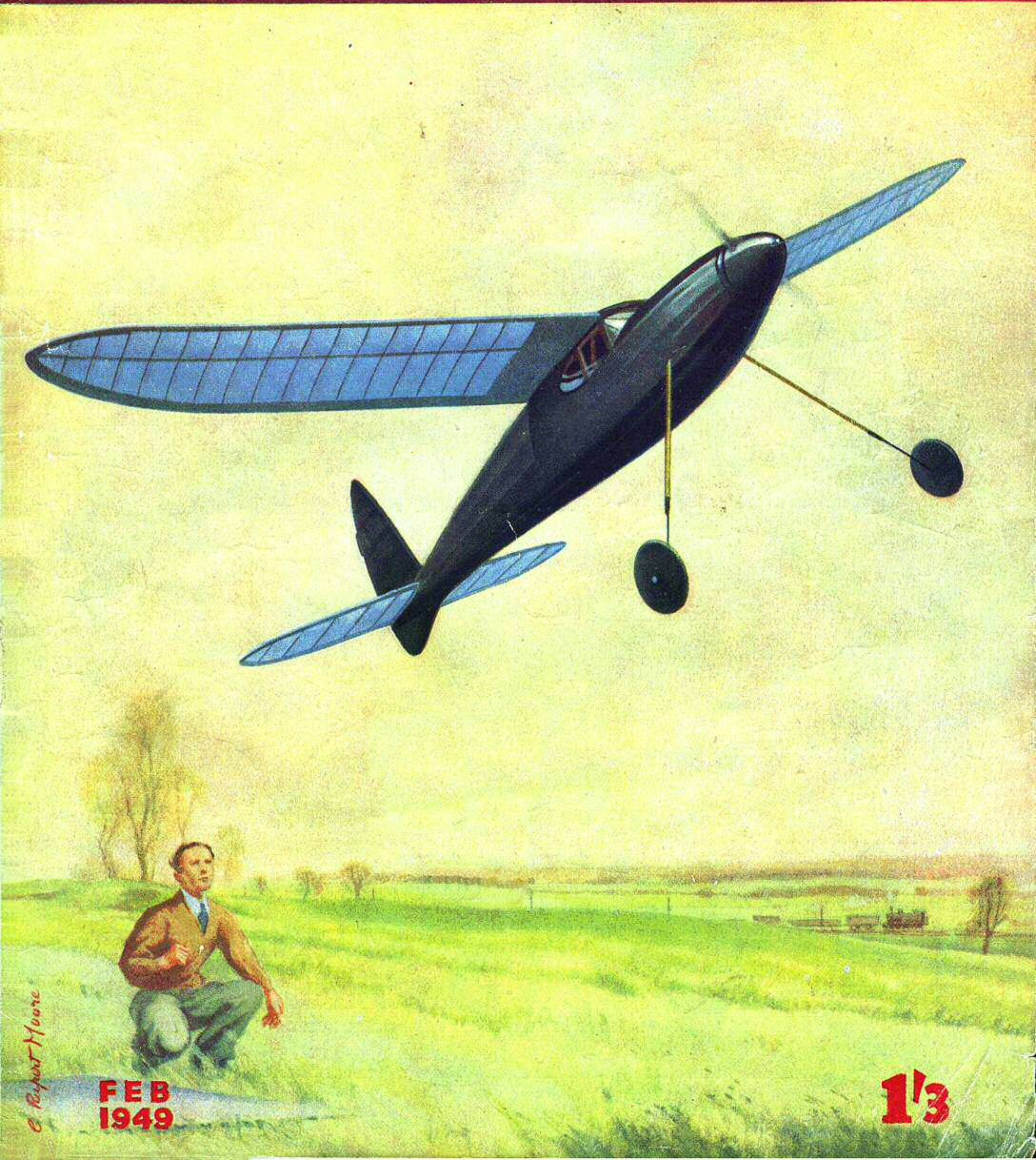
AEROMODELLER



FEB
1949

1/3

REALISM IN CONTROL-LINE with the HAWKER SEA FURY X

The model has beam mounting suitable for Diesel Motors of 1·3 to 3·0 c.c. and Glow Plug Motors of 1·5 to 5·0 c.c. (max. engine weight 6 ozs.). Can be very easily adapted for radially mounted motors such as the "Elfin 1·8 c.c." and the "Frog 160."

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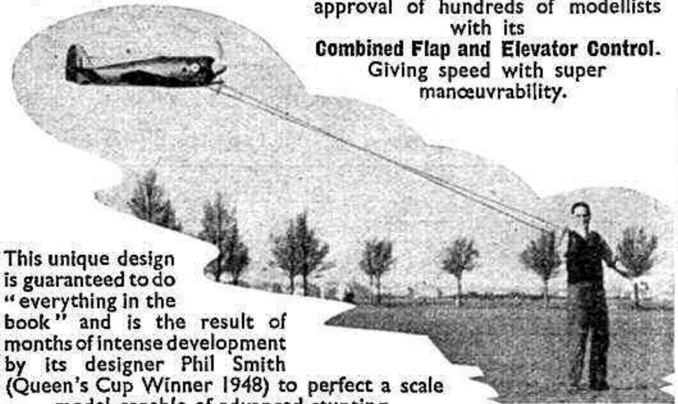
60 M.P.H.

Fitted with a scale 'Drop-off' undercarriage it's a gem to handle—but not for the beginners!

Since our announcement of this **Unique and Sensational** design, we have been deluged with enquiries proving that the Sea Fury X has won the approval of hundreds of modellists with its **Combined Flap and Elevator Control.** Giving speed with super manœuvrability.



This unique design is guaranteed to do "everything in the book" and is the result of months of intense development by its designer Phil Smith (Queen's Cup Winner 1948) to perfect a scale model capable of advanced stunting.

Here we have the designer putting the model through its paces—a wonderful action picture made possible only by "reduced throttle and short lines" with high speed photography—Note the realistic effect of this *accurate* scale model of the Navy's finest ship-board fighter.

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Of essentially simple construction the kit contains many unique features new to Veron Kits.

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- Scale 1/18 full size or ⅔ of an inch to the foot.
- Airframe weight (without U/C and Engine) 6 ozs.
- Concisely illustrated 30"×40" Plan with step-by-step construction.
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- Cements, Tissue Pastes, etc. (No Dopes.)
- Partly formed Metal Tank.
- Metal Spinner.
- All up weight 12 ozs. with E.D. comp. special 2 c.c. Diesel Motor.

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FROG "180"—54/9 DIESEL

FROG "160"—48/- RED GLOW

THE NEW PURCHASE TAX IS INCLUDED IN THESE PRICES

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ENGINE SERVICE

Make your "100" Diesel as new. Let us fit a new piston and/or cylinder for **7/6**

Mail your engine to us with 7/6 plus the list price of any other components you need.

Always quote the Engine No. and label the motor with your full name and address.

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Precision moulded in plastic to true aerofoil sections. With metal centre reinforcing bush. For all FROG engines as detailed below or for other engines of similar capacity.

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8" ,, × 6" ,, ("100" & "160")	2/6
8" ,, × 8" ,, ("180")	3/-
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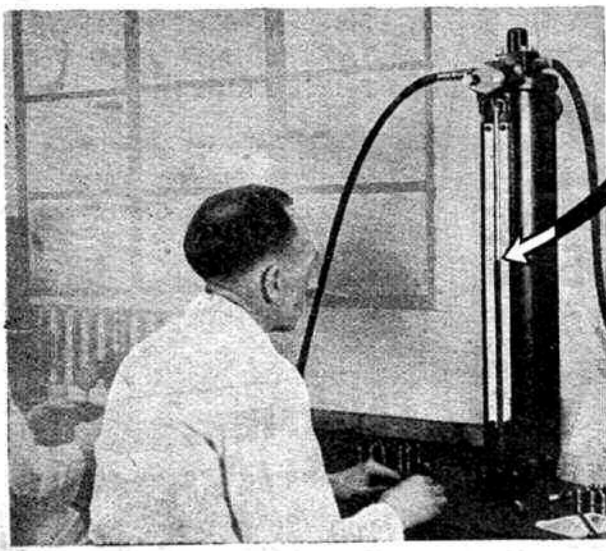
MILLS diesel design

This series of articles spotlights features and details of design marking the superiority of Mills Diesels.

2. WORKMANSHIP

Workmanship is by no means a vague something which manufacturers like to talk about. In the case of a "Diesel" it is indeed a most decisive factor, as every modeller knows who has made and lapped a piston and cylinder to "Diesel fit".



By the way, our maxim is "where there is room for lapping compound, there is also room for a leak". It is for this reason that the piston and cylinder of your "Mills" are not lapped together. The ultra close fit of a Mills cylinder assembly is achieved by producing the individual components separately to predetermined limits. Measuring for size, parallelism and roundness is facilitated by equipment as illustrated here; its sensitivity is such that 3/10000 in., a "mere speck of dust" is magnified to the size of a penny.

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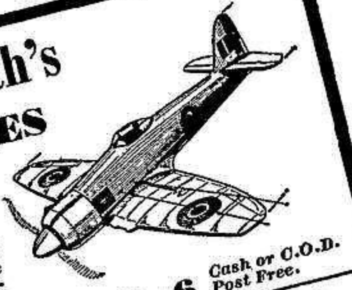
IT PAYS TO STUDY H.J.N. ADS.

H.J.N. presents this month's OUTSTANDING NEW LINES

"There's nothing I like better than selling good lines to people who appreciate them." H.J.N.

★ VERON HAWKER SEA FURY X



Here is a thrilling control-line scale stunt job that sets a new standard in C/L design. With combined flap and elevator controls, this Veron masterpiece has real stunt performance, with true scale appearance. Designed for the E.D. comp. special, it is easily modified to take the Elfin 1·8, with which it will give exceptional results.

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Every engine tested so far by us, has exceeded 9,500 r.p.m. This Mills job is a real high-speed medium capacity engine, employing rotary inlet valve. It features all the well-known Mills qualities—dependability, easy starting, high power-weight ratio.

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These motors have now been exhaustively tested in our engine-room, and have been found to give outstanding results in every way. Both are easy starters and extremely controllable. Every one tested has exceeded 8,000 r.p.m. (tachometer test under full prop load). For the discriminating, here are engines of magnificent workmanship, and high power output for capacity.

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This is the engine so many have been waiting for. It's a really hot 5 c.c. piston ring engine, based on the best established racing practice. Designed for G. Plug working, the 29 gives peak performance with ease of operation. Specially suited for C/L speed or stunt. *Cash or C.O.D. Post Free.* Or by monthly payments.

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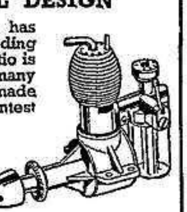

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REMEMBER, we are the only firm with a full-time staff exclusively employed on engine maintenance.

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"FLAPJACK"

All Wing Control Line Model

Likely to become the most popular style of Control Line Model ever

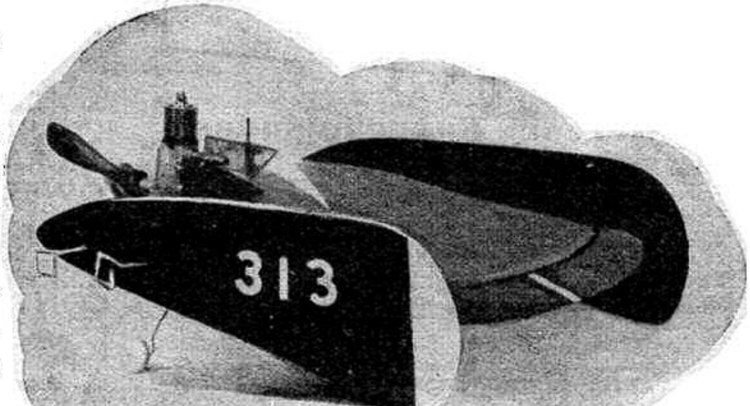
AN UNIQUE Control Line Model specially designed by F. G. Birden of the Leicester M.A.C. Will perform all the usual stunts laid down in the S.M.A.E. Contest Schedule.

Span - - -	11″	Length $12\frac{1}{2}$″
Wing area -	—	121 sq. ins.
Weight with	Mills Mk. 1	$7\frac{1}{4}$ ozs.
” ”	Elfin	$6\frac{1}{4}$ ozs.
” ”	Frog (Glo-plug)	$6\frac{1}{2}$ ozs.
” ”	E.D. Bee	$5\frac{1}{2}$ ozs.

Length of line between 11 ft. (E.D. Bee) and 35 ft. (Elfin). Speed range between 30 and 50 m.p.h.

Suitable for any Petrol, Diesel or Glo-plug engine not exceeding $5\frac{1}{2}$ ozs. in weight or 1·8 c.c. capacity.

All shaped parts precut, ample good quality Balsa and everything ready to build first-class model.



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TO THE TRADE—500 cube Balsa 7/6 per cubic ft. while stocks last. No orders accepted for less than 10 cubic ft. Particulars on application.

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THE MODEL AERONAUTICAL
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AEROMODELLER

INCORPORATING "THE MODEL AEROPLANE CONSTRUCTOR"

"THEY MISSED THE BOARDS!" said our tame CL expert when shown this American picture. British fliers it seems, have yet to prove they know their flaming onions!!!

CONTENTS

VOL. XIV No. 157 FEBRUARY, 1949

EDITORIAL

WITH regret we record the first death by electrocution of an aeromodeller whilst flying a control-line model aircraft. Norman Peck, aged 23 years, of Stainforth, near Doncaster, was flying for the first time his first model aircraft in the vicinity of an 11,000 volt high tension overhead transmission line, part of the National Grid Scheme.

Lowest height of the wires was some 25 feet above the ground, but as the length of the lines of the model was over 50 feet, it required only a steep climb, or attempt at a loop, for the model to make contact.

Inevitably, national publicity has been accorded to this fatality, and we feel that it is our duty also to accord wide publicity to this accident; so that the full measure of danger accruing from flying models of any type—but particularly control-line models—*anywhere in the vicinity of any kind of overhead wires*, may be brought home to our readers.

To Mr. Peck's widow we offer our sincere regrets that such an accident should have had such painful results.

The introduction into this country of control-line flying of model aircraft has created a much wider interest amongst the general public than any previous development; and it is to be feared that accidents of this sort and *near*-accidents, some of which have arisen through sheer negligence both on the part of spectators as well as model fliers, will create an impression which may well do the whole model aircraft movement in this country great harm.

In our next issue we shall publish a comprehensive report based on information we have received from all parts of the country. This report will be of interest, if only to reveal the extremes of viewpoint held by "officials" and "official bodies." From the case of the Town Clerk who "off his own bat" forbade any type of model flying, to the case of the Clerk of a certain U.D.C. who agreed, along with Members of his Council, to see a demonstration organised by the local club; following which the Council not only offered to allocate a defined area for the flying of control-line models, but to spend some £300 on protective fencing, and asked only for an appropriate rental!

Readers will have seen recently in the daily press notices relating to the bringing under Group 20 of the Purchase Tax Schedules certain parts and accessories for model aircraft.

That a "restrictive" move such as this should have been made three years *after* the end of the war, is to be deplored, as also the fact that "power units of all kinds" are to be chargeable to Purchase Tax. During what might be called the worst part of the war, the question of bringing model parts and accessories under purchase tax was raised by the Board of Trade; but after consultation with representatives of the Manufacturers Section of the Model Aircraft Trade Association (in which the writer took a vigorous part) the matter was not carried any further.

We understand that it was some months ago that the matter was again raised by the Board of Trade, but it seems that the present Council of the M.A.T.A. has not offered—or perhaps has not been able to offer—the same resistance. In the event, it has been left to the principals of four of the most progressive model aircraft firms in the country, together with representatives from this Journal and our contemporary, *Model Aircraft*, to negotiate direct with the Board of Trade.

To this end there was organised at the Aviation Section of the Royal Aero Club on December 30th last, a comprehensive range of model aircraft, kits and accessories, with the object of familiarising the Board of Trade officials with every aspect of model making. It is understood that following this exhibition, further discussions have taken place, and that considerable differences of opinion having arisen between the parties, the leading Model Aircraft Manufacturers, for the present, will *not* be charging purchase tax.

In this issue we publish a letter from the Managing Director of Wilmot Mansour and Co. Ltd., as some confusion may arise in regard to the matter in question, we draw specific attention to this letter.

AS a variation from the usual test of proprietary engines, it was thought that a test on a "home-built" engine, made from a kit of parts, would be interesting. In accordance, a kit of parts for the "Buzzard" 2·8 c.c. engine was obtained from Messrs. Model Accessories Supply Co., of Stanbridge, Leighton Buzzard, and the engine was built according to instructions.

Amongst the numerous letters received in connection with Engine Analysis, several readers have asked for details of the apparatus which are used for these tests. Although at the moment I cannot give a detailed description, our new heading picture shows the instruments used, and they will doubtless be recognised as standard apparatus for this work. On the left may be seen a stroboscope, by Dawes Instruments, used for measuring the R.P.M. The torque reaction balance was made in my own workshop and is of the super-sensitine type necessary for measuring such small outputs.

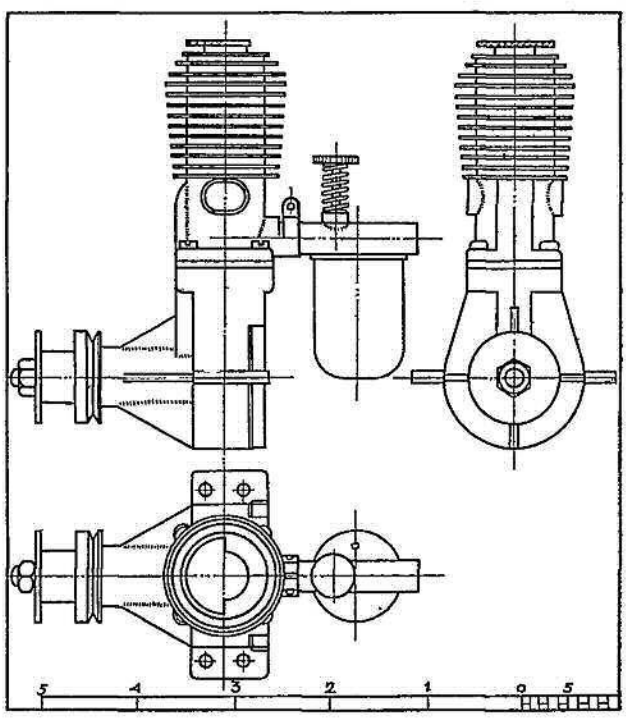
TEST.

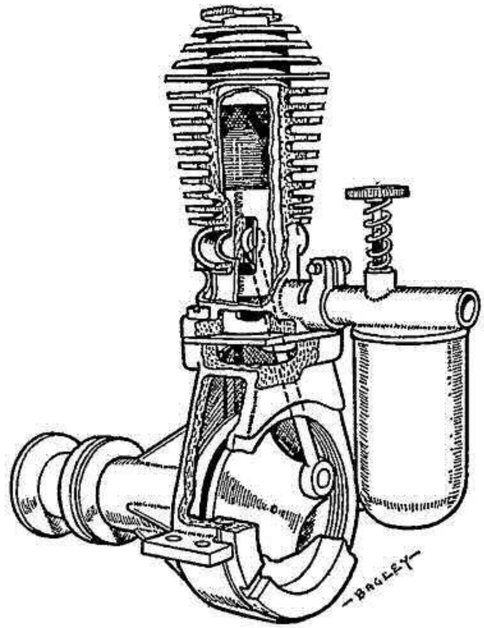
Engine : "Buzzard" 2·8 c.c.

