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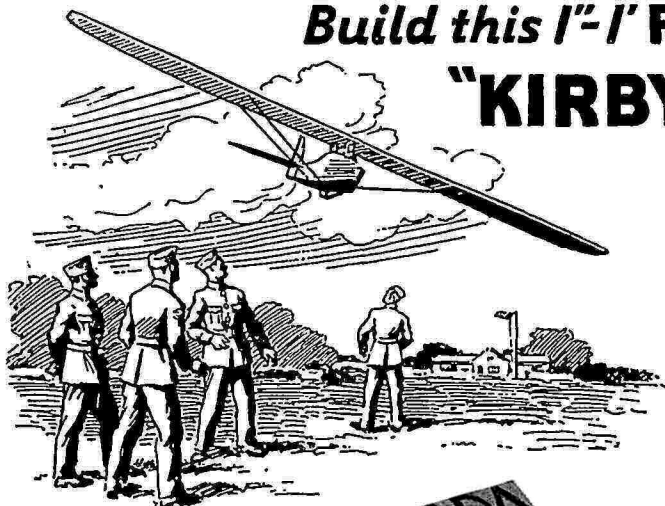
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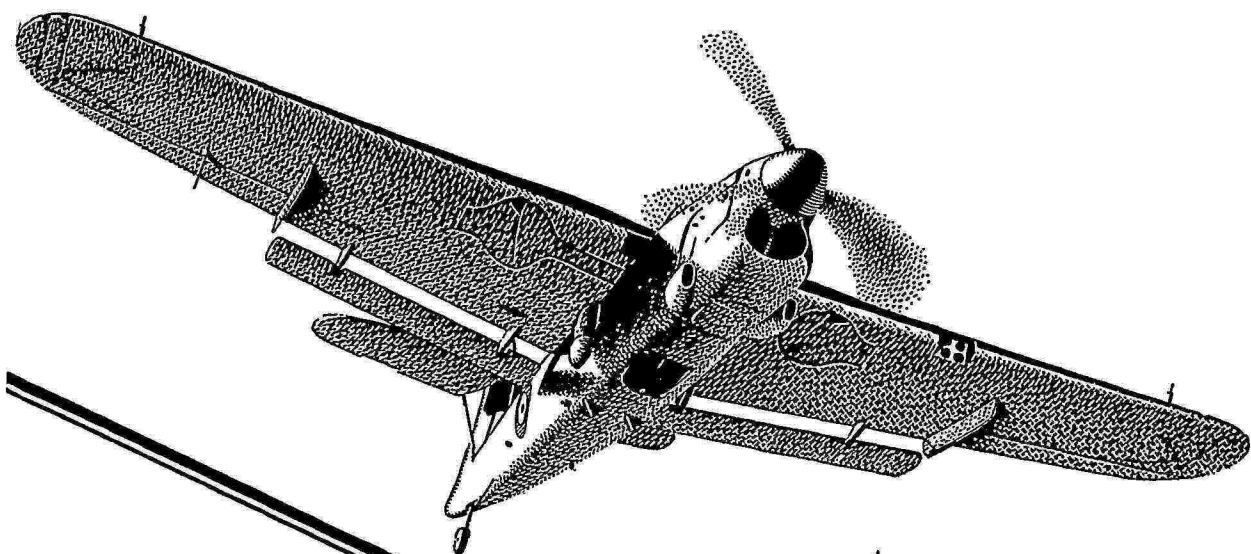
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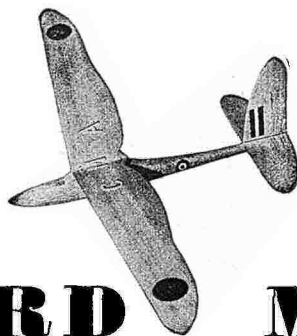
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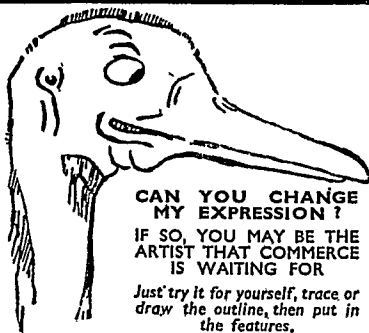
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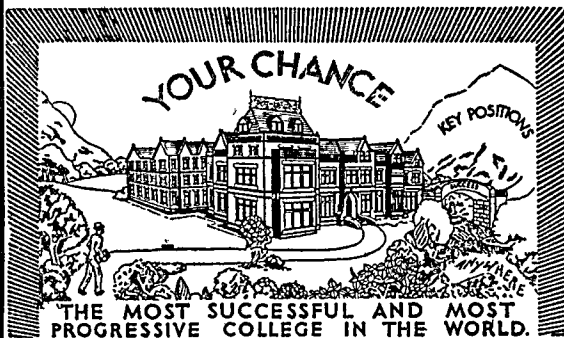
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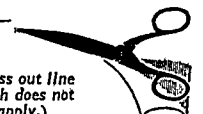
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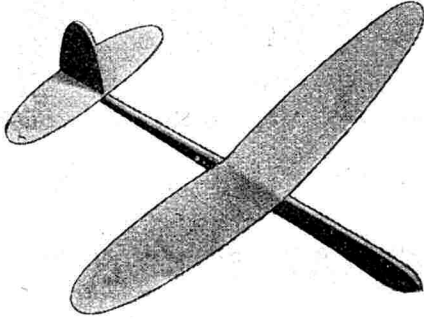
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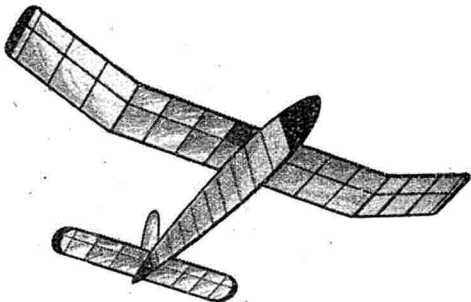
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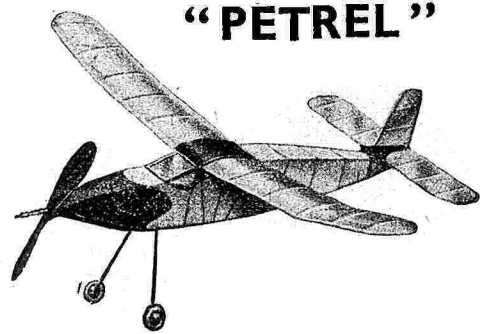
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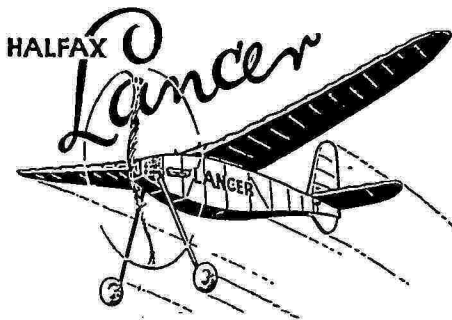


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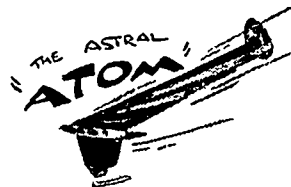
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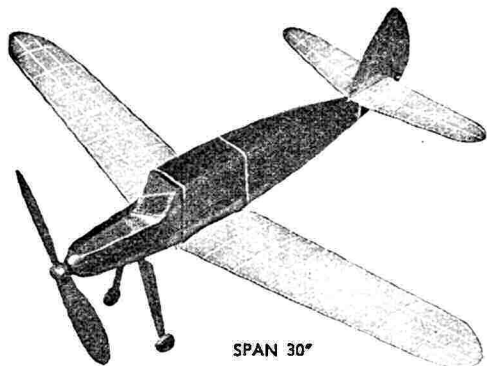
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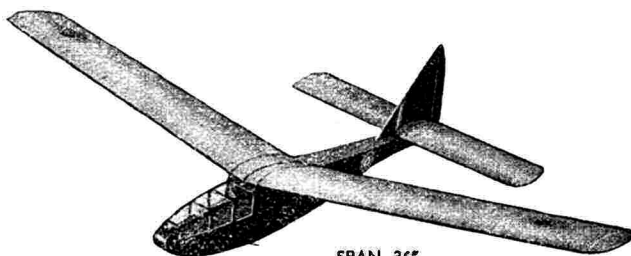
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VOL. X

No. 120

NOVEMBER, 1945

*The Model Aeronautical Journal of the British Empire*

**Managing Editor :**

D · A · RUSSELL, M.I.Mech.E.

**Editor :**

C · S · RUSHBROOKE

**Assistant Editor :**

H · G · HUNDLEBY

Published monthly on the 25th of the month previous to date of issue by the Proprietors :

The Model Aeronautical Press, Ltd.,  
Allen House, Newarke Street, Leicester.

Subscription rate 15/- per annum prepaid (Including Christmas Double Number).

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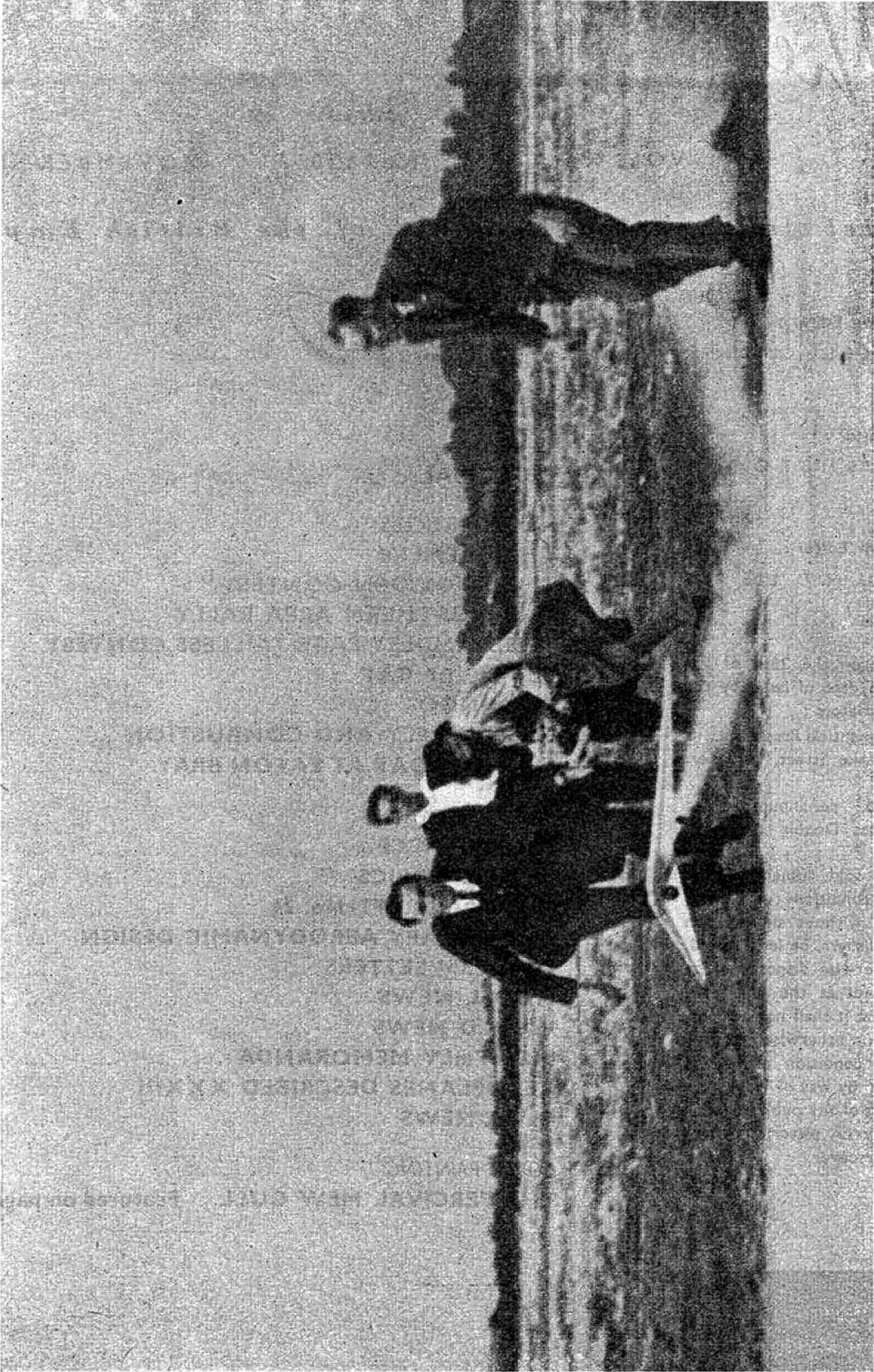
*COVER PAINTING*

THE PERCIVAL MEW GULL      Featured on page 600

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ROCKET R.O.G. Spectators at Eaton Bray opening day received their full share of excitement when Mr. Howard Boys demonstrated one of his rocket driven tailless machines fitted with a tricycle undercarriage.

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# EDITORIAL

## FIRST FLIGHTS AT EATON BRAY

BRITISH weather is rarely helpful to aeronautical endeavour of any kind, and was certainly not co-operative on the occasion of the opening of Eaton Bray, the first aerodrome in the world to be reserved exclusively for the use of modellers. One recalls that in the very early days of the London-Paris airway, officials at Croydon Aerodrome received a somewhat distorted weather report from the coast, which read, "Bolsons in the Channel and squaggy." Well, it was "squaggy," too, at Eaton Bray on September 15th, 1945, and probably, had not the Channel been so far away, the unwelcome squalls would have been augmented by an equally unwanted collection of "bolsons," whatever they may be.

Nevertheless, some hundreds of enthusiasts made the journey to Eaton Bray, and models duly took the air, the first flight being made by a petrol-engined 'plane which took off, flew, and landed in exemplary fashion. The "pilot" was that skilled petrol-model exponent, known to innumerable modellers as "Eddie" Keil. Towards evening, the gusts abated sufficiently for contest flying to take place, for three cash prizes offered by Eaton Bray Model Sportsdrome Ltd. Winner in the petrol-model category was Mr. Keil, whose 'plane, with the stipulated motor run of 20 secs., made a flight of 55 secs. In the rubber-driven class, a flight of 76 secs. won a prize for Squadron-Leader R. Watson, and the award for the best flight by a glider went to Flight-Lieutenant Covington, whose model flew for 41 secs.

The popular verdict was that these contests were efficiently run, and that Eaton Bray, even at this early stage in its physical development, was a place well worth visiting. Despite labour and materials being in very short supply, and weather conditions in recent weeks being anything but conducive to outdoor constructional activity, the proprietors of Eaton Bray had provided all that they had promised—to wit, apart from the ground itself, such basic needs as drinking water, lavatory accommodation for both sexes, and a concrete take-off base, which, though not completed, was sufficiently well advanced as to be usable.

By next spring, when the formal opening of Eaton

Bray is to take place, the sportsdrome will have developed beyond recognition, and will be well on the way to becoming a veritable Brooklands of the model flying movement. Among the numerous amenities to be provided are additional take-off bases and runways, workshops for the carrying out of running repairs, a store where model-making materials can be purchased, loud-speaker equipment, a mobile control tower, a canteen and refreshment room, a first-aid station, hot water as well as cold, a car park, a camping site for week-enders' tents and caravan-trailers, motor patrols for retrieving straying models, and a Members' club-house and enclosure.

The ground will be available for use at week-ends throughout the year and daily throughout the summer months by individual modellers, whether members of clubs or lone hands, and by all responsible organisations interested. It is sufficiently extensive—being 75 acres in area, with the sides measuring about 600 yards—for groups of aeromodellers to make use of different parts of the ground without interfering with the flying facilities enjoyed by other groups. Inter-club, national and international contests will be encouraged, and, one way and another, there should always be something of interest and importance to attract visitors all the time the sportsdrome is open.

Finally, it would ill behove us to chronicle the actual coming into use of Eaton Bray without any reference to the inspirer and central figure of the enterprise—Mr. D. A. Russell, Managing Editor of the AEROMODELLER. It is the latest of a series of his successful efforts for the good of model aeronautics during the past 15 years, enterprises which include the setting up of the first model wind tunnel in this country, and other research equipment, the writing and publishing of numerous technical works, the maintaining of the AEROMODELLER at a high level of excellence throughout many difficult years, and the encouragement by financial and other means of the petrol-engined and rubber-driven flying-scale model. But assuredly, Eaton Bray is his *magnum opus*, and the aeromodelling community stands to gain considerably by this giant-stride in progress.

## Saturday, December 8th

Saturday, December 8th, is a date we would urge all our readers to note and remember, for it is the closing date for the receipt of entries—entry forms and the actual models—for the AEROMODELLER Second National Model Aircraft Exhibition, and the competitions being organised in connection therewith. The Exhibition is to be on an even more lavish scale than last time, and, opening at Dorland Hall, Lower Regent Street, London, on Friday, December 14th, will remain open (with the exception of December 23rd, 24th and 25th) until Saturday, January 12th.

Two solid silver championship trophies and no fewer than 65 cash prizes totalling over £300 in value are offered—the first prize is £30—and there are no entrance fees whatever. The design of the Exhibition is in the experienced and capable hands of the well-known exhibition architect, Mr. John Lansdell, F.R.S.A., N.R.D., and he can be relied upon to provide a setting

that will show the models to the fullest advantage. As to the exhibits themselves, it is aimed to provide them in greater numbers and variety even than last time, and to include all that is best in British aeromodelling. It is with this end in view that we have organised contests in connection with the Exhibition, for the competitive instinct—not to mention the appreciation of a tangible return for effort!—being strongly developed in most humans, aeromodellers most certainly included, we feel that this is the soundest way in which to secure that degree of technical co-operation that will assure the success of the Exhibition.

Full details of the contests and the prizes offered will be found elsewhere in this issue. Here it may suffice to say that there are separate sections for seniors and juniors (16 being the dividing age), and that the contests include four classes for solid scale models, two for duration types, four for flying-scale models, two classes each



for general and experimental types, seaplanes, flying-boats, and sailplanes, a class for freelance petrol-engined designs, and one for flying-scale or semi-scale petrol models. In each class, first, second and third prizes are offered. Over and above all this, there are the silver championship cups for the finest model, irrespective of type, by a senior and by a junior. Entries in any of the classes mentioned automatically become eligible for the championship. In the senior category the winner will receive a cash prize of £30, and will retain for one year a cup to the value of £30; in the junior category the winner will receive £20 and hold for a year a cup worth £20.

Entry forms can now be obtained from the AEROMODELLER offices at Allen House, Newarke Street, Leicester, and we invite all our readers to send for a form, complete it in accordance with the instructions given in the announcement of the Exhibition in this issue, on page 605.

Competitors are asked to see that their models are securely packed—the rest they can leave to the organisers of the Exhibition. Every care will be taken by the organisers' staff, who have the extensive experience of the last exhibition behind them, and who will be much more numerous this time. All models with a span of less than 3 ft. 6 in. are to have some protection in the form of glass, celluloid or Perspex, during the whole run of the Exhibition, so that none will be "manhandled" by the over-enthusiastic, or be blown away as is believed to have happened to certain midgets in the last Exhibition. Further, all the exhibits will again be adequately

covered by insurance throughout their stay at Dorland Hall and during their journey from and back to their owners. In this connection, for the encouragement of intending exhibitors and competitors, we would recall that at the last Exhibition claims for recompense in respect of damaged or missing models were incredibly low, and that these claims, totalling some £40, were promptly met, the few "victims" concerned expressing themselves as entirely satisfied.

Last January, nearly 20,000 visited the Exhibition, which lasted for just over a week. This time; with no V.1, V.2, or black-out to contend with, the transport situation improved to some extent, and the period of the Exhibition extended to 27 full days; the number of visitors this time should be nearer the 100,000 mark. They will include representatives of full-size aircraft construction firms, several of whom have already accepted an invitation to be present. Here, very clearly, is an unexampled opportunity for the individual aeromodeller not only to disclose his latest creation to the gaze of a vast and keenly interested public, and to win a prize, but also to join with his fellows in demonstrating to that public that aeromodelling is not a mere pre-occupation with ingenious toys, but a truly scientific activity and outstanding form of true craftsmanship. There is undoubtedly a great wave of airmindedness throughout the country in these days when the wonderful achievements of the R.A.F. are fresh in every mind; it is for modellers to grasp the opportunity afforded of capitalising that air-mindedness for the benefit of their movement.

## Rockets and the Law

The appearance of rocket-propelled model aircraft at a national competition brings to the fore the important question of how the constructors of such types stand with regard to the law, and a letter on this subject has been received from Mr. A. F. Houlberg, Chairman of the S.M.A.E., organiser of the event in question—the Handley Page tailless contest at Radlett Aerodrome last September.

Under the Explosives Act it is an offence for any unlicensed person to load an explosive mixture into a container, and model aircraft constructors are therefore debarred from making their own rockets. Mr. Houlberg reports, however, that the S.M.A.E. and Mr. Howard Boys, constructor of the models referred to, have been in communication with the authorities with a view to a clarification of the legal position. Mr. Boys has now

received a letter from the Explosives Dept. of the Home Office, stating that after visiting the Handley Page contest, the department is of the opinion that there is no cause for interference provided that the rockets used are made by a firm licensed under the Explosives Act.

They add, however, that in the event of the rockets being appreciably increased beyond the present size and the time of burning thereby being lengthened considerably, the matter might call for reconsideration, and they ask to be kept informed of further developments. As Mr. Houlberg points out, this communication establishes that at present if modellers make use of rockets produced by firms in possession of the necessary licence, no official objection to their activities will be raised. But, of course, the question of third party risk will remain.

## Staff Vacancies

A number of vacancies exist in the offices of "The Aeromodeller", now transferred to the Aerodrome at Eaton Bray.

Applications, which should be addressed to the Managing Director at our LEICESTER OFFICES, and marked "Application" in the top left-hand corner, should contain full particulars of age, education, training, experience and qualifications, and will be treated in confidence.

Vacancies exist for (a) Draughtsmen with a wide knowledge of full-sized aircraft, (b) Tracers capable

of precision fine-line work, (c) a junior in the Photographic Department, and (d) SOLID Model Builders capable of executing the highest class of work.

All positions are "permanent" and offer good prospects of advancement.

There are several towns such as Leighton Buzzard, Dunstable, Aylesbury and Hemel Hempstead within a few miles of Eaton Bray, where living accommodation may be sought, and the employment is offered, of course, in new modern buildings.

