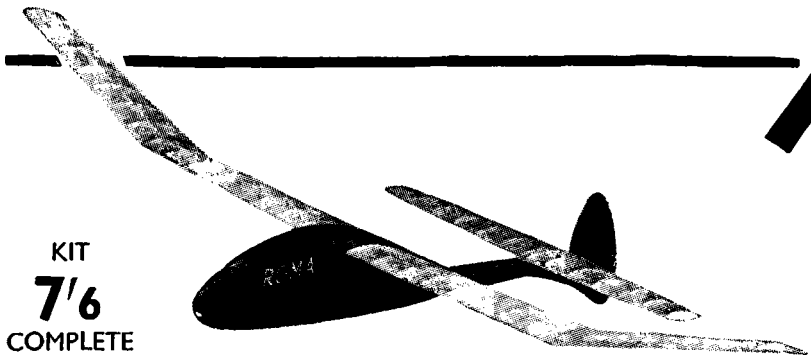
AEROMODELLER

OCT.
1950

1/6



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LIGHTWEIGHT GLIDER

SPECIFICATION

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Overall Length 28"
Wing Area 157·5 sq. ins.
Wing Loading
2·72 ozs/sq. ft.

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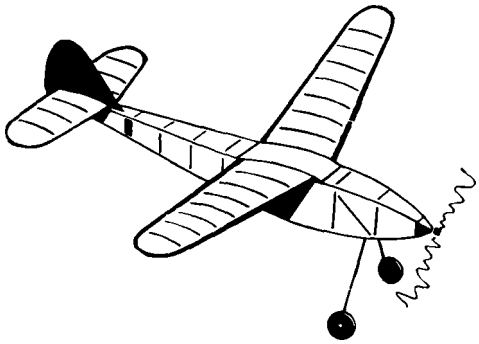

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20" WINGSPAN
3/3

MAJOR
30" WINGSPAN
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PRICE **1/3** COMPLETE
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20" WINGSPAN CONVERTIBLE SPORTPLANE WHICH MAY BE FLOWN WITH THE "JETEX 50" UNIT OR AS A RUBBER AND GLIDER MODEL

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THE FIRST AUTHENTIC TEAM RACER

- EXACT TO S.M.A.E SPECIFICATION
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With pre-shaped and printed Solarbo, "hardware", plan and building instructions. **17/6**

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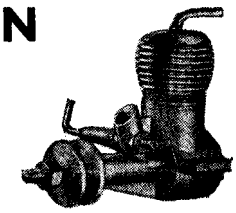
STANDARD KIT COSTS **17/6**

A New 0·5 c.c. Diesel

ALLBON DART



Weighing only 1·2 ozs., this remarkable new Diesel by Allbon opens the way for free-flight flying scale models from 36 to 48 ins. span, with A/U weight of 7/10 ozs. Modellers can now use power more economically than ever before. **52/6**

From all Mercury Dealers.

ALLBON JAVELIN

This remarkable Class I 1·49 c.c. Diesel goes from strength to strength as it wins one event after another. Particularly recommended for C/L Speed and F/F. **55/-**

ALLBON 2·8 DIESEL

A good all-round motor which continues to be demanded for its quality and dependable performance. Now reduced to **65/-**

FROM ALL MERCURY DEALERS

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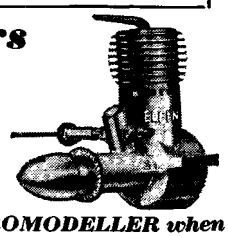
Now available at even better prices in three very useful sizes as follows :—

1·49 c.c.	...	59/6
1·8 c.c.	...	60/-
2·49 c.c. Mk. I	...	63/-
2·49 c.c. Mk. II	...	69/6



ALL FIRSTS THIS SEASON

MALLARD

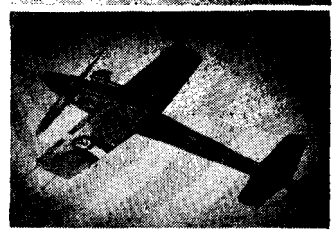
Mercury's first F/F contest design for 1·5–2·5 diesels and 3·5 G.P. motors. **FIRST** E. Anglia Rally, Power Duration (Rutter). Has broken many club records.

