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MODEL aircraft

JUNE 1960

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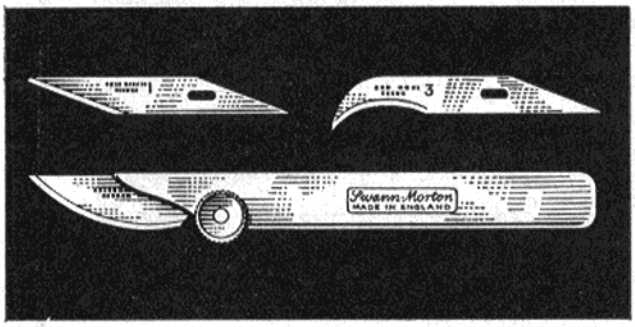

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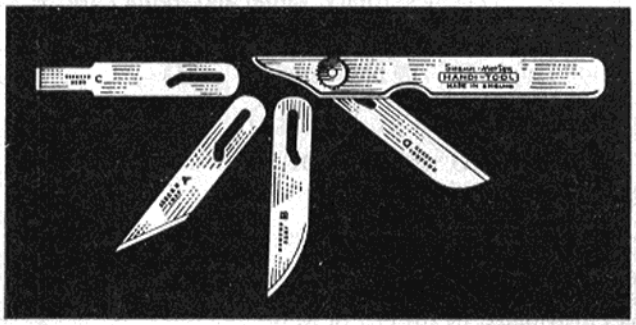

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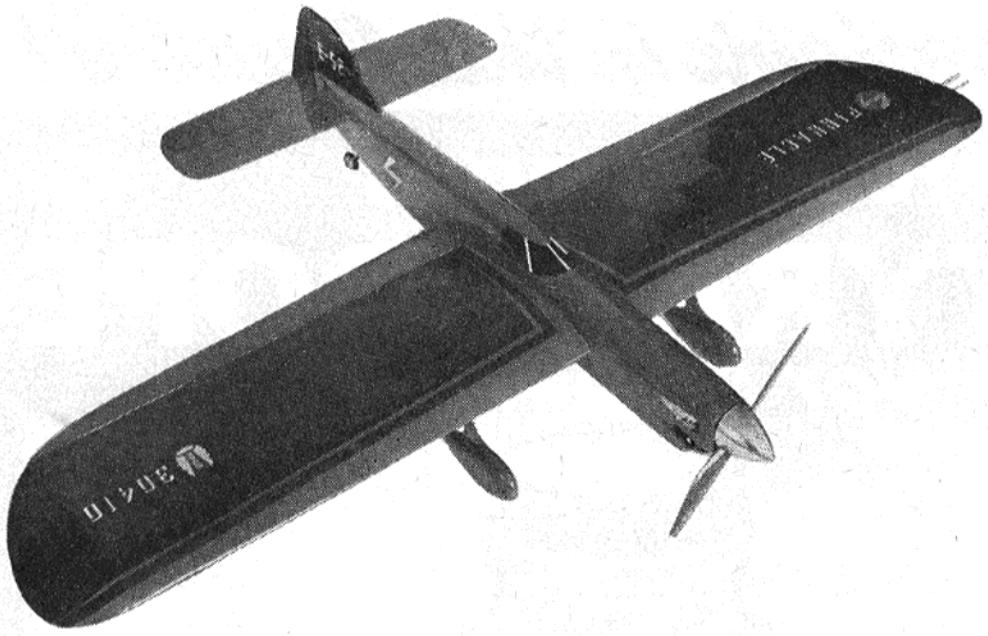

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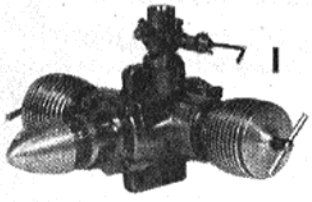

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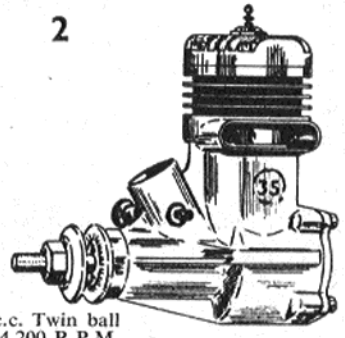

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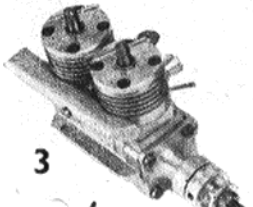

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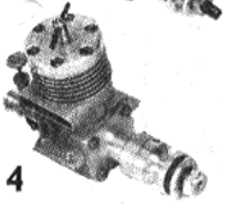

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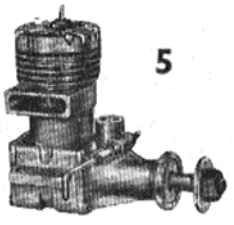

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MODEL AIRCRAFT

JUNE 1960

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IN THIS ISSUE

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Here and There

A MAJOR change in the administration of the S.M.A.E. is apparent from the announcement that a full time paid secretary has been appointed. The need for such an officer has become more and more apparent in recent years, as the amount of work involved in running the Society has rapidly increased.

The S.M.A.E. are indeed fortunate that the ideal man for the job, Major S. D. Taylor, who has been an officer of the Society for 10 years, and honorary general secretary for the last four years, is available to fill the new post. Unfortunately, however, Major Taylor has been troubled with ill health recently and is now in hospital for a serious operation. There will, therefore, be some delay before the benefits of this new appointment are felt, and even after Major Taylor moves in it will be some time before the full effects of the re-organisation he will have to make will be apparent.

We have often voiced complaints about the efficiency of the S.M.A.E., so we welcome this news, not only because we have said for years that such a step was necessary, but because we are sure that if anyone can put the Society's office organisation in order it is Major Taylor. So we congratulate him on his appointment and wish him a speedy recovery to full health so that he can get on with the job.

A New Power Class

AN interesting idea for a new class of power competition has been eagerly adopted by members of London Area S.M.A.E. It is for F/F power models, the only limitation being that they shall not be powered by motors larger than .049's (to be absolutely precise 0.85 c.c. to allow for the A-M 049). There are no wing or power loading requirements and the motor run will be 15 sec., flight maximum 3 min.

Originator of the idea was Croydon Club chairman Jack North, and it was "mulled over" and finalised by interested power fliers. To get the class off to a flying start the organisers of four rallies (Northern Heights, St. Albans, Surbiton and Croydon) agreed to include a competition for these models in their programme, and such is the interest, that already several of these "miniatures" have been seen airborne.

We particularly welcome these .049 models as a new class of power flying that is ideal to encourage competition beginners. Eventually of course a few names will come to the fore as regular winners, but this applies to every form of competition. Nevertheless the new class has one great advantage over other power events—both model and motor are cheap.

To "break in" to the top ranks of the International power class would

require several years of hard work and expense as experience was gained. But with a .049 a newcomer can gain experience—contest, as well as building, design and trimming—while still having fun, and if a model is smashed it's not too disastrous. After all one could build three .049 models in the time it would take to build one F.A.I. machine.

It will be interesting to see if the idea catches on over the rest of the country—we hope it does.

New Type Gala

ANOTHER idea originating from the Croydon Club is a new form of gala. For several years the Croydon Gala has attracted regular support from fliers who like a competition free from petty rules, but still keenly contested and well run. However, to run an event, even of this free and easy type, requires a lot of work and personnel requirements, which strains the resources of a club to the limit. To date Croydon members have abstained from flying in their own gala. Not only did this ensure adequate "staffing," but in the early days Croydon was enjoying a fantastic "winning streak," and it was felt that entries would be encouraged if they knew they would not be competing against the almost invincible organisers.

Now things have changed and Croydon members share their luck, and want to share flying in their gala, with everyone else, added to which there are now far fewer "open" events run under proper fliers conditions. Realising this, and the fact that gala competitors often drop their "specialisation" and like to compete in more than one event. Croydon are now trying the idea of having their gala on three separate days. (For dates see Contest Calender on page 176.)

The main objection to this idea is, of course, that competitors will have to travel to Chobham three times. However, a study of earlier entries showed that the bulk of entrants were regular "Chobhamites," so they would probably be flying there anyhow. It will be interesting to see how the idea works out and whether the attraction of having a full day in which to return a score, will encourage the same people to enter each contest.

Just for the record all contests will start at 10 a.m., finish at 5 p.m. with a fly off to a max. (determined on day). The best three of four flights will count and there will be no attempts.

In a Flap

EVER since Icarus hitched on a pair of oversize bird wings and took a header into posterity, Man has tried to simulate the flapping flight of birds with his own meagre muscle power. Poor old Icarus was let down by his primitive brand of glue, whereas the modern birdman has more sophisticated apparatus at his disposal, and it will be interesting to see to what extent, if any, modern technology assists in the current spate of muscle operated ornithoptery.

Initial glide tests have been less disastrous but no more encouraging than that of the first historic attempt. And this becomes understandable when we consider what a splendidly efficient flying machine the bird is, and how, for technical and biological reasons it is so difficult to copy its mode of propulsion.

It must be appreciated that the bird's wing motion is not just a simple up and down action ; it also involves a rotary action with partial fold back towards the end of each stroke. To reproduce this movement would call for a most complex form of mechanism, and even then could not hope to embody the subtle aerofoil changes etc., that smooth out the action to full aerodynamic efficiency. This underlines the fact that the bird wing is a sensitive, living organism, wonderfully attuned to a whole text book of aerodynamic variation, including changes of camber, angle and airflow control ; all under the skilful operation of the master aeronaut himself, the bird.

Also the bird has a high geared metabolism, which keeps him perpetually hungry, but makes it a dynamo of energy. By comparison, the muscular output of man is that of a donkey engine to a Coventry Climax. As a further aid to levitation the bird has a system of hollow bone structure that gives him a remarkable power to weight ratio.

In the model world the ornithopter has never achieved any great popularity, owing perhaps to the lack of data on the subject and the mechanical problems involved. However, some years ago, the German aerodynamicist, Lippisch, produced an interesting and successful range of flappers, powered both by rubber and I.C. unit, and more recently the record breaking, double wing ornithopter of J. S. White startled the model world with its high performance.

But, in spite of these successes, it would seem on evidence that the birds and the bees are better suited to the flapping wing system than mere man, but, if some peddling aeronaut does manage to get safely airborne, we are prepared to eat our words.

Change of Post

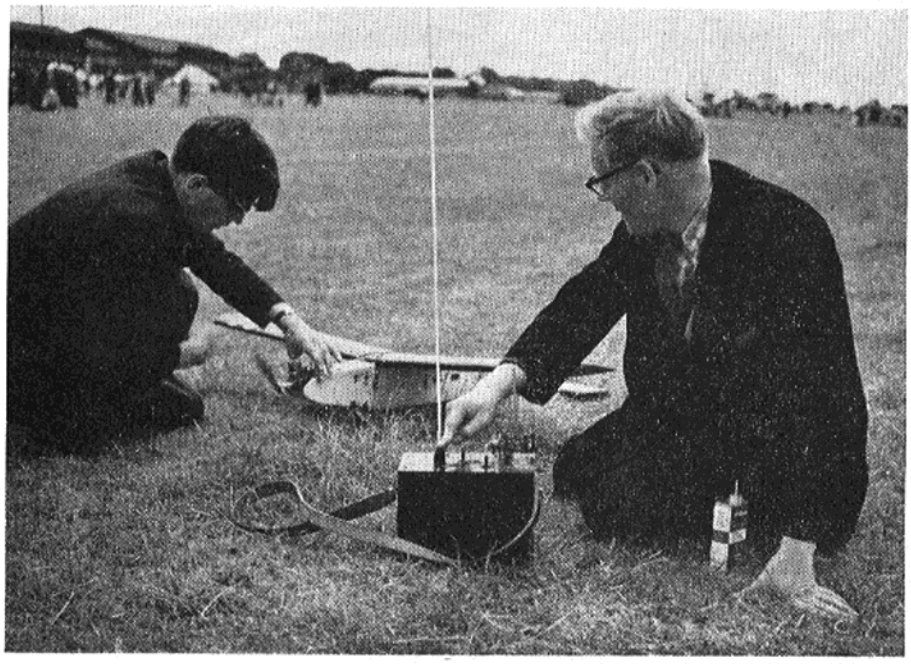
EDITORS of model journals are unique in one respect: they have personal contact with a vastly greater proportion of their readers (through model contests, etc.) than do editors of the majority of other types of magazines. It is, perhaps, on this account, that a lot of readers of our American contemporary, *Model Airplane News*, will, we believe, be sorry to hear that William Winter has given up the MAN editorial chair to join the U.S. journal *Flying* as production editor. Bill Winter's name has been appearing in model journals ever since the mid-thirties—for the past nine years as MAN's editor. One of the pioneers of model aircraft journalism, he has, nevertheless, found time to continue active model building and flying, and his several R/C designs have been built by thousands of modellers all over the world.

To Bill, in his new appointment and to his successor at MAN, we extend our best wishes.

From the right—Number!

MODELLERS in the R.A.F. who join their own Model Aircraft Association are automatically members of the S.M.A.E., and are eligible to enter all S.M.A.E. contests. Until now, however, they have not had individual numbers, and were therefore, not able to comply with the new requirements for the display of S.M.A.E. numbers on their models.

We learn from R.A.F.M.A.A. Sec. Sqdn. Ldr. "Bill" Drinkell that this situation is now rectified, and a block of numbers from 50,000 to 59,000 has been allocated for their use. So from now on, everyone with an S.M.A.E. 50,000 number can be identified as a representative of the Royal Air Force.



The writer successfully flew his G.G. equipped "Loopstick" in numerous contests last year. Plans of this model appear in Part II of this series next month.

ALL FROM ONE

How to obtain "multi" control from a "single" receiver. C. P. Lovegrove describes his "Galloping Ghost" equipment

PART I

WITHOUT a doubt *Galloping Ghost* is the "poor man's multi," in so far as R/C flying can ever be a poor man's hobby. With the right model, in suitable trim and with heaps of practice, one can do all of the manoeuvres in the current multi schedule. When these articles were first drafted in June, 1959, I wrote "almost all of the manoeuvres in the current schedule." I did so because, then, the outside loop and inverted flight seemed nearly impossible to achieve with the G.G. But now, with an improved control box, these manoeuvres have been executed satisfactorily.

At the time of writing I am using a new control system which, pilot-wise, is difficult to fly with, for although stunts are easy, straight and level flight is very tricky. A famous American model flyer once said "It is ridiculous to say a control box is too sensitive to handle satisfactorily. The plane should be made less sensitive, either by alteration of its configuration or by adapting the servos, and the trouble will be cured; the 'over-sensitive' box now being made quite manageable." In my own experience this theory has proved completely true. I never modify a control box circuit unless it is absolutely necessary. The control sensitivity can be completely controlled at the receiving end, either mechanically or aerodynamically.

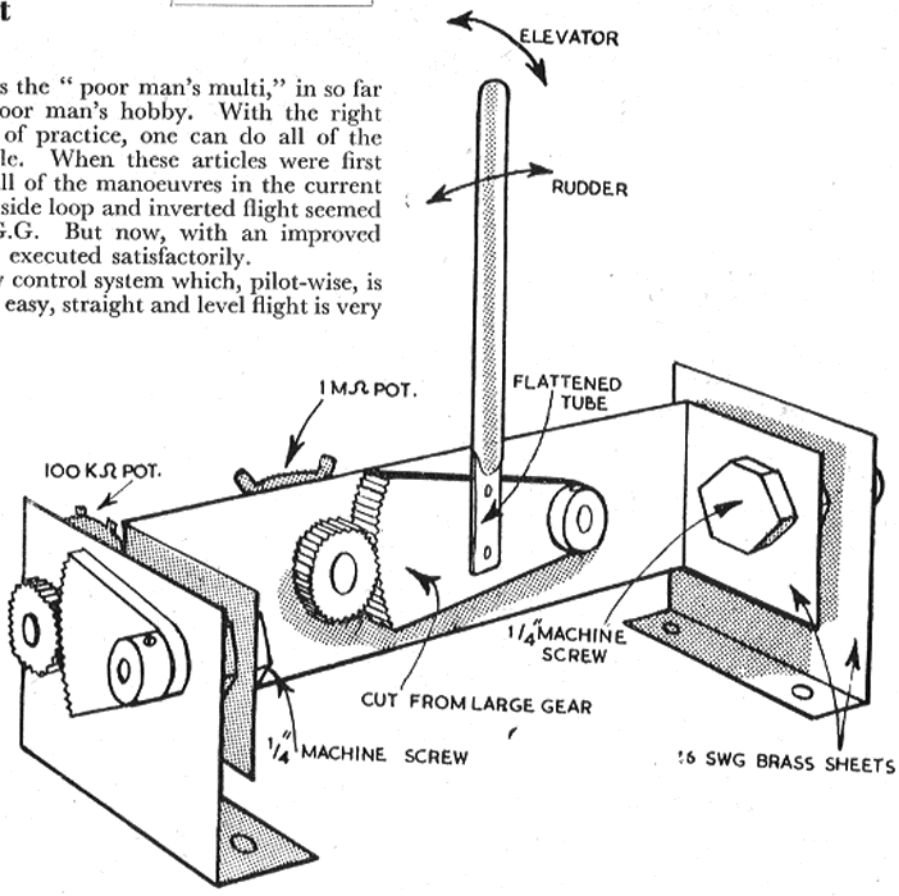
Until I have ironed out all the snags with my present equipment and plane, I shall refrain from giving details but, instead, in these articles will describe the fully developed gear I used just previously. Compared with some of the circuits I see in use today, this is still very much up-to-date.

Let me warn you at the outset that there are inevitably snags to be overcome when you start out with this system. Not the least is that you must learn to fly on dual-simultaneous controls, and, believe me, you are almost certain to suffer a few crashes. So if you cannot persevere in the face of temporary disappointments, then turn to some other article now!

Although I will help you all I can in these articles the ultimate fate of your model will be up to you and providence, but you are holding the joystick!

1. Pulse-Control Circuits

There is, in existence, a circuit using three V4 valves specially designed for this system, which is supposed to give the ideal control conditions. I have tried this circuit, and from discussion at National and A.R.C.C. meetings, I know that others have too, without much success. It is poor in that it gives rather too much mark-space variation. Only about 30 per cent. total variation is required for satisfactory rudder control; with more range than this, one runs a risk of "mixing." For example, left rudder and down elevator suddenly become left rudder and UP elevator. This does not give a tight climbing turn on any but the slowest model; it



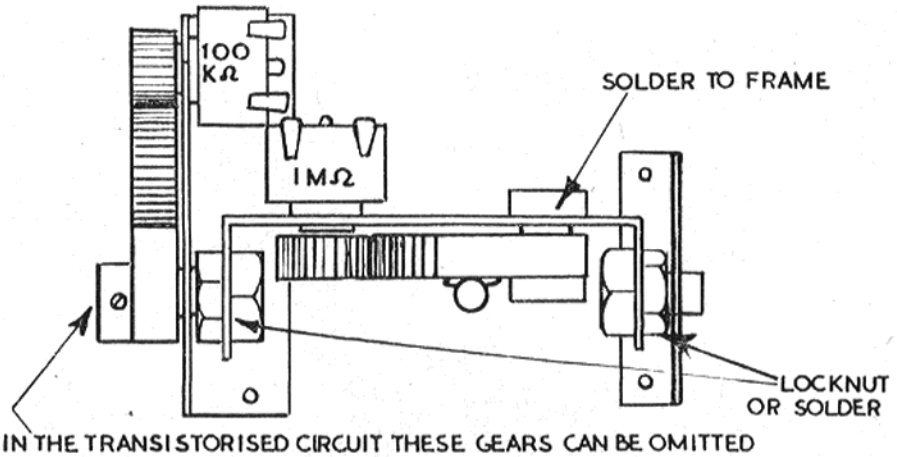
produces a slow roll or a flick roll depending on the speed of the model at the time. Need I elaborate?

This bother can be avoided to some extent by limiting the range of movement of the joystick but it is better to obviate the trouble in the pulse circuit.

Valves or Transistors? I have tried two-transistor pulse circuits without much success. I have made them manageable for flying, but, in general, they suffer from limited frequency range and a vicious tendency to pulse faster on one side of neutral rudder. This vice is caused by the inductive kick from the relay which plays havoc with the operation of the transistors. The only way to prevent this is to use a two-transistor pulse circuit which keys a transistor stage feeding a relay. I have used such a circuit designed by maestro David McQue, who has kindly consented to allow me to describe it here. The circuit diagram is given in Fig. 1A and the wiring diagram in Fig. 1B.

The potentiometer valves given are intended for use with gears (say, 3:1) but these can be omitted, by using a 20KΩ pot. between the emitters of T1 and T2 in place of the two 5KΩ resistors and the 10KΩ pot. The joystick movement must not exceed about 100 deg. otherwise the pulser will stop on extreme left or right with consequent damage to the transistors. The rate pot. can be replaced by another 20KΩ or 25KΩ pot., only about 50-70 deg. at one end of its range being used on the joystick.

David tells me that his friends have also moved one of the end terminals on a 25KΩ pot. to give the required range of 10KΩ for rudder (mark-space). But in my own experience this is not entirely successful. It is tricky to achieve and not awfully reliable afterwards, though, in all fairness, they seem to make it perform satisfactorily.



IN THE TRANSISTORISED CIRCUIT THESE GEARS CAN BE OMITTED AND THE CROSS-PIECE MOUNTED DIRECTLY ON THE SHAFT OF A 20 OR 25 KΩ POT. (SEE TEXT)

If you use the geared pots. or gears on the rudder pot. only, use 5.1KΩ resistors (one per cent. tolerance) in the emitters of T1 and T2. Alternatively, put two 10KΩ resistors in parallel each side to give the required 5KΩ.

Now some details of a valve circuit which I have used with great success, three such boxes having proved equally reliable and easily adjustable. The circuit diagram appears in Fig. 2A and wiring diagram in Fig. 2B. In this multivibrator (and the transistorised one just described) I find the Siemens 96 relay invaluable. It is far superior to anything else I have found, and I still favour it for aircraft in spite of its weight (1 1/3 oz.). The two coils in series give 3,400 ohms; in parallel they give 850 ohms which suits the transistor circuit. These surplus relays are advertised for 16s. each.

Should you use a 3.5KΩ relay in this

Continued on page 169.