# PETROL TOPICS

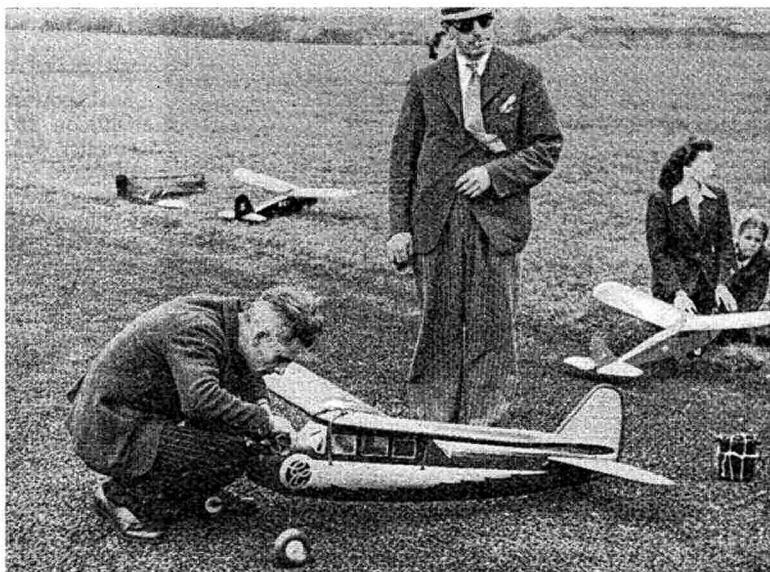
BY DR · J · F · P · FORSTER

HAVING, after lengthy argument and persuasion, gate-crashed the Handley Page Aerodrome at Radlett, on September 2nd to witness the first post-war Bowden Trophy, I cannot help raising a mild word of protest on behalf of all Lone Hands (and, incidentally, any foreign entrants had there been any this year) against the "closed shop" methods of the Organising Body for this *International and Open* event. Not only in a broadsheet issued to members of the S.M.A.E. only, announcing the date, place and conditions of the competition, but also it appears that instructions to the Aerodrome Commissionaires at the gate were to the effect that admission was restricted to members of Model Aeroplane Clubs, evidence of which was to be produced at the gate. The only other Lone Hand whom I knew personally and subsequently met within the "sanctum," was also met with the same obstruction until he finally satisfied the Commissionaires by producing his receipt for insurance premium from the N.G.A. ! Obviously, the majority of the considerable crowd of spectators were friends presumably accompanying Club members, but this hardly seems the best way to interest the public at large (most of whom have never seen a petrol model) in what must surely become a much more widely pursued branch of aeromodelling, given the necessary publicity.

The actual control and running of the competition, especially the "pits," and tea facilities in one of the hangars, seemed quite good, after getting off to a bad start. This was due to the failure to announce certain rules and conditions, with a threat of disqualification until the first two or three flights had already taken place (some of them simultaneously !)

As a humble and uninformed spectator, the chief criticism I have to make is that the real *objects* of the competition were not made clear. Possibly the competitors knew (!) and presumably the judges knew, but in spite of the loud speaker, we—the crowd—for the most part were in complete ignorance. The rules, which are supposed to be alterable from year to year, had not been announced in advance in the AEROMODELLER, as in the case of the Wakefield Cup, so as to give foreign entrants and Lone Hands a chance to build suitable machines. In future years when we can confidently expect a big foreign contingent, I would like to see our biggest Petrol Event given much more publicity in the technical press several months in advance.

Usually points are awarded for freedom from damage, take-off, general flight characteristics, and *landing*, in addition to those for clocking the required duration. The crowd seemed far more highly delighted by a 58 sec. flight than by a 43 sec. flight, though the former frequently landed out of sight. The timers chosen by



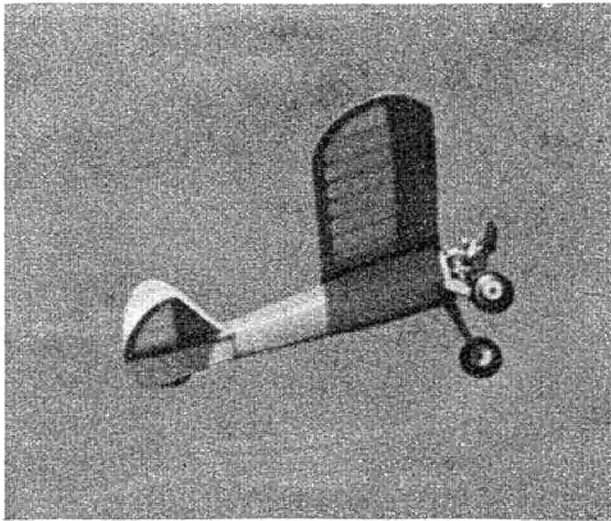
Mr. G. Clark of Bushy Park, the winner of the Bowden Trophy, tops up with petrol for the contest. In the background on the right may be seen Miss Baker of General Aircraft, the only feminine contestant.

each competitor seemed solely interested in the actual flight (which had to be between 40 and 60 secs. on a 20 sec. engine run) and left it to the announcer to decide when the three minutes allowed each competitor for getting his model airborne after calling his name, had elapsed. The announcer himself was obviously far too busy with his running commentary to keep an accurate check on this, and there seemed at times a fair amount of latitude allowed in this respect.

Apart from two exceptionally stable models, one of which twice landed within 40 yards of the take-off, the second time making a perfect landing on the tarmac within a few feet of the crowd, little interest seemed to be taken in what sort of landings the models made. The lightly loaded and overpowered models in the American tradition skyrocketed up with phenomenal climbs on short duration engine runs, only to be swept away almost out of sight on their long glides.

The weather conditions were what some people might well have considered impossible with a gusty wind of probably 20 m.p.h., and it seems remarkable that with all that space at their command the organisers chose the particular piece of tarmac running crosswise on to the wind, and did not reduce the stipulated duration so as to give competitors a better chance of landing on decent ground, and within sight of the judges and spectators. Considering the weather, and the solid bank of humanity lining the upwind side of the take off, which must have created eddies and downdraughts right into the teeth of the models when taking off, towards them *across* the tarmac, the performance was remarkable for the absence of serious crashes.

The worst one might have been avoided had the loud speaker van been placed with more forethought. It is common knowledge that most models are trimmed to circle with the torque under power, and in a high wind considerable loss of height is frequent on that first turn down wind after take off. Whether the model in question actually hit the van or whether the official whom it certainly *did* hit was not sufficiently nimble to take avoidant action in time, it certainly looked as if it stood a fair

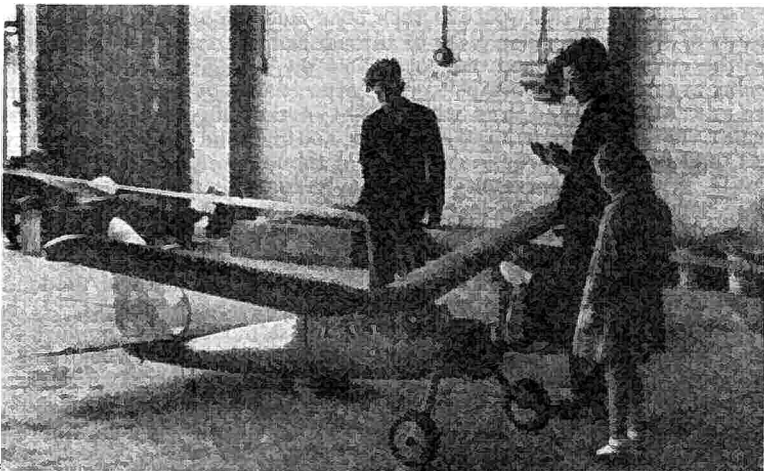


A neat little Natsneez built by one of the contestants snapped in a nice steady climb.

chance of just clearing the deck but for these unfortunate obstacles.

Another very unfortunate incident, which spoilt one competitor's chances, the model having flown very nicely on its previous flight, was primarily due to wartime dearth of rubber wheels, which was apparent on several machines with patched and semi-deflated tyres. The model swung right round 360 degrees immediately after release, but faced into wind again and took off entirely unassisted, only to crash into an immobile lady spectator seated (and therefore incapable of taking avoiding action) on the edge of the tarmac runway facing the take off. If the wind had dropped for a moment, any of the slower climbing models might well have failed to clear the crowd or even to take off in the width of the runway. All these are small points of irritation, particularly to unlucky competitors, which with the coming increase in petrol events might with advantage receive the consideration of organisers.

Except for a couple of Super Buccaneers, a very stable slab-sider flown by Mr. Tansley, and Mr. Keil's entry, which clocked well over a minute engine run due to timer failure which resulted in sarcastic comments from the announcer, most models ran around 4-5 ft. span. Browns, Cyclones and at least one Ohlsson 60 or Gold



A fascinating model built by J. S. Colyer seen in the "Pits" at the Bowden Trophy. Powdered by an 18 c.c. twin cylinder two stroke of his own design the model has a span of 12 ft., weighs 16 lbs, and must be one of the largest in the country.

Seal, powered the "biguns," while the familiar howl of Ohlsson 23's betrayed the "works" of several of the smaller models. The smallest was about 3 ft. span powered with a home-made engine of under 2 c.c.'s which started easily and produced ample power.

The power of the microphone at these events might be used with much more interest to the crowd and credit to the performers if, instead of the announcer giving a running commentary and frequently incorrect forecast of what the model is going to do in the next few seconds, he gave instead some details of the wing loading of the model, its power unit, and any items of interest in its works or construction such as dry cells or mini-accumulators; whether the model was an original design or built from a kit, and whether it or its owner had previously placed in some competition or other.

Spider-leg undercarriage were still evident on a few machines, but most were neatly fared, while I think my greatest surprise was the complete absence of wing tip slots; at all events if there *were* any, I missed them.

#### R.T.P. in Australia.

An interesting letter and superb photography comes from E. R. Nason, of Braybrook, Victoria, Australia. With no previous experience of model building he produced the nearly scale Spitfire, illustrated in the accompanying photos, the engine being also of his own make with a double bearing, double bob weight crankshaft running in phosphor bronze bushes fore and aft. The cylinder, of aluminium, has a cast iron sleeve, the piston being aluminium with one ring. Capacity 8.6 c.c. This remarkable engine gives a static thrust of 2 lbs. at approximately 5,000 revs.; unfortunately he does not give its weight, but judging from appearances and from the all-up weight of the machine in the following specifications it is probably fairly heavy by comparison with single bearing commercial engines with die castings. He gives these details of the plane itself:—Length, 3 ft. 4 in.; span, 4 ft. 2 in.; prop. diam., 13 in.; prop. material, aluminium (variable pitch blades); weight, 4 lb. 2 oz. (!!). Airframe materials, mainly balsa, with 1/16 in. plywood and sugar pine, the covering being Airmail paper.

If the plan form of the wings are scale the area at the very most would be 370 sq. in., so his wing loading is nearly 25 oz./sq. ft.!!! It is hardly surprising, therefore, that on his first test flight R.T.P., when it came down heavily on the downwind side of the circle, the undercarriage was torn clean away, breaking off the prop. blades. Try putting that engine in a free flying model twice the size, Mr. Nason, and let us hear all about it. I like that engine very much, and would like to see a similar one with the contact breaker working from the rear end of the crankshaft with all the controls well back. That looks very like a throttle beyond the jet. Does it work, Mr. Nason?

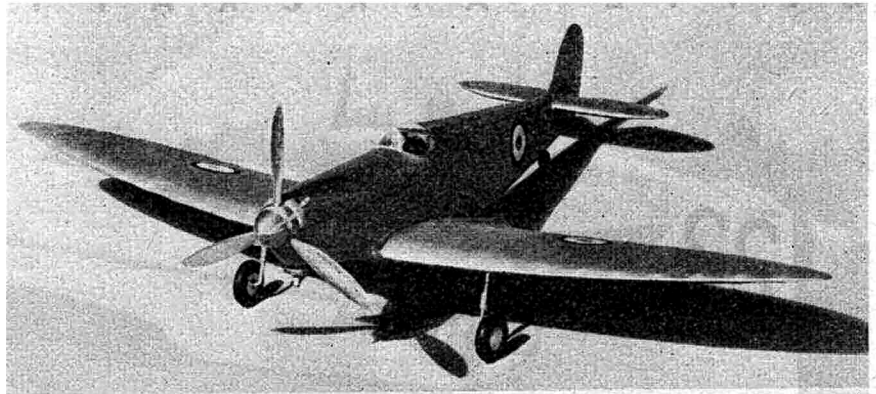


The idea of a reliably throttle controlled engine has long appealed to me for flying boats, where twice as much power is needed for take-off as is required once the model has unstuck, and I have recently had quite a headache trying to get proper compensation between choke and throttle on a home-made carburettor fitted to a Cyclone. This has a fixed jet consisting of (believe it or not!) a hypodermic needle with a hole filed in its side!! The reduction in partial vacuum at the jet when the throttle is nearly closed for slow running, results in too weak a mixture unless this is compensated for by simultaneously closing the choke, and getting the correct balance between the two at all openings is a very tricky business, and takes hours of running. The whole balance is completely upset if one is careless about the exact ratio of oil to petrol in the fuel, which must be exactly the same every time!! I'm hoping eventually to couple this single lever carburettor control to the ignition timing and so get an engine that is entirely controllable at all speeds with one lever. The engine speed can then be reduced without fear of petering out, by a timer mechanism. It can be done on a 98 c.c. "Piff-Paff" motor cycle, so why not eventually on a 6 or 10 c.c. engine!!!

#### Pyrotechnics at Eaton Bray.

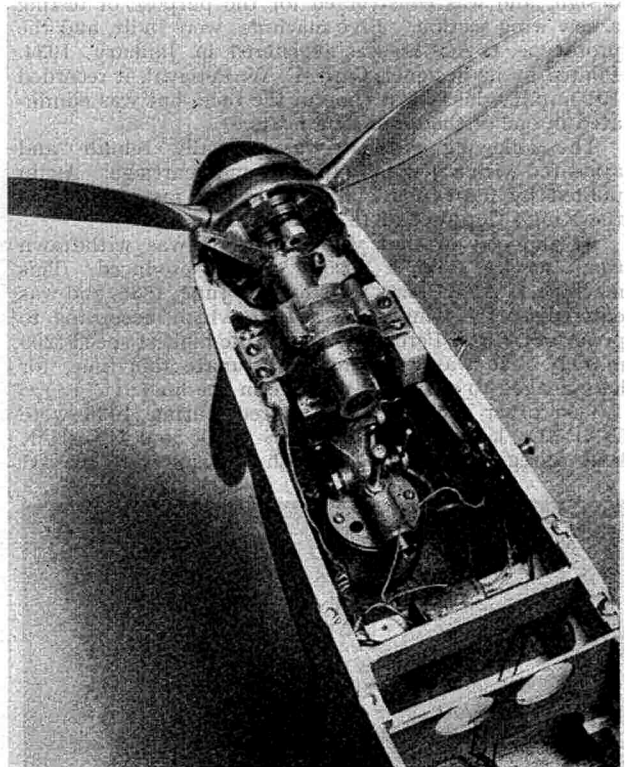
Considering the discouraging weather conditions on Sunday, 16th September, the unofficial opening of Eaton Bray can literally be said to have gone off with a bang! The centre of an intense depression with a howling wind of some 20 m.p.h., must have passed within a few miles of the Sportsdrome, for after a torrential downpour looked like finally putting an end to what little activity had been possible, it gave way to a relative calm which lasted for half an hour before blowing up again at closing time. Mr. Howard Boys was not to be daunted, however, and having ridden out the gale with a looping kite, as did several others, he joined the glider brigade with his tail-less model which, when the wind dropped a little, turned in some fairly stable flights. I thought without doubt he stole the star performance of the day with this model. Fitted with a rocket it made a really beautiful R.O.G. take-off, and though the subsequent flight could hardly be classed as "precision" flying (!), this demonstration of the power of the rocket certainly gave me something to think about. Rocket-assisted take-off for flying boats might be even more spectacular—incidentally just what we want. It would be interesting to know the static thrust of such a rocket, and whether it would make much difference to a Brown Junior's thrust—about 2 lbs., I think. I wonder if any reader can help?

Unfortunately I went off to get some petrol towards the end of the downpour and missed the calmest period, and came back to find Mr. Keil, Mr. Germany, and one or two other Petroleers taking the air in a hastily organised duration competition on a 20 sec. engine run. I was forcibly struck by the steady and unwavering power output from Mr. Keil's engine (? Gold Seal), the model literally *hanging* on its prop. towards the end of steep climbs. He seems to have solved the nickel iron accumulator most satisfactorily with very neat and small batteries weighing 5 ozs., which he can well afford



on his big models. These will, presumably, be obtainable through the trade in due course, as they seem rather beyond the average home constructor, requiring nickel welding. They give 3 volts and evidently operate a good modern coil perfectly reliably, though I found my much abused old coil jibbed on them. There seems no reason why these alkali accumulators (which are definitely unspillable) cannot be made considerably lighter than 5 ozs. by the use of thinner nickel sheet for the walls of the container.

Next year, with Eaton Bray in full swing, there need be no delay in announcing National Events well in advance, on account of difficulties in securing suitable sites or aerodromes, and I feel sure that Eaton Bray, with everything laid on for the aeromodeller, and being reasonably and equally accessible from both London and much of the Provinces, will become of the "Brooklands, Isle of Man and Donnington" of the Aeromodelling World rolled into one!





## THE PERCIVAL MEW GULL By E. J. RIDING

TO the enthusiast, the name Mew Gull conjures up memories of small, high speed cantilever monoplanes clocking highest speeds in King's Cup races with monotonous regularity from 1934 onwards.

Percival Aircraft Ltd., of Luton, Beds., are comparatively new to the aviation world, and in the early thirties they had put the "Gull" into production, a machine which was to be a pattern for most small civil types for years to come. This original Gull was a low wing cantilever monoplane with a fixed undercarriage and seats in tandem. Later developments, the 1934 Gull and the Vega Gull, in which four persons were carried, were the forerunners of the now familiar Proctor.

The Mew Gull was an off-shoot from the original design, and was constructed for the purpose of testing a new wing section. Five machines were built, and the prototype, G-ACND, was registered in January, 1934. Piloted by its designer, Capt. E. W. Percival, it recorded 191 m.p.h., the fastest time in the race, but was eliminated in one of the qualifying heats.

The following year it was partially rebuilt and appeared with a new tail unit and undercarriage. Again piloted by Capt. Percival, it achieved fastest time in the King's Cup race of 1935 (211.17 m.p.h.).

At the end of that year, G-ACND was withdrawn from service, and a second model produced. This machine, G-AEKL, was registered in June, 1936, and was entered for the King's Cup race in which, according to precedent, Capt. Percival attained the highest speed (209 m.p.h.). He was a bit more fortunate this time, for he managed to get into 4th place in the final.

Two other Mew Gulls produced during 1936 were G-AEMO, later re-registered ZS-AHO, and ZS-AHM, later re-registered G-AEXF, both of which were entered

and flown (under their South African registration letters), in the Schlesinger race to Johannesburg in the September of that year.

G-AFAA, the fifth and last Mew Gull, was registered in July, 1937, and together with G-AEXF and G-AEKL it was entered in the King's Cup race of that year. This was a year of success for the Mews, the race being won by C. E. Gardner on 'KL at 234 m.p.h., with Capt. Percival 3rd on 'AA at 239 m.p.h.—as usual, he recorded fastest time for the race. In 1938, the race was won by Alex. Henshaw on 'XF at 236 m.p.h.

### Colouring.

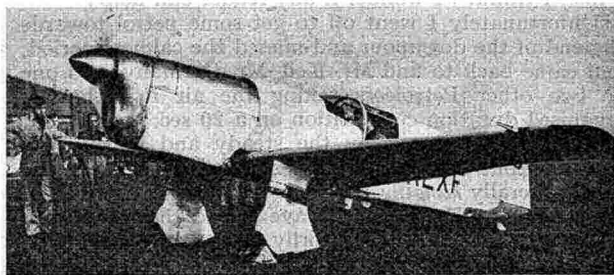
G-ACND, G-AEKL and G-AFAA were all, at one time, painted in a creamy-white colour scheme with either gold or turquoise blue letters and trimmings. 'KL was later repainted dark blue with gold trimmings.

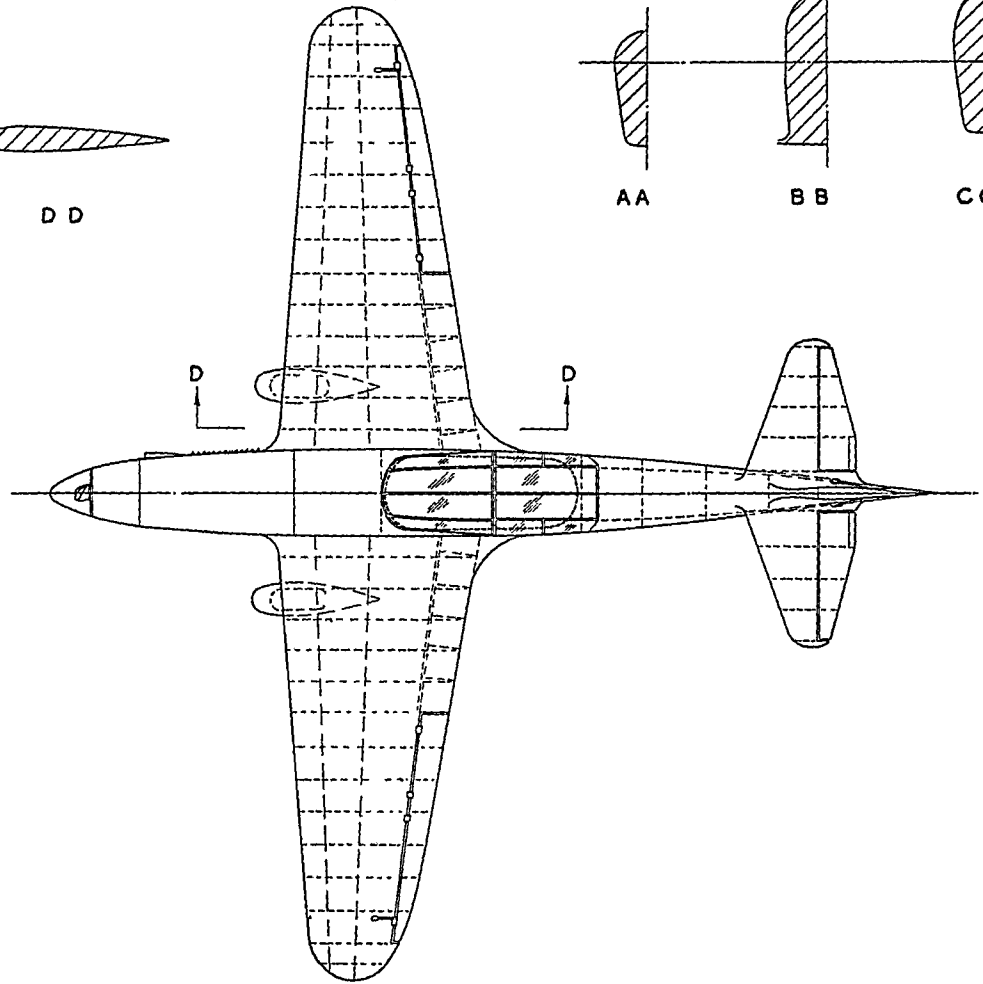
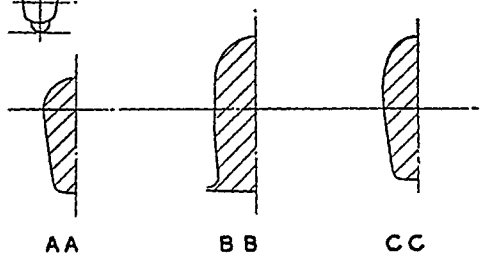
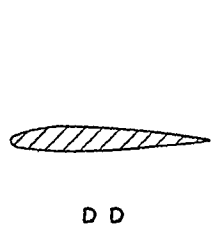
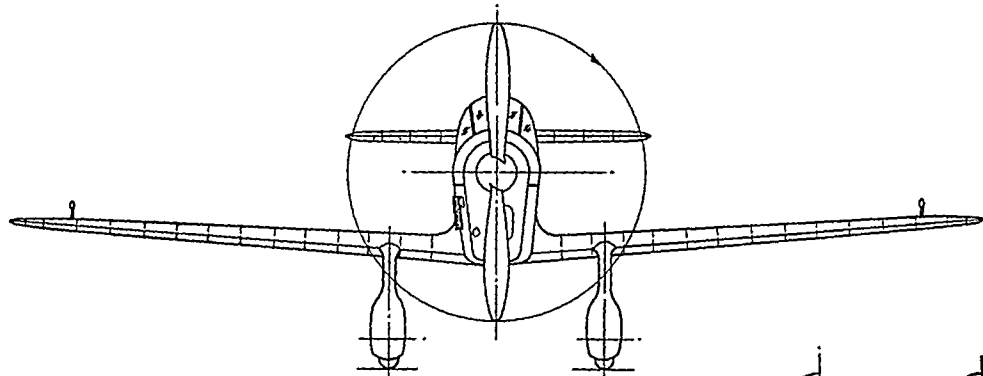
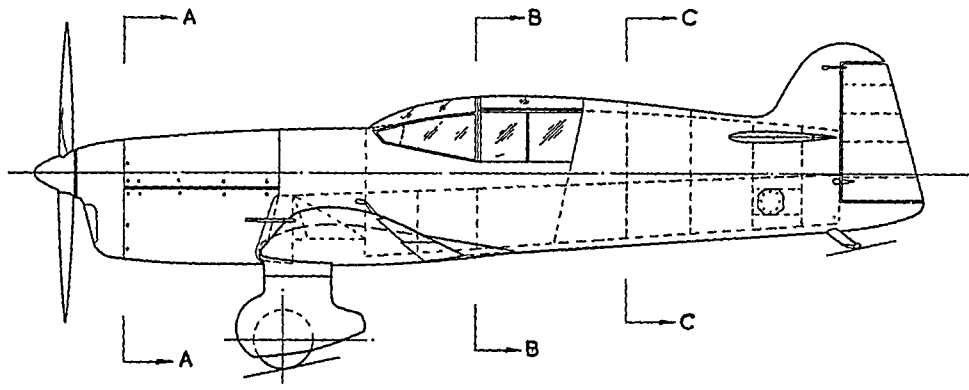
### Construction.

