

MARCH 1957

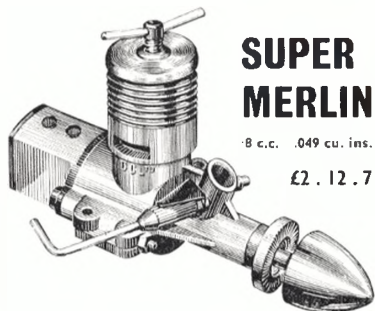
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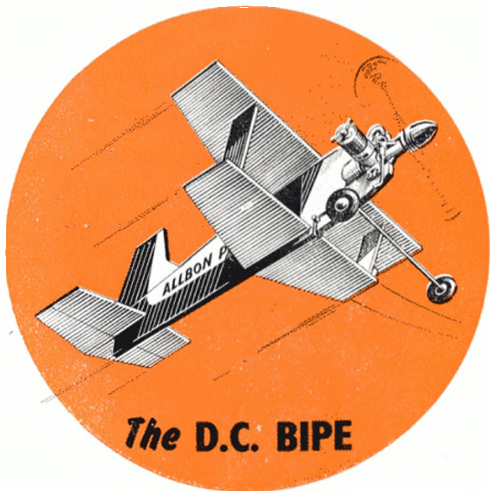
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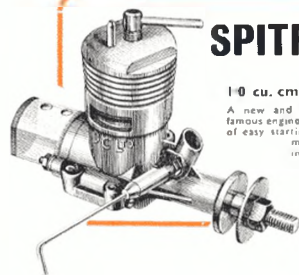
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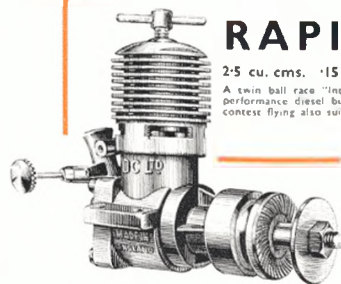


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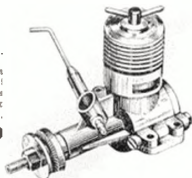
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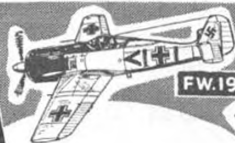
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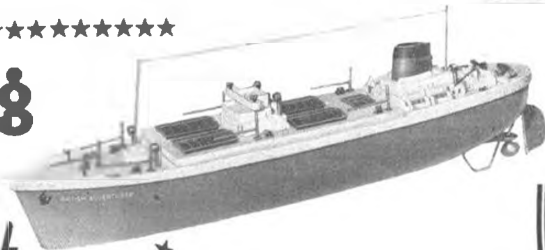
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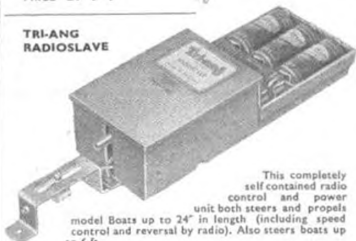
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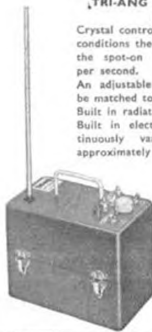
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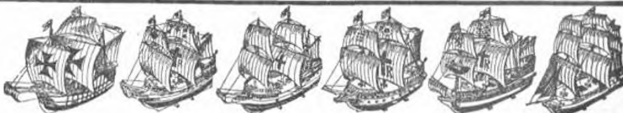
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March, 1957

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FOUNDED 1909



WEEKLY Is. 6d.

The Editor draws attention to the cutting below from the current issue

Happy the lad who gets a copy of Bruce Robertson's *Aircraft Camouflage and Markings 1907-54*. The volume of data contained in its 212 large pages is phenomenal, and seldom have so many first-class informative illustrations been packed into a single book. Many are in full colour and the publisher has not even hesitated to use silver ink where appropriate to ensure complete authenticity.

Mr. Robertson has included everything that one could wish for in such a book, and more besides. Camouflage schemes of British and foreign aircraft, from the F.E.8 of 1916 to the Firefly unmanned target of today, are shown in full colour, as are the current R.A.F. fighter squadron insignia. Line diagrams depict the R.F.C. squadron markings of 1917-18, the French, Belgian and the U.S. squadron insignia that pointed the way to the highly-decorative unit and individual aircraft markings of World War II (themselves covered in detail later in the book) and current world air forces insignia.

This huge collection of drawings and photographs is accompanied by no less comprehensive and painstaking editorial descriptions of how and why the various camouflage schemes and markings came about. A measure of the author's enthusiasm for his subject is that the appendices include complete lists of R.A.F. unit code letters 1939-45, serial number allocations 1912-54, the British non-rigid airships of 1914-19 and even the markings for British standard doping schemes of 1914-18. There are a few mis-spellings, mainly in the captions, but these are mere pin-pricks in a book that is a "must" for model-makers and every self-respecting aviation bookshelf.

*"Aircraft Camouflage and Markings, 1907-1954," by Bruce Robertson. Harleyford Publications Ltd., Harleyford, Marlow, Bucks. Illustrated. Price 45s.*

PUBLISHED BY ILIFFE & SONS LTD., DORSET HOUSE, STAMFORD STREET, LONDON, S.E.1

*This review, which appeared in the December 21st issue of "Flight," is reprinted by kind permission of the Editor of that magazine.*

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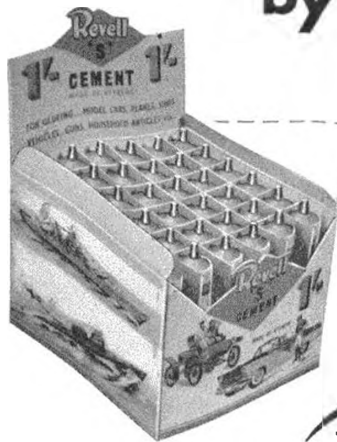


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NUMBER 254
MARCH 1957

Managing Editor - C. S. RUSHBROOKE
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Shades of "FAIt Accompli"!

WHEN WE FIRST coined the now famous phrase that echoed the unfortunate deliberations of the F.A.I. Models Commission at their 1955 meeting we little thought that austere body would be dropping another equally unpopular brick almost before the dust from the first had settled.

We refer to the decision made at their December, 1956, meeting to hold the World Championship events in pairs on alternate years—a decision that can only be described as an ill-considered and unfortunate compromise calculated to reduce interest in the class of models concerned.

According to the minutes of this last F.A.I. conference, procedure had been introduced to safeguard against any hasty or unwise changes to the Code Sportif. To put it in the vernacular, the principle of "hands off the rules until world opinion has been obtained", was at least established as a result of the earlier furore.

How illogical, therefore, to follow this sensible procedure with a foolhardy decision on a matter of basic policy which was not even on the agenda! The item on the agenda was the grouping of the four Championships into one event, admittedly a subject on which there is a wide difference of opinion, but all the more reason why a hitherto unmentioned alternative should have been left severely alone. There are 20 member nations in the F.A.I. Models Commission, of which 11 were present at the meeting. Six voted for this alternate grouping proposal, one against, and four abstained, including Great Britain.

But what of the other nine nations not at the meeting? The nations, strangely enough, most affected by the decision such as U.S.A., Canada, Australia, New Zealand, etc.? It seems under new procedure rules, also voted at the meeting, that nations not represented are not entitled to a proxy vote. So here we have a situation where six European nations, some of them representing very small numbers at that, made a majority policy decision directly affecting nine other nations who do not even have the opportunity of discussing the matter.

We invite the F.A.I. Models Commission to examine their rules of procedure a little closer particularly in regard to proxy voting, otherwise they can hardly describe their committee as international.

We also submit that this decision will be as unpopular with European aeromodellers as with those in continents more distant, and provide still further proof that the delegates of many European nations are completely out of touch with the opinions of the modellers they are supposed to represent.

Is it too much to hope that this second "FAIt Accompli" will be rescinded and nations allowed to choose of their own free will, according to their finances, how often, and how many, World Championships they will support?

On the cover . . .

A DE HAVILLAND "Sea Venom XXI" of 800 Squadron R.N.A.S. displays itself in Naval colours of dark sea grey topsides and sky undersides. Black Witch-on-Broom insignia signifies the all-weather activities of this squadron, first to receive the Sea Venom for carrier service.—Official Admiralty photo.



## Heard at the HANGAR DOORS

### Multi-enthusiasm

THE PAIR of control-line Constellations in our heading this month were but two of several very large scale multi's at the 10th Australian Nationals, reported on page 156 of this issue. As also indicated in Trade Notes this month, there is considerable interest in the type of scale controller that can absorb an aeromodeller's full stock of engines, and the APS plans for the Douglas Invader, D.H. Mosquito, Consolidated Catalina, H.P. Hannibal, Cessna 310 and Dornier 215 are in continual demand. What would you like next? Drop us a postcard naming the next multi you would like to see in Aeromodeller Plans Service, telling us the power units you prefer to use, and we will endeavour to meet the popular demand.

Constellations above are by Stan Barlow at left, using four Australian Sabre 35's, span 5 ft. 1 1/2 in., weight 11 1/2 lbs., has been clocked at 86 m.p.h.! At right is L. Quinn's entry from Tasmania, span 6 ft. 1 1/2 in., weight 13 lb., with three Frog 500's and one O.S.29.

### Aeromodelling on the B.B.C.

*Younger Generation Parade* interviewed Aeromodellers on Thursday, January 10th, and Dick Standing of Croydon and the "Ecurie Nerk" combat group gave a good account of the thrills and hazards of streamer chasing. On the Wakefield and contest side, Peter King put over the modellers' point of view very well and we should imagine the programme was well received by many who did not have any prior knowledge of our hobby. Mystery item in the programme was the mention of a 14-ft. span Delta planned for a Bristol Cherub engine, weighing 400 lb. bare and due to be built soon by a group of aeromodellers near Croydon.

From *Aeroplane* we gather that one of the planners has experience of model deltas up to 10-ft. span. Those we should like to see.

### Hands off the Rules!

TO JUDGE BY the number of letters received following the report of the last F.A.I. Models Commission in our January issue, the above slogan should be painted in red and hung in a prominent position at all future meetings of the Commission.

We regret that space does not permit publication of the many lengthy letters received on the subject, but we do confirm that without exception the writers are thoroughly fed up with the constant and irritating rule changes which seem synonymous with every F.A.I. meeting. Apart from the alternate World Championship decision which emanated from this last meeting, there were suggested alterations to both Team Race and Speed model specifications, none of which had any worthwhile motive behind them.

As many people point out, the classic example of a well-known formula spoiled by the meddlers is the Wakefield, which in the immediate post-war years was handsomely supported throughout the modelling world. Now, one only has to study the miserable entries at an Area Eliminator to appreciate the decline of this once famous event. Where for instance are the once famous names—Ted Evans, Eric Smith, Frank Holland, Ron Warring, etc., none of them actively participating and all for the same reason.

So strong is the feeling in this country about the Wakefield Trophy, for which, incidentally, the S.M.A.E. are guardians, that motions have already been tabled at the S.M.A.E. Council Meeting demanding return from the F.A.I.

This is not a hasty move by a hot-headed majority, but a genuine effort by serious minded modellers, who feel this most famous of all aeromodelling events would be better served if it was controlled by the S.M.A.E. and not the F.A.I.

### The International Spirit

A DUTCHMAN MAY be responsible for the Isle of Wight taking part in an international model flying contest in the spring.

It began when Mr. Ferdly L. Joosten, of Amsterdam, went there for a holiday in the autumn of 1955. He was at that time secretary of the Badhoevedorp and Sloten Aviation Club, and worked for K.L.M., the Royal Dutch Air Lines.

In Newport one day he met Mr. "Pip" Thwaites, who quickly discovered a common interest in flying, and invited him to the headquarters of the Solent Heights Model Flying Club at Godshill.

Mr. Joosten suggested that the two clubs should fly a "correspondence contest". Both agreed to fly similar models on the same day and post the resulting times to each other. Two contests by remote control took place last year and both resulted in a tie.

A few months ago Mr. Joosten, who married a Yarmouth, Isle of Wight girl, emigrated to Canada and settled in Montreal. He lost no time in joining the local model club, and was soon instructing the Royal Canadian Air Cadets.

He found Canadians just as keen on flying model aircraft as they are in Europe. For instance, the Montreal members use the airfield of the Hawkesbury Flying Club for their meetings. This is 62 miles from the city, and a day's sport means leaving at 5.30 a.m.!

Mr. Joosten suggested a three-corner postal contest between Solent Heights, his old Club near Amsterdam and Montreal. He is trying to get an American club at Boston to take part.

Isle of Wight members received the suggestion with enthusiasm, and plans have been made to fly the contest in May.

### Good news for microfilms

INDOOR FLYING enthusiasts will be delighted to learn that the North Western Area have concluded arrangements for the holding of a special meeting at the Corn Exchange, Manchester, on the 13th and 14th. April, 1957. Flying on the Saturday will be limited to test flying and record attempts, and three contests will be staged on the Sunday. These will comprise free-flight events for models of over 100 sq. ins. area and machines smaller than this, and a chuck glider competition. We understand that if application is made for other events, these will receive consideration.

Pre-entry is required, and must reach the Area Comp. Sec., Mr. J. Chadwick, 129 Mottram Road, Stalybridge, Cheshire, not later than April 7th.

### Aeromodelling's loss

WITH THE PASSING away of Mr. E. C. (Ted) Muxlow of Sheffield, aeromodelling loses another very skilled enthusiast, and he will be missed particularly in the field of indoor and Wakefield class flying.

Ted, who was only 34 when he died on December 6th, 1956, started his career as a Civil Servant, but since contracting tuberculosis at the age of 17 had not been able to follow any employment, and had been in and out of hospitals for years. Aeromodelling proved an ideal occupation, and we remember long correspondence with him whilst he carried on his hobby with a building board on his bed. His flair for lightweight construction made him one to be reckoned with in the indoor classes, and he held the r.t.p. record for no less than eight years.

### John's the boy

OUR AMERICAN contemporary *Flying Models*, recently ran a contest for the PAA-load Jetex design produced by Dallas Sherman, rules for which required a model to be built from standard



Plans, and a photo submitted for judging accompanied by a certificate declaring that the model had successfully r.o.g.'d.

First prize in this world-wide contest is \$50.00, and we are pleased to record that this sum has been won by Britain's greatest all-rounder, John O'Donnell—see photo above.

### International coverage

IN THE INTERESTS of presenting only the finest of model designs for your enjoyment, readers may have noted that this issue of *AEROMODELLER* continues last month's international theme.

The German *Delta 707* designed by Herr F. W. Beisterfeld has proved to be one of the most popular radio control designs, and American C. F. Stuby's *Loening OL.9* sent from Thailand one of the most popular flying scale models in A.P.S.

This month we have an outstanding Spanish Combat model in *Duellist*, surely the simplest and most effective of all designs for this purpose, and which will appeal to all who are preparing for the onslaught of the new British Season. Adding to the International flavour we have first news of the Australian Nationals and latest information sent to us direct from Moscow on Soviet aeromodelling.

Next month we shall be introducing America's leading Radio Control design, the famous "*Snoog Hog*" by Howard Bonner of Los Angeles and a full report on the New Zealand Nationals. Whilst on the subject of our contents, we thought that following the many kind comments received at the Editorial Offices on George Cox's accurate and finely detailed scale drawing, that readers would like to see the picture reproduced below of George investigating the Sea Venom F (AW) 21 at the S.B.A.C. Show, Farnborough. The results of his labours will be found on pages 140-141.





Looking for a large stunt model to suit that 5 c.c. - 10 c.c. engine? Why not build this near scale 48" version of the famous Sopwith two-seater fighter?

## SOPWITH 1 $\frac{1}{2}$ STRUTTER by B. Sichi

NO AEROPLANE had a more peculiar name than this first of all the famous two seater fighters. There is no known authentic source for the unusual title of "1  $\frac{1}{2}$  Strutter", but a study of the aircraft and its novel centre section strutting displays the obvious reason for this nickname which has eventually become an official title.

Designed in 1915 by Fred Sigrist and known first of all as "Sigrist bus", the Sopwith "1  $\frac{1}{2}$ " first went to No. 70 Squadron in May 1916, and saw extensive action during the Battle of the Somme. This was the first aircraft to have a synchronised Vickers machine gun as standard equipment and was built in large numbers at home and overseas (4,500 built in France). It was an outstanding aeroplane and served in British, French, American, Belgian, Russian, Rumanian, Japanese services.

We selected the type as one of the eight most suitable subjects for controline stunt way back in the AERO-MODELLER of February, 1952. Brian Sichi of Ayr in Scotland was influenced by this feature and built his prototype for a brand new Frog 500. With this amount of power it certainly proved itself a fine flier and capable of mild aerobatics. For full stunt, it needs one of the American "35" motors, and we venture to suggest that this combination of model and engine would be excellent for entry into most stringent of all controline aerobatic contests.

