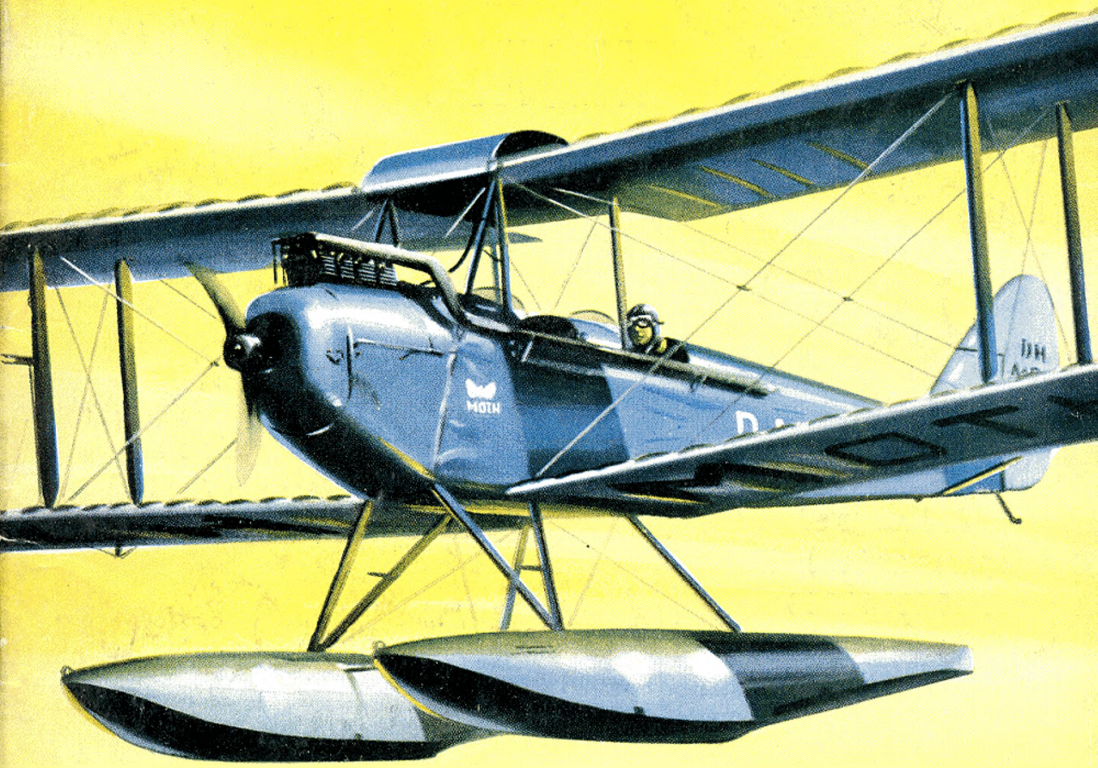
AERO MODELLER

AUGUST 1958



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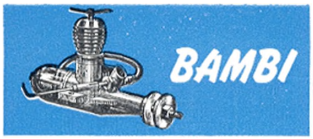

·15 c.c.

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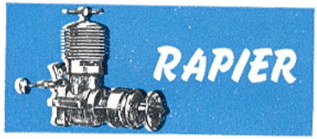

2·5 c.c.

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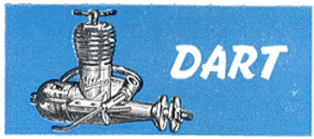

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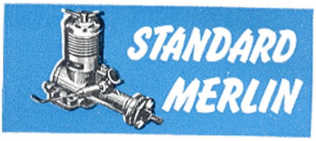

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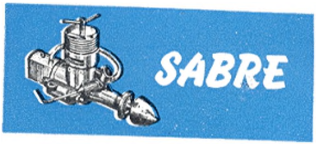

1·49 c.c.

3·44 c.c.

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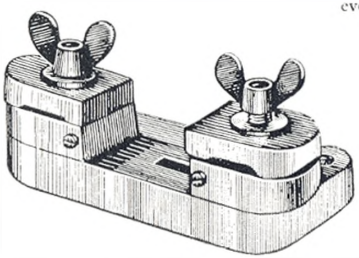

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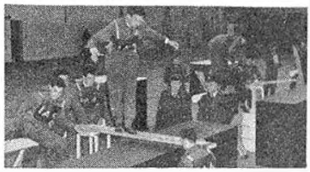

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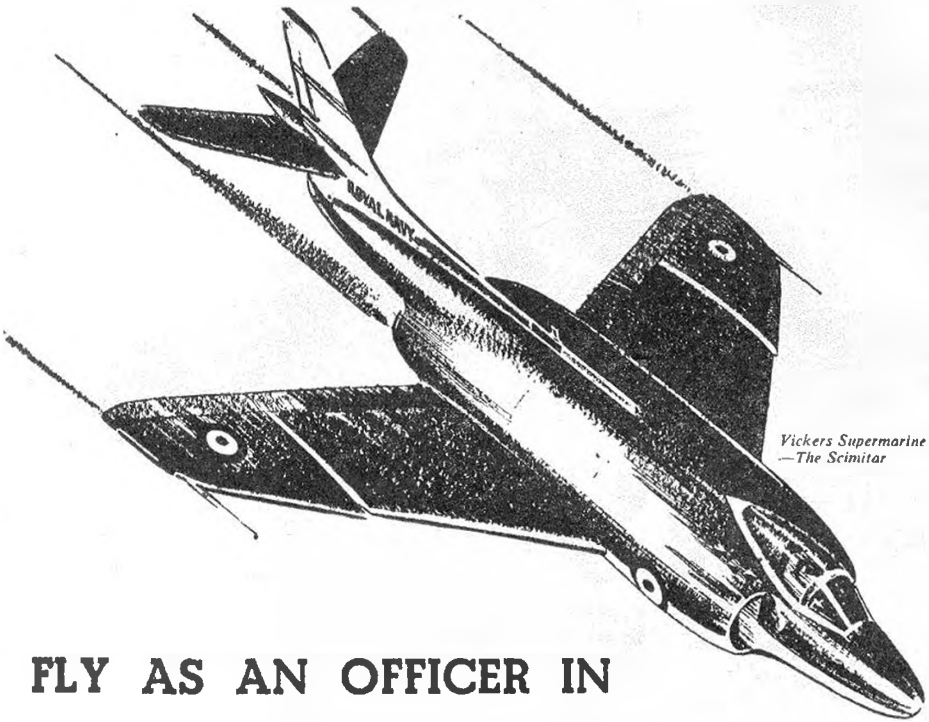

Vickers Supermarine N.113 —The Scimitar

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THE SOLARBO BALSA STORY PART 15

This is one of a series of articles written by John Paterson, Managing Director of Solarbo Ltd., all about Balsa Wood and its many applications in aeromodelling and other industries.

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I am sure if it were not for the difficulties of Import Licences we would probably, in many more countries, have as an effective distribution as we have in England, but we actually export, in all, to 33 countries.

The next thing we do is to supply manufactured parts to Kit manufacturers. In England we are happy in that we count amongst our customers the majority of the leading manufacturers and abroad we have a surprising number who buy these parts from us. Outside of the U.S.A. I am sure that no Works turns out as many parts for Kits as we do and in consequence we have been able to develop special manufacturing techniques, not only designed for economy but for quality.

As any business develops it generally becomes necessary, or better, to manufacture more of the things it needs, as against buying them from other manufacturers. Our Printing and Stamping of Kit parts is an instance of this.

When we first put in a Printing Press our customers supplied their own blocks to us. Then we found a different type of block which gave us better printing, and special ink which suited Balsawood better.

When we started to stamp Balsawood we first bought our cutters from the normal manufacturers who did cutters for cardboard, but they didn't work really well on Balsawood so we decided to make our own.

Then we found the steel normally used didn't satisfy us and so we looked around for a better one. This alone took us two years and when we finally found the steel we wanted it immediately enabled us to cut, for instance, $\frac{1}{8}$-in. thick fuselages that we couldn't do before.

And so our development goes on. We have recently worked out methods of actually cutting the slots for the wings and tails in fuselages at the same time as stamping them out and this has brought us fresh business because of the better prices we can offer.

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When we did the first run it took us 35 hours and try as we could we couldn't bring it down very much below this. We have a bonus system for the men, which works on the basis of hours saved or lost on estimated times and this particular job became a black spot because it meant a loss of 15 or 16 hours on an aggregate bonus system, so it affected everybody.

That made people think, and as a result somebody thought up a better method of machining it and the time dropped to 17 hours, and a loss became a profit.

Too often people think that all a manufacturer has to do is to "think of a number, double it", do the job, however inefficiently, pocket a fat profit and buy himself a better motor car, or something like that? In actual fact, the margin of safety, if you like to call it, in manufacture—particularly if you are dealing as we are with just a piece of machined wood without any element of design—is very small indeed. Otherwise you wouldn't get the job because the customer would be able to do it himself more cheaply.

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AERO MODELLER

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NUMBER 271
AUGUST 1958

Managing Editor - - - - - C. S. RUSHBROOKE
Editor - - - - - - - - - H. G. HUNDLEBY
Assistant Editor - - - - - R. G. MOULTON

★

Special features

★

Regular features

★

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The litter problem

NO—THIS IS NOT a farmyard topic finding its way into our pages instead of an agricultural publication, but the very urgent need to bring to the attention of aeromodellers . . . and in particular those who participated in the recent British Nationals at R.A.F. Waterbeach aerodrome . . . some of the repercussions regarding the unwarranted amount of rubbish left on that very important airfield at Whitsun.

Whilst a large part of the blame can be laid at the doors of those members of the general public who were interested spectators of the multitudinous activities at Waterbeach (wish we could lay the litter there too!), such individuals cannot be held to account for the type of rubbish that is traceable direct to the aeromodellers themselves. John Citizen does not take his family out for a run at Whitsun with the car boot full of diesel fuel bottles . . . neither does he scatter bits of balsa, broken models, or discarded control-line wire all over the aerodrome.

Modellers themselves are *solely* to blame for items of this nature, and are also the first to bleat when permission to use a good open space for flying their models is withdrawn. It is well known that the thorny subject of litter is a National problem, but at such meetings the onus lies fairly and squarely on the modellers, all of whom are only too anxious to take advantage of the facilities provided, but do not consider their obligations go further than putting their models into the air.

Experience shows that such thoughtless individuals are the first to complain bitterly when an airfield becomes out-of-bounds to them, and pillory the handful of officials who spend the whole of their holiday week-end organising and staffing the contests scheduled for such important meetings. These willing workers are hard pressed to find time and assistance to adequately conduct the contests with which they are charged, and it is asking too much to expect them to add to their duties by acting as refuse collectors after the boys—who have had all the fun of flying—have smartly departed immediately the last flight has been timed.

There is one simple solution to the problem of litter—the provision of a special clearing-up party, *but*, if modellers themselves will not co-operate and/or volunteer for such essential work, there is only one answer. It must be *paid* for. In fairness, such expenditure must be levied on those for whom the meeting is organised, and on those members of the public who find that wandering around a large airfield watching the activities of aeromodellers en masse is an attraction.

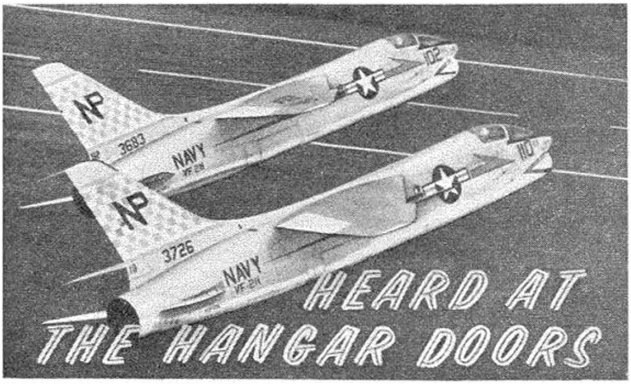
We advocate that in future a special fee shall be added to all contest entry charges, and that the charge to the Great General Public shall be such that the type of facilities expected at such gatherings may be provided. Only in this way shall we get adequate toilet and other accommodation, signposting of events, public address equipment, etc. Greatest need of all is an ample supply of rubbish bins into which the public can be encouraged to deposit their empty mineral bottles and ice-cream cartons, for if such facilities are absent there is a modicum of excuse for the poor individual who can find ample room in his pockets for enormous parcels of sandwiches, but cannot find the much smaller space required to take away his empty papers. As was so rightly said by a senior member of the airfield staff, "Surely if your chaps can bring their fuel bottles full, they can at least take them away when empty!"

And so, should next year's fees include budgeting for a very necessary scavenging squad, you'll know the reason why, and we trust will fork out gladly in an endeavour to retain the use of such a popular airfield.

The litter bugbear aside, the 1958 Nats. was one of the best yet, in spite of weather that left much to be desired. (That Monday morning was a real stinker!) In spite of unavoidable delays, events finished on schedule, which says much for the spirit of co-operation that prevailed and the determination to get through the programme come hell or high water.

On the cover . .

ALL THE CHARM and distinction of a vintage biplane is captivated by this Laurie Bagley impression of the D.H.60 Seaplane Moth demonstrator.



Markings and Supersonics

OUR HEADING this month illustrates how the U.S. Navy is adhering to some of the basic identification markings as have been outlined in George Cox's articles on the subject. Two Chance-Vought Crusader F8U-1's of Squadron VF-211 are seen in close company over their Californian base. Chequerboard fins with Unit letters, red fuselage arrow and duplication of the individual aircraft number on nose and rudder, show how the U.S. Navy is still as colourful as it was in the '30s.

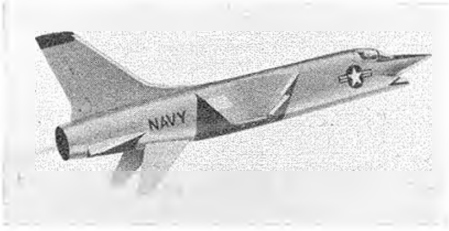
Other Crusader picture is of the Mk. III, latest in the line and capable of Mach 2 speeds. Automatic flying aids make it a push-button interceptor, stated to be capable of "outracing the sun across the American continent".

Major external differences are the shark-like nose, blown flaps and the movable ventral fins which are horizontal for low speeds and nearly 90 degrees downwards at high Mach numbers.

Luton Minor

Arthur W. J. G. Ord-Hume, Director of Phoenix Aircraft Ltd., Cranleigh Common, Surrey, who are making the new Luton L.A.4a Minor for the 37 h.p. Aeronca J.A.P. twin cylinder air-cooled engine, writes to compliment us on Walt Mooney's design for the Luton Minor prototype which appeared in our June edition and to correct a minor point concerning the engine.

The original prototype, G-AEPD, was powered by an inverted Vee-twin-cylinder Anzani engine, not a J.A.P. The Anzani motor was later converted to dual ignition and pre-war Minors flew either with the Luton-converted Anzani or the Bristol Cherub, Douglas Sprite, Scott Flying Squirrel and Carden-Ford. One example appeared with an Austin car engine, but, unfortunately, it never flew with this unit!



Congrats to Colin

Following in famous father's footsteps, Colin Davis and co-driver De Tomaso finished 11th in the 1958 Le Mans 24-hour road race, and won the "Index of Performance" Trophy with their 750 c.c. Osca. Colin was one of the keenest speed modellers ten years back in the heyday of Fairlop, was first to show us a Dooling 61 and Hellrazor, and as a free flight man always prophetically regarded Chobham Common as the London modelling venue to replace the loss of Fairlop.

Another racing driver rapidly achieving fame with Team Lotus is F. J. Ashdown, who will be remembered by the ex-Fairlop fraternity for his youthful button-pushing when he won the 1949 Taplin Trophy at the age of 14 with his Falcon.

Richard J. Trevithick

We regret to report the sad loss of Richard Trevithick on Wednesday, May 21st. Dick, or "Trevvy" as he was affectionately known, was a true veteran of British aeromodelling and a brother of "Bill" Trevithick whose death occurred earlier this year.

"Trevvy" was building "A" frames and such-like way back in 1907 and your Editor well remembers him from the '30s with the Wembley M.F.C. In company with such stalwarts as Dick Sharvell, John Berryman, B. K. Johnson and Denis Fairlee, he flew powered aircraft at Perrins Meadow and Northolt Aerodrome when this class of model was indeed a rarity.

Strangely enough, the Editor's introduction to aeromodelling was effected through "Trevvy" when two small boys stood in awe outside his workshop at Barnhill, Wembley, to be welcomed inside by this kindly enthusiast who explained in practical fashion the mysteries of compressed air models. Suitably encouraged, one of the boys, your Editor, then in short trousers, haunted this haven of modelling interest and it says much for the patience of "Trevvy" that he continued to encourage not only this small boy but any others who showed a genuine interest in modelmaking.

His was a fascinating workshop and one of the finest we have seen where every item displayed the most exacting workmanship and a talent of ingenuity that was typical of the man. His experimental diesel and spark ignition engines were built to watch-

making standards, many of the crankcases being fabricated from steel sheet with brazed joints. It was quite common for him to make a complete set of miniature tools to go with a particular engine when working below capacities of ·5 c.c.

In the 1930's he produced a flash steam aero engine, but the fire hazard to property prevented him furthering this particular experiment. It is interesting to note that this engine, as well as his compressed air engines and tanks, are still in working condition today after some 30 years of life, and we hope to more fully describe in a future issue the more interesting of his models and equipment.

His profession of commercial artist was probably known to many by his advertisements for the Fairey Aviation Company from the 1920's until 1945 and by other work executed for the De Havilland Co., Blackburn Aircraft, Cirrus Aero Engines, Cellon, Rolls Royce and Vospers.

In recent years Richard Trevithick suffered the frustration of continual ill-health, with his hands permanently bandaged through severe dermatitis which prevented him fully engaging in the hobby he loved so dearly. Even so, he was still to be seen at model meetings in the home counties sometimes flying a power model which inevitably included an engine of his own construction.

He leaves a widow, to whom we extend our deepest sympathy and we salute the passing of an enthusiast who so well upheld the famous engineering name of Trevithick.

Area-Calculation continued . . .

Mr. Frederick Howard of Denver, Colorado, has more to say on the subject of area measurement.

"May I contribute to the discussion of area-calculation as propounded by contributor Kadmon and reader R. Crow? As a fervent admirer of the classical beauty of the Calculus, I would be the last to attempt to dissuade any avid area-calculator from the application of Simpson's Rule, or any other similar analytical approach. However, for what it may be worth, I would like to suggest the following, perhaps more general method of area-calculation for any shape, regular or haphazard, definable or indefinable:

"(1) Plot the shape, whatever it may be, either full-size or to some convenient scale, on paper.

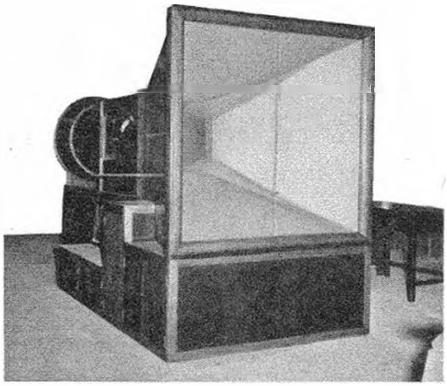
"(2) Cut it out and weigh it.

"(3) From the same type of paper cut out and weigh a unit area. (One square inch or one square cm. plotted in the same scale as (1).)

"(4) Divide the weight noted in (2) by the weight noted in (3) above. The quotient is the required area.

Major Al Williams

We regret to report the death of Major Alford Williams—subject of our "Gulfhawk" feature in June issue—at the age of 67.



Bristol apprentices new wind tunnel

Super Tunnel — aid for Aces?

A wind tunnel which will be worth some £2,500-£3,000 when completed is under construction at the Bristol Aeroplane Company and has been made by 50 apprentices for low-speed investigations.

Eighteen feet long, with a working section 2 ft square, the tunnel will have an airflow up to 100 ft per second, equivalent to 70 m.p.h., and be installed in one of the engineering laboratories at the apprentices school. Bristol Aces model club is a keen section of the 1,200 apprentice community at Filton—shall we be seeing new and aerodynamically advanced model designs from this club in future?

A "MUST" for all power modellers

Now on sale through AEROMODELLER Plans Service, the **Engine Test Data Sheet,** measuring 22½ x 34 inches, is printed on *both* sides with enough fact-packed gen and drawings to keep the average model engine operator happy for years. Full size drawings are given for no less than 46 different engines. Whatever your choice for that next design, all you need to do to find the cowling size, or bearer spacing, is to trace off the details from the Data Sheet. Then there are identification photographs of 50 engines from popular favourites to remote East Zone types, and the most valuable table of all—a complete summary of every "AERO-MODELLER Engine Analysis" that has ever been published right up to this month's date. A grand total of 123 peak figures for quick reference and each with the date of original publication.

