FEBRUARY 1959

AERO MODELLER

B.E.2e Model & 3-view

1'6

BAMBI

The World's smallest production diesel engine. This has been developed for the experienced Modeller and is ideal for small scale models. Complete with metal propeller blank.

Bore—.218"
Stroke—.250"
Capacity—.15 c.c.
—.009 cu. ins.
Weight—¼ oz.
Propeller—4¼ dia.

Price £3 . 5 . 0
P. Tax 12 . 3
Total £3 . 17 . 6

DART

Undisputed champion of the 'point fives', it is built like a watch and has a performance that would not disgrace many larger engines.

Bore—.350"
Stroke—.350"
Capacity—.5 c.c.
—.03 cu. in.
Weight—1¼ ozs.
Propeller—C/L 6" x 4"
—F/F 7" x 4"

Price £2 . 14 . 0
P. Tax 10 . 5
Total £3 . 4 . 5

STANDARD MERLIN

For those with a tight budget this is the ideal engine. All the virtues of the Super Merlin, but without the extra fittings. Positive lock needle valve.

Bore—.375"
Stroke—.420"
Capacity—.76 c.c.
—.046 cu. ins.
Weight—1¾ ozs.
Propeller—C/L 6" x 6"
—F/F 7" x 4"

Price £1 . 16 . 9
P. Tax 7 . 1
Total £2 . 3 . 10

SUPER MERLIN

Performance s as good as it looks, and it really is easy to start and operate. Complete with propeller, spinner and tommy bar.

Bore—.375"
Stroke—.420"
Capacity—.76 c.c.
—.046 cu. ins.
Weight—1¾ ozs.
Propeller—C/L 6" x 6"
—F/F 7" x 4"

Price £2 . 4 . 1
P. Tax 8 . 6
Total £2 . 12 . 7

SPITFIRE Mk. II

The perfect engine for the beginner. Combines easy starting, flexibility and long life with sparkling performance. A limit stop ensures that the compression setting can be found without difficulty.

Bore—.425"
Stroke—.420"
Capacity—1 c.c.
—.06 cu. ins.
Weight—3 ozs.
Propeller—C/L 7" x 5"
—F/F 8" x 4"

Price £2 . 4 . 1
P. Tax 8 . 6
Total £2 . 12 . 7

SABRE

This powerful motor is ideal for the smaller radio control model as well as free-flight and control line. Complete with propeller, spinner, tommy bar and plastic fuel tank.

Bore—.525"
Stroke—.420"
Capacity—1.49 c.c.
—.09 cu. ins.
Weight—3¼ ozs.
Propeller—C/L 7" x 6"
—F/F 8" x 4"

Price £2 . 4 . 1
P. Tax 8 . 6
Total £2 . 12 . 7

RAPIER

A high performance engine with twin ball races, downdraught carburettor and rear rotary valve. Provision for a two-speed fitting or choke assembly makes it ideal for contest work and radio control.

Bore—.580"
Stroke—.575"
Capacity—2.49 c.c.
—.15 cu. ins.
Weight—5¼ ozs.
Propeller—C/L 9" x 6"
—F/F 9" x 4"

Price £3 . 7 . 0
P. Tax 12 . 11
Total £3 . 19 . 11

MANXMAN

A powerful, rugged motor suitable for the larger model especially for radio control work. Complete with spinner, tommy bar, and integral plastic tank.

Bore—.687"
Stroke—.562"
Capacity—3.5 c.c.
—.21 cu. ins.
Weight—5¼ ozs.
Propeller—C/L 9" x 8"
—F/F 10" x 6"

Price £3 . 5 . 0
P. Tax 12 . 6
Total £3 . 17 . 6

Engineered to last a modelling lifetime by

DAVIES CHARLTON LTD.

HILL'S MEADOWS DOUGLAS, ISLE OF MAN

The Royal Air Force spans the world

Map compiled and drawn by the Directorate of Overseas Surveys

As progress in the air forges ahead, the world is rapidly becoming a smaller place. Even the distance between one continent and another no longer helps to safeguard a nation's security. And for this reason, the Royal Air Force must tackle the problems of defence on a world-wide scale.

Looking ahead. New air weapons are bringing increased responsibility to those in command in the R.A.F. The approach of the space age presents a challenge that can only be met by men of the highest calibre. A flying career with the R.A.F. calls for both individual skill and command abilities. It is a career which combines adventure with an excellent future.

TYPES OF COMMISSION

Direct Commission (1). Permanent—leading to a pension.

Direct Commission (2). 12 years with an option of leaving after 8 years and an opportunity of gaining a permanent commission.

Short Service Commission. 5 years with an opportunity of gaining a permanent commission.

Pay and Gratuities. The new increases in pay and allowances enable a flight-lieutenant to earn, with full allowances, nearly £1,700 a year. Non-permanent officers qualify for a tax free gratuity of up to £4,000. For further information see below.

The age limits for Aircrew candidates are 17½-26. Applicants should have attained a high standard in G.C.E. (or equivalent). For further information write stating your date of birth and educational qualifications to the Air Ministry (Dept. AM34a), Adastral House, London, WC1.

THE R·A·F - A GOOD TEAM TO JOIN

THE interest and excitement of *flying* reaches to every job in the Royal Air Force. You feel, too, the satisfaction of being one of a picked team—in a Service that's right in the forefront of new scientific developments. It's teamwork that produces the breathtaking climb of a supersonic fighter, the uncanny accuracy of a radar-guided missile. Good teamwork by men and women who are proud of their job and know they are in an interesting, well-paid career—a *modern* career.

TEAMWORK IN ACTION!

Flt/Lt. d'Oliveira completes another trouble-free flight. He left El Adem, Libya, just 5 hours ago: breakfast in North Africa, lunch in Wiltshire!

Flt/Sgt. Humphries, aerodrome traffic controller, speaks on the R/T to the pilot of XK 671. His is a complex job—and an interesting one, too.

PLACE: R.A.F. Lyneham, Transport Command.

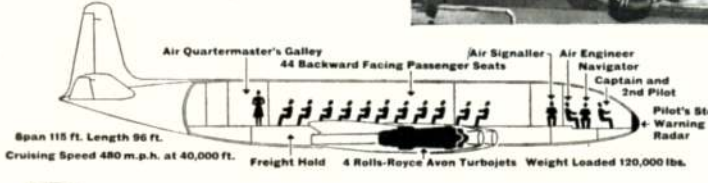
TIME: 1200 hours, and XK 671—a troop-carrying Comet C2 of R.A.F. Transport Command—flies in with scientists and equipment from Woomera, Australia.

S.A.C. Neilson, cook, completes packed meals for outgoing passengers, as the arrival of XK 671 heralds more arrivals in the Visitor's Mess.

A.C. Painter, air movements clerk, checks passenger and freight lists with XK671's Air Quartermaster—W.R.A.F. Sgt. Wickham, one of the first women N.C.O.'s to do this important and interesting job.

TO AUSTRALIA—IN 31½ HOURS!

Operating at speeds of up to 500 m.p.h., the R.A.F. Comets bring the furthest parts of the world within almost a day's flight of this country. They are the world's first pure-jet transport aircraft in squadron service and can carry 44 troops; ideal for important military airlifts where speed is essential.



THE ROYAL AIR FORCE

—a life of opportunity

SEND FOR FREE BOOKLETS!

To R.A.F. (A.M.51), Victory House, London, W.C.2
Please send WITHOUT OBLIGATION details of Ground careers in the R.A.F. (Applicants from British Isles only).

NAME_____

ADDRESS_____

_____

_____ Date of Birth_____

If you're too young for the R.A.F.—
join the Air Training Corps!

Heard at the HANGAR DOORS

AERO MODELLER

Editorial Director
D. J. Laidlaw-Dickson

Advertisement Director
C. S. Rushbrooke

Editor
R. G. MOULTON

Editorial and Advertisement offices:
38 CLARENDON ROAD, WATFORD, HERTS.
TELEPHONE: WATFORD 32351 (Monday-Friday)

CONTENTS VOLUME XXIV
No. 277 FEBRUARY, 1959

Special features

Regular features

AEROMODELLER Incorporates the MODEL AEROPLANE CONSTRUCTION and is published monthly on the 15th of the previous month by the Proprietors.

MODEL AERONAUTICAL PRESS LIMITED. SUBSCRIPTION RATE: (Inland) 23/-, (Overseas) 22/- per annum prepaid including the special Christmas Number.

S.M.A.E. affairs

THE RECENT A.G.M. of the Society of Model Aeronautical Engineers (held for the first time at Blackpool) was well attended, there being 44 members present representing 26 clubs. In case this should be decried, it should be noted that the previous A.G.M. held in London was very scantily supported, despite the admittedly better access that is enjoyed by the metropolis.

Amongst the items discussed and passed was acceptance of the Council's recommendation to increase the membership fees (*see* January issue), which was agreed on a unanimous vote. (We learn that objections have since been received from some quarters, but would point out that all clubs and individuals had the opportunity to voice their criticisms before the meeting voted in a constitutional manner. The fact that they woke up too late is surely an indication of the general laxity prevalent among far too many members today.)

Mr. Henry J. Nicholls (Hon. Technical Secretary) and our ex-Editor, Mr. H. G. Hundleby, were elected to Fellowship of the Society, whilst in the ballot for Vice Chairman, Mr. D. A. Gordon received 29 votes against Mr. E. F. H. Cosh's 20. Only 41 clubs voted, a further sign of the apathy existing within the organised movement.

In future Area Competition Secretaries will receive copies of the official News-letter, it being obvious that difficulties are created when vital information is not forwarded to the appropriate official by an Area Secretary. It was further agreed to re-consider the decision to drop the U.K. Challenge Match from the 1959 programme, Mr. Meechan, representing Scotland, putting forward some very cogent reasons for its retention.

At a Council Meeting held on December 20th, this recommendation was implemented, and it is proposed that the U.K. event will be held in conjunction with the 1959 Scottish Gala, the Northern Area being allotted the provision of a team to represent England.

It was further agreed to supplement the double-Trials system by the addition of two series of Eliminators, one set to be fixed according to the schedule (*see* page 83) the other to be arranged according to individual Area convenience with the proviso that the meeting(s) shall be completed and results forwarded not later than April 30th.

After much debate, the speed events at the 1959 British Nationals were arranged with Classes 2 and 3 on Sunday May 17th, with the whole of Whit Monday devoted to the International (Class 1) section, this serving as a basis for International Team selection. Other events that will serve similar purpose are: Lady Shelley Cup (Tailless) April 19th; Gold Trophy (Aerobatics) and Davies "A" Cup (International Class T/R) May 17th; and International Class Radio Control co-incident with the Area Championships on June 28th.

It having been established that an official entry had been received at H.Q., but had subsequently been mislaid in

transmission to the Competition Secretary, Mr. Yeldham (Belfairs) was declared the winner of the ½A class Team Race held on a de-centralised basis on September 28th, 1958.

F.A.I. decisions

Brief details in draft form are available from the F.A.I. Conference held in Liege on November 28th-30th, 1958. These are as follows:—

(*a*) Maximum loading for R/C models is increased to 75 gm./dm2.
(*b*) Size of pennants on towlines for gliders is increased to 2.5 sq. dm.
(*c*) National Teams for future World Championships reduced to *three*. All scores to count for team purposes.
(*d*) "Attempt" time for power models increased to 20 seconds, thus bringing into line with other classes.
(*e*) Normal Wingover removed from C/L Stunt schedule; triangular loop and four-leaf clover patterns introduced.
(*f*) Team racing limited to three pilots per race.
(*g*) No rules for indoor models were decided, but will be debated once experience has been gained at meeting to be held in Hungary during 1959, plus rules submitted by Britain and U.S.A.
(*h*) Russia is unable to exercise her option on the 1959 Championship events, and as other delegates were not forewarned on this point, it was not possible to finalise the programme. National Aero Clubs are being circularised with a view to obtaining offers to conduct the scheduled events.

Mr. A. F. Houlberg, who has been President of the Models Commission for the past 11 years, regretted his inability to accept further nomination owing to business commitments.

M. Roussel of Belgium was elected to the Presidency; Mr. Meier (Germany) re-elected Vice-Chairman; and Mr. Husicka (Czechoslovakia) was appointed Hon. Secretary to the Models Commission.

Deceptive fog

Chobham Common looked more grim than usual on December 7th for the Blackheath Club Gala. Fog restricted visibility to 100 yards for most of the time, but the stalwart competitors persisted in going through with events and during the very few clear periods, it was possible to follow a 3-minute flight. Yet many models were lost in what appeared to be the dead still conditions of temperature inversion. What was happening above the fog level became apparent when one or two models were picked up miles from the launching area, covering a greater distance than normally expected on a clear day. Be warned! Above the fog there was a steady stream of fast flowing air to trap the unwary, and we understand that this is to be expected in such conditions. What goes up in apparent dead air may not necessarily re-appear near the same spot!

Book value

Three books which have recently been issued can be heartily recommended to all scale modellers as standard references for pictorial detail of markings. Free, on application mentioning AEROMODELLER, from the Press Office, Air Ministry, Whitehall Gardens, London, S.W.1, the 40-page book of the "Royal Air Force, 40 Years in Pictures" has been reprinted to meet the heavy demand for the original issue. Well produced on art paper, it includes 65 of the best Air Ministry pictures, specially selected to depict the progress of the R.A.F. from Camels to the Bloodhound, many of them rare views. More expansive in its coverage, *The Aeroplane* Pictorial Review No. 3 offers a unique account of 1958's Aviation Highlights with over 250 photographs in 128 pages at 10s. 6d. This volume is of particular value to many plastic kit modellers who want photo-detail of modern aircraft to help them embellish their efforts.

Third new book is remarkable for its wealth of information on airline livery. Produced with John Stroud's authentic colour drawings displayed in clear style, the "B.P. Book of Airlines" sells for a modest 3s. 6d. and if it had not been for the British Petroleum Company's backing, we can assure you that the cost might well have been five times as much. No less than 81 airlines are shown in colour to depict the member companies in I.A.T.A., and pertinent facts about each airline are quoted in four languages. For all A.P.S. Viscount modellers there is a wide choice of dazzling schemes to adopt, and plastic enthusiasts can take their pick of Caravelles, Comets, 707s, Britannias and DC-8s to get that "different" colour scheme. *(See pic. below)*

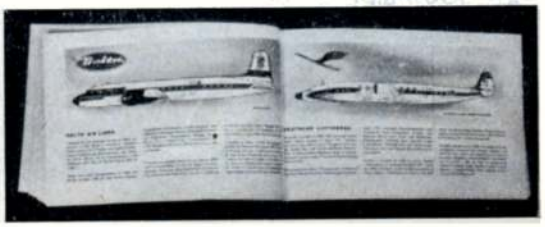
X-15

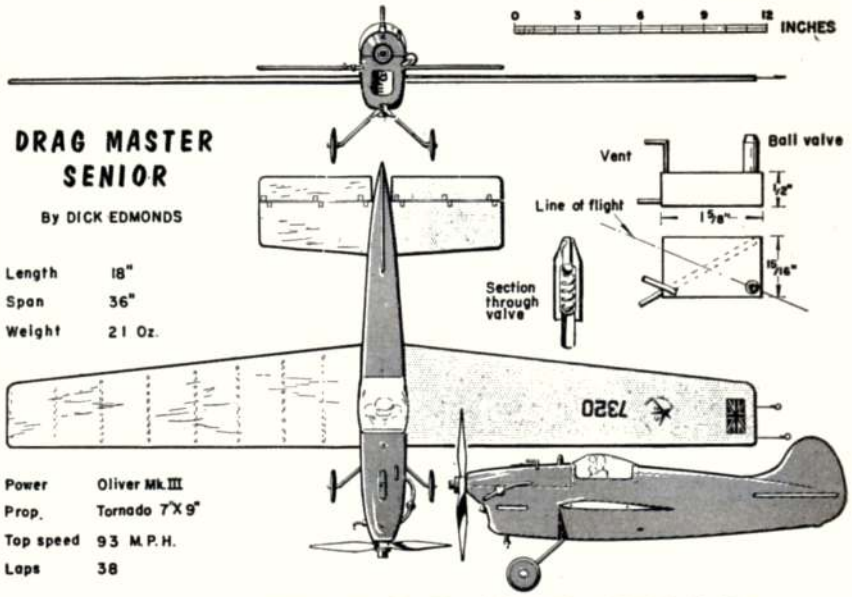
So many readers have asked us for more information on the North American X.15 that we offer no excuses for reproducing yet another view this month, in our heading. Some have pointed out that our drawing on page 25 differed in tail area and skid detail from other published silhouettes, but we hasten to assure them that this manufacturer's 3-view ties in with the photographs. At least one Dynajet-powered scale model is already on the way!

Plastic Contest

Judging the National Plastic Model Contest organised by Messrs. S. Guiterman and Company for their Lincoln and Lincoln-Hawk ranges, we were struck by the way our features on plastics have obviously been closely followed. Photos of the two £100 winners were printed on page 38 last month.

Undoubtedly the finest of the many hundreds of models entered was A. S. Wilson's Mustang with invasion markings, a detailed cockpit and coloured imitation jewellery to simulate instruments, navigation and identification lights. The camouflage finish (Humbrol) with equal standard of mattness for all colours, the neat hand lettering and the undercarriage detail gave it a clear lead—and we now discover it was made in four evenings! Second and third places went to D. A. Knight's Spad in Rickenbacker's colours and J. A. Rollin's Grumman Panther in a gaudy trainer colour scheme. Each was exceptional for hand paint work, a feature that spoiled the chances of S/Sgt. D. H. Halverson's Britannia with a motor to drive each of the four props, and so gave best Lincoln kit model prize to B. Borthwicke for his very up-to-date Britannia decor. Lincoln-Hawk models dominated the consolation prize list and special mention should go to R. W. Estridge for the finest example of metal covering we have ever seen, on the Convair Dart X.F.92, and to D. A. Knight for smart presentation of his Rickenbacker Spad XIII.





Dick Edmonds on TEAM RACING

IN TEAM RACING, as in everything else one attempts to do, the essentials have to be sorted out from the less important items and one has to concentrate one's efforts on getting these right first. The order of importance for these essentials is firstly, the tank and fuel system; secondly, the motor and prop combination; and, thirdly, the airframe. Obviously, if any of these combinations are wrong, it will render the other good work a waste of time. Reason for putting the tank first is based on the idea that it governs the performance of the engine, not only in the amount of laps but also the average speed.

How many models does one see start off really fast for the first few laps and then creeping round lean and hot for three-quarters of the run, or on the other hand, starting rich with the engine gobbling up the fuel, and "coming-in" for the last of the tank? In both cases it is possible for a potentially slower model to put up a better average speed, as well as covering greater range.

Firstly, and most important with any tank, it must be readily accessible for no one can guarantee to get a perfect run with a new tank every time, and if this is so, then it is possible to make another or modify until right.

No 2 in our new series

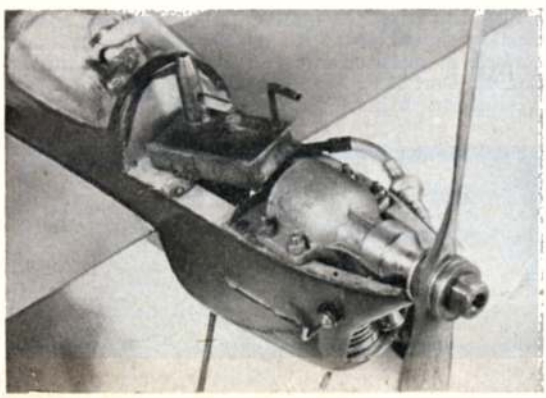
EXPERTS FORUM

Utilise gravity feed: the bottom of the tank should be completely above the needle valve, this ensuring that the fuel will run down to the needle for quick re-starting, also it is on top of the engine bearers which makes it very easy to get at and the bearers make a secure fixing point, to reduce fuel frothing.

Shape was determined by trial and error, practically every shape imaginable being tried, from square to round, but the plain rectangular shape gave the most consistent results when placed diagonally across the fuselage and delivering fuel to the needle on the inside of the model. The needle then comes on the outside and is much handier for making quick adjustments.

Now for the filler: this is a simple ball and spring type non-return valve, to prevent syphoning. With the two vent system there is nearly always syphoning when the tank is full; another advantage is with a single vent facing forward the slipstream tends to put a slight pressure on the fuel system, this has the effect of making the needle valve less critical to adjust. Finally a fuel filter: all fuel that enters the tank must be absolutely clean. Always use one in the actual filling bottle as well as in the fuel line. With a consistent tank a good needle valve and a clean fuel you can always guarantee the number of laps the model will do, consistency is the main thing with any team racer; to know what the model will do and be able to make it do it every time. The number of laps you can hope to get will vary from motor to motor, but as a general rule the motor ought to be able to do three laps per c.c., even on the smallest prop, and a good one has been known to do as many as five laps per c.c., but the latter figure is exceptional. It is easier to get this lappage with a 10 c.c. tank than with a 15 c.c. because the fuel height variation is less with a smaller tank and so the mixture strength remains more constant.

Next, the fuel. As stated before, absolutely clean fuel is a *must*. It should be filtered at every stage, from the mixing to the filling of the tank. Another important



Dick's tank and Oliver Tiger set-up with four-sided prop screw to speed broken prop changes. Drawing above shows his Championship winning model and tank dimensions

point is the accuracy of the proportions of the different ingredients. A good photographic measure is ideal for this job. Putting your thumb half way up a bottle and saying "that's 50 per cent." is just not good enough, and when adding amyl nitrite, a Burette with a ground glass tap is essential. I do not use any fancy formula, just a straightforward mixture of Paraffin, Castor Oil, and Ether, plus Amyl Nitrite in proportions of 45 per cent. paraffin, 20 per cent. castor oil, 35 per cent. ether plus 2¾ per cent. to 3 per cent. amyl nitrite. This is recommended by Mr. Oliver in the instructions given with his engines. I prefer amyl nitrite, the motor does not harden off or over-compress as easily as with amyl nitrate. The amount required will vary from day to day and sometimes during the same day the percentage will require alteration. With too much nitrite the motor gets unduly hot, is hard to re-start and the performance drops off; range is reduced, too. Lack of nitrite makes the compression setting very critical and smooth running nearly impossible. To combat these various conditions, always mix up two fuel mixtures, one with extra nitrite. I make 2¾ per cent. my standard percentage and take a small quantity with extra nitrite, say 10 per cent., and add this to the fuel as required.

The modeller can ensure that he obtains best performance by careful running-in when the motor is new. This point cannot be stressed too much. The motor should be progressively run-in in the air and on the bench, gradually reducing the load, until it reaches its peak. Start with a 10 x 6 for the first 15 minutes then a 9 x 6 for the next 30 minutes and finish off the last 15 minutes with an 8 x 8, it will now be ready for flight testing. At least another 2½ to 3 hours with the 8 x 8 should be completed in the air before the load is reduced further, a 7 x 9 can then be tried, or whatever prop that is usually used, but if it is a prop that revs more than a 7 x 9, a further hour with the 7 x 9 should be completed first.