What could be better then, than the Sopwith 1  $\frac{1}{2}$  Strutter, perhaps further embellished with the many details included in the long and interesting account of the full size aircraft's history by J. M. Bruce in *Flight* of September 28th, October 5th, 1956?

It is best to start construction with the components after which this aircraft has been named. The "1  $\frac{1}{2}$ " struts for the centre section can be made of soft wire, preferably bird cage wire which is tinned for convenience of soldering and obtainable in 16 and 14 s.w.g. sizes. Also bend up the undercarriage leg assemblies and fasten to their retaining blocks and bulkhead F2. Assemble the forward bulkheads, F1, 2, 3 and 4 on to the engine bearers and mark out a set of longerons for appropriate spacer positions. These are then fitted to the forward bulkheads. Join longerons on the sternpost and add  $\frac{1}{2}$  square cross members and all other formers to complete the fuselage assembly, finally adding the bell crank mount.

Now fit the C/s strutting wire and tank, then sheet top and side surfaces of the fuselage, adding stringers to top

decking. Make up the sheet tail surfaces, mounting the tailplane on the fuselage taking care to see the push/pull rod is adjusted to the correct length for neutral elevator when the bellcrank is also neutral. Now cut away front and rear cockpits and make dummy guns as desired.

The wings are perfectly straightforward assemblies, except that the spars are made first with  $\frac{1}{8}$ -ply braces let in to the centre section and being almost full depth spars, the construction is "egg box" fashion. If necessary the wings could be made in two halves and joined in the centre afterwards. Care should be taken to see that the bottom wing is left flat for the centre portion.

When fitting the lower wing to the fuselage, cut away both the longerons and sheeting to accommodate the spars, edges, then fill in the gaps with the removed portions, ample cement making the joint even more strong than before. With the lower wing carefully lined up (a little negative incidence would not do any harm—Ed.) and allowed to set firm, make the rear undercarriage strut joint secure on to S4, and finally sheeting the undersides of the fuselage, slightly rounding off corners when dry.

The cowling is self explanatory, being a wrapping of sheeting round circular formers, and fitting of the upper wing is simplified by lining up the centre section struts with the centre line of the ribs. This should give zero incidence, which is further retained by fitting the interplane struts, afterwards sanded to streamline section.

The entire model is covered with heavyweight tissue and as indicated on the drawing, either R.N.A.S. or R.F.C. colour schemes can be applied. Being a model for the more experienced enthusiasts, the details given on the A.P.S. drawing will be found self explanatory and enable one to make a unique biplane, capable of flying through the full S.M.A.E. Stunt schedule, providing the engine power is of the 6-10 c.c. variety.



All sheer with blue/grey decking signifies R.N.A.S. markings for Brian Sichi's prototype Sopwith 1  $\frac{1}{2}$  Strutter fitted with a Frog 500. Note the generous tail surfaces and ideal proportions of this full stunt model.







## CONTINUING NOTES ON MAKING THE LATEST PLASTIC MODEL KITS

Fully decorated "Aeromodeller" test models. At left, the LINDBERGH F-108 Super Sabre in vivid red, white and blue dross of the U.S.A.F. Thunderbird Aerobatic Flight. Now hatch to reveal internal engine detail. Right, moulded FROG Seahawk fully coloured with detailed w/e on supplied stand. Extreme right: LINDBERGH Thunderceptor built exactly as supplied without extra decoration



LAST MONTH WE DEALT with the structural improvements that it is possible to apply to the many plastic kits which have come upon the model market, and now we are ready for the final and most important task of decoration.

The majority of the plastic mouldings are provided in the base colour of the actual subject, for example, silver to represent most modern aircraft, U.S. Midnite Blue for U.S. Navy types, Olive drab for 1914-18 fighters, etc. However, these base colours are not always truly representative of the full size colour scheme, and the fastidious modeller will want to decorate his plastic kit with any of the many special enamels now available.

Flow patterns in silver plastic are particularly disappointing. They cannot be removed, and the very expensive moulds cannot be altered to improve the position, so we have to make an early decision as to whether to put up with them or hide the minor imperfection with a coat of that hardest of all colours to apply—silver. Our advice is to leave matters alone. You will never regain

that fine smooth finish on the original plastic if you attempt to cover large areas with silver enamel.

Thus forewarned, we should examine our subject and see what the painting sequence should be in order to obtain best effect. As mentioned last month, the interior should be first on the schedule, prior to application of the cockpit canopy or perhaps even joining the fuselage halves. Always paint the light colours first, and you'll find that small mistakes can be hidden as you progress with the darker tones. But first of all, one must be properly equipped.

If you are aiming for the very best of results and most detailed work, then you should have three brushes. Size 0 in sable, which is stronger and firmer, possessing more whip in the bristles than squirrel which is suitable (and much cheaper) for the other, larger brushes, sizes 2 for average work and 6 for larger areas.

The enamel can be any of a half-dozen makes now on sale. Some are mediocre, not living up to claims for drying time and are thus dust collecting—others are perfection it-

### Inter-mixing chart

(After the scheme advised by REVELL Plastic paints)

<b>Orange</b>	3 parts yellow 1 part red	<b>Colour</b>	4 parts white
<b>Maroon</b>	25 parts red 1 part blue	<b>Sky</b>	1 part green (or blue & yellow)
<b>Hull Red</b>	15 parts red 3 part blue 1 part red	<b>Khaki</b>	3 parts tan (light brown) 1 part yellow
<b>Flesh Colour</b>	1 part yellow 15 parts white	<b>Green</b>	1 part white 1 part yellow 1 part blue
<b>Medium Grey</b>	1 part tan (light brown) 2 parts black 10 parts white	<b>Olive</b>	1 part black
		<b>Drab</b>	1 part yellow
		<b>Dark</b>	1 part tan (light brown)
		<b>Sea</b>	4 parts black
		<b>Grey</b>	8 parts white

Add black to darken, white to lighten



self, quick drying and free of brush marks, ready to thin down with specially provided thinners or turpentine in the case of oil paints, carbon tetrachloride in other cases, especially when the smell is strange and not identifiable as either oil or butyrate base. In any case we strongly advise purchase of a small quantity of carbon tet. from the Chemist (Thompson and Dabitoff cleaners would do) as this is a fine chemical for cleaning brushes and stripping colour off a model in the event of a mistake. It can also be used to join some plastic parts due to its slightly solvent action, so take care not to rub too hard when cleaning the model with it for paint removal.

Needless to say, keep the bottles or tins closed up when not in use and remove the skin from oil paints before use. In the unhappy event of finding flakes of skin stirred up in your paint, cover the paint with a piece of Modelpap or Kleenex tissue and load the brush by pushing it against the filtering action of the tissue.

Some of the new paints require special attention, for example the latest Humbrol pack in capsule form. We advise a large tin lid which can be employed as an artist's palette, the capsule contents are squeezed into separate areas, can be thinned or inter-mixed as needed. The same can be applied to enamels sold in narrow necked bottles.

Our table, based upon the excellent information supplied with the Revell paint set, gives inter-mixing data for all the colours we are likely to require, except perhaps "dead" black for tyres or cockpit interiors. This is not among the model shop items, but can be purchased from

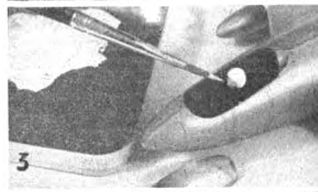
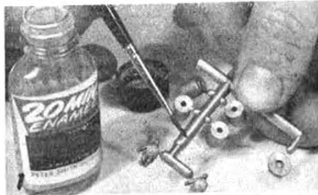
any photographic dealer selling "dead" black paint, and though not always available in small quantities of  $\frac{1}{2}$  oz. or so, can always be used for other models in future so that the excess is not wasted.

One should endeavour to stick to one make of paint for each model. Though we have tried them all, and to date have only found that Revell cannot be applied over (it is safe as the base coat), say O'My oil base camouflage, it is quite possible that intermixing of makes can produce ill-effects in the surface. After all, the model trade has demanded a quick drying paint that is entirely new in composition and each manufacturer has employed a different formula for his product.

Safest check if you have any doubt, is to try the paint or inter-mixed colour on a spare moulding stem from the kit.

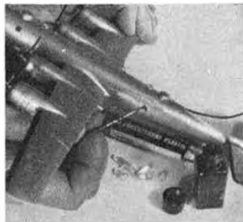
Other "golden rules" are that one should always remember that two thin coats are better than one heavy application, particularly with the lighter colours, due to poor coverage. Secondly, one should always be patient and allow the first coat to thoroughly harden before application of the second coat. Thirdly, remember that colour usually darkens as it dries. Fourthly, don't handle the job until it is dry, and let it dry in a dust-free atmosphere.

**Painting stages: 1. Test the enamel on one of the spare plastic stems before involving oneself on completed parts. (Miniature pilots from the REVELL B-2 Super Fortress). 2. Paint light colours first. Here, right, the LINDBERG tail is being trimmed with red scallops. 3. Mix special colours such as flesh for pilot's face as on the FROG Seahawk. 4. Transfers do not always take on smooth plastic surfaces, unless first prepared with special varnish.**



Where to find the colour information? Some kits—notably the Frog series, provide authentic camouflage information with the instructions. Others rely on the colourful box label which is usually very well executed. For most aircraft, sufficient information has been published in the weekly Aviation magazines and AEROMODELLER, to enable one to obtain supplementary information for a finely detailed colour scheme.

As the most demanding example, both for colour, and intricacy of parts we chose the Lindberg Super



*Above: REVELL B.29 turrets are backed with black paint. New REVELL type "S" cement in background is genuine "non-string" variety*

*Left: Matt black applied to FROG Comet series Thunderjet representing jet pipe*

*Right: FROG Seahawk receives last coating of dark sea grey on tailplane with No. 6 brush*

*Below: Use a tin lid as a palette for latest Humbrol Capsule Pack, squeezing for inter-mixing. LINDBERG F-100 engine in background*



gold Thunderbird insignia, brown di-electric panels, multi-coloured jet engine, red tank noses, and black afterburner variable orifice provide those finishing touches which make the Super Sabre a model-painter's paradise.

The Naval Sea Hawk is no less attractive in its dark sea grey and sky colouring with the authentic "Ace of Spades" Squadron insignia, etc. Here, we used a scribed line along the fuselage to get a perfect division between the two contrasting colours, and by using a fine needle



Sabre for vivid red, white and blue decor, and Frog's fine Hawker Sea Hawk for a camouflaged example. Both schemes have been illustrated frequently in the Aviation mags, and are typical of what can be used to embellish the kit model. The F-100 is one of the Thunderbirds U.S.A.F. aerobatic team. It carries red, white and blue striped tips and ribanded nose which is effective in itself. Add to this the white tail surfaces flecked with blue stars and red scalloped leading edge, plus latest style of large airframe number and U.S. Air Force identification. All of this work was applied free-hand without masking, and the dark blue, white and



*Below: Before and after, FROG Comet series Canard with authentic decorations applied. Silver leading edges red nose, white letters*

point and ruler, we found that the scratch was easy to make, completely disappearing when filled with the darker paint, applied last.

One more point requires attention, especially if the model is to be made exactly as supplied, without extensive painting. This is the question of transfer adhesion, normally left to the gummed backing on the rear face of the transfer. Unfortunately, the plastic surface of many models does not appear to receive the transfer permanently, so it is advisable to use a coat of transfer varnish first.

Now, go to it, and improve those plastics!



## Colours and Codes

**Aircraft Camouflage and Markings 1907-1954** by HIRSH ROBERTSON (Harvest Publications), 45s. 212 pages. Illustrated.

Here is a book to gladden the heart of every scale modeller and military aviation enthusiast. It is the first on military aircraft markings since 1946, its scope is wider than any previous publication and its author is well-known for his up-to-date knowledge of British military serial numbers. More's the pity that in its scholarly text and delightfully rare photographs, selected with skill and care, have not been accompanied by a higher standard of reproduction and draughtsmanship in the colour plates. To cite a few examples: the colours on the Wellington on page 121 are nothing like the "sandy and smoky" camouflage of 1939; the yellow on page 103 is absurd; the plan-form of the Bulldog on page 52 is a travesty and the camouflage colours of the Fokker D.VII on page 34 should not be the same on upper and lower surfaces as shown. There is an extremely odd Me 262 on page 157, and a rather crudely drawn Sumterland on page 122, but the remaining plates reach a high standard and the four pages of contemporary R.A.F. fighter squadron markings will be particularly welcome.

The text ranges from the dazzle painting of the Dunne biplane of 1907 to the Mig 15 of the Korean War, and is unquestionably authoritative being particularly detailed and interesting on 1914-18 aircraft and the beaches built by sub-contractors. The drawings illustrate the markings on 70 1914-18 squadrons (as against 95 in *Camouflage 1914-18 Aircraft*, published in 1943) with authentic serial numbers. The original markings one seeses that Mr. Robertson is less happy, and there are some questionable assertions, for example, in the Italian section. The chapters on inter-war R.A.F. aircraft are admirable on numbers, but less good on squadron allocations. Neither No. 247 nor 263 are mentioned under Gladiators (though Nos. 17 and 223 which never had them are listed); No. 56 is omitted from the Siskins and Nos. 41 and 87 from the Hurricanes. World War II aircraft get excellent coverage on the whole, though it seems regrettable that all the Spitfire Marks from 11 to 21 should be dismissed summarily in four lines on page 100, and that the colour sections should contain no record of the tactical markings carried by daylight flying Lancasters and Halifaxes in 1945. One is surprised, too, to find familiar errors about the D11-7 series perpetuated. All 431 to 529 were not deleted as Havoc IIs but as D11-7As and subsequently converted to the 12-gun Havoc II standard at Burtonwood. If 472 of No. 85 Squadron was one of the original Mk. II and not a Havoc II.

That this book will become the standard work on its subject is at the more reason why a future edition should enjoy more careful editing when one hopes to see a number of irritating errors rectified. Alexander Pope is misquoted on page 5, "it" appears where "is" is intended with monotonous regularity, Prentick is recommended "Prestwick" throughout, W.C. in Beumont becomes "Heaumont" and the "Messerschmidt" beloved of the Jay journalist is revised. The first D11.55a number is delivered to No. 119 and not 109 Squadron as stated whilst in a book on markings it seems curious that many captions make no reference to the squadron operating the aircraft. Blurred plates and photographs. Our old friend, the inverted black, has not escaped us—it's the Hurricane on page 119. This latter aircraft, incidentally, shares the "Turco-Turcoman" place with the 110 and 109 in the captions. Nor has the common error of misquoting manufacturers' names evaded us—for on page 80, the Avro Bison is wrongly attributed to the Avro Pioneer C.C.1.

Despite these shortcomings, it would be

ungracious not to pay tribute to Mr. Robertson's immense industry and there can be no doubt that many enthusiasts will owe him a debt of gratitude for years to come—O.T.

## Airline Career

**Airline Pilot** (Edmund Ward Ltd.) 194-200. Bishopgate, E.C.2 8s. 6d. 94 pages.

Young aeromodellers aspiring to aviation as a career, particularly the plumb jobs such as a B.O.A.C. Captain can learn from this interesting and instructive little book how to place their foot on the bottom rung of the ladder. They can also learn the arduous and exacting duties carried out by those qualified to pin the golden wings and bars on the familiar blue uniform.

The organisation and technicalities behind a modern airliner and its crew are admirably described in simple readable terms mainly from the Captain's viewpoint, including the duties of other members of the crew.

Definitely the book for those who plan a career in the cockpit.—H.G.H.

## For prospective Apprentices

**Jim Bartholomew of the R.A.F.** by DUNCAN TAYLOR (Chatto & Windus Ltd.) 8s. 6d. 124 pages.

Had this reviewer been able to get hold of Chatto & Windus's latest Career book while awaiting his opportunity to join the 42nd Apprentice entry at the famous R.A.F. Station, Halton, he would have devoured it word by word many times over. We have always thought that little had been conveyed to would-be AFA boys to entice even greater competition for the limited annual entries, and this book will certainly tell any lad intending to join the R.A.F. just what kind of a life he is destined to lead. Admittedly, it does not cover that specially exciting atmosphere of inter-Wing rivalry; but that is part of the Halton atmosphere best kept within the ken of those who pass through this finest of all the aircraft maintenance training schools in all the world.—R.G.M.

## Gen for solids

**The Aeroplane Pictorial Review** by AEROPLANE STAFF (Temple Press Ltd.), 7s. 6d. 280 illustrations.

Pictures selected from the pages of *The Aeroplane* published during and just before 1956 are collected into one very impressive and handsomely bound volume, indispensable for the keen solid modeller. Though all black and white, the decor of just about every modern subject can be accurately gauged from the 280 fine pictures, and for detail such as the Fairey Delta 2 nose leg, the Vieucont cockpit and Comet IV wing tank, the illustrations are just what the modeller wants.—R.G.M.