Fuel : Mill's Diesel Fuel 2 parts : Ethyl Ether 1 part.

Starting : Hand starting was used throughout. The engine seems to be a particularly good starter under both cold and hot conditions, and no trouble was experienced at any time.

Running : This engine runs well over a fairly wide range of speeds, and seems exceptionally flexible for a diesel. Speeds were steady and the running smooth under a variety of loads, so that tests were very easy to make. As a point of curiosity, the engine was run with a flywheel under no load, and attained





NUMBER TEN

THE 2·8 c.c. MASCO

BUZZARD

BY L. H. SPAREY

a maximum speed of 15,000 r.p.m., but b.h.p. tests were not taken under these conditions.

B.H.P.: It will be seen that an unusually symmetrical curve has been obtained on the "Buzzard" engine. The lowest tested speed was 4,100 r.p.m., where a b.h.p. output of ·055 was obtained. Maximum power seems to be developed at around 7,300 r.p.m. when ·108 b.h.p. is developed. This maximum is quite good for an engine of this capacity, but it will be understood that this figure would vary according to the workmanship put into the particular engine under test. At 10,000 r.p.m.—the maximum speed at which readings were taken—power falls off to ·066 b.h.p.

Power/Weight Ratio: ·264 b.h.p./lb.

GENERAL CONSTRUCTIONAL DATA.

Name: "Buzzard".

Distributors: Model Accessories Supply Co., Stanbridge.

Retail Price: 4 high-pressure die castings only 21/-. 4 high-pressure die castings and 17 finished or part finished components 50/-.

Spares: Ex-stock.

Type: Compression Ignition: 2-stroke.

Specified Fuel: Mill's Blue Label.

Capacity: 2·8 c.c.

Weight: 6·7 ozs.

Compression Ratio: 16–1 adjustable.

Mounting: Beam. Upright or inverted.

Recommended Airscrew: 13 in. dia. × 6 in. pitch.

Tank: Capacity 3 minutes.

Bore: 13 mm.

Stroke: 20 mm.

Cylinder: 3 per cent. nickel chrome steel, hardened, ground twin exhaust ports.

Cylinder Head: Aluminium pressure die-casting.

Contra-Piston: Cast iron; ground.

Crankcase: Aluminium pressure die-casting.

Piston: Cast iron; ground and lapped. Flat top.

Connecting Rod: Phosphor bronze machined from solid.

Crankshaft: 3 per cent. nickel steel. Hardened.

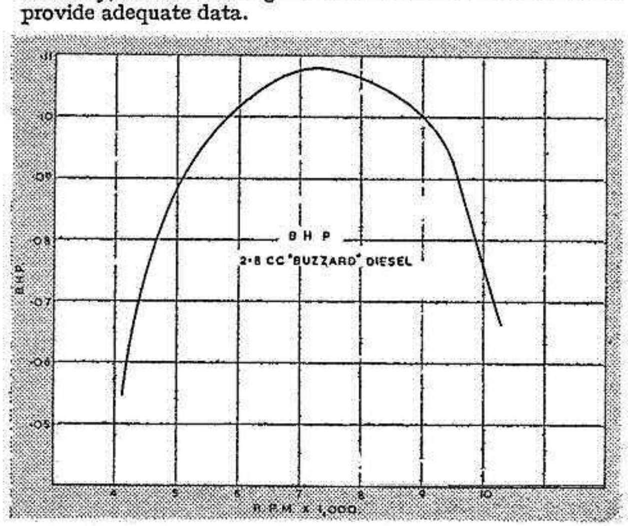
Main Bearing: Phosphor bronze.

Little End Bearing: Plain silver steel.

Remarks:

The kit consists of alumminium pressure die-castings for cylinder, carburettor, crankcase, and crankcase cover. Castings are particularly clean, and most of the awkward internal features are cast in, so that a very minimum of machining is necessary. The 17 component parts are all partially machined; in fact, some of them such as the carburettor, are complete for assembly. The use of a lathe is, however, necessary to complete the engine. Cylinder liner, piston and contra-piston are hardened and ground, but require hand-lapping to a fit. Crankshaft requires turning and lapping. Bearings are finished complete. Many small items, such as gudgeon pin, propeller boss, etc., are completely finished.

The engine was made up on a 3½ in. lathe without undue difficulty, as the drawings and illustrated instruction leaflet provide adequate data.



The 'ARISTOCRAT'

A WAKEFIELD DESIGN

By E. STOFFEL

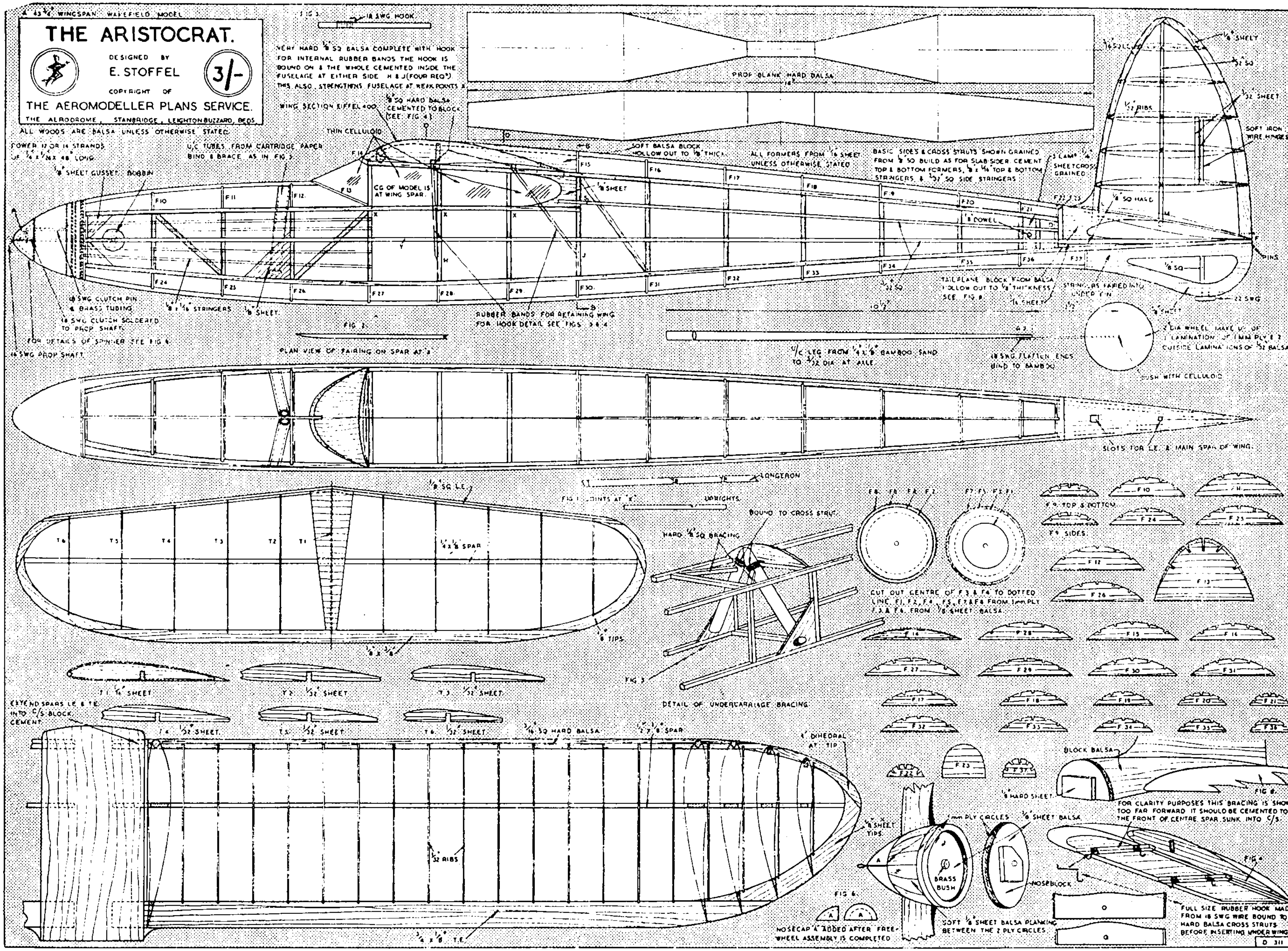
EDWIN STOFFEL . . . prefers Wakefields as requiring most skill...placed fortieth in this year's trials with one flight and a spin in...other hobby is photography...aged 26...married ...started modelling 15 years ago...joined Ilford club.. five years in the R.A.F.... now department manager for a firm of builders' merchants...living at Ilford.

THIS model, also featured on the cover, was designed with an eye to outstandingly attractive appearance, which has been achieved without sacrificing either performance or strength. Further more it is stronger than its fully streamlined counterpart built of formers and stringers.

The first model in this series was flown regularly for a year and ended by finally being broken up indoors and used as spares for the next version. I flew the second model in the Gutteridge Trophy Competition but only completed the model two days before the actual " comp." Those of you who entered for that competition may remember that it was quite impossible to do any test flying on either the Sunday or the week preceding it. Consequently, I had to fly without a single test flight, and suffered a " dive-in " under full power, smashing the fuselage open back to the undercarriage. This was where the model number one came in handy as it was possible to cut off the broken fuselage flush and stick on my old model's nose. The result was that I got a sufficient high placing to enter for the Wakefield Trials.

Did I hear someone say, " If this model was strong how did the nose split open ? " In model one, I used hard balsa for the basic square of the fuselage and fairly soft wood for stringers. Owing to a small amount of sagging on the stringers, I reversed this order on model two, with the sad results as told. The building instructions give the type of wood to use and if you want your model to be able to stand the stress of a 1948 Wakefield's Trials, then don't use soft wood for a fuselage.

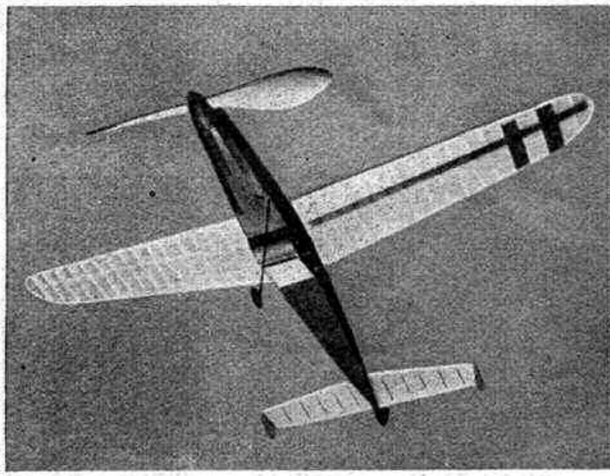
This model is very stable under all weather conditions and will turn in a consistent three and a half minutes in still evening air. At the time of writing, model number one holds the Ilford Club's record with seven minutes O.O.S.

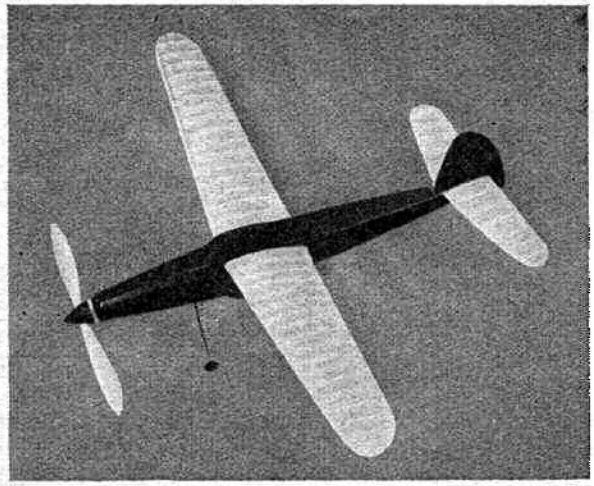


FULL SIZE PLAN AND BUILDING INSTRUCTIONS 3/- POST FREE FROM "AEROMODELLER PLANS SERVICE"

WAKEFIELD MODELS

PT 3 BY R. H. WARRING.





These two illustrations of one of the author's latest Wakefield models give a clear idea of his design trend. Note the general cleaning up of the streamlined slabsider design with slimmer profile to cut down wetted area, pointed spinner completely enclosing freewheel mechanism to give a better entry and streamlined blisters to house parachute dethermaliser and fairing in wing root. Real proof of the design no doubt will be seen in this season's contests.

Selection of Design.

The design of the model is only half the battle. Trimming is the final criterion which decides whether or not the model is outstanding. Of course, the basic design must be sound, but what is more important than the choice between streamliner or slabsider, parasol or shoulder-wing, is development of one particular type. That is, almost all the outstanding Wakefields of the present time have been developed through a series of models, each a little better than the previous one. That is why there is generally very little difference between the external appearance of the designs of the leading experts over a number of years.

Practical development is, if anything, more important than design development, which is why the *time factor* should be one of the most important criteria in deciding the type of model selected. A minimum of two models is necessary, which should be as near as possible identical. Quite probably one will show up a little better than the other in flight testing, when this will be the "contest" machine. The other will then be the "reserve" should the original be lost or badly damaged.

FIG. 1

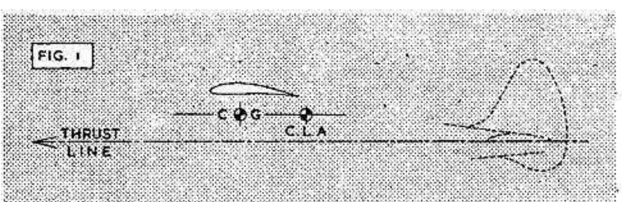
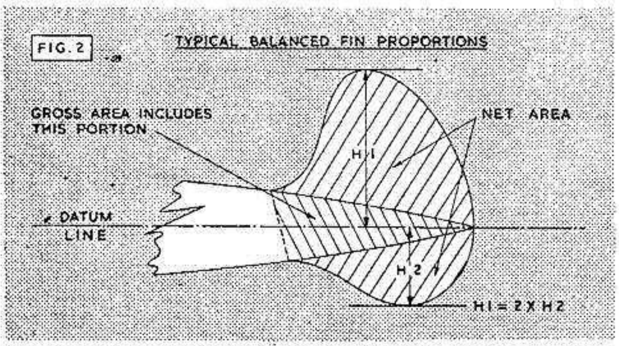


FIG. 2



For any given design, best results are achieved by building to *weights*, and a reasonably accurate weighing machine is one of the most important "tools of the trade." The following table then gives data on components weights. On top of this must be allowed a rubber weight of 3½ ounces, which is a good average figure for a relatively powerful motor equivalent to about 15 strands of ¼×1/24 in. strip, 44 inches long; and also ¼ ounce as the typical figure for a parachute-type dethermaliser. The latter can, of course, be saved by fitting a "tipping tail" unit where the D/T weight is ignored and counted in with the structure.

Minimum weights for adequate strength (ounces)			
Component	Slabsider	Stream.-Slab.	Streamliner
Wings	1	1¼	1¼
Fuselage	1–1¼	1¼–1⅜	1⅜–1⅝
Undercart—single	¼	¼	¼
twin	½	½	½
Tailplane ..	¼	¼	¼
Fin	3/16	3/16	3/16
Propeller ..	¾	¾	¾
Nose Assembly ..	1	1–1¼	1–1¼
Totals	3 15/16–4 3/16	4 3/16–4 13/16	4 15/16–5 1/16

Structure weights should not be allowed to exceed these figures, which in all cases but the slabsider already give total weights over the eight-ounce figure with normal motor and dethermaliser. The weights quoted are for components covered and doped, and so for a check on uncovered framework the following covering weights should be subtracted.

Components	*Covering weight*
Wings	$\frac{1}{2}$ oz.
Fuselage..	$\frac{1}{4}$ oz.
Tail unit (tailplane and fin) ..	$\frac{1}{8}$ oz.

Basic Design requirements.

Adequate spiral stability is one of the most important features of any contest design and this is the one subject on which it is impossible to give specific and quantitative data. However, it is now generally accepted that the datum line for laying out the aerodynamic forces is the thrust line and the accepted practical factor governing spiral stability—the centre of lateral area (C.L.A.)—should lie on a line through the centre of gravity parellel to the thrust line (see Fig. 1). Some theoretical quarters have condemned the use of the C.L.A. as a "non-existent" point, but all other accepted points representing concentration of forces, such as the C.G., C.P., and so on, are equally "non-existent." The C.L.A. method does give results in practice.

The rearward position of the C.L.A. is hard to determine. Under power a rubber model needs quite a considerable fin area for adequate stability, and much less area for the same reserve of stability on the glide. However, variable-area fins do not appear either necessary or desirable and hence the design work is concentrated on stabilising the model under full power.

Since accurate calculation of the C.L.A. position is difficult, the general solution is usually practical, giving a resulting net fin area of around 25 square inches. This, as a generalisation, holds true for almost any Wakefield of orthodox layout. The influence of lowering the C.L.A. to the level of the C.G. is seen in the fact that the modern tendency is to have a fair part of this area concentrated in the under fin, or anti-spin fins are used (see Fig. 2).

The greatest danger is in getting the fin area too small. Provided the C.L.A. is correctly positioned *vertically* an excess of fin area will very rarely cause trouble. Anti-spin fins, for example, are not reckoned in with the main fin area.

The actual aerodynamic value of the centre portion of the fin (see Fig. 3) is debatable at normal flight altitudes. Trimmed for best performance, a rubber model is generally flying quite near the stall and the airflow over the fin in the region of the fuselage is probably so disturbed as to make this part of the fin quite ineffective as a stabilising surface. This is one of the reasons why anti-spin fins can prove so effective. Being mounted outboard of the fuselage they operate in relatively smooth air.

Excessive sidethrust will make any power model spin, but slight excess on a spirally stable layout should produce nothing worse than a vertical or near-vertical bank without loss of height. If any otherwise orthodox model does show spinning tendencies, anti-spin fins should be used; the which may be dispensed with later by modification of the fin area disposition in subsequent development of that particular design.

It is extremely doubtful if any departure from the orthodox layout does pay—both as regards stability and performance. The Jaguar again is an outstanding example, exhibiting conflicting evidence. As regards stability, this particular layout is *not* fully stable. Sideslipping inwards with bank the underslung fin tends to roll the model on to its back—a feature particularly noticeable in rough weather. But from the point of view of achievement the same design has compiled one of the most impressive contest records ever—due mainly to the attention given to its development.

Centre of gravity.

Particularly with a fixed wing position, determination of the centre of gravity position of the finished model whilst still in the design stage is very necessary. But very few people go to the trouble of calculating this in detail, generally "guestimating" the wing position, based on previous experience with similar models. However, on most orthodox models the centre of gravity is located about $1\frac{1}{2}$ ins. in front of the *centre* of the rubber motor (see Fig. 4). If the forebody and/or propeller assembly is unduly heavy (of weight table) a more forward position will result; an excessively heavy tail unit will move the final C.G. nearer the mid-point of the rubber motor.