All wood. Fuselage, wings and tail surfaces plywood covered. Fuel tanks containing 38 gallons situated in wings and fuselage. Split trailing edge flaps. Power plant: One 205 h.p. D.H. "Gipsy Six Series II" fitted with V.P. airscrew.

### Specification.

Prototype.	Type E.2H.	Type E.3H.
Length: 18 ft. 3 in.	20 ft. 3 in.	20 ft. 3 in.
Span: 24 ft. 0 in.	24 ft. 3 in.	22 ft. 9 in.
Weight (Tare), 1,040 lbs.	1,150 lbs.	1,150 lbs.
Weight Loaded, 1,545 lbs.	2,125 lbs.	1,850 lbs.
Speed Max.: 204 m.p.h.	235 m.p.h.	250 m.p.h.
Speed Cruising: 180 m.p.h.	205 m.p.h.	220 m.p.h.
Speed Landing: 55 m.p.h.	60 m.p.h.	63 m.p.h.
Range: 1,500, m.p.h. at 220 m.p.h. Price: £1,950.		







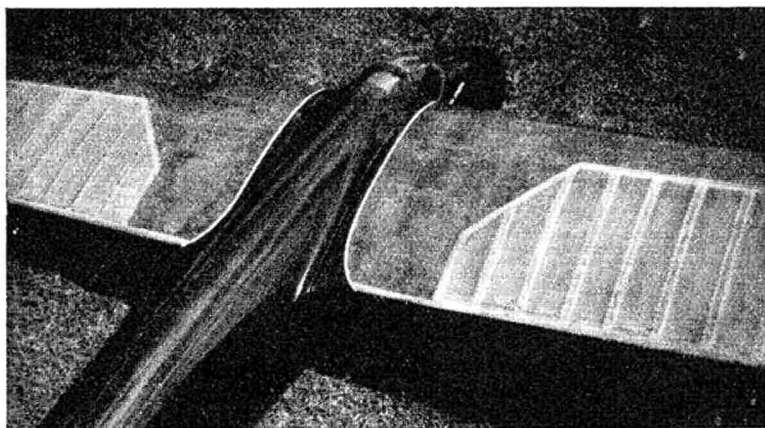
ELEMENTARY AERODYNAMIC DESIGN

SAILPLANES

Part II

BY

J · HALIFAX ·



Example par excellence. A new shot of L. G. Temple's "Celestial Horseman." Note the careful fairing of the wings into the fuselage, and the beautiful finish of the whole model. One of the reasons for the fine performance of Mr. Temple's models is that the best wing setting is always carefully calculated.

Wing Incidence Calculations.

We have now come to the most important calculation in sailplane design, and thus, before we take the plunge, it would be as well to view our objective as a whole.

We saw last month that the power required to keep an aerofoil in motion is inversely proportional to the expression  $C_L^{3/4}/C_{D1}$  and for the lowest possible sinking speed, this expression should be at its maximum value. Thus our task is to discover that angle of attack for which the machine's power factor is greatest. The details of the method are as follows.

Stage (1). Correct the  $C_D$  values given in the data graph of the aerofoil you intend to use, to the appropriate ones for the aspect ratio of your projected model's wing. This should be done for varying values of  $C_L$ , as follows.

From the data graph determine the value of  $C_D$  for each value of  $C_L$ . Tabulate these as in the first two columns of the table with the angle of attack at which each occurs in the third column. Now, by using the chart on page 14 of "Nomographs," determine the coefficient of induced drag for each value of  $C_L$ , as in column 4 of our table. For an example, let us find the

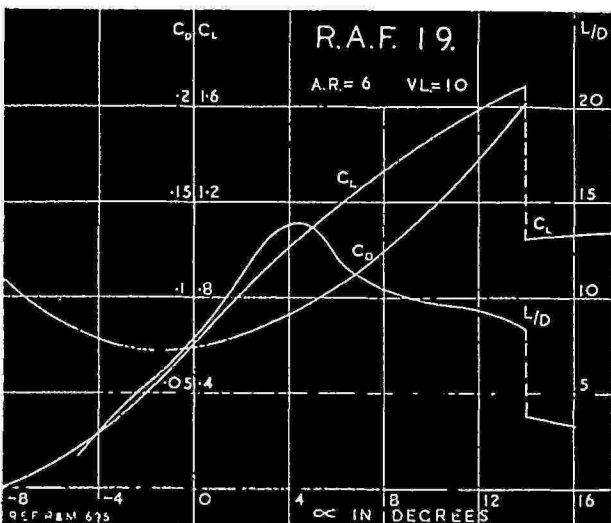
$C_{Di}$  for  $C_L=2$ . The aspect ratio, as we are told on the graph, is 6. Thus by placing our straight edge over .2 in the first scale, and 6 in the third, we obtain our answer of .002 in the second.

Having found the magnitude of the induced drag in our test data, we must now find its value for our projected model's wing and we will assume for the purpose of this calculation that its aspect ratio is 8. Now we must work out the  $C_{Di}$  again, as in column 4, except that it is for A.R.=8. Tabulate this in column 5. Subtract it from column 4, putting the results in No. 6. From the total  $C_D$  of the test aerofoil, in column 2, subtract the values in No. 6, putting the results in No. 7.

We now have in column 7 the corrected  $C_D$  values for our projected model's wing.

This is not the only quantity we must correct for A.R., for, as most modellers know, the effective angle of attack of the wing is also dependent on it. We have not the space to go into the causes here, and in any case it is only the effect that interests us at the moment, and thus any one interested should read up the subject in one of the many excellent books available on elementary aerodynamics. In passing, I might as well digress still further to recommend a good book for this purpose—"Mechanics of Flight," by A. C. Kermode, published by Pitmans, at 6s. 0d.

Now let us return to the furrow we were ploughing. For any A.R. less than infinity, the actual angle of attack at which the aerofoil operates is less than the measured angle. The "measured angle" refers to the angle at which the aerofoil is inclined to the airflow some distance in front of its leading edge. This difference in the two angles is called the induced angle of attack, and it can be calculated from the  $C_L$  and A.R. in the same manner as the  $C_{Di}$ . Thus column 8 should have the induced angle of attack ( $\alpha_i$ ) tabulated in it. The procedure for finding it from the Nomograph on page 14 is, of course, the same as for  $C_D$ , except that the right A.R. scale must be used. Having calculated this for A.R.=6, calculate a new set of values for A.R.=8, and tabulate this in



R.A.F. 19. The sudden drop in the  $C_L$ , and the increase in the  $C_D$  (not shown on the graph) is not due to the stall, but to the boundary layer. Before  $\alpha = 14.5^\circ$ , the B.L. is turbulent, giving "full scale" characteristics, but at this value of  $\alpha$  it changes to laminar flow, giving "model" characteristics.

column 9. Then, as we did for the  $C_{Di}$ , subtract column 9 from 8, entering the result in column 10, and add this to column 3, tabulating the result in column 11. This is the corrected angle of attack for  $A.R.=8$ .

Stage (3). When calculating the power factors for a wing, we divide the  $C_L^{1.4}$  by the  $C_D$  of the wing. It is obvious, therefore, that to find the power factor of the whole machine we must divide the  $C_L^{1.4}$  by the total drag coefficient. This is written as  $C_{DT}$  and is made up of the  $C_D$  of the wing plus the coefficient of all the extra to wing drag ( $C_{DF}$ ).

$$\text{Thus } C_{DT} = C_D + C_{DF}$$

We already know the  $C_D$  so the  $C_{DF}$  is now the only unknown quantity.

At the moment there is an acute shortage of low R.N. data on fuselage shapes, etc., so that in this field our calculations will not be so accurate. This unfortunate situation is being rapidly mended, however, and meanwhile we must use what data we have. Now the "extra to wing" drag consists of three main items—fuselage, tail unit and interference drag. We must find the actual drag of all these in ozs., add them together, and divide by  $\frac{\rho}{2} SV^2$ .

For the purpose of this calculation we must assume certain values for the dimensions of our model. In a later article we will deal with the method of calculating these dimensions, which is rather like placing the tail wheel before the  $U/C$ !

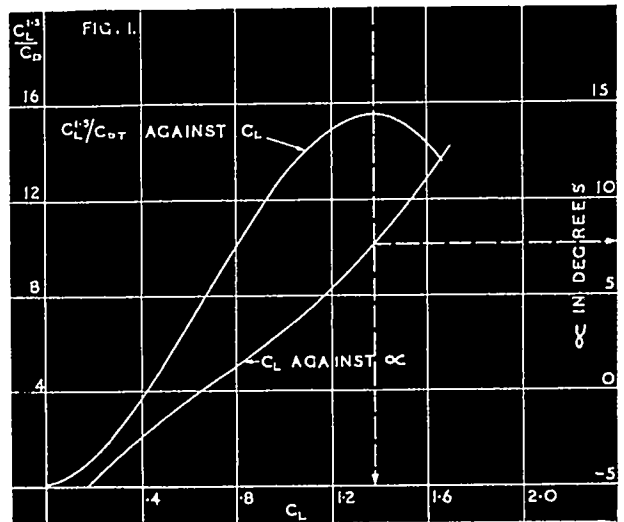
The dimensions we will assume are fuselage length 15 in., cross sectional area 1.125 sq. ins. (from the F.A.I. formulæ), tailplane area 50 sq. ins., and fin area 15 sq. ins. Tailplane section Clark Y set at  $\alpha=0^\circ$  fin section R.A.F. 30 (thick section because the tailplane is mounted in a high position on it).

The fundamental drag formula is  $D=KAV^2$ , where  $K$ =coeff. of drag.  $A$ =projected area at right angles to the airstream (cross-sectional area) and  $V$ =airspeed in ft./sec. Values for  $K$  for fuselages as given by Mr. D. A. Russell are .0009 for slabsider; .00046 for slab-sider, streamlined entry; .00025 for streamliner.

These figures appear to be optimistic, probably due to a high degree of turbulence in the tunnel airstream, but they serve as a useful approximation until more accurate data is available. We will assume  $K=.0003$  for our fuselage. Thus at an airspeed of 20 ft./sec., the drag as found from Nomograph No. 5 is .015 ozs.

Regarding the fin as a wing,  $C_D$  at  $\alpha$  of  $0^\circ=.01$ . Thus the drag, obtained from Nomograph No. 4, is .012 ozs. Similarly the tailplane drag, for a  $C_D$  of .025, is found to be .065 ozs. The total of all these drags is .092 ozs.

If no more precise information is available, it is advisable to allow for interference drag by adding



10 per cent. to this parasite drag. Total drag then becomes .1012 ozs. Now reduce this to its coefficient by dividing by  $\frac{\rho}{2} SV^2$ . This is the  $C_{DF}$  and must be

added to column 7, the resulting  $C_{DT}$  being entered in column 12.

Finally, in column 13 (any significance I wonder?) calculate the power factor by dividing column 12 into the  $C_L$  brought to the power of 1.5. This is easily done, but if you experience any difficulty, use logarithms.

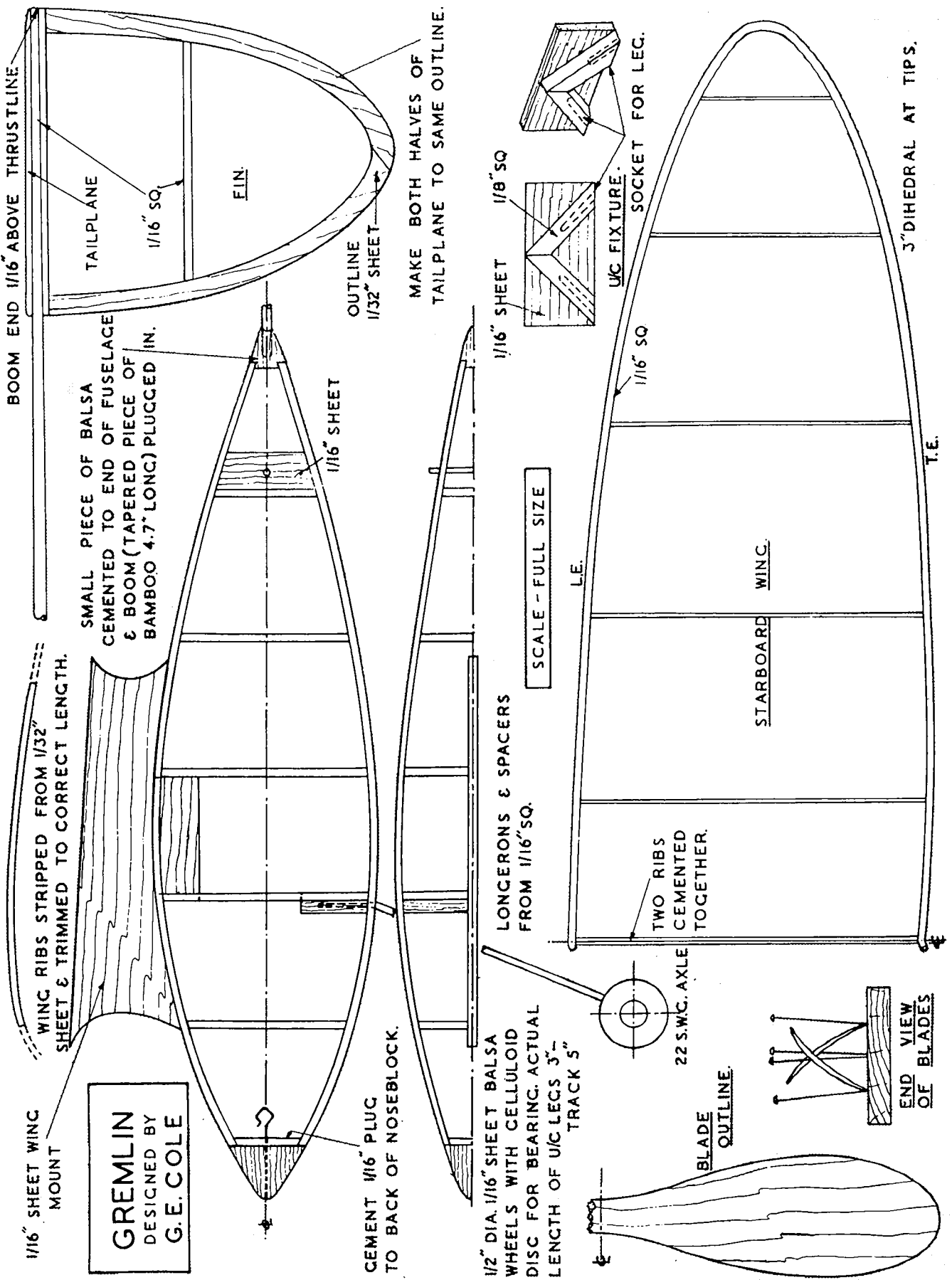
All that now remains to be done is a little plotting. Simply plot  $C_L^{1.4}/C_{DT}$  against  $C_L$ , and  $C_L$  against  $\alpha$  (the corrected value of  $\alpha$  being used), as in figure one. Here it is obvious that the Power Factor maximum occurs at  $C_L=1.38$  at  $\alpha=7.65^\circ$ . Thus on the machine to which this graph refers, the angle of incidence of the wing in relation to the datum line of the fuselage should be  $7\frac{1}{2}^\circ$ .

The method here described is the standard one of find the best wing incidence for minimum sinking speed, and providing that data relating to the flight speeds of the model is available, it is extremely accurate. Many modellers may be discouraged by the amount of calculation needed, and to those I can only repeat the old adage, "if a model is worth designing at all, it is worth designing well." To the rest, if you cannot understand any part of the procedure, I shall be glad to help you if you will send your enquiries c/o The Editor, with a stamped and addressed envelope.

(Part III of this series will, in contrast to the rather uninteresting but essential subject dealt with this month, elucidate the intriguing subject of Aspect Ratio, and the manner in which it is related to this month's work.)

1	2	3	4	5	6	7	8	9	10	11	12	13
$C_L$	$C_D$	$\alpha^\circ$	$C_{Di}$	$C_{Di}$	$C_{Di}$	Corrected $C_D$	$\alpha_1^\circ$	$\alpha_1^\circ$	$\alpha_1^\circ$	Corrected $\alpha$	$C_{DT}$	$C_L^{1.4}/C_{DT}$
.2	.08	-4.4	.002	.0016	.0004	.0796	.61	.46	.15	-4.55	.1808	1.124
.4	.071	-2.0	.0084	.0064	.0024	.0686	1.23	.92	.31	-2.31	.1698	3.69
.6	.073	0.0	.019	.0142	.0048	.0682	1.85	1.38	.47	-0.47	.1694	6.82
.8	.08	1.9	.034	.0255	.0085	.0715	2.45	1.85	.6	1.3	.1727	10.0
1.0	.09	4.0	.053	.04	.013	.077	3.05	2.3	.75	3.25	.1782	13.0
1.2	.107	6.3	.077	.058	.019	.088	3.7	2.78	.92	5.38	.1892	14.93
1.4	.134	9.0	.105	.077	.028	.106	4.3	3.24	1.06	7.94	.2072	15.64
1.6	.175	12.2	.14	.105	.035	.14	4.95	3.75	1.2	11.0	.2412	14.45

**GREMLIN**  
DESIGNED BY  
G.E. COLE



1/16" SHEET WING MOUNT

WING RIBS STRIPPED FROM 1/32" SHEET & TRIMMED TO CORRECT LENGTH.

SMALL PIECE OF Balsa CEMENTED TO END OF FUSELAGE & BOOM (TAPERED PIECE OF BAMBOO 4.7" LONG) PLUGGED IN.

BOOM END 1/16" ABOVE THRUSTLINE

TAILPLANE

1/16" SQ.

FIN.

1/16" SHEET

OUTLINE 1/32" SHEET

MAKE BOTH HALVES OF TAILPLANE TO SAME OUTLINE.

CEMENT 1/16" PLUG TO BACK OF NOSEBLOCK.

1/2" DIA. 1/16" SHEET Balsa WHEELS WITH CELLULOID DISC FOR BEARING. ACTUAL LENGTH OF U/C LEGS 3" TRACK 5"

LONGERONS & SPACERS FROM 1/16" SQ.

SCALE - FULL SIZE

LE.

22 S.W.G. AXLE

BLADE OUTLINE

STARBOARD

WING

TWO RIBS CEMENTED TOGETHER.

1/16" SQ.

1/16" SHEET

1/8" SQ.

U/C FIXTURE

SOCKET FOR LEG.

END VIEW OF BLADES

3" DIHEDRAL AT TIPS.

T.E.



The

# G R E M L I N

BY

G · E · COLE

## A HIGH - PERFORMANCE BEGINNER'S INDOOR MODEL

### Fuselage.

This is basically a simple box type structure, containing the motor, with mounts attached to support the various surfaces. This box is constructed first, and the boom (a circular piece of bamboo tapering from 3/32 in. to 1/16 in. diameter) plugged into the small balsa block.

The wing mount is cemented to the top of the fuselage, and when in place, 1/16 in. sheet braces are fixed between the compression members adjacent to the tongue of the mount, and cemented where they touch it.

### Tail Assembly.

The tailplane is constructed in two halves to the same outline as the fin, and then joined together. This is then cemented to the top of the boom, and the fin underneath. Note particularly the negative angle of incidence of the tailplane.

### Undercarriage.

The legs are of 1/16 in. diameter bamboo, tapering slightly to where the wire axles are lightly bound and cemented on. Complete the wheel with celluloid bearing disc, and cover it completely with superfine tissue. Build the U/C fixture, and after drilling the sockets for the legs, cement it into the fuselage.

### Aircrew.

The blank is cut from 1/32 in. sheet as shown, and twisted in steam until the blade angles at the widest chord conform with those on the drawing. It should then be given several coats of banana oil, sanding between each coat, and finally pinned down to dry, still twisted as on the diagram. The hub is built up of two pieces of 3/32 in. sheet cemented each side of the prop. centre, the shaft being passed through the middle and bent back into the aircrew.

### Covering.

The drawing for the wing is self explanatory, and when completed, it should be covered on the top surface with super fine tissue. This single surface covering also applies to the tail surfaces, and is not sprayed. The fuselage is covered in the ordinary way, and sprayed once with water.

Complete the assembly by cementing the wing into position, and plugging in the U/C legs. The power is provided by two strands of 1/8 in. flat, 9 in. long, this giving a maximum of 700 turns.

The model should balance fairly well if the plan has been strictly adhered to, and any adjustment needed may be provided by bending the tail boom slightly up or down. Trimming should be carried out along the usual lines for a machine of this class.

