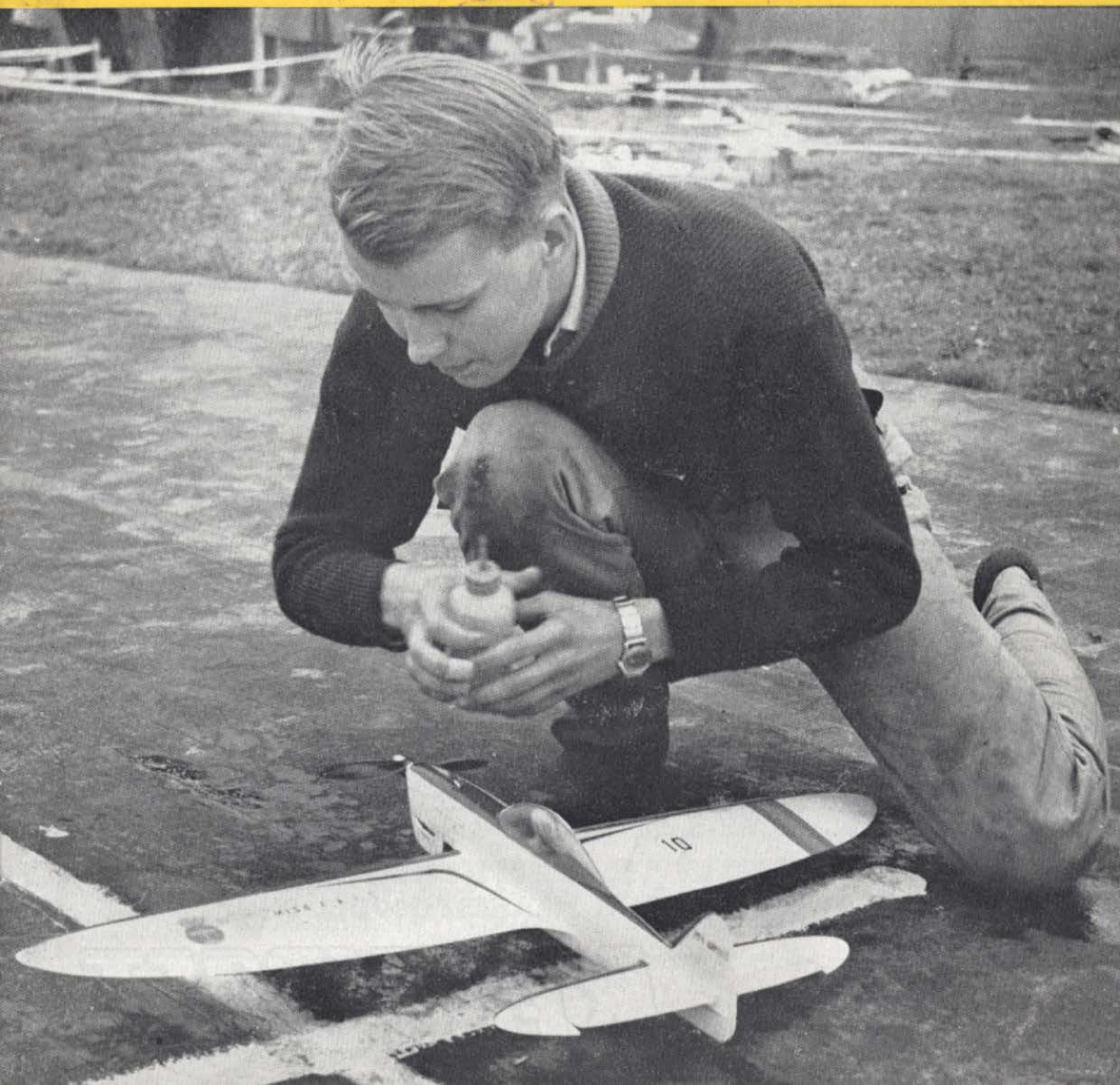


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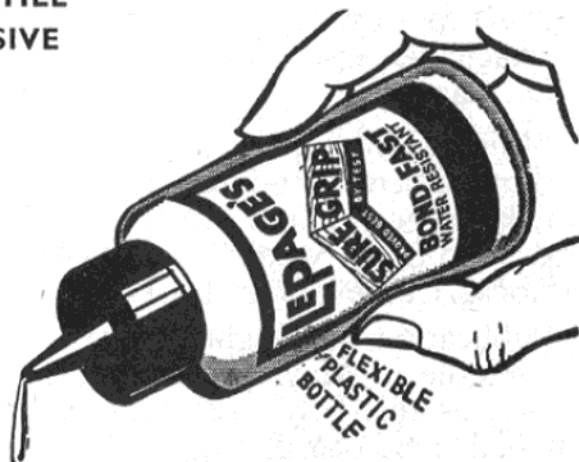
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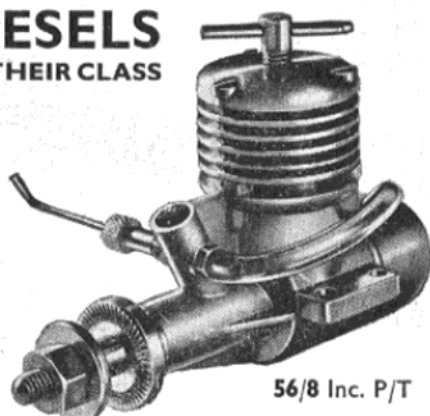
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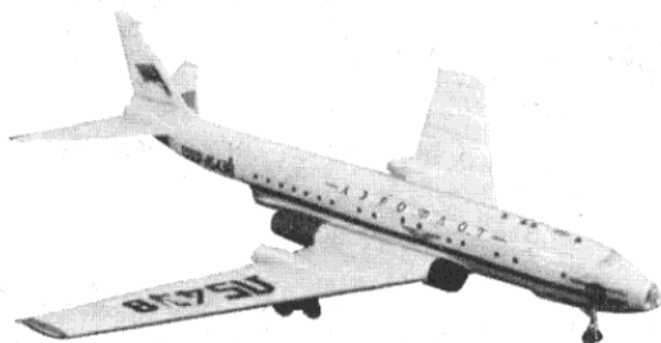
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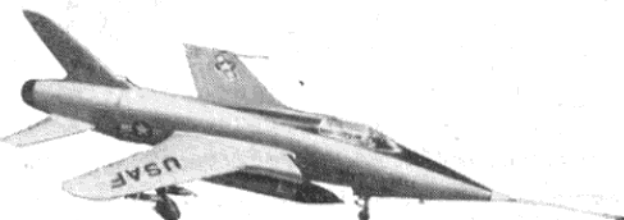
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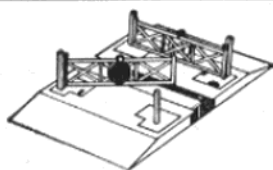
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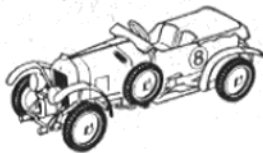
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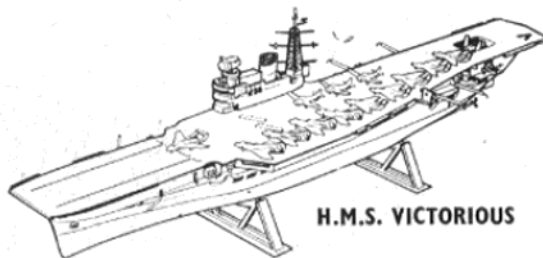
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MAY 1960

No. 227

VOLUME 19

EXECUTIVE EDITOR: C. E. WALLER

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The official Journal of the
SOCIETY OF MODEL
AERONAUTICAL
ENGINEERS

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Here and There

PRAISE for our "Vintage" issue has been flowing in from all over the world. One of the most popular features was the article by Major Draper, and we were fortunate in being able to obtain a further selection of his photographs to publish on page 129 of this issue. Also from the Major this month is an account of his experiences with models—this appears elsewhere in Here and There.

We have received far too many letters about the "Vintage" issue to consider publishing them all, but the shortest, from a Liverpool reader says "Cutting superlatives to a minimum: a positively *Excellent* issue. Well done."

As this sums up the views of all correspondents we will just say thanks a lot to everyone for writing and telling us.

Airborne Travelogue

CURRENTLY on general release with the feature film "Our Man in Havana," is a superior and highly original 33 minute travelogue shot in really beautiful Cinemascope/Technicolour. Titled "High Journey" the film is about a flight over all the European N.A.T.O. countries starting in northern Norway and ending in Turkey.

All the scenes (and some are of very moving beauty), are photographed from the air, many being from very low altitude at low speed, and are most effective. There are several fine close-up air-to-air shots

of some unusual N.A.T.O. aircraft and the inspired narration, spoken by Orson Welles, lifts this film into the "must be seen" class.

Readers can write

IN spite of constant statements to the contrary, many readers are under the impression that MODEL AIRCRAFT relies on a regular team of writers to provide the feature articles, plans etc., that appear each month. This is not so, for a large proportion of the material which appears comes from ordinary readers.

There is an open invitation to all readers to send us plans, articles, drawings, photographs, cartoons; in fact, anything relevant to the building and flying of model aeroplanes. Every contribution submitted is carefully considered and all suitable ones are accepted for publication. Everything published is paid for, so here is one way to make your hobby pay.

Obviously the content is the major factor we consider, but the manner in which material is presented does sometimes influence us, so a few words on how contributions should be laid out may help you.

It is no good sending us an article we can't read, so write clearly and leave plenty of space between lines for corrections. Drawings need not be in ink, "rough" pencil sketches will do, provided they clearly show what they are intended to. Photographs should be of at least postcard

size, but if you only have contact prints then send these together with the negative and we will make our own enlargements.

With regard to plans, your own working drawings will do provided they are still legible, but they must have sufficient notes on them to enable the model to be built. When you send them to us, don't forget to include 700 to 800 words of additional building instructions, details of special trimming techniques, contest successes and other items of general interest such as development data etc. Also it is essential to send at least two photographs of the model and a list of materials.

None of that is too difficult is it? Good, then let's hear from you!

On the cover

AN international flavour this month with this shot of Karl Rosenlund of Sweden about to start in the team race final of last year's Criterium d'Europe. His model, *Miss F.A.I.*, was beautifully built and finished in white and had an excellent performance. Although placed second to the fantastic Bernard/Stouffis team Rosenlund was subsequently disqualified when his tank was said to be oversize (see November, 1959, M.A.). As far as we know the result of his appeal against this decision to the F.A.I. has not been announced, but then the contest was only held six months ago!

Built to Fly

A CLUB flying field on a Sunday morning. Several junior members are busy with their models. One is having a frustrating time with a botched up power model, another is perplexed by the erratic antics of his scale delta, while yet another is trying vainly to tow up a badly warped A/2. Only one unruffled young brow was noticed; that of a lively thirteen-year-old, whose small rubber model was turning in some pretty 2 min. flights.

Inspecting the model, we were surprised at the excellence of the workmanship; alignment perfect, leading and trailing edges cleanly shaped, and smooth, wrinkle-free covering. Altogether a commendable effort for one so young. Careful and painstaking building of a model quite within his capabilities had brought its reward in many, enjoyable hours on the flying field.

The other juniors might well have

taken a leaf out of his book. The choice of a simple model, a few hours extra work on the building board, and the result can be an attractive, flyable model with a satisfying performance.

Major Draper's Models

Personal Reminiscences

IT was at the time that Bleriot crossed the English Channel in July, 1909, that I began to take an interest in flying. It would be correct to say I went mad about it. (This has nothing to do with being called "Mad" later.) But there was opposition from the family; my father said "The Lord never meant man to fly, and this is the end of England as an island."

I lived in a country village in Cheshire with no possibility of getting near an aeroplane, but I was able to obtain what few books there then were and take at least two weekly papers, *Flight* and one which I think was called *Aeronautics*. It was only from these that I learnt anything; both papers had quite large sections devoted to models so I set to work to make my first model which was supposed to be an exact scale model of the Bleriot monoplane.

There was a branch of Hobbies in Liverpool from where I obtained the odd bits and pieces like turnbuckles. There was no such thing as a model aircraft shop in the whole country, but I found the model yacht departments of great help for fabric, wire and light chain, while the wheels came from the model railway section. Then someone produced a corrugated-aluminium propeller, a weird-shaped thing with enormously wide blades out of all proportion to its diameter. Catapult rubber was easy to get so I had at least a working model, well, working on the ground.

After days and nights working on it, with my parents getting more and more annoyed because I would stay up half the night burning precious gas or candles, I was much too frightened to try it in the air. This provided good food for the ridicule of my brothers and sisters. The model had a span of about 3 ft., an open square fuselage, or rather covered only half-way down from the nose, as Bleriot did.

It certainly "looked" nice, so much so that my father sent me with it to see a Mr. Cohen, then head of the big Lewis' store in Liverpool. To my utter amazement he gave me

50/- for it, two and a half golden sovereigns, the first I had ever had and the first penny I had ever earned.

Lewis' stuck it in their main window with a card which said:

"This is an exact replica of the monoplane Louis Bleriot has just crossed the Channel in and won the Daily Mail £10,000 prize. It has been made by a local boy of 16."

It made me blush to look at it, especially over the words "exact replica."

Next came a model of the Wright biplane. This appealed to me because of the front elevators and the long skids from these right down to aft of the bottom wing. I was, of course, very anxious to get a model into the air but all I was able to achieve was to tow it by running down the garden as fast as I could. There was of course no lateral stability; the elevators were set by trial and error, mostly error, for although it got off the ground it broke nearly every time it landed. Quite recently I have been to a number of model flying shows and have been amazed to see what the present day models stand up to (even though I broke one myself) but the frail models of my day, made with very thin struts and main spars, and a mass of rib work, covered with fabric and braced entirely with wires and turnbuckles, were soon put out of action for weeks on end.

The next model I made was of the Latham *Antoinette*. This was a monoplane but the fuselage was covered with three-ply, highly polished a dark mahogany so that it looked quite a showpiece. No balsa wood or any of these modern glues was available in those days so joints were a headache. There was, I think, aluminium; if not, one used tin, for the tiny little plates and angle pieces where main spars and fuselage ribs, etc., joined.

At about this time, 1910 or 11, my father was a prominent member of the Wirral and Cheshire Agricultural Society and we took a little stand at the annual show where I was very proud to make an exhibit of my models. Luckily I was young enough not to mind that they were quite out of place and did not seem to mean much to the farmers and suchlike who attend those shows.

By the summer of 1913 trying to get models off the ground ceased to worry me. I became fully occupied getting myself into the air.—C.D.

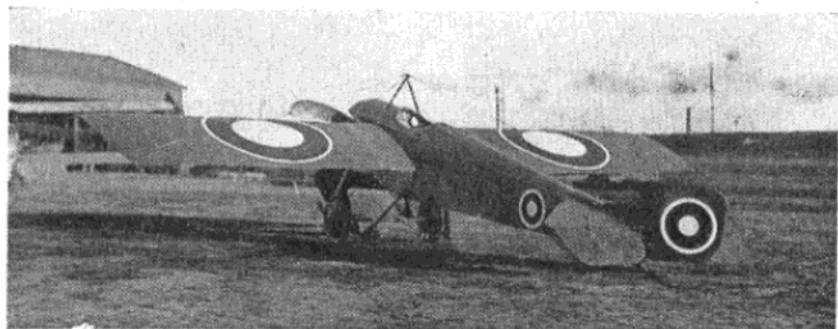
BY REQUEST...

a further selection of MAJOR DRAPER'S
photographs with his own comments



▲ This photo of a Sopwith *Camel* was taken from another machine about 6,000 ft. over Newcastle upon Tyne in 1916.

◀ The Dyott monoplane, about 1915, but I know nothing about it. (*Can readers help? Ed.*)

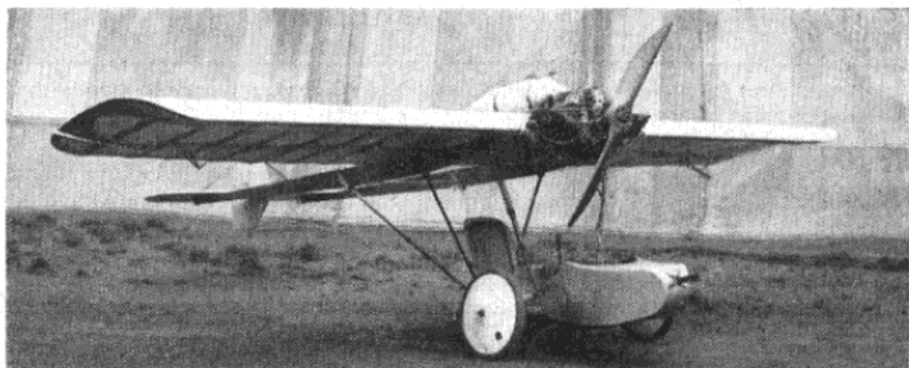


The F.K.27, the very first side-by-side two-seater biplane, fitted with the 200 h.p. Wasp II engine. A beautiful job, delightful to fly but the designer, like so many of them, had the wind up over it, so I hardly ever got up in it. Built 1919/20. ▶

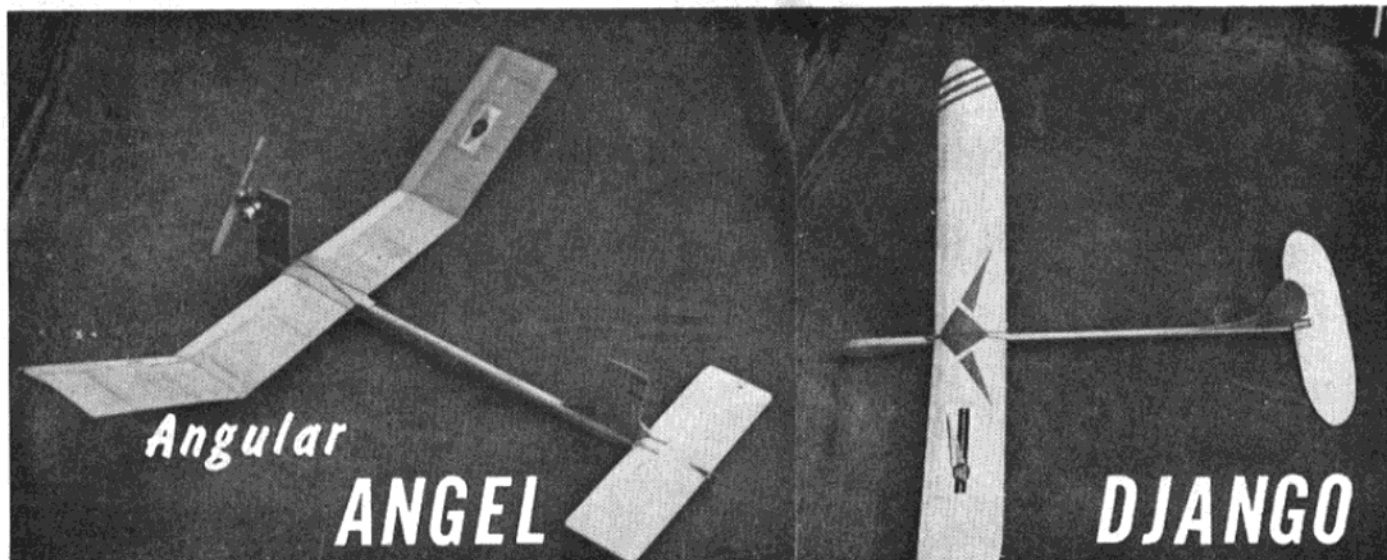


◀ An action photo of Sopwith *Camels* of No. 8 Naval Squadron on service in France in the winter of 1917. I could be in one of them but cannot remember.

The B.A.T. *Crow*, of 1919/20, with 40 h.p. ABC engine. It took me five miles to get to 500 ft. Sitting on the axle seemed great fun. ▶



TWO FOR YOU . . .



Ideal for beginners—two models that are simple, tough and really fly. Designed especially for novices by noted Austrian modeller FRANZ CZERNY

Wings Club members—see special “two for the price of one” offer below

Angular Angel

HERE is a simple contest F/F model of unusual, but very practical layout. The construction is rather unorthodox, yet it is easy to build, warp-proof, robust and easy to trim and fly. You can use the model for open or FAI contests, although for the latter it must be ballasted.

Wing

This is the most important part—once you have finished it, the model falls together almost by itself. Start by sanding all the balsa sheet you will be using, then sand the leading edge block and ply trailing edge to a wedge-shape.

Cement the $\frac{1}{16}$ in. sheet on to this wedge-shaped nose with contact cement or PVA white glue. This sheet must be prepared beforehand, because the grain has to run chordwise. For this cut 3 in. long pieces from 3 in. or 4 in. sheet, cement them edge to edge, and then glue the ply trailing edge in position.

After the whole assembly has dried, sand the upper side of the leading edge to an airfoil shape and place a strip of Scotch tape around the L.E. for strengthening and to prevent splitting. Now cut off the outer panels and sand the ends to the correct angle to allow for a neat dihedral joint. Double cement the outer and inner panels together. In case of a bad crash, this cement joint will break and the tips

come off without doing any harm, it is then a simple job to cement them back in place.

Fix the wing-seat parts in position, do not spare the cement, and cement a strip of sandpaper to the front of the wing-seat. Treat the wing with banana oil or similar non-shrinking dope, thin this down to the consistency of water and give three coats as quickly as possible, so that it soaks well into the wood. Lightly sand the wing after the dope has dried, in order to get a smooth finish.

Tailplane

Cut out and sand to an airfoil shape, lightly dampen the panel on the upper side and cement the parts together. As hold-downs, use ordinary pins, which are pushed through, bent over and pulled back flush with the underside. A piece of dowel is used for the rear hold-down. Give the tail only two coats of dope.

Fuselage

Cut the pylon from $\frac{1}{8}$ in. ply. Also cut the other necessary parts and cement everything together. Cement the engine bearers to the $\frac{1}{8}$ in. ply pylon and fill the space between these with $\frac{1}{8}$ in. balsa. Drill the motor-mounting holes for the motor you are going to use. Fix the wing and tail seating strips to the fuselage and the stair-like incidence piece (extreme rear). Round off all the fuselage corners to the section shown and cement sandpaper to the fuselage sides, then dope as for the wing and finally give one coat of fuel proofers.

Flying

Slide the wing backwards or forwards until the model balances at the point shown on the plan, then key the wing and tail with split dowels. Now hand-launch as usual and trim for a flat glide.

Continued overleaf

SPECIAL OFFER TO MODEL AIRCRAFT WINGS CLUB MEMBERS

If you are a member of the Model Aircraft Wings Club you can receive BOTH these plans for the price of one. Fill in the form below, remembering that it is essential to give your membership number, and send with a 2s. 6d. Postal Order to MODEL AIRCRAFT WINGS CLUB PLANS, 19-20, Noel Street, London, W.1.