I always re-work my motors, doing essentially the same as an Oliver re-work, details of which can be obtained from the makers. There is no great reduction in laps and the speed can be anything up to 10 miles an hour faster. If you happen to be unfortunate enough to have a motor that will just not perform, the cause can very often be discovered by careful inspection and rectified. One component that can cause trouble is the crankshaft and ball race assembly. Sometimes the ballrace will have worked loose on the shaft; this will slow down the motor and if run for long in this condition the shaft will be worn. Fitting two new ball-races such as Hoffman high speed will very often turn an average motor into the hot class. As much as 7 m.p.h. has been gained from this alone. Another point to watch is a bent or out of line connecting rod, causing excessive wear at the small end, and thrusting of the gudgeon pin, as the gudgeon pin is fully floating. This thrusting will cause the pin to score the cylinder. Very often the conrod is bent through over-enthusiastic pit work, particularly with an inverted motor: it should never be forced over against an hydraulic lock.

Choice of prop is very important, as it should be matched to the particular motor, mainly with regard to the laps the motor will do. It's not a bit of use going for the fastest prop if the lappage needs another stop.

With an F.A.I. model, there are three combinations of speed and lappage that can be tried. First, using a 7 x 8 prop the lappage will probably be around the 30 mark, and the speed about 85 m.p.h.; this will give three pit stops, but to compensate for this, a high airspeed. Next with a 7 x 9 prop the airspeed will drop to somewhere around 80 m.p.h., but the lappage will be up to 36 to 38. As the critical lap figure is 34 this will eliminate a stop. Finally, an 8 x 8. With a very economic motor it is possible to do 50 laps to a tank, thus only having one stop but, of course, the airspeed will be lower at about 76 or 78 m.p.h. There is only one way to determine which is the best for a particular motor and that is to try all variations against the stopwatch.

Speed and laps must be carefully checked, a complete 10 kilometre course should be timed and noted for each combination. One must also have reliability, for it is no good being near to borderline on lappage, one should ensure a safety factor of at least three laps, it is better to go a little slower and be sure, than to have one extra pit stop with two laps to go.

Finally, the airframe. There is more rubbish talked about team racer aerodynamics than anything else. Strength and handling qualities come before the streamlining of the aeroplane and cutting the model to the bare minimum has no effect on the speed whatsoever. For stability, the centre of gravity must be slightly behind the front line, that is to say, about 15 per cent. of the wing chord. Many people put in any old bellcrank; that is not good enough, it is essential to have a low geared control system, in other words, a big movement at the handle end and small at the elevator. My bellcrank measures 2 in. between lines, and ⅜ in. between pivot and pushrod, the control horn is 7/16 in. and with this set-up the model is very stable and will fly itself, but has enough manoeuvrability to avoid trouble. Avoid inthrust on the motor, have the undercarriage placed well forward, the wheels free and track straight, using ¾ oz. wing tip weight, and about ¼ a degree of washout on the outboard wing, the fin and engine should be set straight.

Engine bearers should be thick, never go smaller than 7/16 in. x ¼ in. and always use hard close grained beech.

Fuselage shape has practically no effect on performance if kept within reason, the fitting of a spinner adds to the appearance of the model but not to the speed; in fact, it is better off without one, because quick prop changes become very difficult when a spinner is fitted. The greater part of the drag comes from the wing and a carefully designed wing can pay dividends. I favour a high aspect ratio, there is a good theory to support this, the main benefit is a reduction in induced drag. S.M.A.E. rules did not permit an aspect ratio higher than eight to one, so the full advantage could not be gained, but even with the eight to one, there are certain advantages, mainly a quick take-off, the ability to overtake and fly over the highest flying model without slowing down and falling out of the sky; it also gave a good slow controllable landing. Aspect ratio does not appear in the F.A.I. rules (now adopted by the S.M.A.E.), but one must respect the appearance rule.

If the section is too thin it will stall too easily, particularly when trying to overtake high flying models, and the landing will be very fast. Thickness should not be reduced below 12 per cent. It should always be remembered that whatever is done to the model the line drag is always with us, even if it were possible to reduce the model drag by half, the lines would tend to minimise any increase in performance.

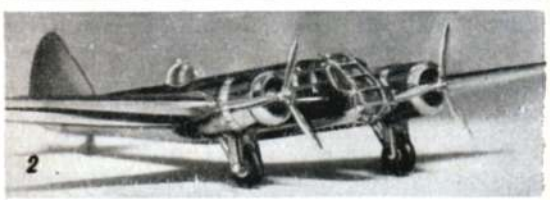
To prove this point I tried an "A" model and an F.A.I. model with the same engine, prop, fuel, and lines a difference of only one second was recorded over half-a-mile. As this represents only 10 seconds in the five-mile heats, it can be seen that model size has very little effect on the ability to win a Team Race.

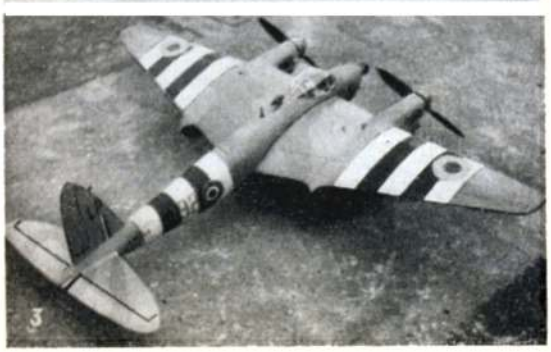
..... Model News .....

WHO SAID SOLID modelling was a dying art? We are very pleased to be able to publish this heading photo line-up which illustrates German World War II aircraft made by Martin Fardell and Tony Wood of Hertford. They are a Messerschmitt 110 G-4, Me 109 G-6 and Focke Wulf 190 D-12. and the camouflage was applied by special mottling unit devised by these two keen modellers, details of which we published in our plastics feature, December, 1957.

The Max Holste 152 is in the news again in France; it is to be a flight test bed for a new propeller turbine and is also, of course, a very popular A.P.S. design for 1-1.5 c.c. engines as plan FSP/593, price 6s. In picture **1** sixteen-year-old Victor Oxley of Sandsend, near Whitby, Yorks. is seen holding his well-made example. Victor is an apprentice gamekeeper living in the middle of some of the most beautiful country in the north of England and when his duties among the pheasants and grouse on the Marquis of Normanby's Mulgrave estate are over, he has plenty of space available for model flying—lucky chap!

1


2


3

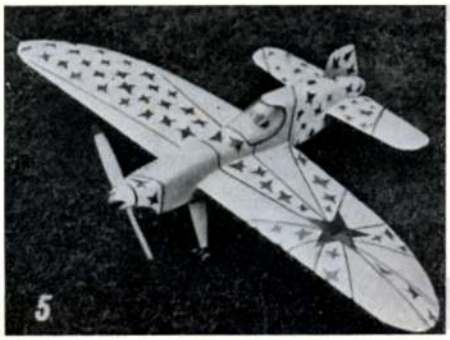
Following our recent features on Modelling in Metal by Leslie Morgan, we are pleased to reproduce in picture **2** a fine example of brass worker's art in the form of a scale Bristol Blenheim. This was actually made during 1939 whilst F. J. Bennett of Headingly, Leeds, was stationed in Jerusalem, and was based on the drawing published in the September, 1939, AERO-MODELLER. The model is made from hard drawn brass, exactly the same way as a balsa model would be carved, hollowed out by hand and only a few files were used. The complete model was then electroplated.

B. Randle of Wyken, Coventry, decided to incorporate a few modification when he made the A.P.S. Mosquito (plan CL570, price 7s. 6d.) and produced a naval version in picture **3** As this mark of Mosquito had various armament, Mr. Randle equipped it with operating bomb doors via a 3rd line, and can release a 18 in. torpedo as well as bombs and has great fun practising his accuracy on target. A timer operates an arrestor hook, there is a battery to illuminate the landing light and the nose carries the unusual radar pimple.

Colouring is of an actual Sea Mossie from 805 Squadron, Lee-on-Solent, and the total weight of the model is three pounds for two E.D. Racers which take the model around at up to 70 m.p.h.

It seems very opportune that we should publish yet another of D. E. Thumpston's little scale models in picture **4**, this month showing the D.H.5. Mr. Thumpston obviously has similar interests to our new contributor, K. McDonough, for we have already published pictures of his B.E.2E, both aircraft are, of course, the subject of our cover painting this month.

The D.H.5 model is 27 in. span, weighs 9 ozs. for a Frog 50 engine and has remarkable fast rate of climb. Its one vice is a tendency for the nose to drop sharply before taking up on the climb. This was also an unfortunate fault with the full size aircraft which used the 27 in. backward stagger to obtain visibility virtues of a pusher design in a more conventional tractor layout. The D.H.5 was eventually replaced by the S.E.5a during 1918, but achieved considerable fame as an ideal ground strafer. Now for a complete change in models and J. R. W. Smith of Macclesfield's own design stunter carrying no less than three hundred stars in its decoration as advised by Dave Platt's feature in our May, 1957

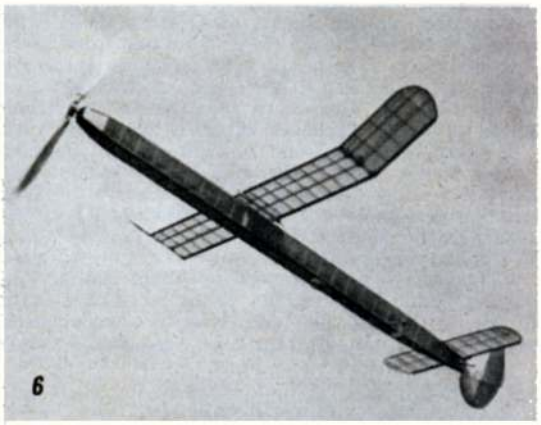


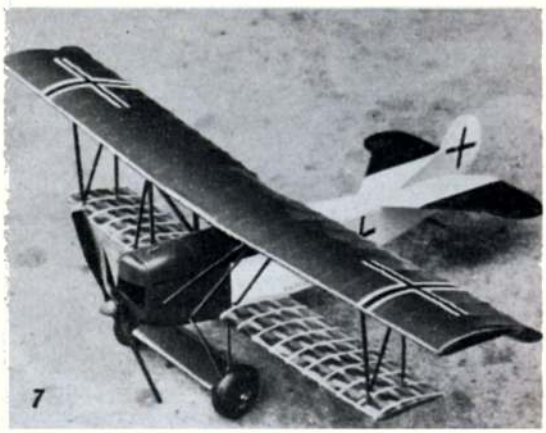
edition. Wing area of this model in picture **5** is 260 sq. ins. and the engine is an AM.35.

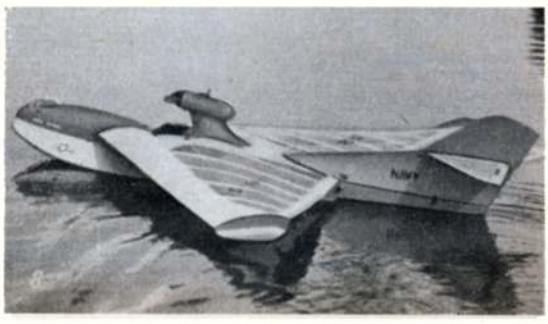
D. Knight's open rubber model in **6** has an impressive length of 54 in. for its 52 in. span, and has been lost more than three times, but keeps on returning to its St. Albans Club owner. Normal rubber motor is 14 strands, 42 in. long, prop. 20 × 26 and we should congratulate B. E. Cox, his clubmate, for an excellent action shot.

The lozenge camouflage scheme on the Fokker D.VII in picture **7** is the result of Eileen Barrett's husband's influence, for he was responsible for our May, 1958 feature on this another system of chalking tissue before covering. Both upper and lower wings have their undersurfaces covered in lozenge camouflage and the model is powered by a Kalper .32 diesel, winning Eileen the Ladies' Prize at the 1958 Northern Model Exhibition. Next, a complete contrast in **8** a refreshing shot of David Robinson's A.P.S. Sea King in appropriate watery surroundings. Colour scheme of this model is light and dark blue fuselage with white wings and tailplane—very nautical. Despite complete covering in silk, the weight is down to 30 ozs., which gives the Sea King a good turn of speed with an E.D. Fury 1.49 engine.

Last, but by no means least, a pic of John O'Donnell and his P.A.W. Special-powered PAAload winner at the Scottish PAA Festival last year. Incidentally, when we captioned his pic in last month's *Experts Forum* we stated John has been Britain's Champ for six years running. This was wrong and should have read six times in all, including the last five years running. Small point but one John would like to see corrected.







Hungarian 5 c.c. Alag Y-2 engine comes without mounting bearers drilled. Has Dooling bore and stroke combined with external features of McCoy and Eta engines.

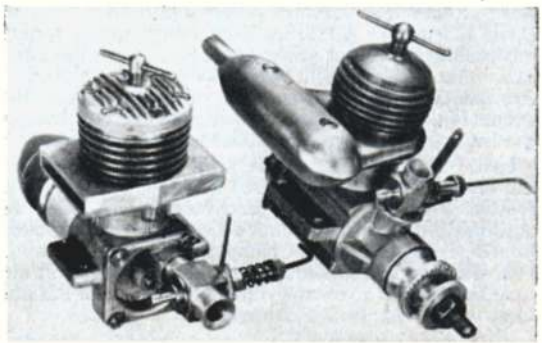
A MINIATURE Hungarian engine is now appearing on the Scandinavian market and has a fine output for its small proportions. In stature this O.25 c.c. diesel is the same as a Bambi, though rather more bulky due to the increased bore. The needle valve is a most vulnerable affair, as can be seen in the comparative view with a standard match. Cylinder is gold anodised, and there seems to be little likelihood of either this or the 5 c.c. Y-2 glowplug engine from the same source, appearing on the British market. The *Alag Y-2* is a robust unit, assembled rather tight, but of comparable performance with earlier McCoy and E.T.A. units, which it closely resembles, though it has the bore and stroke of a Dooling 29 (limited supplies of which are soon to be imported).

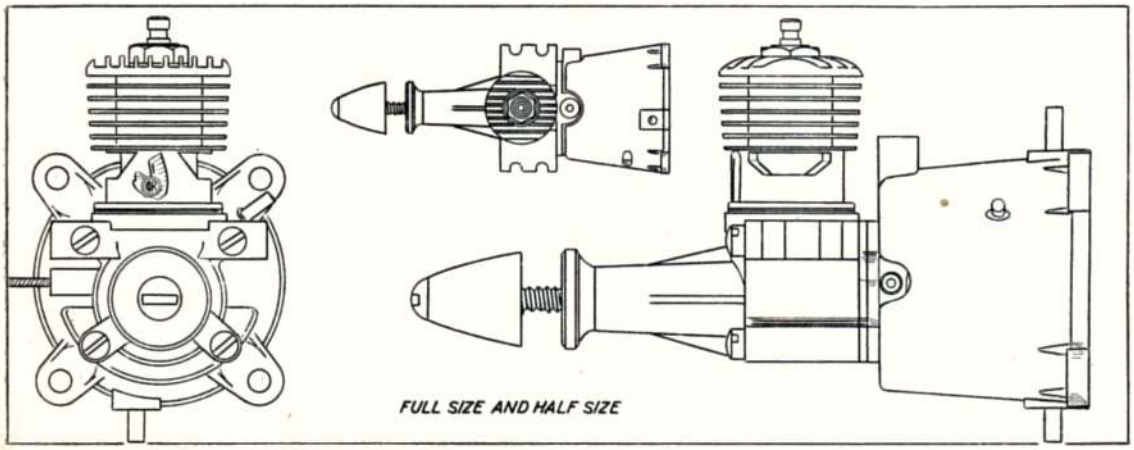
Robustness is the new trend in *Webra* diesels. The 3.5 c.c. Bully, with vacuum pump for servos and a throttle in the carb. plus detachable silencer, is a most sensible production, ideal for R/C. First checks show a useful rev-range with a 9 x 6 of 4,200—9,400 r.p.m. and the effective silencer appears to aid the throttle control with a sacrifice of 400 r.p.m. in top end performance. *Electronic Developments* have also produced a neat throttle for the 2.46 Racer and utilise the sub-piston porting to induct air when the intake is completely blanked off by the throttle. This gives a very smooth transition from 4,500 to 9,200 r.p.m. on 9 x 6 and there seems to be little fear of stopping the motor through over-choking! Altogether an ideal engine for R/C.

Our patents feature (September, 1958) evoked some queries on the Ohlsson .8 c.c. engine so we reproduce a g/a drawing below. The *Midjet* has a riveted reed-type induction valve, which the manufacturers call a feather valve, made up as a factory unit sandwiched between the crankcase and the normal backplate. A locking washer, in front of the washer-shaped valve itself, is dihedralled, thus limiting the free movement or extent of opening of the valve.

The *Midjet* can be mounted with or without the integral tank (in the latter case, four angle brackets attach to the rear of the crankcase or radial mounting, if desired). Cylinder is of typical Ohlsson construction with a blind bore, but exhaust ports are chamfered in elevation for improved scavenging and to reduce mixture loss with an early-opening transfer. The piston appears to be a pressing with a most ingenious spring-locked connecting rod retainer replacing the conventional gudgeon pin. Recommended propeller is 6 x 3. Bare engine weight 1·35 ounces. Bore ·413 in. Stroke ·370 in. Displacement ·049 cu. in.

Left: The diminutive 0.25 c.c. Hungarian engine compared with a standard match. Right: the E.D. Racer with throttle and the Webra 3.5 Bully carrying effective silencer, throttle and vacuum pump.





described by Peter Gray

SUBSEQUENT TO OUR November, 1958, presentation of "between wars" period of Fleet Air Arm markings, herewith is presented an interesting selection of colourful Fleet aircraft from the collection of Mr. P. W. Moss.

Heading shows a neat Vic of Fairey Flycatchers of 405 Fleet Fighter Flight from H.M.S. *Glorious* (Serials L to Rt. S1282, S1286, S1278, S1283, S1280). Wing striping was blue/white/blue and the yellow fuselage band was narrowly outlined with black. Flycatchers, with their 450 h.p. A/S Jaguar engines, were among the star performers of the early Hendon Air Pageants; they were also about the noisiest. The precision of their flying demonstrations when they converged at nought feet from all points of the compass—to confuse ground gunners—on near collision courses, was a bye-word. Flycatchers were also used by 401 Flight (*Furious*), 402/404 Flights (*Courageous*), 403 Flight (*Hermes*), 406 Flight (Coastal Area), 407 Flight (*Netheravon*).

Photo 2 depicts a neatly marked Fairey IIIF of 445 or 446 Spotter Reconnaissance Flight from H.M.S. *Courageous*. This type was widely used throughout the Naval units from about 1928, when it supplanted the IIID, until the mid-1930's when it, in turn, was replaced by the Shark and Swordfish. III F's were classified as Fleet Spotter Recce aircraft, and as such usually carried a crew of three: pilot, gunner/observer and W.T. op./Navigator. They were the first F.A.A. machines to feature the distinctive "Eversharp" nose which neatly streamlined the 450 h.p. Napier Lion engine which, due to its eminent reliability, was so suitable for "over water" operation. Later on III F's were re-engined with the more powerful Armstrong Siddeley Panther of 525 h.p.—a 14-cylinder 2-row radial—which did not improve the looks of the machine; in this guise it was known as the Fairey Seal. A feature peculiar to these aeroplanes was the black upper decking which may be seen in the photograph, also to be noted: blue/white checkered fin, blue fuselage band. Rudder stripes had the blue foremost and the wing roundels were full chord.

Blackburn aircraft produced a long series of strike aircraft (and are still doing so in the N.A. 39) from the Dart of 1920 to the Shark of the mid-1930's. The Ripon (Photo 3) was a worthy member of this lineage, although the pilots' view for deck landing would appear to be something less than adequate. Originally designed for Coastal Defence, it was also operated from Carriers by 460/461/462 Torpedo Bomber Flights on H.M.S. *Glorious* and 465/466 Flights on H.M.S. *Furious*. The crew of the machine illustrated, would appear not to have been superstitious with its "13" numerals in white on the red chevroned fuselage band of H.M.S. *Furious*. In addition to torpedo crutches, this aircraft was fitted with bomb racks and Holt flare brackets. The all-round rugged construction and cranked wing may also be noted. This aircraft had an uprated Napier Lion of 570 h.p. and could carry 1,000 lbs. bombs/torpedo.

Hawker Nimrods replaced the Flycatchers during the early 1930's, and with their 525 h.p. R.R. Kestrel engines, presented a big improvement in performance. No. 4 is unusual in that the long exhaust pipes of these Nimrods have been removed. This is an extremely graphic shot and packed with action; note position of control surfaces, elevators hard up to keep down the tail and ailerons hard over to correct the roll. The machine was one of H.M.S. *Glorious*' flock, although the yellow fuselage band is not very apparent.

Hawker Osprey seaplane (No. 5) was mainly operated from Cruisers for Spotter/Recce duties, being catapulted away and alighting alongside on return. Large identifying numerals were carried on the fuselage sides as is clearly shown in this photograph. The Osprey was largely a navalised Hart (note, Airfix kit forms good basis for a model) strengthened for catapult operation and wings arranged to fold for easy stowage aboard. Wheeled aircraft were operated from Carriers.

Try this 17½ inch scale control-line model for ·5-·8c.c. engines for R.T.P. or normal handle control.

Why not make an R.T.P. pylon for outside-the-circle control to use in the clubroom?

HUNTING PROVOST

BY CLIVE B. HALL

ALWAYS POPULAR at Exhibitions, yet generally considered to be the fortunate asset of clubs with influence at the local engineer's shop, the remote controlled power model can now be enjoyed by anyone with the ability to use hand tools.

Clive Hall, David Miller and Dick Godden of the Cambridge M.A.C. developed this centre pylon which will give a good range of control and has had many hours of active demonstration use with models like the Hunting Provost for .5 to ·8 c.c. This little design will fly equally well from a normal C/L handle for outdoor use; but why not try powered R.T.P. in your clubroom (if it's big enough!) and enjoy some joystick flying!

At left, Cambridge Club pylon head. Thumb pressure on the actuating trigger (normally pulled down by a cable from the joystick base) is seen to push the control arm upwards, in effect this attitude gives down elevator. The two screws on the main pylon vertical tube are used solely to locate pylon head securely. Heavy weights are necessary on the base

First, the model. A 45-degree engine mounting is a compromise between inverted and side mounting which helps appearance, the cowl will take a Dart, Merlin or E.D. Baby; in fact, the latter was used in the prototype. Start by fitting the bearers at right spacing for the crankcase in the two main formers 1 and 2, with the tank between. Set aside and carve the wing from ½ in. sheet and fit the torsion bar undercarriage. Now cement the basic fuselage sides to the bearer formers, add other formers, control assembly, then the tail unit, the wing and the fuselage top and bottom.

