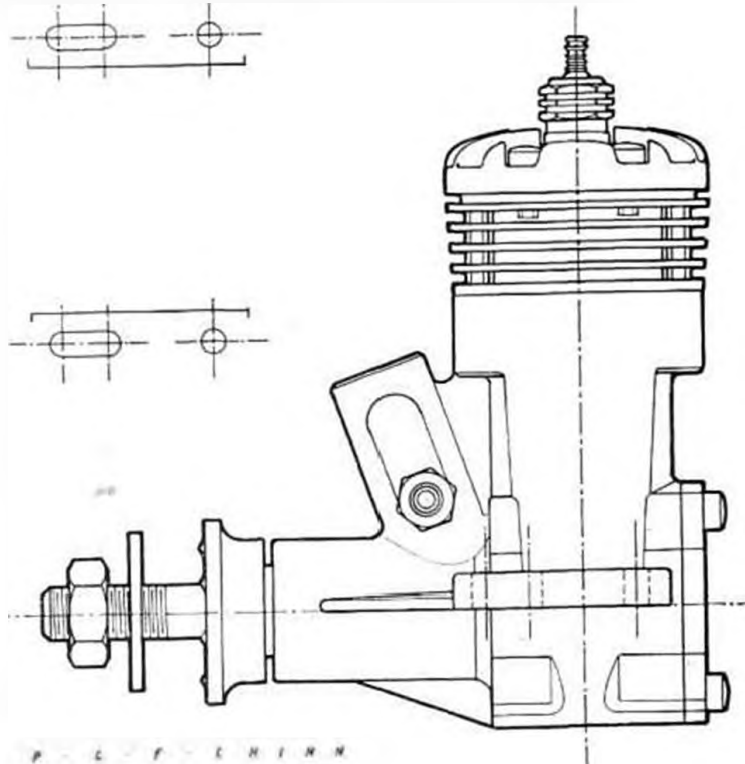
Glowplug used: Testor's Golden-Glo long-reach as supplied.

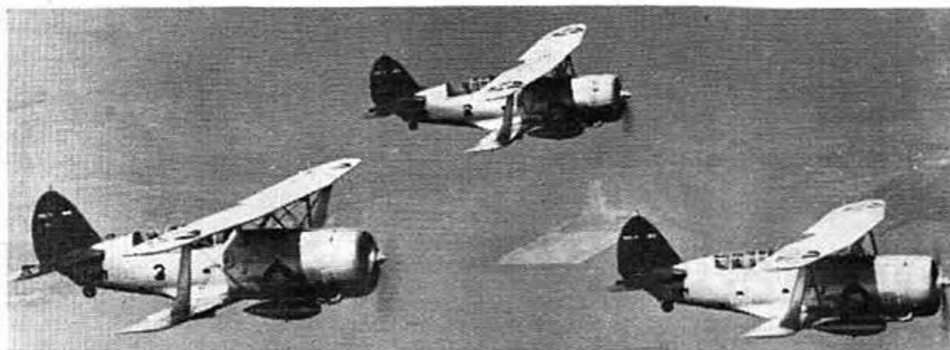
Air Temperature: 58 deg.F.

Barometer: 29.6 in. Hg.

Silencer: Nil.

warmed up from cold. The best prop sizes for general use with the Custom Stunt 19 would appear to be 9x4 or 9x5 for free-flight and 9x5 or 8x6 for control-line. **Power/Weight Ratio** (as tested): 0.72 b.h.p./lb. **Specific Output** (as tested): 82 b.h.p./litre.





Return of the First 'Famous Biplane' drawing

(Originally published in 1956—now revised)

Heading shows U.S. Navy Reserve Squadron SBC-4s flying in formation during 1940.

CURTISS SBC-4 *by George Cox*

THE Curtiss Type 77 two-seat dive bomber was probably the only American operational biplane to be used by the Royal Air Force. Early in the war the United States Navy permitted the diversion to France of ninety of these machines which they had on order. Half of them were aboard the carrier *Bearn* when news was received of the French armistice and the ship put into Martinique. The remainder were delivered to the R.A.F., where they received the name 'Cleveland' 1.

Five of the fifty handed over to France were assembled at R.A.F. Burtonwood in 1940 and sent to Little Rissington. A typical serial was AS 468. Removed from active service for ground training, the 'Clevelands' were re-serialised with the 'M' suffix (e.g. 2669 M) and were camouflaged Dark Earth and Dark Green on the upper surfaces and fuselage sides with trainer yellow under-surfaces. Meanwhile the SBC-4 had re-entered production, having once been considered outdated and the last was made in 1941 bringing the total of SBC-4s to 174. It was the last biplane to see combat service in the armed forces of the United States.

The Type 77 was powered by a Wright 'Cyclone' nine-cylinder radial engine of 850 to 1,000 h.p. according to developed type and its armament consisted of one forward-firing machine gun in the fuselage and one movable gun in the rear cockpit. Either a 1,100 lb. bomb or a 41½ gallon long range tank could be carried beneath the fuselage. Construction was of metal with fabric covering on the lower wings and control surfaces. The machine had a maximum speed of 235 m.p.h. at 17,000 feet, and its range was 610 miles at 197 m.p.h. The service ceiling was 27,000 feet.

Both the Curtiss SBC-4 and its monoplane successor the SB2C-1 rejoiced under the melodramatic but unofficial name of 'Helldiver', a name originally given to the F8C-4 of 1930. The SBC biplanes originated strangely in a parasol monoplane fighter built by Curtiss in 1933.

This machine, the XF12C-1 (Experimental fighter, 12th design by Curtiss, Mark 1), bore the U.S. Navy serial 9225 and had a radial engine and retracting undercarriage similar to those of the Curtiss XF11C-3 and Grumman FF-1 biplanes which appeared in the same year.

Unacceptable in its original form, the aeroplane was subjected to minor modifications and redesignated XS4C-1 and then XSBC-1. (S-Scout, B-Bomber). In June 1934 the new machine crashed, was rebuilt and crashed again in September, this time being written off.

Undaunted, the Curtiss company began a complete re-design of their scout bomber and in November 1935 rolled out their new aeroplane which bore very little resemblance to the original. This, the XSBC-2 was allocated the same serial 9225 but was externally identical to the SBC-3. In April 1936 aircraft 9225 reappeared as the XSBC-3 and in this form was ordered for service with the carrier-based squadrons.

During 1937 and 1938 squadrons VS-3, VS-5 and VS-6 aboard the carriers U.S.S. *Saratoga*, U.S.S. *Yorktown* and U.S.S. *Enterprise* respectively, received SBC-3s as replacements for their ageing Voughts. Models of 'Scouting Three's' aircraft should therefore have white tail surfaces, and 'Scouting Six's' aircraft, blue tails.

The last production SBC-3 was fitted in 1938 with the more powerful Wright engine and further modified, was designated XSBC-4. Production SBC-4s were delivered mostly to Naval Reserve Air Bases and the U.S. Marines, but they also equipped squadron VS2 aboard the U.S.S. *Lexington*, and therefore had yellow tail surfaces.

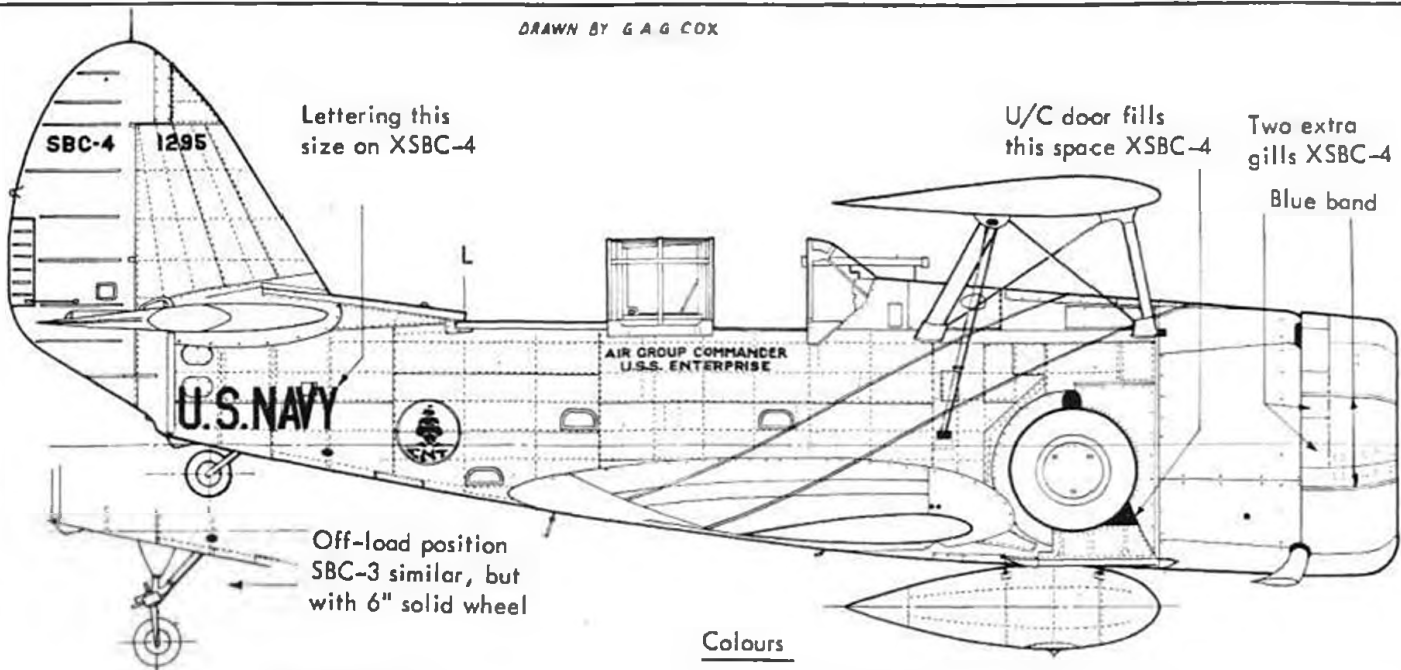
Historical information for this article has been obtained from the authoritative works on this subject, 'U.S. Marine Corps Aircraft 1914-1959' and 'U.S. Navy Aircraft 1921-1941', both by William T. Larkins.

Dimensions

Span: 34 ft. Length 27 ft. 5 ins. Height 10 ft. 3½ ins.
Wing Area: 317 square feet.

At left, French camouflage and markings on an SBC-4 with civil registration NX-C5 across vertical tail surfaces. At right, an 'Aeroplane' photograph of 2669M flying—a rare sight for a ground training airframe to be airborne! Note the clean retraction of the undercarriage.