## Two fine Macdonalds

**Famous Fighters of the Second World War** by WILLIAM GREEN (Macdonald & Co.) 18s. 128 pages, 17 tone drawings. Illustrated.

This latest of the Macdonald Publishing House's series of aviation books will be a must for all scale modeller. Though we would have liked to have seen the Boulton Paul Defiant (which served in 13 Squadron and surely deserves a place among the famous) replacing the Me 110 or Japanese "George", one must admire the extensive effort by both author William Green and artist Gert Heumann in producing such fine histories of the great piston fighters and their successful jets. From the modellers angle,

the pity is that drawings are not to any common scale, and none are to the popular 1/72nd size, nor are sections given. And while the Australians will appreciate the A.C.4E, Mk. 1 or chosen for the Spitfire 3-view, perhaps the more prolific V's (6,479 made) or Mk. IX (5,665 made) would have been a more popular choice.

Many are the hitherto uncovered anecdotes attached to these 17 aircraft that are revealed by Mr. Green. We learn of FW 190's losing engine cowls at high speed, of a Mustang with Griffon engine behind the pilot, and how an FW 190 was used in Japan to devise radical engine installation for the in-line 'Tony' fighter. For such incidental gen, for mark number distinctions illustrated by fine line profiles, and for a fine selection of photographic illustrations, all modellers will be most grateful to the producers of "Famous Fighters".—R.G.M.

**The World's Fighting Planes** by WILLIAM GREEN and GERALD POLINGER (Macdonald & Co.) 18s. 240 pages, silhouette and photo. Illustrated.

Most of our readers will already be aware of this title which has been revised and reset, with the very latest information. The Russian superjet fighters, Escapade, Fitter, Fishpot and Fishable are among many new shapes within this handsomely bound 5-in. x 8-in. volume, and adherence to accuracy is evidenced by the author's introduction which explains the absence of even more modern shapes, such as the "Blowplank", seen by only a few Western delegates to the 1956 Paris Salon. A drawing of the Swiss P.109 jet fighter, or perhaps the Grumman Tracker, the Temco Trainer, or Spanish-built Dewoitine 570 among hundreds of other remote types, then this is your reference book.—R.G.M.

## Contest Fliers Bible

**1955-56 Model Aeronautic Year Book** by FRANK ZAIC (Model Aeronautic Publications No. 10) 50s. 192 pages. "Aeromodeller" 10/6. 152 pages.

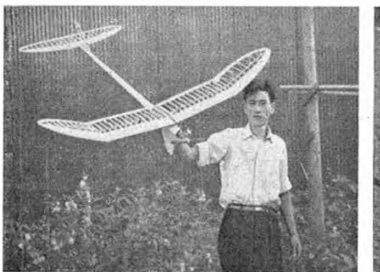
Throughout the years, Frank Zaic has been producing these yearbooks from his New York address and providing contest modellers with food for thought wherever they are and whatever language they speak. The style has changed slightly; but who can deny that this seasons' collection of no less than 125 of the world's leading model designs (all drawn a.s. the you can copy them or build them in. of the book), plus 29 independent features on subjects ranging from Frank Betwot's 10c kit starting to Parnell Schoenly on Helicopters, could be other than intensely interesting to all who fiddle with dope and balas? Yes, Frank has done it again, and all our modellers were eternally grateful to him for his efforts.—R.G.M.

## R.A.F. pictures

**Aircraft of the Royal Air Force** (Air Ministry) Free on application. 288 pages. Illustrated.

A nicely produced booklet which includes over 30 different aircraft in service with the Royal Air Force illustrated by excellent photographs and including brief technical details on each.

Types include: Hunter F.1; Venom F.1; Venom F.2; Meteor F.F.11; Meteor F.8; Javelin F.A.W.1; Canberra B.1; Valiant B.1; Victor B.1; Canberra P.R.3; Meteor T.10; Meteor F.R.9; Shackleton MR.2; Sunderland MR.5; Hastings T.2; Valenta C.1; Beverley C.1; Provost T.1; Vampire T.11; Meteor T.2; Halion T.2; Chipmunk T.10; Mariboth T.11; Penelope; Varsity T.1; Anson T.1; Dragonfly; Swamphen T.1; Pioneer C.C.1; Devon C.1; Auster A.O.P.6.



ALL AEROMODELLERS will be pleased, we know, to learn that George Benedek has survived the recent revolution in Hungary. Only a few days before the uprising, Hungarian modellers held their 1956 C/L Nats in Budapest with the following results:

2.5 c.c.		5 c.c.	
1 B. Beck	116 m.p.h.	1 N. Vitkovics	136 m.p.h.
2 N. Vitkovics	114 m.p.h.	2 E. Horwarth	128 m.p.h.

10 c.c.		Jet	
1 G. Czefai	141 m.p.h.	1 G. Benedek	154 m.p.h.
2 N. Somoyai	139 m.p.h.	2 J. Krizana	144 m.p.h.

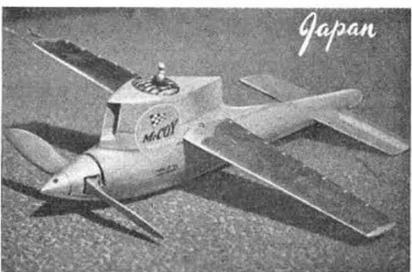
New national records, with thinner lines are 5 c.c. N. Vitkovics, 143 m.p.h. and Jet, George Benedek 165 m.p.h. Best time for a 10 Kilometre team race was 6:04, all of which shows that things were getting pretty warm in Budapest before that bid for freedom.

Undoubtedly the first event of the year is always the indoor meet in Helsinki, Finland, where they use the big hall after the new years celebrations, on January 1st. Best times were put up by L. Englund who made 4:45 in the special class (see photo top left) and 8:06 in the FAI class. We understand that he is on military service and has little time for trimming, so these are good times.

One of the largest clubs in our knowledge is the 150-member group at Oslo, Norway. Co-operation with the Aero Club gets them a regular meeting place for lectures (and Coca Cola!), while the main accent in summer months is control-line, due to lack of a flying field. Winter solves this small problem by freezing the nearby Bogstad lake, seen in the background of photos at left. Club Chairman Birger Balukin uses one of the new Zeiss Activist 2.5 c.c. diesels for contest work and is said to be averaging 3:30 from 12-15 secs. engine runs.

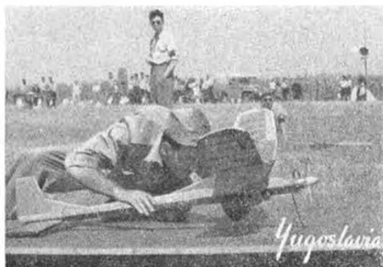
News from the East Zone of Germany, whence the Zeiss hits, is that model engine and diesel truck engineer Otto Willo is now recovering from a nasty

*Finland: In Army uniform, L. Englund ran two indoor events at New Year's day meeting in Helsinki. Helus: on frozen Bogstad Lake, Oslo, c/c Riera Ellingsen (David Andersen 1 c.c. Rb-B), Phil in centre and Andersen with old H.C.350 cabin model. Other view from Norway shows stunt experts Ellingsen (right) and David Andersen (left) whose 2.5 engines power this twin. Toyosaki Takahashi holds an Enya 15 F. J. A. Bethenotte type design brlar, also from Japan. is Fujii's McCoy 29 speedster for clockwork flying*





Russian Petukov attained 1956 International contest performance and won Criterium of Europe, at right, Nevo of Yugoslavia prepares to launch in same contest. Nautical scene is at the Polish Hydromodel event held in conjunction with Yugoslav Cup



accident involving facial injury. Otto has polio, affecting his legs, and suffered a fork breakage on his autogyro. Maybe that is why we have heard little of his products in the past year. Trend is to 1 c.c. and 1-5 c.c. units in the East, plus radio control. Commercial R/C units are appearing in many of both East and West zone manufacturers' catalogues, including a suggestion of one 14 reed unit!!

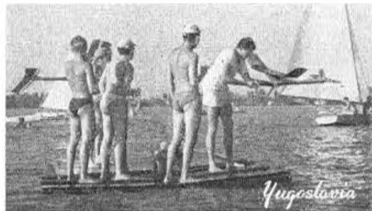
Already mentioned briefly in this column, was the 1956 Criterium of Europe for free light power, at Subotica, Yugoslavia. Delayed pictures and a report have filtered through on this event where the U.S.S.R. swept the board, and a most amicable interchange of ideas took place. Greatest regret was that apart from Switzerland, no "Western" countries took part. Conditions were terrific: but there were strong downdraughts and these decided the winners. At the close of the 4th round, there were four ties with full max's and in the 5th, George Zigic was particularly unlucky in being down-draughted from a great height. Estimated climb of Petukov and Kun was to 330 ft. on 15 secs. E.R. First five placed as follows:

1 Petukov	U.S.S.R.	180	180	180	180	180	980	367
2 Kun	Hung	180	180	180	180	180	900	327
3 Kucherov	U.S.S.R.	180	180	180	180	151	871	—
4 Fresl	Yugo.	141	180	172	180	180	853	—
5 Zigic	Yugo.	180	180	180	160	118	838	—

After the event, a hydromodel contest, bathing and boating were enjoyed by all concerned.

Where is the finest model flying field in the world? Well, we've seen a few windless spots, and heard about Salt Lake, the Californian deserts, the ice in Finland, and then, of course, there is Chobham Common. From Peru, we understand that there is a vast desert where they fly on packed sand, not very dusty, light wind and sweet miles and miles of absolute nothing. Moreover, its right next door to balsa country, Ecuador. If you think you can do better than that, write and tell us about your perfect field.

Latest from U.S.A. shows Gerry Rita above with 5", thick wing experiment for Oliver Tiger. High 41 design is by Russel Hansen of Chicago Aeronauts, has done 75 secs. from 3 1/2 secs. engine run, V.T.O. with Oliver Tiger





Two of Russia's leading aeromodellers are Vladir Mir Matvejev (above) and Ivan Ivanukha seen at right, with his World Record-holding jet.



## SOVIET AEROMODELLING

*The following account of aeromodelling in the U.S.S.R. today has been sent direct to us from Moscow written by "Aircraft Models Referee" P. Anukhin, and S. Malik. We feel sure that it will be of interest to modellers throughout the world, for it reveals how the Soviet modellers are keen to use Western ideas while at the same time their own modelling introduces use of materials and techniques strange to Western eyes.*

AEROMODELLING IS a very popular hobby (classified as a sport) among Soviet youths and the majority of the Soviet Union enthusiasts are school children. Beginners get off to a good start by enrolling in special classes for aircraft modelling at school. In their first year of study they build very simple models made of paper, then make kites and build up wooden gliders and rubber-driven models of the very simplest design.

In their second year of aeromodelling they branch out into the competitive sphere by tackling rubber drive more seriously and in particular the Wakefield specification. In the third year they pass on to power designs, again with models to the F.A.I. specification. Every summer, contests are held in every Republic and Region of the Soviet Union and the overall rubber champion for 1955 was Oleg Shagov a high school student.

Some outstanding international records have been established and have been held several years, notably that of 3 hours 18 min. for glider duration set up in 1950 by S. Ainadinov of Baku (capital of Azerbaijan). In 1951 Nina Chebanova, a Moscow schoolgirl set up a World record for rubber drive hydroplanes which has lasted for several years.

In 1952 several radical changes took place in the

organisation of Soviet aeromodelling and new rules were introduced following the interest in the F.A.I. specifications of that year. This involved the use of a "maximum" for the first time, limiting flights to 5 min, and again with the F.A.I. changes in 1954 this was further reduced to 3 min. The F.A.I. specifications were widely adopted and it took some time for the modellers to get used to the new regulations and to obtain satisfactory "international" standards. One main reason is that the climatic conditions for the majority of the Soviet territory limits the period of outdoor activity to only a few summer months.

At the 1954 Soviet International Contest held in Moscow the U.S.S.R. representatives did not win a single top place in the individual classes, although the team did place second in the overall results. This event served to show comparative efforts by other countries such as Czechoslovakia, Hungary and Poland, and in 1955 the U.S.S.R. standard improved considerably. Yuri Sokolov captured first place in the A/2 Glider Class at the International Finnish Meeting, whilst in Czechoslovakia, Vladimir Matvejev took first place with five maximum flights by his Wakefield. At the same International Meeting in Czechoslovakia, I. Ivanukov (who was in the Wakefield Team in Sweden in 1956) set an absolute World Speed Record of 275.005 k.p.h. with his jet model and won the actual contest with a speed of 253 k.p.h.

Gliders are by far the most popular class throughout the Soviet Union, but have yet to show evidence of a "standard" design trend, although it is customary for nearly all designs to feature tip dihedral with very broad flat centre panels.

*Victorious Team at the 1956 Criterium of Europe for Power models. Left to right: Team Manager, Pesukov, Jernakov, Subotin, and Kucerov*





Yuri Sokolov of Moscow is now working on a model to cope with the many varying meteorological conditions that prevail in the U.S.S.R. and he has already attained definite success in this direction. His A/2 model is distinguished for the thoroughness of construction and consideration of every detail. The wings of the model are in one piece, and he has experimented extensively with various airfoil sections both of his own design as well as that of foreign aeromodellers. It is interesting to note that Sokolov finally decided to use the type of wing produced by the famous Danish modeller H. Hansen, introducing only very slight alterations. The entire model is made of pine and plywood with a small amount of balsa, used only for streamline tips and fuselage fairings.

I. Ivannikov who comes from Frunze, the capital of Kirghizia, won the Tsiolkovsky Prize which is awarded annually for the highest speed attained by jet-propelled models, in 1953. He was not personally satisfied with the speed attained that year, and continued to develop his own pulse jet unit, with the result that in 1954 he was only 2 k.p.h. behind Josef Sladky the Czechoslovakian jet winner at the Internationals, and in 1955 he established the world record mentioned above.

As in Western countries, the restricted weight of a Wakefield rubber motor prompted many avenues of approach to the problem of obtaining lengthy motor runs in this class.

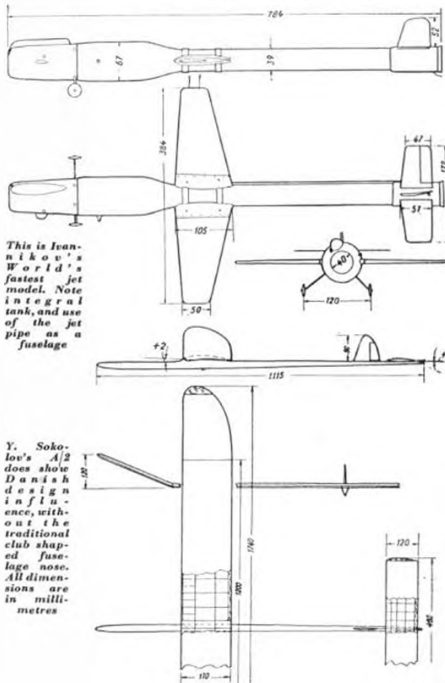
Pavlyuchenko is one modeller who has been building geared Wakefields for several years, but in the main, single strand motors as typified by expert V. Matvejev from Lvov, in the Ukraine, are most popular. Vladimir Matvejev has been building for just over ten years and is very well known; he has established a remarkable standard of workmanship using reeds and grasses and employing airfoils of his own creation with remarkably thin sections and high camber. He has experimented with turbulators, but disregards these in favour of extremely sharp leading edges and the unusual trailing edge form as presented in the sketch on page 648, December issue.

The main idea behind Matvejev's model is a maximum climb during brief motor runs and all emphasis is placed upon the minimum rate of descent during glide. His propeller diameter is approximately half the wingspan and during the 40-50 sec. motor run the usual high climb attains approximately 500 ft. Astute modellers will have noticed that the centre of gravity of Matvejev's Wakefield is well behind the wing trailing edge! (ref. page 648 December issue).

That the Wakefield requirements have been successfully solved in Matvejev's models, is confirmed not only by his successful efforts, but also by the results of other people who have adopted his design as a basis for building their own. This was illustrated particularly by the fine performance of the U.S.S.R. team at Hoganas for the 1956 Wakefield contest.