FIG. 3

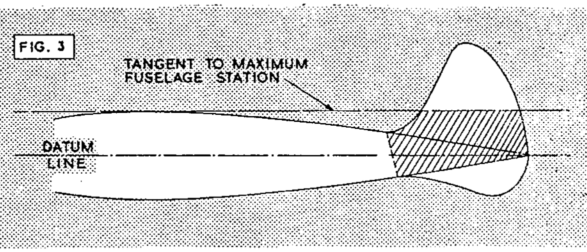
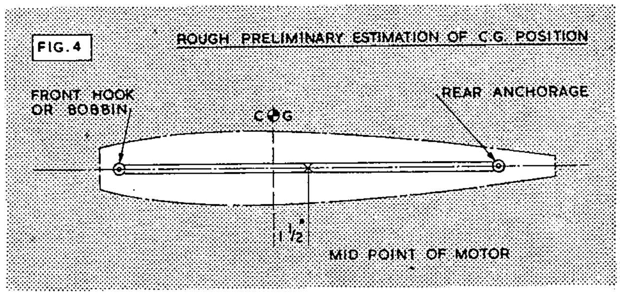


FIG. 4



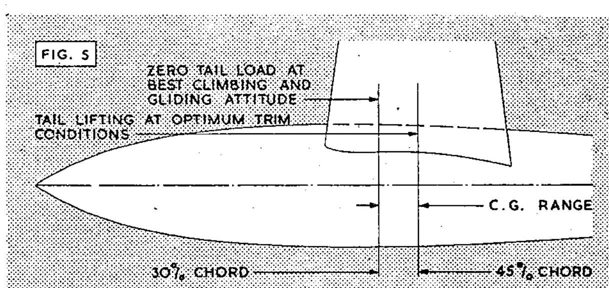
It is very rare indeed that the final C.G. position does come out exactly where designed—even in full scale practice—and the most common fault is finding the C.G. farther aft than originally intended. This is simply taken up where the wing position is adjustable, but may need ballast in the nose with a fixed wing job. It should be noted that the tongue and box fitting is flexible to a degree—about $\frac{1}{4}$ in. either way, giving a total possible movement of $\frac{1}{2}$ in., by trimming off the tongue as in Fig. 5.

Most models, however, will trim quite well over a range of C.G. position, the accepted limits for shoulder-wing layouts being 30 to 45 per cent. chord. Provided the C.G. comes within this range it is possible to trim the model by tailplane adjustment and obtain a very satisfactory performance. For best results, however, a closer range should be used. On parasol type models with folding propellers the range is more limited and the position farther aft. That is, for satisfactory performance the tailplane must be rigged to carry an appreciable part of the load, this being particularly important as regards prevention of stalling on the glide with propeller folded.

There is still quite a bit to be learnt regarding best centre of gravity position. It is fairly non-critical as regards climb and power-on performance where the thrust line setting is the chief factor to contend with. But for the very best glide, C.G. position *is* critical as shown by the fact that even a moderate rubber bunch can often knock a minute off the total (still air) flight duration. Also, with the shoulder wing layout it appears that the very best glide is obtained with the C.G. well forward—almost up to the front limit, in fact. Certainly with the C.G. rigged well forward the model is usually less critical, and this applies to all layouts.

(To be continued.)

FIG. 5



ONCE again the mercury has broken the bottom off the thermometer, and the R.S.P.C.A. inspectors are out looking after all the little brass monkeys. Consus has to fry his words to find out what he is talking about—so that's probably nothing compared with the things his readers will have to do . . . He is still glad to see your brainwaves—though since his last injunction to make 'em practical there has been a sad decline in their numbers. Perhaps that tells its own tale.

We feature a couple of doubles this month (quiet, Colonel) the first pair originating from J. MOSS of Epsom College. Figure 1 shows a novel wing fixing. Wire hinges are made up as shown in the drawing and are bound to the spars in each wing. Two or more dowels are fixed upright in each wing root, fore and aft, and strong rubber bands are looped over these to keep the wing to its dihedral—the root ribs being set at the necessary angle. Should the model overturn the bands give and lower the fuselage to the ground thus avoiding all damage. At the same time both wings are positively locked against the lifting loads in flight.

Second bright idea from Mr. Moss is a folding constant speed propellor where all the mechanism consists of two humble rubber bands. The airscrew blade is attached to the hub in the usual way with the exception that the hub plates are diagonally slotted in opposite directions instead of merely being bored and bushed to take the hinging dowel fixed through the base of the blade. This dowel is made rather longer than usual to project about 3/16 inch either side of the hub plate. A peg is incorporated in the other side of the airscrew hub and from this on either side of the hub a rubber band of suitable tension is looped round the airscrew dowel. Now according to the speed of rotation of the airscrew and therefore the centrifugal force exerted so the rubber band stretches and the blade moves in or out, revolving in its slot, which thus reduces or increases the pitch angle accordingly. Of course, experiment will be necessary to determine the tension required for best results.

Commercial wheels are not always of a size to suit all requirements, and in particular sorbo wheels are difficult to obtain in large varieties. R. DALGLIESH, of Edinburgh, supplies a simple solution to the problem—he builds his own sorbo wheels from sponge rubber sheet in the following manner. A sheet of sponge rubber is cut to the size required by a cork borer or similar tool, using methylated spirits as a lubricant (*do* shut up, Colonel). After rounding the edges with sandpaper, the centre is cut out with a tool of suitable diameter to suit the depth of tyre required, and a shallow circular cut made on either side of the diameter of the hub disc. Cut away from the centre to this cut, which leaves a recess on either side to take the hub disc flush. Dip the finished tyre in Bostik "C" thinned down with benzine and allow to dry thoroughly. This fills in the open pores of the rubber and gives a smooth finish when lightly sanded. The two hub discs are balsa with three balsa spokes supporting the hardwood or metal hub.

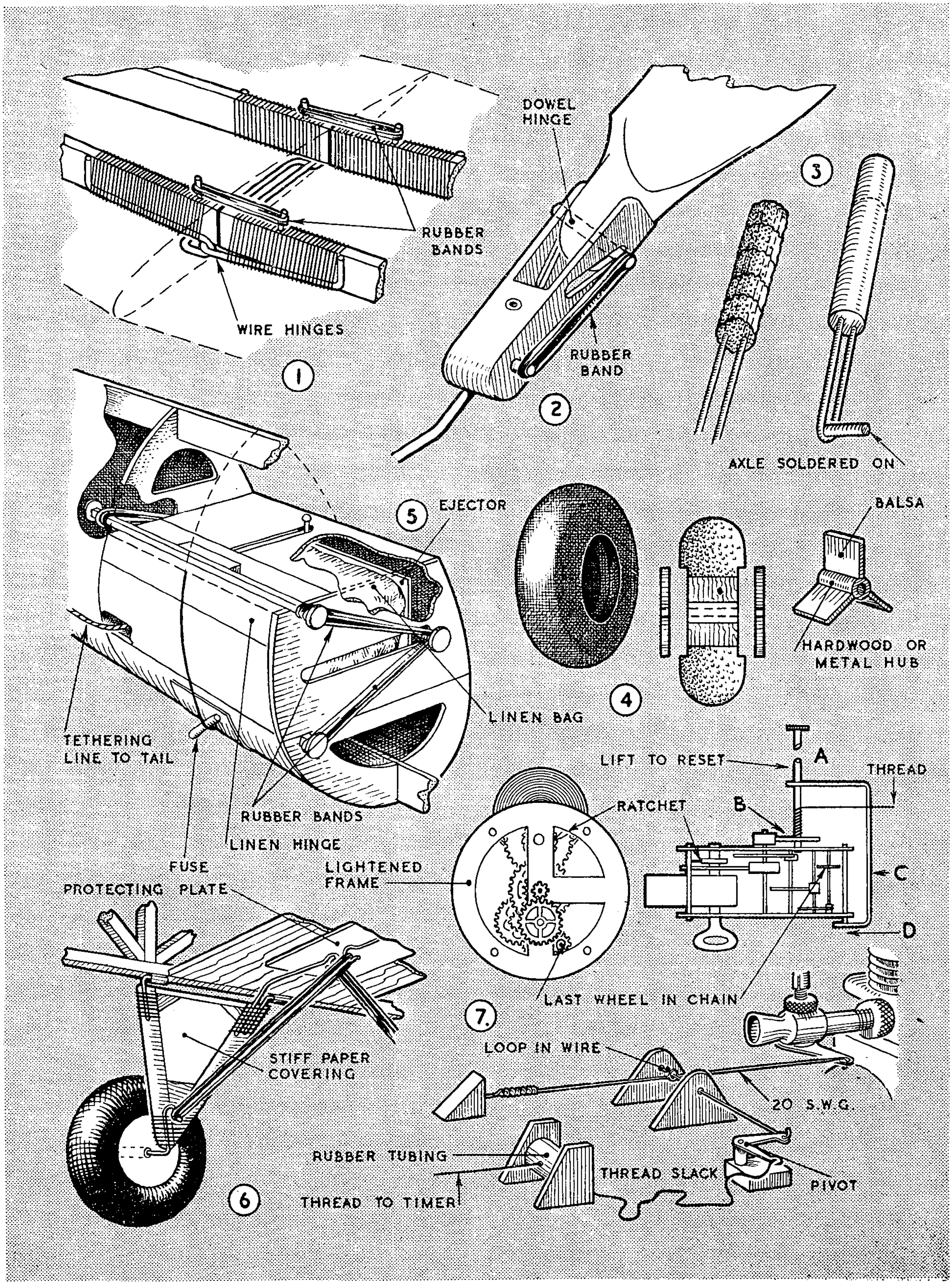
Doubling up on this comes the second idea in Fig. 4. This employs the same material, sponge rubber, in the construction of an oleo type shock absorbing undercarriage leg. Take a piece of tubing of suitable size for the exterior of the leg and seal one end. Cut a number of sponge rubber discs to be tight though sliding fit in the tube. Stick the discs together with Bostik "C" and fix two wires as shown, again with the aid of Bostik "C". Dip the end in thinned Bostik "C", allow to dry, lubricate the tubing sleeve with graphite, drill two holes in the sealed ends for the wires, and insert the sponge rubber "plunger" into the tubing. Seal up the upper end and solder in axle to the twin wires. On transmission of a shock the plunger is pushed up the tube and on release the plunger is slowly pushed down again against the friction of the rubber by the air compression set up by the upwards movement.

The very necessary D/T's on today's high performance models are of various kinds but easily the most popular is the parachute spoiler type. Normally, however, the parachute is merely lashed on to the side of the fuselage, presenting considerable drag and the likelihood of fouling the tailplane on release. G. RANYARD, of Grimsby, offers a kind of built-in jack-in-the-box to get over both troubles. He says the extra weight is negligible, especially in sailplanes for which it was designed. A kind of drawer is built-in to the fuselage between two formers and contains the folded parachute. This drawer is spring loaded by rubber bands so that when the linen hinged door is opened the drawer springs out as far as the slot allows it to travel and the parachute is thus ejected. The door is held shut by a piece of thread to which the fuse is attached. The drawer is not a true drawer as it possesses only an ejector back to which the square dowels are fixed over which the rubber tensioning band is looped. A linen bag is fixed inside the box, its rear glued to the ejector, and the outside of the mouth of the bag glued for 1/8 inch all round the mouth of the box, this protects the 'chute and prevents it jamming on ejection. Note that the tensioned square dowel must be a good but easy moving fit in the slots, as must the vertical guide. Here graphite lubrication will probably help. Other small details are fully explained in the drawing.

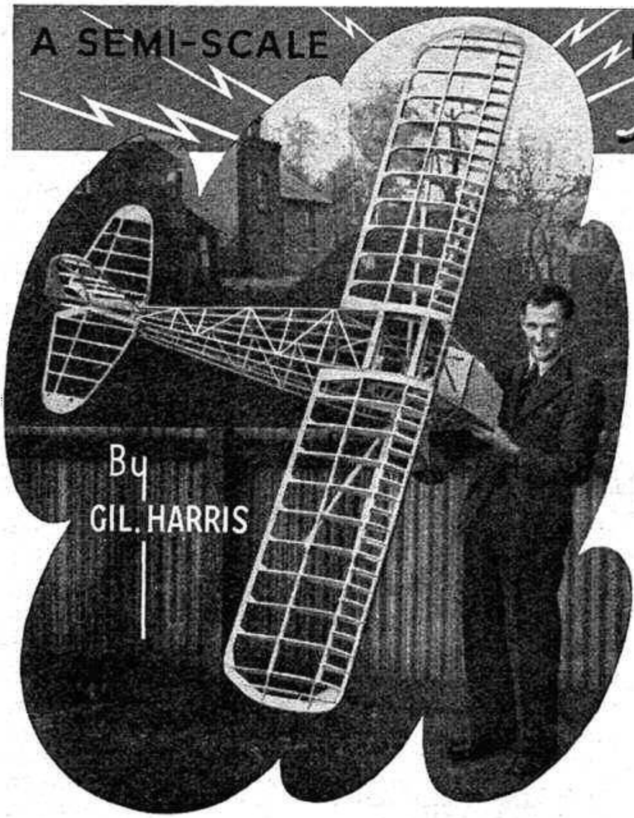
Another undercarriage design comes from P.M. KENNETT of Preston. Shown in Fig. 6, it is very simple and eminently suited to such models as an Auster or Albacore. Springing is provided by rubber bands which run from the bottom hook on each leg to the extension hooks at the top of the opposite ones. By adjusting the length of the extension (which serves as a stop) it is possible to make the rubber bands simulate either V or X types of cross bracing. Small pieces of sheet aluminium or fragments of razor blade should be cemented to the bottom of the fuselage above the stop extension, to prevent these damaging the fuselage on springing back into position.

As clockwork timers are almost unobtainable in this country and very expensive even when they are, P. JEFFERIES, of West Wickham, utilised an old clock for the purpose as shown in Fig. 7. To convert a clock first remove the escapement wheel and hair spring. " A " is soldered to cog " B " and a bearing is made for the upper end of the shaft " A ", by bending a piece of thick aluminium " C " which is bolted to framework " D ". A piece of thread is attached to " A " which is slowly wound up. The thread is tensioned by passing it through a pin hole in a piece of rubber tubing to an " L "-shaped crank, bushed and pivoted. When one arm is pulled by the cord it pulls out a wire which releases another spring-loaded wire which is in turn connected to the cutout on the engine. When the thread is wound in to its full extent the aluminium bearing " C " bends and the two cogs disengage. To re-set the timer the shaft " A " is lifted from its bearing and the thread is unwound and pulled to the rubber tubing. The length of motor run is determined by the amount of thread between the rubber tubing and the crank.

Well, you've listened my children, go thou and do likewise. If Consus hasn't tried to be funny this month he says he's sorry to have done you this service, you must thank his seasonable hangover . . .


RUBBER BANDS
WIRE HINGES
1
DOWEL HINGE
RUBBER BAND
2
3
AXLE SOLDERED ON
5
EJECTOR
LINEN BAG
TETHERING LINE TO TAIL
RUBBER BANDS
LINEN HINGE
FUSE
BALSA
HARDWOOD OR METAL HUB
4
LIFT TO RESET
A
THREAD
B
RATCHET
C
D
LIGHTENED FRAME
LAST WHEEL IN CHAIN
7
PROTECTING PLATE
STIFF PAPER COVERING
6
LOOP IN WIRE
20 S.W.G.
RUBBER TUBING
THREAD SLACK
PIVOT
THREAD TO TIMER

A SEMI-SCALE POWER MODEL OF 9 FT. SPAN for RADIO CONTROL



G.W.W. (Gil) Harris . . . maker of many models, literally hundreds over the last twenty years . . . thirty-one . . . married, one small daughter . . . aero technician, specialises in everything that free flies out of doors . . . favours strength before grace, but tries to compromise . . . known internationally as a contest modeller . . . his father is an enthusiast also, particular interest being engines, an early pioneer . . . Farnborough is the Harris habitat.

RADIO Control as applied to model aircraft is still in its infancy and there is still much to be done before it is reliable, light and cheap to produce. America undoubtedly leads the world in this interesting scientific branch of aeromodelling.

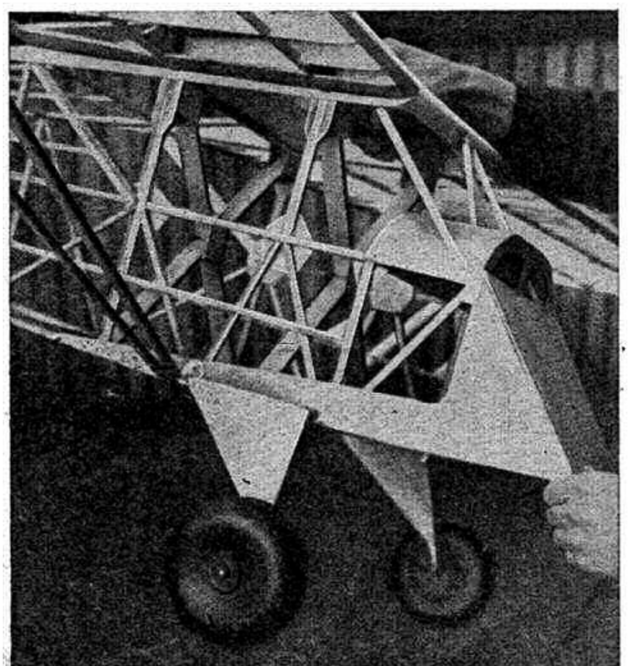
The receivers used by the leading American exponents vary considerably in the basic design, size and weight. The units weigh anything from 8 ozs. to 10 lbs. Thus, it will be realised that if we design the aircraft first, and it is suitable for a complete receiver outfit, it is reasonable to allow for a weight lifting capacity of 2 lbs. at least—a figure I fixed on after reading up on the subject of radio control; I was aiming at rudder and engine control only.

If the model is to stand up to the inevitable rough usage resulting from preliminary experiments it must be robust, easily repaired and maintained, and everything must be accessible.