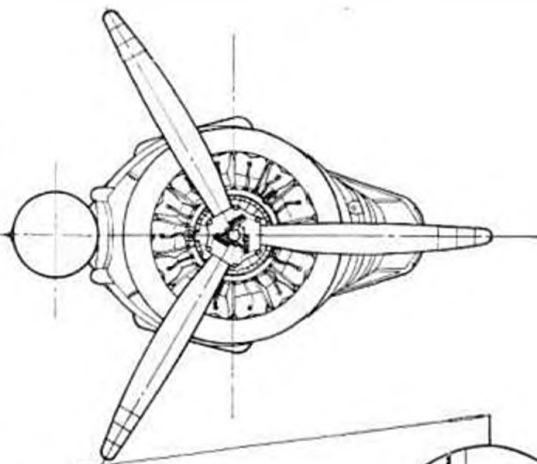
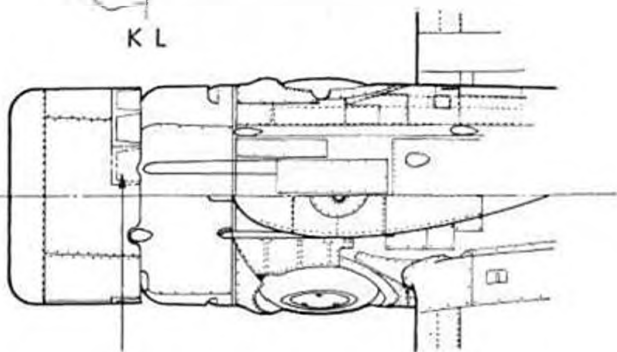
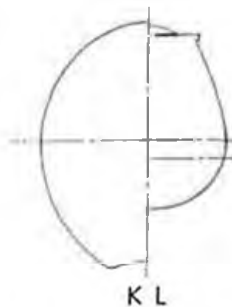


Colours

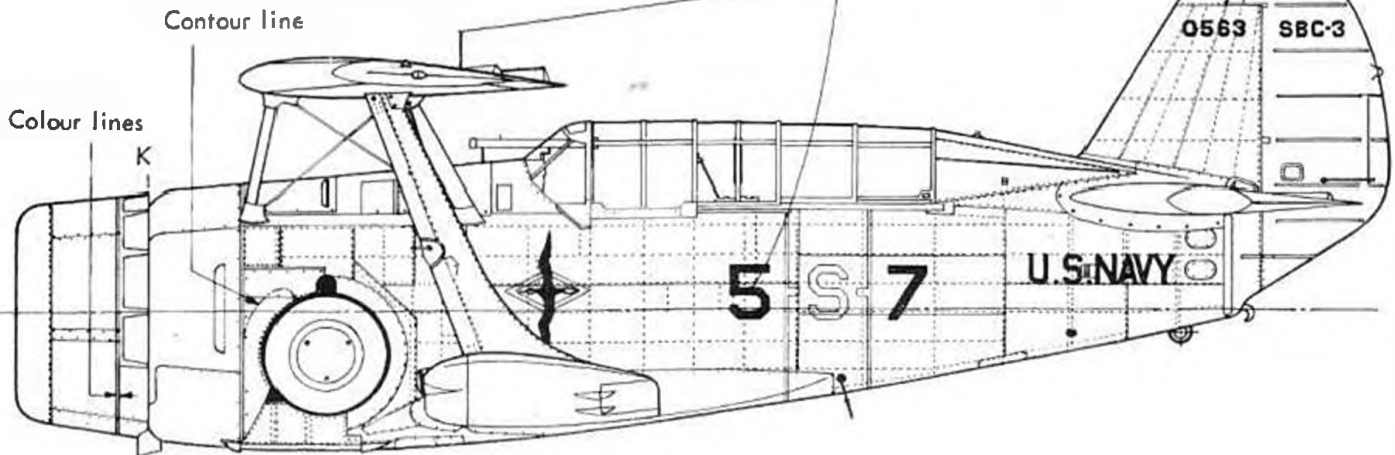
SBC-3. Tail surfaces, excluding fillets: red. Top surface of upper wing: chrome yellow. All other metal surfaces: light grey. Lower wings: silver. Engine cowling, wing chevron and fuselage band: blue with white border. VS5 badge: Black Man O' War Bird with red throat; red border to white diamond. White 'S', hyphens and tail lettering.

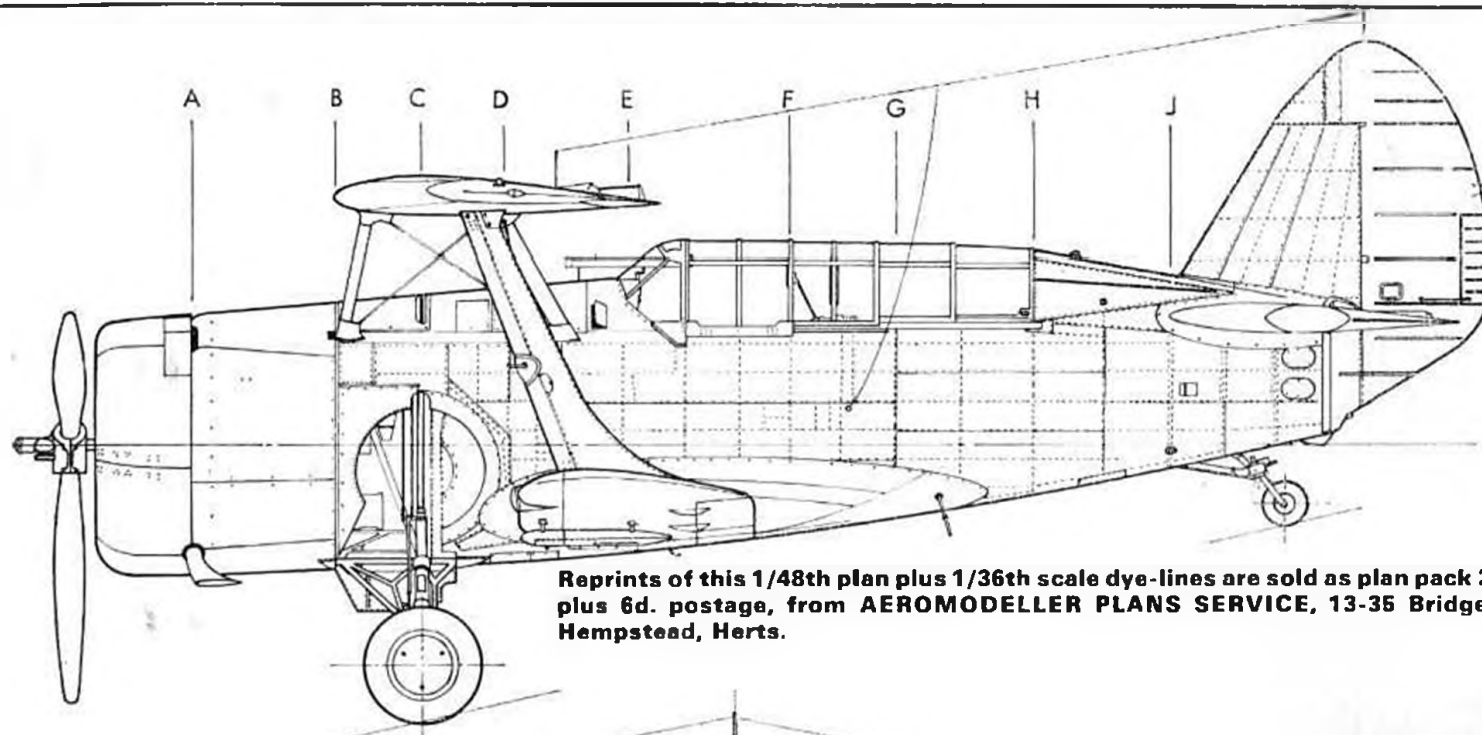
XSBC-4. Serial 0582. From Station 'B' aft, same as SBC-3. From 'B' forward, as SBC-4, except where indicated. Colour: All polished metal and silver dope. All lettering black.

SBC-4. Basic fuselage and wing colours as SBC-3. Tail including fillets, blue (USS Enterprise) cowl & fuselage bands, blue with white outline. Lettering black, except white on tail. Carrier emblem: Probably white disc with blue ship and surrounding circle.