Champion of Europe 1956, Vladimir Petukov is chaired at the October meeting Yugoslavia, by his compatriots, the noted Even Kucerov at left



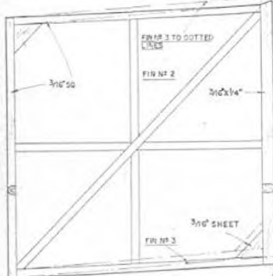
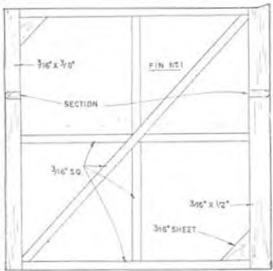
This is Ivan's Wakefield's fastest jet model. Note irregular tank, and use of the jet pipe as a fuselage

Y. Sokolov's A/2 does show Danish design influence, without the traditional club shaped fuselage nose. All dimensions are in millimetres

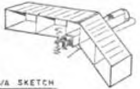
- 1 SHEET OF 3/8" x 3/4" x 3/4"
- 3 STRIPS OF 1/8" SQ. x 3/4"
- 6 " " " 1/8" x 3/8" x 3/4"
- 8 " " " 3/16" x 3/8" x 3/4"
- 4 " " " 3/16" x 1/2" x 3/4"
- 1 PIECE OF 1/2" x 1/2" x 3/4"
- 1 BUSH 3/16" x 1/2"
- 1 EACH OF 1/8" DIA. WIRE
- PAIR OF 1/2" DIA. WHEELS



**DUNNE TYPE TAILLESS**  
 DESIGNED BY  
**H. E. Mayles**  
 COPYRIGHTS OF  
**THE AEROMODELLER PLANS SERVICE**  
 38, CLARENDON RD., WATFORD, HERTS.

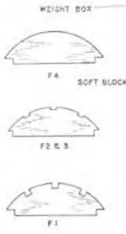


**PINS 2 OFF EACH**  
 COVER WHOLE MODEL WITH LIGHTNE-GHT WOOD/SPRAN  
 AND GIVE 2 COATS OF CLEAR DOPE



G/A SKETCH

ALL WOODS ARE BALSAMLESS  
 OTHERWISE STATED



CARVE LEFT HANDED PROP FROM HARDWOOD  
 OR USE STANDARD PROP IF MOTOR IS SIDE  
 PORT INDUCTION (REVERSIBLE)

**PORT UPPER WING**  
 BUILD ALL 4 WINGS  
 FROM THIS PLAN  
 (LOWER ROOTS  
 TO DOTTED LINES)



SECTION C-C

REVERSE TO USE  
 STRIPS STAY  
 FIN POSITION  
 FOR 1/2" INDUCTION  
 UPPER & PORT  
 LOWER WING

SECTION B-B

SECTION A-A

SECTION D-D

SECTION E-E

SECTION F-F

SECTION G-G

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SECTION K-K

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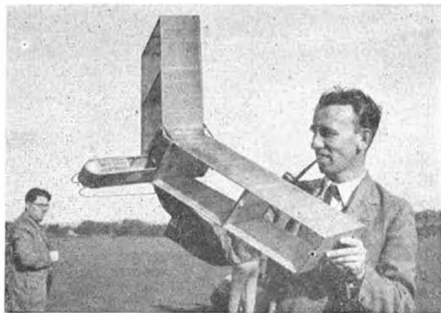
SECTION ZZ-ZZ

**An ultra-simple model with flat plate wings and a unique planform, for any engine up to .8c.c. Will fly in any weather—virtually crash proof.**

The semi-scale

# DUNNE Tailless

by H. E. Males



NO CLAIM COULD ever be made for this unique flying wing biplane to be a scale model, yet its outline closely resembles that of one of the most outstanding aircraft designs of all time. J. W. Dunne experimented with tailless gliders having large sweepback, in 1905/6. In 1913 he demonstrated an absolutely inherently stable machine with a 7-cylinder rotary engine, and remarkable though it was, official interest did not rise to the occasion.

It was with the fame of the Dunne types in mind, that H. E. Males decided to make this simple sport flier for an Allbon Dart. What could possibly be more simple? There are no ribs to cut, the washout required for auto-stability is locked in place by interplane fins, and being a pusher, it is virtually damage free as the wings knock-off in pairs.

It is cheap to make, will fly in all weathers, and collects a crowd wherever it appears—so if you want to knock up something to shake the locals—try the Dunne, and you'll never regret the few shillings it costs to make.

Start building with the fuselage which is little more than a "bath tub", having a block bow and engine mount in the stern. Two basic  $\frac{1}{2}$  in. square sides are made over the plan and faced by sheets of  $\frac{1}{8}$ -in. balsa on the respective outsides. Add ply gusset for tank mounting on port side, the scrap supports for the engine mount, and cut and reinforce the wing tongue slots. Join sides with the engine mount, undercarriage block, the  $\frac{1}{2}$ -in. sheet bulkhead which fills the rear end of the fuselage, and front top formers and spacers. Add all other spacers, stringers and noseblock, drilling the latter for the dowel to take the nose skid. Fit the under-

carriage. To complete the fuselage, cover with heavy grade tissue and dope as desired. Fit a washer on your engine to take up end play on the crankshaft as necessary, and mount with washers under the rear engine bearer holes so that there is approximately 10 degrees upthrust (shaft pointing downwards).

The wings are sheer simplicity, being flat plate section with the only complication of having laminated root ribs to take the  $\frac{1}{8}$ -in. sheet tongues and also having washout built in. Cut a long tapered template for the trailing edge washout, and pack this under the  $\frac{1}{8} \times \frac{1}{4}$ -in. T.E. as each panel is made, remembering, of course, to make one set for the starboard side, with root fittings to the left side! Building in the washout saves a great deal of trouble, as the angle is maintained after covering. Build the fins in pairs, allowing for dihedral by chamfering the tops and bottoms in each case. We are now ready for assembly—after covering and doping.

Apply a cement skin to all mating surfaces on wings and fins. Cover with lightweight tissue but keep mating surfaces free from paste. Rub cement right through tissue at these places. Assemble with dihedral shown and give two coats of dope. Insert pins for retaining bands.

Complete covering, doping. Fuel-proofing is optional. Assemble model with rubber bands across undercarriage and between wings (sufficient to allow model to be supported at wing tips). Add lead to noseblock to bring C. of G. to position shown on plan.

Check wings for accuracy by sighting along fins which should all be in the same plane. Don't try for glide. Hand launch with FULL power and enough fuel for a five-second engine run. If model does straight or diagonal loops increase upthrust by 5 degrees. If model turns too tight increase upthrust slightly. If she flies a straight, undulating flight path reduce upthrust slightly, this indicates that either your engine or prop or both are below standard. When a satisfactory climb is obtained increase the power run and trim for best glide by adding to or removing ballast.

Full size plans for this easy-to-build flatwing tailless biplane are available as 1/1652 price 3s. from A.P.S. Densington opposite in 1/3rd size



AIRCRAFT  
IN  
SERVICE

NUMBER 3

By G. A. G. COX

## De Havilland D.H. 112 VENOM

WHILST NO CLAIM has ever been made for the De Havilland 112 Venom to be anything more than an interim aircraft, filling the gap between unswept and swept wing all-weather fighters, one cannot deny that in its seven years of existence, it has executed its duties with distinction. As this is written, Venoms are in the news as they go into action in the Yemen, and one must also call to mind the recently published report on M.O.S. expenditure. Too much time has been spent, the report

states "... chasing the better instead of putting the good into production."

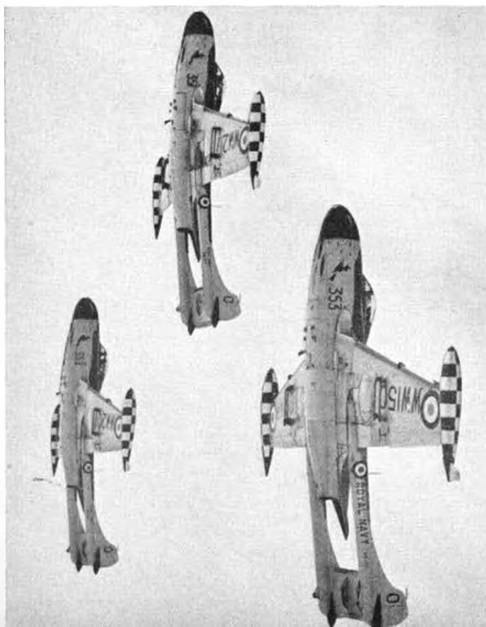
Such could never have been referred to the Venom series. The first Venom F.B.1 (VV612) flew on September 2nd, 1949, just in time to hit the headlines for the SBAC show. It was a much developed version of the well-proven Vampire, designed to be able to make full use of the 4,850 lb. thrust De Havilland Ghost turbojet, with thinner wings on what was basically a Vampire fuselage nacelle. The leading edge had been swept back, and stressed for all manoeuvres with tip tanks fitted, so that in action, the pilot could retain his full fuel supply instead of having to jettison. Today, all Venoms have this distinguishing tip tank feature, and a small slot is fitted to the leading edge close to the juncture of the tank and wing, presumably to correct the airflow at critical speeds.

Provision for jettisonable underwing tanks, each carrying 100 Imp. gallons offers a very useful operational range, and the centre section and wing underside has become a suitable platform for rocket clusters, A.P. bombs or Napalm tanks. Gun armament consists of four 20 m.m. British Hispano 404 cannon in all variants, and in the two-seater NF and F (AW)—the AW standing for All-Weather and not Armstrong Whitworth—the nose cap of glass fibre moulding shields American Radar equipment that can be revealed to date.

Following successful acceptance tests, the single-seater F.B.1 with an estimated top speed of 640 m.p.h. at sea level, was put into production for the R.A.F. In Switzerland, the same fighter-bomber was built under licence (some 250 in number) as the Venom F.B.50 and this same designation was

Code letter "Q" on Sea Venoms 31 Naval All Weather Fighter in heading indicates the mother ship is H.M.S. Ark Royal. In this official R.N. photo, the Venoms is running up to full power, front clocks are down and the catapult will fire at any moment. Aircraft is from 809 Squadron, has glossy Black and White tip tanks

At left, the colourful acrobatic flight of 890 Squadron are rough as they elixir in a formation loop. Note ratchet rails and different "Royal Navy" boom markings. Black Witch on Broom is Squadron insignia. Black and White chequered tip tanks, indicate acrobatic flight. (Admiralty Photos.)



carried by those supplied to the Royal Iraqi Air Force.

Progressive changes in design led to the F.B.4 entering production for the R.A.F., principal distinction being the loss of the hitherto characteristic De Havilland fins and rudders, and the use of a pilot ejector seat. Internally, power boosters were fitted to the ailerons to improve rate of roll, and this version has been supplied in large numbers, starting with WR 374. The Venezuelan Air Force also has the F.B. 4 carrying its colourful red blue and yellow roundels.

Like the earlier Vampire, it was natural that the nacelle of the Venom be adapted for two seats, and in this form it became specially suitable for Naval use, with power folding wings, many of which have been sub-contracted out by Folland's. The second seat is slightly behind and to the right of the pilot, like the piston engined Mosquito, and instead of a sliding hood, the canopy is hinged on its trailing edge. The French built version of the Sea Venom 20, known as the Aquilon or North Wind, differs in having a sliding hood to enable carrier deck take-offs and landings with the hood open: but in the event of a dunking with the home built version, the canopy can be power-jettisoned.

The first two-seater, N.F.2, was delivered to the R.A.F. before power boosted ailerons were fitted to what was later to become the N.F.3, now in current service. Some 81 Mk. 2's were built, starting with WL 804, and the N.F.3 series began with WX 785. Both versions have been exported to Sweden, where they are known as the N.F.51 and 54.

For the Royal Navy, first considerations in modifying the N.F.2 were the folding wings, arrestor gear and catapult pick up points. Added to this, the landing loads would call for different undercarriage legs with longer travel, and all of this adds up to a much heavier aeroplane than the R.A.F. version. Leading edges of vulnerable components are protected from damage by the Carrier crash carrier, and a unique feature is that the undercarriage legs have to be forcibly compressed as they retract, in order to get into the standard retracted position. Large hook castings under the wings and a fitting beneath the fuselage nacelle form the catapult harness pick-ups, and provision is made on the booms for RATOG rocket attachment. Most distinctive of all the Sea Venom modifications is the duck's tail with its upswep and not unattractive flair to the rear fuselage, which houses the yoked arrestor hook.

The F. (AW) 20 perpetuated the unusual vertical tail surface profile of the N.F. 2 and 3, also having extended tail surface outboard of the fins. These were taken away on the Mk. 21 version which also has two ejector seats and the pilot side of the cockpit canopy carrying a large blister for higher seat position. The first of the 21's was WM 569, and an export version sent to the Royal Australian Navy as F (AW) 53 began with serial WZ 893.

By virtue of its differences, the Sea Venom has much more attraction to the modeller than its



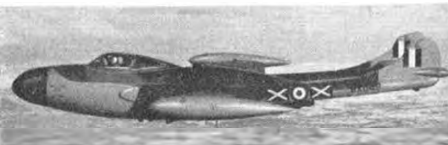
■ X 787 was the third production Venom NF 3 for the R.A.F., seen in maker's colours prior to delivery. In service, the radome is usually matt black, not grey as here. Note camouflage pattern and clean jet orifice which immediately distinguishes the land based Venom from its carrier-borne counterpart. (D.H. Photo.)

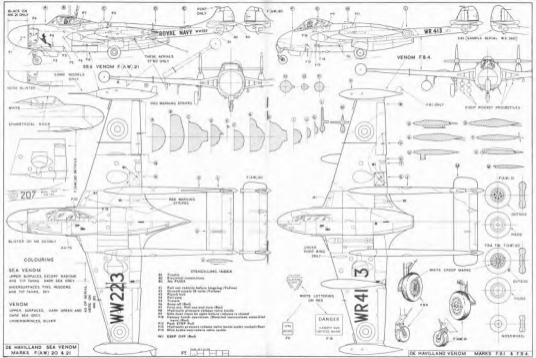
Below, the Sea Venom F (AW) 20, identified by the extended tailplane outboard of fins, different nose blisters and sparer airframe number. This view of a prototype as test shows the "duck's tail" arrestor hook housing, and shape of tips when tanks are not fitted. (D.H. Photo.)

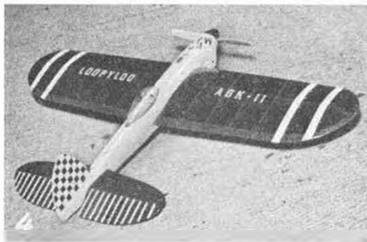
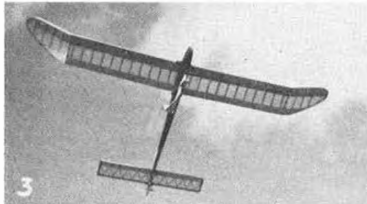
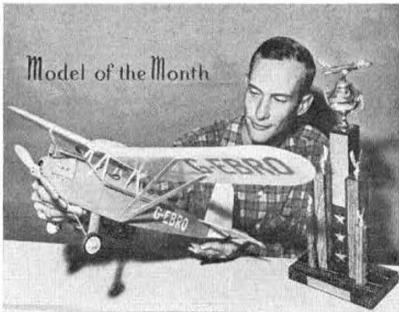


R.A.F. counterpart, hence our selection of the 20 and 21 for the two-seater drawing overleaf. Though the colours quoted include Sky for the undersides, it may well be that latest deliveries may have white undersides, following the scheme introduced on some R.N.A.S. prototypes at Farnborough in 1956.

The NF 3 in service with 151 Squadron R. A. F., has a white cross superimposed over a dark blue ground, within a black border, on either side of roundel. X 819 also shows the smoother cockpit cover profile which differs from the Sea Venom blistered type. (Air Ministry photo.)







## Model News

THE U.S. NATIONALS is perhaps the World's largest model meeting, and one can expect stiff competition in every one of the many events—flying scale included. Winner of the '56 event at Dallas (open section) was Bruce Lynn from Austin, Texas and his model is none other than the popular A.P.S. *Westland Widgeon*, fitted with a 8 c.c. glow engine. Congrats Bruce!—and what a fine trophy to have on the mantelshelf. He is now flying an A.P.S. *Spartan XII*, which he says is the "most rugged freeflight" he has built.

Lots of people write to A.P.S. asking for a combat model plan, and of course the *Duellist* on page 150 fills the bill as a specialist design; but those who want to knock out a toughie of their own, picture 1 will offer a clue, as it's the Leven (Five) club design for stunt and combat. With a 40 x 8 ins. wing, the name is *Halley Comet*—no Rock 'n Roll connection, designer's name is George Halley. Owen Price is holding his version here. Picture 2 shows a model only one inch larger at 41 in. span, a scale *Conair* for two Darts by Michael Lovell (N. Lincs. Club) being prepared for flight by anxious clubmates—they wouldn't let him wait to add finishing touches before the successful maiden flight.

Nice shot of a glider going up on the lines in 3 comes from P. L. Mander of Springpark Club, a difficult attitude for good results unless you have a fast shutter.