## BRITAIN'S SECOND NATIONAL MODEL AIRCRAFT EXHIBITION

organised by

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Open daily from Friday, December, 14th  
to Saturday, January 12th, excluding  
December 23rd, 24th and 25th

at the

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London, S.W.1.**

**Over £300 in Cash Prizes and Silver  
Trophies**

**Over 20 Separate Classes  
as detailed in October "Aeromodeller"**

### COMPETITION RULES

1. Entry Forms Part A must be sent to "Aeromodeller," c/o Aircraft (Technical) Publications, Ltd., 7, Hanover Court, W.1, on or before 30th November, 1945.
2. Models must be received at Aeromodeller Receiving Centre, Dorland Hall, Lower Regent Street, S.W.1, between 3rd and 8th December, together with Entry Form Part B.
3. Entry Forms not filled in, mutilated, or not completed in ink will be disqualified.
4. The Panel of Judges will take the following points into consideration when forming their decision—
  - (a) Style and workmanship.
  - (b) Soundness of general design and special features.
  - (c) Accuracy of outline and detail in the case of scale models.
  - (d) Finish.
5. No correspondence can be entered into with regard to the Competition and the act of submitting an entry form will be interpreted as unqualified acceptance of the above rules and conditions.
6. All entries automatically become eligible for the Championship Competition according to age group.

**Special Note**—Every effort will be made to take "Late Entries," but in view of the response expected the Organisers cannot guarantee to accept such late arrivals.

### ENTRY FORMS

May be obtained post free from the "Aeromodeller," Allen House, Newark Street, Leicester.

These are in two parts—A and B. A should be sent in advance of the model to reach Receiving Centre by 30th November; Part B is sent with the model, which must be received between 3rd and 8th December, 1945.

### PACKING

Careful packing reduces risk of damage in transit and entrants cannot be too careful.

Fragile solids should be suspended on rubber bands and not fixed securely to sides or bottom of box as handling shocks are communicated to the model.

Models that present novel assembly features should have a note of any special methods enclosed.

No loose parts should be left where they can rattle in boxes or cause damage to other components.

Old newspaper, shavings and the like form excellent packing media for larger models.

### INSURANCE

Models will be insured whilst on display and during transit to and from the Exhibition.

### DISPLAY

Smaller models will be displayed under cover and away from possibility of handling by the public.

Expert aeromodellers only will assemble and arrange the exhibits to the best advantage.

### NO ENTRANCE FEES !

Entry is free to all contests, so send in at least one model—you have a chance whatever your skill as Classes are graded according to age, while for the expert there are adequate Championship Prizes that will be a fitting reward for superb skill !

# FROG

## MODEL AIRCRAFT

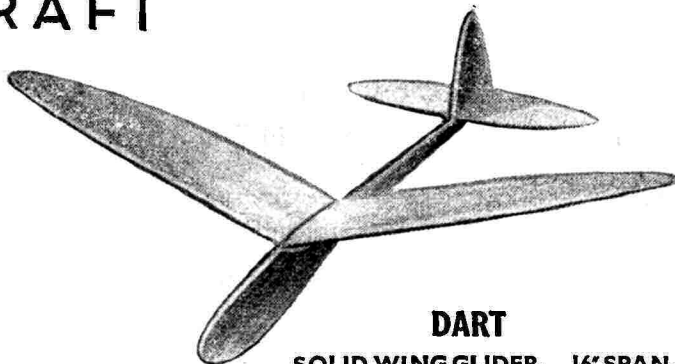


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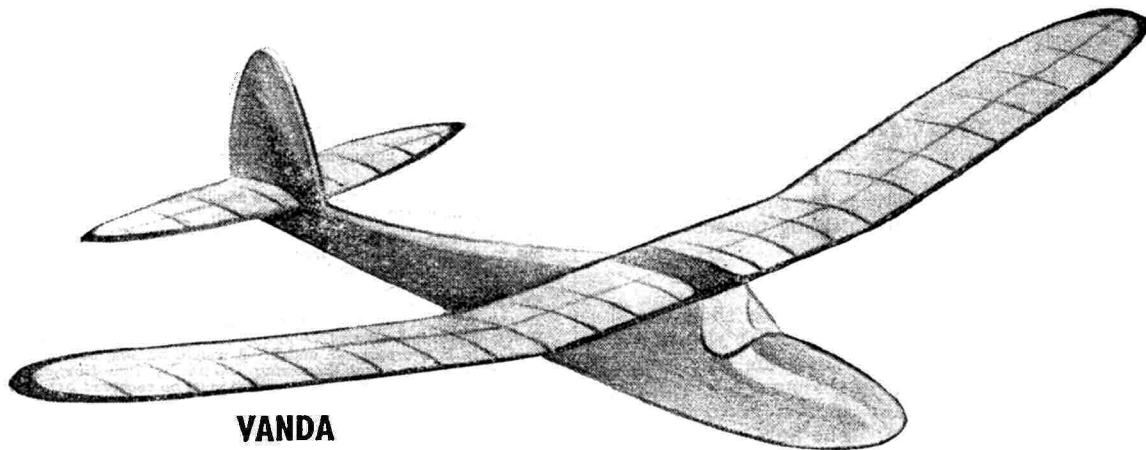
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## THE "BOWDEN CONTEST"

BY LT.-COL. C. E. BOWDEN

DESIGNED AS THE IDEAL PRIMARY  
PETROL PLANE FOR RUBBER MODELLERS

**T**HIS petrol model is designed to suit the man who requires a hard-wearing, stable, and easily operated machine that is easy to build and can confidently be put into the major petrol competitions for next year's "great revival" of petrol interest.

I imagine that there are many people who have been building rubber models in the past but who will be thinking of trying their hand at petrol models now that engines and coils will soon be with us again. These people are mainly experienced or fairly experienced builders, but are in need of a little guidance over petrol matters, and want a foolproof design to commence with. Here, then, I can safely say, is the answer. I have called the model the "Bowden Contest" because I hope it may lead a number of people to have a crack at the "Bowden International Petrol Trophy" and the other major petrol competitions next year. If the reader will build the model accurately, trim it as instructed, and ensure that he can operate his engine without fail, I feel sure he will have a darned good run for his money. The model flies with great ease and stability and its glide is just what the doctor ordered!

### The Fuselage.

Although I now almost always produce monocoque fuselages for my own amusement, there is no doubt that the old slabsider is more simple to build for the newcomer, and is a *very stable type for competitions*. This model is built by a method that I evolved a number of years ago. It is very easy to construct; automatically forms accurate angles of incidence, and when built is almost indestructible—all big points for a competition aspirant, or even for a general purpose flyer. This method has been used on one of my old record models and also on a Sir John Shelley Cup winner, so it has been well tried in a practical manner and I recommend it to all.

Take a look at the plan. First put some 1/16 in. balsa sheet on a building board or the kitchen table, and if the sheet is not wide enough for the depth of the fuselage then smear cement along the edges of several 2 in. or 3 in. wide sheets and join them together; whilst

drying, weight them down to keep them flat to the kitchen table—in order to keep in with the wife do not forget to put some grease-proof paper on the table first!

Now we can start. Stage A on the plan. Place some copying carbon paper over the sheet 1/16 in. balsa, lay the side elevation of the fuselage shown on the plan over this, and trace carefully the outline of the fuselage with a pencil. Trace in the positions of the uprights and remove the plan and you will find a blue outline of your model on the 1/16 in. sheet with correct angles of incidences of wing and tailplane all automatically aligned. Now cut around the outside edges with a razor blade, then cement 3/16 in. by 3/16 in. balsa lengths all around the edges, smearing plenty of cement on the sides of these lengths, and keeping them pinned to the 1/16 in. sheet sides with ordinary women's household pins, until dry. The pins can then be removed. Now cement in the uprights. Keep the whole affair weighted down flat until dry to prevent warping by the glue.

Glue in the celluloid cabin windows, being careful to make the two sides *with longerons and uprights INSIDE!* We now have two sides ready. Cut out formers Nos. 1, 2, 6 and 10 from 1/8 in. sheet to the size shown and cement them to one side as shown on the plan (stage B), again using pins as a temporary fixture.

We now glue on the other side. When the cement is dry, add all the top and bottom crosspieces of 3/16 in. by 3/16 in. balsa (stage C on the plan). Hooks, dowels, etc., are now put in. Hooks and dowels for engine retention and wing and tail retention by rubber bands, add undercarriage tube and hooks are fitted as described on the plan. The top and bottom is covered with 1/16 in. balsa sheet. *Plastic wood reinforcement*, a very important item in all my models which are designed to last and give the minimum of trouble, is applied where shown on the plan. The whole fuselage is now rubbed down with sandpaper, covered with silk or bamboo paper or "Planeilm." Silk is far the best covering for petrol models if you can get it. Dope with *full strength* clear glider dope. No other type of dope is worth while on a petrol model or large glider—model dope is "utterly

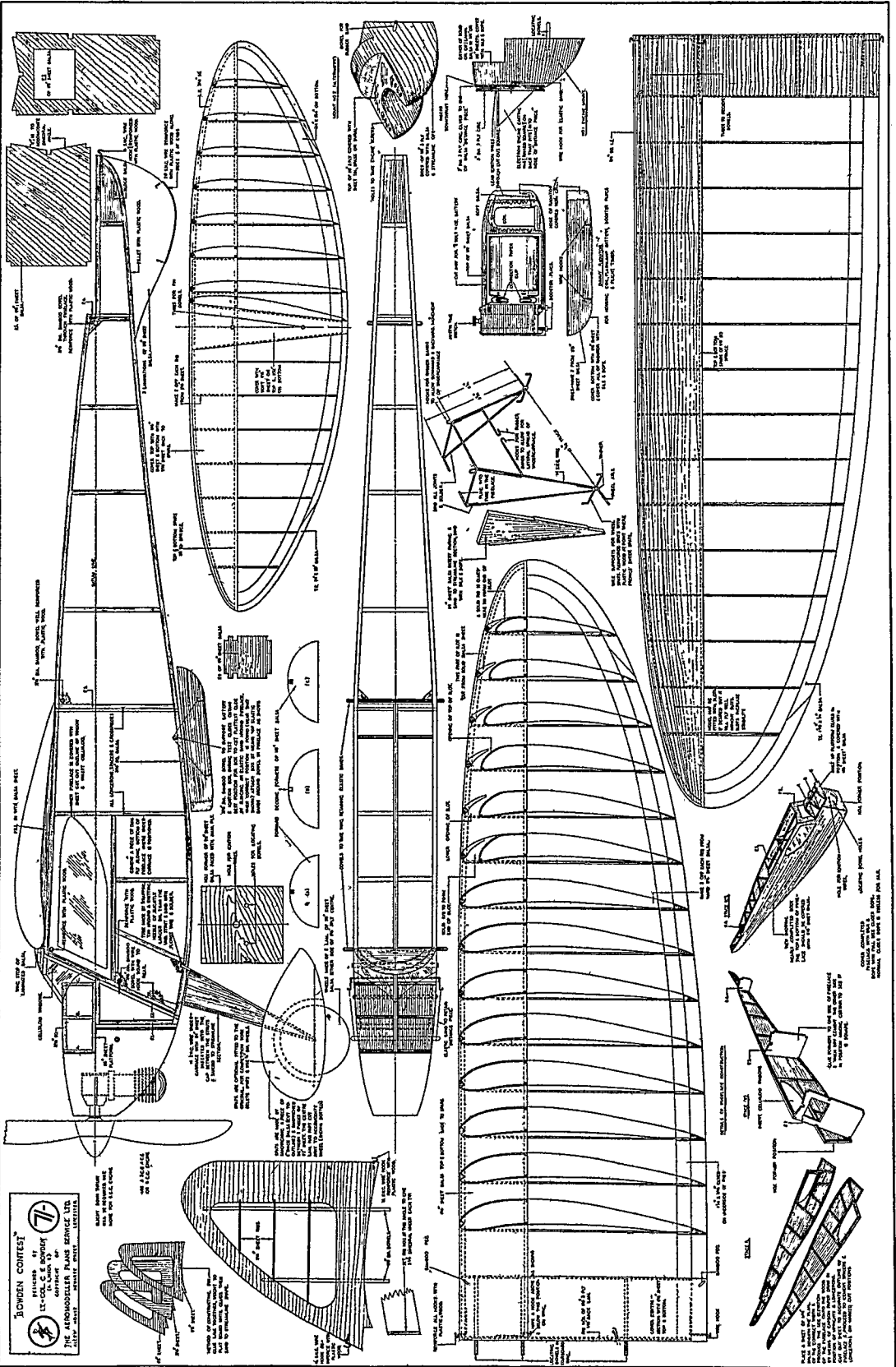
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# FULL SIZE PLANS

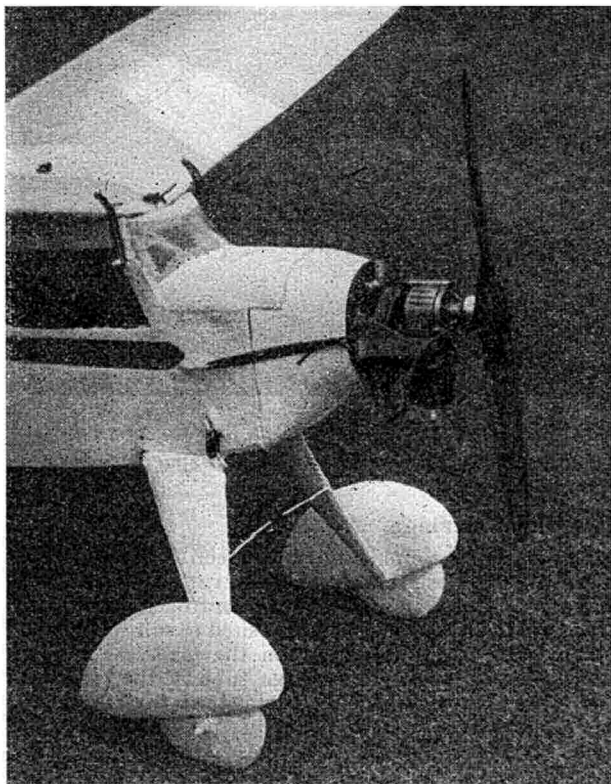
40 inches x 60 inches

(see 1/7th reproduction below)

WITH ALL PARTS FULLY DETAILED, POST FREE FROM THE AEROMODELLER PLANS SERVICE LTD, ALLEN HOUSE, NEWARKE ST., LEICESTER







The photos above give a good impression of one of the types of engine mountings detailed on the plan. This type utilizes the "Distance Piece" mentioned below.

useless," to quote L. G. Temple.

We now have an immensely strong box-like structure leaving no wiring, etc., inside our fuselage to give trouble on the field! If that outfit does not last you for many flying hours, happy or otherwise, I will eat my hat. Of course if you fly it into a brick wall or deliberately stamp on it in a rage, I withdraw that offer!

#### The Nosepiece.

You will notice on the plans that there are no difficult compound bends of the rigid flat sides at nose or tail to cause warping during construction. The model has a flat tail end which gives a grand base for the tail unit which will not shift—a very vital point for competition work. At the nose I have used my old detachable and knock-off engine mounting that saves no end of damage and allows of easy alteration to the engine thrust line during the tuning up period by packing. However, I have introduced a little improvement that is very simple and yet allows one to fit alternative engines and alternative types of engine mounts.

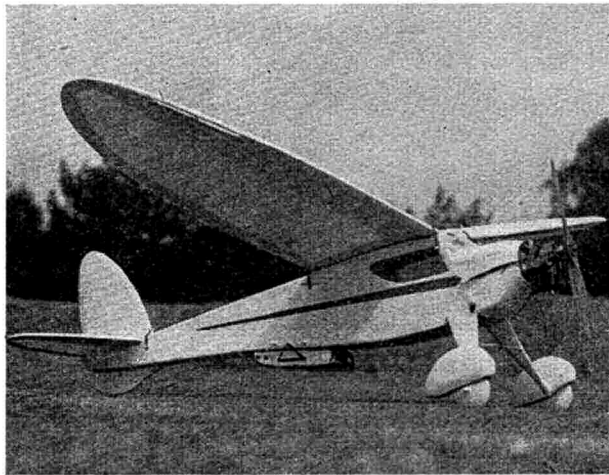
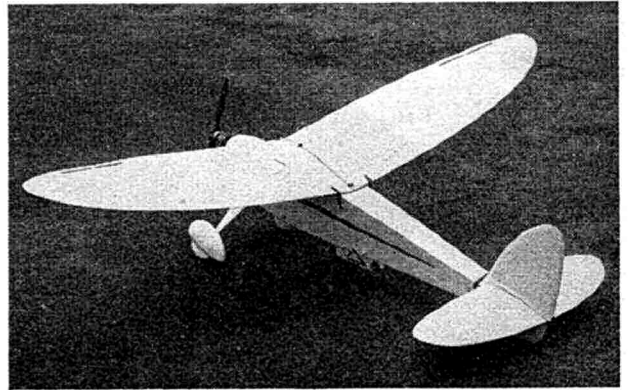
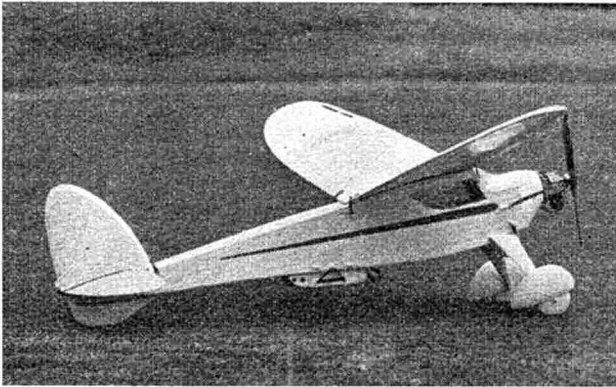
The sketches given on the plan will make the matter clear but briefly one can fit either my old Elektron cast detachable engine mounts, which are now commercially obtainable and save a lot of bother, or one can fit an all-wooden type of detachable mount that I developed some time ago. Both have all the bugs worked out of them. I prefer the Elektron mount owing to its ease of mounting an engine rigidly on the metal bearer arms together with the long induction pipe extension that makes all the difference to reliable engine power output. This is described in Dr. Forster's book on engines and in my new book on petrol models. However, make your own choice, and use whichever best suits the facilities at your disposal. The innovation which I

mentioned before is my "Distance Piece." This simple item is merely a detachable laminated balsa block shaped so that it fits between the rectangular nose end of the fuselage and the detachable Elektron engine mount. The laminated balsa distance piece weighs little, but allows of positioning a light 3 c.c. engine well forward to obtain balance, or a heavier 6 c.c. engine closer to the wing. One can also use it to lead in the nose from a circle to a rectangle. On my original model I use a very powerful little "Ohlsson 23," 4.3 c.c. engine with a rather long "distance piece."

If you decide to use the second method shown on the plan, *i.e.* an all-wooden detachable nose, the "distance piece" will not be required.

#### The Ignition Hook-up.

I have written much about this from time to time because I know from experience how much trouble is caused by poor ignition and wiring trouble. In order to get really reliable flying from this model, I decided to use the detachable and underslung dummy radiator I introduced a year or two ago, with *all* the ignition bag of tricks in the dummy radiator. It is rather like a "Mustang" radiator, and it contains coil, timer, booster plugs and flash lamp battery. It is slung from the dowels by rubber bands to hooks, and can be used to make slight alterations to gliding trim. The heavy coil and battery cannot damage the inside of the fuselage if the model hits something and stops suddenly, and the electrical heart of the model can be quickly inspected and overhauled. Furthermore, one can use this detachable unit on several models much to the economy of one's pocket. I have placed this radiator *à la* "Mustang" rather far back because in full sized practice it has been found to be best there for aerodynamical reasons. These



The three photos above give a good idea of the general appearance of the model. As can be seen, the original model is finished in the designer's characteristic white enamel colour scheme. The machine's graceful appearance when in flight is well brought out by the photo below, taken just after a demonstration hand launch.



are interesting, but we have not the space to discuss them here now.

### The Undercarriage.

This is a very simple affair but effective and light, as it has the two desirable movements, *i.e.* backwards and spreading. These movements are controlled by rubber bands which can be tensioned as desired to suit the model. Construction is fully detailed on the plans. The rear prongs fit into the undercarriage tube in the fuselage. The forward cross wire comes up against the bottom of the fuselage and is held there by rubber bands from hooks, to hooks on the fuselage. The spreader bar between the legs is divided and has two hooks for rubber bands. The wheels I have always used for competition work have been 3-ply and balsa laminated. These are sharp and cut easily through grass when landing and taking off.

For competition work I recommend plain wheels of a larger diameter, and no spats, but for general flying the spats improve appearance and seldom suffer damage due to the very flat gliding angle of this model. The plan shows how the spats are made and fixed.

### The Elliptical Wings and Tail Unit.

From time to time my readers will have noticed my holding forth strongly on the advantages of elliptical wings which apart from low tip losses permit of great surface for a reasonably low wing span which helps stability and gives the better airflow over a large chord. On this model, therefore, I fitted elliptical wings, and in order that the newcomer to petrol models shall not be embarrassed by difficulties in construction I will describe briefly a simple method of building elliptical wings.

All one need to do is to trace out the ribs from the plan, cut them out, and number them. Now trace out the wide trailing edge on to 1/16 in. sheet balsa as specified on the plan, and cut it out. Glue a trailing edge spar of  $\frac{3}{8}$  in. by  $\frac{1}{4}$  in. balsa, also traced from the plan, around the rear edge of this outline, as we did in our fuselage construction. Cement your ribs in position with the two central spars also cemented in, and then add the L.E. spar of balsa as specified. Cover from the L.E. spar to central spars with 1/16 in. sheet balsa top and bottom. Fix in your wing hooks with plenty of plastic wood and sand down your wing edges, cover with silk, and dope with full strength glider dope, keeping wings weighted down to the building board to prevent warping whilst drying. Test flying the model is most important and details are given on the plan which should save the newcomer a peck of trouble.

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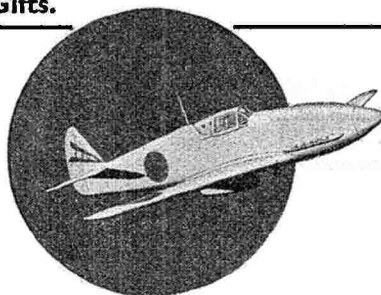
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# Readers' . . . . . Letters

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

DEAR SIR,

I feel honoured by the presence of my sailplane "Tarpon" in the heading photograph of Sailplanes (Pt. I) by J. Halifax in the September AEROMODELLER, but I would like to offer a correction to an error contained therein.

In actual fact, the fuselage does not possess any one of the four sections presented in Fig. 2, and to say that the section is as shown in Fig. 2 (c) is untrue.

Actually the section can be described very simply in geometrical language as an ellipse above the maximum width line and a semi-circle below, the average depth/width ratio being approximately 1:35:1.

I hope this information is of use, and that readers will be advised.

Cheshire.

I. S. CAMERON.

DEAR SIR,

May I reply to the letter from Mr. Cameron in the August issue on the subject of contact breakers?

Of course there are innumerable cases of mechanisms which work satisfactorily, although they are actually not the best mechanically. In this connection I would refer to page 23 of Dr. J. F. P. Forster's book on Petrol Engines.

In spite of your Editorial note, there still apparently remains the fact that more trouble is experienced with contact breakers than any other single component.