No clubroom—or dealer's shop wall—will be complete without this wall chart which is on sale now as E700, price 2s. 6d. plus 6d. post. Why not send for two, at no extra postage charge, so that you can have both sides up on the modelling room wall for quick reference?

THE LIFE OF AN aeromodeller is governed by meteorological conditions. He wakes in the morning to judge the day by the flutter of leaves or flow of chimney smoke, hopes for the best and expects the worst. The dawn outlook on the second day of the 1958 British Nationals contest programme at R.A.F. Station Waterbeach, must have created nothing short of agony. Rain, rain and yet more rain completely nullified the morning for all except the hardy Class B team racer types.

Though the weather might have been a trial, the standard of flying and advance in model design was enough to dispel any gloom. Never before have we been able to note such a rapid improvement between seasons as was evident in R/C Multi and C/L stunt. Man of the meeting was the ubiquitous John O'Donnell. His successes in the free-flight events are a tribute to his serious and methodical approach to trimming. Technically, the most outstanding advance seen was in the use of engine speed control via exhaust restriction for R/C, the degree of control, and the silencing effect were eye-openers. And if anyone ever complains about lack of foreign engines or accessories, he should think again. We saw engines, R/C equipment and kit models from France, Germany, Japan, Italy, Australia and U.S.A.

Team Racing

Reliability plus speed brought the familiar names of Dick Edmonds with his new *Drag Master* and Gordon Yeldham with *Voodoo* into the 'A' final. Though Edmonds finished in what is ordinarily a creditable time of 8 : 18 for 10 miles, he could not match the high speed of the Belchin (Belfairs/Chingford) model which established a new record time of 7 : 26. Young Colin Sanger of Wanstead and another junior, Peter Hartwell, of Enfield, were slow by comparison at 9 : 22 and 10 : 36, but had done better to win their heats and semi-finals in what was a hard-fought event. The standard is such that the smallest mistake is enough to eliminate a team and although Class A has become rather a monotonous and noisy beehive for the spectator, it continues to offer heart-swelling thrills for the participants and unmatched excitement.

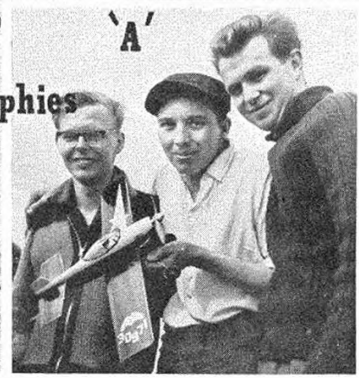
Though faster, Class B has a different tempo, and the loud yowl of racing motors circulating at speeds up to 112 m.p.h. adds a more professional atmosphere; but the entry of 65 models refutes any suggestion that specially prepared engines are discouraging opposition from "over the counter" purchasers. As heats progressed the battle formed its final pattern of West Essex versus Enfield with McGoun and McNess (small comfort for the Scots contingent!) representing those from East of the Lea Valley against the Walker/Tuthill team and young Hartwell from Enfield. A rousing start with all models closely matched, tapered into a McNess versus Walker race as Hartwell lost speed and McGoun's model collected pit-man Morley's shoulder in a landing. Using a Carter Special, McNess was hot on the heels of the Walker/Tuthill model and finished only 9 seconds behind at 7 : 18 in a race that repeated McNess's three-year-old record of 7 : 09.

Power

The new F.A.I. rules have done more to encourage open power flying than any other single factor and the entry of 258 represents an interest rivalling that of glider. Sad were the tales of down-draughts, early d/t's, wet warped surfaces and damp fuses. Startling vertical climbs, fantastic altitude gain and the exhilarating high speed ascents at shallow angle by Tom

Left: R.A.F. Police helped recover an r/c model for lucky owner. Top, winners are: Thurston, Mavis Pepper and A/2 Shelley and Short both by John O'Donnell. Gold by Peter Ridgway at right with Gig Eiffaender. Model Aircraft by Fred Boxall and Knokke by Cesare Milani, with son Roy.

WINNERS



Smith's *Nig-Nogs* were outstanding features among a diversity of designs rarely seen before. Posner missed the fly-off by a mere second through an early d/t, John O'Donnell lost his *Eureka* (P.A.W. 2·5) on his third maximum flight and down-draughts appeared to be laying in wait for all the favourites. The ripsnorting climb of Tom Smith's model with its fine pitch prop taking the Oliver Tiger into High C, actually lost valuable height when the model rolled over at the end of the run in the fly-off and this was enough to clip Tom's chance of a win. In contrast were the prop-hanging climbs of the other two triple-max fliers, O'D. with his reserve gaining greater height than John Bickerstaffe, to make a perfect 4 : 32 decider.

Glider

A brisk wind and distinct scarcity of thermals made glider very much a hit or miss affair—and it was a miss who charmed four thermals in a row to capture the Thurston Trophy. Mavis Pepper was getting just retribution for the reflection on eligibility of her A/2 in the '57 trials. Flying the same close to specification, model she out-towed the menfolk by a three min. margin and repeated her Women's Cup success. Up to lunch time on Sunday the majority of entrants were giving up hope of weather improvement and a fly-off was not anticipated. By 3 o'clock the thermals were beginning to bump and at least two of the ultimate six in the fly-off did not start to fly until then. Thus, the waiting game paid off for once and five A/2's plus D. Morley's massive open job were launched at 5 o'clock to decide the winner. The times, ranging from 5 : 40 to 1 : 03 reflect conditions and help to emphasise how glider gives everyone a chance provided one has a reasonable towing technique.

Scale

A disappointing turn-out of 15 from the original 27 entries made qualifying flights in the two-scale events. C. Crawley's B.E.2c, which won creditably in the free flight section is notable as it is a rebuild of the original rubber driven model made by the late E. J. Riding. Gates' 2nd place Leopard Moth was the finest flier, making a wonderful landing back to the runway and Clifton's Lysander was most unfortunate hitting a wayward car in the take-off area. In the control line section for the Knokke Trophy, Capt. Milani's S.V.A.5 with instrumented cockpit, throttle control on Ohlsson 60, inlaid mahogany and machine finished fuselage panels, was a clear winner. This is an event deserving of a bigger entry and we hope that its inauguration will inspire perhaps a Fairey Rotordyne or Breguet Integral to thrill us next year.

Combat

Went on and on and on, through slick organisation by Dagenham and Kenton Clubs—they actually finished in daylight! Already its a race for the fastest motor and is rapidly becoming a specialised business. Strange to say, it did not hold the crowd which swarmed to team race and R/C.

Gold Trophy

The first Gold Trophy to A.M.A. rules still leaves the argument of small diesel *versus* large glowplug models as undecided as ever. With many models and modellers showing lack of experience it became a challenge to complete the schedule. Certainly Pete

At right Mrs. Owen-Jones, wife of the Commanding Officer, (speaking) presented prizes at the close of the meeting. Top winners are: Speed, P. Drewell with fastest "60". R/C Multi, Chris Olsen and fast Fox Uproar, Ripmax by Wally Neild and modified Electra. Davies B by the Walker/Tuthill team with B. Page. Davies A by Stephens, Hall and Yeldham and Combat by Kendrick at right with Oliver/Black Ghost.

Ridgeway was a deserving winner. His correct altitude pull-outs, best "hour-glass" and perfect in-the-groove loops more than made up for any loss of appearance points his elderly model (re-vamped with flaps) may have occurred, and he settled once and for all time the controversy that a diesel (PAW 2·5) could or could not be pushed around square corners. Had either Bill Morley with his Thunderbird (using a prototype of a new British engine—the Merco 35) or Tom Jolly and his 51-ounce Nobler (Fox 35) observed the rule concerning 5-ft. level flight and pull-out elevation, they might have matched Ridgeway's points, though Jolly must have lost a lot through incorrect entry of eights and inverted (which few seem to realise comes straight off the last inside loop). To these three and "Gig" Eifflaender must go full credit for outstripping the field of elliptical winged mock Thunderbirds that came in all sizes ranging from Gordon Cornell's 230 sq. in. Frog 150 version to H. Gilkes' stock kit model with tandem cockpits. Enthusiasm for the new schedule is high, but lots must yet be learned on engine settings — some far too lean, some over-slow, and the penalty of sealing the tank within an inaccessible fuselage was paid by more than one competitor.

One wonders what might have happened had Pete Russell not suffered the misfortune of a fractured spine to prevent his attendance, or if Barry Corden and his "Grey Mist" original design had not suffered engine trouble. Barry's pattern in "teach it a lesson" flights *after* his contest attempts show him to be a future Gold Trophy contender.

Short (Payload) Cup

With only 27 entries received for this contest, of whom a dozen did not show up, this event was very much a specialists' affair confined to well-known modellers who have shown an interest in this class of flying ever since Pan American awarded those lovely Bulova watches as prizes.

Only two 4-minute maximums were scored during the day, one to the credit of John O'D., and the other to A. Farrar (Wakefield), who unfortunately lost his model in the process and thus removed the only serious threat to O'Donnell's premier position.

The tailenders were obviously not up to the standard required for this contest, and one wonders under what conditions some modellers enter home contests, for one unfortunate, who could not get his model off the deck no matter how he tried, explained that he had no trouble at home with hand-launching! And the first rule with this contest is that the model shall r.o.g. Makes you think, doesn't it ! !

"Model Aircraft" Trophy

With an entry of 115 (only 63 actually flew) the open rubber contest was ably handled by the Midland Area contingent.

Yet again the rubber powered model demonstrated its all-round reliability in duration events, and no less than eight men figured in a spectacular fly-off, won by that doyen of Wakefield fliers, Fred Boxall of Brighton. His top time of 7:26 was 24 seconds ahead of second-placer E. A. Barnacle (Leamington), whilst Urlan Wannop of Edinburgh filled third place with 5:45.

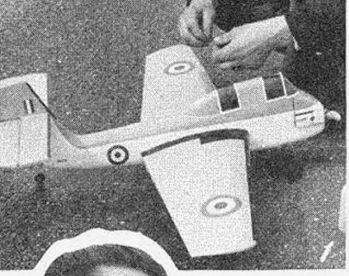
The fly-off produced a complication in that John O'Donnell, who qualified in the top eight, was also committed to appear in the Power fly-off, so by mutual arrangement the rubber fly-off was timed 10 minutes prior to the power launching signal. Of the eight, Draper and Devitt of Coventry had very smart mauve and orange models, and Jack North (Croydon) used a high pitch prop. job with a very long motor run. Cartwright (now of Blackburn Aircraft M.A.C.) used gears as usual. Most educational is the O'Donnell system, for an airtight biscuit tin holds John's stock of rubber motors, all packaged in polythene bags. To each is attached a card registering date last used, achievement, number of turns, and such other gen known only to the maestro. He changes motors for each flight, selecting one from stock to suit the conditions and requirements.

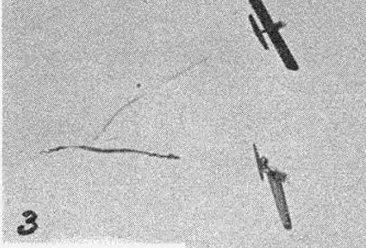
In the exciting fly-off most hovered around the 5-minute mark, but the three leaders had slight thermal aid, and the top two were real eye-strainers. Fred Boxall had a new lightweight machine for the event weighing a total of 6 ounces for a model of near Wakefield size, using 3¼ oz. of rubber and a 16 x 24 prop.

S.M.A.E. R/C Trophy

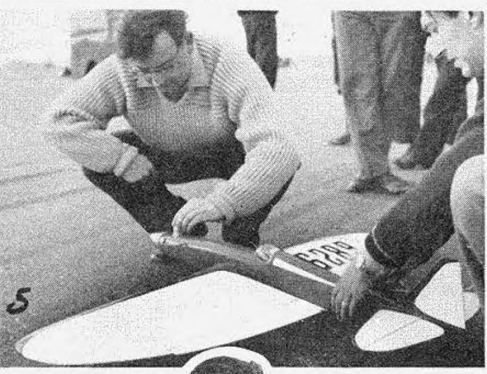
Held on the Sunday under quite reasonable weather conditions, this multi control event attracted 43 entries of which only twelve contestants recorded scores. In spite of this seemingly depressing picture, radio reliability was good and standard of flying considerably better than last year. As we forecast earlier this year, the Olsen/Uwins team with the "Uproar", plus home-built eight-channel reed equipment and a Fox 29 up front with Bramco type throttle, were well to the fore, with Askew of Cheadle splitting them by taking second place. Olsen's high speed aerobatics were notable for the range covered rather than quality of manoeuvre and neither he nor any other competitor achieved inverted flight. Askew flew three perfect loops but failed on his bunts, whereas Olsen was the opposite. Donahue, we are sure, provided the most devastating prang of the whole Nats. when, after performing a

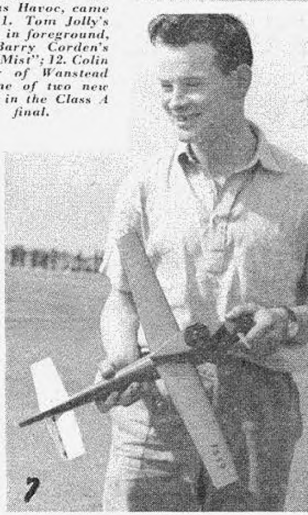
At left, Ken Brookes S.M.A.E. Pro and Alec Houlberg, judge the scale. 1st and 2nd placing B.E.2c and Leopard Moth in flf, and 1st C.L S.V.A.5 are caught in one pic. Opposite: 1. Bill Meechan's Seamew from Glasgow; 2. Only three of the many Palmer type stunters, these by Blundell, Drewell and Kimber at rear; 3. Half a Peacemaker is better than none!; 4. Barry Hopkins used stunt schedule reminder from "Aeromodeller" on handle.; 5. Bill Morley came 2nd in Gold with T'Bird and new British Merco 35 engine; 6. Heare-ho in Combat, a pic. that typifies the continual action in the circles; 7. Last season's efl Champ., Ron Irvine and "60" speedster; 8. G. Abell's novel Gloster Meteor; 9. Dick Edmonds with public school hairstyle, and latest model.,





10. Cpl. Godfrey had a new twin in the Douglas Havoc, came 2nd; 11. Tom Jolly's Nobler in foreground, with Barry Carden's "Grey Mist"; 12. Colin Sanger of Wanstead was one of two new names in the Class A final.





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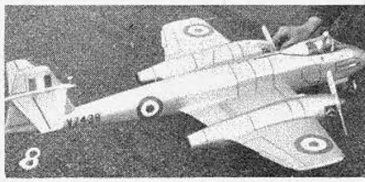

Free Flight


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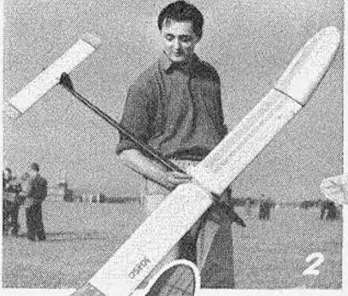
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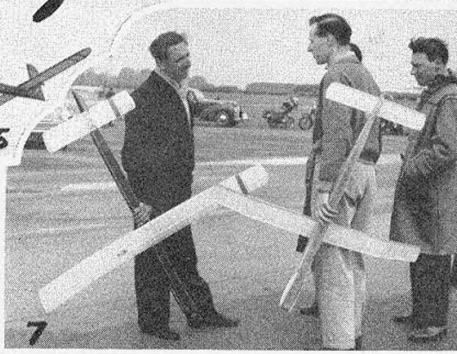
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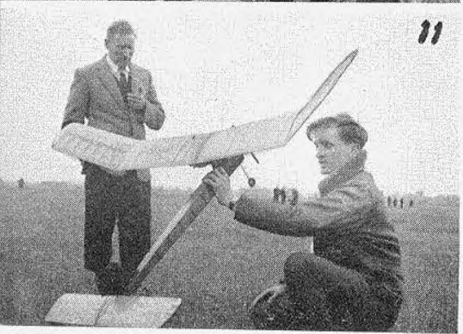
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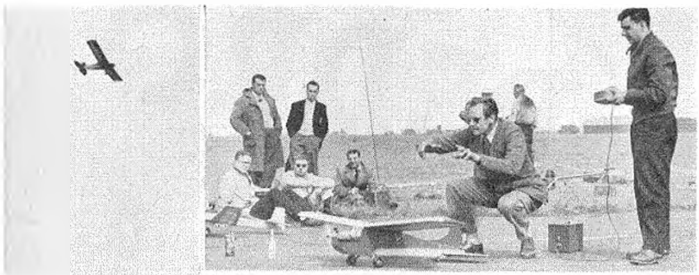


At left: Now back in U.S.A., Capt. Carroll demonstrated at the Nats. with his Live-wire Champion multi - channel. Below: 1. Multi winner, Chris Olsen makes glide approach; 2. Second place was taken by Askew (Veco 19) seen with Donahue; 3. Modified Smog Hog with bracing by Parkinson at centre, with Airey starting; 4. Ed. Johnson's Veco 19 multi model for Stegmaier set.; 5. Third place went to S. Uria's Uproar (Fox launched by Olsen; 6. Close landing by Lockwood, third in single channel.

truly vertical power dive, he was unable to get either up or down elevator. The model burst like a bomb on the tarmac with such force that the engine shattered *forward* due to its own inertia!

The new multi schedule was commented favourably upon by judges Henry Nicholls and Harry Hundleby as well as competitors, and an amplified monitor kept a watch over the ether as a guard against "pirates".

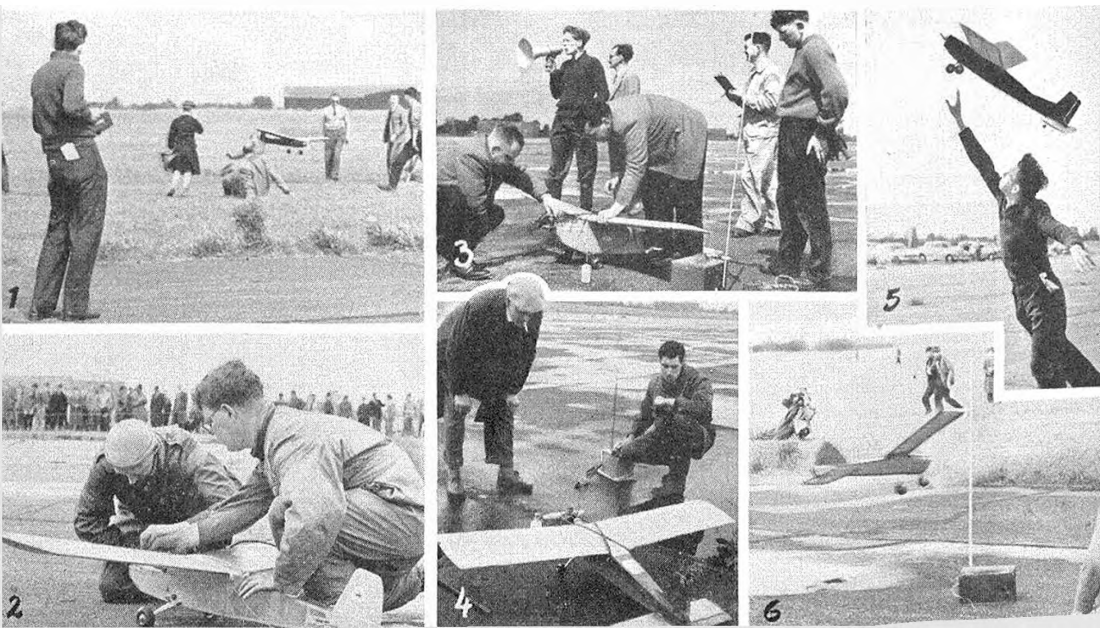
Opposite: 1. Jack North fixing winder stick in the rubber fly-off; 2. John Taylor was 3rd in Glider fly-off; 3. John O'D. checks new motor before fly-off; 4. Pete Muller now has a motorised chuck glider size model—says it's Surbiton's Club badge; 5. Morley's Whopper, 2nd in Thurston; 6. Tom Smith and supersped f/f Nig-Nog; 7. George Fuller and Urlan Wannop, 3rd in Rubber, with John Hanney; 8. World Power Champ., Ron Draper, is doing well in rubber this season; 9. Mike Gaster was out of it—trying rubber Mike?; 10. A.M.25 in this Storch by B. Newman; 11. B. Mack lives at Cranfield—no wonder he places high with enlarged Zoot Suit; 12. PAAload entry by D. Ryman, is a Stan Hill design, for O.S. Max.15.