Numbers 4 and 5 are, we venture to suggest, a *Harlequin* and *Fokker D.III* from A.P.S. They were

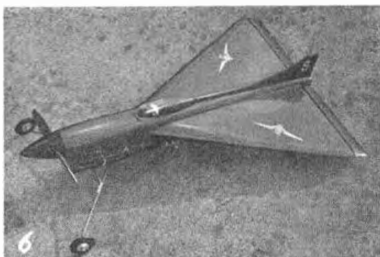




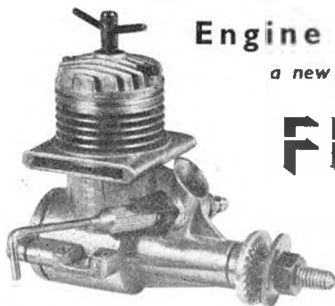
also the winning models, by A. G. King of East Grinstead Club, at a recent Hubbies Exhibition, run by the local Round Table. Nearly 250 entries of all types of handicraft were displayed at this three-day show, and the Round Table are to be congratulated for the encouragement given by them to local modelling enthusiasts. We hope the idea spreads to other districts.

Delta team racer by Sgt. Woodrow of Notting Hill, is called the *Viper* and has the admirable performance of 45 laps (on 10 c.c.) at 81 m.p.h., and won her first outing at the Northolt R.A.F. club meeting. Seen in **6** we fancy those lead-outs are a little fur forward.

Now to the glamour section and our charming ladies of the month. In **7** are the Whiston sisters, Eileen and Sheila, from Stretford, Manchester. Accomplished model fliers, they are seen with Eileen's *Glo Bug* c/liner which used to have an Elfin 1-8 and now boasts an Amco 3.5—and just look at that elevator boys, then you'll appreciate that Eileen can fly 'em. The club is Urnston, in case you'd like to join. Above, in picture **8** there's more glamour and a very nice line in R6-B's by D. Martin of Bognor Regis. Valspar Royal Mail Red and Atlantic Green, form the colour scheme and Mrs. Bette Martin strikes an admirable pose. Sipeaking of poses, get the one in **9!** D. G. Turtle of Belvedere in Kent has a unique twin engined c/l with staggered mounts and it appears to have staggered him too! Not that we can talk—we looked that way ourselves when we found that we had christened a "pusher" flying boat as a canard in last month's Model News!







## Engine Analysis No. 31

a new miniature powerhouse from I.M.A.

# FROG '80'

Reviewed by R. H. Warring

*Cast aluminium alloy cylinder head does not give good anodized finish, hence the plain, uncoloured appearance of this striking new product from the Merstan factory (actual size photo)*

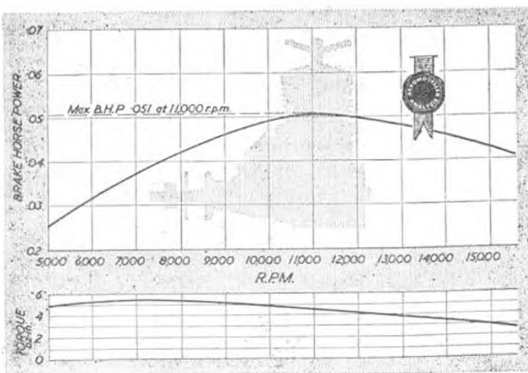
THE NEW FROG "80" is a truly delightful little sports engine. Smart and attractive in appearance, very well made and, by no means the least of its virtues, it sells at a rock-bottom price! One reason for this low price is that considerable production cost is saved in employing an O-ring seal on a turned contra-piston (instead of the more usual lapped in "contra"). Another shilling or so might even have been knocked off the final price if a straightforward reamed bearing could have been employed, as has become standard practice with the larger Frog engines. But in the case of the "80" the bearing is honed to finish, presumably because whilst a relatively slack bearing does not adversely affect running, on the small sizes, no leakage can be tolerated in this region without sacrificing easy-starting properties.

The use of a contra piston O-ring seal does somewhat alter the "feel" of this adjustment and on experiences with other small (American) diesels fitted with O-rings, popular opinion is to associate the employment of an O-ring with bad starting characteristics. We therefore paid particular attention to this feature in testing the "80". It must also be borne in mind that starting characteristics tend to deteriorate on all diesels once capacity is reduced below 1 c.c. They are not necessarily

more reluctant to start, rather it is a case that they are more "touchy" about mixture for starting.

The Frog "80" is generally free from such troubles. For starting from cold it must not be flooded, otherwise it responds readily. One or two finger chokes (at most) with the fuel line full draw in sufficient flick when the compression can be advanced, as necessary, and flicking continued until the engine fires. The needle valve can be opened a full turn from the running position for quicker response. We found that tending to start with slightly underchoking, and then flicking until the engine ran, more foolproof than generous choking. If the engine is too wet, then it will not fire at all, when the only action is to close the needle valve completely and keep flicking. The crankcase suction is quite considerable, hence choking also has a powerful effect as regards the amount of fuel drawn in.

There is an appreciable change in performance as the engine warms up. The compression setting needs to be backed off about a quarter of a turn from the "cold" position for optimum running, accompanied by a small but definite increase in power, which running it then holds consistently. And once warm the starting characteristics are almost unbelievably easy. Both compression



### FROG "80"

Bore: .400 in.  
 Stroke: .390 in.  
 Displacement: .804 c.c. (.49 cu. in.)  
 Bore/Stroke ratio: 1.025  
 Weight: 1.9 ounces  
 Max. B.H.P.: .051 at 11,000 r.p.m.  
 Max. torque: 5.4 ounce-inches at 7,000 r.p.m.  
 Power rating: .0635 B.H.P. per c.c.  
 Power/weight ratio: .025 B.H.P. per ounce

#### Material Specification:

Crankcase unit: Light alloy pressure die casting  
 Cylinder: Steel (no cylinder jacket)  
 Piston: Cast iron  
 Contra-piston: Mild steel (with fitted O-ring)  
 Con. rod: Light alloy forging  
 Crankshaft: Steel  
 Bearing: Plain (reamed and honed)  
 Cylinder head: Light alloy die casting (no fan insert for compression screw)  
 Spraybar: Brass

Manufacturers:  
 International Model Aircraft Ltd.,  
 Morden Road, Merton

Retail Price:  
 45s. inc. tax

and needle valve can be left as they are and the engine merely flicked over smartly—to start every time.

The running (warm) compression setting may be a little too low for starting from cold and so the general rule for cold starting is to advance the compression from the setting in which it was last left—and then reduce again for final adjustment as the engine warms up. Over-compression when running is very evident from the laboured running. Best setting is with the compression slackened off to the point where "mis-firing" starts, and then just forward enough again to eliminate the "miss". For slowing the engine the compression can be reduced progressively over a further half turn, beyond which the engine stops. The needle valve can be left alone during these adjustments. Provided the mixture is not too lean, the "80" will run with the needle from "minimum lean" setting to the maximum unscrewed position (i.e. where the needle valve is on the point of falling out). Best performance, of course, comes with the leanest setting consistent with continued running.

Considerable attention has been given in the design to easy starting and these desirable characteristics would certainly appear to have been achieved. About the only thing to avoid is flooding the engine. Since the "80" has excellent suction we would therefore suggest avoiding using a gravity-feed tank on any installation as it would then be imperative to close the needle valve at the end of each run, unless the engine were mounted inverted. In that case the fuel would merely drip out of the intake.

Inverted running, incidentally, appears if anything even better than upright. There is somewhat less likelihood of flooding this way up, except that if you do accidentally get the engine well and truly flooded, trying to force the piston into a flooded cylinder head in turning over could result in damage. It would be advisable, therefore, never to prime through the exhaust ports with an inverted installation.

The fact that the "80" does run so exceptionally well inverted makes it ideal from the "sports model" point of view for completely enclosing the engine in a scale-type cowling. Another useful feature is that it can be "throttled" quite effectively by slackening off the compression and it will also swing really large propellers at low speeds. On a 9 x 6 Frog nylon propeller, for instance, it will run at some 4,500 r.p.m. but with this load can be "throttled" right back to a slow and consistent "tick-over". It will also "tick-over" on any other size of prop.,

PROPELLER—R.P.M. DATA		
Propeller		r.p.m.
dia. x pitch		
9 x 6	Frog nylon	4,500
8 x 6	Frog nylon	5,250
6 x 6	Stant	8,000
6 x 4	Stant	11,000
5 x 6	Frog plastic	10,500
6 x 4	Frog nylon	12,800

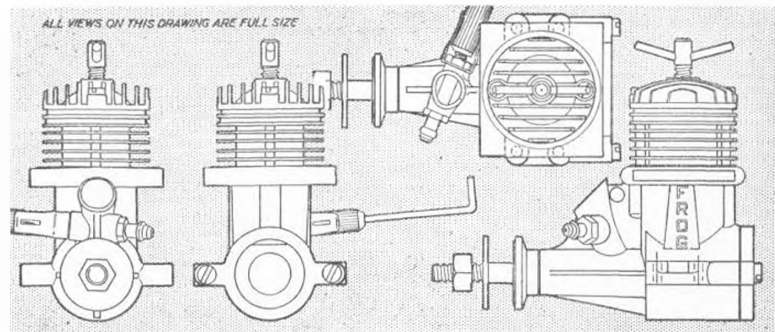
*Note on Fuels:* Mercury No. 8 and Shell Powanix used on test. On Mercury fuel the "80" tends to run somewhat cooler, has a greater consumption (needs needle valve more open) and requires slightly less compression. R.p.m. figures are up 400-500 r.p.m. on most propeller sizes, but starting and running is slightly better at speeds below 11,000 r.p.m. on Powanix.

although the smaller the prop., the more irregular the low-speed running.

In the air the "80" has a tendency to pick up power more like a glow motor than a diesel, which is a point to bear in mind if the engine is throttled back for an initial test flight. Once under way it is likely to pick up into a fine burst of speed. It retains typical "diesel" characteristics, however, in showing a slight preference for plastic propellers over wooden types.

Constructionally the "80" features a most elaborate and well produced crankcase casting, incorporating the lower cylinder and twin exhaust stacks. The casting is to some extent "stylised" in that the apparent transfer passages on each side are dummy. The only machine work done on this casting to finish is reaming and honing the main bearing and drilling and tapping holes for the fixing screws. Radial mounts are incorporated in the crankcase casting, blending into lugs holding the two rear cover screws. The "80" can readily be adapted to radial mounting by filing off the beam lugs and drilling through the cover screw holes to 8 B.A. clearance. These holes are already tapped to full depth and drilling is only necessary to "clear" the holes to slide over fixed mounting screws. A point in utilising the beam mount lugs is that the (8 B.A.) fixing bolts used should not be longer than  $\frac{1}{4}$  inch, otherwise they will have to be "worked" past the exhaust stacks to get down into the holes (unless fitted from under the bearers). There is, however, adequate clearance for getting a screwdriver down on to the screw heads.

(continued on next p.)





## TRADE NOTES

WHAT IS UNDOUBTEDLY the largest model kit produced anywhere in the World, has recently arrived in separate parcels at the home of Mac Grimmert at West Bromwich—since the entire kit weighs 30 lb., the postal authorities would not accept it in one piece! It is the Japanese **Eureka** kit for the *Comair B-36* ten-engined bomber. Cost in the U.S.A. is \$49.95 (approx. £30) and somewhat less in Japan. It is prefabricated, with cut out ribs, spars, formers, etc., all from light Japanese Kiri wood, and the only balsa components are the elevator ribs and a few block parts. Quality and quantity are astounding. There are ten spars in the wing, some three inches deep and  $\frac{1}{2}$  in. thick. Fifty sheets of  $\frac{1}{4}$ -in. balsa is supplied for planking, there are two large and fully sprung main gear legs, each with four scale

airwheels. Six pusher props, six tanks, transfers, two large blueprints 7 ft. x 3 ft. and yet more, more and more bits and pieces that go to make a 10 ft. span, 6 ft. 6 in. long B-36 with six Oliver Tigers and four Jetmasters for industrious Mac Grimmert. Model should be seen at this seasons meetings, and is the only one in Europe, there are some half-dozen others in the U.S.A., more in Japan.

Now while we do not in any way suggest that this momentous effort should be taken as a yardstick for British traders to follow, we do suggest that the first British manufacturer to put out a scale multi, just twin engined, will be filling a big gap in the market that the modellers would be quick to appreciate—and we learn that there's a Mercury *Lockheed Lightning* on its way—good show!

A complete and ready to fly glider that shows intelligent use of vacuum plastic moulding, is now available through **Sebel Products** of Erith, Kent. Retailing at 4s. 11d., including tax, the *Gull* is semi-scale, with printed balsa sheet wings and tail, and a specially strengthened hollow plastic fuselage and fin. With the model there is a length of elastic for catapulting, and we can confirm that it really is ready to fly.

Each year **Contest Kits Ltd.**, awards prizes for successes gained with their products—a nice sales encourager. 1956 award went to R. Corney of Harpenden who was 1st in R.A.F. Training Command A/2 and Open Championships plus the Final R.A.F. Champs with his first contest model, an *Inch Worm*. For his efforts he received a suitably inscribed 8-day clock. Heading the list of winners at the East Anglian Area Winter contest was C.K. Director M. A. King with a *Calypto Major*, first indication of what may be a new kit.

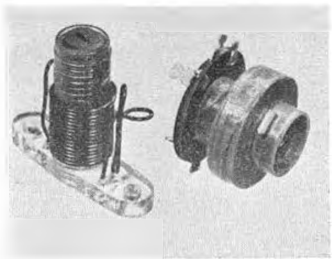
Each year the **KeilKraft** Handbook and Catalogue is revised and brought up to date to cope with the many new items introduced annually to the vast KK range. The '57 issue also has a change in face, for it is now a 5 in. x 8 in. landscape production (pages longer than deep) with 56 pages against 48 last year. Our only criticism is against the thinner cover, and being in the publishing business we fully appreciate how the price has had to go up to 1s. 3d. per copy. It is full of hints and tips, from a Glossary of modelling terms, to how to fly control-line models, and should, we think, be an automatic sales item for all aeromodelling beginners, particularly those starting off with ideas in advance of their capabilities. Incidentally, those KK plastic Bobbins mentioned last month and pictured below, left, are ideal for radio control receiver Quench coil cores.

One of the finest transfer decoration sheets we have seen for a long while is the special P-51 *Mustang* sheet now issued by **Mercury Models Ltd.** in their kit. Retailing separately at 1s. 6d., it carries not only international insignia and squadron lettering: but also those hard to paint diagonal red and white stripes for the fin and rudder . . . plus a neat reproduction of the Mercury trademark. Markings are "spot-on" for accuracy and colour rendering.

Most of our radio enthusiasts know that **Messrs. Odeon Radio** supply various parts for the "Aeromodeller" Receiver, including Aerial Coils, Quench Coils, R.F. Chokes, etc. Odeon are now offering the same service for the *Hill Receiver*, and we illustrate below, the Aerial Coil which sells at 3s. 6d. and the Quench Coil at 5s.!! Also available at 2s. 6d. is a pre-wound R.F. Choke, and we would mention that the rest of the components for the Hill outfit are also available.



Left: Top to Bottom: KK Terylene 4 L cord for small trainers is cheap at 7d. per 100 ft.; but take out the 10 per cent. stretch before using! Next is the Sebel Gull ready made glider at 4s. 11d. with plastic fuselage. Revell plastic paint kit at 8s. 11d. is neatly packed, includes a brush, thinners and eight colours with interesting data. Paint is superb for all plastic kit models. Next, Mercury's Mustang transfer sheet for 1s. 6d., and bottom, the KK Plastic bobbins at 3d. to 5d. each.



# RADIO CONTROL NOTES

## H.M.V. Radio Equipment

W. G. ROWELL, who at one time produced the Rowell 10 c.c. racing engine, has been carrying out practical tests for us with the H.M.V. Zew Zealand radio equipment. This he installed, appropriately enough in an R.6-B shown opposite with fair assistant.

The receiver was mounted in sponge rubber with a small outlet hole for tuning. The H/T consisted of four 22½-volt battery units made up into a 45-volt pack. A standard 1½-volt Deaf Aid cell provided the low tension, and the H.M.V. Relaytor was mounted in approved fashion. Initial tests on the bench disclosed a standing current with no signal of ¼ millamp rising on receipt of a signal to 9 milliamps, which was the maximum that could be obtained. The Relaytor was tested separately and it was found that this would operate on just under 6 milliamps, giving a safety margin of over 3 milliamps.

On the field the radio was tuned at about quarter of a mile range to give maximum rise, after which it was checked on the ground at half a mile range, and at this distance was still giving 8½ milliamps current change. In operation in the air the set was completely reliable and as the makers claim, can be installed and forgotten about.

