DOUBLE WAKEFIELD NUMBER

AEROMODELLER

SEPT 1949

2/6

"WAKEFIELD" CUP CONTEST

PRESENTED BY THE LATE VISCOUNT WAKEFIELD IN 1927, THE FAMOUS TROPHY HAS SINCE BECOME THE "BLUE RIBAND" OF AEROMODELLING. AS ONE OF THE LEADING SPECIALISTS IN THIS TYPE OF MODEL WE ARE MOST PROUD TO PRESENT BRITAIN'S No. 1 DESIGN.

"JAGUAR"

designed by E. W. Evans, Esq.

WINGSPAN 44 ins. OVERALL LENGTH 37 ins.
WING AREA 205 sq. ins.

Kit contains full-scale detailed plan, explicit building and flying instructions, specially graded "SOLARBO" Balsa Sheet and Strip, Printed Sheet and 18 ins. diameter Hand Carved Propeller, etc., etc.

KIT COMPLETE (excluding Dopes and Rubber Motor)

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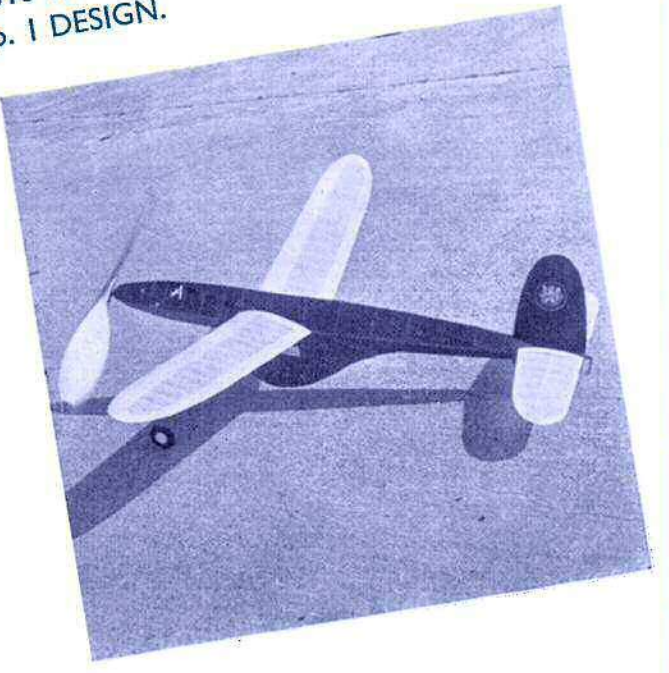

When it was first decided to kit the "JAGUAR" design, we realised that here was a potential winner, a model which had already established a list of National Contest successes far in excess of any other individual design. ROY CHESTERTON, in his masterful and precise flying of the "JAGUAR" at Akron, Ohio, last year, succeeded in placing FIRST and WINNER of the LORD WAKEFIELD Cup. Again this year, flying the same "JAGUAR" machine, he outflew all other contestants at the WAKEFIELD TRIALS with a maximum of THREE FIVE-MINUTE FLIGHTS. To all contestants we send our sincere good wishes, our hopes that each and every one will have the best of luck on this eventful day —"may the best man win!"

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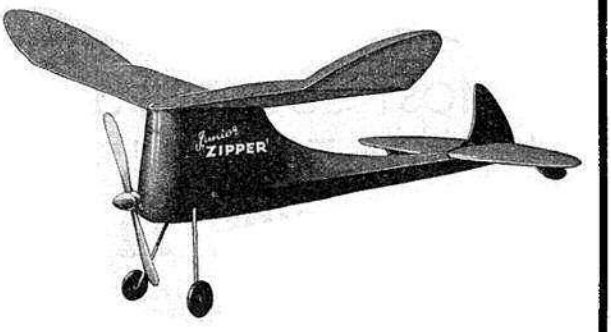

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THE JUNIOR ZIPPER

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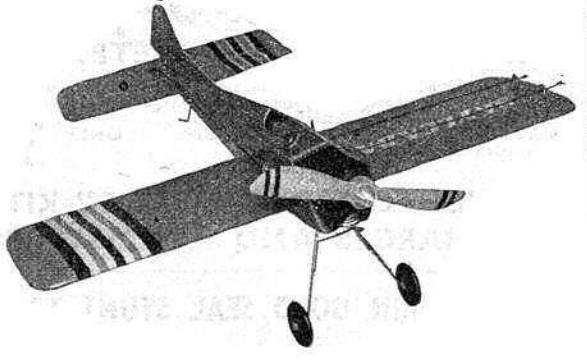

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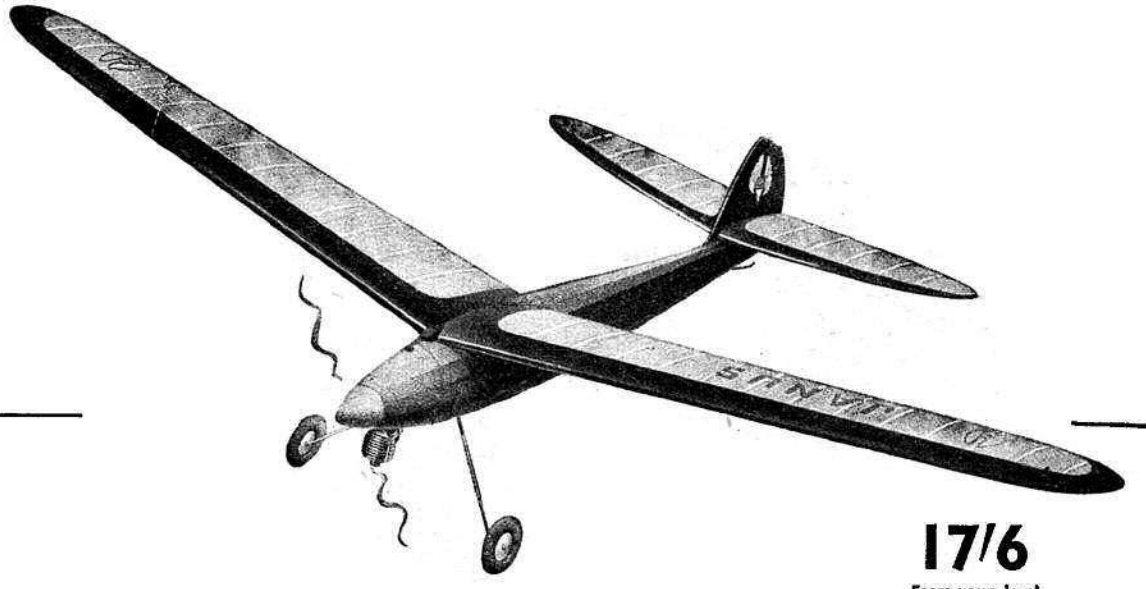

17/6

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DESIGNED BY A. A. JUDGE — WAKEFIELD TROPHY WINNER 1936

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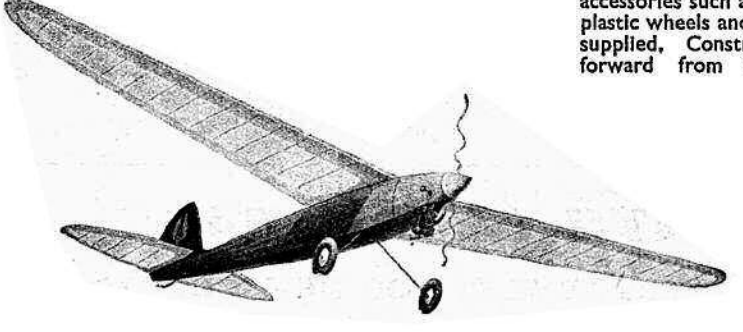

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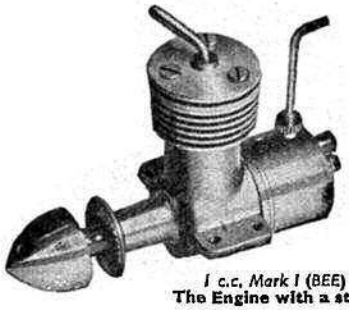
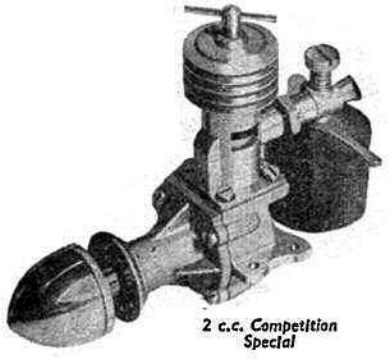


1 c.c. Mark I (BEE)
The Engine with a sting

E.D. Make your PLANS Come true!



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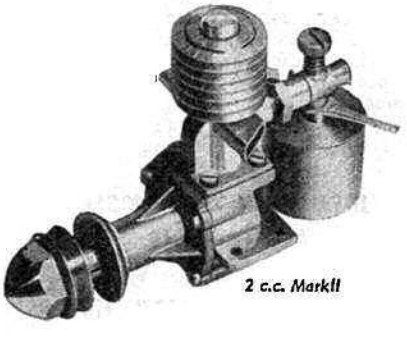

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AEROMODELLER
INCORPORATING "THE MODEL AEROPLANE CONSTRUCTOR"

Contents

VOL. XIV. No. 164 SEPTEMBER, 1949

STOP-PRESS SUPPLEMENT
THE 1949 INTERNATIONAL WAKEFIELD TROPHY CONTEST
FEATURED ON PAGES 557 to 588

COVER PAINTING

AARNE ELLILA'S WINNING WAKEFIELD MODEL.

THE increasing number of notices which are appearing in the National Daily Press, in regard to the flying of free flight and control line power driven model aircraft; and in particular the references made to coming legislation in this connection, prompts me to write yet another Editorial on this problem.

I have already dealt at some considerable length with the powers which "local authorities" *might* be able to invoke with a view to restricting if not entirely prohibiting flying of power driven model aircraft over land under their control; and I continue to receive a steady stream of letters, notices and local press reports from which it is clear that considerable differences of opinion exist as to just what are the powers of these local authorities. Generally speaking it would seem that the powers claimed are not in fact, as wide as at first thought; and in a number of cases, when the matter has been taken up directly with the local town clerk or other responsible official the withdrawal of a ban or at least a modification in the rulings previously given has often been effected.

Urban District Councils are able to make bye-laws under section 164 of the Public Health Act, 1875, or under Section 16 of the Open Spaces Act, 1906; *but* I have understood that all proposals must first be referred to the Home Office for ratification; and have pointed this out on a number of occasions.

With a view to clarifying the position for the benefit of all parties I recently wrote to both the Home Office and the Ministry of Civil Aviation asking what was the present position.

My letters were dated July 11th, 1949, and under date of the 15th of that month the Home Office replied to the effect that:—

"The Ministry of Civil Aviation will communicate with you about the proposed bye-laws for the regulation of flying power driven model aircraft in parks and open spaces before terms are finally agreed."

Under date of the previous day (14th July) I received a reply from the Ministry of Civil Aviation in which occurred the undernoted two paragraphs:—

In view of their extreme importance—to say nothing of their significance, I make no apologies for printing them in quite large type!

> "I might take this opportunity of stating that before any local authority can introduce bye-laws controlling the flying of model aircraft in parks and pleasure gardens and on common land, their intention has to be made known and opportunity given for the receipt of representations regarding the proposed bye-laws.
>
> In the meantime you may rest assured that this Ministry is watching the matter closely in order to ensure that, as far as possible, any restrictions imposed should not be unreasonable."

Aeromodellers throughout the country will I am sure be pleased at the tenor of the second paragraph; and certain "local authorities" might well ponder on the wording of the first paragraph!

Further evidence that the Home Office is taking a fair and realistic view of the problem is shown by a report published in a recent issue of the "Municipal Journal" in which the following paragraph was published:—

"Association of Municipal Corporations is being asked by the town clerks of Epsom and Beckenham to arrange new talks with the Home Office, in the hope of producing a bye-law controlling flying of model aeroplanes in public places.

Previous talks failed to produce a solution—the town clerks consider jet models now being used are noisy and dangerous. Home Office is reluctant to interfere with a sport which has produced so many pioneers in aircraft design."

In view of the above; the statement by the London Star published under date of July 13th, to the effect that "several London Councils have authority to enforce the banning of model aircraft flying in several parks and open spaces" would appear to be incorrect.

Further, when a Staff Reporter of "Reynolds News" under date of July 10th publishes a statement to the fact that:—

"If your council decides that the buzzing of model aircraft in public parks is a nuisance, it can now ban flying altogether—and it will be backed by the Home Office.

This has been agreed after a conference of local authorities throughout the country, where views on the flying of model planes were exchanged."

. . . it may be taken that the newspaper is *quite definitely* misinformed!!!

At this point—less it slip my memory—may I once again thank readers who during recent weeks have kept me advised of local developments, because it is mainly by being kept up-to-date of what is going on throughout the country that we of the AEROMODELLER, can become so advised of the general position—and its "why and wherefore" that we can form a fair, accurate and unbiased view of the whole problem.

That it is necessary for use to be competently advised in this way, is shown by the belief we have that before any final decision is made by the Home Office and the Ministry of Civil Aviation, we of the AEROMODELLER and representatives of the Federation of Model Aeronautical Manufacturers and Wholesalers, as well of course as representatives of the S.M.A.E., will be given an opportunity of stating their views.

In connection with control line flying it seems desirable to give a good measure of publicity to some trouble which occurred on Baildon Moor a short while ago. According to reports published in the "Daily Mail" under date of 23rd July "two golfers complained that they had been dive bombed by a model plane. The plane owner said the machine,

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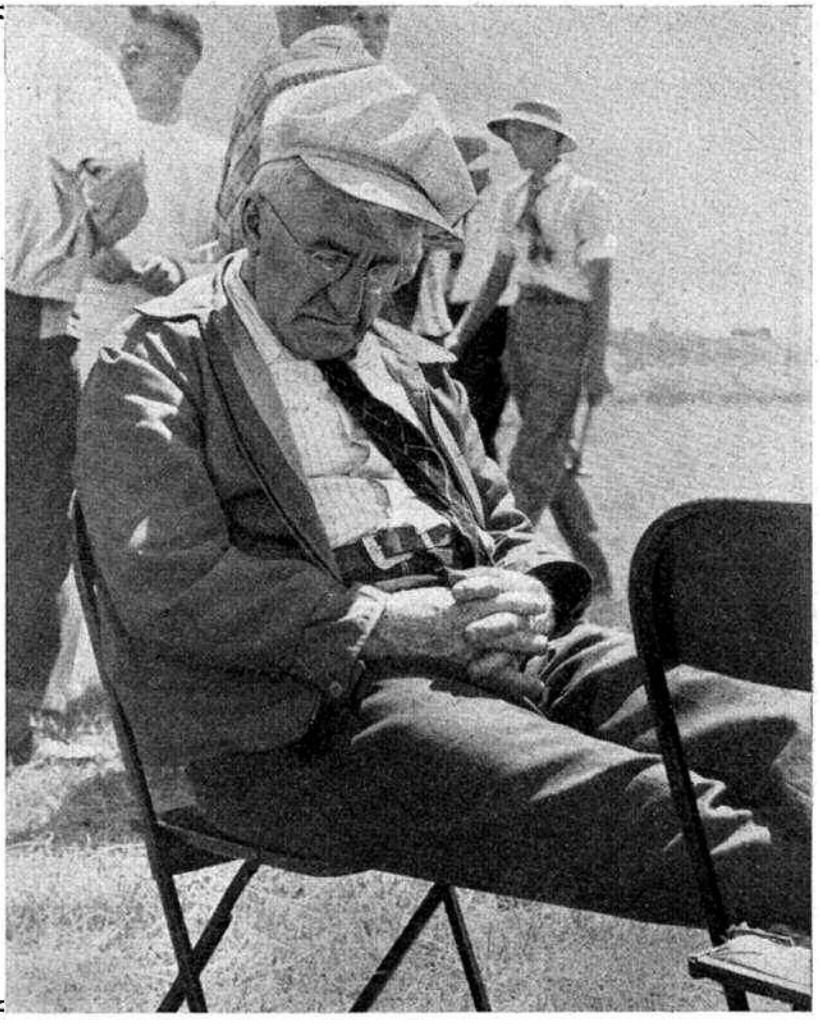
LIFE GETS TEDIOUS, DON'T IT? Especially if you're Granpappy to an aeromodeller—and even more if you don't hold with them new-fangled fuselages. Sure is far more comfortin' to dream about real reliable "A"-frame pushers—yes, Sir, them were the days!!!



which was controlled by wires, had been brought down by a golfer."

A reader has sent me a further cutting reporting this incident in which the point was brought out that the golf course, and the control line flying was taking place on Baildon Moor "to which the public at all time have right of access." The principals in this incident were a Mr. C. R. Eastwood, ex Work's Manager of Sandels Road, Baildon, and Mr. Silvio Lanfranchi, Confectioner of Holin Closs, Bolton Lane, Bradford.

Mr. Lanfranchi is of course President of the Bradford Model Flying Club, and a well known exponent in the art of control line flying.

From these two newspaper reports it appears that Mr. Colinson was flying his model at a speed alleged to be some 60 m.p.h. in the neighbourhood of the 13th hole on the Golf Course. Mr. Eastwood's drive sent the ball into the area covered by the flying plane, and Mrs. Eastwood was unable to approach for her shot. It was alleged by Eastwood's Solicitor that the operator would not move when asked.

It appears that Eastwood placed his golf bag on the wires and brought the machine to the ground whereupon according to one report "one of the operator's companions snatched Eastwood's golf club and broke it across his knee. As Eastwood was walking away Lanfranchi came from behind, flung himself on Eastwood forcing him to the ground and tore his golf clubs away. It was then alleged that he broke four of the clubs across his knee two at a time!

Summonses for assault and damages were brought by both parties against the other. Ottley Magistrates settled the matter by fining Lanfranchi 10/- for assaulting Eastwood. Lanfranchi was also ordered to pay £9. 5s. 0d. for breaking the golf clubs over his knee as he admitted doing. Summonses against Eastwood alleging assault on Lanfranchi and Colinson were dismissed but Eastwood was ordered to pay £6 for damage to the model plane.

We deplore what appears to be a regrettable lack of self-control on the part of all parties involved in this incident. From the way the Magistrates dealt with the matter it would seem that they regarded it as one in which it was "six of one and half a dozen of the other"—but the fact that *one* of the participants was President of a well known club, and that the incident has been fully reported in the National Press, impels us to express once again, our firm opinion that if incidents like this continue, much harm is going to be done to the model flying movement in this country.

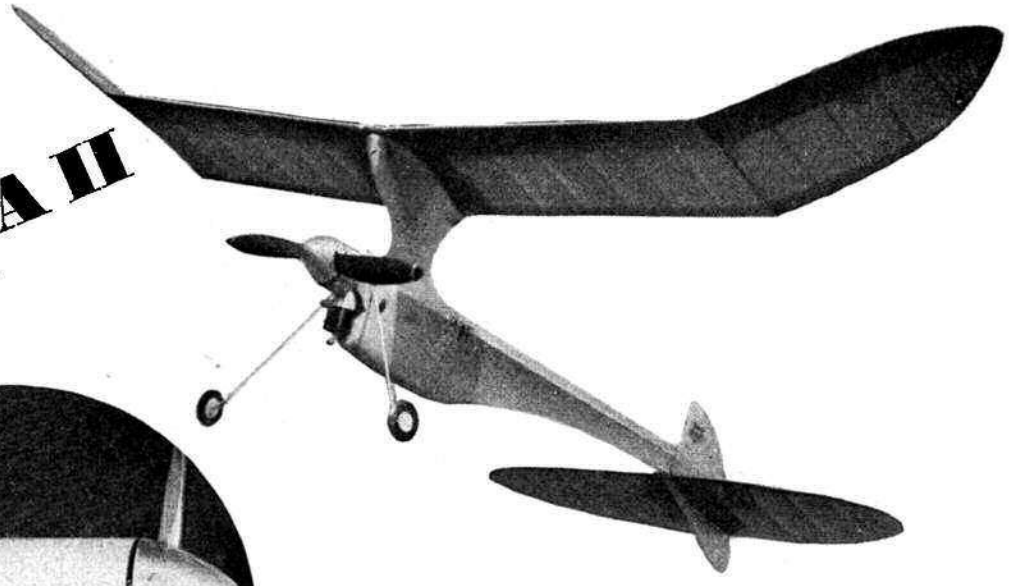
When tempers become strained and folk take the law into their own hands, the results invariably are that no good is done by or to anyone.

SOUTH COAST MODELS ADVERTISEMENT.

We offer sincere apologies to Messrs. South Coast Models for the unfortunate error in our August issue which resulted in a wrong block being inserted in their advertisement. We would point out to our readers that we have reprinted Messrs. South Coast Models advertisement on page 611, with the correct illustration of the well known Kalper diesel.

HORSA II

BY J. MARSH



THE DESIGNER: J. MARSH . . . 25 . . . single . . . modelling for 13 years . . . joined Leicester M.A.C. 1940 . . . has tried rubber, gliders, R.T.P., microfilm, precision and duration power, now on radio control . . . considers Wakefields the most exacting . . . no interest in control-line but appreciates good stunting . . . keen motorcyclist . . . electro-plating chemist by trade . . . lives at Leicester.

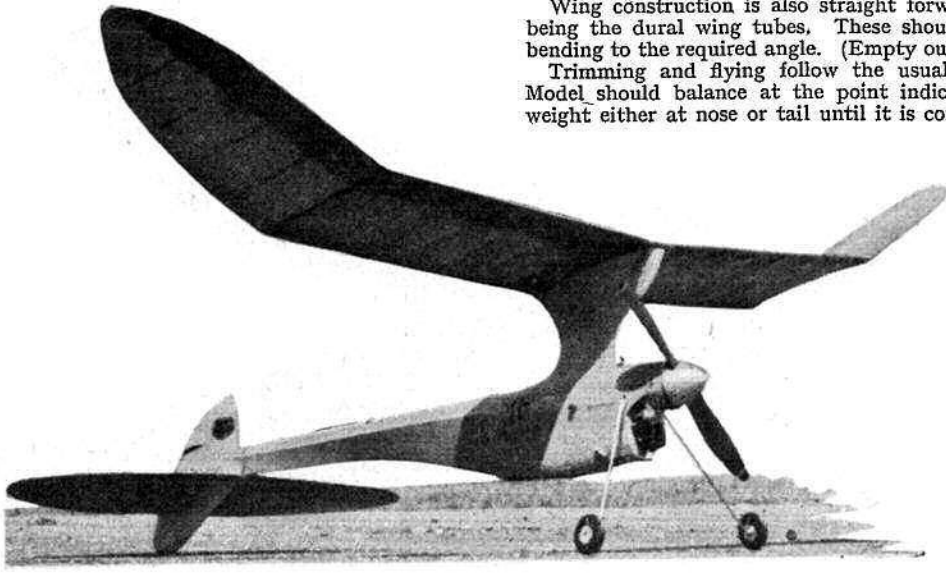
AFTER a season's competition flying in 1947 I decided in 1948 to design a pylon competition job of my own. Experience showed that such a model must be capable of a ratio of at least 10 : 1 and I am happy to say that this was achieved as subsequent test flights and competition successes proved. The model was only entered in two Rallies and obtained first and second places respectively in these; furthermore, in neither case was there any thermal catching.

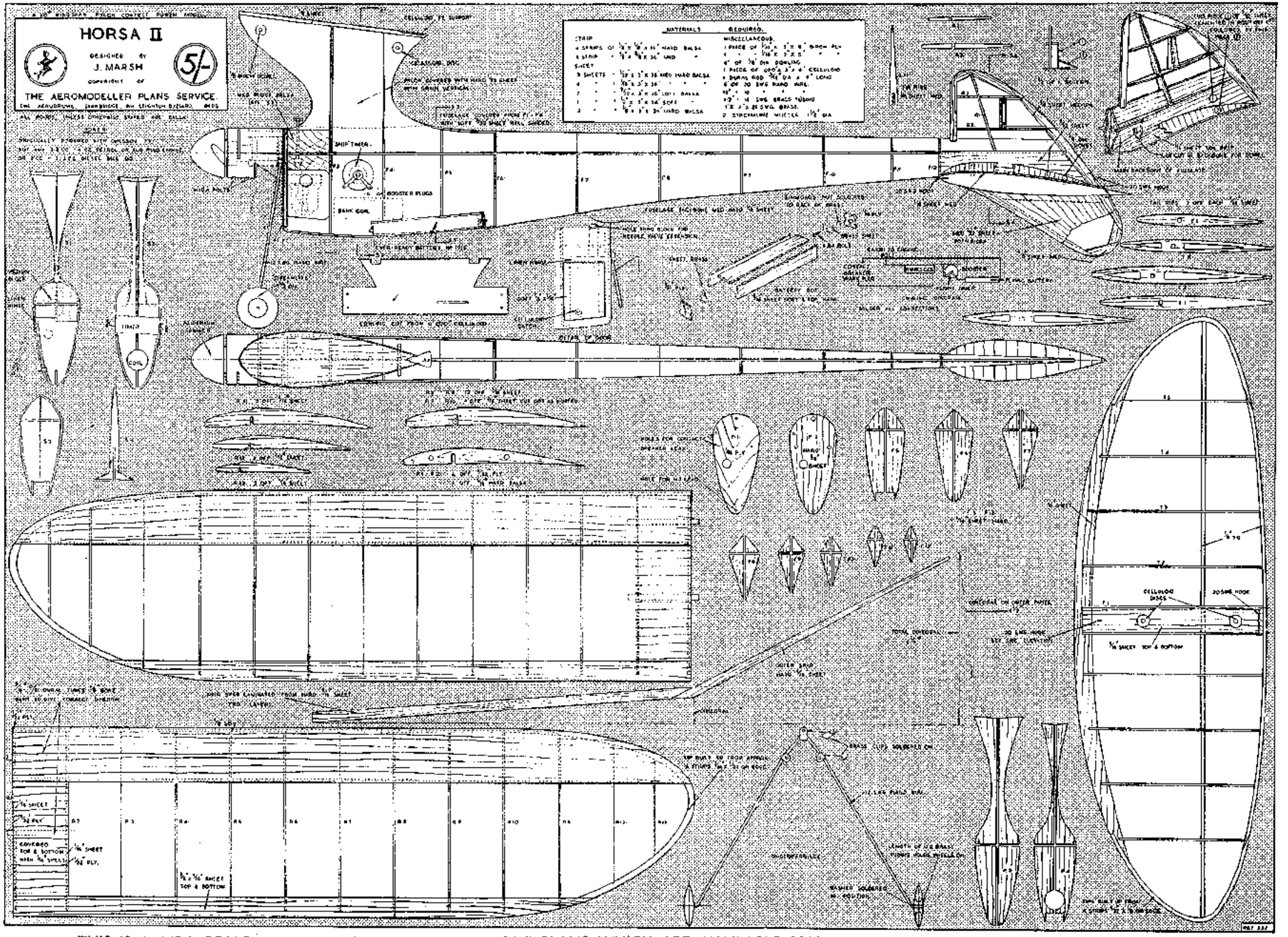
The design was centred around an Ohlsson " 23," a powerful and very reliable power unit and a cowling scheme inspired by a fellow clubman, Geoff Dunmore, was used. To obtain the performance in mind, weight had necessarily to be kept to a minimum in order to give a high power loading which in conjunction with generous wing area would give a low wing loading. No apology is given for adhering to the standard American pylon layout as it is obvious that this type offers the best angle of climb combined with maximum stability. The usual angularities of this type of design have however been smoothed out and an effort has been made to smooth out contours, consistent with good engine cooling and low frontal area. Although the original used an Ohlsson " 23 " with spark ignition, any " 19 " Glowplug engine or 2–3 c.c. diesel engine, providing it runs inverted, would be suitable.

Fuselage construction is based on Schulman's well known method using a sheet outline with sheet cemented to its sides at right angles. This is a simple yet sturdy method and a time saver in building.

Wing construction is also straight forward, the only special feature being the dural wing tubes. These should be filled with sand before bending to the required angle. (Empty out sand afterwards, of course !)

Trimming and flying follow the usual long established principles. Model should balance at the point indicated on the drawing, if not weight either at nose or tail until it is correct. First flights should be made on reduced power and the rudder adjusted to give a gentle left-hand circle. Any stalling or diving tendencies should be corrected by adjustment of the tailplane incidence. Maximum power should be approached very gradually through a number of flights, care being taken to avoid excess banking. When properly trimmed the model should climb steeply in wide left-hand circles and continue to glide in the same way. No downthrust or side-thrust are required.

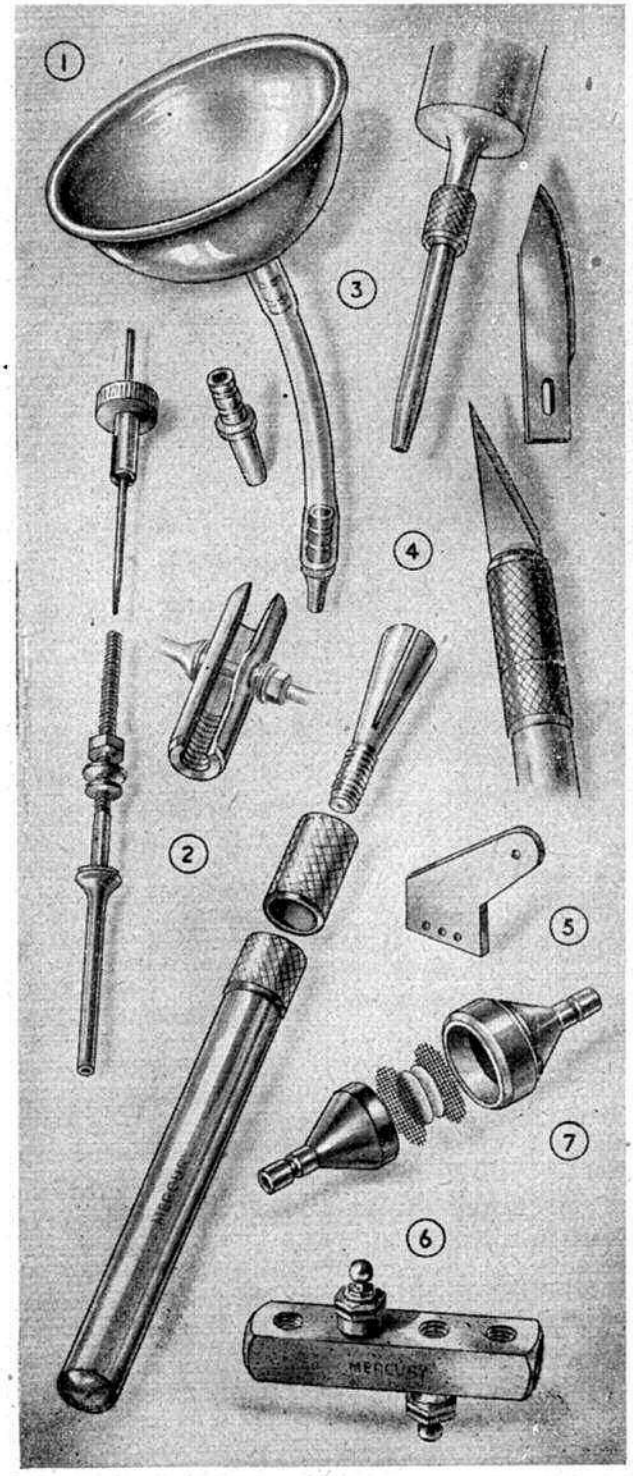




THIS IS A 1/5th SCALE REPRODUCTION OF THE FULL SIZE PLANS WHICH ARE AVAILABLE PRICE 5/- FROM THE AEROMODELLER PLANS SERVICE

TRADE

IN reviewing articles we have received for our past two Trade Reviews, we have endeavoured to preserve a very fair and balanced viewpoint, based upon the several reports of a number of our staff who individually put the articles to thorough and practical test. To judge by the letters we have received from readers the first two articles were much appreciated, because they were really critical and not just polite rewrites of the manufacturers' descriptions. This policy we intend to continue.



We make no bones about being frank, because we review only goods sent in to us for that purpose by the manufacturers or distributors concerned. We would therefore like to extend our appreciation to those manufacturers who have expressed their thanks for this service, and have confidently continued to send in their products for review. We shall continue to welcome them, together with newcomers whose entries we are glad to see are increasing.

From a considerable batch of new lines produced by MERCURY MODEL AIRCRAFT SUPPLIES, we have first a very well made fuel funnel (1), a product that is fully up to the high standard we have come to expect. A large and a small nozzle are supplied with the outfit to suit varying-sized tanks, and the fuel supply is easily controlled by pinching the transparent plastic tubing connecting nozzle and bowl. It is priced at 4s. 3d. and we found it very useful for filling all kinds of tanks, with the exception of ordinary wedge control-line types, which the ordinary pressure fuel can was necessary to fill in reasonable time. MERCURY fuel tubing is available in three different diameters to fit any engine from the smallest up to the largest, and being fully transparent any fuel stoppage in the tube is immediately visible. In addition, the tubing is fairly thick-walled and we found that this enabled even very sharp bends to be negotiated without bad kinking. Price is only 9d. a foot for the thin and medium diameters, 1s. a foot for the thick. The MERCURY needle jet assembly (2) is a universal accessory which fits almost any American engine and many British. It is extremely useful for converting such motors as the Ohlsson family to control-line, and with the aid of a neat replacement carburettor venturi, price 1s. 6d. (2), can be used to convert the E.D. II and Comp. Special for control-line flying. The jet assembly, which is very well made and easy to adjust, costs 3s. 9d., which again is far from extortionate. For glueing those difficult spots inside the fuselage which an ordinary tube of cement is too fat to reach, the MERCURY cement nozzle (3) is an invaluable aid. It costs 10d. and fits any standard tube by a simple twist on to the lead nozzle. One of the best accessories we have yet seen on the market, the MERCURY Modelling Tool, is not only good but cheap. The special light alloy handle can be fitted with two types of blades (4) and at 2s. 3d. for the handle and 6d. per blade is very good value for anybody's money. The blades are very strong, ground to a razor edge that lasts well but can be resharpened or if preferred, replaced. During constant use not once did we experience any trouble with blades shifting or pulling out from the handle—highly recommended. Latest MERCURY line for control-line fans is their new paxolin elevator horn, coming on to the market shortly at somewhere around 3d. (5). On a trial attempt to move a sample horn from its slot in a balsa elevator, the balsa gave around the slot—nothing would persuade the horn to pull out although it was held only by cement. The secret is the three holes at the base of the horn which when flooded with cement make a kind of tongued joint with the wood, which it takes more than any ordinary model to outlast!

For speed control-line enthusiasts, the MERCURY Control Plate (15) is a hard wearing paxolin plate with an offset pivot hole to reduce sensibility and give a self-centring action. Its price is 4d.

Also we have two other very useful little gadgets, the MERCURY Plug Holder, a simple device price 2s. 3d. (6) into which several glow or spark plugs can be screwed, and are then protected from dirt, dust and damage, and the MERCURY fuel filter (7), intended for fitting in the fuel line between tank and motor, also price 2s. 3d. We opened one of the filters before trying it and it was easy to see why it was so effective—two layers of very fine gauze with two tiny asbestos filter rings sandwiched in between. It would be very hard indeed for any solid impurity to get through that lot, although the fuel itself finds no trouble.