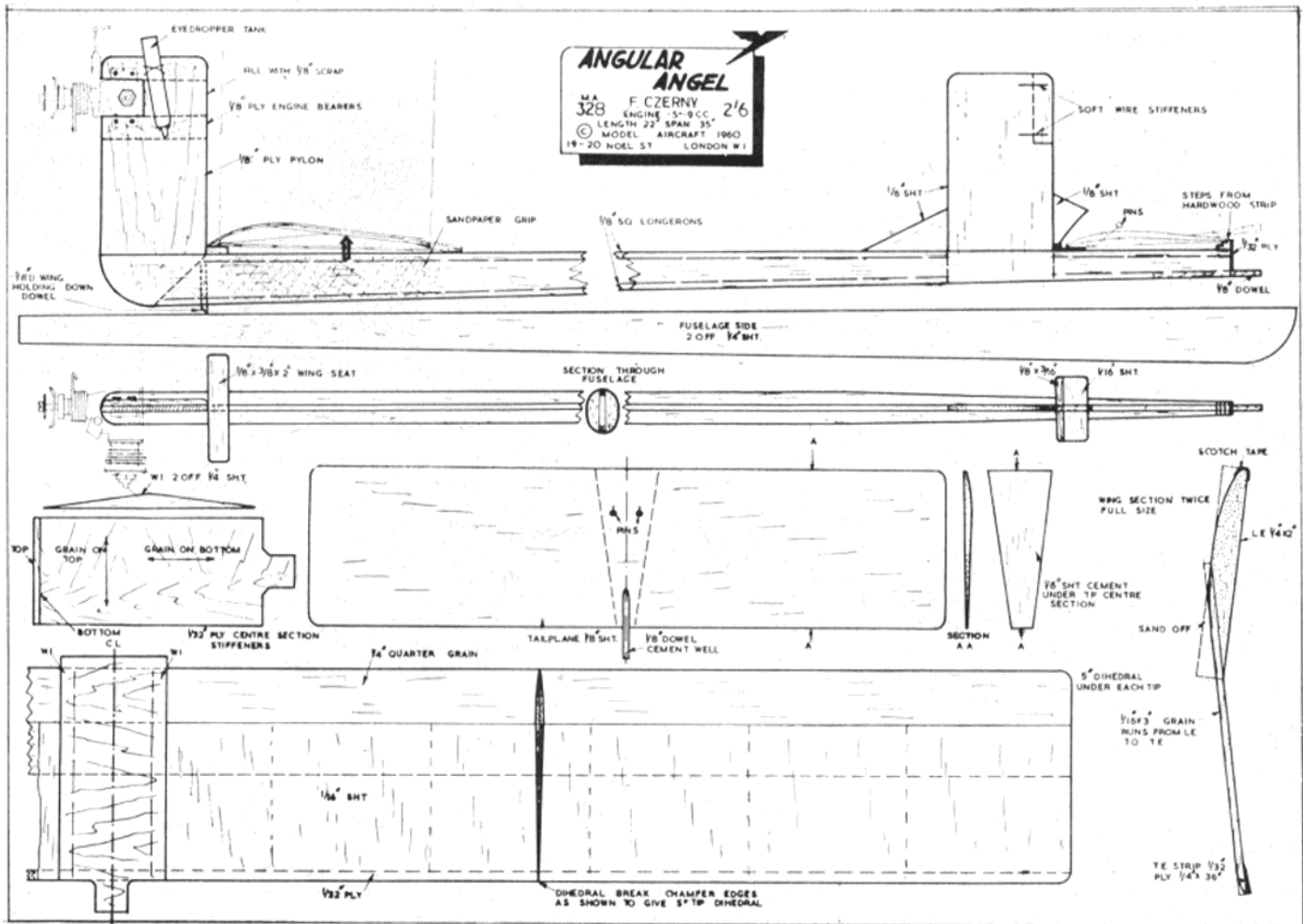
This offer only applies to Wings Club members, orders must be on this form, and you must give your membership number.

Please send the plans of *Angular Angel* and *Django*. I enclose herewith postal order for 2s. 6d.

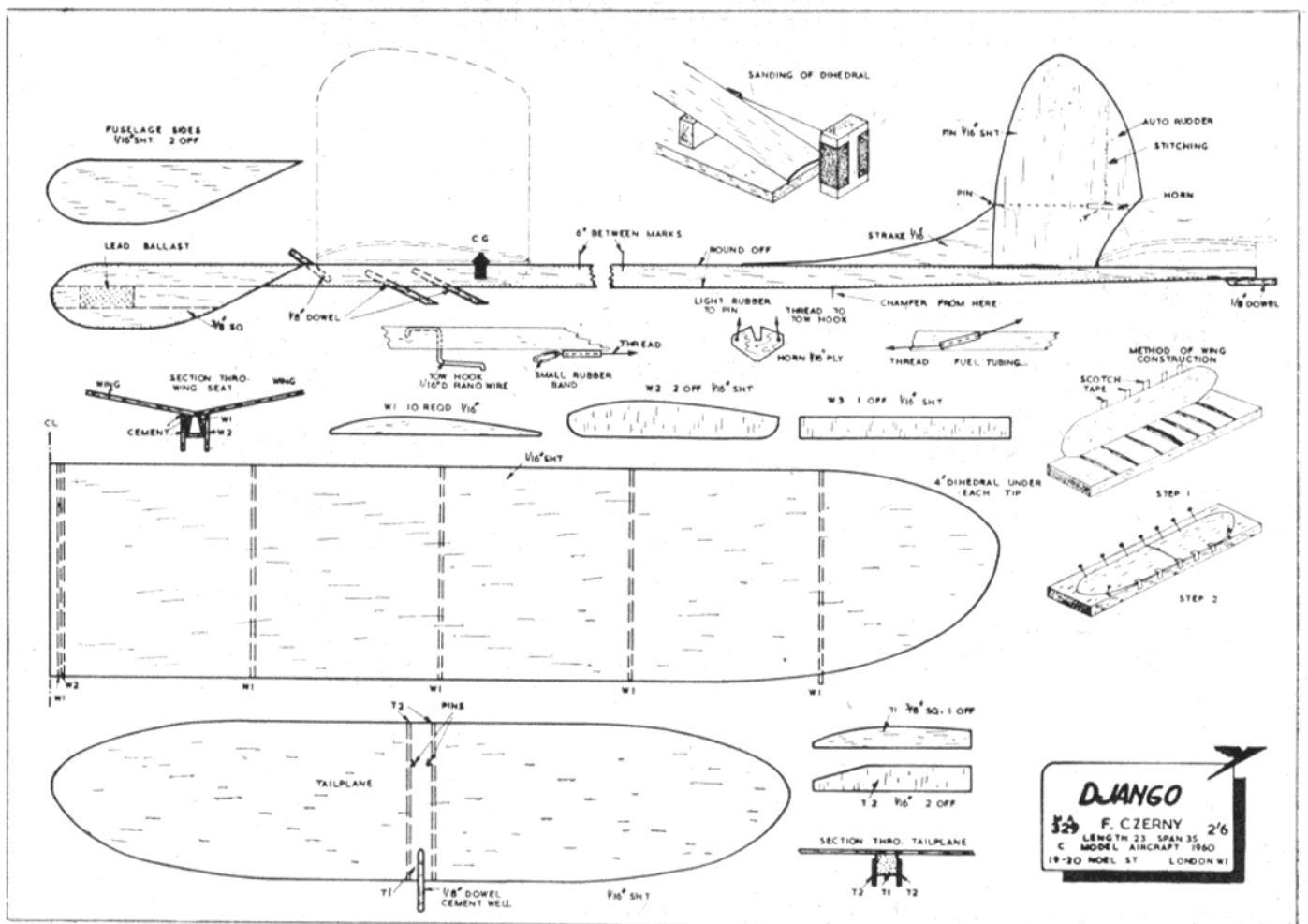
Name in full.....

Address.....

Wings Club Membership Number.....



Full size working drawings of *Angular Angel* and *Django* are obtainable from your local dealer or by post from Model Aircraft Plans Department, 19-20, Noel Street, London, W.1, price 2s. 6d. each post free. Model Aircraft Wings Club members can take advantage of the special "two for the price of one" offer on facing page.



The first powered flights should be made on full power but with the prop on backwards. The model should fly almost straight with only a very slight turn which should be in the same direction, both under power and on the glide. Correct the power-on turn by altering the thrustline. The model needs a moderate throw on launching to achieve full flying speed, or else it will sink to the ground before climbing away. The climb is at an angle of 45 deg. and very fast.

Always use a dethermaliser fuse in the rear tailplane rubber band when flying under power, otherwise you may easily lose your *Angular Angel*.

Django

THE trouble with most so called beginners' models is that they are too complicated, and take too long to construct. *Django* is so simple that it can be built in a couple of evenings. Despite its simplicity, it is an excellent flier, and building costs are low.

Wing

Cut 10 wing ribs (W.1) and spot cement these lightly to the building board (see sketch). Next cut and sand the wing panels; only the right wing is shown on the plans. Slightly dampen the forward half of the upper surface to produce the correct section and cement the panels to the ribs with a rolling motion. Secure the whole assembly with pins and Scotch tape. After drying, remove the panels with a sharp knife, separate them in the middle and sand the centre joint to achieve the correct dihedral, as shown in the third sketch. Now cement the wing halves together and fix the wing seat. Ribs W.2 are now fitted; note that they are parallel and trued up to the wing seat. Construct

This view of *Django* clearly shows the wing construction.

the wing seating accurately, for the squareness of the model depends upon it.

Tailplane

Check for squareness. Cement the tailplane panel to the top side of it, and cement the seat-ribs (T.2) in place. Push two ordinary pins through the tailplane as hold-downs, bend them over and pull them back flush with the underside of the seat.

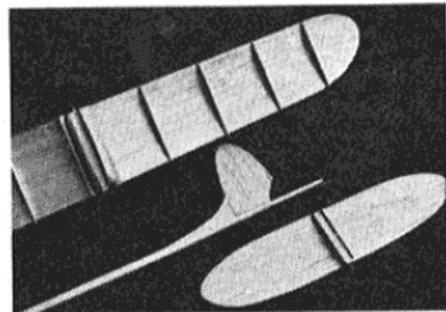
Fuselage

Cut a 23 in. length of $\frac{3}{8}$ in. sq. for the fuselage boom, and a 3 in. length for the tailplane rib. The rest of the 3 ft. length is used for the fuselage-nose, with the nose side panels from $\frac{1}{16}$ in. sheet. Cement the appropriate parts together, and fit 1 oz. of lead in the space provided. Taper the end of the boom as shown in the side view and round off the corners, except where the wing and tail "sit." The fin and strake are then cemented to the fuselage, together with the tailplane holding down dowel. The wing holding down dowel and the two hooks can now be fixed in place—use great care in order to avoid splitting the fuselage.

Flying

Assemble the model and balance at the point shown on the plan. Test glide from shoulder height and adjust for a flat glide, by packing up the L.E. or T.E. of the tailplane or wing. Excessive turn should be corrected by warping the rudder. When trimmed the model may be tow or catapult launched.

For a catapult, use a loop of $\frac{1}{4}$ in. flat rubber about 10 to 15 ft. long and a length of fishing line about 30 yd. long. Push a spike into the ground, and fix



the rubber band to it. Attach the fishing line to the rubber band and fit a wire ring to the other end. Launch by hooking the model to the line and gently pulling back. You may also, of course, tow launch the model.

If *Django* veers to one side, then release it, banked to the other side. The tow will not be exactly straight but rather in the form of a gentle "S." In windy weather use the forward hook, in calm the rear. When you have gained some experience, cut the dowel tow-hooks away, and install the auto rudder with the wire hook. This will enable you to achieve a straight tow and circling flight.

Assembling "Angular Angel" and "Django"

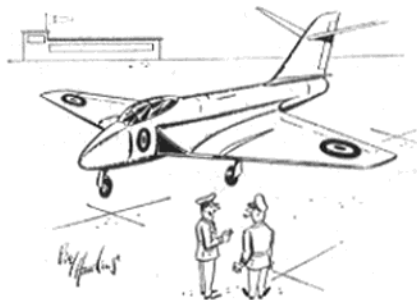
The wing is fixed by a rubber band, which goes from the dowel, over the wing, around the fuselage and back over the wing to the dowel.

For the tailplane a rubber band is fitted from one pin, around the fuselage to the other pin. A small band is stretched between the two rear dowels. The stair-like incidence piece is used for test-gliding, starting with the middle step. The steps, which are not used after testing, are cut off or filled in, as necessary.

IN LIGHTER VEIN



"What I like about model flying is the bags of good clean fresh air."



"Keep it under your hat—it's one of the latest plastic kits."

"So that's why they call them 'choppers'."

"It's a good job old Charlie's got big feet."



"Be careful Bill—I can feel that jet on my neck."



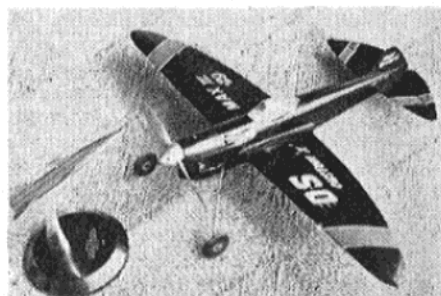
M.A.'s

ROVING REPORT

- brings you up to
date on the latest
world model news



Tony Farnan's latest Class B team racer. Model placed second in Australian Nationals. O.S. Max III 29 and chicken-hopper tank.



Graupner's Amigo, designed by Fred Militky, will accommodate the Polyton three-channel gear, wingspan 70 in.



THE big news from Germany is currently centred around the exhibits at this year's Nuremberg fair. Numerous fresh products from the established manufacturers and from several newcomers to the model market have been announced.

As usual, Germany's biggest model manufacturers and wholesalers, Johannes Graupner, now represented in the U.K. by A. A. Hales Ltd. (whose kits they distribute on a reciprocal basis in Germany) were well to the fore with new offerings. Graupners have been in the hobby industry for 30 years and the concern is now directed by Hans Graupner, son of the founder.

Designed by Fred Militky, around the remarkable Graupner Mikromax motor, is the 30 in. span *Silentius* electric F/F kit. The 30,000 r.p.m. motor, geared down 15:1, drives a special 12.6 in. dia. folding prop which is sold separately. This has a plastic hub and pre-shaped balsa blades and is said to be very suitable, also, for lightweight rubber driven models. *Silentius* weighs a little under 5 oz. complete with battery, ready to fly.

A further addition to the existing range of 10 Graupner glider kits, is

the clean looking *Amigo*, conforming with the A-2 formula, but designed to accommodate lightweight equipment enabling it to be flown as a R/C model. Kit contains printed, rather than die-cut, wood and sells for a reasonable DM 16.40—about 28s. A versatile model, *Amigo* can be flown as a towliner or slope-soarer, F/F or R/C and provision is even made for flying it as a power-assisted glider, using a 0.3-1 c.c. engine mounted as a "power-egg" above the wing.

The use of a certain amount of shaped plastic parts, mixed with conventional balsa construction, as first used by Graupner in the present *Dornier* DO.27 (31½ in. span) and *Focke-Wulf* TA.152 (39 in.) C/L kits, is continued in the latest of this 1/15 scale series, a 28 in. *Klemm* KL.107B. To a somewhat larger scale (1½ in. to the ft.) is the new *Piper Tri-pacer* (44 in.) for F/F and R/C.

Filling the wide gap between the Graupner single channel and 10-channel radio equipment, is a new three-channel outfit, comprising *Bellaphon-3* transmitter and *Polyton-3* receiver. This equipment is for operation on the new German 40.68 Mc/s fre-

quency, recently adopted as an alternative to the interference-prone 27.12 band.

The transistor transmitter provides modulation at 400, 650 and 900 cycles and includes a built-in charger for the accumulators. The *Polyton-3* receiver, like the other all-transistor Graupner receivers, is plastic embedded and uses *Gruner* Type 957 relays. Weight is 4½ oz.

* * *

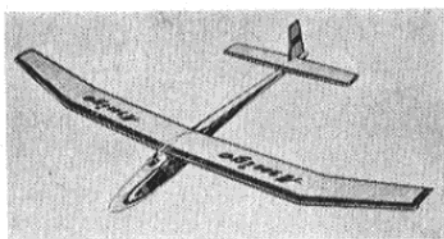
Like Graupner, Schuco-Hegi are offering a Nordic size R/C glider. Designed by Wolfgang Soergel, who holds the German R/C glider endurance record at over five hours, the model, called *Pascha*, is a functional shoulder-wing design and weighs 23 oz. complete with the new small *Metz-Mecatronic* receiver. Schuco also have a new semi-scale R/C model based on the *Auster Aiglet* trainer. As might be expected

Below: Flying-wing expert Wilfried Klinger of Knittlinger, designed and built this multi-channel R/C model bi-plane. Called *Olympic*, it spans 55 in. (lower wing 44 in.), 44 in. long and weighs approximately 7 lb. all up with *Taplin* Twin fitted. Wing section used is *NACA* 2415 and the model is equipped with ailerons on the lower wing.



Right: New Zealand's wandering boy John Sheppard is seen here launching his slope soarer at last year's Croydon Gala.

Below: Schuco's Hegi 330 "Pascha," designed by German duration record holder Wolfgang Soergel, weighs 23 oz. complete with the new *Metz-Baby* receiver.



of a model by Karl-Heinz Denzin, this is a well-designed and thoroughly practical model, easy to build and fly and of robust construction. Spanning 48 in. it will carry up to 1 lb. of equipment and is intended for 1 c.c. to 2.5 c.c. engines.

A potentially powerful rival to Graupner and Schuco in the German model industry has recently emerged with the entry into the market of Dux-Modellbau—otherwise known as Markes & Co., toy manufacturers. Actually Dux are not entirely new to models: 28 years ago they brought out one of the first flying model aircraft in kit form. In January this year, Dux absorbed Star Models of Westernhausen and with their own new designs have started strongly by offering quite a fair range of kits, etc. In addition to conventional balsa models, the kit range includes three 20 in. rubber-powered models made of moulded diecut plastic sheet—presumably on the lines of those rather remarkable American Strombecker models. Dux are also handling several imported lines and list Cox, Allen-Mercury and Merco engines.

Like most other countries, America found herself at the end of last year with one new and unused F.A.I. Power Team as a result of the cancellation of the 1959 World Championship Power Event. Problem: should the 1959 team automatically become the 1960 team or should an entirely new team be selected from eliminating contests in the usual way? The U.S. authorities have decided on a compromise. Fresh eliminators are to be held in the form of five-round local and eight to ten-round semi-finals, followed by a final five-round challenge match against last year's winners.

One of the more enthusiastic "Inter-



Latest Graupner transmitter is the Bellaphon-3 operating on 40.08 Mc/s and designed for use with the Polyton-3. stick control for two channels, plus single push button.

Sandro Alinari of Florence, one of Italy's leading Wakefield flyers, on the occasion of the 11th Coppa Rossi contest at Milan last year.



nationalist" groups in the U.S. is the Minneapolis Model Aero Club. We have regular letters from two of its leading members, Sid Jepson—who, incidentally, is also the club's president—and Clint Cross—who owns just about every worthwhile 2.5 on the world market—plus a couple that are not on the market. . . . Gold weather (and it can be cold in Minnesota) doesn't worry the Minneapolis lads. On February 7th they held their annual Winter Meet on Medicine Lake: temperature 16 deg. of frost. Top F.A.I. power model was Clyde White's O.S. 15 powered O.D. at 897 sec., followed by Sid Jepson's Oliver powered Hustler with 842. Hustler is a high-

thrustline original design, with under-slung fin, by Jepson and Willard Anderson, and another Hustler, Enya 15-D powered, took third place at 830 sec. Hustlers also placed first and second (Enya 15-D and Cox Olympic) in the combined A-B class event.

In addition to modified Olivers, Enya, O.S. and Cox, the Minneapolis fliers have Super-Tigres, Silver-Streaks and an MVVS. Sid Jepson has used an Oliver and Super-Tigre G.20 successively in the same model. Overall performance was about the same, the Super-Tigre starting off more slowly, as is usual with glows, but continuing to accelerate longer than the diesel, so that approximately the same height was reached after a 15 sec. motor-run. Cox Olympics, which have a reputation in some quarters for erratic running, are pressurised by some Minneapolis Club users, pressure being tapped from the side of the crankcase just above the mounting lugs.

Odds and Ends

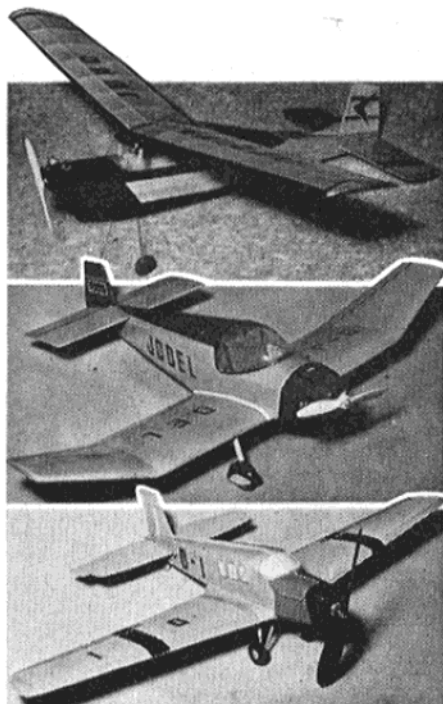
Polks of New York have a new range of Aristo-Craft transmitters and receivers up to a 10-channel simultaneous outfit, selling for \$240 (approximately £86)—made for them in Japan.

Fins and fully-cowled engines seem to be back in favour for speed models in the U.S. Last three open Nationals winners in 2.5, 5 and 10 c.c. all had these features. All had metal pans and wood tail surfaces. Two had aluminium wings, one had a fibreglass top shell. Only one used conventional two-line control.

High-thrustline is currently gaining favour with some of the top Canadians. Montreal's Brian Hall has the most extreme layout with his 24 oz. Segway, a polyhedral 6 ft. low-wing with a K & B 19 pylon mounted above.

Left: Three new German small models photographed at the Nuremberg Fair. Top two, Arcona's 14-in. F/F "Juno" and Eggenweiler's 20-in. scale F/F Jodel D-11 are both Pee-Wee powered. The Junkers F.13 is a 20-in. rubber model of die-cut and pre-formed plastic sheet made by the large "Dux" organisation which has just entered the model industry.

Italian team-racing Championship of 1959 was won by the team of Monti and Berselli of Bologna. Monti is seen below with the winning model.





TOPICAL TWISTS

by pylonius

Back to Normal

After last month's history lesson, which I trust all you eleven plussers carefully studied and promptly forgot, perhaps we could get back to a spot of topical chat about an obscure, and often overlooked, pastime called model flying.

Some of you, who are not too well acquainted with this homely hobby, might like to know that it is completely unpretentious, though not exactly down to earth. It involves no strutting or bracing, no flaunting of vintage pedigrees, and is more at home on the kitchen table than the sideboard.

What is more—stand by to cheer—you only need one wing. This might seem a bit on the miserly side after a rich diet of tripe and bipes, but at least you don't get building board indigestion. Fuselages, too, are somewhat meagre by all the cowl and cockpit canons, just plain, squarish sort of structures, which might not be fancy but at least keep the prop from knocking the fin off. And, as for undercarriage, they are strictly for the birds.

In order to get to know more about the sport we suggest you visit a popular flying field. Come to think of it, though, make it two popular flying fields—you can never tell upon which one the local model flyer might be operating.

And All That

But, talking of history, the vintage wallahs don't have it all their own cap-back-to-front way; the humble model can do the 1066 act with the best of 'em. To illustrate the point we publish this exciting extract from the action packed pages of the recent autobiography of Aphraim Prang, "Oiled Silk and Old Elastic."

"My first machine was of the pusher type. It featured an open cockpit, four-wheeled undercarriage, dummy silencer, and was operated by manual propulsion. As a result of some erratic piloting on the part of my big sister I took my first nose dive. Thus my introduction to model flying was a classical one.

"Our big problem in those early days was finding suitable materials. Balsa was unknown, which was perhaps a good thing, as it would have been madly frustrating to have had such tempting razor fodder in such a bewhiskered world. We explored many woods, but soon found that models flew better over open ground. This was how we came to use Wimbledon Common. Chobham, it should be remembered, was as yet undiscovered, which was possibly one reason why these were called the good old days.

"In our unremitting quest for model making material we tried almost everything, but achieved our first real success with the pages of school exercise books. Birch followed, and it struck us that this might prove ideal for our purpose, and its use as such met with the fundamental approval of the other students.