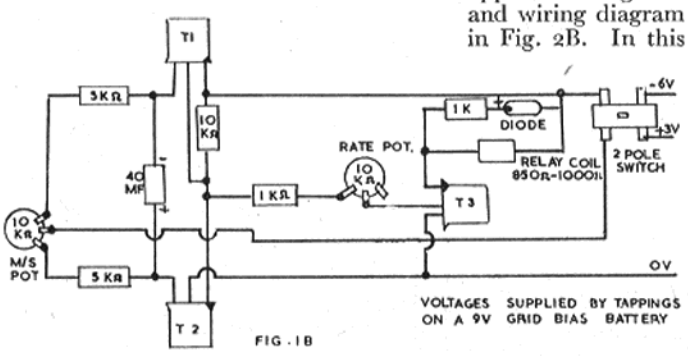


FIG. 1B

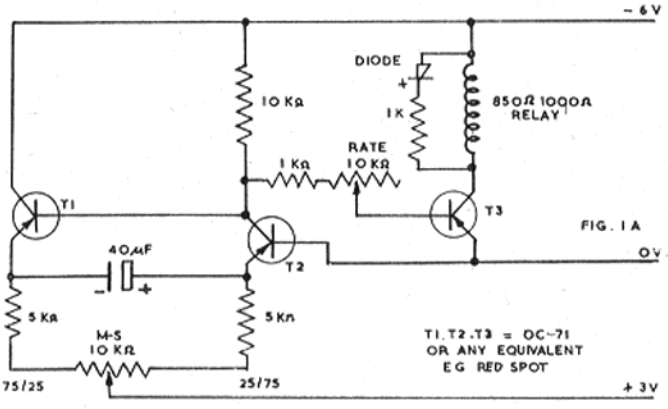


FIG. 1A

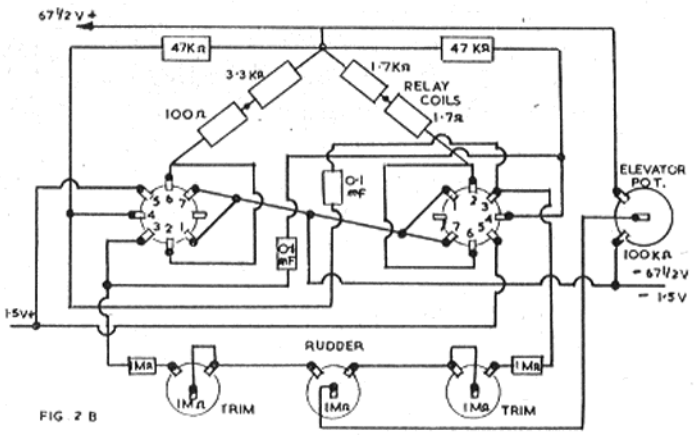


FIG 2 B

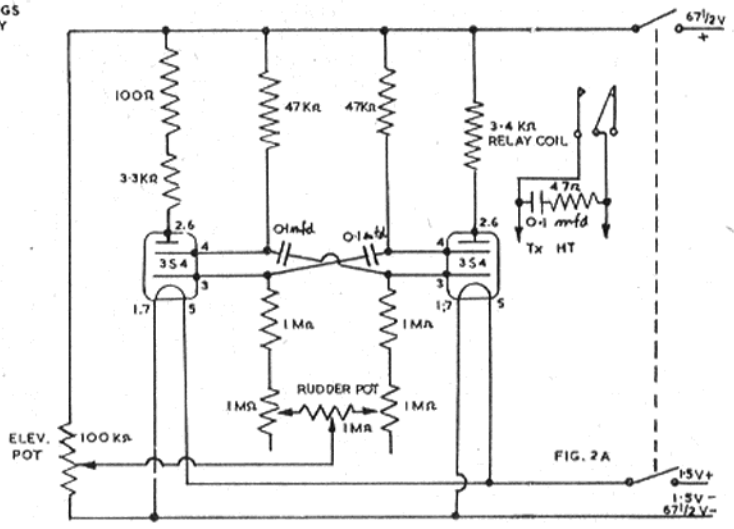
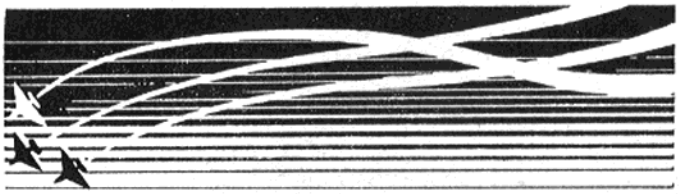


FIG. 2A



TOPICAL TWISTS

by pylonius

Home Design

There seems a lot of controversy going on about which genius discovered that a hefty tail tilt and a whopping wing warp makes a 15 sec. motor run go that little bit further. Some of the claimants are waxing quite historical on the subject, and perhaps we can expect to read the true story in the next vintage issue. Meanwhile all manner of unlikely inventors are being produced, even blokes' wives. "Well, I only put it over the oven to keep it away from the baby, dear."

But, seriously, what has happened to all our lady flyers? At one time we could count on 10 fluttery entries in the Women's Cup, and now if it wasn't for Mavis they'd hand the pot over to the Knitting Circle.

The trouble, I suspect, is the technical complication. When models were small, eight stranded and cuddlesome, wifey could be persuaded to throw hubby's into the air, but now that they are either 16 stranded or 16 h.p. she's just that wee bit afraid of chipping her nail varnish. Moreover, the preliminaries have become so complicated; timers, fuses and all that sort of wife baffling gadgetry are best left to clever hubby.

A Far Cry

Distance lends charm, and youth optimism. So, if you are a starry-eyed 13, living in remote Rhodesia, even the old S.M.A.E. looks less tarnished than some of its antique trophies. And, being young, the rewards of national success are suitably exciting. What schoolboy could resist a gleaming, cornflake style tin badge, or the sort of impressive certificate that you get for swimming the width of the swimming baths. And all yours just for making the winning flight and writing the winning application letter.

Again, when you are young in heart, with all your illusions intact, you wonder what the old moaners find to moan about. If you live in the old country you'll probably find the moaning wind sets a pretty bad example, but, even so, some people will moan about anything. There's even one liverish character bemoaning the omission of a combat event from a European handle waving orgy, which seemed to me about the one bright spot on the international scene.

Perhaps our young colonial friend is taking our national pastime of grousing much too seriously. He should take all those nasty knocks against our Aunt Sally institutions with a pinch of salt. What we're really moaning about is our sublime climate. It's not the wind of change we're concerned with over here, but just a change of wind.

* * *

Of course we haven't yet found anyone so young or so trusting to have a good word to say for the F.A.I. Or, not as a rule, if you get what I mean. We can always look to the faithful old Federique to provide the moan of the month, and this month's grizzle comes trans-Atlantic-wise from an expatriate who got tired of moaning about the weather and did something about it.

But old habits die hard, and his harangue is right up to the old country standard. If only I could understand what the heck he was moaning about I would have felt happier. But all those technicalities about getting up early in the morning left me floundering.

Trouble is, everything's getting so technical these days. Unless you've a degree in law you haven't a hope of understanding the latest rule change, and if you don't happen to be a budding Einstein you're strongly advised not to venture outside of the Wings Club section of the model journal. All in all it's a hard life for the Simple Simon who doesn't know a milliamp from a rotary-valve.

This egghead influence has even penetrated into the club room, where the earthy motor bike chatter is subdued by long and learned dissertations on micro-waves. The healthy minded moron no longer feels at home in such an intellectual environment. At one time everyone raised a cheer when good old Charlie did something clever, like buying a 1,000 c.c. racing machine or building a chuck glider, but, now, unless you can produce a new fuel formula or 20-channel transmitter you're out in the cold.

Altogether there doesn't seem much of a future in model aircraft for the 11-plus failure, which is a pity. In the old days we had more B.F's than B.A's, but, boy, did we do some flying!

Dig This

Congrats are still pouring in from the do-it-someone-else modellers for that celebrated vintage edition, but, in spite of this heavy punishment the old T.T. column is gamely fighting back. My faith remains unshaken in the belief that somewhere an off beat reader is nursing his home made, flying type model, and gazing anxiously out of the window for a patch of flyable weather. Unlike the ecstatic vintage reader who wrote, "Cutting superlatives to a minimum, a really excellent issue," the bod I'm thinking about will be cutting his balsa to a Maximum, and if anyone wants to make an issue out of that. . .

I can't help noticing that the vintage leadership rank seems to have dropped a notch. Back a few years it was always a Colonel who beat the big toy drum, but now I can find no rank higher than that of a Major at the head of the biplane brigade. However, this doesn't seem to have upset the promotion of the campaign to any extent, but, naturally, it's not to be expected that majors would have quite the same sort of success on the flying field as fully fledged colonels. Indeed, our leading major seems to have been particularly unsuccessful in this regard. For some obscure reason, known only to the local ironmonger and the mahogany dealer, his models never got airborne.

Of course, this was in the days when models were built on the bedstead principle, but, even so, it must have been pretty galling to stay grounded after going to all that trouble with chain, model railway wheels and corrugated iron propellers, not forgetting the cost of hiring two labourers to carry it to the flying field.

High Comedy

Perhaps the most startling aspect of modelling progress is that the young modeller of to-day can afford to go to the pictures. At one time any modeller worth his balsa dust wouldn't think of throwing away all those precious hours of building time. Why, you could build a wing in the space of a double feature, if you kept the balsa knife flashing as fast as the villain's stiletto. And, as for the lolly, it was a noted fact that the older modeller had one foot in the workroom and the other in the workhouse.

I'm more or less still in the same state. The last film I remember seeing was the original of that team race epic, "Ben-Hur." I forget what it cost me, but it must have been at least a week's balsa ration and half a fuselage.

One thing, though, the movie going modeller of to-day does at least get a bit of light airborne relief between the love clinches. You can now pass a peaceful hour watching the antics of H-bombers on dummy runs, or join Orson Welles in a spot of aircraft recognition. On rare occasions you can even catch a glimpse of a model plane, that is, if you prefer comedies. It is not often that the model plane is given the chance of providing comic relief outside the flying field, but a film now going the rounds features a frantic headmaster being industriously dive bombed by a rampant model. Needless to say the scholastic mister, about to have his chips, is Jimmy Edwards, but it may surprise you to know that the expert model operating was in the capable hands of our own editor.

So, if you can stand the sight of your favourite comedian being butchered to make a Norman holiday. . . .

Henschel Hs.129

designed by

PETER WHELDON

A scale control-line model for two 1.5 c.c. motors

I CHOSE the Henschel Hs 129B-2/R4 as a companion model to my *Moskito* (published in the December, 1959, M.A.) as being a typical example of German design. It is not a " pretty " aircraft but does make a most attractive model.

The Hs 129, powered by two 690 h.p. Gnome-Rhone engines, entered operational service in 1942 and was the Luftwaffe equivalent of the Russian *Schturmovic*. As a result of space limitations in the cockpit, certain flight instruments were positioned on the inboard sides of the engine cowlings. The entire fuselage nose section—including the pilot's canopy—was built up from armour plate. Although the original armament consisted of two heavy cannon and two machine guns this was steadily increased until the 2/R4 staggered into the air carrying a 75 mm. anti-tank gun! This was no mean achievement when the limited power available is considered. Considerable success was achieved with this armament but with the advent of rocket carrying aircraft in 1944 the era of the Hs 129—the " Flying Can-opener "—ended.

Construction of the Model

The construction is similar to that of the *Moskito* and is split into three stages—(1) the fuselage and tail unit, (2) the wings, and (3) the engine nacelles—all being linked together by the two master formers B and C. Provided these two formers are carefully constructed and lined up on the fuselage keel, alignment of the model is automatic. Being a scale model, a little patience is needed, but as the photograph shows, the effort is well worth while.

Fuselage

Commence construction by carefully cutting out all parts for formers B and C including the hard $\frac{1}{8}$ in. sheet main-spars. (Note that small portions of B and C braces will have to be cut away to allow the engine bearers to slide into position.) Pre-cement all mating surfaces and assemble these two formers, then put aside to dry and cut out the remaining fuselage formers. Cement master formers B and C to the keel and hold true by inserting the engine bearers in place (do not cement bearers at this stage). Cement former A to the keel and link B and C with the $\frac{1}{8}$ in. sq. longerons. Add the cockpit floor, check alignment and put aside to dry.

Cut out the two fin parts, stabiliser and elevators, and assemble. Cement the remaining fuselage formers in position on the keel, and then add the top longerons. Cement the bellcrank assembly in place, complete with short lead out wires. Now fix the tailplane in position, link up the elevators to the bellcrank and check for " neutral."

Cut out fuselage sides from hard 3/32 in. sheet, and after sanding the top longerons to follow the fuselage contours, cement in place. Follow with the top decking and bottom planking—all of hard 3/32 in. sheet. Note that the bay between B and C is left open at this stage. Fit the tail wheel assembly and tail cone fairing blocks. The nose block should be hollowed slightly and about 2 oz. of lead poured in before it is cemented in place. Carefully sand the fuselage to the correct section, fillet all tail/fuselage joints with silk and finally give the entire structure one coat of clear dope.

Wing

Cut out all the wing ribs and cement R1 in place on B and C. Cut the leading edge pieces and assemble as shown on the plan, then cement ribs R2, R3 and R4 in place. The engine bearers can now be removed, and the leading edges cemented in place. At this stage check that both wings are at the same angle of incidence and that no " twists " are developing, and if all is true cement the remaining ribs in place, followed by the flap and aileron spars. When dry sand these to the wing section contour.

Cover the lower wing surface with hard $\frac{1}{16}$ in. sheet, noting that the port and starboard sheeting meets on the fuselage keel between formers B and C. At other places it should be a snug fit against the fuselage sides. Sheet the upper surfaces of the wings and add the line-guide and wing tips. Carve the leading edges to section and sand the wings all over.

Fillet the wing/fuselage joints with silk, and cover the lower surface of the wing between ribs R1, with one large silk patch then give the wings one coat of clear dope.

Carve the gun blister to shape and cement in place, but remember that the gun barrel is removable so do not cement this in position. Force two pieces of 14 SWG bushing into the wing leading edges to represent machine guns and fair them to the fuselage sides with silk and plenty of cement.

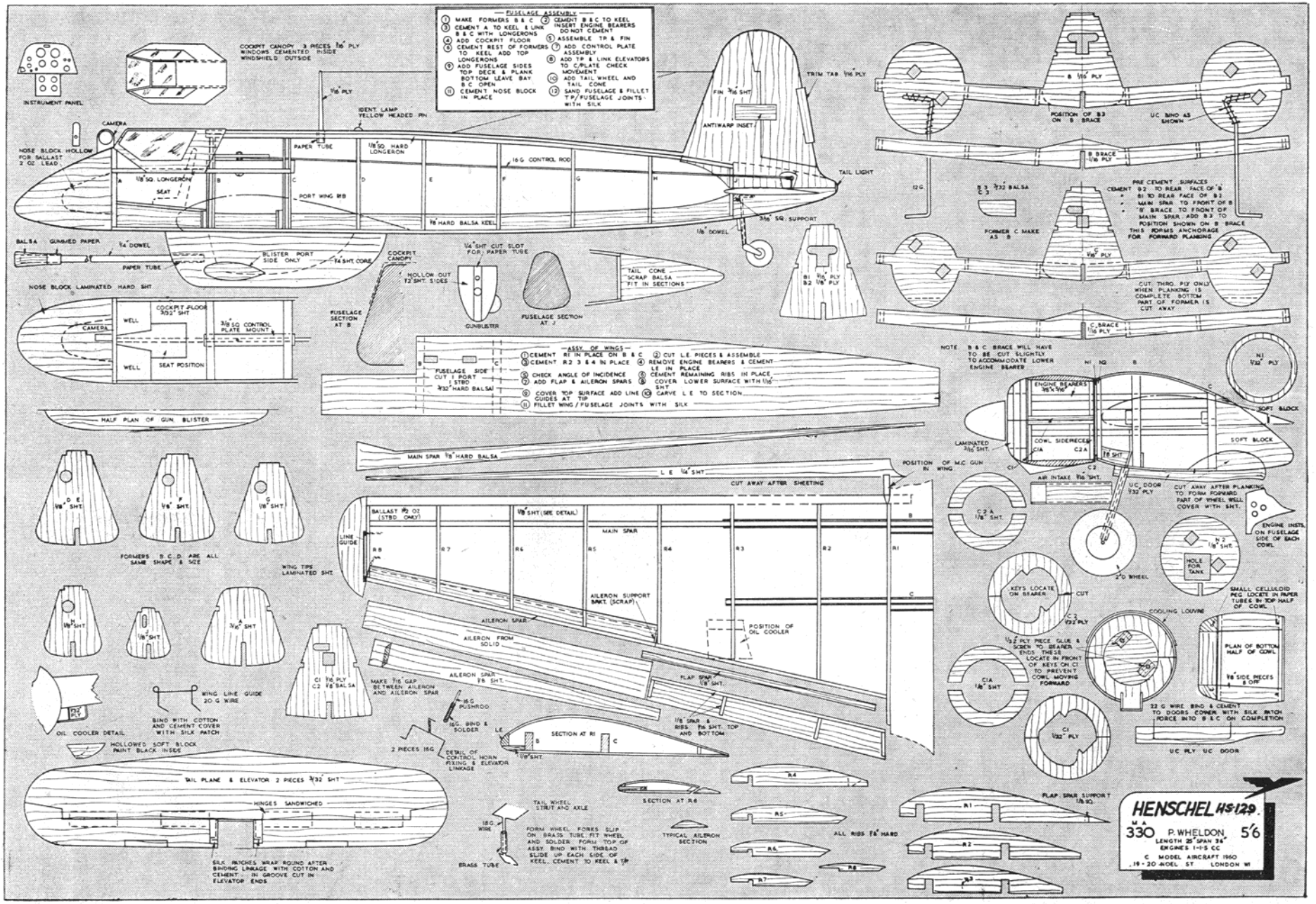
Nacelles

Drill the engine bearers to suit the motors (A.M.15s were used in the original model) to be used, and pre-cement. Cement the bearers into place and mount the motors to hold them true until dry. Bend the under-carriage wires to shape and bind them in position using strong linen carpet thread. Cement N1 to the front face of N2, and when dry, slide N2 into position on the bearers. Plank the nacelles with hard 3/32 in. sheet, add the rear fairing blocks and sand smooth.

Cut away the lower portions of nacelle formers C (shown by dotted line on plan) to form wheel wells and fill in the space with sheet to prevent fuel seepage. Cover the nacelles with silk, overlapping onto the wing by about $\frac{1}{2}$ in. all round. Use plenty of cement. (Note all the silk patches specified, in particular those around the nacelles, add considerably to the strength of the finished model and are essential.)

The construction of the cowlings is quite straightforward and when finished they lock into position very neatly, but if you have a favourite method of

Continued on page 185



AVIATION NEWSPAGE

By J. W. R. Taylor

BEVY OF BUCKEYES above is from the first U.S. Navy unit to use North American's latest trainer, at Sherman Field, Florida. Something new so far as the U.S.N. is concerned, it will take Navy and Marine pupils through basic training, instrument flying, gunnery training, formation and tactics, right up to carrier qualification.

Designated T2J, the *Buckeye* represents a bargain package for customers. To keep down costs, at no expense in performance or handling qualities, North American built it around the wing of the original FJ-1 *Fury* fighter and control system of the T-28C trainer, with added hydraulic boost. Most equipment is "off-the-shelf" and the 3,400 lb. thrust Westinghouse J34-WE-46 turbojet is simply a new mark of a well-proven engine first delivered in 1946. Span over the 100 U.S. gallon tip-tanks is 38 ft. 2 in., length 38 ft. 8 in., and normal gross weight 9,916 lb. Top speed is 492 m.p.h.

* * *

INJUN OUT FOR SCALPS is the Bell HU-1A *Iroquois* (right), with half-a-dozen Nord SS.11 wire-guided anti-tank missiles slung from racks on each side of its cabin. Normal task of the HU-1A is to transport six people, stretchers or 142 cu. ft. of freight in its wide and roomy cabin, but it is extremely manoeuvrable and could probably get away with quick hit-and-run ground attack sorties by hugging the landscape on the way in to the target.

Known originally as the H-40, the prototype *Iroquois* flew on October 22nd, 1956. An initial order for 100 HU-1As was placed in March of last year, and the first of these are now entering service. A 700 h.p. Lycoming T53-L-1 shaft-turbine gives them a max. speed of 141 m.p.h., which is expected to go up considerably when a 960 h.p. T53-L-5 is fitted in later models. All components

are designed for a life of 1,000 hours between overhauls, which is really something for a chopper.

* * *

LOOK NO PILOT—although, like all British target drone conversions, the *Meteor* U.Mk.16 (bottom right) can be checked out by the gin-drinking type before black boxes take over for operational runs: hence the fully-equipped cockpit and ejection seat.

WH284 is the first U.Mk.16, modified from a Mk.8 fighter by Flight Refuelling Ltd., and flown for the first time on March 21st this year. Resplendent in cream and red livery, it can be distinguished otherwise by its lengthened nose, containing auto-pilot and command circuit gear, and the tiny jettisonable and recoverable wingtip fairings containing wide-angle cameras to photograph intercepting missiles.

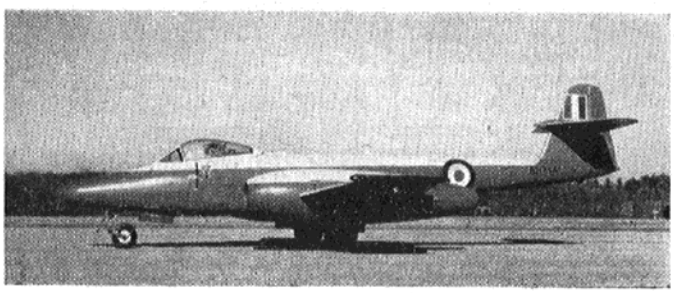
* * *

SHOWING ITS TEETH bottom left is a Fiat-built F-86K *Sabre* of the Royal Norwegian Air Force. The Italian company turned out 231 of these lethal all-weather interceptors before production ended in 1958. They went to the Italian (65), French (68), German (88), Norwegian (5) and Netherlands (5) air forces, and to save you adding them up I can assure you that the figures in brackets *do* total 231—at least they did before this page went to the printers!

* * *

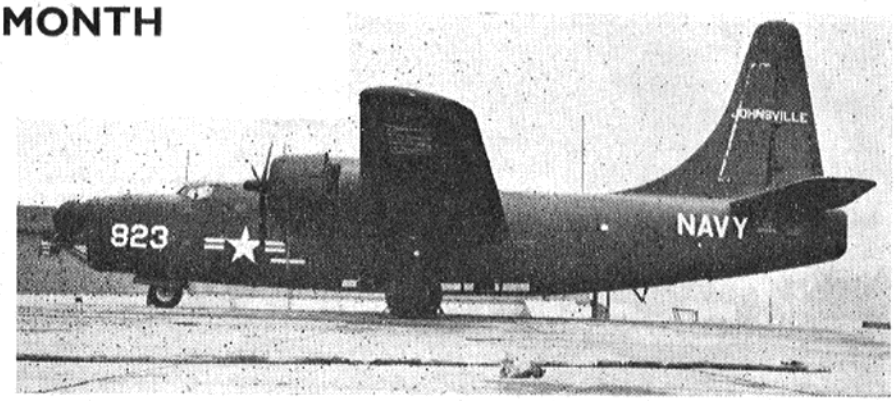
In the "What-will-they-think-of-next?" category is DASH, short for Destroyer Anti-Submarine Helicopter, and it is the latest piece of nastiness in the U.S. Navy's atomic-age arsenal. It seems that the Gyrodyne company fitted an autostabiliser to one of its YRON-1 rotorcycles, found it worked so well that the pilot could stay on the ground, and fitted radio to turn the whole thing into a super R/C model.

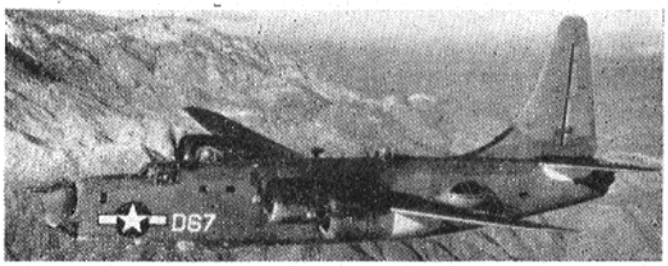
With a homing torpedo slung between its legs, and a little structural simplification this model becomes the Gyrodyne DSN-1, airborne portion of DASH and the world's first rotating-wing guided missile. Launched from destroyers and flown under remote control, it will form a potent new weapon for the war at sea. What is more, unlike most guided missiles, it is recoverable once it has delivered its warhead.