REVIEW

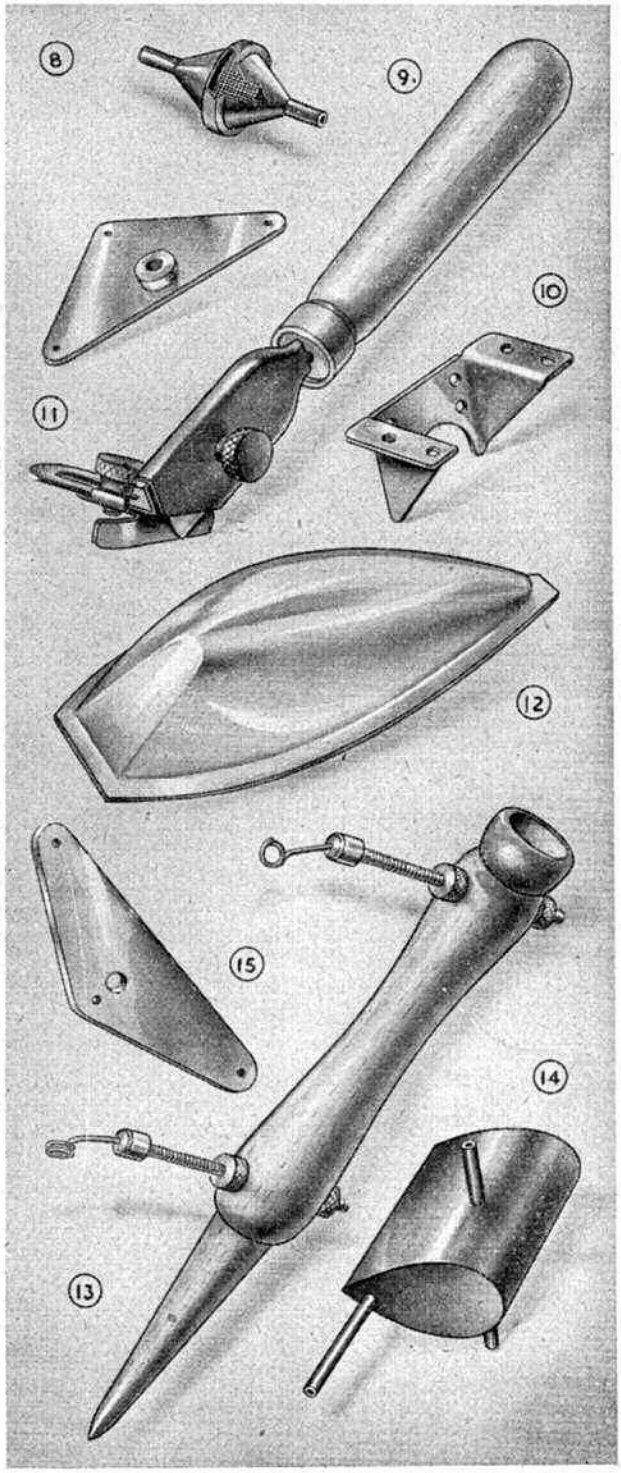
Designed for multiple purposes in the home and various other uses, POROSAN " Synwood " is a new kind of plastic wood which sets by chemical action. Many claims are made for this product by its agents, but after test we doubt if it can serve any useful function in the aeromodelling sphere. It sets very hard indeed, which is a grave disadvantage when used with balsa, as any attempt at sanding wears away the balsa without producing much effect on the " Synwood." It is also inclined to stick to the fingers, which combined with its peculiar composition makes any kind of moulding or filleting very difficult.

A new balsa stripper is the " MODLIT " strip cutter distributed by B. J. WARD, LTD., which uses a razor blade in a special fixing. Designed to cut 1/32 in. to ¾ in. wide sheet up to 3/16 in. thick, we found that strips from 3/32 in. to 3/16 in. were easy to cut, but strip wider was more difficult owing to the light pressure on the guide. Thin strip was also awkward, 1/16 in. being difficult and 1/32 in. almost impossible in any length. Nevertheless, in the most used sizes it is extremely useful, and a definite money-saver, at 2s. 11d. (9). Suggested improvements are a longer guide to lessen the tendency for the blade to swing in when cutting the larger and smaller sizes, and a graduated width scale, as the present plain one means it is necessary always to have a rule handy while cutting.

The MODEL SHOP, Newcastle, have always been well known for their unusually large range of accessories, and there are now one or two more to add to the list. For those Mills owners who fly Nancies or other models requiring the engine radially mounted the useful little adaptor (10) should prove an asset. Simple, but strongly made of dural, it is priced at only 9d., and in the event of a bad crash it should not prove a difficult task to quickly bend it straight again. It is, of course, only intended for the Mills 1·3 c.c. engine. For the miniature speed model or fast stunter requiring a smallish control plate the Model Shop has also provided the necessary. (11) shows their neat little aluminium control plate, price 6d., strongly bushed with brass at the fixing point, which should stand up to far more rough treatment than the model itself. Lastly, from M.S. is a sample of their moulded cockpit canopies (12)—in this case a large size which is ideal for scale jobs or adding that saving touch to stunters whose only claims otherwise to being aeroplanes are the possession of wings, tail, and the other bare necessities. Our sample was very well moulded, with no flaws, from strong celluloid or similar plastic, 5 in. long, and quoted price is 2s. The M.S. plastic filter (8) is priced at 1s., and it seemed quite efficient on test. However, we feel that the single layer of gauze fitted would be improved if of finer mesh, as one sometimes gets impurities which would get through the present size, although we were not unlucky enough to suffer in this way.

Last two accessories for review this month are again for the control-line addicts—from STANT TOOLS LTD. comes a new wooden control line handle (13) that possesses several unique features. The "waisted" handle fits any hand, there are adjustable swivel links tested up to 12 lbs. direct pull—each made on the " Keyring " principle to eliminate the lines jumping, and the pointed dibber bottom to the handle can be stuck conveniently into the ground when adjustments to the engine are required, the coloured dome at the top making relocation easy. At 4s. it is reasonably priced and a useful accessory which we have used with pleasure. Last of all a new stunt tank (14) of reasonable size which suits any diesel under 2·5 c.c. made by NEWPORT MODEL SUPPLIES and priced at 3s., a reasonable sum at last for a metal tank. We have tested this tank by consistent flying in several models and we have had no trouble in any attitude. It is very light, nicely finished in black enamel, and at the price is a very good buy. We look forward to sampling the double capacity version promised us shortly.

Thus we close this Trade Review, thanking once again those manufacturers who have supported it, and looking forward to receiving more and increasingly better products from our friends the Trade, whom we would remind that we are now reviewing all goods presented—not only control line. Our forthcoming Reviews include a kit review and a special airscrew review with wind tunnel tests carried out by the L.S.A.R.A



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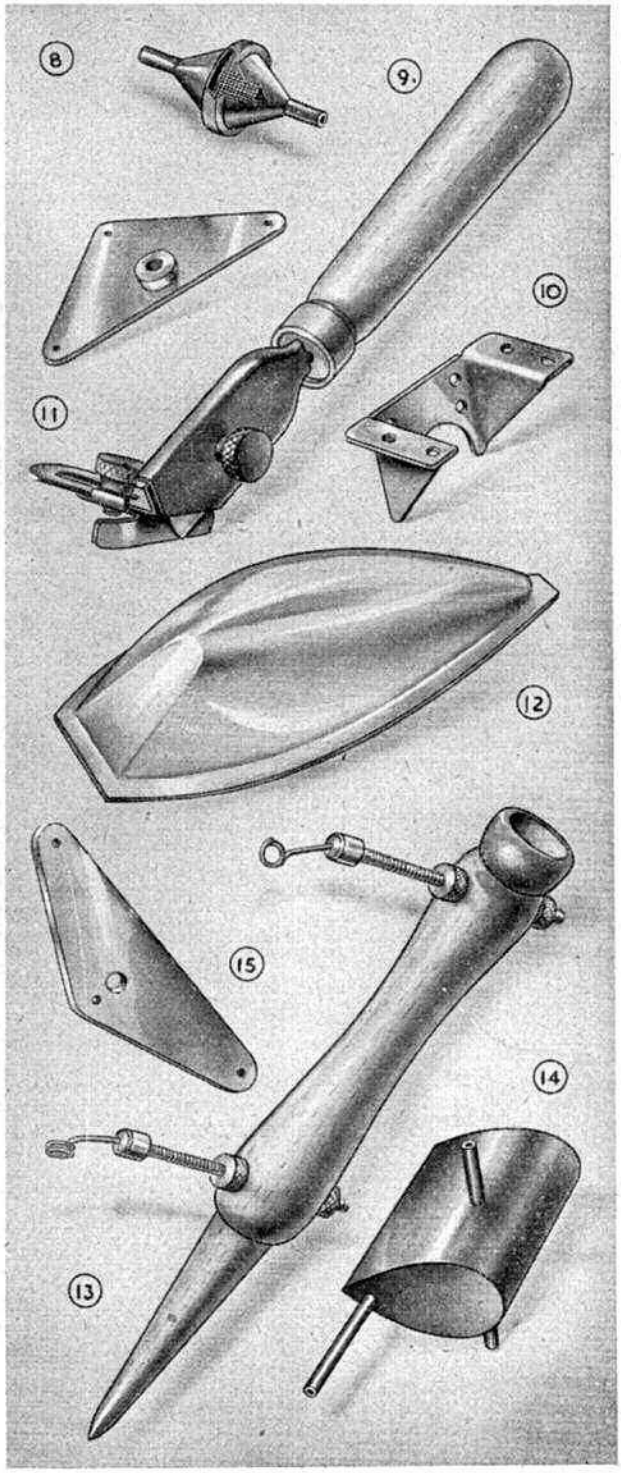


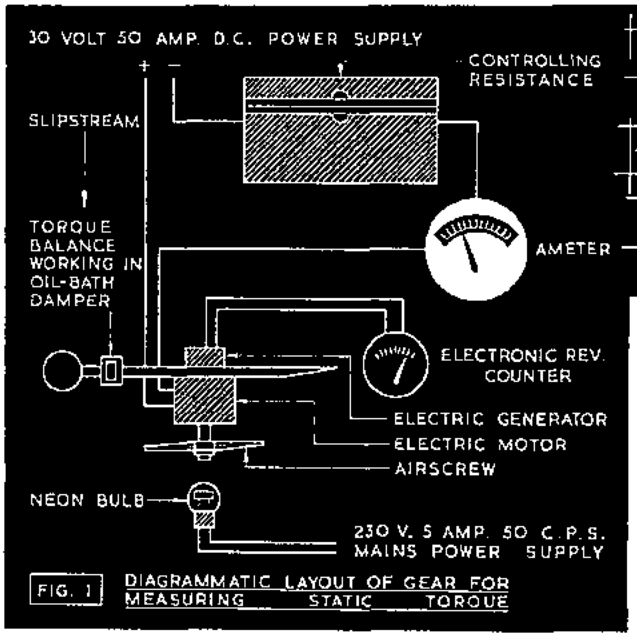


FIG. 1 DIAGRAMMATIC LAYOUT OF GEAR FOR MEASURING STATIC TORQUE

PROP REPORT

BY P. R. PAYNE

As part of our Trade Review service, tests have been carried out on a considerable number of airscrews sent in by various manufacturers. The results will be fully described in forthcoming issues—meanwhile this article deals with the interesting equipment used for the job.

IN view of the fact that no reliable information is available on model propellers, the Model Aeronautical Press has commissioned the L.S.A.R.A. to measure the performance of a number of contemporary commercial designs. The first part of this report is concerned with describing the testing equipment and static performances; the second with the measured performances in forward motion, and the third with a simple method of picking the best prop. for a given condition.

Static Test Equipment.

The gear used for measuring static torque is shown in Fig. 1. Briefly the procedure was to mount the airscrew so that the motor was upstream (thus minimising interference) and rotating it at say 12,000 r.p.m. by the rev. counter. At this speed the prop. should appear to stand still when illuminated by the neon bulb, and the resistance was adjusted until this occurred. The torque was then measured by a second operator on the torque balance. This can be repeated for various speeds, but it has been definitely established that there is no scale effect with model airscrews (i.e., torque and thrust vary accurately with r.p.m. squared—see Fig. 2), and thus one accurate measurement is sufficient to give the constant Q/n^2 where Q = torque in inch/ounces, and n = revs./sec. From this constant the torque at any r.p.m. can be found by multiplying it by n^2, where n is the desired revs./sec. Similarly, the static thrust at any r.p.m. can be obtained from the value of T/n^2 given in the table of performances.

Tunnel Testing Equipment.

This is substantially the same as that above, except that the ammeter will take the place of the torque balance. Whilst static tests were in progress the reading was noted for every test so that it was possible to plot torque against current input. Thus the torque can now be readily obtained from the meter reading, and the complications involved in obtaining a direct measurement are avoided.

The airscrew to be tested is mounted on the motor (which is faired into the nacelle of two inches diameter) in the working section of the tunnel, as shown in Fig. 3b. The whole assembly is hung from the roof on four wires set in two V's, so that it is free to move parallel to the airstream. Then when the airscrew is rotated, the distance through which it moves forward will be a measure of the thrust.

The tunnel itself, depicted diagrammatically in Fig. 3a has a working section of two feet diameter, and is powered by an electric motor delivering 1½ b.h.p. Considerable delays have been experienced in its construction, not the least of which was an acute shortage of plaster of paris, which was to be used in considerable quantities on the intake. In the end, Portland cement had to be used as a substitute; probably the strangest material yet used in aeromodelling, it is thought!!!

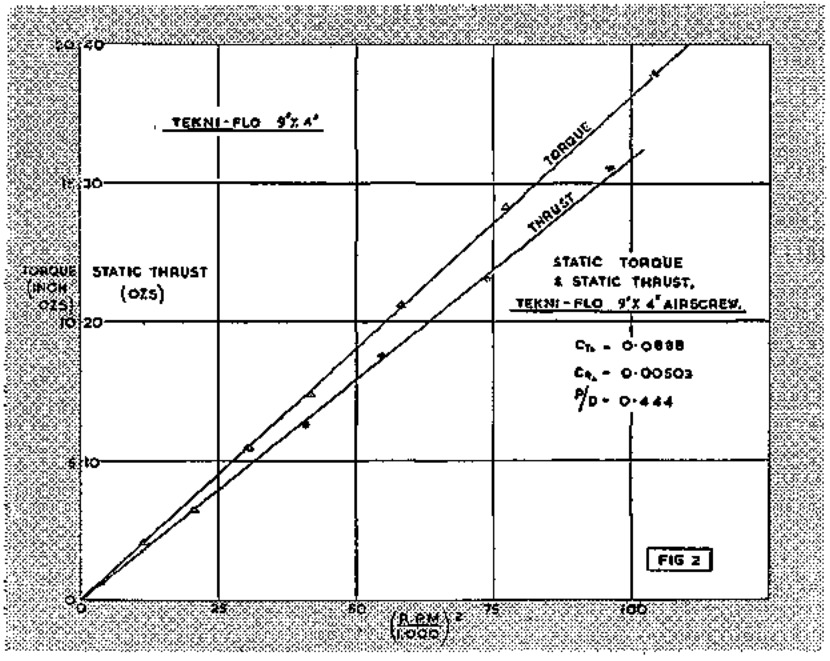


FIG 2

Size	Q/n^2	T/n^2	C_{P_0}	C_{T_0}	$PT/2\pi Q$
7×4	·00028	·000493	·0571	·1119	1·125
7×5	·00031	·000476	·0637	·108	1·215
7×6	·00040	·000476	·083	·108	1·120
7×8	·00060	·000542	·123	·123	1·000
7×10	·00070	·000416	·144	·0944	0·940
7×12	·00070	·000340	·143	·0771	0·930
8×4	·000465	·000756	·0484	·1005	1·080
8×8	·000845	·000880	·0880	·117	1·310
8×10	·00110	·000850	·115	·113	1·230
8×12	·00160	·000765	·167	·1015	0·915
9×4	·00061	·001111	·0354	·0823	1·160
9×5	·00072	·00115	·0416	·0955	1·272
9×6	·00109	·00133	·0631	·1107	1·170
9×8	·00153	·001145	·0885	·0992	0·995
9×10	·00222	·00124	·1287	·1030	0·890
9×12	·00219	·000968	·127	·0805	0·850
10×4	·000999	·00165	·0344	·0898	1·050
10×5	·000970	·00148	·0333	·0806	1·215
10×6	·000158	·00179	·0542	·0975	1·080
10×8	·00240	—	·078	—	—
10×10	·00268	·001775	·0920	·0966	1·035
10×12	·00377	·00159	·122	·0865	0·855
11×4	·00115	·00170	·0246	·0761	0·940
11×5	·00136	·00191	·0290	·0855	1·120
11×6	·00162	·00217	·0345	·0972	1·280
11×8	·00294	·00233	·0627	·1042	1·010
11×10	·00356	·00247	·0760	·1103	1·100
11×12	·00440	·00218	·0936	·0976	0·950
12×6	·00296	·00344	·0707	·0903	1·110
12×8	·00340	·00324	·0785	·0850	1·210
12×10	·00450	·00358	·102	·0940	1·265
12×12	·00476	·00340	·110	·0893	1·365

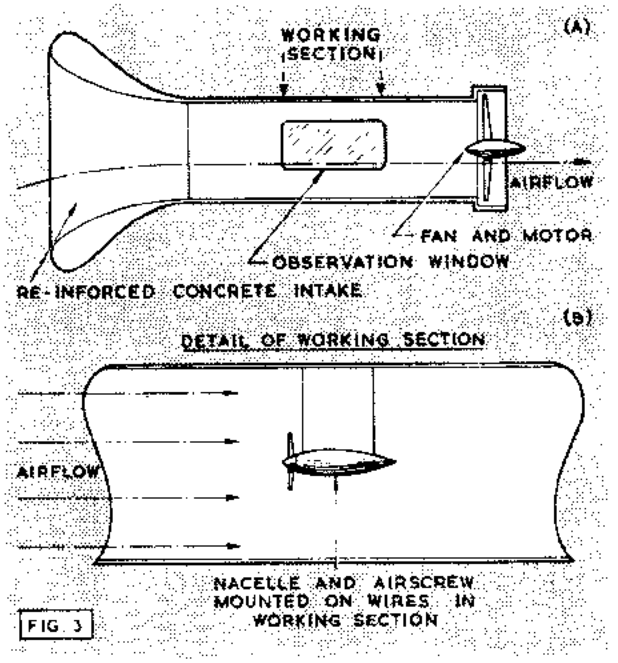


FIG. 3

Static Performance.

Since so many modellers have pointed out the absurdity of judging a propeller on its static performance it may be as well to point out that this does not mean that static tests have no value. To name just one reason, if we are to plot thrust and torque against forward speed we shall naturally want these measurements for the extreme left-hand side of our graph.

Probably the best method of comparing the static efficiencies of various propellers is to use Glauerts approximation, which gives

$$\frac{\text{Pitch} \times \text{Thrust}}{2\pi \times \text{Torque}} = 1{\cdot}0$$

Actually this varies as shown in Fig. 4, where a test point falls on the curve, the propeller is, relatively speaking, 100 per cent. efficient. When it falls below, the distance between it and the curve is a measure of the propeller's inefficiency.

The chief advantage of this method is that it allows for the lower static thrusts and higher torques associated with high P/D ratios.

It is immediately obvious from the Tru-flo results that not only do different designs vary considerably in performance, but individual airscrews in the same series as well. In fact the Tru-flo series may be taken as a perfect example, since they are well cut from Hydulignum and have an excellent finish: yet it is found that the pitch quoted on the hub gives only a rough guide to the true pitch, whilst the pitch at the tip is often considerably more or less than the pitch at the standard radius. (A 9 × 5 prop. made by "X" proves best on your stunt model: if you turn to manufacturers "Y" you may have to use his 9 × 6 to get the same results).

The accompanying table gives the results of measurements on all the Tru-flo propellers received by L.S.A.R.A., with the exception of two stunt props., and it is hoped to publish results for the rest of the 76 designs next month, with the first tunnel tests. Note that in the table the power coefficients C_{P_0} and thrust coefficient C_{T_0} (the suffix $_0$ referring to static conditions) have been included without explanation for modellers who prefer their results in this form.

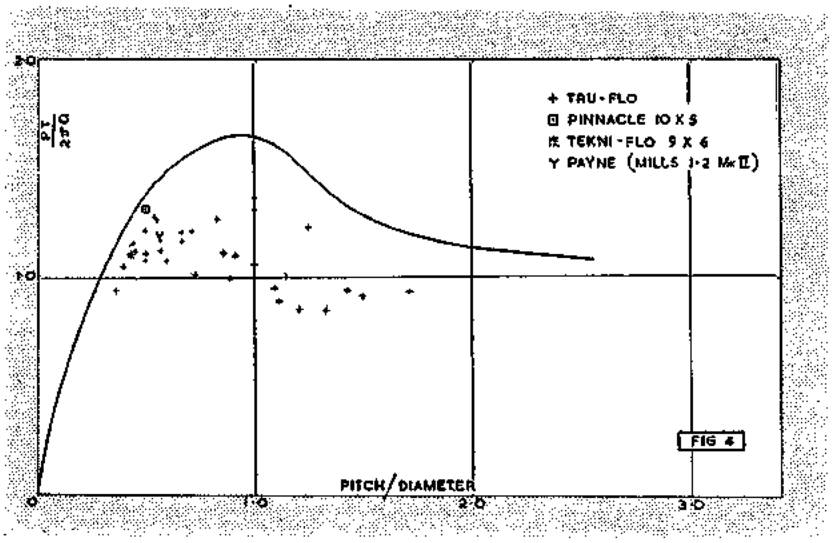
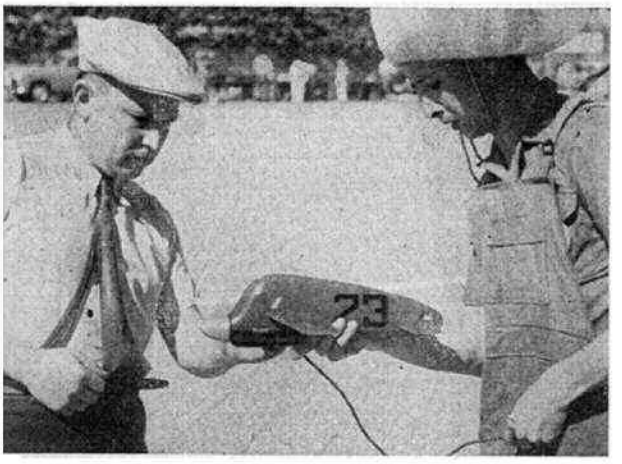


FIG 4

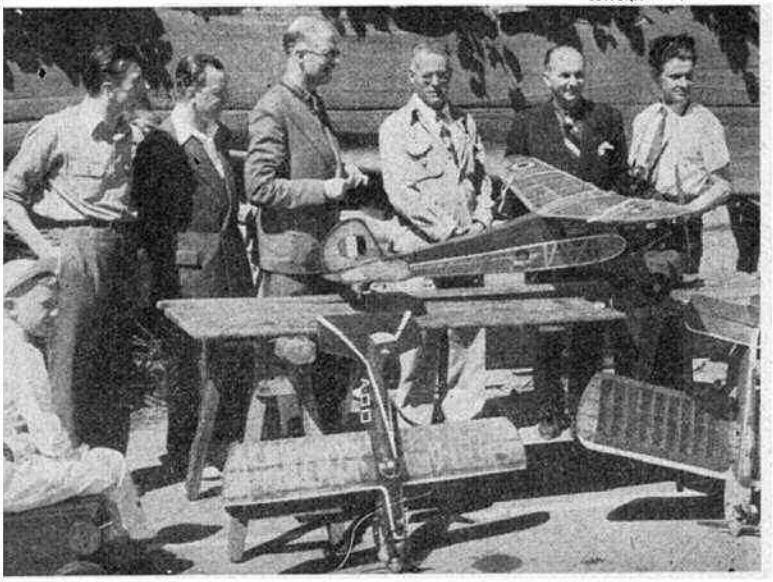


BELGIAN C/L AT KNOCKE

BRITISH enthusiasts missed a treat in not attending first Belgian Control Line Championships at popular seaside resort of Knocke. Main square, free accommodation, and full local authority support as well as splendid prize list were provided by the triple towns of Knocke-Zoute-Albert Plage; organisation by Petite Aviation Belge. Teams were sent by France and Switzerland to compete against local talent. Stunt—which we were invited to assist in judging—was on 1948 Gold Trophy Points—and winner gathered only 385 after taking best figure from four flights. Our friends overseas seem reluctant to risk their models and until they do must progress slowly. Such American jobs as Go-Devil were restrained to mere circuits, climbs and dives! In the speed section Belgian Cordier put national 10 c.c. record up to 204 km. /h. (127 m.p.h.), just beating French ace Labarde. Labarde gained the 5 c.c. class without undue trouble at 168 km. /h. As a final thrill for the crowd Lippens and Stockermans demonstrated their first successful Belgian jet model with redhead Dynajet. In the enclosed space it was horrific! Presenting the prizes the Burgomaster intimated that he hoped this would be an annual affair and that notices in future would be set out in time for British entrants to obtain necessary currency. If this is a fair specimen of Belgian hospitality we can but hope for more!

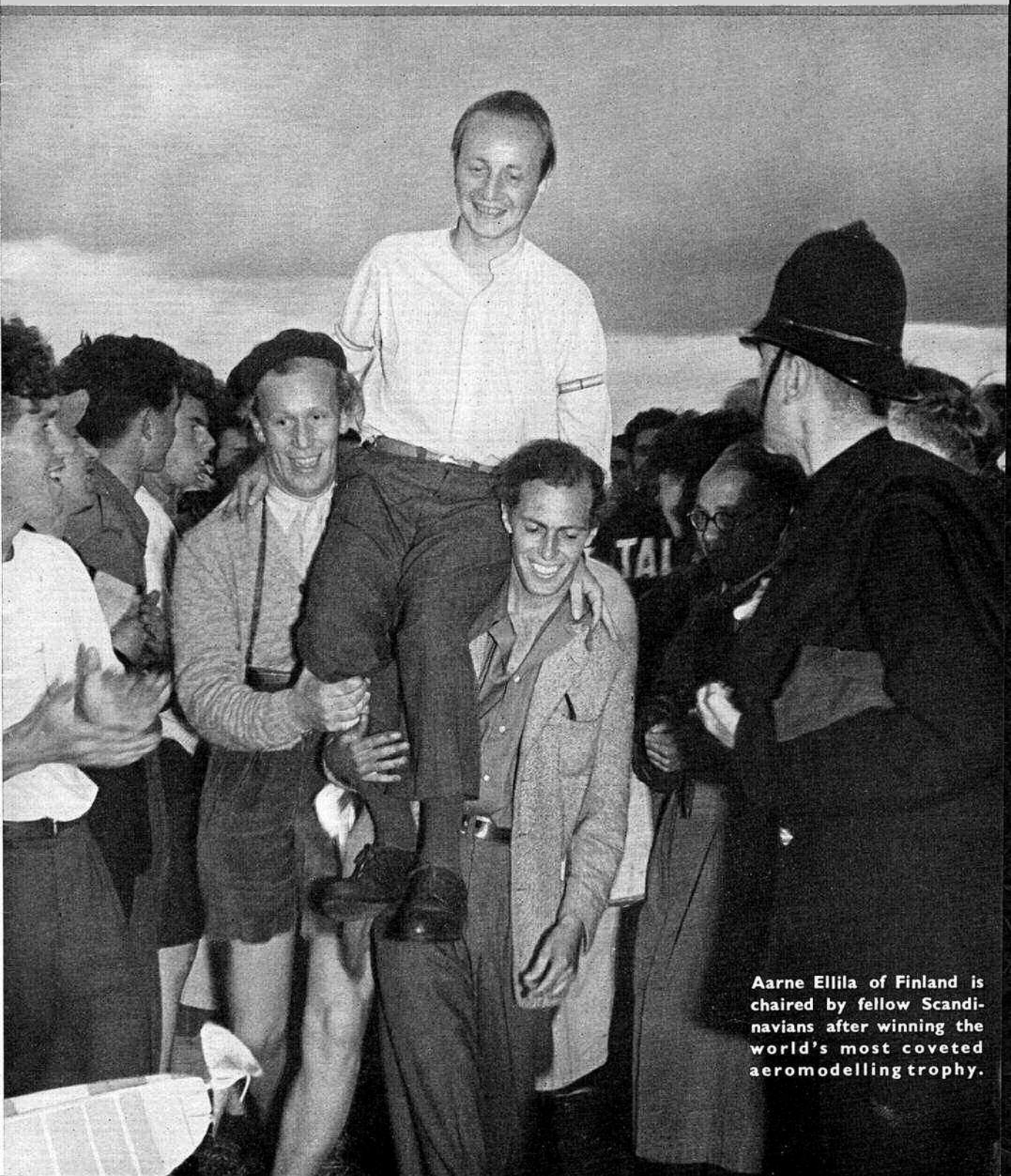
Top left: De Kempener's O.K. Twin powered semi-scale goat banner towing. Top right: French "ace" engine designer Maraget starts a baulky engine for fellow-countryman Malfait in 5 c.c. speed event. Above: French speedman Labarde helps Arnold Degen, Switzerland with his Debolt Bipe. Below: Mr. and Mrs. Stockermans with the former's speed entry: later Mrs. S. showed that she too can do her stuff. Below right: Hosts and visitors, left to right Messrs. Ferber and Roussel, Belgium; "Dicky" Dickson and D. A. Russell, "Aeromodeller"; Chabot and chief French delegate with some of the models flown.

"Aeromodeller" Photos.



AEROMODELLER 1949

WAKEFIELD SUPPLEMENT

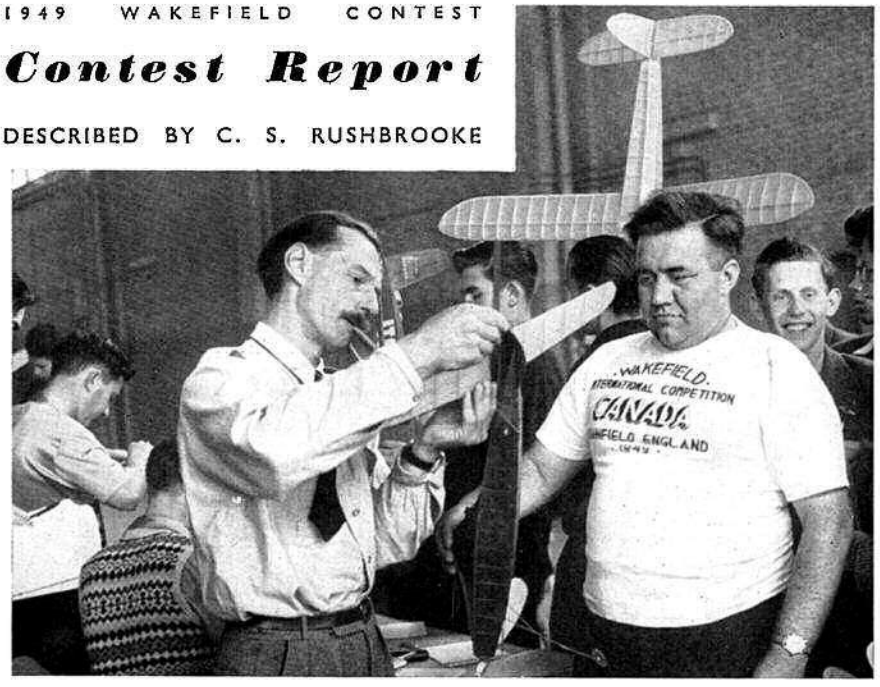


Aarne Ellila of Finland is chaired by fellow Scandinavians after winning the world's most coveted aeromodelling trophy.

1949 WAKEFIELD CONTEST

Contest Report

DESCRIBED BY C. S. RUSHBROOKE



NOT being given to superlatives, describing the 1949 Wakefield Contest will be somewhat difficult for me, but those of you who can read between the lines of my matter-of-fact style of reporting will easily gather that this year's Wakefield event was a classic of all time.

Following Chesterton's win in America last year the Society of Model Aeronautical Engineers was faced with the exacting task of organising the contest in Britain in 1949.

Suggestions were put forward relative to the important question of venue, and the general consensus of opinion was that the only possible means of accommodating the expected large foreign entry would be a Service aerodrome where accommodation and catering could be undertaken, thus avoiding the additional complications of arranging hotel to field transport as in the past. Much discussion took place around this point until someone had the inspiration of suggesting Cranfield, the home of the College of Aeronautics, situated some ten miles south-west of Bedford.

Suitable representations having been made to the Senate of the College, Mr. Houlberg (Chairman of the Society) was able to conclude extremely satisfactory arrangements with the College authorities, with the gratifying results that are now well known.

Situated on a low plateau, Cranfield, formerly an R.A.F. Station, was adapted for its present purpose following the report of a committee under the chairmanship of Sir Roy Fedden. Following the usual pattern of a permanent R.A.F. Aerodrome, the site was ideal for the purposes of the Contest, the topography of the ground being such that the whole of the aerodrome can be seen from any point on the perimeter track.

Through the courtesy of the Senate visitors were accommodated and fed in the magnificent buildings which provided what must surely be the most excellent accommodation yet offered to competitors in an international contest, and from this point alone the 1949 Wakefield will long be remembered as outstanding. Unlimited co-operation from the Registrar, Mr. F. V. Knight, and his staff, was sincerely appreciated and the thanks of all participants are accorded them for making their stay so enjoyable.

Following the distribution of official invitations to the various national aero clubs acceptances were received from no less than nineteen countries, the greatest support ever for this classic event. The story of our own eliminating contests to select the British team is already well known, but it is apparent that a number of countries did not get down to this important task as soon as they might have done, and the Society was still without definite information regarding a number of competitors even up to three days before the Contest.

Strangely enough late notification of entries came mainly from those closest to us, far off countries like South Africa, New Zealand and Australia being amongst the first to advise the Society of their participation! The American team had a real last minute scramble! I learned from Ed Naudzius that he only received word that he had succeeded in gaining a place in the team about a week before he had to leave the States.

For me the Wakefield activities started the Tuesday before the Contest when I travelled down to London Airport to welcome Frank Zaic who arrived at mid-day by "Stratocruiser," the rest of the American team following two days later. The main activities, however, commenced with the official reception held at the Society's Headquarters, Londonderry House, on Friday, July 29th. This rallying point brought most of the competitors together for the first time, and surely the ballroom of that stately building has rarely witnessed such a scene of gesticulation and mixture of languages.

Coaches transported the visitors from London to Cranfield, my own car being loaded up with a very interesting international party in the shapes of Zaic (U.S.A.), Van Hattum (Holland), Cosh ("Model Aircraft" (advt. !)) and the wife.