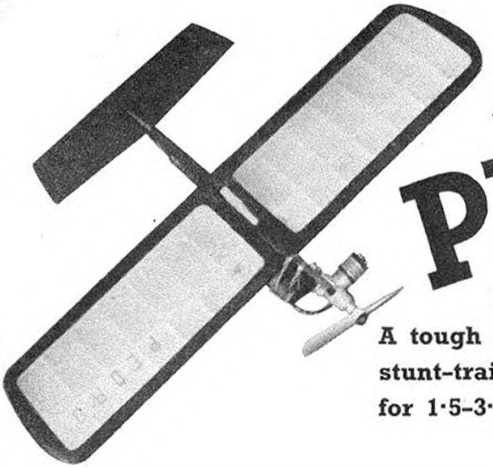
Ripmax R/C Trophy

Conditions were such that this event did not start until after lunch, by which time the 59 entries had dwindled to 18. Due to the delayed start, one or two competitors were not included in the draw which resulted in an official protest. We only hope that this incident will result in more precise instructions being laid down in the future to cover bad weather conditions.

Neild of Kersal, flying a modified Electra with Arden 19, took a narrow lead from Howard Boys, still flying his ancient rudder waggler that we know so well. Spot landings were more accurate than in the multi event, but the standard of flying was low indeed. It seems that the flying of an accurate course is more difficult than the aerobatic manoeuvres in both single and multi alike, which means a closer study of the rules and more extensive practice for the future.

Results on page 438





PEDRO

A tough 32 inch profile stunt-trainer or combat model for 1·5–3·5 c.c. engines . . .

by L. Whalley

HERE'S A STUNT trainer or combat model that has already gained a great reputation in the North Western Area Club, Cheadle and in Farnborough, where it is alternately known as the Javelin. It can take a wide range of engines from the new hot stuff 1·5's to the most powerful diesel 3·5's and will withstand practically any form of crash provided the wing-to-fuselage joint is glued securely.

All-up weight hovers around the 14-oz. mark and with 220 sq. ins. of wing, it provides just the right type of performance for the man who wants to learn his figures of eight and outside loops—and still get away with the inevitable initial errors!

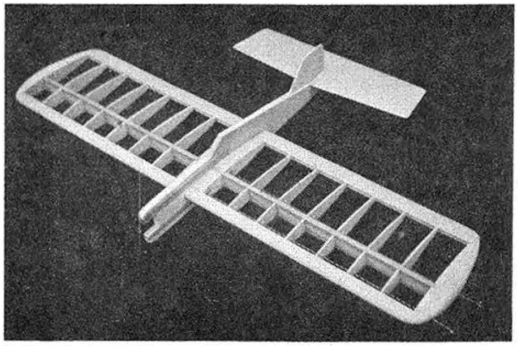
In case you are wondering what kind of engine is fitted to one of the prototypes seen in the heading picture, it is a Spanish Byra 2·5 with altered cylinder fins and arranged at the port side of the fuselage to give carburettor clearance. Many different tank arrangements have been applied to Pedro, some inboard, but mostly outboard of the fuselage (starboard side) and because the tank is detachable, held in place with rubber bands, it can be easily adjusted to give optimum performance. A good general purpose tank is shown on the plan, but for those who prefer to use a commercial product, the Veron 1¼ x 1½ x ¾ in. tank is recommended.

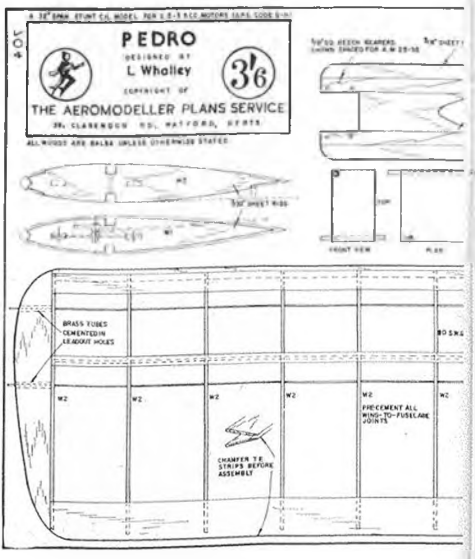
If you have one of those engines with an angled needle valve which protrudes below the fuselage bottom line, then a piano wire protector is recommended in the form of a nose skid.

As the picture at lower left shows, there is very little to construction. All sheet fuselage and tail surfaces only require special care in their joints and here we particularly recommend the new PVA glues, such as Le Page's Bondfast, which is just reaching the model shops and provides excellent strength where most required.

Pedro has been under development for over two

These photographs emphasise the simplicity of Pedro, and with generous engine bearer dimensions, a ¼ in. thick profile fuselage and tough leading edge, it is ideal for combat or beginners.





years and was first created when Mr. Whalley was changing over from controline trainers to stunt model and had difficulty in finding a model that suited his purpose. The initial model, "Pablo", was made for an AM.25 and with it, five club members were taught to fly aerobatics and eleven duplicates eventually made, all very successful.

Modifications to the fuselage created the Pedro as drawn below.

Construction

The wing is the only part which has to be made over the building board and is started by pinning down the bottom ¼ in. sq. spar over the plan and cementing ribs in appropriate positions with a piece of ⅜ x ⅛ in. balsa, packing the trailing edge so that all ribs are perfectly in line and parallel to the building board. Add the 1/16 in. x 1 in. upper trailing edge with the rear corner chamfered as sketched on the plan, then the upper spar and leading edge, followed by the leading edge bracing strip 1/16 in. x ¼ in. Allow to set and then remove from the plan, completing the trailing edge and leading edge sheet, then fit the 1/16 in. ply bellcrank plate between centre ribs W.1 and fix the bellcrank and lead-out wires. An over-length push-rod can be fitted to the bellcrank, noting that soldering is not required, provided the end is "joggled" and now the centre section can be sheeted top and bottom and vertical 1/16 in. sheet webs fitted between the spars and between each pair of ribs to make an "I" section spar of great strength. Lastly, fit the 1 in. square block tips, roughly carved to shape, the starboard tip being recessed to receive ¾-oz. lead ballast.

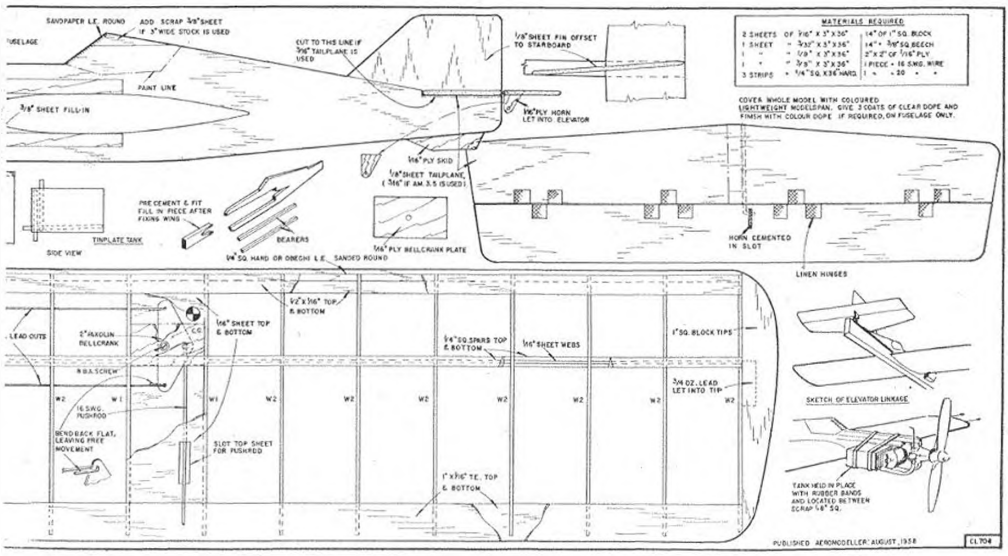
Cut the ⅜ in. sheet fuselage to shape and after pre-cementing, fit bearers in place to suit your engine crankcase width. Slide the wing in place and fill in gap in front of leading edge between engine bearers with ⅜ in. balsa, taking care to pre-cement all joints or to use slow drying glue, for strength is essential in this area to withstand head-on prangs. Make up the tail assembly by hinging the elevator to the tailplane and bend the push-rod to length, making slight adjustment to obtain true neutral elevator by slight fore and aft movement of the tailplane on its seating. Finally, add the fin, off-set to starboard to maintain line tension and the 1/16 in. ply under skid, which is usually the first part to touch the ground in a slow speed landing.

Cover the entire model with lightweight tissue and apply liberal quantities of clear dope to keep the model oil- and crash-proof. Our personal preference would be to cover the wing with the lightweight silk now available, but this, of course, adds slight weight, but does nevertheless give the model even greater strength.

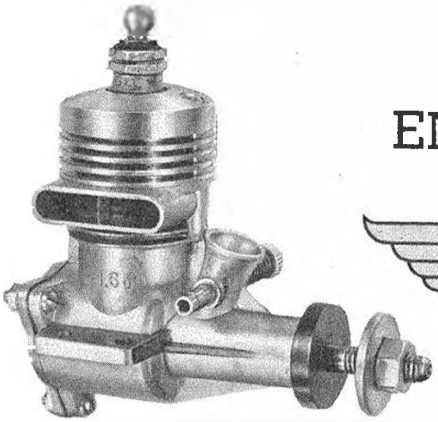
Use an 8 x 6 or 9 x 6 plastic propeller for 2·5-3·5 c.c. or if using one of the new 1·5 c.c. engines, use a 7 x 6.

With Pedro there's no need to wait for fair weather—it's weatherproof; so why not build one to fly any day?

FULL SIZE COPIES OF THIS 1/4 SCALE REPRODUCTION ARE AVAILABLE AS PLAN CL 704 PRICE 3/6 PLUS 6d. POSTAGE FROM AEROMODELLER PLANS SERVICE



ENGINE ANALYSIS No. 50



O.S. "PET"

Reviewed by R. H. Warring

THIS IS THE SMALLEST engine produced in the by now well-known Japanese "O.S." range, and like the others, a glow plug motor of typically clever crankcase casting design, and outstanding performance. Rated as an "09" or 1·6 c.c. size, the O.S. "Pet" has a power output comparing with the best of 1·5 c.c. diesels, which is rather exceptional for a glow motor.

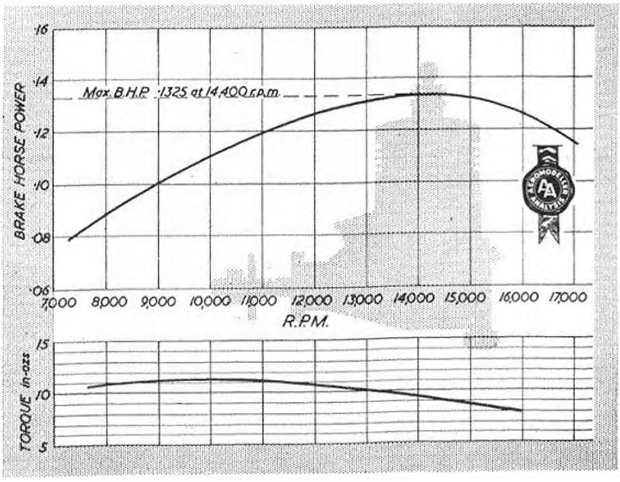
Running was found to be consistently good at all speeds and, again a little unusual, retaining a high torque at the lower end of the speed range. Peak power was ·1325 B.H.P. developed at 14,400 r.p.m., with the actual peak being fairly broad and no sharp fall off. Maximum torque was slightly in excess of 11 ounce-inches, developed at 9,000-10,000 r.p.m.

Designwise, the O.S. "Pet" features a pressure die cast light alloy crankcase of elaborate form, which is machined only for the bearing. The crankcase unit incorporates the lower cylinder complete with exhaust stub and diametrically opposed transfer passage, and lugs for the attachment of the rear cover by small bolts and nuts which can be replaced by longer bolts for alternative radial mounting of the engine.

The only unusual feature is, that the spraybar is a simple brass tube push fitted into the choke tube—and not a very tight fit at that. Since the needle valve is locked with a compression spring, this spring is effectively trying to pull the spraybar out to one side—which it does under engine vibration. As a consequence, the mixture may be affected, causing erratic running, or for readjustment of the needle valve. This, in fact, is about the *only* poor feature of the design and the very slight additional expense of incorporating a flange or K. & B. style knurled fluting on the spraybar to prevent sideways movement should have been obvious. A worthwhile modification to existing engines, would be to solder on a washer on the side of the spraybar opposite to the needle valve.

The cylinder is of hardened steel, ground and honed to finish internally and also ground externally. It seats in the crankcase casting on a very narrow flange with a gasket underneath for seal. The exhaust port is cut in the cylinder wall immediately *above* the flange and the diametrically opposed transfer port in the wall immediately *below* the flange, facing the transfer passage. Thus the cylinder can only be fitted one way round.

The piston is of cast iron with a flat top but stepped on one side to form a deflector. Besides being a simple form of deflector to produce this also has the advantage, that the lower cylinder does not have to match the crankcase since the necessary gas seal is provided by the flange and gasket. Again, of course, the piston must be fitted the right way round to match the cylinder.



SPECIFICATION

Displacement: 1·615 c.c. (·0985 (cu. in.)
Bore: ·529 ins.
Stroke: ·448 ins.
Bore/stroke ratio: 1 18
Bare weight: 2¼ ounces
Max. B.H.P.: ·1325 at 14,400 r.p.m.
Max. Torque: 11·3 ounce-inches at 9,600
Power rating: ·0825 B.H.P. per c.c.
Power/weight ratio: ·048 B.H.P. per ounce

Material specification:

Crankcase unit: light alloy pressure die casting
Cylinder: hardened steel
Piston: cast iron
Cylinder jacket: aluminium
Crankshaft: hardened steel
Connecting rod: light alloy die casting
Main bearing: plain
Big end bearing: brass bush
Spraybar: brass

Manufacturers:
Ogawa Model Mfg. Co., Osaka, Japan

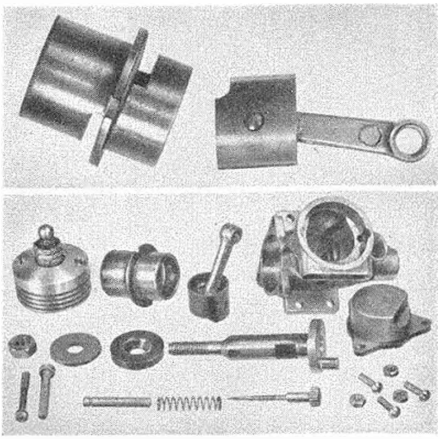
The cylinder is held in place by a substantial jacket, machined from aluminium with a thick solid head, held down by two bolts screwing into lugs cast in the crankcase fore and aft and drilled and tapped. The glow plug is located centrally in the head (on the general arrangement drawing a KLG plug is shown, and used on test, a Japanese plug not being supplied with this particular engine).

The crankshaft is very nicely made and finished, with a main diameter of $\frac{5}{16}$ in. stepping down in a short taper to a 2 B.A. threaded length. It is finished by centreless grinding after being hardened all over. The central hole is drilled out to the port, the latter being rectangular in shape. The crank web is circular, ·669 in. diameter, with a ·156 in. diameter crank pin (70 mm. and 4 mm., respectively, and as with previous "O.S." engines, a mixture of "metric" and English sizes appearing. In particular, the 2 B.A. propeller nut size is unexpected in view of the fact that O.S. engines are obviously made with an eye on the American sales).

The connecting rod is a die casting in light alloy and of fairly small section. The big end is bushed with brass. The little end is plain and takes a ·118 in. (3 mm.) diameter gudgeon pin, which is an easy fit in the piston. Crankcase volume is reduced to a minimum by the very deep cover (again a die casting), which incorporates a passage to avoid blanking off part of the transfer—so again this is a unit which can only be fitted one way.

The main bearing is reamed to size and is an extremely good fit on the crankshaft—even a tight fit by glow motor standards, although it runs quite cool. The propeller driver is a plain, solid disc, tapered on the rear face to fit the shaft taper. Despite the absence of knurling or similar gripping surface on the driver, and the apparent free fit of the driver on the shaft, no trouble was experienced with propellers slipping or coming loose.

Actual production cost of the O.S. "Pet" must be remarkably low, for it sells for a matter of $6·95 in Canada and $4·95 in the United States, and for the equivalent of 33s. in Germany. Yet there is nothing particularly "cheap" in the appearance of the engine, nor any evidence of skimping on the important manufacturing stages. And performance figures speak for themselves, albeit at the expense of a considerable thirst for an engine of this size. The fuel consumption, in fact, rivals that of many larger engines, although this was with doped fuel, which does tend to increase consumption as well as performance. Certainly the "Pet" is a "performance" engine in its own right.

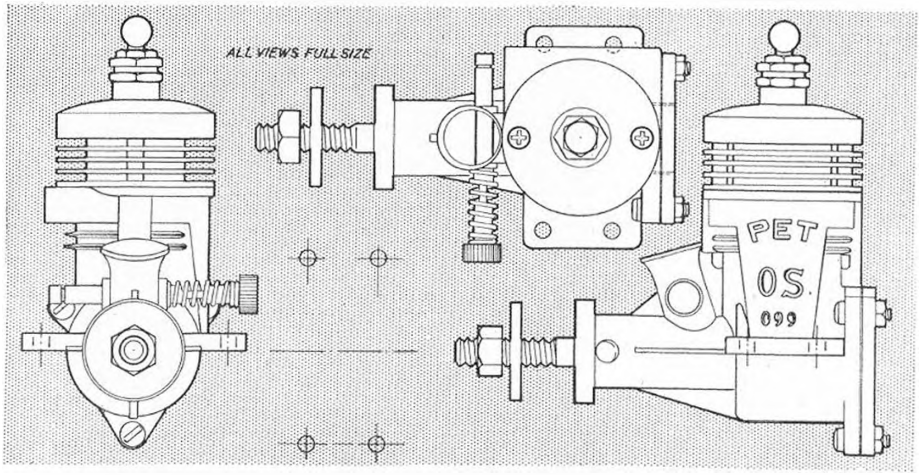


Simplicity of the O.S. Pet is seen in the piston (note transfer step) and cylinder at top. Whole engine is dismantled in lower photo.

PROPELLER—R.P.M. FIGURES

Propeller dia. x pitch		*r.p.m.*
8 x 4	(Stant)	10,800
9 x 4	(Stant)	7,800
6 x 4	(Stant)	14,800
8 x 3	(Trucut)	10,800
7 x 4	(Trucut)	12,800
7 x 3	(Trucut)	15,000
6 x 4	(Trucut)	14,500
6 x 3	(Trucut)	15,500
8 x 3½	(Tiger)	12,000
8 x 4	(Tiger)	11,000
9 x 3	(Tiger)	8,900

Fuel used: 25 per cent. castor, 75 per cent. methanol, 10 per cent. nitro-methane added.



George Cox relates the story behind the most famous of all D.H. Moths—"Jason"

"Amy, Wonderful Amy"

IT IS STRANGE that in aviation, which has in this century been a field of progress and endeavour without peer, so few of the contributing personalities are remembered. Military exploits in the air quite understandably bring glory to the man or woman concerned, but civil pilots rarely achieve lasting distinction for their deeds, however momentous. Most people whose interest lies in aviation, could name a dozen record-breaking aircraft, but could they name the pilots?

There is one name, however, which will long be remembered: the name of a young woman who had half the world waiting anxiously for news of her progress as she flew alone from England to the Antipodes. Had Amy Johnson been a professional pilot with long experience the feat would have been remarkable enough in 1930, but what endeared her to ordinary people was the fact that she was outwardly an ordinary girl herself, who by sheer determination and steadfastness of purpose had proved herself able to achieve great things. The story of David and Goliath would have been far less memorable had David been a giant too: the fact that Amy had to fight against male prejudice and the obstacle of impecuniosity with no inherited advantage but her courage and resoluteness, warmed a million hearts to her cause, for cause it was.

Bored and frustrated in her job as a typist for a London firm of solicitors, Amy yearned for excitement and found no opportunity within the four walls of her office to unleash her adventurous spirit. The freedom and adventure which aviation offered caught her imagination to such a degree that with sacrifice of every luxury, coveted by most young women of her age, she not only managed to pay for expensive flying lessons but was the first woman in England and probably in the world to qualify as a ground engineer (engines).

Having won the support of her parents, Amy began to look around for an aircraft in which to realise her intention to fly to Australia and when she saw a De Havilland Moth G-AAAH, advertised second-hand for £700, felt that this would meet her needs if she could meet the cost. The price seemed prohibitive, for she had practically no money of her own, but her father under pressure from Mrs. Johnson, put up half the price, although he did so with misgivings. The only way to raise the remainder was to find a philanthropist with sufficient vision and faith to see the value of such an enterprise, and it was Lord Wakefield who gave her the balance of the purchase price plus £50 pocket money.