The cowl is made up with soft block and the cabin built up with flat sections of celluloid over the two frames. Fit the wing tip guides, wheels and leg fairings, decorate and fuel proof, then you are ready to go! For a good finish, cover the entire model with tissue prior to applying the first coats of clear dope and silver, but if you're in a hurry, a couple of coats of sanding sealer will suffice to give an effective surface.

The pylon unit is usually clamped in the top of a metal tube, with two necessary 56 lb. weights keeping the base in place on the floor. A pulley at the bottom of the pylon tube carries the single wire from the joystick up to the pylon unit, attaching to the hole in L, and it will be seen that by pulling on this wire, the trigger L lifts the push rod K and moves the two-line controller J. Spring tension against this action provides a positive movement.

To make the unit, one should first study the requirements of the various component parts. Variation in the sizes is tolerable, provided the same general principles are adhered to and the rotating head is a safe and rigid fit about the ball race mount B.

Patience, a file, hacksaw, and set of drills will soon give you a source of permanent enjoyment and the same pylon unit can also be profitably employed for rubber R.T.P. Perhaps the club funds will cover the cost of materials!

One small word of warning—don't try it outdoors in a wind—the pylon can't walk back to take up slack!

what's the answer?

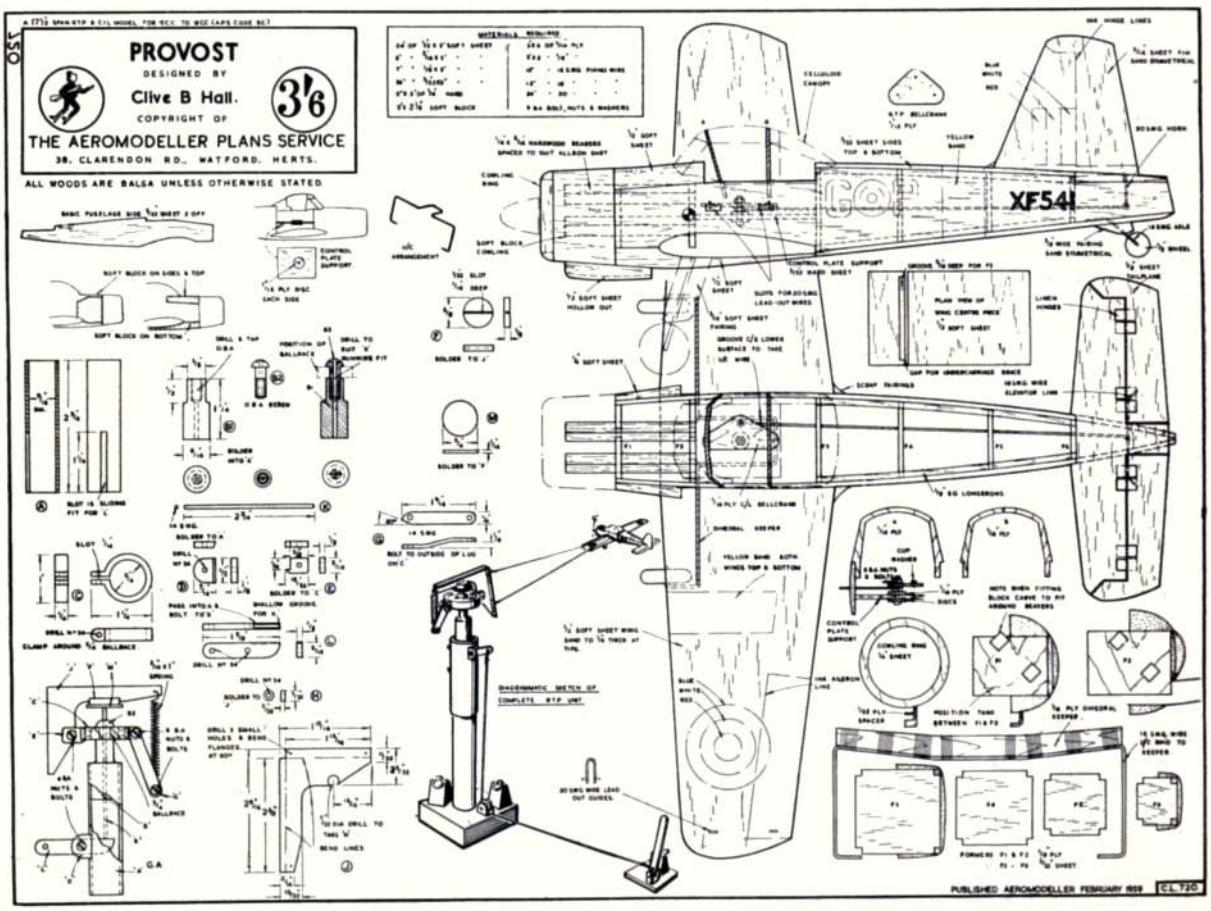
What would YOU do in a case like this? Think a moment, then twist the page for the solution to the problem which is printed below left.

MY PAL has a crazy theory. He maintains that the right hand circle trim for duration models is theoretically correct for this country—in fact any country north of the equator—but south of the equator, such as South Africa and Australia, a left hand circle is correct for thermal hunting. Is he right?

Answer.—Certainly the rising air in a thermal *is* spiralling and consistent with the way a model normally behaves in a thermal in this country it is circling in a right-hand direction. This is proved by the fact that a model already circling right will usually tighten up the circle in a thermal—sometimes almost to the point of spinning. Logically, too, all thermals should spiral in the same direction in the same locality, because of the effect of the earth's rotation. Peter Visser, the South African contest flier who has won many National events and has been in International teams, tells us "We have king-size thermals out here—what is more, they don't exist in small patches but tend to cover quite wide areas so the need for a real light turn to the *left* in order to stay in the thermal is not so necessary." My own opinion is that if a model is in, it's in and it doesn't matter if it's left or right—the area of lift is so big.

"For the past couple of years I've been trimming my gas-jobs, rubber jobs too for that matter, to fly right-right mainly because the transition from power to glide is much better and I find it's the only sure way to get rid of that altitude-losing dip when the prop stops. This I must hasten to add is a trim I have only used since the new rules have come in—during the old unlimited days it was always right left."

FULL SIZE COPIES OF THIS 1/4th SCALE REPRODUCTION ARE AVAILABLE PRICE 3/6 PLUS 6d. POST AS PLAN CL720 FROM A.P.S.

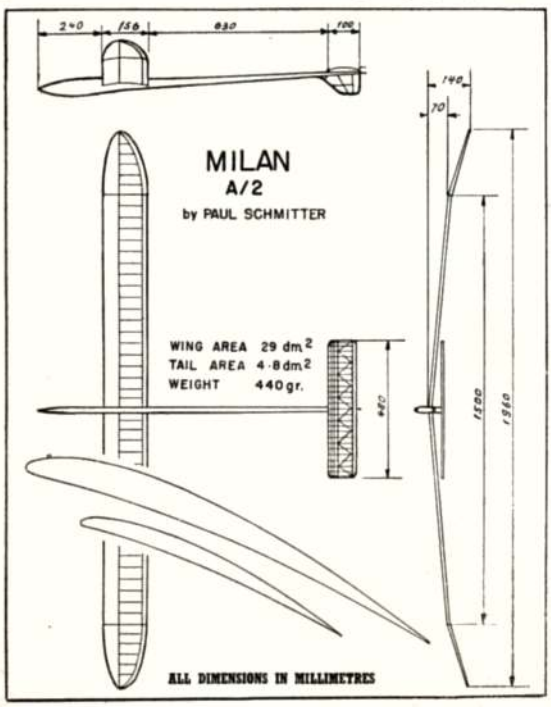


In the heart of Africa at Kampala, UGANDA, an A.P.S. Luscombe Skypal is being tuned up by J. Harber. Small model above, has 4-channel r/c gear, weighs only 16 oz. and placed 5th in GERMAN Nats. for Berliner Werner Paschke.

WORLD NEWS

THE NATIONAL control-line championships of **France** held at Rouen on October 26th were the scene for a new French speed record, equalling the then standing world record for 5 c.c. This flight by Roland Jarry-Desloges at 244 km/h. (151 m.p.h.) was the highlight of a meeting which conclusively proved French weakness in the International 2.5 c.c. class. M. Souliac is the new aerobatic champion of France, with a Fox 35 design using a *Nobler* style wing, the elliptical *Thunderbird* shape having fallen out of favour.,

This same trend also applies to **Belgium** and **Czechoslovakia,** although one might well consider the natural choice of constant chord construction, as distinct from a series of tapered wing rib plottings, playing a major part in swaying a modeller's opinion. Josef Gabris, winner at the Brussels International also used *Nobler* planform as can be seen in the drawing on page opposite.



The thick, 19% wing of *Master* is one reason why his slow flight pattern was so smooth, another being the use of a fine pitch prop on the fast revving M.V.V.S. 35.

American servicemen based in France have maintained their enthusiasm for the hobby and one particularly keen unit that would welcome contact from other modellers in the N. East part of the country is at Phalsbourg Air Base. Known as the "Falconeers" they have a smart emblem, interest in free flight, C/L and R/C, with accent on the latter and in their last meeting introduced a novel control-line "slow-go" event. What a pleasant change from speed. Dare we suggest the F.A.I. adopts it for classification!

Over in California, the ten-mile race—not necessarily for team racers—is a popular event with clubsters, but apparently it has its problems as the Western Associated Modellers, governing the West Coast clubs, has ruled that in future all pit crews must wear protective helmets and all models have two wheels. In a film of the 1958 **U.S.A.** Nationals we saw recently, we were impressed by the very high standard of decoration and finish of the R/C entry, and also with the high speed of those *Astro-Hogs*. Yet now we hear of dentist Chuck Boyer, from the Los Angeles Aerial Robots, who has a scale P.51 Mustang flying at almost twice Astro-Hog speed and collecting two first places at the West Coast R/C Champs. in the process. His Pylon race speed was 45 m.p.h.

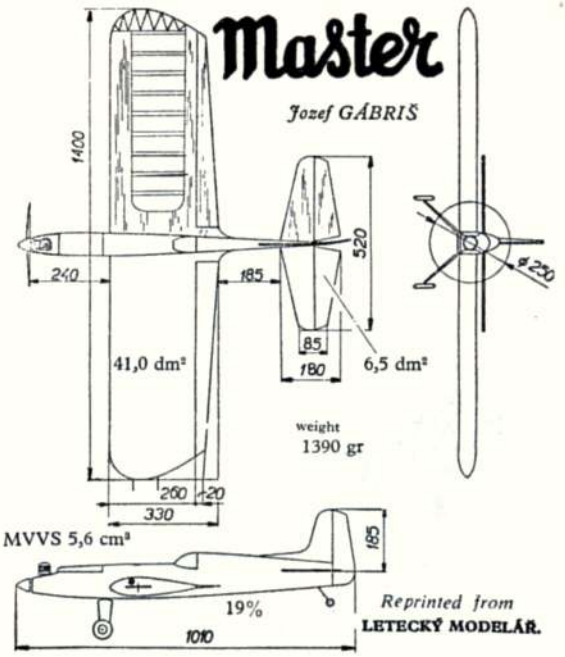
Paul Schmitter of SWITZERLAND with his very successful models at the Swiss Championships. His Milan A/2 design leads in the eliminators.

A Friberg of Tyringe, SWEDEN made this power assisted glider for r/c with a Webra Record 1.5 in the pylon. Span is about 100 in. From SPAIN, the scale c/l Sparrowhawk for an E.D.246 Racer is by Alberto Dalmau of Barcelona.

One great danger to club activity that is fast becoming International is what might be termed the 8-Channel influence. The Kansas City R/C club recently had to quell a rumour to the effect that 8-Channels were a pre-requisite for membership and emphasised through their news-sheet how the rudder-only modeller was a necessary component of the KC/RC membership. The problem usually arises when a group of multi-channel experts collect the prizes from a succession of meetings. Beginners in R/C feel they have no chance, and moreover, cannot afford to compete with the lavish equipment used by those who have either Trade connections, unlimited finance or advanced radio knowledge. The impecunious enthusiast must never be forgotten, this column hopes his presence will be remembered when radio clubs in all parts of the world plan their '59 programme of events.

Henry Struck, one of the most enterprising model designers we know of, has a 5-Channel model (*picture below*) for a Fox 59 which is used for meteorological research, carrying instruments to high altitudes. A homing device returns the model to base area and over 30 flights have been made up to November last year. This "return home" feature sounds like modelling perfection: but Hank complains that it is actually cause for him not seeing much of his model as the people for which the Met-model was made usually want the job for tests between missions.

Peter Grunbaum of AUSTRIA designed the 60 in. taper-wing stunter with short span flaps, radial cowl round the O.S. Max 35 and super finish. Right: Stunt Champ. Gabris' design, and below Henry Struck's Met-model.



Reprinted from LETECKÝ MODELÁŘ.

AERO MODELLER

FAMOUS BIPLANES No. 19

described & drawn
by Kenneth McDonough

ROYAL AIRCRAFT FACTORY

THE HISTORY OF THE B.E.2E really begins in 1911 when Geoffrey de Havilland and F. M. Green designed the B.E.1, a two-seater tractor biplane powered by a 60 h.p. Wolseley engine. Later the B.E.1 was much improved and engined by a 70 h.p. Renault and known as the B.E.2. In this form, its capabilities were quickly recognised and many notable flights were made in the two years before the Great War.

Subsequent developments, the provision of ailerons on staggered mainplanes in place of the old warping wings, a fixed fin, and a redesigned fuselage of improved aerodynamic form gave the Royal Flying Corps an aeroplane which became immortal as the B.E.2C, the standard reconnaissance machine in the first two years of hostilities on the Western Front.

Further modifications were the substitution of a Vee undercarriage in place of the twin skid type and the installation of the 90 h.p. R.A.F. 1a engine in place of the 70 h.p. Renault. The B.E.2E, in principle an improved B.E.2C, was produced for the Battle of the Somme, 1916, but only one machine was in the field in time to participate in the opening stages of the battle. This aeroplane was on the strength of No. 21 Squadron at Fienvillers. Thereafter B.E.2E's were used in increasing numbers until the close of hostilities. More B.E.2E's were built than any other type in the B.E. series. About 1,800 were still in service at the Armistice.

In design, the B.E.2E differed from the B.E.2C in the construction of the mainplanes. The 2C had two-bay wings, those of the 2E being of the single bay type. Upper wings were of much greater span than the lower and braced by a system of kingposts and wires. The higher aspect ratio and simpler layout of the new mainplanes bestowed but a meagre increase in performance, and the huge extensions of the upper wings were not suited to aerobatics and were prone to collapse if the aeroplane was held at the top of a loop. Many rumours circulated about the B.E.2E's extensions. Unless properly rigged they would flap alarmingly and it was said that if they did so in earnest, the aeroplane became an ornithopter, invested with miraculous lifting powers.

Attempts were made to produce a single seater scout using a standard B.E.2E airframe. The 12-cylinder 150 h.p. R.A.F. 4A was fitted in place of the 90 h.p. 8-cylinder engine and a fixed synchronised Vickers gun was mounted on the port side of the fuselage. This version was known as the B.E.12Ae. Even in this form the aeroplane was far too unwieldy to prove of any real use as a fighting machine and it was quickly relegated to bombing.

Apart from action in France, the B.E.2E saw service in the Middle East and in India. During the attack on Jerusalem in General Allenby's Palestinian campaign, the aerodrome of No. 14 Squadron was waterlogged, but by manhandling the B.E.2E's to the top of a small steep hill it was found possible to take off to bomb the demoralised Turks. B.E.2E's were also employed on Home Defence duties, at the Training Schools and a number were used by the Royal Naval Air Service. At least one Zeppelin was intercepted by a B.E.2E.

CONSTRUCTION of the B.E.2E was quite orthodox and consisted of mainplanes of two spruce mainspars and ribs braced with wire. The fuselage was a rectangular wooden structure with four main wooden longerons and intermediate struts wire braced with a semi-circular turtle deck, stringered aft of the pilot's cockpit and ply-covered forward. Main fuel tanks were in the fuselage and a gravity feed reserve tank was provided under the port upper wing. The engine was carried on tubular steel bearers which were extensions of the upper longerons. The undercarriage struts and centre section struts were also of tubular steel faired with wood bound with fabric tape. The empennage was wood, wire braced, and the ash tail skid was mounted on a tubular steel pylon. Shock absorbtion of main landing wheels and tailskid was with elastic cord.

Dimensions: *Span* 40 ft. 8 ins. *Length* 27 ft. 3 ins. *Height* 12 ft. *Chord* 5 ft. 6 ins. *Wing Area* 360 sq. ft.

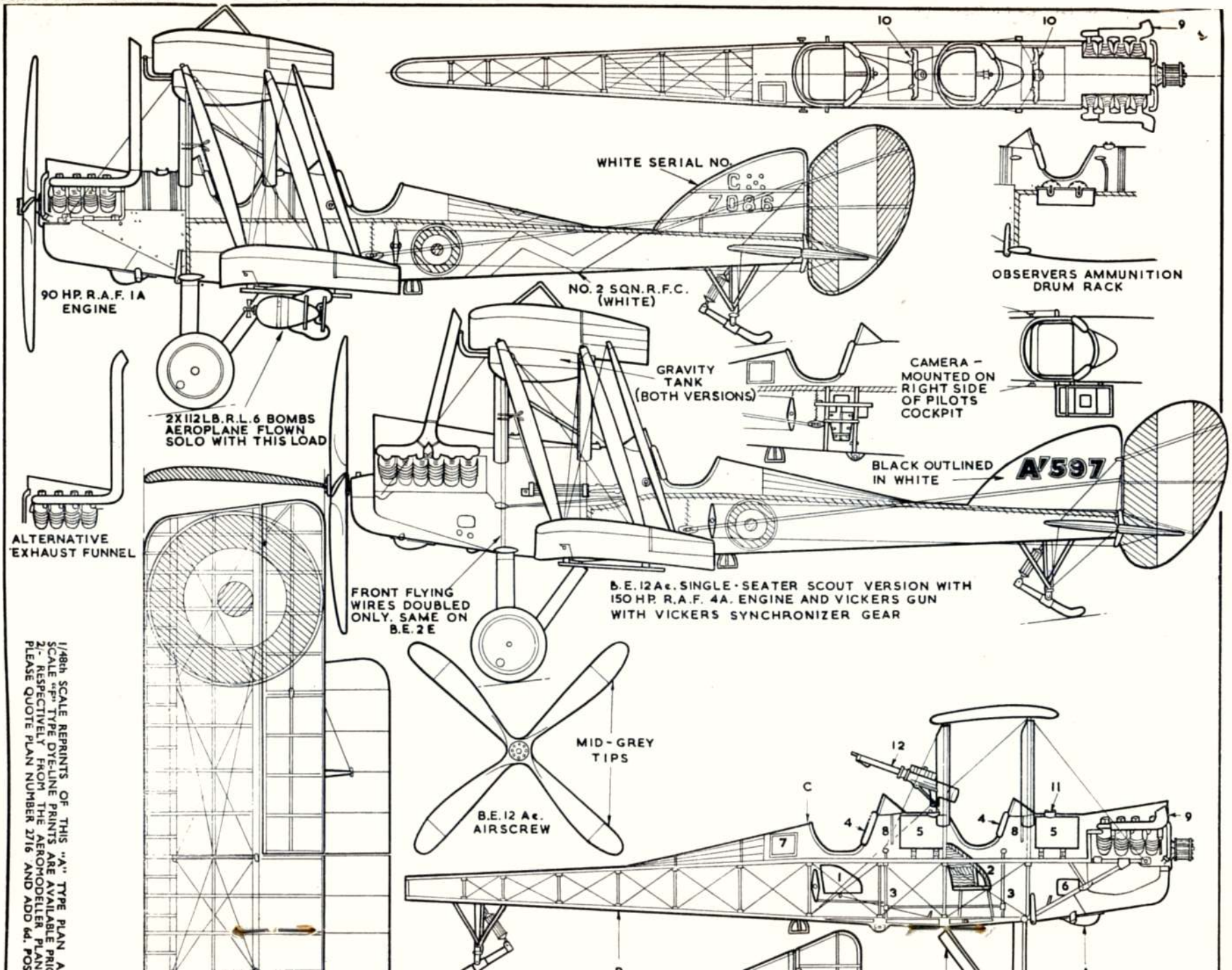
Performance: 82 m.p.h. at 6,500 ft. 75 m.p.h. at 10,000 ft. 24 Minutes to 6,500 ft. 53 Minutes to 10,000 ft.
Endurance: 3¼ hrs. *Service ceiling:* 11,000 ft.

Weights: Gross 2,100 lb. *Empty* 1,431 lb. *Fuel and oil* 239 lb. *Military load and crew* 430 lb.

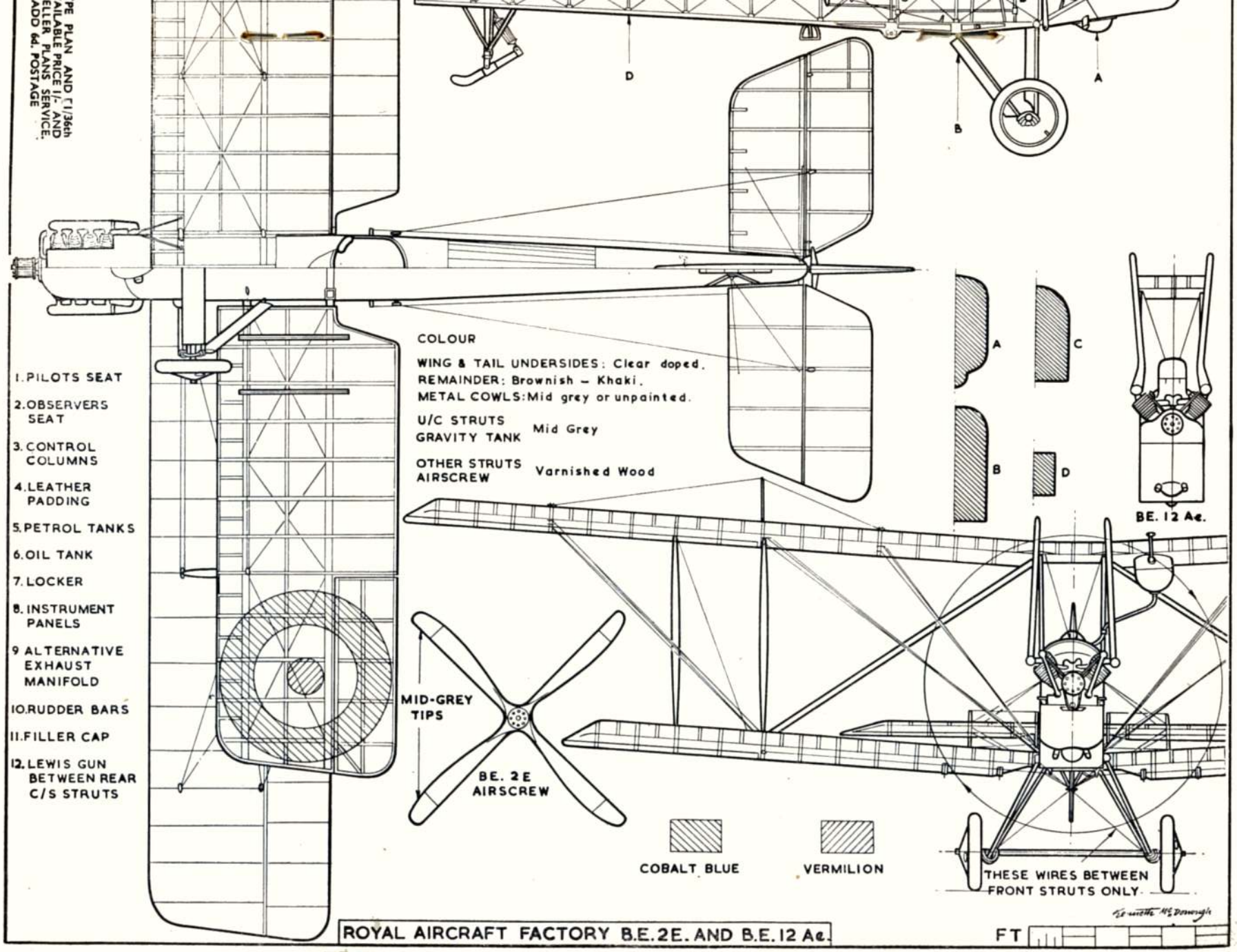
Price: B.E.2E airframe less engine, instruments and guns: £1,072 10s.
R.A.F. 1a engine: £533 10s.