Saturday was spent in test flying and processing of the models. Some competitors were out as early as 6 a.m. when conditions were practically ideal, and in very short order one model was completely lost. A deviation from the printed programme was made when it was wisely decided to conduct processing throughout the day, models being returned to competitors after checking instead of being impounded as was the original intention. No praise is too high for the extremely good job of work done by Henry J. Nicholls and his team of willing helpers who carried out a most arduous task without batting an eyelid. Processing was carried out on a production line basis, models going from table to table for the examination and checking of various components. The undoubted advantage of a man being given a specific job was evident from the efficiency with which this section operated.

Approximately one in five models was found not up to specification, although the margin of error (with the exception of one Trinidad model which had to have some 20 square inches built into the wing area) was small. The component mostly at fault was the tailplane which in a number of cases was found to be slightly over the limit, and one or two fuselages were a fraction under the necessary cross sectional area and had to receive minor modifications to come within the limits. The average weight of all models was 10 oz. and there was not a single case of a model being below the stipulated minimum 8 oz. Altogether a total of 14 working hours was devoted to this exacting task, no mean feat on the part of the sliderule wizards.

Towards the evening of a very exacting day it was only natural that the team of processors became fagged and a few errors started to make themselves apparent. The writer gives full marks to Henry J. for calling an immediate shutdown and announcing that processing would be completed immediately after breakfast the next day.

It was during Saturday that a foretaste of the weather to come started to make itself apparent, and by the afternoon

wind velocities of 20–25 knots were being reached. This unpleasant circumstance was confirmed on looking out of the bedroom window on Sunday morning when the trees were seen to be showing their usual indication of a high wind, accompanied by a most dismally overcast sky and drizzling rain. Keen disappointment was apparent everywhere and it was a most unfortunate circumstance that, following several weeks of unbroken fine conditions, the Weather Clerk saw fit to change his mind on the day of our most important contest.

During breakfast I was informed that the Belgian model belonging to Mons. Deschepper had been handed in at the Police Station at Marston, some four miles from the drome, and time was filled in by taking the jubilant owner out to collect same. However, having been out in the prevailing weather conditions for some hours the model was hardly in its best form and Deschepper decided to fly his reserve model, unfortunately with disastrous results as will be seen from the detailed list of times.

During this time a team of helpers had been erecting some twenty marquettes, this being necessary following a misunderstanding with the contractors, who had delivered the equipment on Friday night instead of delivering and *erecting* on Saturday morning, an omission which caused much heartburning and additional work to an already overburdened organisation.

Following numerous small delays which seem to be inevitable at model aircraft contests, the 1949 Wakefield Contest finally commenced at 11.30, the first man away being Mons. Aubertin of Monaco.

My team of timekeepers (six pairs) did a fine job of work throughout the day, and this meeting should surely go on record as being one at which one had only to mention the word " timekeeper " to be answered by a shoal of applicants for the job. Positively a reversal of the usual conditions when one has almost to go on one's hands and knees to beg somebody to come forward for this necessary job of work !

Flight followed flight in rapid succession and the high wind immediately began to take its toll of machines and tempers. Many models pranged immediately on take-off, and all competitors met with extreme difficulty in holding the model in a proper take-off position. Some competitors had their chances eliminated right at the outset with complete write-offs, among them being Clements of Great Britain whose machine became a total wreck. Kuniss of Denmark suffered a like fate and Mlle. Odette Pin of Monaco (the only woman competitor in the event—and, we believe, the first in the history of the Wakefield Contest) was unable to score a time in this or either of the succeeding rounds in spite of heroic efforts on her part.

One notable flight made during the early stages was that of Pregaldien's model (proxy flown by the Belgian team manager Gaston Joostens) which went into a rocket-like climb with its wings fluttering in an alarming fashion. Everybody fully expected the high aspect ratio mainplane to tear itself apart, but the model stayed in one piece and scored the highest flight of the Belgian complement with a time of 4 : 38. Unfortunately the model was lost and he was unable to participate in the second and third rounds. Only two machines bettered this Belgian effort in the first round popular Warren Fletcher (hereafter known as " Junior," and baby of the American team), proving top scorer in the first round with a flight only 4·2 seconds below a maximum.

Another fine flight was turned in by the machine belonging to March of New Zealand, admirably proxy flown by P. T. Taylor. Appreciation should here be recorded of the sterling work put in by the proxy fliers for they sweated it out flight after flight laboriously repairing machines that had absolutely no chance to place high in the Contest, but determined to complete the required three flights with the machines handed to their care. It is perhaps invidious to single out any one proxy for particular mention, but I cannot let the opportunity pass of appreciating the efforts of veteran J. L. Pitcher who produced three remarkably good flights from a machine that nobody thought would even get into the air.

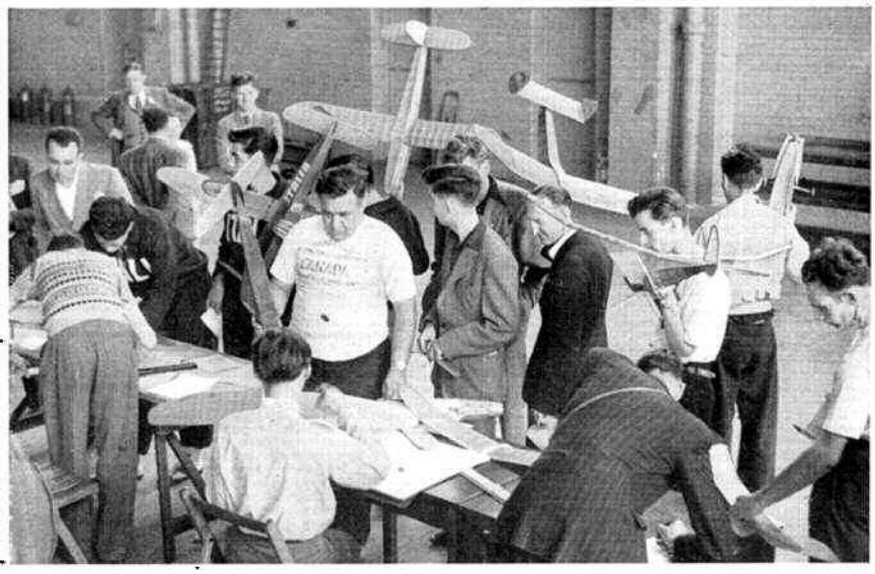
High flight times were well distributed amongst the nations, our top two men being Warring and Smith, with Chesterton and Holland following close behind. Hinks was obviously worried by the conditions and finally tailed off to finish with a hopelessly damaged machine.

The first round gave no indication of the potential danger from Ellila the eventual winner, his flight time of just over two minutes being fairly average for this round. One thing was noticeable, however, with this veteran machine, that being the nose-down flight attitude which with the fast revving prop. enabled a good headway to be made into the very strong wind. (This type of flying brought back memories of my own days of " active " flying, as this was the type of flying favoured in the Manchester district some years ago.)

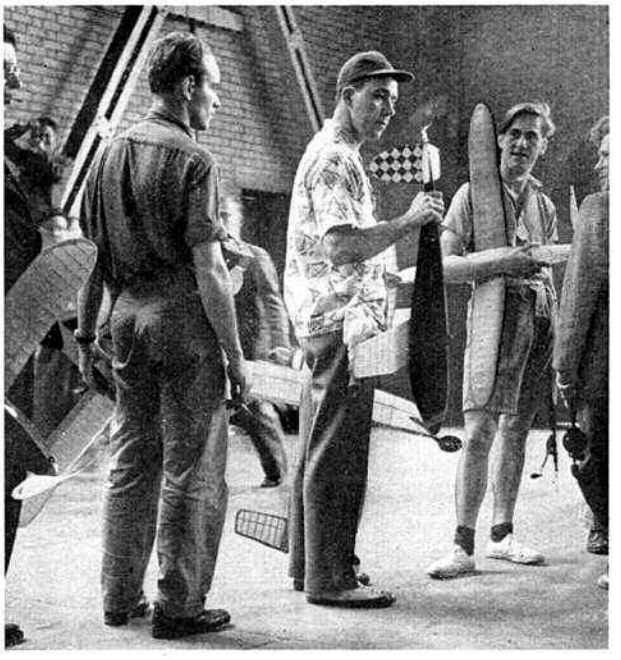
A great deal of amusement was afforded by the wild enthusiasm shown by the Cannucks, particularly when Loate's machine became airborne to loud cries of " Get up, there," " He's on the eight ball," etc.

An interesting Italian twin-geared model was obviously under-powered, and it was soon evident that only those able to make a fast getaway to a fair height would stand a chance. An amusing incident was witnessed when Copet's (France) model shed a wing panel and flew many hundreds of yards on its side, only gradually losing height. Lidgard. provided a diversion by producing a pukka rugger tackle to catch his model as it was blown down the runway, but he finally got the model away for a flight of 72 seconds, the dethermaliser coming into operation too soon.

The break for lunch saw the first round still incomplete but it was obvious that conditions were not going to improve, and the elimination of many excellent models meant a decreasing pressure on the organisation as the Contest wore on.



Heading photo shows Chief Processing Officer Henry Nicholls checking up on " Tiny " Webb of Canada. It's a pencil in his mouth by the way, not a cigar ! Right, a general view of the processing hangar at a peak period when even the slide rules were bending under the strain.



A portion of the processing queue featuring Bob Hanford, Ed Lidgard and Geoff Salt who was proxy for Kennedy of New Zealand.

POSITION AT END OF FIRST ROUND

1.	Fletcher	(U.S.A.)	295·8
2.	March	(N.Z.)	290·4
3.	Pregaldien	(Belgium)	278
4.	Galenne	(France)	252·7
5.	Sadorin	(Italy)	192·2
6.	Joostens	(Belgium)	190
7.	Gregory	(Australia)	185·4
8.	Warring	(G.B.)	182·4
9.	Smith	(G.B.)	168·5
10.	Loates	(Canada)	167
11.	Petiot	(France)	158·9
12.	Naudzius	(U.S.A.)	155·6
13.	Lim Joon	(Australia)	154
14.	Chesterton	(G.B.)	151·2
15.	Holland	(G.B.)	150
16.	Borgesson	(Sweden)	149·4
17.	Bland	(Trinidad)	146·7
18.	De Kat	(Holland)	141·7
19.	Ferber	(Belgium)	135
20.	Osbourne	(Ireland)	130·7
21.	Drew	(Ireland)	123·2
22.	Ellila	(Finland)	122
23.	Hoff	(Norway)	119·5
24.	Boyle	(U.S.A.)	115·4
25.	Millar	(Ireland)	115·4
26.	Bethwaite	(N.Z.)	114·8
27.	Cassola	(Italy)	110·8
28.	Heiret	(Norway)	109
29.	Lutjens	(Holland)	108·2
30.	Jossien	(France)	103·9
31.	McKay	(Canada)	103·8
32.	Woodley	(N.Z.)	103
33.	Bachli	(Switzerland)	101·5
34.	Munnik	(Sth. Africa)	101
35.	Sala	(Sth. Africa)	100
36.	Lustrati	(Italy)	99·9
37.	Kennedy	(N.Z.)	96·9
38.	Orvin	(Norway)	94·8
39.	Bernard	(France)	91
40.	Speidel	(Switzerland)	91
41.	Fitzpatrick	(Ireland)	90·4
42.	Molbach	(Norway)	87·5
43.	Janni	(Italy)	81·2
44.	Rowe	(Australia)	81
45.	Walter	(Canada)	77·1
46.	Siqueria	(Trinidad)	72·8
47.	Lidgard	(U.S.A.)	72
48.	Leibenberg	(Sth. Africa)	72
49.	Hinks	(G.B.)	66·2
50.	Peterson	(U.S.A.)	64
51.	Webb	(Canada)	62·2
52.	Baumann	(Switzerland)	59·5
53.	Hewitson	(N.Z.)	57·7
54.	Haslach	(Switzerland)	57·2
55.	Aubertin	(Monaco)	54·5
56.	De Jong	(Holland)	50
57.	Browne	(Ireland)	44·3
58.	Blomgren	(Sweden)	39·4
59.	Stark	(Sweden)	36·6
60.	Pena	(Trinidad)	33
61.	Larsson	(Sweden)	27·9
62.	Macdonald	(N.Z.)	23·5
63.	Grund	(Czechoslovakia)	22
64.	Segerfelt	(Sweden)	16·6
65.	Morison	(Sth. Africa)	15·8
66.	Deschepper	(Belgium)	13·1
67.	Christiansen	(Denmark)	12·6
68.	Beujean	(Belgium)	12·3
69.	Ford	(Canada)	11·6
70.	Von Ahlenfeldt	(Sth. Africa)	11·1
71.	Felstead	(Australia)	10·9
72.	Lansky	(Czechoslovakia)	10·1
73.	Copet	(France)	10
74.	Lippens	(Belgium)	9·8
75.	Meader	(Australia)	8·8
76.	Cellini	(Italy)	7·8
77.	Partridge	(Sth. Africa)	7·5
78.	Leardi	(Italy)	7·5
79.	Deurell	(Sweden)	7·4
80.	Serres	(France)	7·3
81.	Petersen	(Denmark)	6·9
82.	Wirth	(Switzerland)	6·5
83.	Fullarton	(Australia)	5·8
84.	Lequver	(Canada)	5·8
85.	Gaillard	(Holland)	5·5
86.	Grell	(Trinidad)	5·1
87.	Van der Woerd	(Holland)	4·5
88.	Brazier	(Ireland)	—
89.	Suls	(Holland)	—
90.	Clements	(G.B.)	—
91.	Mlle. Pin	(Monaco)	—
92.	Kuniss	(Denmark)	—
93.	Hanford	(U.S.A.)	—

ON resumption after lunch the pace speeded up slightly as both competitors and officials realised that they must press on if the Contest was to be finished by a reasonable time. Much repair work had been (and was still being) carried out, and delays were experienced in producing representatives from various teams to make their flights when called upon. The gusty and turbulent conditions continued and if anything the wind increased in strength, with the result that more and more models were damaged, particularly on take off. In comparison with the 6 who failed to make a score in the first round no less than 19 suffered a similar fate in round 2.

America started to come well into the picture mainly as a result of Joe Boyle's excellent flight of 4 : 29·3, the best score in the second round. Fletcher was unable to repeat his earlier performance and only managed to get just over two minutes, but in spite of this still retained a lead of some 40 seconds over his compatriot, who now stepped up into second place. The next best time in this round was made by Blomgren of Sweden only three seconds lower than Boyle.

It was here that Chesterton's chances of retaining the cup started to waver. His fin broke off on landing in the first round, and although repairs had been carried out the trim was obviously affected, the machine wallowing badly and only clocking 109·8 seconds. By virtue of a good flight Holland of Great Britain stepped up into third place, and matters began to look exciting.

It is a great pity that some form of visual score board was not available for the instruction and interest of competitors, for in spite of periodic announcements of flight times it was impossible for anybody busily engaged at the time of these announcements to maintain a record in their programmes.

It was during this round that the shadow of things to come appeared, as Ellila of Finland managed a fine flight of just under 4 minutes which brought him from 22nd to 4th place.

An amusing sidelight in this round was the severe ticking-off given by " Papa " Joostens to son Yves who muffed his second flight and only scored 12·5 seconds. As someone remarked, " He did everything but spank him."

A further highlight was the sight of heavyweight Billy Brazier (Ireland) pounding away in pursuit of his ground looping model and eventually retrieving the machine with a flying tackle worthy of international rugger Blue—but the model suffered somewhat through this treatment!

Mlle. Pin appeared for a second struggle with the elements and her lack of success could in no way be laid to the lack of masculine support. Frankie " Snookums " Zaic held her

A. Deurell of Sweden makes last adjustments after winding assisted by team mate Borgesson.

hand (sorry, steadied her winder) on every possible occasion.

During all this time much activity was taking place behind the scenes, or shall I say at the far end of the aerodrome. An enthusiastic and self-sacrificing gang of lads under the able direction of P. T. Guilmant were charged with the rather unexciting job of model recovery. This little group worked like Trojans, considerably aided by the loan of an official "Land Rover" and a really efficient telephone link-up between the take-off area, flying control and the far precincts of the airfield. Models were coming over all day and out of 213 flights timed during the Contest only 9 got away from "Guillie" and his willing team. Altogether four cars, three motor cycles and two bicycles were employed and over 200 miles covered in retrieving models. The village lads were very eager to help and fought for the privilege of retrieving models (having been told how important the event was), and probably further encouraged by Ed. Lidgard's offer of 10s. 0d. to the retriever of Naudzius's machine, which produced the most rapid appearance of the model and a further depletion of Ed.'s stock of currency!

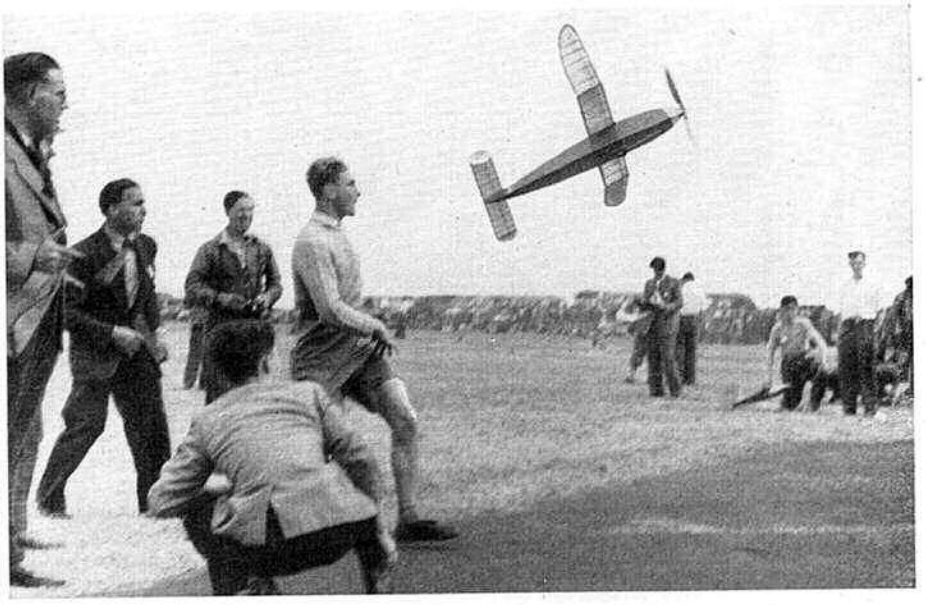
This recovery service was greatly appreciated by our foreign visitors and accounts for the remark made to me by one of the American team who said, "Boy, you do just about everything for us. You give us Dunlop rubber, fix us up with time-keepers, fetch our models back and really do everything in a swell way. This is the finest meeting I have ever been to." Surely a compliment from a nation which prides itself on its slickness and efficiency.

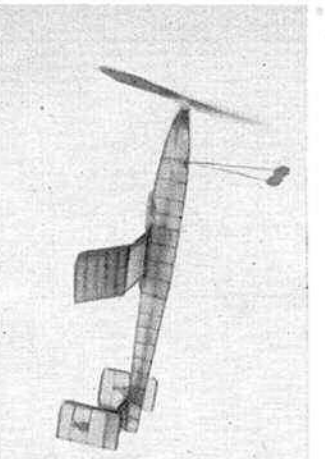
Messrs. Marcus, Pitcher and Foden were struggling along manfully with the Trinidad machines, and all proxy fliers were justifying their method of selection from the results of our own Wakefield eliminating contests.

By this time Denmark was represented by a sole entry, Carl Petersen being the only member able to carry on. Hanford's unfortunate start in getting a "no score" in round 1 was compensated slightly by getting a 2½ minute flight in round 2, but it was obvious that a number of very promising machines would have their chances completely squashed unless lost models were returned before closing time. Among these were Gregory (Australia), Pregaldien (Belgium), Galenne (France) and de Kat of Holland. This also unfortunately applied to one or two of the leaders who lost their models during round 2, and as will be seen from the final results, Joe Boyle (U.S.A.), Drew (Ireland), Janni (Italy) and Stark (Sweden) were all eliminated from the final round either through losses or hopeless smash-ups.

POSITION AT END OF SECOND ROUND

1.	Fletcher	(U.S.A.)	422·8
2.	Boyle	(U.S.A.)	384·7
3.	Holland	(G.B.)	361
4.	Ellila	(Finland)	357
5.	Naudzius	(U.S.A.)	339·4
6.	Sadorin	(Italy)	320·9
7.	Ferber	(Belgium)	315·5
8.	Blomgren	(Sweden)	305·7
9.	March	(N.Z.)	302·9
10.	Petiot	(France)	302·8
11.	Borgesson	(Sweden)	301·3
12.	Lim Joon	(Australia)	301
13.	Warring	(G.B.)	287
14.	Loates	(Canada)	285·6
15.	Smith	(G.B.)	282·2
16.	Pregaldien	(Belgium)	278
17.	McKay	(Canada)	277
18.	Chesterton	(G.B.)	261
19.	Galenne	(France)	252·7
20.	Janni	(Italy)	246·8
21.	Cassola	(Italy)	245·4
22.	Drew	(Ireland)	242·7
23.	Bland	(Trinidad)	231·9
24.	Osbourne	(Ireland)	218·1
25.	Hoff	(Norway)	212·2
26.	Joostens	(Belgium)	202·5
27.	Millar	(Ireland)	198·6
28.	Kennedy	(N.Z.)	198·4
29.	Bethwaite	(N.Z.)	193·1
30.	Heiret	(Norway)	192·1
31.	Fitzpatrick	(Ireland)	191·9
32.	Bachli	(Switzerland)	190·7
33.	Lutjens	(Holland)	186·6
34.	Gregory	(Australia)	185·4
35.	Walter	(Canada)	180·4
36.	Molbach	(Norway)	177·6
37.	Peterson	(U.S.A.)	170·8
38.	Sala	(Sth. Africa)	164·5
39.	Stark	(Sweden)	162·5
40.	Hanford	(U.S.A.)	151·4
41.	Lidgard	(U.S.A.)	149·1
42.	Von Ahlenfeldt	(Sth. Africa)	145·4
43.	De Kat	(Holland)	141·7
44.	De Jong	(Holland)	140·9
45.	Baumann	(Switzerland)	137·8
46.	Munnik	(Sth. Africa)	133·5
47.	Haslach	(Switzerland)	131·9
48.	Jossien	(France)	113·5
49.	Gaillard	(Holland)	113·5
50.	Serres	(France)	111
51.	Woodley	(N.Z.)	109
52.	Lustrati	(Italy)	104·9
53.	Copet	(France)	102·8
54.	Hewitson	(N.Z.)	100·9
55.	Larsson	(Sweden)	99·7
56.	Siqueria	(Trinidad)	97·6
57.	Orvin	(Norway)	94·8
58.	Segerfelt	(Sweden)	91·1
59.	Speidel	(Switzerland)	91
60.	Bernard	(France)	91
61.	Fullarton	(Australia)	86
62.	Rowe	(Australia)	81
63.	Lippens	(Belgium)	77·1
64.	Leibenberg	(Sth. Africa)	74·5
65.	Lansky	(Czechoslovakia)	74·1
66.	Hinks	(G.B.)	73·8
67.	Macdonald	(N.Z.)	69·5
68.	Felstead	(Australia)	67·5
69.	Grund	(Czechoslovakia)	63·6
70.	Aubertin	(Monaco)	62·4
71.	Webb	(Canada)	62·2
72.	Petersen	(Denmark)	56·1
73.	Wirth	(Switzerland)	56·1
74.	Browne	(Ireland)	55
75.	Pena	(Trinidad)	52·8
76.	Deurell	(Sweden)	27·4
77.	Lequver	(Canada)	21·6
78.	Ford	(Canada)	21·5
79.	Morison	(Sth. Africa)	20·8
80.	Brazier	(Ireland)	20
81.	Leardi	(Italy)	18·9
82.	Beaujean	(Belgium)	16·3
83.	Deschepper	(Belgium)	13·1
84.	Christiansen	(Denmark)	12·6
85.	Partridge	(Sth. Africa)	9·8
86.	Meader	(Australia)	8·8
87.	Cellini	(Italy)	7·8
88.	Grell	(Trinidad)	5·1
89.	Van der Woerd	(Holland)	4·5
90.	Kuniss	(Denmark)	—
91.	Mlle. Pin	(Monaco)	—
92.	Clements	(G.B.)	—
93.	Suls	(Holland)	—





Top, W. Baumann of Switzerland provides an excellent action shot as does Sune Stark of Sweden, shown right. Stark's model cannot be denied the oft maligned description of a vertical climb !

Left, a fair lady from Denmark adds to Reg. Dunning's autographed shirt. (Wait till his missus sees that one !)

Below shows a gathering of clans at the tarmac with Ed Lidgard demonstrating a two way stretch assisted by Naudzius and Tangney. Talk about tortured T-56 ! and need we say it's $\frac{1}{8}$th and not $\frac{1}{4}$ rubber.

Right, Janni of Italy gets away nicely with the assistance of three teammates. Near the camera are Silvio left, and Ronny Moulton right.
Below, a beautiful straight take off by Deurell; note the various cameramen and large crowd in the background.

WHILST for the purpose of this report each round is dealt with separately, in actual fact there was considerable overlapping of the second and third round flights, and although it is easy in retrospect to gain a clear picture by studying the list of results, on the day of the Contest this flight by flight picture was not easy to maintain. It was during this round that the weather tended to steady, and although there was no appreciable drop in wind speed the machines as a whole seemed to find the going steadier. This improved condition was accompanied by a shift in direction which made a move from the original take-off areas advisable, and in fact quite a number of competitors travelled some distance away from the control area, generally to their advantage. This confirms the opinion that elasticity in organisation is best, although under the circumstances where a large permanent area had been tented and roped off, this was extremely difficult to accomplish.

The tempo of the Contest increased at this stage and in spite of the fact that a large number of competitors were busily engaged in repairing damage to their models (and undoubtedly a few more holding back in the hope that conditions would still further improve) flights were made with increasing regularity. It is evident from a study of the third round results that competitors generally threw caution to the winds and adopted a " wind or bust " attitude in an attempt to get a maximum third round. No less than 20 competitors succeeded in making their best flight during this final round, and we saw the first maximum flight of the day when Woodley's machine clocked a time of 5 mins. 8 secs., flown by Birmingham proxy W. E. Dallaway.

Ferber of Belgium, who had climbed from 19th position in the first round to 7th in the second, spoiled his chances of a high finishing position by a poor third flight of 15·5 seconds, this taking him back to 19th place in the final score. Chesterton, who was definitely unhappy at this stage, wrecked his hopes (and his machine) when the model climbed away in a steeply banking right turn which ended in a serious crash at the end of 9 seconds. Thus ended for Roy what must have been a somewhat disappointing Contest, complicated by the fact that he had brought along his newly acquired wife only to have her banished to the " nunnery " with the rest of the female visitors !

Tension increased as better times were made, and those who had been able to maintain a fairly clear picture of the scores were beginning to forecast the probable result. Smith of Great Britain improved on his second round attempt completing three steady flights to place him at the head of our own contingent, closely followed by Ron Warring only 9 seconds behind his total. Frank Holland meanwhile was frantically searching the countryside for his lost model in company with Boyle.

Fletcher, well in the lead at the end of round 2, carefully wound his model for his final flight, outwardly calm but undoubtedly praying for a good flight to wind up the proceed-

ings. The duration, however, was not as good as his previous efforts and he finished with a total score of 539·4 seconds. With Boyle and Holland showing no signs of re-appearing Junior's margin over the next man, Ellila, gave rise to a natural optimism for his eventual success. Photographers crowded round him and the usual anticipatory shots taken.

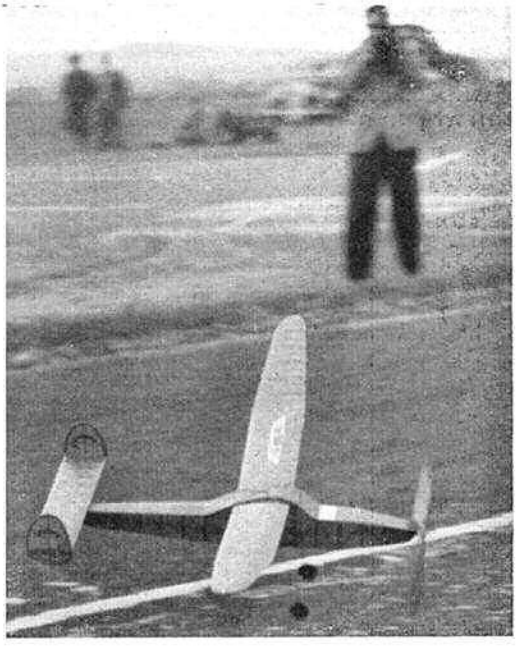
Ellila now made his third flight and scrambling in a 3 minute 12·9 seconds duration pipped Fletcher by 10½ seconds, turning the wild enthusiasm of the American contingent to deep disappointment. Sadorin of Italy produced his best flight of the Contest at this stage to peg Fletcher down a further place by a margin of 3/10th seconds.

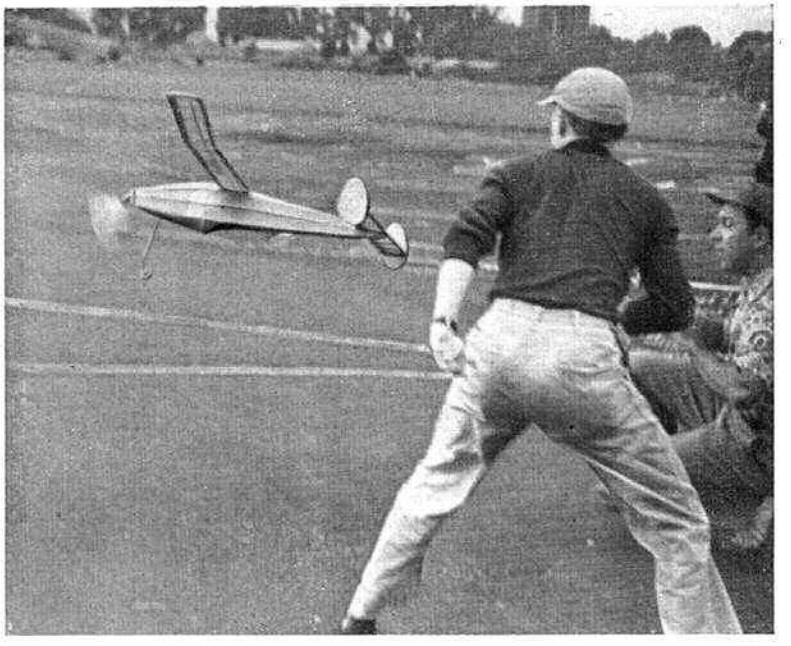
A closing time of 7.30 p.m. having been fixed, tension mounted as this rapid change in fortunes took place, and all eyes were anxiously watching the watch hands creep towards zero hour. Ed. Naudzius completed the third of three very steady flights and Frank Loates and Borgesson did likewise.

Suddenly the arena became electrified when word came through that Holland's model had been found, and with some ten minutes to go his car tore down the runway in order to retrieve the model in time for his third and final flight. Here started a chapter of accidents; halfway on the return journey he ran out of petrol and further time was lost before an accompanying driver realised that something was wrong and turned back to pick him up. Arriving back at the control area with only a few minutes to spare, a hurried check was made and he tore out to the take-off position amidst great excitement.

Here occurred the only contretemps of the day as obviously a number of the competitors understood that 7.30 p.m. would see the definite close of the Contest, whereas the judges' intention was that no further competitors would be allowed to fly other than those on the spot at that hour. Amidst great excitement and a certain amount of muttered discussion Holland hurriedly wound his model, but in the process snagged his clutch and freewheel with the result that the former became loosened, thus requiring a major repair operation. In view of this the judges rightly called a close to his efforts and the Contest finished on this exciting if somewhat disappointing note (from the British point of view).

However, such is the luck of the game, and the hard luck angle applied even more so to Boyle of America who, with a





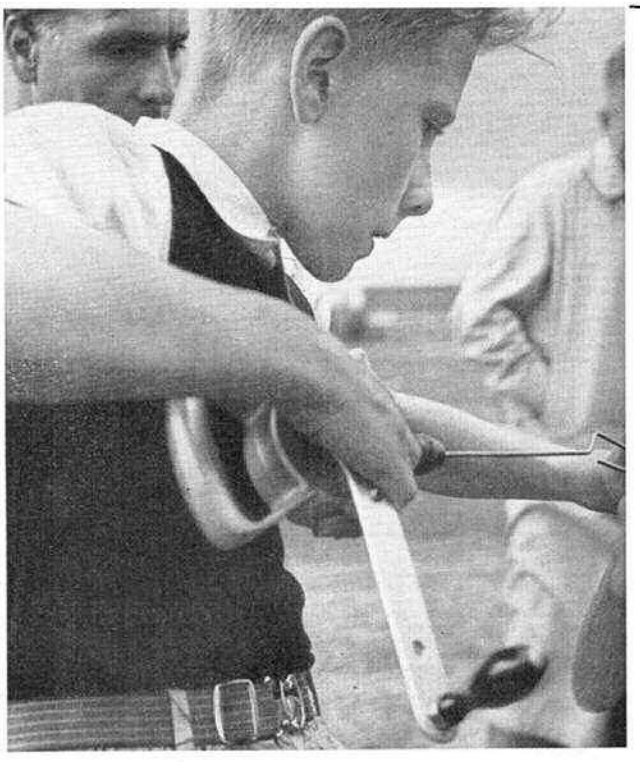
Top left, we have second man in the contest Egardo Sadorin of Italy who is very slick with his get-away. His model of very pleasing appearance features a cunning device for automatic adjustment of downthrust in the shape of a compressed spring in the noseblock. We shall be featuring plans and full details of his model in the very near future.

Top centre, L. E. Wood, flying proxy for Laval Walter of Canada, skims the tarmac.

Top right, "Junior" to wit Fletcher of U.S.A., third man in the contest, starts a climbing right-hand turn that very nearly brought him to victory. His was the biggest disappointment of the day.

Right, the model recovery service featuring all forms of transport including Shanks' pony. Operating the telephone in the Land Rover is P. T. Guilmant who was in charge of operations.

Below, is a general panorama with tents of the various countries in the background.



Youngest competitor in the contest, K. Wirth of Switzerland, age 15 years, uses a man-sized winder. Note the extension arm, a good point for Wakefield fliers.

greater score than Holland, stood an even better chance of running out the winner.

Excitement remained at fever pitch whilst the final results were worked out and double checked, and a very tense crowd gathered around the control tent to hear Competition Secretary Val Turner announce the results. On the announcement that lone-hand Ellila of Finland took top honours for 1949 there was a terrific cheer, and a crowd of the competitors rushed on the winner and carried him shoulder high into the centre to receive congratulations on his success. The efforts of this lone entry undoubtedly appealed to the sporting instincts of the rest of the competitors and the crowd, and this shy newcomer to the Contest was undoubtedly a very popular winner. Further cheers were forthcoming for Sadorin of Italy and Fletcher, who took his disappointment in the best sporting spirit.