May I also allude to the article on geodetic construction in the same issue? You were kind enough to publish an article from me on this subject in the early part of the war, in which I showed a very simple method that can be carried out even by such unskilled modellers as myself. With balsa a cemented butt joint is just as strong as halving in the two portions as suggested, and which to anybody but a very skilled workman is a nightmare.

Walthamstow.

E. N. BRAY.

DEAR SIR,

In the August AEROMODELLER I see Dr. Forster states that he views "U Control" flying of petrol planes as "a confession of abject failure"!

There is a lot to be said for his point of view, and a 100 m.p.h. projectile rotating like a planet round its sun is probably little more of a flying machine than are those "flying machines," a sort of gyrotory swing boat, one sometimes sees at Exhibitions like Wembley. However, I believe there is a very real use for the system for:—

- (a) Research;
- (b) Scale Model Flying.

As regards (a), I can see few better ways of trying out original ideas in slots (such as a really highly slotted high-lift wing), or autogyros. Given a calm day one has all the requirements, except one, to establish the lift coefficient in "free air"—the "one" is the angle of incidence, but one could get a reasonable idea of it. (Frank Zaic's angle of attack indicator, described last month?—ED.)

As regards (b), I want to see a Bleriot type XI, an Antoinette, a 1912 H. Farman, a Morane parasol, a Sopwith triplane, an SE 5 and, best of all, perhaps, a real old box kite of 1909 or 1910 vintage, flying round under full control and in full view. In no other way can I see this happening, and incidentally, believe the final answer is electric power (some very small motors are now on the market for other purposes). I see the appropriate noise being initiated by a species of "trend rattle" on the prop shaft!—a small serrated disc lightly brushed by a spring attached to a sounding box or board. It should be possible to initiate the unmistakable note of the 50 h.p. Gnome, somehow!

Dorchester.

BRIG. H. J. PARHAM.

DEAR SIR,

Just a few lines to express my appreciation of your excellent magazine. Here in Western Australia it is the only magazine, English or American, of its kind. As a matter of fact, the *only* aviation magazines on the market are those printed in England, although I believe that in the Eastern States American journals predominate. Still, the AEROMODELLER amply furnishes any and every need of aeromodellers the world over.

I should very much like to tell you about the aeromodelling here, but as there is no club all views would be my own, and I probably do not represent the majority. Nevertheless, I do not think that we are so "Americanised" as your South Australian correspondent in the April edition of the AEROMODELLER makes out.

Petrol models are favoured more than their rubber-driven counterparts, it is true, but very little American propaganda has filtered through here in comparison to the Eastern States. We are essentially "British" in outlook.

With regard to the models we build, I am sorry to say that the standard of workmanship does not seem (bearing in mind a recent exhibition) to be comparable with the models in the British exhibition at the beginning of this year. (Judging by photographs of course.) This is probably due to the absence, for the duration, of all accessories such as dope, etc., balsa being the only material readily obtainable.

Again, building has been difficult due to the absence of plans. But for the AEROMODELLER and one or two battered and coverless volumes of "Aircraft of the Fighting Powers," which sold at 36s., I think aeromodelling would have come to a standstill.

Best wishes to you, the AEROMODELLER staff, and all British aeromodellers.

W. Australia.

DALE HARVEY.

## Duletide

Peace and Goodwill, the prerogatives of this festive season, will, we hope, be generated in unusually large quantities among aeromodellers by the contents of the double-size Christmas issue in colour, on sale November 25th, price 2s. Every branch of aeromodelling is catered for, and here are a few oddments to whet your appetite:

**The Christmas Pantomime.** Robert Jamieson and Freddie at their very best, combine to produce in colour, six pages of slide-splitting humour. Heartily recommended for those first few hours of Boxing Day.

**A Miniature Diesel Engine.** A revolutionary model engine that will change the whole aspect of power flying.

**Jet Propulsion.** Describing a successful model jet [reaction unit built and operated by the author.

**The Boffin.** "A cantankerous bird is the Boffin," sang a great English bard. Meet this amazing bird next month.

**The Bristol Bullet.** A flying scale model by an acknowledged expert, E. J. Riding.

**Model Aircraft Exhibition.** Full particulars of special attractions and details of competitions free to all.

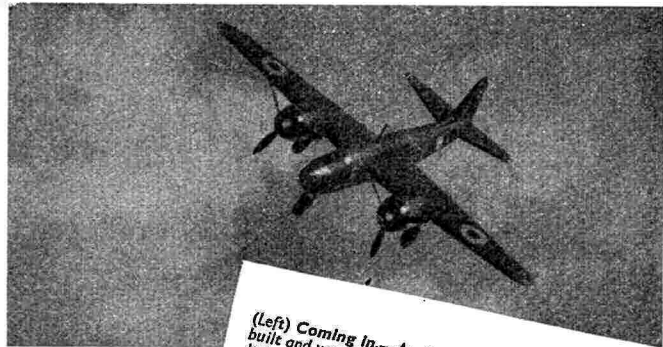
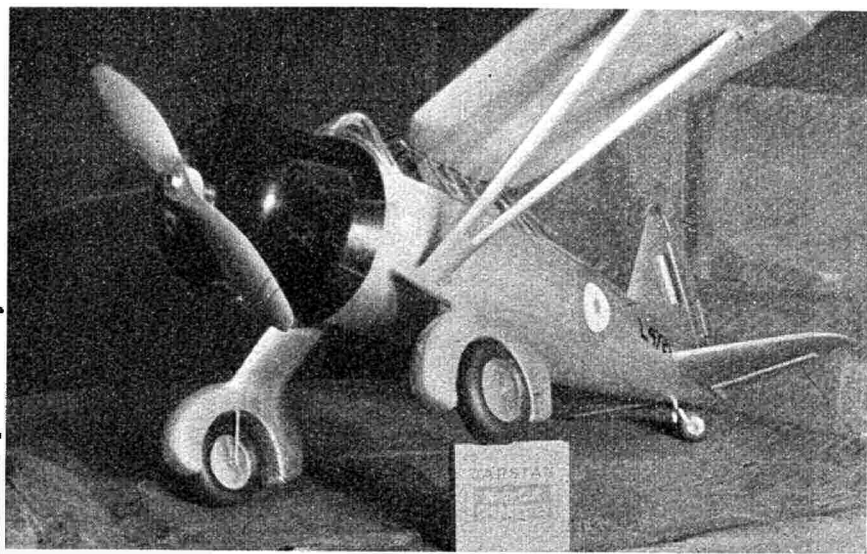
**The Mick Farthing Lightweight.** Latest addition to the Aeromodeller Plans Service.

All the regular features, in an enlarged form, together with drawings for various types of models.

There's sure to be a rush for this exceptional number, so to avoid any risk of missing it, we would advise you to place a regular order with your newsagent at once.

# Model News

**Model of the Month.**—Yet another excellent example of the "Art of Aeromodelling," once again from the stable of H. Foden, of Aintree. The finished construction and photography of this 1-in-1-ft. flying scale "Lysander" leave nothing to be desired. A superb piece of workmanship, Mr. Foden!

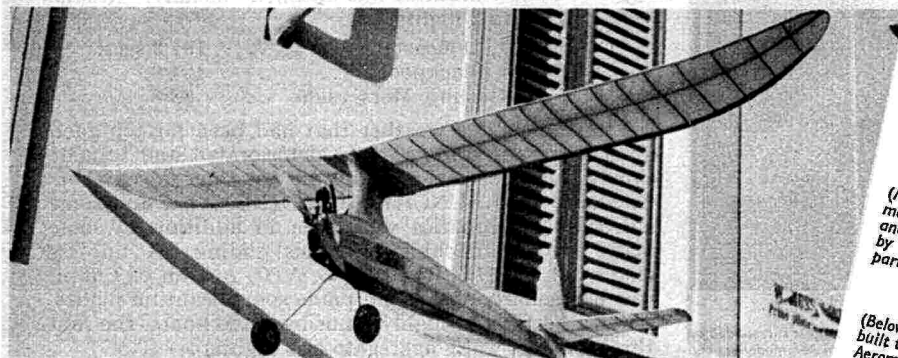


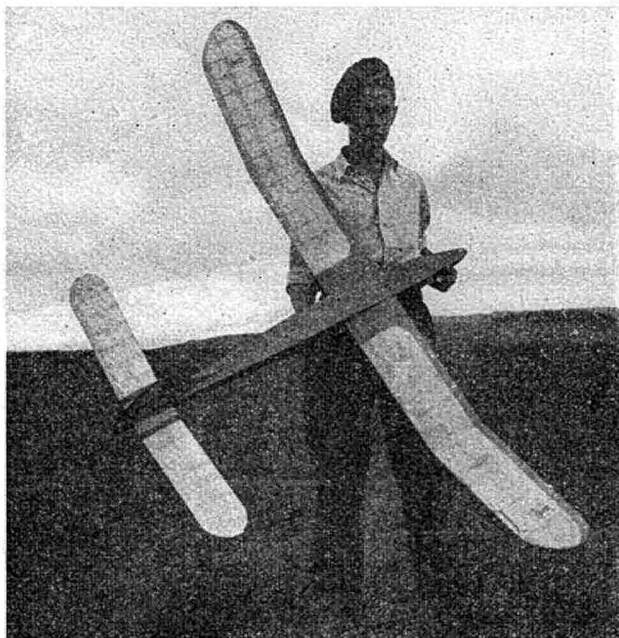
(Left) **Coming In.**—An interesting semi-scale model built and very nicely posed by J. P. Griffin, of Bristol. It is a free-lance design based on "Gladiator" lines with the exception of the triangulated undercarriage. The final touch of realism is achieved by the fully revving prop.

(Above) **Keep 'Em Turning.**—An excellent photo of a model Boston cleverly posed against a hand painted sky background, but unfortunately spoilt by the unimaginative effect of stationary props and lowered wheels. The model was built by F. W. B. Seaton, of Derby.

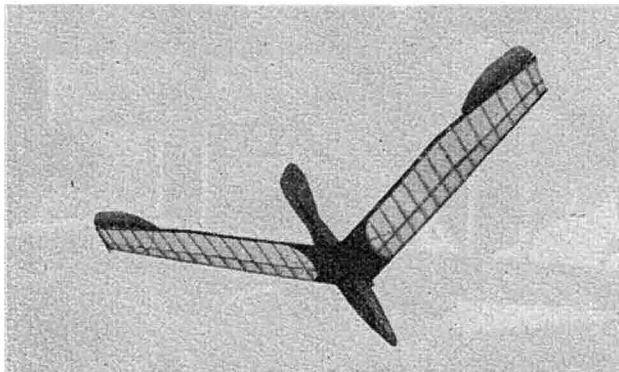
(Middle left) **Yankee Trend.**—We wonder if the marked leanings towards high pylon mounted wing and bare engine presented by this petrol model built by Guglielmo Barthel, of Florence, Italy, are in any part due to the famous fraternising qualities of our American allies?

(Below) **Nine-Ack.**—F. S. Stringer of Farnborough built this detailed model of a D.H.9A from scaled-up Aeromodeller plans. The resulting model is to 1/36th scale.





The heading photo shows a section of the line-up for the petrol contest surrounded by an interested and enthusiastic crowd. Many well-known Northern Aeromodellers can be seen. (Above) the winner of the hand-launched glider contest, S. Bassett of Doncaster with his winning model.



## THE NORTHERN

B A I L D O N M O O R ,

B A I L D O N M O O R "bah't 'at," and the reason—for the first time in living history, weather conditions were better than in the Sunny South. The rally attracted a large number of entrants, including some Americans. Visitors were from the following clubs—Bury, Blackpool, Doncaster, Leeds, Sale, Ashton, Luton, Whitefield, Wallasey, Merseyside, Rochdale.

The first competition saw some excellent HAND-LAUNCHED GLIDER flights. As is usual, the best flight of some 7 minutes was untimed officially. Results were (aggregate 2 flights) :—

S. Bassett, Doncaster .. ..	181.2 secs.
D. Evans, Blackpool .. ..	124.0 "
R. F. L. Gosling, Merseyside .. ..	92.8 "

After lunch, the weather that had been far too good for a Northern Rally rapidly deteriorated and became cloudy and much cooler. This did not deter the entrants for the TOW-LAUNCHED GLIDING event and some hair-raising aerobatics were seen in addition to some really clever launching and nice gliding. A tail-less glider, "LEN III," built by L. A. C. Ashton of Luton, was particularly stable and made some beautiful flights. After a hectic and highly amusing three hours, the first three winners were (aggregate of 2 flights) :—

W. D. Higginbotham, Ashton .. ..	209.4 secs.
D. Helliwell, Doncaster .. ..	205.6 "
N. Wakefield, Whitefield .. ..	164.5 "

Next came the open all-in HAND-LAUNCHED RUBBER COMP., and there was much speculation as to who had the most looked after pre-war rubber or a few precious ounces of good present-day stuff. The wind was keener by now and rather cool, making long flights impossible, the only fly-away being by K. H. Lloyd of Leeds, who lost his model on his second flight. (Lloyd, after the competition, broke down after a severe grilling and confessed his motive power was real American brown rubber.) First three were (aggregate of 2 flights):

K. H. Lloyd, Leeds .. ..	242.0 secs.
--------------------------	-------------

An interesting tall-less glider design by L.A.C. Ashton of Luton, snapped just after it had left the tow line.





Left. R. F. L. Gosling with yet another variation on his "Ivory Gull" theme and above, Len Stott with a scaled-down version of his original "Flying Minutes".

## AREA RALLY

SEPTEMBER 9th 1945

A. Hetherington, Doncaster .. 221.0 secs.  
J. Hardman, Rhyl and Prestatyn 192.0 "

There were quite a few good-looking models that would obviously have put up much better performances had good rubber been available. They could not reach an altitude to contact a thermal had there been any about.

There were six entries for the petrol contest, Silvio of Bradford, well known for his spectacular flights, being a late entry, having only returned from Switzerland the night previously. Another well-known northern enthusiast conspicuous by his absence was Norman Lees, who was away on holiday. Some spectacular flights were seen, the most outstanding being by Harry Austwick of Halifax and Bradford. Engine run was limited to 20 secs., and on his first flight, his engine running with a full-throated roar, cut out at 16 secs., after a wonderful banking power climb to glide for a further 64 secs. On his second flight, which was of 19 secs. engine run, his machine attained a height of about 200 feet, and made a lovely glide o.o.s. of 45 secs. The model is a streamlined high-wing cabin job of about 4 feet span, with an Ohlsohn 23 inverted engine. Two other good flights were made by H. E. Vauvelle of Leeds, flying a much larger model with elliptical wings. P/O. Long of Doncaster was the envy of other entrants by the ease with which he started his engine. One flick and it was off, but unfortunately the machine seemed underpowered and never attained any altitude. First three results were (aggregate of 2 flights) :-

H. Austwick, Bradford .. .. 144.7 secs.  
H. E. Vauvelle, Leeds .. .. 108.2 "  
E. S. Bassett, Doncaster .. .. 47.5 "

There was a good crowd and everyone appeared to have a very enjoyable day. The weather just held out, for which the officials and entrants were truly thankful. May the time soon come when the keen enthusiasm shown by the entrants will be seen on the International Contest Fields.

The ubiquitous Silvio of Bradford caught by the camera just as he launched his model during the petrol contest.

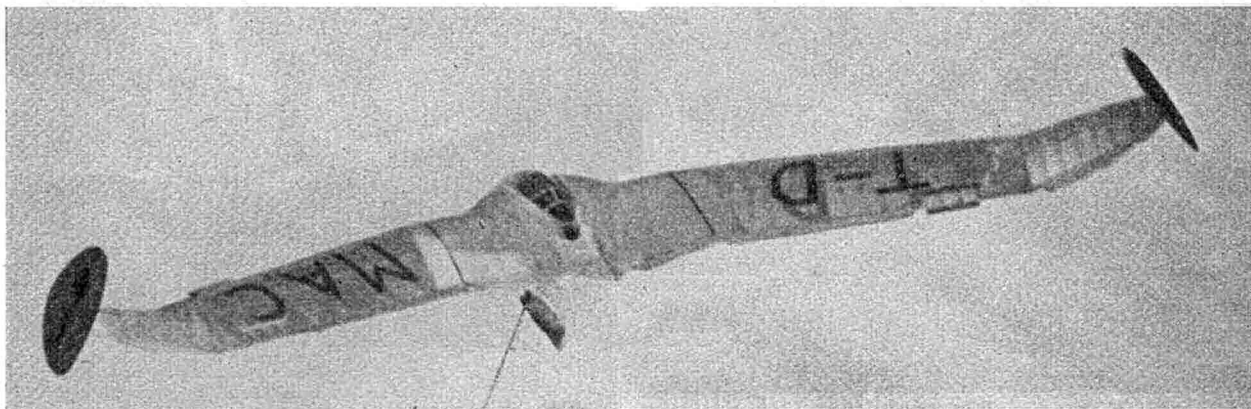


Austwick's model getting away nicely, and appears "... bound for the hills and the valleys beyond ..."





# THE HANDLEY-PAGE TAILLESS CONTEST



## REPORT ON THE FINALS HELD AT RADLETT AERODROME, SEPTEMBER 9th, 1945

Crossing the vast expanse of Radlett Aerodrome, accompanied by the loudspeaker van directing us to the competition enclosure, we were pleasantly surprised at the large number of flying wings being tested and assembled on the aerodrome. It was a bright day but a high wind spoiled what might have been excellent conditions.

The microphone safely erected in the enclosure, Mr. A. G. Bell announced details regarding qualifying flights. To qualify, models had to attain a minimum duration of 60 secs. Each competitor was allowed three competition flights, and points were awarded for duration, directional control, and aerodynamic excellence. The competition enclosure, surrounded with

white tape, kept the spectators at a safe distance and on one or two occasions acted as an admirable shock absorber for erring models. It was apparent from the start that tow-launching was to be no picnic in the prevailing high wind. Longitudinal control is extremely sensitive on these tailless models in the best of conditions, and there is a distinct tendency to yaw on the line. This was accentuated by the high wind and proved to be the undoing of several competitors.

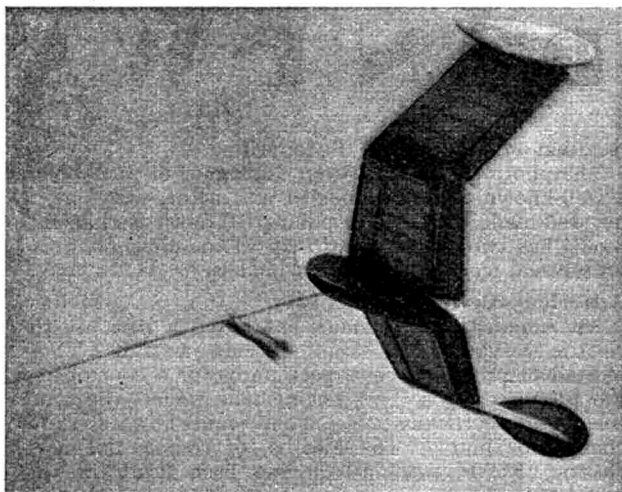
Practically all of the models, with two exceptions, were flying wing gliders. D. A. Pavely, an old-timer known to many aeromodellers, provided one of the exceptions. His model, of the pusher type, employed a slab-sided fuselage and tapered wings with pronounced sweepback and ailerons at the tips. The other competitor with a rubber-driven model, Mr. Vanderbeek, also employed pronounced sweepback on his model, but had a short pod with a large central fin and utilised flaps below the trailing edge of the outer wing sections. We especially mention the above two competitors for their courage in entering power-driven models in this contest and readers will note with interest that Mr. Pavely placed third, proving that the difficulties encountered are not insurmountable.

The disappointing number of power-driven entries was compensated to some extent by the large number of tailless gliders in evidence, although one noticeable point was that many of the models on the field that day were not entered for the competition. In view of the excellent prizes offered (the first prize being £50) we can only surmise that "competition nerves" were equally prevailing with the high wind.

A word here on the gliders—the majority of models had central pods and wing tip fins and almost without exception employed ailerons or flaps of varying types. One exception was R. H. Annenberg, whose model was literally a flying wing with no other excrescences beyond wing tip fins. A. H. Taylor, of Bushey Park, surprised the spectators and caused doubts among the



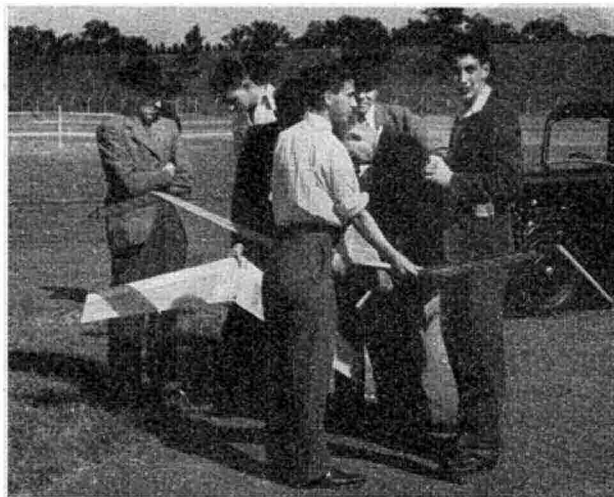
The heading photo is an excellent shot of an enterprising tailless model built by competitor G. A. Paul of Twickenham. Left—a tardy Coventry member with his interesting model; unfortunately he arrived too late to compete. Note the absence of fins.



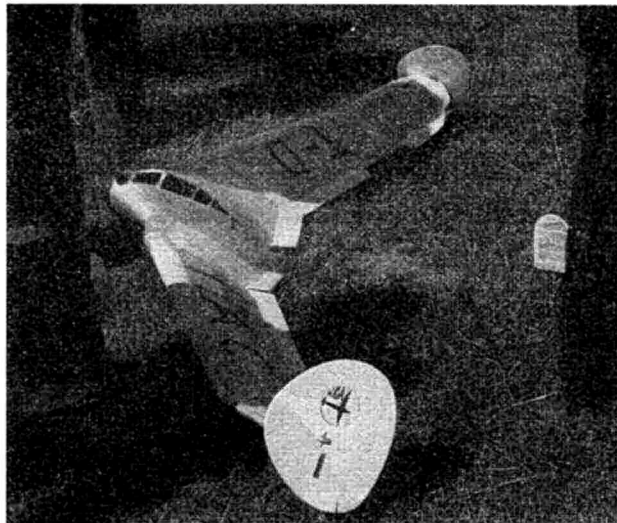
other competitors by catching a "riser" on his first flight and knocking the clock for 147 secs. o.o.s., the best flight of the day. Unfortunately he only completed two out of his three flights and gained no marks for directional control but even so placed second and obtained the highest points for duration with a model that soared like an orthodox sailplane. R. E. Connor, of Brentford, winner of the competition, flew a model with a small central pod and pear shaped fins at the wing tips. Consistent flying capabilities, good directional control and excellent aerodynamic design won him the laurels. One of the youngest competitors, D. P. Chandler, of Croydon, who placed fifth, deserves special mention as a real aspirant.

A bouquet to the Organizers, the S.M.A.E. The contest ran smoothly, the spectators were admirably controlled, and the refreshments served in one of the hangars were welcomed by all.

A tribute also to Sir Frederic Handley Page for sponsoring such a progressive contest. One of the keenest spectators, we believe he has aroused great interest in what should certainly be developed as a leading International Model Aircraft Competition.