Finding the set so reliable, Mr. Rowell began flying much too near the ground and in the process of trying



to make a low approach in order to take a photograph, crashed the model. The fuselage was more or less a "write-off" but the receiver and Relaytor were still working merrily, which says much for the robustness of the gear.

## Modifications to the R6-B

To judge from the letters and photographs we have received from all over the globe more examples of that enterprising layout by Alan Rowe have been built than any other design. Several people have suggested improvements including Mr. Rowell, and the one mentioned by all is the need for strengthening the fuselage structure. The "A/M" drawing office has therefore modified the plan by deleting the diagonal braces and filling in the top, bottom and sides of the fuselage with ¼th sheet balsa back to a point opposite the trailing edge of the wing. The whole fuselage is then covered with 1/16th sheet. The motor mounts as originally specified need strengthening, especially when using motors around the 2.5 c.c. to 3.5 c.c. mark. This is done by using good quality ¼-in. five-ply, preferably the resin bonded variety. The motor lugs are then fixed to the inside face of the mounts. Some people have had trouble with the sheet balsa fins warping which is easily cured by an insert with the grain running in the reverse direction. Those people who like a fairly quick response to rudder movement can increase the crank movement by almost 100 per cent., although novices would do well to leave things alone until they have gained experience. One thing we do not recommend is modifying the twin fins to a single fin. A certain well-known radio enthusiast who shall be nameless, tried this with dire results! Fitted with an F.D.246, the R6-B gives a lively performance, the advantage of this particular engine is that it can be fitted with a pusher prop by simply turning the back cover through 90 degrees which permits it to run backwards.

## Interference from High Frequency Sparks

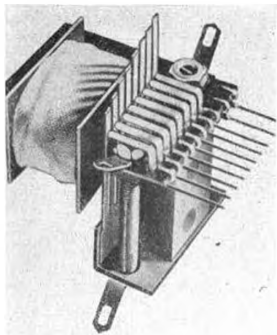
Reader R. Wilson of Hyde was recently flying on the sports field of a large steel firm using the new Triang Mk. II crystal controlled outfit for which he has the highest praise. To use his own expression, "the equipment suddenly went haywire" only to resume normal working a few moments later. Subsequent investigation showed that a large and powerful electric welding plant in the steelworks was completely swamping the normal signal, the range of the interference being up to two miles. Another of his receivers was similarly affected giving no satisfactory "drop" or "rise" and becoming over-sensitive. The Editor was recently watching a



Claude McCullough sends this picture of his rudder only design "Chariot" which was inspired by the R6-B from A.P.S. Model is a fast flier with excellent penetration—makes smooth turns with fine recovery. McNabb 465 mc. radio used with pulse proportional control

Left, is W. G. Rose-H's No. 11 used for the flight tests of the H. M. 1. New Zealand radio equipment. Note the built-up pins which Mr. Rose-H prefers to the solid sheet variety originally specified.

Right, the German 8-reed unit manufactured by Martin Pfeil of Hildesheim which is a beautifully made and shown here approximately full size.



demonstration of some radio equipment in Messrs. Hivacs factory when a high frequency spark of some sort went into action in an adjoining department. This immediately operated the receiver in question, which was tuned to 27 megacycles, and there seems to be no doubt that the high frequency spark, emitted by welding machines and such like, put out a whole range of frequencies and harmonics of considerable strength. There appears to be no means of suppressing this type of flying field, the only thing one can do is to find another flying field.

### New German Reed Unit

We have been sent a sample of a new 8 reed unit being manufactured in Germany by Zungen-Relais which is shown approximately full size in the accompanying photograph. Weight is 47 grammes (1.65 ounces); sensitivity at operating voltage of 5 volts is .6 mW; lowest operating voltage is 3 volts with sensitivity then down to 3 mW impedance at 400 megacycles is 40,000 ohms and the D.C. resistance 6,000 ohms. Switching frequency is between 280 and 400 megacycles and the spacing 15 megacycles; operating current can be up to 200 volts, both the coil and the contacts having been safety tested up to 380 volts.

The unit is extremely well made and the manufacturers are prepared to supply them in pairs tuned to avoid co-interference. There is the possibility that they may be available in this country in the not too distant future.

### Up with the "Larks"

For the benefit of the uninitiated, the "Larks" Club hails from Los Angeles, U.S.A., and is probably one of the biggest and most thriving radio control clubs in the world. We regularly receive their News Letter which is quite a "Radio Control Notes" in itself. Amongst its members it includes such well known people as Howard Bonner winner of the radio event at the 1956 U.S. Nationals and many other experts. With the advantage of almost perfect flying weather the whole year round (just imagine it!) the flying standard is pretty high. This latest letter includes some useful sketches on aileron installation and we read of Chuck Boyer and Bill Segelken doing low altitude rolls. Not just one, but a continuous series of rolls finishing back at the same altitude they first started! For those experimenters over

here who have reached the stage of considering ailerons we pass on some very precious "pearls of wisdom" regarding their practical operation. Because of the greater drag of the "down" aileron compared with the "up" aileron, when both are moved the same distance, they must be given a differential effect to prevent yaw in the wrong direction. The boys have various schemes for doing this which we hope to publish at a later date, not the least costly, being the simple method of building the aileron with the upper surface longer than the lower. Or to put it more simply, by leaving a large cutout "Vee" between the underside of the aileron and the wing, with the hinge on the upper surface.

Seems the "Larks" are also suffering from interference due to sunspot activity reaching its peak. Somehow or other this magnifies Ham radio signals operating legally on 27-212 m. ca., sufficient to operate the average broadly tuned super-generative receiver. By using a pair of headphones on a Babcock receiver, the "Larks" actually picked up a call sign from a Ham the other side of the States who confirmed he was using a 50 watt transmitter on the correct frequency. We can just hear conversation following the first spin in at the British Nationals. "Nothing wrong with my equipment, old man. Must be one of those Yank Hams and a sunspot!"

Another interesting item mentioned was the Orbit 8 channel simultaneous equipment manufactured in Lynwood, California by Bob Dunham. Transmitter uses two toroid coils (amongst other things) which keep it completely stable throughout all battery voltages with no drift off frequency. The receiver has one detector tube which draws 10 milliamperes and two transistors. It idles at 1-75 milliamperes, measures 2 1/4 in. x 2 1/2 in. x 3 1/2 in., and weighs 9 ounces less batteries. Price of receiver is \$119.50. How many do you want!

Before leaving the "Larks" we would mention that Howard Bonner's famous "Smog Hog" winner of the 1956 American Nationals will be appearing in our next issue with plans available through A.P.S. in the usual way. Howard together with Bob Palmer the American Stunt Champion will be going to South Africa in April to give demonstrations sponsored by Monty Malherbe of "Jix Models". On their return journey early in May they will probably be visiting this country, when AEROMODELLER hopes to arrange similar demonstrations and a general get-together between Howard and Bob and British enthusiasts.





**GET INTO THE COMBAT  
CIRCLE WITH THIS SUPER  
MANOEUVRABLE ALL-WING  
FROM BARCELONA**

**BY ADOLFO TRISTANY**

*Jose Garcia Flegenhelmser won last year's Criterium of Europe with this pair of Duellists*

# The DUELLIST



WINNER OF THE 1956 International Combat event at the Criterium of Europe, Brussels, this remarkable flying wing is the result of specialised design by a group of acromodellers in Barcelona.

The Spanish people are well aware of the type of spectacle which will draw appreciative public support, and the Barcelona club in particular have fostered Combat and Team Racing to bring about wide public interests in the hobby of acromodelling throughout their country.

Naturally, Combat fits in very well with the Spanish temperament and there has been rapid progress in design, final result being "Duellist".

First requirement was found that the model should be faster than all others and secondly that it should have good manoeuvrability. Flying wings were found to be faster, particularly when built lightly, but they suffered from a large turning radius and were not quite as good as the conventional model in tight manoeuvres. That was before the compensated elevator was introduced—a new idea which occurred simultaneously both in Switzerland and Spain, and was seen on models from both of these countries at the Criterium of Europe. This is simply projected area of the elevator, forward of the hinge line and which opens on to the "opposite" side of the fixed wing or tailplane, forming a slot. It gives a snappy action which calls for care during the initial flights, but when one is fully trained to its rapid effect, it is possible to execute tight manoeuvres and brings the flying wing up to the standard of manoeuvrability required for Combat.

As will be seen from the drawing opposite, there is really very little to the construction, as the design is no more than a conventional stunt model wing to which is added broad sheet trailing edge extensions, elevators and a hardwood engine mount. Make up the wing first by assembling all ribs over the lower  $\frac{3}{8}$ -sq. spruce spar, pinned down in place on the plan. Add the leading edge, basic trailing

edge and then upper spar in that order, reinforcing trailing edge joints with  $\frac{3}{32}$ nd gussets.

After lifting from the board, fit the bellcrank mounting plate and  $\frac{3}{32}$ nd sheet braces, then the tip profile and  $\frac{1}{8}$ -in. sheet trailing edge extensions, with the trailing edge fences to support them. Care should be taken that the two extensions on either side of the elevator are exactly in-line, for on them will depend upon the stability of the model in flight. Do not forget to add the tip weight in the outer wing, make up the tinplate tank, then fit sheet on the leading edge and centre section.

Fit the bellcrank, hinge the elevator and connect the two with a push rod, bent to accurate length with elevator neutral when bellcrank is neutral. Then fit the 18 s.w.g. lead-out wires running through the brass tubes on the inboard tip.

Note that the push rod is not soldered permanently in position on the elevator. This is a good idea, for it allows for quick repairs and disconnection on the field. This also permits the celluloid grommet to be slipped over at the covering stage to allow a hole in the covering for push rod travel.

The engine mount or "fuselage" is simply hacked out of a piece of scrap hardwood from an eggbox or fruit box and being in one piece, is immensely tough and will withstand a head-on crash in the hardest ground. Carve away a space to accommodate the engine crankcase then secure the fuselage to the leading edge with cement and use an 8 B.A. bolt to locate the extreme rear end.

A Byra 2.5 c.c. diesel, powered the prototype and airspeed is in the region of 65 m.p.h. with a  $8\frac{1}{2}$  in. x 5 in. propeller. We recommend an 8 x 4 or 5 on any of the British 2.5 c.c. diesels for utmost performance.

Cover with silk if possible, otherwise a double covering of heavy tissue and plenty of dope. Finally, as our good correspondent in Barcelona says, "attack always, good luck, good sight, and go to the torol!"





APRIL 21ST, 1918, saw the end of the career of the legendary Baron Manfred von Richthofen when, in his scarlet Fokker triplane 2009/17, he crashed into the British lines fatally injured by the guns of Roy Brown's red-nosed "Camel". Richthofen had first flown the Dr. I in September, 1917, and on the 2nd he shot down an R.E. 8 for his 60th victory in a machine serialised FI 102/17. Other triplanes he flew at various times were numbered 114/17 (which he crashed on October 30th), 152/17 and 425/17; it was in the latter that he scored his final victory—the 80th—the day before his death.

A more spectacular exponent of the triplane was Werner Voss, who downed some 48 Allied aircraft during his fighting career. The story of his death is an epic in W.W. I literature; when alone on September 23rd, 1917, he ran across a flight of six S.E. 5's from 56 Squadron led by the famous Capt. "Jimmy" McCudden, and managed to shoot holes into all of them before falling to the guns of Lieut. Rhys Davids, a young Welshman still in his teens. Another colourful triplane pilot was Heinrich Goetermann, whose speciality was balloon busting; he died on October 31st, 1917, when a Dr. I in which he was on a test flight broke up. Reports seem to indicate that no more than about 150 of the type had been built when production terminated.

When designing this machine Anthony Fokker's aim was to produce an aircraft expressly for "dog-fighting" and so manoeuvrable that it couldn't be hit. That he succeeded cannot be denied; another attribute of the Dr. I was its phenomenal—for the period—climb, its

**Heading:** Adolph Ritter von Tutschek in Dr. I. This shows the streaky camouflage—running vertically on fuselage and chordwise across wings—and the location of serial number. Pale blue undersurface may be noted extending along bottom edge of fuselage side. Below (left): Prototype Dr. I with unbalanced ailerons and elevators and clear doped covering. (Right): Excellent "action" shot as reputed to be Werner Voss' aircraft. Has a "face" painted on cowling and coloured stripe each side of fuselage insignia.

initial rate enabling it to get upstairs at nearly 2,000 ft. per minute.

The wings, which were fully cantilever, were built on a single spar which was actually two box-spars, joined together top and bottom with three-ply, to form a single unit of constant cross-section throughout its length. Ribs were of three-ply with large circular lightening

AIRCRAFT DESCRIBED No. 83—by P. L. GRAY

## FOKKER Dr. I.

holes; the leading edge was sheeted, and the trailing edge simply a wire which formed a scalloped profile when the fabric was doped. Ailerons were of welded steel tube and there was some variation as to the taper commencing from the first or second (inboard) rib.

Fuselage and tail assembly were of welded steel tube construction and very similar to the Fokker DVIII described in the November, 1956, issue. Centre-section and undercarriage struts were of streamlined steel tube; the interplane "struts" were simply wooden ties no more than half-an-inch thick.

A near circular metal cowling housed the 110 h.p. Oberursel engine, the front face being fretted with round cooling holes—some Dr. I's had open front cowls similar to those fitted to French Nieuport scouts.

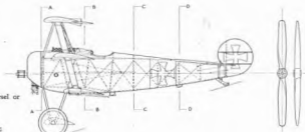
The cockpit was austere: a bucket type seat was mounted on an adjustable frame and covered with leather-cloth; flying controls consisted of a tubular control column mounted on a racking shaft, and of a tubular rudder bar, with simple stirrups. A double-handled grip was at the top of the control column, the left side of which was pivoted and used as an auxiliary throttle control; between the grips were the triggers for the guns and the engine cut-out switch. A unique feature of the guns was that they could be fired independently or simultaneously.

Some Dr. I's were fitted with 110 h.p. Le Rhone engines which have often been referred to as captured; in view of this the following note from the well-known authority, Mr. A. R. Weyl, should be of interest: "These rotaries were Swedish-built Thulin engines which had been manufactured to the order for the German Government under licence from the French Le Rhone firm. At one time there were 700 of them at Adlershof, brand new and complete with all spares."



#### DATA

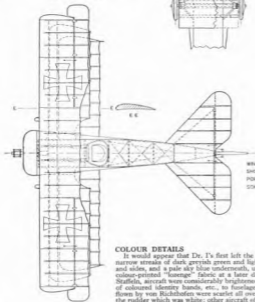
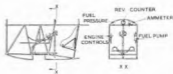
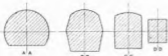
Engine: 110 h.p. Oberursel or  
Le Rhone.  
Span: 23 ft. 7 in.  
Length: 19 ft.  
Height: 9 ft. 9 in.  
Weights: 1,259 lb. loaded;  
829 lb. empty.  
Speed: 115 m.p.h. (approx.) sea  
level; 80 m.p.h. (approx.)  
ceiling.  
Climb: 3,281 ft. in 1-75 min.;  
9,843 ft. in 6-5 min.;  
16,405 ft. in 14-0 min.



#### INSIGNIA

National insignia was in the form of black patent crosses (later, in 1918, revised to Latin crosses) usually painted on a square white background, or with white outline.

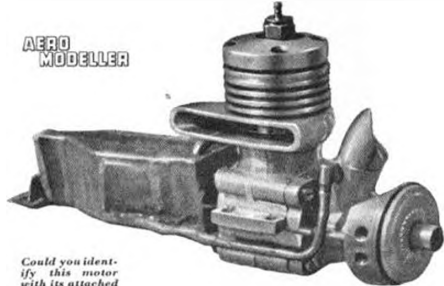
Serial numbers were painted near the bottom of the fuselage just aft of the cockpit (as on DVIII) in black, but they were often obliterated by Staffel decor. Sundry serials: 110/17, 121/17, 141/17, 155/17, 188/17, 195/17, 460/17, 591/17, 404/17 was flown by von Tuschek and had white cowling and rudder. It may be stated that pilots did not stick solely to one aircraft.



WING STRUCTURE  
SHOWING LARGER  
PORT ALLECON ON  
SOME VERSIONS

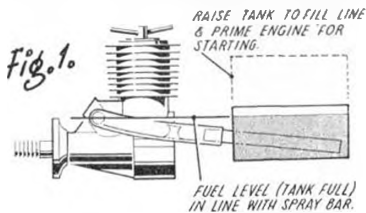
#### COLOUR DETAILS

It would appear that Dr. I's first left the factory camouflaged in narrow streaks of dark greyish green and lightish brown on the top and sides, and a pale sky blue underneath, until the introduction of colour-printed "lozenge" fabric at a later date. When received by Staffeln, aircraft were considerably brightened up by the application of coloured identity bands, etc., to fuselage and/or tail. Machines flown by von Richthofen were scarlet all over with the exception of the rudder which was white; other aircraft of Staffel II were mainly red with white distinguishing marks added, e.g. the triplane of Reinhard had white stripes between alternate ribs on the tailplane.