An unfortunate error deprived Eric Smith of his share of glory at this juncture as it was finally learned that he had just pipped Ron Warring to score the best time for the home team. Proxy P. T. Taylor deserves special mention for gaining 7th place on behalf of March of New Zealand, who, you will remember, came very near to succeeding at Akron last year with the best flight of the day.

Thus, with the exception of the presentation of the Trophy and mementoes on the day following, ended the greatest Wakefield Contest ever in a spirit of tension and excitement that has surely never had its equal in an International aeromodelling event. Finland's success will do much to maintain the popularity of this aeromodelling classic, and 1950 should see a struggle on at least equal if not more ambitious lines than this year. The retention of the Cup in Europe ensures wide participation as happened this year, and whatever happens in other phases of aeromodelling activities the Wakefield Trophy Contest remains in an unassailable and solus position.

I have omitted technical details of the many machines from this contest report, relegating these to their separate sections in this supplement, but I cannot close without recording appreciation of the many helpers whom it is impossible to individually name, whose untiring efforts made the 1949 Contest one that will long be remembered.

POSITION AT END OF THIRD ROUND

1.	ELLILA	(Finland)	549·9
2.	SADORIN	(Italy)	539·7
3.	FLETCHER	(U.S.A.)	539·4
4.	NAUDZIUS	(U.S.A.)	532·3
5.	LOATES	(Canada)	471.9
6.	BORGESSON	(Sweden)	470·1
7.	March	(N.Z.)	469·1
8.	Blomgren	(Sweden)	444
9.	Smith	(G.B.)	433·7
10.	Warring	(G.B.)	424·9
11.	Woodley	(N.Z.)	409
12.	McKay	(Canada)	405·3
13.	Petiot	(France)	399·9
14.	Boyle	(U.S.A.)	384·7
15.	Lim Joon	(Australia)	369·8
16.	Holland	(G.B.)	361
17.	Kennedy	(N.Z.)	345·8
18.	Osbourne	(Ireland)	335·3
19.	Ferber	(Belgium)	331
20.	Lidgard	(U.S.A.)	308·3
21.	Joostens	(Belgium)	307·5
22.	Bland	(Trinidad)	305·2
23.	Ford	(Canada)	302·7
24.	Peterson	(U.S.A.)	298·4
25.	Fullarton	(Australia)	295·9
26.	Bethwaite	(N.Z.)	280·1
27.	Pregaldien	(Belgium)	278
28.	Fitzpatrick	(Ireland)	271·9
29.	Chesterton	(G.B.)	270
30.	Heiret	(Norway)	265·9
31.	Von Ahlenfeldt	(Sth. Africa)	265·4
32.	Galenne	(France)	252·7
33.	Cassola	(Italy)	249·6
34.	Janni	(Italy)	246·8
35.	Drew	(Ireland)	242·7
36.	Hanford	(U.S.A.)	237·7
37.	Segerfelt	(Sweden)	226·6
38.	Jossien	(France)	223·2
39.	Hoff	(Norway)	216·2
40.	Sala	(Sth. Africa)	215·9
41.	Serres	(France)	207
42.	Millar	(Ireland)	206·7
43.	Walter	(Canada)	203·6
44.	Lutjens	(Holland)	193·8
45.	Bachli	(Switzerland)	190·7
46.	Lippens	(Belgium)	187·1
47.	Gregory	(Australia)	185·4
48.	Copet	(France)	180·2
49.	Molbach	(Norway)	177·6
50.	Hewitson	(N.Z.)	172·5
51.	Lansky	(Czechoslovakia)	169·1
52.	Browne	(Ireland)	163·1
53.	Macdonald	(N.Z.)	162·5
	Stark	(Sweden)	162·5
54.	De Kat	(Holland)	141·7
55.	De Jong	(Holland)	140·9
56.	Baumann	(Switzerland)	137·8
57.	Munnik	(Sth. Africa)	133·5
58.	Wirth	(Switzerland)	132·7
59.	Haslach	(Switzerland)	131·9
60.	Felstead	(Australia)	125·5
61.	Gaillard	(Holland)	113·5
62.	Larsson	(Sweden)	105·1
63.	Lustrati	(Italy)	104·9
64.	Grund	(Czechoslovakia)	98·1
65.	Siqueria	(Trinidad)	97·6
66.	Orvin	(Norway)	94·8
67.	Speidel	(Switzerland)	91
	Bernard	(France)	91
68.	Morison	(Sth. Africa)	88·8
69.	Petersen	(Denmark)	86·6
70.	Leibenberg	(Sth. Africa)	84·9
71.	Rowe	(Australia)	81
72.	Hinks	(G.B.)	73·8
73.	Aubertin	(Monaco)	62·4
74.	Webb	(Canada)	62·2
75.	Pena	(Trinidad)	52·8
76.	Deurell	(Sweden)	27·4
77.	Brazier	(Ireland)	27·2
78.	Lequver	(Canada)	21·6
79.	Leardi	(Italy)	18·9
80.	Beaujean	(Belgium)	16·3
81.	Deschepper	(Belgium)	13·1
82.	Christiansen	(Denmark)	12·6
83.	Partridge	(Sth. Africa)	9·8
84.	Meader	(Australia)	8·8
85.	Cellini	(Italy)	7·8
86.	Grell	(Trinidad)	5·1
87.	Van der Weord	(Holland)	4·5
88.	Kunniss	(Denmark)	—
	Mlle. Pin	(Monaco)	—
	Clements	(G.B.)	—
	Suls	(Holland)	—

1949 WAKEFIELD CONTEST

Detailed Results

AMERICA

				Total	Average
Boyle, J.	115·4	269·3	—	384·7	128·23
Fletcher, W.	295·8	127	116·6	539·4	179·8
Hanford, R.	—	151·4	86·3	237·7	79·23
Lidgard, E.	72	77·1	159·2	308·3	102·77
Naudzius, E.	155·6	183·8	192·9	532·3	177·43
Peterson, A.	64	105·8	127·6	298·4	99·47

AUSTRALIA

Felstead, B. N. (Brockman)	10·9	56·6	58	125·5	41·83
Lim Joon, A. K. (Tangney)	154	147	68·8	369·8	123·27
Gregory, E. O. (Bolton)	185·4	—	—	185·4	61·8
Fullarton, J. M. (North)	5·8	80·2	209·9	295·9	98·63
Meader, A. (Monks)	8·8	—	—	8·8	2·93
Rowe, R. S. (Lees)	81	—	—	81	27

BELGIUM

Deschepper, P.	13·1	—	—	13·1	4·3
Beaujean, M.	12·3	4	—	16·3	5·43
Ferber, M.	135	180·5	15·5	331	110·33
Lippens, G.	9·8	67·3	110	187·1	62·37
Joostens, Y.	190	12·5	105	307·5	102·5
Pregaldien, H. (Joostens)	278	—	—	278	92·67

CANADA

McKay, W. M.	103·8	173.2	128.3	405·3	135·1
Webb, B.	62·2	—	—	62·2	20·73
Lequver, R.	5·8	15·8	—	21·6	7·42
Ford, A.	11·6	9·9	281·2	302·7	100·9
Loates, F.	167	118·6	186·3	471·9	157·3
Walter, L. (Wood)	77·1	103·3	23·2	203·6	67·87

CZECHOSLOVAKIA

Lansky (Moon)	10·1	64	95	169·1	56·37
Grund (Woolls)	22	41·6	34·5	98·1	32·7

DENMARK

Christiansen, P. B.	12·6	—	—	12·6	4·2
Kuniss, P. E.	—	—	—	—	—
Petersen, C. J.	6·9	49·2	30·5	86·6	28·87

FINLAND

Ellila, A. S.	122	235	192·9	549·9	183·3

FRANCE

Petiot, J.	158·9	143·9	97·1	399·9	133·3
Bernard, A.	91	—	—	91	30·33
Jossien, R.	103·9	9·6	109·7	223·2	74·4
Copet	10	92·8	77·4	180·2	60·07
Galenne	252·7	—	—	252·7	84·23
Serres	7·3	103·7	96	207	69

GREAT BRITAIN

Chesterton, R. B.	151·2	109·8	9	270	90
Holland, F.	150	211	—	361	120·33
Smith, E.	168·5	113·7	151·5	433·7	144·57
Warring, R. H.	182·4	104·6	137·9	424·9	141·63
Hinks, R.	66·2	7·6	—	73·8	24·6
Clements, R.	—	—	—	—	—

HOLLAND

De Kat, H. L. F.	141·7	—	—	141·7	47·23
Lutjens, H. (Caay)	108·2	78·4	7·2	193·8	64·6
De Jong, J.	50	90·9	—	140·9	46·97
Van der Woerd, H.	4·5	—	—	4·5	1·5
Suls, L. K.	—	—	—	—	—
Gaillard	5·5	108	—	113·5	37·83

IRELAND

				Total	Average
Drew, G.	123·2	119·5	—	242·7	80·9
Osbourne, N.	130·7	87·4	117·2	335·3	111·77
Brazier, W.	—	20	7·2	27·2	9·07
Browne, D.	44·3	10·7	108·1	163·1	54·37
Millar, G. B.	115·4	83·2	8·1	206·7	68·9
Fitzpatrick, G.	90·4	101·5	80	271·9	90·63

ITALY

Leardi, A.	7·5	11·4	—	18·9	6·3
Lustrati, S.	99·9	5	—	104·9	34·97
Sadorin, E.	192·2	128·7	218·8	539·7	179·9
Janni, G.	81·2	165·6	—	246·8	82·27
Cellini, G.	7·8	—	—	7·8	2·6
Cassola, F.	110·8	134·6	4·2	249·6	83·2

MONACO

Mlle. Odette Pin	—	—	—	—	—
Aubertin, R.	54·5	7·9	—	62·4	20·8

NEW ZEALAND

Bethwaite, F.	114·8	78·3	87	280·1	93·37
March, B. B. (Taylor)	290·4	12·5	166·2	469·1	156·37
Macdonald, A. (Eales)	23·5	46	93	162·5	54·17
Kennedy, D. R. (Salt)	96·9	101·5	147·4	345·8	115·27
St. Clair Woodley, J. (Dallaway)	103	6	308	409	136·33
Hewitson, R. N. (Copland)	57·7	43·2	71·6	172·5	57·5

NORWAY

Orvin, H.	94·8	—	—	94·8	31·6
Hoff, Per.	119·5	92·7	4	216·2	72·0
Molbach, T.	87·5	90·1	—	177·6	59·27
Heiret, J.	109	83·1	73·8	265·9	88·63

SOUTH AFRICA

Partridge, B. (Muxlow)	7·5	2·3	—	9·8	3·2
Morison, L. (Jessop)	15·8	5	68	88·8	29·6
Leibenberg, C. (Parham)	72	2·5	10·4	84·9	28·3
Von Ahlefeldt, C. (Hinks)	11·1	134·3	120	265·4	88·47
Sala, J. (Hardman)	100	64·5	51·4	215·9	71·97
Munnik, R. (Dubery)	101	32·5	—	133·5	44·5

SWEDEN

Blomgren, A.	39·4	266·3	138·3	444	148
Borgesson, B.	149·4	151·9	168·8	470·1	156·7
Deurell, A.	7·4	20	—	27·4	9·13
Larsson, A.	27·9	71·8	5·4	105·1	35·03
Sagerfelt, L.	16·6	74·5	135·5	226·6	75·53
Stark, S.	36·6	125·9	—	162·5	54·17

SWITZERLAND

Haslach, T.	57·2	74·7	—	131·9	43·97
Baumann	59·5	78·3	—	137·8	45·93
Speidel, O.	91	—	—	91	30·33
Bachli, B.	101·5	89·2	—	190·7	63·57
Wirth, K.	6·5	49·6	76·6	132·7	44·23

TRINIDAD

Pena, H. (Marcus)	33	19·8	—	52·8	17·6
Bland, B. A. (Pitcher)	146·7	85·2	73·3	305·2	101·73
Siqueria, T. M. (Foden)	72·8	24·8	—	97·6	32·53
Grell, R. (Luck)	5·1	—	—	5·1	1·7

1949 WAKEFIELD CONTEST

Worried Winders . .

STOICAL E. W. EVANS and ROY CHESTERTON

HAPPY WARREN FLETCHER

INDIGNANT LUSTRATI and helper

PHLEGMATIC A. LARSSON, B. BORGESSON help SUNE STARK

CAFARD (!)
A helper and PETIOT (France)

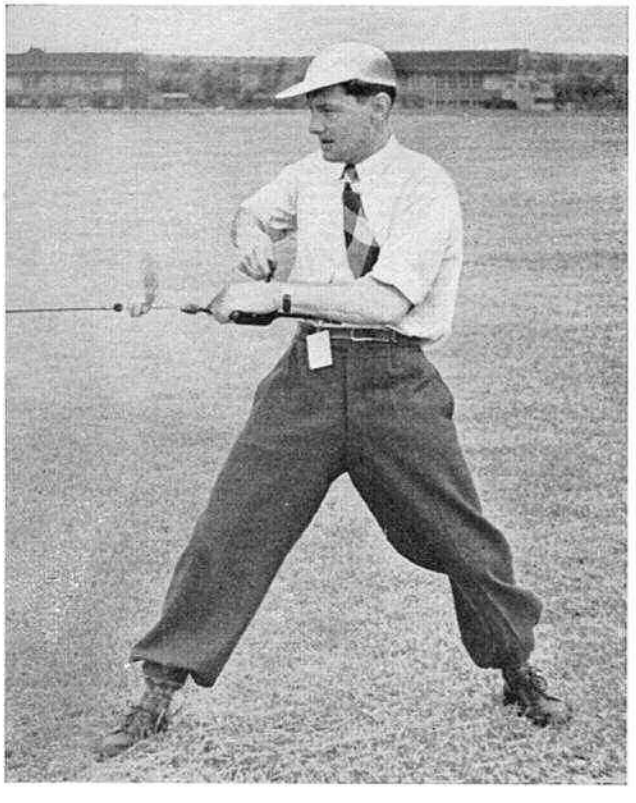
COMPUTATING
BAUMANN (Switzerland)

AGONISED
CASSOLA and TIONE (Italy)

DETERMINED
DE KAT (Holland)

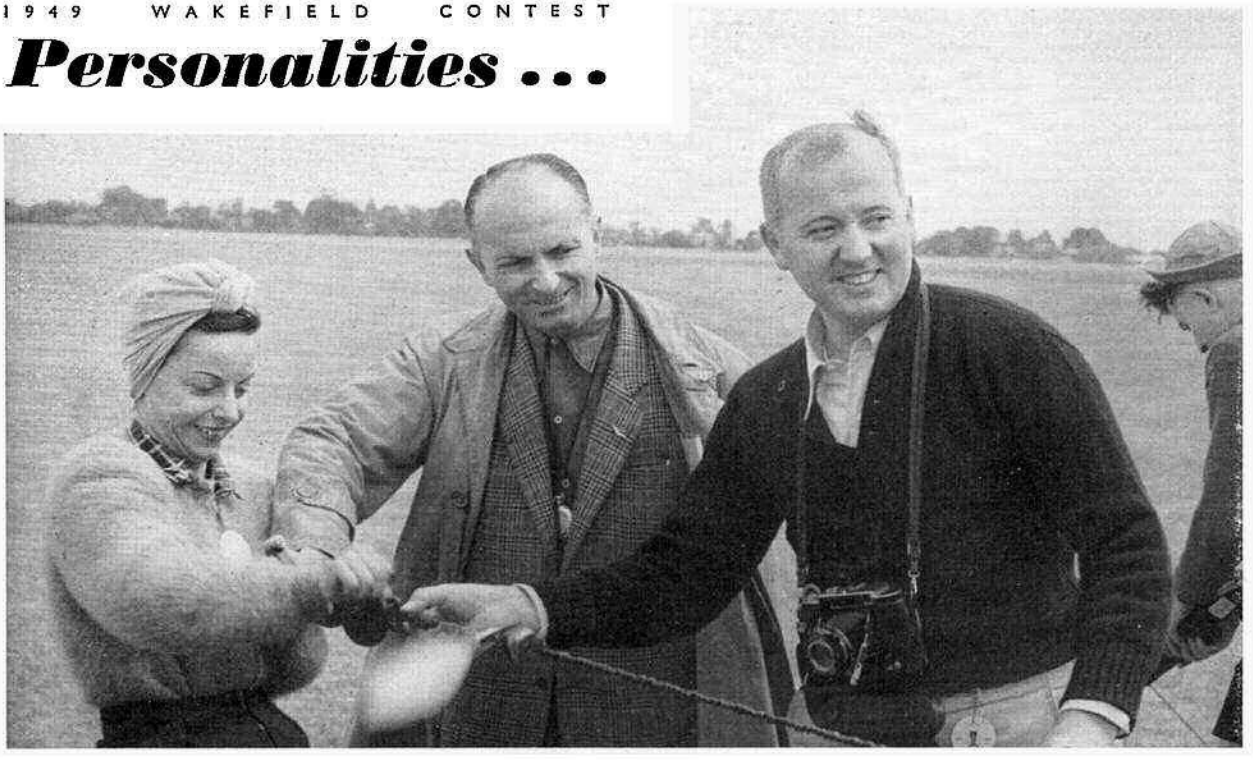
. . and The Carefree Cameraman

HENRY J. ("There's nothing I like better than shooting good lines to people who appreciate them!") NICHOLLS living up to his reputation as (quote Dunning!) "Britain's answer to America's Atom Bomb" . . .



1949 WAKEFIELD CONTEST

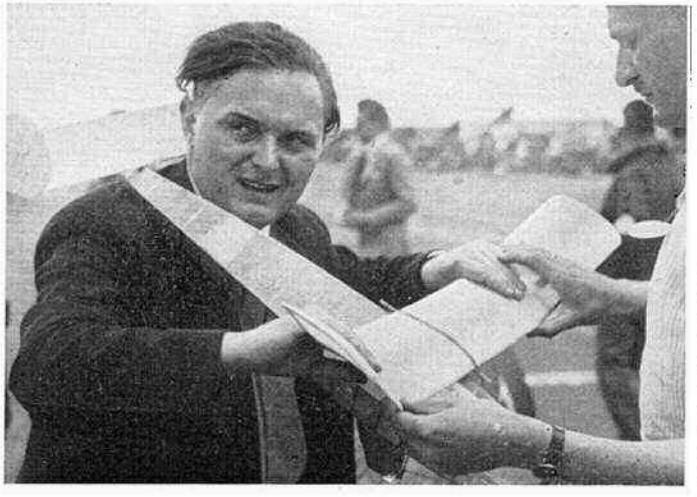
Personalities . . .



MLLE. ODETTE PIN—Monaco. It is appropriate that our first " personality " should be the first woman ever to be selected for the Wakefield Contest—that she occupied a somewhat lowly position is just the luck of the game and the presence of very un-Mediterranean weather. Flying a Jaguar she made many fruitless efforts to get clear away, assisted by her team-mate Robert Aubertin and Frank Zaic, ever ready to lend a hand in so charming a cause. She may take some consolation that last year's winner, Chesterton, flying a similar model succumbed to the take-off Gremlin before the end. Monaco is to be congratulated on providing this Wakefield surprise: we hope women of all other lands will be stimulated to make a special effort next year.

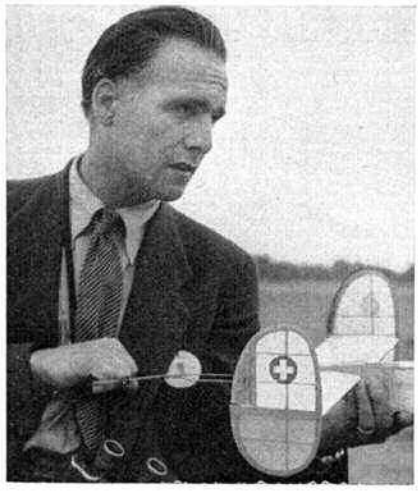
ROBERT CHABOT—France. No international contest would be complete without the dapper presence of smiling Robert Chabot in charge of France's entry. His calm acceptance of success or failure, triumph and disaster, make him the ideal man to check the often mercurial temperaments of his countrymen. Year after year he makes his appearance on the flying grounds of Europe, be it France, Belgium, Switzerland or England—and while to-day he may have no national victory to report, to-morrow is quite another story, and yesterday has already provided a whole string of occasions where he has produced substantial victories—at Eaton Bray alone he has twice had reason to wire his headquarters: " France a gagnée la victoire."

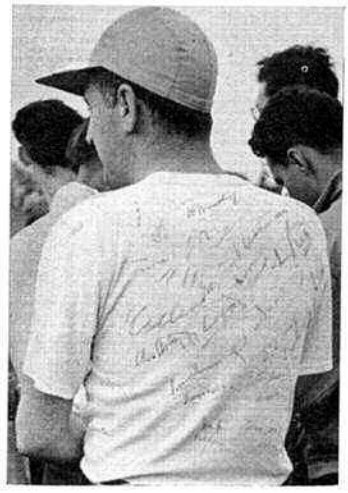
FRANK ZAIC—America. The almost legendary figure of Frank Zaic back in England again was a source of great pleasure to the many who knew him only from his famous Year Books and the Thermic series of gliders. Frank has quite the most fascinating and catching of all American accents, a few more days and we should all have been doing it. No calmer and more efficient team manager for America could have been chosen—his great skill was in letting the boys get on with it as they best knew how without driving or flapping, which still left plenty of time to cover the equally important social aspects of the contest. We hope he has enjoyed his stay in these parts—and his subsequent European trip—and will carry back memories of friends old and new—certainly he will long remember " Henry."



GASTON JOOSTENS—Belgium. We first met Gaston Joostens in Brussels in 1946 with his friend Edgar Balasse, when we were shown their curious power models developed as a co-operative effort. Odd as they looked they carried all before them in subsequent international contests. The same thing applied to their Wakefield entry—four identical models of the group design with two others from the 1948 contest. Last year's promise seemed likely to be fulfilled with a first round flight of over four minutes by Gaston flying proxy for Pregaldien—but the model was lost and with it Belgium's chances in 1949. Has the distinction of being first Wakefieldite to manage a team with his own son in it—young Yves Joostens, not quite the baby of the meeting. Joostens must take credit for much of the hard theoretical work put in on their model and may best be described as the N. K. Walker of Belgium.

ARNOLD DEGEN — Switzerland. As Chief of the Aeromodelling Section of the Swiss Aero Club, Arnold Degen has one of the pleasantest jobs in Europe. With a nice workshop at his office, enthusiastic assistance, both practical and financial from Swiss modelbods, what more could he want than a trip to Cranfield ? One of the few national executives who manage to find building time themselves, Arnold has competed regularly in European speed control-events. That a full Swiss team competed speaks much for his enthusiasm—twelve months ago rubber models almost unbuilt over there, but with the aid of such stalwarts as Traugott Haslach, developed a strong attack. Switzerland has honour of providing baby of the meeting, young Wirth aged fifteen—who nevertheless put up a man-size performance.

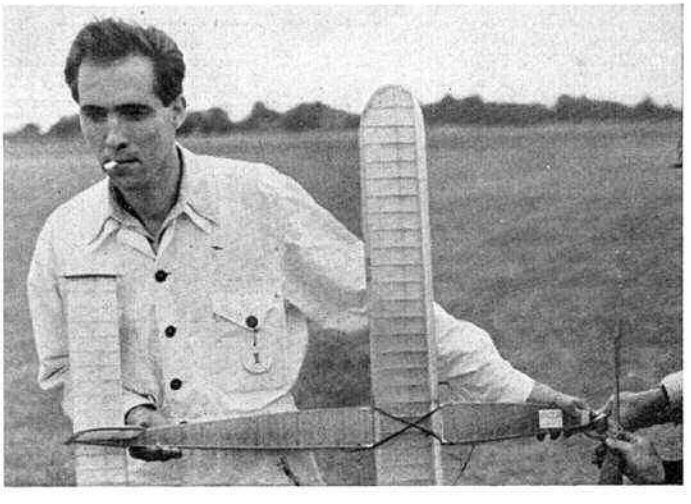




REG DUNNING—Canada. Popular Canadian team manager who led the white-shirts (we did admire them !) on and off the field. Distinguished himself by having all and sundry autograph his Wakefield vest : Mrs. Dunning, we understand, will have the winter task of embroidering them in permanence ! Most active of the team managers he not only borrowed the Boffin's motor-cycle in pursuit of a flyer lost in search of his model, but also took a leading part in the " doing " of Ed. Lidgard on the final evening with in-between rye sessions accompanied by Jeff Moss. Reg has two children of his own plus three more adopted but still finds time to be Vice-President of the Model Aircraft Association of Canada from his home in Toronto, Ontario. Is a convert to the British way of contest running by unpaid enthusiastic volunteer officials rather than the paid official system common across the Atlantic, and was much impressed with British Wakefield organisation.

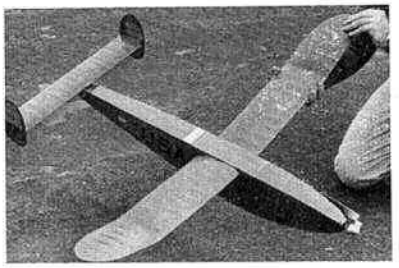
CARLO TIONE—Italy. As Chairman of Federazione Aeromodellistica Nazionale Italiana (better and more familiarly known as FANI), Carlo Tione has reason to be proud of the best dressed Wakefield team in the contest—and fine feathers in this case made fine birds for Edgardo Sadorin of Italy came within an ace of winning for his country. Carlo has strong views on aeromodelling prestige and is determined that his countrymen should set a good example in every direction. He even thinks that model plans for foreign publication should be distributed solely through FANI so that only the best designs are seen truly representative of modern Italian trends. As our illustration shows he really feels with his team the frantic emotions sacred to winding on those last turns, with all the fluidity of expression expected of the Latin race.

THOR MOLBACH—Norway. When only eighteen months ago the Model Aircraft Section of the Norwegian Aero Club had regretfully to admit at an F.A.I. meeting that little or no practical modelling progress had been made in their country since the war owing to lack of materials, it seemed unlikely that any strong Norwegian representation was to be expected for some time. All the more credit then is due to Thor Molbach as leader of their model group for his keen team and active participation ! Not only has Norwegian rubber modelling now made substantial progress but their experts have achieved quite widespread fame for their work in the power field. Norway of course is a member of the Scandinavian Nordic Modellers Group with their combined nationals, and they have also sent members to Per Weishaupt's annual aeromodelling camp in Denmark. While Heiret placed highest in the contest, most prominent Norseman was Viking-size H. Orvin, about six-foot-three and big with it—in fact our youthful ideal of what Bulldog Drummond should have looked like !

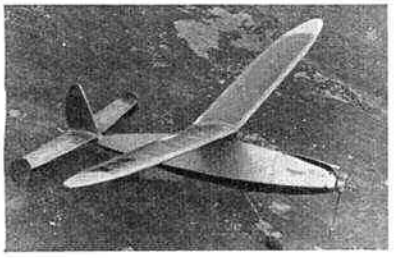


1949 WAKEFIELD CONTEST

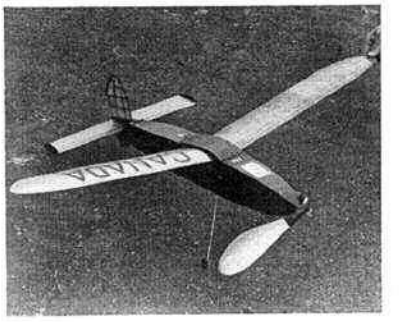
Model Miscellany . . .



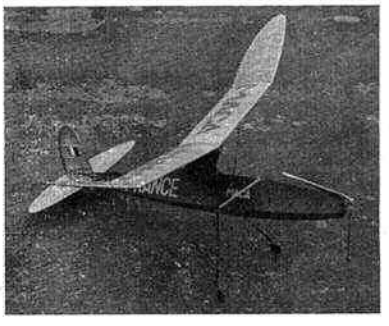
ED. NAUDZIUS (U.S.A.) "Pipsqueak"—42.2 in. span shoulder wing slabsider, fitted with a single-bladed folder.



B. B. MARCH (New Zealand)—Diamond slabsider with parasol wing, single-bladed folder, small pylon, and tailplane endplate sub-fins.

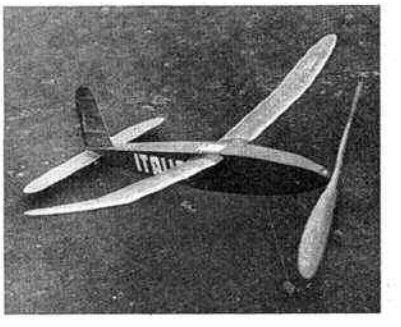


FRANK LOATES (Canada)—42 in. span shoulder wing slabsider, two-bladed folder, with tip-up centre-section dethermaliser.

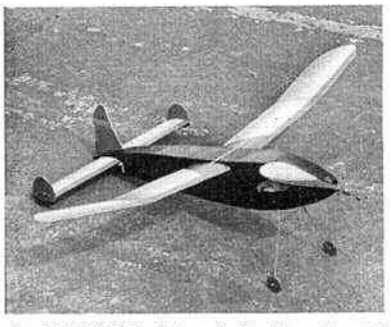


A. BERNARD (France)—36 in. span parasol pylon diamond slabsider, single-bladed folder, mechanically operated dethermaliser.

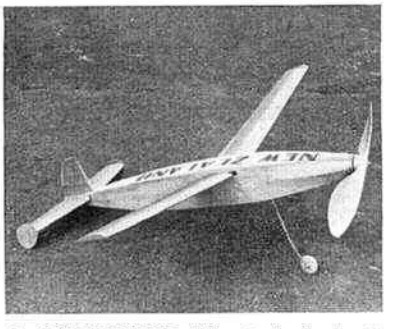
P. E. KUNISS (Denmark)—45¾ in. span shoulder wing streamlined slabsider, section Gottingen 359, double-bladed folder and pop-up tail D/T.



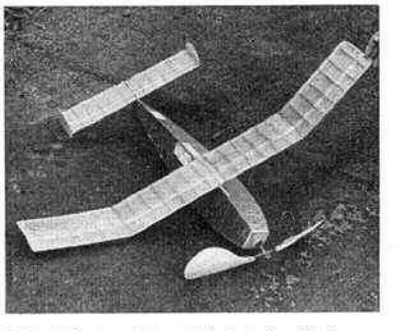
GIAMPIETRO JANNI (Italy)—Shoulder wing slabsider with single fin and double-bladed free-wheeler, notable for its fine finish.



R. AUBERTIN (Monaco)—Shoulder wing slabsider with single-bladed folder, single fin with tailplane endplate sub-fins.

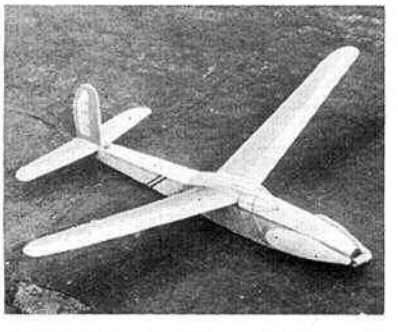


A. MACDONALD (New Zealand)—Shoulder wing streamlined slabsider, double-bladed free-wheeler, and single fin with tailplane endplate sub-fins.



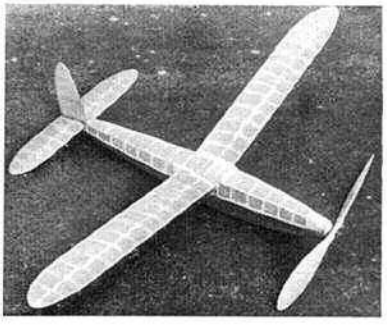
MARCEL BEAUJEAN (Belgium)—41½ in. span typical Belgian pylon parasol diamond slabsider, both wing and tail same section Joostens III.

P. B. CHRISTIANSEN. (Denmark)—41½ in. span parasol slabsider with a double-bladed free-wheeling prop, short fuselage and large twin fins.

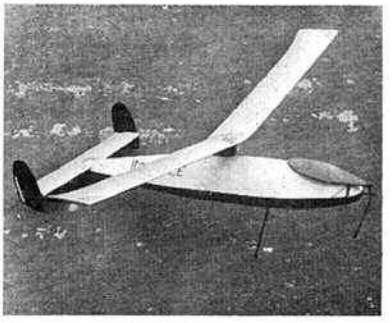


J. PETIOT (France)—40 in. span high wing cabin slabsider, with double-bladed folding prop and single-leg retracting undercarriage.

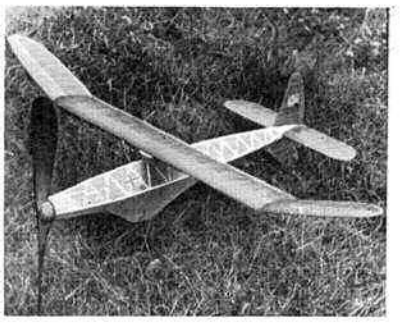
B. BORGESSON (Sweden)—Shoulder wing streamlined slabsider with normal wire undercarriage and twin fins inset slightly from the ends of tailplane.



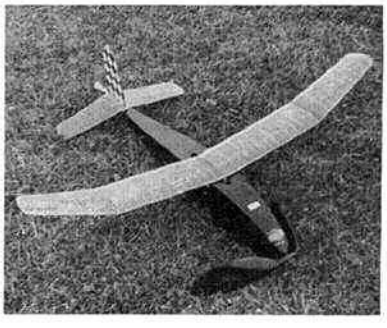
F. CASSOLA *(Italy)—High wing, poly-sided fuselage with a double-bladed freewheeling prop and retracting undercarriage.*



R. JOSSIEN *(France)—"Bouboule" 42¼ in. span parasol pylon wing diamond slabsider with retracting undercarriage, single-bladed folder, and twin fins.*



T. MOLBACH *(Norway)—Parasol pylon wing diamond slabsider with fuselage "udder", streamlined nose, double-bladed freewheeler and large underfin.*



ED LIDGARD *(U.S.A.)—38 in. span high wing slabsider, with double-bladed folding prop, retracting peg-leg undercart and anhedralled tailplane.*

G. CELLINI *(Italy)—Very unusual pylon diamond streamlined slabsider with narrow fuselage but very bulbous nose to give the required cross-section.*

R. LEQUVER *(Canada)—"Flying Cloud," 43 in. span streamlined cabin slabsider, diamond rear fuselage and polysided front, double-bladed folder.*

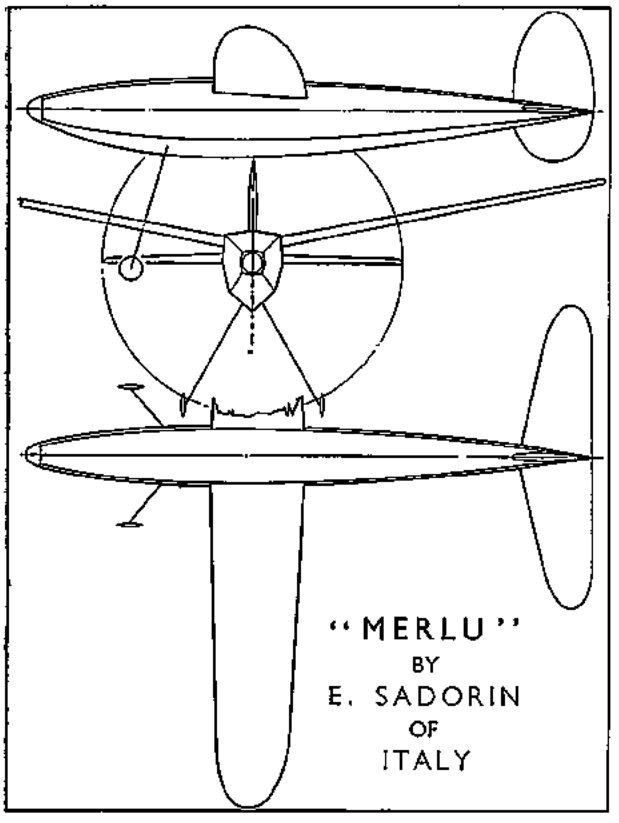
Sixteen Synopses . . .