(Top, left)—The winning model going up on the line. Note the pear-shaped fins stationed at the wing-tips, standard position for most of the models. (Top, right)—The office! Bill White (stooping) taking details of competition models before the contest. (Above)—D. A. Pavely piles on the turns with the two-fisted aid of a couple of friends. His model finally placed third. (Bottom, left)—Vanderbeek of Harrogate with his rubber-powered tailless tractor. (Bottom, right)—Another view of G. A. Paul's model, showing its clean lines and futuristic appearance. He might have put up better times with more clemency from the weather.





# WORLD NEWS



## Sweden—A Modelling Personality.

The photo shows Mr. Bengt Blomgren of Stockholm, a well-known Swedish modeller and actor, with one of his well-made models. A point of interest is that this model has two motors geared up to the airscrew, quite an unusual feature in duration models.

## America—Ballistics Again.

An American in Germany has found a new use for electric servo motors from German aircraft. Thus, instead of providing centripetal force for a control line job propelled by a "gas engine," he prefers the same role for an electrically powered one—must be a refreshing change for him! The idea is, of course, not new, electric R.T.P. machines having been flown in this country for several years now, but it is the first time we have heard of a control line model powered in this way.

Whilst talking about this form of sport, it is interesting to note that an enormous number of American modellers have abandoned *flying* model aircraft in its favour, and it now ranks as one of the leading branches of model aeronautics in that country. Many British modellers think that stones, providing they are firmly tied to the piece of string, are much cheaper, but this is probably due to a difference in our national characteristics! In any case "What's in a force?" as Shakespeare once remarked. "Lift or centrifugal, it matters not."

## France—Unconfirmed Record.

An unconfirmed French long distance record for petrol models was recently set up by Monsieur R. Chabot, President of the "Modèle Air Club d'Asnières." The machine, typical of contemporary American practice, was of the "pylon wing" type, the engine being a "Morane 500," and flew for a distance of 24 kilometres, as against the old record of 19 kilometres.

## India—Materials Again.

The tale of enthusiasts in the Far East is always the same—lack of wood, lack of cement, lack of everything but enthusiasm. Although Mr. W. Seddon of Ambala, India, is by no means as badly off as Mr. Stubbs of Burma, whose trials were described last month on this page, he and his friends still have many hardships to endure in the course of their modelling activities. Despite this, however, he has managed to produce the model shown in the accompanying photo—a very creditable effort. In actual fact it is an A.P.S. "Ivory Gull," scaled up to twice full size, built of hardwoods and ply, and although its performance is not twice as good as an ordinary "Ivory Gull," it can definitely be classed as extremely good.

## Eaton Bray—Old and New.

There is always something of interest to be seen on the concrete runway at Eaton Bray. The accompanying photo shows Howard Boys, a name synonymous with tailless aircraft, with one of his latest rocket-propelled models on the "tarmac." The camera catches him in the act of igniting the rocket, and we suspect that the predominant thought in his mind was "light the blue paper and retire immediately!" The frontispiece shows the results.

In the dispersal area on the right(!) Sq./Ldr. R. W. Watson ("Wattie") is waiting to taxi his model into position. Note the retriever.





## LET US BE GAY!

BY  
ROBERT JAMIESON

NO! I am not going to suggest that we fashion our remaining stocks of coloured tissues into itsy-bitsy flowers, discard our gent's natty suitings for a toga, peplum or whatever it was that the ancient Romans wore; and after fixing a few vine leaves in our hair, trip a saraband-like measure through the fields, scattering our paper flowers on the breeze in a graceful dance of Spring.

It's our models I have in mind . . .

Not long ago, one golden Autumn morning, I boarded a Clyde river steamer to enjoy a stolen week-end of escape from the war. The air was tangy with salt and Autumn, and overhead members of Drambuie's prolific clan wheeled and swooped, their wings flashing white against the heather-mottled hillsides. The little steamer had just drawn out from the pier when along came a Sunderland flying boat. Leisurely he taxied past on two engines, then, about half-a-mile down wind, he turned slowly and jockeyed into position facing us. Four props, flashed in gleaming arcs, the hills flung back the thunder of his engines, the blue waters of the Firth turned to lacey white foam in his wake—then he was up! Airborne! Climbing gracefully against the background of mountain and sky; banking a derisive wing at the hills that seemed to lie in his path.

Nothing much in that. Any one living by sheltered waters can see flying boats these days. The Sunderland wasn't the only aircraft about that morning. A mile further down I watched a couple of Catalinas come in, and directly overhead a Spitfire was circling. But what made that Sunderland stand out was the colour. All pretence of warpaint had been abandoned; no camouflage or drab grey. That Sunderland sported a coat of burnished white that beat even the wings of Drambuie's companions. I couldn't tell you what colour the Catalinas or the Spitfire were painted; the eyes grow weary of drab shades, and fail to notice them after a while, but the gleaming white wings of the Sunderland . . .

Until I saw that white painted 'plane I had not realised how monotonous the drab greens and browns were. It will be grand to see again the gleaming silver and bright shades of peace-time crates—and from that to the decoration of our post war models.

Now, a well-made model 'plane is a beautiful thing: yes, even an ordinary slabsided durator is beautiful—in that at least it is functionally perfect for the job it is designed to do—and how much more attractive could our models be made to look if we but paid a little more attention to finish and decorative colour schemes. By that I don't mean adding weight by plastering the job with paint. Coloured tissue adds little or no weight, and I am convinced that with a little thought and research the appearance of our models could be vastly improved.

It was—and still is—the practice of a good many aeromod. to rather avoid this problem by covering their models in black and white. Well, there's nothing much wrong with black and white, but let us be frank; is not the continual use of these two rather unexciting shades almost a confession of artistic bankruptcy? To my way of thinking the covering should be something more than merely the stuff we water shrink and dope. It should be the warm flesh that gives life and colour to the boney skeleton; it should enhance the sweep of a fuselage and the curve of a wing.

For an example of what can be done in this direction we have only to look at the work of that grand craftsman L. G. Temple. I have never (so far) had the pleasure of seeing any of Mr. Temple's work "in the flesh," but even in photographs the high standard of not only technical but artistic finish "sticks out a mile."

"That's all very well," you may say, "but he's building heavy weight jobs, he can afford to splash the paint around—but how far would you get with a duration job that weighed twenty-eight ounces?"

True enough: but it won't do for an excuse. Wonders can be achieved with coloured tissue and a little thought. By careful lining and panelling: by skilful blending of colours, and the superimposing of a dark shade on a light, even the humble slabsider can be turned into something really beautiful.

We won't ring the bell immediately, of that I'm certain; some of my attempts at artistic finish have looked more like drunkards' dreams, but "by effort we achieve!" and in the days to come the manufacturers will doubtless come to our aid by producing all the colours of the rainbow for us to choose from. We may even see tissues printed in blue and silver dice and black and white stripes—to say nothing of McGillicuddy tartan.

Incidentally, while on the subject of black and white stripes, have you noticed what a wonderful difference "D day finish" made to our warplanes? Here is a worthwhile pointer toward the solution of the lost model problem. A job tricked out with a band of black and white stripes on wings and fuselage should be easily spotted both in the sky, and afterwards among the trees or cabbage patches they invariably choose as landing grounds.

So now, to our studies of flight theory and aerodynamics, let us add that of line and colour—for the sake of finish and appearance. If that new super sailplane of yours boasts wings with the grace of an albatross, or a fuselage with "coives" a la Rita Hayworth, then see to it that your decoration enhances said grace or coives.

And that snappy little durator—the little doodlebug that always does a couple of loops before setting off across country, and always makes such a hit with the crowds at a rally. It's a clown, so dress it in motley. Devise some colour scheme of harlequin aspect and gay contrasts that will emphasize its squat, perky aggressiveness.

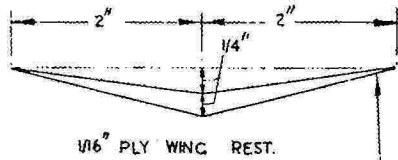
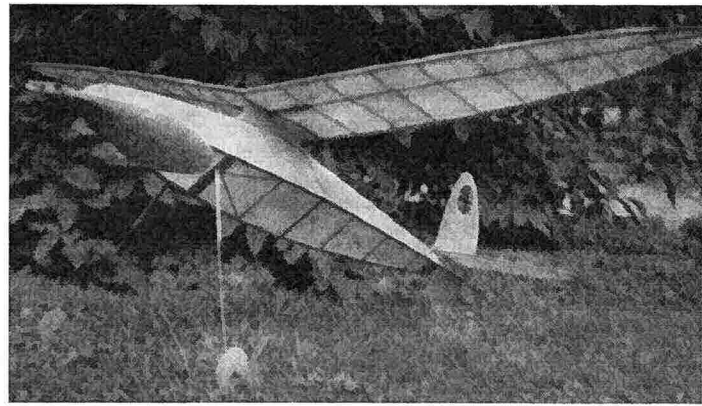
The story of the keen aeromod. who toiled over a super design, and jibbed at covering it because all his beautiful framework would be hidden has now passed into the folklore of our hobby. I remember one lad who overcame this by covering his model with cellophane, and very, very strange and indecent it looked; flying around with all its interior economy exposed to the vulgar gaze of the crowd. But the mere fact that such devices are resorted to are proof of my contentions. Our sense of line and colour lags far behind our constructional abilities.

So, brother aeromod., let us be gay! Let us devise colour blends and decorative schemes that will transform our models into "bright coloured flowers, flitting across the sky." Though it may mean a little more time and trouble—and possibly a few exasperating failures—the results will be well worth it. A thing of beauty is a joy for ever!

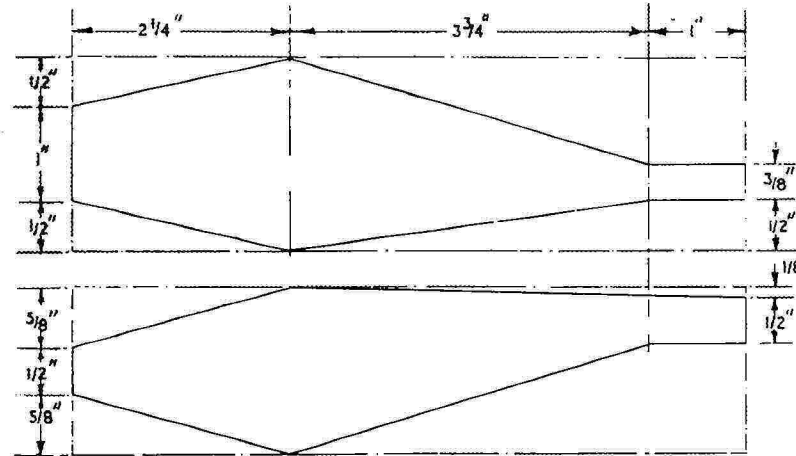


# FLAMINGO

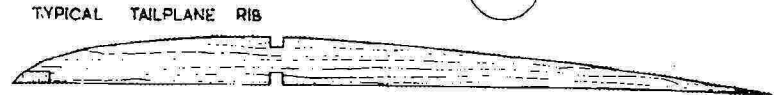
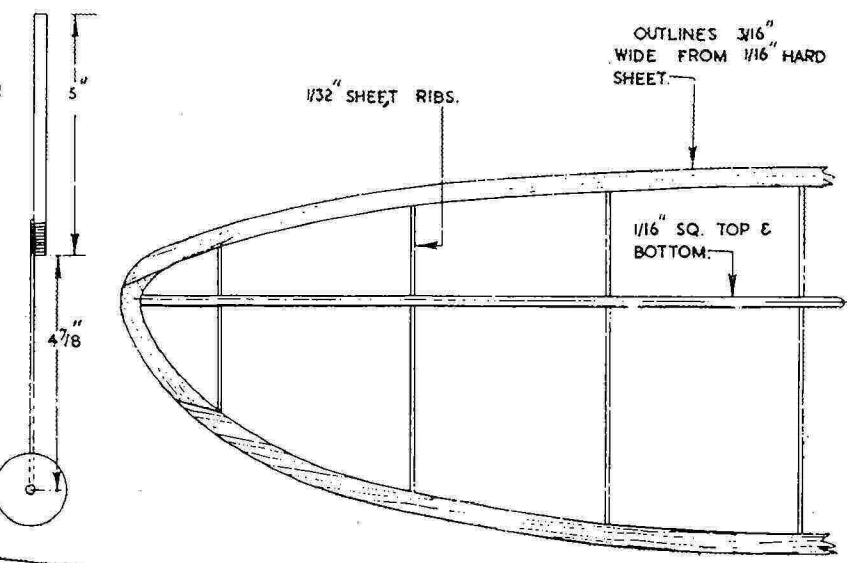
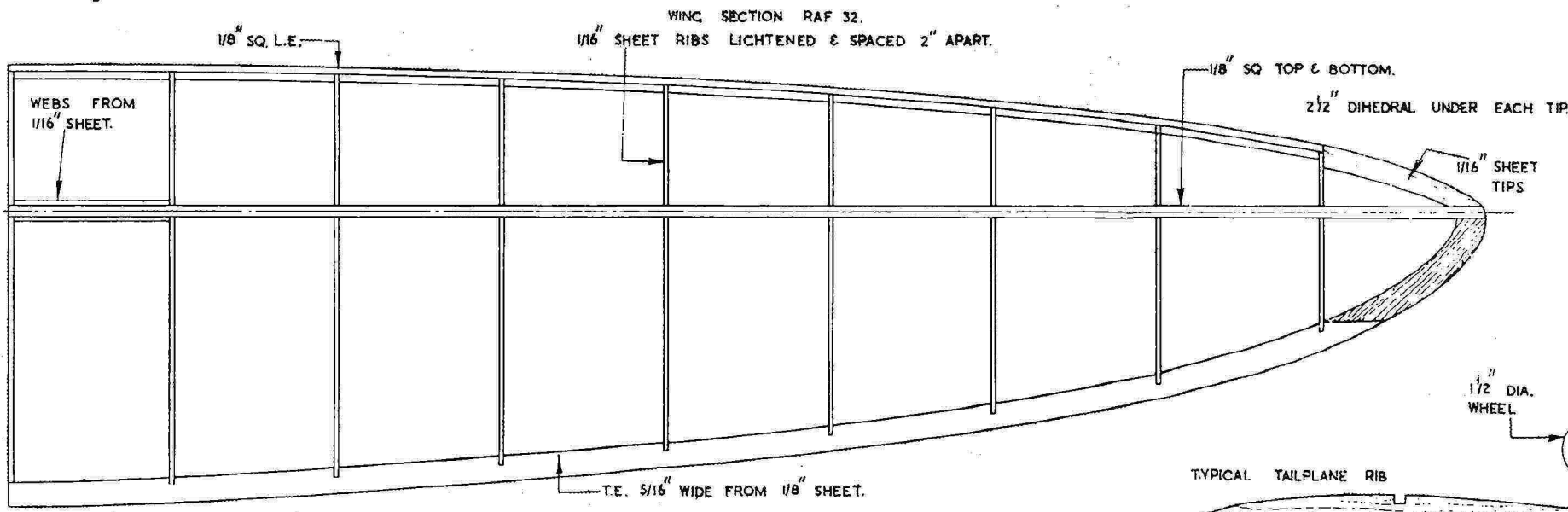
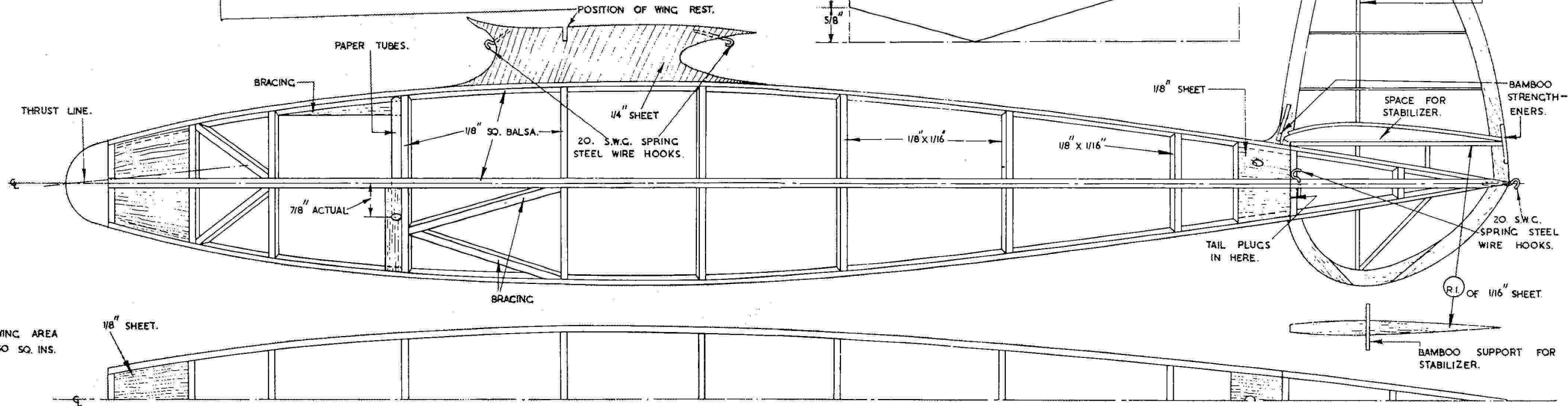
DESIGNED BY  
C. FURSE



HINGE FOR 7 1/2" RADIUS SINGLE-BLADE FOLDING PROP SIMILAR TO THAT USED ON THE "MICK FARTHING LIGHTWEIGHT."



1/2 FULL SIZE.



# FUEL SUPPLY AND COMBUSTION IN MODEL JET PROPULSION UNITS

BY C · R · TOTTLE

HAVING been extremely interested in the articles by H. G. W. W. Harris in the December, 1944, and January, 1945, issues of the AEROMODELLER, I venture once more to add to the general discussion on this subject.

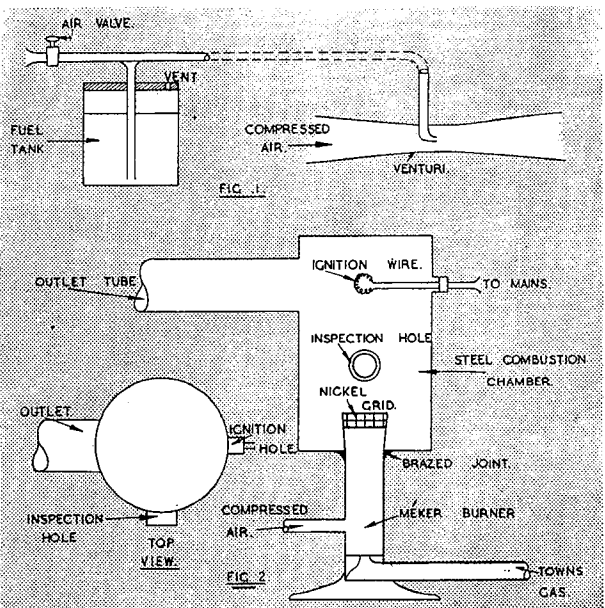
The first problem seemed to be fuel supply and combustion, as confirmed by the trials of Mr. Harris. In order to test this in practice, I constructed a jet and venturi system as outlined in sketch one, using hard glass for the venturi so that I could see exactly how the fuel left the jet. The valve which controlled the air intake at the fuel tank was found extremely useful later, although put in merely as an afterthought. Compressed air was led past the venturi by means of a 1 in. diameter pipe, serving merely to direct the flow over the venturi. The pressure of this air was approximately 20 in. water gauge on entering the pipe, that was the only measurement made on the air flow. Considerable suction was achieved on the jet, however, and, with the air valve closed, large droplets of fuel, in this case petroleum ether, could be seen leaving the jet. When the air valve was opened slowly the drops became finer, and eventually formed a mist which condensed on any cold object placed about 6 in. from the venturi exit. Further opening of this valve merely decreased the amount of fuel delivered by the jet. I re-tested the set-up with a lower pressure of compressed air, and found that again there was an optimum opening of the fuel tank air valve to give the best "atomisation" of fuel leaving the venturi. The next step was to fit the fuel tank as an "atomiser" in itself, *i.e.*, resembling a carburettor, so that the fuel left by means of a jet into the fuel pipe, and then entered the jet in the venturi proper. No improvement accrued from this procedure so far as I could see.

A 2 in. diameter fused silica tube was then placed over the venturi unit, and the compressed air led directly into this at 5 in. water gauge pressure. Upon ignition of the fuel, flame appeared down the tube but with extremely low velocity and a distinct tendency to burn fuel on the tube walls only. Increase of pressure to 10 in. water gauge was sufficient to avoid this, and a flame of 12 in. long appeared, the venturi then being approximately 3 in. from the exit end of the surrounding tube. Higher pressures increased the length of the flame, with 20 in. water gauge, the flame was at least 30 in. long, and very bright. Owing to the somewhat dangerous nature of this experiment, I did not proceed further, but feel sure that such a jet can be made to operate—but in metal, not glass, although the latter served its purpose with success for periods up to 60 seconds with the longest flame.

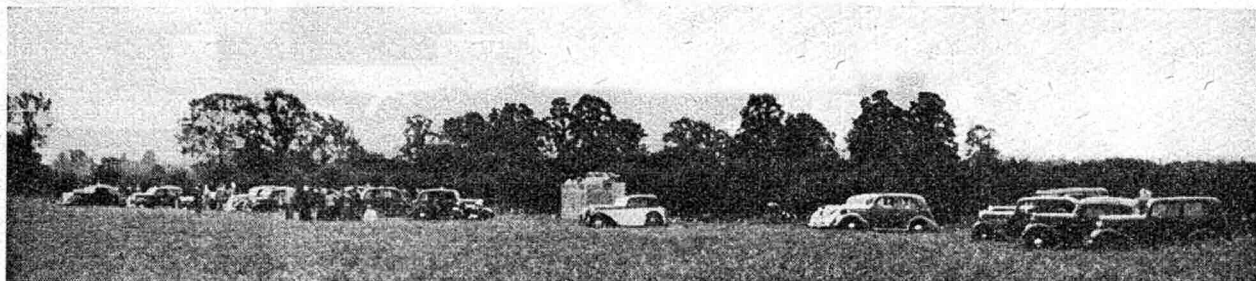
These experiments led me to believe that liquid fuel is difficult to control because of the small quantity required for a model jet unit. My own jet was approximately 10 thou. in diameter, being easily made in glass. I therefore turned to experiments on town's gas, which, being at low pressure is easily controlled. This gave excellent results. At this time I was engaged in a research involving a tubular electric furnace through which it was desired to pass a current of burned town's gas. The combustion chamber, see sketch two, was made of a cylindrical steel shell with an outlet tube and two small bosses welded on, one for ignition, the other

for inspecting the combustion. A Meker burner, which is similar to a Bunsen burner but with a grid of metallic nickel to give a better flame distribution, was adapted for the chamber, and brazed into the base. Compressed air at 10 in. water gauge pressure, and town's gas at 5 in. water gauge, were led into the base of the burner as shown. Ignition was made by a hot platinum wire, electrically heated, and, when combustion was correct, the current removed and the inspection hole plugged with asbestos. The gas was found to burn quietly on the grid under these conditions, and to leave the combustion chamber with a linear velocity in the outlet tube of 30 ft. per minute. It occurred to me that the introduction of the air for combustion could be satisfactorily made on a small scale unit. With this view, I experimented with the air and gas flow so as to provide an excess, the correct quantity, and a deficiency of air in turn. The excess air merely increased the velocity of gas and decreased its temperature. The correct air supply gave the conditions described above, but the deficiency in air caused a most amazing change. The gas did not burn quietly but collected air until an explosive mixture was formed, ejecting this with considerable velocity from the outlet tube. It was necessary, in this case, to keep the ignition wire hot, and a series of explosions, of approximately four per second in frequency, followed, accompanied by a flame of 9 in. from the outlet tube. This seemed to have quite a bearing on the subject, and I am now endeavouring to procure a miniature turbine rotor in order to test the usefulness or otherwise of this "jet" engine discovered accidentally.