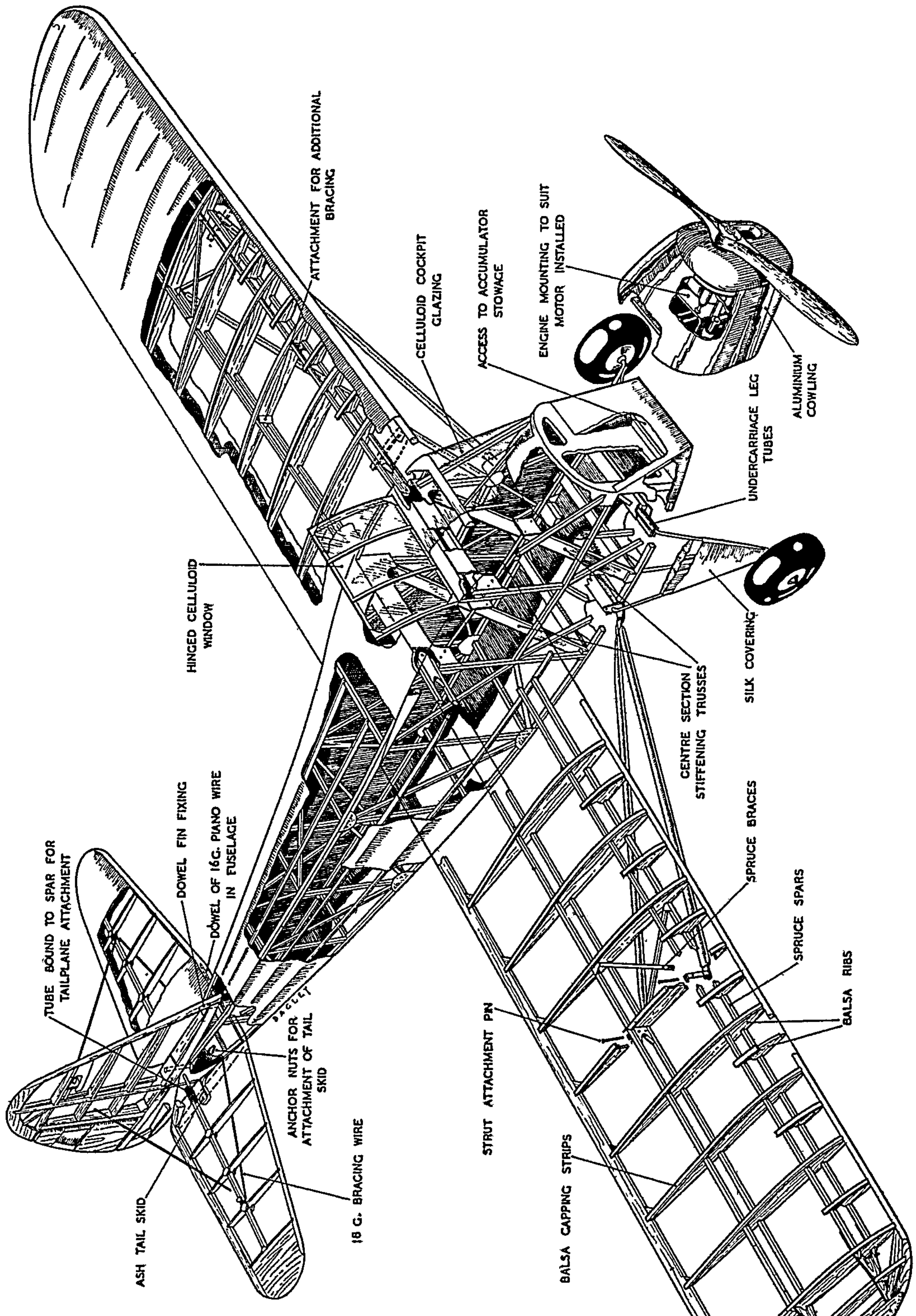
Access to the radio gear would normally be gained through the hinged roof light of the cabin, but if required the side window panels can be made detachable. The lateral cross struts are a structural feature of the fuselage—their purpose is to absorb the loads of the mainplane roots, brace the fuselage, and carry the radio equipment which is slung by rubber loops from the fittings provided.

Power Unit. The engine can be of any capacity between 10 c.c. and 30 c.c. The average 10 c.c. engine will fly this machine (*light*) very well but is hardly powerful enough for full load conditions. 15 c.c. is, in the writer's opinion, the best size for radio control work, and preferably a 4 stroke. The actual engine fitted is home made. This engine was designed to drive a large airscrew at low speed and thus be able to drive a scale size prop. (18 ins. diameter) the capacity of the engine being 10 c.c. It was built to my specification by my father in about three weeks spare time. It was running the day it was finished and has never had a spanner to it since.

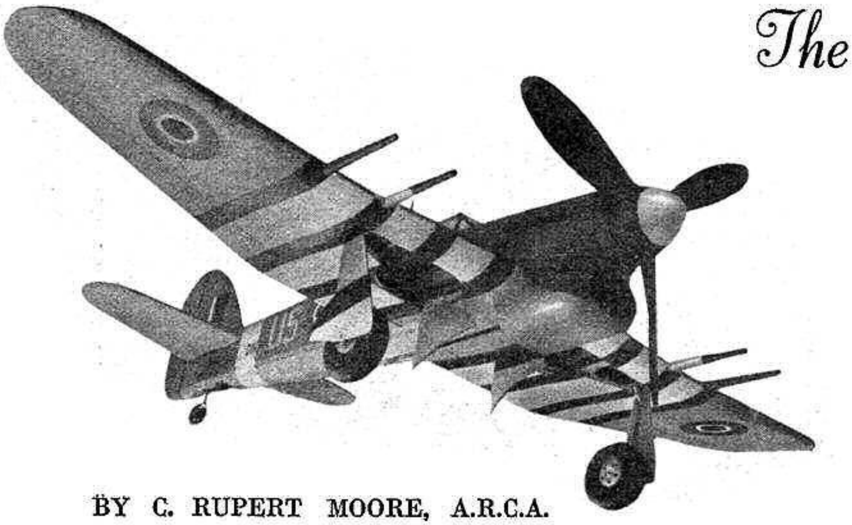
Construction. The building is simple though detailed, and the machine extremely strong. The procedure is fully dealt with in the illustrated instruction sheet accompanying the A.P.S. plan.



The photos on this page demonstrate the size and near-scale lines of this impressive model designed after the Auster Mark I. Note the heavily stressed components which ensure greatest strength where most necessary.



FULL SIZE PLANS PRICE 17/6, POST FREE, FROM AEROMODELLER PLANS SERVICE, THE AERODROME, STANBRIDGE, NR. LEIGHTON BUZZARD, BEDS.



The FLYING SCALE MODEL

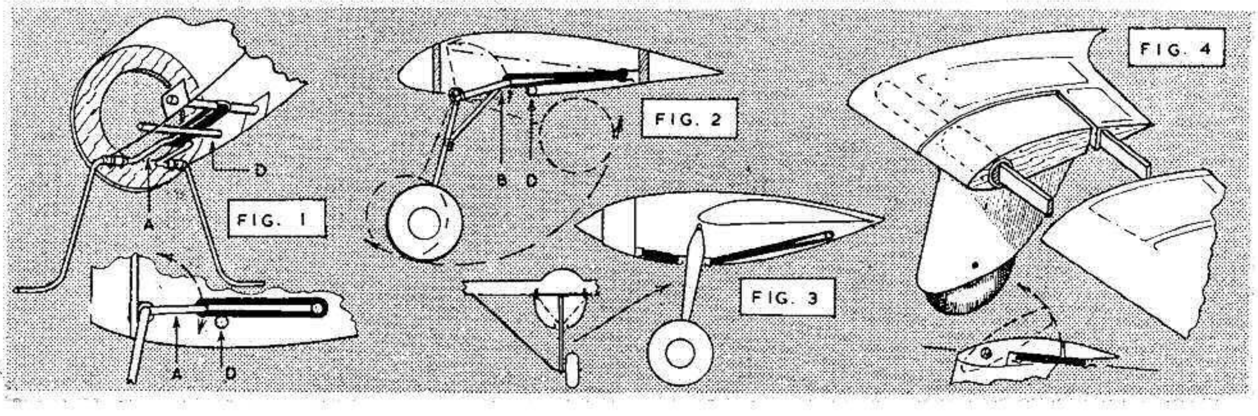
PART EIGHT

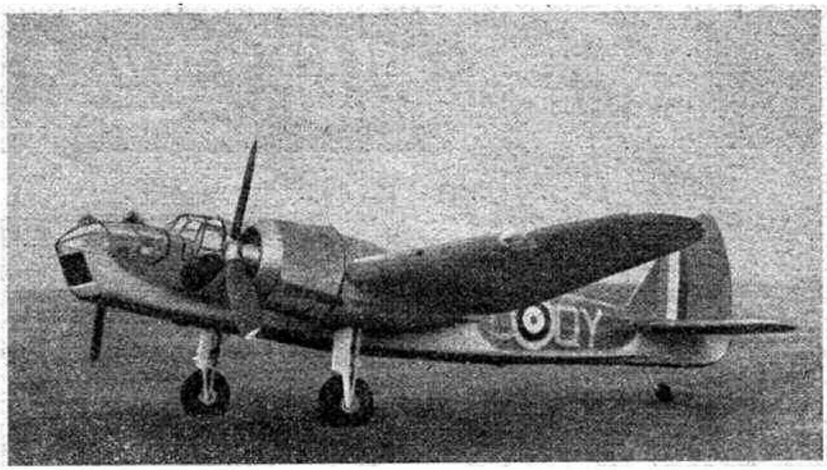
BY C. RUPERT MOORE, A.R.C.A.

MAY I first remind you of the two main points I made in Part 7. The whole of the landing shock of a model is in a backward direction and the chief destructive force is not the shock but the ensuing backlash. The problems of various V undercarriages were dealt with and shown in Figs. 3, 4, 5, 6 and 7 of last month. This month I propose to start with the cantilever undercarriage. Fig. 1 shows the legs of a flying scale model "Gloster Gladiator." For models up to 15 ozs. the problem is simple enough, the legs are formed from one continuous piece of piano wire. A crank is formed at A to which is attached the powerful rubber shock absorber. About ½ in. clear of the crank a hardwood dowel should be fixed under the shock absorber at D. This limits the travel for backlash but does not interfere with the travel for shock. Unless this is done the legs will not remain upright when the model is at rest without far too great tension on the rubber. With models above 15 ozs. the principle is sound enough but the natural weakness at the hinge angles has to be overcome. This may mean a built-up unit from steel tube if the model is very large, but the use of 12 s.w.g. steel for "axle" and 1 in. of the bend usually is satisfactory. This method is easily adaptable to aircraft with separate legs mounted under the wing as for instance the "Miles Messenger," Fig. 2. This is limited to models with a thick wing because the length of the lever arm B must not be greater than the wing thickness otherwise damage will be done on every landing. A damper peg is fixed at D. Where wing thicknesses do not allow this, the method used on "Castor," my twelfth semi-scale twin, has been used to advantage (Fig. 3). This is a continuation of the "Viper's" system. The absorber is about twice as long as the damper so that the damper is always in great tension. The side thrusts were taken by a strut but if the hinge pin C is made long and braced where shown by a chain line, the side strut can be abolished.

Trousered undercarriages such as on the "Miles Sparrowhawk" have their own particular problems. The rigid trouser prevents the usual methods being used, but in Fig. 4 I show a very successful solution. In this, a portion of the leading edge of the wing, back as far as the rear spar and sufficiently wide to give lateral rigidity is built to hinge around a circular wing peg. (Where desirable the circular portion can be built up.) The leg fairing and wheel are built integral with this portion. The shock absorbing system is similar in action to Fig. 2. On either side of the leg in troughs on the under surface of the wing, from appropriate loops situated under the moving portion and under the fixed trailing edge, are stretched strong rubber bands. These act as both shock absorbers and dampers. Troughs are necessary in order that the rubber and hinge dowel lie in one straight line. Trouser legs are far better made from 1 mm. ply or celluloid otherwise damage is unavoidable. I make such units the load-bearing members and dispense with an internal leg. This method is equally effective with spatted wheels, but the spats I make from moulded paper—which I will describe at a later date. Light balsa fairings are useless in this position as they are too vulnerable.

Most tricycle undercarriages can be solved by having the legs as Fig. 2, the rear legs being mounted in reverse on the rear main spar of the wing with the shock absorber in a forward direction. The damping peg would also have to be reversed—*i.e.*, placed above, Fig. 5, unless the leg slopes in a backward direction. Every undercarriage has its own set of problems, but I think I have said enough to cover most fixed types and now I come to the next problem—retracting and detracting undercarriages.





From a duration point of view, automatically operated retracting and detracting undercarriages rarely, if ever, can be worth while at the low speeds at which scale models fly, the aerodynamic advantage being more than paid for by the extra weight.

The scale modellers aim is certainly duration, but this is coupled with *true outward appearance and true characteristics of flight.* For example, an eighth scale "Tiger Moth" should fly at about one-eighth of the speed of the real aircraft and a twelfth scale "Typhoon" should fly at about one-twelfth the true speed. This of course can be carried to excess, but if you make a model "Typhoon" perform like a "Tiger Moth" or vice versa you have produced an absurdity, not a scale model.

Below a speed of say 30 m.p.h. let us agree that the fitting of an automatic undercarriage is purely æsthetic and is fitted because the real aircraft chosen has this refinement. If you get no pleasure from seeing a miniature aircraft perform as its parent then you will never understand the scale modeller.

The most vital thing about the automatically worked undercarriage is that the retracting and detracting mechanism must not under any consideration interfere with the shock absorbing qualities of the undercarriage, nor with the "knock off ability" of the wings. This fact is the chief difficulty with the mechanism. I have used two principles both of which are entirely successful, but when I build another model I intend to take the best features of both and incorporate them.

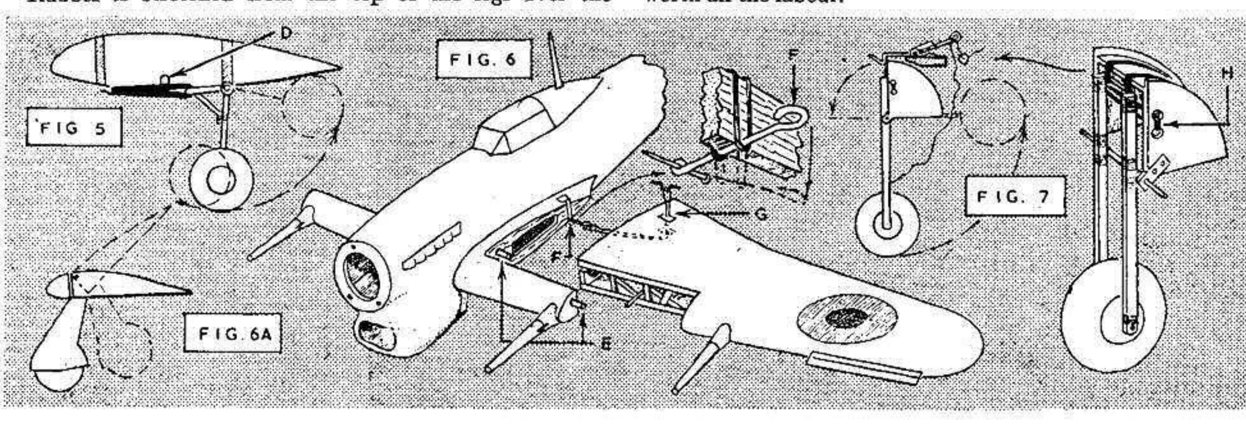
The shock absorbing has been dealt with as follows. In the "Typhoon," because of the thin wing and because the undercarriage door has to fit in its proper place when retracted, I decided not to try and shock it at the hinge but to design the wing in such a manner that it could absorb the shock itself, Figs. 6 and 6a show the idea. The leading edge as far as the undercarriage is built integral with the fuselage.

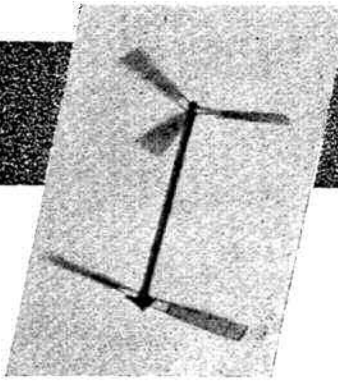
At E and E are fixed bamboo pegs which are located in appropriate slots in the wing. These pegs form the hinge. Through a hole in the T.E. of the wing, G, from the end of the locating rest, F, which terminates in a hook, is stretched the shock absorbing rubber. This rest F is pivoted at its inner end and is rubber loaded to take the backlash. In the "Blenheim," a hollow quadrant, what I call a "cheese," is built from 1 mm. ply and balsa. The axle holes are reinforced by brass strip and the "rubbing surface" on the outside is faced with thin celluloid.

Rubber is stretched from the top of the legs over the rubbing surface to hooks below the "cheese." The rubber is lubricated with castor oil to make it slide. At H, $\frac{1}{8}$ in. strip rubber is tied across to form a buffer. In the down position the "cheese" is held by a catch at the top, but to retract, the catch is tripped by the tension on the cable, and the whole shock absorbing mechanism turns with the leg about a common axle, Fig. 7.

Now to deal with the problems of retraction. The energy necessary to retract the wheels can, in the case of a rubber-powered model, be indirectly connected to the waste longitudinal tension of the motor itself. This tension can be harnessed through a suitable lever, worked by a movable tailhook joined to the cables, which are connected to the legs themselves. When the model is wound up the legs are held down against this force by catches, these catches being released when the model is clear of the ground. The timing of this release I find is better done by the relation of the model itself to the ground and have used a simple lever hinged below the belly like an old fashioned deck arrester gear. This is spring loaded to swing in a forward direction so that the model has to be at least the length of the lever above the ground in order for it to swing. With high-speed models which have a steep and quick take off a very short arm is all that is required, 7 in. in the case of the "Typhoon." The release catch is so planned that the lever trips it at the end of its travel. Detraction is done simply by gravity. When the longitudinal tension of the motor dies away the spring-loaded tailhook travels backwards allowing the tail lever to remove the tension from the retracting cables. The legs then tumble down and lock themselves.

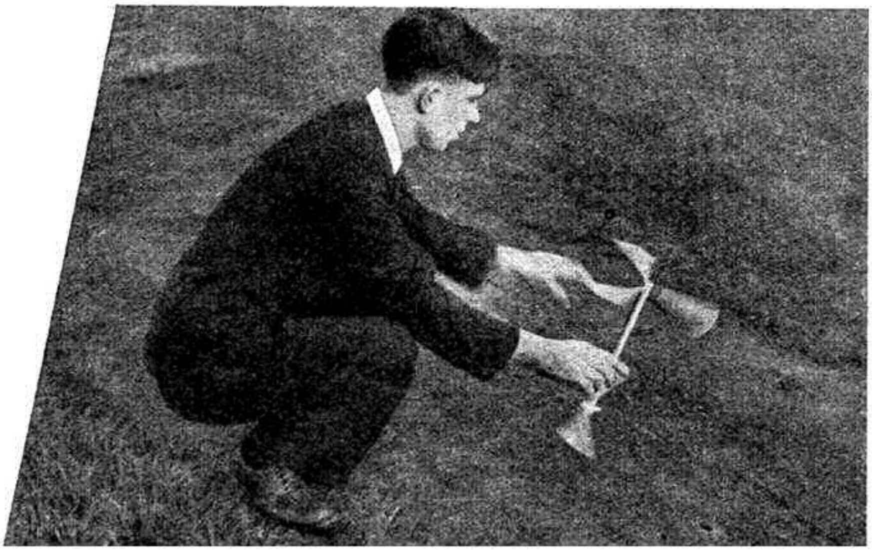
The automatic undercarriage is a fascinating problem as, with the weight limitation, it is by no means simple to solve, but the sight of a model's wheels clapping up after take off and detracting at the end of the power run makes it quite worth all the labour.





RECORD HELICOPTER

1948 BRITISH RECORD HOLDER BY R. MUSGROVE



RAYMOND MUSGROVE ... Secretary Oldham and D.M.A.C. ... Comp. Sec. Manchester and District Council of Model Aero Clubs ... aged 20 ... student at Manchester University ... holds two British records, outdoor helicopter and indoor free flight tailless ... prefers indoor modelling ... Class B S.M.A.E. Merit certificate holder ... holds all Oldham's outdoor rubber records and several of the indoor records.

THIS design is the essence of simplicity and can be built by beginner or expert alike in about three hours. Trimming the model is also easy provided that a little common sense is used and as an additional advantage I would point out that the flying space needed is only small.