"For surface covering we used oiled silk, and this was how my first real model came to be called 'The Cape of Good Hope' and also why the headmaster got so wet cycling home. Motive power was another thorny problem, owing to the acute shortage of younger sisters. However, by good fortune, I made a fascinating discovery about golf balls, and my 1,000-strand motor caused quite a sensation at the time—almost as big a one as the closing down of the local golf course.

"Flying at that time was always a tricky business. Conditions had to be just right. I can well remember walking out to the centre of Wimbledon Common and taking out my handkerchief. I retired to bed immediately with a heavy cold.

Streamers were just as fashionable in those days, Combat or no Combat.

"Our models were a trifle heavy by present day standards. In fact the state of the common was the subject of a spate of angry letters to the council, protesting over the ploughing up of this historic public space. But, as time went on, our models became lighter and less agrarian. A typical example of our progress was my V-frame puller. I was never a great interpreter of plans even in those days, but the thing flew, and I've never looked backwards since..."

Birdie Eye View

Upon seeing that mystery picture of a Bleriot Monoplane in last month's issue, I immediately donned my vintage Sherlock Holmes outfit and began to investigate. After carefully scrutinising it, under my stereoscopic magnifying glass, I unearthed the first significant clue. It was an exciting moment. One of the cloth capped figures was wearing his bicycle clip on his left leg! Thus it immediately became obvious that the negative had been printed the wrong way round. From this I inferred that the figure three on the rudder was not in fact a three, but the letter "E." Taking down my copy of Pulsator's "Great Modelling Eccentrics" I searched for the vital information. As I thought, the letter "E" was the trade mark of Ernest Bloggs, pioneering father of the famous Joe.

The next object of my scrutiny was the small figure standing by the tailplane. This I took to be either a child or a midget dressed up as a child. As the diminutive figure appears to be busily devouring part of the tailplane I took it to be the infant Joe getting his first taste of flying.

I next examined the clothes and demeanour of the crowd, and became highly suspicious. They seemed to display that stolid, obstructive attitude peculiar to model spectators, rather than the respectful, cap-in-hand deference of full-size onlookers. From this it became evident that the machine was, in fact, a full-size model of a full-size aircraft. Possibly the design was lifted from a French model journal, and the inability to convert metres into inches, recently demonstrated by Joe's matchbox Wakefield, seems to be something of an ancient family curse.

The tree in the background supplied much interesting data. By taking the square of its height, and dividing by its angle of inclination, we come to the inevitable conclusion that the picture was taken on Chobham Common on December 1st, 1912, at 11 a.m. At 11.2 a.m., the youthful Joe got a slosh round the ear from his angry father. This historic incident was perpetuated in the naming of the site as the Clump.

Standing in the centre of the picture is E. Bloggs himself. To his left is Kit Carton, the model shop proprietor and number one creditor. The lady to the right, lurking under the large expanse of millinery is E. Bloggs' landlady, whose grand piano supplied the bracing wire, and antimacassars part of the wing covering. The gentleman on the extreme right, wearing the bicycle clip, is the owner of the undercarriage. We do not know whether he had to walk home or managed to get the wheels back on his bike before nightfall.

It is extremely doubtful if the model ever flew. That elastic motor took some winding up.

Raf and Ready

A reader points out that Scampton is likely to be without its camp this year, which means that the Annual National All-Britain Outdoor Engine Running Marathon may not take place. This will come as a great disappointment to those who have put in such arduous practice over the past months, at great sacrifice of precious flying fields and neighbourly goodwill.

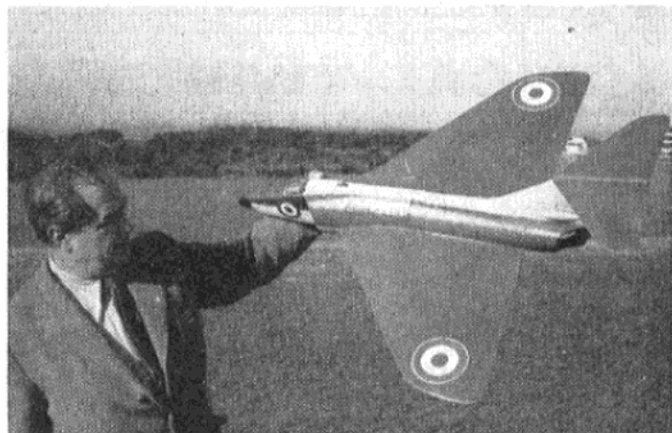
Holding the Nationals without its riotous sideshow is like Derby Day without its fair. A typical solution to the problem would be to enlist the sympathies of some marathon-minded holiday camp owner. A little extra noise around the camp would go more or less unnoticed, and just think of those prizes!

A more active type of marathon was a record breaking, radio control jaunt along one of our English highways. Leading the merry dance was a bod bleep-buttoning his way to glory from the seat of a car. He struggled gamely on in spite of a badly swollen finger, and though he didn't make Land's End, the model did after 23 miles.

PHOTONEWS—

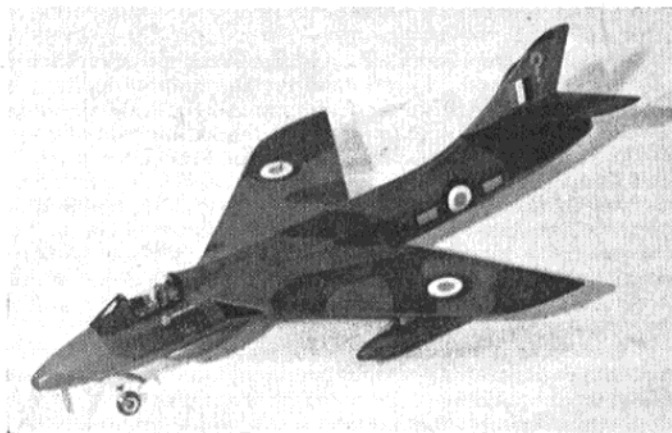
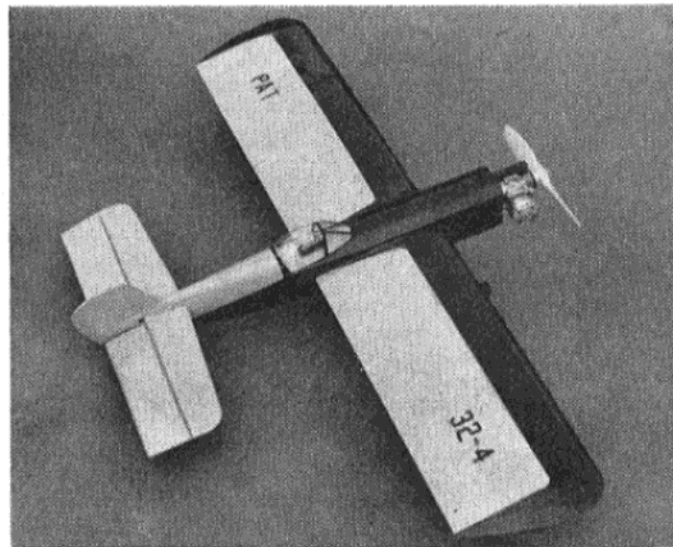
brings you a selection of readers' photographs

Eddie Norman's R/C ducted fan deltas get bigger and better! The latest version, which you can see here, is at present powered by an E.D. 2.46. Although having a wing loading of 16 oz. per sq. ft., this impressive 2½ lb. model has a climb resembling the full size Javelin upon which it is loosely based.



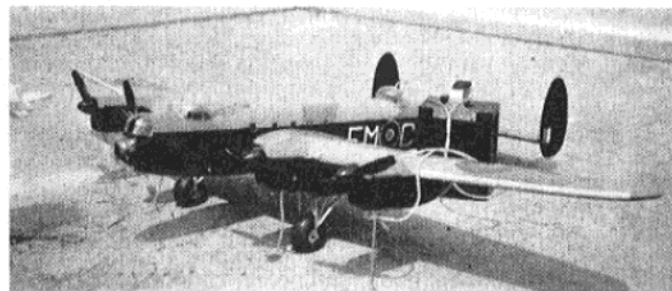
Burmese modeller Sai Mya Tha of Rangoon is here shown starting his Sai 45, a neat original Mills 0.75 powered sport model. Mr. Sai tells us it flew very consistently during its two years of life, before finally disappearing in one of those powerful Burmese type thermals.

Very nice photography shows the great care with which A. R. Drinkall paints his plastics. This Frog Hawker Hunter is authentically finished in the colours of 247 Sqn. Matt red fin with yellow question mark, and red squadron marking rectangles outlined with black, either side of the fuselage roundels. The original machine bearing these markings was the personal mount of Sqn. Ldr. R. A. Carson, M.C., A.F.C., at R.A.F. Odiham.



David Findlaw designed and built this simple yet attractive Frog 2.49 powered stunter. The wing span is 36½ in. and the high finish is obvious from the excellent photograph. David says that P.A.T. stands for Prototype Aerobatic Trainer!

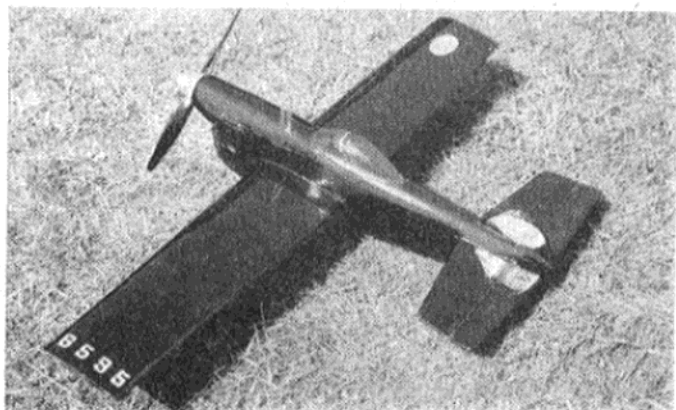
Howard Levy took this photograph of fellow New Yorker Graham Ireland's magnificent ⅜ in. scale Lancaster. It is powered by four inverted Ohlson 23 glow motors and took 600 hours to build. Airspeed is around 75 m.p.h. and we congratulate Graham on a fine achievement.





Well-known modeller Ken Tansley of Northern Heights M.F.C. designed and built this D.C. Merlin powered Luton Minor. Scale is 1 in. to 1 ft., and the dove grey and blue finish with black and white trim really sets off this beautifully built model.

G. A. Pretty of the County Police Station, Great Barr, Birmingham, built this Oliver-powered 24 in. span Voodoo team racer. That lovely mirror finish is the result of no less than seven coats of car primer, ten coats of black car cellulose and lots of elbow grease. (There is obviously very little crime in Mr. Pretty's district!)



The Army is becoming air-minded to judge from this photo of Private A. C. Wells' 40 in. span F/F Nardi Amphibian. This very original choice of prototype is powered by a Mills 0.75 which, being a sideport engine, means that the direction of rotation can be reversed; therefore a standard airscrew can be used in the pusher position behind the wing.

Jean M. Mouttet of Marseilles sends us this photo of his Fregoli. This sporty looking C/L model is a French kit which by varying component positions can be assembled in six different ways. Here it is presented in the short span parasol version powered by the Polish P.Z.L. "Sokol" 5 c.c. diesel.



An American built E.D. Radio Queen must be something of a rarity. This one, built by C. La Mar Kemp of Dallas, Texas is powered by a Fox 35 and uses Babcock three-channel radio for rudder, elevator and engine. Mr. Kemp is very well pleased with his model which, he tells us, is an ideal R/C trainer—we agree!

RADIO TOPICS

Latest news and views from
the world of radio control

THIS new—and, we hope, regular—feature has been launched to provide up-to-the-minute “news and comment” for the ever-growing number of R/C enthusiasts. The proviso is deliberate. For news items outside the trade we must rely to a large extent on readers letting us know what they are doing. The more letters we get on the subject of R/C for model aircraft the better—and you can be sure that any items of general interest will receive due mention in these columns.

With commercial R/C development a lengthy job—and the fact that you can count the number of established manufacturers in this country on one hand and still have some fingers over—trade news is bound to be spasmodic. It would be easy enough to fill the gaps with foreign news (which could be all too frustrating to those readers who keep up with their American magazines—as we ourselves have often experienced on other items), but we would much rather report on British news. How about some “gen” from the North and Scotland where it is rumoured some very fine R/C flying is going on?

Following their 4-, 6- and 8-channel Black Prince “multi” equipment, E.D.’s have another variant up their sleeve. This is the Black Prince 8-channel tone receiver with crystal control and simultaneous working (two channels simultaneously). Price, at the moment, is anyone’s guess, but it will not be far off the mark either way of £50 for the receiver-transmitter outfit.

Winner of the S.M.A.E. Southern Area (1959) radio event, Frank Knowles, has sold kit rights of his American-style low wing model to H. J. Nicholls. Henry J. was most impressed with the performance of this design on single channel and 1.5 c.c. power—Knowles flies one model on the AM “15” and another on an Elfin 1.49, but a fellow

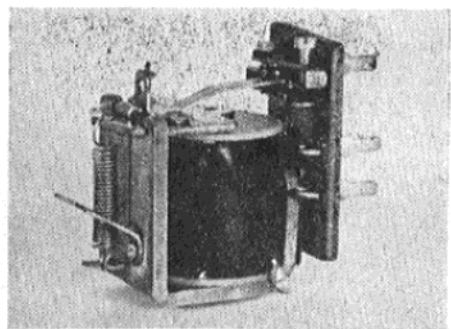
clubman has installed a “Tritone” three-channel receiver and boosted power to 2.5 c.c. for an even livelier performance. With a wingspan of 50 in. this seems to be a model which can “double” for single channel or multi. Kit will be called the *Galahad* and price should work out at about the £2 mark.

Slower off the mark with their version of multi-channel equipment is Pathfinder. Designer Eric Hook had a prototype complete and working about a year ago with no apparent snags—except on the production side. Main cause of the hold-up has been the necessity of developing and getting into production a new lightweight relay, and a miniature reed bank. The version of the latter we saw had gold contacts and a printed circuit layout—no more expensive than orthodox construction, we were told. However, there seems some doubt that the final production version will follow the same material spec. We can say, however, that the performance of the equipment was most impressive—remarkable stability virtually eliminating any need for further adjustment after an initial setting up and a “power boosted” reed circuit which made relay adjustment a gesture towards convention rather than a necessity. More news of availability of this equipment a little later on, we hope. It should be very good indeed.

American stunt C/L flyer Bob Palmer—whom many British aeromodelers will remember visiting this country on a demonstration tour with Bonner—has deserted a C/L handle for push buttons, we are told, and is currently trying out a Merco “35” R/C to see how it compares with American engines (or should that have been a note for Peter Chinn’s Engine News column? In case not, we will add that Harold de Bolt also has a Merco “35” R/C on an

appraisal test). No truth in the rumour that Bonner is taking up C/L, however, even if he did not make the American radio team visiting Switzerland for the World Championships!

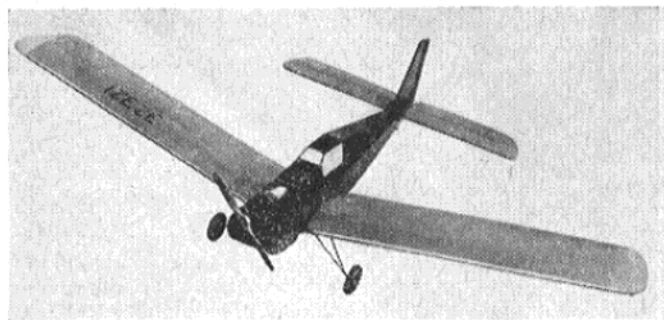
Receiver kits are quite big business these days and Radio and Electronic Products are right on top of this market. Since “Honest George” marketed his printed circuit transmitter kit it has paved the way for a real do-it-yourself interest. A leading retail shop reported recently that sales of REP receiver kits



New Ripmax relay, weight ½ oz.

topped the corresponding figure for built-up receivers. We checked with a number of people flying with REP kit units—none of whom we would class as electronic experts—and all were obtaining good results. Yet a year or so ago nobody would have given a multi-channel receiver kit the ghost of a chance as a commercial proposition.

Argument we got drawn into on fully proportional controls with no self-neutralising—practicable or not? We flew with this type many years ago and always got “out of step” with the model. Some people maintain it is only like flying a full size aeroplane—you just operate the controls instinctively, with practice. We still maintain, however, that the human response lag is an inherent hazard. It is one thing sitting in an aeroplane, moving as it does, and automatically applying correction, or a required control movement. It is quite a different matter when you and the aeroplane are detached and you have first to translate a mental image as to what the aircraft is doing into control action. This seems to be variable with distance, too. The farther away the model, the more likely you are to be slow in recognising a deviation, or applying correction.



First low-wing R/C kit to be marketed in Great Britain—H.J.Ns’ *Galahad*.

And if the model is too far away you cannot tell which way it is pointing anyway.

Seems some experts can contradict this theory and fly perfectly well on fully proportional, non-centring all the time. It threatens to become a popular system in the States. Perhaps the "quickness of the eye" can be sufficient—with enough practice. We would still hesitate to trust a lot of expensive equipment of our own to this system.

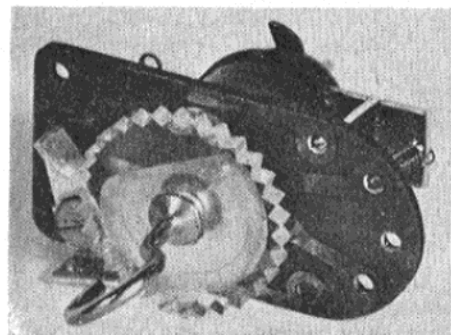
Fred Rising, who has made such a mark with his nicely built actuators and escapements—showing that accessories of this type can be produced in this country down to individual component sizes and weights which have hitherto been an American prerogative—was going to put out a receiver kit. The operative word now seems to be "was." If it does come to pass, and there are no immediate plans for it, it will not be the original transistor circuit planned.

Turning up old R/C pictures, and happening on one of Ed Lorenze, R/C contributor to *Model Airplane News*, reminds us of the time when we sent one of the first Mercury-Cossor receivers and transmitters to Ed in exchange for the American Aerotrol which was then the sensation of the American model press. Ed never got anywhere with the Mercury-Cossor, nor did we with the Aerotrol—quite apart from it working on an illegal frequency (in this country). People still find one story of our Mercury-Cossor equipment amusing—we got a room-to-room range indoors, all right, but only if the door was open. We never have found the proper technical answer to that one.

Which reminds us of another story—when we were asked to develop an inexpensive circuit for short range R/C (this one for a car to be operated in a room). We got down to the price, and felt very pleased about it. But whatever we did the maximum range was 9 in.—and there was nothing we could do to better it! One unkind friend suggested it might be all right for intercom. in our then fully operative *Rudder Bug*.

Two new products from RipMax Marine Accessories should become avail-

Compound Mactuator (prototype). Weight 1½ oz. Production model will be slightly lighter and cleaned up.



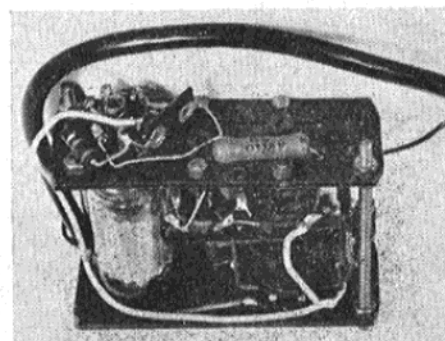
Fred Rising compound escapement—all the F.R. range deservedly popular for sound design, good workmanship. In particular we applaud the realistic component sizes—not exaggerated to the point of clumsiness, as is all too common—and light overall weight.

able within the next month or so. First is a compound version of the "Mactuator"—basically a "worked on" standard Mactuator with ratchet brake wheel and printed circuit switching.

Scope of this unit, which is very little bigger and heavier than a standard "Mactuator" is:—

- (i) selective control for two positions, e.g. right and left rudder.
- (ii) Selective position — (press-release-press-release-press) for a separate switching position with control positions operated as (i) as near neutral as makes no difference.
- (iii) A "blip" response for a further switching circuit operated off the back contact of the relay.

In addition, wiping contacts and printed circuits provide electrical



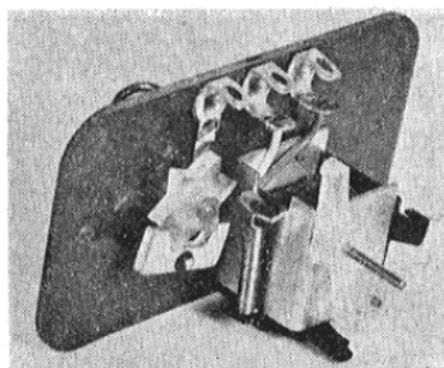
View the customer does not—or should not!—see. Standard "Pathfinder" receiver less case showing the unusual construction with components mounted between two Paxolin plates.

contacts (connected through a common negative) at each control position, if desired. In other words, the unit can be used as a rotary selector. All control positions are self-neutralising on release. The price—39s. 4d.

Other new RMA radio accessory is a lightweight relay—designed to supplement the present A30-A40 series, if not replace them entirely. All tooled up and ready to go, the photograph shows a prototype off the production tools. A number of minor amendments remain to be attended to. The contact plate, for example, is to be lowered to reduce the overall height.

Various coil resistances will be available, also the relay will be marketed in fixed contact and adjustable contact forms.

Standard "sealed case" receiver returned to the manufacturers for servicing with the note "not working, never been used" was found to still contain traces of salt water inside—and the amount of corrosion one would expect from a prolonged immersion in the sea! It pays to be honest with



manufacturers—they all are really trying to do their best and provide the best service with their equipment. In any "doubtful" case of liability the customer usually wins out—but not if he so obviously departs from the truth!

World R/C distance record aspirants Charlie Dance and Wally Skills are using home-developed equipment, with receiver similar to Aerotone and crystal controlled transmitter (carrier drawing 6 milliamps plus another 5-6 milliamps with modulated tone). Performance of the latter has proved exceptionally good under all operating conditions, remembering that the base station is mobile.

Model control is effected by selective rudder plus trimmable elevators connected to engine control. The latter is sequence operated on the cycle—

- (i) neutral elevator—full throttle.
- (ii) down elevator trim—full throttle.
- (iii) neutral elevator—slow speed.
- (iv) up elevator trim—full throttle.

Familiarisation with sequence is easy, says Charlie. If the sequence is lost, position (iv) is readily established by "press and try," producing a comparatively gentle stall.

More details of this interesting system in a later news page—by which time this team should have that world record as a *fait accompli*.

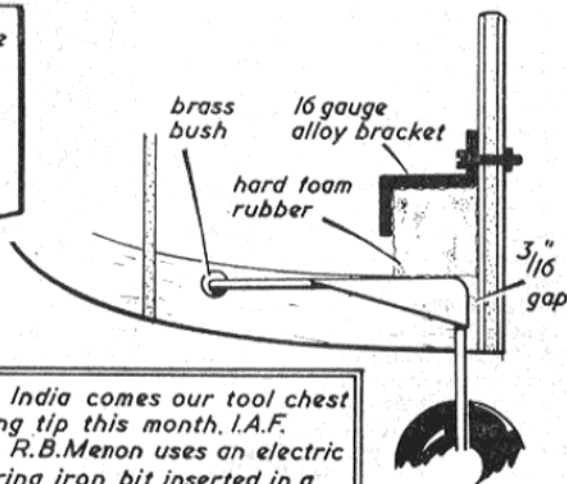
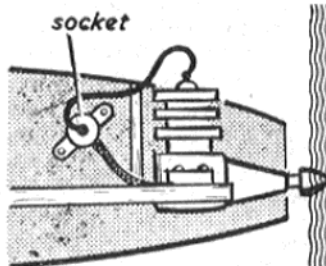
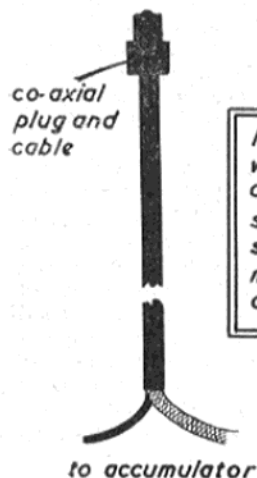
R/C as a model flyer wants it is the aim of the new Reptone combined receiver, motorised actuator and battery box. Here the "electronics" and transducer element (actuator) are completely packaged so that it becomes a simple mechanical element to link to the working control system.