Heading shows a typical B.E.2E trainer as used by the R.N.A.S. at Cranwell, it compares with the smaller photograph of a B.E.12A (150h.p. R.A.F. 4a engine) which has only one cockpit. At left: the B.E.2E's upper wing overhang is very evident in this view of B.728 with a R.A.F. 1a 90 h.p. engine. All photographs are by courtesy of the Imperial War Museum.

GEORGE COX is taking a well-earned rest this month, but will be back in March with a superb "Aircraft in Service" dealing with what we believe to be the most colourful example of an already spectacular Jet-fighter.—No prizes offered for guessing the identity.



1/48th SCALE REPRINTS OF THIS "A" TYPE PLAN A
SCALE "P" TYPE DYE-LINE PRINTS ARE AVAILABLE PRI
2/- RESPECTIVELY FROM THE AEROMODELLER PLAN
PLEASE QUOTE PLAN NUMBER 2716 AND ADD 6d. POS



ROYAL AIRCRAFT FACTORY B.E.2E. AND B.E.12 Ae.

FT

Build the plane on the cover !

Stability was a main feature of the full-size

B.E.2E

so is it with this 40 3/4 inch super-detailed flying famous biplane by cover artist Kenneth McDonough

• 1/12th scale • for ·75cc (or ·049 cu. in.) • Knock-off wings • Easy to build

OF ALL THE B.E.'S, the B.E.2E was the most prolific yet, strangely enough, it is one of the least well known. Virtually defenceless in combat, it was the cause of many casualties but numbers were still in service until the close of hostilities. Drawings on pages 72/73 give extensive information on the full-size aircraft and provide supplementary detail for the 1/12th flying scale model presented here, and should be sufficient to fully satisfy the most rabid of W.W.I. scale fans. With its generous wing area, simple box-like fuselage and square cut tips, it becomes an ideal flying scale subject—remember, a B.E.2C won the Nationals scale event last year! Building Kenneth McDonough's design should be within the capabilities of any modeller with experience of at least one power model, and the extensively detailed A.P.S. drawing covers all possible queries. The following notes summarise the sequence of assembly.

Construct fuselage side frames over the plan, using medium hard balsa for the longerons, incorporating side keels of hard balsa. Join the side frames with two main bulkheads F.3, F.4 then add the 3/16 in. ply engine mounting. Fit all cross members and fill in triangular nose bays with 1/8 in. sheet. Bind and cement centre section struts and solder spreaders and runners in place, it is essential that these struts are cross-braced with 20 s.w.g. wire since the completed cabane takes all load of the upper mainplanes when at rest. Make the turtle-deck of 1/16 in. sheet, add formers, stringers and remaining components, u/c tubes, 1/8 in. sheet stern pieces and fin tube, skid pylon, etc.

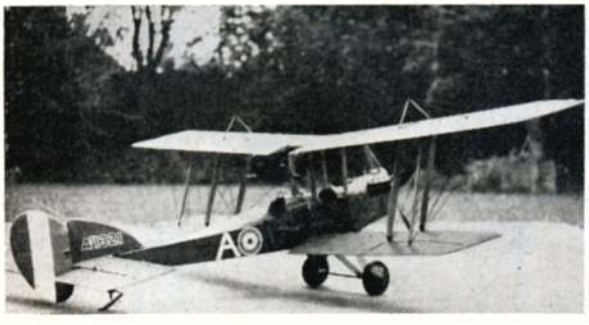
The tailplane fin and rudder are made over the plan. Add cap strips, 20 s.w.g. wire prong and 1/16 in. dia. bamboo fin dowel. Ensure that key piece is true so that the tailplane is square with fuselage.

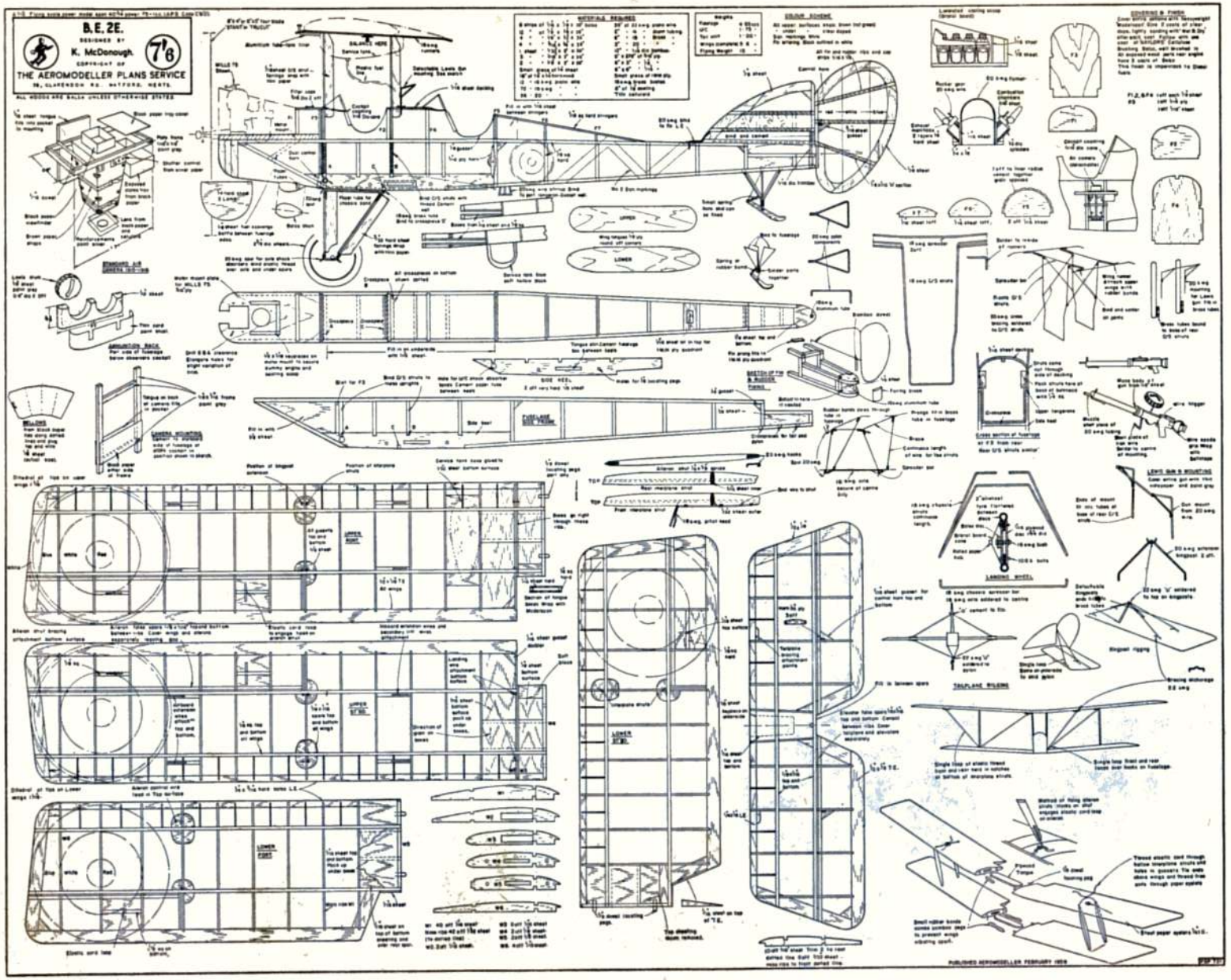
Tyres are made from 2 in. diameter air wheels and sandwiched between 1/16 in. ply discs. Secure with 10 B.A. bolts to prevent the discs buckling. Solder the u/c chassis frame and streamline it with hard balsa. When making the wings, ribs should slide easily on to spars, check spars for warps. False ribs are added after the panels have been removed from the plan. Note that dihedral is obtained by angling the boxes, therefore, the mainplanes should be supported at correct dihedral angle with tongues and boxes in place before cement has dried. When correct dihedral angle is achieved, secure permanently by filleting boxes to adjacent ribs with cement.

Cover the entire airframe with heavyweight tissue, lightly waterspray and follow with two coats of thinned clear dope before camouflaging. One coat of Brushing Belco gives a scale khaki, diesel fuel proof finish. Glide tests should be conducted in flat calm over long grass or heather. Check the glide as flat and straight. This aeroplane needs no right sidethrust as there is negligible torque or gyroscopic reaction. Directional trim is obtained on the rudder only, or by offsetting the engine if this is preferred. No downthrust is needed under calm weather conditions and the flight pattern is amazingly realistic.

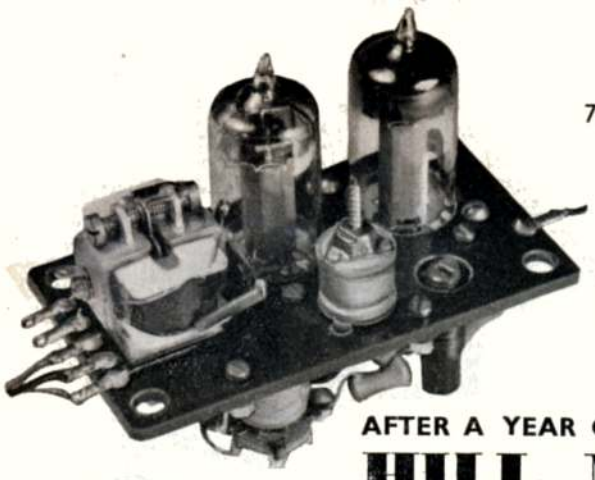
Now get going and order your plan—there's plenty of time to build one before the '59 Nationals!

Realism in these two views of the B.E.2E model prototype emphasises the authenticity of this excellent scale design





FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE PRICE 7/6 POST FREE FROM AEROMODELLER PLANS SERVICE
PLEASE QUOTE PLAN NUMBER FSP 721 AND ADD 6d. POSTAGE

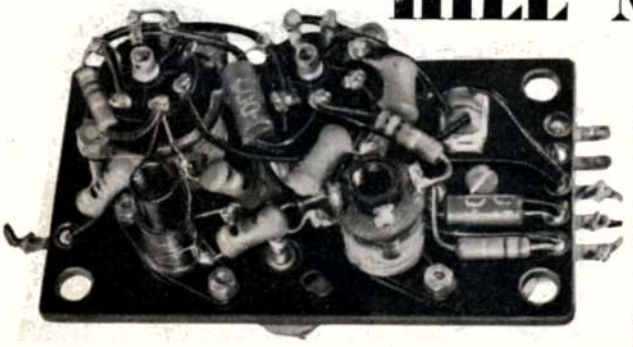


4.0 or more on signal is enough to make any relay jump for joy. Only one H.T. battery is needed, and the Ever-Ready B.105 30 v. is the only one we could ever wish to use. For L.T., the D.18 1.5 v. is ideal and the weight amounts to 3 ozs. for Rx, 1¼ ozs. for switches, Conquest actuator and plugs and 6 ozs. for batteries (including for the actuator) making a total of 10¼ ozs. This was no problem for either the Taifun Hobby or Frog 100 Mk. II 1 c.c. diesels, both of which looped the model consecutively and happily with kick elevator, proving the small battery complex to be a fallacy.

AFTER A YEAR OF SUCCESSFUL FLIGHT TESTS

HILL Mk. 2 Receiver

is reviewed by the Editor



NO HOME-CONSTRUCTED receiver can ever hope to match the universal popularity of Eric R. Hill's two-valve circuit first published in the AEROMODELLER for June, 1956. In many varied guises it has been kitted, sold as a complete unit, transistorised, made as a single-valve unit and known throughout the World by as many names as Jacob's coat had colours. It could have no greater testimonial for its reliability than its renowned popularity with fly-for-fun club modellers.

A year ago, Eric Hill introduced us to his Mk. II version. The demand for smaller model designs emphasised a need to reduce size and weight. Thus the 3-ounce set (with E.D. Polarised Relay) on a 3⅛ in. by 1¾ in. base came into being. We elected to make one and try it in a specially produced 40 in., 1 c.c. design, and the results have kept us, and the local populace amused ever since.

What are its merits? First and foremost, anyone capable of making a *good* solder joint can make the set in double quick time, and moreover, get it to work! Cost is 92s. 0d. with all new components, and battery life such that we are still employing those purchased in May, 1958—our second set in 12 months! Tuning is elementary, and the current rise from 0.4 milliamps to

Our set was made from a designer approved kit by Dockerty's of Harrogate. If you are going to make it from locally purchased components, be sure to get components exactly as specified in this list:—

DUBILIER ½W B.T.S.
Resistors:
One each, 22K, 1·0M, 4·7M.
HUNTS MOULDSEAL
Condensers:
One each ·005mf, ·01mf.

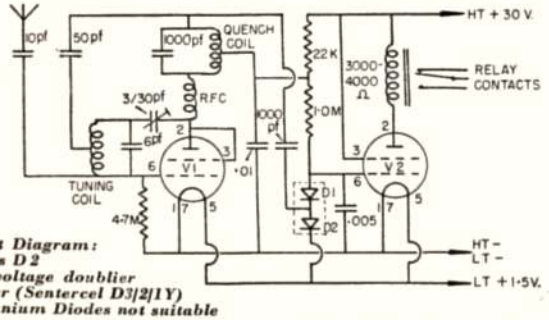
ERIE CERAMICON
Capacitors:
One each, 6·0pf, 10pf, 51pf, two 1,000pf.
One D3/2/1Y Selenium Rectifer.

One Miniature wave wound Quench Coil; Two B7G moulded valve holders; Two DL 96 Valves; One 7-pin Plug; One Miniature Dust-cored R.F. Choke; One 3,000-5,000 Ohm Relay; ¼ oz. DENCO polystyrene Cement; 24 in. 26 s.w.g. enamelled wire; 24 in. 20-gauge tinned copper wire; Six solder tags; Systoflex; Flexible plastic covered wire; Paxolin for the base; (3/32 in. advised thickness); Four 1 in. 6 B.A. bolts, 12 locknuts; Four each ¼ 8 B.A. bolts and nuts; Resin-cored solder.

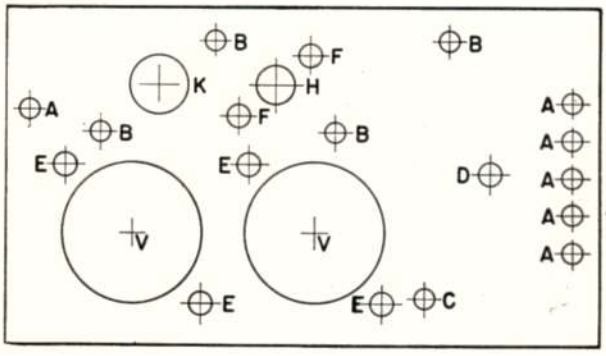
It is significant that the four main faults in Hill sets sent for repair and check are:—
(1) Use of cheap sub-standard valves; (2) Use of tube polystyrene not designed for radio work (or even cellulose cement) to lock the coil; (3) Incorrect grade of components; (Be warned—and keep to the designer's specifications.) (4) "Dry" solder joints.

Component assembly

First cut the panel to actual size template below, and drill holes, A, B, C with No. 40; D, E, F No. 31; H No. 7; K 5/16 in. and V at ⅜ in. radius with rounded edges to take the valve. If you want to rubber band suspend it, drill a No. 7 hole in each corner. Countersink tag holes A on underside and lightly rivet the six tags in place. Now secure 1 in. 6 B.A. bolts with lock nuts, in holes E, with heads on top of panel. Run second nuts to ¼ in. from panel underside, pinch bolts together to fit valve holders, lock with third nuts on each bolt and file off excess bolt metal. Mount Philips trimmer above panel by passing centre through hole H, tabs through F, largest towards nearest valve hole. Pull tabs with pliers,



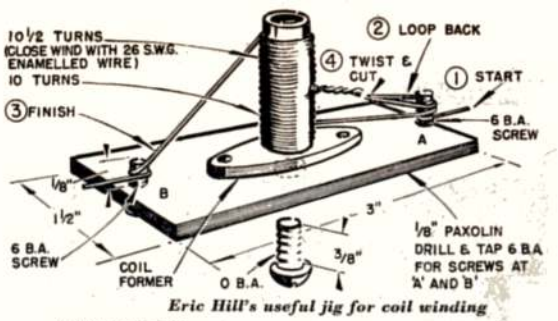
Circuit Diagram: D1 plus D2 equal voltage doublier rectifier (Sentercel D3/2/1Y) Germanium Diodes not suitable



Actual size base template on right

bend over to hold trimmer in position, bend larger tab end up slightly. Mount Quench coil below panel with slot in tag ring pointing to valves, using 8 B.A. bolts. Screw core right in and lock permanently.

The tuning coil is best wound on a jig as at right; which has two 6 B.A. screws and takes the coil former by means of an O.B.A. bolt up through the base. Start by locking the end of 26 s.w.g. enamelled wire around bolt "A", and then close-wind anti-clockwise for 10 full turns around the former and starting right at the base. At 10th turn, return to "A" and then back again for further 10½ turns close-wound to finish at "B". Holding the centre of the coil, take off loop "A" and twist *almost* back to the former, and cut about ¼ in. from former. Coat the windings with Denco polystyrene cement and when set, disconnect from jig, unwind top and bottom leads to coil by ¼ turn and remove enamel to within ¼ in. of coil on all three connections.



Eric Hill's useful jig for coil winding

Wiring up

Study the actual size drawing, ally it with the theoretical circuit and you simply cannot go wrong here.

Except where there is no danger of shorting, all leads should be covered with Systoflex sleeving.

The best sequence to follow is given below:

(*a*) Strap pins 1 and 7 of V1, connect 4.7M (yellow-violet-green-silver) between pins 1 and 6 and connect pin 1 of V1 to pin 1 of V2. Solder pins 1 and 7 of V1.

(*b*) Strap pins 1 and 7 of V2, connect .005 between pins 1 and 6 and connect pin 7 of V2 to the common LT—, HT— solder tag. Solder pins 1 and 7 of V2.

(*c*) Connect pin 5 of V1 to pin 5 of V2 then to LT+ tag. Solder pins 5 of V1 and V2.

(*d*) Strap pins 2 and 3 of V1 and connect pin 3 to centre of Philips trimmer. Solder pins 2 and 3.

(*e*) Connect R.F. choke between centre of trimmer and tag 1 of Quench coil. Solder leads on trimmer.
Connect 1,000 pF (silver-brown-black-red-black) between tags 1 and 4 of Quench coil. Solder tag 1.

(*g*) Connect positive (red) lead of rectifier to LT+ tag and solder.
The centre tag goes to pin 4 and negative (black) to pin 6 of V2.

(*h*) Connect second 1,000 pF (silver-brown-black-red-black) between pin 4 of V2 and tag 4 of Quench coil. Solder pin 4 of V2.

(*i*) Connect 1.0M (brown-black-green-silver) between pin 6 of V2 and tag 2 of Quench coil. Solder pin 6.

(*j*) Connect pin 3 of V2 to HT+. Solder tag. Sleeve up to tag, but leave about 2½ in. of bare wire protruding through eyelet on top side of panel (for relay connection).
Solder pin 3 of V2.

(*k*) Connect 22K (red-red-orange-silver) between tag 2 of Quench coil and HT+ tag. Solder HT+ tag.

(*l*) Connect .01 between common LT— HT— tag and tag 2 of Quench coil. Solder both connections.

(*m*) Bolt tuning coil to panel with the centre tap (C.T.) pointing away from V1.
Connect lower end of coil to long tag of trimmer (this might be considered easier if done before bolting the coil down) and top of coil to pin 6 of V1.

(*n*) Connect 10 pF (violet-brown-black-black-white) between aerial tag and pin 6 of V1. Solder both ends.

(*o*) Connect 6 pF (white-blue-black-white-green) between long tag of trimmer and midway along upper coil connection. Solder both ends.

(*p*) Connect 51 pF (violet-green-brown-black-white) between C.T. of tuning coil and tag 4 of Quench coil. Solder both ends.

All that now remains is to mount the relay (using hole D) with the tag panel towards the valves, connect the HT+ lead to the red coded end of relay coil, and run a lead (using hole C in panel) from the other (black) coil connection to pin 2 of V2. The armature connection of the relay and the fixed contact nearest the valves go to the two relay tags on the panel.

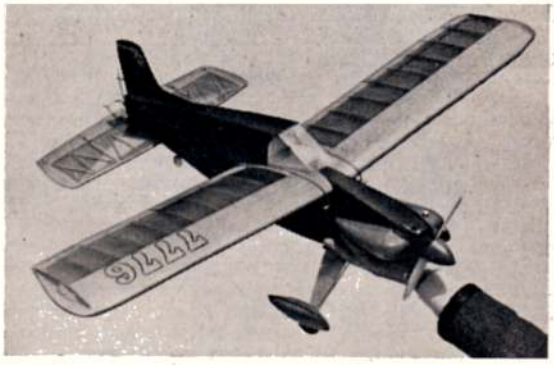
Use about 6 in. of thin plastic covered flexible wire (red for HT pos.; blue for LT pos.; and black for common negative) to form a twisted connecting loom from the 5 tags to a 7-pin plug for convenience in the model, a spare B7G base can be removed from its metal surround to make the connector for actuator and battery circuits.