BELOW is a carefully compiled chart of the main characteristics of sixteen of the leading Wakefield models in this year's contest. Perhaps the two most notable points of design are the complete absence of super streamliners and the increasing occurrence of twin fins or a single fin with sub-fins. Probably the most unusual innovation was the unique dihedral arrangement of Belgian competitor Marcel Beaujean's parallel chord wing where the dihedral angle of one wing is greater than that of the other. Blanks in the chart are only where the required information was not supplied by contestants.

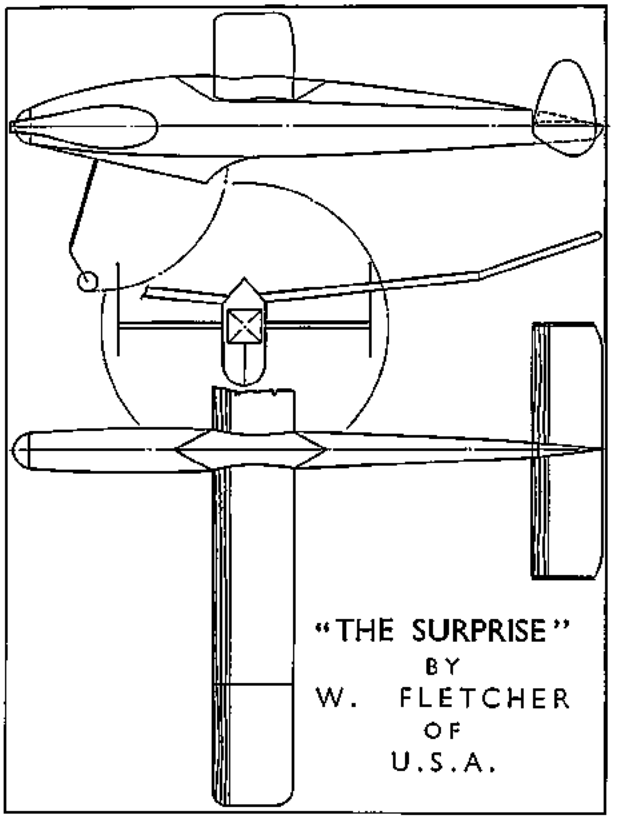
On the following pages there appear full G.A. drawings of the leading sixteen models, all to scale. Some of these models are illustrated amongst the photographs in "Model Miscellany" on these two pages, and those remaining will nearly all be found illustrated in further photographs throughout this special Wakefield supplement. The only exception is B. Borgesson, of Sweden, sixth man, who eluded all our note-taking representatives and draughtsmen.

NAME	COUNTRY	AIRSCREW					MAIN PLANE							FUSE-LAGE	RUBBER		UNDER-CARRIAGE		FIN(S)			TAILPLANE					DETHER-MALISER		ALL UP WT. Ozs.
		DIAM. Ins.	PITCH	TYPE	THRUST DOWN Deg.	THRUST SIDE Deg.	SPAN Ins	AREA Sq Ins	SHAPE	SECTION	INC. Deg	POSITION	DIHEDRAL Ins.		Strands & Size	BRAND	TYPE	MAT'L	No	CONST'N	SUB FINS	SPAN Ins.	AREA Sq in	SECTION	INC. Deg	POSITION	TYPE	OPERATION	
ED. NAUDZIUS ...	U.S.A.	18½	—	S.B. Folding	1	1	44·2	208·7	Parallel	Eiffel 400	3	Shoulder	5 P	Slab	22×⅛	Brown T.56	Single Leg R.	Wire	2	Built up	Nil	19½	68·25	Clark Y	Nil	High	Chute	Mech. Timer	8·7
FRANK LOATES ...	CANADA ...	18	32	D.B. Folding	3	1	42	209·8	Parallel	R.A.F. 32	5	Shoulder	4	Slab	16×¼	Dunlop	Normal	Wire	1	Built up	2	18½	68	91% Clark Y	—1	Mid	Pop-up C/S	Fuse	9¼
WARREN FLETCHER ..	U.S.A.	18	—	S.B. Folding	4½	4½	43	204	Parallel	Eiffel 400	2	Shoulder	4 P	Slab	16×¼	Brown T.56	Single Leg R	Wire	2	Sheet	Nil	16	65	Clark Y	Nil	Mid	Pop-up tail	Fuse	8½
BRUNO BACHLI ...	SWITZERLAND	18	27½	D.B. Freewheel	1½	1½	40½	208	Parallel	S1F, 3503	4·5	High	4½	Slab	16×¼	Dunlop	Normal	Wire	1	Built up	1	15·9	67·25	S1 33006	+1½	High	Nil	Nil	8½
J. M. FULLARTON ...	AUSTRALIA ...	18½	—	D.B. Folding	—	—	46	202	Parallel	—	—	High	5½ P	Slab	16×¼	Dunlop	Single Leg R	Hardw'd	2	Sheet	—	18	66	Thin Clark Y	—	High	Pop-up tail	Fuse	8½
L. J. WALTER	CANADA ...	17	30	D.B. Folding	1	1	50	205	Parallel, Tapered Tips	80% R.A.F. 32	—	High	6 P	Pylon Slab	14×¼	Dunlop	Normal	Wire	2	Built up	—	16	64	Own	—	High	Pop-up tail	Fuse	—
ROY J. CLEMENTS ...	GT. BRITAIN ...	17	23	D.B. Freewheel	—	—	43·4	199·8	Parallel	Grant X8 Mod.	3½	High	4½ P	Scream. Slab	14×¼	Dunlop	Normal	Wire	1	Built up	Nil	19·4	66·6	Own	—½	High	Chute	Fuse	8½
P. B. CHRISTIANSEN ...	DENMARK ...	18	23	D.B. Freewheel	2	1L	41·5	203·6	Parallel	Grant X8	3	Parasol	4 P	Slab	14×¼	Dunlop	Normal	Wire	2	Built up	Nil	16·4	63·2	Own	Nil	High	Pop-up tail	Fuse	8½
A. LEARDI	ITALY	18	—	D.B. Freewheel	1	2½	43·5	—	Elliptical L.E. Straight T.E	N.A.C.A. 6409	2½	High	4½	Diamond	14×¼	Dunlop	Normal	Bamboo	1	Built up	Nil	17	—	Own	Nil	High	Chute	Fuse	—
M. BEAUJEAN	BELGIUM ...	18½	26	D.B. Folding	6	—	41·5	210	Parallel	Joostens III	2	Parasol	4½L 4½R	Diamond	20×⅛	Dunlop	Single Leg R.	Wire	2	Sheet	Nil	17	67·2	Joostens III	—6	High	Pop-up tail	Fuse	8½
EDGARDO SADORIN...	ITALY	18½	22½	D.B. Folding	—	—	40	206	Tapered	L.D.C. 2	6	Shoulder	4	Poly-Slab	28×¼	Pirelli	Normal	Wire	1	Built up	Nil	19	67·5	Clark Y 90%	Nil	High	Chute	Fuse	—
J. PETIOT	FRANCE ...	19½	23½	D.B. Folding	Nil	2	40	205	Tapered	N.A.C.A. 6409	3½	High	4½	Cabin Slab	40×½	Caton	Single Leg R.	Bamboo	1	Built up	Nil	20½	63	Clark Y 60%	—½	High	—	—	—
LENNART SEGERTFELT	SWEDEN ...	18	27	D.B. Freewheel	2	1	39½	—	Parallel	Davis	5	High	—	Scream. Slab	18×¼	Brown T.56	Normal	Wire	1	Sheet	2	15	—	Clark Y 60%	+2	High	Chute	Fuse	—
N. McKAY	CANADA ...	15½	22	D.B. Folding	Nil	Nil	42	210	Parallel	Eiffel 400	2	Parasol	3½ P	Pylon Slab	24×⅛	Dunlop	Normal	Wire	2	Built up	2	13	61	Own	Nil	Low	Pop-up tail	Fuse	8
F. BETHWAITE... ...	NEW ZEALAND	18	28	D.B. Freewheel	0°	1	40½	209	Parallel	L.D.C. 2	7	Parasol	3½	Pylon Slab	18×¼	Dunlop	Normal	Wire	1	Built up	2	17	68	Flat plate	+4	High	Pop-up tail	Fuse	9⅛
H. LUTJENS	HOLLAND ...	—	—	S.B. Folder	—	—	45½	—	Parallel	—	—	Parasol	4½ P	Pylon Slab	—	—	Single Leg	Wire	2	Built up	Nil	20½	—	—	—	Mid	—	—	—

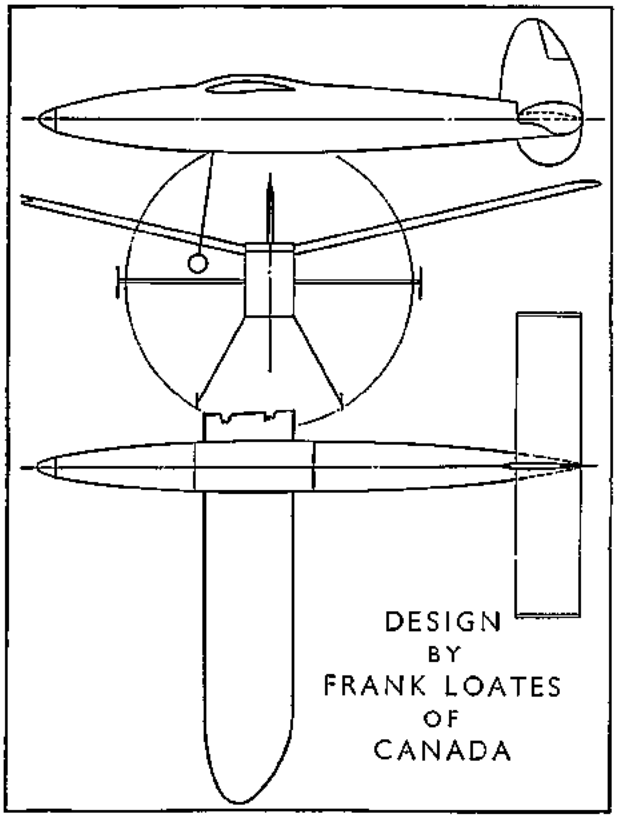
Keys: S.B.=Single Blade. D.B.=Double Blade. Inc.=Incidence. P.=Polyhedral. R.=Retracting.



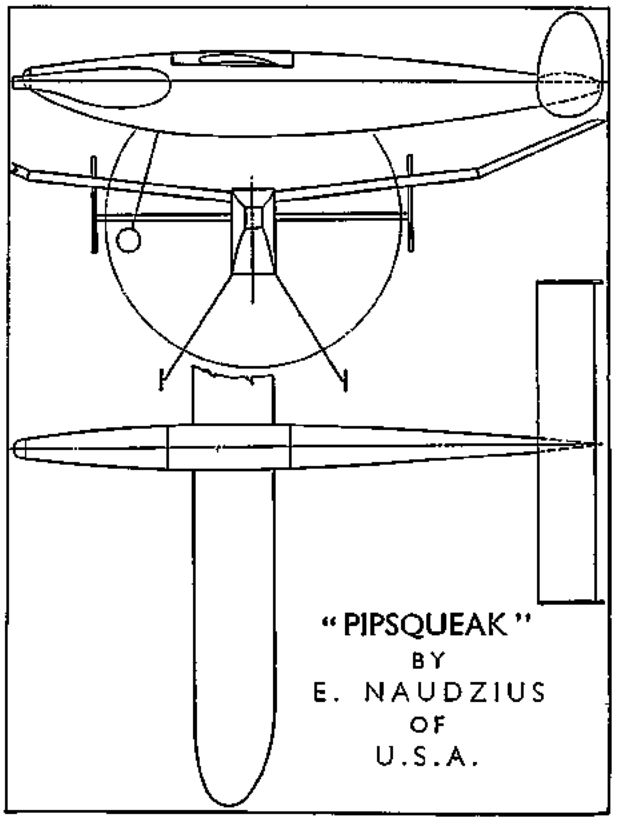
"MERLU"
BY
E. SADORIN
OF
ITALY



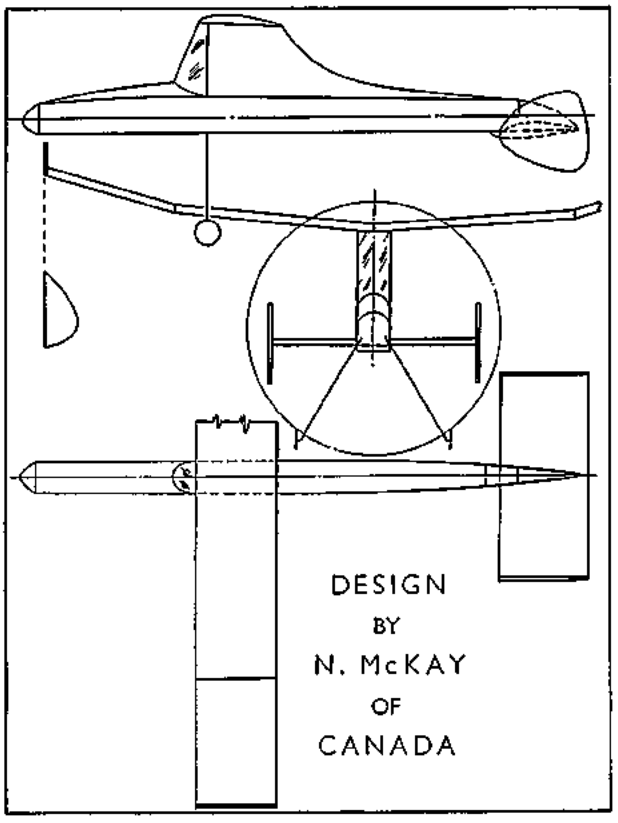
"THE SURPRISE"
BY
W. FLETCHER
OF
U.S.A.

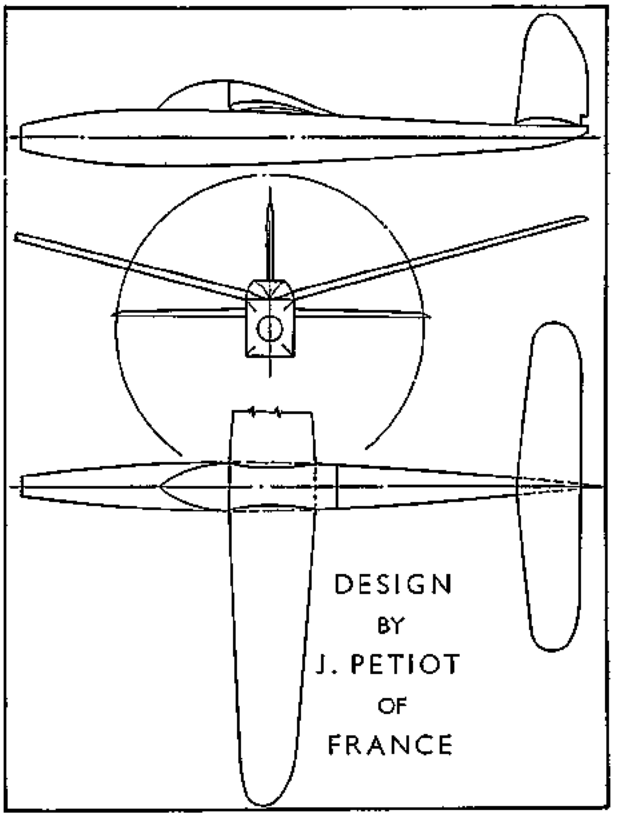


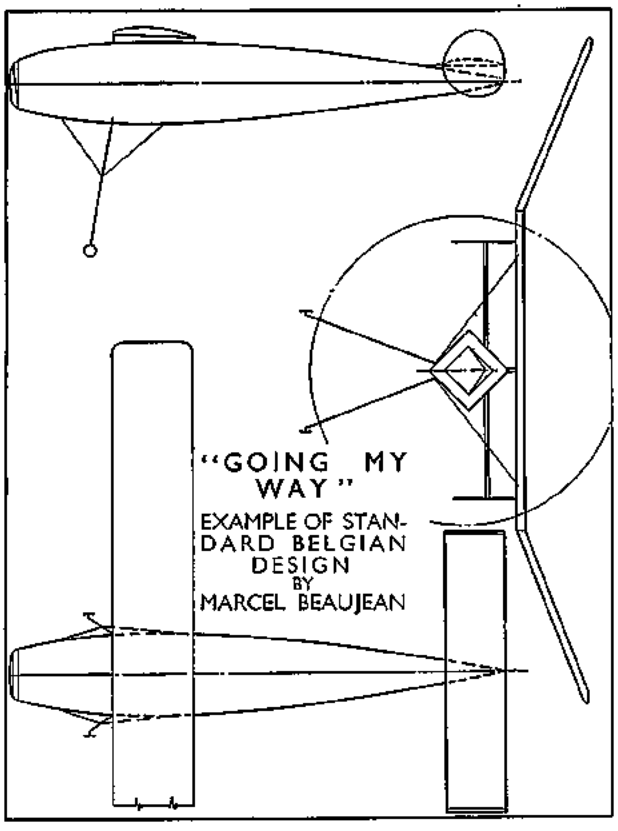
DESIGN
BY
FRANK LOATES
OF
CANADA

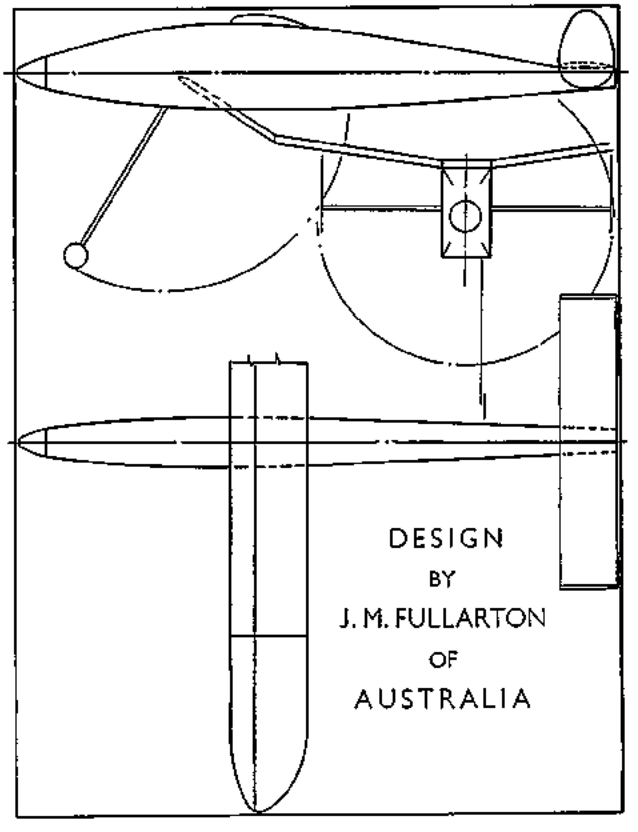


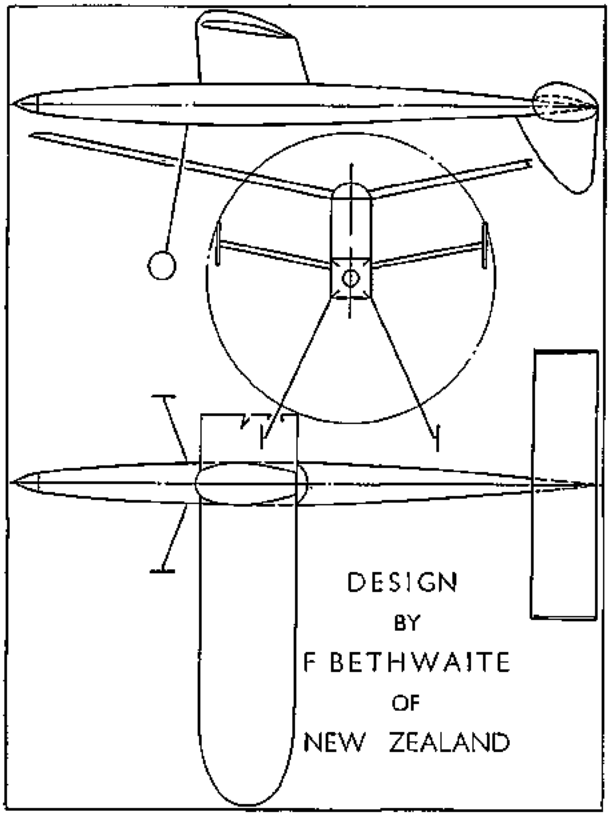
"PIPSQUEAK"
BY
E. NAUDZIUS
OF
U.S.A.

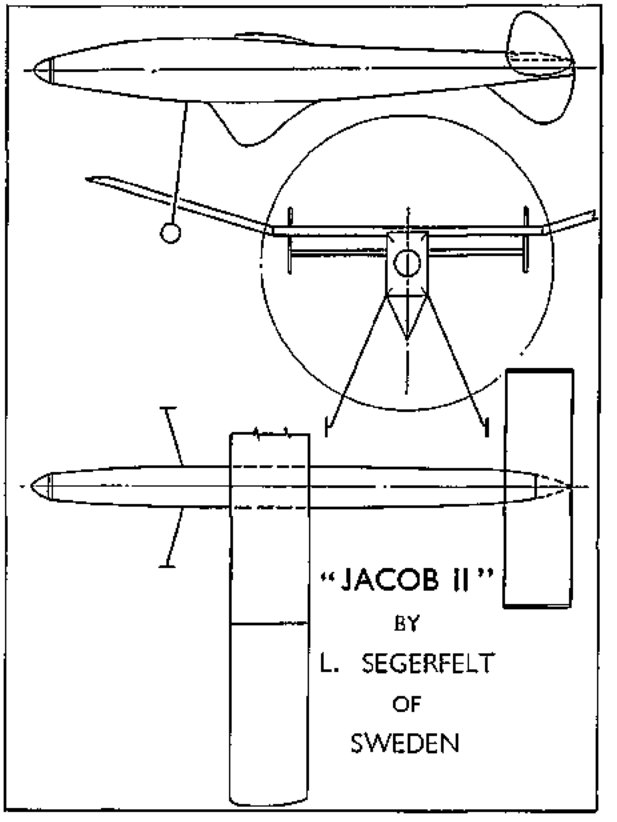

DESIGN
BY
N. McKAY
OF
CANADA

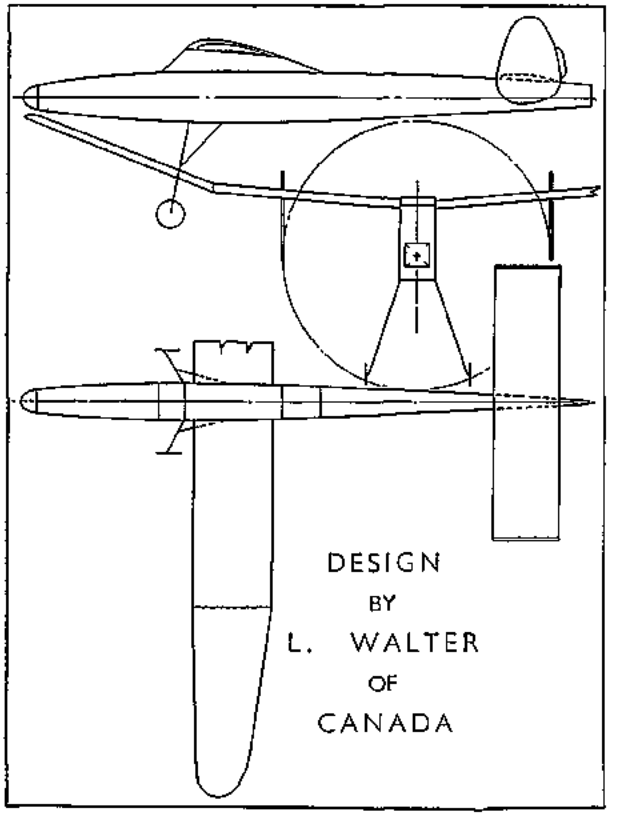

DESIGN
BY
J. PETIOT
OF
FRANCE

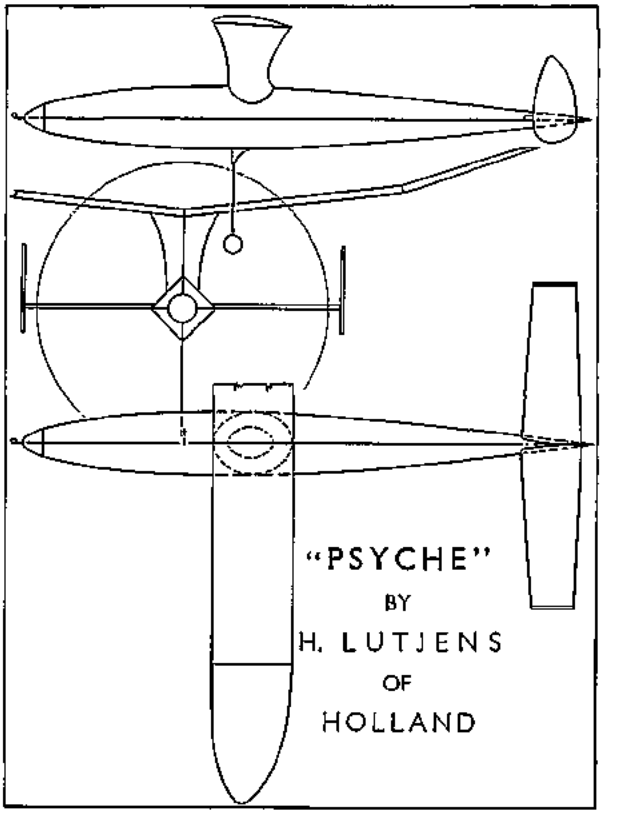

"GOING MY WAY"
EXAMPLE OF STANDARD BELGIAN DESIGN
BY
MARCEL BEAUJEAN

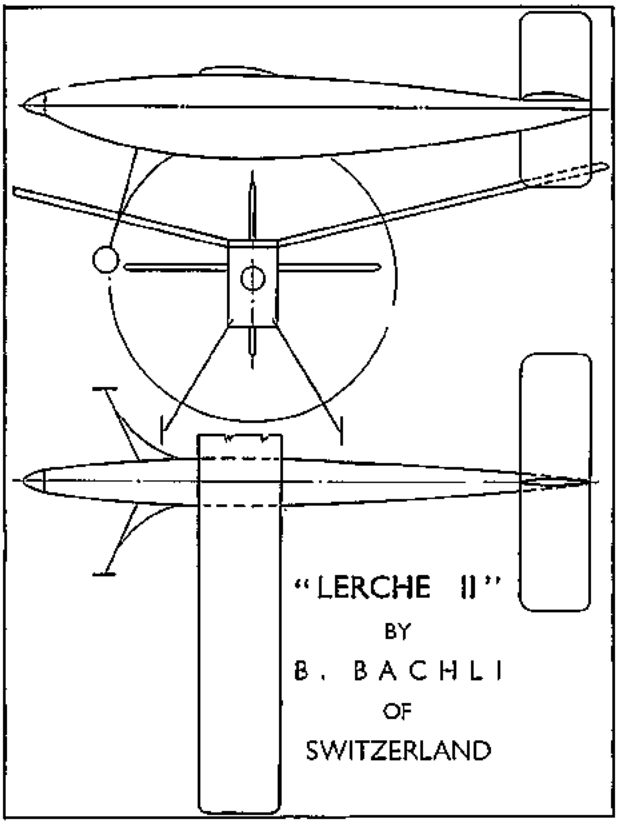

DESIGN
BY
J. M. FULLARTON
OF
AUSTRALIA


DESIGN
BY
F BETHWAITE
OF
NEW ZEALAND

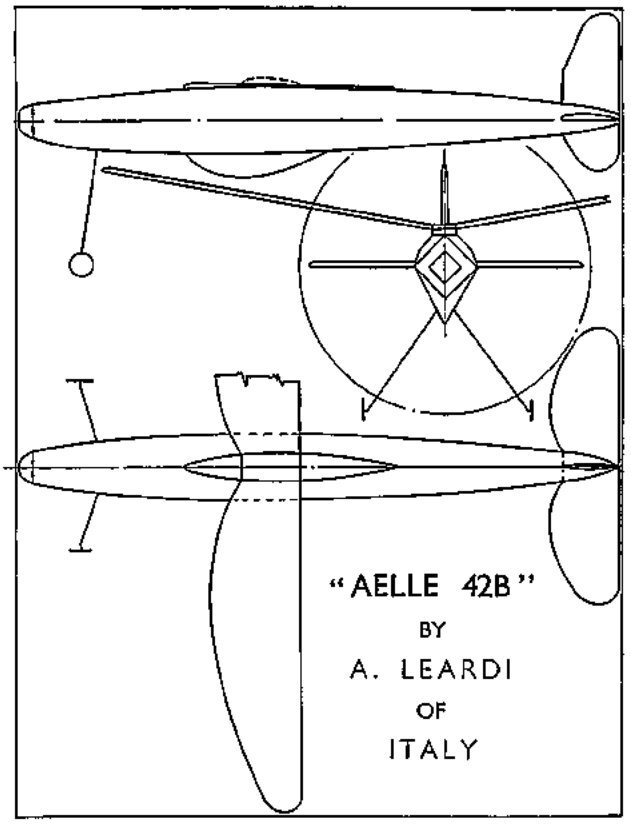

"JACOB II"
BY
L. SEGERFELT
OF
SWEDEN


DESIGN
BY
L. WALTER
OF
CANADA

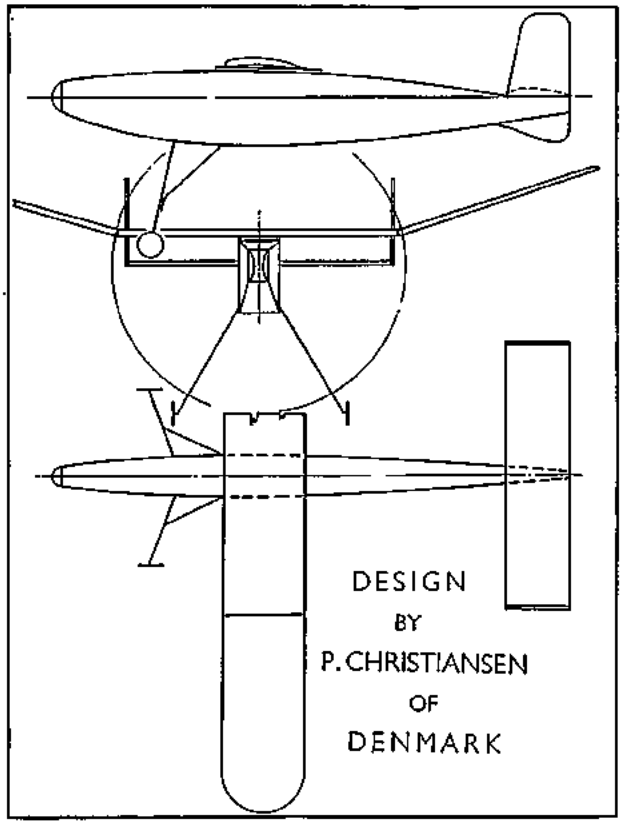

"PSYCHE"
BY
H. LUTJENS
OF
HOLLAND



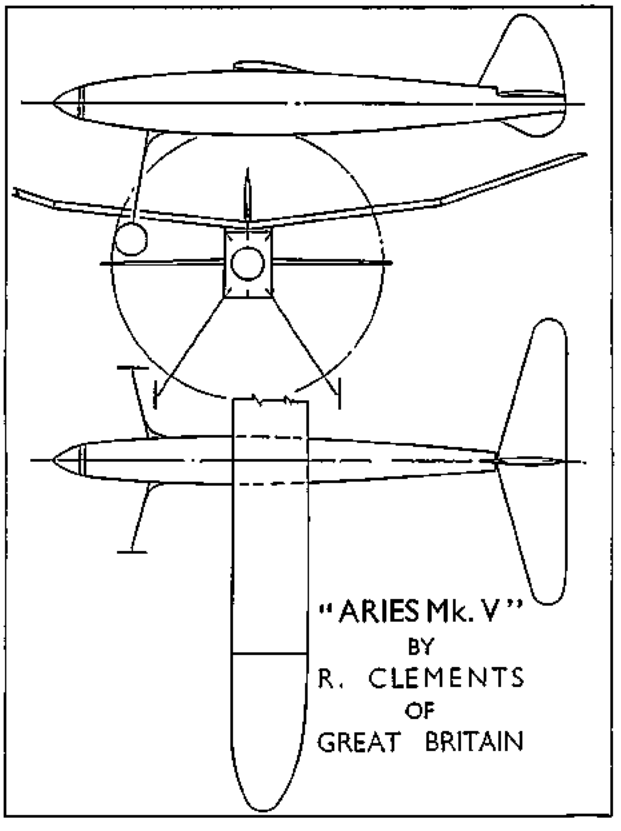
"LERCHE II"
BY
B. BACHLI
OF
SWITZERLAND



"AELLE 42B"
BY
A. LEARDI
OF
ITALY



DESIGN
BY
P. CHRISTIANSEN
OF
DENMARK



"ARIES Mk. V"
BY
R. CLEMENTS
OF
GREAT BRITAIN

1949 WAKEFIELD CONTEST

Ballet de Tarmac . . .

The World's finest choreographers have nothing on this International Corps de Ballet where no attitude is repeated more than once.