PLANE OF THE MONTH

CONSOLIDATED–VULTEE PB4Y-2 PRIVATEER





Above : A P4Y-2K target drone launcher. Right : One of the first production PBY-2 Privateers with U.S. Navy wartime markings.

AMONG the latest batch of prints received from Bob Archer, MODEL AIRCRAFT's keen camera-carrying correspondent in California, was one showing a very forlorn ex-Navy P4Y-2 *Privateer*, with the civil registration N7682C chalked on its tail end. The letters NATC on its fin and rudder identified it as a machine once used for checking out test pilots at the Naval Air Test Centre, Patuxent; but it was difficult to visualise what further use it might be to anyone.

The answer came a few prints further down the pile with a picture of a very trim cream and red sister-ship, registered N6884C and carrying a label below the flight deck windows indicating that it belonged to International Air Applicators Inc. "Belonged" is, unfortunately, correct in the past tense. Having demonstrated at the Las Vegas World Congress of Flight its ability to carry and drop four tons of water for fire fighting, it crashed on the way home. N.7682C may replace it in due course.

Left : A fine take-off shot of a PB4Y-2B "Bat Carrier" used for launching glide-bombs.

It is good news that some of these fine old bombers are still going strong, because they represent a link with the B-24 *Liberator*, one of the great combat aircraft of World War II. As early as 1942 the U.S.A.A.F. came to the conclusion that the *Lib* would be more stable with a single fin and rudder instead of the usual twin tail. A B-24D was fitted with a single square-cut fin in 1943 and became the XB-24K. A year later it was decided that all future *Liberators* would be single-finned, but only one prototype XB-24N and seven YB-24Ns were produced before the type went out of production in May, 1945.

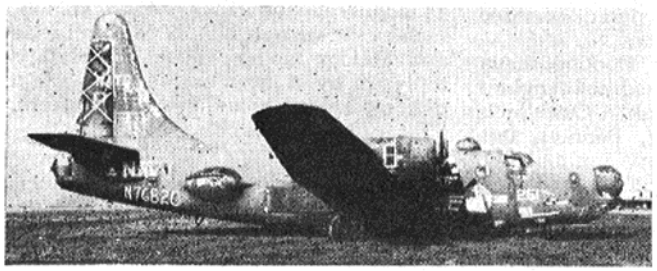
Back in 1943, however, the U.S. Navy had ordered from Consolidated-Vultee a single-fin *Liberator* tailored to their special requirements. The first of three prototypes flew on September 20th, 1943, and these were followed by about 740 production PB4Y-2 *Privateers*.

Although the PB4Y-2 looked *Lib*-like, it was really very different and carried a crew of 11. The basic wing remained unchanged, but the oval nacelles for the 1,350 h.p. Pratt & Whitney R-1830-94 Twin Wasp engines were turned through 90 deg., with their slit intakes top and bottom. The nose of the fuselage was lengthened by 89 in. and the armament was increased to 12 0.5-in. guns. These were mounted in pairs in a front ball turret, two dorsal turrets, a tail turret and two large blister-type turrets on the sides of the rear fuselage. Added to a fair number of bumps on the lower part of the nose, all this gave the *Privateer* a lumpy appearance which has quite disappeared on the civilian water-bomber.

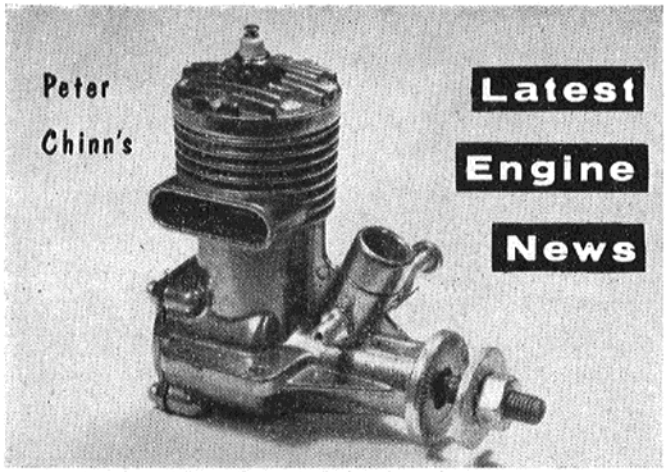
A small number of *Privateers* were delivered before the close of the war, some as PB4Y-2B "special armament" aircraft, carrying Bat unpowered glide-bombs. Post-war they served in a variety of roles, some becoming P4Y-2K drone-launchers (the "B" was dropped eventually from the designation) and others P4Y-2S anti-submarine patrol-bombers. In addition, there was a transport version known as the RY-3, of which the U.S. Navy had 46, with others going to No. 45 Group of R.A.F. Transport Command. Designated Liberator C.Mk.IX, the latter were used on the trans-Pacific route from Canada to South-East Asia Command, carrying a crew of four and 28 passengers.

Data (PB4Y-2): Span: 110 ft.; length: 74 ft. 7 in.; height 26 ft. 6 in.; loaded weight: 65,000 lb.; max. speed: 250 m.p.h.; range: 3,000 miles.

This sorry looking P4Y-2 is awaiting civilianisation and will eventually look like the Privateer on the right.



In civilian guise this fire fighting P4Y-2 was named "The Big Dipper."



The new American Veco 29R engine designed for team-racing, "proto racing," combat, etc. It is both more powerful and easier handling than the standard Veco 29.

SO far, 1960 has produced a bumper crop of new or improved engines from British manufacturers. . . . Not for about 10 years have we approached a new season with so many additions to the market: E.D.'s Pep, Super-Fury and improved Bee, Merco's Multispeed 29 and 35, Rivers' Mk. II Silver Streak and improved Silver-Arrow, Frog's 049 (plus the expected appearance of an entirely new contest diesel), Allen-Mercury's 049, D-C's Bantam and Tornado, Eta's 15 and Allbon-Saunders' A-S 55. A dozen "definites" to date, with the promise of one or two more yet to come.

Merco's Multispeed R/C engine is a really nice job. The finely made throttle parts which convert the standard Stunt engine to the Multispeed type are illustrated in one of our photographs. The special piston also shown is used for the Multispeed 35. This has been lightened by machining away the fillet on the exhaust side of the baffle; seemingly without detracting from the performance of the engine. The idea, of course, is to reduce vibration to a minimum—so important with present-day multi-channel radio systems. The engine has been tested over a period of several weeks in eight-channel R.E.P. equipped models by Dennis Allen and Stewart Uwins. Incidentally, the lightened piston is used only in the 0.35 cu. in. Multispeeds, the smaller 0.29 engine piston being light enough to justify its use, unaltered, in the R/C version of this latter engine.

* * *

The first of the revised Rivers models, the Silver Arrow 3.49, has now been received. As mentioned in our April issue, this has a revised crankshaft design of larger overall diameter, journals increased from 0.350 to 0.406 in. dia. and eight rollers and spacers per journal. A neat alloy stud replaces the extended threaded portion of the shaft and the engine is, despite its bigger shaft, ¼ oz. lighter than the original model.

This same type shaft will be fitted to the Mk. II Silver-Streak 2.49. The new Mk. II S-S crankcase, incidentally, will be provided with a boss below the main bearing and a drilled bearing sleeve to allow a high-pressure forced-feed fuel system to be used. On works tuned engines, the valve port is radiused and the induction passage polished. The crankweb is also radiused and polished.

* * *

A decade ago, much of the progress in 10 c.c. racing engine design and performance could be traced to model car racing influence. The immortal Dooling 61, a product of that period, has never been bettered among commercial model i.c. engines for sheer performance and is still the favourite power plant among model car enthusiasts, many of whom have kept 10-year-old Doolings in service by making new pistons, liners, valve rotors and other parts, as these have become unserviceable.

Some of these rebuilt Doolings have been developed into modified engines better than the original. One such engine, built by A. W. Bennett, last year achieved a speed of 140.146 m.p.h. for the flying quarter-mile, the highest speed ever attained in Great Britain by a model racing car. Mr. Bennett, who is chairman of the miniature car racing section of the Maidstone Model Engineering Society, tells us that his engine develops 1.85 b.h.p. and will do 23,000 r.p.m. under load.

News of another high performance engine based on a stock product comes from Ian Lindsey of the Hayes Club, who has evolved what appears to be a promising racing glow 2.5 from a new Enya 15 diesel. After one hour of running-in, with performance still improving, the Lindsey-Enya was 700 r.p.m. up on Cox Olympics when the latter were propped for peak revs, both engines using Super-Nitrex fuel.

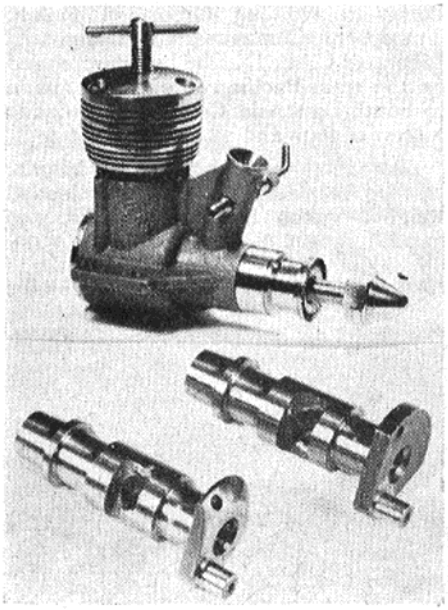
* * *

Some 20 years ago in the United States, Bill Atwood produced a 10 c.c. engine with twin rotary valves—a shaft valve at the front and another at the back, each fed by its own carburettor. Later this was developed into the Atwood Champion engine, of the late 40s, which had a single rear carburettor ducted to both valves.

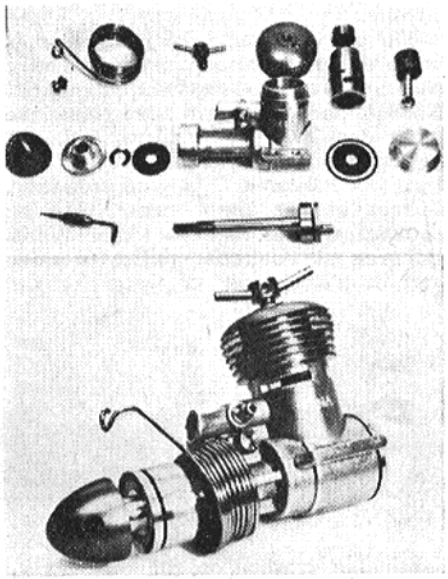
Now, conversion kits for modifying popular types of shaft-induction engines to twin carbuterror, dual rotary-valve intake are being offered by an advertiser in Missouri. These are suitable for 29 and 35 engines having detachable backplates, such as the current Fox, K & B, Johnson and McCoy models. The backplate is replaced by a new unit fitted with a disc rotary valve and an extra intake. "Gratifying power" is claimed.

* * *

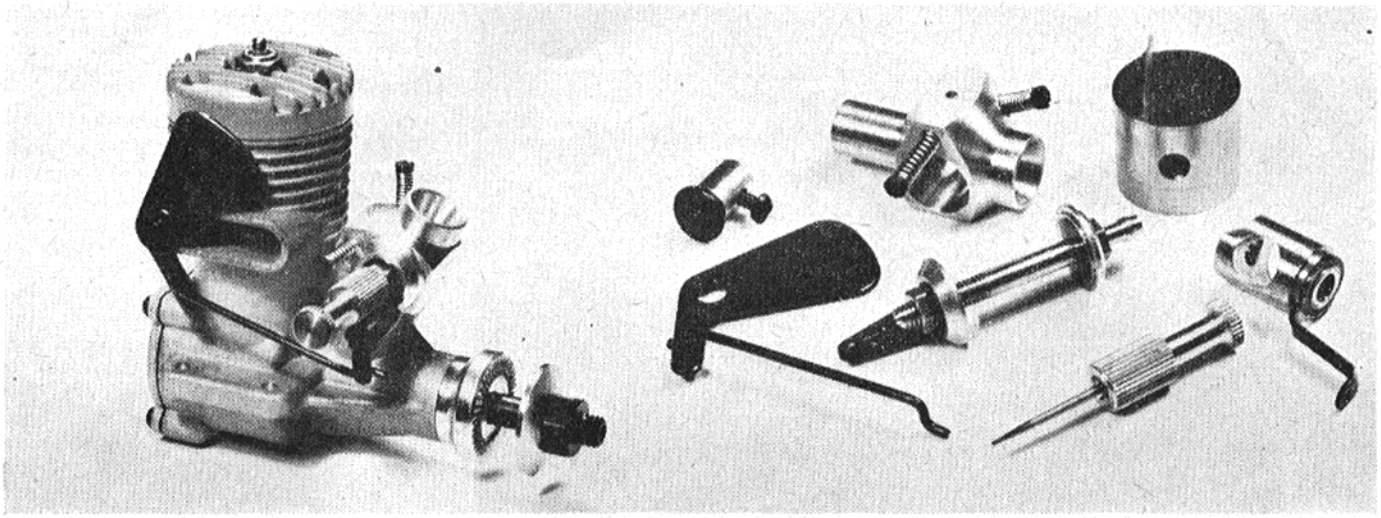
Latest engine from the Veco Products Corporation of Burbank, California, is the new 29R, of which we recently received a couple of samples from the U.S.



The revised Rivers Silver-Arrow with heavier roller-bearing crankshaft and detachable prop shaft. The new crankshaft is shown, below, in its "standard" and "tuned" versions.



The new Zeiss 1 c.c. diesel with its unique forward facing intake. The first East European engine to feature a starter spring and unusual in its use (in an engine so small) of ball-bearings.



Britain's quality R/C engine, the Merco Multispeed, showing the parts of the coupled intake throttle and exhaust restrictor, also, the special piston fitted to the 35 model.

(Would-be private importers please note: £5 12s. tax and duty to pay!) Externally, the engine can be distinguished from the standard Series 100 Veco 29 only by its extended venturi insert and a red "R" printed on the transfer side of the main casting. Internally, it has a new crankshaft which is more heavily counterbalanced, has a bigger gas passage and a journal increased from 0.440 in. to 0.475 in. dia. The exhaust and transfer ports are also deeper and the shaft is drilled to convey lubricant to the front of the main bearing.

We found the engine to be a distinct improvement on the earlier 29 both as regards handling qualities and power output.

* * *

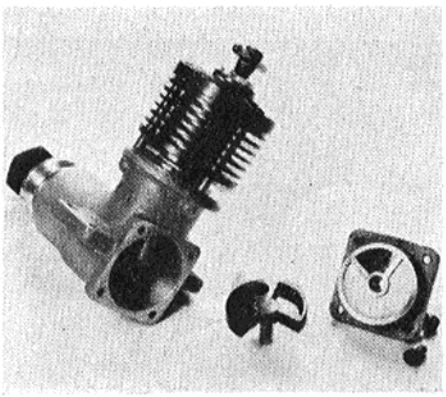
The first East-European engine to adopt the coil-spring starter unit, as pioneered in the U.S. and currently used in Britain by Davies-Charlton, is the new East-German 1 c.c. Zeiss. As the photographs show, this is an unusual engine in many respects. It uses piston-controlled induction, but unlike older engines of the three-port type layout, the intake is at the front. A very long crankshaft and front bearing housing are employed and it is very uncommon to find a relatively small engine employing two ball-bearings. Radial exhaust ports are used in conjunction with three internal transfer flutes. Bore and stroke are 10.5 × 11.5 mm. and weight 3.1 oz. The engine carries the name "Jena" (where East German Zeiss products are made) presumably to identify it, like the Jena lenses, as a product of East-Zeiss as opposed to those of the Stuttgart Zeiss factory.

* * *

Following the recent incorporation of the K & B Allyn firm into the Aurora Plastics Corporation, the K & B engine range is reported to be in the process of revision. Both the Johnson Bulldog and Fox contest 2.5 glow engines are expected to reach the market by June. Provisional data on the revived and revised 10 c.c. Fox 59, to be known, in this latest R/C version, as the Mk.4, indicates that it will have an extra large diameter crankshaft (0.594 in.) carried in two ball-bearings, and an aluminium piston with three rings.

The reversion to the ringed alloy piston for large R/C engine use is, we think, a wise move. It is no secret that one of the currently favoured American R/C engines is apt to wear out piston-cylinder assemblies quicker than they take to run in from new, added to which, in the larger capacities now being demanded, (lapped) piston weight begins to make itself felt in extra vibration. It remains to be seen whether the revival of ringed pistons will be extended to medium-sized engines also.

The production E.D. Super-Fury 1.49 twin ball-bearing 1.5 with moulded Bakelite valve rotor. Developed from the standard reed-valve Fury, it has vastly better performance and many practical improvements.



ALL FROM ONE

Continued from page 162

valve circuit then replace the 100 ohms resistor with one of 220 ohms value.

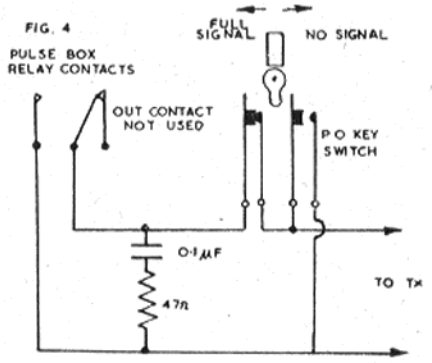
Increasing the two 1 megohm pots. together will decrease the overall pulse rate and vice versa. Adjusting one "in" and the other "out" will give some control over the neutral rudder position. But remember that, as you increase or decrease these pots. together, you are altering the range of M/S which the joystick movement will give.

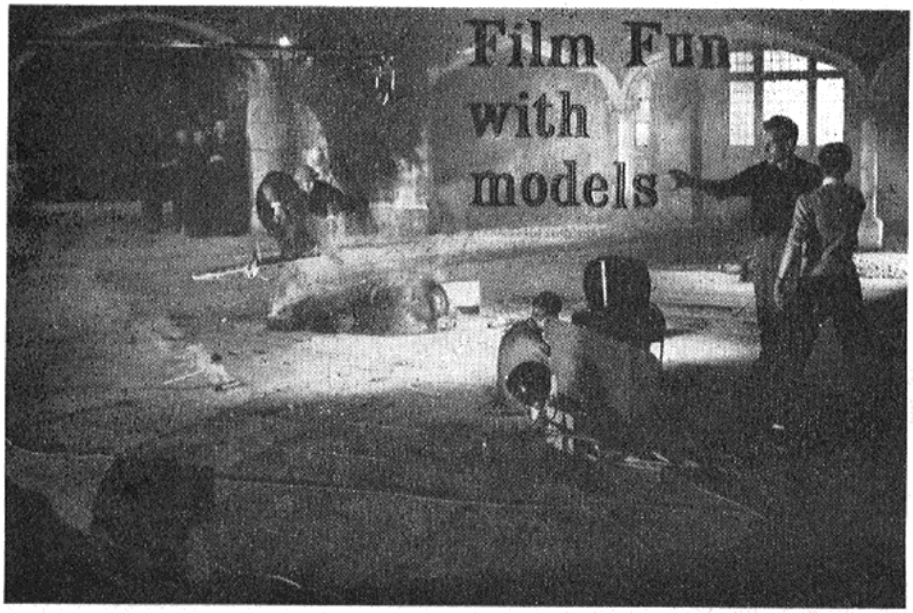
2. Joystick Arrangement

A satisfactory scheme for driving the potentiometer for either of the foregoing schemes through 3:1 gears is shown in the diagrams If you are a beginner at this system, do use some centring on the stick. Twisted rubber bands, or better, the Bonner "scissors" mechanism, is quite suitable.

If, like me, you find them a nuisance immediately, or as you progress with your piloting, then you can reject them, but for first attempts, they allow you to let go of the stick in times of trouble and the plane will make at least a partial recovery. This gives you time to think, which you will jolly well need, but do not normally get!

As full- and no-signal switches are required for stunting I have indicated in Fig. 4 how these are fitted to the control box. You may use push-button switches or micro-switches instead of the Post Office key switch shown, provided they give the desired results.





Taken during the actual filming of a scene, this photo shows that the model had to pass between Jimmy Edwards and Arthur Howard and in front of the camera left foreground. Microphone is for dialogue. Engine sounds dubbed in after.

How the flying scenes in the new Jimmy Edwards comedy 'Bottoms Up' were filmed. The inside story by NORMAN BUTCHER

WHEN I was first approached concerning a sequence in a new feature film, in which Jimmy Edwards was to be "dive bombed" by model aeroplanes, it seemed a simple enough job. All the script required was "... three boys flying model aeroplanes, with miniature engines, on wires at 120 (sic) m.p.h." However, a preliminary visit to the A.B.C. studios at Elstree put a different complexion on the matter.

A discussion with director Mario Zampi revealed that what *he* wanted was a sequence showing radio-controlled models taking off from in front of hangars and then zooming to prevent Jim, who is bound hand and foot, from being rescued by Pettigrew (Arthur Howard). It was obviously impossible to use actual R/C models, not only because of the precision of the near misses necessary to achieve the required effect, but because the scene was being shot on an interior set. This also virtually ruled out normal C/L work.

Accompanied by John Wylie, Pete Wright, Terry Purnell and a miscellaneous collection of models, I made a further visit to the studio to try some practical experiments and show the technicians what they would have to cope with.

The set would allow of 25 ft. lines being used, on which a few flights were made. From these it was apparent that even throttled right back the model was moving too fast to "register" on the film. In addition it would be necessary to have a camera about 8-12 ft. inside the circle for close-ups, and as the camera was 4 ft. high, low flying would be impossible unless the pilot were raised at least 6 ft. off the ground. (This technique was, in fact, tried for one shot, John and myself flying two models from a 10 × 6 × 6 ft. high platform, but the normally impeccably behaved motors "played up" causing a distinct rise in the director's temperature.) However, the main objection was on the score of danger to the actors. The possibility of either Jimmy Edwards or Arthur Howard being hit by a model and receiving an injury that would hold up filming could not be considered.

One other idea was tried and this was to use 45 ft. lines, stand on the roof of the tuck shop set and fly continual 8's. This might have worked if the model could have built up enough speed to get into the first "8," but the restricted ceiling height caused by the lighting gantries did not allow enough room, and the model ended up among the arc lights.

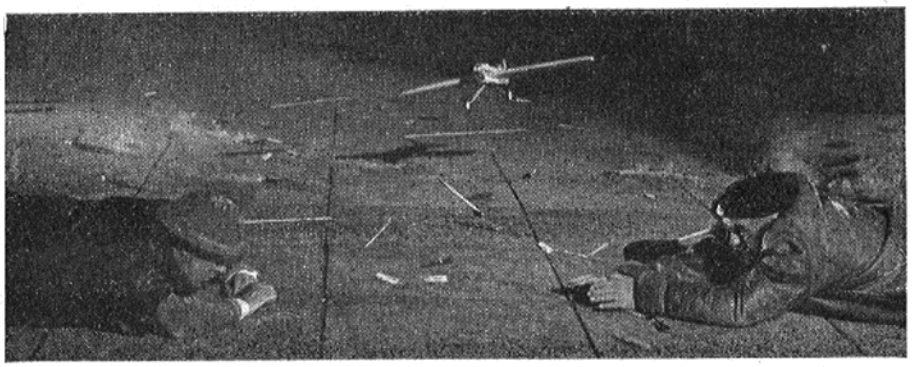
There was only one other possibility—to remove the propellor and "whip" the model, and this, in fact, was how all the shots used in the film were actually made. This method also allowed two models to be flown at once—just what Mario Zampi wanted.