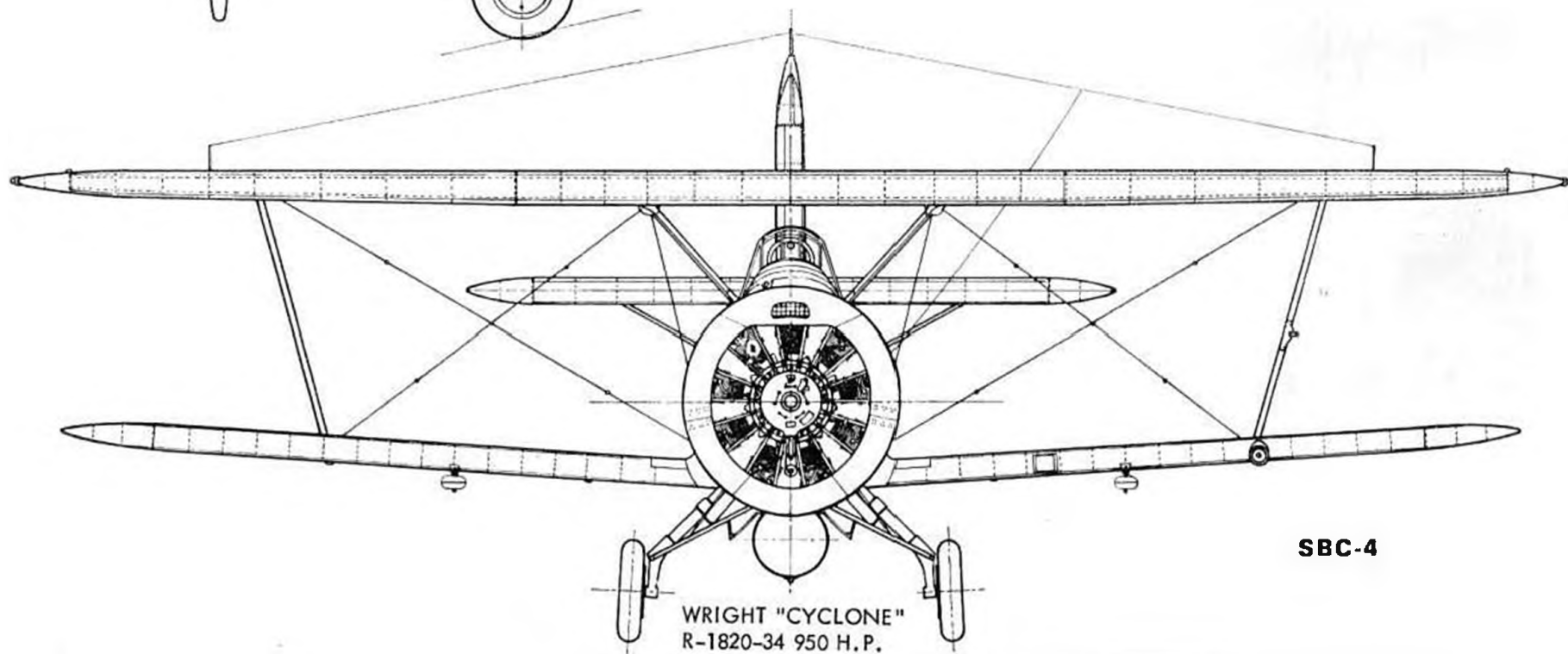


SBC-3



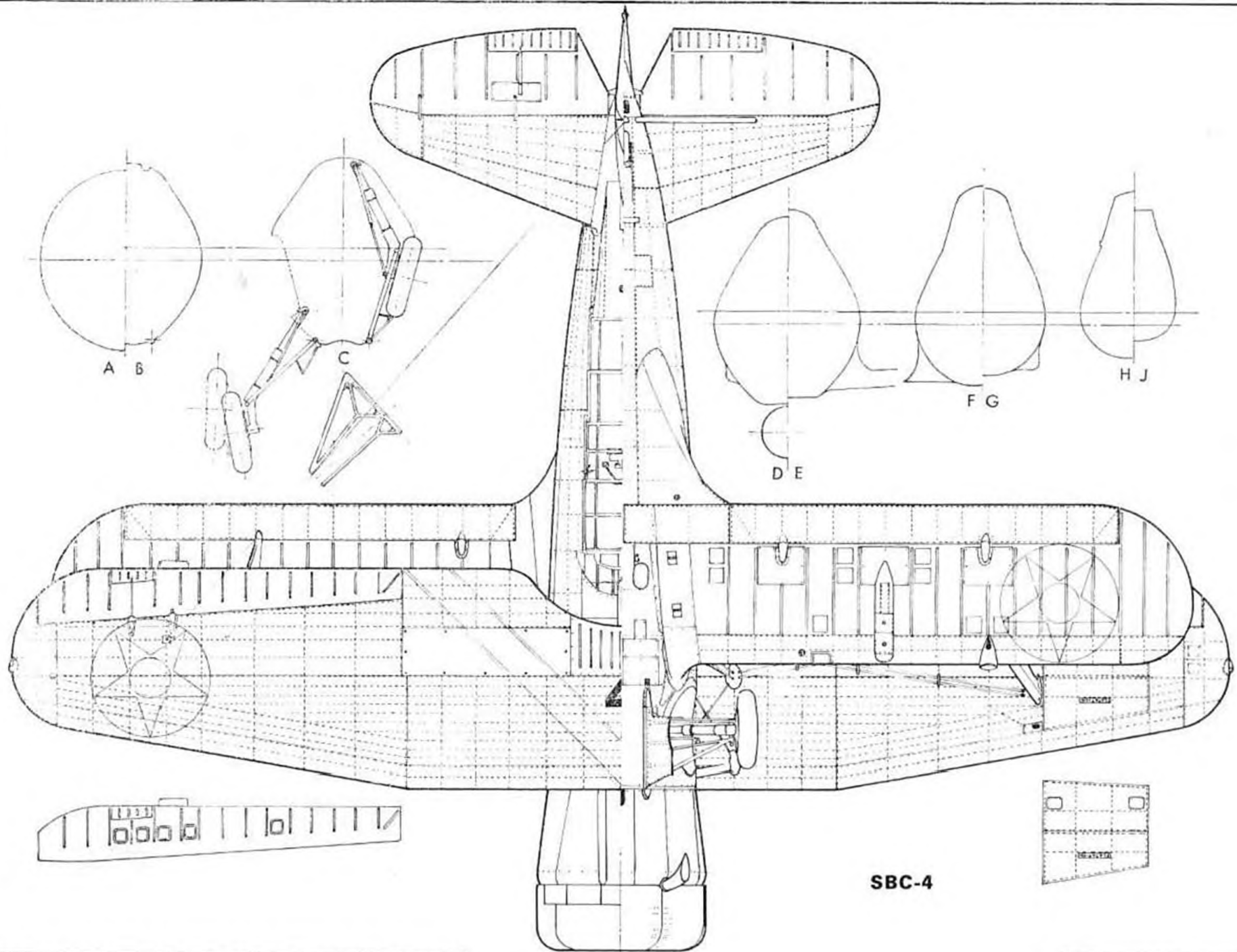


Reprints of this 1/48th plan plus 1/36th scale dye-lines are sold as plan pack 2671, price 2/6d. plus 6d. postage, from AEROMODELLER PLANS SERVICE, 13-35 Bridge Street, Hemel Hempstead, Herts.



WRIGHT "CYCLONE"
R-1820-34 950 H. P.

SBC-4



SBC-4



FREE - FLIGHT COMMENT

CONTEST TACTICS & TECHNIQUES THROUGH THE EYES OF J. O'DONNELL

WITH LAST month's 'comments' appearing in the guise of a 'Nationals' report, there is a sizeable portion of the endless English season left to cover.

Prior to the 'Nationals' was the **Croydon F.A.I. Gala** held on 19th May, at, inevitably, Chobham Common. This was run by Dave Hipperson, single-handed apart from advice by his club members. The advertised 10 o'clock commencement was delayed $\frac{1}{2}$ to $\frac{3}{4}$ hour through indecision as to *where* to fly. The wind, although not particularly strong was in an awkward direction in that the 'usual' sites were unsuitable. The eventual choice meant that launch and timing had to be well down-wind of the car park so as to permit observations of flights into the valley.

Seven flights in one hour rounds made for a busy day. I entered both **Wakefield** and **A/2**, expecting to drop one or the other as the day progressed. However, my poor scores came rather late, and I recorded all 14 flights! Credit is due to Russell Peers who helped retrieve.

Wakefield was convincingly won by Laurie Burrows who made seven very consistent flights. He now uses autorudder instead of a moving wing — still worked off the prop. stop. The model has a Seelig D/T timer mounted aft of the motor peg. Runners-up were home club members Ian Kaynes and John Blount — the latter using variable wing incidence (one side only). I was the only other entrant to finish. Bob Wells started very well but lost a model in the fourth round and declined to risk another.

Glider was certainly affected by the round system. Both tactical flying and 'self-detection' (or just plain lengthy tows) were successfully used and it seemed a case of knowing when to try which. Lift was plentiful early and several fliers had 3 or 4 successive maxs. However, the fifth round was 'dead' by the time most people had returned from their fourth recovery — and scores dropped suddenly. The remaining rounds were better, provided one was able to fly at the 'right' times. Winner was Pete Bayram, flying a straight dihedral square tipped design, with six maxs. and a poor fifth flight. Pete Jellis beat Tony Young by just one second for second place. One or two entrants missed a round with retrieving problems, and retired in consequence.



Whitefield A/2 Glider team in the N.F.F.S. Postal 1968 and winners of the Spanish Postal event in June, P. Oliver (Sans Egal) John O'Donnell (Stowaway) and Mike Reeves with his own design. With Alan Moss this team also won the 'Model Engineer' Trophy.

Apparently **F.A.I. power** is no-one's idea of an everyday event as there were just *two* contestants. They were Dick Johnson and Pete Buskell and they finished in that order. Their scores compare more than favourably with the other classes!

* * *

The **Northern Area** arranged use of Topcliffe on June 9th and staged a variety of F/F contests.

Despite very seasonal weather (Flaming June implies hot, calm and sunny) attendance seemed very low. Perhaps it was a case of post-Nationals-lethargy — although this did not seem to afflict the R/C contingent in midfield. The weather can be gauged by the opportunity to try the current F.A.I. rules "for size". My club were 'doubling' flights to count for the **Spanish Postal A/2 Contest** and so I continued after seven maxs with a four, a five, and 3:11 trying for 6:00. Such scores seem mainly dependant on how quickly flights can be made whilst the weather holds! Mike Reeves and Pete Oliver were the others in the postal team.

Runner-up in **F.A.I.** was Dave Hipperson tactical flying his Wakefield underneath the gliders. Third was Henry Tubbs who managed six maxs out of seven with his 'old' A/2. This has P.A.A. on the wings so dates back to 1961 *at least*.

Not surprisingly all the other events needed fly-offs — even open power which was poorly supported as is common in the Northern Area. Both the trebles were recorded by *diesel* powered models. Brian Spencer used a 1.5 cc. to win, whilst friend Pete Southam chose a Webra Mach 1.

Coupe d'Hiver was notable for Henry Tubbs flying off against himself — well almost! He flew American Tom Medley's model proxy and almost beat his own model. Ken Rutter made up the fly-off trio.

The **A/1** fly-off was very close in very fair conditions. Mike Reeves' own design did a little longer than John Pool's 'Strolling Bone'. **Rubber** had 10 participants, with nine of them in the fly-off! The odd man out dropped a few seconds on his last flight. (This really does make 3:00 maxs. look a *farce* in these conditions). Weather unfortunately influenced the fly-off. Weak lift was found by those who launched first, and was best held by Dave White's model that D.T'd well in sight. Russell Peers was delayed by a broken motor, and flew in good air for second place. Those in between recorded disappointing scores. Ron Pollard cut his D/T too short, and Brian Picken did much longer than he got on the card!

The **glider** fly-off had to wait the return of three participants from retrieving their rubber models — and was eventually held at about 8:20 p.m. Lift was hardly likely to be strong so no-one was anxious to launch. I reckoned the air improved after about 10 minutes waiting — and precipitated a mass launch! The result left me quite happy.

The area-centralised events were held the following weekend (16th June). I elected to fly with Northern Area at Elvington. It was another gorgeous day — but again was poorly supported especially when it was realised that representatives from *four* areas were present.

This perhaps camouflages the fact that the top three National places in the glider event were secured at Elvington. Surprisingly they were *not* all launched into the same thermal. The weather had clouded over in late afternoon and a definite breeze had sprung up. Roger Baggott was first to fly off, and the initial signs did not encourage *everyone* to follow. My flight was similar, except that I towed well upwind, gaining on visibility, and hit a bit more lift. Barry Lumb had the best air (found by Dave White, who then stalled) but a faster running D/T timer.

The power fly-off was held later in 'sink,' as Dave Wiseman and I proceeded to demonstrate. The top four in the **White Trophy** all flew at Chobham. Winner was John Boxall using a $\frac{1}{2}$ A after losing his TD 09 model on his second max. Ken Smith was second and was said to have been using a rubber model wing on his $\frac{1}{2}$ A model!

Wakefield places went round the country a bit better. Ron Pollard flew on Newcastle Town Moor to record six consecutive maxs. and a final 2:04. He has abandoned his aluminium tube, sheeted surface design in favour of an elliptical tipped conventional structure model that 'thermals better.' He won the **Weston Trophy** by launching as the breeze blew after hot calm spells. Jack North likewise did six maxs. out of seven at Chobham, whilst third placed Henry Tubbs flew at Elvington.

Ron Pollard, winner of the 16th June contest for the **Weston Cup** (20:04). In error, we captioned photo on page 377, July issue, showing Russel Peers — with Ron's name.

Unusual Coupe d'Hiver Pod and boom fuselage with high mounted tail surfaces used by C/Tech. Harry Franch, R.A.F. M.A.A. Lyneham.

I missed the **Croydon Open Gala** at Chobham on 23rd June but have details and results via Russell Peers. He said it was windy, and initially blowing onto the 'Tank Factory', and unpleasant - but with a few bright spells when good flights were possible. As usual in bad weather at Chobham support was indifferent. Most of the 'locals' have the attitude that one week's events are much the same as another - so why fly in wind and rain.

Doubling up was not permitted which perhaps explains why **A** power scores are so much higher than open power. It is also a reflection on the models that fliers are willing to risk. Likewise **A/1** scores, especially winner Colin Morris', compare well with open glider. **Rubber** was hardly a contest with Ray Pavely retiring after losing a model, and George Sharp finishing with a couple of nominal 1½ minute flights.

The following week was better for the St. Albans Gala, again at Chobham, although drift was sufficient to carry models almost across the common in three minutes. Longer flights cleared the railway.

For the second year running, George Fuller won the **John Simeons Memorial Trophy** for open power - this time flying his 'second best' Eta 29 'E' type Dixielander. He dropped one flight short of a max., as did G. Hobbs and Ed Warwick.

Glider scores were surprisingly low, as there was plenty of lift even if conditions didn't suit tactical flying. This tempted me to fly glider *after* finishing rubber. The first flight was easy, but then over-cast conditions persisted right up to the 6 o'clock closing time. At 5:50 I went out to fly regardless, and managed to tow both **A/2s** into v.oak, but sufficient, lift. Ken Winstanley and Jim Punter were second and third, with one down-draughted flight apiece.

The organisers delayed the **rubber** fly-off until I returned from retrieving the gliders - a move that I had not expected. In an attempt to retain my only open 'Maxine' I delayed launching my fly-off until after Ray Pavely's model had landed, and Russell Peers' was on glide, and set my D/T to suit. This worked out very well - but it is rather a dangerous technique.

'**Veteran**' is St. Albans' terms for 'Vintage' (which they consider implies improved quality) and was mainly supported by the S. Bristol enthusiasts. John Mayes 'cleaned up' the event by taking first and second, with a K.K. Kestrel powered Goldberg 'Interceptor' and a Laurie Barr 'Scram' respectively. Third place went to J. Blagg flying a completely colour doped (or could it be one of the 'iron-on' coverings?) 'Hoverking' glider.

★ ★ ★

July 7th saw another Area centralised event with results arriving just in time for this report. From perusal it certainly looks as if East Anglia and the North had the best weather. My club went 'en bloc' to Topcliffe as experience has shown that thermal activity at Carl, the N.W. venue, is rather dependent on the state of the tide. Determined effort, ruthless tactical flying, and pilot models produced a perfect score in the team glider contest, with all 12 flights made in a couple of hours early afternoon.