K. W. MOON, proxy for Lansky of Czechoslovakia, demonstrates an underarm reverse launch, and was, incidentally, the only contestant in "natty gents". (1)

A. PETERSON, U.S.A., and supporter encourage the model to ascend with expressive arm waving. (2)

N. G. MARCUS, proxy for B. A. Bland, Trinidad, sees his 13-ozs. charge away with worried "will you, won't you" expression. (3)

O. SPEIDEL, Switzerland, lets go poised to retrieve if early promise is unfulfilled. How the model got round the corner like this we cannot even guess. (4)

BILLY BRAZIER, Ireland, for all the world a Madame Butterfly, watches his model with fearful anxiety. (5)

J. VAN DE CAAY, proxy for fellow countryman H. Lutjens, Holland, appears to fear the worst as his model keels uncertainly in the wind. (6)

J. CASSOLA, Italy, is reluctant to let go, or so it appears as the speed of the camera shutter catches him in the middle of a tricky launch. (7)

ROY CHESTERTON, Great Britain, out of tune with the ballet, jives with his Jaguar. (8)

(continued overleaf

1

4

5

8

9

2

3

6

7

10

11

1949 WAKEFIELD CONTEST

Ballet de Tarmac Act II

GEOFF SALT, proxy for D. R. Kennedy, New Zealand, executes a neat knees-bend with agonised look. **(9)**

G. B. MILLAR, Ireland, favours the Balinese style with expressive hand flapping. **(10)**

F. HOLLAND, Great Britain, exhibits Apache desperation as his eloquent arms wave the Zombie on its way. **(11)**

BRUNO BACHLI, Switzerland, casts a witching spell—or is he yodelling—as once again a Swiss model is launched left handed. **(12)**

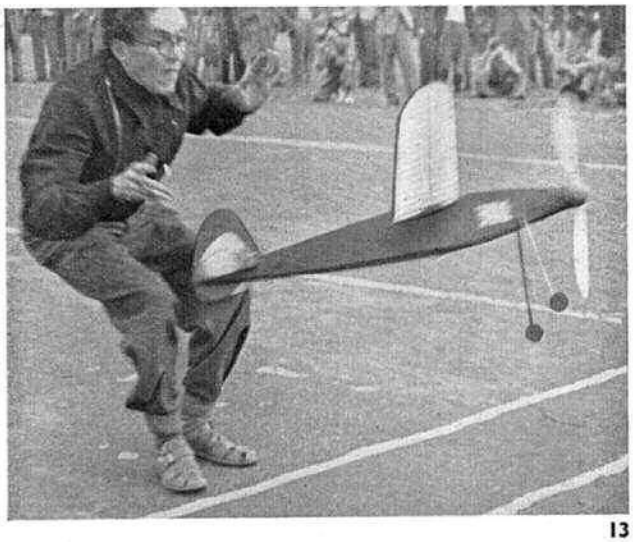
"ZOMBIE" WARRING, Great Britain, lives up to Haitian tradition with a Voodoo dance. **(13)**

F. BETHWAITE, New Zealand, launches with light fantastic air. **(14)**

BOB HANFORD, U.S.A., gets right down to earth to send off his underbellied hopeful. **(15)**

N. OSBOURNE, Ireland, bears a typical Paddy look under the eyeshade and might well be bowling a wood down the green. **(16)**

12



13

14

15

16

1949 WAKEFIELD CONTEST

International Ideas

THIS article might well be entitled "Gadget Review of the Wakefield International Contest" and is an endeavour to show readers who were unable to attend, the ingenuity of some of the expert model fliers from 19 different countries.

Firstly we will deal with the winning model, by A. S. Ellila of Finland. This was really unique in a number of ways for though the fuselage looked new, the wing (judging by the number of repairs on it) and other parts of the model certainly looked as if they had seen quite good service on another fuselage long ago, but this was not all. Ellila used a device over 15 years old which seems contrary to all modern ideas, gears situated at the TAIL end of the machine. Details are shown in Fig. 1. The gears are mounted on 3 in. shaped plywood, the shafts passing through tubes, then through the wheels and bent over and soldered to the face forming a wire loop in each case. A wire pin is then passed through these and locks the gears for winding.

The nose block is in two sections, the lower piece being the anchorage for one motor which is wound first in the reverse direction, the upper half bearing the prop. being wound afterwards in the orthodox fashion. By using this device which halves the motor thickness, many more turns can be piled on and a much longer motor run is obtained.

Now for dethermalisers. Fig. 2 is from the model entered by J. M. Fullerton of Australia and is one of many of the lifting tail variety where the entire end of the machine lifts up to an angle of about 40 degrees. A tensioned rubber band on top supplies the lift whilst cotton tied between two pins underneath and over a piece of mica holds the tail in position during flight. The fuse burns the cotton, up goes the tail, and a piece of thread from the fuselage to the moving parts ensures that the angle does not exceed 100 degrees.

The device in Fig. 3 comes from Italy through A. Leardi and is a novel device for releasing a parachute. The fuse burns through the cotton as before and this lets the wire handle drop, opening the door and releasing the chute.

Fig. 4 is almost the same as Fig. 2, but with two big differences. Firstly, it comes from Canada *via* W. N. McKay, and secondly it has underneath a streamlined extension whereby the incidence of the tailplane can be altered by the insertion of thin strips of balsa.

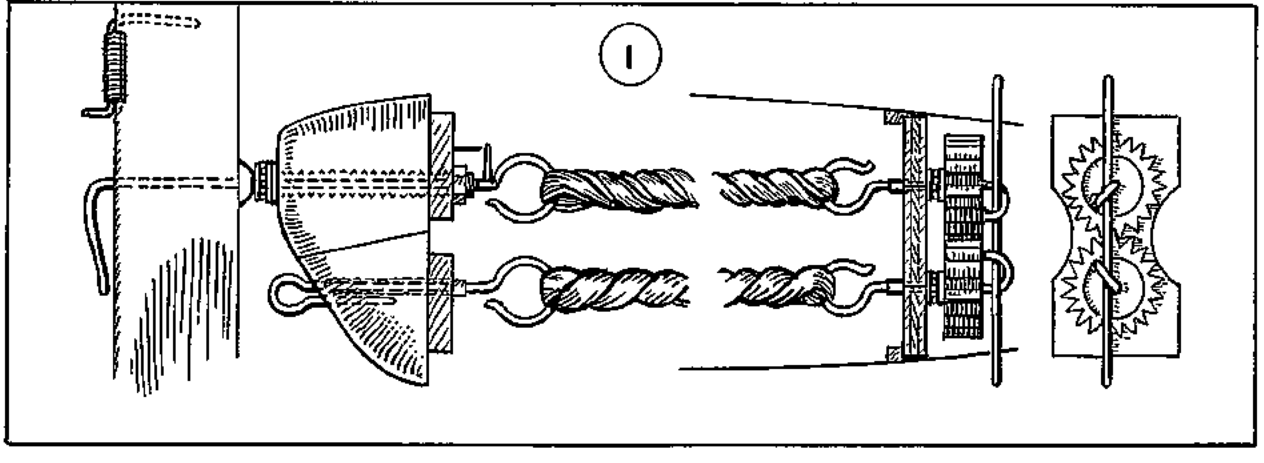
Now for a real piece of ingenuity worked on an entirely new principle by Andrew Peterson of U.S.A., Fig. 5. The main-plane is hinged to the fuselage at the trailing edge, the leading edge being secured by a shaped hinged wire which bears on a thin metal plate secured to the leading edge. At the base of the shaped hinged wire is a flat bearing plate. A reverse action airdraulic timer with a buffer on the end and connected to a steading rod running through a bearing tube is used in this case. Push the timer arm right home, and as you make your flight, the arm slowly comes out until the buffer on the end gradually pushes on the flat bearing plate and releases the catch holding down the leading edge of the wing as shown in Fig. 6. Andrew tells me it isn't as expensive on props. as you would think because he uses a folder. The last of the D.T.'s comes again from the empire. Frank Loates of Canada presents a novel form of spoiler depicted in Fig. 7. It consists of a small box about 1¼ in. wide and 1 in. deep, the full width of the fuselage just forward of the leading edge. The lid is hinged opening outwards towards the prop., and is a tight push fit, the whole being lined with asbestos paper. This is to hold the fuse, ventilation being provided by air holes cut in the lid. Stretching backwards over the wing seating is a streamlined section, hinged at the rear, tensioned with the usual rubber band and held down in position with cotton thread containing fuse inside the box. The mechanism is as before, the fuse burns through the thread, up goes the section into the slipstream as far as the retaining thread will allow and a very efficient air brake is in operation.

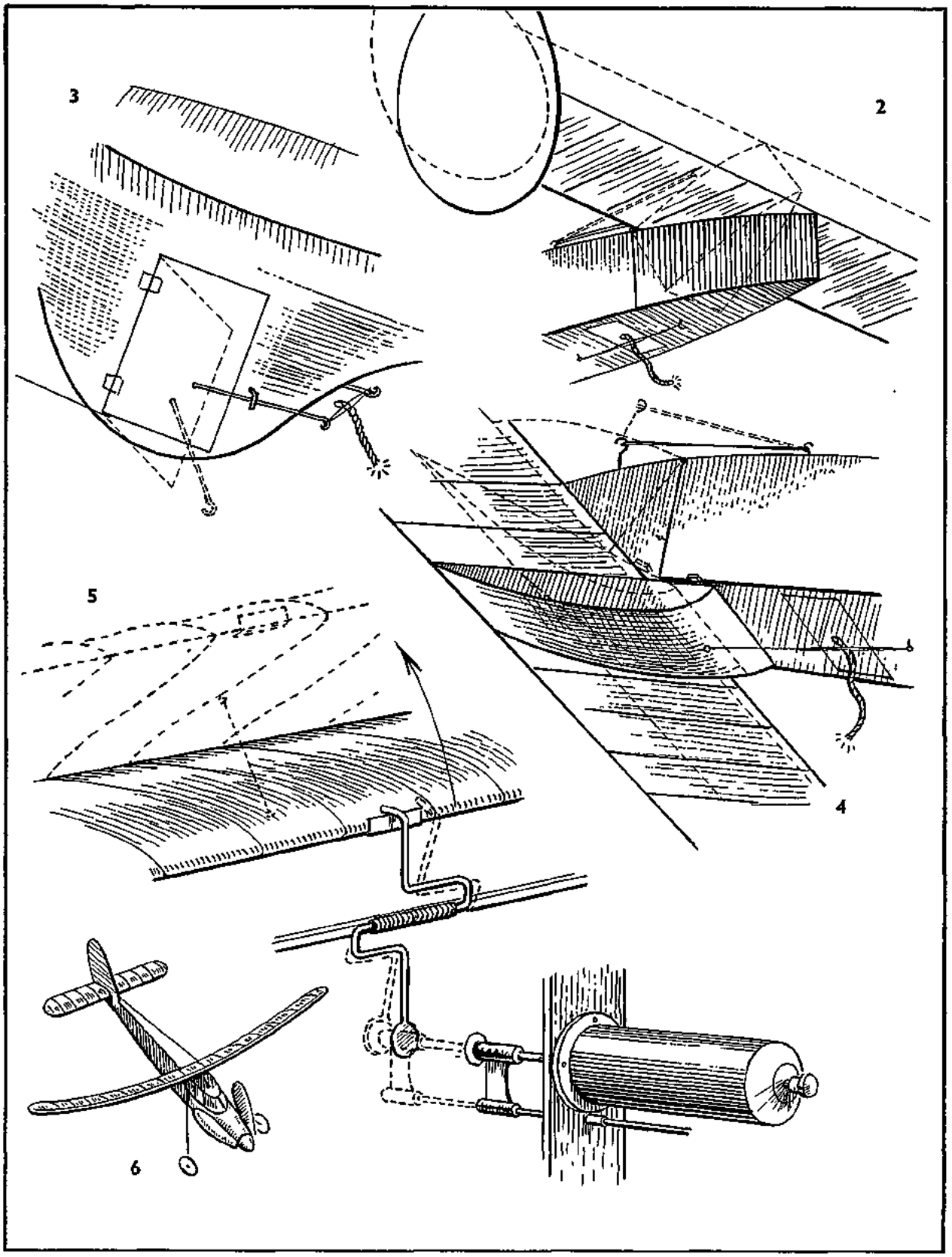
Fig. 8 is self explanatory and is from Ben Webb of Canada. It works on the same principle as the rest but is a single fin version, the upper position of fin and the whole of the tail-plane lifting as a unit.

An ingenious piece of construction was incorporated in the model of Bruno Bachli of Switzerland and like all the most useful appliance is simplicity itself and absolutely self operative and foolproof, Fig. 9. To counteract torque he merely builds the starboard side of the upper half of the fin to a lifting section and the port side of the lower half to a lifting section. The stabilising effect of this when the model was under full power at take-off was remarkable, the efficiency decreasing with the speed as it becomes less necessary.

Fig. 10 comes from Holland. H. Lutjens who has devised this method of quick change for single blade folders. The prop. merely slips on to wire from the front, bears on it during rotation and folds over at the end of its run. Another device incorporated in his model "Psyche" is shown in Fig. 11. Patterned silk ribbon runs along the fuselage from nose to tail, the idea being to strengthen it, though this seemed superfluous as the whole fuselage was silk covered. A useful idea is for an all-weather machine is shown in Fig. 12. The wing is fixed to the pylon and the whole moves up and down the scale marked on top of the fuselage. E. O. Gregory (Australia) uses a revised version of an old idea for a single leg retractable undercart, which operates the moment the weight is taken off the leg. Fig. 14 shows the wing fixing of E. J. Lidgard of U.S.A. and needs no describing here.

Otto Speidel of Switzerland uses the nose block assembly depicted in Fig. 15. The prop. is a double-bladed folder. A simple light and strong construction was used by Bob Hanford of U.S.A. The two sides of the fuselage are cut from 1/8 in. sheet, with lightening holes in the sides. These holes are reinforced with 1/8 in. sq. diagonally placed. The top and bottom were plain 1/16 in. sheet the whole being tissue covered. (*Drawings overleaf*).

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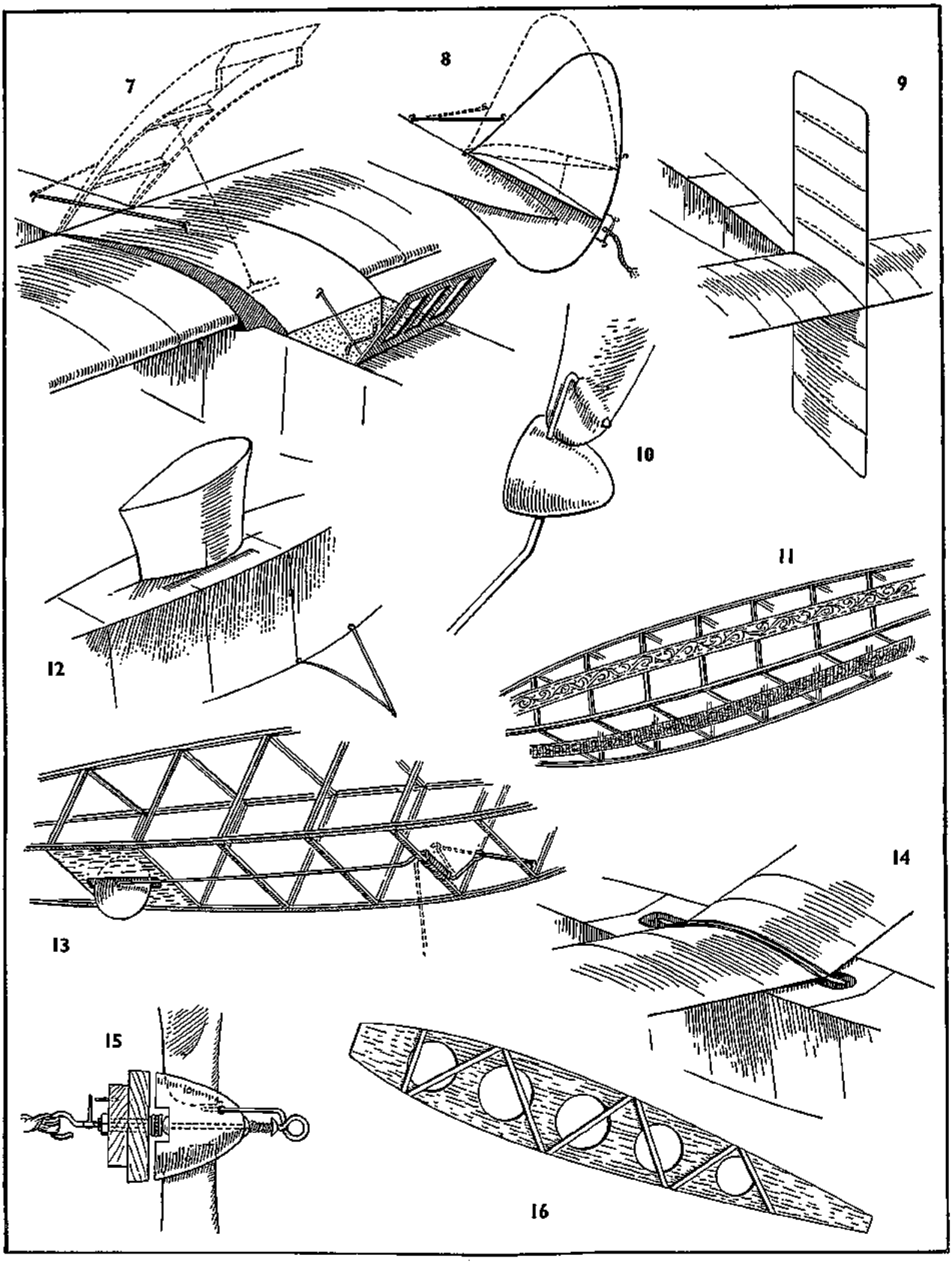
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1949 WAKEFIELD CONTEST

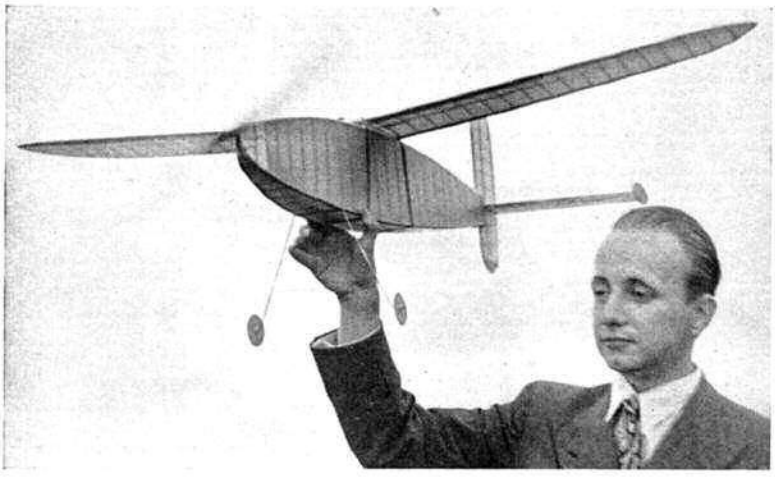
The Winner

DAVID beating Goliath is always news—but this year's Wakefield produced a Finnish David who accounted for no less than eighteen Goliaths! First "small nation" victor, Aarne Ellila goes to join the élite of Gt. Britain, U.S.A. and France who have provided the winners since 1928. Coming unexpectedly into the lead during the last half-hour of the contest, Ellila contributed to a series of last minute thrills never before experienced at any previous contest, where the probable winner has usually been manifest by the end of the second round. For the Scandinavians this was a victory dear to their hearts—if not a Swede, a Dane or a Norwegian then certainly a member of the Nordic Modellers—and they celebrated his success in true Viking style tossing him high into the air on to a springboard of linked arms amid deafening shouts of Rah! Rah! Rah! To those other entrants with less neighbourly enthusiasm it was an equally popular win—the general view being that, if they could not win, then the prize had gone to a skilful and plucky trier. Aarne's chief thought, apart from recovery of the model from its long and distant flight, was to escape for a wash and brush up before facing the battery of photographers spick and span in coat, collar and tie, with his thick fair hair slicked back for so solemn and momentous an occasion.

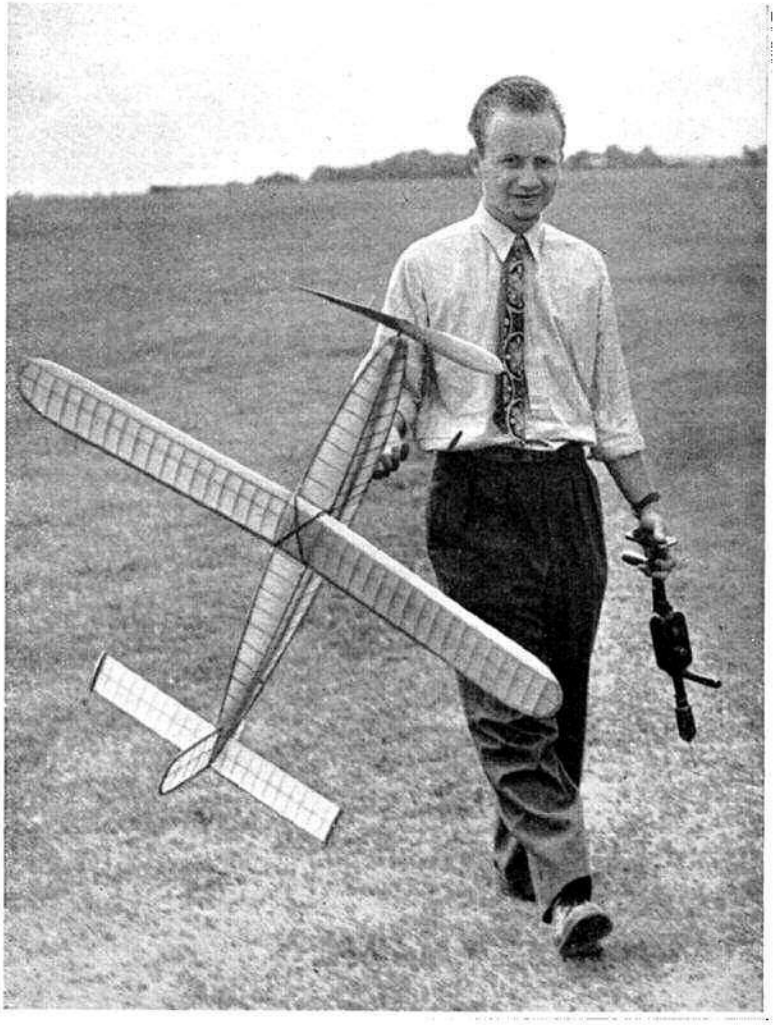
Still not quite believing it was true his first reaction was that he might have been happier in a more modest place, say second, for his country is still struggling to recover from two disastrous wars, and the expense of organising the contest next year may well provide headaches for Suomen Ilmailuliitto, the Finnish Aero Club. But pride in his achievement soon chased such dismal thoughts away and he spoke feelingly of his homeland, which, if not rich in material things, can yet offer unequalled scenery with the Midnight Sun providing never ending light throughout the short Northern summer.

What of this young man who came alone with a model built in 1939 to do battle with the world's best? Aarne Ellila is just twenty-seven years old and comes from Finland's capital Helsinki. His background includes an economics degree at Helsingfors University, which he is following up with further studies in this country. During the war he served in the Finnish Air Force, whilst since his teens he has been a keen aeromodeller well known in the regional contests arranged by the Nordic Modellers' Group. Though the only representative of his country he was "mothered" by members of the Swedish team, to whom he is no stranger. Lennart Sundstrom, Editor of the Swedish annual *Hobbyboken*, who came along to cover the Swedish press angle, attached himself as general assistant and model holder. Indeed Lennart can claim to have been among the prophets for the winning design was published by him in his 1944 *Hobbyboken*.

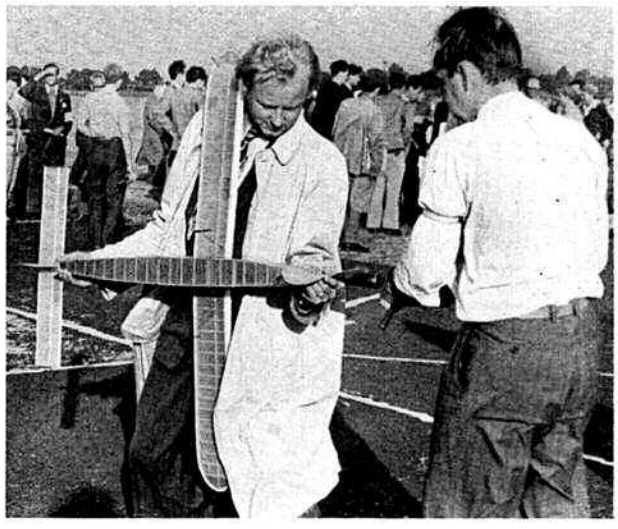
How did he do it? Perhaps that is best answered by the Finnish watchword "Sisu" or fighting spirit, used—like our own "V"



Heading picture shows Aarne Ellila, freshly slicked and smartened up to face the press with his by then somewhat battered model. Below he is seen with model in all its pristine glory on the way to the take-off complete with businesslike winder.
On opposite page, bottom right: The model just becoming airborne on its first flight, with Aarne wisely crossing his fingers as he watches. Top right: Putting on the last vital turns for his last flight with anxious-looking Lennart Sundstrom holding the model. Centre: Winner—who by now has abandoned collar and tie—makes a good landing on the arms of his tossing Scandinavian neighbours, after a series of victory "flights" of his own.



for Victory—to stir the Finns to deeds of unparalled bravery in the Russo-Finnish war of 1940. After a second flight of nearly four minutes his model was recovered the worse for wear: damage had been done to miscellaneous tissue, one wing was broken, and the airscrew decidedly shaky. Time was getting on but " Sisu " encouraged him to make the effort with no thought that he was anywhere in the running—just the urge to do the best he could. That he won was incidental to the effort of doing his best!



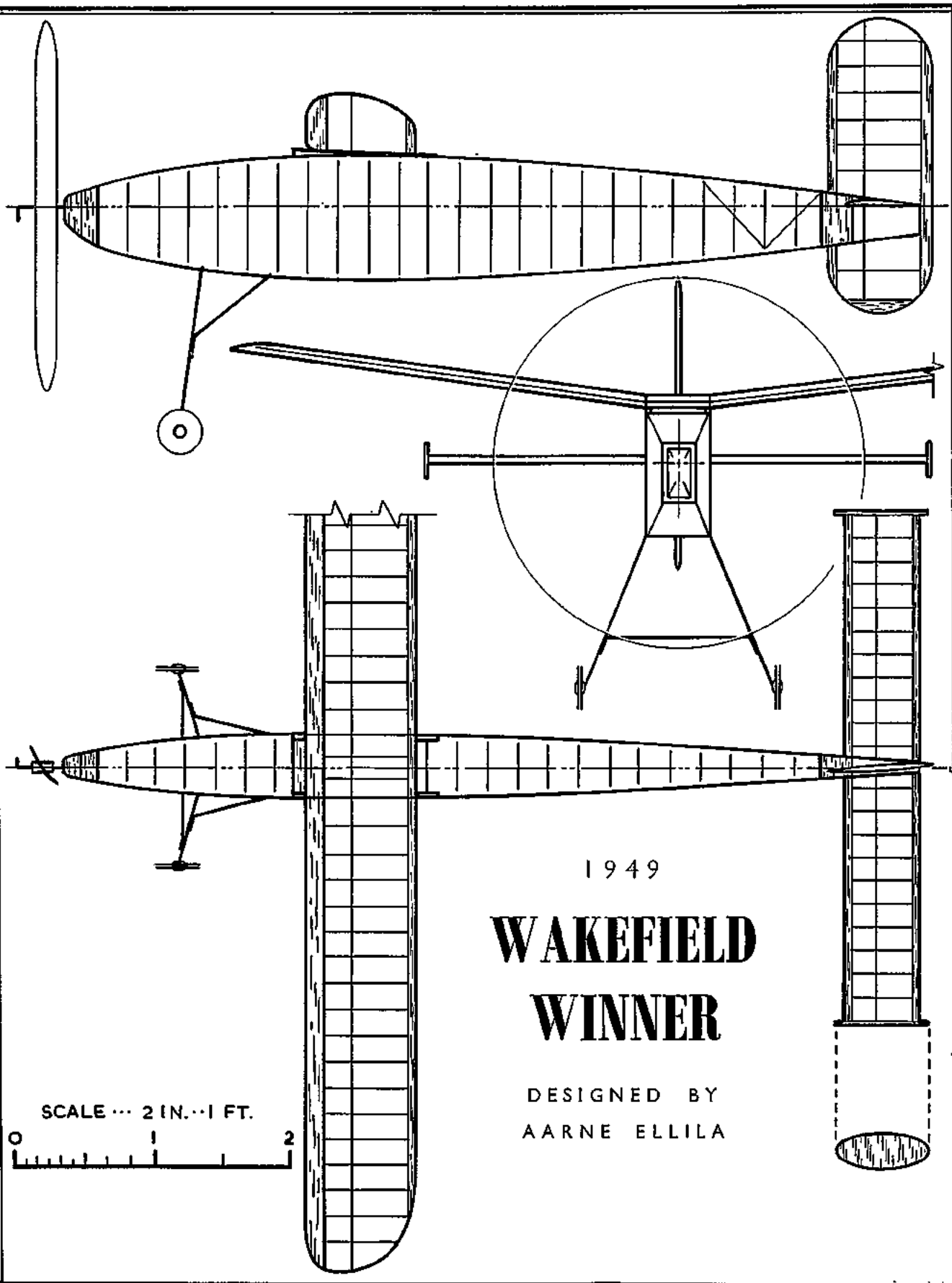
Quite a few of the experts' notions may have to be revised in the light of another slabsider victory. It is the triumph of structural simplicity over theoretical super-efficiency that came unstuck on a day demanding virtual rebuilds after every flight. The deep box fuselage gives ample room to the two skeins of rubber, driven by a rear positioned twin gearbox, of the type popular in Scandinavian modelling circles about 1938. This indeed is the only complication in a basically simple design, that, nevertheless, on analysis, may be seen to embody many of the features offered as " modern improvements " to-day! Parallel chord wings with sheeted leading edge located on top of the fuselage employ a modified Grant X section. Tips are elliptical, preserving a good depth of chord by a bold curve. Dihedral is moderate with a flat centre section to bed securely on wing runners. Fixing is by elastic bands passed right round the belly of the fuselage. To modern builders fin area may seem exceptionally large, together with the deep underfin that served also as skid, but this style was exactly suited to the weather conditions prevailing. The parallel chord tailplane is distinguished by the addition of small end plates that have always been popular in the northern lands, and form also an essential feature of many successful French power models. The fin, incidentally, is offset to counteract propeller torque and provide fairly tight circles on the glide.

Undercarriage of wire suitably braced and strutted may not appeal to plug-in streamlined bamboo practitioners but in effect offers very little increase in drag, while the somewhat large wheels assist pendulum stability. Airscrew is quite straightforward, fixed blades, no spinner, and simple swing-over type freewheel catch. Gears are locked for winding with a wire pin and the two skeins wound separately from the nose. Once the two motors are wound (one of course in the opposite direction to the other) and the freewheel clipped in place the gear retaining pin is withdrawn and the gear held at the nose end until take-off. These gears are drawn in detail in the technical section of the supplement.

The consistent contest flyer will search in vain for one accessory now deemed almost essential by British Modellers—there is no dethermaliser! Perhaps this is the modest omission of a man who never really expected to do so well, but more probably reflects the standard Scandinavian practice.

Perhaps one reason for Ellila's surprise victory is the very age of the model. While others have been changing their minds twice a season the winner was able to get thoroughly acquainted with every foible of his model in every sort of weather. It would be no secret to admit that many entrants —particularly from the sunnier parts of the world—had never put up their contest models under such conditions, and their basic design, particularly amongst the streamliners, made extensive field repairs against time quite out of the question.

It remains to be seen whether next year's trials produce a spate of geared models, or whether aeromodellers as a whole remain conservative devotees of the single skein. The significant fact remains that a pure streamliner has yet to win the Wakefield—perhaps the nearest approach to it being Chesterton's Jaguar last year. With a Scandinavian venue for 1950 it will certainly pay to consider what the natives of those parts rely on and base future models on something after their style, without departing too far from lines that have been successfully proven over a number of years.



1949

WAKEFIELD WINNER

DESIGNED BY
AARNE ELLILA

1949 WAKEFIELD CONTEST

The Social Side

BY D. J. LAIDLAW-DICKSON

AGAINST the massed flags of the participating countries and before entrants and proxies, for the first and only time gathered together under one roof; the impressive ceremony of bestowing the Wakefield Trophy and commemorative plaques gained a dignity of its own in Cranfield's handsome Assembly Hall, and provided a fitting climax to a holiday week-end packed with incident. At 8 o'clock on Monday evening the S.M.A.E. Council and contest officials together with Mr. E. F. Relf, C.B.E., F.R.S., A.R.C.S., F.R.Ae.S., Principal of the College of Aeronautics and titular host to the nineteen nations competing took their places on a raised dais, where the Trophy stood complete with its traditional Blue Riband.

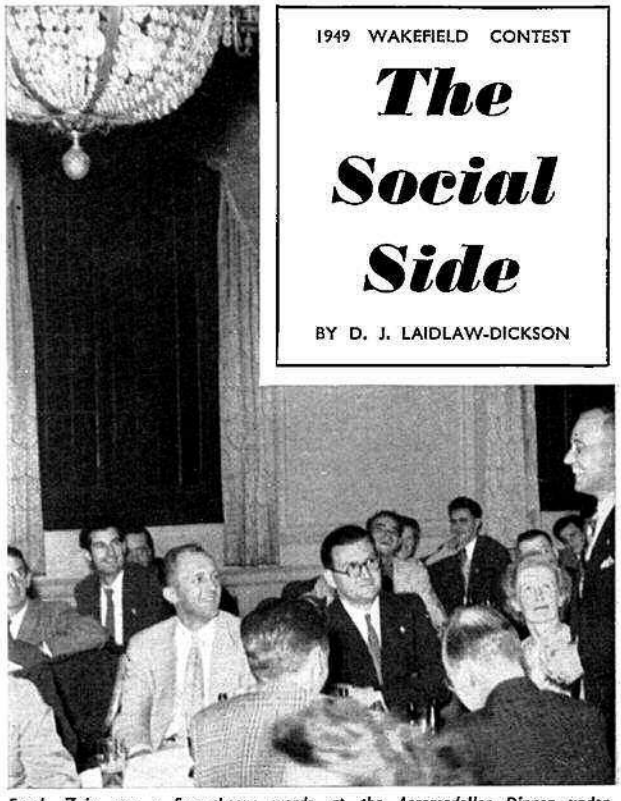
The Chairman, Mr. A. F. Houlberg, A.F.R.Ae.S., opened proceedings by welcoming the many teams present, a welcome he said that was at the same time almost a farewell. He paid tribute to the enthusiastic co-operation of the authorities at Cranfield in making available facilities the like of which had never before been available for a Wakefield Contest in this country. He thanked the competitors for their presence, and was particularly cheered by the truly friendly rivalry that had distinguished the contest throughout—an example that showed what could be achieved in the wider realm of world relations. He concluded with a few words of appreciation for the remarkable performance of the winner, and called upon Mr. Relf to make the presentation.

Mr. Relf, in a stimulating address, declared his pleasure in being able to make Cranfield available for the meeting, and his satisfaction that all had been so comfortable. His one regret was that with so much to offer he had been unable to provide the kind of weather that all would have liked. He confessed that, in spite of a long—he would not say just how long—connection with aeronautics and in particular aerodynamics he had never been an aeromodeller himself, but that, now he had seen the magnificent array of models of all shapes and sizes, he was quite convinced that aeromodelling had an important part to play in the future of aviation. Amid frenzied applause for a popular winner he handed the ribbon-bedecked Wakefield Trophy to Aarne Ellila of Finland.