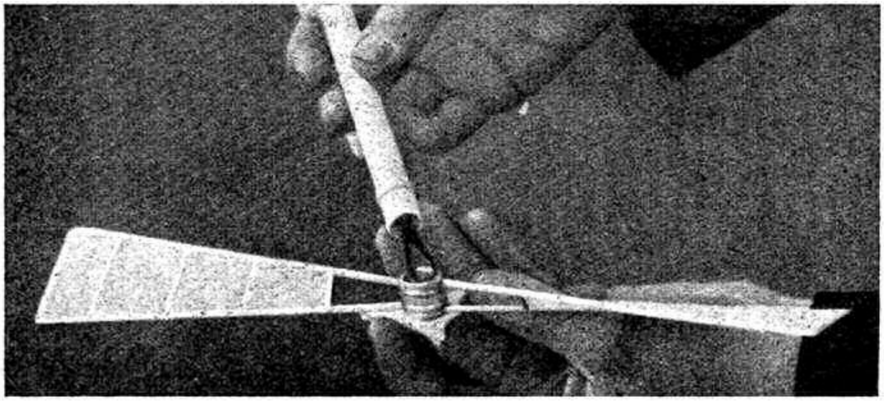
The Motor Tube. A 15½-in. sheet of hard 1/32 in. balsa, smooth on both sides, is wrapped around a 1/2 in. diameter core and cemented into a tube using a lap-joint for strength. From this a 13½-in. length is cut and a further layer of sheet, 3/8 in. wide, cemented around one end to provide a wider seating for the nose plug. Further 1/4 in. wide layers are cemented every 3 ins.

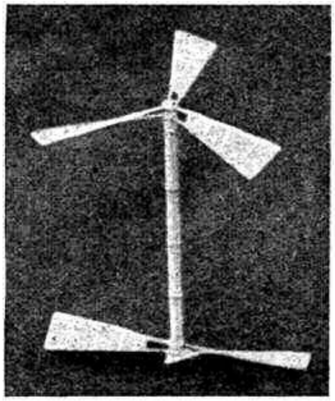
Rotor Blades. Build these up on the plan, using the appropriate template to obtain the correct incidences. The leading and trailing edges, made from hard 1/16 in. sq. are rounded off after the addition of the ribs, which are sliced off from 1/32 in. sheet around a hardwood template. Cover the rotor blades, on top only, carefully to avoid wrinkles and do not water spray or dope. Leave the innermost bay uncovered.

Take-off Base. The remaining 2 in. length of the main tube is sanded down in thickness slightly and waxed. Over this a small ½ in. long cylinder is made to fit tightly on to the lower end of the main tube. One end of the small cylinder is cemented on to the actual take-off platform which is laminated from two layers of 1/32 in. sheet cut to shape. The wire hook is cemented in place and the two lower rotor blades added.

Nose Plug and Rotor Head. The three top rotor blades are cemented at angles of 120° to each other on top of a 1/16 in. sheet disc, ½ in. in diameter. The domed top is then added and a 20 s.w.g. tube bush cemented in position. Note that the under surface of the domed top will have to be slightly conical in order to fit correctly on top of the rotor leading edges. A nose plug of 1/8 in. sheet with 1/16 in. sheet spigot should be made next and bushed with 20 s.w.g. aluminium tube. Form the free-wheel and rubber hook, using 20 s.w.g. piano wire.

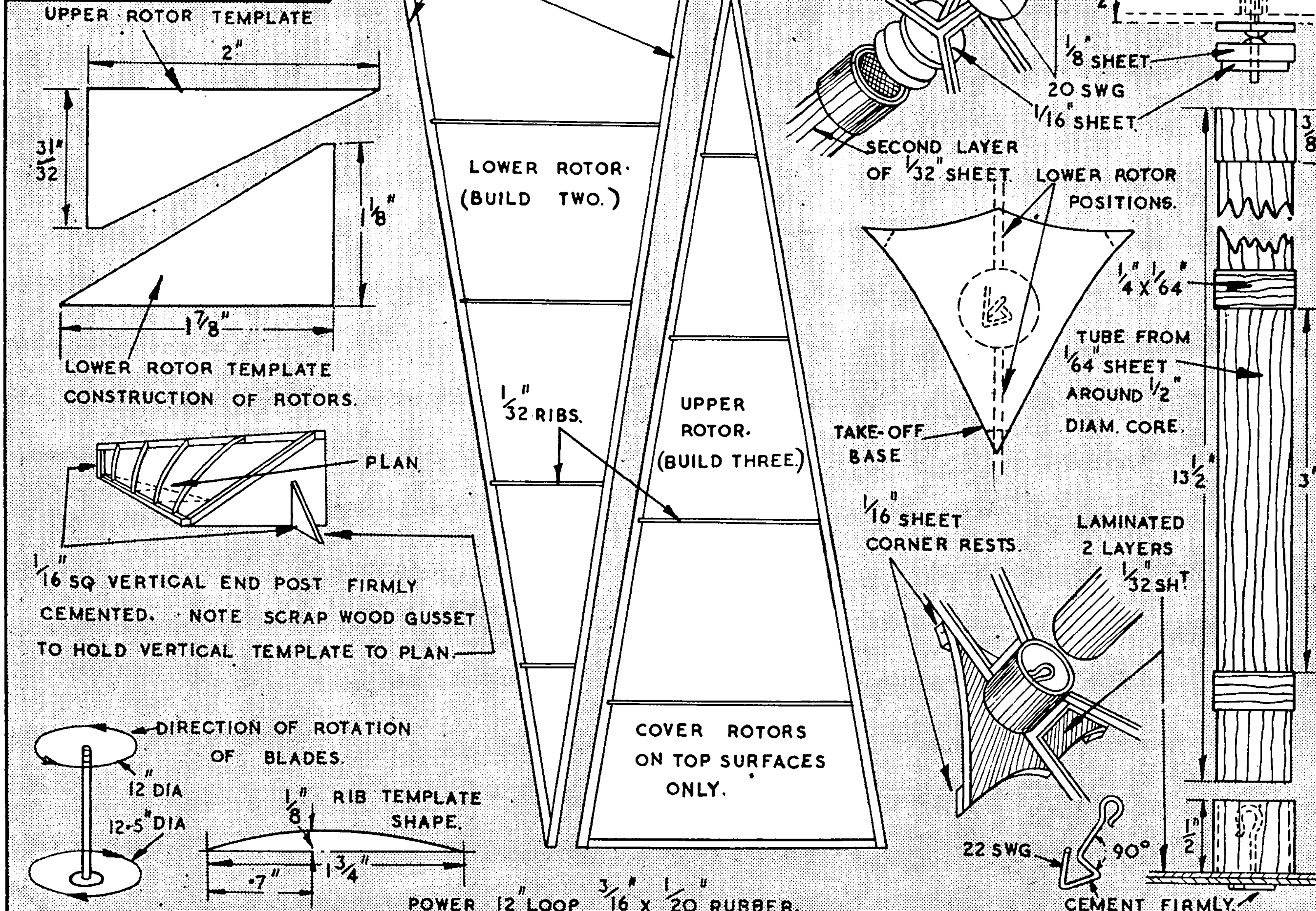
Flying Adjustments. One loop of 3/16 in. by 1/20 in. rubber should provide sufficient power. Adjust the freewheel spring to act when the power is insufficient to maintain hovering flight. As the C.G. position of each model will differ carry a small piece of plasticine with you on test flights and add it to the bottom of the motor tube until the axis of the model remains vertical throughout the major part of the flight.

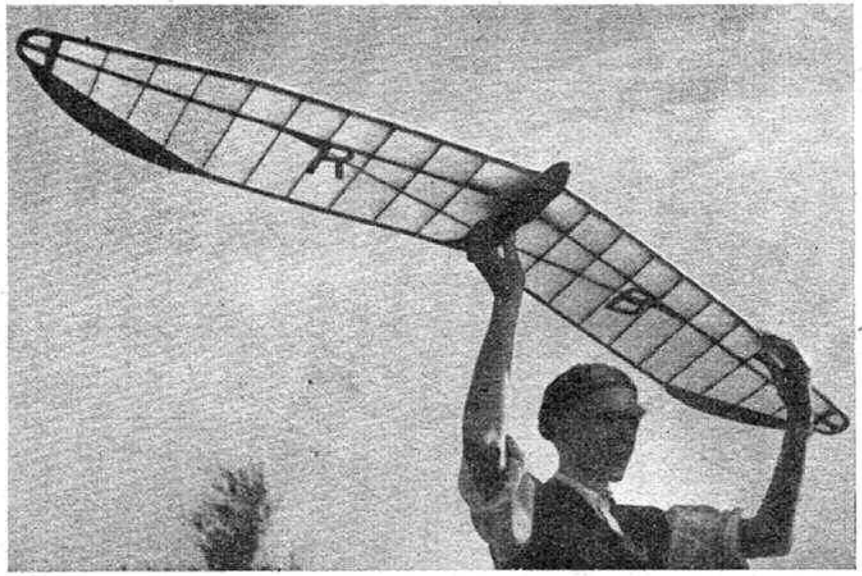


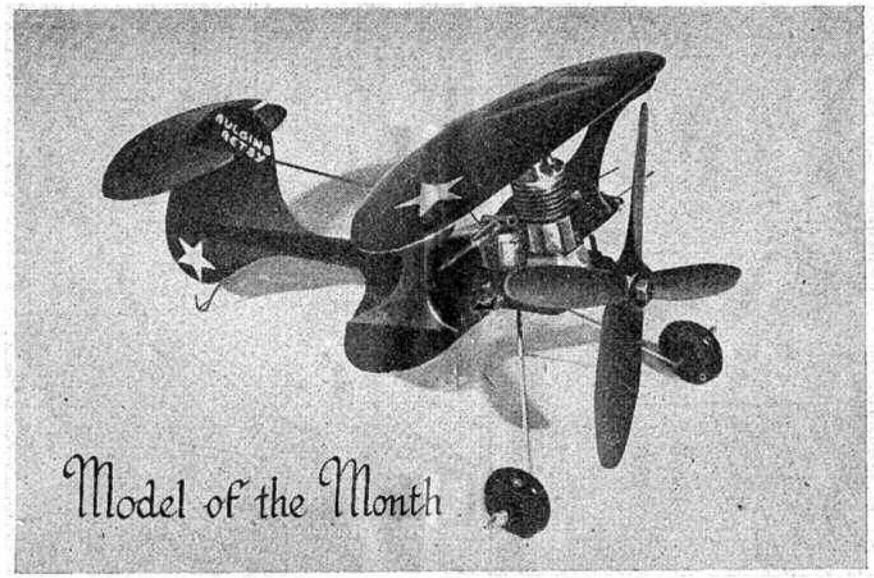


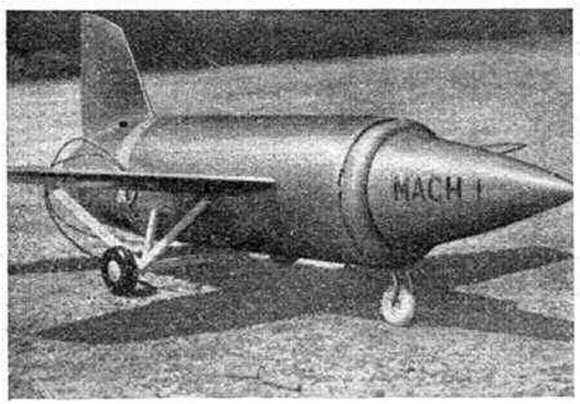
DURATION HELICOPTER.

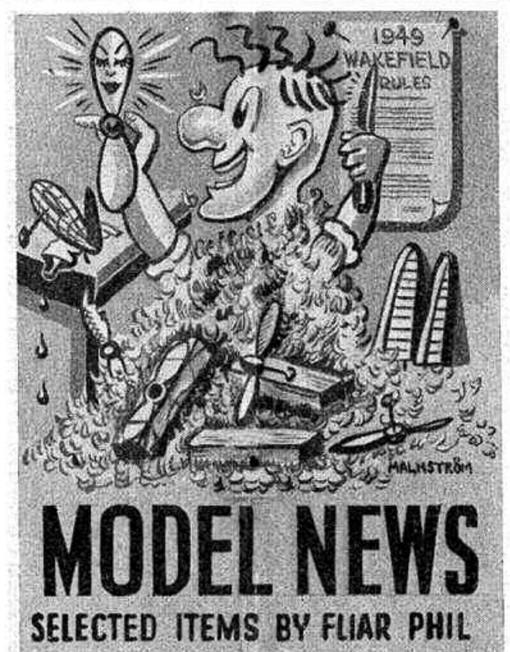
BY R. MUSGROVE.











BEING awkward as usual, Fliar Phil begins by reminding you of last month's request—i.e., to send him your photos—but send them in the right way if you want them published. The details are all in February, 1947, Model News. Let's hear from you !

Model of the month is this time a midget—and what a midget ! It is our Belgian friend Guy Ramaekers' " Bulging Betsy " baby bipe control-liner powered by a 0·8 c.c. Micron. It weighs three ounces and is only six inches in span—flown with its usual 5 in. diameter, 6 in. pitch four-blader its speed is frightening on 20 ft. lines, it being very sensitive as well. As landings are hazardous in the extreme and call for much whipping, the usual procedure is for an intrepid companion to field the model when the engine cuts. As our correspondent says, the helper needs to be even more aerobatic than the bipe ! Altogether, a most intriguing little model.

Over the sea, but this time to post-war Germany, where an October competition at Neumünster attracted a large selection of models and modellers of which top photo left shows a good example. Flying wing sailplanes show no signs of decreasing in popularity and the first-class performance of these continental models is a high tribute to their designers and builders. The model illustrated is a typical flying wing by Richard Brugge. of Neumünster.

Some enterprising gentlemen from the Technical Staff Mess at the R.A.E., who entitle themselves " Aero Enterprise " (not without some justification Fliar Phil would suggest !) have sent in details and the photo centre left of their frightening high speed rocket propelled prototype " Mach I," built and flown during 1945. It featured a knife edge aerofoil, drop-off main wheels, and was powered by a large cordite rocket which was electrically fired. Free flight speeds were attained well in excess of 100 m.p.h. over a distance of some 200 ft. Made of balsa and ply the model was 14 ins. long and 13 ins. span. However exciting this may be, Fliar Phil would not recommend imitators—the practice being both lethal and illegal for less privileged persons. And quietly he would whisper to Mr. Bishop who sent the photos—" Were your mainplanes really necessary ? " . . .

To our picture bottom left and another tailless model, this time a British effort. Of unusual design the model features anhedralled tips with elevons, and a central fin on the pod fuselage extension. It is the work of J. Chaplin of Earley, the photo being taken by E. Chandler at Reading and District's Open Day.

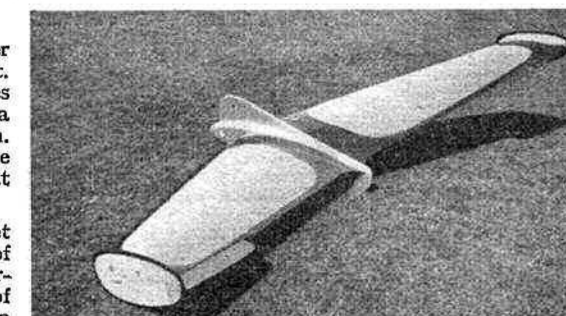
Many modellers seem to be going jet conscious and naturally as this form of power is now limited to control-line aircraft increasing numbers of this type of model are making their appearance. Top right is a first-class example of a modern trend, the model being D. W. Greenslade's Dynajet-powered heavy-weight of 38 ins. span and 48 ins. length—all up four pounds. The model is entirely covered with sheet, the construction being on the crutch principle with very solid balsa members. Having seen the way these jets perform, Fliar Phil is a little pessimistic as to whether even such sturdy building as this will prevent it from a horrible fate should it get that sinking feeling. One thing slack lines are unlikely !

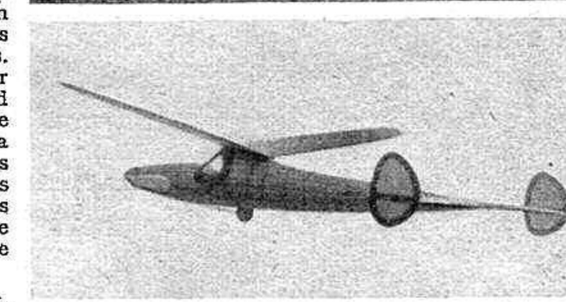
Well-known Northampton modeller A. J. Cockle designed and built this 8 ft. 6 ins. span tailless model shown top right centre. Exhibiting his usual outstanding construction and finish, it is a development of a slightly smaller design by Erick Voit of Switzerland who placed second in the 1946 International Competition for Tailless Models at Lyon. Wing area is 11½ sq. ft. and the weight about 6 lbs.

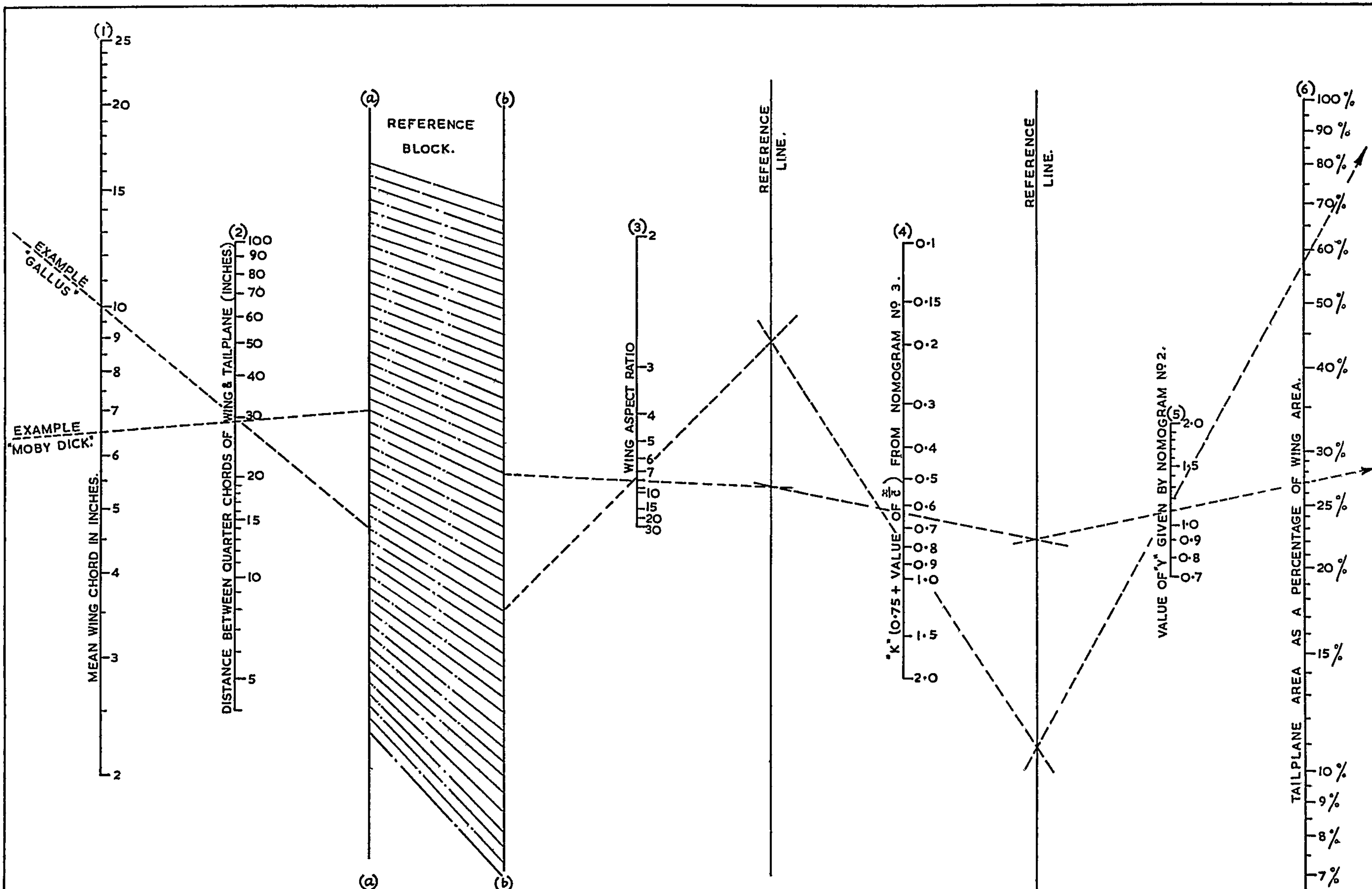
Of American origin the model in our photo lower centre right was built by R. W. Robinson of Downham Market, and has an attractive performance of the usual American fast climb type. Known as " Smoothie ", it has both a retracting peg leg and folding prop and its lines are certainly most attractive compared with more stereotyped rubber jobs.