The fly-off was very different, as rain commenced in late afternoon and continued until after 7 o'clock. Whitefield flew off as late as possible, after even more than the usual difficulty in obtaining timekeepers. We thought the fly-off was mere a safely precaution until we saw the results! Norwich 'A' also managed a full house but with a little less total fly-off. Third place in the '**Model Engineer**' went to Baildon 'A'.

F.A.I. power for the **Astral Trophy** saw another win in this category for Ray Monks - very closely followed by clubmate Roger Baggott. They flew at Topcliffe and mostly when the glider fliers marked lift for them. The weather ran out however, and their seventh flights both went o.o.s. behind downwind obstructions. Dave Wiseman and myself, now fighting it out *alone* for the season's championship, tried a different technique. This was to arrive early and fly as the sun cleared the early morning mist and haze. It was an easy way to fly, seven flights in two hours, but we found one down-draught apiece.

Final event was **Coupe d'Hiver** with results spread round the country. Blackheath's P. Whiston made a better fly-off than C. King of Cambridge. Henry Tubbs provided the top non-treble score. There seem a lot of well known names, and clubs, missing from this event.

South Bristol M.A.C. clubsters at the St. Albans Veteran event, Chobham Common June 30th. Left to right, R. Wade 'Percy', J. Down 'Rapier' and 'Stratosphere', J. Mayes 'Interceptor' and 'Scram', S. Spencer 'Dinahmite', G. Pink 'Junior Mallard'.



CONTEST RESULTS

CRUYDON F.A.I. GALA, 19th May '68 CHOBHAM COMMON

WAKEFIELD: 1. L. Burrows (Blackheath) 20:18; 2. I. Kaynes (Croydon) 17:54; 3. J. Blount (Croydon) 17:29; 4. J. O'Donnell (Whitefield) 16:11 **A/2:** 1. P. Bayram (Lincoln) 19:08; 2. P. Jellis (Croydon) 18:40; 3. A. Young (Croydon) 18:39; 4. J. Baguley (Hayes) 18:27. **POWER:** 1. R. Johnson (St. Albans) 20:24; 2. P. Buskell (Surbiton) 19:58.

NORTHERN AREA RALLY TOPCLIFFE, 9th June '68

COMBINED F.A.I.: 1. J. O'Donnell (Whitefield) 21:00; 2. D. Hip-person (Croydon) 20:07; 3. H. Tubbs (Baildon) 19:10. **COUPE d'HIVER:** 1. H. Tubbs (Baildon) 6:00+1:40; 2. T. Medley (U.S.A.) 6:00+1:37; 3. K. Rutter 6:00+1:14. **A/1 GLIDER:** 1. M. Reeves (Whitefield) 9:00+2:32; 2. J. Pool (York) 9:00+2:20; 3. R. Firth (Sheffield) 6:12. **POWER:** 1. B. Spencer (Ashton) 9:00+2:35; 2. P. Southam (C/M) 9:00+2:16. **GLIDER:** 1. J. O'Donnell (Whitefield) 9:00+3:21; 2. P. Oliver (Whitefield) 9:00+2:56; 3. M. Reeves (Whitefield) 9:00+2:24; 4. D. White (York) 9:00+2:07; 5. B. Picken (Wallasey) 9:00+1:51. **RUBBER:** 1. D. White (York) 9:00+5:48; 2. R. Peers (Congleton) 9:00+5:46; 3. E. Prince (Congleton) 9:00+5:30; 4. G. Tideswell (Baildon) 9:00+4:15.

CRUYDON OPEN GALA, 13th June '68 CHOBHAM COMMON

A: 1. Hook 8:28; 2. Peers 6:55; 3. Fuller 6:37. **POWER:** 1. Chilton 6:13; 2. Child 4:06; 3. Mobbs 2:59. **GLIDER:** 1. Mabey 7:20; 2. Turner 6:31; 3. Thompson 6:24. **COUPE d'HIVER:** 1. Hadland 4:36; 2. Johnson 4:23 and Allen 4:23. **A/1:** 1. Morris 7:53; 2. Smith 5:54; 3. Bailey 4:04. **RUBBER:** 1. Sharp 5:55; 2. Pavely 3:00.

ST. ALBANS GALA, 30th June '68 CHOBHAM COMMON

GLIDER: 1. J. O'Donnell (Whitefield) 9:00; 2. K. Winstanley (Brighton) 7:40; 3. T. Punter (Hayes) 7:39. **RUBBER:** 1. J. O'Donnell (Whitefield) 9:00-5:17; 2. R. Peers (Congleton) 9:00+4:24; 3. R. Pavely (Norwich) 9:00+4:02. **POWER (SIMEONS TROPHY):** 1. G. Fuller (St. Albans) 8:30; 2. G. Hobbs (Crookham) 8:01; 3. E. Warwick (Lee Bees) 7:47. **VETERAN:** 1. J. Mayes (S. Bristol) 5:41; 2. J. Mayes (S. Bristol) 4:58; 3. J. Blagg (St. Albans) 3:43.



AFTER OVER two years absence from our pages, this feature returns with another selection of ever useful gadgets, many of which can be made without looking any further than Mr. Average Modeller's box for the pieces. It is an interesting thought to wonder how many gadgets go unknown due to their designer's thinking that lack of sophistication makes them of no use to other modellers. Our first is the very simple solution of a problem which must have upset most of us on occasions namely getting engine mounting bolts into position without removing large portions of cowling. A. Healey of Burnley, Lancs., gives two methods in A, utilising ordinary valve rubber stretched over a bound section of a screw driver. Simply roll back the valve rubber, insert bolt on blade and unroll valve rubber to retain in position. His second method is to bind two suitable tinplate clips to the screw driver for retaining the bolt (equally suitable for attaching mounting bolt nuts when a close fitting cowl is restrictive).

approximately 1/16 in. to remove the lead plug (you may need to melt it out) drill in suitably sized holes to correspond with collector ring and retaining bolt, and the unit is complete.

Transport of fragile model wings etc., is often a risky tedious job, particularly if the rally is a family outing as well. From T. Faulkner of Sheffield comes the idea of close fitting bags in G. Wrap plastic or polythene sheet around the wing, and lay this on insulation board which is covered with aluminium foil. Lay another strip of aluminium foil over the trailing edge and weld the two sheets of plastic together using a soldering iron. The aluminium concentrates the heat in the plastic and the insulation board increases the efficiency. (Take care not to get that soldering iron too near the wing itself!)

In crash landings with a high wing glider or power model the canopy etc., usually manages to get itself chewed up after a while. J. Morley of R.A.F. Akrotiri,

GADGET REVIEW

A simple 'second man' or assistant, devised by A. C. Queck of London is shown in B. To hold down that ply wood component for drilling just Sellotape it to a piece of scrap board and fire away. Sellotape being clear gives no locating problems, and there are no ill effects from drilling through the tape if the number of holes required dictate this. (Should allow the wife to attend the junior who always yells at the crucial moment.)

In Combat, spraybars have a fairly high mortality rate (what doesn't?) but A. J. Longhurst of Hounslow, Middlesex has invented a replacement using broken parts and a No. 13 steel knitting needle, seen in C. For this gadget one does need access to taps and dies. Tap an 8 BA thread internally in the spraybar and thread an inch from the needle point with 8 BA. Screw on 8 BA nut on to the needle until it will go no further, slip on a good ball-pen spring or similar (anti-vibration) and with a bend on the other end for adjustment.

When that 'Windex' window cleaning bottle is empty do not throw it away suggests D. K. Tempest of Loddington, Lancs., as it forms an excellent basis for a fine water spray. Obtain a screw top jar, make a hole in the lid and solder the screw top 'Windex' unit in position. Shorten the tube to requisite length (note angle of cut) and the unit is complete. The spray is worked by a simple self returning pump. See sketch D.

Neat attachment of engine cowls is often a thorny problem but B.S. Ward of Amersham, Bucks., uses the idea shown in E, for his A.P.S. Cherub. Obtain two plugs from the end of a (used) ball point pen, cut the sides to a rectangular shape, and Araldite into recessed cowl blocks. Araldite two birch dowels into bulkhead and a vibration proof plug in cowling is the result. (Should be really ideal with those radially mounted glow motors, now so popular).

Back to Mr. Longhurst, who is obviously a noise conscious Combat flier, for the Oliver Tiger silencer in F. He suggests that the standard Oliver silencer is not really strong enough for Combat but uses the standard collector ring plus a used Soda Syphon sparklet bulb suitably modified, as an expansion chamber. Similar in capacity to the Oliver unit these are virtually unbreakable. Saw off

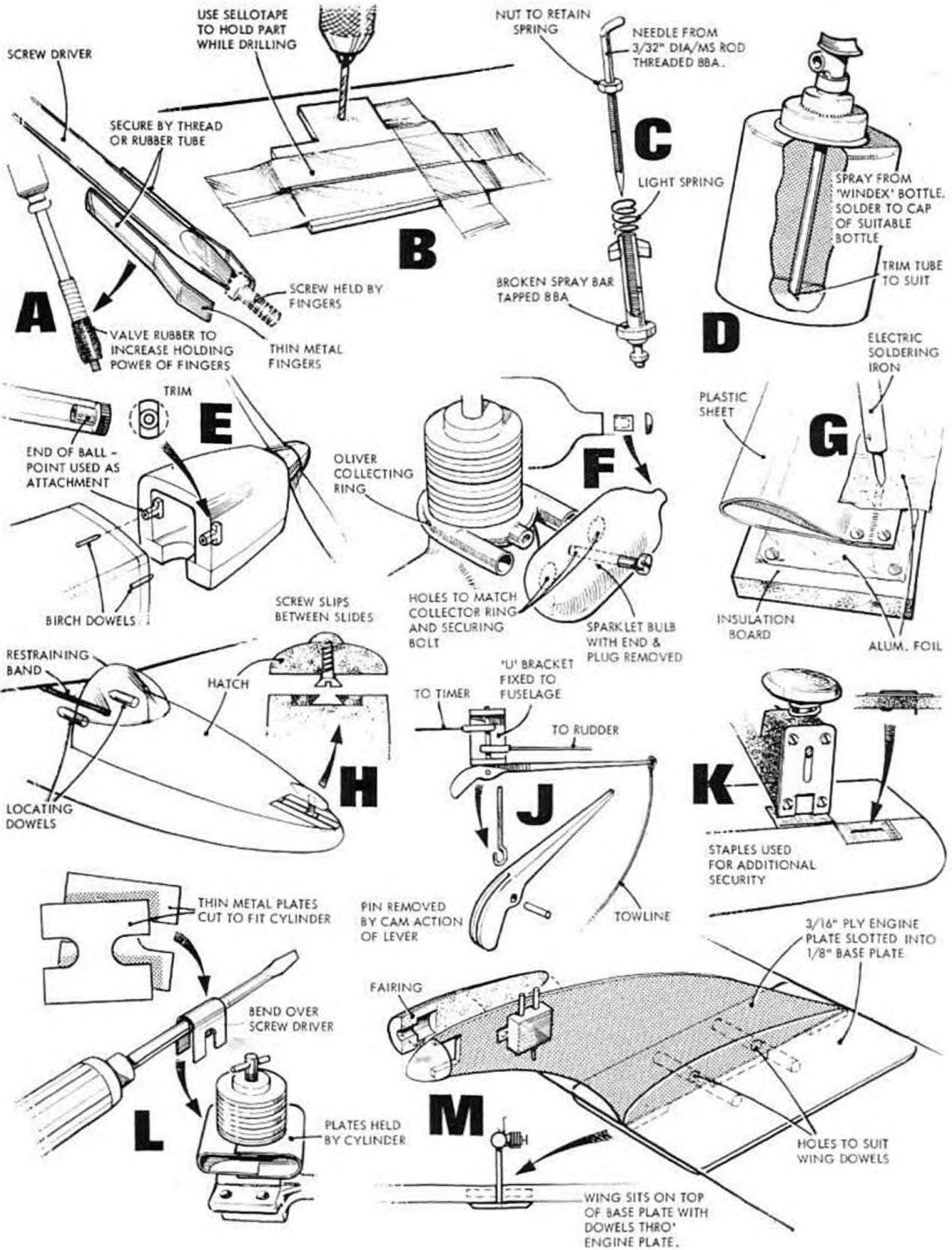
Cyprus, comes up with idea H. Two bevelled dural runners are Araldited and screwed (countersunk) to the noseblock, spaced to suit the thickest portion below the head of a suitable screw. This screw is fitted to the top cowling block giving a reasonably firm fit. With two locating dowels at the rear, retaining rubber bands if desired, a very neat knock-offable canopy/hatch results.