The Gipsy-Moth was overhauled and fitted with extra fuel tanks in the front cockpit and the baggage compartment, increasing the range to 1,000 miles. Amy chose for her aircraft the trade name of her father's firm in Hull; a most appropriate one, for the flight to Australia was in its way just as stirring as the quest for the Golden Fleece. Preparations were completed by the end of April and the moment Amy had striven for during the last few months was rapidly approaching; May was chosen for the journey, because it offers fair weather in both hemispheres and is monsoon-free. It was when making the last-minute preparations that the idea came to Amy and her friend Jack Humphries, the ground engineer at Stag Lane, that the Press might be interested in her story and perhaps pay for exclusive publishing rights; the money would help to meet a multitude of minor expenses connected with the flight. Fleet Street thought differently however, making no bones of the fact that a madcap young woman making a forced landing or suffering a change of heart somewhere between London and Paris had precious little news value. They refused to pay £25 for the story and yet a few weeks later they paid as much as £10,000 for it!

On May 5th, 1930, with sundry luggage on the floor, a spare propeller strapped to the fuselage beside her, a parachute for luck and a heart pounding with accumulated excitement on the point of release, Amy Johnson took off from Stag Lane and set course for Vienna, her first stop. She had just eighty hours' solo flying experience behind her. Because cross-country flying was more expensive than local circuits and bumps all her flying had been in the Stag Lane vicinity, except for one long distance trip to Hull to say goodbye to her parents, and here she was tackling a solo flight which had been done only once before, by the Australian Bert Hinkler in an Avro Avian two years ago. He had taken fifteen and a half days. If only she could beat his record!

As "Jason" flew out of sight the whole world forgot the girl with the hopeless ambition except for the few who were associated with the venture. This futile attempt by a headstrong young woman of twenty-seven had far less reader appeal than the start of the cricket season and so the public heard nothing of this momentous flight until Amy landed in India. Halfway there and a whole day ahead of Bert Hinkler's time! Fleet Street was rocked by the news. This could be the sensation of the year and no-one had bothered!

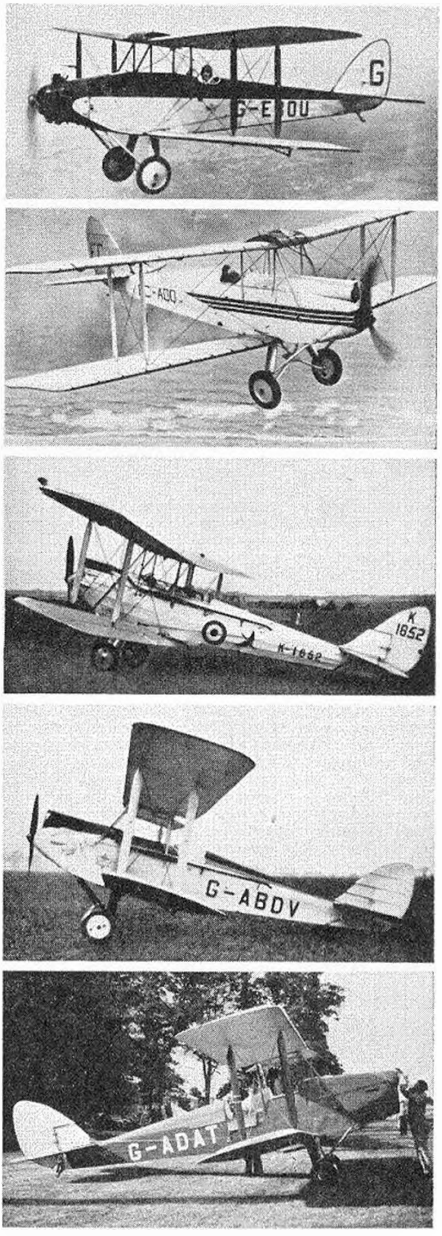
Had Amy been able to picture the scene at her home in Hull during the next few days, she would have found the tribulations of the journey easier to bear. Reporters descended on the Johnson household in scores. The telephone rang incessantly with offers from the London and provincial newspapers for the publishing rights of her story. The Johnsons were besieged. Amy's father, astute business man that he was, refused to be rushed and firmly declined all offers until a representative from the *Daily Mail* arrived. Lord Rothermere had heard of the enterprise and was determined to secure the story at any price. The sum of £10,000 was agreed on provided Amy served the *Daily Mail* for six months after her return, lecturing on her experiences—an obligation she accepted when she heard of it.

Meanwhile, in contrast to the almost lunatic atmosphere of her home, Amy pressed on stoically with her flight to the Antipodes, tired, apprehensive, but always alert to the dangers awaiting her if she were to make a forced landing on barren desert, mountain, jungle or

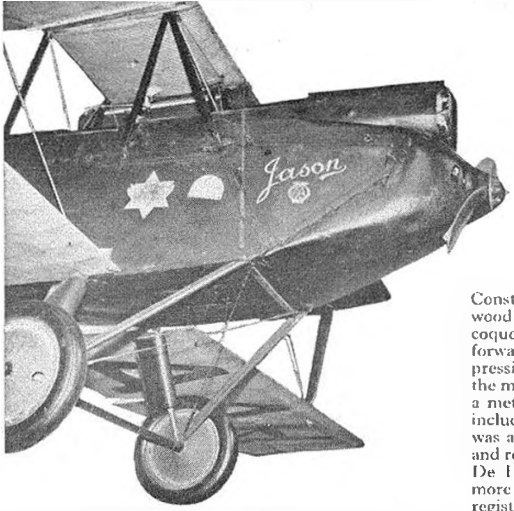
sea. Hundreds of miles of inhospitable terrain lay beneath her as she slowly progressed towards the goal which had tantalised her since those early days at Edgware. How secure and friendly England must have seemed in comparison as she looked down on the notorious Timor Sea. The initial tremor of excitement had long since died down only to give way to a thrill of another kind—the feverish anticipation of a goal rapidly coming within her grasp and the taut, tense anxiety as to whether her machine would stay the course. Was it her imagination, or was she really losing power? Had she enough petrol? Was her navigation sound? Would the weather hold out just a little longer? The journey had by no means been uneventful so far: from Vienna to Constantinople and then over the Taurus mountains to Aleppo in the Syrian desert. Between Aleppo and Baghdad she had been forced to land until a 50 m.p.h. sand storm abated. When she touched down in Karachi, she had established a new record for the journey and her prospects of beating Hinkler's time to Australia seemed bright. Jhansi, Calcutta, Akyab, over the Burmese jungle to Rangoon then Bangkok on May 17th, Singapore on the 19th. Time had been lost in India through a minor mishap and in the Dutch East Indies she was delayed for several days so there was now no hope of beating the record of fifteen and a half days, but to reach Australia at all was achievement enough. At last Amy took off from Atamboea on Timor Island and set course for Port Darwin. The last lap, but all of it across treacherous stormy sea.

When the news came from Atamboea that the English girl was on her way, the townsfolk began to assemble on Darwin airfield to welcome her. Amy's excitement could hardly have been greater than theirs, as they waited impatiently in the broiling sun. They were to be the very first people to have the news the world was waiting for. The first solo flight by a woman from England to Australia was nearing its end and they desperately wanted to welcome their heroine. Just when all eyes were focussed out to sea, everyone hoping to be the first to spot the tiny green and silver biplane appear out of the haze, Amy flew in low over the aerodrome from the opposite direction. One could almost sense her jubilation as she turned and set "Jason" down on Australian soil. Her welcome was tumultuous. One milling mass of people surrounded her as she climbed, smiling from the cockpit. When she had left the airfield for the reception in Darwin, her machine was examined and found to be in an appalling condition. The propeller nuts were dangerously loose. There was virtually no compression in two of the four cylinders. When the engine had cooled it took two men to wrench loose the plugs and the oil sump cap, yet all that was needed was routine attention and the craft was soon in perfect order—a fine testimony to the quality of the De Havilland airframe and engine.

From Port Darwin Amy flew with an escort across the great Australian desert to Brisbane where, ironically, she crashed badly. Her machine somersaulted on landing, wrecking the wings completely, but to everyone's astonishment she stepped out unhurt. There followed a month's tour of the dominion, speaking at public meetings of her experience and receiving the acclamation of an adoring people, while "Jason", repaired by De Havilland's at Sydney, went on exhibition. When Amy left for home by boat with "Jason" tenderly crated and stowed on deck, she did so to the strains of a popular song written in her honour—"Amy, Wonderful Amy".



Five of the many Moth variants, Top to bottom: Genet Moth, also used by R.A.F., Spanish Racing Moth, R.A.F. D.H.60M metal Moth with fuselage stringers and 120 h.p. Gipsy II engine. "Jason 3", one of the four months used by Amy Johnson and at bottom, a Moth Major with the 130 h.p. inverted engine. All photo's by A. J. Jackson.



Famous Biplane No 16

by G. A. G. COX

de Havilland D.H.60 Moth

IT IS A HAPPY coincidence that Amy Johnson, who by her example fired the enthusiasm of so many people for flying, should use for her flight to Australia the very machine which was the mainstay of the private flying movement in its infancy.

Captain G. De Havilland collaborated with Major F. B. Halford of the Aircraft Disposal Company, designing his airframe around the A.D.C. "Cirrus" engine of 60 h.p., which was to be basically one half of the "Airdisco" eight cylinder vee engine. Both airframe and engine were completed in February, 1925, and the combination was a winner. Named "Moth" by Capt. De Havilland, and bearing the factory designation D.H.60, the little aeroplane was a masterpiece of designing. Functional in the extreme and yet of pleasant appearance, it could be built (and therefore repaired) with ordinary woodworking tools quickly and cheaply. It was safe and economical to fly; the folding wings meant less hangar space and also gave it an appeal as a privately-owned runabout. Since they were to fold, staggered wings were out of the question, but the upper wing was rigged 3½-in. ahead of the lower so that they would clear the ground when folded. Before withdrawing the locking pins to fold the wings a jury strut was fitted between the front spars to keep the wings braced. A wire from the rear centre-section strut to the lower wing prevented sagging. On early Moths the jury struts were strapped to the cockpit edge, but telescopic ones pivoted at the front spar were later adopted for all Moths.

Construction was of wood throughout, including plywood covering on the fuselage, making it semi-monocoque. The undercart looks a little ungainly, but the forward-sloping drag strut was lighter than a compression strut of equal strength would have been behind the main leg. Springing was by rubber in compression—a method used on all De Havilland aircraft up to and including the Mosquito. The first Moth, G-EBKT, was a resounding success, and it is upon the reputation and revenue earned by this little machine that the present De Havilland company was built. An order for nine more aeroplanes was placed immediately, these being registered G-EBKU, 'LI and 'LR to 'LY and so G-EBLV, which De Havillands have restored to airworthy condition is one of the very first batch.

Over a period of years, more than 3,000 Moths were built in this country, the dominions, France and U.S.A.

Historic Flights in Moths

1925	Sir Alan Cobham	London to Zurich and back in one day
1926	King's Cup Air Race	Winner: H. S. Broad in Cirrus Moth, 3 out of 5 finishers were Moths.
1926	T. N. Stack and B. M. Lyon	Stag Lane to India.
1927	King's Cup Air Race	Winner: W. L. Hope in specially modified Moth, Cirrus I engine.
1927	R. R. Bentley	Cape Town and back.
1927	Major A. M. Miller	South African tour and height record of 17,289 feet.
1928	King's Cup Air Race	Winner: W. L. Hope in a D.H.60G
1928	H. S. Broad	World endurance record, 24 hours in a D.H. 60G.
1929	600 hours reliability test, equivalent to 51,000 miles with only routine attention.	
1930	Amy Johnson	England to Australia.
1931	J. A. Mollison	Australia to England in 9 days.
1934	Jean Batten	England to Australia.

Performance figures varied enormously according to powerplant and airframe modifications. Two different wheeled undercarriages were fitted, and at least two types of floats. The Moth was flown as a single and two-seater. There were racing, training and sport versions, some with slats some with headrests, so perhaps it will suffice to quote figures for the 120 h.p. Gipsy Moth only:

Max. speed, 105 m.p.h. at sea level, 100 m.p.h. at 5,000 ft. Cruising speed 85 m.p.h. Initial climb, 700 ft./min. Range 280-320 miles, Service ceiling, 18,000 ft.

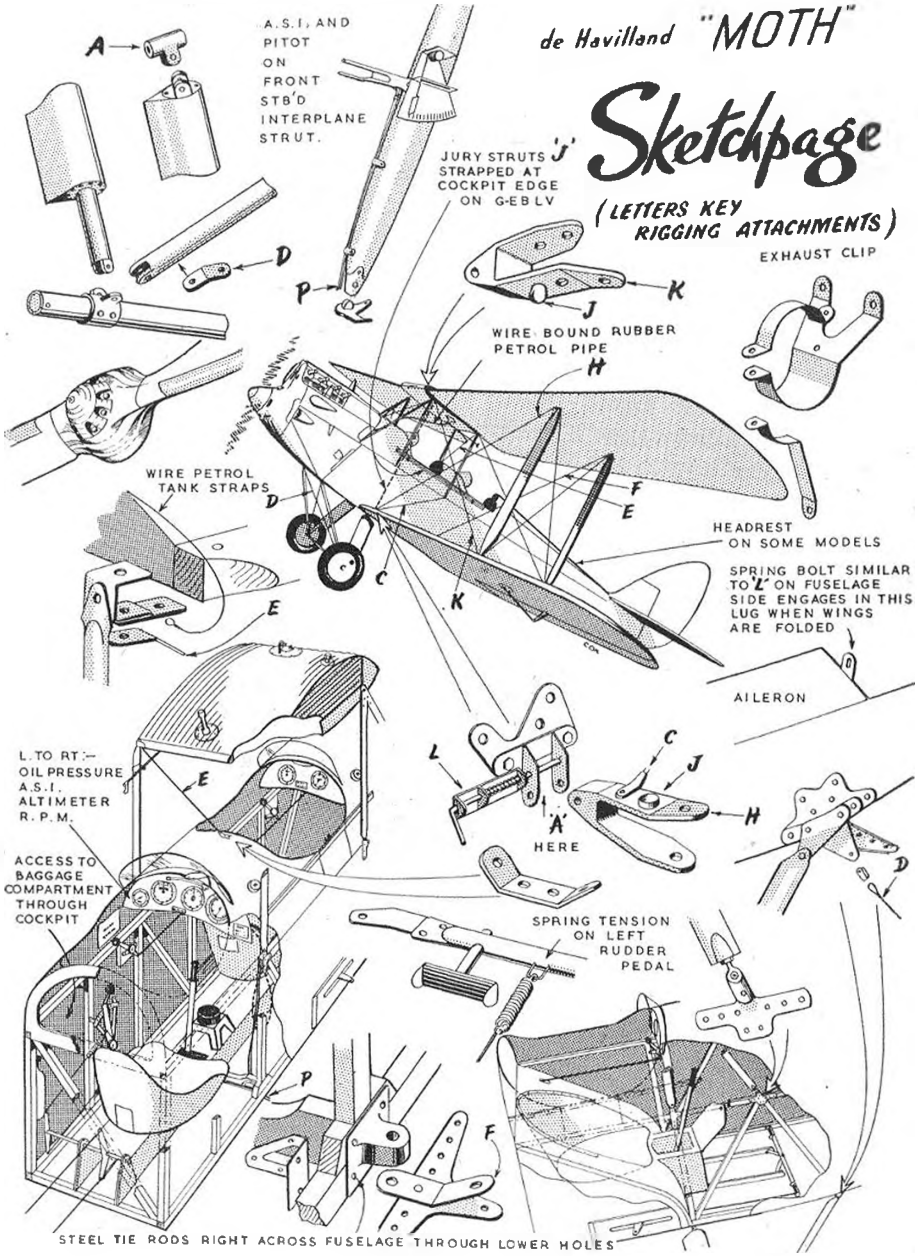
The 80 h.p. Cirrus Moth had a top speed of 85 m.p.h. and landed at 45 m.p.h.

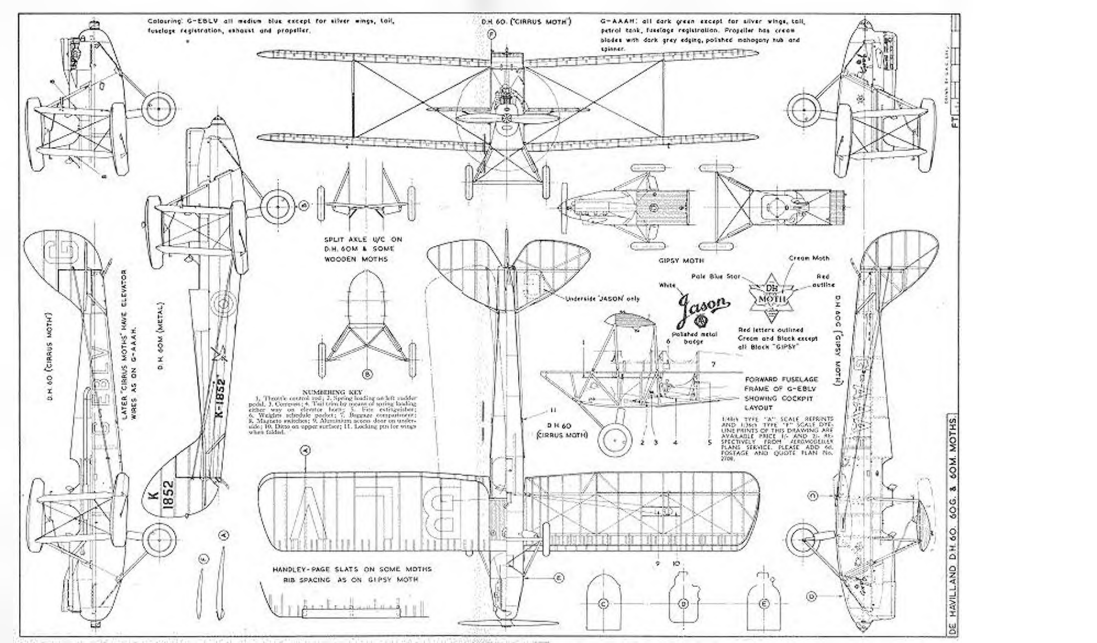
The writer is grateful to Mr. V. O. Tapper and the De Havilland Aircraft Company for their assistance with this article.

Heading shows the famous Gipsy Moth "Jason". At left: "Switches on—Contact" for the Cirrus engine in G-EBLV, a Moth preserved by D.H.'s and flown by Oliver Tapper at the recent R.Ae.S. Garden Party. His wife is about to swing the prop. Below: Gaily coloured American Moth, one of several in the U.S.A.

de Havilland "MOTH" Sketchpage

(LETTERS KEY RIGGING ATTACHMENTS)




Colouring: G-EBLV all medium blue except for silver wings, tail, fuselage registration, exhaust and propeller.
D.H. 60 ('CIRRUS MOTH')
G-AAAH: all dark green except for silver wings, tail, petrol tank, fuselage registration. Propeller has cream blades with dark grey edging, polished mahogany hub and spinner.
D.H. 60 ('CIRRUS MOTH')
LATER 'CIRRUS MOTHS' HAVE ELEVATOR WIRES AS ON G-AAAH.
D.H. 60M (METAL)
K-1852
K 1852
SPLIT AXLE U/C ON D.H. 60M & SOME WOODEN MOTHS
GIPSY MOTH
Cream Moth
Pale Blue Star
Red outline
White
Jason
DH MOTH
Underside 'JASON' only
Polished metal badge
Red letters outlined Cream and Black except all Black "GIPSY"
D.H. 60G (GIPSY MOTH)
NUMBERING KEY
1. Throttle control coil. 2. Spring loading on left rudder pedal. 3. Compass. 4. Trail wire for escape of spring loading either way on elevator horn. 5. Fire extinguisher. 6. Weights schedule pocket. 7. Baggage compartment. 8. Magneto switches. 9. Aluminium access door on underside. 10. Drain on upper surface. 11. Locking pin for wings when folded.
FORWARD FUSELAGE FRAME OF G-EBLV SHOWING COCKPIT LAYOUT
1:48th TYPE 'A' SCALE REPRINTS AND 1:36th TYPE 'B' SCALE DYE-LINE PRINTS OF THIS DRAWING ARE AVAILABLE PRICE £- AND £- RESPECTIVELY. FOR FURTHER DETAILS PLEASE SEND S.A.E. POSTAGE AND QUOTE PLAN No. 2108
D.H. 60 ('CIRRUS MOTH')
HANDLEY-PAGE SLATS ON SOME MOTHS
RIB SPACING AS ON GIPSY MOTH
DE HAVILLAND D.H. 60, 60G, & 60M MOTHS.

What's the Answer ?