The actual filming of the model sequence should have been completed in three or four days; in fact, it took much longer. Nothing like this had been filmed under similar conditions before, and innumerable camera angles were tried before everyone was satisfied. This entailed the same scenes being shot time and time again, until there must have been almost 45 minutes of model flying on film, from which the final 2½ min. film sequence was cut.

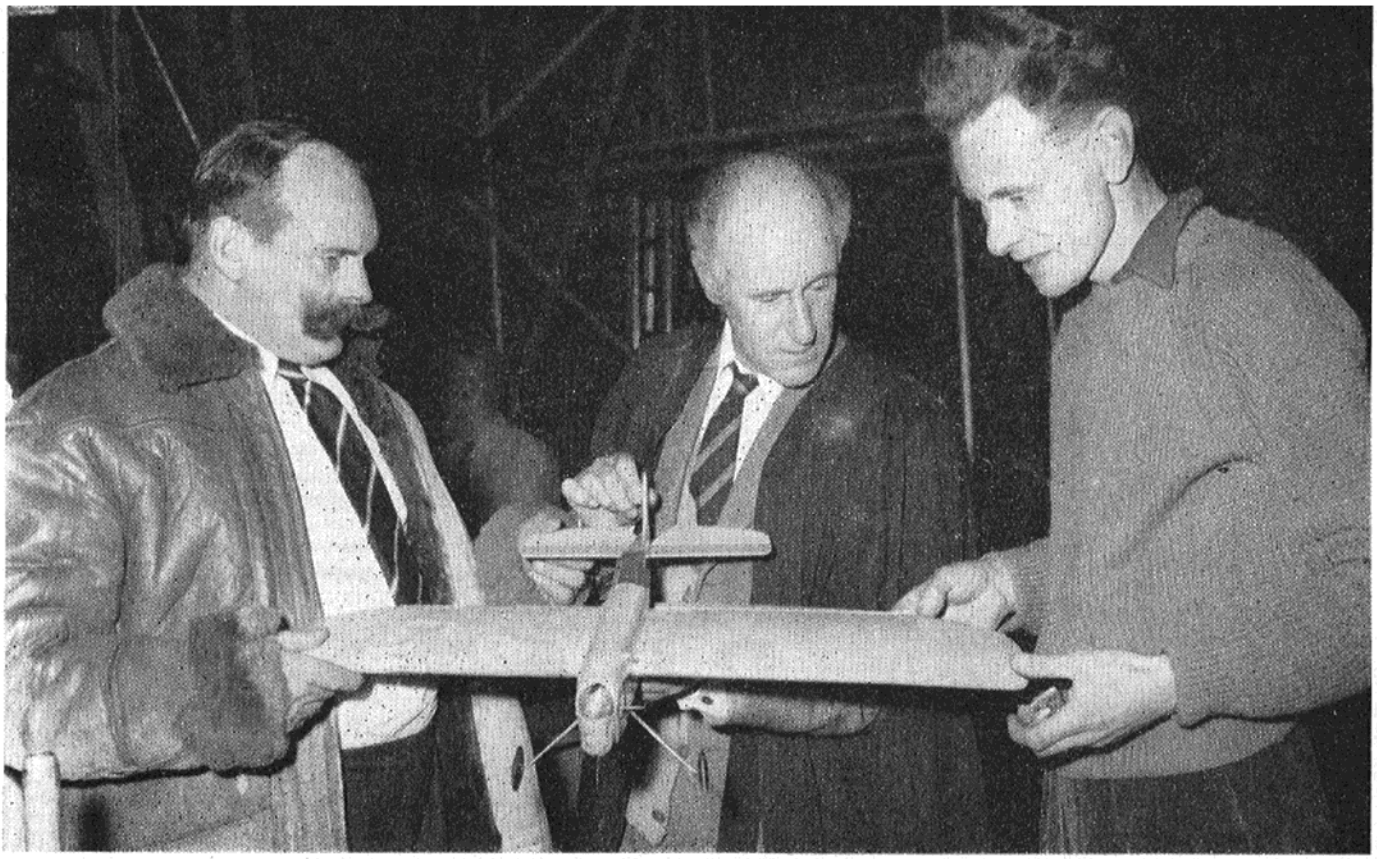
The actual flying itself was comparatively straightforward, no more difficult, in fact, than normal two-in-a-circle work, although having to keep the models airborne by whipping was tiring, and I can appreciate why team race pilots nowadays look so played out after a race. Actually the whole business could be likened to a team race—hours of waiting about, a few minutes hectic flying, then more hours of waiting while the camera, lights, etc., were re-arranged. However, the real strain was worrying about the possibility of hitting either of the actors, while still taking the models, literally within inches of them, but we eventually got used to the director shouting "lower with the models, lower with the models." *Crash*! "Too low"!

Fortunately, the "crash" was usually the model hitting the ground as it was taken low to zoom up over Jim as he lay on the ground. There were, inevitably, times when the models hit both Jim and "Petters" but these were few, and although the hit probably hurt, fortunately, it was where it didn't show. We were not lucky in other directions, contact with the ground, arc lights, and on one occasion the camera played havoc with the models, but the studio staff were more than efficient, and, with their help, repairs were effected quickly if somewhat crudely.

After several shots had been taken it was apparent from the "rushes" that the angle at which the models were flying was unrealistic, so John devised the system where they could be whipped round in a banked attitude, by attaching a line to each wingtip and one to the tail. For a handle two pieces of wood



Pettigrew crawls to rescue Jim as models pass between them. Easy at this stage, things got really hectic when their hands touched. Line-lengths for takes varied between six and eighteen feet. For this shot models were on eight-foot lines.



Jimmy Edwards, Arthur Howard, and the writer with the much repaired Frog *Condor*. Plasticine on nose is to weight model up to make it easier to " whip."

some 12 in. long were fixed in a cross shape, so that once the model was airborne its angle of bank, plus its angle to the circle, could be governed by the position of the handle. This worked well and resulted in some of the best shots, although in the actual film it will be seen that both methods have been included.

The opening shot of the flying sequence, showing the models taking off from in front of the hangars, was actually the last scene in the entire film to be taken, and was only completed with one minute to spare before the studio closed for the weekend. It was also the only " trick " shot in the entire sequence in that the models were not flying but slid up wires. Two lengths of C/L wire (made invisible and lubricated with black grease paint) were fixed to the floor of the hangars, through an eyelet in each model's wingtip and attached to a stand some 4 ft. high. A length of nylon was attached to the fins and fed out through the back of the hangar to a props man out of camera range. With the engines running the props man ran forward and the models slid up the lines.

Two " takes " were made like this, but the engines were overheating and to be safe a further " take," with the props removed and the models pulled up the wires by nylon attached to the nose, was made. I could not spot which was actually used in the film, but I think it was the first take with the engines running.

The only model in this shot which was actually flown in the film was the Frog *Condor*, furthest from the camera. This was used throughout the filming and was repaired numerous times, until finally the outer wing was a mere shell of cartridge paper. A Keil Kraft *Talon* shared the bulk of the flying with the *Condor*, but on occasions when one or other was temporarily out of commission a combat model borrowed from Pete Wright was pressed into service, and this is the model which appears on the cover.

Sound effects were taken at a special session and were dubbed in afterwards. John Wylie's Frog 500 powered model, which is also shown on the cover held by Jimmy Edwards, provided some of these, blended with an Enya 0.19, Frog 1.49, E.D. 2.46 and a glowplug Frog 2.49 running on a 6 × 4 prop.

Most of the flying was done by John and myself, with help from Pete Wright and Clive Booth, while the three " Aviation Boys," who appear in the film, are St. Albans Club juniors, Harvey Dunston, Graham Hiskett and Richard Henderson.

Altogether a fascinating experience.

Arthur Howard was glad of his tin helmet on more than one occasion, although in this case the model just missed him.

news!

N WAITING FOR

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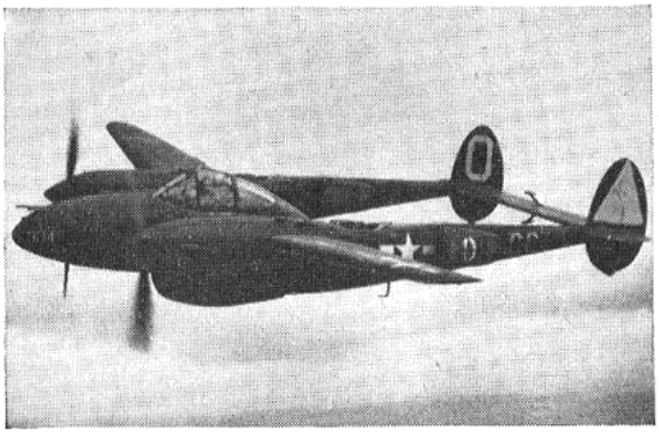

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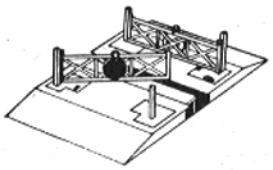

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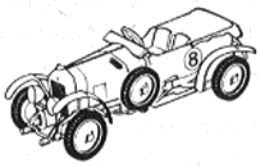

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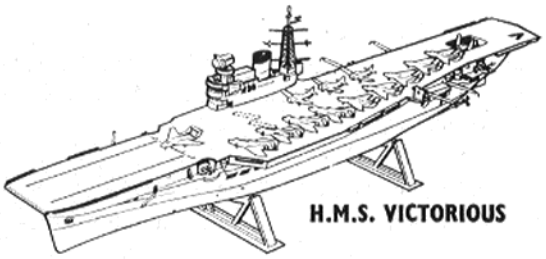

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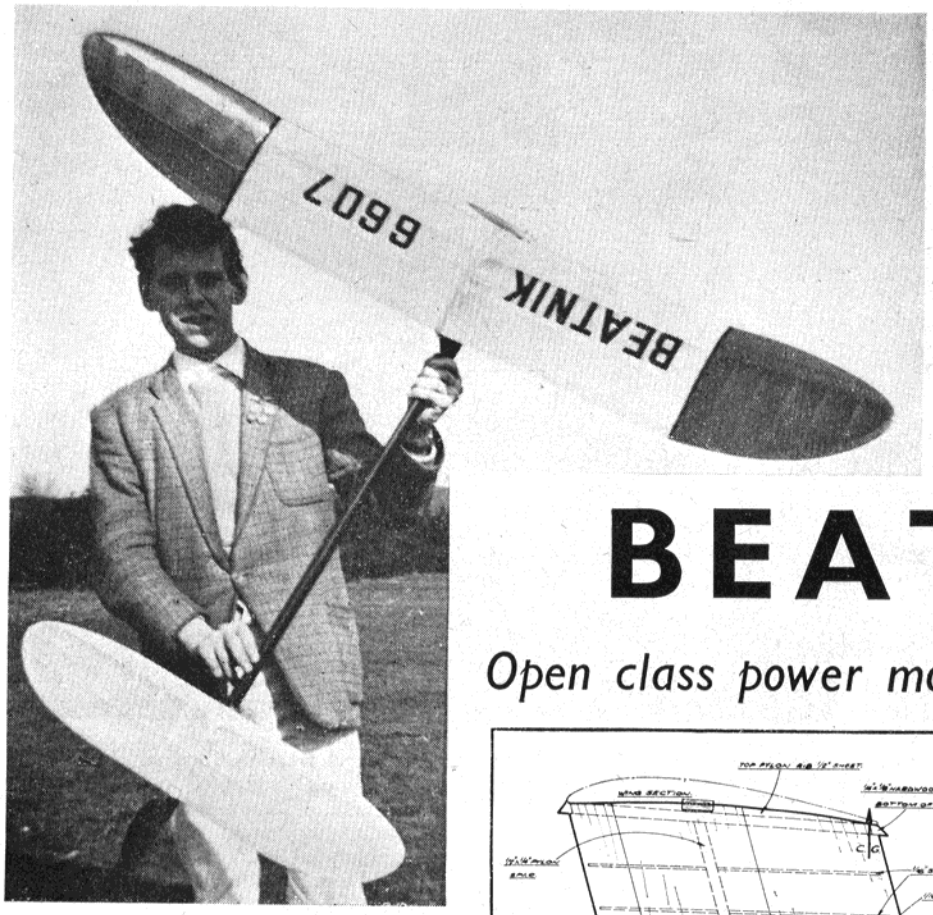


BEATNIK

Open class power model by JIM BAGULEY

Jim Baguley's series of articles on power model design, which appeared in "Model Aircraft" between December, 1959 and March, 1960, aroused considerable interest both here and overseas. In view of this fact, we have great pleasure in presenting here the plans of Jim's latest power model.

THIS is the sixth development in a particular series, the main improvements over earlier versions being structural, and an increase of tailplane chord.

The most potent 3.5 c.c. engine will not prove too powerful for it and the ideal is probably a "19" glowplug motor, by using which the flying weight can be taken down to 14 oz. The original *Beatnik* weighed 16½ oz. with a modified Oliver, and using over-hard balsa all round. The only hard balsa needed is that used for the fuselage longerons.

The construction is very simple enabling building time to be a nominal 20 hours, and while the plan contains ample information for an average person to complete *Beatnik*, the following general constructional notes will prove of interest.

Fuselage

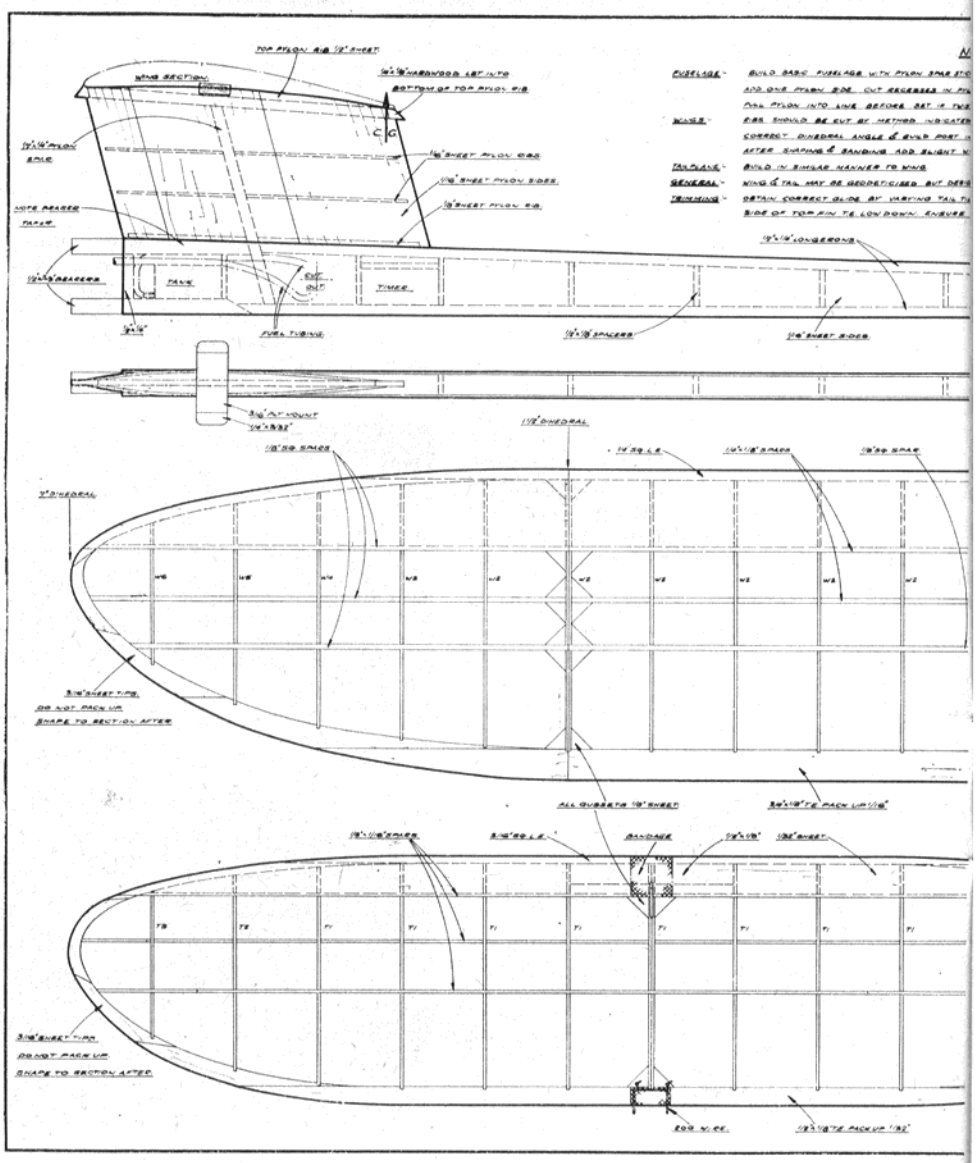
This component is as slim and simple as practicable, the completely enclosed 10 c.c. tank being sufficient for any motor up to 3.5 c.c.

To gain the full advantage from this form of construction the longerons should be made from hard balsa and the sides from soft. The section is sanded and carved to a semi-circular shape at top and bottom as shown.

Wings

The tip shape is a concession to appearance but the construction is essentially practical.

Care should always be taken with this type of wing tip to leave no gaps between the parts during assembly, or cement shrinkage may produce excessive warps. A natural and desirable tendency is towards wash-out, and this should be



encouraged if it does not appear of its own accord. The ¼ in. wash-in on one inner panel is important but the other inner panel must remain flat.

Tailplane

This is of similar construction to the wing and although the wood sizes shown may look flimsy, they should not be increased. My original tailplane shows no defects due to the small wood cross sections and it is extremely light.

Finishing

The whole model should be covered in heavyweight Modelspan or its equivalent, given a suitable number of coats of dope, and then fuel proofed.

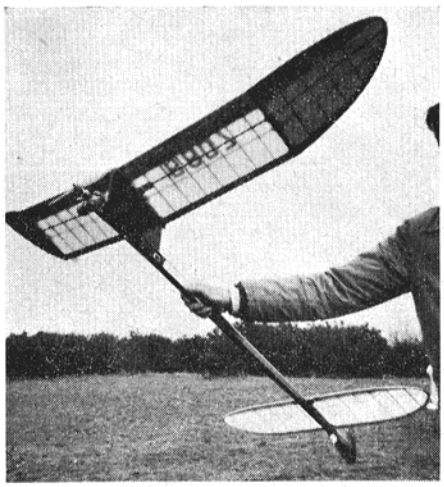
Trimming

The trim is the " Tail Tilt and Wash In " type and should result in a near vertical spiral of a type increasingly common nowadays.

Before even venturing onto the flying field, however, check and ensure that wing incidence is correct (4 deg.), thrustline is zero/zero, c.g. where shown, and all warps as indicated. The wing should be keyed in place, preferably with pieces of split dowel. Correct the glide by adjusting the tailplane incidence and tilt, and by using low power with a fairly long engine run and a very short D.T. The tilt should bring the tailplane nearly parallel to the starboard inner wing panel while the tailplane incidence should be increased to cure any trace there may be of a stall.

Power can now be increased gradually. If looping or more likely excess left rolling tendencies predominate then a strip of $1/32 \times \frac{1}{8}$ in. balsa should be added to the starboard side of the fin T.E., just above its junction with the fuselage.

If the climb pattern is too tight and possibly banked inwards, strip should be added to the port side of the fin in a similar position. In this way a safe trim should be arrived at within 10 flights, although further detail trimming will probably be necessary to get the best out of the model.



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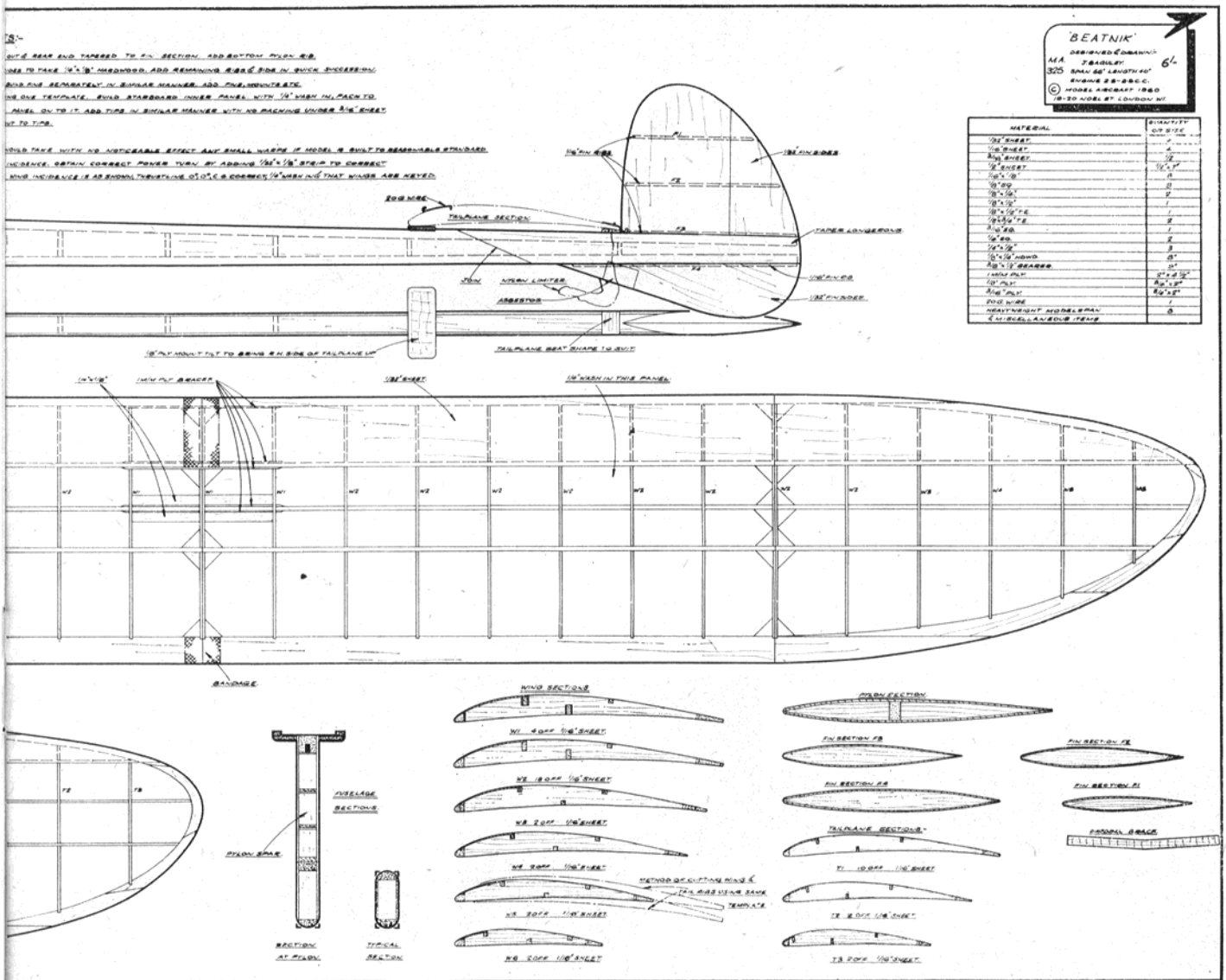
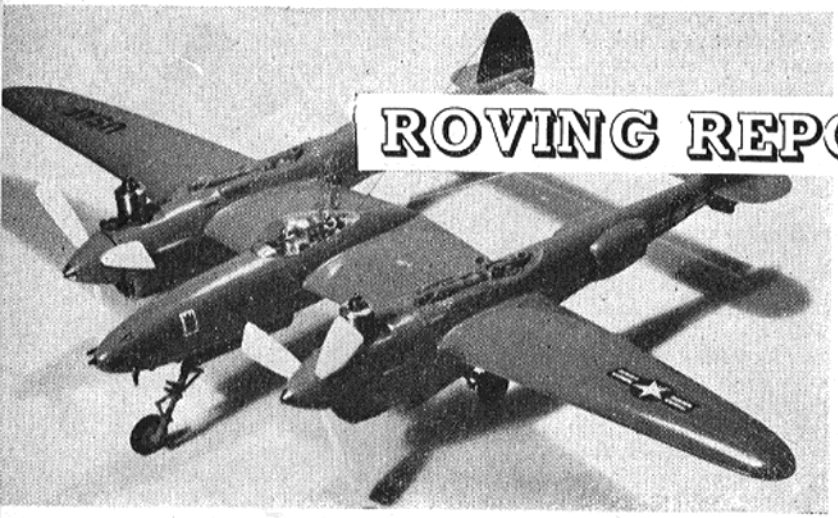
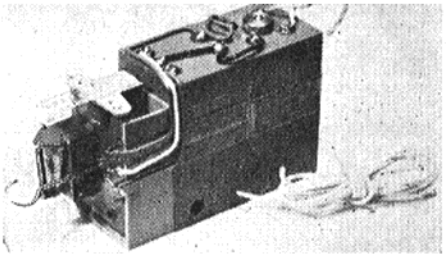
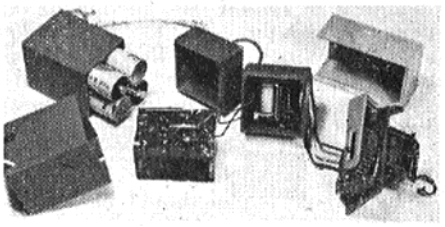


ROVING REPORT



Most ambitious of American plastic ready-made control-liners: Wen-Mac's new Lockheed P-38 with twin Wen-Mac Mk. III Roto-matic engines.