It has always been our contention that this is the only way to put over R/C on a popular scale. Reduce the radio side to the equivalent of a mechanical operating gear and the chaps who can really fly models, but find radio a "blind spot," can forget everything but flying. Complete Reptone transmitter and packaged receiver-actuator unit sells at £15. 8s.

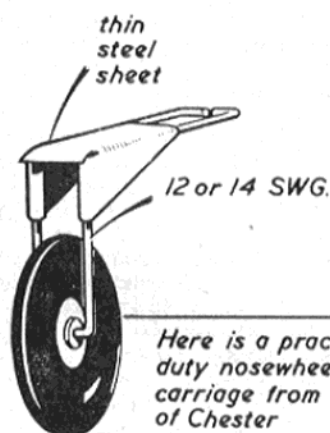
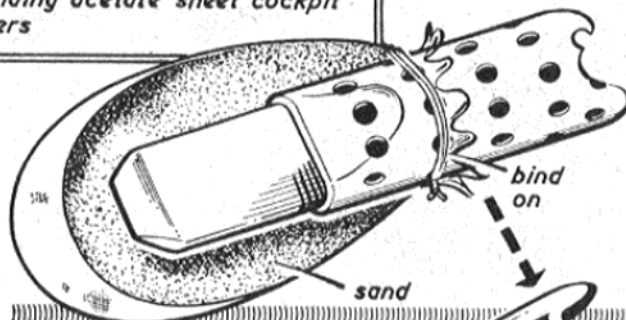
One final paragraph—and one of the most important. Please re-read the first paragraph—and do something about it. Tell us what you are doing—what you would like to know—and see if we can cope!

Readers hints and tips...

By using Co-Axial cable 13 year old B.LEWIS of Hipperholme needs only one length of flex and one plug socket for his glow engine.

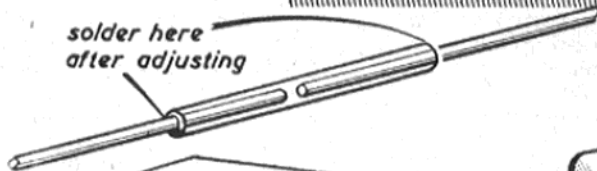
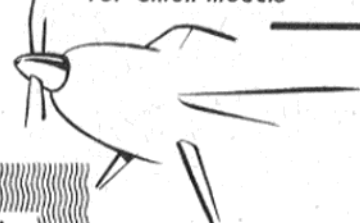


From India comes our tool chest winning tip this month. I.A.F. cadet R.B.Menon uses an electric soldering iron bit inserted in a small sand bag to supply heat for moulding acetate sheet cockpit covers



Here is a practical heavy duty nosewheel undercarriage from F.WILDE of Chester

Pen cases can be adapted as excellent airscrew spinners for small models

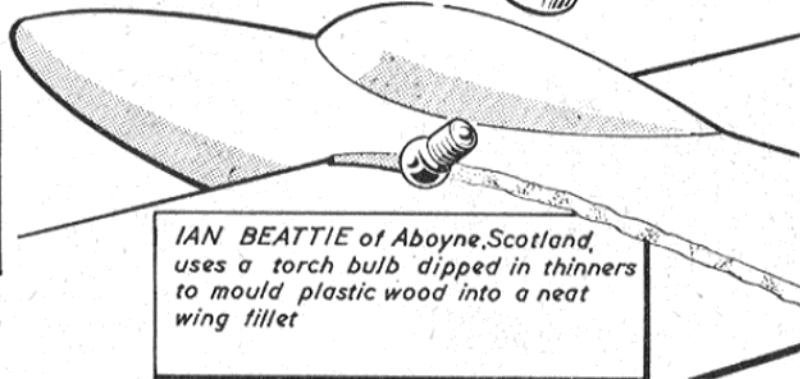


To enable c/l elevator pushrods to be produced to accurate length, make them in two halves about 1/4" shorter than required, join with brass tube and solder after adjusting to length. From J. GRAY of Hornchurch

Plastic screw on tube caps can be employed very usefully as glow plug protectors. These ideas come from D.J.HUNT of Birmingham



IAN BEATTIE of Aboyne, Scotland, uses a torch bulb dipped in thinners to mould plastic wood into a neat wing fillet





LETTERS

to the Editor

Power Duration comments

DEAR SIR,—I would like to congratulate both yourselves and J. Baguley on the excellence of the "Power Duration Models" series; it is, indeed, a fitting successor to the "Designing for Duration" articles, which I found very instructive. I have been flying power models for about four years and have built *Eliminators*, *Y-Bars* and also Brian Eggleston's *Creep*. Using the knowledge I gained from these models, I have designed Payloaders and two F.A.I. power models, all using the tail tilt/wing wash-in trim favoured by Mr. Baguley. Although my experience is somewhat limited and I have not had first-hand knowledge of the models he discusses, I would like to amplify and clarify a few of his statements.

Wing wash-in: As stated, overdoing the left roll can be interesting! It seems that high-pitch propellers are best avoided when using this type of trim. A friend and I have used 6 in. pitch propellers on a *Dream Weaver* and *Creep* respectively, and as is generally known, higher pitch props tend to turn a model left. After about one complete circle, the *Dream Weaver* would straighten out and start to yaw left. My *Creep*, using a slower motor, would start turning left at the top of the climb. In both cases, recovery to the normal right-hand circle was delayed and only accomplished after a few stalls. Using a little right rudder this tendency was cured. With the normal 4 in. pitch props generally used, a normal right-hand spiral was achieved, although height reached was considerably less.

Downthrust on the Bethwaite design: Regarding the "remarkable amount of downthrust," on Frank Bethwaite's original design, this amounted to 5 deg. (quoted on the plan), surely not excessive, as Ron St. Jean's *Ramrod* design uses 10 deg. However, the developed models of the Henley club did require 20 deg. and more, due to their high power and lower wing loadings. Also these higher powered models were trimmed to fly right under power to avoid precession troubles, unlike the original which flew left.

The diagram (Fig. 5) should read "rotating slipstream impinging on fin, rolls model right and yaws model left."

This is due to the centre of fuselage area in the slipstream being forward of and below the c.g. which acts as the pivot about which the model swings. Conversely, in the Stan Hill designed *Amazoom* (Fig. 6), with the centre of affected area behind the c.g., the effect is to roll the model to the right, allowing the model to be trimmed for a safe left climb. As the fin is underneath the tailplane and out of the slipstream, the centre of area should be well forward. This should give the model a slight right yawing tendency, or a neutral effect, but hardly a left-yawing tendency.

Stan Hill's designs: The original *Amazoom*, not the *Amazoom* was, in fact, designed by Stan Hill's wife, Sandra. This model had, I believe, a fairly thick undercambered section, possibly the N.A.C.A. 6412. This model was not designed for really high power, two Oliver Tiger powered versions I have seen proving very hard to trim. The *Amazoom*, I am fairly certain, had a sharp leading-edged airfoil with a flat bottom and it is hard to see how this model "scored on the glide."

On Stan Hill's very high-thrustline model, the designer stated that "putting the rudder back on top in the wash, countered the small left [turn] tendency." This does not agree with Mr. Baguley's statement that "The action of the slipstream on the rear fin may also give left turn." The original *Hammerhead* with fin underneath the tailplane had a natural left climb but could be trimmed straight or slight right with a rudder tab. On the Mk. III putting the fin on top, as stated above, gave a straight climb.

As far as I can remember Norman Marcus and Tony Brooks started the tilted tail trimming technique at about the same time, but whether or not it was used in conjunction with wing wash-in, I do not know.

As Mr. Baguley hoped, his article really provoked some thought on my part at least, so I hope that the above remarks will prove of interest and value.

Yours faithfully,

RON MAGILL

Auckland, New Zealand.

Moaners moaned at!

DEAR SIR,—Referring to your correspondent, P. N. Tribe, he is moaning about no British entries in the combat event at the Criterium d'Europe. As something should have been done why did he not up and pack his bags and do something about it himself, instead of moaning at everyone else.

Talking of moaning, it seems to me that too many people moan. In every

issue of the magazine there is a complaint either about the S.M.A.E. or about MODEL AIRCRAFT.

Although I do not know an awful lot about the S.M.A.E. out here, it seems to me it does a fine job of work, and if it has a few shortcomings, cannot they be overlooked? The same applies to MODEL AIRCRAFT which is very good and naturally a mistake or two cannot be helped.

I noticed that in the January issue there were four letters to the editor and out of them, three were complaints.

I expect some chap will write and say that I am moaning myself. I agree, but not about the S.M.A.E. or MODEL AIRCRAFT. I am moaning at the moaners.

Yours faithfully,

PHILIP SHAW

(13 years old)

Rusape, S. Rhodesia.

Canadian comments

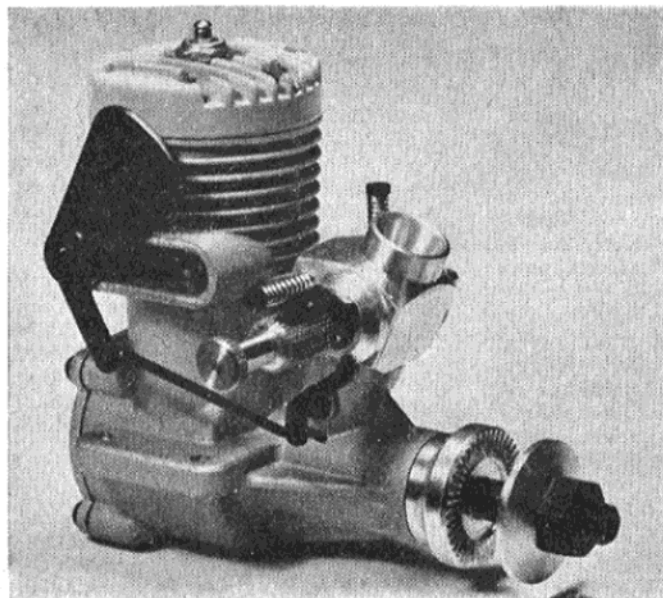
DEAR SIR,—Since there are to be no world championships for Nordic and Wakefield in 1960, many contest men were nevertheless going ahead with development work and contest flying in readiness for 1961. But in view of the monstrous proposals for rule changes from Italy now sitting in the F.A.I.'s lap for tabling at the 1961 meeting, it is possible that such efforts would be totally wasted, as the Italian specifications would require new models.

Any contest flier knows that it takes several seasons to work out fully any given set of rules affecting design; to which I add, quite categorically, that no one can claim to be on top of the present rules, although the fly-offs in 1959 gave the unenlightened the impression that too many could make that claim. I believe that the fly-offs were the penalty for starting flying late in the morning. More than two months after the meeting was held in Paris, we learn that the F.A.I. is henceforth resolved to have an "early start," though it is not clear why there should be a reluctance to pin down a specific time. (Canada suggested, optimistically no doubt, that the time to start flying was "within one hour of sunrise.")

Nevertheless, the "early start" is encouraging, indicating some awareness of the connection between performances and the arrangements for flying. Maintaining the flight maximum for the sixth and succeeding flights appears to be another significant step forward. Many had hoped that the number of flights would have been increased; there can be no defensible argument for confining an international event to one day.

Such progress will, I hope, cancel out any need for changing rules for some time to come, and any changes eventually made should, surely, be such that existing models may be modified fairly easily. Pious hopes aside, the 1960 F.A.I. meeting will discuss the Italian

Continued on page 144



PETER CHINN'S

LATEST ENGINE NEWS

The Merco 35 Multi-speed engine for R/C. Originally intended for the home market only, Mercos are being exported in increasing numbers.

SOME modifications have recently been made to the E.D. Bee diesel. This popular engine, first put on the market nearly 12 years ago and redesigned in 1955, has, undoubtedly, been sold in larger numbers, throughout the world, than any other 1 c.c. engine. The Bee has never been renowned as a hot performer and, indeed, one may argue (justifiably, we think) that it does not need to be, as it provides all that the average purchaser of this type of engine is looking for, namely: easy starting, pleasant handling characteristics and reliability, at moderate cost. However, it has long been apparent that the Bee was capable of further development to bring its power output up to a figure more in line with present levels and this the manufacturers have now done. In this way the scope of the engine should be extended slightly, by making it suitable for those models, just outside the beginner class, that demand a little more power.

Externally, the revised model—which should start reaching the shops at about

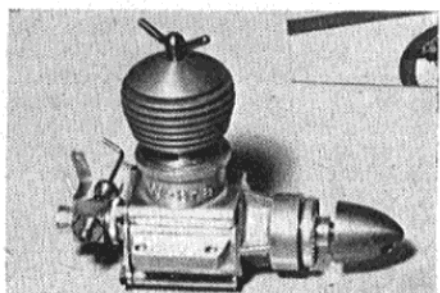
the same time as these words appear in print, looks exactly the same as the present Series 2 Bee, except in regard to finish. All external steel parts on the Bee, i.e. the cylinder, prop driver, compression lever and head screws, have been given a blued anti-rust finish, while the aluminium alloy crankcase is now sandblasted.

Internally, the principal change is in the cylinder, which has greatly increased transfer port area. The ports are now four in number and $\frac{1}{8}$ in. dia., drilled through the cylinder wall at approximately 30 deg. to cylinder axis. Formerly (to be exact, from mid-1956 when the Mk. II porting was modified from the earlier internal flute system) three $\frac{3}{32}$ in. dia. ports were used. The skirt of the cylinder is also now shortened and tapered to facilitate gas flow from the crankcase and thereby does away with the need for external grooves. Exhaust porting remains unaltered and the timing of both exhaust and transfer is approximately the same as before. Other modifications include a lighter piston and a diecast, instead of a machined, valve disc.

We hope to give some test figures for the revised Bee in due course.

Another new E.D., the latest British production engine received for test, is the Super Fury 1.49. A prototype of this disc-valve engine was briefly

described in the January issue and it may be recalled that the performance of this prototype Super-Fury was found to be a vast improvement on the original reed-valve Fury. The Super-Fury is now in full production and at the E.D. factory recently, we watched a batch of newly assembled engines being started up for the first time. The average production Super-Fury is claimed to be fully up to the performance obtained with our prototype and, for above-average examples, therefore, this could well mean an ultimate output exceeding that of any other British 1.5 currently available. Further information



The completely revised Webra Bully Mk. II engine with ball-bearing shaft, disc valve induction and intake throttle.

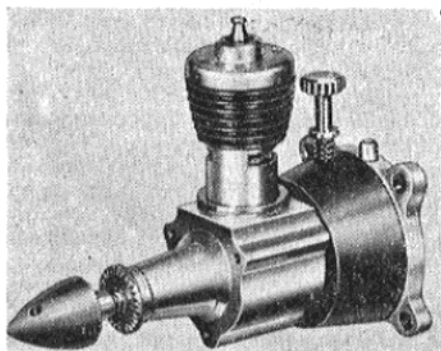
in this connection will be published as soon as we have conducted further tests. The engine, incidentally, like the Bee, has a sandblasted crankcase which, unlike the earlier Furies (and the 2.46 Racer), is now of aluminium, instead of magnesium alloy.

Two new Graupner Taifun engines have just been announced in Germany, the first glowplug engines from this manufacturer.

The smaller of these is to be known as the "Foxie." It is somewhat "Coxish" in appearance, but is an odd size—0.452 c.c. or 0.0276 cu. in.—derived from a bore and stroke of 8x9 mm. Disc valve induction and an integral glow filament are used. An output of 0.04 b.h.p. at 18,000 r.p.m. is claimed. Weight, including the radial-mount integral rear tank, is $1\frac{1}{4}$ oz. The engine is expected to be on the market by July.

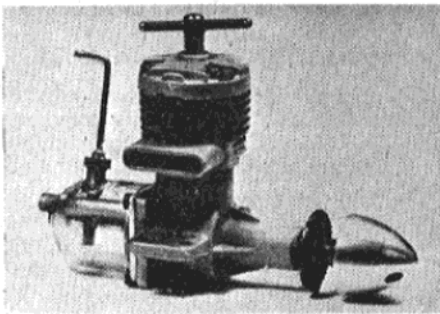
The larger Taifun glow engine is the Bison, a 3.5 c.c. loop-scavenged, shaft induction, plain bearing motor. It has

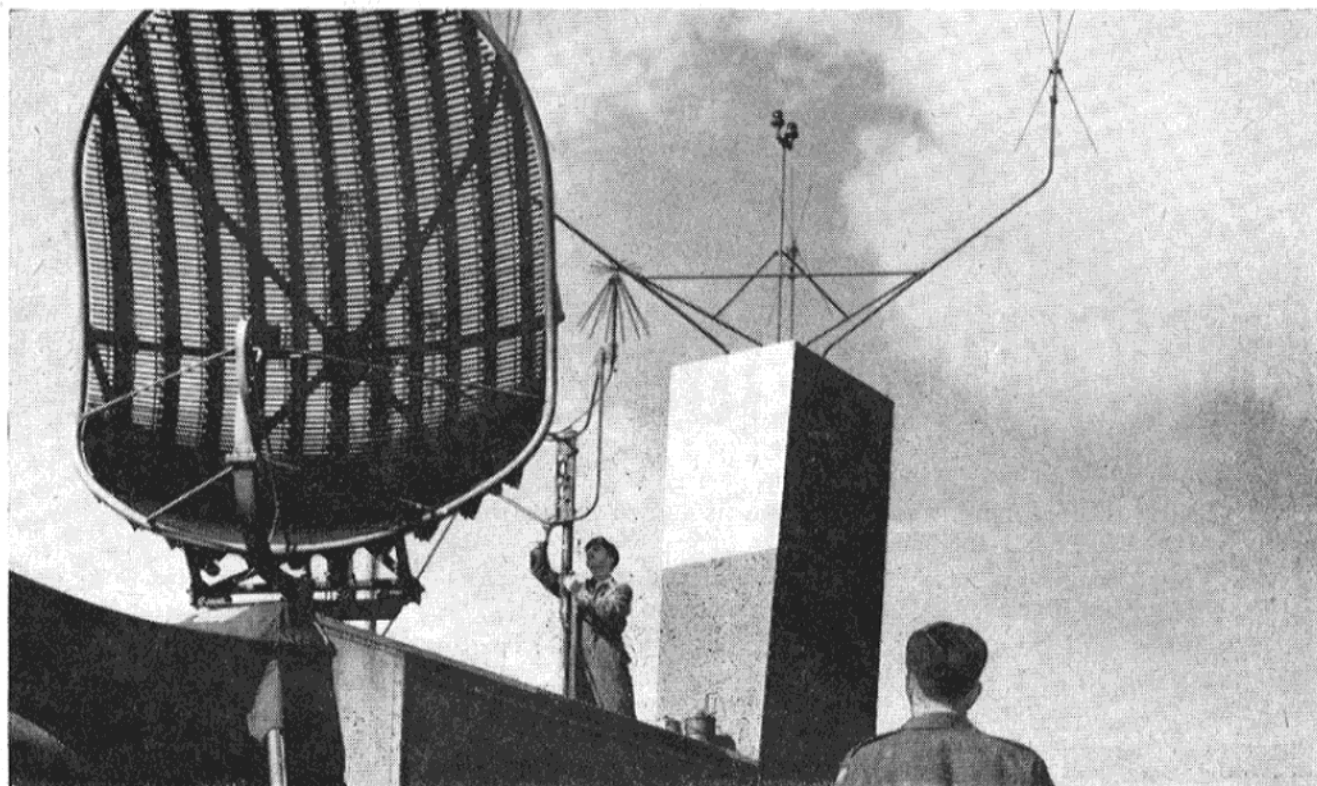
Continued on page 143



Above: Due for release in July, the German Taifun Foxie baby glowplug engine of .45 c.c. American influence in general design will be apparent.

Right: The latest version of an old favourite. New E.D. Bees coming into the shops have improved porting, lighter piston and sandblasted castings.





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Many interesting and new items were examined and ordered at the NUREMBERG EXHIBITION.

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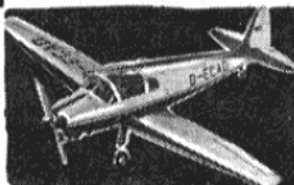
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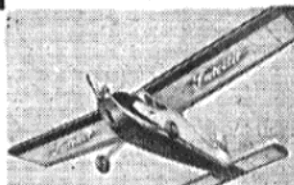
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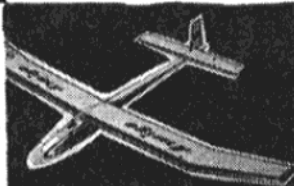
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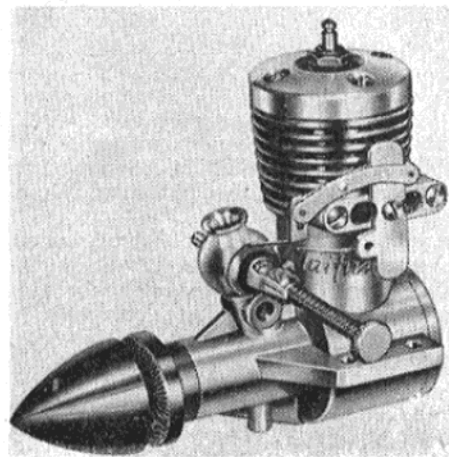
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been designed primarily for R/C and C/L use and is available with a coupled throttle system, consisting of a barrel-type carburettor throttle linked to an exhaust restrictor. The latter is of the simple swivelling plate type, pivoted at the centre. The engine has a bore and stroke of 15.8×17.8 mm. and weighs about $6\frac{1}{2}$ oz. without throttle. Claimed output is 0.31 b.h.p. at 13,000 r.p.m.

Designed for the same duty as the Bison is a new version of the Berlin-built Webra Bully 3.5 diesel, to be known as the Bully Mk. II. Modifications include the use of rear disc-valve induction, twin ball-bearing crankshaft and an intake throttle as standard equipment.

Another new German engine aimed at the R/C field is the "Duo 29," a 5 c.c. diesel twin shown at the recent Nuremberg Fair by the firm of Robert Becker of Metzlos-Gehaag, Hesse. The engine is a horizontally-opposed type built around a pair of Jaguar 2.5 cylinder assemblies. Two versions were shown, an



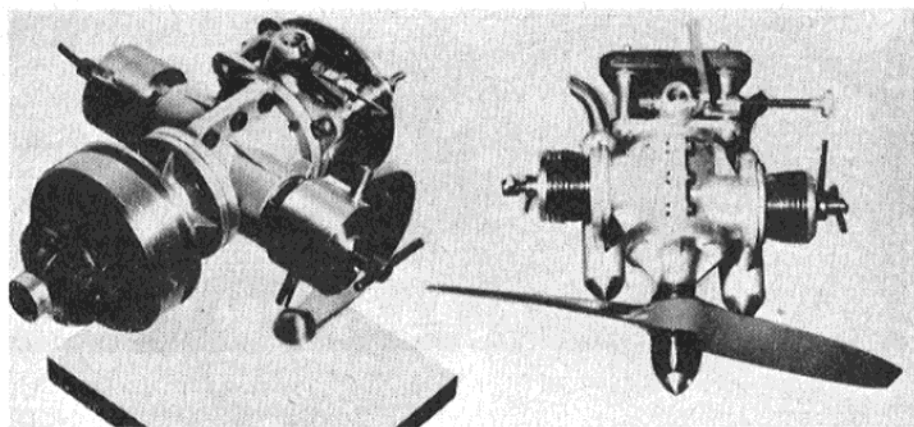
New Taifun Bison 3.5 c.c. glowplug engine seen here in its R/C version with coupled intake and exhaust throttles.

air-cooled model, fitted with exhaust collector-rings leading into large expansion chambers with short pipes, and a marine version with water-jackets, flywheel and universal joint.