Our last photo, from T. Daulman of Belfast, shows W. Little and R. Hanna, Ulster Clubmen, preparing for a flip. Very popular over there, the model is an American " Falcon " with modifications. It possesses a terrific spiral climb with an Ohlsson 23, and an excellent glide. This particular model took second place in a Dublin Nationals and first in an Ulster Nationals.

Fliar Phil goes February filldyking to fly his floatplane—phew . . .







NOMOGRAM Nº 1.

TAILPLANE AREA.

TECHNICAL TOPICS

BY P · R · PAYNE

PUTTING higher theory into a form which may be readily understood by practical aero-modellers is probably one of the most difficult exercises in technical writing. Quite often it proves impossible; tailplane area for instance was dealt with practically in a simple Nomogram, and for the more discerning, two articles in the " Aerodynamic Design " series dealt with longitudinal stability. Theorists at once said that the Nomogram was too approximate, and the writer's friends said that the articles were impossible to read, and anyway, finding the tailplane area would take hours of work. In a way, this month's article is an attempt to answer the challenge behind these conflicting views. All the calculations necessary for finding tailplane area have been incorporated into one large and two small Nomograms, and the underlying formulæ are given below for theorists to chew over.

Nomogram No. 2.

Paradoxically, the tailplane aspect ratio must be decided before its area is found; then the value of " Y " can be quickly obtained. It should be remembered that fitting tip fins makes the effective A.R. somewhat higher than its geometric value. Just what this increase is cannot be easily calculated, and no experimental information is available at the time of writing, but 2 or 3 is probably near enough. Any error in quantities of this size would have a negligible effect on the final answer.

Nomogram No. 3.

The best " all round " position for the C.G. is a quarter of the chord from the leading edge, and in this case " K " is equal to 0·75. For other positions its value can be obtained from the Nomogram.

Nomogram No. 1.

This may seem rather alarming at first sight, but is really just as simple to use as the more normal type. The quality of impressiveness is given by the Reference Block, which is simply a sliding scale. That is, the reference point on line (*a*) must be " slid down " to the corresponding point on line (*b*), as with the examples shown.

Scales (4) and (5) are for the values obtained with Nomograms No. 3 and 2 respectively.

Of the examples shown, " Gallus " is a tandem glider at present under construction by the writer; it clearly illustrates the flexibility of this method of calculation.

For Theorists:

The familiar " Neutral Point " formula can be expressed in the form:

$$\frac{H}{\bar{c}} = y_T \frac{S_T}{S_W}\left(\frac{l}{\bar{c}} - \frac{H}{\bar{c}}\right)$$

and from this:

$$\frac{S_T}{S_W} = \frac{H/\bar{c}}{y_T\left(\frac{l}{\bar{c}} - \frac{H}{\bar{c}}\right)} \qquad \text{equation (1)}$$

where

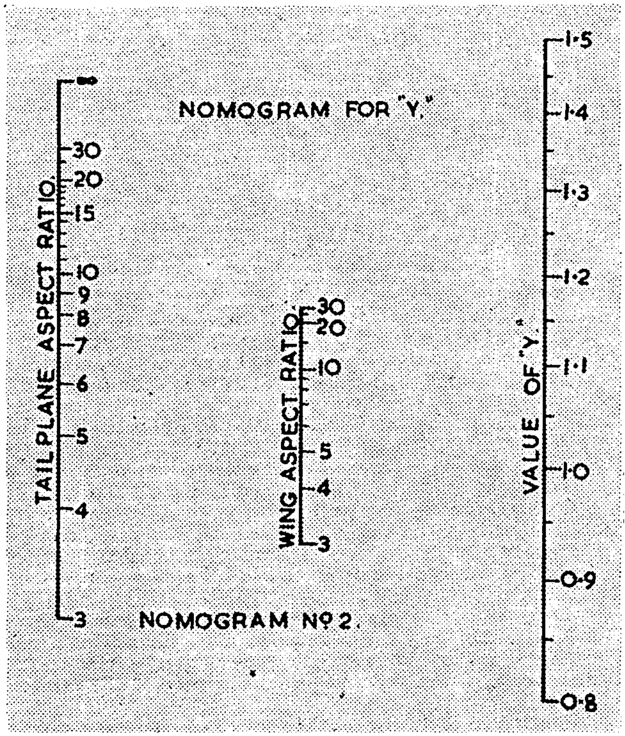
$$y_T = \frac{0{\cdot}1A_T}{2+A_T} \Big/ \frac{0{\cdot}1A}{2+A} \times \left(1 - \frac{3{\cdot}5}{2+A}\right) \qquad \text{equation (2)}$$

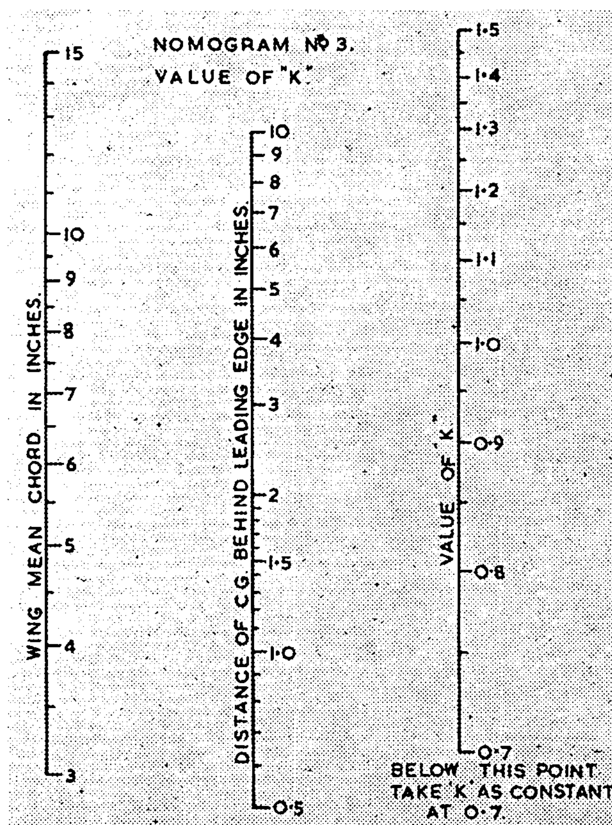
The term H in the *denominator* of equation (1) is of second order importance and thus we can take an average value of 0·5, whilst the static margin is assumed to be constant at 0·25.

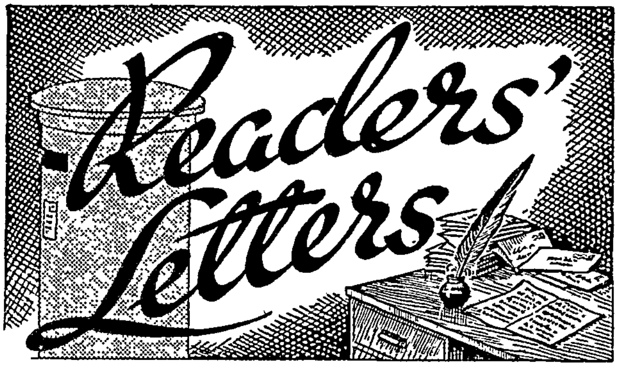
Thus we get:

$$\frac{S_T}{S_W} = \frac{0{\cdot}75 + \frac{x}{\bar{c}}}{\left(\frac{l}{\bar{c}} - 0{\cdot}5\right)\left(1 - \frac{2+A}{3{\cdot}5}\right)\left(\frac{A_T(2+A)}{A(2+A_T)}\right)}$$

where x = distance of C.G. from wing quarter chord, l = distance between wing and tailplane quarter chords, $\bar{c}$ = mean wing chord, A = wing A.R., A_T = tailplane A.R., S_T = tailplane area, S_W = wing area.







The Editor does not hold himself responsible for the views expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters.

DEAR SIR,

Harry Harper's article in the November issue of the AEROMODELLER is most interesting and particularly so to those of us here in Bournemouth for it may not be generally known that Sir Alliott Verdon-Roe has been President of the Bournemouth Model Aircraft Society for the past eighteen years, in fact, ever since the Society was founded in 1930.

Your remarks " Once an aeromodeller, always an aeromodeller " are certainly most appropriate, for Sir Alliott is extremely interested in and conversant with all that is going on in the Aeromodelling world today. In a recent letter to me (I happen to be the less distinguished person in your photograph) Sir Alliott said :—" I much enjoyed the display at Gosport, remarkable progress has been made and I congratulate all concerned ".

I do know he was greatly impressed by the aerobatic show put up by the West Essex members and others taking part in the Control line Contest, and extremely interested in the great variety of small i.c. engines being used at the Gosport Rally.

Now that I am writing on the subject of Pioneers, I would like to take the opportunity of expressing my surprise when reading the recent letter by our old friend Mr. D. A. Pavely. To suggest that the amateur would know little about aeromodelling if it were not for the professional is just nonsense, and I hope that it is *not* the general opinion of all the present day professionals. It would indeed be very true to say, " if it were not for the amateur there would be very few professionals " ! and possibly no S.M.A.E. as we all know it today !

Regarding trophies, it may well be that the original S.M.A.E. trophies were put up by Pro's, but I would like to remind Mr. Pavely that S.M.A.E. trophies represent a very small percentage of those competed for annually throughout the country and to quote but one instance, out of 13 cups and Trophies possessed by the Bournemouth Model Aircraft Society *to date* only *one* came from a professional, if an employee of a Model firm can be cited as such !

Personally, I rather like the expression of Eddie Keil :— " Let's forget I am a manufacturer when I am on the field ", and I sincerely hope that is how the majority of the present day Pro's feel about it.

Boscombe, Bournemouth. H. F. WELLER.

DEAR SIR,

In your January issue we noticed with great concern that Clubman raises the question of a decision, presumably taken by the S.M.A.E., regarding the banning of reaction (Jet) propelled models from free flying, but we must presume that this decision refers to Ramjet motors only.

Jetex Motors, however, would also appear to come under the general category of reaction motors and although we can only assume that Clubman was referring to the former type, the way the paragraph was worded might easily lead members of the public to believe that Jetex propelled models should also be banned from free flight. It is perhaps as well to mention here that our Company is still in negotiation with the S.M.A.E. regarding the use of Jetex Motors in competitions as the Royal Insurance Co. have agreed that the Jetex Powered Models can be included in their general insurance policy with the S.M.A.E., as they have been convinced, as have most of the members of this august body, that a Jetex powered model is even less likely to cause damage than either a small Diesel or I.C. Engine. powered model with a propeller turning at several thousand revs. a minute.

The fire risk is negligible and as the thrusts given from these motors are small enough for light weight models only to be built it must be obvious that they are classed nearer to rubber powered jobs than other forms of powered models.

This letter is written, not with the idea of plugging Jetex Motors, but bringing to the notice of the model aircraft world the fact that a serious injustice which will effect export sales from this country very considerably, may easily take place if the home country, by imposing bans of this nature on unique and really new inventions, places restrictions on all Jet power units, however innocuous they may be.

Wilmot, Mansour & Co. Ltd. J. N. MANSOUR.

DEAR SIR,

It is a known fact the world over that British engineering and materials are the finest ever, yet with all the machinery and brains at our disposal we cannot produce a petrol motor to beat the Yanks.

How much longer are we British Aero-mods to rely upon Yankee motors to get the best out of our models ?

There are some good British diesels on the market, if they can be made why not some petrol motors ?

From my point of view there is no interest in a diesel, it either goes or it doesn't and there the interest ends. With a petrol motor there are many component parts which all have interest in them, and if there's a stoppage one can examine and test to find the trouble, and when found one feels he has done an interesting job.

So please what about an English Arden or Dooling ?

London, E.5. W. A. TICKMAN.

DEAR SIR,

In a previous letter I stressed the hope that articles on Radio Control should be based on practical results and *facts*.

Apparently Mr. P. R. Payne in your December issue has based his statements upon Mr. P. Hunt's book and upon the L.S.A.R.A. (possibly their pamphlet of January, 1948)

I should like to point out that since early this year the frequencies allocated by the G.P.O. are as follows :—

26·96 to 27·28 MC/s.
464 to 465 MC/s.

Secondly, under " Audio Frequency Control " Mr. Payne states that " not many widely spaced frequencies can be crammed into a band which is only one MC/s wide."

In fact the entire audio range can be accommodated as well as the supersonic range. Even on the 27 MC/s band which he has given, 7·500 cycles is the limit or 16·000 on the present band.

Perhaps Mr. Payne was thinking of multi Radio Frequency channels. So please, statements which can be verified must not be misleading.

To forestall a reply relating to separation and harmonics, I have demonstrated to the R.C.M.S. a three channel (A.F) job with three frequencies between 200 to 1,000 c/s weight, including three valve receiver and batteries less servo motors being under 20 ozs.

Richmond, Surrey. S. HONNEST-REDLICK.

P.S. *I should like to enter a word for the "Radio Controlled Models Society" (Secretary R. Lawton, 10, Dalton Ave., Manchester) and would mention in particular the London Area Branch which welcomes new members.*

(Ed.—*Reader H. R. is correct with his latest G.P.O. frequencies, and also correct in assuming contributor Payne's statements were based on L.S.A.R.A. report. Main purpose of article, however, to arouse correspondence on radio control has been achieved to judge by letters received and we invite further correspondence and MSS. from those working on this particularly interesting section of our hobby.*

Douglas C47 Dakota Mk.III

AIRCRAFT DESCRIBED No. 16 BY E. J. RIDING

AT the time of writing, the Douglas C.47 Dakota is used on the majority of the world's airlines and by a great number of charter firms as well, although indications point to the fact that it has at last reached its hey-day. It is fitting therefore, that space should be devoted to the purely airline version of this famous transport aircraft, and it is by popular request that we present it in our series this month.

The first Dakotas of any mark to be used on a British airline were those allotted to British Overseas Airways Corporation during the early months of 1943. These machines were ex-R.A.F. C.47's which had been issued with the Service serial numbers FD.769, 770, 771, 777, 773 and 796.

On being converted for civilian use they were re-registered G-AGFX, to G-AGGB inclusive and G-AGGI respectively. At various times during the following months additional batches of Mk. III's and IV's were added to the strength of B.O.A.C's fleet, until by the beginning of 1945 the corporation had taken delivery of 59 aircraft for use on their European air routes. When British European Airways Corporation was formed in 1946, most of B.O.A.C's. Mk. III's were gradually transferred to the new concern, until at the time of writing, all B.O.A.C's Dakotas are Mk. IV's with four exceptions. It is now learned that thirteen of these former are up for disposal.

The Mk.IV machines differ from the Mk.III's in that they have lengthened carburetter air intakes, thermostatically operated oil cooler shutters and a modified hydraulic system whereby a small jack replaces the bunjee cord assister on the undercarriage up-lock gear. The basic Mk. III as used by B.E.A. has been modified to carry 21 or 24 passengers, or it can be used as a freighter by stripping out the cabin furnishings. Some machines, e.g. G-AJHY—G-AJIC inclusive have the large entry doors sealed off and substituted by a smaller door for passengers only. In the 21 seater the seats are arranged in seven rows of three, one seat on the port side and two on the stbd. side, and in the 24 seater six rows of seats are arranged in pairs on both sides of a central walkway. Our heading photo shows EI-ACK "St. Albert," belonging to Aer Lingus, leaving Northholt for Dublin, and the lower ones show examples of Mk. III's with the two different types of doors referred to above.

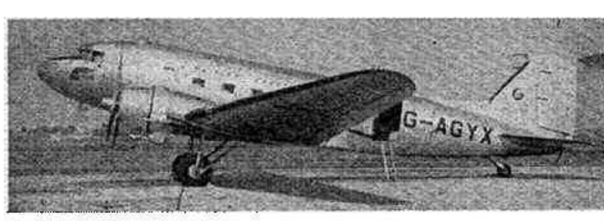
Construction. All metal. The fuselage is built up from light alloy formers, " L " shaped stringers with sheet covering. The wings employ three spars made from light alloy extrusions and sheet webs to which are riveted the rims which in turn carry a system of " L " stringers running spanwise across the wing, and to which is riveted the upper and lower skin. The tailplane and fin are of similar construction. The ailerons, elevators and rudder are fabric covered light alloy structures. Fuel is carried in four main tanks situated two in each side of the centre plane. Power is supplied by two Pratt & Whitney SIC3-G Twin-Wasp radial engines driving Hamilton Hydromatic 3-bladed metal airscrews.

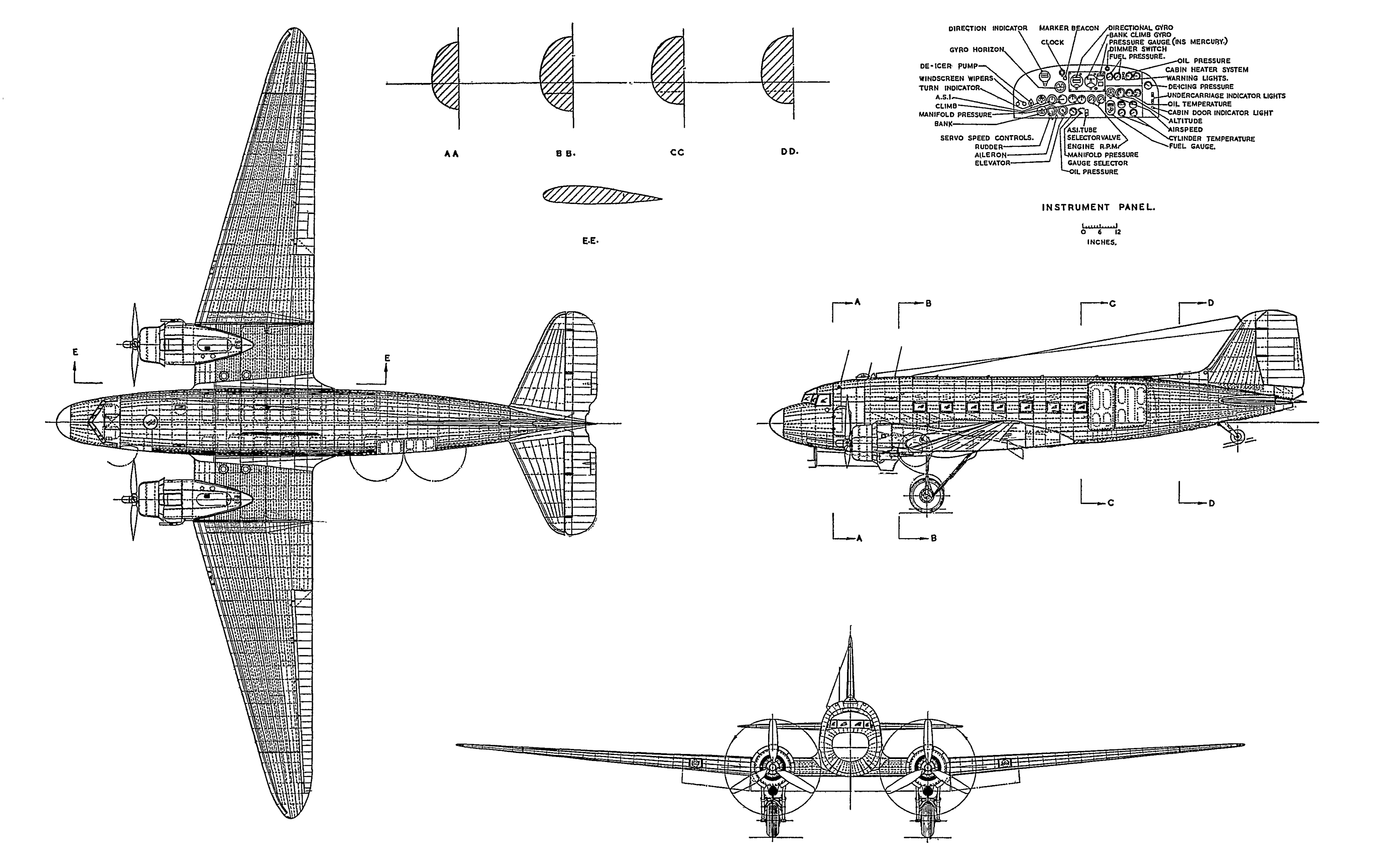
Colour. British European Airways. Passenger versions :—Natural metallic finish all over. Red letters on fuselage and wings, Red Speed Key insignia on nose and fin. Corporation's name in red on both sides of fuselage above cabin windows. Black or dark blue apron in front of pilot's windscreen. Black de-icing bags on leading edge of outer wings, tailplane and fin. Freighter Version :—Same as above but with black registration letters on fuselage, and " Freight Express " painted in black between the first cabin window and pilot's side window. Aer Lingus :—Natural finish, emerald green flash and letters on wings and fuselage.