A question on soldering

"I have always been told that an electric soldering iron is best for all electrical joints, but I can never get good results with mine. The solder never runs cleanly, never seems to melt properly and I always seem to get dry joints. And using an electric iron on joints on wire undercarriages, I can't even get the solder to stick. What's the answer?"

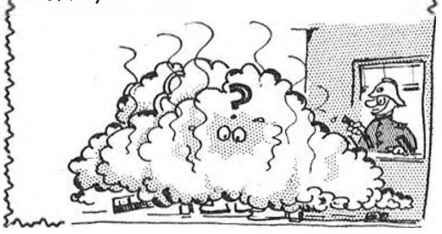
"Frustration"

What would YOU do in a case like this? Turn the page for the solution to the problem, printed below.

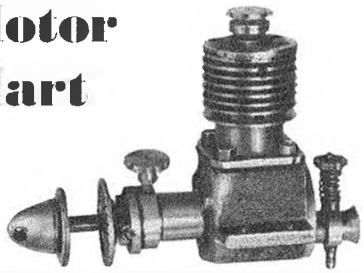
A common trouble with electric soldering irons is that the mains supply voltage is below that for which the iron was designed. In such cases the iron will never get hot enough to make really good joints. Check that the voltage of the iron matches your mains voltage or, failing that, use a transformer to boost your mains voltage, as required. Then you should have no trouble with electrical solderers, provided tags, etc., are clean. One must be able to heat the job being soldered to accept the flow of metal solder.

Steel wire is more difficult to solder. It must be really clean (use a file or emery paper) and an acid flux is best, together with a *really* hot iron. A gas heated iron is usually better than an electric iron in such cases, heated to just below dull red heat. It also helps if the joint is bound with fine or fine copper wire.

A very hot iron . . . !



Motor Mart



The Sholto-Douglas 2·2 c.c. diesel

A UNIQUE 2.2cc. DIESEL bore ·541 in., stroke ·5625 in. by Squadron Leader N. Sholto-Douglas, illustrates how it is possible to make a most successful power unit with the minimum of facilities. Although the engine has been used for several seasons and shows considerable wear with the induction disc in need of refacing and sloppy big end, it will churn out 10,500 r.p.m. on an 8 x 4, 10,200 on 7 x 6. 9,400 on a 9 x 3, and 7,600 on a 9 x 6, which is more than equal to a good many of the better commercial products of slightly less capacity. The main point about this engine, is that it has a fixed head fitted with a ball valve. This eliminates any possible head leak, lowers the overall height and renders the engine specially suitable for inverted running because a hydraulic lock can be cleared through the ball valve without turning the aircraft over.

The compression adjustment is by means of an eccentric main bearing in phosphor bronze, bored 20 thou. eccentric which is moved by a pin behind the driving washer. This small amount of adjustment is ample and sufficiently fine enough for one to obtain approximate compression ratio without recourse to re-adjustment during the engine run. To release a build-up of compression in a rich condition, without having recourse to compression setting, the valve in the head allows complete decompression or reduced compression and is used as an aid to starting. The lever rotating the eccentric main bearing bush for compression adjustment can be located either above or below the crankcase according to whether the engine is being operated upright or inverted.

The interior of the dural head is contoured to match the conical piston and both transfer and exhaust ports are produced by drilling holes through the $\frac{1}{16}$ in. thick upper cylinder and $\frac{1}{8}$ in. lower cylinder. The liner is then pressed into the dural jacket, which is located on the crankcase by four studs and an annular transfer chamber, thus permits full 360° porting.

Another novel feature is the crankpin extension on the crankshaft, which is a flat section to mate a slot in the disc. Running tests of Squadron Leader Sholto-Douglas' engine have shown it to be an extremely practical job as befits its rugged appearance.

Now reaching the shops and rapidly gaining in popularity are the 55s. pair from **FROG**, the 100 Mark II, and the 150 Mark IIR. Each is a modified variant of the familiar Frog layout, but the change in porting for both engines has resulted in greatly increased performance. Unique is the transfer system on the 100, for it consists of six vertically bored holes through the very thick lower cylinder barrel. Rigidity in the cylinder is assured, and one of the features of both these engines is their smooth vibration-free running through a wide r.p.m. range. The 100 has a gold head, the 150R is blue, and the distinction between the latter engine and its forerunners is found when the piston is at T.D.C.

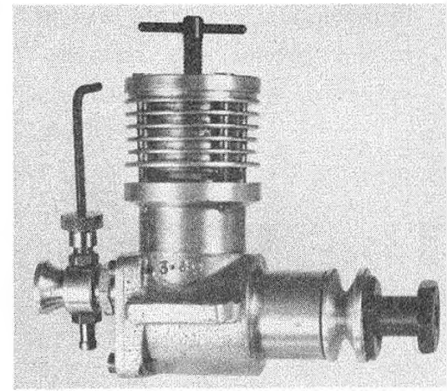
The amount of sub-piston intake rivals that found on very early Elfins, and is produced through use of a new type short skirt piston.

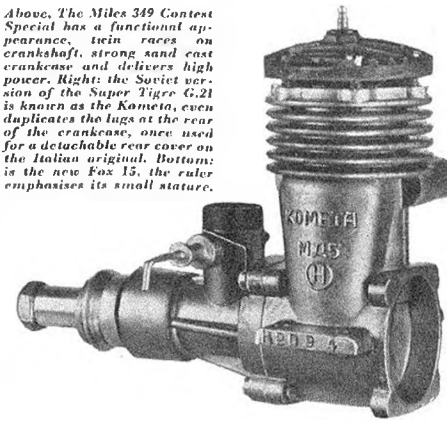
From Russia we have an example of the 5 c.c. **Kometa** MA-5 No. A.2904, which was signed out of the factory in May, '57. This is a remarkable engine, for if it had not been accompanied by a compact booklet on how to operate (including timing diagram) we might well have taken it as a practical joke by the lads at Micromechanica Saterno, who make the Super Tigres. To all outward appearances it *is* a Super Tigre, and adopts every feature of the G.21 (bore 19 mm. stroke 17 mm.) but adds the wise precaution of placing the head bolts nearer the edge to get better seal and less chance of distortion.

Considering that the booklet is dated 1956, it is surprising that little has been heard of this motor in the past three years, perhaps its lack of originality has restricted distribution to those in central Russia.

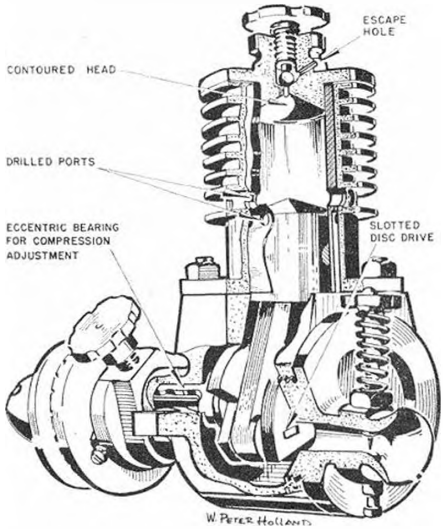
New from **Fox** is the long awaited 15 or 2.5 c.c. glow engine. Small in stature, but very much a Fox in appearance and handling, the 15 is labelled "especially developed for beginners", and as such, it starts easily, is simple to tune, and delivers fair output. Performance straight out of the box was 8,800 r.p.m. on a 9 x 3 which leapt to 14,800 r.p.m., a very good figure, on an 8 x 3½. For free-flight, stunt, and possibly team race (it seems economic on fuel) it will rival the two other American '15's. Novel machining of the transfer port gives a generous overlap without any sacrifice of strength or rigidity.

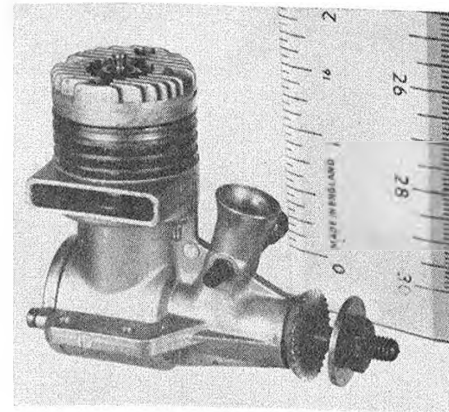
New in this country is the **Miles** Contest special 349. This engine has been circulating with the combat lads for a few months and many envious eyes have been cast in its direction. Originally a 3·3 conversion of the E.D. 246 Racer which is another Basil Miles design, the motor is being made in small batches to order with a strengthened sand cast crankcase to stand up to the high r.p.m., and give reasonable wall thickness when bored out to take the $\frac{5}{16}$ in. throw. Stroke is 11/16 in. It was tested up to 12,000 r.p.m.





Above, The Miles 349 Contest Special has a functional appearance, twin races on crankshaft, strong sand cast crankcase and delivers high power. Right: the Soviet version of the Super Tigre G.21 is known as the Kometa, even duplicates the lugs at the rear of the crankcase, once used for a detachable rear cover on the Italian original. Bottom: is the new Fox 15, the ruler emphasises its small stature.

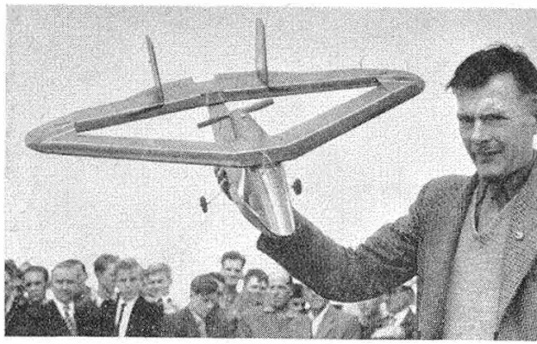




AERO MODELLER

Remarkable semi-scale 36 inch model proves the stability values of a full-size project

by G. WOOLLS



The Warren-Young Wing

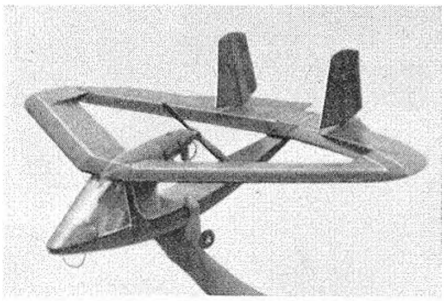
POSSIBLY MANY READERS will look at "Ace of Diamonds"—smile tolerantly, and mutter something about odd looking aircraft without other purpose than to look unusual.

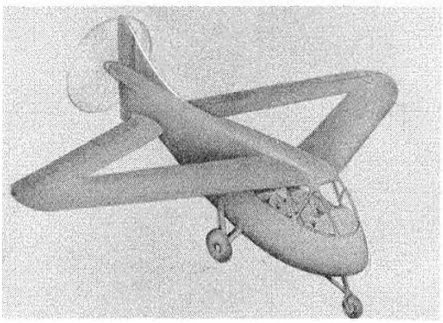
In order to straighten the record, let it be stated that the model is based on a full size project and appears to bear out the advantages claimed for the original aircraft.

It was back in 1926 that Mr. Norman Hall-Warren, A.R.Ae.S. created a wing design which would be stall and spin-proof and have a very large speed range.

Ex-R.F.C. pilot and well-known sailplane enthusiast, Rex Young later joined forces with Hall-Warren and in December, 1937, a patent (No. 508022) was granted. A private backer for the building of a prototype was found, but the international situation at that time (just prior to the war) prevented fruition of the project.

Since the war, rising production costs and official obstructions (Warren states) have prevented the production of a full size aircraft.





The theory behind the Warren-Young is largely concerned with the Boundary Layer flow over the wing. One of the features of swept wings is that the Boundary Layer moves in a spanwise direction, towards the tips in the case of sweepback, and towards the root when the wing is swept forward. This outward movement normally causes tip stalling, and fences are often used in an attempt to cure this.

A study of the diagram opposite, will show how the combination of sweepback and sweepforward causes the Boundary Layer to move from the front plane centre section, around the tip and thence back to the rear plane centre section. This continuous removal of the boundary air prevents stagnation of the airflow and stops the lift from decreasing at angles of attack greater than that of maximum lift, *i.e.*, both front and rear planes will have a flat lift curve.

There is also a slot effect between the front and rear plane near the point of juncture. This has the effect of speeding up the flow over the trailing edge of the front plane, preventing early separation, which might otherwise occur at this position.

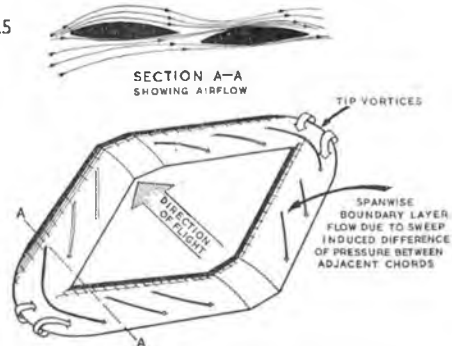
In addition, the relatively large chord of the wing tip spreads the tip vorticity, preventing an early local stall and as with all low aspect ratio aerofoils, the Warren-Young tip surface will continue to develop lift up to an exceptionally high angle of attack. In fact the stalling angle of the tip is beyond that attainable in flight and is probably well over 40°.

Another anti-stall characteristic of the Warren-Young wing derives from the fact that the rear plane is always operating at a lower angle of attack than the front plane, due to the decalage indicated by stability considerations, and also to a smaller degree due to the downwash, and the rear plane is therefore still lifting strongly when eventually the lift of the front plane starts to fall.

The stability of the Warren-Young aeroplane is exceptional, due to the large area of wing surface located with an effective arm about the centre of gravity. There is no onset of instability or upset of balance at very high angles of attack, corresponding to very low forward speeds. In fact it is impossible to spin the Warren-Young, nor in the accepted sense, is it possible to stall it.

All this means that the Warren-Young aeroplane will take-off after an exceptional short run and can be climbed very steeply in complete safety. Also it can approach a landing in an almost vertical path, with no risk of loss of balance or sudden loss of lift. The calculated figures for the Warren-Young Skycar, a two-seater, 100 h.p., light plane version, are still-air minimum level flying speed 28 m.p.h. and approach and touch-down speed of about 20 m.p.h.

Comparison of George Woolls' model with Skycar project below shows main difference in engine and prop position, a long extension shaft being too complicated for the flying model.



AIRFLOW OVER 'WARREN-YOUNG' WING

Coupled with the aerodynamic advantages, the Warren-Young wing is an exceptionally stiff structure, due to the triangulation in both the horizontal and vertical planes, and is thus proof against any distortion. Moreover, it is a proven fact that the Warren-Young aeroplane will tolerate relatively large changes in locus of centre of gravity, without reducing stability.

It is interesting to note that the Russian aircraft designer, Mikoyan, has stated that the Rhomboid type aircraft (*i.e.*, Warren-Young type) is the shape of things to come in supersonic flight (*see R.A.F. Flying Review*, June, 1955).

Readers who require detailed technical descriptions of the Warren-Young wing may refer to the following publications:

—*Flight*, November 18th, 1943
May 18th, 1944
August 10th, 1950

The Aeroplane, March 5th, 1948
June 25th, 1948

Aeronautics, March, 1948

Brit. Pat. Spec. No. 508022 of December, 1937

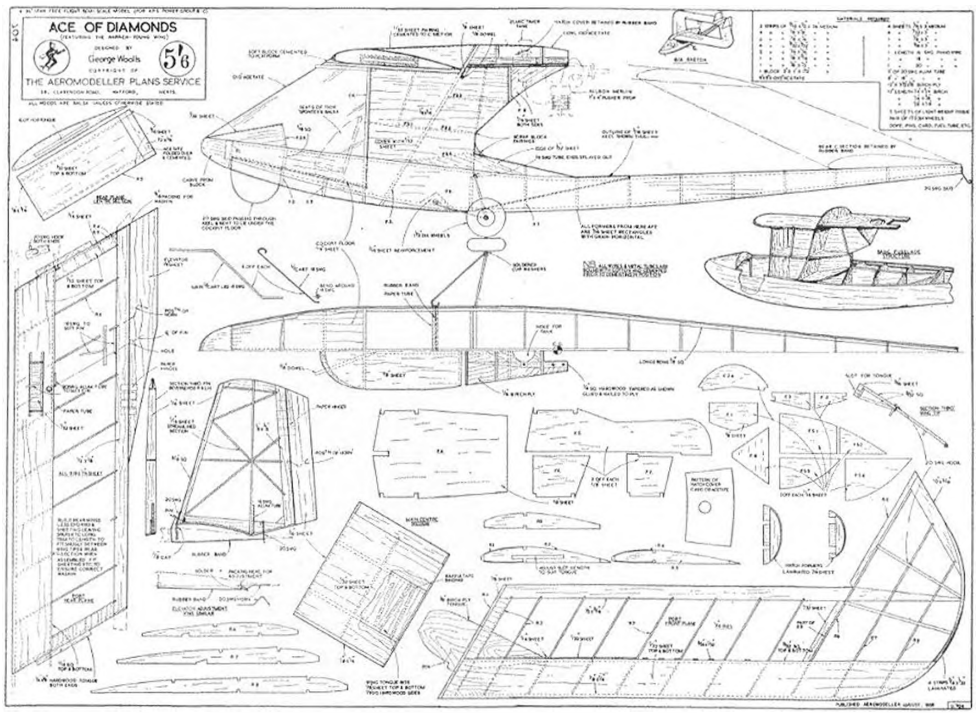
"Ace of Diamonds" may be described as a semi-scale model of the projected Warren-Young "Sky-Car". That aeroplane has its propeller at the extreme rear of the fuselage, but as the necessary extension shaft would add complication to the model, the prop. was moved to a position between the wings.

The first powered version went O.O.S. on its third flight, being recovered some 2½ months later from a cornfield! A second powered version (seen above) won the Unorthodox Concours at the 1957 All Britain Rally and made several excellent demonstration flights. The model is not an absolute beginners project, but this does not mean that it is so complicated to be beyond the powers of anyone who has already built a couple or more orthodox power jobs. Although the model will bear out the stability claims made for the Warren-Young Wing, it must, in common with any other aircraft, be rigged correctly in order to give it a proper chance to fly properly.

Check that C.G. lies where indicated, and that there is no side thrust, as, due to the proximity of the prop. to the fins, this has a very powerful effect. There should be approx. 6° of wash-in on the rear wing, and with this, the elevators should be shimmed up until their back edges are about $\frac{3}{32}$ in. above their front edges. Ensure that the rudder trim tabs are not offset.

Trimming, if any, follows the usual pattern, remembering that the model is a scale type, *i.e.*, tight spiral climbs should not be attempted—at first anyway!

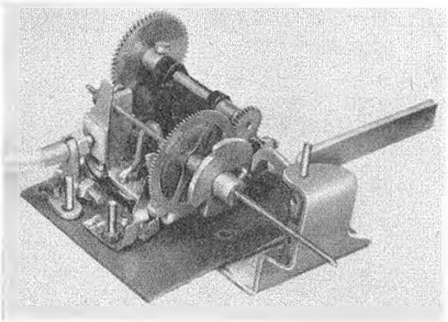
FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION BELOW ARE AVAILABLE AS PLAN U. 707 PRICE 5/6 PLUS 6d. POSTAGE FROM AEROMODELLER PLANS SERVICE

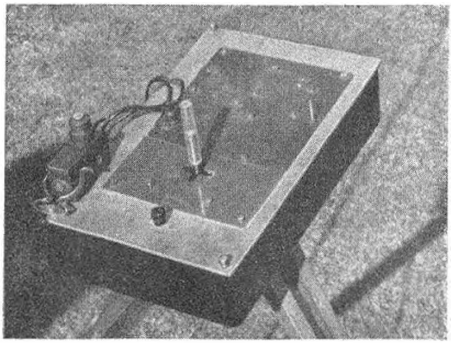


JOYSTICK CONTROL

FOR SINGLE CHANNEL RADIO

Developed by M. H. FORD





Above is Mr. Ford's control box which is mounted on a camera tripod and connected to the transmitter by means of a flexible lead. The normal micro switch is also retained in circuit. Left, is the receiver servo with anti-flyaway device on left and the elevator arm with operating cam can be seen on right

THOSE OF US who desire more controls from single channel radio gear invariably look to selective compound escapements similar to those described by C. C. Badger in the May AEROMODELLER. This type of escapement or actuator gives a positive control movement for a selected code of signals and has the advantage of always giving, say, "left" for one push of the button and "right" for two pushes, etc. The disadvantage of the selective system lies in the human difficulty of giving the correct sequence of signals at speed, particularly when additional signals are necessary to obtain either engine or elevator, or possibly both when cascaded escapements are employed. Just how difficult this selective button pushing is can only be truly appreciated by trying such a system.

The obvious answer, as used by Mr. Ford, is to produce a reliable electro-mechanical "think-box" that does the job for you and which in this case merely necessitates moving a joystick in the customary directions to obtain "left", "right", "up" and "down" with automatic returns to neutral on release of the stick.