Gadget J. illustrates a novel way of tripping auto rudders and D/T timers, on towline (particularly lightweight) gliders. The usual pin is pivoted to a 14 swg. Duralumin cam, and is removed with ease by the levering force from the long stem as shown. At least 14 swg. is desirable to allow the required slot to be cut. The pivot pin is easily retainable with washers soldered in position and the unit should prove to be a boon for those who suffer from stalls set into their flights through stiff release mechanisms.

When using tape for hinges of elevators etc., B. Barrett of Wittering, Northants, is probably not alone when he says that they often come unstuck. A carefully used ordinary office stapling machine certainly adds to the security of such hinges as shown in K. The staples are very small and could easily be covered to go unnoticed. Limited use of these staples could also come in handy for holding down tricky curved balsa sheets to hardwood structures while the glue dries - a practice used in making real gliders.

An idea for making exhaust manifolds, even silencers for small engines (particularly 049 radio jobs) comes from Tom Prukner of Yugoslavia. Cut out plates to the required shape and size in L from aluminium or tinplate (how about these disposable motor oil cans?) and epoxy together when fitted.

As power assisted sailplanes become popular, methods of mounting the engine must become easier and one of the simplest seen so far in M comes from C. M. Jones (again!) of St. Albans, Herts. Suitable only for two piece wings this method is adaptable for the Graupner style dihedral braces from piano wire and is a practical proposition with or without the baseplate. The drawing is self explanatory and the designer's example is at present used on an A.P.S. Ariès.



World News



Jean-Marie Berthe's A/2 which made the longest flight in the fly-off but didn't win, was beautifully built; it featured a flamingo airfoil, pylon mounted wing and an offset towhook to counteract the permanently set glide turn.



East Germany's Joachim Loffler, who won the 1963 World Championships at Wiener Neustadt was a little off form and placed twelfth in Wakefield.



FAI Powerwinner Klaus Engelhardt from East German dropped ten seconds on his first flight with a Savini-like model using Super Tigre with a 7 x 4 Tornado prop.

The warm Central European weather produced quite a crop of maximum exposure garb, here modelled by a Czech lady.

Alpine Cup June 18th-19th Wiener Neustadt, Austria

THE 1968 ALPINE CUP contest was held on what must be one of the biggest and best situated airfields in Europe, Wiener Neustadt, about 25 miles south of Vienna; it attracted 110 competitors in the three F.A.I. classes, from France, Austria, Switzerland, Yugoslavia, West Germany, East Germany, Czechoslovakia, Hungary, Great Britain, and was organised by the Austrian Aero Club.

The Cup itself and the team award were for total score in all three classes, although the individual winner, Hans Kenrath of the Austrian club of OMV Feldbach, only flew in A/2 and Power. The East European teams were particularly strong, but the team event was won by the Swiss team of Gaensli, Schaller and Siebenmann, who ended up with a convincing lead of some 300 seconds over the Austrian runners-up.

British participation came solely from the Croydon club, Messrs. Young, Dilly, Jellis, Kaynes and Smith, flying in A/2, while Ian Kaynes also flew Wakefield; Ian, in fact, was in quite a good position after his third flight, unfortunately made during a period of wind and rain, resulting in the loss of his good model in the outskirts of Wiener Neustadt. In spite of an extensive search assisted by some very thorough locals in charge of a vast scrap yard, the model remained lost, thus ending the Croydon challenge in Wakefield.

The contest started early, around 8 a.m. each day and certainly the first few rounds of the glider event were flown in pretty flat air, giving plenty of opportunity for protracted towing, were it not for the fact that as eight people shared a pair of timekeepers (paid, incidentally, by the Austrian Aero Club) the time any one person could take to make a flight was around eight or ten minutes. There was a three-man fly-off between a Czech, a Frenchman and an Austrian after the seven rounds; some ten seconds before the end of the five-minute fly-off period a count-down started over the public address system in German. The Austrian, who was the only one to understand the language, quickly towed up followed by the other two, all three models being released within ten seconds of each other. Jean-Marie Berthe, the Frenchman, flying a flamingo-airfoil model with an offset, folding, towhook to give the Bourgeois-type of circling tow, assisted by a constant tension device on the line reel, got quite strong life to D/T after the four minutes several hundred feet up apparently the clear winner. However, the organisers decided that as the Austrian, Hermann Karner was the only one who was released before the end of the round he was the winner; this decision caused quite a few mutinous mutterings about announcements in only one language, and not only from the French contingent!

Technically, variable pitch props and various automatic trim devices were used pretty extensively on Wakefields. An airfoil developed by Wortmann of the Aerodynamics Department of Stuttgart University was popular with the German and Austrian Wakefield and A/2 flyers; it is basically a thinned M.V.A. 417 but uses the recessed type of notched upper surface turbulator, wings being sheeted top and bottom. Some very neat double sheeted tailplanes using an undercambered airfoil a bare $\frac{1}{4}$ " deep and $\frac{1}{8}$ " top and bottom skins were to be seen.



In the thundery gale that sprang up for half-an-hour or so half-way through the **Wakefield** and **power** day it was obvious that quite a few people weren't used to flying in any sort of a wind. '95' cross-wind and even once a down wind launch were seen. However, the overall standard was pretty high and the advantages of not having the distractions of Open classes to fly in as well as F.A.I. was clear, a great deal of development having obviously been put into a number of models that wouldn't last a weekend under average Chobham Common conditions.

Austria is apparently yet another country that takes aeromodelling very seriously; the dinner after the contest was attended by the mayor of Wiener Neustadt and the vice-president of the Austrian Aero Club, and a good deal of effort had gone into the organisation of accommodation, timekeepers and various small details. It was interesting to hear that several countries' National Aero Clubs, quite apart from the Eastern European ones, paid the expenses of competitors. There is certainly a very different official attitude to the sport in most of Europe; this is reflected in the results.

A/2			
1. H. Karner	Austria	1260-116	
2. S. Hubert	Czechoslovakia	1260-0	
3. J.-M. Bertho	France	1260-0	
Power			
1. K. Engelhardt	D.D.R.	1250	
2. J. Blazek	Czechoslovakia	1248	
3. Z. Malina	Czechoslovakia	1233	
Wakefield			
1. E. Gouvarno	France	1135	
2. H. Ployer	Austria	1118	
3. H. Zachalmel	Austria	1100	
Individual Combined Results			
1. H. Keinrath	Austria	2376	
2. D. Siebonmann	Switzerland	2325	
3. F. Gaensli	Switzerland	2253	
British Placings			
A/2		Wakefield	
20. Tony Young	1109	29. Ian Kaynes	521
22. Ian Kaynes	1086		
26. Ken Smith	1070		
48. Martin Dilly	986		
62. Pete Jallis	832		

New World Records, 1968

Rubber Driven F1b	(Previous record in brackets)
No. 4 Speed in a straight line	116.128 km/h
Joujny (U.S.S.R.) 5 May 1968	(107.080 km/h)
No. 32 Indoor Duration 8 metre class	19:20
Jiri Kalina (Czechoslovakia)	(14:37)
15 June 1968	
Helicopter F1f	
No. 9 Helicopter Duration	33:26.7
Nazarov (U.S.S.R.) 3 June 1968	(12:02)
No. 10 Helicopter Distance	4.635 km
Kraramenko (U.S.S.R.)	(889 m)
3 June 1968	
No. 11 Helicopter Altitude	352 m
Voltchanovsky (U.S.S.R.)	(205 m)
4 June 1968	
No. 12 Helicopter Speed	78 km/h
Motekaitis (U.S.S.R.) 8 June 1968	(37.384 km/h)
Power Driven	
No. 16 Helicopter Speed	68.569 km/h
V. Krameranko (U.S.S.R.)	(not claimed before)
28 February 1968	
Radio Control Power Driven F3a	
No. 31 Distance in Closed circuit	338.04 km
Bob D. Kunce (U.S.A.)	(280 km)
17 February 1968	
No. 48 Duration (Seaplane)	1h. 39m. 17s.
R. Gunning (U.S.A.) 5 May 1968	
No. 49 Distance (Seaplane)	10.496 km
A. Leftwich (U.S.A.) 4 May 1968	
No. 52 Distance in a closed circuit (Seaplane)	116 km
Daniel L. Gregory (U.S.A.)	
1 June 1968	
No. 23 Speed	320 km/h
Werner Kaeschberg (W. Germany) (225 km/h)	
14 April 1968	

Latest World Record

Duration: 15h 2 min. 25 sec.

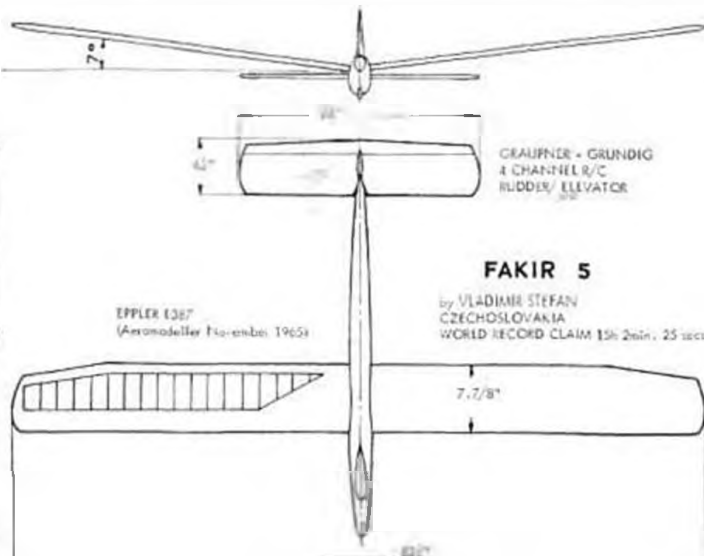
Vladimir Stefan, holder of the Czechoslovakian national record for R/C soars at 5h. 33 min. 59 sec. created a new world record of 15h. 2 min. 25 sec. on 6th July, in the Krkonose Mountains from the peak of Zlate navrsi (Golden Top). The launch point is 1,420m. (4,650 ft.) above sea level and the slope is 600m. (2,000 ft.). A slope soaring contest is held on the same slope every Autumn - this year on Sept 28th and 29th.

The Krkonose Mts. (Giant Mts.) are situated in North East Bohemia, the highest peak is Snezka, 1,602m. (Snowpeak). The whole region is a National natural park. In Summer it is visited by tourists; in Winter it is a ski-resort.

On Sunday, 6th July when Vladimir Stefan reached the top of Zlate navrsi with the necessary staff, the time was a few minutes



Golden Top slopes, ideal for soaring, the scene of Vladimir Stefan's incredible 15 hour stint on 6th July in Czechoslovakia.