Graupner Mikrokombi (receiver, battery-box and escapement). Note how receiver components (excepting relay) are "crashproofed" by embedding in plastic block.

HAVING had good reports from the Continent of the Graupner Mikrokombi, we recently obtained one. This is the ultra lightweight receiver installation, complete with escapement and battery box, based on the all-transistor "crash-proofed" Ultraton. The whole outfit operates on only four pencells and weighs under 5½ oz. ready to go. Installation is just about as simple as it is possible to imagine. There are no electrical connections to make. Just a case of fixing the switch in a convenient position on the fuselage, rigging the aerial and coupling up rudder linkage and rubber motor.

* * *

Feather in their cap for Rivers . . . the American A.M.A. have recognised a new national record in the F.A.I. F/F Power Senior Class by Gary Duncan of Van Nuys, California, flying a model powered by a British Rivers Silver-Streak.

* * *

Bigger and more elaborate ready-to-fly plastics seem to be a current trend in the U.S. Cox's 32-in., 2½ c.c. powered Piper *Comanche* was mentioned in our April issue. Now we have just received Wen-Mac's 1960 catalogue, together with their latest: the first twin-motor plastic—a really well-produced P-38 *Lightning* with two Wen-Mac Rotomatic engines. In addition, the new Wen-Mac range includes a 30-in. *Mustang* and a 34-in. Cessna *Skylark*.

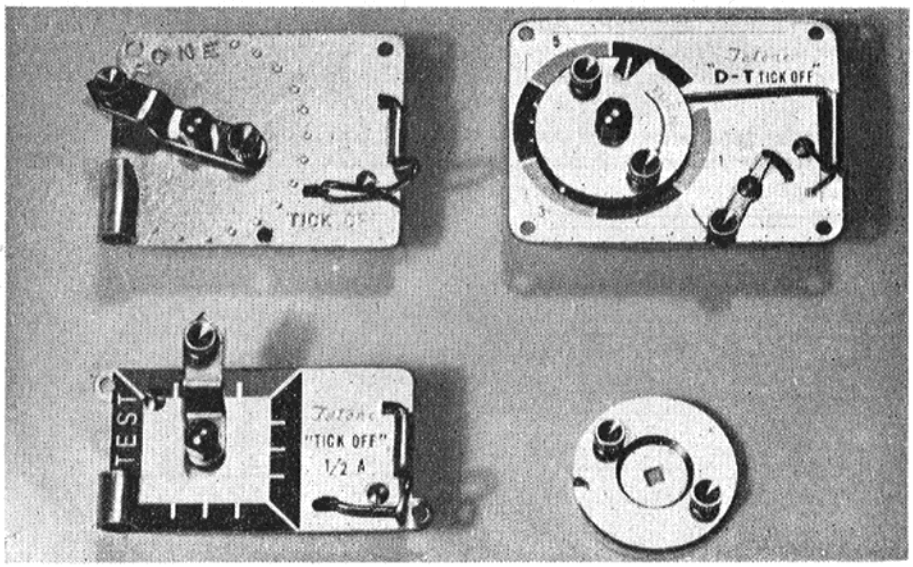
* * *

A somewhat unusual project for a "full-size" manufacturer, the Temco Aircraft Corporation, under the auspices of the U.S. Weather Bureau, has designed and hopes to put into production, a radio controlled model for meteorological research. The model, 10 ft. span and weighing 25 lb. all up, is of balsa and fibreglass construction. Much regular model equipment is used, including a McCoy 60 engine, driving a 14 × 6 Top Flite prop, Citizenship SS-MSR-8 eight-channel superhet receiver and Bonner servos. The model is a high-wing strut-braced pusher with "hatchet"-shaped fuselage. It is launched by means of a special catapult, to simplify take-off in restricted or rough areas. An automatic parachute recovery system is included and works on loss of carrier from the transmitter.

The idea is not so fanciful as one might think. The possibilities of a radio-controlled model for probing the atmosphere have been recognised for some time. It is largely due to the recent advances in model radio equipment capability and reliability, that such a project is now feasible.

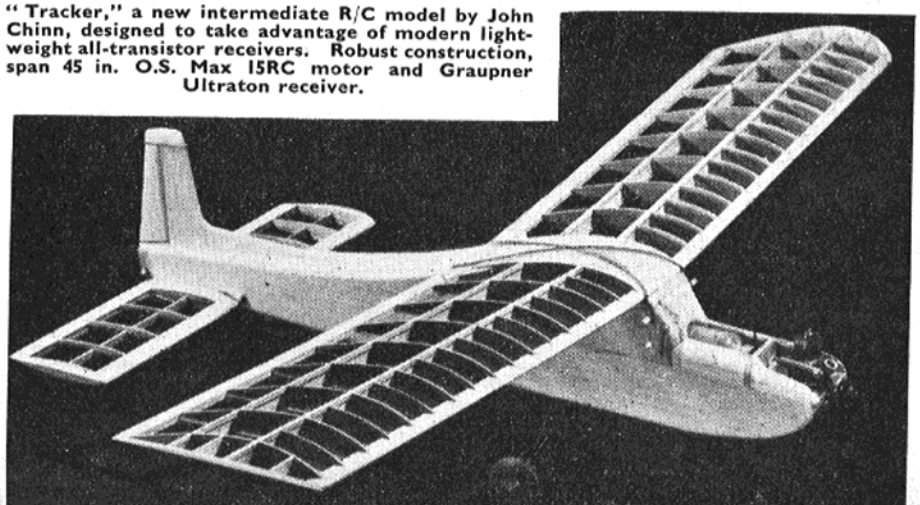
* * *

The Tatone timer range made in Japan for John Tatone of San Francisco, and now available in the U.K. from Dave Posner, has recently been extended to include a slightly smaller and lighter version of the standard "Tick-Off," plus a special accessory for the d/t timer to increase dethermalising limits for fly-off work. The new small timer uses basically the same movement as the bigger type but has a smaller mounting pleat and is ⅛ oz. lighter. The d/t accessory, called a "Time Extender Disc," fits in place of the standard timing disc on the d/t timer and allows two revolutions of the disc instead of one.



The Tatone timer range: Standard Tick-Off (top left), Half-A Tick-Off (bottom left) and D-T Tick-Off with "Time Extender Disc" for fly-off.

"Tracker," a new intermediate R/C model by John Chinn, designed to take advantage of modern light-weight all-transistor receivers. Robust construction, span 45 in. O.S. Max 15RC motor and Graupner Ultraton receiver.



LETTERS

to the Editor

No Siskin nose!

DEAR SIR,—I am not, I'm afraid, an aeromodeller or a regular reader of MODEL AIRCRAFT, but the cover of your April issue [the beloved (sometimes) *Siskin*, which I flew in my R.A.F. days in 111 Squadron at Hornchurch, in 1929], stopped me dead in my tracks at a news stall the other day.

I did about 350 hours on *Siskins*, IIIA solo, and III dual. I have *not* got a *Siskin* nose and nobody I knew in 111 Squadron had either, although such things were to be found in Fighting Area (now Fighter Command). Trouble with the *Siskin* occurred when it was near the stall, as aileron control faded out long before elevator control. In landing, a ham-footed pilot kicking the rudder about to keep the machine straight, could drop one wing. Having no aileron control left to pick it up, and observing with a very anxious eye that the wing tip was much nearer the grass than it ought to be, it was almost a reflex to pull the stick back a bit. The elevator was still full of life and promptly depressed the tail. The large, parasol-like upper wing responded to the suddenly increased angle of incidence by ballooning the whole aircraft up about 10 or 15 ft. where it stalled completely and fell on to the ground with a re-sounding crash. Its forward speed over the ground at this interesting moment would be about 60 m.p.h. If the pilot was lucky, the wheels hit first, the aircraft went over forwards onto it's back, and the pilot received his *Siskin* nose from the edge of the cockpit. If the pilot was unlucky, the wing tip hit first and the whole outfit cartwheeled with disastrous results.

The *Siskin* inspired mixed feelings in those who flew it. It was, I think, the first all metal fighter and suffered by comparison with the earlier *Grebes* and *Gamecocks* which were the most beautiful viceless little aeroplanes to fly. In landing a *Siskin*, the last little bit of pull-back of the stick *had* to coincide exactly with the overall stall. Up to about 15,000 ft., the *Grebe* and *Gamecock* had a better performance, but the *Siskin* was the superior over this altitude.

I see from my log-book that on January 10, 1930, I took a Battle Flight Climb to 29,000 ft. and I believe they were designed to fight up there. The *Siskin* was very strong, and very reliable, and although we rather envied 23 Squadron with their *Gamecocks* (the last in the service), I think we had a sneaking affection for our "tin" aeroplanes.

Yours faithfully,
J. S. POLE

Thaxted, Essex.

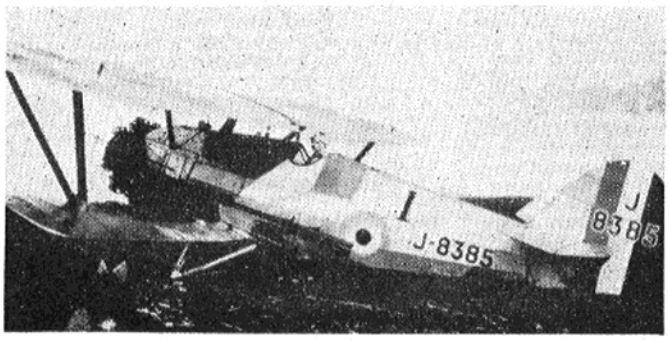
Early Camel

DEAR SIR,—With reference to Major Draper's photos in the May, 1960, issue of MODEL AIRCRAFT, I think a few comments are necessary. Being only 17, I cannot remember the *Camel* flying over this city, but it is as well to mention that if it did do so in 1916, it must have been very late in the year, as the first prototype was not turned out until December 22nd, 1916. Deliveries of the *Camel* did not commence until the summer of 1917. The machine in the photo could be the prototype, but Imperial War Museum photo H.305 shows the prototype with service markings. I don't think that the then local aircraft factory (Sir W. G. Armstrong Whitworth) were responsible for the production of any *Camels*. (*Slip of the pen here, it should of course have read* 1917-*Ed.*)

The only reference I have to the Dyott monoplane indicates that it was constructed by Hewlett & Blondeau Ltd., Oak Road, Leagrave, Luton, and that they did so in 1913. It was designed by G. M. Dyott who was a pioneer of British aviation. He received his Royal Aero Club pilot's certificate (No. 114) on August 17th, 1911. Eighteen months later he designed the little monoplane which was powered by a 50 h.p. Gnomr engine. He used it a good deal foe flying at home and in America.

Yours faithfully,
P. W. LIDDELL

Newcastle upon Tyne.



J. S. Pole seated in his III Sqdn. "Siskin IIIA" at 5 F.T.S. Sealand. (See "No Siskin nose.")

Vintage Models

DEAR SIR,—May I congratulate you on your "Vintage Issue." I have been a model aeroplane enthusiast almost since the cradle so I can go back to the "oiled silk and birch spar days" as I am now 54.

It would be so interesting to see drawings of such early models as Newalls *Falcon* (three gears, elastic), Mr. Willis' *Sky Rover*, and Mr. Inevitich's *Ad Astra* landplane and seaplane. This last machine, birch, plywood, silk covering, elastic powered, weighed over 1 lb. and really flew.

If these "old timers" could be reproduced in modern materials (balsa wood, etc.) they could still put up a great show as against the modern types, so why not a "Model Vintage Issue?"

Yours faithfully,
D. M. DENT

Claygate, Surrey.

More Dyott gen.

DEAR SIR,—I notice in the latest issue of MODEL AIRCRAFT that you are asking for further details of the Dyott monoplane, a photo of which appeared on page 129. The following notes may therefore be of interest.

The Dyott monoplane was an original design by George M. Dyott, and was built by Hewlett and Blondeau at Clapham during 1912-1913. It was fitted with the popular 50 h.p. Gnome engine, and had a span of 29 ft. and a length of 23 ft. The machine was a single-seater, constructed for sporting flying and cross-country trips. Soon after it was built, Dyott shipped it to the U.S.A. and, from April until October, 1913, flew his monoplane at demonstrations from the east to the west coasts, covering some 2,000 miles in the process.

On returning to the U.K., the Dyott was entered in the London-to-Brighton Handicap race which was flown on November 8th, 1913. After making a forced landing on Beachy Head, the machine was unlucky enough to be blown over by the wind and had to withdraw from the race.

Among the cockpit instruments was a special graphic recorder, designed by Dyott, which showed by pointers on a

revolving drum, the movements made by the controls for the rudder, elevators and wing-warping. The maximum endurance was three hours and the top speed was 75 m.p.h.

By the way, I'm a bit puzzled by the caption which calls the F.K.27 "the very first side-by-side two-seater biplane," as several much earlier types come to mind straightaway, such as the 1912 Military Trials Bristol G.E.2 with 100 h.p. Gnome, the 1912 Military Trials Coventry Ordnance Works biplane with 100 h.p. Gnome and also the 1913 prototype Sopwith *Tabloid*. The Sopwith *Bat-Boat* of 1913 was another two-seat side-by-side biplane.

One thing has just struck me. In each of the two vintage issues, both the latest and that of July, 1957, the material has been pretty well 100 per cent. military. As both issues have proved very popular, I suppose that the idea will be repeated at some time in the future, so how about making it a vintage civil number? (*What do other readers think?—Ed.*)

Yours faithfully,
P. M. H. LEWIS

South Benfleet, Essex

Eagle or Lion ?

DEAR SIR,—I was extremely interested in Major Chris Draper's contribution "Early Days" in the April issue of MODEL AIRCRAFT. Not only did he revive memories of my association with the *Pup*, *Camel*, 1½ *Strutter*, *Snipe* and others, but also my first and only personal meeting with him, although I have followed his exploits throughout the years with much admiration.

It was either when returning late one evening from the 1919 Amsterdam E.L.T.A. or on a subsequent Continental trip, in bad weather, that Major Draper dropped in at the former R.N.A.S. aerodrome at Eastchurch, Isle of Sheppey, in the B.A.T. airliner and after being introduced to an audience watching a show in the station theatre, affectionately known in those days as "L" shed, he was taken to the mess and stayed the night.

As a member of the "Flying Section" at the aerodrome, whose duties included the handling of visiting aircraft, I found myself in the morning pulling over the four-bladed prop of a very stubborn engine on the B.A.T. airliner, with a number of other fellows hauling me away until blisters appeared on my hand. Eventually, hot water put into the cooling system induced the engine to start! I note Major Draper mentions the engine as being a 400 h.p. Rolls-Royce. Personally, I was under the impression it was an early type of Napier Lion, for at the time we had had a fair amount of experience with Rolls Falcon and Eagle engines on the station and had ironed out most of the starting snags! Engines of 400 h.p. at the time were the American Liberty and Sunbeam-Coatelen of 430 h.p. and 475 h.p. respectively, whereas the Eagle Mk. VIII had of course a bore and stroke of 114.3 mm. by 165 mm. and was rated at only 352 at 1,800 r.p.m.

The heading photograph of the *Snipes* in formation at Hendon in 1921 (which I saw) also brings back to mind the parachute drops by Newall and the crazy flying in the Avro 504 by Flt. Lt. Longton. Knowing Chris Draper was an R.N.A.S. type, I had always wondered where the "Major" part came in. Quite frankly, I had assumed his numerous exploits had earned for him the oft bestowed *nom-de-plume* of "Mad Major," one of whom commanded the squadron of red-nosed night-fighter *Camels* based at Hornchurch 1917-18, and who frequently did a little day straffing of 63 Squadron at Joyce Green on the opposite side of the river!

Ah, well, those were the days! and that some of us are still actively interested in model aeroplanes may well give your Topical Twist writer "Pylonius" a clue towards solving his "Just a Sec" problem!

Just one other thing, the photograph of the Bleriot monoplane which you publish from Mr. H. Grundy of Carlisle is quite probably the one flown around Britain before World War I to advertise the *Daily Mail*. The pilot was a Frenchman named Salmet. I was present on the occasion of his visit to Gravesend, Kent. The landing ground was Arnolds Meadow, Milton, then bordered with

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.

CONTEST CALENDAR

May 29th	Scottish C/L Nationals. Kirkaldy.
June 5th/6th	**BRITISH NATIONAL CHAMPIONSHIPS.** R.A.F. Scampton.
,, 5th	THURSTON CUP. U/R Glider.
	SHORT CUP. P.A.A. Load.
	S.M.A.E. CUP. F.A.I. R/C Multi.
	LADY SHELLEY CUP. Tailless.
	KNOKKE TROPHY. C/L Scale.
	DAVIES TROPHY. Class A T/R.
	COMBAT. Prelim. Heats.
	SPEED.
,, 6th	SIR JOHN SHELLEY. U/R Power.
	MODEL AIRCRAFT. U/R Rubber.
	SUPER SCALE. F/F Scale.
	RIPMAX TROPHY. F.A.I. R/C Rudder only.
	TEAM RACING. Class B and ½A.
	COMBAT. Finals.
	SPEED.
	GOLD TROPHY. C/L Aerobatics.
,, 18th/19th	F.A.I. POWER TRIALS. (2 x 5 flights.) Centralised.
,, 25th/26th	P.A.A. Festival. Abbotsinch.
,, 25th	P.A.A. Load / Clipper Cargo (3.25 c.c. Limit)
	Junior Jet.
	Senior Jet.
	U/R Glider.
	Combat.
,, 26th	U/R Power.
	U/R Glider.
	F.A.I., T/R.
	Class "B" T/R.
,, 26th	†Northern Heights Gala, R.A.F. Halton.
July 2nd/3rd	SECOND F.A.I. C/L TRIALS. Centralised.
,, 2nd/3rd	R.A.F. Championships Debden. Wakefield (3rd). Open S.M.A.E. members.
,, 3rd	†Clwyd Slope Soaring, Moelffamau, Open, A/2, R/C, Junior.
,, 10th	Enfield C/L Rally (Playing fields by A10) T/R—A and B, Combat, Stunt, Handicap Speed.
,, 10th	Scottish F/F Nationals. Abbotsinch.
,, 16th/17th	PRACTICE TRIALS. F.A.I. Rubber. Centralised.
	PRACTICE TRIALS. F.A.I. Glider. (five flights each contest.)
To be fixed	**SCOTTISH GALA.**
	K.L.M. TROPHY. U/R Power.
	C.M.A. TROPHY. U/R Rubber.
	GLIDER. U/R Glider.
	TAPLIN TROPHY. R/C Rudder only.
	TEAM RACING. Classes A & B.
July 24th	*MODEL ENGINEER CUP. Team Glider.
	FLIGHT CUP. U/R Rubber. Area Centralised.
July 30th/Aug. 2nd	**WORLD CHAMPIONSHIPS POWER.** Cranfield.
,, 7th	St. Albans Gala, Chobham Common. R/G/P, R/C single, F.A.I. Power, .049 Power.
,, 14th	†Devon Rally. Woodbury Common, nr. Exeter. R/G/P, Combat, R/C.
,, 21st	AREA CHAMPIONSHIPS. Rubber/Power/Glider.
Sept. 4th	**NORTHERN GALA.**
	GLIDER. U/R Glider.
	HAMLEY TROPHY. U/R Power.
	CATON TROPHY. U/R Rubber.
	AEROMODELLER TROPHY, R/C Multi.
	TEAM RACING. ½A, A & B.
	PAN AMERICAN CUP. P.A.A. Load (American Class).
	UNITED KINGDOM CHALLENGE MATCH.
,, 11th	†Croydon Gala, Chobham, Open Glider.
,, 18th	*KEIL TROPHY. Team Power.
	FROG JUNIOR TROPHY. U/R Rubber/Glider. Area Centralised.
,, 18th	S.A.A. Caledonian Shield.
,, 25th	South Coast Gala.
To be fixed	Surbiton Gala, Chobham. R/G/P and .049 Power.
Oct. 9th	*FARROWSHIELD. Team Rubber.
	TEAM RACING. Classes ½A, A & B. Area Centralised.
,, 16th	FROG SENIOR CUP. U/R Power.
	C.M.A. Cup. U/R Glider. Decentralised.
,, 23rd	†Croydon Gala, Chobham, Power, Open and .049.
Nov. 20th	†Croydon Gala, Chobham, Open Rubber.

* Plugge Cup events.

† S.M.A.E. Sanctioned meetings.

quite high trees, with numerous clumps of trees in the centre, it is remarkable how they managed to get in and out of such places. At the present time local aeromodellers may know the place as the site of a very modern school, certainly not a landing field for aeroplanes!

Yours faithfully,
H. F. WELLER

Bournemouth, Hants.

Modellers will be welcome at the Air Britain meeting, Caxton Hall, Westminster, (admission non-members 2s. 6d.) at 7.30 p.m. on June 1st, when Major Draper will give an illustrated talk entitled "Underneath the Arches!"

More tissue tips

DEAR SIR,—Having read David. Williamson's letter about dyeing tissue in your April issue with great interest, I should very much like to add a few extra tips concerning this subject.

Firstly tissue should be immersed in cold water and surplus dye solution rinsed out directly after removing it from the dye bath, then laid on clean newspaper to dry.

The reason for this is that the dye tends to cling to certain areas of the tissue, and cause it to become darker in these parts giving it a blotchy effect, and spoiling the finished article. One need not worry about the dye coming out of the tissue whilst rinsing, as this is only surplus which has not "taken."

This brings me to another point. If you have not taken this precaution of rinsing thoroughly, the dye may come out with the application of clear dope. Imagine you have used ordinary white tissue on one part of the wing and the dyed tissue on another part, you may find thin streaks of colour appearing on the white tissue.

Unlike Mr. Williamson I have been experimenting and producing several different colours, using Dylon, and I thoroughly recommend this method.

Colours such as orange, purple, green and the well-known colours can be produced, all of which give a very deep hue and will aid visibility for the poor old timekeeper.