We have seen Mr. Ford's equipment in operation and it is highly successful. He uses a Hill Receiver, an AEROMODELLER Transmitter, and his model is a Bowden Meteorite of 48 inches span powered by an E.D. Racer.

The entire mechanism can be made without the use of special tools and readers should not be deterred by the fact that the "works" looks complicated.

The Receiving End

The actuator is basically a development of the Canadian motorised actuator described by Laurie Ellis in our February, 1957, issue. It uses a Mighty Midget motor running at 3 volts which draws no current when held on.

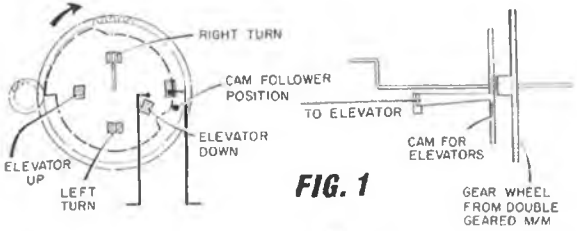
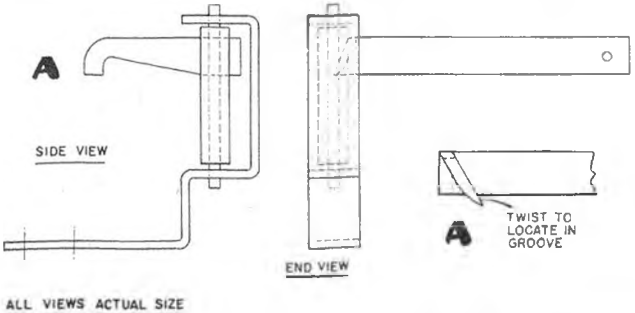


FIG. 1



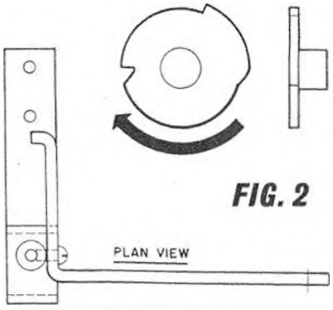


FIG. 2

It will be seen from the photograph that the motor is double geared, the second large gear wheel being mounted on a shaft that also carries a cam for operating the elevator. Wiper contacts on the face of this large gear wheel, together with dead segments of Sellotape, control the movement of the motor and in turn the rudder and elevator positions. *Fig.* 1 shows the position of the dead or no-contact segments and it will be noted that in "elevator down" there are also two degrees of left rudder which is unavoidable and in any case makes no difference in flight.

The elevator follower rides around the cam which is mounted on the rudder shaft and shown full size in *Fig.* 2. For "left" and "right" rudder positions the elevators are at neutral and the follower passes the "up" and "down" cam positions too fast to cause any change in flight trim.

The cam follower is bent at the angle shown so that the "instep" of the follower rides in the cam depression and is the first portion of the follower to lift out of the depression when the "toe" takes over. This relieves excessive load on the motor when moving from down elevator to up elevator.

On the designer's servo the gear ratio on the second train is about 1 : 4 as he used a larger secondary gear speed which makes the actions faster without loss of power. Furthermore, using a larger gearwheel with fewer teeth makes the sticking of the patches easier, and more simple to position. There is, however, no reason why standard Mighty Midget gears of 1 : 7 ratio cannot be used for both gear trains. It will be noted that there are four patches on the inner circle in line with the inner contact. They are "right", "up", "left" and "down". The latter position is slightly offset to the "neutral" patch which is in line with the outer contact strip. As mentioned previously, this means that when final adjustment is made, the rudder crank is offset two degrees to starboard in the neutral position, and when in the "elevator down" position the rudder is two degrees to port. Since the propeller torque acts against starboard rudder when in flight, this small deviation has no effect.

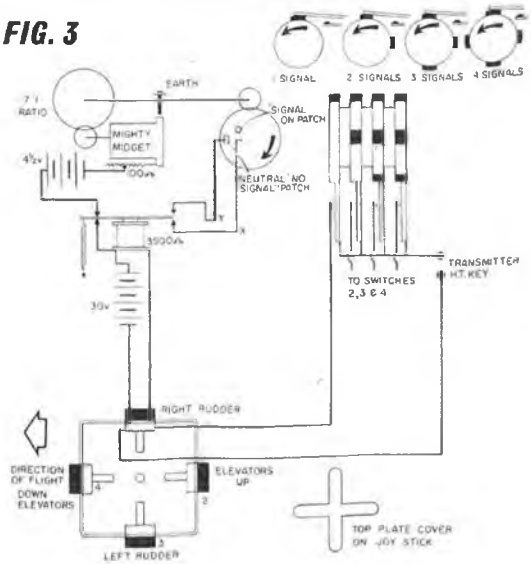
It will be noted from the photograph of the servo that an air bleed device is incorporated at the other end of the rudder drive shaft. This very ingenious scheme was thought up by Mr. H. Brooks, a friend of Mr. Ford. The pipe goes to the fuel tank vent and is sealed by a clapper valve made up of a piece of foam nylon covered with sellotape cemented to a spring arm. This arm tends to spring away from the pipe, uncovering the end by a cam fitted to the shaft coincident with the neutral position of the servo.

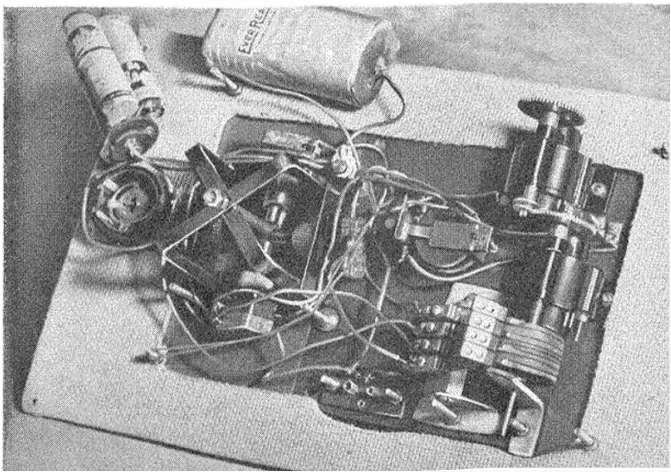
Providing the servo rotates at least once every 25-30 seconds then the fuel tank, which is vented and made from thin shim brass to permit contraction keeps the engine running. Should, however, the model have a radio failure or fly-away, when the servo is in its neutral position, then the engine will stop after a maximum of 30 seconds. Very cunning indeed Mr. Brooks!

The Transmitter Unit

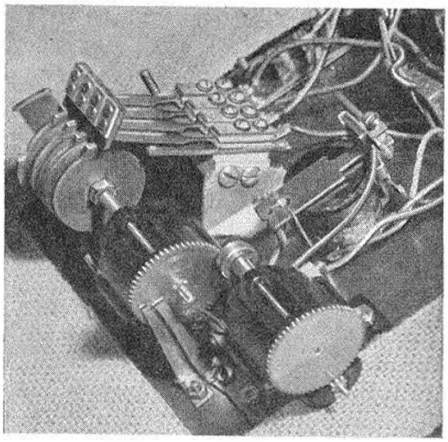
A study of the photographs and *Fig.* 3 will

FIG. 3





Underside view of control box lid on which are mounted the various components. Great care should be taken with all soldered joints and none of the leads should be left unsupported if 100 per cent. reliability is to be achieved



Left is a close-up of the bank of actuating cams. Note the wiper contacts on the large gear wheel of the second Mighty Midget which is merely used as a housing for the gears

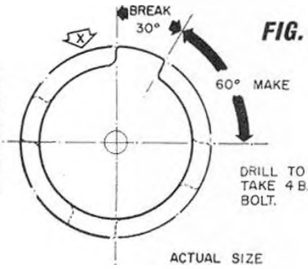


FIG. 4

quickly explain the salient points. The joystick is a Bill Warne double pole four way control stick, the outer set of contacts (shown shaded) are used to complete a circuit to a relay. When the relay is energised, contact is made on wiper contact "X" through the gear wheel to the earth brush of a double geared Mighty Midget motor. The other brush goes to a 100 ohm potentiometer which acts as a speed governor and then to a 4½-volt battery. This will make the gear wheel and shaft rotate until wiper contact "X" stops at the "signal on" patch. The bank of contact cams will now have rotated almost one complete turn and will stop with all contacts made, although the only one that matters is that with the circuit completed according to the selection made by one of the inner circle of switches. Either one, two, three or four signals will be sent depending on which switch was selected via the joystick.

When the stick is released the other relay contact takes over and moves the gear wheel until wiper contact "Y" stops at its no-signal patch. This last movement is very slight taking no time at all, but it also moves the bank of contact cams and opens the circuit for "signal off".

The mechanism is now ready for the next selection and it is obvious that every time the stick moves from one position to another it must go through neutral which cancels the previous selection.

By using 4½ volts with the variable resistor the motor in the transmitter unit will run faster than that in the airborne servo unit. This is essential, but there will be a tendency for the transmitter motor to overrun the stop patches as a result. The answer is to make larger patches to suit and it will be appreciated that the neutral patch on the control box and its counterpart in the receiver servo unit comprise the time base or synchronism on which successful operation depends.

Once the system is in operation the potentiometer or variable resistor is used to time the pulse to coincide with the speed of the actuator. This is not very critical and will work at a wide variety of settings, but the designer recommends that the setting is half-way between the actuator over-running the joystick and the joystick going too fast for the actuator to follow.

The gear ratios on the control box are standard Mighty Midget, that is 7 : 1 ratio, and we should mention that the extra motor used in Mr. Ford's unit serves no other purpose than to provide a mounting for the second gear train.

A few notes on the constructional side of the control box will help constructors. To make the contact cams use $\frac{1}{16}$-in. paxolin sheet and mark out four circles using a penny as a template. *Fig.* 4 shows basic cam drawn full size. Take some $\frac{1}{8}$-in. or $\frac{3}{16}$-in. paxolin, use a halfpenny as a template and cut three spacers with a fretsaw. Drill the centres of all these items to take a 4 B.A. bolt.

Assemble penny circles with halfpenny circles as spacers, then with a fine scriber, using the smaller circles as templates, mark the smaller size on the penny circles and then dismantle. It is now necessary to mark the appropriate number of cam lifts and saw away the unwanted material.

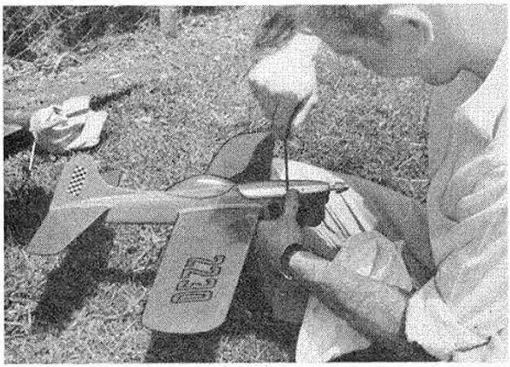
The cam discs should be accurately quartered and the cams cut as shown in *Fig.* 3.

The bolt which anchors the cams and spacers is drilled each end $\frac{1}{8}$-inch deep to take a wire shaft each end. One end is supported by a bearing the other takes the driving gear.

The bank of four spring contacts can be made from thin brass or from surplus equipment. Those used in the original came from Arthur Sallis of Brighton.

Since Mr. Ford's equipment was photographed he has made an addition to the mechanism in the form of a brass spring brake which bears on the opposite side of the gear wheel on the camshaft to the wiper contacts. This ensures that the mechanism stops quicker, thus preventing overrun of the no-contact strips.

Well, there it is—a little extra work at the transmitter end and you can enjoy the pleasures of multi flying with single channel radio without the bugbear of remembering a signal code. Mr. Ford has already flown many hours with his original performing loops and similar manoeuvres with comparative ease.



Top: German Stunt Champion, Rieger attends to the O.S. Max 35 in his fast stunt model, a new departure for him, as he has been faithful to the E.D.246 for several seasons. Centre: Stouffs and his latest Pfffft Team racer to new F.A.I. specs. He is fitting the specially cast engine pan back on the nose. Bottom: Champ. of the meeting, Fernand Batllo of Spain, manufacturer of the Byra diesel, with winning stunt model (Fox 35). Has assymetrical flaps, trike u/c and is hardwood construction.

WORLD NEWS

European C/L Championships

SUNNY SPAIN played host to teams from Belgium and West Germany over the Whitsun holidays for a team racing and aerobatic contest included in the F.A.I. Calendar as a European Championship.

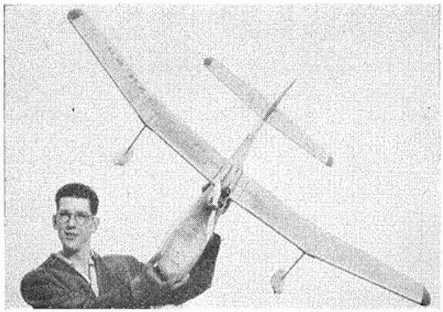
The new F.A.I. t/r regulations were given their first international airing, and during processing, objections were rightly raised on the use of blisters to meet cross-section rules, and young Lenzen's all-metal racer from Germany with its cross-section in an extended engine cowl. Such irregularities were accepted in view of the flexibility of the French text in the official rules.

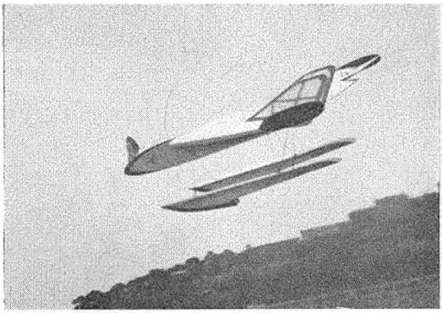
In the first heat at Montjuich, where special circuits have been laid for the Barcelona club, Germany led with the Kroger/Lenzen team taking 6:04 to cover 10 kilometres. Considering the 50 per cent. increase in overall size in the 1958 F.A.I. racers, this compared most favourably with last year's winning time of 5:50 by Stouffs in Brussels. But there was better to come. Deligne won the next heat for Belgium with his long span high aspect ratio design at 6:05, then in heat three Batllo and Fernandez set up a record of 5:04 with airspeed approaching 90 m.p.h. Clearly, the rules have not made any difference to model speed, and as for range, this Spanish model covers 46 laps on 10 c.c. of fuel—about the same as British modellers get out of 15 c.c. at the same speed. Fastest model was that operated by Stouffs and Bernard, with a specially cast metal pan to take the inverted engine, removable for overhaul. They did not have an ideal tank arrangement, getting only 26 to 30 laps at a checked speed of 145 k.p.h. or 92 m.p.h. (Since returning to Brussels Stouffs now reports 37 laps at 97·5 m.p.h.!) This model and those of Fernandez (flown by Batllo) and Pedemonte of Spain were finalists. It was a case of range beating speed. Fernandez winning in the time of 5:34, lapping at 88 m.p.h. for 46 laps, followed by Bernard at 92 m.p.h. for up to 30 laps, and Pedemonte who covered more than 50 laps a time at 76 m.p.h. All engines were Oliver Tigers.

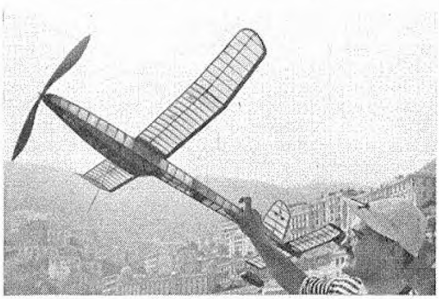
In stunt, large capacity glow motors led the field. Stouffs had his Thunderbird with Fox 35, but coagulated castor cut his engine on every flight before he could complete. Germany's Rieger, a fine exponent of the E.D. 246 at previous European Champs., had an O.S. 35, flew fast, and flew manoeuvres out of sequence on two flights to lose valuable points, and Fernand Batllo displayed great style to fully earn his "Champion of Champions" title, winning stunt by a 120-point margin.

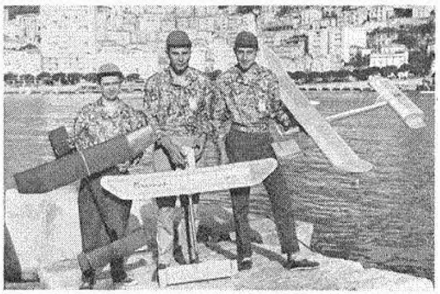
Team Placings
Spain 1,712 points; Belgium, 1,518 points; Germany 1,485 points

Team Race Final		*Aerobatics*	
1. Fernandez (Spain)	5:34	1. Batllo (Spain)	990·5 pts.
2. Bernard (Belgium)	5:41	2. Rieger (Germany)	877 ,,
3. Pedemonte (Spain	5:54	3. Pedemonte (Spain)	821 ,,









Monaco Hydromodel Contest

THE VITH INTERNATIONAL Contest for waterplanes held in the beautiful harbour of Monaco on May 25th/26th, inaugurated the new Prince Rainier III Challenge Trophy for radio models and attracted contestants from Italy, Switzerland, France, Yugoslavia and the host Principality. This time of the year is chosen for the perfectly calm conditions normally prevailing, but unfortunately, the wind chose to stir itself on the first day and although radio control was delayed for a evening start, two notable incidents created no little excitement among the inhabitants of Monte Carlo and were vividly recorded in the local press. It seems that two models "escaped from control of their pilots", one of them attacking a car parked on the quayside and the other excelling itself with a landing in the panther pit of the zoo whereupon it was immediately torn to pieces!

The Swiss team excelled in R/C and both Fea and Piazzoli repeated their last year's success, once more winning rubber and power. This relatively small but very happy occasion was concluded by a momentous banquet during which prizes were liberally distributed to the majority of the competitors by a distinguished group of patrons, among them Madame Louis Bleriot.

Radio

1. Entzeroth	Switzerland	799 pts.
2. Schramme	Switzerland	400 pts.
3. Bickel	Switzerland	360 pts.

Power

1. Piazzoli	Italy	477 pts.
2. Bige	France	300 pts.
3. Molinari	Monaco	281 pts.

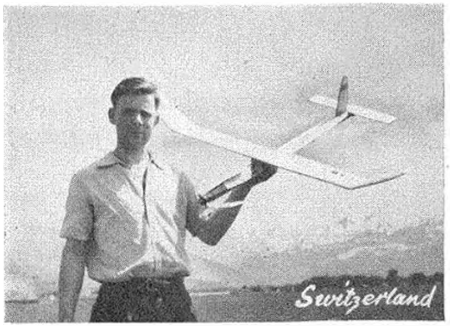
Rubber

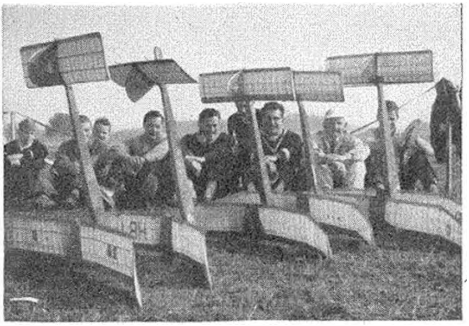
1. Fea	Italy	492 pts.
2. Suter	Switzerland	277 pts.
3. Novaro	Monaco	157 pts.

Rest of the World News

World Championship team selections have now been completed in **Japan** and **Switzerland**, and there is a possibility of Takeo Asano, whose model was top of those proxy flown at Cranfield in 1956,

Top: Entzeroth of Switzerland displays his Berkeley Sea Cat winning r/c model and at right: Bickel's 3rd place modified Veltan with what appear to be carpet slippers! Rubber model is Italian Fea's elegant winner with retractable float under the nose, and two teams are the Monegasque hosts and the French contingent posed on the delightful waterfront.





coming over in person. Only two modellers represent each class for Japan—

Wakefield		*Power*	
S. Nonaka ...	626 secs.	T. Asano ...	900 secs.
M. Onishi ...	588 secs.	H. Suzuki ...	852 secs.

The Swiss teams—picked after two eliminators:

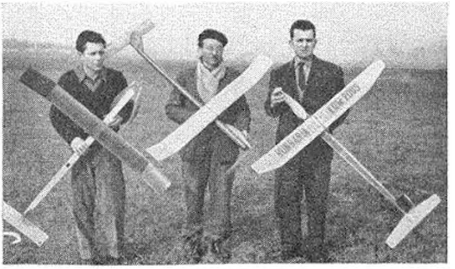
Power			
1. J. Schilknecht ...	Zurich ...	946 + 748 = 1,694 secs.	
2. R. Schenker ...	Schonenwerd ...	871 + 727 = 1,598	,,
3. F. Risin ...	Yverdon ...	884 + 677 = 1,561	,,
4. R. Grappi	Biele ...	846 + 653 = 1,499	,,
Wakefield			
1. H. Suter	Schonenwerd ...	521 + 797 = 1,318	,,
2. E. Hegglin ...	Winterthur ...	509 + 779 = 1,288	,,
3. J. Miser	Wahlen ...	346 + 711 = 1,057	,,
4. B. Kaufmann ...	Witherthur ...	399 + 641 = 1,040	,,

Other news item from Switzerland is that Kurt Strahm of Thun is claiming a new distance record of 8,750 metres.