With a shy but happy smile Aarne replied in English, saying that Finland was only a little country which made him very proud to be the winner; that he had been very happy in England, and hoped that all those who had competed with him would be together again next summer in Finland.

Then commenced the long procession of ninety-two other contestants in order of merit to receive their souvenir ashtray-plaques. Suitable applause greeted each as he mounted the dais, with Bob Hanford of U.S.A. doing his best to eke out a short supply of flashbulbs on his team-mates. No further set speeches had been arranged, but some of the more popular figures said a few words in response to vociferous demands from the body of the hall. Amongst them were Frank Zaic, American team manager, Van Hattum, Dutch team manager, third man Warren Fletcher from New York, and G. Court of New Zealand, who craved a few words to express his country's thanks for the magnificent work put in by the proxy flyers, on which distant countries must perforce rely.

The Bowden Trophy and International Ratio/Duration awards were then made, and Mr. Houlberg rounded off proceedings by inviting the usual appreciation for the work of the College Registrar, Mr. Knight, and his assistants.



Frank Zaic says a few cheery words at the Aeromodeller Dinner under "Rushy's" watchful eye.

Balsabashers at the Bar

In addition to spacious lounges where quieter and more abstemious visitors could take coffee, read the papers or exchange views; there were in both buildings well-stocked bars with a distinctly convivial "country pub" atmosphere. From the very start of the meeting on Friday night they became the social centre where carnival was king and Henry J. Nicholls his chief jester. From a host of merry incidents it is but possible to select a few. We think of Henry J. in one of his interminable dialect stories, leaping from character to character as aeromodelling's Maxie Bacon, with Frank Zaic endeavouring to look appreciative but really not quite sure where the polite listener put his laughs! We remember "Gili" Guilmant, hardy Recovery Squad Chief, manfully helping out at the bar when the more professional attendant fell prostrate amongst his barrels.

Groups formed and reformed as topics ranged from American Nationals, and paid contest directors for same; to the cost of getting an extra mile or two from a control-line speedster and the high mortality of glow-plugs. But ever and anon one of the recognised wags would produce a story out of the bag, when aeromodelling would for a moment be forgotten in the laughter, to break out again somewhere else. It was a pleasant sign of the general get-together spirit that there was little evidence of national groups forming; everyone seemed willing to split up and have fun with some

Typical evening scene at Cranfield when the bar fliers met. Greek slogan over bar counter should offer no problems to our more erudite readers (?).

Proud moment for Aarne Ellila as he receives congratulations from Mr. E. F. Relf on the dais for his victory and prepares to bear off the massive Wakefield Trophy.

new-found friend. Most of the visitors could manage a smattering of English or French and found opportunities of fraternising. One group who really suffered from the language difficulty were the Italians, only two of whom were at home in anything but Italian. However, Silvio Lanfranchi proved a guide and mentor to them whenever things got anything like difficult—though the way he would keep discussing past and future meals in Rome or Milan was somewhat mouthwatering.

Any restraint that future competition flying might have laid upon the party disappeared on the final Monday evening and hair was really let down. We had the pleasure of seeing expert Ed. Lidgard develop the famous American party game of the hotfoot with matches, until finally he convinced himself that a fire extinguisher was necessary. He gunned the bar with a streaming jet that few escaped except New Yorker Warren Fletcher—he must have seen this before—and his flying dive through a window was worthy of Dick Barton. Canadian Reg Dunning and our own Harry Hundleby were equal to the occasion, and, having retrieved the still squirting can, penned the author of their misfortunes in the corner and gave him the rest. Meanwhile with the skill born of long practice the bar counter shutters had swept to with a clang—quite the slickest safety measure seen for a long time. S.M.A.E. Council officials distressed at the "incident" hastened to appease Registrar Knight, who sportingly confessed that such things were not altogether uncommon in Cranfield messes where Air Force and other exuberant types regularly foregathered.

Aeromodeller Dinner

On Tuesday evening many of those visitors who had been able to stay in Town were welcomed to a friendly and informal dinner at the Holborn Restaurant by the Managing Editor, Mr. D. A. Russell, M.I.Mech.E., and others of his staff who had been active newshawks during the week-end. Most of the S.M.A.E. Council were able to attend, together with representative parties from the competing nations, and a number of leading figures in the model aircraft trade world. We were pleased to welcome Mr. Houlberg, Contest Controller Val Turner, *Model Aircraft* Editor Eddie Cosh, Treasurer Barker, Doug Gordon, F. E. Wilson, Len Stott, Henry J. Nicholls and many others. Of the competitors, only France, Monaco and Switzerland were unrepresented, and the guests included most of the American and Canadian teams, headed by Frank Zaic and Reg Dunning; Gaston Joostens and P. Deschepper from Belgium, Ing. Per Weishaupt from Denmark, H. Orvin from Norway, all the Swedish visitors and as guest of honour Aarne Ellila of Finland. Italian team manager Carlo Tione was there with his team, the bhoys from Ireland in force, J. Van Hattum from Holland and furthest travelled visitor, F. Bethwaite from New Zealand. In addition several of the British team, including Ron Warring and R. Clements were present.

Following the loyal toast, Mr. Russell said a few words of greeting to all the guests. He emphasized that this party, given by the *Aeromodeller*, was not intended in any way as a substitute for those magnificent functions given by Lord Wakefield before the war. In light-hearted vein he expressed his appreciation of the forbearance with which his staff had been met by all and sundry during their days of news gathering at Cranfield, and his pleasure that it was possible for his journalistic rivals to join him at a friendly party in spite of what they might separately have to say in print!

In his reply, Mr. Houlberg was greeted with a loud explosion when Asst. Editor Hundleby's flashbulb blew up, which provoked the inimitable Henry J. to exclaim: "Eh laad, don't shoot him he's doing his best!"

Aarne Ellila again expressed his pleasure at winning and hoped that it would be possible to have next year's contest in his country. Opportunities were then given to representatives of many of the countries present to say a few words. Carlo Tione of Italy demonstrated his virtuosity by speaking in Italian, French and English, while others all spoke in English. Deschepper of Belgium spoke for his leader Gaston Joostens, while Frank Zaic capped his speech with a request for a few words from "Henry" to make his enjoyment complete. The Chairman granted this request with a two-minute limit proviso. But this did not stop Henry J. who declared he often had trouble with his timers and went on to give a typical speech. Finally Mr. Russell concluded with his traditional story without which no *Aeromodeller* function would be complete, and invited the party to circulate and exchange last minute confidences with friends who must shortly separate, in so many cases, for another year.

Thanks are Due . . .,

Production of this supplement in time to include it with the September issue of the AEROMODELLER, *has been made possible only by the co-operation of the engravers, John Swain & Son Ltd.; the printers, Alabaster, Passmore & Sons Ltd.; the suppliers of the art paper, Spalding & Hodge Ltd. and Messrs Kodak Ltd. who supplied photographic materials in record time. Opportunity is taken here to express to the staff and employees of the above firms our sincere appreciation.*

To the Registrar of Cranfield, Mr. F. V. Knight, and his staff, acknowledgement is made for the provision of an Anson aircraft equipped as a studio from which our artist Mr. C. Rupert Moore, A.R.C.A., painted the cover of the magazine; and for other services during the contest.

Appreciation is also accorded to the Society of Model Aeronautical Engineers, for the provision of excellent press facilities and many instances of close co-operation without which it would not have been possible to produce such a comprehensive report. Our best thanks are due also to all competitors for their tolerant acceptance of our inquisition.

For ourselves, readers may be interested to know that in the space of 72 hours over 400 photographs were taken, developed and processed; close on 300 man-hours were put in during the contest by some dozen members of the Editorial Staff; and that with the following editorial, drafting, and drawing office work; the total number of hours involved in the publication of this supplement is little short of 1,000.

The Editorial Staff motored over 500 miles, and the Drawing Office Staff produced 25 complete drawings and 59 detailed specifications. With the co-operation of all those mentioned the whole of this supplement was completed for press between Saturday, July 30th and Friday, August 12th.

Copies of all Aeromodeller photographs in this supplement may be obtained from the Aerodrome in the usual way.

AIRFRAFT DESCRIBED NO. TWENTY-TWO

The PERCIVAL P.50 PRINCE

BY E. J. RIDING

NOW in production at the Percival Aircraft Factory at Luton, Beds., the Prince, capable of accommodating from eight to twelve passengers is Britain's most modern Feeder Line aircraft. At the time of writing, four machines have been built and flown—G-ALCM, which was demonstrated at the S.B.A.C. Display at Farnborough last year, G-ALFZ, G-ALJA, and G-23-5.

The second machine, 'FZ, has recently concluded a 25,000-mile proving flight round Africa, flying 170 hours under varying changes of climate without incident. G-ALJA was sent on a proving flight to India, via Holland, Switzerland, Turkey and Pakistan, where tests in tropical conditions were carried out successfully. Meanwhile at home, the prototype G-ALCM has undergone a series of tests at Boscombe Down for the Air Registration Board, in connection with which, it is interesting to note that it carried out 70 assymmetric take-offs and nearly 150 crosswind landings.

Throughout all these tests the pilots have reported that the Alvis Leonides nine-cylinder radial engines have behaved astonishingly well, the single-engined performance under tropical conditions and with full load having proved exceptional.

Although the Prince has been designed primarily as a passenger aircraft, its duties may include freight carrying, aerial survey work, ambulance work, pest control and military training.

Construction. All metal. The fuselage is of semi-monocoque design, being built up from light alloy frames, stringers, etc., covered with light alloy sheet. It consists of two sections, the forward one including the pilot's cockpit, and the rear containing the passengers' cabin and tail section. Since there is no separate centre-plane, the wings are attached directly to fittings incorporated in the fuselage structure. They also are constructed from light alloy, using one main spar at about 17 per cent. chord, and a subsidiary spar to the rear of it carrying the flaps and ailerons. The aerofoil section is N.A.C.A.23017 at the root, and N.A.C.A.44010 at the tip. The ailerons, rudder and elevators are similar in construction to those on the Republic Seabee in that little or no internal structure is used, rigidity being maintained by fluting the skin of each component. Provision is made on all flying surface leading edges for the inclusion of T.K.S. de-icing units.

The tricycle undercarriage is pneumatically retracted upwards and rearwards into the engine nacelles, and the twin nose-wheels retract backwards into the floor space beneath the cockpit, where they are totally enclosed by two doors when in the fully retracted position.

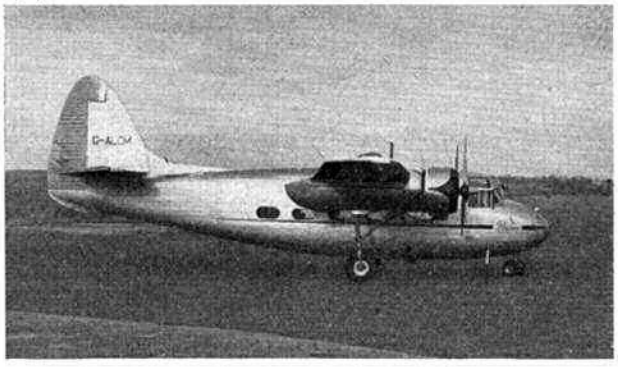
180 gallons of fuel are contained in tanks situated in the wings inboard and outboard of the engine nacelles. Power is provided by two nine-cylinder 520 h.p. supercharged Alvis Leonides radial engines driving three-bladed constant speed feathering and braking metal airscrews of either de Havilland or Rotol manufacture.

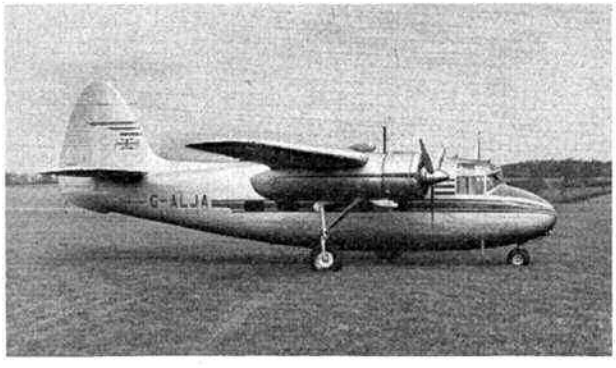
Colour. G-ALFZ—aluminium all over, green fuselage flash and letters. G-ALJA—aluminium-blue all over, dark blue fuselage flash and letters.

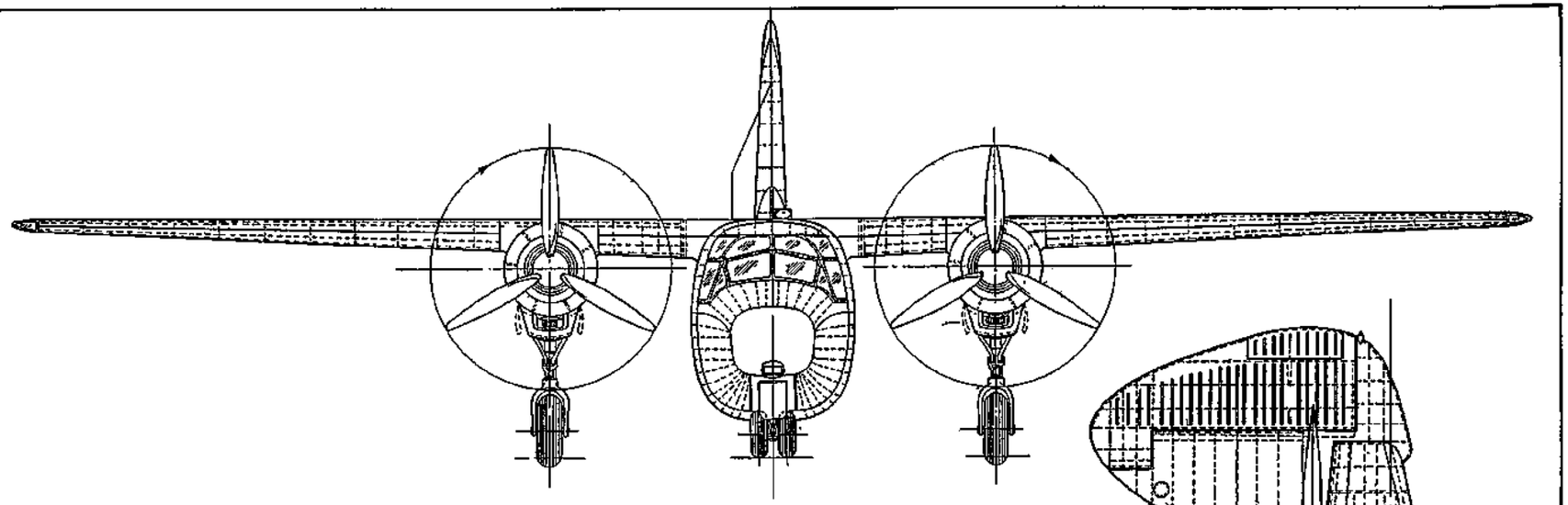
¼" : 1' reproductions of the G.A. drawing are available price 2/- from Aeromodeller Plans Service.

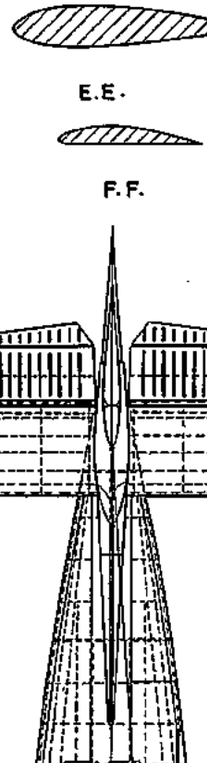
Specification.

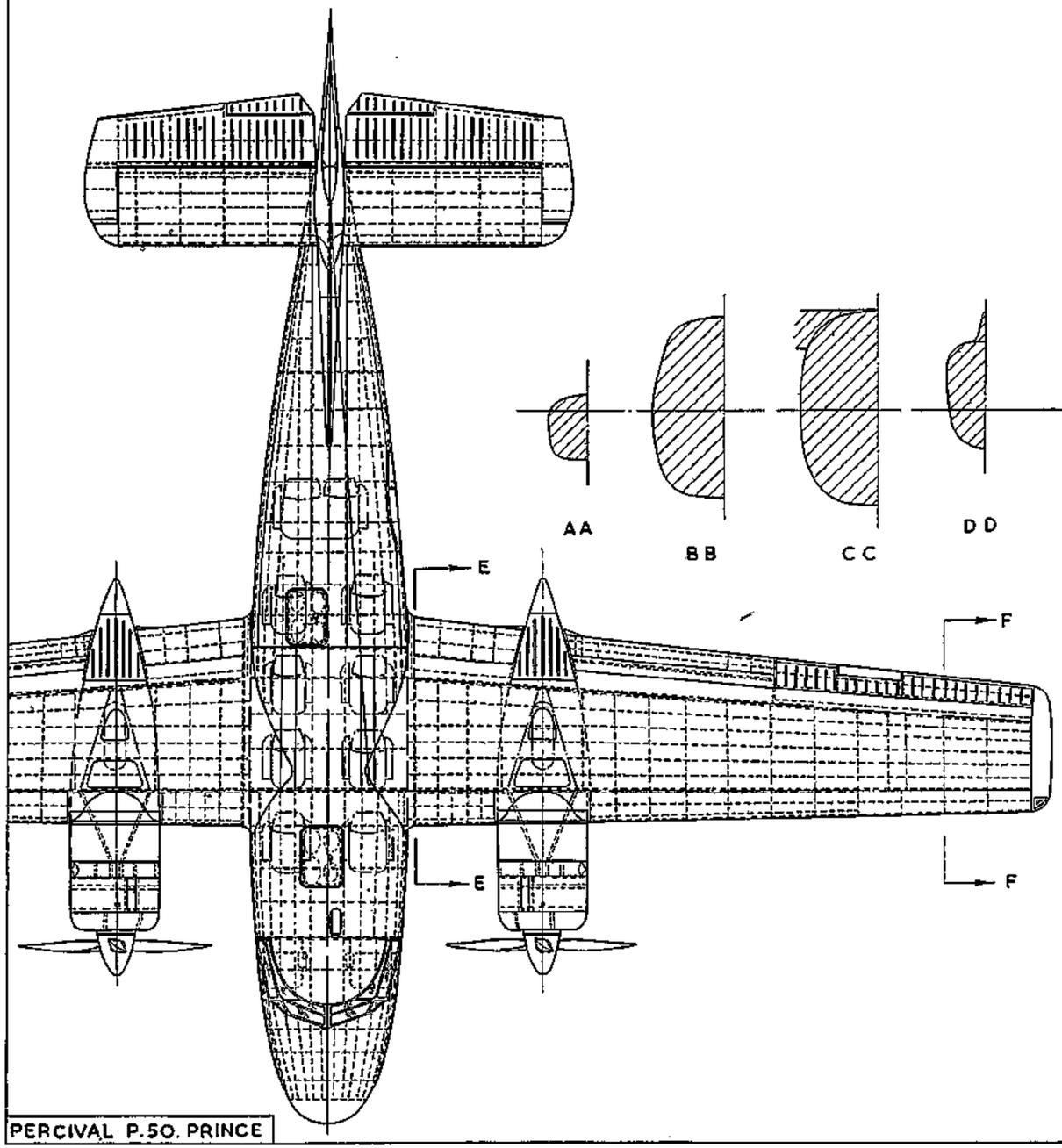
Length: 42 ft. 11 in.
Span: 56 ft. 0 in.
Height: 16 ft. 1 in.
Wing Area: 365 sq. ft.
Tare Weight: 7,472 lbs.
Loaded Weight: 10,650 lbs.
Max. Speed: 222 m.p.h. at 5,000 ft.
Cruising Speed: 179 m.p.h. at 5,000 ft.
Stalling Speed: 74 m.p.h.
Range: 743 miles (with 106 gallons of fuel).
Service Ceiling: 24,000 ft.



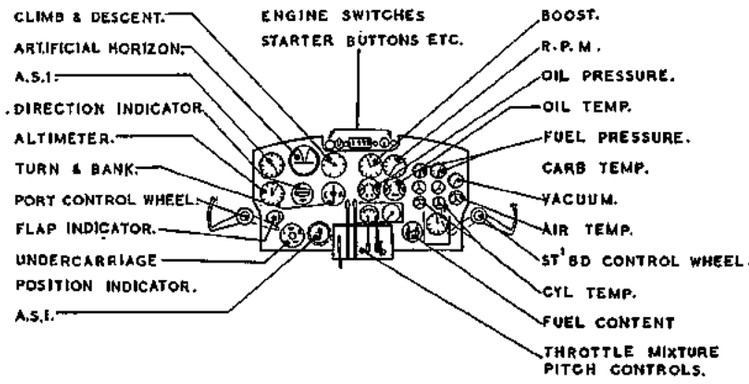


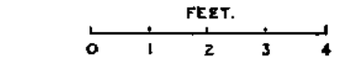


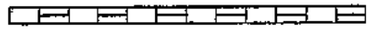


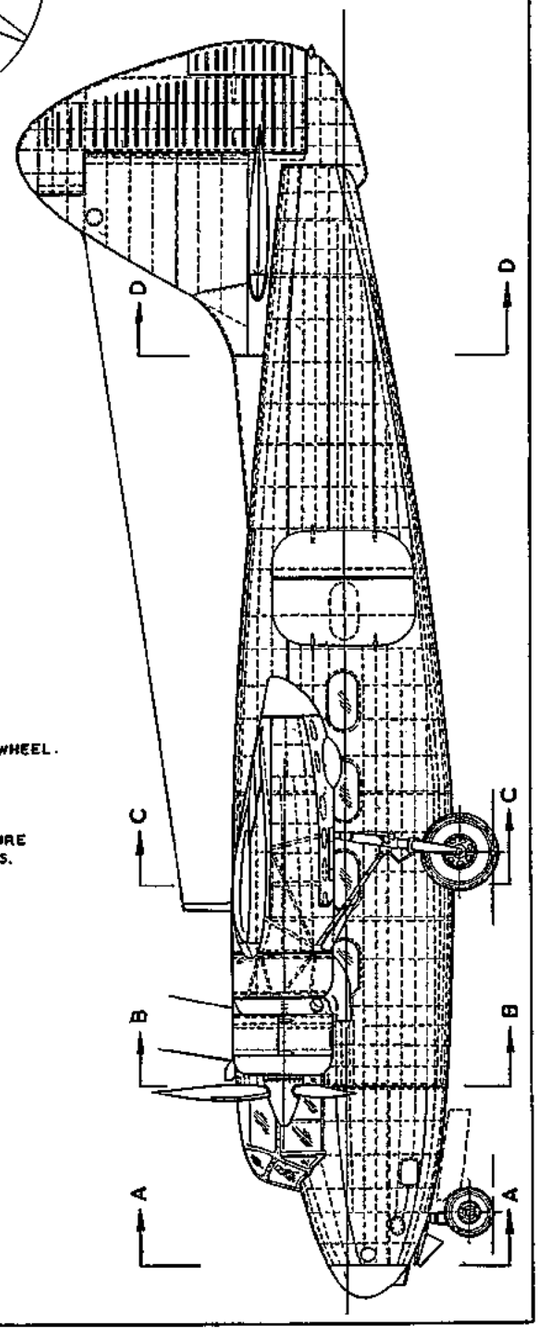


DASHBOARD.









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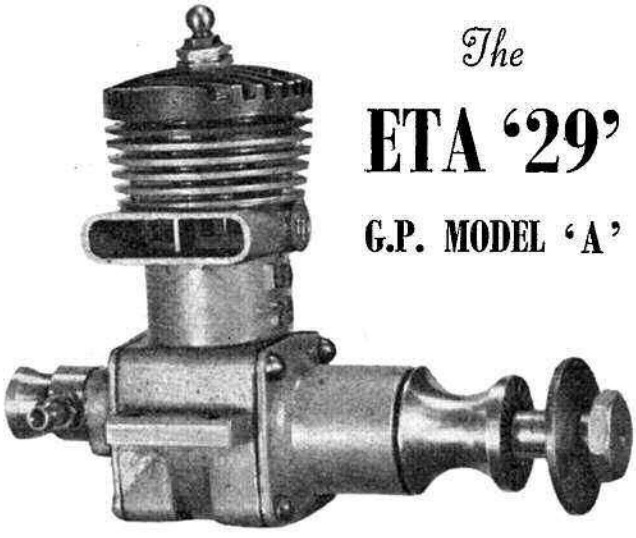


The ETA '29'

G.P. MODEL 'A'

SINCE the introduction of glowplug ignition, and spurred by the efficiency of American engines, British manufacturers have during the past twelve months concentrated more and more on this type. As is only natural, American designs have been closely copied, although it would be wrong to assume that this is a sign that British designers lack originality. It is an axiom of engineering practice that advantage be taken of the experience of others; in fact, very little progress would be made in any branch of mechanics if every designer started from scratch and gathered his knowledge by painful experiment.

For this reason we now have several British engines which not only resemble each other but which closely follow an American prototype; although the British engines may have subtle differences in design based on the experiments of the manufacturers. Such an engine is the "Eta 29," and the result has been a really hot-stuff engine, with a performance which would not have been thought possible a few years ago. From the viewpoint of performance, and the remarkable power-weight ratio, the Eta "29" is a very creditable British effort.

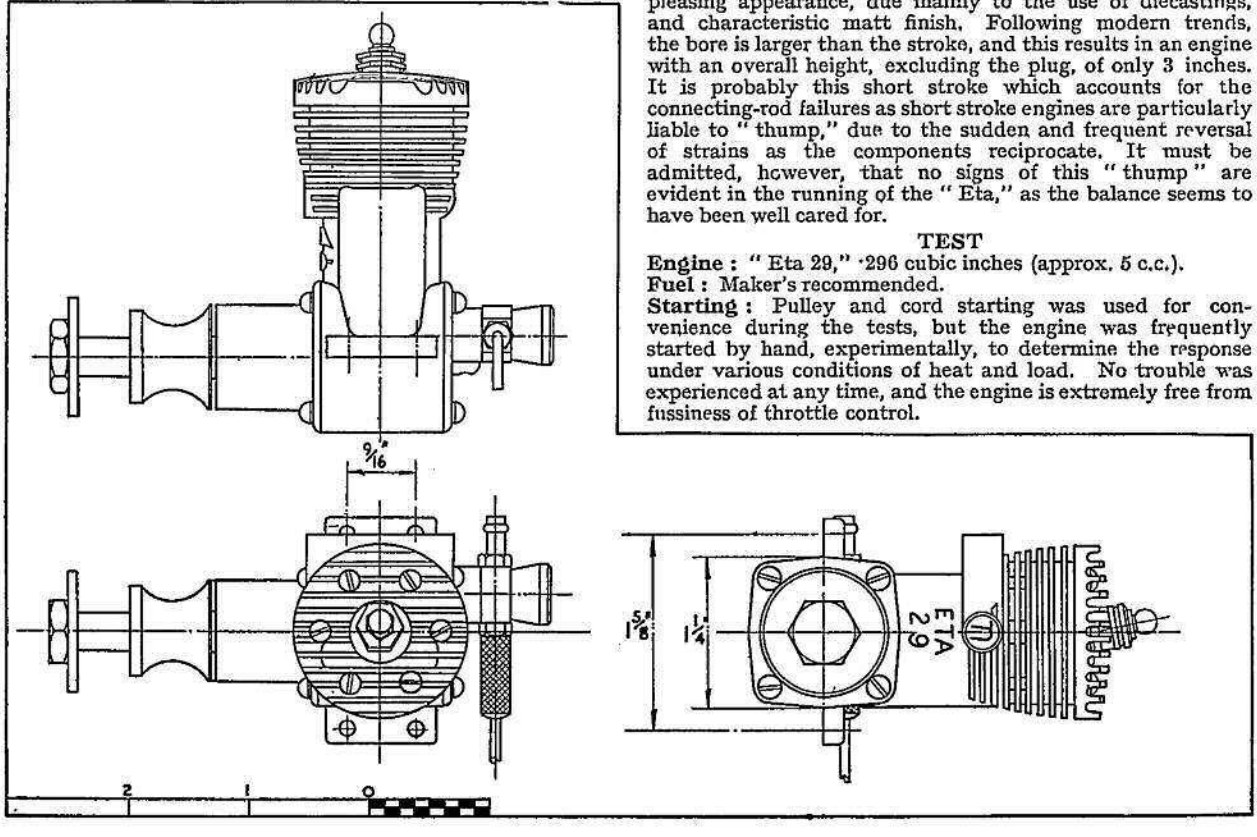
As in most other spheres of human activity however, increased speed and efficiency bring their own problems; in the case of small engines these are usually structural, and some little time is necessary before the design settles down. With the particular "Eta" engine tested, the component which does not seem to have kept pace with the performance is the connecting-rod, as it was found necessary to replace this twice during the tests. The connecting-rod is a diecasting in a duralumin alloy, and at the higher speeds this became badly bent, and delayed the tests considerably. Apart from this, the engine performed well, and no other troubles became evident. Starting was good, and the engine ran evenly and consistently over a wide range of speeds.

Induction is by rotary disc valve situated on the rear coverplate of the crankcase, and this places the controls at the rear of the engine so that the fingers are well away from the airscrew.

Apart from the running characteristics, the "Eta" is of pleasing appearance, due mainly to the use of diecastings, and characteristic matt finish. Following modern trends, the bore is larger than the stroke, and this results in an engine with an overall height, excluding the plug, of only 3 inches. It is probably this short stroke which accounts for the connecting-rod failures as short stroke engines are particularly liable to "thump," due to the sudden and frequent reversal of strains as the components reciprocate. It must be admitted, however, that no signs of this "thump" are evident in the running of the "Eta," as the balance seems to have been well cared for.

TEST

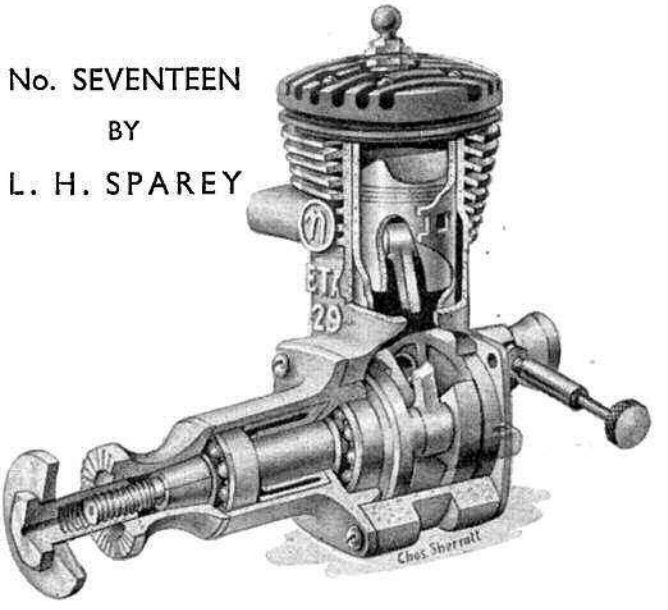
Engine: "Eta 29," ·296 cubic inches (approx. 5 c.c.).
Fuel: Maker's recommended.
Starting: Pulley and cord starting was used for convenience during the tests, but the engine was frequently started by hand, experimentally, to determine the response under various conditions of heat and load. No trouble was experienced at any time, and the engine is extremely free from fussiness of throttle control.



No. SEVENTEEN

BY

L. H. SPAREY



Running : The engine ran smoothly and well at all speeds except those at the very low range. In spite of the unusual bore to stroke ratio no hardness was evident, due to good internal balance. No cut-out is fitted.

B.H.P. : Althqugh the manufacturer's figures could not be approached, the performance obtained was truly exceptional for an engine of this capacity, as no less than ·370 b.h.p. was obtained at 11,600 r.p.m. The curve is exceptionally flat, as between 8,600 r.p.m. and 12,750 r.p.m. the drop in b.h.p. from maximum is only ·07. Between 10,000 r.p.m. and about 12,300 r.p.m. the drop is only about two-hundredths of a horse power, so that it may be said for all practical purposes that the maximum efficiency may be obtained at any speed between these two. This is a particularly good characteristic for actual flight conditions.

Checked Weight : 7·25 ozs.

Power/Weight Ratio : ·815 b.h.p./lb.

Remarks : This engine is noteworthy by reason of the extremely high power/weight ratio. (The power/weight ratio obtained from the manufacturer's figures is 1·35 b.h.p./lb. !)

This ratio has not been obtained by any undue skimping of materials; the crankshaft, for instance, running on rather heavy ballraces. The connecting rod, however, certainly does need attention, and suitable materials should be more fully explored.

GENERAL CONSTRUCTIONAL DATA

Name : " Eta 29," G.P. Unit Model " A."

Manufacturers : Eta Instruments, Ltd. (Miniature Engine Division), Bypass, Watford. Herts.

Retail Price : £5. 19s. 6d.

Delivery : Ex Stock.

Spares : Complete service.

Type : Glowplug ignition high performance racing engine.

Specified Fuel : 70% Methyl Alcohol, 30% Castrol R.

Capacity : 4·85 cubic centimetres, ·296 cubic inches.

Weight : 6·5 ozs.

Compression Ratio : 9/1 approx.

Mounting : Beam, upright or inverted.

Recommended Airscrews : Free flight 10×5 in., stunt 9×6 in., speed 8×9 in.

Recommended Flywheel : Two types supplied by manufacturers.

Tank : None supplied. Instal for suction feed—not gravity.

Bore : ·750 in.

Stroke : ·672 in.

Cylinder : One piece with crankcase. Pressure diecasting with integral fins and exhaust duct. Large volume transfer duct. Two port design.

Cylinder Liner : Meehanite, shrunk in; ground externally and internally, bored and honed. 9 rectangular ports.

Cylinder Head : Pressure die casting, multi-finned. Special combustion chamber design for high speed efficiency. Treated black. Lapped joint face, 6 studs.

Front Housing : Pressure diecasting, lightweight design, fully enclosed ballraces. Retained by 4 studs.

Crankcase : See cylinder.

Piston : Pressure diecasting, ultra lightweight deflector pattern. Twin lapped extra low pressure rings.

Connecting Rod : Light alloy bronze bushes both ends.

Rear Cover : Pressure diecasting. Friction free design for rotary valve seal, retained by 4 studs.

Crankshaft : Heat-treated nickel chrome alloy steel, ground on all working diameters.

Main Bearing : One ¼ in. and one 3/8 in. selected grade high speed ballraces fully enclosed.