Lastly, dyed tissue does not fade so readily as ordinary Modelspan and jap.

I should like to sign off with the thought that if modellers will follow Mr. Williamson's idea, perhaps we shall see brighter coloured models at the flying fields this season.

Yours faithfully,
M. J. SMITH

Norwich, Norfolk.

Jim Baguley replies

DEAR SIR,—I thank Mr. Faulkner for his kind comment at the beginning of his letter in your April issue and would hasten to say that I agree with his explanation of the origin of the tail tilt and wash-in trim. I would also like to thank him for filling in some history as I only started modelling in 1953.

I would like to point out however, that my words were "the majority of the Surbiton club seem to use the wash-in and tail tilt on pylon models; indeed, certain members of that club would *seem* to be the originators of this trim etc." I was therefore, only suggesting that they were the originators as I had not heard of it being used before any of the instances I mentioned.

Now for other criticisms as opposed to comments. Mike Gaster and Pete Buskell were after my blood for writing in reference to Tom Smith's models "The propellers were also a lesson, being very wide bladed and making efficient use of the engine power, this in contrast to the narrow bladed Surbiton propellers."

Here my wording was rather unfortunate as I meant to show appreciation of Tom Smith's propellers and then to contrast their shape with that of the Surbiton propellers, which also work very well. Pete also didn't appreciate what I said about his *Slick Stick* design in other peoples hands, but here I think I said what I meant.

John Thompson, in a recent letter attributed the under elevated sweep round mentioned, to a long moment arm (29 in. on, I believe, 59 in. span), and this may well combine with other features to produce this unpleasant effect, but I have had 30 in. moment arm on 56 in. span on one model which did not do it. In John's case however, a reduction to 27 in. moment arm was a cure. He also does not appreciate thick flat bottomed tailplanes and suggests that they slow the climb quite a lot, but I have never noticed this myself.

I thank Mr. Magill for the opening comment of his letter in the May issue of MODEL AIRCRAFT and reply to the others as follows:

Wing Wash-in: I agree with his comments but would say that the propeller depends upon the individual motor used as well as the size and model.

Downthrust on Bethwaite Design: 5 deg. downthrust may not be excessive in itself but when added to wing incidence and compared with a typical pylon models 4 deg., it is a bit large; possibly excessive is a bit strong. I admit I was thinking more in terms of the Henley models.

Slipstream comments: here, I must confess to having made rather a severe mistake. As Pylonius might comment "I don't know my left from my right" and here I would certainly seem to have "dozed off." I don't think it spoils the general effect of things, but I apologise for the mistake and add that Mr. Magills comments are correct.

The *Amazjom* has a flat section with sharp leading edge as he stated and seeing Tony Young's *Amazooms* in action I would re-state emphatically that, in his case at least, the model "scores on the glide."

Generally, no one seems to have disputed much, which is rather surprising, although I did notice that Pylonius had his usual dig! There were, however, a few small errors, which I would like to correct. December issue, page 327, ref. to Max Byrd 1932, should read 1952, and name of Tom Smith's model should be *Fried Fritter*. January issue, page 39, 300 and 600 force units and distance units should be 150 and 300 (my error).

Yours faithfully,
JIM BAGULEY

Hayes, Middx.

The Editor welcomes letters for publication on any subject, but preferably of "newsy," topical interest or controversial nature. Address is "Model Aircraft," 19/20, Noel Street, London, W.1.

This month's WING CLUB PAGES overleaf . . . .

Dear Alan Winterton,

I would like to become a member of the Model Aircraft Wings Club. With this coupon I enclose a postal order for 1/- to help cover the cost of the badge transfers and membership book. *All membership applications must be on this form.*

Name in full.....
(Underline christian name normally used)

Address.....

.....

..... Date of birth.....

School or College.....

Name of other club or clubs to which I belong (if any).....

.....

Send to—MODEL AIRCRAFT WINGS CLUB, 19-20, NOEL STREET, LONDON, W.1.

Outside, Everybody!

FINE summers for the next 10 years! If this cheering forecast proves correct, the model aircraft enthusiast in Britain will have plenty of opportunity for flying and less cause to envy his fellow modellers in countries where a long, hot, bright summer is regarded as normal.

One of the reasons for the happy progress of our hobby in North America is the continuance of fine weather through a large part of the year. The winters are tough, but even then the air is clear—so wonderfully crisp and glittering that all the young people rush out, between snowfalls, and enjoy themselves strenuously. At other times they busy themselves indoors. Snug behind the storm-windows, the aircraft modeller prepares a new project or improves an old one.

Part of the great appeal of the model aircraft hobby is that it can be enjoyed indoors and in the open air as well. It belongs to both, and no other popular hobby strikes such a balance.

As most of our models are built to fly, the work that we do inside the house usually finds its fulfilment outside, in field or park or the open spaces of a common. Last summer gave us excellent conditions day after day. If the same kind of weather is repeated this year—and we began to expect it at Easter—we shall soon cease to be surprised when one sunny month succeeds another. Like the Americans and Canadians, we shall take the summer for granted. A bad spell should not lower our hopes, for the long-range forecast is based on the breaking up of the Northern ice-cap, a process which is sure to continue.

To Wingmen a blue sky is an invitation. "Come out," it says, "and fly your models!" Other young people will see them in the air—and then they, too, will want to share the fun. Make friends with them, if they are not your friends already. Tell them about your hobby and about the Wings Club. Bring them in, to share your pleasure!

United by an intelligent activity, a group of boys can have a wonderful time together in the open air.

ALAN WINTERTON

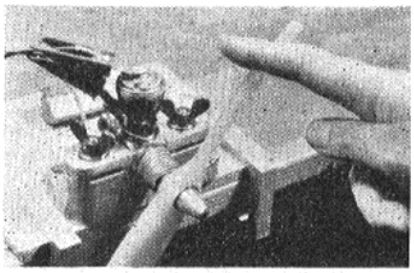
Peter Chinn's ENGINE TIP for Wingmen

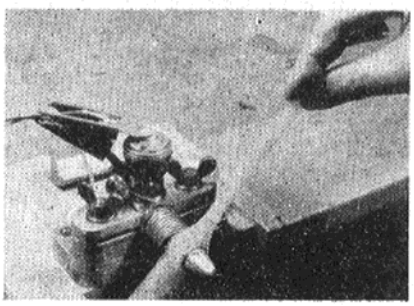
SEVERAL of the smaller engines now being manufactured for the younger modeller are equipped with spring "starter" units. They include the D-C Quickstart range, the A-M 049 and the American Cox, Cub and Wen-Mac series.

These starters are simply operated by turning the propeller backwards against the spring, then releasing it. The energy stored by the spring is more effective than normal finger flicking in spinning the motor over really vigorously, which means that you can be more certain of a quick start.

In addition, the spring starter will eliminate any possibility of rapped fingers—*provided that you use it sensibly.* If you use one finger, as in our top photo, there is a risk (at least until you become accustomed to using a spring starter) of your finger slipping and getting in the way of the second blade as it snaps round. Whipping

Continued top next column





the finger quickly off the end of the blade, to make sure of its being out of the way, can also result in a sore digit, especially with the sharp edges of modern nylon props.

A better system is to grip the blade tip firmly between the forefinger and thumb and to then pull your hand outwards from the prop, letting the blade slip from your grasp. In this way, your starter will work efficiently but without any risk of cut or bruised fingers.

WINGMEN WRITE . . . .

Thank you very much for sending my badge, membership card, and transfers so quickly. I am a very keen aeromodeller, and I started this hobby about two years ago. Already I have a Keilkraft *Spectre* C/L stunt kit with an A.M. 25 in it but I started off with a Keilkraft *Dolphin* glider, and followed up with quite a lot of the Flying Scale Series.

I then got a Keilkraft *Champ* with an Allbon Merlin in it, mastered C/L flying, and finally arrived at my present state in aeromodelling. I am not actually a member of a club, but I sometimes fly with the Ashford M.A.C.

I still think your club is fabulous.—John Richards, Pluckley, Kent.

* * *

May I make this point for I think it will interest fellow Wings Club members? It concerns the numbering of different printed parts in balsa wood kits.

I find that the numbers are often blurred, and hard to read, therefore it is easy to mistake some parts for others.—Clive Robson, Leeds 17.

Clive sent an example taken from a kit and I entirely agree with him. What about it manufacturers? A.W.

PEN-PALS WANTED

John Richards, whose letter is published this month, would like a pen-pal with similar interests. His address is: Sunflowers Farm, Pluckley, nr. Ashford, Kent.

James Tobin, 21, The Bourne, Hook Norton, Banbury, Oxon., is mainly interested in F/F power models and he would like to correspond with another enthusiast.

An entry form for new members to join the MODEL AIRCRAFT WINGS CLUB appears of page 177.

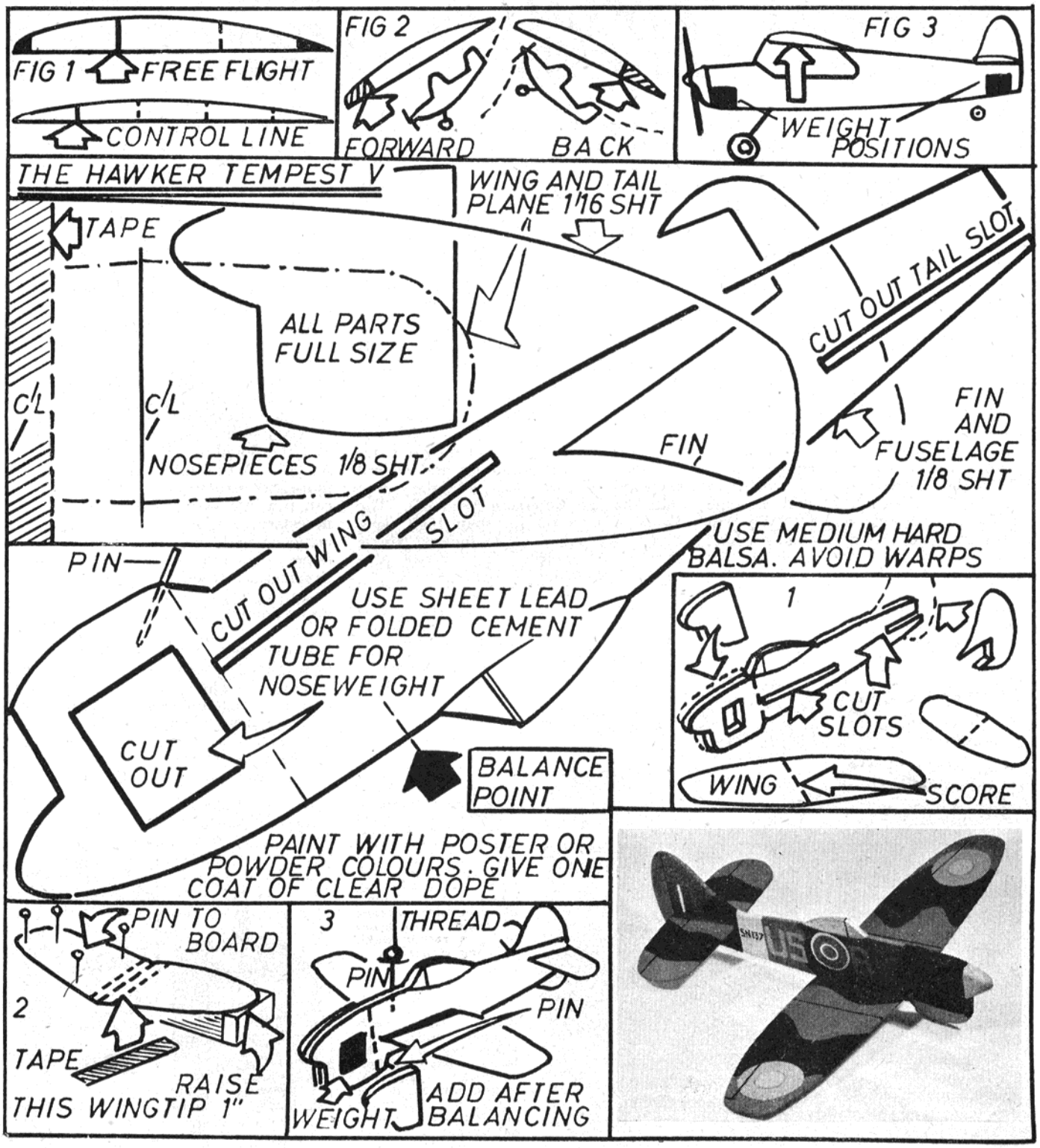
Watch out next month for three thrilling pages of Club News, with a special crossword competition for members to enter.

Model 'n Tip

A special instructional feature for wingmen, with FULL-SIZE plans to build a flying model TEMPEST by **Ray Malmstrom**

THE BALANCE POINT (CENTRE OF GRAVITY)

ONE way (among others !) of wrecking a model is to balance it incorrectly. A guide to correct balance is that F/F models balance at a point 1/3 back from wing leading edge, and C/L models 3/4-1/5 approximately back from the leading edge. This point on C/L models must coincide with the front lead out wire (Fig. 1). With the balance point too far forward your model will DIVE ; too far back it will STALL (Fig. 2). Locate your balancing weights as in Fig. 3. Now build and balance this *Tempest V* glider. Launch it by hand or by tow line catapult (5 ft. $\frac{1}{8}$ in. flat rubber. 10-12 ft. thread anchored to a $\frac{3}{16}$ dia. dowel in the ground. Paper clip on end of thread). Fly over soft grass. Photograph below of my original *Tempest V* shows code letters of No. 56 Sqdn., with which I served in world war two. You'll get some fine loops from this tiny *Tempest*.



Radio Topics

NEWS AND VIEWS FROM THE WORLD OF RADIO CONTROL

KIT manufacturers in this country have not been over-enthusiastic on R/C models as a commercial proposition, though Keilkraft (*Junior* " 60 "), Mercury (*Matador*) and Veron (*Sky Skooter*) have each run a standard production line for years. Meantime, American and Continental R/C kit production has developed to a most elaborate degree and recent relaxation of import restrictions means that a number of these " de luxe " kits will soon become available through the model shops.

Graupner agency for this country has been allocated to A. A. Hales Ltd., which means that these products will shortly be available to all model retailers. A selected range of kits are, in fact, already on their way for general distribution. Graupner R/C equipment is not, at the moment, being imported in any quantity, but this will become readily available later on. We will report in detail when we know which items are to be made available for general distribution.

The introduction of Graupner kits to Britain means that Harold de Bolt's *Satellite* will become available here. This is a variant of de Bolt's well-known *Live Wire* design, retaining all the aerodynamic and structural characteristics which de Bolt virtually pioneered in the United States. Model is 48 in. span—the size of the original *Live Wire Trainer*, but can take engines up to 2.5 c.c. The original *Trainer* flew well with a Mills 1.3 and, although outdated by modern standards, really was one of the nicest of all models for single-channel operation.

Two other very interesting imported kits available are the *Viking* and *Vagabond* by Sven Trudson of Sweden, which will retail over here at just over the £6 mark. The degree of prefabrication and general standard of these kits is higher even than the best American standards. The *Vagabond* is a 60 in. span high wing design for 2.5-3.5 c.c. motors (single channel or multi). The *Viking* is a proven low-wing design for 2.5 c.c. power and incorporates a side-mounted engine. Importers are Ripmax Marine Accessories, so these kits will also be generally available through model shops.

* * *

For those modellers who find silk and nylon hard to handle as covering material, Viscotex may well be the answer. This is a viscose rayon (artificial silk) fabric which has the appearance and handling qualities of a heavyweight tissue and is stiff like the original American Silkspan.

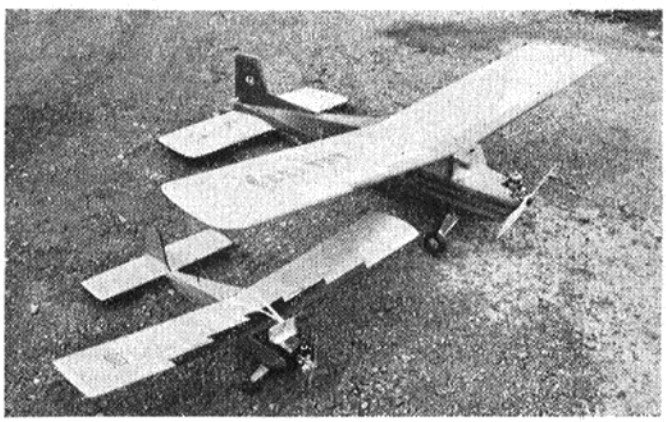
Readily applied with paste (tissue or photographic) Viscotex has a strong shrinkage with dope, making water-spraying unnecessary. The resultant covering is extremely tough and durable and thoroughly to be recommended for wings. Avoid full strength dope on non-rigid structures, however, or you can run into warping troubles. All the necessary initial shrinkage can be achieved with one coat of full strength dope. Then follow with 50-50 dope/thinners as further coats. Sheets measure 30 in. × 25½ in. and covering weight is approximately 0.1 oz. per 100 sq. in.

* * *

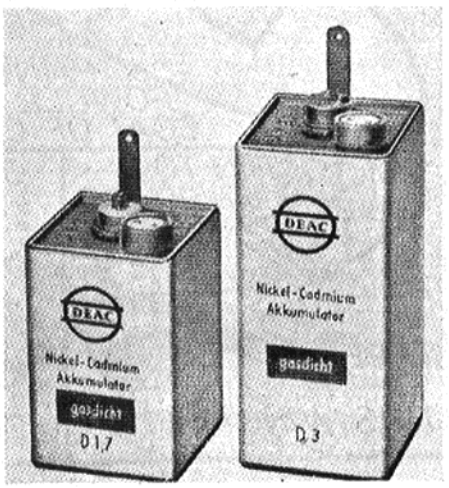
Query from a reader—" Are DEAC cells the German equivalent of our Venner ? " The answer is no. Both are alkaline accumulators (rechargeable batteries), but whereas the Venner is a silver-zinc cell, DEAC cells are of the nickel-cadmium type.

Discharge voltage of DEAC cells is

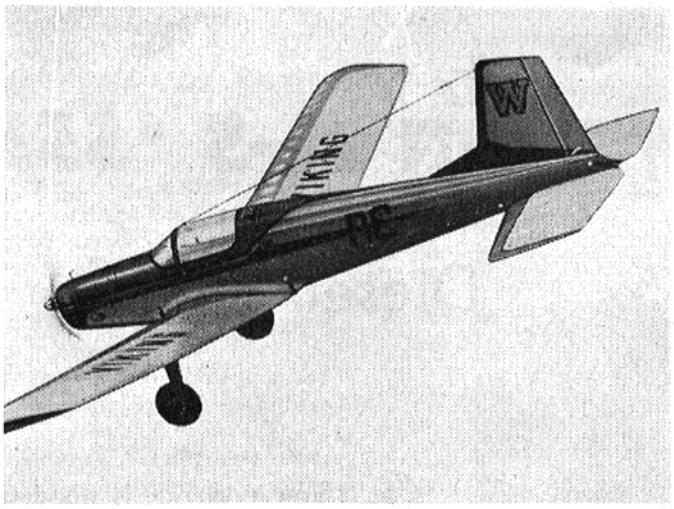
Top left: The de Bolt Live Wire Senior for single - channel or " multi-." Aerodynamic configuration is typical of original American design and much copied.



Bottom left : Live Wire "Kitten," shown here alongside " Senior " is an ideal matching size for new British 049 glow motors, for those who like them small. A very nice model for single-channel operation in calm weather — main limitation being a rather weak wing structure.



Right : DEAC rectangular cells, this shape typical of the larger capacity nickel-cadmium accumulators. Small cells are made in cylindrical and disc form. Nominal output 1.35 volts per cell.



Left : Kits for this good looking *Viking* by Sven Trudson of Sweden are soon to be imported by Ripmax. A 2.5 c.c. side mounted engine is used.

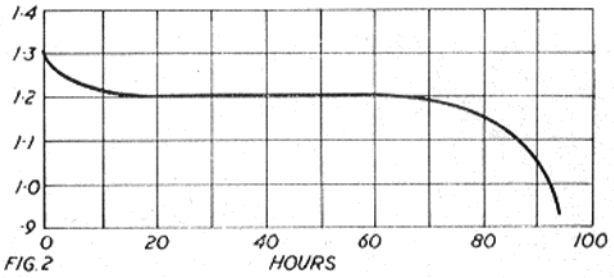


FIG. 2

1.22—lower than the Venner—with an end voltage of 1.1 (beyond which the cell should not be discharged).

DEAC accumulators are hermetically sealed and produced in a range of three main types:—

Disc type cells with a capacity of 60 to 150 milliampere-hours.

Cylindrical cells with a capacity range of 125 milliampere-hours and up.

Rectangular cells with a capacity range of 1.7 ampere-hours up.

Disc type cells can be stacked to give higher voltage single batteries.

Sole concessionaires for DEAC alkaline in this country are G. A. Stanley Palmer Ltd., Maxwell House, Arundel Street, Strand, London, W.C.2.

* * *

Standard method of suppression usually recommended for relay contacts in a servo circuit is a capacitor and resistor connected in series across the contacts. Equally effective, and usually much simpler to arrange, is a single resistor across the inductive *load* itself—i.e., connected across the terminals of the actuator coil or servo motor (see Fig. 1). Using a 47 ohm resistor, one component is saved at the expense of a slight increase in servo circuit current demand (of the order of 10 to 15 per cent., approximately, depending on the voltage of the circuit).

* * *

Whilst on the subject of batteries, we might also mention Mallory Mercury dry cells which came into prominence during Wold War II for packaged communications equipment and have subsequently been developed on a commercial basis both in the United States and this country. Chief advantage is the exceptionally high ratio of energy to volume and weight offered. They are also extremely stable, have a long shelf life, do not require "rest" periods to recover (except under heavy current drain) and have a substantially constant voltage output of 1.2 volts (see Fig. 2). Sizes range down to 0.6 in. dia. by 0.230 in. height (275 milliampere-hour capacity), weighing only 0.14 oz. Pencell "equivalent" weighs 1 oz., has a capacity of 2.4 ampere-hours and a nominal voltage of 1.35 volts.

Chief disadvantages of Mallory cells for model work are the high cost and the fact that they are not rechargeable.

* * *

Undoubtedly, the best arrangement for two-speed engine control when twin needle valves are used with glow motors is to keep the original needle valve position for high speed and make the second needle valve (nearer the open end of the intake tube) the low speed adjustment. Then start the engine and warm up on low speed before switching to high speed and making final adjustments.

Modern trend, of course, is towards barrel throttle combined with exhaust slide for speed control, which is, undoubtedly, a better arrangement. One fault common to all two-speed (or multi-speed) controls, however, is that people will try to aim at too lean a high speed setting on the ground. A slightly rich setting is nearly always required for best flight performance—and that applies equally well to glow and diesel power.

* * *

Article on servo power required to move control surfaces in a current issue of a contemporary journal states that 90 per cent. of R/C flying is done within the speed range 10 to 30 m.p.h. and that servo power required is . . . " a lot less . . . than was generally believed necessary." Now we know where we went wrong with elevators that locked in the down position on a dive and even deflected wire push rods. We exceeded the 30 m.p.h. speed limit!

* * *

Our apologies to Wally Skeels (last month's "Topics"). We grant him plenty of skill in his achievements, but we had no intention of spelling his name that way! Just put it down to a slip of the fingers on the typewriter keyboard. Sorry, Wally *Skeels*!