I hope these experiments may be of value to some fellow readers, and if anyone has suggestions for further efforts short of actual metal work, I would very much like to attempt them.



# OPENING DAY AT EATON BRAY



ONE of the "excitements" available to any aeromodeller is contending with the weather conditions which obtain in this country! Particularly in the late summer or early autumn are conditions liable to change from hour to hour, and in this respect the weather at Eaton Bray on Sunday, September 15th, lived up to its reputation. In the morning it was cold and blustery, with showers of rain, and by mid-day the wind had risen to quite a high velocity. Nevertheless, despite the unfavourable outlook and the still very restricted travelling conditions, quite a strong body of enthusiasts journeyed to Eaton Bray for the opening meeting, and a number of the cars are shown along part of one side of the field in the upper photograph. Such well-known aeromodellers as Messrs. C. A. Rippon, Dr. J. F. P. Forster, Howard Boys, L. H. Sparey, "Eddie" Keil, B. A. Germany and Squadron Leader Watkins were present, and altogether the attendance was representative of those who, pre-war, attended a Rally.

Until about 5 p.m., the weather was too blustery for much flying, and Howard Boys provided a considerable amount of entertainment and amusement by demonstrating his rocket-propelled tailless glider. The frontispiece photograph facing this month's Editorial was taken by Mr. Wright, Chief Photographer, and is a fine example of an "action" shot. It would be rather an exaggeration to say that Mr. Boys always knew exactly what his machine was going to do! But the degree of uncertainty which existed nevertheless added to the gaiety of the proceedings! After a quite heavy shower of rain the wind dropped, the sun came out, and the



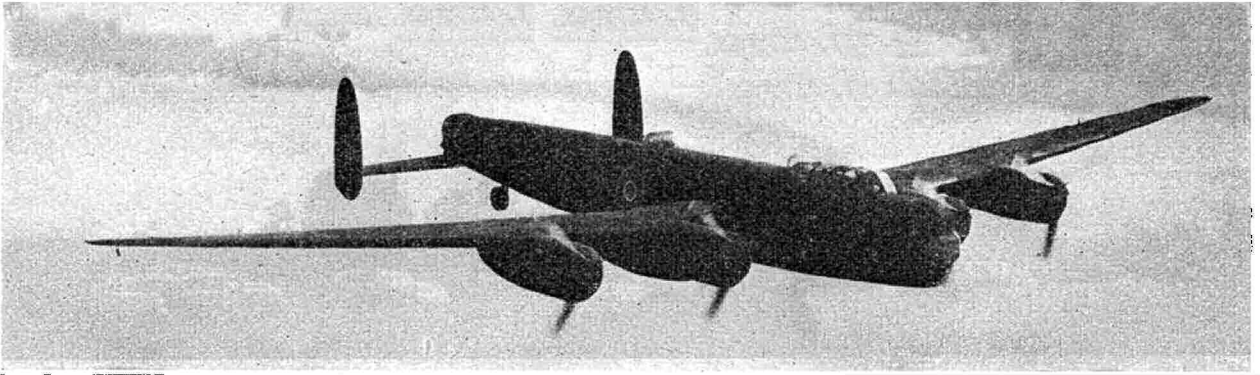
closing hours of the first meeting were typical of our English weather—calm, sunny, with just a nice steady breeze from the south-west.

Our second photograph shows Mr. B. A. Germany straightening his back after an unsuccessful attempt at starting his petrol model due to a faulty coil. We are happy to report very few cases of "non-starters' stoop" on this occasion, which augurs well for the future.

In the lower photograph is shown a portion of the crowd watching Mr. Howard Boys' model making one of its more spectacular flights. This and the middle photograph give only a slight idea of the extent of Eaton Bray, but they do illustrate how level the Aerodrome is.

Free duration competitions were flown, open to all present, for petrol models, rubber models and gliders; the prizes of one guinea each being put up by the Proprietors of the Sportsdrome.

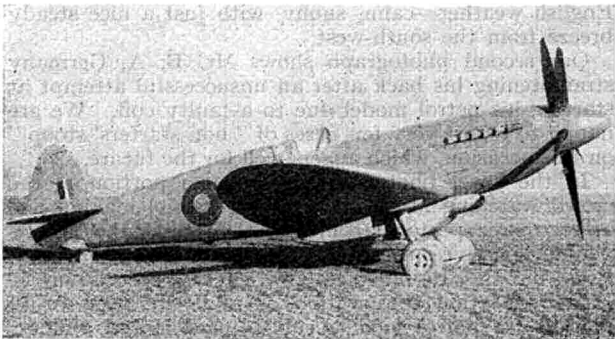




**The Last Heavy Bomber?** The Avro Lincoln, successor of the Lancaster, was just too late to get into action against German and Japanese targets. With the advent of the atom bomb, it is possible that the heavy bomber, as typified by these aircraft, has come to the end of its days. *Avro Photo.*

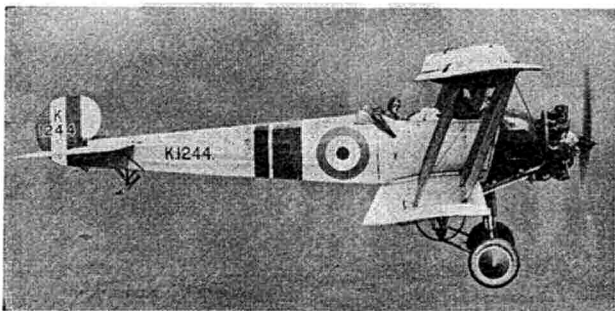


**War-Paint.** Still bearing its wartime camouflage, this Rapide G-AGEE is in service with Great Western and Southern Air Lines Ltd., and was photographed at Croydon. *Photo: E. J. Riding.*



**Another P.R. Type.** Latest photo-reconnaissance version of the Spitfire is the Mk. XIX, fitted with Griffon 65 or 66 motor, five-blade airscrew, and long-range slipper tank. Colour is P.R.U. Blue on all surfaces. Twenty-two of these aircraft were built. *Photo: Vickers-Armstrongs.*

**Old-Timer.** A Central Flying School Avro 504N trainer, fitted with Siddeley Lynx radial motor. Notice the blind-flying hood on the rear cockpit. "Flight" Photo.



## MONTHLY

BY O.G.

### Internal Airlines Again.

Camouflage on civil aircraft is now being abandoned officially and eleven of the thirty-six De Havilland biplanes operating the internal air routes of Great Britain are now flying with aluminium finish in place of their war-time green and brown drab. The remaining aircraft will be repainted after the first Certificate of Airworthiness inspection.

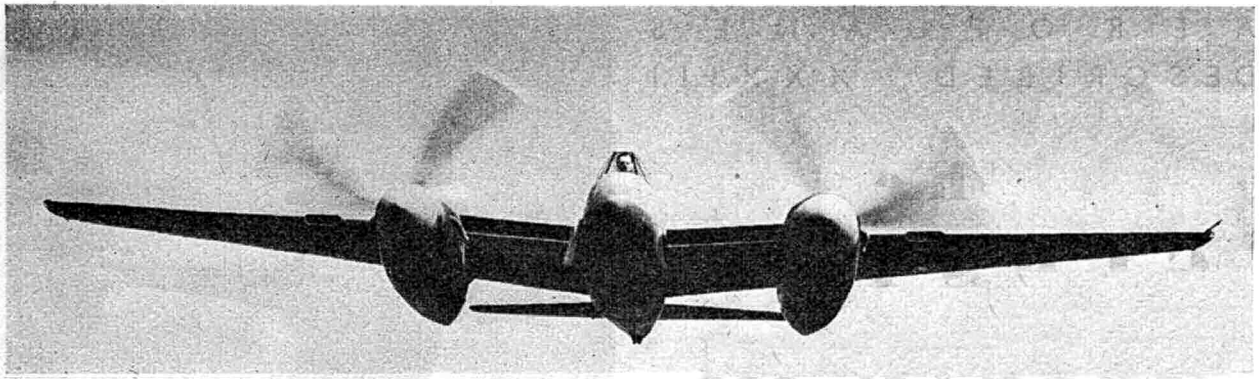
Details of present internal airline equipment markings appear below:—

Registration.	Finish.	Type.	Owners.
G-AERZ	Silver	Rapide	Air Commerce Ltd.
G-AFEP	Camouflage	Rapide	Air Commerce Ltd.
G-ACNJ	Camouflage	Dragon	Allied Airways Ltd.
G-ACZE	Camouflage	Rapide	Allied Airways Ltd.
G-ACZF	Camouflage	Rapide	Allied Airways Ltd.
G-ADAH	Camouflage	Rapide	Allied Airways Ltd.
G-AGDN	Camouflage	Rapide	Allied Airways Ltd.
G-AGHT	Silver	Rapide	Allied Airways Ltd.
G-ACPP	Camouflage	Rapide	Great Western and Southern Air Lines Ltd.
G-AGEE	Camouflage	Rapide	Great Western and Southern Air Lines Ltd.
G-AFEZ	Camouflage	Rapide	Isle of Man Air Services Ltd.
G-AGSJ	Silver	Rapide	Isle of Man Air Services Ltd.
G-AGPH	Silver	Rapide	Channel Islands Airways Ltd.
G-AGPT	Silver	Rapide	Channel Islands Airways Ltd.
G-AGSH	Silver	Rapide	Channel Islands Airways Ltd.
G-AGSK	Silver	Rapide	Channel Islands Airways Ltd.
G-AGSI	Silver	Rapide	Olley Air Services Ltd.
G-ACVY	Camouflage	D.H.86	Railway Air Services Ltd.
G-ACZF	Camouflage	D.H.86A	Railway Air Services Ltd.
G-AENR	Silver	D.H.86B	Railway Air Services Ltd.
G-AFFF	Silver	Rapide	Railway Air Services Ltd.
G-AGLE	Camouflage	Rapide	Railway Air Services Ltd.
G-AGLP	Camouflage	Rapide	Railway Air Services Ltd.
G-AGLR	Camouflage	Rapide	Railway Air Services Ltd.
G-AGIT	Camouflage	Dragon	Scottish Airways Ltd.
G-ADAJ	Camouflage	Rapide	Scottish Airways Ltd.
G-AEWL	Camouflage	Rapide	Scottish Airways Ltd.
G-AGDG	Camouflage	Rapide	Scottish Airways Ltd.
G-AGIC	Camouflage	Rapide	Scottish Airways Ltd.
G-AGJG	Camouflage	Rapide	Scottish Airways Ltd.
G-AFOI	Silver	Rapide	Scottish Airways Ltd.
G-AFRK	Camouflage	Rapide	Scottish Airways Ltd.
G-AGIF	Camouflage	Rapide	Scottish Airways Ltd.
G-AGJF	Camouflage	Rapide	Scottish Airways Ltd.
G-ADYH	Camouflage	D.H.86B	West Coast Air Services Ltd.
G-AERN	Camouflage	Rapide	West Coast Air Services Ltd.

### The D.H.103.

Another winner from the D.H. stables is the Hornet single-seat long-range fighter, of composite wooden and metal construction and fitted with two Rolls-Royce Merlin motors, each of 2,070 h.p. The Hornet first flew on 28th July, 1944, and production models commenced





Front Elevation. The clean lines of the single-seat De Havilland Hornet long-range fighter are evident in this photograph. Photo : Chas. E. Brown.

## MEMORANDA

### THETFORD

delivery to the R.A.F. in February, 1945. With two D.H. Hydromatic four-blade airscrews, the Hornet has a top speed exceeding 470 m.p.h., a climb of 4,500 ft. per minute, an operational ceiling of 35,000 ft. and with long-range tanks a range exceeding 2,500 miles. Armament consists of four 20 mm. cannon in the nose.

Many Hornets are camouflaged sky blue on all surfaces and have red and blue roundels on the fuselage and above the wings. One batch is numbered PX 217, PX 218, PX 219, PX 220, etc.

### A New Avro "Heavy".

Avro's successor to the Lancaster, the Lincoln, has been announced. The Lincoln has a span of 120 ft., a length of 78 ft. 3½ in., a height of 17 ft. 3¼ in., a wing area of 1,421 sq. ft. and a loaded weight of about 75,000 lb. Lincoln Mk. I has four Rolls-Royce Merlin 85 motors of 1,750 h.p. each, driving Rotol four-blade airscrews, whereas the Lincoln II has four Merlin 68 motors driving D.H. four-blade airscrews. Both versions have a crew of seven.

Most Lincolns are camouflaged in the conventional night bomber pattern, but certain aircraft for special duties were painted all-white on the top surfaces and all-black on the lower surfaces. One of these special Lincolns was serially numbered RE 294.

### R.A.F. Flashbacks—12.

The Lynx-Avro, or 504N, was the standard trainer of the R.A.F. from the early 'twenties until 1932 when it was superseded by the Avro Tutor. The 504N was a modernised version of the famous wartime 504K, with a new type of oleo undercarriage and a radial motor in place of the rotary.

Lynx-Avro biplanes equipped all the Flying Training Schools, the Central Flying School, the University Air Squadrons and various Auxiliary Air Force Flights. Standard finish was all-silver, with the usual roundels and rudder stripes of the period. C.F.S. Avros (see illustration) could be distinguished by two red bands encircling the fuselage aft of the rear cockpit. Three C.F.S. 504Ns were serially numbered K 1244, K 1246 and K 1963.



Peace Paint. Back in its peacetime silver is this Channel Islands Airways Rapide, G-AGSH, one of four operated by this concern. Photo : Channel Islands Airways.



Landing On. A Seafire XV (Griffon VI motor) about to touch down on H.M.S. Pretoria Castle. The Seafire XV is armed with two 20 mm. cannon and four .303 Brownings and carries the stinger-type deck hook. Photo : Admiralty.

Coming with a Burton. No, not a new type of bomb but two barrels of ale. This is one of the Spitfires which ferried beer to the R.A.F. boys on the Continent shortly after D-Day. Photo : Vickers Armstrongs.



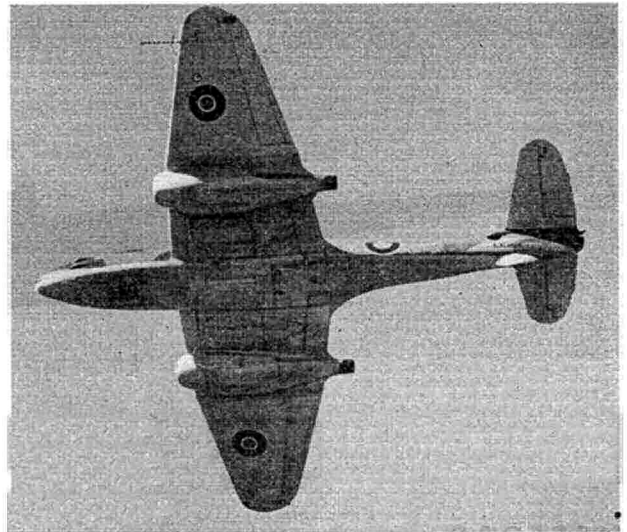
# A E R O P L A N E S D E S C R I B E D    X X X I I I

## The G L O S T E R M E T E O R   I I I

**T**HE Gloster Meteor earns a notable place in military aviation history as the first type of jet-propelled aircraft to go into regular squadron service with the Royal Air Force. The Meteor was also the first jet-propelled fighter on the Allied side to go into action in the Second World War.

The prototype Meteor I made its first flight on 5th March, 1943, almost two years after the original Gloster jet, the E.28/39, had first flown. Production Meteors, Mk. III, were ready about a year later, and a Fighter Command squadron formerly equipped with Spitfires was chosen to fly the new aircraft. The first operational patrol flown by the Meteor III squadron took place during the height of the flying-bomb attacks and the first victory was recorded on 4th August, 1944. The Meteor shot down a substantial number of flying-bombs, according to an official Air Ministry statement.

In the autumn of 1944 it was reported that the Meteor III was serving on the Western Front, from bases in Holland and Belgium. The Meteors carried out many offensive patrols but there is no record of their having engaged any of their German counterparts, the Messerschmitt Me 262s. Meteor fighters equipped Nos. 74, 245 and 616 (Fighter) Squadrons of the R.A.F.



*British Official Photo.*

The Meteor single-seat fighter was designed by a team led by Mr. W. G. Carter, and many new aerodynamic problems had to be surmounted to achieve with safety the high speeds at which the aircraft flies. The Meteor conformed to Air Ministry Specification F 9/40, and the prototype Mk. I was powered by two Rolls-Royce Derwent or Welland gas turbines, and the Mk. II with the De Havilland Goblin gas turbine. The Meteor III reverts to the Rolls-Royce installation. The high-set tailplane of the Meteor is so arranged as to avoid the gases from the twin jet nozzles.

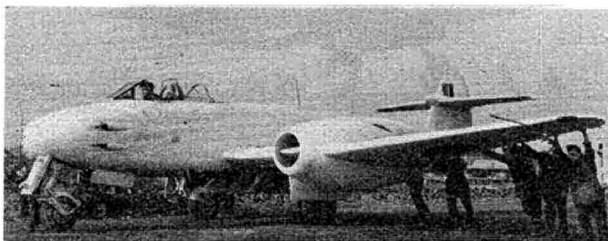
Armament of the Meteor consists of four 20 mm. Hispano cannon mounted in the nose. No performance figures have yet been released in Great Britain, but enemy reports suggested a top speed in the region of 470 m.p.h.

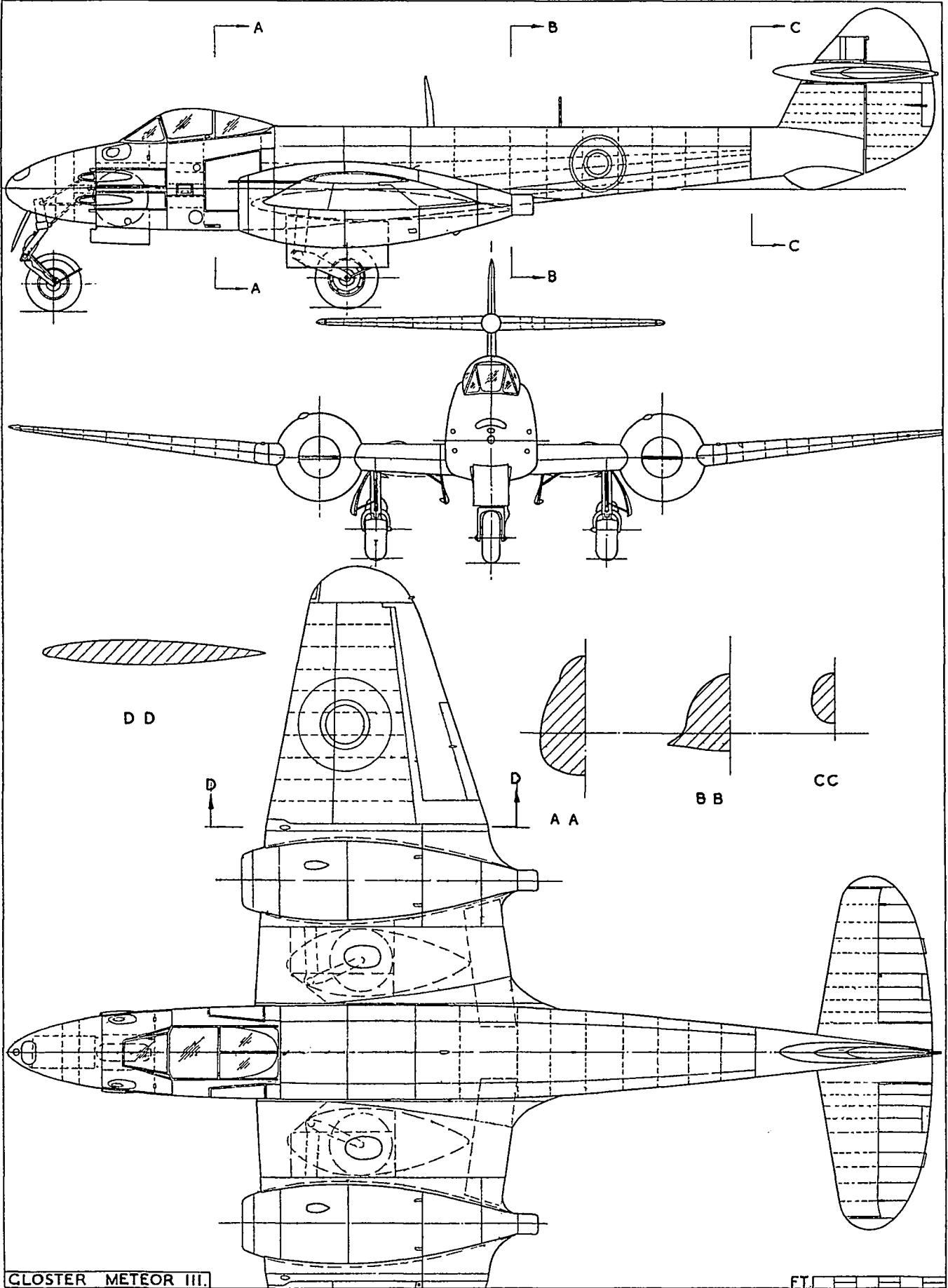
Pilots praise the Meteor enthusiastically, and report that it is highly manoeuvrable, easy to handle and has a reasonably low landing speed. The Rolls-Royce gas turbines are simpler, lighter and more easily serviceable than the conventional piston motor, and are known to be more efficient and to have a longer life than the German Jumo gas turbines.

Meteors have standard fighter camouflage and three squadrons bear the code letters "XE," "YQ" and "HB." Meteor "HB-W" has the serial number EE 357.