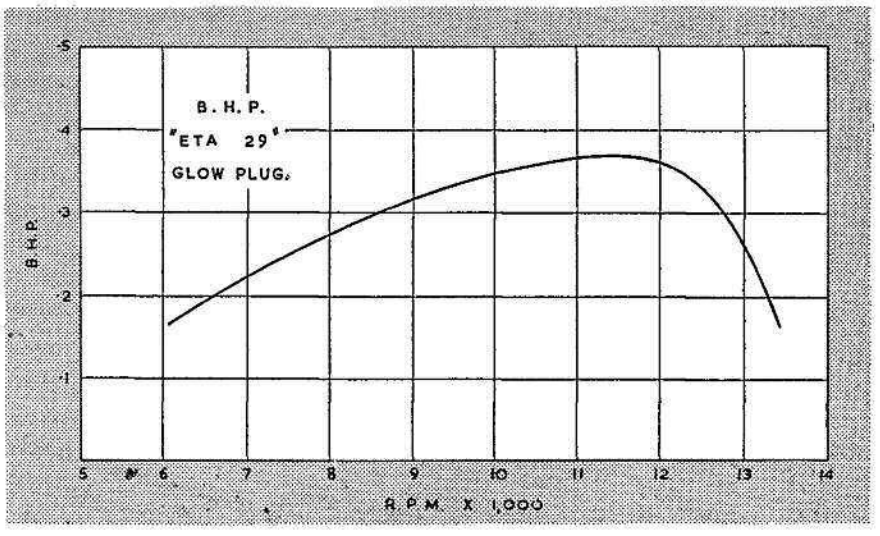
Gudgeon Pin : Tubular high strength alloy. Ground and fitted end pads.

Valve : Disc type. Lightweight pressure casting, bronze bushed. Large bore venturi and discharge port.

Ignition : Glowplug.

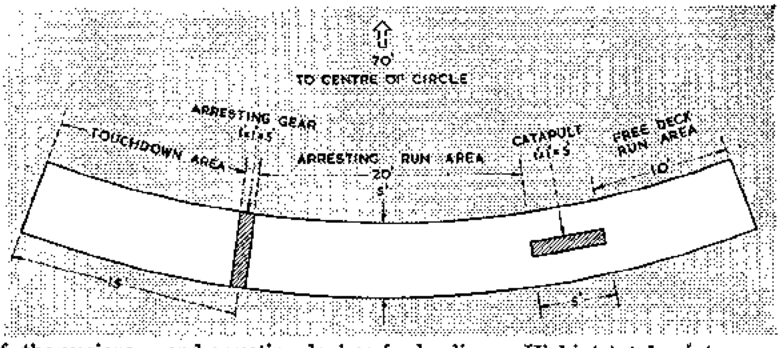
Plug : K.L.G. " Miniglow," ¼×1/32 in.

Special Features : Extreme compactness for reduced frontal area. All light alloy parts of specially selected Hiduminium alloys. All locating and seal faces fully machined. Non-slip collet drive hub nut and washer anti-rust coated. Hub nut tapped 6 B.A. for spinner fittings. ETAmatt standard finish, with bright dural and brass fittings.



American News Letter

Bill Winter writes . . . . .



IT is fascinating to watch the approach of the various large and important sponsors who are backing both contests and events. You know about the Plymouth motor car people who put on their international contests each year at Detroit—and we understand that the people who supply Plymouth's trophies and awards made a profit of $50,000, an indication of what a large-scale program really costs. But Plymouth's approach is orthodox, running contests with existing rules and machinery as a guide.

Distinguished from such non-aeronautical people for whom a model program is, after all, just promotion, are the aeronautical firms and organizations who would try to remake the model builder. For, when you get right down to it, model building does not contribute in a scientific sense to full scale aviation, however much we like to fool ourselves. Our American contest modeler cares absolutely nothing about what his ships do or do not contribute to aviation. His ships are functional, unrealistic creations designed to win trophies. Many modelers are bitterly competitive and will not travel where the accustomed trophies and awards will not be up to par.

Pan American's weight-lifting event is an example—and a very moderate one at that—of what happens when the aeronautical people evaluate modeling. By stressing basic and, for us new, factors in design, Pan American obviously seeks to attach some worthwhile and meaningful goal to the event they sponsor. As you know from a previous letter, Pan American encourages two classes of ships, one with Class A engines and the other with Class B power. The class A ships must carry an eight-ounce figure, and the Class B ships two such figures. In other words, the builder must cope with power limitations, weight to be carried, and, perforce, solves problems of some significance to real plane builders and operators. Pan American's event is quite reasonable and it can only be hoped that it gains the support it deserves.

Far more extreme are the details of the Navy's proposed events for radio control, in which bombs are dropped, and for jet, in which realistic or scale planes operate from a space scaled to a carrier deck. Navy's approach is similar to Pan American's in that they hope to make the builder solve more realistic problems but, reasons the Navy, if modelers are to contribute to full scale aviation, naturally it should be naval aviation. As interesting as these events will be, the writer fears that the service people will end up puzzled and disillusioned about our lack of co-operation.

In the radio-control event, a semi-scale type is specified. While the objective is to drop bombs (three of scale type, single or in salvo) on a bullseye by remote control, awards are actually made on a point basis. Points are divided according to take-off, bombing run, and landing. In addition to points awarded under AMA rules for R.C. take-offs, the Navy would award 100 points for an unassisted take-off within ten feet, 50 points for ten to 25 feet, 20 for 25 to 50 feet, five for 50 to 100 feet. Bombs must be released from at least 75 feet altitude, with 300 points for a direct hit, 100 for within ten feet of bullseye, 50 for 10 to 25 feet, 20 for 25 to 50 feet, five for 50 to 100 feet. Landing points are awarded according to present rules for spot R.C. landings, plus points for the shortness of the landing run. One hundred points are awarded for a stop within ten feet, 50 for 10 to 25 feet, 20 for 25 to 50 feet, five for 50 to 100 feet, Two points of interest are permissible use of sighting or computing device for bombing and arresting devices for landings. Highest total point score for single flight determines the winner.

Compared with the proposed jet event, the R.C. bomb-dropping business is as simple as hand launching a glider. Based on official AMA regulations, emphasis is placed on simulation of a carrier plane, quick take-off, slow-speed flight, arrested landings, and speed performance. Scale models of existing naval aircraft are to be made to 1/20th scale, with deviation permitted for drag and lift devices, for powerplant installation. If the model isn't scale it must at least be useable in size proportion on existing carriers. Such models must fit dimensionally on a carrier elevator of 2·7 feet by 2·3 feet (scale) and in a hangar ·85 feet high. Wing folding and tail folding, hand operated on the ground, may be used. This is but the beginning!

Models must take-off from a simulated carrier deck using their own power and a catapult device of the modeler's own design. This catapult must be built within a space of 5 by 1 by 1 foot. Points are awarded not only for the above considerations but also for the size and efficiency of the catapult, and for best control on take-off. The catapult must be capable of making five successive launchings, but may be reset after each flight. Points are awarded for minimum speed over one-half mile (six laps). Lift and drag devices may be set on the ground before take-off without removing or adding anything to the model.

The model must land on an arresting gear of the builder's own design, and be capable of making another flight. No appreciable backward movement of the model after landing is permitted. Each model must be equipped with an arresting hook or similar device. Maximum arresting distance is 15 feet. Points are given for the shortest landing distance and the efficiency of the arresting gear. The arresting gear itself must fit in a space 5 by 1 by 1 foot, and be capable of five successive arrestations, but may be reset by hand after each landing. Points are awarded for deck run after arrestation.

Flight points are given for a high speed run over six laps, with take-off, flight, and landing according to AMA regulations; also for carrier operation, consisting of catapult take-off, the six-lap minimum speed run, and arrested landing.

Win or lose, these Navy ideas will at least outline what it really takes to make a model airplane contribute to full scale aviation in the opinion of the sponsors. Some of the problems involved seem worthy of Rupert Moore. And just to show that we aren't making this up, there is an official Navy diagram of an arc-shaped carrier deck, all done to 1/20th scale, for operation on 70 foot lines.

The powerful Aero Modelers Association of Northern California, which more than once has set national trends, have issued some interesting rules for FAST type racing models and for actual prototypes. "Proto" racers, as they are called, are coming into their own, independently of the FAST semi-scale movement. The AMA of NC decided that proto models can be flown two ways, one, according to FAST rules (outlined in a previous issue) and, two, against time in all engine classes. Note all engine classes for this is the first time that anyone has conceded the importance, in these ships, of greater than ·29. In the latter event, spans would be keyed to displacements: 36 ins. for D, 30 ins. for C, 24 ins. for B, and 18 ins. for A. Models will be raced for 24 laps from standing start, wires, starting at ·010 for A and increasing ·002 per class. Pull test of 20G's to be employed.

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

DEAR SIR,

For one reason or another I had not seen a Sir John Shelley Contest flown for a few years until the other day. The impressions I gained were rather a shock, for I vividly remember all the early events. I was frankly bored with the flying, if it could be called by that name, for it was so very erratic, and I had gone to see what I hoped would be something to sit up and take note of since this was a National contest of great importance and historic interest.

I could not help asking myself some unpleasant questions. Had the flying improved or had it deteriorated as the years passed by? In the earlyish days and middle ages I can remember entrants were very upset if they could not fly with reasonable stability, even in windy weather. Now I saw, more often than not, machine after machine, on this windy day, leap up in a series of convulsive zooms, twisting and writhing in agony until all pretence of stable flight departed and they crashed to mother earth a mass of splintered balsa, broken props and wrecked engines. *And here I was watching one of England's leading duration contests.* I was forced to the conclusion that the standard of flying had sadly gone down instead of up as it should. (Later I was told that the local paper in the area of the contest had made its main theme the number of crashes during the day!)

Now all this is bad for the model movement. It perhaps justifies local authorities and the general public, who are not actual practising aeromodellers, in their frequently expressed view that model aeroplanes are "toys" and their chief characteristic is "crashing." One dealer remarked:—"It is wonderful for trade!" One could not help laughing at this quip, but nevertheless as an aeromodeller of many years enthusiasm it made me feel rather sad.

We should cast aside any hurt feelings and partisanship, and ask ourselves a few questions of the cause of all this, forgetting the comparatively few good flights. For as our medical friends will admit, once the cause of a disease or malady is recognised, it is generally possible to find a cure.

Let us consider two main points.

(1) In a maximum duration limited engine run flight, such as the Sir John Shelley and many other competitions today require, *we should demand a stable and fast climb followed by a levelling out, and a stable glide with a model in one piece when retrieved.* Any unduly unstable manœuvres should lead to disqualification. Rules could easily be devised to this end. These contests are not for instability and ridiculous flight. That must be frowned upon. At present any very immature small boy can fling into the air an overpowered zooming and tumbling monstrosity with no pretence to real flight, and with no knowledge of how to trim a model, hoping it will hang on its prop. There is no skill in this as should be demanded at every National contest. This leads to the important question as to whether some simple test for selection should not be carried out to weed out the duds and get down to a better standard for such an important contest. One does not want to make the tests too laborious and so discourage busy people, but a simple certificate from clubs stating that the model has been observed to fly with stability would probably suffice, whilst the lone hand would sign his own certificate. This would at least emphasise that a standard is aimed at. Disqualification at the contest for gross instability would do the rest.

(2) What is the underlying cause of today's bad flying with its undermining influence on the serious model movement? The answer may be unpalatable to some, but it is a very simple technical one, and however unpalatable, I would ask readers to approach it with reason and understanding untinged with wild partisanship or blind faith.

We as a nation have slavishly copied the American method of mounting our wing very high in relation to the thrust line. This sets up out of phase moments, *which I admit can be trimmed or controlled by the expert in trim. But the trouble is the AVERAGE modeller is not sufficiently expert to do this, and furthermore the AVERAGE weather in Britain is composed of high winds where a really stable set up is desirable.*

As a nation we should concentrate on the development of a clearly recognised British type, and not be content to become mere copyists of another nation. Our pride and enthusiasm for our hobby should see to this! It may suit the American climate etc., but it is not necessary to prop the wing on a tall pillar of trouble to get duration and climb. The Belgians proved this with their duration shoulder wing models. Everyone has his own idea of how to create a STABLE duration machine. Well let our leading designers, and amateurs too, get down to a characteristically British duration model which can be recognised throughout the world as our own development, and it will be far more suited to our own climate. It will also infuse new life into our hobby.

We are not devoid of ideas, and we should not rest until we have got machines of many designs which any young modeller with little knowledge can fly without devastating crashes bad for prestige and for the contents of his pocket. A national contest will then be worth watching for flying skill.

Let us repeat what our aim should be, and then get down to it instead of poring over the latest American journal, copying a design with a few minor disguising alterations, and calling it a British duration model.

We want a model which will fly in windy weather with stability and no antics, climb like a scalded cat on a level keel, level out without stalling, diving or looping, into a glide like a soaring angel. Let this year's Sir John Shelley cup form a lesson, and let us see some real and consistent flying to be proud of at this historic contest next year.

C. E. BOWDEN.

We have long since advocated a minimum standard of proficiency for "Nationals" competitors, i.e. Class A Merit Certificate holders, who have thereby proven themselves out of the novices category.—(Ed.)

DEAR SIR,

Regarding Mr. Capon's letter in your July issue, I would like to point out that Judge's 1936 Wakefield Winner was not a true streamlined slabsider as has been so successfully flown over the past few years.

Whereas Judge's 1936 machine incorporated a high wing fixing, rounded nose and spinner, the modern streamlined slabsider features the *shoulder wing* layout, which, in practice, gives area of the width of the fuselage between the two wing panels as *additional effective wing area.* This arrangement results in a lighter wing loading and at the same time complies with the Wakefield ruling that *cambered* wing area must be 200 sq. ins. with a margin of 10 sq. ins. either way.

Apart from Mr. Warring's designs which are, of course, very well known, in my opinion the "Jaguar" although an unorthodox design is a good example of a modern streamlined slabsider in as much as it makes use of "extra" wing area.

London, S.W.16. W. HINKS.

CLUB NEWS

BY CLUBMAN

Upton Park M.F.C.'s exhibition was opened by the Mayor of West Ham, here seen with the Mayoress as a juggernaut powered control-liner is explained to them by the Club Treasurer, Mr. Roberts. (Keystone photo)

TO those Press Secs. who have been holding their club reports till the 25th in accordance with our usual closing date for such reports, our apologies for missing you out of this month's columns. This is brought about by the urgent necessity to get the "normal" section of this issue to press ahead of time in order that we may turn our full efforts onto the special Wakefield Supplement, and your reports will therefore be held over till the October number.

Well, the unusual run of good weather came to a stop at long last, and this past week has seen anything but modelling conditions. I found this out with a vengeance when I travelled up to Baildon Moor for the **NORTHERN AREA RALLY** on July 17th, though it was pleasant to find the day pass with no rain (after having driven some 100 miles with the "dew" falling in buckets!). A fair breeze was very much on the chilly side, but some good flying was witnessed in spite of models generally going o.o.s. below the horizon.

I enjoyed the informal nature of this meeting, and particularly getting amongst the Northerners once again. Flying on the whole was very good, though the usual number of power model prangs shows that the vast majority of aeromodellers have a lot to learn about this type of flying. Probably the most interesting model was the rubber-driven canard job owned by Mr. Harrison of the Hull Pegasus club, which turned in some extraordinary stable flights, and is all set to break the British Record.

I had to leave before the finish of the meeting, but apparently witnessed (and in a number of cases timed!) the winning flights, all of a high standard as witnessed from the following results:—

Open Rubber:	Munden, A. B.	(Blackpool)	548·4 agg.
	Muxlow, E. C.	(Sheffield)	474·5 ,,
	O'Donnell, H.	(Whitefield)	392· ,,
	Walker, F. W.	(Sheffield)	386·9 ,,
	Dubery, V. R.	(Leeds)	346 ,,
	Branton, W.	(Hull Pegasus)	339·4 ,,
H.L. Glider:	Fitzpatrick, C. D.	(Southport)	320·7 ,,
	Jackson, C. B.	(Ashton)	306·4 ,,
	Rushton, W.	(Burnley)	306·4 ,,
	Christianson, C.	(Sale)	295·8 ,,
	Knell, R. E.	(Southport)	285·1 ,,
	Eckersley, J. C.	(Bradford)	221·2 ,,
Open Power:	Farrance, W.	(West Yorks)	714 ,,
	Heppenstall, N.	(Leeds)	605·4 ,,
	Hatfield, W.	(Ashton)	517·8 ,,
	Ree, J. H.	(Wallasey)	427·7 ,,
	Cameron, G. A.	(Leeds)	355·7 ,,
	Sallaway, D.	(Ashton)	347· ,,
Control Line:	Eifflander, J. G.	(Macclesfield)	287 points
	Ridway, P.	(Macclesfield)	285 ,,
	Cook, R.	(Rotherham)	257 ,,
	Bamford, K.	(Cheadle)	256 ,,

For the first time an effort was made this year by the Scottish clubs for a "bash" at the Wakefield Trials, and the **NORTH EAST SCOTTISH AREA** had a good turn out for the Gutteridge event. Wind was much in evidence, but Colin Campbell of the Montrose club aggregated 448 seconds, with two of his clubmates as runners up. The Montrose boys seem to be having it rather much their own way at the moment, supplying the winners of three out of four events so far, and heading the list of points for the "Strathmore Trophy", competed for by the clubs in the Area.

In first class weather, the first "Control Line only" rally held in the West of England was staged by the **WESTERN AREA** on July 3rd. An invasion from the South Birmingham club had things all their own way, putting on a polished show which delighted the Westerners. One of the best events was the Scale Stunt class, which included a realistic "dog-fight" between a Sopwith Camel and a Fokker D.VII. The ground was not suitable for speed work, this class eventually going to Hewitt, flying his ordinary stunt job. Results:—

Open Stunt:	A. J. Hewitt	(S. Birmingham)	290 points
	N. A. Long	(S. Birmingham)	285 ,,
	B. G. Hewitt	(S. Birmingham)	280 ,,
Junior Stunt:	J. Berryman	(Phœnix)	31 ,,
Scale Stunt:	A. G. Way	(Phœnix)	215½ ,,
	G. Elliott	(Phœnix)	197 ,,
	M. Wells	(Weston)	191 ,,
Speed Class 3B:	A. J. Hewitt	(S. Birmingham)	55·25 m.p.h.

Before tackling individual club reports, there are one or two items of general interest to exercise your minds. First is a letter from Mr. E. W. Bridgeman of the Ilford & D.M.C.F. who is very anxious to destroy the reputation that Fairlop has regarding "whipping" of engines. He therefore asks for anyone who has lost an engine at Fairlop to contact him at 144, Trelawney Road, Barkingside, Ilford, Essex, giving full particulars as to date of loss, engine number, etc., etc. The local police have promised to help, and I wish Mr. Bridgeman every success in getting this sticky point cleaned up.

The foregoing gives added point to a letter received from "Gussie" Gunter, who requests our assistance in getting back an engine stolen from his model whilst competing at the Northern Heights Gala. The model landed just outside the drome, and though Gus reached it only some 15 minutes later, the engine was missing. The job was an Arden ·199 Glo-Plug No. 6146, with the figure 2 stamped on both port and starboard sides. Anyone having news of this engine will be doing the movement a great service by sending in details to this office, which will be transmitted to the owner.

Leslie F. W. Hayward of 3, Raynor Close, Southall, Middlesex, is endeavouring to organise a reunion of members of the Seletar (Singapore) M.F.C., so if any of the ex sand-eaters are available, get in touch with him right away.

The **FORESTERS M.F.C.** wish to correct an error in the revised date of their postponed Rally, which will take place at Langar on September **11th** and not the 18th as indicated in our August issue.

On Pilcher Cup day, W. Shelton of the **DARLINGTON M.A.C.** raised the club glider record to 7 : 30, and also set up the best three flight aggregate of 910 points. Club rooms have now been obtained, and all aeromodellers are welcome any evening at 11–15 Northgate (4th floor above Burtons the tailors).

A crowd of 300–400 spectators spent an enjoyable afternoon

with the **ALDERSHOT & D.M.A.C.** at their first open meeting, held on the Command Polo ground on June 26th. Twenty-two competitors lined up for the events, which were won by Messrs. Bainbridge, Leggatt, Worsnop, Lawrence and Sharpe, the special prize for " best constructed model " being carried off by Mr. Summerhayes.

Entries are invited for the exhibition to be held by the **HARROW & WEMBLEY S.M.E.** on September 22nd, 23rd, and 24th. An open aeromodelling section is available, with a cup and medals if entries justify same. Those interested please contact Mr. C. R. Fox, 71, Norval Road, North Wembley.

The following extract from the **BLACKPOOL & FYLDE M.A.S.** magazine is underlined, heartily endorsed and likewise stressed by yours truly! Discoursing on this year's Nationals at Fairlop, they state: *" The usual crop of thoughtless individuals were of course present, and how some folk avoided serious injury was a minor miracle. Until free-flight (and C/L) bods are made to observe proper precautions they will fetch down cries of 'Dangerous models'. Many of these types hand launched from the midst of spectators, and it was very noticeable that the models were invariably untrimmed. It behoves all clubs to clamp down on this type of flier, for he is a menace to the movement as a whole."* Of course, the whole trouble is that the culprits never think the cap fits them, and do they get huffy when someone tells them what they think of their actions! (I know at least two bods—I won't call them aeromodellers—who take a dim view of me following a few words of prayer that passed between us after a carelessly thrown model nearly parted my scalp from east to west.)

Don Pearce, formerly of Bushy Park M.A.C., is now running the **VIKINGS M.A.C.**, formerly the Vickers Armstrongs club. This club hope to stage open comps and galas, details of which will be published at a later date.

The **LUTON & D.M.A.S.** are naturally bucked at getting two of their members into the British Wakefield Team. On the occasion of the Pilcher Cup some good if erratic flying was seen. Ron Hinks put up the best club time with two low flights, followed by an 18 minute flyaway, the job landing only three fields away. Next best was Bob Minney whose glider did 2 minutes, and then 15 minutes o.o.s.

An inter-club affair staged between the **CRYSTAL PALACE M.A.C.** and the West Kent clubs resulted in a win for the latter group, the Crystal Palace boys being sadly handicapped by crashes. The West Kent lads scored 1,121 points against the 657 of the Crystal Palace boys in the rubber event, and 421 to 410 in the glider class.

Some pretty good times were set up by the members of the **ERDINGTON & D.M.A.C.** on the 3rd July, flying from Sutton Park. D. Smith flew a " Nomad " glider for a time of 14 : 05·8, whilst H. Smith did 4 : 08 with an Elfin powered modified " Scorpion " from a 9 second engine run. A standard kit " Jaguar " built and flown by H. Scarrott clocked 13 : 12 o.o.s. on its first time out—and not found yet! Expensive isn't it.

Speaking of big flights brings in the report of the **WAKEFIELD (Yorks) M.F.C.** 3rd Annual Gala, during which W. Nelson of Sheffield flew a glider for a time of 21 : 40, J. Hepworth of West Yorks a rubber job for 5 : 17, and a power flight by G. A. Cameron's model of 8 : 14. In very good weather thirteen Yorkshire clubs competed in the four events, with thermals in great abundance. In spite of dethermalisers, seventeen models were lost, many directly overhead. Results :

Gliders :	**H. Tubbs**	**(Leeds)**	**345**
	W. Nelson	**(Sheffield)**	**350**
	E. Midgley	**(Barnsley)**	**345·6**
Rubber :	**J. Hepworth**	**(West Yorks)**	**373·2**
	E. Muxlow	**(Sheffield)**	**344**
	A. Naylor	**(Sheffield)**	**231**
Power	**G. A. Cameron**	**(Leeds)**	**363·2**
	E. Farrance	**(West Yorks)**	**362·3**
	H. R. Glentworth	**(Oswyn Ave)**	**248·8**
C/L Stunt :	**G. Cooke**	**(Rotherham)**	**257 points**
	J. Shawcross	**(N. Shields)**	**198 ,,**
	T. Dutton	**(Rotherham)**	**128 ,,**

Perfect weather blessed the Rally staged by the **BEVERLEY & D.M.A.C.** on July 10th. Visitors came from Scarborough, Bridlington, Hull and Scunthorpe, and the wind was so non-existent that it was anyone's guess which way to launch the jobs. (What a change from our usual stuff isn't it. 1949 must surely be a record for good model flying weather.) Best flight of the day was made by P. N. Cross, flying a power job, which clocked 14 : 16 from a 15 second engine run. Results :

Power :	**P. N. Cross**	**(Scarborough)**	**53·5 ratio**
	J. B. Marshall	**(Scarborough)**	**5·9 ,,**
	W. T. B. Yates	**(Scarborough)**	**4·1 ,,**
Rubber :	**Trotter**	**(Scunthorpe)**	**7 : 20·5**
	G. Harrison	**(Hull Pegasus)**	**4 : 06·5**
Glider :	**J. K. Cartwright**	**(Bridlington)**	**3 : 44**
	I. Peacock	**(Beverley)**	**3 : 12**

The two national comps. on June 19th again brought good weather for the **LIVERPOOL M.A.S.** members, and Sealand saw some good flying. Barry Haisman scored 2 : 32, 4 : 35·9 and a maximum 5 : 00 to place top in the club score for the S.M.A.E. Cup, followed by I. S. Cameron with time of 2 : 36·8, 5 : 00 and 1 : 15·7. Cameron later lost his glider o.o.s. after 6 : 00.

The " Southern Counties " inaugural Scale Control-Line Contest will take place at Hurn Airport, Bournemouth, on September 4th. The event will be strictly pre-entry (entry fee 2/–) and entry forms can be obtained from Mr. A. P. Oddy, 110, The Avenue, Moordown, Bournemouth.

The first exhibition to be held by the **TONBRIDGE M.E.S.** was a big success, over 4,000 people passing through the show. The object—to provide a television set for the Old People's Home—was laudable, and the show has aroused a lot of interest in models generally in the district.

The " wing on a thread " dethermaliser (inventor we believe to be N. G. Marcus) has been given some thought by the **THAMES VALLEY M.A.C.** lads. P. Taylor was trying this method, when the thread broke, the fuselage came to terra-firma in no uncertain manner—and the wing just disappeared in a thermal! These lads cleaned up the Blackheath Open meeting, D. Searle and T. Berryman taking first and second in the rubber event, and R. Kendall third in the glider.

Seventeen clubs took part in the **SEVENOAKS & D.M.A.C** gala on July 17th, though a strong wind did not make things too pleasant, taking its usual toll of models. A. R. Parker won the rubber with 5 : 00, R. J. Boxall of Brighton the glider class with the same time, while Hodgson of R. P. carried off the power honours with 2 : 19.5. N. J. Butcher of Hastings won the rather poorly supported C/L class with 280 points.

The **HUDDERSFIELD AIR LEAGUE M.A.C.** announce that their 2nd Annual Rally will take place at David Brown's Airfield, Crossland Hill, Huddersfield, on September 4th. Competitions in all classes.

That's the lot for this month chaps, and I'm now getting ready for what should be the best model meeting ever held. With an entry like the 1949 Wakefield, it could be nothing less than the tops. Whoever wins, it will be an event worth going miles to see, and I am looking forward to a thoroughly enjoyable time.

NEW CLUBS

THE VIKINGS.
D. Pearce, 1, Hampton Court Way, Thames Ditton, Surrey.

NORTH MANCHESTER YOGI'S.
F. Kirkwood, 38, Corelli Street, Miles Platting, Manchester.

SMALL HEATH M.A.C.
R. W. Downes, 3/84, Oldfield Road, Balsall Heath, Birmingham 12.

CEDARS M.A.C.
J. H. Worrall, 29, Station Road, Earl Shilton, Leicester.

SECRETARIAL CHANGES

CIRENCESTER & DISTRICT M.A.C.
S. J. A. Willett, 3, The Mead, Cirencester.

GOOLE & DISTRICT M.S.
F. J. Warren, 4, Nab Drive, Goole.

BARRY & DISTRICT M.A.S.
K. T. Gardiner, 23, College Road, Barry, Glam.

DERBY M.A.C.
R. Adamson, 22, Stanley Road, Alvaston, Derby.

YORK M.A.S.
R. Grimbley, 28, Hartoft Street, Fulford Road, York.

LINCOLN & DISTRICT M.A.S.
D. Naylor, 4, Sibsthorpe Street, Lincoln.

MANCHESTER M.A.C.
L. Darby, 14, Woodbourne Grove, Brooklands, Sale, Cheshire.

STOURBRIDGE & D.M.C.
C. W. Cook, Bleak House, Brook Holloway, Wollescote, Stourbridge.

S.M.A.E. NEWS

THE Council were pleased to award British National Records Certificates to the following at their meeting on July 9th, 1949.

1. RUBBER DRIVEN MONOPLANE
   F. H. Boxall (Brighton D.M.A.C.)—15/5/1949 35 min. 00 secs.
2. RUBBER DRIVEN WAKEFIELD
   As above.
3. POWER, CLASS "A"
   K. W. Kendall (Birmingham M.A.C.)—17/4/1949 10 min. 41 secs.
4. POWER, CLASS "A"
   E. R. COMLEY (Swansea and D.A.M.)—1/5/1949 12 min. 04 secs.
5. POWER, CLASS "B"
   W. E. Dallaway (Birmingham M.A.C.)—17/4/1949 20 min. 28 secs.

A protest regarding the unsuitability of the pylons used at the South Eastern Area meeting at Dover was upheld, and the Council regret having to disallow the records claimed by D. C. Butler, I. J. R. Monkhouse and D. Foskett. (The pylons were not fitted with yokes as required by the rules, and organisers of meetings are requested to ensure that all equipment is to the standards required.) The following new records claims are due for ratification at a council meeting to be held on August 20th.

1. POWER, CLASS "A"
   H. E. Springham (Saffron Walden M.A.C.)—12/6/1949 25 min. 01 secs.
2. CONTROL LINE, SPEED CLASS II
   D. W. Free (Surbiton)—19/6/1949 80·357 m.p.h.
3. CONTROL LINE, SPEED CLASS IV
   C. A. Shaw (Zombies)—19/6/1949 118·421 m.p.h.
4. CONTROL LINE, SPEED CLASS V
   W. Dean (Zombies)—19/6/1949 119·205 m.p.h.
5. OUTDOOR HELICOPTER
   J. F. Tangney (Croydon D.M.A.C.)—26/6/1949 1 min. 56 secs.
6. OUTDOOR HELICOPTER
   J. S. Richmond (Wolves M.A.C.)—3/7/1949 1 min. 58·4 secs.

MERIT CERTIFICATE AWARDS

"B"—

No.		No.	
224	Haddock, C. F. (Reading)	227	Alexander, R. A. (Merseyside)
225	Frampton, J. B. (Reading)		

"A"—

No.		No.	
285	Gabriels, L. (Oldham)	293	Baker, W. (Burnley)
286	Gilbert, H. (Whitefield)	294	Foster, K. (Sale)
287	Peacock, J. (Accrington)	295	Inkester, J. (Wallasey)
288	Ross, J. (Winchester)	296	Crumplin, E. C. (Swansea)
289	Johnson, D. (Wallasey)	297	Calkin, C. H. (Wallasey)
290	Bolton, D. E. (Foresters)	298	Jackson, H. W. (Reading)
291	Howard, J. (Foresters)	299	Beeson, E. (Reading)
292	O'Donnell, M. (Whitefield)	300	Jeffery, J. R. (Reading)

LIST OF BRITISH NATIONAL RECORDS AS AT JULY 9th, 1949

OUTDOOR

RUBBER:	MONOPLANE	Boxall, F. H	35 : 00
	BIPLANE	Young, J. O.	31 : 05·125
	WAKEFIELD	Boxall, F. H.	35 : 00
	CANARD	Paveley, D.	1 : 3·71
	SCALE	Marcus, N. G.	5 : 21·75
	TAILLESS	Boys, H.	1 : 24·5
	HELICOPTER	Musgrove, R.	1 : 06·8
	ROTORPLANE	Crow, S. R.	: 39·5
	FLOATPLANE	Parham, R. T.	8 : 55·4
	FLYING BOAT	Rainer, M.	1 : 09
GLIDER:	TOW LAUNCH	Best, F.	63 : 46
	HAND LAUNCH	Packett, G. D.	6 : 57·5
	TAILLESS (H.L.)	Twomey, B. J.	1 : 15·3
	TAILLESS (T.L.	Harris, L. C.	10 : 30
POWER:	CLASS A	Comley, E. R.	12 : 04
	CLASS B	Dallaway, W. E.	20 : 28
	CLASS C	Frazer, A. T.	16 : 25
	TAILLESS	Marshall, J.	1 : 50·8
	SCALE	Petch, P. L.	: 36
	FLOATPLANE	Bellinger, R. A. C.	1 : 08
	FLYING BOAT	Gregory, N.	2 : 09·5
CONTROL LINE:	CLASS I	Butler, D. C.	51·7 m.p.h.
	CLASS II	Taplin, J. D.	89·95 m.p.h.
	CLASS IIIB		
	CLASS III	Houghton, C. L.	91·00 m.p.h.
	CLASS IV	——	——
	CLASS V	——	——
	CLASS VI	——	——

INDOOR

FREE FLIGHT:	STICK (H.L.)	Copland, R.	18 : 52
	STICK (R.O.G.)	Mackenzie, R.	8 : 42
	FUSE (H.L.)	Gilbert, D.	6 : 44·4
	FUSE (R.O.G.)	Gilbert, D.	4 : 33
	TAILLESS (H.L.)	Booth, R.	: 53·3
	TAILLESS (R.O.G.)	——	——
	HELICOPTER	Mackenzie, R.	1 : 33
	ROTORPLANE	Mawby, L.	: 32.2
R.T.P.:	CLASS A	Muxlow, E. C.	6 : 05
	CLASS B	Parham, R. T.	4 : 26
	SPEED	Heaton, F. F.	34·04 m.p.h.

Conditions of Sale . .

Photographs in this issue . .

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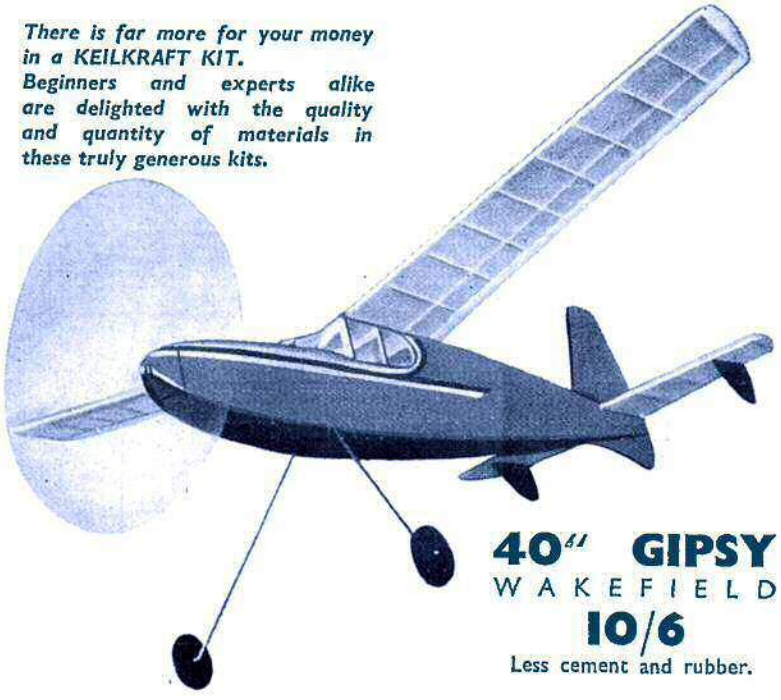

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