* * *

Working tip for those who like dural cantilever undercarriages—some people swear by them, some swear at them (the latter being usually people who cannot build a light model). *Do* choose a high tensile grade of light alloy, *not* pure aluminium. The hard alloy sheet must be softened by heating before it will bend. If you coat with ordinary soap and heat gently over a gas flame, the right temperature is reached when the soap turns brown. Then your dural will be as soft as aluminium for bending, but will gradually age-harden again over one to two days until it is back to full strength.

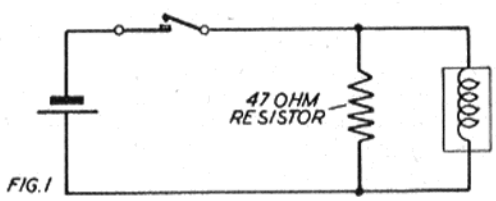
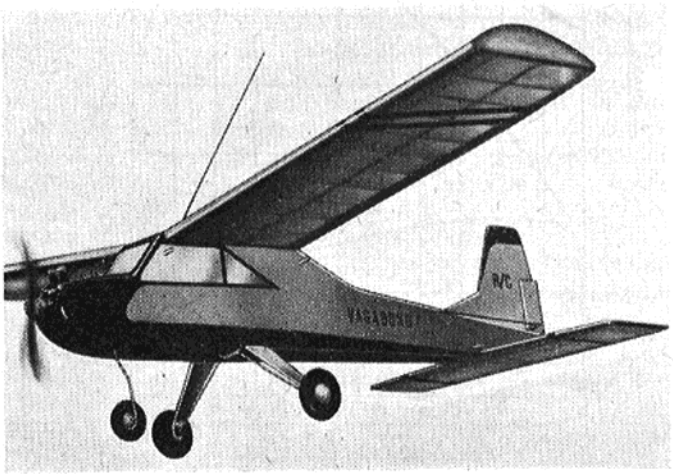


FIG. 1

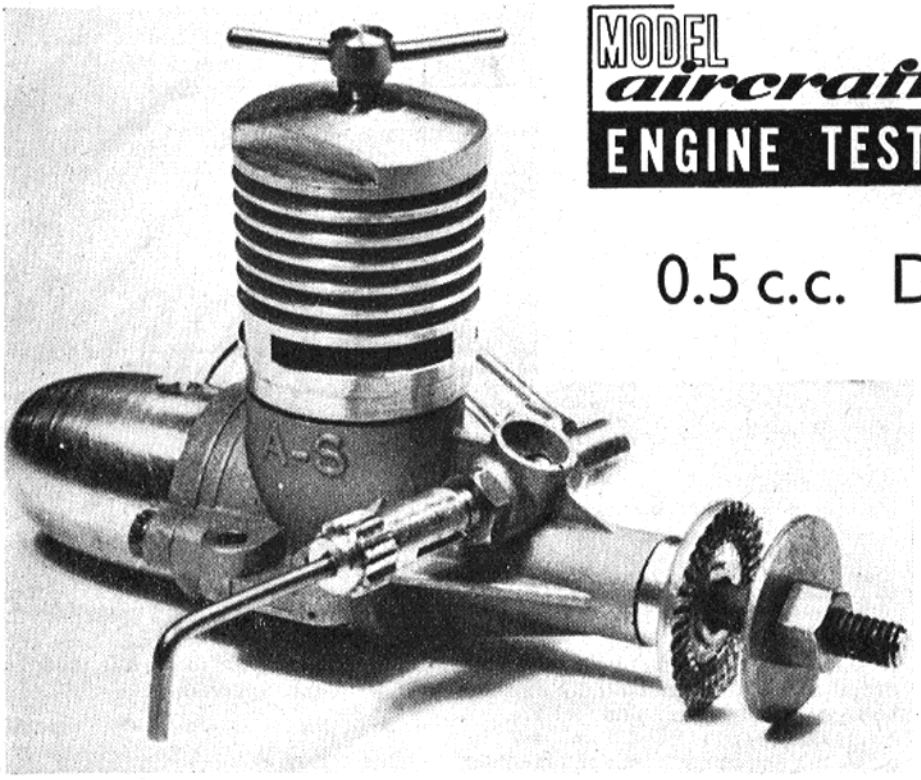


Another Ripmax - Trudson import is the 5 ft. span *Vagabond* (right). Fully pre-fabricated, the kits will cost about £6.

MODEL *aircraft* ENGINE TESTS

The A-S '55'

0.5 c.c. Diesel engine

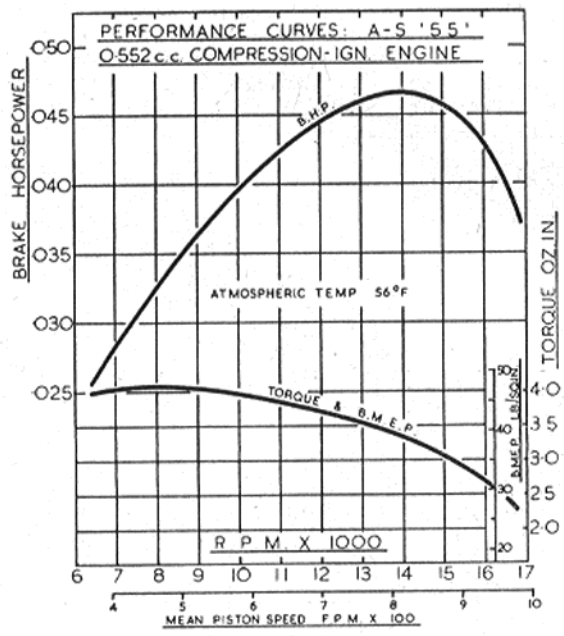


". . . if any evidence is needed to prove that 'baby' engines can be just as easy to start as any other capacity, the A-S '55' is the answer"

ALLBON-DESIGNED model engines date back to the early post-war period of British motors. They began with the Allbon 2.8 of 1948, and progressed through the Arrow, Javelin and Dart, subsequently built by Davies-Charlton and from which later D-C Allbon engines were developed.

The new A-S "55" marks Alan Allbon's return to model engine manufacture and we have no hesitation in saying that, judging by our test sample, this is the best ½ c.c. diesel that has yet been offered to the British modeller. The A-S 55 earns this high praise on three main counts: excellent construction, easy starting and good performance.

The design and construction of the A-S 55 is fairly conventional, although it does have one or two small refinements that lift it out of the rut. Basically, it is a shaft-induction, radially-ported diesel. Components are assembled around a very clean and well-finished diecast crankcase unit with integral main bearing, adequately webbed vertically and laterally, generous beam mounting lugs and a short carburettor intake. The spraybar is angled back to incline the needle control to a position further back from the prop and is unusual in that it is provided with a right-angled inlet nipple, a feature that makes for a much neater line-up of the "plumbing" from tank to carburettor.



A plain, unbushed main bearing is used to support the crankshaft, which has a generously proportioned journal, ⅞ in. long and 0.240 in. dia. The induction hole through the shaft is ⅛ in. dia., leaving a wall thickness of approximately 0.057 in., which should be ample insurance against shaft breakage across the valve port. Unlike most small diesel shafts, the A-S crankshaft is of a counterbalanced pattern. Drive to the prop is via a dural driving disc, taper fitted on a brass split collet which slides over the threaded end of the shaft and is self-locking—not, perhaps, the cheapest method of making a prop drive fitting, but certainly one of the most satisfactory.

The cylinder is in two parts: a plain liner, flanged immediately below exhaust port level to seat on the crankcase, and a finned outer barrel and head unit which fits over the liner and retains the complete cylinder assembly by screwing over the top of the crankcase. The cylinder has three slot-type radial exhaust ports and, below and between these, three inclined, drilled transfer ports. The piston has a domed head and a fully-floating gudgeon-pin is used to couple it to the forged connecting-rod.

The crankcase backplate is a deeply recessed diecasting, attached by means of two screws into the rear of the beam mounting lugs. The backplate is provided with a central boss which forms the lug into which the fuel tank mounting bolt is screwed. The fuel tank itself is a neat and serviceable bullet-shaped container machined from aluminium.

The engine is not the smallest or lightest motor of its capacity that we have seen, but it is unquestionably

one of the most well designed and built that has yet appeared in the 0.5 c.c. group.

Specification

Type: Single-cylinder, air-cooled, reverse-flow scavenged two-stroke cycle, compression ignition. Shaft type rotary valve induction.

Bore: 0.350 in. Stroke: 0.350 in.

Swept Volume: 0.0337 cu. in. = 0.552 c.c.

Stroke/Bore Ratio: 1.00: 1.

Weight: 1.6 oz. including tank.

General Structural Data

Pressure diecast aluminium alloy crankcase and (unbushed) main bearing unit. Counterbalanced, hardened and ground alloy steel crankshaft with 0.240 in. dia. journal and $\frac{1}{8}$ in. dia. crankpin. Flanged and radially ported cylinder liner clamped in position by machined alloy cooling barrel and head, screwed onto crankcase. Cast-iron lapped piston with domed crown and fully-floating 3/32 in. dia. gudgeon-pin. Drop forged high-duty alloy connecting-rod. Machined alloy fuel tank, mounted with a single screw on diecast crankcase backplate, may be rotated to any position for upright, inverted, inclined or side-mount running. Aluminium alloy spraybar type needle-valve with right-angled feed. Beam mounting lugs.

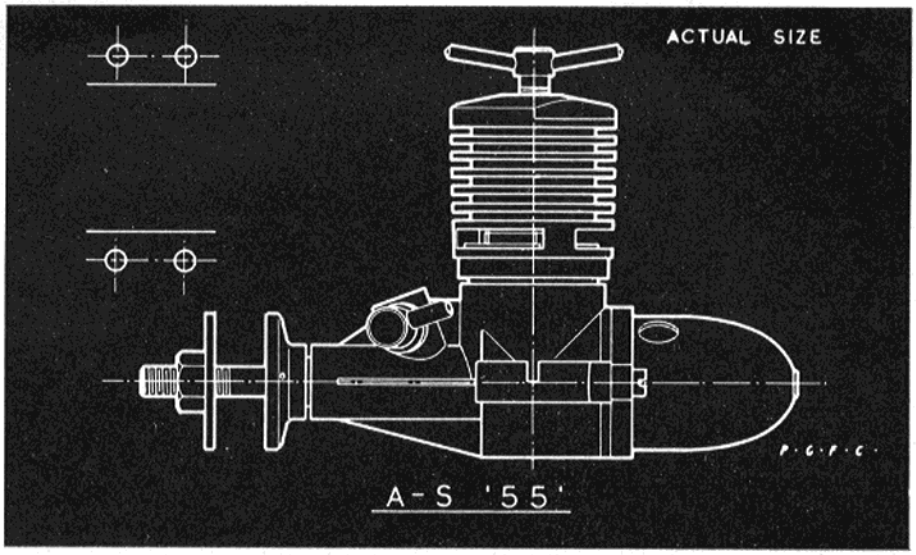
Test Engine Data

Running time prior to test: $1\frac{1}{2}$ hours.

Fuels used: Mercury No. 8 and Keilkraft Nitrated, as recommended by manufacturer.

Performance

Diesels of $\frac{1}{2}$ c.c. capacity are not a recent innovation. An engine of this size appeared on the British market in 1947 and, in 1950-51, several manufacturers of popular diesels brought out $\frac{1}{2}$ c.c. models. These were of varied design, but all, to a greater or lesser degree, seemed to indicate that the $\frac{1}{2}$ c.c. capacity diesel was inferior to, say, the 1 c.c. size, in starting and handling characteristics. Certainly, one hesitated to recommend them to beginners. For several years now, no new $\frac{1}{2}$ c.c. motors have been announced in the U.K., but some diesels of this size have appeared on the Continent and the better examples of these latter have served to disprove the suggestion that a $\frac{1}{2}$ c.c. diesel is inherently tricky to start. Now, if any further evidence is needed to prove that these baby sizes can be just as easy to start as any other capacity, the A-S 55 is surely the answer. This is definitely one of the easiest starting diesels we have yet encountered.



On all the props best suited to the engine, 7 × 4, 7 × 3, 6 × 4 and 6 × 3, both wood and nylon, starting was really excellent. On 8 × 4 and larger props, starting was still quite reliable but the engine was somewhat overloaded on these sizes. On sizes below 6 in. dia., notably 5 × 4 and $5\frac{1}{4}$ × $3\frac{1}{2}$, a beginner would need to exercise just a little caution to avoid the risk of rapped fingers, but, otherwise, starting was still good.

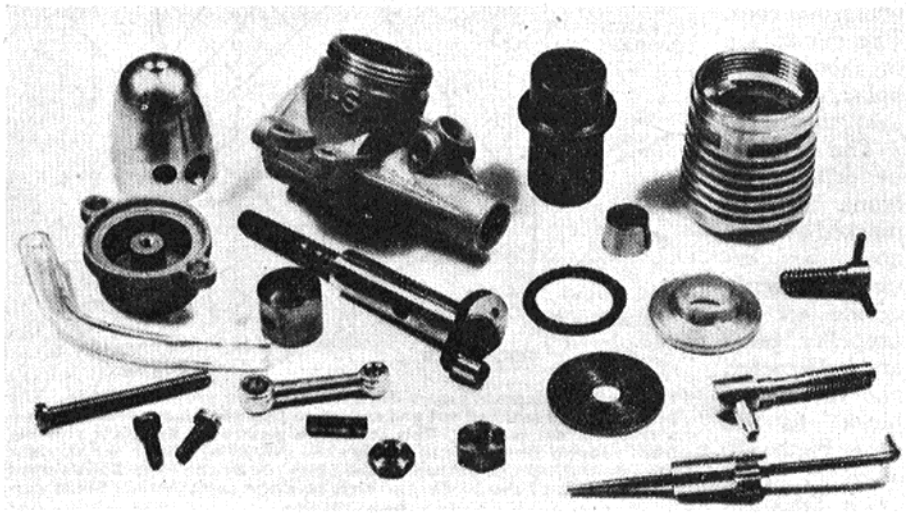
No priming was used during our tests; all starts, hot or cold, being easily obtained with choking the intake only. Running setting for the needle valve was approximately $2\frac{1}{4}$ turns open. Both the needle and compression controls were easy to adjust and held their settings firmly. There was no tendency for the contra-piston to run back, or, alternatively, to seize in the bore when hot.

On dynamometer test, the A-S 55 recorded a maximum torque of 4.1 oz. in. at 8,000 r.p.m., equivalent to a b.m.e.p. of approximately 48 lb./sq. in. Maximum b.h.p. was delivered at 14,000 r.p.m., an output of just under 0.047 b.h.p. being indicated, which, of course, is a very satisfactory figure for an engine of this type and size.

Propeller sizes suggested in the makers' leaflet are 7 × 4, 6 × 6 and 6 × 4. On a 7 × 4 PAW prop our engine recorded 7,500 r.p.m., 8,500 being achieved on a 7 × 3. In the 6 × 4 sizes, we obtained 9,100 on a PAW wood, 12,100 on a Frog Nylon and 14,300 on a D-C Nylon. At all these speeds, the A-S 55 ran smoothly and consistently.

Power/Weight Ratio (as tested) less tank: 0.51 b.h.p./lb.

Specific Output (as tested) : 86 b.h.p./litre.



PROP BLANK LAYOUT

THE PROPELLER IS THE HEART OF A RUBBER MODEL AND M. S. PRESSNELL HERE DESCRIBES AN EXTREMELY ACCURATE METHOD OF MARKING OUT THE BLOCK PRIOR TO CARVING

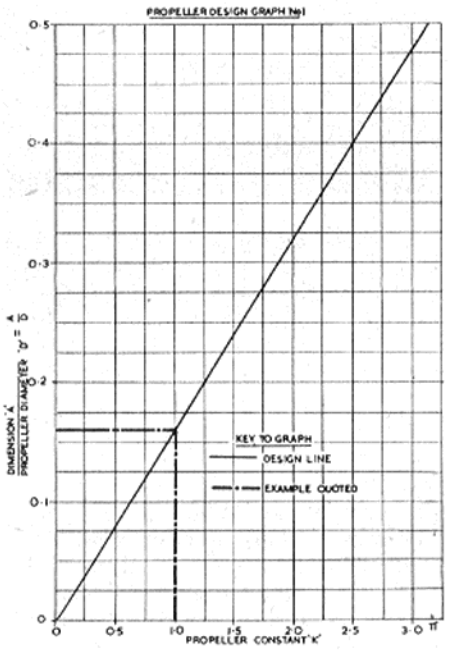
WITHOUT paying a good deal of attention to the propeller a rubber model will be a flop, however good the rest of the model may be. The converse is not nearly so true—a poor model with a well made propeller assembly will outfly many better machines—so it is for this reason that I pay particular attention to the construction and design of my own propellers.

Previous articles have described the laying out of propeller blanks, but the following is a small modification I make to the laying out of a blank, and is, I like to think, an improvement on the usual method. The idea is to mark out the block in such a way that, on carving, one is left with a helical surface on which to draw the actual blade shape. It is by no means certain that a helical surface is the best to use, but it is not far out, and has the advantage of being fairly easy to lay out and carve from the usual hunk of balsa.

In practice, two dimensions must be worked out before we can start. These are the radius at which the blade lies diagonally across the blank from edge to edge—call this dimension A. It depends on the size of block to be used and the propeller pitch desired. The other dimension is the blank thickness at the tip; this depends also on the propeller diameter. These dimensions are put on the blank and joined with straight lines. From the centre to dimension A, these straight lines will give a helical surface. However, from A to the tip, where the straight lines are on the blank sides, *a helical surface does not result.*

It is here that the modification comes in by enabling us to use a curve instead of a straight line on the sides of the block, so obtaining a helical surface. The advantages to be gained by this are :

1. A true helical surface results.
2. A truly continuous surface is obtained past dimension A.
3. The rate of twist continually reduces from root to tip.



4. As a result of 3, the tip is very nearly flat and consequently the propeller will fold really " snugly " against the fuselage.

Have a look at Fig. 1—it is an upside-down view of the block, and shows the helical surface carved from the blank with the marking out lines along which it runs. The curves are in fact hyperbolae, whatever that means !

The method by which the blank is to be marked out will now be explained. Firstly decide on the propeller pitch and diameter, and the size of block to be used. Pitch = P, diameter = D, block thickness = T, and block width = W. Now work out your propeller constant K.

$$K = \frac{\text{pitch} \times \text{width}}{\text{diameter} \times \text{thickness}} = \frac{P \times W}{D \times T}$$

Look at graph 1 and read off the appropriate value of $\frac{A}{D}$ Multiply this by the diameter D, and you now know the distance A which can be put on the blank (see Fig. 2). Divide the remaining length of block into four equal pieces as shown in Fig. 2, and divide the first of these in half. Next turn to graph No. 2, where a curve is shown for each position you have just marked on the blank. Compare graph 2 and Fig. 2, so that you know which curve refers to which position. Put your value for K on the graph and read off the blank factors C for each position. Multiply each of these by

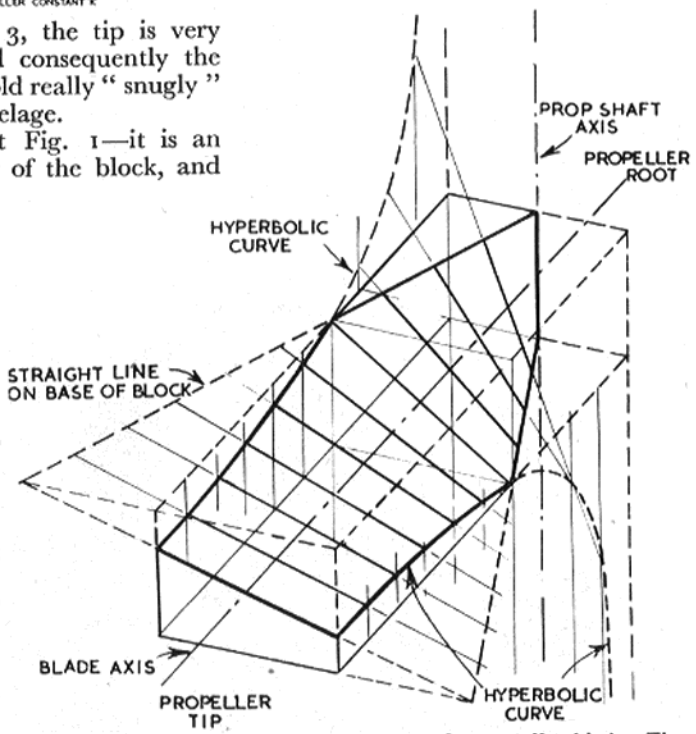
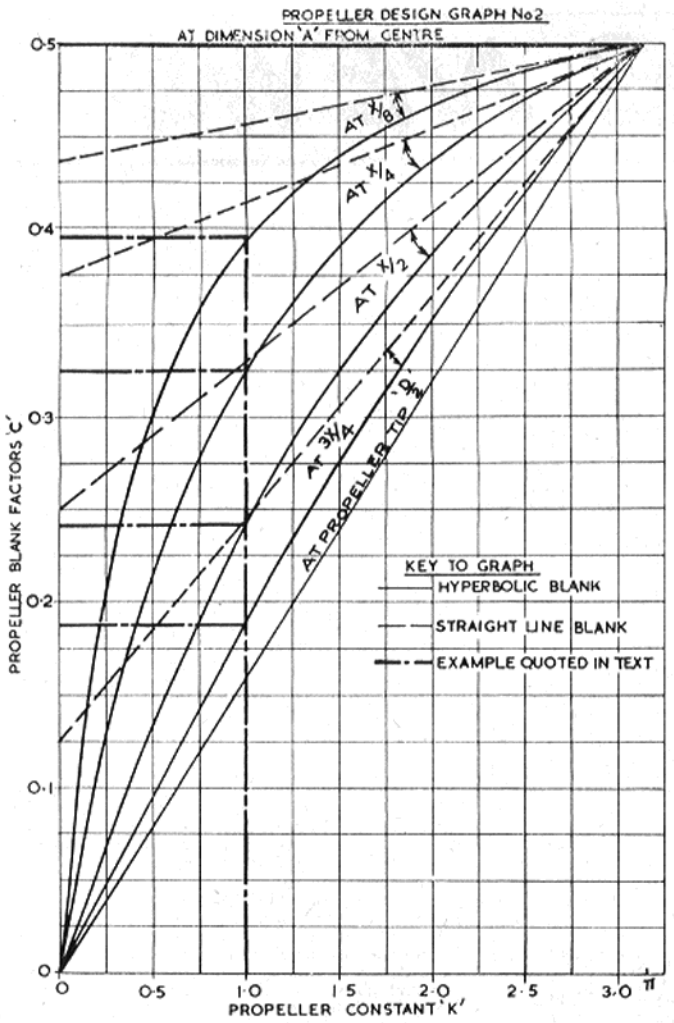


Fig. 1. This diagram shows the geometry of a propeller blade. The prop. blank is marked out and carved so that the blade surface lies on a truly helical surface. This surface is generated by a line running from root to tip along the blade axis, guided by either the straight lines on the top and bottom of the block, or by the hyperbolic curves on the sides of the block. In each case the same helical blade surface results.



the block thickness T. That gives you the dimensions you require to complete the marking out. Place them as shown in Fig. 2 and join with a smooth curve. Now carry on carving as usual.

Here are the results for a propeller for which pitch and diameter equal 22 in., block thickness and width are 2 in. The prop constant is one, hence from graph 1, $\frac{A}{D}=0.16$. Multiply by the diameter (22 in.) which gives distance A=3.52 in. The remaining block is divided up as shown in Fig. 2.