Specification :—Length 64 ft. 6 ins. Span : 95 ft. 0 ins. Height : 16 ft. 11 ins. Max. Loaded Weight : 28,000 lbs. Max. Speed : 230 m.p.h. Cruising : 160 m.p.h. Landing : 70 m.p.h. Service Ceiling : 23,200 ft. Range : 1,600 miles. Wing Area : 987 sq. ft.

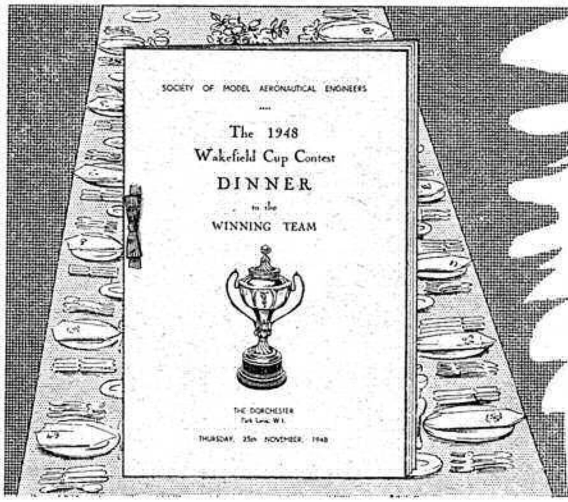
The G.A. Drawing is printed here to a scale of 1/144. ¼ in. to 1 ft. reproductions of it may be obtained price 3/– from Aeromodeller Plans Service, and photographs, price 2/– each half plate, or 6/– per set of four from Eaton Bray Studios.

"Aeromodeller" Photos.





DOUGLAS C47. DAKOTA Mk. III.



S.M.A.E. NEWS PAGE

RARELY do the "powers-that-be" honour our chosen hobby with their presence and support, so it is sincerely hoped that the precedent created on November 25th, 1948, will continue to the benefit of the movement throughout the country. The occasion was the dinner in honour of the victorious Team which secured the Wakefield Trophy for Great Britain last August, and the distinguished gathering shewed full appreciation of their efforts.

Our host, Sir Robert Bird, Bart., M.R.I., Vice-President of the S.M.A.E. is to be warmly congratulated on his foresight in bringing our achievements to the notice of influential personages who should be informed of our work and successes, and in my humble opinion a great amount of prestige will accrue from this very important event.

Held in the Orchid Room of the Dorchester Hotel, Park Lane, some seventy people sat down to dinner, an appropriate touch being given to the scene by a display of the team members' models arranged behind the top table, flanking a trophy of flags of the competing nations.

With the President, the Rt. Hon. Lord Brabazon of Tara, in the chair, distinguished guests included the Minister of Civil Aviation, Lord Pakenham, Sir Patrick Hannon, M.P., Mr. F. Bray, Under-secretary for Further Education, Mr. Whitney Straight, and Mr. Percy E. Chorley, Liaison Officer of the American Academy of Model Aeronautics. The technical and lay press were well represented, my dinner partner being Mr. Courteney Edwards of the "Daily Mail".

Other guests included members of the S.M.A.E. Council, Fellows, Area Delegates, and last but by no means least, past winners of the famous cup. Unfortunately the weather (which at that period was extremely foggy) kept away Mr. J. W. Kenworthy, but all the previous winners were there with the exception of J. B. Allman who is now in South Africa.

Lord Pakenham opened the speeches by proposing the toast of the Winning Team. Whilst appreciating our hobby he admitted that his schoolboy son was better fitted technically than himself, he being a very keen aeromodeller! However, the Minister expressed full appreciation of the aeromodelling movement and its achievements, and there was no doubt from the tone of his speech that aeromodelling would receive full consideration from his lordship. Roy Chesterton, in replying to the toast, paid full tribute to his fellow team members and their hosts, and is to be congratulated on a very fine speech.

Mr. Bray (deputising for the Minister of Education who was detained at the House of Commons) stressed the advisability of linking up with the Youth Movement in the country, a point which was well taken by Mr. A. F. Houlberg in a later speech when replying to the toast of the F.A.I. proposed by Sir Patrick Hannon.

The toast "Our American Hosts" was proposed by Lord Brabazon who, in a typical "Brab speech, disclosed that he is nowadays known as the "human pterodactyl" and made some humorous references to certain newspaper headlines in connection with the Brabazon aircraft which were most apt when applied to himself. Mr. Chorley in replying expressed the delight of his countrymen on our success and the hope that this international event would continue from strength to strength from now onwards.

This concluded a most enjoyable evening, made all the more agreeable by meeting many old friends, some not quite so active in the modelling game as they used to be, but nevertheless still with the movement at heart.

It is my sincere wish that better appreciation of our hobby in Ministerial circles will result from this function, and if this is effected in only a small measure, Sir Robert Bird will have achieved a tremendous benefit for the aeromodellers of this country.

C.S.R.

WAKEFIELD FUND DONATIONS

GENERAL	£	s.	d.
The Aeromodeller ...	200	0	0
Vickers Armstrong Ltd.	105	0	0
Sir Robert Bird	100	0	0
International Model Aircraft	100	0	0
C. C. Wakefield & Co. Ltd.	52	10	0
De Havilland Aircraft Co.	50	0	0
Fairey Aviation Co. ...	50	0	0
Royal Aero Club ...	25	0	0
E. Keil & Co. Ltd. ...	10	10	0
"Flight"	10	0	0
All Herts Rally	5	9	6
Folland Aircraft	5	5	0
E. W. Evans	5	0	0
R. F. L. Gosling	5	0	0
E. E. Whittle	2	2	0
Millar (prize)	1	1	0
CLUB DONATIONS	**£**	**s.**	**d.**
Accrington & District M.F.C.		7	6
Aberdeen M.A.C. ...	1	6	0
Arbroath M.A.C. ...		12	6
Alton & District M.A.S. ...	1	0	0
A.S.T. Model Eng. Society	1	0	0
Aeromodellers in Harrogate–Knaresborough District		15	0
Bathgate & District M.F.C.	1	1	0
Bradford M.A.C.	3	3	0
Bournemouth M.A.S. ...	1	0	0
Bushey Park M.F.C. ...	1	0	0
Barnsley & District M.A.C.	1	0	0
Birmingham M.A.C. ...	2	10	6
Blackheath M.F.C. ...	2	0	0
Blackheath & Halesowen M.A.C.	1	0	0
Bolton & Farnworth M.A.C.	1	0	0
Birmingham Black Eagles M.A.C.		10	0
Bernard's Brotherhood of Boys		4	0
Crew & District M.F.C. ...		15	0
Colchester Society of Model & Exp. Engrs. ...		7	6
Chichester & District M.A.C.	1	0	0
Cardiff M.A.C.	1	0	0
Croydon & District M.A.C.	1	0	0
Cambridge M.A.S. ...		10	0
Chelmsford Society of Model Engineers ...	1	0	0
Cheam M.A.C.	1	0	0
Durham City M.F.C. ...	2	0	0
Dundee M.A.C.	1	0	0
Darfield & District M.A.C.	1	0	0
East Kent M.A.C. ...	1	0	0
Erdington & District M.A.C.	1	7	6
Enfield & District M.A.C.	1	0	0
Ealing M.F.C.	1	0	0
Eastbourne M.F.C. ...	1	0	0
Five Towns M.A.C. ...	1	0	0
Gravesend Aeromodelling Club	1	1	0
Grimsby & District M.A.C.	1	0	0
Herne Hill Power Club ...	1	1	0
Harrow M.A.C.	3	3	0
Hackney M.A.C. ...	1	0	0
Halstead & District M.F.C.		10	0
Hull & District M.A.C. ...	1	0	0
Hull "Pegasus" M.F.C. ...	1	0	0
Higham Ferrers & District M.A.C.		10	0
Ilford & District M.A.C. ...	1	0	0
Islington M.A.C.	1	1	0
King's College M.A.C., Taunton	1	0	0
Kirkcaldy M.A.C. ...	1	0	0
Leicester M.A.C. ...	1	1	0
Littleover M.A.C. ...		10	0
Luton & District M.A.S. ...	5	2	0
Malden Eagles M.A.C. ...	1	0	0
Manchester M.A.C. ...	1	0	0
Merseyside M.A.S. ...	2	2	0
Mansfield & District M.A.C.	1	0	0
Moonrakers M.A.C. ...	1	0	0
Newport & District M.A.C.		5	0
Northampton M.A.C. ...	1	0	0
Northern Heights M.F.C.	17	10	0
North Kent M.A.S. ...	1	1	0
O.D.M.A.C.		7	6
Oakington M.A.C. ...	2	0	0
Odiham & District M.F.C.		10	0
Pontefract & District M.A.C.	1	0	0
Portsmouth & District M.A.C.	1	0	0
Potters Bar M.A.C. ...	1	0	0
Peterborough M.A.C. ...	1	0	0
R.A.F. Wittering Model Club	1	0	0
R.A.F. Wellesbourne M.A.C.		10	0
Regents Park & District M.F.C.	2	0	0
R.P. M.F.C.	1	0	0
Rugby M.E.S.	1	1	0
R.A.F. Calshot M.A.C. ...	1	0	0
R. Ae.S. Portsmouth Branch	1	1	0
Sevenoaks & District M.A.C.		10	0
Spalding & District M.A.C.	1	0	0
Southend Senior Model Club	1	0	0
Southampton M.A.C. ...	1	0	0
Sudbury Heights M.A.C.		15	0
Tipton & District M.A.C.	1	0	0
Tunbridge Wells M.A.C.	1	0	0
Tamworth & District M.E.S.	1	1	0
Torquay M.A.C.		10	6
Upton M.A.C.	1	0	0
West Essex Aeromodellers	1	1	0
Willesden & District M.A.C.	1	0	0
Worcester M.A.C. ...	1	0	0
Wolves M.A.C.	1	0	0
Whitefield M.A.C. ...	1	0	0
Whittlesey M.A.C. ...	1	0	0
York M.A.S.	1	0	0
	£840	11	0

With due apologies to Messrs. Watneys for the writing on the wall, we present the Ampleforth M.A.C. who appear to be taking either life or aeromodelling very seriously.

THOUGH I hate to use the cliché in what are tragic circumstances, I can only say—"I TOLD YOU SO!" As far back as the August 1948 issue (page 491) I drew special attention to the dangers of control-line flying near high tension cables, and this was further emphasised in the December issue of "Model Aircraft" (page 303). In spite of these warnings, one unfortunate chap has now lost his life as a result of his control-line wires contacting overhead power cables.

Without piling on the agony, may I again ask for special discretion in the flying of these models, as flying in such circumstances can now only be castigated as sheer carelessness and sublime lack of forethought. People must realise there is a bit more to model flying than just building a job and throwing it into the air from the nearest open space.

Without having a "down" on control-lining, I do feel that most of our current difficulties with local authorities is the result of this class of flying, and I think it high time that special areas were set aside in our public parks, etc., for our use. If pitches can be reserved for football, cricket and tennis, surely we are entitled to an area which could be conveniently fenced off for the use of aeromodellers. (The town of Topeka in Kansas, U.S.A., has provided a field complete with two C/L circles as a memorial to their World War II dead. This is a lead that our municipal bodies could well follow, and it would perhaps be a good idea if club secretaries armed themselves with copies of the January 1949 issue of "Air Trails" to show their local committees when approaching for permission to use public spaces.)

Before leaving the subject of C/L flying, the following quotation from an American reader is extremely interesting. He writes:—

"I sincerely enjoy your magazine, and feel it presents the true spirit of aeromodelling as a sport, although I do pray that your staff will not tend to shift to control-line flying and eventually suffer the setback that we in the U.S. are now experiencing. Control line flying has killed aeromodelling as a sport in the U.S., and I believe (based on 20 years of active interest) that the sport has lost better than three quarters of its supporters due to the influx of C/L flying and the resulting lack of science, chance, etc., which is essential to a true "sport". In the end even the commercial firms have lost out here, as the drastic loss in advertising space in the U.S. magazines will witness, as well as the price drop in motors".

Well, I hesitate to comment on that other than to state that this is not an isolated opinion, many chaps expressing the same misgivings when I spoke to them in America last August.

My travels during the past month included three social functions at such widely separated places as London, Manchester and Birmingham. The London affair was the **NORTHERN HEIGHTS M.F.C.** Dinner and Prizegiving and was a most enjoyable event. Many guests swelled the numbers, and the ladies were well catered for with plenty of dancing.

The second event was the first club dinner to be staged by the **SALE AERO CLUB.** A very pleasant evening was enlivened by speeches, and the presentation of the years' prizes by the club President, Capt. Steel, Messrs. Barnes and Holmes being the recipients of most of the attractive trophies. (Jolly good these, and out of the rut. Any club wishing to present decent prizes should get in touch with the Sale lads for details). This trip was all the more enjoyable being right on the doorstep, as it were, of my early modelling days—though there wasn't a club operating in Sale at that time.

And so to Birmingham for the first annual Dinner of the **BIRMINGHAM M.A.C.**, a credit to the club for a "first-timer". "Chuck" Doughty had conducted an instalment system during the season so that junior members (and others) would not find the expense too much in one lump, and the scheme was a marked success. Sir Robert Bird and Mr. Houlberg were also in attendance, and the company enjoyed themselves thoroughly, including the cabaret! (The wife took a dim view of having to walk in front of the car leading me through thick fog on the way home! Took us over four hours to cover 36 miles.!!)

Response to the Wakefield Fund "raffle" organised by the **MANCHESTER M.A.C.** was worthy of better support from the clubs, only some 25 per cent. of those circularised returning the cards. The winning time was 2 hours, 14 minutes and 52 seconds, the list of prizewinners being:—

1.	D. Thomspon	Constarpline
2.	B. Hunt	Berkhamsted
3.	G. Stewart	Alton
4.	M. Thompson	Blyth
5.	A. E. Pullin	London, S.E.2
6.	G. R. Smeed	Chessington
7.	H. Jessop	Addlestone
8.	—Ward	Ipswich
9.	J. H. Fisher	Shepstone
10.	G. Reynolds	Pontefract
11.	R. Mason	Orpington
12.	J. D. Simpson	London, W.I.

The **NORTH WESTERN AREA** are advocating the institution of an Annual British Championship meeting, as an addition to the firmly established Nationals. To quote from the communication, "*this would have a restricted entry and would be held centralised over a period of two days, and, if inaugurated, would evolve into an annual battle between fliers of proven ability which would be really something to watch—as opposed to the discouraging scenes typical of the Nationals, where the bored onlooker is led to believe that the movement is still in its infancy. Too late for the* 1949 *season, the suggestion is nevertheless worthy of careful consideration (by those with a progressive outlook) for* 1950." (Readers views on this subject will be welcomed).

BRADFORD M.A.C. were the winners of the Rootes Trophy for 1948, with Blackpool and Whitefield runners up. Ray Musgrove wins the Gosling Distance Trophy with a flight of over nine miles.

Some remarkable r.t.p. flights were recently witnessed during a contest held by the **SHEFFIELD S. of A.M.**, as a result of which a claim will be submitted for the British Class "A" record. E. C. Muxlow made two flights of 5 : 20·5 and 6 : 05, this latter figure being the subject of the claim. Second placeman was C. E. Exley with 4 : 43 and 4 : 08, third man R. Parsons with 1 : 51 and 3 : 53·5.

DOVER YOUTH CLUB M.F.S. has increased its membership by over 100 per cent. during the season, and has the splendid advantage of support from the Town Council by the provision of a special ground for C/L flying. (Other towns please note !) They have four flying fields, including Hawkinge Aerodrome, and a good slope soaring area.

In spite of losing their flying ground for much of the season, the **PHOENIX M.F.C.** have had a very successful season, records going up in consequence. Mr. Brace holds the rubber record at 2 : 40 and power at 2 : 35·5 on a 20 second motor run, while the glider figure goes to A. G. Way with 2 : 55.

The **HALIFAX M.A.C.** have been prospecting around for a new flying field, and have settled on Flints' Moor, where the inaugural meeting was greeted with pouring rain ! In spite of the conditions, E. Hardy put up 3 minutes with his "Fugitive" glider, and W. Green's 2 : 30 with his "Vanda" was worthy.

Records have been set by the **ESTUARY POWER MODELLERS** as follows :—

Power :	D. Richardson	5 : 35
R.T.P. Speed	D. Richardson	50 m.p.h.
Sailplane :	K. Branfield	12 : 11
Sailplane Canard	R. Chapman	2 : 16

A newly acquired McCoy 49 Redhead is expected to hot things up in the control line class, where plenty of stunting is taking place.

An Xmas Eve dance arranged by the **GODALMING & D.M.F.C.** was a great success, as was the open gala during which 4 guineas was raised on behalf of the National Institute for the Blind. Their C/L expert, "Skipper" Rowe, has got something entirely new in C/L flying—the model remains in the centre of the circle, and Skipper does all the aerobatics !

Two new records have been established in the **AMPLEFORTH COLLEGE M.A.C.** recently. M. Pitch turned in a good flight with his power model to raise the ratio record to 12·0 and R. A. Twomey has pushed the indoor free-flight record to 0 : 50 in a smallish hall. Other club records are 8 : 45 open glider, and 21 : 45 open rubber.

Camping at Eaton Bray brought a new club record to the **CHELSFIELD M.A.C.**, a glider being timed for 12 : 05 o.o.s. Membership has gone up from the original six to over forty.