Installation circuits have been published frequently, C. C. Badger's feature in March, 1958 AEROMODELLER, offering a switch-less system and Harry Hundleby's "Simple Radio Control" details several others. No potentiometer is required but a meter socket for a 0-5 Milliameter should be fitted in the lead between the 30 v. battery and H.T. pos. tag. The aerial should be about 30 in. long, though ours was most successful and only 26 in. long, being cemented to the spine of the model and fin contour with dress snap connector to a 6 in. free length from Aerial tag.

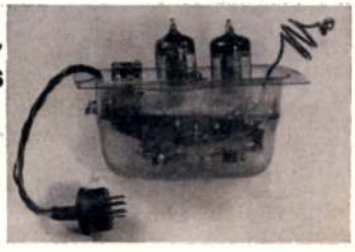
Insert the valves and connect up the batteries. With the trimmer screwed fully out and the dust core in the centre of the tuning coil, the meter should read between 0.2 and 0.4 mA. (If not, recheck wiring to quench coil, polarity of rectifier (D3/2/1Y), connections and valves.) Now screw the trimmer fully in and the current should rise to over 4.0 mA. (If not, check tuning coil connections and associated components.)

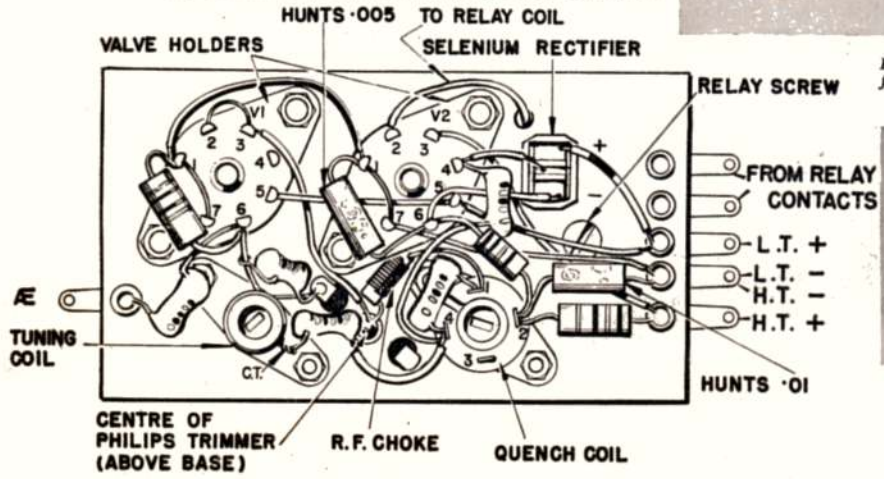
Note that fingers can be used to adjust the trimmer

(*continued on page 79*)



Ron Moulton's "Loopy Lou" test model for 1 c.c. and moulded acetate "bath" to protect Rx, below





BOOM

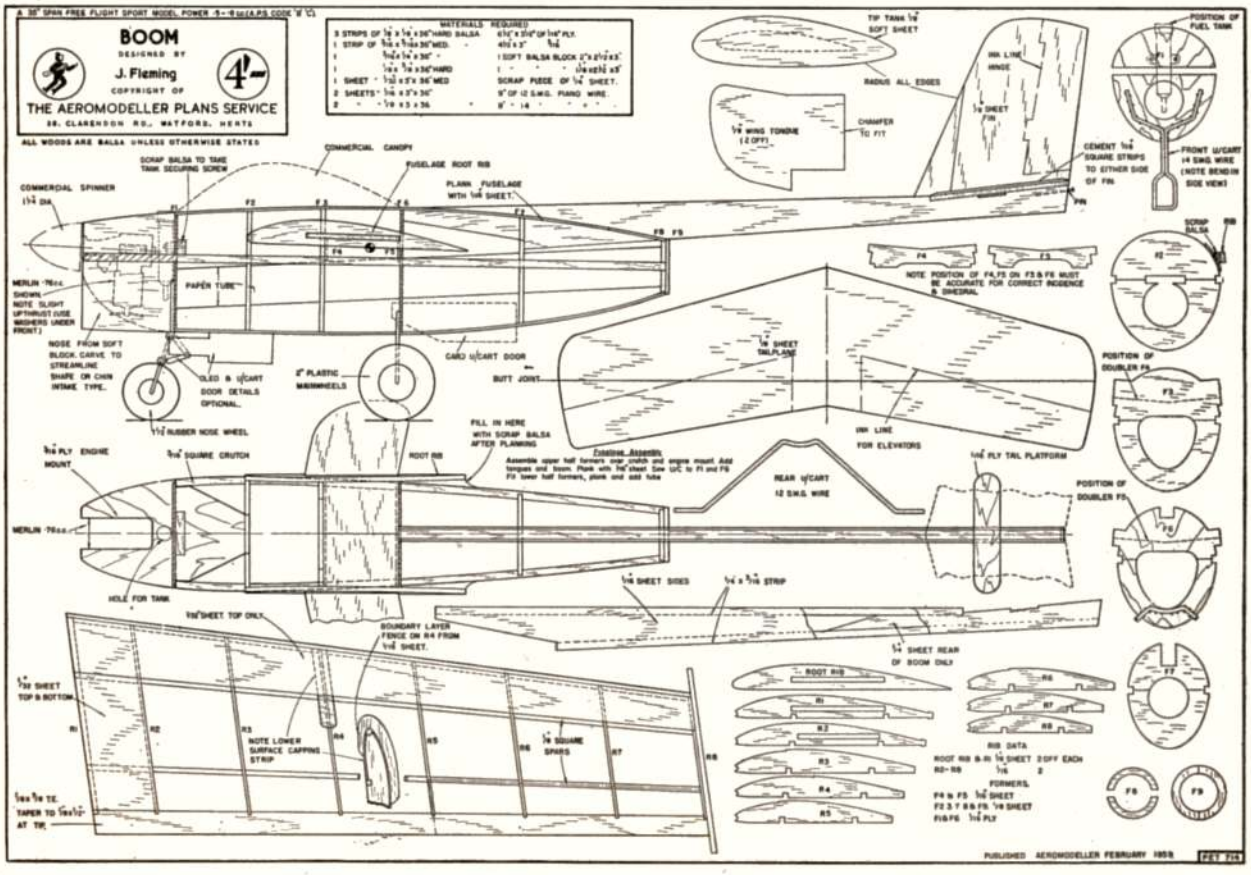
J. Fleming gives us the Jet look for sport flying with ·5 - ·8 c.c.

YOU WON'T BREAK any sound barriers with "BOOM", but you'll also have a job denting this model because of its solid construction. Designed for ·5 c.c. to ·8 c.c. engines to be an out-of-the-rut model with Jet fighter appearance, it's surprisingly easy to build providing you start by familiarising yourself with the plan.

As usual, cut all parts out and begin the fuselage by pinning two lengths of 3/16 in. square balsa onto the plan view. Now fit the engine mount and all upper formers not forgetting the doublers F.4 and F.5 on F.3 and F.6. Cement the $\frac{1}{8}$ in. hard balsa wing mount onto the doublers and then slide and cement the boom in position. This consists of two sides of 1/16 in. sheet balsa with a $\frac{1}{4}$ in. x 3/16 in. balsa strip sandwiched at the top and bottom. Note the extra stiffener of balsa near the tail. A 1/16 in. ply platform completes the boom. Slide the root ribs onto the wing mounts and then cover the upper fuselage with 1/16 in. balsa filling in the space between root ribs and fuselage with scrap balsa.

Bend nose and mainwheel wire to shape and sew to their respective formers. To get the C.G. in the correct position, plastic wheels are used for the main wheels

FULL SIZE COPIES OF THIS 1/5th SCALE REPRODUCTION ARE AVAILABLE PRICE 4/- POST 6d. FROM AEROMODELLER PLANS SERVICE PLEASE QUOTE PLAN NUMBER PET 714 WHEN PLACING YOUR ORDER



with a rubber nosewheel. Now add the lower fuselage formers and plank with 1/16 in. balsa. Roll a thin card tube and insert through the fuselage, this will help clear exhaust oil from the engine bay. Engine cowling is formed from scrap or block balsa. Sand the fuselage smooth and covering will be facilitated by doping on rag tissue followed by two coats of dope. Alternatively, apply coats of dope mixed with talcum powder and sand smooth. Fuel proof the engine bay and after bench running the engine to ensure ready starting, install with 1 degree upthrust. Add the cockpit canopy.

Tail assembly is straightforward. The fin is cut from $\frac{1}{8}$ in. medium sheet with the leading edge butt jointed as shown. The tailplane is also from $\frac{1}{8}$ in. sheet and consists of three pieces cemented together—the three inch width of balsa from leading edge to butt joint and right and left rear parts. With a set square align fin on the tailplane and for extra strength cement 1/16 in. square strips on either side of the fin.

Wing trailing edges are notched to receive the wing ribs and after pinning the $\frac{1}{8}$ in. square spars to the plan, add ribs and $\frac{1}{8}$ in. square leading edge. The leading edge and space between R.1 and R.2 is planked. Note the extension of planking on R.4. Cover wings with rag tissue waterspray and dope. Add wing tip "tanks" and any scale details you wish—undercarriage oleos, and doors, control surface outlines and roundels.

Before powered flights, check all surfaces for correct alignment. Test glide over long grass until a flat glide is obtained, when flights on reduced power may be attempted. Adjust engine thrust as necessary and—Happy Flights!

HILL Mk. 2 Receiver

(*continued from page* 77)

providing of course, they are removed well clear after each adjustment, but a non-metallic screwdriver is ESSENTIAL for adjusting the tuning coil core. (A plastic knitting needle filed to form a screwdriver is ideal.)

Tuning

1. Adjust the trimmer to the point where the current JUST FAILS to RISE when the hand is removed.
2. WITH THE TRANSMITTER ON adjust the tuning coil dust core for maximum current reading, by screwing in or out slowly.
3. WITH THE TRANSMITTER OFF check for full current drop and if necessary re-adjust the trimmer.
4. For maximum range and sensitivity, repeat (1) and (2) *at least* 100 yards from the transmitter.

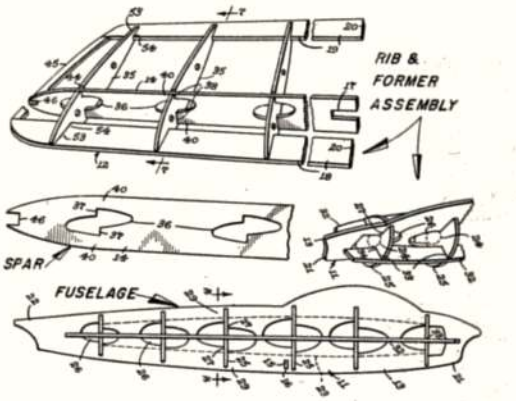
To ensure best results, the E.D. Polarised relay should be set so that it operates at 1.4 mA an i falls out at 0.8 mA. This is checked by means of a 50 K potentiometer in series with the 0-5 Milliammeter. Screw the trimmer fully in, adjust the "pot" so that the relay movement can be heard and reading observed on the meter. Reduction of armature movement reduces the difference between make and break currents, screwing in the "break" contact reduces make current and screwing in the "make" contact increases the break current.

As with all receivers, for reliable performance a 100 ohm resistor in series with a 0·1 mF capacitor should be connected across the escapement.

Range is sufficient to cope with visibility, using any of the popular carrier wave Tx's, the AEROMODELLER No. 1 transmitter being the usual choice, and it is advisable to check the reception prior to launching the model when about 30 ft from the Tx, especially after tuning for over 100 yards range. This avoids swamping the set with close proximity.

One can never claim to have had a troublefree path to R/C progress; but all of our spots of bother with the Hill Mk. II boil down to two basic errors. First we tried to use a B.123 and two half pen-cells in parallel. Relay chatter, poor current rise and difficult tuning led us to blame the wiring until the light battery fallacy was realised. There was no difference in model performance using the B.105 and D.18 and our troubles were cured immediately. Then there is the tendency to trim the Beehive too close to maximum sensitivity. Always trim close, then *back off* a $\frac{1}{8}$ turn. Put red spots on the body so you know the normal setting position and you'll find this will not vary until new L.T. is needed. The sympton of "Close" tuning can be rather unfortunate, as the model may hold its first signal, with cart-wheeling results!

The day will come when tone R/C holds full sway; but for our money, the carrier-wave Hill Mk. II represents the most economic approach for any beginner to take towards trouble-free and very satisfactory radio control.



IMPORTANT PATENTS No.4

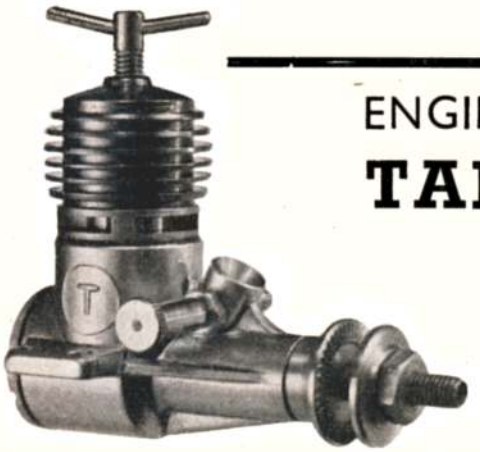
U.S.A. 2770072-NATHAN G. BAST.

APPLICATION DATE NOV. 13TH. 1956.

THE CONSTRUCTIONAL method provided by this invention is now well known, in the U.S.A. at least, as a "*Testor*" product. The apertures in the keel member are of generally oblong shape and include diametrically opposed shoulders adapted to arrest and to positively locate the formers in a vertical position. Slots are provided in the formers to engage with the keel; each former has a major dimension slightly shorter than the major axis of its respective aperture and is rotated into position against the shoulders. Transverse slots are also provided to receive secondary keel members arranged on the horizontal plane in the manner of a crutch and these also may be slotted to extend inwardly against the base keel member.

A particularly rigid structure results and accurate pre-fabrication ensures rapid symmetrical assembly.

Aeromodelling daffynitions



ENGINE ANALYSIS No. 56

TAIPAN 1·5 c.c.

Well made Australian diesel with good performance rating for sport or contest flying— Reviewed by R. H. Warring

THIS NEW AUSTRALIAN engine is obviously designed as a sports motor with the emphasis on easy starting and consistent performance. On test it proved particularly easy to handle and running on undoped fuel ran just as steadily at 16,000 r.p.m. plus, with propeller loads as at 4-5,000 r.p.m., although with the higher speeds the settings became increasingly more critical. Its flexibility was outstanding. Hand starting was still easy with a 5 in. diameter propeller whilst, at the other end of the scale, a steady 4,600 r.p.m. was achieved with a 12 x 4 Trucut Maximum torque appears to be developed at 7,000 r.p.m. and there was very little fall off in torque with lower speeds down to the limit tested (4,000 r.p.m.).

About the only feature that could be criticised on this particular engine was the rather tight fit of the contra piston which made adjustment difficult after the engine had warmed up, although the contra never actually "froze". General handling, however, was excellent, the controls being non-critical and, with little overlap, a prime was readily induced by finger choking and turning the propeller over without any blow-back down the fuel line (a very desirable feature on a sports engine).

For starting with the smaller propellers, finger choking followed by a prime through the exhaust ports produced the quickest starting, the needle valve also having to be opened up from the normal running setting to give a fairly rich mixture. We did not like the thimble-type needle valve screw, but that is mainly a matter of personal preference. A thimble is not so easy to grasp, nor is it easy to see when a particular setting has been established. But the friction lock (split thimble) was quite adequate to prevent the setting from wandering.

Power output is what would now be termed moderate for a modern 1.5 c.c. diesel, reaching a peak figure of .11 B.H.P. at 12,000 r.p.m. Possibly a slight improvement would be realised with a nitrated fuel and certainly more power could be extracted from the design, if required, by reworking the transfer ports and passages. The four ports only just open, so the effective transfer is somewhat restricted and if performance were increased by opening the transfer flow, quite likely some of the easy handling characteristics of the engine would be lost.

The manufacturers recommend a 9 by 4 propeller for running in (which on our check gives an r.p.m. figure of around 8,000); and 8 x 4 or 7 x 5 for free flight; and a 7 x 6 for control line work. These would appear just about the right sizes for operating r.p.m. in the air consistent with peak power. But for sports performance we would be tempted to take advantage of the low speed characteristics of this engine and try something like a 9 x 4 or even 10 x 4 for free flight, making the engine ideal for R/C work.

A series of fuel consumption tests were run with the Taipan over a range of 9,000 to 16,000 r.p.m. At low speeds a fairly rich needle valve setting is required for smooth running whilst at the upper end there is a marked difference between maximum lean mixture setting and the amount the needle valve can be operated before there is any appreciable loss in r.p.m. The curve given represents an arbitrary "optimum lean" setting of the needle valve, individual checking points also being indicated. At the r.p.m. for peak power output, fuel consumption with standard fuel was 1 c.c. per 12.5 secs. or 4.8 c.c. per minute, equivalent to 2·6 litres per B.H.P./hour.

Constructionally the Taipan is quite conventional. The cylinder unit is very similar to the Frog 150, but employing four transfer passages cut on the outside of the lower cylinder, terminating in holes bored at an angle upwards through the cylinder walls. These ports overlap the exhaust but, as mentioned previously, offer restricted transfer with the piston at the bottom of the stroke. Four exhaust ports are milled in the flange giving approximately 180 degrees effective circumferential opening coming between the transfer ports. Exhaust opening is fairly late, although the ports themselves are of generous depth, resulting in sub-piston induction of about one-third the depth of the port. The hardened steel cylinder has the bore internally ground and finished by lightly honing, following typical European practice; external cylinder threads are $\frac{5}{8}$ in. diameter at the top and $\frac{3}{4}$ in. at the bottom (screwing into the crankcase casting), a fibre gasket provides a seal with the case.

Piston and contra are meehanite with shallow conical matching surfaces finished by grinding and carrying a 9/64 in. diameter press fitted silver steel gudgeon pin. The connecting rod is turned from dural and is of generous proportions.

The crankshaft is extremely massive for a 1.5 c.c. engine, being 11/32 in. diameter stepping down to a 3/16 in. diameter front section tapped with an A.F.N. thread. The shaft is splined to take the driver and the abrupt change of section here would appear to produce a stress raiser so that a shaft could break immediately in front of the main bearing in a bad crash. The shaft is finished by grinding, but the 3/16 in. diameter crank pin is not ground, which is a little unusual.

A plain main bearing is formed by reaming the crankcase casting and then very lightly honing. The fit was generally excellent and the bearing ran cool at all speeds. The crankcase casting itself is a nice clean job with fillets supporting the bearing length, short choke tube angled forward and nicely proportioned mounting lugs.

The brass spraybar blocks off more than half the throat area of the intake tube, but this has no adverse effect and helps venturi effect. Its needle appears to be

DATA

SPECIFICATION

Displacement: 1·5 c.c. (·091 cu. in.)
Bore: ·511 in.
Stroke: ·453 in.
Bore.stroke ratio: 1·16.
Bare weight: 3·3/16 ounces
Max. B.H.P.: ·11 at 12,200 r.p.m.
Max. torque: 11·2 ounces-inches at 7,500 r.p.m.
Power rating: ·074 B.H.P. per c.c.
Power.weight ratio: ·0345 B.H.P./oz.
Material Specification:
Cylinder: Case hardened mild steel
Piston: Meehanite
Contra piston: Meehanite
Con. rod.: Dural
Cylinder jacket: Dural (anodised red)
Crankcase: Light alloy die casting L.33
Crankshaft: 3 per cent. Nickel steel, hardened
Back cover: Dural (turned)
Bearing: Plain (reamed and honed)
Spraybar and thimble: Brass
Prop driver and front washer: Dural
Manufacturers: Gordon Burford & Co. 91 Beach Street, Grange, S. Australia
Price: £3.19.6 (Aust.)

PROPELLER—R.P.M. DATA

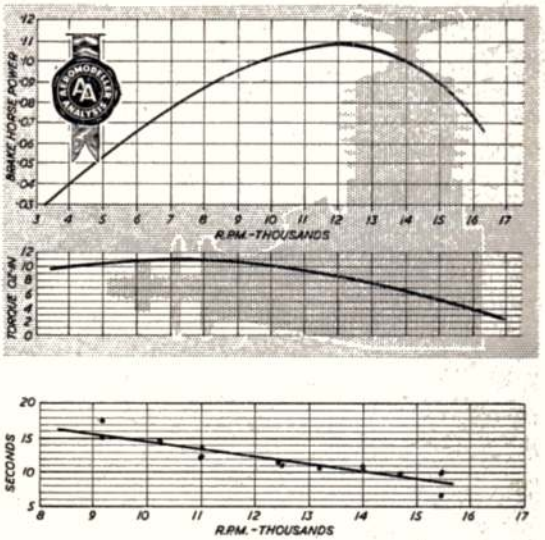
Propeller dia. x pitch		*r.p.m.*
12 x 4	(Trucut)	4,600
11 x 4	(Trucut)	5,400
10 x 4	(Trucut)	5,700
9 x 4	(Trucut)	8,000
8 x 4	(Trucut)	10,200
8 x 3	(Trucut)	10,750
7 x 6	(Trucut)	9,200
7 x 5	(Trucut)	10 000
7 x 4	(Trucut)	12,200
7 x 3	(Trucut)	14,000
6 x 4	(Trucut)	13,200
6 x 3	(Trucut)	14,500
5 x 3	(Trucut)	16,000
7 x 4	(Frog nylon)	11,200
6 x 4	(Frog nylon)	15,500
9 x 3	(Tiger)	9,000
8 x 3½	(Tiger)	11,400
6 x 9	(Tiger)	11,000

Fuel used: Standard diesel mixture (1:1:1)

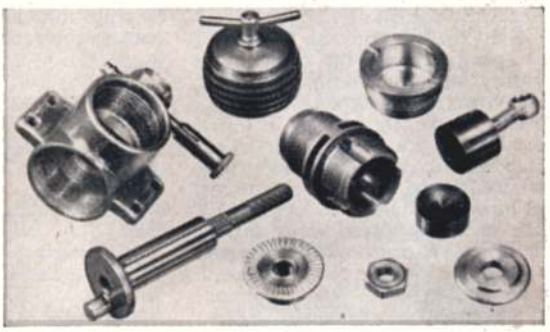
adapted from a standard darning needle—which is probably just about as good a fine needle as one can find.