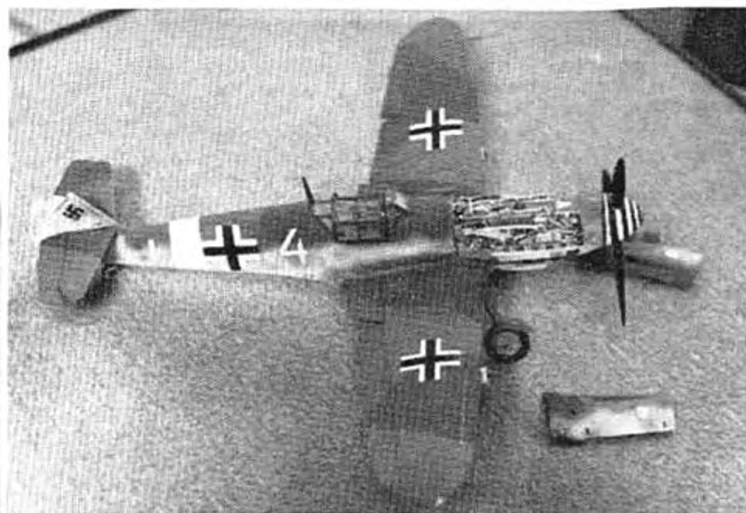
past 4 a.m. Wind direction was south at 11 m.p.h. and a very satisfactory launch followed at 5h. 08 min. and the Fakir 5 quickly gained over 300 ft. altitude. During the day the wind velocity reached 23 m.p.h. and the model flew between 300 and 750 ft. above the crest. Later in the afternoon a front from the west developed and at 19:30 hrs. the wind turned to SW and blew at over 27 m.p.h. At 20 hrs. Vladimir decided to land, which followed at 20 hrs. 10 min. (central European time). The model had been airborne for 15 hrs. 2 min. 25 sec. and landed 200 ft. from the starting point and 10 ft. higher!

OLD WARDEN '68



ZERO WIND AND EXCELLENT VENUE PROVIDE DREAM CONDITIONS FOR THIRD AEROMODELLER ALL-SCALE RALLY

June 21, Shuttleworth Collection Airfield

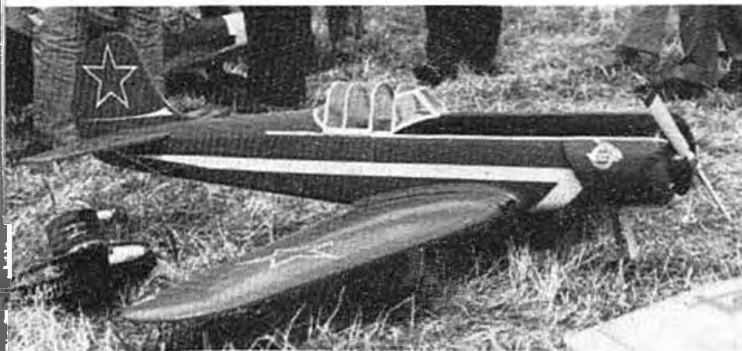


WHEN, as organisers we arrived 'early' at the Shuttleworth Collection Airfield near Biggleswade. Beds to set up the control points - we had to queue to get into the gates! Two hours before official opening there were models in the air and this early activity was a prelude to the most pleasant day we have enjoyed for many a season. Who could possibly complain when the windsock droops and in one glance a whole circus of models ranging from the early *Blackburn Monoplane* to a *Douglas Skyraider* could be seen in orbit over the soft green field! During the morning 'warm-up' the super-hot equipped R/C models were streaming around the circuit. An *SE.5* would be chased by a *Fury*, outpaced by a *Shoestring* and outflown by a *Kawasaki Tony*. Scale fans were spellbound. More scale R/C types could be seen in just half of their compound than ever before at any previous meeting. And this was only part of the story for as the day developed so the free fliers spread across the airfield. The most encouraging aspect of all this was the originality of the designs. Joe Archbold's *Air Transport P.2* parasol was so novel he was practically accused of being an impostor until visitor Bill Warner of Inglewood Flightmasters confirmed the scale data! When the model circuted the airfield at a radius of extreme dot like visibility he really made our day. Others chased their tips around in tight circuits, the evergreen Mills .75s, Dart .5s and even a few veteran Amco .87s as well as the flock of Merlins proving that the easy to handle diesel is still the favourite for free flight scale



Heading: Radio Control take-off area provides typical setting. Above left, John Chisman (Billericay) won static with superb Revell Bf 109G conversion. Left, P. Hunt's F.E. 2b pusher was a finger-mincer while Eric Coates' SE5 below it was a low flier. Below is Ken McDonough's fine Douglas 0-38, winner of free flight. Top right J. Archbold's Enya 15D P-2 which toured the district, and bottom, J. Nicklin's Morane Parasol.





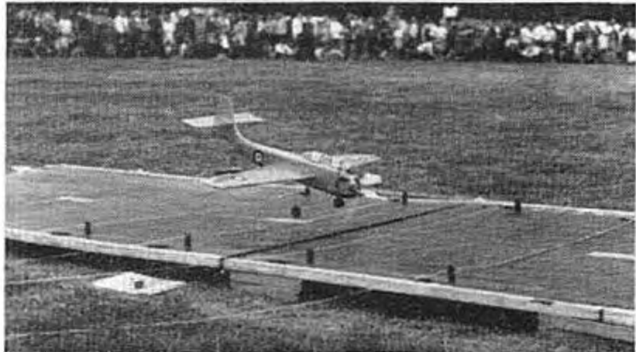
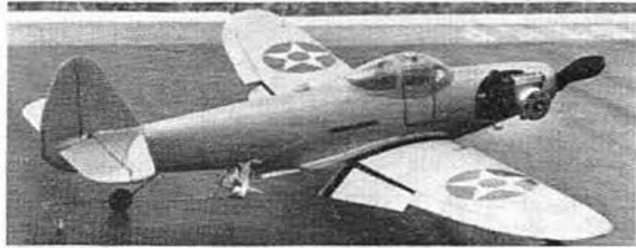
As if this wasn't spectacular enough, the control-line area was always active. H.M.S. Flycatcher the R.N. Carrier was in position and an appreciative crowd was treated to some very fine displays of precision flying, particularly by Mick Reeves with his *Seamew* which subsequently appeared on T.V. Difference of 50 m.p.h. between high and low speed flight and first-time 'hook-on' shows how the Carrier technique is being quickly mastered. In the other C/L Scale event several 'twins' appeared and as a demonstration of force, three flew simultaneously the sound of six muted engines in one circuit being music to the ears of all around. Sizes of the C/L models ranged from Barry Clay's little *Hughes Racer* to Bob Ivans' enormous *Ju 88* and included some absolute gems of construction.

In the static (non flying) class the entry was largely plastic conversions and here the intricacies of small scale workmanship by John Chisman excelled in an entry which was slightly down on last year's. In this, and other classes it is clear that awards are needed for the novice and junior modellers who find themselves otherwise pitched in with the 'aces' whose standards are legendary.

Perhaps our pictures convey something of the atmosphere - but they represent only a smattering of what could be seen. So many scale models in fact, that it would be difficult to estimate numbers. Thousands of visitors passed through the gate, and the models more than justified the attendance - as frequent spontaneous applause confirmed appreciation for flying which not only entertained but also served to educate many strangers to our hobby.

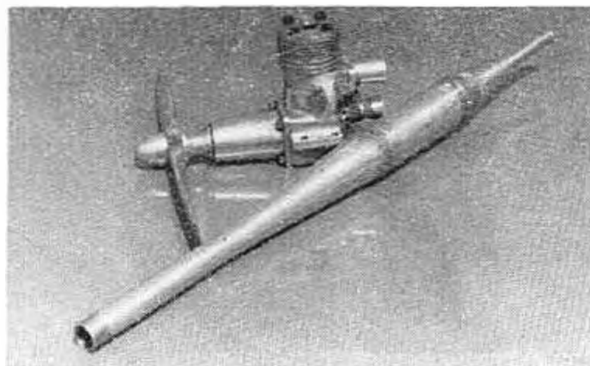


Top, A. Lalley's YAK 18 PM (Kraft R/C, Merco series III), at left, Frank V.d.Bergh joins scale ranks with Merco and Kraft in Hawker Fury. Top to bottom at right: Stan and B. Berry with Brawster Buffalo in Carrier placed third. Fastest was A. Woodrow's Bell Airabonita though K & B 40 throttle needs tuning for slow flight - see effect of a high speed arrested landing with detached hook! Mick Reeves seems to 'lob' on, as in next picture about to snatch 3rd wire. Magnificent detail in D. Goddard's Ansaldo SVA 4, which needs more flight experience and lastly - that regular C/L Scale entrant H. J. Carter and his Piper Comanche.





As this issue is printed the 'Private Enterprise'-S.M.A.E. Supported Control-Line contingent are battling with the opposition at the 1968 World Control-Line Championships in Helsinki, Finland. Among them, are Brian Jackson and Bill Firbank of Sheffield seen at left, refuelling the former's model at the centralised C.L. meeting Upwood on July 7th. At right, seen by a few at the Nats was this home built special 2.5 cc. by Norwegian modeller Andreas Ytreoy, a most noteworthy effort.



Until recently, the biggest problem for Rat Race contestants was finding a suitable propeller for the new breed of racing 0.40 glow plug racing engines. Those in the know, or with American contacts, have been using the Rev-Up Series 200, 8" x 9", and *outsiders* have had to be content with anything they can get their hands on, until now. Dennis Nixon, a control-line contestant of years past, has now changed all this with the introduction of his 8" x 9" **Puntilio** prop. Last year we tested some of the prototype propellers with thick hubs and found these to be fine in a Super Tigre G 21/40 RV powered rat racer. On 5-10 per cent nitromethane fuel, airspeeds of 110 m.p.h. were recorded, and 115 m.p.h. with a little thinning of the blades and careful balancing on a razor blade-edged jig. These were rough prototypes and the now available production Puntilio 8" x 9" are a vast improvement and we would say as good as any imported propeller costing nearly twice as much. With a thin hub, they are made from close-grained beech, well finished and more or less balanced, all for 4s. 6d. We tried these for the first time just before the Nationals and used them in all heats, the semi-final and the final of Rat Racing at the Nationals. On 25 per cent nitromethane fuel with 20 per cent oil, our K&B 40 RV powered M.A.N. plan 'Hooptee' was flying at 125 m.p.h., even higher speeds being recorded with a higher nitromethane fuel after the Nats. These propellers are now available from H. J. Nicholls (London) and G. Franklin (Leicester). For those with less powerful engines, that won't peak out on an 8" x 9", an 8" x 8" is available, also at 4s. 6d., made to the same design.

CONTROL LINE NEWS



Above, Mick Reeves of Wanstead receives the Royal Navy's congratulations and a special plaque for his success in the Carrier Deck event at the Nats - followed now by his win at Old Warden with a fine Seamew. Lt. Cdr. Coward is seen handing over the Trophy. At left, the new Turner-Hughes racer, which went to the World Champs to add 'Finland' to the list of Nations on the tool box of this Champion pair of control line fliers.