From graph 2 we get,

at $\frac{X}{8}$, C=0.396
$\times 2$ in.=0.8 in.

at $\frac{X}{4}$, C=0.326
$\times 2$ in.=0.65 in.

at $\frac{X}{2}$, C=0.242
$\times 2$ in.=0.48 in.

at $\frac{3X}{4}$, C=0.188
$\times 2$ in.=0.38 in.

at tip, C=0.160
$\times 2$ in.=0.32 in.

The lines on graph 2 for the straight line block are seen to depart from the curves most at small values of K, it is here that most is to be gained by the method described. K cannot exceed π, when A is equal to half the diameter.

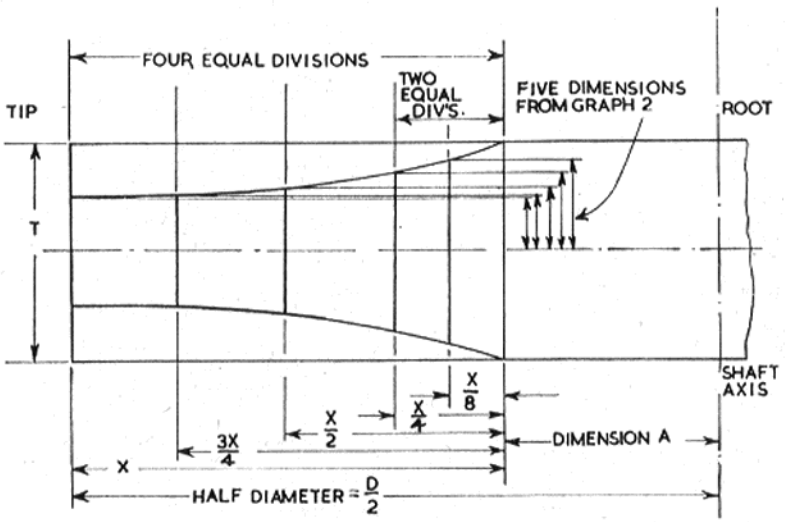


Fig. 2. This figure shows the side view of half of a propeller blank. It is dimensioned and shown marked out ready for carving. Note that hyperbolic curves are used in2tead of the usual straight lines. On the top of the block straight lines are drawn as usual.

HENSCHEL H.S. 129

Continued from page 164

construction or fixing you may prefer to use it.

Ailerons and Flaps

These are made and finished independently of the wing. On the original model the flaps were built up and the ailerons carved from the solid, but here again, you may use any method preferred. These two units are held in place on the wing trailing edges by matchstick " hinges "—four each for flap and aileron. They are cemented to the ailerons and flaps before these units are finished but not cemented to the wings until the model is completed.

Cockpit Canopy

This is fabricated from $\frac{1}{16}$ in. plywood and constructed on the fuselage. After the sides and top are cut, the celluloid windows are cemented on the inside face, and the complete frames cemented in position on the fuselage sides, followed by the top transparency. Cover the frame/fuselage joints with silk for strength, and then add the windshield.

Finishing

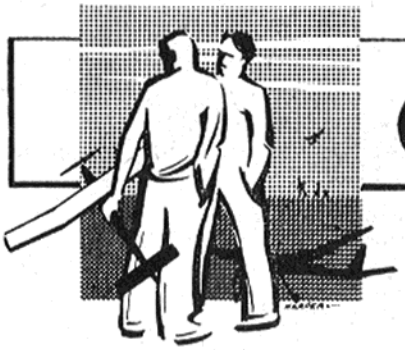
A good finish enhances any model and is essential for a scale model. Enough has been written about methods of finishing models, and it is assumed that, after covering the model with lightweight Modelspan, the surfaces are quite smooth and free from any dents or cracks. The prototype was finished in the standard colours of the period—pale blue/grey undersurfaces and dark olive green uppers. Squadron markings were in yellow.

The model should be painted pale blue/grey all over—three or four coats should suffice—rubbing down between each one. When the finish is satisfactory, mask off at the colour dividing lines, and paint the upper surfaces dark olive green. After the insignia have been applied, the model should be fuel proofed, and when dry, given a final rub with wax polish. The radio mast and gun barrel are painted matt black.

Flying

Before attempting to fly the model, check the balance point carefully. If the model is tail heavy add ballast to correct (attach ballast to engine mounting bolts). The original model showed a fair turn of speed and no trouble should be encountered when flying on 58 ft. lines. However, as a precaution, carry out the initial test flights on 40 ft. lines. When flying over rough ground it may be advisable to remove the gun barrel and radio mast in case of a nose-over landing.

One final word. After all the time taken in building your Hs 129, spare a few moments before taking off to check that the control lines and fixings are safe. A scale model makes a lovely prang—for onlookers!



CLUB NEWS

CRESWELL M.F.C.

We recently presented an invitation film show and refreshments in the local British Legion hall. Films were of Hucknall Air Display, and rallies at Linton, Rufforth, and the World Power Championships, taken on 8 mm. film and projected by R. Ray.

SMALL HEATH (BIRMINGHAM) M.A.C.

Over the past few years we have become one of the largest clubs in the Midland Area. There is a keen interest in all fields of the hobby and in the current competition season we are hoping for a good showing.

At the Midland Area rally held at Wellesbourne J. Bishop, who is now the Midland Area secretary, gained first place in the A/2 event, while B. Brown placed third in the C/L stunt.

The first of an annual series of C/L rallies that we will organise was held at the Jaguar Cars sports ground recently. The meeting was quite successful despite rather cold and windy conditions. This first meeting was restricted to stunt only owing to the rather limited space available, but in future years with the return of R.A.F. Wellesbourne as a venue, other events will be included. The results of this meeting were—B. Horrocks of Wolverhampton, D. Day of Birmingham, and E. Burke of Outlaws.

NORTH KENT NOMADS

Contrary to the usual winter of little activity we have been kept busy this winter in assisting Charles Dance and Wally Skeels in their world record attempt at R/C cross country flying. We congratulate Charles and Wally in the efforts they have made on their own account and also the publicity they have attracted to the model aeronautical world.

We have a full competition programme for the coming season and are looking forward to challenging the Northwood Club to a home and away flying contest.

The rules for the C. H. Roberts Flying Boat Cup were revised last year. (*Space does not allow us to print these but interested modellers can obtain a copy from W. Hubbard*, 161, *Hook Lane, Welling, Kent.—Ed.*)

OUTLAWS (CANNOCK) M.A.C.

Our first three comps. of the season have all been marred by high winds. At the first Area C/L championship meet our best F.A.I. team racer to date pranged whilst doing 45 laps at 85 m.p.h. (standard Oliver) and the stunt boys could do no better than sixth and seventh due to troublesome engine runs. These problems were overcome in time for the Small Heath Stunt Rally at Jaguar sports ground, Coventry, where Eric Burke placed third and Roy Lockley fifth in a gale force wind that served to eliminate 55 per cent. of the entries. Two weeks later the wind was even stronger (the worst we have ever experienced at a comp.) and the second championship meeting was "blown off" to a later date.

CRYSTAL PALACE M.A.C.

Hunting through the junk in the club cupboards we unearthed seven silver cups, so we are arranging club comps. to award these for power, glider, rubber and concours. To get rid of another one we will be running a combat comp.

POULTON, BLACKPOOL & FYLDE M.A.C.

Although some of our members have deserted the club temporarily to take dancing lessons, at the last meeting we were pleased to welcome three new members. Our stand at a recent Hobbies Exhibition in Kirkham aroused a good deal of interest, all types of models being shown. Control line remains very popular, R. Hayward was testing his *Footprint* for the first time when the tailplane fell off in flight, with obvious results! More recently C. Copple's new *Topscore* got well and truly "trimmed" when it landed in the path of a motor-mower!

HAYES & D.M.A.C.

Our only contribution to the small London Area entry of eight glider and six power, in the Astral and S.M.A.E. Cup was one entry in each. The wisest people stayed at home and added to their collections of untrimmed models.

ST. ALBANS M.A.C.

We have made a very good start to 1960 with M. Burrows, a comparatively new member to contest flying, clocking up 13.42 in the first A.2 eliminations, this gained him a well deserved second place. Main interest at the moment is A.2 and Power, both open and F.A.I. To help boost our rubber flying we are pleased to welcome back from the R.A.F. Bruce Rowe whose name will no doubt appear in this year's rubber successes.

Many of the keen types went to Chobham for the Astral Trophy and S.M.A.E. Cup. Despite the strong and gusty wind which blew all day, five members flew in the Astral (out of a total of six in the London Area). We had little success however, three models were badly damaged, one model was lost and the other survived with minor damage. Nobody flying power did more than one flight, top time was B. Cox with 2.37 o.o.s off 11 sec.

On August 7th we are holding a Gala at Chobham, classes being—Open Glider, Open Power, Open Rubber, F.A.I. Power, Open Power (.049), Radio, Single Channel. Trophies will be awarded for each class and general S.M.A.E. rules will apply.

DAGENHAM M.A.C.

Just recently the club invited the Debonairs and the St. Albans boys for a friendly combat do. Most of our boys were on form and managed to secure an all Dagenham final. The order being Alan Marsh, "Neddy" Wickcoup and Ivan Morse.

Most of the combat boys in the club are using lightweight geodetic wings powered by Oliver Tigers and have settled on a design for this year.

WEST BROMWICH M.A.C.

We recently attended the first of the Midland Area C/L competitions at R.A.F. Wellesbourne Mountford, along with members of Bilston and Wolves M.A.C. The contest was the first of a series intended to decide the area champion for each of the respective events and the combat boys excelled themselves; Mike Kendrick, Dave Summers and Les Newman being first, second and third respectively.

EAST LANCASHIRE M.A.C.

Recently we held a Concours d'Elegance competition. The judging was performed by

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Recent Results

NORTHERN MODELS EXHIBITION

Power Models
1. J. O'Donnell. 58 in. span Duration Model.
2. E. A. Horwich. 65 in. span Aerobatic Model.
3. D. Brunt. 66 in. span "Quidato."

Rubber Driven Models
1. J. A. Turner. 45 in. span Open Type Model.

Flying Scale Models
1. A. S. Bailey. 32 in. span Gloster Gladiator.
2. W. I. Barrett. 17 in. span Avro Tutor.
3. W. Melling. 51 in. span 2-seater R.A.F. Trainer.

Sailplanes
1. A. Fletcher. 78 in. span Competition Model.
2. T. A. Meighan. 72 in. span A/2 Glider.

Scale Control Line Models
1. E. A. Horwich. 30 in. span D.H. Comet Racer.
2. Mrs. E. Barrett. 20 in. span Boeing P26A (Special Ladies' Prize).

Other Control Line Models
1. J. Jolley. 56 in. span Aerobatic Model.
2. P. A. Dunkerley. 32 in. span Stunt Model.
3. M. A. Beckett. 41 in. span Stunt Model.

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1. E. A. Horwich. 65 in. span Aerobatic Biplane.
2. J. Cope. 72 in. span Smog Hog.
3. D. Brunt. 66 in. span "Guidato."

S.M.A.E. COMPETITIONS

K.M.A.A. Cup (188 entries)

1.	Partridge, D.	Croydon ..	15.00 + 1.47
2.	Burrows, N.	St. Albans ..	13.42
3.	Bishop, J. ..	Small Heath	13.40
4.	Monks, R. ..	Birmingham	13.37
5.	Martin ..	Birmingham	13.36
6.	Wade, S. A.	C.M. ..	13.32

Gutteridge Trophy (50 entries)

1.	Greaves, D. ..	Leamington ..	12.32
2.	Roberts, G. L.	Lincoln	12.23
3.	Picken, B. ..	Wigan	11.50
4.	Wingate, J. ..	Eng. Elec. ..	11.34
5.	Elliott, N. P.	Southampton ..	11.19
6.	Rowe, B. ..	St. Albans ..	11.18

Plugge Cup Points to Date

1.	Birmingham	285.295
2.	Croydon	274.119
3.	Surbiton	273.530
4.	Essex	269.001
5.	Baildon	235.296
6.	Wallasey	234.118

S.M.A.E. Cup (44 entries)

1.	Tideswell, G.	.. Baildon ..	10.00
2.	O'Donnell, J.	.. Whitefield ..	9.49
3.	Lawson, P.	.. Baildon ..	9.08
4.	Beal, G. ..	.. Mexborough	6.56
5.	Robson, A. M.	.. Tees-side ..	6.17
6.	Carson, P. ..	.. Sheffield ..	5.53

Astral Trophy (40 entries)

1.	Spurr, A. W.	.. Tees-side ..	8.47
2.	Wilmot, D.	.. Essex ..	6.09
3.	King, M. ..	.. Essex ..	4.21
4.	Cox, B. ..	.. St. Albans ..	2.37
5.	Robson, D.	.. East Lancs. ..	2.11
6.	Eckersley, S.	.. Baildon ..	2.07

Women's Cup (Provisional Result) (2 entries)

1.	Miss S. Allsopp	.. Essex ..	0.18
2.	Mrs. P. King	.. Essex ..	0.11

Jetex Trophy (Provisional Result) (3 entries)

1.	O'Donnell, J.	.. Whitefield ..	20.5 pts.
2.	Pressnell, M.	.. Essex ..	7.9
3.	Worley, N.	.. Southampton	2.0

J. O'Donnell and B. Eggelston, who were kind enough to give some of their valuable spare time. More is the pity that more of our members did not feel it was worth supporting.

In all, some 15 models were entered, the eventual winners being P. Verity's *Sans Egal* in the Senior class and S. Lache's *Dixielander* for the Junior class.

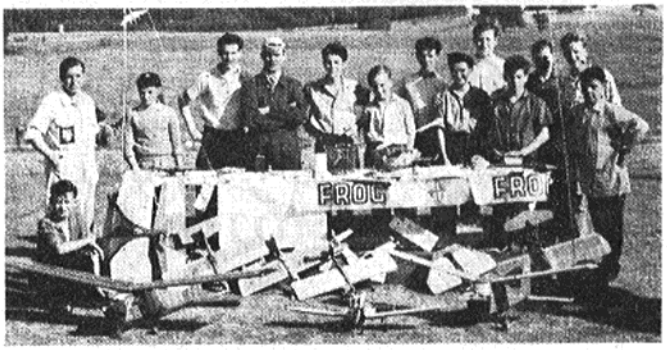
NOVOCASTRIA M.A.C.

Due to bad weather there has only been one area comp. in the north east, but we managed a first in the "½A" and "A" and second in the "B" T/R at R.A.F. Usworth. Free-flight which was set for the following Sunday was cancelled because it was too windy(F/F standard).

NORTHERN HEIGHTS M.F.C.

Halton is again the venue for this year's gala on June 26th, and we will be including a F/F contest for .049 (0.85 c.c.) power models. There are no size or weight rules and a 10 sec. engine run with 4 min. max. will apply. An over-run will count as an attempt and two attempts will be permitted for each of the two flights. The contest will be run in conjunction with the open power event but there will be separate prizes.

Combat entries will be taken on the day until the list (probably 64) is full, or 11 a.m.—whichever comes first, and the Queens Cup this year will be to the *current* F.A.I. power specification.



This photograph of members of the Pilgrims M.F.C. was taken at a local fete where they put on a static and flying display which was very successful—in fact a repeat performance was requested !

ASHFORD M.A.C.

We attended the area rally at West Malling but weather conditions rather spoilt the day, with high winds and a heavy rainstorm in the afternoon.

The club should be well represented in class B this year, with two new Eta 29s having just arrived. It seems unlikely, however, that we wil be attending the Nationals, as we have had a rather attractive offer to give a large flying display at the local football stadium on the weekend in question.

TO ALL P.R.O.s

About this time of the year many clubs will have elected new press officers to take over the job of "spreading the news" of the clubs' activities, and at first the new man may not be sure of the best way of preparing a report for the Club News pages of MODEL AIRCRAFT.

The main thing to remember is that a report is published mainly to interest members of *other* clubs, who probably will not know personally the characters mentioned. Therefore "family" gags will be lost on the readers. Secondly, the ideal report from our point of view is one that can be sent straight to the printer with no alteration. A glance through the published reports will show the style we want, but here are the features of a good report:

1. About 150-200 words in length.

2. Typewritten, double-spaced, or *clearly* handwritten, preferably on every other line of ruled foolscap. This enables us to make alterations between the lines.

3. One side of the paper only and on reasonable size sheets—please, not on folded sheets of quarto notepaper !

4. Reports go to the printer on the 15*th of the month before* publication. If we receive them after that date they will have to wait until the next issue; if much earlier, they will not be topical.

5. Reports should be written specially for Club News—not sent as a personal letter to the Editor. There is no need to send a covering letter, just put the name of your club at the top—we will know what t is.

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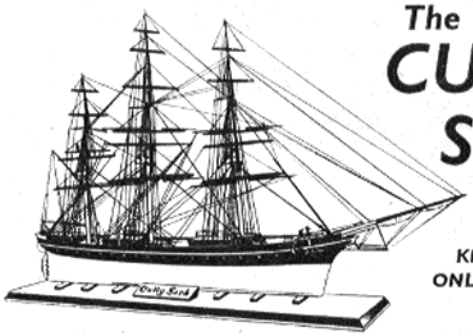

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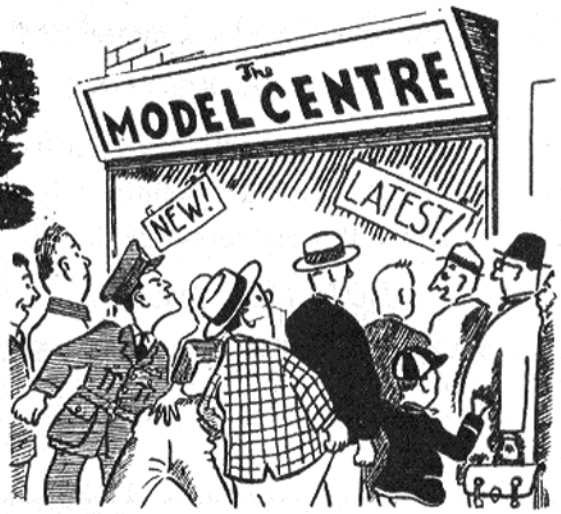

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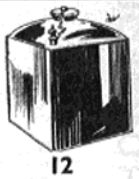

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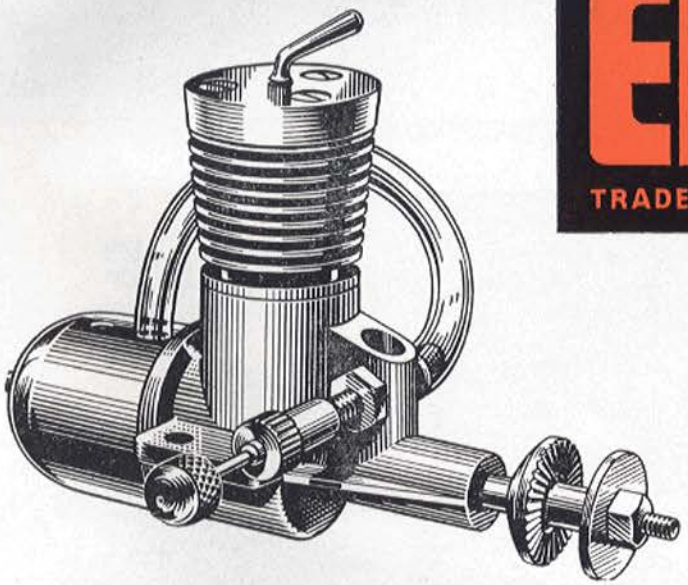

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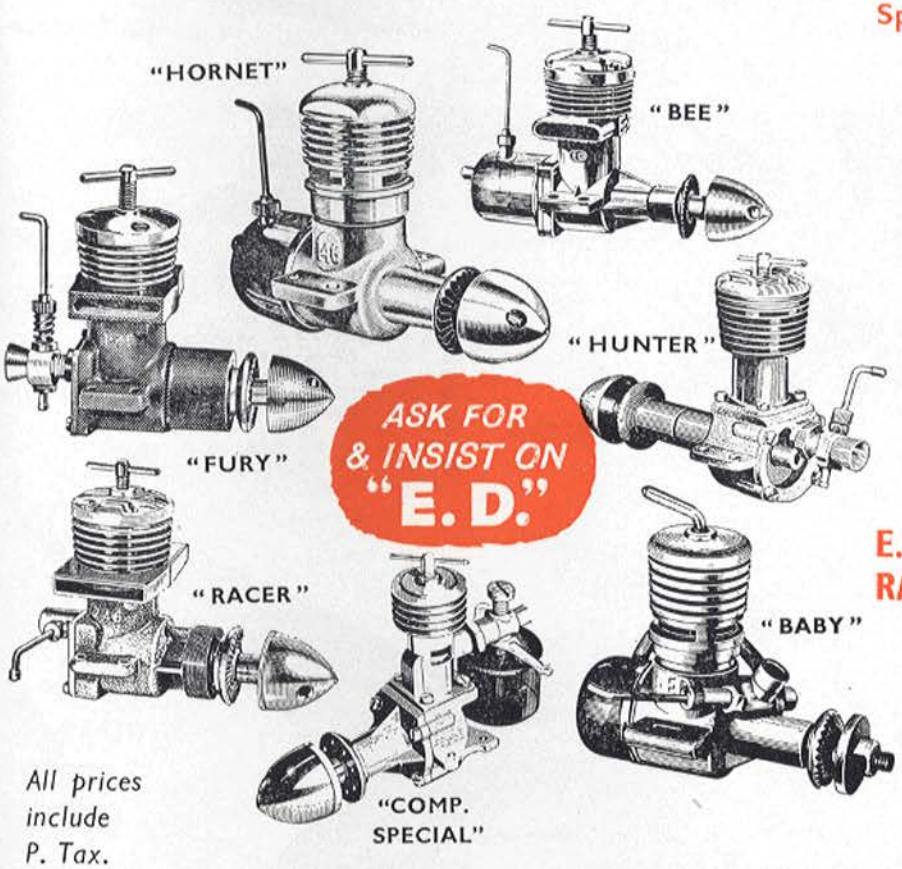

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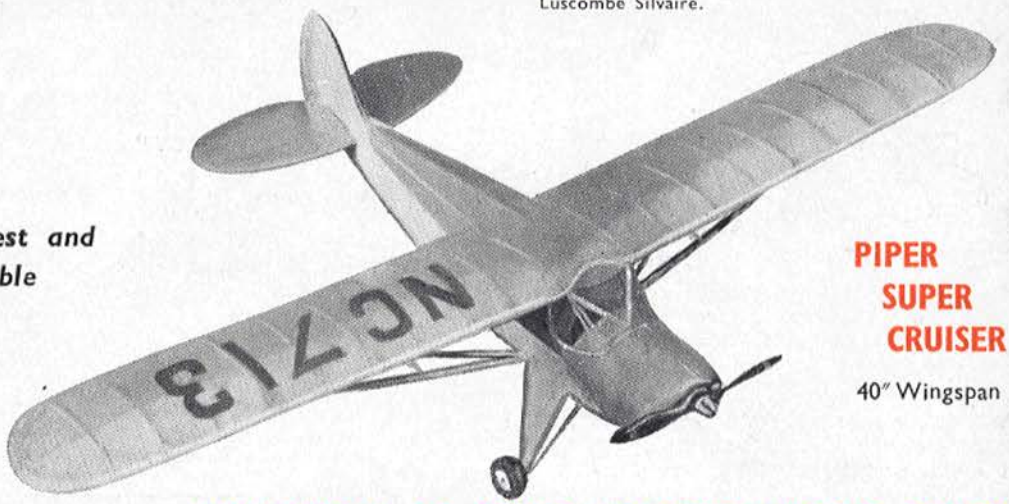

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