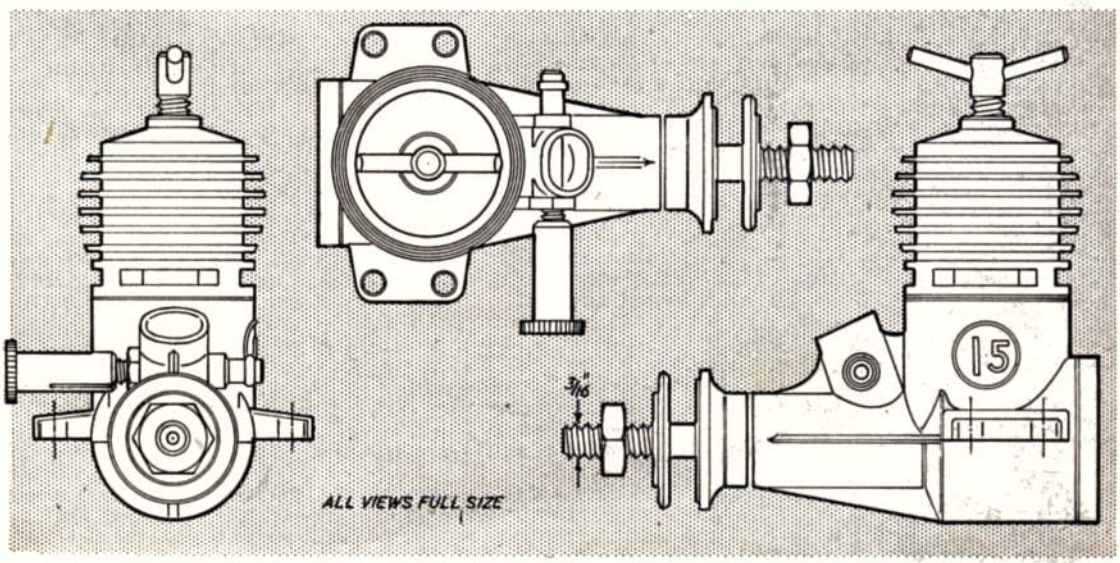
Workmanship throughout is good and, in fact, the factory producing the Taipan appears to be well equipped with machine tools and knows how to use them. Packaging follows the modern trend in display, employing a vacuum formed transparent acetate moulding to encase the engine on a card backing—operating instructions for the engine being printed on the back of the card. Not, perhaps, as much "literature" as one normally gets with a new engine—but this one should be sufficiently foolproof to get by with a minimum of instructional matter.

Fuel recommended by the manufacturers is equal parts ether, paraffin, and castor oil, on which mixture the engine handles admirably. A small addition of dope (up to 2 per cent. nitrate) gives a certain benefit and a 4 per cent. additive makes for easier control settings at speeds of 14,000 r.p.m. and over. This order of speed, however, is beyond the peak of the engine, so a standard diesel mixture is adequate. A.P.S. power coding is E.



Curve above is for fuel consumption, showing time against revolutions per minute with plots and mean curve. Below, parts of the Taipan, named after a dangerous Australian snake





The generosity of McGILLICUDDY

An effort to raise club funds related by

Brian Holmes & Russ

H. McGILLICUDDY ESQ., President and Chairman of the Auchengargle M.A.C., stared accusingly at the other members of the committee.

"It's about time . . ." he began.

"Should think so, too", yawned Tumps McWhippet, rising to leave.

"I didna mean that", cried the Maestro, "I was going to say that it's aboot time someone else used his brain for a change. I dinna see whay I should wear out my cranial matter for the sake of a few quid.

The response to this harangue was typical of a feverish session of the club committee. T. McSwindle muttered something unintelligible in his sleep; Snooky Monro idly turned the dog-eared pages of an old model journal; and Drambuie, though not an official member of the committee, gave vent to an impatient squawk.

The reason for the Maestro's exasperation over the question of money was the club financial crisis, which was now regarded as an annual event. Strangely enough it always occurred a few weeks prior to the club outing when resources were strained to the limit to meet the cost of hiring a coach. The fact that the idle members would insist on the luxury of a coach was a constant source of irritation to the Maestro, who was a firm believer in the frugality of a horse and cart.

At the moment of crisis only the meagre sum of one pound, three shillings and an Irish penny resided in the club coffers. Some scheme for raising the wind was called for, and called for urgently. Usually it was left to the McGillicuddy cunning to meet any emergency involving hard lucre. But the Maestro wasn't quite his old scheming self, and though certain jealous elements hinted that any such change could only be for the better, a one degree under Maestro was a dead loss in times of stress.

The fact was that the mighty brain was impaired by the grief of a lost model. Only the Sunday before one of his prized models had flown off into the unknown, leaving the Maestro in a state of collapse, and Drambuie, who had wolfed up the D/T fuse, in complete disgrace.

It was left to Tumps McWhippet to break the gloomy silence. "What about a club concert", he suggested hopefully, "There's our bagpipe skiffle group and . . .".

His voice trailed off as he caught sight of the gleam in McSwindle's eye. The McSwindle baritone was a well-known menace to all Auchengargle music lovers, and was ready to erupt into discordant song at the least encouragement. The last time

The McSwindle baritone

it was heard in full spate was at the Ben McSplurge Music Festival; since when rumours of an abominable snowman haunting the mountain had been rife in the town.

McSwindle was about to endorse Tumps' suggestion, but the fierce McGillicuddy expression froze him to silence.

Snooky Munro sought to break the tension by changing the subject. "Funny things some of these Sassenach clubs get up to", he remarked brightly, looking up from the model journal, "Fancy holding a Jumble Sale in the clubroom".

The Maestro was not amused.

"May I remind the esteemed member that we are not here to discuss circus life", he said testily.

"Did you say a Jumble Sale, Snooky?" asked Tumps, "May be the great white hope if we only knew what it was".

Snooky conveyed the general idea of members bringing up their discarded model relics to flog to other members, thereby inflating funds.

The idea was enthusiastically received by all save McGillicuddy, who could hardly be expected to rave over any scheme involving personal loss to the Miser of Auchengargle.

"It might work", said McSwindle, "The only trouble will be to get some of the miserly jumble owners to part up with their loot. Some of them have had it around for so long their homes wouldna be the same without it".

"Be it ever so jumble, there's no place like home", chanted Snooky'

"Never mind that", interposed Tumps, "Let's see what we can rake up among ourselves for a start. Now I can rake up a couple of half finished kits and a pair of balloon wheels—only one tyre missing. What about you, Snooky?"

"Sixteen plastic tanks, six hundred feet of control wire—needs unravelling, of course—and a 1950 Wakefield wing", replied Snooky proudly.

McSwindle thought that he could ferret out an old Brown Junior, and I offered my stock of old white tissue, then all eyes focussed upon the embarrassed Maestro.

"Any old crates going spare?" asked Snooky brightly, "apart from those awaiting return to the brewery"

The Maestro wriggled, then a secretive smile crept over his overripe countenance.

"I may have a wee surprise for you, after all. A pleasant wee surprise", he said craftily.

Following this mysterious statement, McGillicuddy shut up like a clam. We were all burning to know what skullduggery the old fraud had in mind. Perhaps the loss of his model had sent him a bit dizzy in the head; not one of us thought that he intended to give anything.

Mystified as we were, time was pressing. The Jumble Sale had yet to be organised. After much discussion the date was fixed for the following week, and in spite of Drambuie's cries of starving protest, we stayed to thrash out the details until long past the Maestro's supper time—they were closed by the time we staggered out into the night air.

Came the great day and the Sale

was going with a swing. The scene in the clubroom looked something between a scrap iron yard and an airfield after a rally. Members were busily delving into the piles of rubbish in the hope of unearthing a bargain. A few of the more fastidious types were using prongs.

While this was going on McSwindle was running his gimlet eye over a battered team racer.

"Verra strange", he muttered darkly, "But I could have sworn that was the verra model I loaned to that rogue McGillicuddy a few months ago".

Further speculation upon the moral scruples of McGillicuddy was interrupted by the sudden appearance of a small boy. He was holding a familiar looking A/2 glider in one grubby paw, while the other, equally grubby specimen, was extended hopefully.

McSwindle strode over to him. After a whispered consultation between that dour giant and the diminutive urchin, the latter scuttled fearfully away with grubby paw enriched by an unspecified, but needless to say, minute sum. McSwindle returned, holding the glider triumphantly aloft.

"Friends," he declaimed, "This is truly an auspicious day in the annals of the old club. Our beloved President, H. McGillicuddy, has been gracious enough to donate this magnificent model to the Sale. The bidding will start at ten bob. Gather round, gentlemen".

After the members had recovered from the shock, the bidding became brisk, with the glider being finally sold to a new member for the princely sum of thirty bob. This sum had more than saved the day, and we were all marvelling over the generosity of the Maestro, when in walked the gentleman himself.

"Well lads", he cried jovially, "How did you like my wee surprise? Not bad, eh, McSwindle?"

Everyone was full of praise for the man of the hour.

"By the way", said the benefactor, a little overwhelmed by the warmth of the reception, "has a wee laddie called here this evening?"

"A wee grubby little chap?" ventured Snooky, helpfully.

"I dinna ken what he looks like", retorted McGillicuddy, "All I know is that someone found my lost model at Muckle Mire, and that his wee boy was fetching it to the clubroom this evening".

We were all aghast at this news, with the exception of McSwindle. A close observer would have seen something almost resembling a smile flit across his cadaverous features.

"And what I want to know", continued the Maestro, "is whether the wee lad called with the model".

"A wee lad did call with a model", explained Tumps, "But it was the one you gave to the Sale. Ask McSwindle, he knows all about it".

The Maestro turned so white that even his luminous proboscis was reduced to a shocking pink. He wheeled round angrily to confront the arch villian McSwindle, but whatever weird forms of club life was seething in the hall nothing remotely like a McSwindle could be seen.

McGillicuddy stayed just long enough to learn the full horror of the scurvy trick, then tore off in pursuit of McSwindle, brandishing a certain team racer, cudgel fashion. He was preceded by the bloodthirsty Drambuie, who always co-operated on such armed sorties.

Though I have no precise news of the ultimate fate of McSwindle, I do know that the vengeful Maestro is now camping out on the airfield, awaiting the appearance of the new member with his glider. Somehow I don't think he'll get much joy out of his vigil. Even less joy than I got out of my thirty bobsworth, for I lost the model on the very first flight. The usual D/T trouble of course. Just wait till I get my hands around the neck of that seagull!

1959 S.M.A.E. CONTEST PROGRAMME

March 1st
Gamage Cup (U/R Rubber)
Pilcher Cup (U/R Glider)
Halfax Trophy (U/R Power) — *D/C*

March 8th
*K. & M.A.A. Cup (F.A.I. Glider)
Gutteridge Trophy (Wakefield Elim.) — *Area*

March 29th
*Astral Trophy (F.A.I. Power)
S.M.A.E. Cup (A/2 Elim.)
Women's Cup (U/R Rubber-Glider)
Jetex Challenge Cup — *Area*

April 19th
F.A.I. Power Eliminator
*Weston Cup (Wakefield) — *Area*
†Lady Shelley Cup (Tailless)
(Centralised at South Midland Area Venue)

BRITISH NATIONALS

May 17th/18th
Thurston Cup (U/R Glider)
†Gold Trophy (C/L Aerobatics)
Knokke Trophy (C/L Scale)
S.M.A.E. Trophy (Radio Cont.)
†Davies "A" Cup (FAI t/r)
Speed (Classes 2 and 3)
Combat (Prelim. Heats) — 17th

Sir John Shelley (U/R Power)
Short Cup (Pay Load)
Model Aircraft Trophy (U/R Rubber)
Super Scale Trophy (F/f Scale)
Ripmax Trophy (Radio Control)
Davies "B" (Class B T/Race)
†Speed (International Class)
Combat (Finals) — 18th

May 30th-31st-June 13th-14th
World Championship Team Selection Trials *Centralised*

June 28th
Area Championships (U/R Rubber, Glider, Power) *Centralised*
†Radio Control (International Class)

July 12th
*Model Engineer Cup (Team Glider)
Flight Cup (U/R Rubber) — *Area*

August 23rd

SCOTTISH GALA

(U/R Power)
(U/R Glider)
(U/R Rubber)
Taplin Trophy (Radio Control)
Team Racing (Classes A & B) — *Centralised*

United Kingdom Challenge Match (Date to be decided)

September 6th

NORTHERN GALA

(U/R Glider)
Hamley Trophy (U/R Power)
Caton Trophy (U/R Rubber)
Aeromodeller R/C Trophy (Radio)
Team Racing (Classes A & B) — *Centralised*

September 20th
*Keil Trophy (Team Power)
*Farrow Shield (Team Rubber)
Frog Junior Cup (U/R Rubber-Glider) — *Area*

September 27th
½A, A & B (Team Racing) — *Area*
(May be run with Area events on September 20th if desired)

October 11th
Frog Senior Cup (U/R Power)
C.M.A. Cup (U/R Glider) — *Decentralised*

* *Plugge Cup events.*

† *Events setected for basis of Int. Team selection.*

TRADE NOTES

GET WHAT YOU WANTED for Christmas? Chances are that you did—if you're a keen aeromodeller and we wonder if you decided to try **LEPAGES** Bondfast P.V.A. glue when making that kit. Already the accepted adhesive in the U.S.A. for large gluing areas, leading edge sheeting and planking, we find it also has special attributes for permanently fixing ply bulkheads in place. Takes an hour to set properly and you must pin the joint securely; but when it is done, the joint is tough enough to withstand the hardest of knocks.

Among the new kits to reach the shops in time for the pre-Christmas spree, the **FROG CONDOR** offers a good-looking stunter for the Frog 100 Mk. II, 149, 150 series of engines with top class die-cut wood, a clear and concise plan in the traditional I.M.A. style and several interesting new design features. This flapped stunter is in the luxury class, and although priced higher than its contemporaries at 30s. for 32-in. span, the completeness of the kit and quality of design make it money well-spent.

This column has often maintained that shop display plays a most important part in salesmanship and we were thus most pleased to see the new **MERCURY** Minipak lines in their smart yellow and grey triangular packs with transparent bubble covers over the accessory. Three of the lines are new: the Throttle at 13s. 9d. with all the assets of American units at twice the price and the advantage of having a fixed needle valve assembly within the choke barrel, a new filter at 2s. 6d. and a light needle assembly that fits all types for 4s. 6d. With these packs there is no need to grope around that scruffy field box for your sludge-filled spare—keep it in the neat pack clean and tidy ready for use.

Incidentally, if the throttle doesn't fit your engine—try a P.V.C. tube adaptor—it works! Mercury are also introducing the popular Super-6 diesel and 45 glow fuel formulae in pint-size cans at 5s. 6d. each, complete with the exclusive long spout.

When we reviewed the Australian Glo-Chief 29 in December Motor Mart we had no idea these fine engines were to be distributed in G. Britain by **PERFORMANCE KITS** of Coventry at £6 12s. 8d. each. Our analysis of the engine is in hand; in the meantime, an assessment of Gordon Burford's diesel workmanship appears on pages 80/81. Four semi-elliptical section stunt tanks with internal baffle and a high standard of soldering from "Small" 30 c.c. to "Giant" 4·2 in. x 1.8 in. are on sale through Performance agents, the Giant size being to special order at 10s. 6d., others 6s. 6d., 7s. and 7s. 6d. respectively. All tubes are soldered together internally and the medium size is perfect for their Lynx Biplane kit. If you're an Aerophile you ought to get **C. G. B. STUART'S** Catalogue of literature dealing exclusively with aviation subjects. Mr. Stuart specialises in out-of-print volumes and has many rare tomes in his 16-page listing plus a novel £10 reward offer and a request for books to buy.

A name synonymous with aeromodelling for countless years is that of Warneford and four of their latest accessory lines show they are well up to the mark with current demands. Firstly, their 1s. sheet of 1¼ in. alphabets come in a choice of seven colours with numerals, dots, commas and dashes, making a total of no less than 107 characters per sheet plus a smart **WARNEFORD** trade mark! For S.M.A.E. registration we think these ideal. Other lines are the 5s. 6d. Kwikajuss C/L handle, a 10d. Glowplug box spanner and a very clever graduated free-flight tank, the Airmaster at 2s.

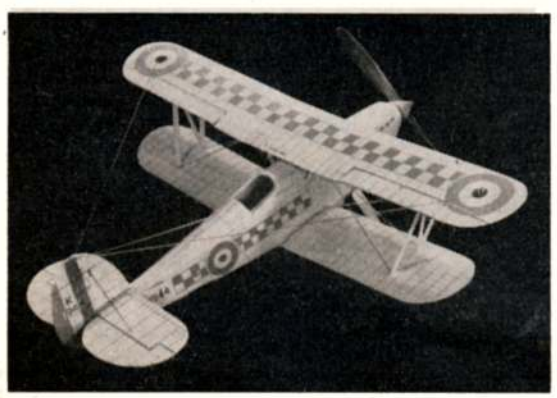
A kit high on our list for flight tests early in this 1959 season is the Deltaceptor by **VERON.** One might we l say Phil Smith has "done it again!" for in this kit all the skill of this very original designer has gone into one of the finest examples of British kit "engineering" it has been our pleasure to examine. The die-cutting is no less than perfect, the plan leaves nothing to chance and the design matches all of its advertisement claims. One of the most outstanding models at the 1958 Northern Heights Gala, the Deltaceptor will be a regular sel'er for many seasons to come. We await news of the first to fly with ultra-light R.C!

American motors and kits are reaching the British market in increasing numbers; but when an item like **VICTOR STANZEL'S** clever Electromic Flash monoline controlled electric powered ready-made model appeared in Harrods prior to release in the U.S. Model magazines before Christmas, we had thoughts of the free-market opening up!

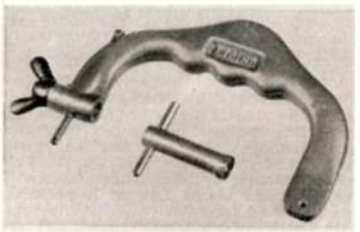
A new kit each month is the plan for **KEIL KRAFT** and with the smart 2·5 c.c. Spectre Stunter announced last month, the Talon in this issue and several more to come, we shall be seeing changes in the K.K. catalogue for the first time in many moons. It's no secret that the Wickford factory has been heavily engaged in the Cornflake give-away battle (those submarines really do work, don't they!) and the proven popularity of the well-established K.K. designs has kept the works busy turning out kits old enough to leave school, but now the new jobs are on the way—hooray! Incidentally, our first check with Keil Kraft Record Super-Nitrex glow-fuel (30 per cent. nitro methane and 5 per cent. nitro benzine) at 4s. 9d. half-pint, indicates that this is the fuel for getting those high notes of peak r.p.m., especia.ly in small capacity U.S. glow motors.

Delta man Laurie Ellis is with **ACADEMY HOBBY SUPPLIES LTD.,** of Toronto, Canada, and is doing well as an ambassador for British model goods over there. Stateside influence on the hobby market is strong, but Laurie and his unusual models are gaining ground. He offers a tip for Skyhawk Team Racer builders (A.P.S. Plan CL/678)—make it with normal two-wheel u/c—the trike gear tends to cause a ground loop in rough surfaces.

Model clubs in the U.K. have recently been asked by the **HUMBER OIL CO. LTD.** for their special wants in the model cement and finish line. We hope you've told them what you would like to see. Mr. S. Sharpe, B.Sc., F.R.I.C., was appointed technical director of Humbrol in November, and has considerable experience in the paints and finished trade plus an honours degree in chemistry. We know he wants to develop the items you need—so send in those requests to Humbrol, Marfleet, Hull. **A. A. HALES'S** impressive



At top: Veron's new D/Fan kit parts have impressive die cutting. Three new K-K fuel cans in distinctive green and yellow wrappers at right. Left: Yeoman Hawker Fury with radio aerials and extra coloured ball pen decor flies well



Left, the new Ripmax R/C accessories, an aerial coil and tuning key with octagonal bore slug. Below are the Warneford c/l handle and cheap glowplug spanner. At right: the Tri-tone three-reed Rx compared with matchbox for size. Radio & Electronic will be producing this with Uni-tone and Oct-tone sets, each a compact, well-produced and trouble-free unit to be recommended

trade list is a "must" for all retailers—it carries useful tips for the man behind the counter as well as cataloguing the thousands of items under thirty branded names which are distributed by this wholesaler. The Yeoman Quickbuild biplane series is now a trio, with the Tiger Moth joining the Hawker Fury and Gloster Gladiator at 6s. 11d. each. Our Fury flies exceedingly well, and is destined to take a Bambi in its nose at a very early date.

Motorised servos are occupying many of the R.C. specialists' minds, including the inventive **FRED RISING** who asks us to point out that the correct price for his escapements is 35s., not the 32s. 6d. quoted in November R/C Notes.

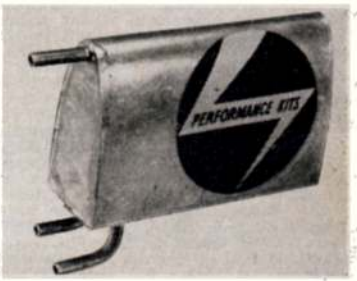
A modification to increase the range of the **RIPMAX** Pathfinder transmitter is a plug-in aerial coil which can now be bought for 5s. This boosts the output considerably, and another Ripmax R/C aid is also available in the shape of a plastic insulated tuning key with both screwdriver and Allen key ends at 1s. 3d. to suit all types of tuning slug. Some fine new **PLASTICS** are added to our census in the December issue and are announced as becoming available during February. We list them in the style as before. A number of readers have pointed out retail price differences between those quoted in our December survey and local shop charges for plastics. It should be remembered that some distributors have been able to reduce their prices for imported kits, and that in several cases small batches of kits have been imported by other sources than the official distributors whose current prices were quoted.

TYPE	Checked Scale	Model Span (inches)	Price (inc. P.T.)	No. of Parts
REVELL				
Lockheed Hercules C130	1/100	11.4"	8/11	67
Martin Seamaster	1/139	8 1/16"	8/11	67
Douglas A3D Skywarrior ...	1/85	10 1/2"	8/11	43
Chance Vought Crusader ...	1/45	9 1/2"	7/11	33
Martin B57B ...	1/82	9 3/16"	8/11	37
Fokker DR1 ...	1/27	10 5/16"	17/6	51
AIRFIX				
Avro Lancaster B.1	1/72	17"	7/6	75
LINCOLN				
Folland Gnat ...	1/43	6 1/2"	4/11	41
KLEEWARE				
Beechcraft Super 18	1/60	10"	5/-	21

Without exception, each one of these new kits is a real credit to the manufacturer, and if any of them are to be singled out for special virtues, the Lancaster represents great value for money, the Skywarrior and Fokker DR1 have fascinating detail and both the Gnat and Beechcraft are interesting types produced to high standards at popular price.

From Australia we have the first **TOLTOYS** Plastikits, for the D.H.82 Tiger Moth. This 1/48th scale "Tiggie" is a credit to the mould-makers. Featuring such useful devices as rigging hooks on the true-scale struts, clever wing assembly and being accurate down to the aileron differential cams and the different angles of sweep on upper and lower wings, the 43-part Toltoy Tiger Moth retails in Australasia for 9s. 11d. through Alex Tolmer, 29 Queens Bridge Street, South Melbourne.