Could you identify this motor with its attached special motor tank? Answer, foot of next page

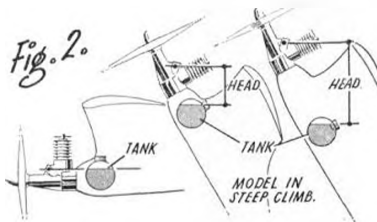
WITH THE ELEMENTARY form of carburettor used on all model aero-engines (i.e., a jet hole opening, normally controlled by a needle valve) anything other than suction feed will result in a continual flow of liquid fuel when the engine is stationary, unless the needle valve is closed right down. It is therefore more or less standard practice to arrange the tanks so that the standing fuel level is not



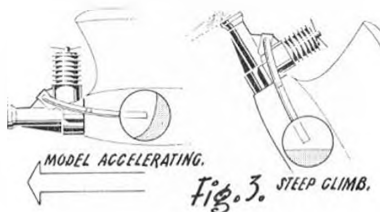
above the level of the spray bar jet hole. For static running this is generally quite satisfactory for the suction head resulting (i.e., the "head" or height through which the fuel has to be sucked to reach the jet hole) can be made quite small and there is little variation between this head with the tank full and empty—Fig. 1.

The actual suction available to lift the fuel varies a lot with different engine designs, although all may operate perfectly satisfactorily when running. By this we mean that some engines do not readily suck up fuel from the tank to fill the fuel line for starting, even when fully choked and with a minimum suction head. For bench running, in fact, with a set-up like Fig. 1 the easiest way to fill the fuel line may be to lift the tank bodily and so momentarily apply gravity feed.

To a large extent the "suction" power is governed by the crankcase compression ratio. This can be defined as



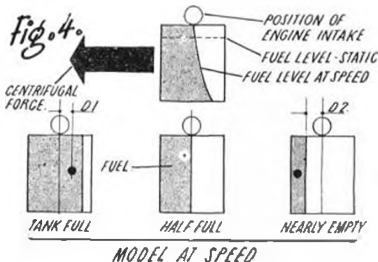
the ratios of the "under piston" volume with the piston at top dead centre and bottom dead centre. If the displacement of the engine is X c.c. and the actual crankcase volume at B.D.C. is Y c.c., then this ratio is  $X+Y/Y$ . The higher this ratio the more work has to be done on the piston travelling down to the B.D.C. position. Hence to minimise power losses a designer may deliberately use a low crankcase compression ratio, which may result in the engine having very poor choking characteristics. It should be appreciated that for a given speed the volume of mixture inducted is unaffected, but factors giving a rapid suction effect, e.g., high crankcase compression ratio, small intake diameter, shorter induction tuning, etc., give more pronounced suction and easier starting characteristics. The method of induction also affects the issue, side-port engines generally having good suction and thus are far less susceptible to suction head. Most side-port engines will suck in and run satisfactorily with the tank well below the intake position. Most reed valve engines have similar characteristics, but rotary disc induction is at the opposite end of the scale, with rotary crankshaft induction intermediate.



The predominate pressure inside the crankcase of an engine is positive and suction pressure is realised only over a proportion of the cycle. Thus finger choking and turning the propeller over by hand to suck up fuel will apply both positive to blow-back and suction pressure to the fuel line. Particularly with racing engines or engines designed for high operating speeds the timing may be such that there is appreciable "blow-back" when turned over slowly. The correct technique for priming the fuel line in such cases is to move the propeller forwards and backwards across compression, applying finger choke only on the forward movement. In this way the intake is sealed only on the suction movement and blow-back can escape, through the intake on the return movement, the finger having been removed. This seems a small point but is one which gives trouble to many engine operators who are puzzled by the apparent lack of suction with a

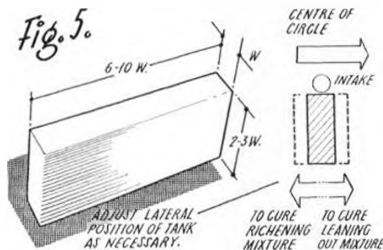
particular engine and perhaps have to resort to blowing through a fuel tank vent, holding a model up on its nose, etc., for priming the fuel line for starting. Provided there is only a small suction head to start with, once the fuel line is properly primed no further troubles should be experienced with it draining again, unless there is an air leak in the line connections.

Once running the engine can tolerate a far greater suction head without interrupting the fuel flow to the engine, although there are obvious limits. In the case of free flight power models, provided the tank is mounted on a level with the spray bar to start with, few troubles should be experienced due to changing fuel level in flight. It should be borne in mind, however, that to minimise the effect of changing attitude on suction head the tank should also be fitted as close behind the engine as possible—see Fig. 2. Almost any form or shape of tank is usually suitable, provided the fuel feed remains submerged for the duration of power run required. For



example, mounting a circular tank with the feed to one side might result in the engine being starved in a steep climb or when the model is accelerating (when inertia will throw the fuel to the back of the tank)—see Fig. 3. Normally, however, on free flight models the fact that the engine will speed up due to the propeller becoming "unloaded" in forward flight will have more effect on needle valve setting than tank position.

In the case of models subjected to considerable accelerations—e.g., aerobatic radio control models and control line models—the question is far more important for inertia effects are exaggerated. On a control line model, for example, fuel will tend to be piled up with a near-vertical surface in the tank—Fig. 4.



Assuming that the engine intake is on a level with the top of the tank and the fuel pipe arranged suitably to pick up from the tank from full to empty, conditions for starting and adjusting the engine on the ground are zero suction lift. Now with the model flying and tank still nearly full there is effectively a *positive* pressure feed due to centrifugal force, which becomes a *negative* feed force after the tank is half empty.

This effect can be calculated quite easily. Centrifugal force is equal to  $\frac{MV^2}{r}$ , where M is the mass, V the speed and r the turning radius. For a given weight W of fuel,  $\frac{WV^2}{g}$  centrifugal force =  $\frac{r}{g}$  which for 136 m.p.h. (200 ft. per sec.) and a 52½ ft. radius circle is centrifugal force = 23.7 W.

Thus in the case of the example sketched in Fig. 4, at the start of the run with the tank full conditions are equivalent to placing the tank some 23.7 × D<sub>1</sub> inches above the spray bar (i.e., equivalent to nearly 12 inches gravity feed on a 2 inch wide tank). At the end of the run, conditions are equivalent to suction feed of a somewhat reduced order (due to the smaller weight of fuel left). But even so the total change of head from tank full to tank empty is considerable, and the greater the speed and the smaller the radius of the circle, the greater the effect.

Most tanks for speed models are, therefore, made tall and thin, a minimum practical width ensuring a minimum change of fuel head during flight. At the same time the lateral position of the tank with respect to the intake is significant. If too far towards the inboard side of the model (i.e. large D<sub>1</sub> dimension) the motor may have a marked tendency to richen up, slowing the model down when the motor will lean out again, and the process may be repeated until the tank is half empty. Conversely, with the tank too near the outboard side of the model (large D<sub>2</sub> dimension) the motor may tend to lean out too much, Fig. 5. Adjusting the lateral position of a speed tank is often a cure for such troubles.

(To be continued, with special data on pressure-feed tanks)

Motor illustrated opposite is, Czechoslovakian State product, the M.V.F.S.25, first seen at the World Championships, Paris, 1955, featuring off-set needle valve, allpiston directed induction, expanding exhaust port and other potent racing details. The M.V.F.S. also employs a unique fuel feed system as sketched at right. System is the Chikren Hopper principle, the tank is virtually 2-in-1. Both sections of the tank are filled through detachable aerec plug with the model held on its side. Fuel filters through to the feed compartment via a central pipe and when in flight, this feed compartment is continuously supplied from the in-board, main section. Principal advantage of such a method is that there is a minimum of centrifugal force effect on the smaller feed section of the tank, yet the overall capacity is sufficient for the required full kilometre run for competition speed record attempts.





Above, Champion of Champions, H. Ellis of Victoria, launching his W-been 1.5 Class 1 powered winner with many hands to assist in high winds. Next, the second placer, N. Harding, with high lift Max 15 model. At right, Ken De Boniford prepares his 1 1/2 scale Bristol Bulldog, flown as monoplane and biplane, was unplaced; still requires engine cylinders. Below, also unplaced, nice Lancaster by Tony Jaden with four E.D.2.16's.



Above Mercury Aerona kit with radio control by R. Kenille of Queensland. Below: Class "A" TFR winner, Junior Allen of Bendigo at work on B. Deason's racer.



## 10th Australian Nationals

THIS YEAR'S RECORD entry of 170 contestants, provided a most entertaining and keenly fought series of events. Contestants came from most States including Tasmania; in fact, the Wakefield Trophy was won by Van Leuvan of Western Australia (proxy flown, entrant was 1,500 miles away). International flyers will recognise the names of competitors Bond Baker and Adrian Bryant, both recently in Britain, who made special efforts to be present for the competition.

G. Pentland scored top honours in the Free Flight Scale section with a beautiful *Luscombe Skylark*, which boasted not only of perfect workmanship but also perfect scale. This model flew fairly well, but was even surpassed by F. Taylor's excellent flight with his *Westland Widgeon*, which finished second in the event.

Control Line Scale saw a surprising number of multi-engine aircraft, all of excellent construction. Winner F. Taylor had an exact scale *Halifax*, and M. Newnham was runner-up with his *Viscount*, which was first place-getter the previous year. J. Bone recorded third place with an outstanding 90 in. span *Douglas Invader* powered by two Anderson Spitfires. Weighing fourteen pounds this job really pulled hard, and Jack's heels could be seen slipping while he flew. The last two mentioned models were both covered with silvered wallpaper, the A26 being made up with scale panels.

Class 1 Power Free Flight times and performances were seriously upset by the wind, however on following days the Class 11 and 111 events were held under more reasonable conditions. R. Bird put up outstanding performances to win the two classes with the same high thrustline model. He substituted his O.S. Max 29 for a Max 35, and produced the same rocket climb using a single blade 11 x 4 propeller.

Generally the wind upset most of the Free Flight events, the F.A.I. Sailplane, A/2 Sailplane, Wakefield, and F.A.I. Power all suffered. The times in these events should not be taken as an indication of the standard in Australia, as in some instances the boys refused to even unpack their models, and fly in the contest.

Control line enthusiasts put up some rather startling results with the Japanese Max engines, collecting more first than any other makes. Perhaps the best example was the performance of a Max 29 in winning the two

(continued on page 159)

PETROL RATIONING has already had its effect on the forthcoming programme, for as you will see by the S.M.A.E. announcements (centre col.), Area Centralised meetings have been revised to reduce the amount of travelling. Talking of contest programmes, I must point out that the date, August 4th, given last month for the South Midland Rally was quite wrong, this date being reserved for the Northern Gala, whilst the South Midland Rally is on August 25th, the original date for the Northern Gala.

Rally organisers would be well advised to plan their dates at the very earliest opportunity if they intend to get full club support. I learn that coach bookings are likely to be difficult unless very early reservations are made and there is no reason whatsoever why some of the big rallies could not be announced right now to ensure club bookings.

This business of prior announcement of Rallies and open events could make or mar meetings. I feel that whilst weather conditions were appalling at Epsom for the Bill White and Winter Glider Contest, there would have been more than double the support had the date been announced early enough in these columns.

## London

**BLACKHEATH M.F.C.** organised the Bill White and Winter Glider event this year on ominous January 13th, with 58 entries attracted to this desolate spot where the wind was blasting at the merry rate of 20 knots. One glimpse that I had at the results sheet showed that about one third of the entry managed to make one flight and victory went to those in the Bill White who could put up a reserve model for a second flight.

All credit is due to those stalwarts who braved the weather.

### The Bill White Cup

1st: J. O'Donnell, Whitefield, 6 mins.;  
2nd: D. Larter, Men of Kent, 4 mins. 42 secs.

### Winter Glider Contest

1st: P. Anzor, C.M., 2 mins. 31 secs.;  
2nd: M. Savage, De Havilland, 2 mins. 28 secs.

It is hoped to run the event early in March next year in order to obtain a larger entry and better weather. Have they never heard of mad March winds? February is the month for calm weather, I think.

Another London area organised winter meeting was the **WANSTEAD AERO-MODELLING CLUB** Invitation Rally on Wandorad Flats where Sudeup, West Essex and Southgate took part, with the host club, The Class A Final was especially thrilling, no less than five models taking part, three finished, but none were broken, only 19 a.s. attracted 1st from Jera Mike and John Templeman tied for 1st place in Combat whilst in Open Stunt, Dave Platt of Wandorad won with his own A.M.10 powered *Martini* soon to be a kit model. The first A Team Race held in this country to the proposed S.M.A.E. National Rules was won by Mike Bassett's Oliver Tiger Cub model with winning speed of approaching 80 m.p.h. Looks as though A.V. is going to be exciting and a lot of Oliver Tigers will be sent down to the manufacturers for their

*Billie up at 1 point on the occasion of the Bill White Trophy. They are watching the rapid ascent and disappearance of a newspaper sheet in the 20 knot wind! Billie of wind effect can be seen in disastrous collapse of Duncan Woods' (Linton) 2nd Wake entry at right. Dozens of models finished this way.*

slewing process to reduce them to 1.5 c.c. **NORTHERN HEIGHTS M.F.C.** have announced the date for their rally as June 22nd at the Hutton venue. The Queens Cup event for 1957 being for models to the F.A.I. power specification, other events as before. It is hoped that the petrol rationing will not restrict the attendance at this popular Gala, but I know that a lot of people will be saving up their gallons in order to be at Hutton for that inevitable glorious day.

The Regional Gas Board Publicity Department put on a free film show for the **ENFIELD AND D.M.A.C.**, who tell me that they offer this service free gratis provided they show one film of their own for advertising purposes, but this is usually one of the best films anyway. The Club took part in the local Youth Festival and put on a display including a novel "model making" machine made of 1-in. square and wallpaper and was suspended in front of a black background. Materials were fed into one end and models flew out of the other! 1957 Controline Rally is provisionally dated for July 7th, including Team Racing, Combat, Handicapped Speed and maybe stunt.

## Important Contest Changes

In view of the present system of petrol rationing, and consequent restrictions upon travel, the S.M.A.E. Council have decided upon the following changes in the 1957 Programme.

### Area Semi-Centralised Contests

The Area Semi-Centralised meeting arranged for April 28th, is cancelled, and the programme amended as follows:

March 31st: S.M.A.E. Cup A/2 Eliminator  
Keil Trophy Team Power  
March 19th: Atrial Trophy F.A.I. Power  
Gutterless Trophy Wakefield.

### De-Centralised Events

March 17th: Garage Cup U/R Rubber  
April 28th: U/R Rubber  
Weston Cup U/R Rubber  
Lady Shirley Cup Open Tailless

### International and F.A.I. Events

Ats will be required to hold one other A/2 eliminator during March, April, or May. The two F.A.I. events on May 19th will only be three flight (four minute maximum) events.

### De-Centralised Contests

The entry for these is still required, at least seven days before the event. All entries will be accepted after this date, but at double fees.

### Entry Fees

Note there is no reduction in fee for Junior entries in Power Contests. Entry fee for this class is 1s. 6d. to all full members.

**DEBONAIRS M.F.C.** enjoyed considerable publicity when the local dry cleaners window was loaned for a prominent display of models which has already increased membership. They also had the front page of the local paper with a good photo and several. This club is being put on the right lines, having already formed its constitution and rules, and has adopted Captain Scott's Antarctic motto, "Patience, Lenté", literally means "make haste slowly".

## Southern Area

To coincide with the S.M.A.E. Cup and Keil Trophy event on March 31st, the area is running Open Power, Glider and Rubber Free Flight contests, plus A and B Team



Racing, Radio Control and Chuck Glider events. No venue is announced, but I hope to have this in time for next month.

**DORKING AND DISTRICT M.A.C.** would welcome new members, details can be obtained from F. Tuck, 11 Parkway, Dorking. They have awarded a seal of merit to the local Model Aircraft Shop for their great help to members and believe that this is the first time any such award has been made by a club in this country.

## South Midland

**OXFORD METEOR M.C.** have a few own design models on the board, but there is a decided tendency to use V.P.S. designs by most members. One original model due to come out soon is a low wing free flight model with an Anco P.H. 3-S.

## South Eastern

Final results of the club championship in **BRIGHTON D.M.A.C.** shows Fred Bowal to be the winner, his brother Reg the runner-up and Peter Brown 3rd. 1957 sees the club celebrating its Silver Jubilee and in February plans will be formulated to commemorate this event.