*Specification: All-metal structure; span, 42 ft. 10 in.; length, 41 ft. 4 in.; height, 13 ft.; wing area, 374 sq. ft.; tricycle undercarriage of Dowty design, the nose wheel retracting backwards and the main wheels inwards into the wings.*

*British Official Photo*

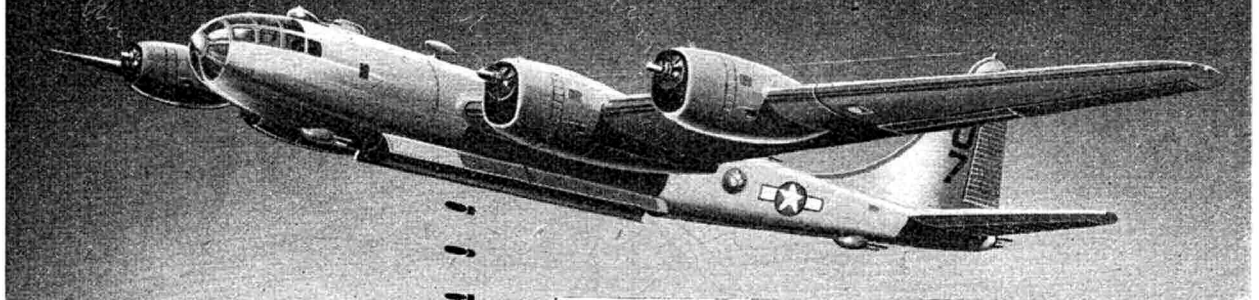




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*Model Aerodrome*

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A FEW weeks ago I had the pleasure of welcoming one of the best known Continental aeromodellists to this country on his first post-war visit. J. Van Hattum is too well known to the majority of my readers for comment from me, but it is well to remember his work in the past and efforts to bring about closer relations respecting international aeromodelling contests.

Looking finer drawn, and somewhat more serious than when we last met, Van was over here on a mission to collect information that might assist Holland to get into the swing again, and from what I learnt of his itinerary he had a busy time ahead! One thing he stressed to me and the other members present was his anxiety to get international meetings started without delay, and in this he has my full support. Admitted, conditions are not yet suitable for full scale contests, but that is no reason why we should not be fully prepared to get cracking immediately the word goes is received.

Travel is bound to be restricted for some time yet, but I would appeal to the powers that be to have everything cut and dried in readiness for a possible start in 1946. France and other continental countries already seem to be well organised, and have run some good meetings, though rubber shortage seems to have hit them even more than it has us—which, I suppose, was to be expected.

Van Hattum had with him a most interesting model engine which, while not exactly a diesel type, was, by virtue of its special features, able to function minus such gadgets as plugs, contact breakers and wiring—which all my "gas" fan readers will know and curse as major causes of trouble with small engines. I am not mechanically-minded enough to be able to give a proper description of the working of this engine, but it would appear to function on compression ignition, with a special fuel of petrol and ether, plus a spot of oil for lubrication. It was most weird to see this little engine buzzing away, minus all the usual excrescences to be seen on the normal type of internal combustion engine. Perhaps we shall be able to print a fully detailed description at a later date, (*Christmas issue 1—ED.*) but I am of the opinion that this type of engine—or something on similar lines—has come to stay, and will find many adherents among those who hate the conglomeration of gadgets that smother the present engines. (Saying which, and calling down on my head much vituperation from the ardent gas wallahs, I had best get down to the reports for this month!)

Optimistic news (or opinion) is expressed in the August issue of the S.M.A.E. Journal on the subject of rubber. Great improvement in the field of synthetic rubber is claimed, and it is expected that the supply will very shortly meet demands—a hope which I heartily trust will be justified. Aeromodelling has suffered greatly from lack of both quantity and quality of this very essential means of motive power, and far too many well-built models have come to an untimely end owing to poor rubber strip. As the Journal states: "It is a pleasant prospect to look forward to."

The SCOTTISH AEROMODELLERS' ASSOCIATION held their first National Championships at Kirkhill, near Glasgow, on Sunday, September 9th, and were blessed with fine weather, which made for a successful day. Eighty-eight entries were received from fourteen clubs from all parts of Scotland, and only a few were eliminated through crack-ups when flight testing. The glider event had most of the entries, 55 in all, and as it took all afternoon to run this section off, only two flights per competitor were allowed. The Clyde Model Dockyard

# CLUB NEWS

BY  
CLUBMAN



L.A.C. Hood sends us this photo of a 52 in. sailplane that he has constructed mainly from 8 mm. ply, while serving with PIAFORCE. Best flight to date 15 ; 10 o.o.s. Temperatures of 120 degrees F. in the shade are hardly conducive to great effort, and this model is certainly outstanding.

Trophy was put up for this event this year instead of a Wakefield contest, so competition was keen, and some very good flying was witnessed. The Trophy went to the Garnock club through their member H. Williamson.

The AEROMODELLER Trophy was won by R. Mitchell of the Glasgow M.F.C., with his well-constructed and finished "Comper Swift," which gave a fine exhibition of flying in the scale event. Full results were:—

### Junior Championship (Rubber).

K. Mackay	Edinburgh	1 : 48·5
W. McConnachie	Glasgow	: 43

### Senior Championship (Rubber).

J. Mason	Bathgate	3 : 44
R. Burt	Glasgow	3 : 38·5
J. Hassock	Bathgate	3 : 15

### Glider Championship.

H. Williamson	Garnock	2 : 54·7
W. Grant	Stirling	2 : 40·2
J. McChesney	Dalmellington	2 : 33·7

### Flying Scale Championship.

R. Mitchell	Glasgow	1 : 06·5
G. Leask	Glasgow	: 53·9
Mrs. R. Mitchell	Glasgow	: 42·4

The Irish National Model Flying Contests—known to all Irish aeromodellers as the "Nationals"—were held at Dublin Airport on August 26th, in almost perfect weather. The contests were witnessed by a crowd of nearly 3,000, who saw much good flying in spite of rather low times. This was evidently due to poor rubber motors, and the competitors were obviously saving their motors and using little more than half turns. Results:—

### Wakefield.

B. Crawford	Ulster M.A.C.	1 : 11·6 average.
H. Daulman	"	1 : 05·6 "
J. Archbold	Dublin M.F.C.	: 56·1 "

### Petrol Event.

H. Charles	Dublin M.F.C.	3 : 10·4 aggregate
J. Archbold	" "	2 : 37·9 "
J. P. Evans	" "	1 : 53·4 "

### Inter-Team Event

Ulster M.F.C.	511 points
Belfast F.C.	345·3 "

Some good flying has been witnessed at the BLACK-

POOL & FYLDE M.F.C. ground recently, C. J. Davey (a junior member) putting up a total time of 11:24.6 in the Thurston Trophy, with a best flight of 9:27.6, thus winning a buckshee ticket for the club outing to the Northern Rally. J. Pennington on the same day only managed to get in two flights, but totalled only some twenty seconds less than Davey, his best time being even better with a grand flip of 10:18.9. This flight constitutes a club record for F.A.I. sailplanes; and M. J. Cowburn set up a new record for open sailplanes in the junior contest with a fine flight of 6:15.5, his other contest flight being 3:28.4. Good flying this, in any club! J. Owen heads the list for the club championship with a total number of 856.5 points out of a possible 1,000, with P. Uttley placing second with 728.4 points (also qualifying for junior championship). Both entered all ten contests, this showing the wisdom of regular and persistent effort.

The RIPON M.F.C. held its annual Rally at Littlethorpe Potteries on the 9th September, and it is true to say that this was the most successful event yet staged by this club. Basic petrol appeared to be quite a boon, and many visitors rolled up in cars and on motor bikes!! (Amazing the mileage one gets from basic as distinct from normal rationed petrol, isn't it!!!) For the first time in the history of the club near perfect weather conditions prevailed, and some very fine models were on view, notably the many gliders of the York M.A.S. The success of the Rally was in no small way due to the strong spirit of friendliness and co-operation between the competing clubs, and it is hoped that this will continue in times to come. Full results were:—

*Open Glider.*

M. Bartram	York M.A.S.	6:05 aggregate.
A. Warrie	" "	5:19 "
F. R. Fox	" "	5:08 "

*Open Rubber.*

W. S. Elliott	Ripon M.F.C.	2:56 aggregate.
A. Warrie	York M.A.S.	2:49 "
E. Hullah	Ripon M.F.C.	2:15 "

*Nomination.*

S. Simpson	Ripon M.F.C.	3 secs. error.
J. Wallace	York M. .S.	2.4 " "
S. Ridge	" "	4.4 " "

*Best Flight of the Day.*

A. Warrie ("Atalanta"), 2:56 o.o.s.

The HATFIELD M.A.C. has restarted activities, after a temporary shut-down owing to losing their clubroom through enemy action. Recent competitions have seen the club duration record put up to 2:04 o.o.s. with an "Ajax," while r.t.p. flying has caused some excitement in spite of low times.

September 9th must have been a popular day, the NORWICH M.A.C. holding their first inter-club rally on that date, entertaining the Yarmouth club. Three contests were held, which resulted as follows:—

*Open (Junior).*

P. Guyett	Norwich M.A.C.	3:29.2
R. Cutting	" "	2:35.6
J. Gibson	" "	1:55.7

*Open (Senior) Rubber.*

A. G. Jeeves	Norwich M.A.C.	4:40.8
D. Danny	" "	4:39.4
L. Claydon	" "	3:29.4

*Senior Glider.*

J. Lamb	Yarmouth M.A.C.	5:05.2
P. Hornagold	Norwich M.A.C.	2:53.4
Ward	" "	2:48.2

Changing their flying ground to Hounslow Heath, the HARROW M.A.C. continues to flourish, some good times having been recently set up. Three members made o.o.s. flights on the S.M.A.E. Cup day, D. Taylor—flying a glider—losing his model after a flight of 10:45. This model was later recovered from Hanworth Aerodrome, having landed between two Dakota's. Many forms had to be filled in and duly signed before this model could be removed!! Next to fly away was D. Spence's model, for a time of 6:50. He was followed by A. Williams, whose unusual biplane glider flew away after being timed for 3:20. Around 30 ins. span, and bearing a strong resemblance to a motorless "Walrus," this model is extremely stable, and has caused much comment on the Heath.

The KINGSBURY M.F.C. has been going great guns, and some really remarkable glider times have been set up. Started off by a flight of 17:50 by R. Monk's "Thermic 50," a real day out was had on the 26th August, when a real aeromodellers' day was experienced. Early in the day R. Miles made a record-breaking flight with his lightweight glider of 60 ins. span, time being 24:10 o.o.s. Just afterwards M. Hanson made a flight of 21:00 with his "Thermic 50," both models being retrieved. R. Monk, however, was not so lucky when his model went away for a flight of 23:25, though it was seen again and timed for a total of 45 minutes.

August 19th saw another Scottish meeting, when the EDINBURGH M.F.C. held their most successful rally to date. The weather was ideal, and 85 competitors competed in the four events. Best times of the day were put up by S. A. Martin (Edinburgh) whose glider flew for 2:11, whilst best power flight was made by C. Byron of the Bathgate club, time 2:31. Full results:—

*Open Rubber.*

C. Byron	Bathgate	5:16.7
W. Murray	Fife	4:36.5
P. Montgomery	" "	3:09.5

*Open Glider.*

S. R. Martin	Edinburgh	4:16.6
W. Grant	Stirling	3:44
I. Rowley	" "	2:54

*Massed Start.*

T. Carruthers Bathgate

*Team Event.* Stirling M.A.C.

Following publication of the news of a new club starting in Southampton, P. Guilmont of the old club has been in touch with the new chaps, and it has been agreed to amalgamate, the old club restarting under the guidance of Mr. Guilmont. Things are going well with the new group, and some good flying put in, in spite of poor conditions. Something new is a scheme whereby juniors are "apprenticed" to seniors to learn the hobby and achieve proficiency in order to graduate to senior status when they reach the age of 18. Unless the junior can pass an "enthusiasm" exam, he isn't allowed to become a senior! And not a bad idea, either.

At the last committee meeting of the NORTH KENT M.A.S. it was decided that the next competition for the "C. H. Roberts Cup" for flying boats will be held on the lake at Danson Park, Welling, Kent, on the 22nd April, 1946. Full rules and particulars can be obtained from the Press Secretary, A. R. Parker, 3, Eversley Avenue,

Barnehurst, Kent, the contest being open to all.

The ROMFORD & D.M.A.C. has been flying pretty regularly throughout the "summer," and the club records have soared accordingly. Best times to date are three unofficially timed flights of 9:45, 7:10 and 6:00 (lost) with F. Hopwood's lightweight glider. This club wonders what has happened to the members of the pre-war Phoenix club—if they are still interested will they please communicate with the secretary.

Thurston Cup day was a highlight with the LUTON & D.M.A.S. F. Allen, on his first flight, broke the Class A record (already held by a member of the club) with a time of 14:43 o.o.s. R. Minney, not to be outdone, finished his three flights with an aggregate of 26:34, his best flight being 24:07 o.o.s., the model landing only a mile away. Both these chaps are juniors, so this should give some encouragement to the youngsters.

R. Toms of the COVENTRY M.A.C. made a remarkable flight of 15:22.5 with a solid balsa glider (chuck launch), and the club is now wondering whether this can be claimed as a record for the type. On the same day R. Hollis made a flight of 4:21 with his scale "Waco Hadrian" glider.

Yet another high time for glider flight was set up by A. Hand when breaking the CHINGFORD M.F.C. glider record with a time of 27:32.4, which is believed to be a British record for juniors. (I think it high time a list of the National Records to date was issued by the S.M.A.E. What about it, Council—it would make good reading

this year, I think.)

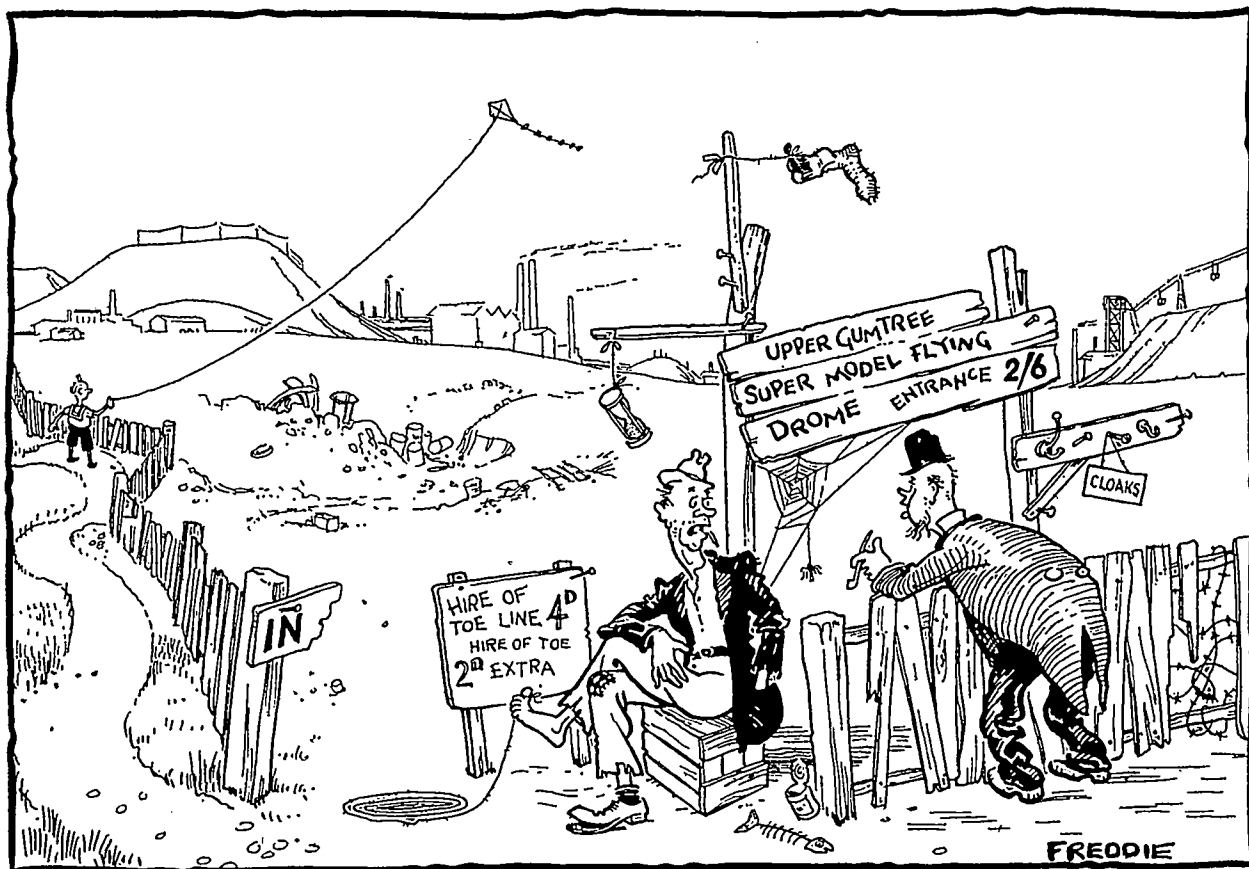
In spite of bad weather the LEEDS M.F.C. lost five models in the S.M.A.E. Cup event. These were P. Holt, 3:50.3; K. Lloyd, 5:09.2; E. W. Jackson, 3:07.7 and 2:39.2; B. Crocker, 1:29; and F. C. Anderson, 1:58. On the following day Lloyd clocked 13:36 o.o.s. with the same model. Looks as though balsa will fetch good sales round Leeds at the moment!!

Juniors put it across the seniors in the BRISTOL & WEST M.A.C. effort for the Thurston Cup, first three places going to the youngsters. D. Jones made one flight of 15:45 o.o.s. with his "Aeolus," E. Middleton totalled 10:36.5 with a 7 ft. span glider of his own design, and M. Ayres collected an aggregate of 6:27.1.

W. Davies, of 73, Bradford Terrace, Birches Head, Hanley, Stoke-on-Trent, wishes to form a club in that district, and would be obliged if other modellers would get in touch with him in order to get things going.

Well, so much for this month's little batch of news, and I am certain the high times being recorded are a sure sign of good times to come. Restrictions on rubber have undoubtedly brought the glider into its own, and I hope we shall be able from now onwards to hold our own in international glider events with the same distinction we had in the rubber-powered field. I look forward to the day when we can again meet our overseas contemporaries, and once more strain my neck and eyes trying to keep elusive models in sight for that few extra—and such vital—seconds. Cheerio till next month.

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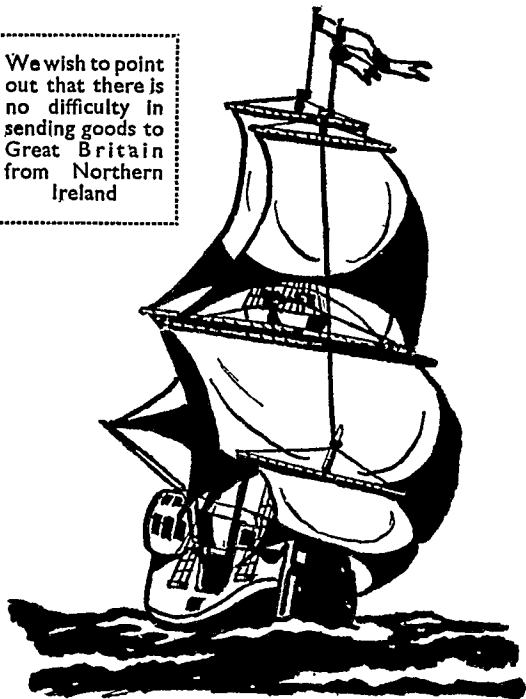
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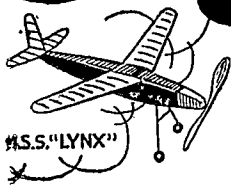
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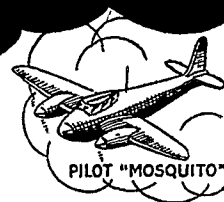
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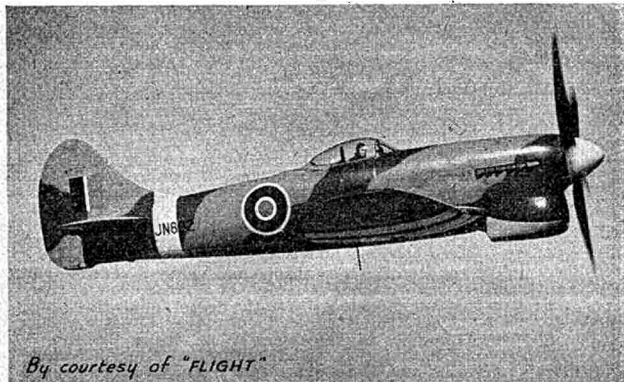
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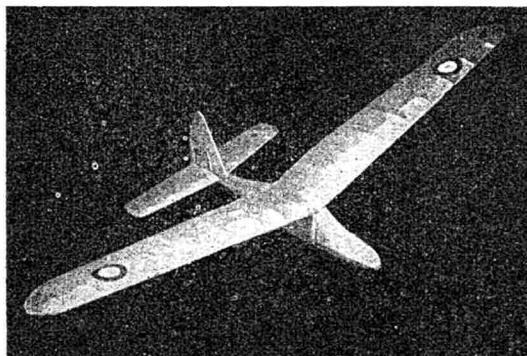
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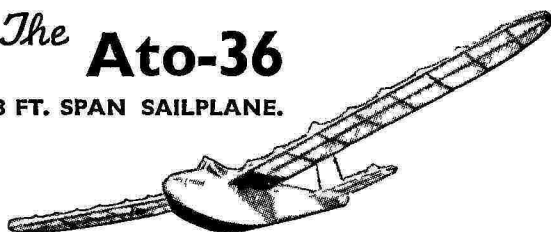
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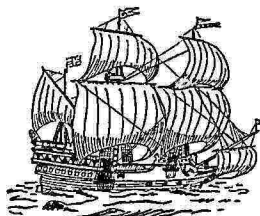
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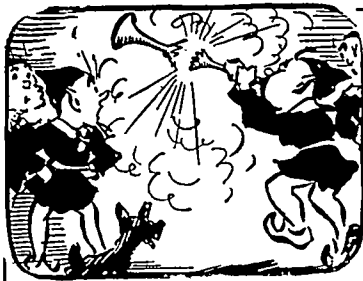
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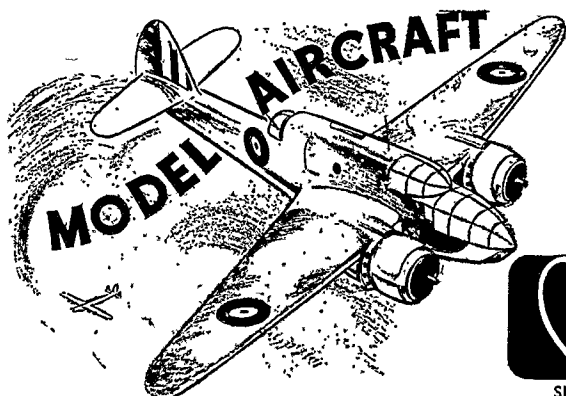
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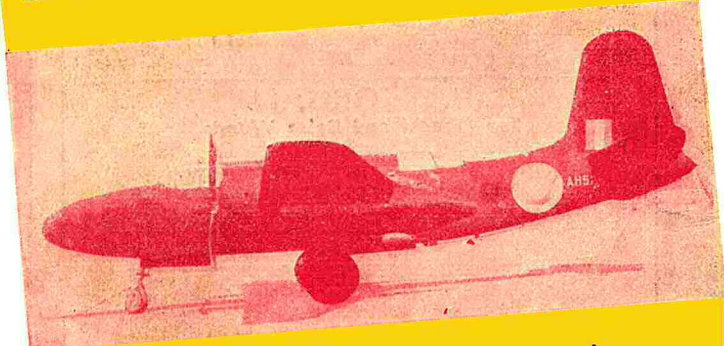
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