Cheap High Nitro Fuels

In control line racing events using imported engines one of the biggest problems is being able to afford to run them on high enough nitromethane content fuels to realise peak performance. Most commercial fuels do not have enough nitro in them and the imported high nitro fuels cost so much for a half pint that one would have to 'rob a Bank' to afford two or three pints for each contest. The only other users of nitro we could think of in this country, were the Drag Racers, so we set about tracking down their supply of racing fuels. At last we came upon G-Max Research of 8 Tate Road, Sutton, Surrey. This company is run by A. E. Densham, holder of the World Record for Drag Racers, and P. J. Billinton, brother of Mika Billinton the well-known speed flier. The dragster fuels are not, however, complete fuels, as related to aeromodelling, as they do not contain any oil, just methanol and nitromethane. The maximum percentage of nitro in methanol available, is 55 per cent, at 46s. 9d. per gallon. We purchased a gallon of 50 per cent nitro with 50 per cent methanol, for 43s. and made two gallons of 25 per cent rat race fuel by adding castor oil and methanol to reduce the nitro content. The lowest percentage nitro content is 5 per cent, costing 9s. 6d. per gallon. As well as selling nitro/methanol mixes, G-Max also sell nitrobenzene at 22s. 6d. a gallon, acetone at 13s. 6d. a gallon, castor oil at 37s. 9d. a gallon, and methanol at 6s. a gallon. For the diesel types they sell ether at 37s. 6d. a gallon. They also keep stocks of hydrometers calibrated directly in percentage nitromethane in methanol, for checking the basic mix. These are made to G-Max's own design and are supplied complete with measuring flask in a polished mahogany box for £5 15s. 0d. *Note:* The fuel is *only* available in gallon cans, and it must be ordered in advance from G-Max (Sutton) and it cannot be dispatched. Personal collection is essential at a pre-arranged date from Tate Road, Sutton, Surrey, for those south of London, or Santa Pod Raceway, Poddington Airfield, Poddington, Beds., for those north of London. We test flew the fuel at the Nationals and the results given in the Puntilio propeller test were obtained on G-Max based fuel.

IT'S ALWAYS a glowing moment when the sun comes out after the rain, particularly if the downpour has washed the wind away. And it was just such a warm and steamy afternoon that I looked in upon the Nationals. My first impression was that it was a National Car Park Day meeting, as the whole vast field was covered with a multi-coloured metal mantle. However, much model life was seen to abound over the grassy patches between the car masses; model life that represented quite a chunk of the club movement in the country. Altogether, the Nationals scene was perhaps the greatest agglomeration of man and model yet seen in this country.

Still in *Zummerzot*, I was up and downing my way through the Mendip hills when, high on a peak I stared in wild surmise at a slope soaring meeting in full spate. It was, in fact, a multi glider rally staged by the **West Mendip M.A.C.** And Crookes Peak, the lofty venue on this very perfect June Sunday, was the most ideal soaring slope you could wish for. I was much impressed by the acrobatic abilities of the slope glider, and by the rate of knots achieved without engine power. Planform of these craft tends more to a span-extended radio model than to that of a sailplane, and flying effects are enhanced by the eye-level view provided.

Our first report this month is rather like our summer weather: full of drizzle, with occasional glimpses of the sun. Cause for some lament is that the humble members of the **Dabdenairs M.F.C.** are not in the affluent superhat class (Share a park bench with me!). Shabby, but proud, they bravely suffer the outrages of the tyrannous landlord, to wit, the local council. However, a sunny smile to welcome a good programme write up in the area Youth Fortnight, for which the lads are contributing an 'Open Night', to include building and flying demos and a Concours for non-club modellers. Yet another public performance is due at the Chigwell Sports Festival, but the prospect of being chucked off the home flying ground, tends to cast a wintry shadow over these summer festivities. But to conclude on a sunny note: the Chairman, who is privy to so much big time chat from the seniors, was rather chastened by the sight of two juniors doing some truly controlled R/C flying. 'Youth at the helm, etc.'

If on the A11 road between the Essex townships of Stansted and Quendon you are confronted with the sign 'Ugley' don't take it as a personal affront, but look out for the Village Hall. This is the meeting place, each Friday evening at 7.30 of the **Stansted M.F.C.**, where new members are always welcome. Club activities cover the full spectrum, with a lively amount of contest work thrown in. F/F flyers who grace the national contesting field, are known as the Stansted Saints. *Why, pray?*

Turbulator, the **Crawley M.A.C.** newsletter, gives us a warming little homily on the problems of being a model flyer, listing many of those reasons which tempt us at times to take up fishing or stamp collecting, but goes on to remind us that it is the tough challenge of model flying that makes it worth doing. Even if you are thinking of going over to bingo why not try 'Mousey-Mousey', the latest indoor rage? All very hectic, to say the least.

People with wide-ranging model interests should be especially interested in the 21st Anniversary Exhibition of the **Chichester & Dist. Soc. of Model Engrs.**, to be held at the Assembly Rooms, North Street, Chichester, from August 21st to 24th. Open daily 9 a.m. Admission 2s. 6d. for adults, 1s. children. Model aircraft exhibits are, of course, included.

A joint plea for a spot of publicity for the boys of the **Wharfedale & Dist. Aeromodellers** comes from Hon. Sec. L. Davy and P.R.O. John Rhodes. A request well taken, for deservedly they rate a trumpet sounding for getting three of the first four places in the Nationals F.A.I. Team Race. (Incidentally, they had something to do with running it too!) Winners were the formidable Place/Haworth combo. And with that sort of expertise on hand the 1,000-lap F.A.I. race which the club intends to run on August 25th should have the right sort of organisation. Active style club publicity of its own is provided by the newly-formed display team. A performance at Cullingworth Gala went down well in spite of wet, anti-spectating conditions. Next display on the books is for Bradford University, where a demonstration to students, experts in such matters, must be good. Of more homely concern is a one-off kit contest. These popular club events must be giving the trade quite a boost. Wharfedale choice is the *K.K. Competitor*, and the sight of a dozen hardened C/L addicts flying off a rubber comp should give scope for much jolly bandinage. **Wanted:** more under sixteen juniors - wastage something chronic, due to short life span of species. Club meets at Salem Sunday School, Burley, 1st Friday in each month. Come and join us.

As a change from 'Coronation Street', TV up North has filmed a model display given by the **Whitefield M.A.C.** demo team, with the **Stockport** boys contributing. Stunt, Combat, Autogiro and a W.W.1 Monoplane vied for stardom on Stockport County's football pitch (fame is the goal). Tough realism, too. When the film director



Above: The Feltham and D.M.A.C. retiring committee, caught in a jovial mood. Left to right, Steve Smith, Dava Balch, Andy Longhurst, Allan Dell, Dave Rudd and Tom Lambert. Below: Part of the Whitefield M.A.C. demonstration for Granada Television. Organiser Miss Stacey Waddy extreme left

called for a crash sequence, a 'stunt' man duly obliged in the best Hollywood tradition. Seems, though, the treatment given by the TV people is likened to a sort of visual 'Round the Horne'. This might give rise to a faint suspicion of a send up: the medium using the model rather than the model using the medium. Let us hope that the levity is tempered with some measure of serious intent.

Douglas McDonald, Hon. Secretary of the **Arbroath M.A.C.**, seeks our advice on ways and means of bolstering up the failing fortunes of his club. Many of the difficulties which he says beset this group are all too familiar, and to some extent endemic in club life. Meeting places, for example, are always in short supply, but a letter to the local education authority is never wasted, nor indeed an approach to a Youth Centre or Community Centre. Most important piece of club equipment is, of course, a flying field. On this point the only advice to be given is to keep searching. As for ideas, just read this column, where we try to give prominence to those lively activities which make for a cohesive club life. Whilst it's nice to be ambitious, try for a realistic rather than an idealised programme. Try to concentrate on the quantity and quality of the model flying and not get bogged down in grandiose plans, impossible schedules and a purposeless paper membership. Use the local press for publicity.

We trust that the boys of the **Blackburn M.A.C.**, who are also asking for a word of advice on how to run a club, find the foregoing guide lines of some use, too. Often the success or otherwise of a club can be largely circumstantial. After all, unless your district has a few resident model flyers you are embarked upon a tough uphill project. Then again, the incidence of model flyers will certainly depend upon the local flying site situation and also on the availability of a decent meeting place. Here, however, the Blackburn boys are lucky in having the use of the Blackburn Community Centre (take note, Arbroath), where they meet each Wednesday evening at 7 p.m. New members invited to drop in. If you have expert knowledge of club procedure you will be more than welcome, although I'm sure Blackburn could obtain guidance on the official side of things from other clubs which must surely meet at the Centre.

One club out on the stones, but now warmly esconced in a club-room is the **Abingdon & D.M.F.C.** (Berkshire), thanks to the good





Air power in miniature display by Alan Hall and Richard Ward at R.A.F. Abingdon and Hendon for 50th Anniversary celebrations includes every R.A.F. type to see service - in 1:72nd scale, a most impressive collection of high standard workmanship. offices of one of the members. Site in question is Christchurch Hall, Northcourt Road, Abingdon, where the club meets every other Tuesday night at 8 p.m., from June 25th. Current club projects are F/F Glider, effective engine silencers, and one I've not heard of before. C/L Glider pick-ups, though I can imagine the possibilities. Club stint in the cause of the movement is a spot of programme and raffle ticket bashing at the forthcoming Cranfield Rally. See them there if I can find a hole in the fence.

The first report with hard news of the Nationals comes from Bob Tabbut, P.R.O. of the **Nottingham M.A.C.** No less than 11 members made the journey into deepest Somerset, and not merely to idly spectate, either; they came prepared for Combat. Did tolerably well, too, with three getting through to the third round. Outstanding tryers were the Orange brothers, Denis and Colin; the latter doing particularly well. Although still a junior, he is showing the sort of form that makes for the star of the future. Back on the home front, C. W. Draper, last year's 'National Novice Stunt Champion', lived up to his promise by winning the Club Stunt Contest with some impressive flying. The summer programme bespeaks a lively spate of contest activity, with an F/F event on August 18th and Club Combat on September 22nd.

Sad news from the **Maldenhead Model Makers Club:** there will be no Woodley Fair this year. Usual unhappy story: the diggers are digging up the fair field. Club confessional: no real atmosphere of club unity at the present time, the impression being one of a disconnected assortment of individuals. Therapy treatment recommended: plenty of flying field action, free flight and combat. Leading the combat revival after taking a fleet of well-weathered Twister 5's and Blades out of moth balls is John Chamberlain, last year's Nationals winner. Seems that the model makers are also adept at making a bob or two: revenue from this year's jumble sale was a useful £28. Down on last year, but a kitty-full, nevertheless.

A few lines from the newly-formed **St. Austell & D.M.A.C.,** speaks of primitive but keen modellers in the wilds of Cornwall. Cornwall lies beyond that impenetrable barrier known as the Exeter by-pass, and it's comforting to know that balsa and other essential supplies do reach the natives. Details of the St. Austell settlement from Stuart Church, Church & Sons Toy Shop, New Town Centre, St. Austell.

Warning: don't be a sucker for punishment by flying your A.P.S. Humbug without a d/t. Mr. T. Bowry of 113 Cheyne Way, Cove, Farnborough, Hants., did just this, and it was goodbye to Humbug. No name or address either, impetuous lad, but S.M.A.E., number 52661 displayed. Disappeared in the Chertsey-Windsor direction.

Decadence is in the air. No longer does the model movement look forward to a bright tomorrow, but dwells nostalgically on the glories of the past. Forget the grim outlook of a motorwayed Chobham or a computer-controlled radio model and wallow in the simplicities of a Mick Farthing or a Brown Junior. You can get on the time machine by joining the **Antique Model Airplane Society,** to be known as the A.M.A. Object of the Society is to re-create all those fascinating craft of the pre-1950 era, and to circulate plans and literature on same. Of course, Vintage already has quite a following up and down the country, and all-vintage events are now appearing in the contest list (October 13th, Vintage rally at Old Warden for instance). Contest wise, straight duration leaves much to be desired, and here the Society could help in devising a standard set of rules which might give a better comparative participation. I am thinking on the lines of a points bonus per year of vintage, etc. If interested, contact

Keith J. Harris, 21 Burns Lane, Market Warsop, Mansfield, Notts. Personally, I'm all for the Society, but not for the title: 'Antique' is a misnomer and 'Airplane' unnecessarily American.

I have never heard of the **Fylde R.C.M.S.,** but I can determine they transmit Blackpool way, and they seem to be well versed in news-sheet production, if their limerick-clustered mag., *Relay* is anything to go by. Apart from the verse, one page is engulfed by a fetching drawing of a lassie in a hip bath, wearing only a transmitter. She rejoices in the appellation of Miss Cleo Dope; so now we eagerly await the presentation of some of her girl friends: Connie Densor, Di Pole, Ellie Vator and Pretty Polly Styrene (and, boy, does she expand!). Club Trophy is 'The Irremovable Finger', which this month went to a chap flying the wrong frequency colour.