Along the coast, **SOUTHERN CROSS A.C.** elected John West their sportsman of the year, and a glance at the trophy awards list for 1956 shows that he won 50 per cent. of the cups, including the Miles Trophy for Club Championships. I like their announcement for the Annual Dinner for January 26th: "The Bar will be open at 6.30 and eating commences at 7.00 p.m. Anyone arriving after that will find both his soup and his welcome cold..."

## East Anglian

I see by the Area newsletter of January that people who are having difficulty with

**For Your Diary**

- ANNOUNCED RALLY DATES**  
**March 31st**  
 Southern Area Rally—Open 1/1, 1/1R—venue to be announced.  
**April 13th-14th**  
 Indoor Rally—Corn Exchange, Manchester.  
**June 23rd**  
 Northern Heights Gala—All Classes—R.A.I., Hailton.  
**July 7th**  
 Entfield Controlline Rally—1/1R, Combat and Speed.  
**August 25th**  
 South Midland Rally—All Classes—Cratfield.

transport to any events are asked to contact the Secretary, N. Willis, or P.R.O., M. A. King, as early as possible. I hope the applicants for coupons have some success. The Winter Contest held on January 6th (their first event of the year) attracted members of Thameside, Angha, Cambridge and Lamdan despite the very cold, icy conditions. First all-in result in power rubber/glider contest are as follows:

- |                 |             |
|-----------------|-------------|
| 1. M. A. King   | Power 8:50  |
| 2. G. Reed      | Power 9:48  |
| 3. G. French    | Glider 7:00 |
| 4. Miss G. Cox  | Glider 6:06 |
| 5. N. Willis    | Glider 6:51 |
| 6. R. Grosvenor | Glider 4:38 |

**WITHAM D.M.A.C.** have been holding regular meetings at the W. J. Hall, Ravenhall, every first Saturday in the month at 7 o'clock, and held four contests during last summer. T. C. Rogers was champion of the year for outdoor free-flight, and right now they are settling down to indoor flying, where chuck gliders, Jetex and rubber R.T.F. are very popular. They claim 54-45 m.p.h. from a Jetex 30 on 6-in. wires. New members are welcome at any time and can be assured of a good evening.

**At NORWICH** the M.A.C. held their A.G.A. and R. Howard-Alpe raised himself the controlline champion by winning Speed, Combat and Class A Team Racing at earlier meetings. Three of the lads have started planning for contests during the nights of about four hours with no external fuel connections. Sounds a good deal more sensible than those 34 hours auxiliary fed American marathons.

**Western**

Multi-enned controlline models are popular with the **BRISTOL ACES** where Secretary, Peter Dimaggio's beautiful scale Amphidax and B.F.A. Flagship captured spark of interest for 26-in span *Moyana*, a *Cessa 310*, a *Dakota* and it is said that there are more to come. On the free-flight side, an M1 contest is usualising among the A.P.S. *diadet* as a standard model.

**Midland**

**LONIC EATON D.M.A.C.** have elected a formidable number of fourteen officials, including a catering manager, which is quite a new one on me. The club has organised an R.T.F. League which is now in full swing with a top speed of about 95 m.p.h., presumably by Jetex. The club has boxes of its own workshop and headquarters in the near future.

The **BIRMINGHAM M.A.C.** finished the first year with a flourish by Reg Lenson winning the Flight Cup and Ray Manks only just managing to get his S.M.A.E. dinner ticket by winning the Long Senior. The Midland Area Rally was won by the club at Wellsboro. Mounted, Indons, two more records have fallen to members of the club, those of the Class "A" R.T.F. and Clubfighter.

Congratulations to the **LEICESTER M.A.C.** in presenting a full size plan for indoor lightweight on the back of their January newsheet. This was called "Junior Juggermatt", quite a smart little model which

could be covered by Microfilm or tissue, and which we are sure will be very popular among indoor fliers. Their film shows must be popular, as they have to run on a ticker on the walls. I also note that this year is the 21st in the club's history. On February 27th, Geoff Dunmore will give a talk on Eppanderson illustrations on the club's history and the members must suggest topics on the appropriate way of celebrating the anniversary during the coming year.

**North Eastern**

Following the dissolution of the West Hartlepool D.M.A.C. there have been many people who have been seeking a local club to go to, and eight of them with access to three large free-flight fields on a school playing field for controlline are intending to form the **WINGATE D.M.A.C.** People in the vicinity are advised to contact G. Trudgill, Waiside, Durham Road, Wingate, Co. Durham, for details of membership.

The **SOUTH SHIELDS A.M.A.** had the last year and suffered the temporary loss of an A.P.S. *Number Eight* glider which flew on, on the usual test flight from Town Moor. In his first try at Combat, "Nutt" Almond came 2nd of G. Oswell, of **TYNE-MOUTH M.A.C.** (see "Model News") January issues and most remarkable of the recent flights was W. Metcalfe's out of sight flight at 2:47 with the A.P.S. *Creeper* from only a 3 second engine run—needless to say with considerable thermal assistance.

**North Western**

Indoor National Meeting at the Corn Exchange, Manchester, is planned for this winter by the area and has been referred to the M.A.C. for approval and backing. The actual date will be during April, but as they say, why not start that indoor model now? (see Hanger Hours).

The Rally of 1956 from the **COLNE D.M.A.C.** was held on December 10th-24 minute maximum were flight and as the following results show, J. O'Donnell maintained his usual invincible reputation. The first set was won through very high gusts, with rain, wind, snow and finally, near flat calm with very bad visibility. Radio Control attracted five entries.

<b>Rubber</b>			
1. J. O'Donnell	Whitefield	6:30	
2. H. O'Donnell	Whitefield	5:44	
3. D. Barber	Southport	3:30	
<b>Sailplan</b>			
1. J. O'Donnell	Whitefield	6:57	
2. Francis	Cheshire	5:50	
3. Hillwell	Sharston	5:05	
<b>Power</b>			
1. Riley	Accrington	6:32	
2. E. Lord	Accrington	5:21	
3. B. Eggleston	Whitefield	5:20	
<b>Combat</b>			
1. Carley	Whitefield		
2. R. Place	Wharfedale		

**WHITEFIELD** are well in evidence in the above results, and also announce that they enjoyed a Christmas Party at the local social club, which by all means were invited. This was the first party of its kind to be held by the club for some time, and the programme was a mixture of films shows, games (attn and drinks). I have no doubt that a fine time was had by all and there is a general agreement that this should be made an annual event.

The M1 Glider specification has been revised by the **CHADEL D.M.A.C.** as their construction courses followed by the free-flight contests. They are also having a series of discussions on the various types of model on club nights during winter evenings.

**WALSLEY M.A.C.** have been struggling manfully to run all the camps over the past months between gates, and John Hainey was the winner of rubber and Stan Hinds Glider on Hadfield's stoppage play in the power event, visibility at 3 p.m. down to 30 yds. As a result of the recent F.A.I. announcement, most members are now building "open" models in all classes as

distinct from the F.A.I. restrictive types. "Hot" engines have been appearing from the fullander stable, and I expect to see quite a number of these units in action during the coming season.

Much the same point of view comes from **WIGAN A.C.** concerning F.A.I. models. For they are building open design and also have interest in controlline speed. A search club is being formed to make things easier on the pocket for the intended trip down to the Nationals at Waterbeach and a film show is being planned to encourage new members into the club, which now has twenty-six on its books.

**HYDE M.A.C.** announces a Radio Control Rally on April 7th, the Rally to be held on their new and larger field which is just outside Hyde. This is a pre-entry event, fees 3s. per model with cash prizes tapering down from £3 3s. for first place. The contest permits more than one model per person and each flight must last longer than 5 minutes and no more than 15 minutes. Entries to James Leigh, 21 Harding Street, Hyde.

**Scotland**

**ANGUS D.A.C.** held its A.G.M. in MONTROSE M.A.C. clubhouse on December 16th. New League Comms. Secretary is Roy Yule of BLICKSBURN A.C. Six competitions fixtures were planned. Venue of first 1st Mountain Aerodrome on April 28th for Open Rubber and a one-hour scratchable plus M2 Glider between April and September, six M2 competitions will be held in conjunction with the other events run by the League in 1957.

There is a club at **TARVES** in Aberdeenshire with an enthusiastic membership of twelve, and the current craze is flying controlline by moonlight. New club record has been set on 23rd Donald's Frog 149 powered. Fax of 8 mins. 35 sec. 0.0s.

**Wales**

From C. Green of 115 Deva Way, Queens Park, Wrexham, N. Wales, I have an appeal for old copies of *AEROMODELLER* and similar magazines to be sent to him for distribution in the local T.B. Sanatorium and Orthopaedic Hospital. Mr. Green spent some time in hospital in a local hospital with a crushed hand, appreciates how time can hang heavy when you are out of action, and feels that the lads will certainly appreciate anything that can be sent along.

**Pen Pals**

Japanese 19-year-old modeller, particularly interested in F.V.I. classes. Contact: Y. Kimura, 102 Ishiyama-cho, Onara, Hokkaido, Japan.  
 Canadian Pen Pal wanted for M. Michel, 7 St. Rule Place, Auchmuty, Glenrothes, Fife, Scotland.

Australian, Tasmanian, or New Zealand Pen Pal wanted for keen 22-year-old flier, C. McNulty, 24 Tuckett Rd., Woodhouse Bay, Brisbane, Queensland.  
 For Japanese Speed Champion, T. Fujii, c/o Tatum, 3-287 Takada-Minami, Tofumitsu, Tokyo, Japan, a British controlline Pen Pal wanted.

A special plea by B. Cant, 108 Graham Road, Southampton, for pre-war plans for Cahills, Kordas, and flying Minuties Wakefields, plus "Nippy" the Normie kit.

**NEW CLUBS**

**LAMPWORTH & DISTRICT M.A.C.**  
 115, Milton, 2449 St. Andrew Road, Heckle Heath, Southall, Warwickshire.  
**PECKHAM M.A.C.**  
 A. E. Fisher, 26 Strickland Court, London, SE 15.

**SECRETARIAL CHANGES**

**ABINGDON & DISTRICT M.A.C.**  
 A. J. Howe, 10 Mathews Way, Lambourgh Hill, Nr. Abingdon, Berks.  
**ASHTON M.A.C.**  
 W. Hadfield, 0 Lord Street, Stalybridge, Cheshire.

## 10th Australian Nationals (continued from page 156)

Class II Team Race Events and in the second breaking the Australian Record. This plane of D. Whitley, flown by stunt star A. Bellamy, recorded 8 mins. 42 secs., and consistently clocked 90 plus m.p.h. for 40 plus laps during a whole day's Team Racing. Oliver's dominated Class I Team Race, and it seemed to be just a question of who had the best props and fuel to decide the winner — H. Deason, J. Crockett, former Victorian Junior Stunt Champion, gained top honours in the Stunt event flying his "Draggin' Wagon", powered with a Fox 35.

An enormous entry in the Combat saw once again a large number of O.S.'s, and the winner, R. Ellis, had a particularly fast job powered by a Max 29. Flying wings were popular, although a Team Racer flown by R. Silva managed to reach the final.

Australian Class III Speed Record was broken by J. Buck, in a spectacular fashion, when he recorded 149 m.p.h. with a McCoy 60 powered model employing Monoline. This was approx. 11 m.p.h. better than the previous record, and Len went on to win the Class I and come second in Class II with 120 m.p.h.

Radio Control saw only rudder control operation and several of the star entrants had troubles or crashes before the event, thus making the field fairly small.

The potential for radio flying in Australia is quite strong, and this year should see rapid developments of vastly increased numbers entering the ranks of the controlled Free-Fighters.

This year's Champion of Champions was R. Ellis of Victoria, who proved himself an all-rounder by placing in four Free Flight events, and topped this off by winning the Combat. His Fox 29R speed job would have made some impression had the fuel supply been stable.

Lasting impressions gained from this year's Nats

were—the smaller and faster Team Racers in all Classes—very large stunt models all powered with 5 or 6 c.c. motors—very small and overpowered combat machines—many multi-engined scale jobs, practically ruling out the enthusiast with a perfectly finished single motored aircraft—the usual take-off troubles with speed jobs—the necessity for penetration with a radio controlled model and spectacular climb of the high thrustline Free Flighters—**Tony Farn**

## FREE FLIGHT

Class I	...	R. Ellis (Victoria) 6 : 32 Ratio
Class II	...	R. Bird (Victoria) 21 : 33 Ratio
Class III	...	R. Bird (Victoria) 20 : 6 Ratio
R/Control	...	R. Robinson (Victoria)
F.A.I. Glider	...	R. Hammond (N.S.W.) 835 secs
Jetex	...	C. Stanes (Victoria) 213 secs.
Club Glider	...	C. Stanes (Victoria) 237 secs.
Scale	...	G. Pentland (Victoria) 614 pts.

## CONTROL LINE

Team Race I	...	H. Deason (Victoria)
Team Race II	...	D. Whitley (Victoria) 9 : 31
Team Race III	...	I. W. Shurmer (N.S.W.)
"Advertiser" Trophy	...	D. Whitley (Victoria) 8 : 32
Speed I	...	L. Buck (South Aust.) 96 m.p.h.
Speed II	...	F. Finerman (N.S.W.) 136 m.p.h.
Speed III	...	L. Buck (South Aust.) 109 m.p.h.
Combat (Butcher's Picnic)	...	R. Hyde
Stunt	...	D. Crockett (Victoria) 342 pts.
Junior Stunt	...	I. Wright (Victoria)
Scale	...	F. Taylor (Victoria)

## INTERNATIONAL TEAMS

A/2		F.A.I. POWER	
1st B. Howie (South Aust.)	507	1st R. Habtead (Victoria)	540
2nd R. Hammond (N.S.W.)	488	2nd J. Fullerton (Victoria)	433
3rd D. Jacob (Tasmania)	487	3rd R. Ellis (Victoria)	438
4th M. Buckmaster (Vict.)	454	4th B. Healy (N.S.W.)	364

## WAREFIELD

1st Van Leuvan (West Aust.)	...	647
2nd M. Hayson (Victoria)	...	536
3rd B. Baker (Queensland)	...	540
4th R. Bird (Victoria)	...	520

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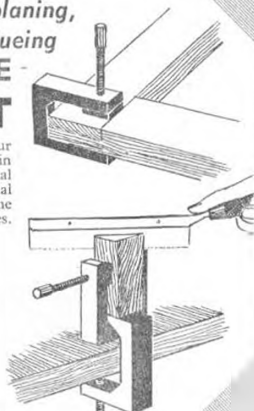
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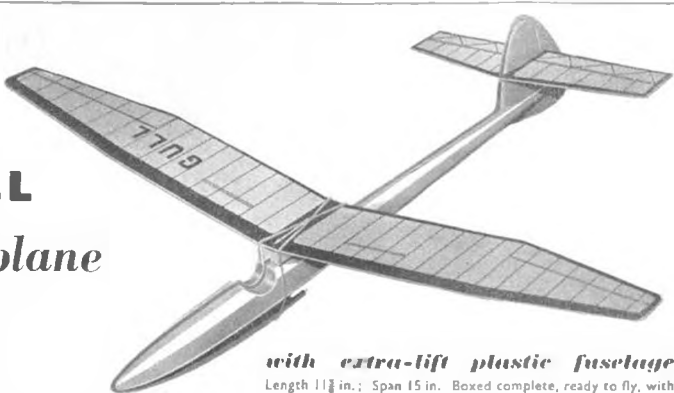
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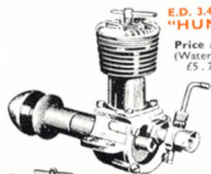
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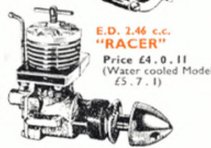
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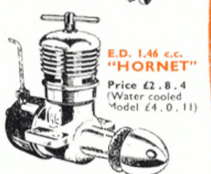
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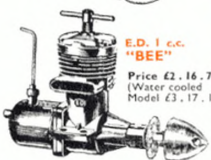
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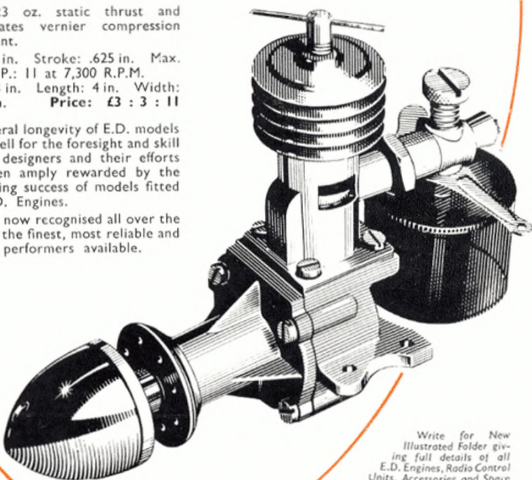
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