Members of the **BOLTON & FARNWORTH M.A.S.** have been busy getting a new clubroom shipshape, size 60 × 20 feet. In contrast to most clubs, this group think the National programme too crowded, and favour a reduction in the number of contests !

With reference to the recently announced Easter Rally proposed by the **EVESHAM & D.M.A.C.**, Honeybourne Aerodrome is now no longer available owing to ploughing up by the Ministry of Agriculture and Fisheries. A new venue will be announced as soon as arrangements have been made.

The **MONIFIETH M.A.C.** started off with two members, but now number 23, all juniors. They want some seniors, so what about it you lads in Angus. In spite of their junior status, the club had a big success when M. Stark placed first in the K. L. M. Power contest held at Abbotsinch, winning a cup and a four day trip to Holland.

First of the **DARLINGTON M.A.C.** winter rallies was held at Croft Aerodrome on December, 5th. The weather changed from bright and mild on the 4th to dull, hazy and very cold on the Sunday, but that did not deter some two hundred modellers turning up. The wind stopped a lot of entries, but everyone had a good time, despite plenty of cross-country running and many o.o.s. flights. Results were :—

Glider :	J. Knowlson	(Thirsk)	4 : 00
	— Shawcross	(N. Shields)	3 : 23
Rubber :	— Chambers	(Teeside)	1 : 54
	J. Irwin	(Darlington)	1 : 31·5
Power :	T. Merrick	(Middlesbrough)	3 : 11
	J. T. Walker	(Darlington)	1 : 42
C/Line :	J. Shufwell	(Teeside)	47 points

The **READING & D.M.A.C.** arranged a "proxy contest" with their American namesakes in Reading, Pennsylvania, during which the British model won the rubber event with an o.o.s. flight of 10 : 00. An extract from the American communique states "*the day of the contest was very windy (25 m.p.h.) and thermals were in evidence. I flew your model at noon, but it did not gain enough altitude to thermal, and had less than two minutes time. The next flight at* 12.20, *I used* 700 *turns and it performed* 2 : 10. *The last flight at* 1 *p.m. wound fully, was out of sight in ten minutes and lost. I lost my own model on the first flight in* 8 : 45".

Repeating last year's excursion, members of the **BLACKHEATH M.A.C.** journeyed to Gravesend Airport for another day of friendly contests with the North Kent boys. A high wind drove models out of sight before any good times could be recorded, the final times being :—

Gliders :	J. B. Knight	(N. Kent)	6 : 45·2
	J. P. Trussler	(Blackheath)	4 : 17
	A. Tame	(Blackheath)	3 : 42
	A. D. Hall	(N. Kent)	3 : 37
	W. Bishop	(Blackheath)	3 : 24·5
	J. B. Ball	(N. Kent)	3 : 19·8
Rubber :	A. Russell	(N. Kent)	6 : 05·4
	W. Bishop	(Blackheath)	4 : 51·6
	Miss D. Knight	(N. Kent)	4 : 31·2
	A. R. Thomas	(Blackheath)	3 : 57·5
	R. Watson	(N. Kent)	3 : 06
	J. P. Trussler	(Blackheath)	1 : 14·4
Power :	J. Howard	(N. Kent)	30·65 points
	A. Russell	(N. Kent)	20·25 ,,
	D. J. Dudley	(Blackheath)	20·23 ,,
	H. J. Knight	(N. Kent)	18·58 ,,
	M. Joblin	(Blackheath)	6·35 ,,
	R. A. Dyball	(Blackheath)	5·15 ,,

December 4th saw a large gathering of members at the annual dinner and prizegiving, when Mrs. Cosh presented the prizes. The evening ended with the company duly entertained at a theatre to "Nothing but the Truth"—which it is hoped will sink in to those enthusiasts who return from a day out with the comment "I lost it 5 min. o.o.s. ! !"

Who was the **SOUTHAMPTON M.A.C.** member who set out to attend an Air League lecture, seated himself in the Conference Room at the Civic Centre, listened to a discussion on "Communism and the Church", and then decided he had better try the Royal Hotel, where the aeronautical lecture was taking place ! A goodly number of successes were obtained by members in the recent exhibition staged by the local section of the Air League.

The indoor flying season has got well under way with the **OLDHAM & D.M.A.C.**, class "A" and "B" models making their appearance. Free flight indoor models include a quarter-scale Banshee and Slicker (rubber powered of course !) T. Carey set up a speed record of 28·75 m.p.h. though he hopes to better this soon, the original having "liquidated" itself. Musgrove and Gabriels are experimenting with autogiros, and in spite of a complete lack of gen. good progress has been made. An r.t.p. spot-landing comp. provided much entertainment, the winner flying a microfilm job that (aided by a convenient draught) flopped down practically on the spot ! Mention is made of a commercial plastic prop which burst at 11,000 r.p.m. during a recent meeting causing considerable alarm but no injuries.

Crewe and District M.F.C. would appear to have other attractions besides Aeromodelling! It is a long time since we have seen such a good proportion of lady members in a club group.

Congratulations to the **MERSEYSIDE M.A.S.** on their new type of club magazine—a very creditable effort. A few "Daffinitions" from this issue may amuse you;

JET MODELS—a new type of weapon for keeping inquisitive spectators off the airfield. The corpses have to be removed for R.O.G.

LAMINATIONS—the remarks made by disgruntled aeromods after their new brainchild has just pranged.

NATIONALS—country-wide "free-for-all" in which all the juniors, novices and inexperienced types take part. Usually held in the most inaccessible place available. Good for Publicity.

OPEN CONTESTS—see above.

RESULTS—a form usually filled in by the Comp. Sec. a few days after the event, when his memory has allowed his imagination to get to work.

Two **BLYTH & D.M.A.C.** power models have been lost at sea, in spite of the willing co-operation of both fishermen and coastguards! The club is fortunate in having a good clubroom, and a flying field almost on the doorstep. Club records to date are: Rubber 1 : 30; Sailplane 2 : 59 and Power 5 : 00.

The **LEICESTER M.A.C.** experiment of continuing organised outdoor meetings during the winter months is paying dividends. Semi-scale jobs are coming back into their own, and sailplanes are very popular. G. Dunmore's new job, "Dizziest Diesel" (Elfin engine) has been clocking a ratio of 10 in still air, whilst a hush-hush radio controlled job is receiving its final coats of dope. The club had a very enjoyable social evening (another "do" I went to last month) all sorts of activities making for a cheerful and hectic evening.

Ronald E. Cross of 37, High Street, South Strathfield, Sidney, New South Wales, Australia, wishes to find a correspondent around 18–19 years of age. Any takers?

And so we reach the end of another month's reports—not many it is true, but we are used to that at this time of the year. Don't forget the Control Line warning chaps—can't be too careful. And make a serious effort to get on the right side of the local authorities before they clamp down on your activities.

To you all, my sincere good wishes for the New Year, and may 1949 see even better and more efficient models built, thermals and weather conditions just what we want, and the spirit of sportsmanship keep its place as the main requirement of our (and any other) hobby. The CLUBMAN.

NEW CLUBS

ESTUARY POWER MODELLERS
(Formerly Southend M. Assoc.)
D. W. Richardson, 16a, Hastings Road, Southend-on-Sea, Essex.

CKLAM HALL SCHOOL M.A.C.

HALIFAX M.A.C.
J. Magson, Stack Lane House, Warley, Halifax, Yorks.

LOUGHTON SKYRANGERS M.A.C.
M. A. Hollingworth, 45, Valley Hill, Loughton, Essex.

OSWIN AVENUE (Balby) M.A.C.
B. McBurnie, 48, Carr Hill, Balby, Doncaster, Yorks.

GLASGOW M.A.C.
R. Todd, Jnr., 273, New Edinburgh Road, Addington, Nr. Glasgow.

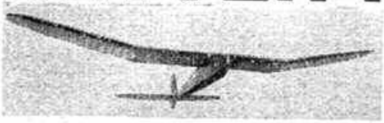
PHOENIX M.F.C.
A. G. Way, 131, Jersey Avenue, St. Annes Park, Bristol 4.

DOVER YOUTH CLUB M.F.S.
H. D. Austen, 1a Balfour Road, Dover, Kent.

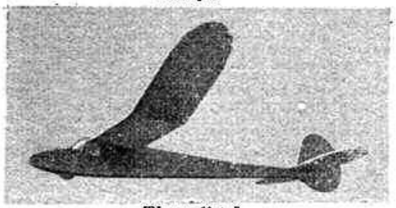
SHEFFIELD S.A.M.
E. C. Muxlow, 9, Crofton Avenue, Sheffield, 6.

EAST BIRMINGHAM M.A.C.
A. D. Sansom, 28. Ingestre Road. Birmgham 28.

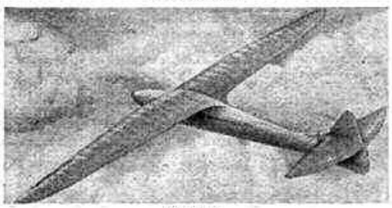
BIGGER & BETTER !



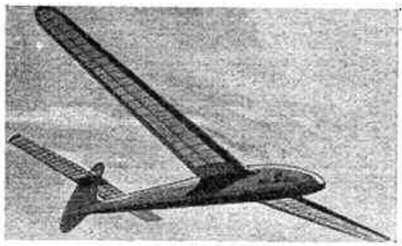
Sunspot



Thermalist I



Nimbus



Moby Dick

GLIDERS.

The trend is towards larger and thus more efficient gliders. NOW is the time to start building for the contest season. Below are featured some of our biggest and best :—

G/183. SUNSPOT. By Ron Yeabsley. Simple outsize ultra-weight glider (weight 2¾ lbs.) Span 10 ft. **8/-**

G/306. THERMALIST I. By R. Minney. International winner, tip dihedral wings, slabsider fuselage. Wt. 4 lbs. Span 11 ft. 5 ins. **12/6**

G/304. NIMBUS. By P. E. Norman. Graceful high performance sailplane, planked fuselage, tapered wings, high tailplane. Span 8 ft. **7/-**

G/310. MOBY DICK. By Eric Smith. Elegant elliptical fuselage sailplane, tapered shoulder wings, high tailplane. Simple construction. Wt. 1½ lbs. Span 6 ft. 10½ ins. ... **8/-**

G/199. SOKOL. By L. G. Temple. Typical Temple constructional performance. Low aspect ratio wing, planked fuselage, basically balsa built. Span 7 ft. **7/-**

Sokol

G/260. FILLON'S CHAMPION. By E. Fillon. Superb design by France's leading aeromodeller. Tapering wing elliptic dihedral, high tail, auto-rudder. On two sheets. Span 9 ft. 3 ins. **15/6**

G/242. PERES I. By Dr. Ing. Platelli, the leading Italian model expert, this high performance sailplane of unusual lines employs extremely robust construction. Span 10 ft. ... **6/-**

G/206. IOLANTHE II. By N. M. Braun. Elliptical fuselage, high performance model with "Thermic" wings. Span 6 ft. **5/-**

G/154. KING FALCON. By R. E. Bowyer. A model with a guaranteed performance, designed on continental lines. Span 6 ft. 4 ins. ... **4/9**

BOOKS.

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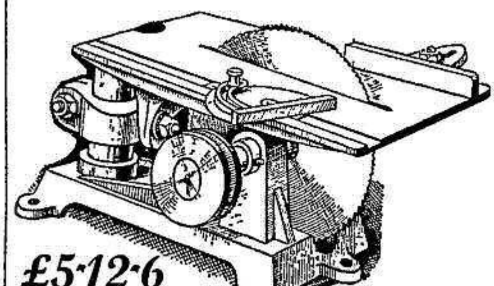

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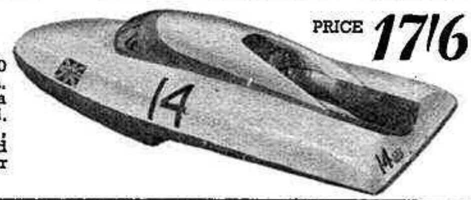

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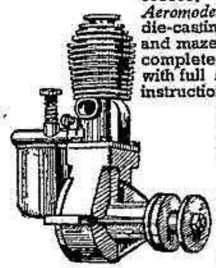

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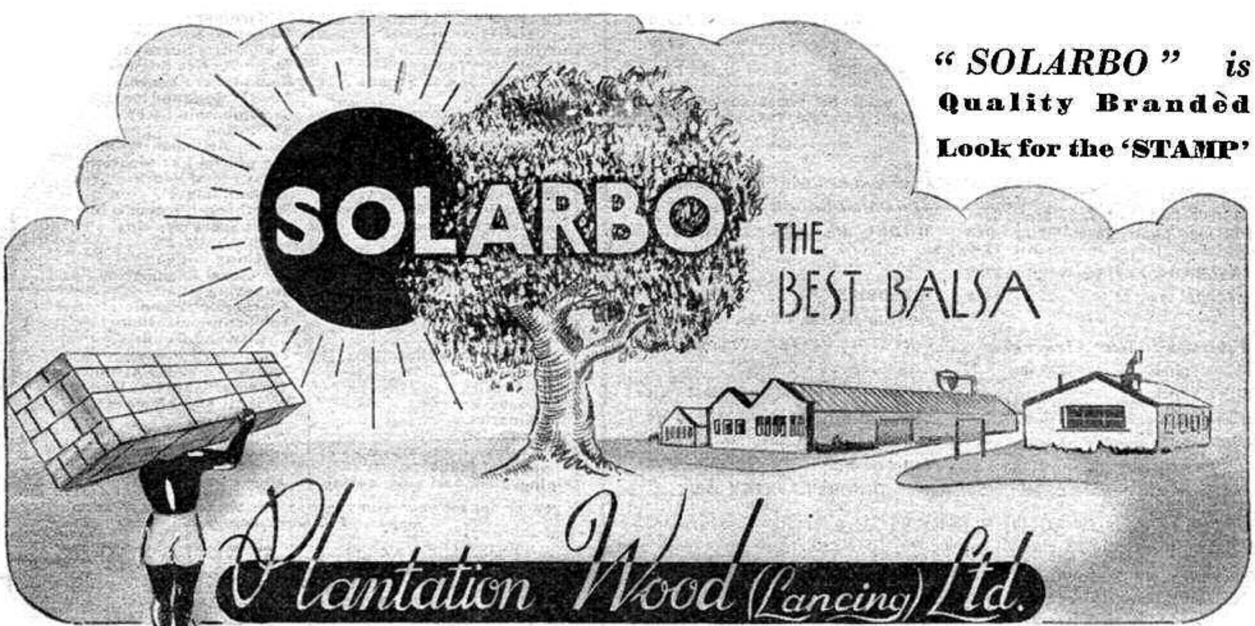

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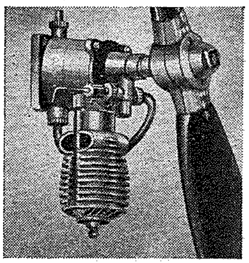

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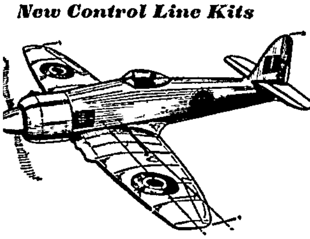

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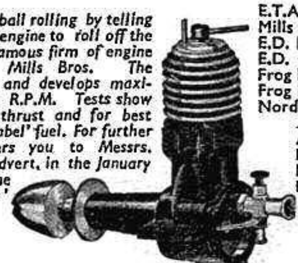

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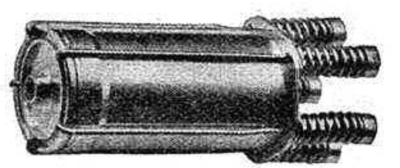

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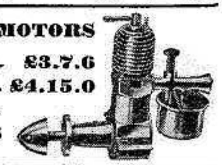

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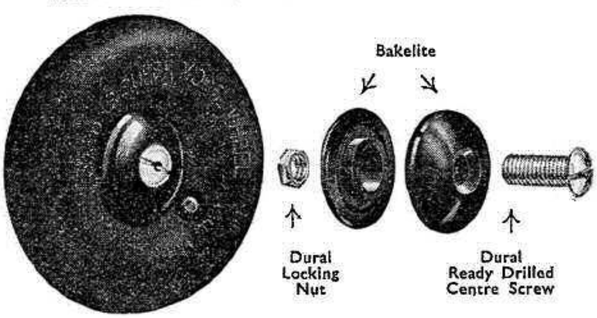

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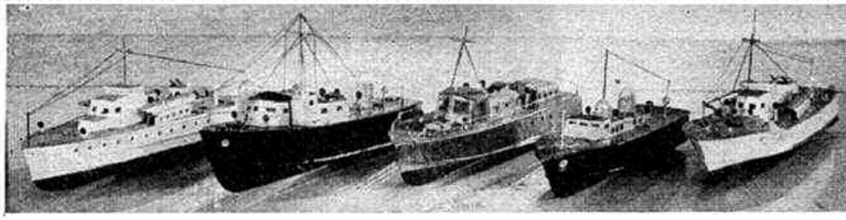

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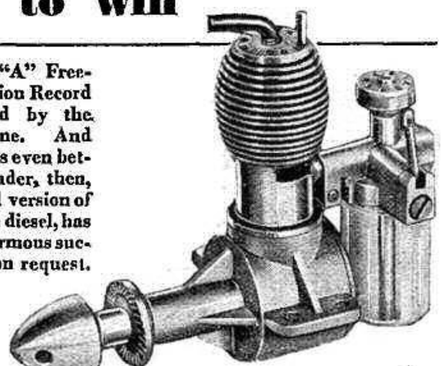

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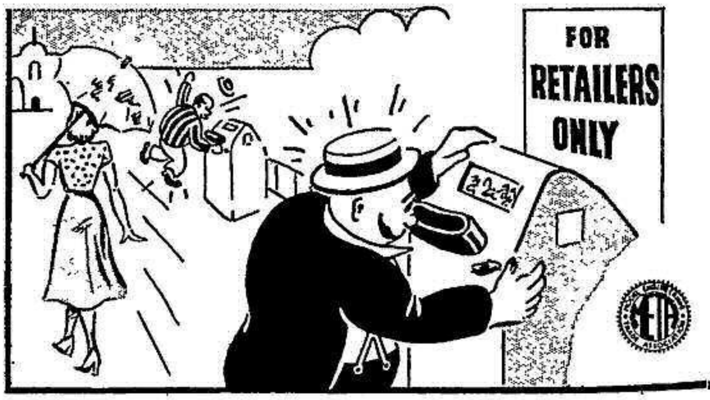

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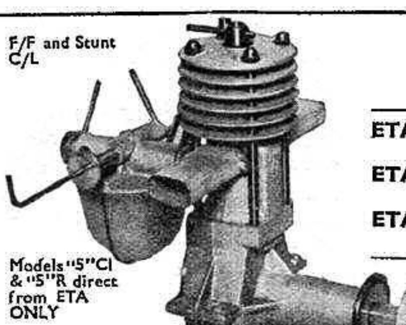

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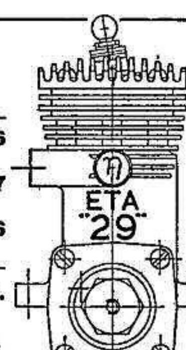

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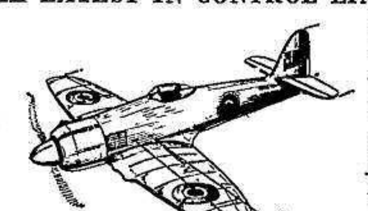

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