In Canada Montreal M.F.C. Bulletin includes towing tip from Mike Thomas, ex-British A/2 team flier. Mike states that he likes the towhook as far forward as possible. Then he runs with the line at 60 or 70 degrees and puts up with the weaving. Why?—because when the model does ride into a thermal it takes the line up vertical and you know the model is in lift. Says he got the idea from Austria's Oscar Czepa.

Leading the 20 flight eliminators thus far held to select the **Czech** Wakefield team is Radoslav Cisek with a total of 3,214 seconds and he is closely followed by a clubmate, F. Dvorak with 3,190 secs., both of them flying the XL-58, details of which are on A.P.S. plan D 690. By topping the Czech rubber times, Rad Cizek goes to Hungary to represent his country in the M.M.S. "Peoples' Democracies" International.

Top: Leading Swiss Wakefield man, Hans Suter and at right, a few of the many Swiss Miss style designs lined up at the Swiss trials. Centre: "Ole Baldy" himself, Fred Dunn the Astro-Hog designer, displays a chequered example at Los Angeles, where Astro-Hogs fly in profusion. Below: the two Hungarian World Champs. teams. Power: Metzner, Gasko, Frigyes and Ordogh and Wakefield: Krizma, Benedek and Azor.



Start ½A racing with a model that meets the semi-scale requirements in full

Cupid

by Ron Moulton

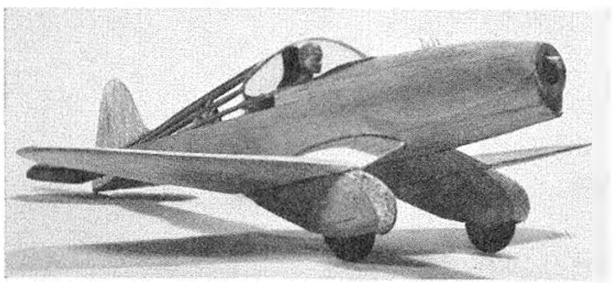
THE S.M.A.E. specification for a team racer holds that models shall be either scale or semi-scale. How we digress from that elementary requirement in our class "A" racers of today! Any rule-abiding jury with the fortitude to withstand the abuse of would-be competitors might be fully justified in eliminating 25 per cent. of the entry in some of our contests.

Let's get away from the dangling undercarriage, external fuel filter, postage stamp fin, ruler winged, short fuselage, pimpled canopy Class "A" monstrosities that appear with depressing monotony, and take a leaf out of the Don Walker Class "B" racer book. His designs, flown so successfully with Ray Tuthill engines, have shown the way to win with the fastest—and realistic models.

Speed is not necessarily a function of how small one can reduce a chord or fuselage—it is derived from practical streamlining and we hope that in the newly-instituted Class "½A" consideration for appearance and streamlining will stem the degeneration which has overtaken the 2·5 c.c. class.

The structural specification for ½A calls for a 1·5 c.c. engine, 55 sq. in. (including the area within the fuselage) projected wing area, 10 c.c. fuel tank, 1¾ in. x 2½ in. cockpit, 1¼ in. wheels and 38 ft. 2½ in. lines (110 laps equals 5 miles). From experience we can expect an *ultimate* performance of 70-80 laps at 75-85 m.p.h., but that is looking perhaps two seasons ahead when development is butting its never-satisfied head against the tough barrier of purchasing power and who can afford the fastest engine. For the moment let's enjoy life with a healthy, cheap, plain bearing 1·5 and be satisfied with loads of fun and a range of 30-40 laps at 70 m.p.h. That's the figure we claim for Cupid, not unnoticeably derived from Neil Loving's wonderful little homebuilt, and as snappy a model to fly as is the full size.

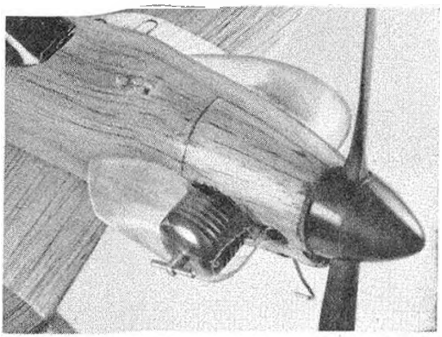
Scale has to suffer (shame!) with the 1¼-in. wheel requirement and the need for prop. clearance and ground stability with a forward centre of gravity—here we must also pen the advice of using one of the new B.M.A. (Skyleada) solid dural spinners to take the occasional landing tumble when the wind gets under the tail. The original had an A.M.15 and straight from the first flight it was obvious that little Cupid was a fast piece of work. Clocked at 65 m.p.h. with a 6 x 9, it held the flight straight and level as though in a groove, and with a minimum of line tension (weight is only 8 ounces—with fuel). Using 6 x 6 or 6 x 8, speed improves to 70 m.p.h. plus. Our only word of caution calls for full-up elevator to keep the tail down during take-off and landing, and if your building has made the model excessively nose-heavy, drag the C.G. back to F4 position prior to the covering stage, by adding ballast in the space over the tailplane. All set? Cupid needs only four sheets of 3-in. balsa and three pieces of strip plus sundry scrap and ply, so it's a cheap good-looker that can be ready for test flights in remarkably little time.



Based on the Loving Love with amendments to meet the ½A team racer specifications. Cupid is painted in the livery of pale blue and white as used on the full-size, but carries the designer's S.M.A.E. insurance number for registration. At left, the airframe prior to engine installation. Cowl is cut to permit engine fitting, then replaced with holes for cylinder and intake. Chin intake is supported by front former until sanding is completed

Construction details are included on the plan and it is recommended that one starts right at the heart of the model—the engine. This will determine your mount spacing so the first thing to do is to cut the bearers to length, bolt them to the engine and make the two ply bulkheads fit over them. Assembly of the fuselage sides, bulkheads and addition of the tail assembly follows, as detailed, in logical sequence, and the wing is added prior to fuselage planking. The fact that the wing has gull dihedral makes it an "off the board" assembly, but by making up the spar over the plan and sighting the ribs one to the next as they are added to the spar, one encounters no difficulty. Because the centre section is not sheeted the complete wing has a novel appearance prior to joining with the fuselage for it is simply a pair of gull halves—joined by the u/c wire and a plywood spar C.S.1.

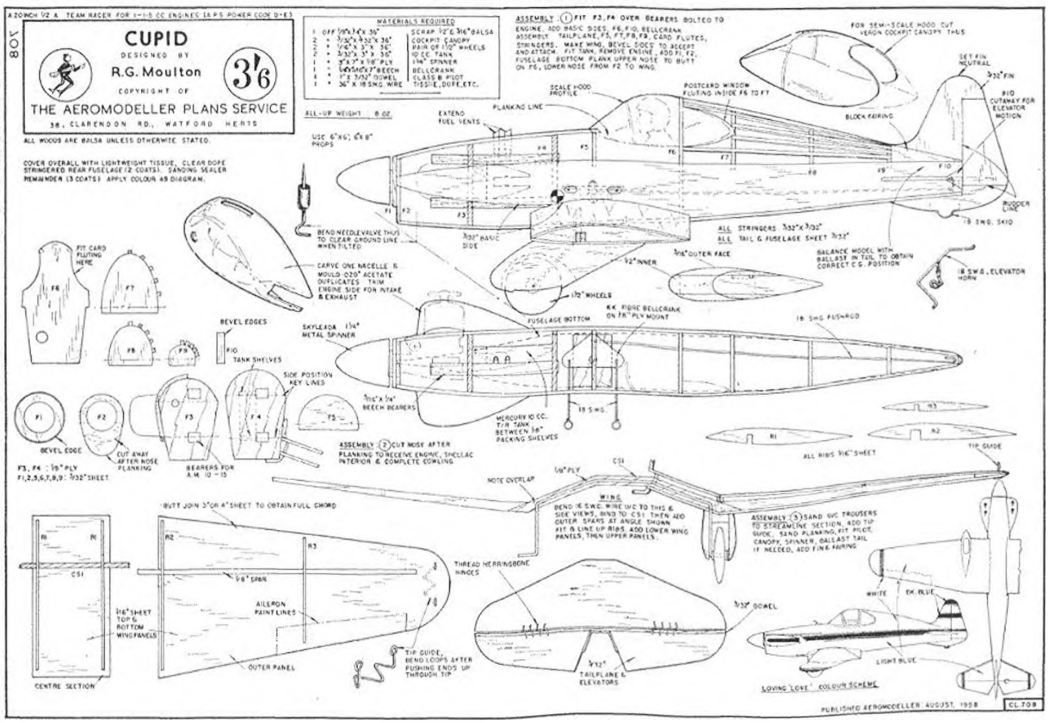
Slow-drying glues of the new PVA types are particularly recommended for this form of construction, and were used for everything on the original except the stringers on the rear fuselage which call for the fast drying property of cellulose cement.

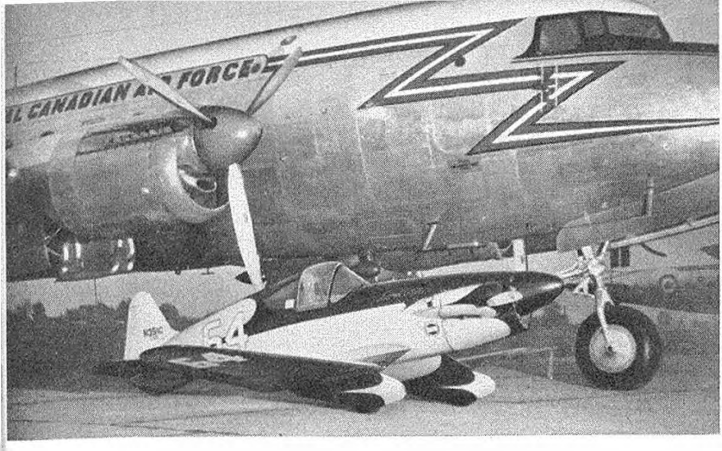


Moulded acetate nacelles give semi-scale appearance. 1/16-in. clearance around cylinder avoids heat effect on plastic—can be replaced by balsa cowls

Before covering, and after the engine has been installed permanently, don't forget to check the balance and avoid nose heaviness with tail ballast. This will pay off in reducing line tension and give better ground stability.

FULL-SIZE COPIES OF THE 1/4th SCALE REPRODUCTION BELOW ARE AVAILABLE AS PLAN CL 708 PRICE 3/6 PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE





AIRCRAFT DESCRIBED No. 93

Loving-Wayne "LOVE"

Home-built sports-racer designed by an aeromodeller

WHAT PROMPTS AN aeromodeller to make his own full size aeroplane? "In a practical sense there is no justification for the expense, work and risk involved", states Neil Loving, "but certainly the satisfaction derived from creating and flying your own aeroplane cannot be obtained on lesser terms".

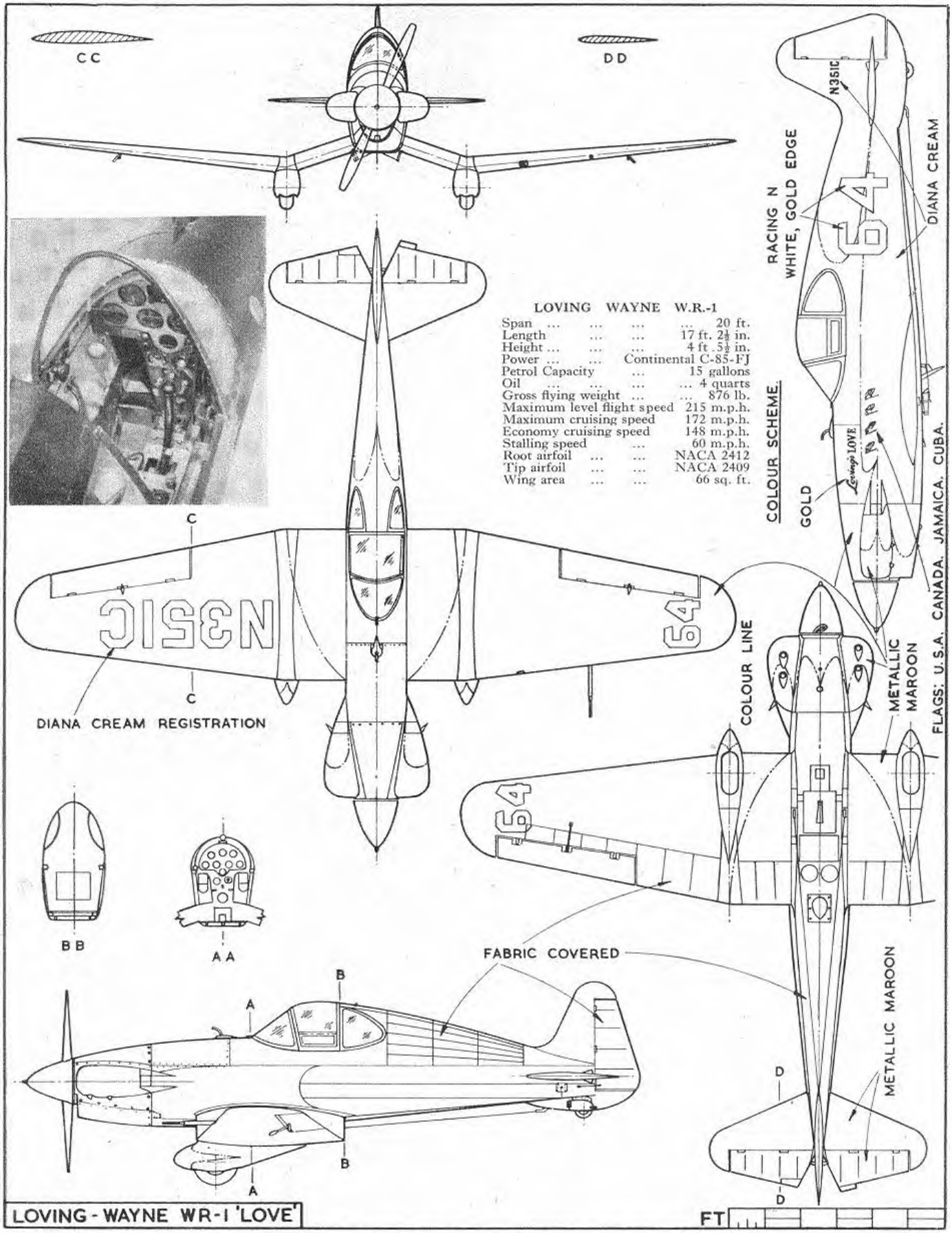
If your aeroplane happens to be the WR-1, sports racer, one can readily understand Neil Loving's enthusiasm, for in our opinion, it is the most delightful of all the American home-builts and fully deserving of its 1954 award as the most outstanding design in the Experimental Aircraft Association. Add to its appearance the superb performance of 215 miles per hour on only 115 h.p. and cruising speed of 155 m.p.h., giving an average consumption rate of 34 miles per gallon, with a range of more than 450 miles, then the W.R.1 becomes even more attractive.

It differs from the majority of American home-builts in that it is an all-wooden aeroplane and is rather more complicated in construction, calling for comparatively large floor area over which to lay out the 20 ft. gull-wing spars. The prototype (others are being made from sets of plans available at $50), weighs only 613 lb. fully equipped with a Bendix radio receiver and an extensive instrument panel. Given the racing number 64, it has not achieved any great successes in midget racing, but at the end of 1953, it attained a fine reputation for touring, when Neil flew his "Love" down to relatives in the Caribbean from Detroit, a total distance of 2,200 miles, including 215 miles over open water. Incidentally, Neil is a full-time student in the Aero Engineering Department of Wayne State University, having charge of the Aeronautical Laboratory there and is currently working on a two-place twin for a pair of Continental C-85 engines as a design project. Considering that the WR.1 is now surprisingly, eight years old, it is no wonder that many designers are anxiously awaiting sight of Neil's twin.

An aeromodeller who taught model construction in the Recreation Department of the City of Detroit for five years, and worked as a contest official at the American Nationals in 1938/39, Neil's modelling activity was largely concerned with power models, employing the Brown Junior and Bunch Mighty Midget engines. In span these models could not have been much less than a third of the size of the aeroplane he is now flying! Some idea of the size of the WR.1 "Love", can be gained by comparison with the R.C.A.F. Douglas DC-4M, which was used by Princess Elizabeth for her tour of Canada in 1951 and is seen in the heading photo. Physically, one can well imagine the size by recalling that the highest part above the ground, the apex of the detachable cockpit hood, is a mere 53½ in. above ground level and the wing trailing edge at the lowest point, only 6¼ in.!

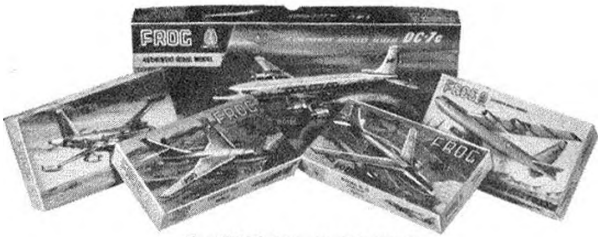
Streamlining has produced the high performance of the "Love" for its small four cylinder Continental C-85 motor, and the gull-wing configuration with incorporated un-sprung undercarriage is the major drag-saver. Note that the engine cylinders are completely faired over, a 48 sq. in. chin intake providing a flow of baffled air to the cooling fins. To reduce speed for landing, a 110 sq. in. drag plate extends to 60° under the centre section, and ground steering is facilitated by a 5 in. solid tail wheel which moves in conjunction with a small sub-rudder.

Heading shows the original Diana Cream and Metallic Maroon colour scheme. The "Love" is almost dwarfed by the DC-4M nose gear in this photo taken at Windsor, Ontario. At right, "Love" in latest colour scheme, devised by Keith Hopkinson of Goderich, Ontario. Lower half, wings, and tail are Pale Blue, fuselage topside, White with Navy Blue trim and name in red. Flags are those of counties in which the "Love" has flown, U.S.A., Canada, Jamaica and Cuba.



1/48th SCALE "A" TYPE DIE-LINE PRINTS AND 1/36th SCALE "K" TYPE REPRINTS OF THIS DRAWING ARE AVAILABLE PRICE 1/– EACH PLUS 6d. POST AS DRAWING 2707 FROM AEROMODELLER PLANS SERVICE

Trade Notes



New FROG Kits, out this month

PLASTICS ARE IN the news this month, **International Model Aircraft** have extended their FROG range with the DC-7c in a new kit with S.A.S. Livery, and very smart it is too. We note that others to follow in this 1/96th scale range are the long awaited "V" bombers, Valiant, Vulcan and Victor, plus the Comet 4. Though out of scale with the rest of the 1/72nd range, having a common span of about 7 in. the B-47, B-45, B-52 and Lockheed P2V-7 are welcome new additions to the FROG range and with the Boeing 707 shortly to come (1/144th scale, 12 in. span) the series will include a total of 32 different types—all original British mouldings.

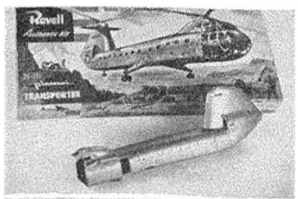
From America, the Piasecki YH-16A transport helicopter, has joined the British **Revell** range at 8s. 11d. This is a unique kit for a twin rotor whirly-bird, and the 9¼ in. long fuselage with twin 10¼ in. rotors helps to confirm the claim that this 40-passenger transport is one of the world's biggest. Also from Revell is an entirely new 4s. 6d. paint set with seven colours and a neat slide tray designed to hold the bottles and stop them spilling. The paints have been developed to adhere to ultra-smooth plastic surface without any tendency to flake or crack, and each is glossy. With the colours is a special matting coat. This works very well. The thinner the coat the more matt the effect, and it is ideal for matting down those unrealistic glossy insignia transfers.

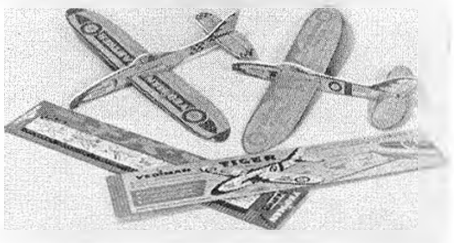
All-balsa gliders have been the means of introducing beginners to our hobby ever since the wood was discovered in Ecuador. A new **Yeoman** pair from A. A. Hales Ltd., at the low price of 1s. 11d. each, are sure to play their part in promoting aeromodelling. Based on real jets, the Panther with 16 in. span and Tiger at 14 in. come die-cut and colour decorated, ready to fly for hand or catapult launching—and it will not be long before someone discovers they go well on a Jetex 35 or 50 too!