For anyone interested, now that model purchases can be made from the United States, A.H.C. of New York have a few Dooling 61's at \$75.00 each (approximately £26 16s.). British tax and duty, however, may bring them up to over £40.

At the other end of the scale, we are advised by Western Hobby Mart, Box 533, Carmichael, California, that they have a limited number of Mk. I Taifun Hobby and Rasant diesels at \$4.95 (35s. 5d.) and \$5.95 (42s. 6d.) respectively.

Interesting news from the U.S.A. is that the Holland Engineering Company has been merged with Dynamic Models Inc., manufacturers of Johnson engines. The Holland Hornet will, of course, continue in production under the



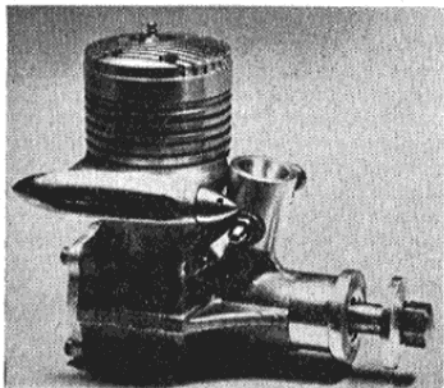
Two models of the Becker "Duo 29" 5 c.c. flat-twin diesel recently shown at Nuremberg. Air-cooled version costs approximately £13 in Germany.

supervision of Bob Holland, who will now also be in a position to spend considerably more time on research and experimental work. This possibly means that Bob may also be working on the promised Johnson Bulldog 0.15 F.A.I. class engine and, if this engine comes anywhere near emulating the factory-modified Hornet in terms of specific output, it should be first-rate.

John Maloney, of "World Engines," the U.S. model engine importers (Oliver, Frog, O.S., Super-Tigre, David-Andersen), dropped into London recently in the course of a round-the-world-trip during which he had spent a fortnight in Japan and five days in Italy. We had an interesting couple of days with him and with Jan David-Andersen, who came across from Oslo to join the party. John showed us pre-production samples of two very interesting new engines that he will be handling this season, one for F.A.I. F/F and one for multi-channel R/C (more about these anon), and had some illuminating remarks to make about probable trends in the U.S. Piston rings, it is thought, may come

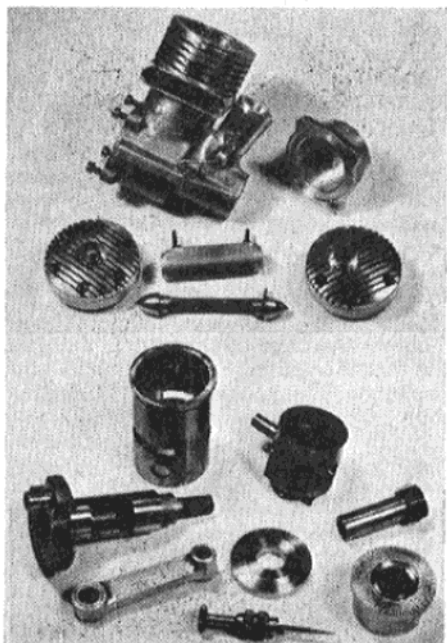
Below: Sandcast prototype of the new Japanese Kyowa 45RC: a powerful, solidly built 7.5 c.c. engine that should find favour with "multi" enthusiasts, particularly in the U.S.

Right: Parts of the Kyowa 45. Note the robust crankshaft and the special R/C cylinder-head with plug offset to the side and rear.



back into fashion, especially for R/C (a good thing, we would say). The trend, among leading multi flyers, towards using larger engines will probably continue, the present requirement being for a really powerful 0.45-0.50 cu. in. glow engine capable of turning a 13 in. prop and putting a 7 lb. model into a vertical climb for upwards of 70 ft.

J.M. confirms our opinion that foreign manufacturers who seek to compete in sales volume with American production of popular type engines, in the U.S., are wasting their time. The metier of the manufacturer who hopes to export successfully to the U.S. is the "specialist" engine, aimed primarily at the contest flyer. There is a limited market for such engines, but, nevertheless, a useful one for the foreign manufacturer who, because his production costs are generally lower, on limited production items, than those of his American counterpart, is in a better position to undertake such work. In support of this argument, John compared the outstanding success of the O.S. Max contest engine in the U.S. with the relatively modest amount of business done in America with the small low-priced O.S. Pet.





The range of **Airfix** plastic kits continues to expand, and the latest in the aircraft series is the *Dornier 217 E.2*. We can readily understand why it caused a minor sensation when it was first shown at the recent Nuremberg Toy Fair, for this kit is one of the best yet seen from this enterprising company, the plastic mouldings being of an even higher quality than usual. We were

particularly impressed by the incredibly fine engraving of the panel lines. These are so near to scale that a rather thick coat of paint would completely obliterate them, and it is recommended that a sprayed finish should be used.

Another point we like is the inclusion of an alternative rear fuselage section so that the modeller can produce the standard E-1 version or the E-2 with the umbrella type dive brakes (rather like the Blackburn N.A. 39).

The only fault, we find is the height of the cockpit floor, which is about 3/32 in. too low, but this can easily be modified during the initial assembly. The *Dornier* is very good value at 4s. 6d., and this price includes a capsule of adhesive, now enclosed in all Airfix

boxed kits at no increase in their price.

A revolutionary self-sealing tube is employed by the manufacturers of a new polystyrene adhesive called **Polytak**. No pins or other sealing devices are needed to close the tube after use. The price of a tube is only 1s. and the absence of waste will easily outweigh the very slight additional cost. Gadget-minded modellers will not doubt soon find another use for the neat self-sealers—(fuel tank fillers?).

The *Viper* is the name of a new profile stunt and combat trainer from **Mercury**. All parts are die-cut or preformed, and the quality of materials in the kit we



Above: the new Polytak adhesive and left Airfix's superb replica of the Do. 217.

examined was of a very high standard. Construction is quite straightforward and the *Viper* is entirely suitable for the comparative novice. Any motor from 1 to 1.5 c.c. can be used and the price is 17s. 6d.

READERS' LETTERS

Continued from page 141

proposals. I doubt that they will be accepted, though there is, as always, danger of diplomatic compromising. A further hazard lies in the mere discussion of model specifications, as it could help to establish a tradition of changing them every two years for no better reason than that the F.A.I. provides for such fatal diversion. It was this that encouraged Canadian modellers to propose a five-year "freeze" of the existing F/F specifications.

This leads me to an important point. Thorough search of the F.A.I. minutes has failed to reveal any mention of this proposal. Canada made two proposals, that concerning an early start, and this one. By implication the latter may have been tabled, but since our national

association did not receive an actual agenda of the meeting we thus have no evidence that our "freeze" proposal was put before the meeting. Canada's criticisms of organisation in France and Belgium had a good airing, it appears, and for this we are grateful, while regretting not having a man there to deal with the charges of alleged injustice and exaggeration. Comment and criticism is, nevertheless, secondary to concrete proposals, whose number we limit severely so as to strengthen the chance of a fair hearing.

We think we did well in 1959 to fly two teams to Europe—some 12,000 miles were flown using eight different airlines—and if we cannot afford to have a delegate at F.A.I. meetings we would like to be assured that our written proposals receive a hearing. (In passing, I should like to congratulate MODEL AIRCRAFT on its reporting of last year's world championships, and to enquire whether it also has been accused of injustice and exaggeration. (No one has said anything to us—Ed.)

Returning to the Italian proposals, 1960 is a year of indecision for Wakefield and Nordic modellers. I should like to

add the final coat of dope to a new 50 gm. Wakefield, but am wondering if it is worthwhile to do so. My own club, Montreal MFC, will continue to build F.A.I. models, regardless of the rules, as, I am sure, will most people elsewhere, and while this is an indication of the enthusiasm common to those interested in international competition I submit that there is a limit to that enthusiasm. Much of the satisfaction I find in Wakefield models comes from the work of development, and this, I believe, will diminish in direct proportion to the frequency of rule changes.

Perhaps, after over 20 years of interest in the Wakefield model, I am becoming conservative. May I therefore ask, through the columns of MODEL AIRCRAFT, for expression of opinion about rule changes from other F.A.I. modellers?

Yours faithfully,
BARRY HAIMAN

Montreal, Canada.

P.S. I wonder to what extent the Italians, in making their proposals, were influenced by the warmest and sunniest European summer for half a century?

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.



IT is early autumn now in West Australia—not the season of mists and mellow fruitfulness that England knows, but a time of the year when the skies are blue and the temperature is in the seventies. Few leaves fall, for most of the trees are evergreens.

In Natal now, winter is not far off. The season resembles a warm English summer. Temperatures vary with the altitude, and the South Africans who live high above sea-level are enjoying a crystal world of clean air and bright sunshine.

Go to either of these autumn paradises and you would be able to find a member of the Model Aircraft Wings Club. At Leederville in West Australia you would be sure of a welcome from Mark Jones, and at Estcourt in Natal you would have plenty to talk about with John David Shuter.

Mark was born on February 10th, 1950. He attends Leederville State School where he is a member of the camra club. Leederville is a suburb of Perth about three miles from the centre of the city, and Mark's home is at 16, Bruce Street.

John David Shuter lives at 11, Clegg Road, Estcourt. He was born on January 22nd, 1946, and is therefore four years older than Mark. At Estcourt High School he belongs to the model club. Estcourt is 3,800 ft. above sea-level near the junction of the Bushman River and the Little Bushman; all of which seems romantic to us in Britain. A narrow-gauge railway runs to Weenen, the second oldest settlement in Natal and the scene of a massacre during the troubles between the Zulus and the Boers. I doubt if the boys of Estcourt and Leederville know how lucky they are. We envy them their wide open spaces.

Nevertheless there are still many parts of our tight little isle where young people can enjoy themselves without feeling cramped. The countryside of North Devon, for instance, breathes the air of freedom that we find in the pages of Henry Williamson. Without going far from home one can sail, fish, bird-watch, explore, swim in the sea, camp on the cliffs—and, of course, fly a model aircraft. I am not surprised to hear from Mr. O. B. Rigby, headmaster of the Secondary School at Chumleigh, that several of his boys are interested in the Wings Club.

Northumberland, too, has plenty to offer the enterprising schoolboy who likes to make his own fun and share it with others. Mr. J. Phillipson, headmaster of the County Secondary School at Whitley Bay, reports a similar stirring of interest in the Club.

As the interest grows in a particular school, the boys may form themselves into a school club with the goodwill of teachers and perhaps their active help. Every Wingman who joins a local club, or forms one himself, should continue to enjoy the benefits of our larger organisation. There can be nothing better than a local club whose members are all linked, through the Model Aircraft Wings Club, with the international movement.

It is uplifting to know that the badge which you are wearing in Devon or Natal is also being worn in West Australia and Northumberland. Meanwhile I wish you good flying in the English spring, or whatever season corresponds with it in your own part of the world.

ALAN WINTERTON



COMPETITION PRIZEWINNER

Michael Hardinge is the winner of the £2 prize offered in the March MODEL AIRCRAFT for the best photograph of a completed X-13. Michael sent several photographs and although this one is not the best shot of the model it is especially interesting as it shows Michael with his X-13.

Many wingmen sent photographs of their models and although there is only space to publish the one, a consolation award of 10s. each will be sent to the following members for sending tips they found useful in flying their X-13's.

John Landan fitted a catapult hook to his model in order to achieve greater altitude before the Jetex ignites, and Ian Poacher has arranged a tethering hook on the wing to allow him to fly his Vertijet round-the-pole in the garden.

WINGMEN WRITE

As you have probably read in the newspapers, those of us who are growing up in the New Towns have very little to attract us in our spare time. Here in Stevenage New Town there is not even a cinema or library.

Many of us like to be out in the open air when the weather is fine, but unless we play games all the time or walk continuously, we are in danger of being classed as layabouts or young loafers on the look-out for mischief.

In my opinion, there is nothing better for a New Town boy than model aircraft. You can build a model indoors on bad days, and in fine weather you can go out and fly it. No-one can accuse you of loafing!

So I hope that a great many boys in Stevenage and similar towns will join the Wings Club whether or not they belong to another club already.—Robert Phillips, Stevenage, Herts.

* * *

My father, who is an old reader of MODEL AIRCRAFT, told me that if I joined the Wings Club he would buy me my first kit. He says that he would like to join himself, but he was born in 1914!

I enclose the coupon for membership.—Andrew Stevenson, Edinburgh.

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.

More Wings Club news on next page →

Peter Chinn's ENGINE TIP for Wingmen

SOME engines, especially in the medium and larger sizes, but also including a number of smaller types, have their cylinder heads held down with screws, as shown in our photo. In some cases, such as when a cast alloy cylinder block is used (e.g. Merco and Enya engines), these screws serve to attach the head only. In other types, where the cylinder is separate, two, or more, extra long screws may be used, passing through

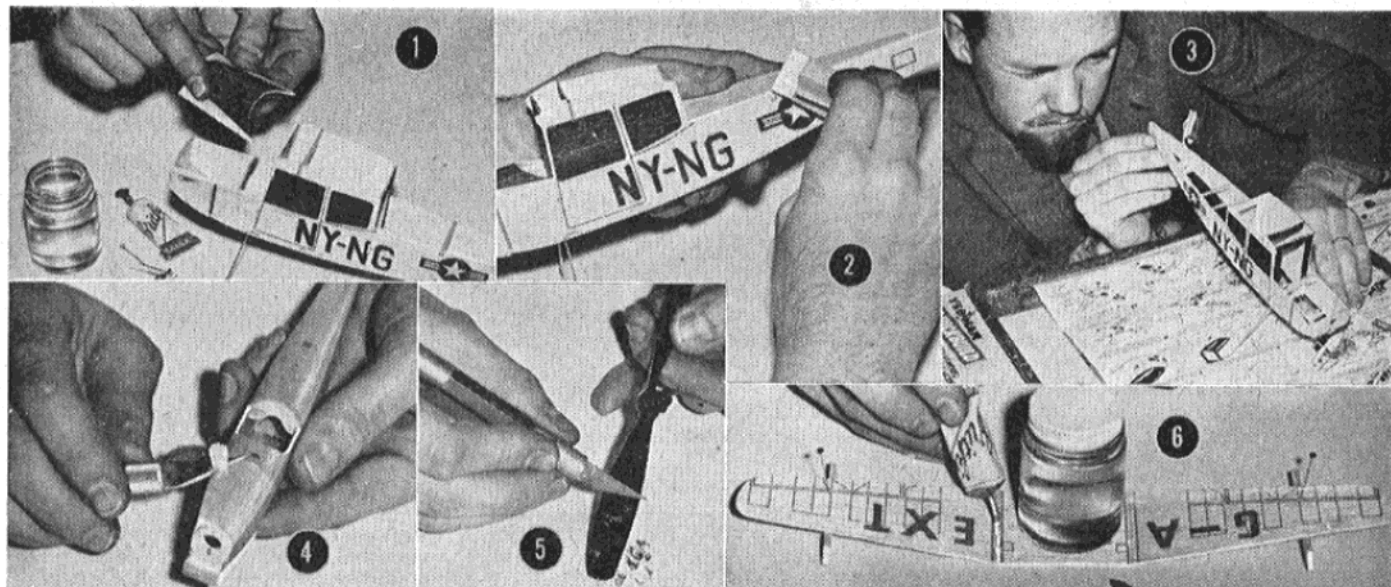
the cooling fins to secure the entire cylinder assembly to the crankcase—such as in several E.D., Frog and Allen-Mercury designs.

No matter which of these types your engine may be, however, it is most important that the screws should always be tightened evenly. Some engines are fitted with gaskets of a compressible material and manufacturers may recommend that head screws should be tightened down after a new engine has had some running. To do this, you should use only the correct size screwdriver and tighten each screw only a fraction of a turn at a time, working across the head from one screw to another.

Much the same applies if you should have any reason to dismantle your engine. When re-assembling, run down all screws until "finger



tight," slack off half-a-turn all round, so that the component is just free, then begin tightening, a few degrees at a time on each screw, working diagonally back and forth across the head.



ON THE WINGS CLUB WORKBENCH — 'Prefabs'

THIS month we have been building some of the excellent little prefabricated all-balsa flying scale kits that are so easy and quick to put together. Most of these kits have all the parts pre-cut and all that is required is careful assembly. In recent years, a great deal of development has gone into the all-sheet type of flying model, and besides looking like full-size aeroplanes, these tough little models really fly.

An excellent choice for absolute beginners, these models are also terrific fun for anyone who likes flying a model, and as most wingmen fall into this category, we took these photos while our models were being built, to pass on one or two useful building hints.

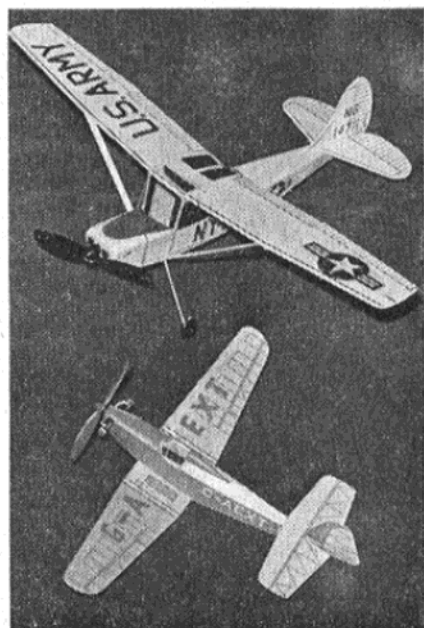
Photo 1 shows the Yeoman "Quick-build" Cessna Bird Dog under construction and the outer face of the engine cowling is being moistened with water to enable it to be curved without splitting. In

photo 2 we are rounding off the corners of the fuselage, using a piece of sandpaper wrapped around a small block of balsa (in this case, the noseblock).

It sometimes happens that one fuselage side is cut from harder balsa than the other, making it more difficult to bend to the correct curve. This will make the fuselage lop-sided unless you pre-bend the harder side before assembly. In Photo 3 Assistant Editor Doug McHard is seen taking a sight down the newly assembled fuselage to make certain there are no twists in it.

Photo 4 shows our Frog Junior Series Dart Kitten fuselage being built. Here, the nose is being carved to shape after cementing the blocks in place. This ensures a perfect fit; but do the final shaping with a sandpaper block, as in photo 2.

These kits contain finished plastic
(Continued top of next page)



propellers but most of them require balancing before fitting. The heavier blade should be lightened by scraping away the plastic from the rear face (don't try to balance a propeller by altering the blade outline), until the prop will remain in any position on the shaft without one blade persistently falling to the bottom. An out-of-balance prop will produce bad vibration and drastically reduce your model's performance. A drop of oil on the prop shaft will make a big contribution to smooth running.

The Dart *Kitten* wing is already scored at the dihedral break, and only requires cement reinforcing along these lines. In photo 6, a weight has been placed on the wing centre section and the tips are packed up to the correct height with small blocks. These blocks should be cemented to the building board and the wing pinned to them in order to prevent the dihedral altering as the cement skin dries and shrinks.

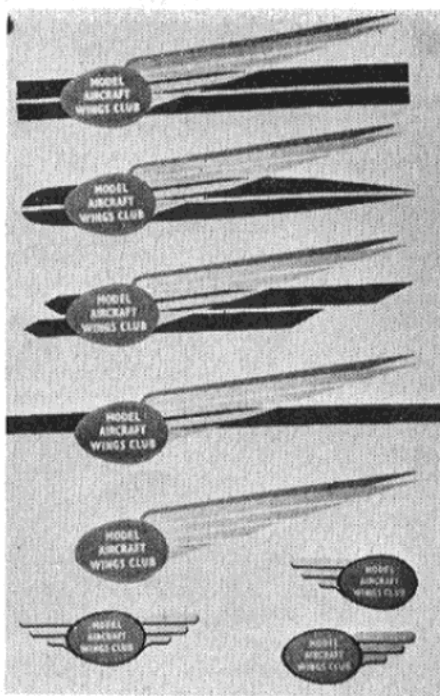
Don't forget to lubricate the rubber motor with a special rubber lubricant or with a non-mineral oil such as castor oil. This will enable many more turns to be given to the motor before reaching breaking point. Don't colour dope these models as the extra weight of the dope will completely destroy the flying performance; additional decoration can be done with a ball point pen. A little water colour was applied to the top cowling and headrest of the *Kitten* to match the fuselage sides.

The photograph of the two completed models shows, top—the Yeoman Cessna *Bird Dog* and, bottom—the Frog Dart *Kitten*, both of which fly beautifully.

TRANSFORM YOUR TRANSFERS

A NUMBER of modifications can be made to the basic red, silver and black Wings Club transfers to adapt them to various model requirements.

At the top of the picture the large transfer is shown in its unaltered form, and below it are four simple adaptations.



The small transfer, with its two wings, can be modified into a single left- or right-hand wing as shown. One of these was seen on our Veron *Colt* in last month's issue. Don't forget that when you introduce a new Wings Club member, you receive two large, and four small transfers absolutely free. But remember that every new Wingman must be enrolled on the official entry form.

Extra transfers can be bought from the Wings Club offices for 2d. each for either size. If you wish, you may send postage stamps to the value of the transfers you require and don't forget a stamped addressed envelope.

Have you seen the **SPECIAL PLANS OFFER** to Wingmen on page 130?

SIX E.D. BEE ENGINES TO BE WON

Veron offer special prizes to Wingmen entrants in their "Beat the Clock" competition.

The great interest in the Veron "Beat the Clock" competition, which is open to all builders of their *Colt Trainer* (see last month's Wings Club Workbench), has enabled them to extend the time for which this contest will run and this allows Wingmen to enter a special section for separate prizes.

All Wingmen who have built, or are building, a *Colt* should send the completed entry form, which is in the kit, to Model Aircraft Wings Club, 19-20, Noel Street, London, W.1. Mark the envelope **COMPETITION**, and write your membership number clearly on the margin of the form. Entries must be in by May 25th, and the names of the winners

will be published in the July issue of "Model Aircraft."

All entries are still eligible for the general competition so that you have two chances to win an engine. Unsuccessful entrants to the WINGS CLUB section of the competition automatically have their entries passed on to Veron for inclusion in the monthly section of the "Kwik-Fix *Colt* Competition" ending the last day of the month. In other words, it is possible for Wingmen to win 12 engines!—but six are at least guaranteed to Wings Club members.

In any case, win or lose, you will have a first class model which will give you hours of flying fun.