Visitors to the Nationals with sleeves rolled up were the boys and girls of the **Buckaneers Model Club.** But it was a case of awash rather than swash on the Sunday morning. They were there to run the Gold Stunt Trophy, and this they did with the competence and thoroughness for which they have become known, wet or no wet. A few competitors were prepared to argue the point but generally most accepted the novelty of a rule book contest. The Buckaneers were also active on the carrier deck, an event which they found most intriguing, and one which they hope to stage at the Cranfield Rally, September 15th, using that very same carrier deck. Between working stints they took in a few of the sights around the field and even found time to do some flying. A most enjoyable outing.

A slight misunderstanding has been cleared up by a paragraph in the current newsletter of the **Bradford & Shipley Model Eng. Soc.** I have rather peevishly criticised a previous newsletter item for proclaiming the Scale Multi as the acme of aeromodelling achievement, and suggested that other, less dramatic, forms of model craft had equal claim to eminence. We are now told that no disrespect was meant to other branches of the hobby, it is only that they, as a group, are committed entirely to scale reproduction, and naturally tend to judge modelcraft by this criterion.

Stacks of contest news in the **North Western Area Message,** but the one that caught my eye was a report on a combined open F/F Comp. The field on the day was occupied by a herd of ruminants, classified by the more timorous as bulls, but others were on the horns of a dilemma. Rubber dominated the event, both in entries and performance. Brian Picken of Wallasey and Mike Reeves of Whitefield, each returning three threes to compete against each other in the fly-off. Glider had a 50 per cent. bonus help, which seems a fair handicap, but I wonder if rubber has the edge on power as a general rule. A moot point, but I would say just.

The **Belfast M.F.C.** newsletter expresses concern over what the club considers to be a low membership, i.e. 18 seniors and 18 juniors. Gloomily they reflect upon the tally of lost members over the years, estimating that a healthy and workable figure of 75 members could be theirs had not so many, for diverse reasons, drifted away. However, the present membership situation is pretty stable, so why this concern? Quality rather than mere size seems to me the true measure of club success. Remember, that large membership clubs can be unwieldy, impose impossible burdens upon a few dedicated officials, be riven with dissension and lifeless on the flying field. Not always the case, but beware of a paper neurosis. Cautionary article included on the dangers of allowing club meetings to become too democratic. The clamour of demand and counter demand drowns the quiet voice of logic and amity. Solution is obvious: leave the club business to the elected committee. Representation, not clamour, is the true democratic method.

Rather like the flying field situation, I seem to have run out of space. Looking forward to your reports and newsletters.

THE CLUBMAN

Wanstead Stunt Rally

Hayes
June 9th.

Even the most perfect weather is not perfect enough for the perfect comp., and this was very much the case where a gloriously hot day was accompanied by a light but irritatingly variable wind. The inconsistency of direction made things a bit hectic for the judge, John Perry, who had to keep weathervaning himself upwind of the circle. Contestants, too, found the shift of emphasis disconcerting, but, nevertheless, the flying went with a swing, and there were plenty of dramatic casualties to add spice to the proceedings. During the four flown rounds Mick Mayo had engine trouble and gave his new World Champ model a nose-bob as a result; Harvey crashed into the soft turf without damage; and Blake got disorientated due to sun dazzle and wound up in high grass with only slight damage. Reeves, perhaps, came off worse during a post-scheduled engine run out. A sudden cut resulted in the engine leaving the bearers (bolted?). He had his consolation though in topping the contest. Most promis-

ing flying came from newcomer Clanford of Mitchum. He showed real potential in this his first contest, and may have been placed higher than sixth had he been more conversant with the schedule. Results:

- | | |
|----------------------|----------------------|
| 1. Reeves 1,094 pts. | 3. Taylor 1,064 pts. |
| 2. Day 1,086 pts. | 4. Harvey 1,009 pts. |

Elliott Model Eng. Club Rally, June 16 '68

Held at the Elliott Works, Rochester, this all C/L Rally attracted a substantial entry, albeit somewhat lower than that of the previous year. Weather was none too kind; dull and drizzly around noon, and a positive downpour in the late afternoon. Fortunately, the large canteen gave handy shelter to the mass of competitors and spectators,

whilst the flyers bravely kept the circles turning. Notwithstanding the splash, all who attended had an enjoyable day.

Good advance publicity brought in competing teams from far afield; Wharfedale, for instance, coming in from distant Yorkshire.

Event winners as follows:

- | | |
|--------------------------|---------------------------|
| Stunt: | M. Taylor, R.A.F.M.A.A. |
| Combat: | D. Phipps, F.A.C.C.T. |
| Rat Race: | Rudd/King, Feltham |
| F.A.I. Team Race: | Rudd/King, Feltham |
| 1/2A Team Race: | Turner/Hughes, Wharfedale |

Placings for the Elliott Trophy, awarded to the most successful competing club, was retained for a second year by the Feltham boys, with Wharfedale second and F.A.C.C.T., third.

Contest Calendar

- August 18th Southern Area Gala. Open R/G/P and A/I Glider, at Beaulieu.
- August 18th SEA Open Thermal Soaring Contest 300 ft. line & minute max. Field entry. Golden Cross, Nr. Lewes.
- August 25th Sutton Coldfield R/C MAC Annual Rally. Details: B. Marsh, 107 Station Road, Wylds Green, Sutton Coldfield. Fradley Aerodrome, Nr. Lichfield.
- August 25th Bellahouston Rally. Combat and R/R, (Silencers and Insurance) Bellahouston Park.
- September 1st R/C All-Scale Day. Bristol R.C.M.A.C. and Westland Aircraft M.F.C. Start 9.30 at Westland Aircraft Ltd. Aerodrome, Yeovil, Somerset.
- September 1st/2nd Southend Model Show. Model Aircraft, Boats, Trains and Cars. Details: J. H. Wilson, 366 & 368 London Road, Westcliff-on-Sea, Essex. At Southchurch Park East, Southend.
- September 1st Woodford Rally. Open R/G/P, chuck glider, F/P, C/L and R/C Scale, Multi R/C, FAI T/R, R/R, Combat and Stunt. 9.00-5.30. Pre entry 2/6 to G. Stott, 4 Cecil Street, Lytham, Lancs. Free admission to S.M.A.E. members producing cards.
- September 2nd R/C Rally, Sywell, Northampton.
- September 8th Northern Area R/C Rally, Multi, Open Pylon (all classes) and single channel. Details from D. Pask, Brandon Nurseries, 17 Brandon Lane, Shadwell, Leeds 17. 10 a.m. at R.A.F. Topcliffe, Yorks.
- September 8th Cotswold R/C Society Rally. Open Pylon, Goodyear and Limbo Insurance and G.P.O. Licence essential, Morston Valence Airfield Glos.
- September 14th Ulster F/F Nationals—Details: M. Doyle, 14, Bloomfield Road, Belfast, BT5, 5LT.
- September 15th South Midland Area Rally. Open R/G/P 1/2A Power, Coupe d'Hiver, Chuck Glider, 1/2A T/R, F.A.I. T/R, R/R, Carrier, Combat, Stunt, Single Surface R/C. Intermediate R/C and Multi, Helicopter, Vintage Sports, Tailless. Pre entry 2/6 to D. Giles, Derron,

- Station Road, Bow Brickhill, Bletchley, Bucks. At Cranfield, Bedfordshire.
- September 22nd Sheffield S.A. Slope Soaring, Single, Multi and F/F. Details (S.A.E.): P. Scaife, 44 Todwick Road, Sheffield 8.
- September 22nd R.A.F.M.A.A. Championships. R.A.F. Hullavington (inc. All-in FAI for Thurston Trophy open to all).
- September 22nd L.A.R.C.A.S. Slope Soaring Fly in: Clwyd, N. Wales.
- September 29th Wansstead Scale Rally. C/L and static. Pre-entry 5/- to A. Harknett, 24 Mayfield Road, Chingford, London, E.4. at Charville Lane C/L circuit.
- September 29th Luton D.M.A.S. Slope Soaring Rally. Rudder only, Multi, Magnet, F/F and Chuck Glider (Max. 20" span). Pre entry 3/- and S.A.E. to L. Rudd, 38 Windsor Road, Barton, Beds. 10.00 a.m. start at Ivinghoe.
- October 6th Irish F/F Nationals—Details: M. Doyle, 14, Bloomfield Road, Belfast, BT5, 5LT.
- October 6th NA Vintage—Topcliffe.
- October 6th Scottish Gala 1/2A, F.A.I. R/R, Combat and R/C Spot (SAA), East Fortune.

SMAE CONTEST CALENDAR

- | | |
|--|---------------------------|
| August 11th *Team Power (Keil Trophy) | } Area Centralised Venues |
| ↑Wakefield (Cutteridge Trophy) | |
| A/I Glider | } Area Centralised Venues |
| R/C Multi | |
| August 11th Leigh Marsh, Southend, Essex | } Area Centralised Venues |
| August 12th All Scale Meeting | |
| August 25th *Team Rubber (Farrow Shield) | } Area Centralised Venues |
| *F.A.I. Glider (S.M.A.E. Cup) | |
| 1/2A Power | } Area Centralised Venues |
| C/L events | |
| September 8th 1st Free Flight Trials (Entrants only) | } Area Centralised Venues |
| September 7th/8th 1st R/C Trials | |
| September 22nd *F.A.I. Glider (K. & M.A.A. Cup) | } Area Centralised Venues |
| Open Power (Frog Snr.) | |
| ↑Open Rubber | |

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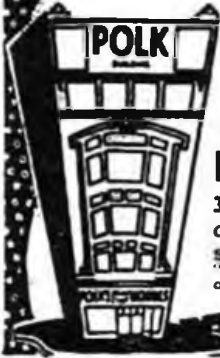
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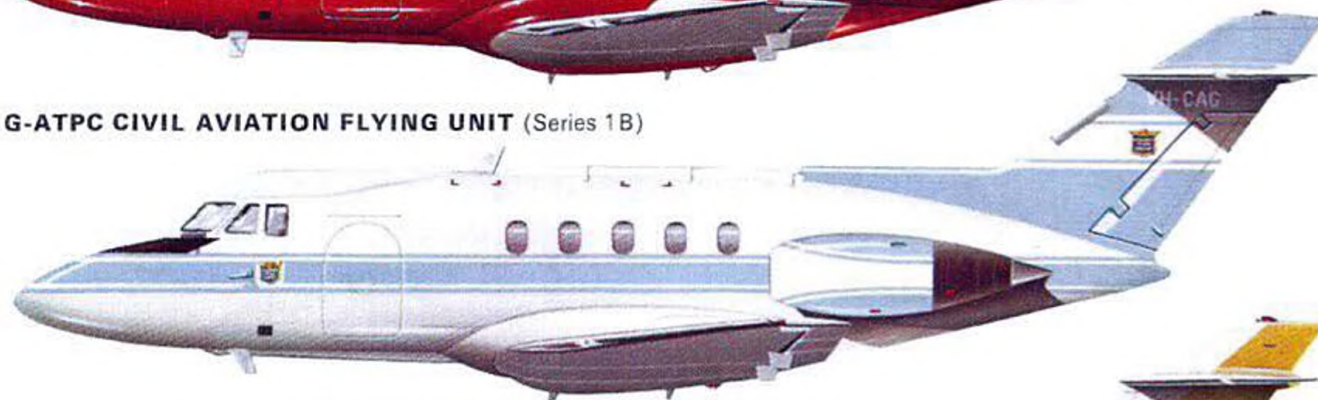
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