Spooled control-line wire has now hit the market and the handy reels will soon be appreciated by those who've got themselves in a tangle in the past. A wide range of thicknesses and finish of wire have been introduced and the **Contest Kits** range includes ·013 in., ·010 in. and ·008 in. single strand rust-proofed at 2s. per double 62 ft. length and 5s. 6d. for the same length of triple stranded non-kink which has been dipped after stranding. This gives a more rigid wire, and provided it is looked after, it has a marked disinclination to kink. Other new items from Contest Kits are the Zeta series additions in neat Polythene bags at 1s. 9d. each, the Hunter and the Fairey Delta 2, both 1/48th scale profile gliders. Excellent instructions, and transfers for decoration plus a small tube of cement and nose-weight, make the Zeta series very complete and ideal "quickies".

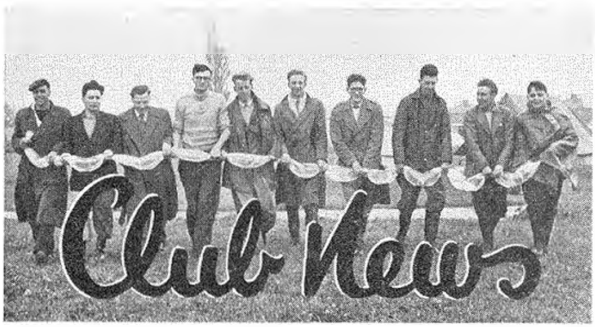
Peter Donavour-Hickie has now resumed production of his 1/12th scale **N.A.T.O. Pilots** for team racers or scale models and the accuracy of the head and shoulders figure will help to grace your model with additional realism. Crash helmet and sun visor, life jacket and oxygen mask can be hand painted to instructions provided.

Polythene squeeze bottles are standard equipment these days for refuelling; but many modellers report difficulty in getting exactly what they want in this line. **Mercury** have introduced the ideal 10-oz. (capacity—not weight)! bottle with thin walls for easiest squeeze, and long, sturdy taper spout for direct injection into fuel tubing or to take an adapting piece of large bore tube to fit over vents. At 1s. 10d., and with a cap designed to avoid leakage under full squeeze pressure, the bottle is a must for all power fliers. Mercury are also distributing the new range of **Le Pages** cements, of which we have special praise for the P.V.A. type called Sure-Grip, Bond-fast. This white cement sells in a range of p.v.c. squeeze bottles (2-oz. size is 2s. 3d.) and is slow drying but immensely strong. Bonner and Palmer told us they used nothing else but P.V.A., and it is the rage of the American West Coast. Joints need an hour to set firm, and by that time, the white glue is transparent and almost invisible. Specially advised where strength or slow drying is most needed. P.V.A. will not replace cellulose cements: but will certainly become equally popular once its properties are realised.





At left: latest Revell items are the twin rotor 'copter and paint set, at right, the Yeoman Panther and Tiger fly well, are made in five minutes.



Puzzle Picture? 24-ft. long Polythene water carrier used by the Glevum Club at the Nats needed a lot of support!

WELL ANOTHER Nationals and Team Trials have come and gone, the next major item in the contest programme is the big meeting on July 20th at the College of Aeronautics, Cranfield. This will be in effect an expert-experts "Nationals". Team selection will take place for the partly sponsored controline team to go to the International Meeting in Brussels during September and for the Radio Control Team to compete in the "King of the Belgians" Cup in Darmstadt, Germany, late September. In addition, the Area Team Championships and Tailless contest will certainly make this a meeting to remember and I doubt if a better venue could be found anywhere for such an important occasion.

London

London Area Committee is concerned at the amount of litter and the subsequent litter problem arising out of the Nationals. The answer is, of course, for proper litter bins to be provided at large meetings and I hope that the lesson of the 1958 Nats. will be remembered next season. **MILL HILL AND D.M.A.C.** attended the Nats. by inveigling new member, Mr. Mullens, to provide transport. They should make him an honorary member! Although Mill Hill entries were small in number, they enjoyed success when C. Crawley took first place in free-flight scale with his B.E.2c Maid from A.P.S. Plans. **WANSTEAD A.C.** travelled by lorry to Waterbeach some forty modellers and thirty models being sandwiched (with eight tents) in the back. All six of the club's Class A Team Race entries reached the quarter finals and young Colin Sanger reached the finals to eventually secure a creditable third place against really tough opposition, being beaten only by the veritable Dick Edmonds and Gordon Yeldham. Wanstead Club have now scheduled stunt to be included in their Rally for August 31st. A speed model for an E.D. Bee is main news item from **FARNBOROUGH M.A.C.**, apart from their scramble event over a quarter hour period, won by two flying saucers in the hands of Messrs. Harris and Sibbick. Winning time was 6 : 21, engines, Mills ·75's.

Two new clubs in London Area are **SOUTHGATE METEORS** and **FELTHAM EAGLES,** addresses are quoted at the end of this feature and unattached local modellers are advised to contact the Secretaries.

Ken Lockwood of **NORTH KENT NOMADS M.C.** placed third in the Ripmax Trophy at Waterbeach and was the only club member to enter the Nationals. Preparations for the C. H. Roberts Cup on September 28th are going ahead and rules are available from A. R. Parker, 3 Eversley Avenue, Barnhurst, Bexley Heath, Kent, for this flying boat cup which deserves better support than it has received in the past. Mr. C. H. Roberts, donor of the Trophy, is principal of the College of Aeronautical Engineering, Chelsea. Club congratulations have been bestowed upon Charlie Dance for gaining his A and B Glider Pilots Licence and we trust that he will not forsake his R/C modelling. Jack Ashcombe has a *Rohma* with 6-reed equipment, which has been performing some very pretty loops.

Nitro-benzine and a Tornado prop. found another four m.p.h. for the **ENFIELD** Class B Team Racer, operated by the Walker/Tuthill team to win the Nationals Contest. Unfortunately, after winning, the model was wrecked (motor too!) whilst demonstrating fer the benefit of the Shell Film Unit. A line broke as the model was released. Pete Hartwell placed third in the same event and was also fourth in the Class A finals, whilst in free-flight, Rex Gough totalled 11 : 26 in the Sir John Shelley and would have been in the final but for an early d/t—a tale that has been related of a renowned member of the **SURBITON CLUB** in the same event. The unattached modellers in the Epping Forest area are asked to contact P. Oliver of 23 Covert Road, Chigwell, Essex, Sec. of **DEBDENAIRS M.F.C.**, this club has been doing trojan service at local fete and sports days, whilst in their "Festina Lente" Glider Trophy, Mike Pointing appears to be well in the lead and also holds the glider record with 8 mins. o.o.s. **DAGENHAM CLUB** have had a clean sweep of old records and thus hope to encourage more competition mindedness in the establishment of new times. They wish to thank members of the Kenton Club for their assistance in running the combat event at the Nationals. On the other hand, **KENTON M.A.C.** ran the combat at the Nationals ably assisted by Dagenham M.A.C. (well this hearty piece of reciprocation is exactly as it appears in their respective club reports!). Anyway, Kenton are rapidly establishing a name for themselves in Combat and at Godalming on June 15th the familiar names of L. Burbridge versus P. Tribe appeared in the finals after a lengthy period of knock-out heats throughout the day.

Tribe is from the near-by **NORTHWOOD M.A.C.** and is the man who defeated Joe Burbridge in the semi-finals at the Nationals only to be beaten by Kenrick in the final. A standard *Satellite* kit is used by C. Beckett of Northwood with Oliver Tiger to fly at 90 m.p.h. for 40 laps.

Southern

Ten members went to the Nats. from **SOUTHAMPTON M.A.C.**, the only success being Mavis Pepper's eclipse of the menfolk in the Thurston Glider Cup. Two members travelled far north to Hemswell for the first International Team Trials, Pete Gingle placing twentieth with 11 : 47 in Wakefield. The **SOUTHERN AREA** is running a rally on September 28th with a very full programme, venue to be announced at a later date, but as this coincides with other area decentralised meetings, the meeting will not perhaps be as well attended as it deserves.

LEATHERHEAD M.A.C. has a two-hour film show to which parents and friends were invited, and there is apparent hope for contest successes with M. Dias's team racers.

East Anglia

A demonstration at the Church garden party has obviously done the **NORWICH M.A.C.** some good, although the flying area was somewhat restricted. Outstanding club contribution to the Nationals was the performance of a *Cessna* 180 in U.S. Artic Markings, which was flown in the late evening when models were only just visible, and it is said that when airborne, all that could be seen of the model were the ghostly fluorescent red model extremities glowing in the sky! **CAMBRIDGE M.A.C.** had a combat contest with **IMPINGTON,** only three models reaching the finals, the rest having been accounted for by mid-air collisions and unintentional "landings". Clive King of Cambridge survived the finals beating his two Impington opponents. This was followed on June 8th by the Club's

For Your Diary

July 13th
Enfield C/L Rally, all classes incl. Stunt.
August 17th
Devon Rally, All Classes F/F, Combat, R/C Woodbury Common.
August 24th
S. Midland Area Rally, All Classes F/F, Combat, R/C, T/R A & B, Cranfield.
August 17th
Rush Trophy Gala, All Classes F/F, Combat, Concours d'Elegance, Newcastle Town Moor.
August 31st
Epsom Slope-Soaring, Chobham Com. Wanstead C/L Rally, T/R, Combat, Stunt
September 14th
Croydon Gala, Open Rubber/Glider/Power, Slope Soaring.
September 28th
C. H. Roberts Cup, Dawson Park, Bexley Heath for Flying Boats.
Southern Area Rally, All Classes F/F, All Classes T/R, Stunt, Combat, R/C. Venue to be announced.
October 5th
Bill White Rubber and Glider, Chobham.
October 19th
South Coast Gala. Ashdown Forest.

S.M.A.E. Contests

July 20th
Area Championships, R/C and C/L and Tailless Trials, Cranfield.
August 3/5th
World Championships, Power and Rubber, Cranfield.

S.M.A.E. Results

FIRST INTERNATIONAL TEAM TRIALS, HEMSWELL
June 22nd

Power			
1. A. Collinson	Baildon	....	15 : 00
2. J. Bickerstaffe	Rugby	....	14 : 56
3. G. Upson	N'Wick Pk.	....	14 : 44
4. K. Glynn	Brixton	....	14 : 42
5. V. Jays	Surbiton	....	14 : 21
6. G. Fuller ...	St. Albans	....	14 : 07
Wakefield			
1. R. Draper	Coventry	....	14 : 54
2. E. Barnacle ...	Leamington ...		14 : 35
3. R. Copland ...	N. Heights	....	14 : 26
4. R. Palmer	Croydon	....	14 : 09
5. J. O'Donnell...	W'field	....	14 : 03
6. G. Lefever ...	S. Essex	....	13 : 54

English Electric Co. Ltd. donated this unique trophy for inter-club contest in N.W. Area

unrestricted team race which was mentioned the other month, for controline models of any type, dimension and capacity, which are handicapped. Michael Hobbs won with a combat model, easily overcoming his handicap.

Western

BRISTOL RADIO CONTROL M.A.C. report disastrous weather and strong winds only two of the club having remained unscathed. John Mardon completes his Junior 60 powered flights with a spot of ridge soaring near the aerodrome whilst on glide. **SOUTH BRISTOL M.A.C.** went in force to the Nats, and in the Bristol Aero Company's "Aces" Bartlett Trophy event on June 15th, they came out winners with the team total of 2,803 secs. John Down placing first in both power and glider. Club auctions have attracted a number of old and antique engines and at the last meeting a double Delta powered pusher Eta 29 Team Racer with an all-moving front plate was exhibited.

South Midland

Item in the **NORTHAMPTON M.A.C.** newsletter says that Ted Evans has been heard to say that he was going to make up some rubber motors—shall we see him back with a new Wakefield? **KETTERING M.A.C.** have a new club badge in the form of a scale rubber model flying over blue cloud background and also pass on a tip that one can use sawn sections of old car inner tube valves to bush the boss of any propeller drilled for ⅜ holes as for E.D.2·46 when needed for the smaller and more reasonable ¼ shafts.

From **STEVENAGE M.F.C.** I hear of yet more local fete demonstrations with an impressive show of stunt flying and balloon bursting. Twenty-nine members of this club attended the Nats, but only two flew in contests—shame! A different tale could be told of **WAYFARERS M.A.C.**, who feature in the results sheet with John Taylor's third in the Glider fly-off. Cesare Milani's first in the Knokke Trophy and Doug. McHard placed third in free flight scale. Flying their first attempt at Class B Team Racing in the Godalming Rally they were unfortunate to be drawn against the fast McNess Team to be eliminated in their first heat, in spite of 104 m.p.h. for 30 laps.

North Eastern

The Rush Trophy Gala organised by **NOVOCASTRIA M.A.S.** at Newcastle Town Hall, is scheduled for Sunday, August 17th from 11 a.m. –6 p.m., for all free flight events and combat, plus Concour d'Elegance.

Northern

BAILDON M.F.C. were as usual, well represented at the Nationals and achieved a fair measure of success though the best effort by Mr. C. P. Miller in rubber was rather unfortunate in just missing the fly-off by only two seconds. Arthur Collinson and Silvio Lanfranchi were both over the 11 min. mark in power, and Frank McNulty placed among the top twelve of glider. The Baildon "A" Team, Messrs. Collinson, Miller and Pannett met the Wakefield Club on their home ground in the second round of the area knock-out to win after a hectic day of flying and recovery from local marshalling yard and sewage plants, etc. Arthur Collinson is to be congratulated for his success in the Trials, other members who also did well were Eckersly and Eggleston.

Midland

Haymaking season has prevented **LEICESTER M.A.C.** from using the Rearsby Aerodrome and so they are resorting to their reserve aerodrome at Kilby (lucky people! !) They have a Dormobile, which they hire to carry eight modellers to rallies at most attractive cheap rates and must count themselves one of the most organised and lucky clubs in the country. **STRATFORD-UPON-AVON D.M.A.C.** were not very impressed by some of Class A team race conduct and the use of strong arm whipping tactics and high flying. The club newsheet is to be produced monthly and in their first issue I note how frequently they are able to use the flying aerodrome at Wellesbourne and how they intend to visit all the major rallies. Mike Kendrick of **WEST BROMWICH M.A.C.** had a field day at the Nationals, winning combat with the club design *Black Magic* and coming third in the Knokke Trophy, with his A.P.S. *Fairey Gannet* and this by a junior too! The club's flying field is shortly to be built upon and I gather that during Sunday flying sessions up to 200 spectators have been gathering to watch the activity before they finally have to close down.

North Western

An early d/t is the tale yet once more for B. Talbot at the Nationals, who was sure of his third max. when the tail popped at 2·45. He was also unfortunate at the Woodford Meeting, when a clueless power flying non-competitor launched his model into the queue of rubber competitors writing off Talbot's model. New interest in controline stunt is obvious in **SHARSTON D.M.S.** and R. Gammons flew an E.D. 2·46 A.P.S. *Blue Pants* to win the first club event. Twenty members went to the Nats, and all of them are anxiously awaiting results to find their respective positions. **ENGLISH ELECTRIC M.A.C.** was well represented at Waterbeach and Tom Smith was in the power fly-off. His Dooling 29 powered *Nig-Nog* had a spate of engine trouble and he changed to his better Oliver model on the third flight, then launched out of wind with the reserve in the fly-off—clearly not his day, although the air speed of his model was the talk of the Sir John Shelley Area.

The trophy for the inter-club competition comprising a model P.1B. in wood mounted on a gold plated stand, has now been completed ready for eventual presentation. Wally Nield came home from the Nats to **CHEADLE AND D.M.S.** feeling pleased with his first place in the Ripmax Radio Contest and since then, the club has been demonstrating at a local gala in Stockport with up to four in the controline circle, a spectacle much appreciated by the crowd. To round things off, Wally Nield and John Brereton gave a nerve-racking demonstration of radio flying in restricted conditions.

—See you at Cranfield?

THE CLUBMAN

BRITISH NATIONALS

Thurston Cup (*Glider*—274 entries)

1.	Miss M. Pepper	South'pton	9.00 + 5.40
2.	D. Morley	Lincoln	9.00 + 2.41
3.	J. Taylor	Wayfarers	9.00 + 2.20
4.	R. Nicholls	Tynemouth	9.00 + 1.50
5.	— Thorpe	Derby	9.00 + 1.35
6.	K. Glynn	Surbiton	9.00 + 1.03

Short Cup (*P.A.A. Load*—26 entries)

1.	J. O'Donnell	Whitefield	8.40
2.	R. Monks	Birmingham	5.38
3.	K. Glynn	Surbiton	5.26
4.	A. Farrar	Wakefield	4.54
5.	R. A. Ward	Croydon	4.50
6.	V. Jays	Surbiton	4.29

S.M.A.E. Trophy (*RIC Multi*—43 entries)

1.	C. H. Olsen	A.R.C.C.	87 points
2.	R. Askew	Kersal	66 ,,
3.	S. E. Uwins	A.R.C.C.	46.5 ,,
4.	G. Parkinson	Kendal	41 ,,
5.	R. Higham	A.R.C.C.	36 ,,
6.	E. Johnson	A.R.C.C.	33 ,,

Sir John Shelley Cup (*Power*—256 entries)

1.	J. O'Donnell	Whitefield	12.00 + 4.32
2.	T. W. Smith	Eng. Elec.	12.00 + 3.10
3.	J. Bickerstaffe	Rugby	12.00 + 2.36
4.	D. Posner	Surbiton	11.59
5.	I. Riley	Accrington	11.30
6.	R. Gough	Enfield	11.33

Davies Trophy (*Class A T/R*—120 entries)

1.	G. Yeldham	Belfairs	7 : 26

Model Aircraft Trophy (*Rubber*—115 entries)

1.	E. A. Boxall	Brighton	12.00 + 7.28
2.	E. A. Barnacle	Leamington	12.00 + 7.02
3.	U. A. Wannop	Edinburgh	12.00 + 5.45
4.	J. O'Donnell	Whitefield	12.00 + 5.10
5.	R. Draper	Coventry	12.00 + 5.05
6.	J. K. Cartwright	Blackburn W	12.00 + 5.01
7.	T. North	Croydon	12.00 + 4.51
8.	F. Devitt	Coventry	12.00 + 3.15

Davies Trophy (*T/R Class B*—65 entries)

1.	D. C. Walker	R. J. Tuthill	Enfield 7:09

Combat

1.	M. Kendrick	West Bromwich

Ripmax Trophy (*R/C Rudder Only*—59 entries)

1.	W. Neild	Cheadle	34.5 points
2.	H. Boys	North'm'ton	34 ,,
3.	K. Lockwood	North Kent	33.5 ,,

Gold Trophy (*C/L Stunt*—31 entries)

1.	P. Ridgeway	Macclesf'ld	418 points
2.	W. Morley	West Essex	415 ,,
3.	T. Jolley	Whitefield	411 ,,
4.	J. G. Einhaender	Macclesf'd	404 ,,
5.	G. Cornell	Croydon	305 ,,
6.	M. E. Blundell	Godalming	298 ,,

Super Scale Trophy (*F/F Scale*—17 entries)

1.	C. Cawley R.E.2e	Mill Hill	72 points
2.	E. Gates Leopard Moth	Blackb'n W.	70 ,,
3.	D. McHard Gladiator	Wayfarers	67 ,,

Knokke Trophy (*C/L Scale*—10 entries)

1.	C. Milani S.V.A.5	Wayfarers	87 points
2.	Cpl. Godfrey Havoc	R.A.F.	72 ,,
3.	M. Kendrick Gannet	West Brom.	64 ,,

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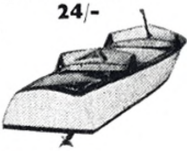

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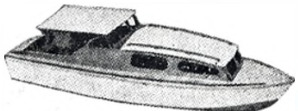

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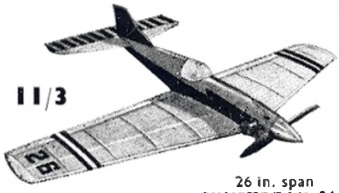

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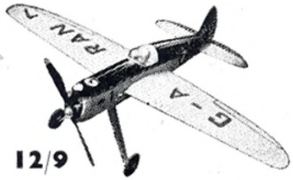

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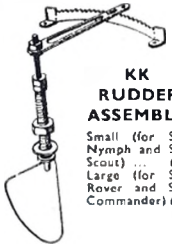

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