IMPROVE YOUR MODELLING

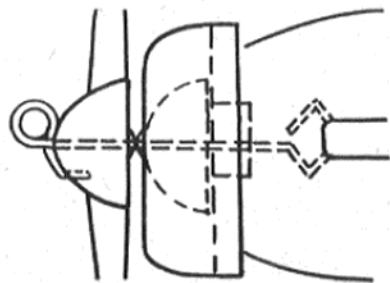
with this month's

Tip

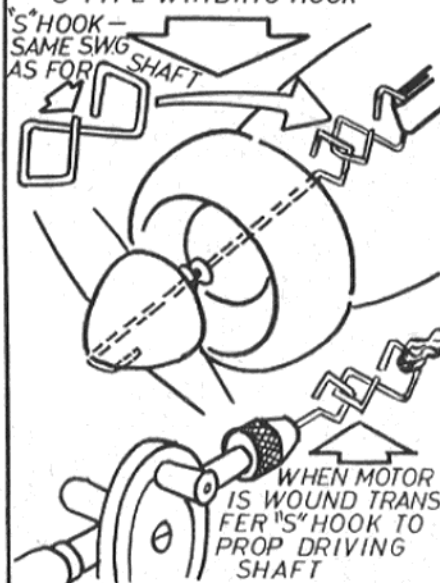
BY
RAY MALMSTRÖM

WINDING THAT SCALE RUBBER JOB

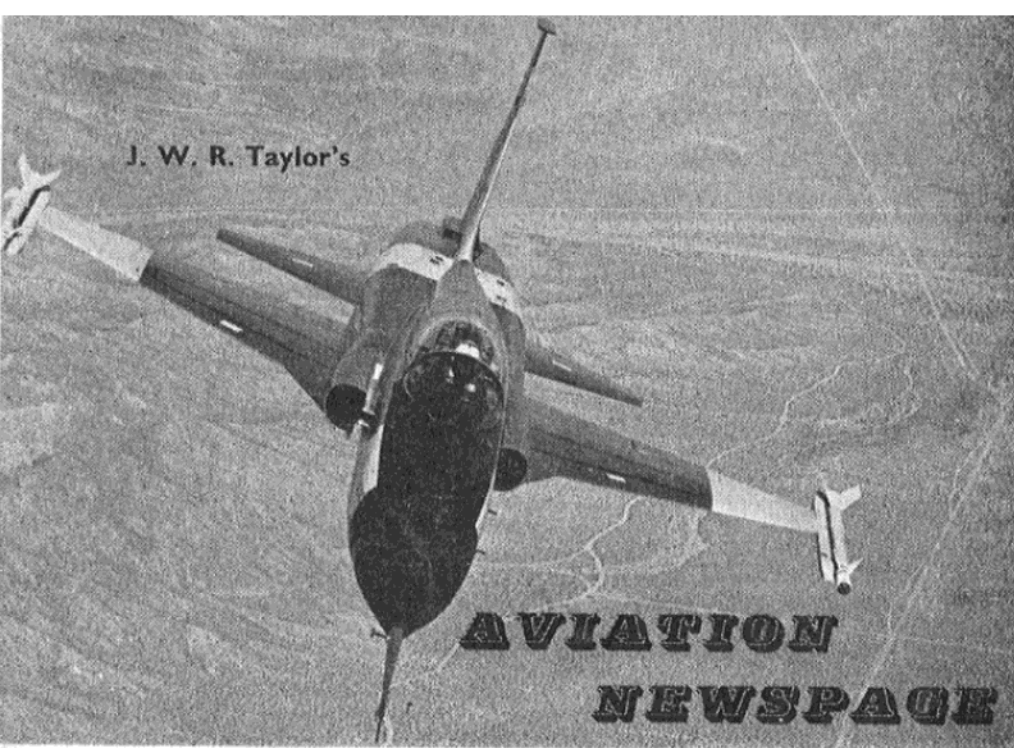
WITHOUT doubt the best way of winding the motor of a rubber driven model is with a geared drill, but this necessitates a winding hook on the front of the propeller, and a large hook sticking out of the spinner of a scale or semi-scale model is an eyesore. Concealing the hook in a hollow removable spinner cap is a fairly complicated way around this problem, so why not make a small "S" hook and insert it between the rubber motor and the driving shaft? Wind up the rubber motor with the "S" hook as shown, and then transfer the "S" hook from the winding drill to the hook on the propeller driving shaft.



AVOID THIS DISFIGURING WINDING HOOK ON THE SPINNER OF A SCALE MODEL BY USING A QUICKLY MADE "S" TYPE WINDING HOOK



J. W. R. Taylor's



ailerons are mid-span, with flaps inboard, and it is claimed that the *Freedom Fighter* can be flown and landed on one aileron. No trim-tabs are fitted.

Span is 26 ft. 5 in., length 43 ft. 11 in. and height 13 ft. The range of well over 2,000 miles with underwing tanks can be extended by flight refuelling if required.

TUBBY TBM-3 below is an ex-U.S. Navy Grumman *Avenger* torpedo-bomber now equipped for attacking forest fires with borate solution carried in a bulbous bomb-bay tank. Owned by H.V. Flying Service of Hemet, California, it is painted orange overall, with black nose-ring and lettering. The "73" on its cowlings is an official Forest Service aircraft number assigned by the State Government, and it carries a brown "Smokey the Bear" symbol on a white disc on its fin. The anti-glare panel forward of the windscreen is dark brown, and the rear end of the borate tank is painted light grey.

DITCHED AIRCREWS will not find it difficult to spot any U.S. Coast Guard SC-130B *Hercules* search-and-rescue 'planes sent out to look for them. The entire front fuselage of these aircraft is painted fluorescent orange, in addition to the usual day-glo orange wingtips, rear fuselage band, fin and tailplane.

Six SC-130Bs are being delivered to the Coast Guard Stations at Elizabeth City, North Carolina, to patrol the Atlantic coast, and in Honolulu, for air-sea rescue duties in the Pacific. Each will be capable of flying to a search area 1,000 miles off-shore at a speed of 370 m.p.h. at 25,000 ft. It will then fly a seven-hour patrol "on the deck," cruising at 150-170 m.p.h. on two engines, before returning to base at 370 m.p.h. A crew of nine will be normal, with a variety of special rescue equipment and stretchers. The SC-130Bs will also be available for transport of emergency equipment, personnel and cargo.

missile-type ramps with the help of a jettisonable booster rocket.

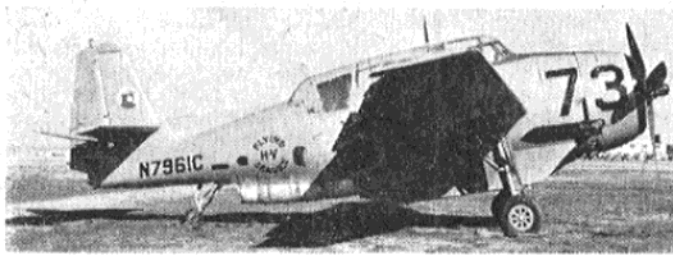
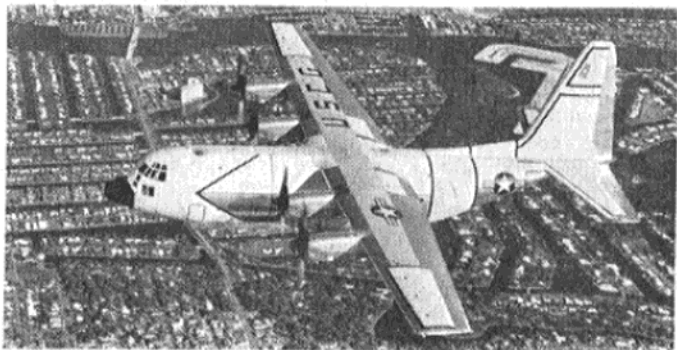
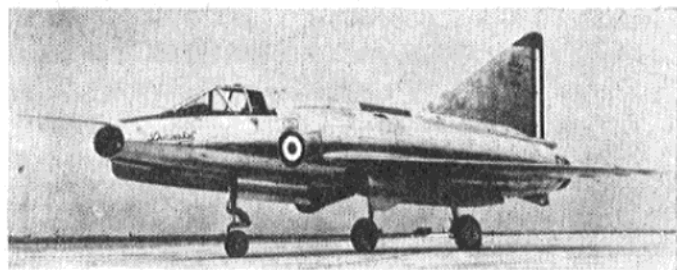
Costs are kept down by using almost the entire airframe and same twin 3,850 lb.s.t. afterburning General Electric J85-GE-5 turbojets as the T-38A *Talon* two-seat trainer which is in production for the U.S.A.F. It is planned to supply *Freedom Fighters* to NATO and SEATO air forces under the M.D.A.P. programme. Variants with two Pratt & Whitney J60 or Rolls-Royce RB.145 engines will also be available, and the customer can fill some 40 cu. ft. of space in the fuselage with any required combination of highly-complex or relatively simple fire-control, radar and navigation systems.

All controls are fully-powered and are supplemented by directional and longitudinal stability augmentors. The

STILL FLYING in France is the prototype S.E.212 *Durandal* single-seat delta-wing fighter, of which little has been heard since it made its first flight on April 20th, 1956. In its original form, with a 9,900 lb.s.t. SNECMA Atar 101G-3 turbojet and 1,800 lb.s.t. SEPR rocket engine, it flew at speeds higher than Mach 1.5 and was rolled at Mach 1.2 with a Matra 510 air-to-air missile under its fuselage. Today it is serving with SNECMA as one of a fleet of flying test-beds which include a *Mystere* IVB, *Mirage* III, *Super-Mystere* B-4, twin-Atar S.O.30 *Bretagne* and an S.E.2060 *Armagnac*. This last aircraft now carries two 14,000 lb.s.t. Atar 9s in pods under its wing-roots, in addition to its normal four 3,500 h.p. Wasp Major piston engines, and can reach Mach 0.6 at 42,000 ft.

The **LIGHTWEIGHT FIGHTER** concept, pioneered by Folland, seems finally to have hit the jackpot with Northrop's N-156F *Freedom Fighter* (above). Despite its take-off weight of only 12,190 lb., it is a genuine all-weather interceptor, with a Mach 2 performance, armament of wingtip-mounted *Side-winder* infra-red homing missiles, and the ability to operate from forward airstrips or even to be launched from

Heading photo shows the Northrop *Freedom Fighter*. Right: The S.E. 212 *Durandal* delta, at present used as a flying test bed. Below left: The colourful ex-U.S. Navy *Avenger*, now an airborne fire engine. Below right: The bizarre colour scheme of this Lockheed *Hercules* is described in the text.



EXCEPT for the Hawker Hurricane, it is doubtful if any aeroplane has flown in as many different forms as the Meteor. This in understandable. It was the first British jet aircraft to go into production and had offered a highly-versatile and pleasant-to-fly test bed for any new power plant or equipment that has happened to come along.

The process started early, because the eight prototypes, designed to Specification F.9/40 and ordered early in 1941, had a variety of engines. The first to be completed was DG202/G with Rover-built Whittle W.2B turbojets; but these gave only 1,000 lb.s.t. each and were suitable only for taxiing trials. It was the fifth prototype, DG206/G with Halford H.1 (D.H. Goblin) turbojets which became the first to fly on March 5th, 1943. By then the design was in series production, an initial contract for 20 having been placed as early as September, 1941. Originally these were to be named *Thunderbolt*, but the change to *Meteor* became necessary when Republic gave the former name to their P-47.

Other types of engine fitted in the prototypes were the 1,526 lb.s.t. Rover B.23 (DG202/G), 1,640 lb.s.t. Power Jets W2/500 and 2,000 lb.s.t. W2/700 (DG203/G), 2,000 lb.s.t. Metrovick F3/1 (DG204/G), 1,400 lb.s.t. Rolls-Royce B.23 (DG205/G), 1,600 lb.s.t. Rolls-Royce WR.1 (DG208/G) and 2,000 lb.s.t. Rolls-Royce B.37 (DG209/G). DG207/G had Halford H.1s.

The Rolls-Royce B.23 was developed into the Welland and became the standard engine of the Meteor F.1, seven of which were delivered to No. 616 Squadron in July, 1944. One of them (EE216/G) destroyed a V.1 flying bomb on August 4th, giving the Meteor its first victory. No. 616 received Meteor 3s in January, 1945, and used them mainly for ground attack. They were the only allied jets used in action in World War II. The later Meteor 8 was, of course, used by the R.A.A.F.'s No. 77 Squadron in Korea, shooting down some Mig-15s, while other Meteors saw action with both the Israeli and Egyptian air forces during the Sinai campaign of 1956.

The following versions of the Meteor had Mark Nos.:

F.1.—Twenty, with 1,700 lb.s.t. Wellands. Sideways-hinging hood. Short nacelles. Span 43 ft. Length 41 ft. 4 in. Weight 13,800 lb. Max. speed 410 m.p.h. at 30,000 ft.

F.2.—One only, with 2,000 lb.s.t. Gobblins.

F.3.—First 15 with Wellands. About 200 with 2,000 lb.s.t. Derwent 1s. Rearward-sliding hood and ventral drop tank. Max. speed 475 m.p.h. at 30,000 ft. Last 15 introduced lengthened nacelles.

F.4.—Standard R.A.F. day fighter, with 3,500 lb.s.t. Derwent 5s. Span reduced to 37 ft. 2 in. Weight 15,175 lb. Max. speed 585 m.p.h. at sea level. EE454 set up world speed record of 606 m.p.h. on November 7th, 1945. EE549 raised this to 616 m.p.h. on September 7th, 1946. Built in Holland by Fokker. Supplied to Argentine, Belgium, Denmark.

P.R.5.—Reconnaissance-fighter with cameras in nose. One only (VT347).

F.6.—Swept wings. Project only.

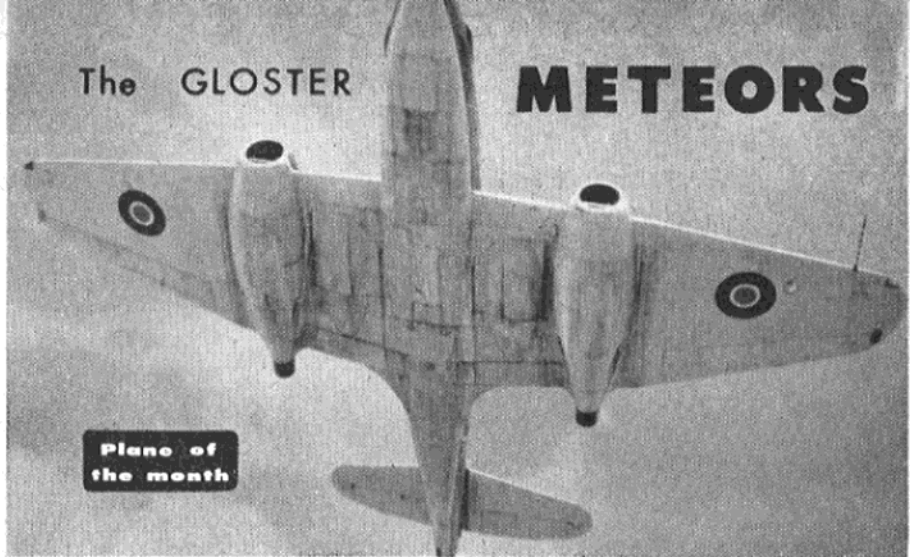
T.7.—Tandem two-seat trainer developed from F.4. Supplied to R.A.F., R.N., Belgium, Brazil, Denmark, Egypt, France, Israel, the Netherlands. Length 43 ft. 6 in.

F.8.—Standard R.A.F. day fighter with 3,600 lb.s.t. Derwent 8s. Lengthened nose, with extra fuel tankage. Redesigned square-cut tail. Underwing bombs, rockets, etc. Built in Belgium and Holland. Supplied to Australia, Brazil, Denmark, Egypt, Israel and Syria. Length 44 ft. 7 in. Weight 19,100 lb. Max. speed 590 m.p.h.

F.R.9.—Standard R.A.F. reconnaissance-fighter, supplied

Heading photo shows a Meteor I. Top, right: is the Trent turbo-prop powered Meteor flying on one engine. Lower right: An Israeli Meteor 8 with air to air rockets. Below: the extensively modified Meteor for prone pilot research.

The GLOSTER METEORS



also to Ecuador. Similar to F.8, but added nose camera.

P.R.10.—Standard R.A.F. high-altitude P.R. aircraft. Unarmed. Cameras in nose. Long-span wings and tail of F.4.

N.F.11.—Two-seat night-fighter developed and built for R.A.F., Belgium, France and Denmark by Armstrong Whitworth. Radar in lengthened nose. Long-span wings. Mk. 8 tail. Standard armament of four 20 mm. guns moved from fuselage to wings. Length 48 ft. 6 in. Weight 22,000 lb.

N.F.12.—Similar to N.F.11, but longer nose with improved radar. "Acorn" at fin-tailplane intersection faired in.

N.F.13.—As N.F.11 for overseas service. Some supplied to Egypt and Israel.

N.F.14.—Standard R.A.F. night fighter until 1959. Blown plastic canopy. Production completed by Armstrong Whitworth in May, 1954.

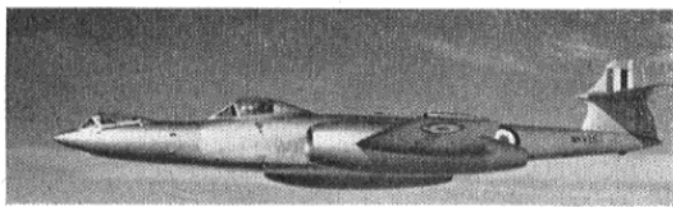
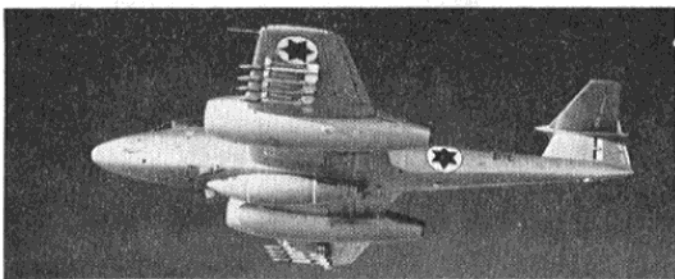
U.15.—Conversion of F.4 by Flight Refuelling for drone target duties. Wingtip camera pods.

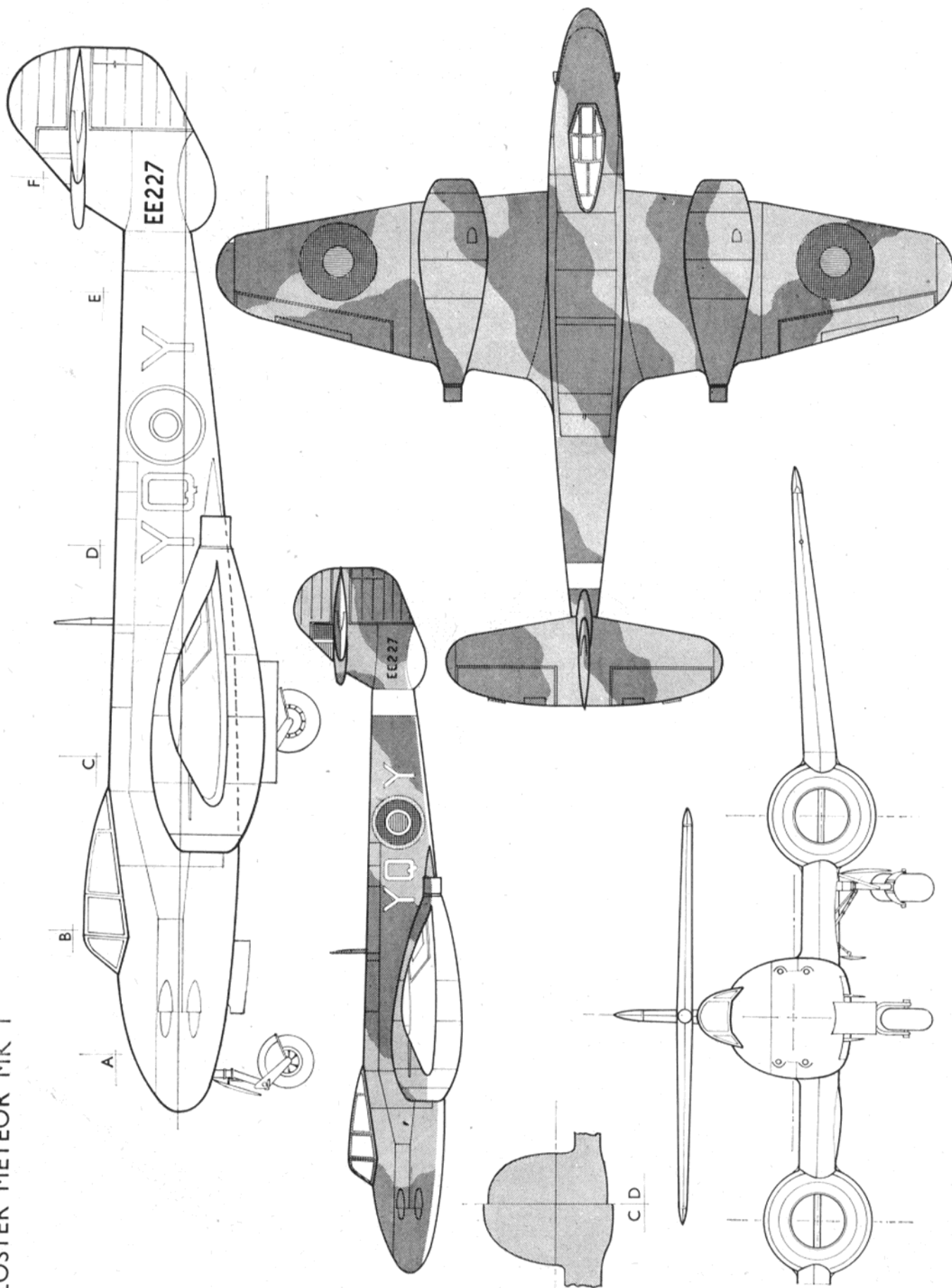
U.16.—Conversion of F.8 by Flight Refuelling, to supersede U.15 as drone target. Wing-tip fairings, carrying cameras.

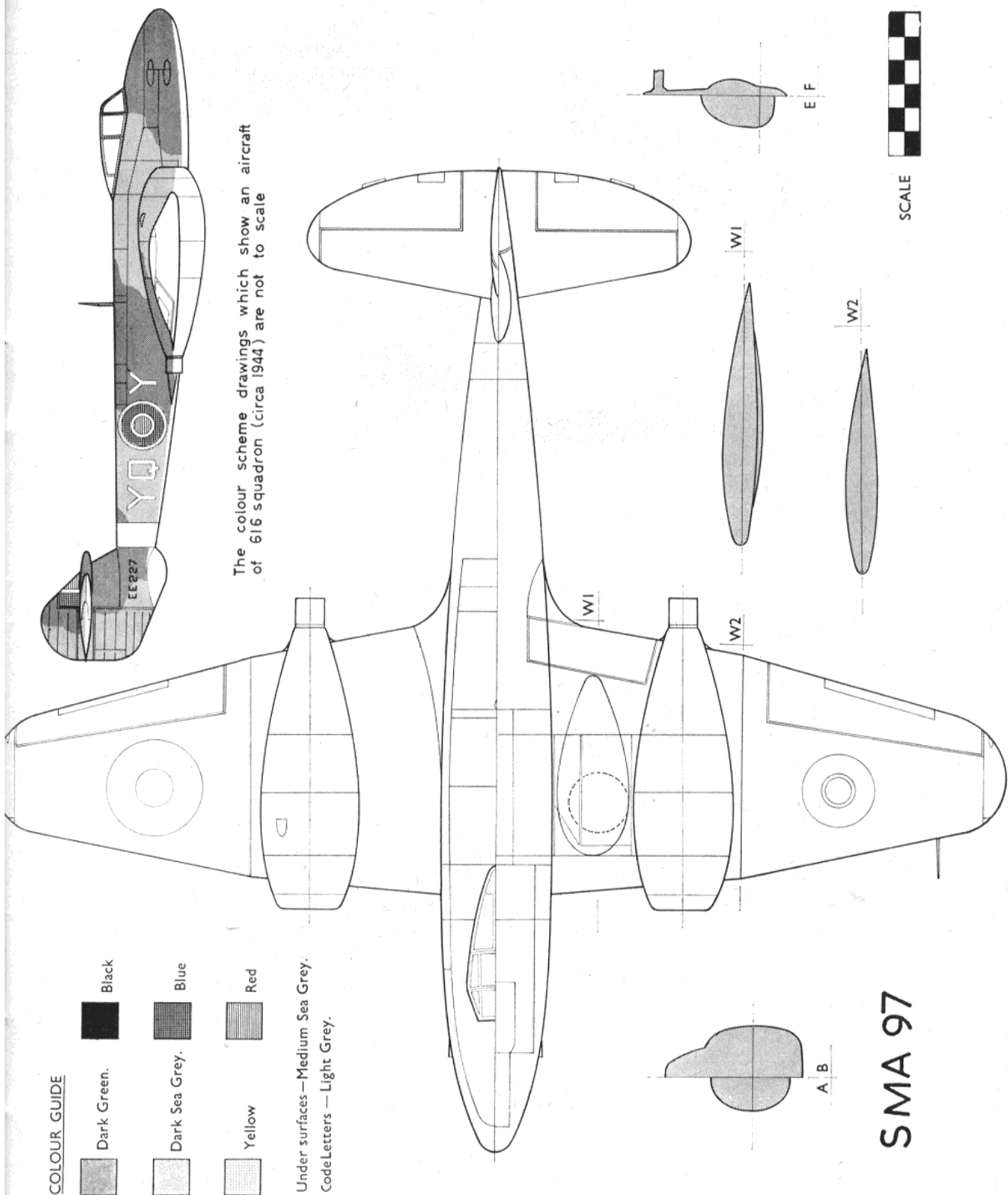
T.T.20.—Conversion of N.F.11 for target-towing.