Revell's latest, the Lockheed Hercules at right. Performance kits tank is a robust job, comes in four sizes. Below it are the Warneford baffled and graduated free flight tank and the latest long nozzle cement tubes with different plastic cap by Britfix



Cross-section view of Airfix's super Lancaster kit shows cockpit equipment and movable turrets. Below are the attractive Minipaks by Mercury

THE SECOND attempt at running the Bill White Cup (rained-off on its original day) at Chobham Common on December 7th attracted a very healthy entry of sixty-eight in this annual rubber event and the supporting power and glider contests. Conditions were not so good, but I feel we should congratulate the winner, D. Greaves of Leamington, for his valiant efforts in coping with the muddy swamps on this blasted heath. Not only did he lose his model on the last flight—but he practically lost his trousers as well, as he went headlong into a very deep bog and I gather was lucky to be dragged out. After such discomfort he deserves the trophy.

London

BLACKHEATH M.F.C. were, of course, responsible for the Bill White and the final results were as follows:

Bill White Cup

1. D. Greaves (Leamington) ...	5·38
2. J. Knight	5·22
3. R. Boxall (Brighton and Dis.) ...	5·18

Glider Contest

1. D. Partridge (Croydon)	6·00
2. T. Brooks (Surbiton)	5·22
3. B. Tofield (Watford)	5·14

Power

1. A. J. Crisp (Martyrs)	4·29
2. D. Wain (Martyrs)...	4·25
3. A. J. Steaker (Springfield Park) ...	3·56

It is very pleasing to see a great revival of activity in the **WEST ESSEX AERO-MODELLERS.** North Weald aerodrome has become the club flying field and this is an admirable base for regular flying on Sundays for radio control and free-flight, in fact the revival of free-flight interest in the club is a point worth noting. Controline is by no means left behind, for McNess has achieved some successful performances with his latest Class B model, mainly as a result of experiments with fuel. Bill Morley has a new "35"-powered model for the 1959 Gold Trophy and Chas. Taylor is taking up stunt seriously. Eight-channel *Smog Hogs* are on their way from Messrs. Marsh, Allen and Sutherland and in order to make club meetings more interesting, a programme of film shows, lectures and building demonstrations are to be given on Wednesday evening sessions, at Markhouse Road School, Walthamstow.

Dave Sibbick heads the **FARNBOROUGH M.A.C.** club points system with his Helicanth design. This design has been flying for the last five months without a name and address label on the model! **BERNARD'S BROTHERHOOD FOR BOYS** has re-opened and meetings are now held at 7 p.m. on Mondays and Thursdays at Charlecote Road School, Dagenham, and the boys' interests are centred on the A.P.S. *Pageboy* and *Golden Wings* designs. **FELTHAM EAGLES** held a pleasant three-cornered team race at Heston on November 23rd between themselves, **HAYES** and **TOLWORTH.** J. Headley of Tolworth was the winner of both A and B, and D. Balch of Hayes the ½A. As ever, combat was inconclusive due to lack of moonlight. Sounds of triumph on the Bill White day at Chobham were heard from the **ST. ALBANS M.A.C.** camp after their tough battle with Surbiton for the final of the L.D.I.C.C. Contest. The lads from St. A. had a flight in hand plus 57 secs. lead when the fog eventually clamped down and they really deserved their victory. At the moment the St. Albans clubroom is being redecorated (?) by members of the club, two walls having been stripped of their plaster, which should make it most unsafe for a full membership meeting, as I have always had my doubts about the roof supports of that building! **DEBDENAIRS M.F.C.** are pleased with their 1st and 2nd places at the inter-club Combat event organised at Harlow with members from the Bishops Stortford, Dunmow Harlow and Hoddesdon clubs. Another inter-club event took place between **SIDCUP, DARTFORD** and **COSMO A.M.C.** clubs on November 16th, with I. J. Ella and A. Baylis of Cosmo taking 1st and 2nd places. B. Southern and S. Robinson have worked out a good demonstration routine to keep the crowd on their toes, each is capable of flying two models at once! Club meetings are held on Fridays at 8 o'clock, at Hurst Community Centre, Hurst Road, Bexley, and flying takes place up till 1 o'clock on Sundays at Danson Park.

CLUB NEWS

North Western

WIGAN M.A.C. had a very successful season in 1958 with Mike Hosker taking most of the honours as N.W. Area and National Junior Champion, a double feat of which the club is justly proud. Brian Talbot was N.W. Area power champ. and 2nd in the overall placing for free-flight, whilst Dave Morgan was 3rd in the N.W. C/L champs. **BOLTON M.A.S.'s** successes were W. Murray winning the Lady Shelley and placing 2nd at Woodford, whilst B. Hall was top junior in the power event at the Northern Gala. Their winter programme includes an R.T.P. competition for rubber-powered Team Racers and more members would be welcome at Maudesley Street School at 7.30 on Monday nights.

The North Western Area **Winter Rally** is to take place on February 1st at R.N.A.S. Stretton, near Warrington.

East Anglian

HARLOW M.A.C. were hosts to several clubs on November 30th for a combat event, and as reported, the Debdenairs took top honours with local lad Rob Kimber of Harlow placing 3rd. Film shows have been organised for the coming season and local modellers in this new town are recommended to contact the new Secretary's address at the end of this feature. Jetex speed R.T.P. has been a feature of the **HODDESDON M.F.C.** indoor meetings, D. Cheek winning the finals with 74 m.p.h., and he also claims an outright club record of 115 m.p.h. New members would be welcome at the Scout Hut, Salisbury Road, Hoddesdon, at 7.30 any Wednesday. The club enjoyed its outing to Harlow for a combat session, P. Titmarsh making his first flight ever with a Frog 2.49 *Rogue* built from our December free plan. Dusty Miller is one of the **CAMBRIDGE M.A.C.'s** top power men and, until recently, never thought of as being anything else, although his stalwart efforts with the Hunting Provost in this issue at club exhibitions have earned him worthy praise. However, Dusty has now received the East Anglian Scale Cup and has been flying R/C for several weeks. After searching the area, the club has at last found a substitute for their deteriorating clubroom—last time they went to their regular spot, they found a gaping hole in the middle of the ceiling and fear of further falls of plaster put paid to their R.T.P. flying. Chief attraction of the new club room is a ready-fitted fire at Trinity Hall, Trinity Place, King Street, Cambridge.

Peter Tindal of the **DAGENHAM M.A.C.** claims an altitude record for his combat model. It departed from its lines during a combat session and continued to climb until almost o.o.s. when the motor cut and the model came down in a spiral glide. Only a few dabs of cement were needed to get it airborne again and it was then flown against the Debdenairs in a combat comp. Incidentally, Dagenham will be running a **Combat rally** next Easter Sunday with two classes up to 3·5 c.c. on 50-ft. lines, up to 6 c.c. on 60-ft. lines.

Southern

LEATHERHEAD AND D.M.F.C. had a successful film show with twenty-five parents and friends attending on November 28th, raffling a box of Christmas groceries in the process. Single channel R/C has caught up with the club, and 105 m.p.h. is claimed with an Eta Mk. 6 Class B Racer. This club's Combat League now has seventeen models in ½A and members would be welcome to contact the Secretary, G. Dias, 21 Orchard Close, Fetcham, Surrey. Four members of the **SOUTHAMPTON M.A.C.** travelled up to Chobham for the Bill White event, Norman Elliot collecting a max on his first flight, but was outdone as were many others by the fog in his attempts. P. Giggle and Mavis Pepper have had a very good season helping the club to collect three firsts and several near misses in major events. N. Worley who lost his "tree creeper" in the Hamley Contest because of a 3 min. 25 sec. engine run, has now had his model returned in several pieces. The finder said that her cows had been eating it! Quite true—there were some teeth marks on the timer!

Midland

OUTLAWS (CANNOCK) M.A.C. had their First Annual Dinner and Social evening with fifty members and guests from five neighbouring clubs, with dancing, party games and general frivolities (!). The first of their monthly practice combat was almost an Eifflaender Benefit Day, as 75 per cent. of the entries used P.A.W. 249s, with new-boy Derek Gater placing 1st using a *Peacemaker*. **LEICESTER M.A.C.** had their Annual Dinner on December 12th and the Committee has chosen an A/2 model for the club's winter building comp.

Northern

A one-design glider comp. to stimulate junior interest is the aim of the **WHARFEDALE M.A.C.** and the one selected is the Keilkraft Dolphin. Ten per cent. of the final points were allocated to quality of construction and finish, all models obtaining over six points out of the ten. The main contest for flying was held on Baildon Moor on December 21st. Incidentally, don't forget the **Northern Area Winter Rally** on January 18th at Linton-on-Ouse. Wharfedale will be running the Team Race event.

South Midland

KETTERING AND D.M.A.C. have now obtained the rights to fly in the centre of Wicksteed Park cycling track (for controline, of course) and during a recent flying session the club Secretary's "up" line broke and the model proceeded to disappear through the fog dragging the handle along the tarmac, finally landing up around some iron railings!

Western

A new association to be known as **UNITED BRISTOL MODEL AIRCRAFT ASSOCIATION** has been formed by five Bristol clubs to act as a controlling body for aeromodelling in the Bristol area. It will control the search for flying fields, and try to find new sites. Their activities will include the organisation of club events. **BRISTOL BULLDOGS M.A.C.,** one of the member clubs, has had four contests in the recent seven weeks, Gordon Bunney flying consistently in all events and fully earning the Championship. The club has permission to fly on Sodbury Commons from December 1st to April 30th. Foggy and damp air covered the common when the club had their inter-club comp. with the **BRISTOL ACES M.F.C.** D. Cummin and Gordon Bunney took the leading places, but unfortunately, Gordon had bad luck in getting an over-run and losing his P.A.W.-powered model in his attempt to make up the times for his Class B certificate. One of the first activities of the new Bristol Association is to take part in running a model makers Exhibition in the Bristol branch of Lewis's chain store, opening January 31st, and continuing for two weeks. Among the exhibition plans is an electrically-propelled model of the Bristol 172 twin rotor Helicopter (R.T.P.). **WESTON-SUPER-MARE** had a combat "do" with the Bristol Aces at Whitchurch Airport with Peter Heeley of Weston-super-Mare taking 1st place. The biggest (and most lethal) model at the moment is a twin O.S. Jet job by W. Evans and the club are laying on supplies of ear plugs and tin helmets. It is hoped that it will be accepted for speed record attempts.

South Western

The **SOUTH-WEST R/C M.F.C.** had their A.G.M. at Paignton and it was decided

that club monthly rallies next season will be held at Woodbury Common and Salcombe alternately to cater for the Eastern and Western sections of the area. Membership now stretches from Somerset to Cornwall. There is also to be an open rally once a season at Winkleigh Airport. Healthy sign is that subscriptions have been reduced to a nominal 2s. 6d. and building emphasis this winter will be on models designed for penetration in windy conditions, this being their usual lot in the South Western Area. Their first rally is booked for Easter Sunday at Woodbury Common.

Wales

CARDIFF DRAGONS have a revival of activity in spite of 'flu knocking out a lot of their Senior supporters. Meetings are held once a week at Ely Welfare Hall, Pethybridge Road, Ely, Cardiff, on Mondays at 7 o'clock. On December 7th the club held a gala on the Ely racecourse with S. Morgan taking top place using an A.P.S. *Aiglet*. Television was present at this meeting and the results were shown on the screen with great predominance on a certain 11-year-old member. **MILFORD HAVEN D.M.A.C.** have regular meetings at Marble Hall Flying Field each Saturday afternoon with a keen interest in controline. New members would be selcome at the flying field. Interest in A.T.C. and aeromodelling at **ABERKENFIG** has attracted fourteen modelling members with interest in controline stunt, combat, free-flight, power and combat. Meetings are held on Thursdays and Fridays at 7 p.m. and respective members should contact 19 Dunraven Street, Aberkenfig.

Scotland

PAISLEY M.F.C. have had a good season's flying, but with only one success, this being Bill Ewing's collection of the Edinburgh Cup in the Scottish National Open Power event. Oliver Tigers and P.A.W. are the order of the day for open free-flight in the 1959 season.

Pen Pals

Pen pal in Germany, Sweden, Norway or Denmark for W. J. Pegelous, 45 Kashgar Road, Plumstead, London, S.E.18.

British or American modellers are invited to contact Josef Valenta, 772 Csl. Armady. Kladno, Czechoslovakia, for exchange of their own magazines for the excellent Czech monthly. THE CLUBMAN.

New Clubs

EAST LANCASHIRE M.A.C.
P. Wilson, 42 New Market Street, Colne.

LAINDON M.A.C.
A. Collen, Lynmead, Sandringham Road, Laindon, Basildon, Essex.

MANCUNIANS M.A.C.
P. R. Criddle, The Flat, Town Hall, Prestwich, Manchester.

NAPIER/ENGLISH ELECTRIC M.A.S.
D. Wood, 31 Holliwick Road, Dunstable, Beds.

NEWBURY AND DISTRICT M.A.C.
J. E. Evans, 55 West Street, Newbury, Berks.

OXFORD MARTYRS
A. Crisp, 331 Iffley Road, Oxford.

PRIMETHORPE A.C.
I. Beeton, 60 Jubilee Road, Primethorpe, Leics.

ROTHERHAM & D.M.F.C.
J. Roderick, 14 Winifred Street, Rotherham, Yorks.

SUSSEX RADIOMODELLERS F.C.
N. Peckham, 32 Montpelier Street, Brighton, Sussex.

Secretarial Changes

BLETCHLEY AND DISTRICT M.C.
D. W. McQue, 6 Laburnum Grove, Bletchley, Bucks.

CHEADLE & D.M.A.S.
J. E. Wingate, 62 Ogden Road, Bramhall, Cheshire.

CHORLTON M.F.C.
L. A. Hart, 1 Seacombe Avenue, Falowfield, Manchester 14.

DAGENHAM M.A.C.
B. J. Whitcomb, 682 Becontree Avenue, Dagenham.

HALESOWEN YOUTH M.A.C.
R. Newton, 71 Bloomfield Street, Halesowen, Birmingham.

HARLOW M.A.C.
W. J. Horton, 162 Pennymead Road, Harlow, Essex.

HARLOW NEW TOWN M.A.C.
J. F. Goodwin, 3 Centre Avenue, Epping, Essex.

HESWALL M.A.C.
B. Henshall, 3 North Drive, Heswell, Cheshire.

HORNCHURCH M.A.C.
A. R. Wells, 167 Ardleigh Green Road, Hornchurch, Essex.

GOSFORTH SAINTS M.A.C.
K. Gates, 21 Strathmore Road, Gosforth, Newcastle-upon-Tyne.

LARNE M.F.C.
L. Blair, 207 Ferris Park, Larne, Co. Antrim.

LONG EATON & D.M.A.C.
M. G. Foster, 16 Wilsthorpe Road, Long Eaton, Nottingham.

MEDWAY M.F.C.
I. Tanner, 82 Osprey Avenue, Gillingham, Kent.

NORTH LINCOLNSHIRE M.A.S.
J. C. W. Renfrew, 6 Westminster Drive, Grimsby.

RADIO & ELECTRONIC PRODUCTS

G. Honnest-Redlich

PROMPT MAIL ORDER SERVICE
S.A.E. for Price Lists and information
Trade enquiries invited.

★ The R.E.P. "TRITONE" ★

The R.E.P. "TRITONE"

Three-channel transmitter and receiver with outstanding qualities. Price inc. P.T. **£21 2s.** Pretuned to frequency and channels. No tuning or adjustment required. Range exceeds two miles. Transmitter: 8¾ x 6 x 3 self-contained. Telescopic aerial, 9½ ins. to 5 ft. Two valves. DK 92 A.F. oscillator amplifier. 3V4 R.F. oscillator. Unique circuit gives freedom from channel drift. Batteries: Two B101, one AD4. Receiver: 3 x 1½ x 1⅝ in light dural case. Weight: 5 ounces. XFY34 valve and two transistors. Three R.E.P. ½ oz. relays. R.E.P. "Mini" 3-reed unit. Batteries: One B122, one U12.

R. E. P. ½ oz. RELAY

5,000 ohm coil. Fine silver contacts. "G" and vibration proof. Price **24s.**

"MODULATION UNIT"

Component package includes: valve, transformer, all condensers and resistors, tag strip, wire, socket and drilled pre-assembled chassis.

Price 38/–

AEROMODELLER SINGLE-CHANNEL TRANSISTOR RECEIVER

Component package includes: 1 valve, 2 transistors, 4 condensers, 5 resistors, 1 RF choke, flex, wire, sleeving, drilled and pre-assembled panel complete with coil former, valve and transistor holders, and potentiometer **Price 62/–**

"TRANSMUTONE" MULTI-CHANNEL TRANSISTOR RECEIVER

Component package includes: 1 valve, 2 transistors, 8 condensers, 6 resistors, 1 RF choke, flex, wire, sleeving, drilled and tagged preassembled panel complete with coil former, valve and transistor holders and transformer. **Price 82/–**

Telescopic aerial 9½ in. to 5 ft. **21/–**; "F.R." clockwork escapement **35/–**; "Uniac" motorised actuator **45/–**; "Speediac" rudder actuator **30/–**; "Joystick" four position mutli C.B. control **18/-**; 6- and 8-reed tuned relays **60/–** and **70/–**; Engines fitted with throttle controls. R.C. components, valves, transistors, transformers, condenser resistors, etc.

SINGLE-CHANNEL CARRIER TRANSMITTER UNIT

"A Printed Circuit addition to the R.E.P. range." Pretuned to G.P.O. R.C. band: Complete component package includes printed Circuit, all Resistors, Condensers, Valve Holder and Flex.

Price less D.C.C.90 valve **18/6**
Suitable 3A5/DCC90 **17/6**

8 STATION PARADE, SHEEN LANE, MORTLAKE, S.W.14. *Telephone* PROspect 9375

ROLAND SCOTT

THE MODEL SPECIALIST **147 DERBY STREET BOLTON, LANCS.**

★ ★ ★ ENGINES ★ ★	*Tax*
E.D. Baby .46 c.c. ...	46/–+ 9/11
E.D. Bee I c.c. Mk. II	45/–+ 9/9
E.D. Hornet 1.46 c.c.	46/–+ 9/11
E.D. Racer 2.46 c.c. ...	65/–+14/–
E.D. Fury 1.46 c.c. ...	64/–+13/10
E.D. Hunter 3.46 c.c.	66/6+14/5
E.D. Miles 5 c.c.	168/–+36/3
Mills Popular .75 c.c.	50/–+ 9/8
Mills Standard .75 c.c.	55/–+10/7
Mills 1.3 c.c. Mk. II ...	75/–+14/5
Frog 80 .79 c.c. ...	40/–+ 7/6
Frog 100 Mk. II 1 c.c.	46/–+ 9/–
Frog 150 1.5 c.c. R ...	46/–+ 9/–
Frog 149 Vibra ...	47/–+ 9/–
Frog 249 BB	66/–+12/9
Frog 249 Modified ...	78/–+16/9
Frog 500 5 c.c. Glow...	63/–+12/–
Allen Mercury 10 ...	50/6+ 8/–
Allen Mercury 2.5 c.c.	56/–+12/6
Allen Mercury 3.5 c.c.	58/6+13/3
Allen Mercury 1.5 c.c.	51/–+ 8/6
Allbon Bambi .15 c.c.	65/–+13/6
Allbon Dart .5 c.c. ...	54/–+10/5
Super Merlin .76 c.c....	44/–+ 8/7
Allbon Sabre 1.49 c.c.	44/–+ 8/7
Allbon Manxman 3.5 c.c.	65/–+12/6
Enya 15 Glow ...	£3/17/6
Webra Piccolo .8 c.c. D	75/–
Fox 35 6 c.c. Glow ...	£8/15/–
O.S. Max II 15 ...	£6/15/–
Veco 35 6 c.c. Glow ...	£8/15/–
P.A.W. Special 2.5 c.c.	£6/10/–
Eta 29 Series VI Glow	£7/6/4
Taplin Twin 7 c.c. D ...	£8/12/–
Fox 15 2.5 c.c. Glow	£3/10/–
Fox 19 3.2 c.c. Glow	£6/–/–
Fox 35 R/C Special ...	£10/–/–

Second Hand Engines, if in good condition, will be taken in Part Exchange for any modelling goods

★ CONTROL LINE KITS ★	
Voodoo "A" Team Racer ...	21/6
Junior Monitor Stunt ...	23/–
Monarch 2.5 3.5 c.c. Stunt ...	36/–
K.K. Talon Combat ...	25/6
K.K. Spectre 2.5 c.c. ...	35/4
Frog Condor 1.5 c.c. ...	30/–
Picador 1 1.5 d.c. Stunt ...	19/6
Toreador 2.5 3.5 Combat ...	26/9
Combateer 2.5 3.5 c.c. ...	28/2
Lynx Stunt Bipe 2.5 5 c.c. ...	25/8
★ FREE FLIGHT POWER ★	
Fairey Delta FD2	49/6
Aeronca Sedan 65" ...	72/6
New Junior 60"	54/–
Calypso Major	35/–
Calypso	21/6
Calypso Cub	14/6
Veron Deacon 52"	34/6
Mercury Tiger Moth 33" ...	34/2
★ ★ GLIDER KITS ★ ★	
Contest Inchworm 64" ...	21/6
Contest Empress 72" ...	29/6
Magpie 24" Beginners ...	4/10
Martin 40" Intermediate ...	9/10
Swan 48" Contest	12/6
Contest XC4 Novelty ...	6/6
SECOND-HAND ENGINES	
Allbon Javelin 1.5 c.c. ...	35/–
Allbon Dart .5 c.c.	40/–
Frog 80 .78 c.c.	32/6
Elfin 2.49 c.c. P.B.	42/6
Frog 149 Vibramatic ...	37/6
E.D. Racer 2.46 c.c. ...	47/6
Alag X3 2.5 c.c.	42/6
Frog 249 BB	47/6
Eta 29 Series V5 c.c. Glow...	95/–
E.D. Hunter 3.46 c.c. ...	45/–
Miles 5 c.c. D	110/–
D.C. 350 3.5 c.c.	35/–
E.D. Bee Series I	32/6

Full List forwarded on request

★ RADIO EQUIPMENT ★	
★ RECEIVERS ★	
E.D. Boomerang+Escapement	*Tax*
Ready Wired ...	106/–+22/11
E.D. Airtrol	120/–+25/-
Deltron 109	£9/8/6
E.D. Mk IV 3-Reed	192/–+41/6
Ripmax Parhfinder	100/–+19/6
E.D. Everest 6-Reed	292/–+63/–
★ TRANSMITTERS ★	
Boomerang	91/6+19/10
Mk. IV Complete ...	156/–+33/9
E.D. P.C. 1 Lightweight	100/–+19/6
Ripmax Pathfinder	83/6+16/–
Tri-ang Radiomaster	107/–+23/–
★ R/C ACCESSORIES ★	
Mk. III Escapement ...	19/–+ 4/1
Clockwork Escapem't	48/–+10/8
E.D./Taplin Actuator	62/6+13/4
Ripmax Mactuator ...	19/6+ 4/4
Ripmax Geared Servo	48/3+ 9/3
XFG-1 Valves ...	15/–+ 3/–
T.M.1 Transistors ...	18/–+ 3/10
Ripmax A.30 Relay ...	18/6+ —
E.D. Polarised Relay	30/–+ —
0-5 M/A Meters ...	20/–+ —

Also: Venner and Exide Accs. All Batteries, Wire, Switches, Plugs, Reed Banks, Pot'meters. All Valves a d Spares, etc.