Flying test-beds have included a Mk. 1 (EE227/G) with Trent turboprops (750 h.p.+1,000 lb.s.t.), Mk. 1 (EE215/G) with reheat Wellands, Mk. 4 (RA435) with reheat Derwents, Mk. 4 (RA490) with 3,950 lb.s.t. Metrovick Beryls and later jet-deflection Nenes, Mk. 4 (RA491) with Avons and later SNECMA Atars, Mk. 8 (WA820) with Sapphires, Mk. 8 (WA982) with 1,810 lb.s.t. Rolls-Royce Soars added to wingtips, Mk. 11 with SFECMAS S.600 ramjets added under wings.

Among other variants of the Meteor were a Mk. 1 (EE227/G) with no fin and rudder surface above the tailplane, Mk. 3 (EE337) with Derwent 5s and deck-hook for trials on H.M.S. *Implacable*, Mk. 3 (EE379) and Mk. 4 (VZ389) with nose probe for flight refuelling, PV version of Mk. 8 with increased underwing armament and wingtip tanks, "Mk. 7½" with airframe of PV Meteor and Mk. 7 nose, and a Mk. 14 (WK935) modified to have a prone piloting position in a lengthened nose.







The Fox ROCKET 09

1.6 c.c. Glowplug
Engine

"... excellent starting
through a wide variety of
props, with no tendency
to 'bite.'"

THE Fox Rocket-09 is an American glowplug motor aimed specifically at the beginner market in the U.S., where it costs a modest \$4.95—or approximately 35s. 5d. On the British market, it has been advertised at prices ranging, according to supplier, from 45s. 6d. to 60s., but is still one of the cheapest imported engines currently available.

The Rocket-09 is to the popular American 0.099 cu. in. size, actual displacement being 0.0974 cu. in., or just outside the British 1½ c.c. group, at 1.596 cubic centimetres.

Compared with most leading 0.09 glow and 1.5 c.c. diesel motors, the Fox is not especially outstanding as regards power output. For the purposes for which it is intended, however, this is unimportant. As we have said, the Rocket-09 is intended primarily for beginners. As such, it does not need ultra-high power. Hot performance is usually more of a hindrance than a help to a beginner: an extra 1,000 r.p.m. with an imperfectly trimmed

F/F model can spell disaster. On the other hand, costing, in its country of origin, no more than the average "Half-A" (0.049 cu. in.) motor, the Fox does offer, over these baby motors, the extra power generally desirable for C/L models. In other words, the Rocket-09 rates favourably on the basis of "power-per-dollar"—as distinct from power/displacement, which, after all, is mainly of interest only to the contest enthusiast.

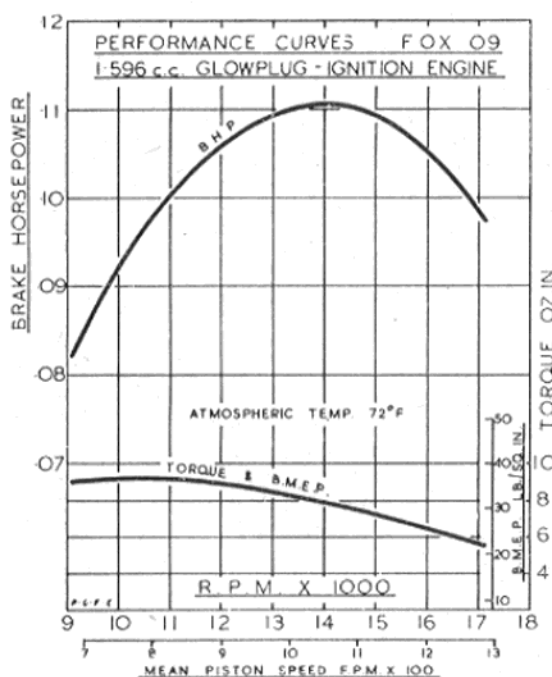
We have emphasised this approach to assessing the Rocket-09 because we feel that there is often a tendency for modellers to place undue importance on high specific performance figures, irrespective of engine types. This was brought home to us rather forcibly

in the case of the Fox, which one experienced and noted modeller dismissed as "disappointing"—mainly because its power fell somewhat short of another engine of equal capacity but costing twice as much.

A quality which is of greater importance to the beginner than sheer power is, of course, easy starting, and, in this respect, the Fox excels. Other desirable characteristics, in a beginner's engine, are that the controls should be placed at a safe distance from the prop, that the engine should be as self-contained as possible—preferably with an integral fuel tank—and that it should be easy to instal in a wide variety of model designs, i.e. with provision for bulk-head or beam type mounting. All these are features of the Fox Rocket-09.

The design of the Rocket-09 is somewhat off the beaten track. With its one-piece crankcase, front housing and fuel tank casting and inclined rear intake, its appearance is quite unlike that of any other engine at present on the market.

The most unexpected feature of the Rocket-09 is in its revival of the 3-port type layout—i.e. piston controlled induction instead of the rotary-valve or reed-valve system that has become standard practice nowa-



days. Instead of the usual single induction port of the old-type 3-port engine, however, Fox has brought things up to date by using twin opposed induction ports, of generous area, fed from an annular chamber, into which mixture is drawn from an inclined rear-positioned carburettor. This has also facilitated the use of an efficient reverse-flow scavenged cylinder, having twin internal transfer flutes and twin opposed exhaust ports. Other modern features include the use of a ball-joint small-end and a built-in glow filament in a hemispherical pattern cylinder head. Standard beam mounting lugs are disposed symmetrically on the horizontal centre-line of the engine and aft of the cylinder axis. Frontal overhang, however, is kept at a minimum by the short main bearing—made possible by the rear carburettor location. Alternative, four-point, radial mounting is provided for by means of a rectangular flange which normally serves to secure the tank backplate. The engine can be used with or without the integral tank, beam or bulkhead mounted.

Specification

Type : Single-cylinder, air-cooled, reverse-flow-scavenged 3-port 2-stroke cycle.

Bore : 0.527 in. Stroke : 0.450 in.

Swept Volume : 0.0974 cu. in. = 1.596 c.c.

Stroke/Bore Ratio : 0.854 : 1.

Weight : 3.1 oz.

General Structural Data

Pressure die-cast aluminium alloy crankcase and unbushed main bearing unit with integral fuel tank. Tank section separated from crank chamber by screw-in backplate. Rear of tank sealed by stamped aluminium plate, with cork insertion gasket, retained by four screws and nuts. Counter-balanced, hardened crankshaft with $\frac{1}{4}$ in. dia. journal and $\frac{1}{8}$ in. dia. crankpin. A $\frac{1}{8}$ in. dia. oil hole leads into the main bearing from below the cylinder skirt. Machined leaded-steel cylinder with integral fins, screwed into crankcase and seating on soft aluminium gasket. Lightweight, flat crown, steel piston, hardened on outer skirt surface and with swaged socket to ball-joint steel connecting-rod. Screw-in aluminium cylinder head with integral glow element. Soft aluminium head gasket. Alloy prop driver, keyed to shaft by three short

lands on latter. Pressed-in brass spraybar, with one-piece steel valve needle and control knob.

Test Engine Data

Running time prior to test: 1 hour.
Fuel used: mixture of two parts Record Nitrex-15 and one part Record Super-Nitrex.

Performance

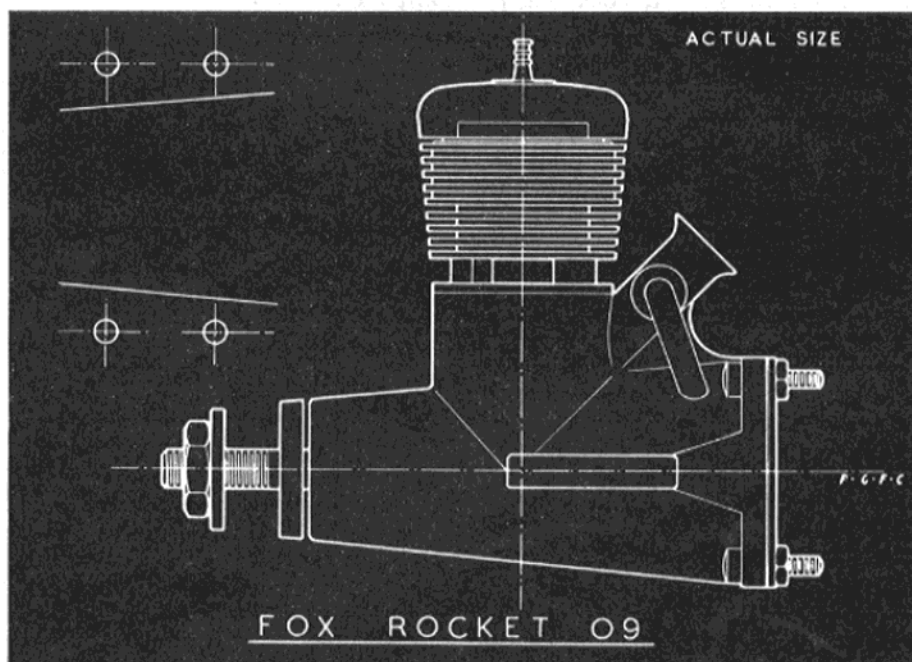
The maker's recommended fuel for the Fox Rocket-09 is Fox "Missile Mist." This is a fuel containing approximately 20 per cent. nitromethane but is unobtainable in the U.K. An equivalent was therefore blended by adding one part Record Super-Nitrex (30 per cent. nitro) to two parts Nitro-15 (15 per cent. nitro).

The first clue to the excellent handling of our test sample came with the initial start from cold. The maker's instruction leaflet is clearly worded and was followed exactly.

above the peaking speed. On the smaller and lighter props there was a tendency (as with other non-rotary valve type engines) to start in the reverse direction. This, however, was easily dealt with by flicking the prop backwards.

The needle-valve was positive and progressive in operation. Fairly accurate adjustment was necessary to extract the last hundred or so r.p.m., but the 09 would continue to run on an excessively rich mixture, allowing plenty of time to make such adjustment. This latter is particularly welcome in view of the fact that the position of the needle-control, while at a safe distance from the prop, is rather close to exhaust heat.

Torque tests revealed a maximum of 9.2 oz. in., equivalent to a b.m.c.p. of 37 lb./sq. in. For a 3-port type motor, the b.h.p. peaking speed was unusually high—14,000 r.p.m.—where an output of just over 0.11



It calls for a port prime for cold starting. The result was a genuine first flick start, the motor cutting out after a few seconds. A further half-turn of the needle-valve was then sufficient to keep the 09 running continuously and evenly.

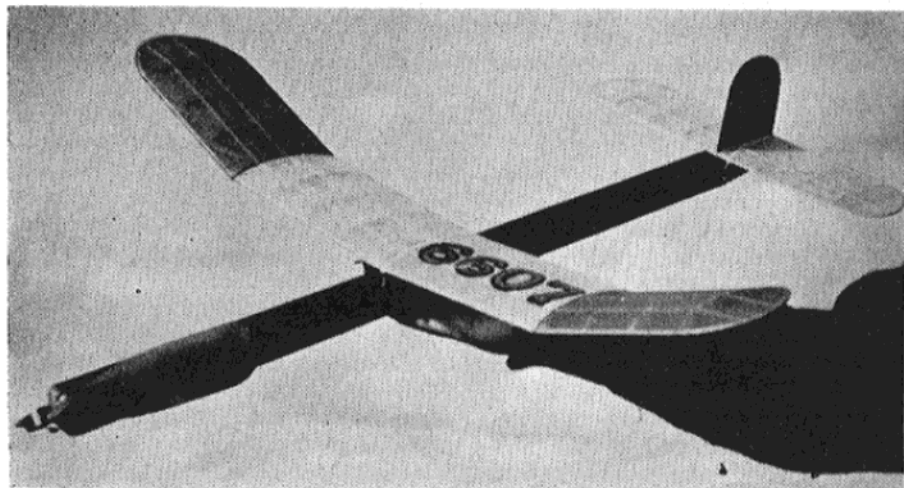
With the motor warmed up, restarts were virtually instantaneous after a single, choked, preliminary flick of the prop. This excellent starting continued through a wide variety of props and the engine proved remarkably docile with no tendency to "bite" on props down to 6×3 size—allowing r.p.m. well

b.h.p. was realised. The Rocket-09 will, however, rev happily well beyond the peak. The maker's recommended props are $7/3$ and $6/4$, wood or nylon. With a $7/3$ wood, the test engine reached 13,000 r.p.m. static, and, on a $6/4$ nylon, exceeded 15,500 r.p.m. At these higher speeds, the engine is particularly smooth running.

In all, a likeable motor and one that was a pleasure to test.

Power/Weight Ratio (as tested) : 0.57 b.h.p./lb.

Specific Output (as tested) : 69 b.h.p./litre.



LAST RESORT

THE 1956 season saw the arrival of the first version of this design, which was to be used as a reserve for a larger model but consistently outperformed it! The model seems to be viceless and easily trimmed and the several reproductions of it, built by fellow club members, have performed equally well.

The characteristic flight pattern on 900 turns (1,000 usual max.) is a near vertical spiral for 150 ft., then gradually levelling out till the prop folds at approximately 350-400 ft. after 70-80 sec., when it should glide for a further 2 : 50 to 3 : 00 min. giving a usual time of 4 min. This is, of course, with good rubber. If the rubber is weak, performance may be cut down to just over 3 min. in which case the motor should be increased to nine strands 32 in. long, which will give almost equal performance.

It should be emphasised that the model is designed to climb steeply and fast, and should be allowed to do so otherwise performance will be killed. No trouble should be experienced in getting the airframe weight down to 2 oz.; indeed, with care it can probably be got down to 1.5 oz. giving a total weight of 3.1 oz. to 3.5 oz.

Fuselage

Use soft to medium balsa throughout and if you fly on a place like Chobham Common cover the fuselage with heavyweight Modelspan! The outside corners of the longerons should be radiused slightly. With the rubber motor fitted, the wing mount should be attached to the fuselage

in such a position that the c.g. falls at the point indicated on the plan.

Tailplane

Use medium hard balsa throughout, except for the tip laminations which should be soft. Cover with either jap tissue, or lightweight Modelspan, and go easy with the dope as this component will warp easily if tissue shrinkage is excessive. The fin should be of soft sheet and slotted into place after both fin and tailplane are covered, but before they are doped.

Wing

Construct the wing from soft to medium balsa, but use a hard grade for the two top spars. Do not be tempted to increase spar sizes, as it is entirely unnecessary and will produce an unevenly stressed structure. Wash-in should be built into the starboard inner panel as shown on the plan. The trailing edge angle should be adhered to closely. Cover with jap tissue or lightweight Modelspan.

Prop Assembly

This is the component which can account for a lot of weight if care is not taken, thus frustrating any attempts to build a light airframe. The 1/32 in. sheet for the prop blade should be soft, as should other balsa on this part, except for the blade stub through which the 1/8 in. hinge dowel goes.

Cut two blades from 1/32 in. sheet, apply cement between the two pieces and bind them to a 10 in. dia. cylinder, offset as shown. Leave

A tried and tested 'open' rubber model for pleasure or contest flying by well known modeller—

JIM BAGULEY

to dry thoroughly. When dry the 1/32 in. sheet facing pieces are added followed by the blade stub, slotted at 40 deg. The whole is then sanded, shaping the blade on the top surface only and fairing the stub into the blade. The hub and nose block assembly is clearly shown on the plan. The 1/8 in. dia. hinge dowel should be cemented to the 3/8 in. sq. stub, thus bearing on the 1/16 in. ply hub sides. Dope the prop blade only and do not tissue cover.

Note—cement used throughout the construction should be of a type which does not contract excessively on drying.

Trimming

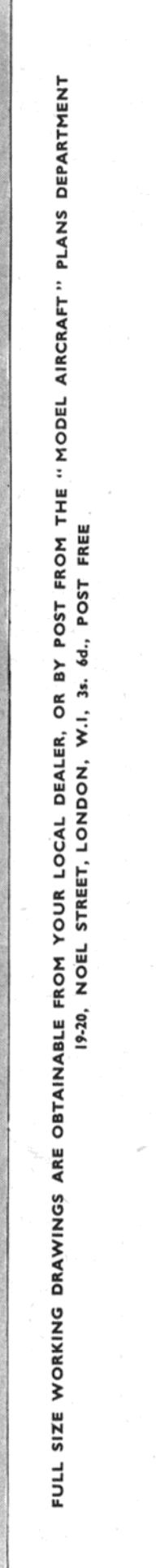
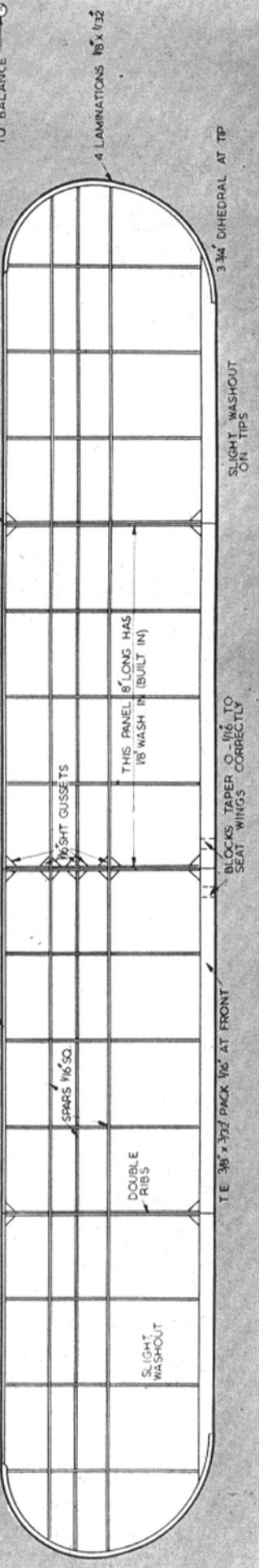
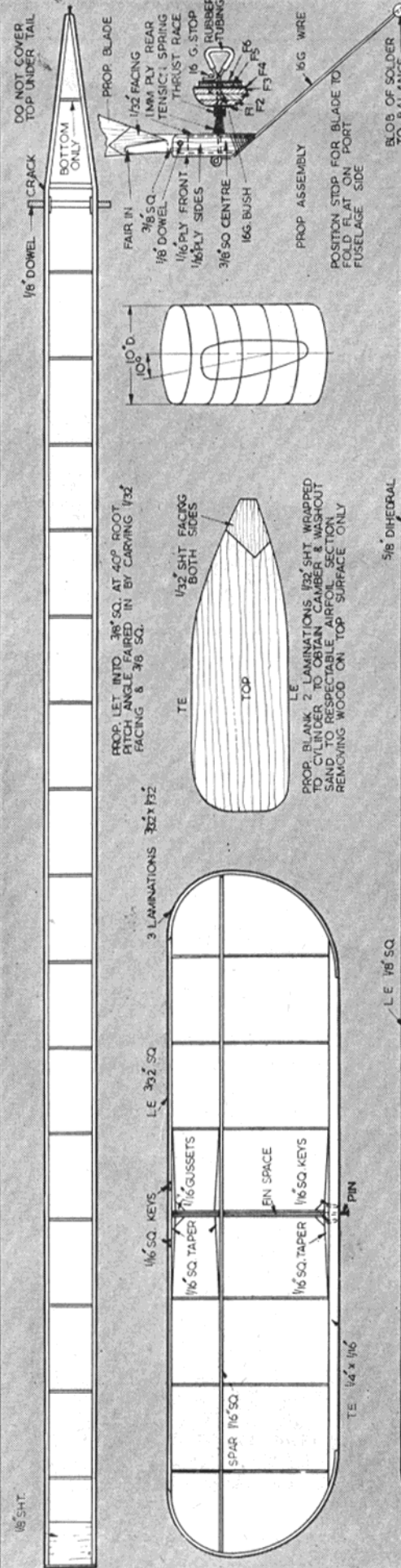
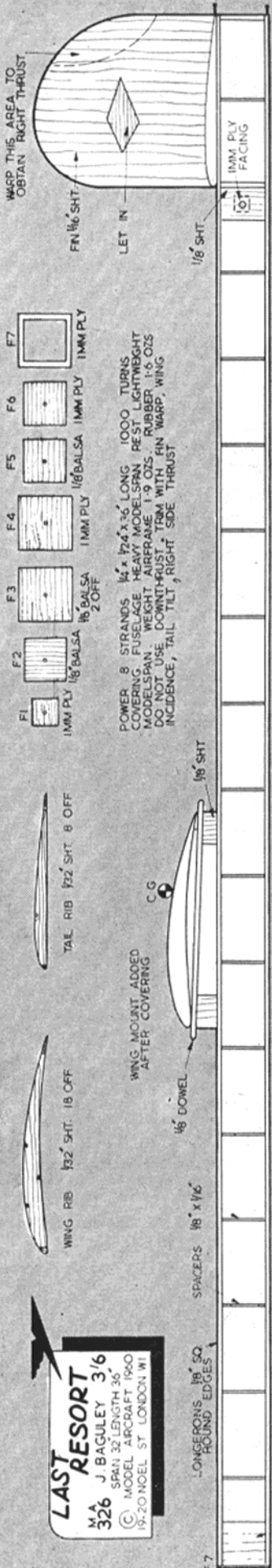
If the nose block has been drilled true, and the incidences are correct, no downthrust should be used at any stage.

Start on low turns, just enough to gain sufficient height to see, and trim, the glide. Move the wing backwards or forwards, and warp the fin trailing edge until a circle of approximately 50 ft. dia., and just off the stall, is obtained. Fin warp may have to be quite considerable (do not be frightened by 1/4 in.!) and do not leave the keys off, even though turn is non-critical.

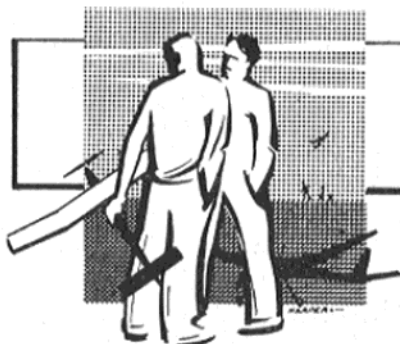
If the model persists in power stalling add side-thrust, 1/32 in. at a time. When satisfactory, increase turns. If it is O.K. on 400, it should be safe to go the lot. It may be found necessary on full turns to launch slightly cross-wind with turn; do not be frightened to do so, as this has yet to be overdone, and gives a much cleaner get-away into the steep spiral when the wind is strong.

Once trimmed, the original models have stayed trimmed, even when fallen upon and repaired! The only snag in competitions with a small model is the o.o.s. flight, about which one can do nothing but select good timekeepers!

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CLUB NEWS

HIGH WYCOMBE M.A.C.

The High Wycombe C/L Rally will be held on Sunday, May 1st, 1960, at R.A.F. Booker. The events include "A" and "B" Team Race, Combat and Stunt. All events are pre-entry, at 2s. 6d. each entry, and should be sent to Mr. J. Elphick, 102, Suffield Road, High Wycombe, Bucks. Enclose a stamped addressed envelope for return of flight-cards.

Entries may have to be restricted, so get in early; latest date for this is Friday, April 22nd.

MIDLANDERS M.A.C.

The combat competition was held recently on a disused 'drome, the winner being B. Colley and runner-up M. Ashcroft.

The highlight of the comp. came in the final bout when both Ashcroft's lines gave up the ghost and the model hurtled 100 ft. + into the blue, descending in bits! The engine fell within

a couple of feet of a Mk. VIII Jaguar, whose owner promptly exclaimed "Damned good flight old boy!"

The recent stunt comp. was a great success, M. Ashcroft being the winner, closely followed by R. Kendrick.

HAYES M.A.C.

There is a move afoot to apply to the Hayes Borough Council for a site to erect a four-circle C/L centre for our own use. Approximately 10 members have so far been banded together to make a combined effort, as far as labour and finance are concerned.

For moral support, we are drawing upon some 32 sources, and will be applying to others as they are realised. We hope to make our application within two to three months. If agreement is reached, the circle should be ready for use by autumn and we would hold contests on it in 1961.

We trust we have everyone's full moral support in our efforts.

WESTON CONTROLINERS

We recently flew a friendly comp. against the Bristol lads at R.A.F. Colerne, and won the combat, P. Healey first and R. Burgess second,

while the Bristol club won the team race. One of our members has bought a camera, and has taken many films of models in flight, which are to be shown at future club meetings.

The Sunday afternoon flying sessions are getting very good turnouts, all types of C models abounding. It is very pleasing to see that some of our modellers are breaking away from the conventional trends, but combat still, by a small margin, the most popular.

HORNCHURCH M.A.C.

A F/F comp. was held recently which resulted in a win for Clive Morris. It was not an idle day though, as models were going o.o.s. 2½ min.

We have the use of Hornchurch Aerodrome for our flying field, and C/L flyers now have the use of a newly laid tarmac surface between the hangars. Rules are now being devised for up to 0.8 c.c. team racing—should be fun.

STEVENAGE M.F.C.

Such flying activity that has taken place during the last few months was mainly by the hardy C/L and R/C types. This, however, was not entirely without an occasional bit of F, when a model got away! Don Beaver's R design was unfortunately eaten by a herd of cows during an enforced overnight stay in the field, and Eric Noble's Galloping Ghost missile ended its activities even more abruptly for the umpteenth time. Pete Weston's Silverstreak powered team racer is also a casualty, having caught fire and burnt out during practising. Must be hot fuel! Chiefly Wheeler's Halifax now nearing completion, and very good looks too, especially the size "OO" fur line boots of the aircrew!

To Mavis and Pete Giggie congratulations on the happy event! Gamage day brought Force 5 wind and temperatures in the low forties; however, there was some lift about as Alan Payne's Ramrod 250 (T-Hopper) powered failed to return from a first round max. in the White Cup. G. W. Dallmer repeated the feat of losing a model in both White and Pilcher events one being returned from the Vauxhall factory at Luton some 11 miles away. Needless to say the fuse was not lit! Junior member David Dyer did well in the Pilcher managing a hard earned score of 6.26.

EXMOUTH & D.M.A.C.

On June 19th, the South Western Area F Championships will be held on Woodbury Common near Exmouth, for the S.W. Area Shield. This competition is limited to Devon and Cornwall; all clubs and unattached modellers within the area are invited to compete. Entry fee will be 1s. 6d. per event. Anyone wishing further details should send S.A.E. to D. C. Baudet, Hon. Sec., Exmouth & D.M.A.C. 80, Moorfield Road, Withycombe, Exmouth. We have fixed the date of the "1960 Devon Rally" for August 14th, the venue to be as previous years—Woodbury Common, near Exmouth.

Combat and R/C. Re-entry will be permitted after the first flight only.

For the first time the rally will have a Rally Champion award (for the F/F events only).

Prizes: F/F and R/C. First 15/-, second 10/-, third 5/-. Combat. First 20/-, second 10/-, Rally Champion 20/-.

Entry fees: F/F 1/6. Combat and R/C 2/-.

MILL HILL M.A.C.

The first contest of the current season was held at Cophall Playing Fields in the form of a scramble, each competitor endeavouring to obtain the highest possible flying time in a period of 15 min.; the eventual winner was Mike Barton with a time of 52 sec. which was obtained from two flights.

A Plastics Exhibition has also been held; models varied from an ancient Avro 504K, the Chance Vought Cutlass. Models were judged by members of the trade, namely M. A. Blunt, Mr. J. Lane and Mr. M. Barton, with

CONTEST CALENDAR

April 24th	Woodford Rally. R/G/P, Flying scale, R/C (single and multi), T/R "A" Combat.	July 2nd/3rd	SECOND F.A.I. C/L TRIALS. Centralised.
May 1st	HALFAX TROPHY. F.A.I. Power. *WESTON CUP. F.A.I. Rubber. Area Centralised.	" 3rd	Clwyd Slope Soaring, Moelfamau, Open, A/2, R/C, Junior.
"	High Wycombe C/L Rally. R.A.F. Booker, T/R "A" & "B," stunt, combat. Pre-entry (2s. 6d.) to J. Elphick, 102, Suffield Road, H.W., before 22/4/60.	" 10th	Enfield C/L Rally (Playing fields by A10) T/R—A and B, Combat, Stunt, Handicap Speed.
" 15th	Dagenham Combat Rally. Pre-entry (2s. 6d.) to P. Palfreman, 27, Bell Farm Avenue, Dagenham, Essex.	" 10th	Scottish F/F Nationals. Abbotsinch.
" 21st/22nd	FIRST F.A.I. C/L TRIALS. FIRST F.A.I. R/C TRIALS. Centralised.	" 16th/17th	PRACTICE TRIALS. F.A.I. Rubber. Centralised. PRACTICE TRIALS. F.A.I. Glider. (five flights each contest.)
" 29th	Scottish C/L Nationals. Kirkcaldy.		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.
June 5th	BRITISH NATIONAL CHAMPIONSHIPS. R.A.F. Scampton. 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. KNOCKE TROPHY. C/L Scale. DAVIES TROPHY. Class A T/R. COMBAT. Prelim. Heats. SPEED.	To be fixed	TEAM RACING. Classes A & B. MODEL ENGINEER CUP. Team Glider. FLIGHT CUP. U/R Rubber. Area Centralised.
" 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 ½ A. COMBAT. Finals. SPEED. GOLD TROPHY. C/L Aerobatics. F.A.I. POWER TRIALS. (2 x 5 flights). Centralised.	July 24th	WORLD CHAMPIONSHIPS POWER. Cranfield. AREA CHAMPIONSHIPS. Rubber/Power/Glider. Centralised.
" 18th/19th	P.A.A. Load { 3.25 c.c. Clipper Cargo } Limit	July 30th/Aug. 2nd	NORTHERN GALA. GLIDER. U/R Glider. HAMLEY TROPHY. U/R Power. CATON TROPHY. U/R Rubber. AEROMODELLER TROPHY. R/C Multi.
" 25th/26th	Junior Jet. Senior Jet. U/R Glider. Combat.	Aug. 21st	TEAM RACING. ½ A. A & B. PAN AMERICAN CUP. P.A.A. Load (American Class). UNITED KINGDOM CHALLENGE MATCH.
" 26th	U/R Power. U/R Glider. F.A.I., T/R. Class "B" T/R.	Sept. 4th	" 18th *KEIL TROPHY. Team Power. FROG JUNIOR TROPHY. U/R Rubber/Glider. Area Centralised.

* Plugge Cup events.

AEROBODS OF NOTE



JOHN BICKERSTAFFE

John is one of aeromodelling's top power men. A member of the British team at the 1958 World Power Championships.

commented on the high quality of the models placed before them; the winner after careful consideration was Mr. W. G. Evans with the 504K.

Prior to this novelty event, Sgt. M. Bright was kind enough to give a lecture on R/C, this to be followed by other lectures. Indoor flying meetings in future are to be devoted to contests of various types, the first of which will be a Jetex speed contest.

FELTHAM AND DISTRICT M.A.C.

The main item of news is that the Hanworth Air Park, our local flying field, is to be converted into a wooded recreation park.

When the council announced their plans for the park in the local paper, they asked for suggestions to improve the original plans. Seeing this, our club wrote a letter suggesting the laying out of an asphalt C/L circle, also pointing out the fact that this park will leave us without a flying field.

This month has seen the starting of a club library consisting of modelling books donated by members.

Our silverware collection is increased from two to five cups by the presentation to the club of three cups by Mr. Bradley.

Our last contest was combat with Feltham Eagles, whose secretary won both A and 1A.

BRIERLEY HILL AERONAUTS

We are now preparing for the forthcoming season, and the first club competition (combat) was held recently. Treasurer Mick Wilson is now in possession of two ETA 29 models which, in the humble opinion of fellow members, are equal to any 5 c.c. F/F models yet seen. We are fortunate in having a nucleus of serious contest fliers who hope to be seen at all competitions this season.

WELLINGBOROUGH M.A.C.

After the annual reshuffle of the committee, we are now settling down to the new contest season, under Pete Johnson as Comp. Sec. Junior R. Morris has already 52 points towards the club championship. The nearest senior, E. Arnold, gets 10 points for winning the recent club Open Power comp. with a MVVS powered Dixielander.

Three new comps planned for 1960 are—a floatplane event for power or rubber and a new F/F power event for under 1.5 c.c. We have a new trophy to be awarded for Jetex, which is expected to raise the club's F/F Jetex record of 77 sec.!

R.A.F. HALTON M.A.C.

Activity has been rather low during autumn and winter, but interest is growing, and we hope to enter quite a few contests this season.

L.A.A. Winterhalter has been flying his gliders quite frequently, in spite of the weather, and has found that one can catch thermals off snow. A.A. Bird has added an F.A.I. job to his power model stock.

There are quite a few speed models in the club, mainly 0.5, 1.5's and Cox's, and it is hoped to make an attempt on the R.A.F. M.A.A. speed record soon.

A.A. Gulliver made a helicopter for an O.S. Pet, but although it flies quite well without the fuselage, it will not take the added weight.

A club comp. for chuck-gliders and one-model rubber (Veron Goblin) will be flown off in the near future. The ground is already littered with bits of chuck-gliders!

TEES-SIDE M.F.C.

We had a good start to the season at the Indoor Nationals where Geoff Parker won the F/F microfilm and set up a new British record (to be ratified) with the only good flight of the day, 10.02.

Conditions were very poor most of the week-end with cold air and draughts, but, despite this, two members broke the old Class A microfilm record with flights of 6.55 and 7.15 only to be told that all these separate classes have now been scrapped! This reduction in the list of classes will certainly take a lot of interest away from indoor flying, just at a time when we are all trying to revive the spark.

CARDIFF M.A.C.

Tony Hill, with an Oliver powered Duellist was the winner for Cardiff M.A.C. over K. Widdison (Dragons) with a Webra Mach 1 flying wing, when flying in 3.5 combat at Pengam. Standards are rising in combat but more combatants would be welcome.

A successful competition on novel lines was recently held in ideal conditions at Ely, Cardiff, and a good start was made to the 1960 programme. Members of Port Talbot M.A.C. swelled the entry to a record of 29. After starting with a modest max. of 1 min., these were increased by half minutes, until only Pete Waters, Port Talbot, and Doug Dyer of Cardiff were left in. The Cardiff man won when Pete's motor overran the 10 sec. limit, attempting to make a 3 min. max. E. J. Langton and J. H. Phillips both of Cardiff tied for third place.

CRYSTAL PALACE M.A.C.

With the increasing membership, we have got down to some good organisation. The overall standard of some of the members is rather low and consequently a course of lectures is in hand. These include "Design and Construction of F/F and C/L Models" and "Simple R/C Easily Explained."

As the club funds have increased a hire purchase system has been adopted to aid the younger members in their purchase of new engines.

Five c.c. combat has been tried and abandoned as the mortality rate on large American motors is rather hard on the pocket.

COSMO A.M.C.

We hope to run our annual social and prizegiving on April 29th, and this year are including R.T.P. flying to add to the fun, as well as the usual static display.

We are also running a series of C/L comps in all classes, before the contest season proper starts to get the lads up to scratch.

At present approximately 80 per cent. of our membership are juniors in the hands of four competent instructors. If there are any experienced senior modellers around the Bexley or Crayford area, we would like to hear from them. Meetings are held every Friday night from 8 o'clock onwards at "Hurst Community Centre," Hurst Road, Bexley.

Flying takes place in Danson Park near the lake, until 1 p.m. each Sunday.

DERBY M.A.C.

We enter 1960 with great hopes, after a bumper 1959 (our 13th season), with all types of modelling flourishing. Members gained over 60 placings from 24 C/L and 15 F/F rallies. We were placed top in the Midland Area C/L Championships and top C/L and F/F club of the North Midlands Association. We also ran five combat comps. for various organisers. Ernie Thorpe was top club F/F man and Rob Gibbard top C/L pilot. Estimated cost of combat flying was 20 models, 8 spinner nuts, 88 9x6 nylon props, 20 gallons of fuel and 1 Austin Devon saloon.

In travelling to rallies we covered almost 2,000 miles by bike, car(?), train and coach. Favourable local Press reports of activities are helping to strengthen the club. Following a highly successful display last year it is hoped to give one in aid of refugee funds in 1960. Juniors are attending a special series of lectures on all aeromodelling topics given by specialists in each sphere, it is hoped that this will increase membership.

At the club dinner we were pleased to welcome friends from far away including Hucknall, Cannock and Peterborough. Prizegiving was by founder member Jack Merriman who needed a new hand after presenting nearly 70 awards. Of note was a new idea of giving rosettes as mementos of places gained during the season. A novel straight line indoor rubber K.O. speed contest was held at the dinner and proved successful and almost lethal.

UXBRIDGE & D.M.A.C.

After going downhill for many years we are at last making a comeback. Under entirely new leadership we are gradually increasing our numbers and although we have only a dozen or so members at present, the club is becoming reasonably proficient at all types of C/L flying.

For anyone wishing to come along, the address is: Ickenham Community Centre, Glebe Avenue, Ickenham, Middx. The meetings are on Tuesdays and Fridays from 7.45 p.m. to 10 p.m. We are fortunate in having a workroom as well as canteen facilities. The address of the Club Secretary is: L. P. Meier, 97, Tilehouse Way, Denham, Uxbridge, Middx.

CHANGE OF SECRETARY

WALLASEY M.A.C. B. W. Davies, "Sheiling," Pine Road, Heswell, Wirral, Cheshire.

BOLTON M.A.S. M. Hartley, Wellington House, Ladyshore Road, Little Lever, Bolton. BRIGHTON & D.M.A.C. J. W. West, 12, Northfield Way, Brighton 6.

WELLINGBOROUGH M.A.C. J. Parkinson, 85, Highfield Road, Rushden, Northants.

UXBRIDGE & D.M.A.C. L. P. Meier, 97, Tilehouse Way, Denham, Uxbridge, Middx.

WEST HANTS AEROMODELLING ASSOC., J. S. Hitchcock, "Russets," Arne Road, Wareham, Dorset.

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Recent Results

Bill White Cup

U/R Power (143 entries)

1. Roberts, G. L.	Southampton	12 : 00 + 4.04
2. Castell, G.	Letchworth	12 : 00 + 2.25
3. Thorne, C.	do.	12 : 00 + 2.05
4. Willis, N.	Essex	11 : 51
5. Carter, A.	Liverpool	11 : 28

Gamage Cup

U/R Rubber (100 entries)

1. Elliott, N. P.	Southampton	12 : 00 + 4.50
2. Morley, D.	Lincoln	11 : 35
3. Monks, R.	Birmingham	10 : 40
4. Parker, A.	Exmouth	10 : 31
5. Broady, S.	Tees-side	10 : 13

Pilcher Cup

U/R Glider (215 entries)

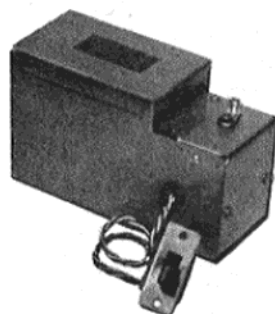
1. Dowling, B.	Watford Wayfarers	8 : 43
2. Dallimar, G.	Stevenage	8 : 40
3. Webb, A. C.	Brierley Hill	8 : 31
4. Aitkenhead, C. C.	Glevum	8 : 30
5. Perry, D.	Birmingham	8 : 03

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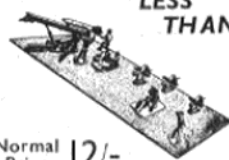
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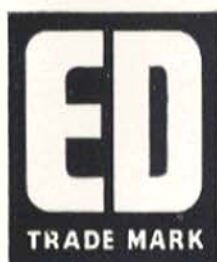
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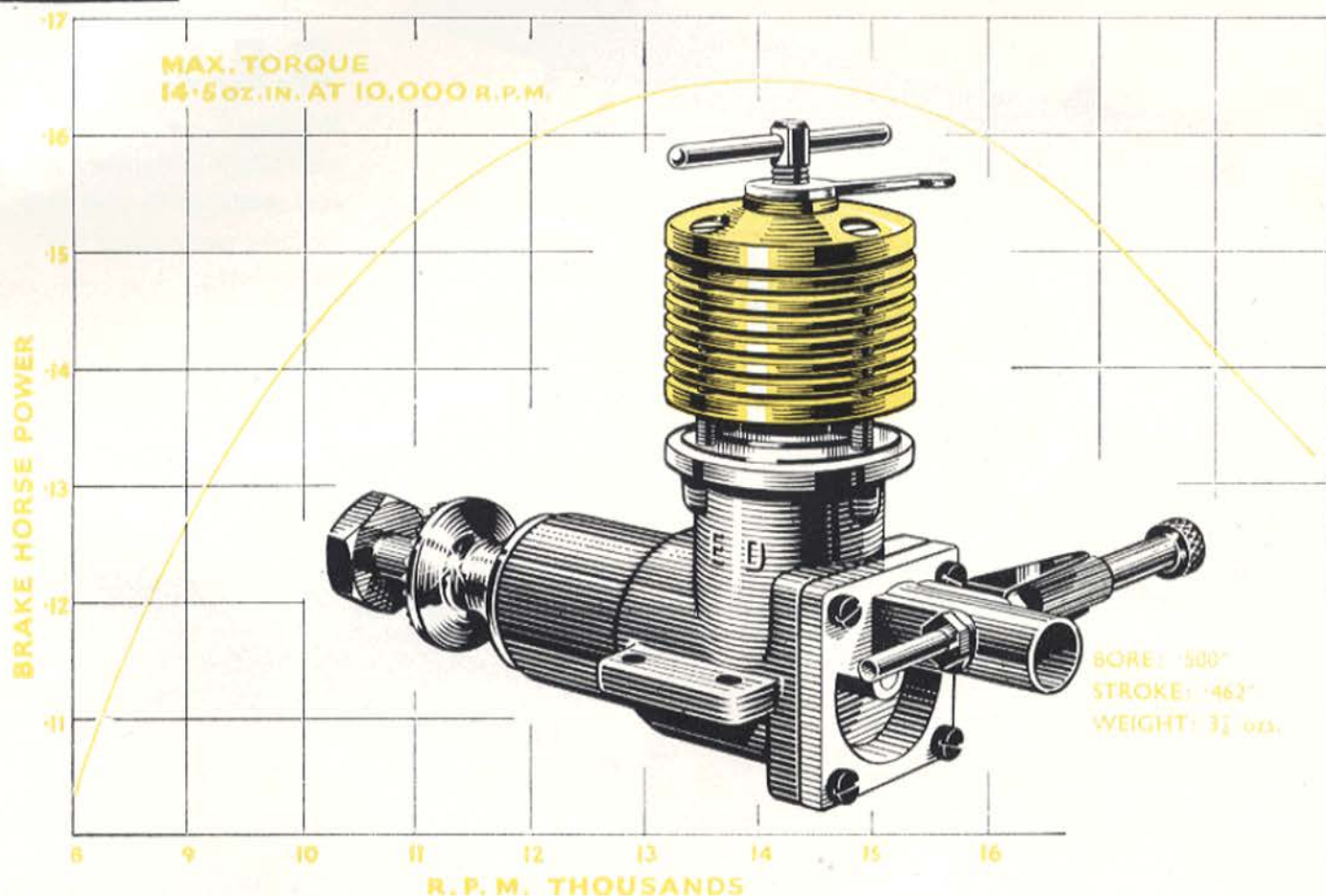
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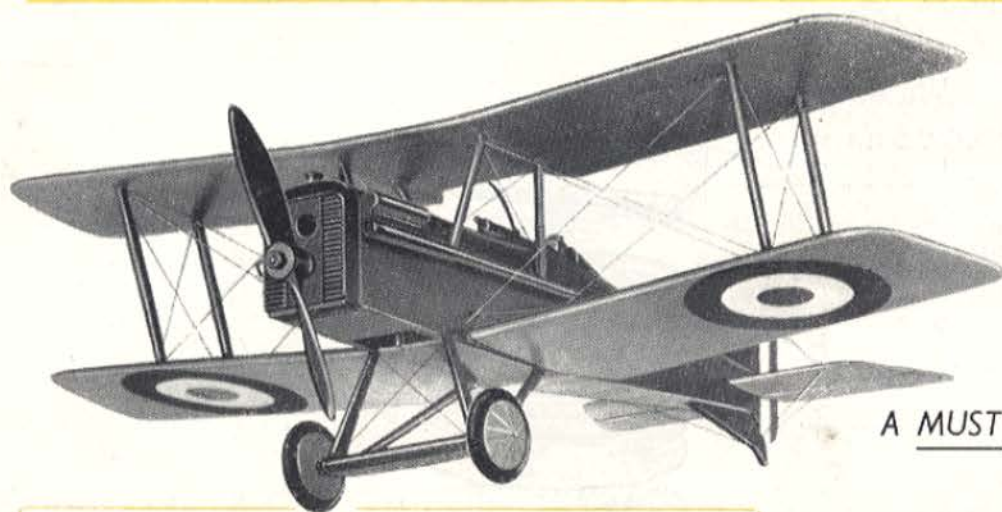
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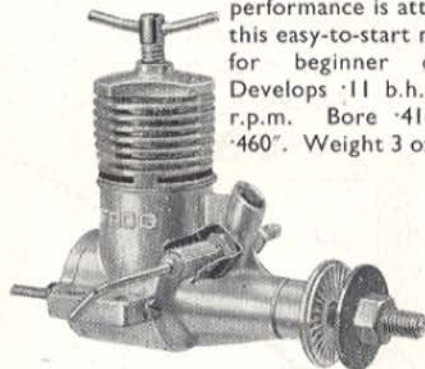
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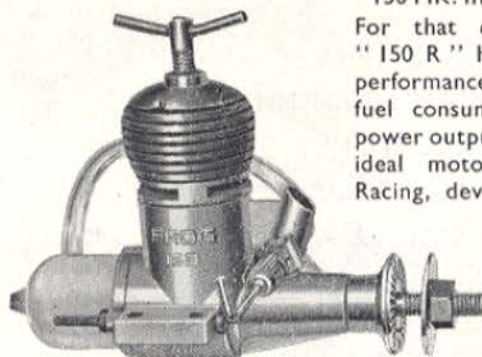
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