★ ★ X-ACTO TOOLS ★ ★	
No. 1001 Knife+2 Blades	1/6
Set of 4 Clamps	10/6
Saws for No. 5 Knife	2/– & 2/6
Balsa Stripper	5/6
Spokeshave	3/9
Plane ... 5/9 Sander ...	3/9
Spare Blades, all Knives ...	6d.
Gouges and Routers ...	1/–
Wood Carving Sets...	23/– & 39/6
Burlington Hobby Chest ...	87/6

X-ACTO LEAFLET ON REQUEST

★ ★ ★ TO ORDER ★ ★ ★

Home: List your requirements and forward P/O or Cheque. I WILL DO THE REST C.O.D. service available

Overseas Orders are despatched Free of Tax and payment can be made by Cheque, Notes, Money Order, Dollar Draft or Exchanges for Modelling Equipment from your co ntry.

★POPULAR ACCESSORIES★	
Celspray Airspray ...	9/6
D.C. Test Stand	12/11
E.D. 246+346 Jet Assembly	6/–
Fuel Filters	2/6
Class "A" Pilots 2/5 "B" ...	3/1
Elmic Limitank	7/9
All A.M. Jet Assemblies ...	4/3
All Allbon Jet Assemblies ...	4/11
Britfix Cement ...	7d., 1/–, 1/8
15 c.c. T.R. Tanks	3/3
Mercury Pressure Tanks ...	5/5
K.L.G. Miniglow Plugs ...	7/10
Light Laystrate Wire	3/4, 4/9
K.K. 4" Airwheels	30/–
Thimbledrome C/L Handle	38/4

Solarbo Balsa, Truflex, P.A.W., Frog and Stant Props, Spinners, Wheels, Dope, Wire, Tissue, Fuel, Transfers, Brushes, Bearers, etc., etc. I can supply Spares for All Allbon, Elfin, E.D. Mills, A.M. and Frog Engines from Stock.

★ ELECTRIC MOTORS ★	
Ever-Ready 4½ v.	10/3
Mighty Midget, Geared 4½ v.	15/9
Kako No. 4 4-6 v.	19/5
Kako No. 5 6-12 v.	34/11
Taycol Supermarine 6-12 v.	79/2
Taycol Meteor 6 v.	39/9

★ ★ ★ **HIRE PURCHASE TERMS** are available on all purchases over £2. Send for lists and simplified agreement form ★ ★ ★

Introducing another winner!

The latest addition to the House of ETA is the

ETA 19

SERIES 2

This unit has been designed for general purpose use and follows the traditions of the famous ETA 29 Mk. 6.

This remarkable unit is already attracting considerable interest and orders are flooding in from all over the world. Our first production batch is very nearly sold out, so get your orders in now.

Wishing you a very successful New Year with your ETA. Whether it be your new 19 or your famous 29.

Price ETA 19 114/- *Plus 25/8 P.T.*

ETA 29 146/4

Manufactured by

E.T.A. INSTRUMENTS LTD.

289 High Street, WATFORD, Herts.

BUD MORGAN

THE MODEL AIRCRAFT SPECIALISTS

Send 6d. for MY 1959 LISTS

The CHALLENGER READY MADE CONTROL LINE AIRCRAFT

Complete with Mills .75 diesel, control handle, prop. and fuel filler. **Price £5/2/-** post free. CHALLENGER LESS ENGINE **Price 42/10**

By the makers of the **Challenger** a **New SPEEDBOAT PLASTIC ready to run complete with MILLS .75 Diesel. Price £4/5/-** or LESS ENGINE **24/11.**

FREE FLIGHT POWER

K.K. Skylon 1 c.c.	12/9
K.K. Ladybird 1 c.c.	22/-
K.K. Pirate .75-1 c.c.	14/3
K.K. Junior 60 2.5 c.c.	54/-
Veron Deacon 52-in.	34/6
Calypso Cub .75 c.c.	13/6
Cardinal .75 c.c.	18/7

SAILPLANES

Inchworm 64-in.	19/6
Marauder 64-in.	17/5
Grebe 52-in.	16/9
Dolphin 30-in.	4/9
Invader 40-in.	7/6

ENGINES

NEW Frog 100 Mk. II	55/-
NEW Frog 150 Type R	55/-
NEW Fox 15	70/6
NEW Fox 19	120/-
A.M.10	58/6
A.M.15	59/6
A.M.25	68/6
A.M.35	71/8
E.D. Bee 1 c.c.	54/9
E.D. Hornet 1.46	55/11
E.D. Racer 2.46	79/-
E.D. Fury 1.46	77/9
Mills .75	58/9
Merlin .76	43/10
Frog 80 D	47/6

Send for full list of engines and watercooled.

SECOND-HAND ENGINES

E.D. Bee, S. Merlin, Frog 80, all at **35/-** each. E.D. Hornet, Sabre, Spitfire at **37/6** each. A.M.25, Manxman 3.5, Frog 500, all at **42/6**. A.M.35 **45/-**. E.D. Racer **45/-**. ETA 29 **80/-**. Send for S/H price list.

I PAY CASH FOR GOOD SECOND-HAND ENGINES

CONTROL LINE KITS

New K.K. Spectre	38/5
Picador 1-1.5 Stunt	19/6
Marvin 1-1.5 Stunt	19/6
New K.K. Talon	25/6
K.K. Champ. 1 c.c.	12/9
Ranger Class A	12/9
Skystreak 1 c.c.	11/3
Aerobat 2.5 Stunt	27/6

Send for E.D. RADIO CONTROL Price List Free

22 CASTLE ARCADE CARDIFF

Phone: 29065

Equado BALSAWOOD

1. PARAGUAY
2. ARGENTINE
3. PORTUGAL
4. YUGOSLAVIA
5. THE CONTINENT
6. SOUTH AFRICA
7. INDIA
8. AUSTRALIA
9. N. ZEALAND

Is shipped all round the world to satisfied clients —in metric and English sizes. Let us quote you for your balsawood requirements.

Trade price lists on application to Sole Manufacturers and Shippers

E. LAW & SON (TIMBER) **LTD.**

272-274 HIGH STREET, SUTTON, SURREY • VIGilant 8291-2

Modellers can be assured of personal service coupled with expert knowledge of aeromodelling requirements at any of the following shops.

We invite bona-fide aeromodelling traders to take advantage of this feature, in which space is available at moderate cost.

AUSTRALIA Tel.: Melbourne Cent. 918

CENTRAL AIRCRAFT CO., PTY.
5 PRINCES WALK, MELBOURNE, C.1
Australia's Main Distributor for: "Aeromodeller", "Model Maker" and their Plans Service.

BLACKBURN

RAWCLIFFE'S
FOR MODELS
38 WHALLEY RANGE
BLACKBURN
MODEL BOAT KITS
AIRCRAFT KITS
ENGINES & ACCESSORIES

BOLTON Tel.: 7097

ROLAND SCOTT
The Model Specialist
147 DERBY STREET
The obvious shop for all Model Aircraft Requirements

DARLINGTON Tel.: 66399

HANDCRAFTS
31 BONDGATE, DARLINGTON
COUNTY DURHAM
Boats, Model Railways, Aircraft
Everything for the Model Maker
also at 54 Gorgie Rd., Edinburgh

DONCASTER Tel.: 2524

B. CUTTRISS & SONS
MODELS AND HANDICRAFTS
49-51 CLEVELAND STREET
Call and see our Shop

GLASGOW Central 5630

CALEDONIA MODEL CO.
Model and Precision Engineers
5 PITT STREET, C.2
Our works at your service for engine repairs, rebores and rebuilds
Everything for beginner and enthusiast

GRIMSBY Tel.: 3220

THE MODEL SHOP
49 NEWMARKET STREET
Plastic, flying model kits and accessories
Send S.A.E. for price list.
RADIO REPAIRS — PROMPT SERVICE

HONG KONG 62507

RADAR CO. LTD.
2 OBSERVATORY ROAD
TSIN SHA TSUI, KOWLOON
The most complete stock of aeromodelling and hobby supplies in the Far East. Run by an experienced modeller. Agents for Solarbo, Britfix and Sole Agents for O.S. engines and radio control equipment

LEEDS Tel.: 27891

THE MODEL SHOP
58 MERRION STREET
(Nr. Tower Cinema)
Model Aircraft — boats — cars — railways, all makes engines. Every accessory, R/C equipment, same day postal service.

LINCOLN Tel.: 588

THE MODELMAKERS MECCA
13 CLASKETGATE
(Next Door to Theatre Royal)
Large stocks of all Plastic Kits, Engines, Fuels and accessories. Stockists of Triang, Trix, Rivarossi Railways.

LONDON Tel.: HOP 3482

MODEL AIRCRAFT SUPPLIES LTD.
171 NEW KENT ROAD, S.E.1
The oldest established aircraft shop in London. Service with satisfaction

LONDON Tel.: PAD 8627-8-9

BURLEIGH'S
303 EDGWARE ROAD, W.2
THE MODEL MAKERS' PARADISE
BURLEIGH of Edgware Road, Ltd.

LONDON Tel.: Isleworty 8978

BARDSLEY'S
263 HIGH STREET,
BRENTFORD, MIDDLESEX
Service and Satisfaction our Speciality Own Workshops available for Engine Testing and Tuning, Stockists of V.I.P. Roadways.

MANCHESTER Tel.: BLA 6159

MODEL SUPPLY STORES
17 BRAZENNOSE STREET, MANCHESTER 2
Manchester's Main "Mecca" for every make of KIT, ENGINE & ACCESSORIES, Solarbo, BALSA, etc.
Northern SKYLEADA Factory

MANCHESTER Tel.: BLA 3972

THE MODEL SHOP
13 BOOTLE STREET,
MANCHESTER 2
THE UP-TO DATE SHOP WITH THE COMPREHENSIVE STOCK
Mail Orders by Return

NELSON Tel.: 2591

KEN'S MODEL SHOP
57 RAILWAY STREET,
NELSON, LANCASHIRE
Advice without obligation—call and see us

NOTTINGHAM Tel.: 42959

GEE DEE LIMITED
40 GOOSE GATE,
NOTTINGHAM
Everything for the aero modeller at Nottingham's leading model shop

OXFORD

HOWES MODELS
9-10 BROAD STREET
Everything for the Modeller

CLASSIFIED ADVERTISEMENTS

PRESS DATE for issue March, 1959, January 20, 1959

ADVERTISEMENT RATES

Private — **Minimum 18 words 6s. and 4d. per word for each subsequent word.**

Trade — **Minimum 18 words 12s., and 8d. per word for each subsequent word.**

Box numbers are permissible, to count as 6 words when costing the advertisement.

COPY and Box No. replies should be sent to the Classified Advertisement Department, The "Aeromodeller", 38 Clarendon Road, Watford, Herts.

FOR SALE

Allen Mercury 35, little used, perfect condition, only £2 10s. Maxwell, 5 Langlands, Dumfries.

BB Amco, Dart .5 spares, cylinder unit, Crankcase, Crankshaft, Sugden Casting. LR Glowplug, Veron D Impeller, 50b and A/Tube, 3 Trucut 6 x 10, D/C test stand. 27 AEROMODELLERS. 17 *Model Aircrafts*. 2 *Aeromodeller Annuals*. Details S.A.E. Thompson, 68 Ball, Haye Green, Leek, Staffs.

Selling up E.D. Racer 2.46, Mills 1.3, Allbon Javelin 1.46, Allen-Mercury 25. What offers? Church Farm, Shelfanger, Diss, Norfolk.

REPLIES TO ADVERTISEMENTS should always be accompanied by a stamped addressed envelope (s.a.e.) in the event that the advertiser is unable to accept your offer due to prior purchase, sale or exchange.

Selling up because of studies. Veco 19, almost completed combat model, adjustaline handle, prop, squeeze bottle. All brand new. Many odds and ends, £7 the lot. 98 Woolacombe Road, Blackheath, London, S.E.3.

Eta Mk. 5 brand new and unrun, £5. Eta Mk. 5 just run-in, £4 10s. D.C. Rapier, new, £2. Two off A.M.35s, £1 15s. each. Amco 3 5 BB, reconditioned as new, £2. A.M.10, £1 15s. Mercury Wasp C.L. Model built with new Allbon Dart, £2 10s. Mercury Mustang Kit, 15s. M. Templeman, 718 Sidcup Road, New Eltham, London, S.E.9.

Veco Thunderbird Kit, £2 15s. G20V Super Tigre, unrun, £4 15s. Box 569.

Works re-worked Oliver, excellent condition £6. Also quarter gallons of clear, green, yellow, white modelling dope. 7s. 6d. per quarter gallon. Good balsa blocks 18 in. x 3 in. x 5 in. approx. 5s. per piece. Re-worked Oliver less crankcase and backplate, all parts good condition, £2 10s. I. Mackay, 10 Kilmarnock Road, Mauchline, Ayrshire.

TRADE

Ex-Government Stop Watches 45s. Illustrated leaflet on request. Charles Frank, 67-73 Saltmarket, Glasgow, C.1.

1939/45 Squadron Insignia Transfers. Six Pairs assorted 1/72nd scale for 1s. 3d. Six Pairs F/S 2s. 6d. S.A.E. Phillips Transfers, Woodford Green, Essex.

500,000 Transfers, Roundels, Insignia, Numerals, Alphabets, etc. Send 2s. 3d. for extra large assortment. Halfax, Richardson Street, Halifax.

Cox Pee Wee 52s. 6d., Golden Bee 65s., Fox, Enya, Webra, K & B, etc., Thunderbird and other kits. S.A.E. for list. Used engines taken in part exchange. S/h engines for sale. Cliff Edwards, 197 Ardleigh Green Road, Hornchurch, Essex.

Individual Enlargements from your Christmas Flash-shots: Postcard 9d., Wholeplate 2s. 3d. The Willow Studios, 59 Five Mile Drive, Oxford.

BOOKS

Sailplane and Gliding—Published every month. Send stamped addressed envelope for description leaflet; or 2s. 10d. for current copy; or 17s. for a year's subscription to British Gliding Association, Dept. A, 19 Park Lane, London, W.1.

American Magazines.—Year's subscription *Model Airplane News* 35s. Full catalogue free. Willen Ltd. (Dept. 1), 9 Drapers Gardens, London, E.C.2.

World's largest stock of old aviation books (over 15,000). Catalogue Free. Top prices paid for *Jane's*, any year, *World War I* and other aviation books. Stuart, Fairlight Hall, Hastings.

France's Magazine for Aeromodellers. Send for free specimen copy and subscription details to Modele Magazine, 12 Rue Richard-Lenoir, Paris XIe, France.

WANTED

Pre-1941 Frog small flying scale plans, kits or parts. Also Sweetens' "Tower" plans. K. Alefounder, Flat 5, 3 Magdala Road, Nottingham.

Oliver Tiger III, good condition vital. Send S.A.E. to K. Sunderland, 10 Pinder Avenue, Lower Wortley, Leeds 12.

Amco .87 in good condition. Also sharp detail photos of Blackburn Monoplane and V.A. Walrus with accent on cockpit, undercart, control mechanisms, control surfaces and motor. Name trade or price. E. Henley, 497 Raglan Road, Winnipeg, Manitoba, Canada.

ECC 5a Relay (5K preferred), must be good condition. 38 Buttermere Avenue, Acklam, Middlesbrough, Yorks.

TAPLIN TWIN

BRITISH PATENT
No. 747742

Here are some of the highlights of the TAPLIN TWIN

- **EASE OF STARTING:** A flick and it fires—every time!
- **WIDE SPEED RANGE:** Operates through **500/7,000** r.p.m.
- **HIGH TORQUE AT COMPARATIVELY LOW REVS:** At **7,000** r.p.m. it gives equivalent of an "ordinary" engine's **15,000.**
- **BARREL TYPE CARBURETTOR:** Infinite adjustment just like a "fullsize" job.
- **BUILT ON EXHAUST MANIFOLD:** Gets the used gases away efficiently.
- **VERY QUIET RUNNING:** Quality purr to please you and cause no annoyance to non-modelling neighbours.
- **CLEAN RUNNING:** Minimum of dirt and mess in the model and exhaust extension easily fitted.
- **RUNS IN EITHER DIRECTION:** Clock or anti-clock running simplifies design requirements, i.e., pushers, etc.
- **NO VIBRATION:** Alternate cylinder firing produces power output unbelievably smoothly.
- **HANDSOME IS AS HANDSOME DOES:** Green anodised heads and spinner and highly chromed or polished parts match looks to performance.
- **BUILT LIKE A SAFE:** Ultra rugged design, with no vulnerable parts ensures long and trouble - free working life.
- **SIMPLE SYNCHRONISATION:** Individual compression adjustment presents no problems, and once set remains constant over speed range.
- **LOW FRONTAL AREA:** Only an in-line twin can be streamlined so efficiently.
- **RIGID ENGINE MOUNTING:** Long fixing lugs, with widely spaced bolt holes ensures solid attachment.
- **STANDARD FUEL:** Runs on simple diesel fuel formula. (No "hot" dopes to guard against.)

WATER-COOLED VERSION. Price complete with Flywheel, P.T., Post & Packing £9.18.

THE TAPLIN 7 c.c. TWIN is not "just another engine", it is the culmination of a lifetime's experience and over four years specific research into multi-cylinder diesels which have produced a newcomer which is so far in advance of any other as to bear little comparison. It enjoys all the flexibility of a good petrol engine without the disadvantages of electrics, the high power output and easy starting of a glow motor without the snags of 'hot' fuels and cumbersome starter batteries. It is the ideal power unit for radio control aircraft and a boat version (shown below) is also available. Every feature has been considered by a PRACTICAL user of models for which it is intended and will do its designed work without fail.

VITAL STATISTICS

Capacity: 7 c.c. (6.92 c.c. actual). Weight: 15oz. Engine bearers: Fixing holes 1¼ in. centres laterally and longitudinally. Max. height 3¼ in., max. width (excluding throttle toggle arm) 2⅜ in. Recommended prop. 13 x 8 Recommended waterscrew: 2¼ x 2¼ (3 blade).

£8.12

Inc. P.T., POST & PKG.

3-BEARING CRANKSHAFT — ALL BALL-RACES

A GOOD STOCK has been built up before release of the great news of the Taplin Twin so that you can secure YOURS at once by completing the coupon below and sending with your cheque or money order for by return delivery of aero model or watercooled version. Needless to say, if you are not completely satisfied that it matches our description we will gladly refund your money! But send off at once as world wide demand is coming in fast!

This is the watercooled TAPLIN TWIN supplied complete as illustrated.

Birchington Engineering Co. Ltd.,

BIRCHINGTON, KENT **Tel.: THANET 41265/6**

Please send me a TAPLIN TWIN ***(Aero : Watercooled).*** (Delete type NOT required.)

I enclose cheque/money order value.....

NAME .....

ADDRESS .....

.....

Made and printed in Great Britain by the Croydon Times Ltd., 104 High Street, Croydon, for the Proprietors, The Model Aeronautical Press Ltd., Clarendon Road, Watford, Herts. Published by the Argus Press Ltd., 42-44 Hopton Street, London, S.E.1, to whom all trade enquiries should be addressed Registered at the G.P.O. for transmission by Canadian Magazine Post.

THE FABULOUS TALON

NEW KEILKRAFT COMBAT WING

KIT CONTAINS

- All parts cut to shape
- Formed Cockpit Cover
- Metal Stunt Tank
- Full Size Plan, and Building and Flying Instructions
- Bell Crank
- Steel Control Horn
- Covering Materials, etc.

outstanding in performance!
unique in appearance!

PRICE 25/6

A fast and very stuntable ship that is quick and easy to build. (Buy it Friday—Fly it Sunday!)
Rugged 32-in. span model for 2·5 to 5 c.c. motors

For Super Performance with your Talon — use KEILKRAFT FUELS

BUY KEILKRAFT AT YOUR LOCAL MODEL SHOP

KEILKRAFT
THE GREATEST NAME IN MODEL KITS

Manufactured by E. KEIL & CO. LTD., WICKFORD, ESSEX Phone: Wickford 2316

1/48th SCALE REPRINTS OF THIS "A" TYPE PLAN AND [illegible] SCALE "P" TYPE DYE-LINE PRINTS ARE AVAILABLE PRICE 1/- AND 2/- RESPECTIVELY FROM THE AEROMODELLER PLANS SERVICE. PLEASE QUOTE PLAN NUMBER 2716 AND ADD 6d. POSTAGE [illegible]

10 10 9

WHITE SERIAL NO.

C 7086

90 HP. R.A.F. 1A ENGINE

NO. 2 SQN. R.F.C. (WHITE)

OBSERVERS AMMUNITION DRUM RACK

GRAVITY TANK (BOTH VERSIONS)

CAMERA – MOUNTED ON RIGHT SIDE OF PILOTS COCKPIT

2X112 LB. R.L. 6 BOMBS AEROPLANE FLOWN SOLO WITH THIS LOAD

BLACK OUTLINED IN WHITE

A597

ALTERNATIVE EXHAUST FUNNEL

FRONT FLYING WIRES DOUBLED ONLY. SAME ON B.E.2E

B.E.12A c. SINGLE-SEATER SCOUT VERSION WITH 150 H.P. R.A.F. 4A. ENGINE AND VICKERS GUN WITH VICKERS SYNCHRONIZER GEAR

MID-GREY TIPS

B.E.12 Ac. AIRSCREW

12 C 11 4 8 5 4 8 5 9 7 1 2 3 3 6

D A B

1. PILOTS SEAT
2. OBSERVERS SEAT
3. CONTROL COLUMNS
4. LEATHER PADDING
5. PETROL TANKS
6. OIL TANK
7. LOCKER
8. INSTRUMENT PANELS
9. ALTERNATIVE EXHAUST MANIFOLD
10. RUDDER BARS
11. FILLER CAP
12. LEWIS GUN BETWEEN REAR C/S STRUTS

COLOUR

WING & TAIL UNDERSIDES: Clear doped.
REMAINDER: Brownish – Khaki.
METAL COWLS: Mid grey or unpainted.

U/C STRUTS
GRAVITY TANK — Mid Grey

OTHER STRUTS
AIRSCREW — Varnished Wood

A C B D

BE. 12 Ac.

MID-GREY TIPS

BE. 2E AIRSCREW

COBALT BLUE VERMILION

THESE WIRES BETWEEN FRONT STRUTS ONLY.

ROYAL AIRCRAFT FACTORY B.E.2E. AND B.E.12 Ac.

FT