Standard Kit. **17/6**

MIDGE

C/L Speed Model for Class I motors. Up to 80 m.p.h. yet handles like a trainer. **FIRST**—S.E. Area Rally, Speed—(Cyril Shaw).

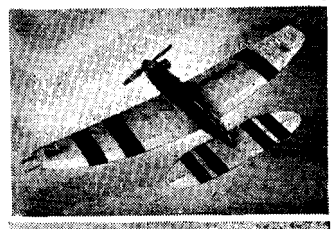
Standard Kit. **5/6**



MUSKETEER

A magnificent job in every way. Prefabricated for easy building. 40 in. C/L stunt model. **FIRST**—S.E. Area Rally Stunt Contest (L. Steward).

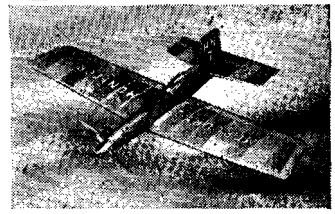
Standard Kit, with cowling. **19/6**



MONITOR

High speed stunt model for the connoisseur. Beautifully kitted. **FIRST**—W. Essex Rally Stunt Contest (Russell).

De Luxe Kit. **27/6**



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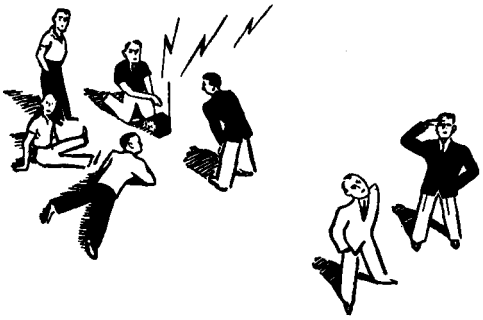
MERCURY MODEL AIRCRAFT SUPPLIES Ltd., LONDON, N.7. **North 4272-3.**

BE A PILOT WITHOUT LEAVING THE GROUND



With the E.D. MK III MINIATURE RADIO CONTROL UNIT

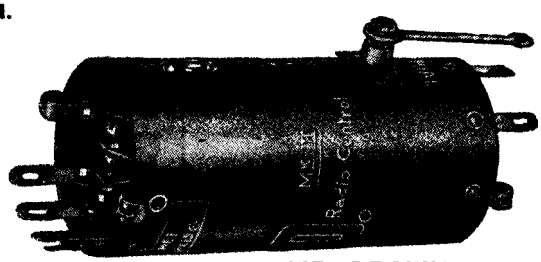
Miniature in size, weight and price. Crash Proof. All-up weight only 7½ ozs. RANGE IS SO GREAT WE WILL LET CUSTOMERS MAKE THE CLAIM.

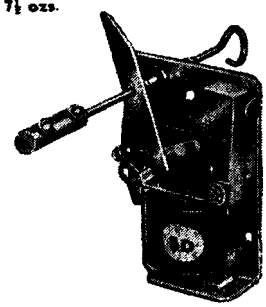
THE ESCAPEMENT

100 per cent. reliability due to robust and accurate construction of claw and rotor. Fitted with double winding and current saving device, a feature first developed by the E.D. technical staff.
Weight ⅜ oz.

Escapement Battery: 3 half pen cells, weight 1½ ozs. Price only 18/6.

Total weight of receiver, escapement and all batteries only 7½ ozs.





THE RECEIVER

Carefully matched components to obtain 100 per cent. performance from the new gas-filled R.C. valve.

Tuning by variable inductance, eliminating difficult adjustments.

Small volumetric size achieved by tubular case.

Special feature: Crash-proof.

Receiver weight only 1¾ ozs.

H.T. Two B 122 22½v. batteries, 2¾ ozs

L.T. One half pen cell, ¼ oz.

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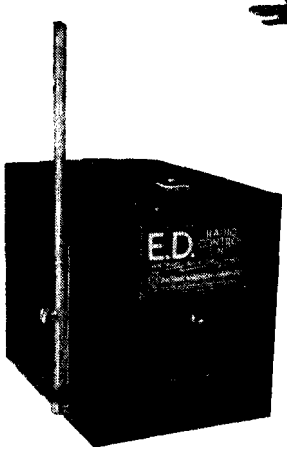

The Transmitter

THE TRANSMITTER

3A5 twin triode valve giving greater radiation than any other commercial transmitter. Up to four watts input. Entirely self-contained. Sectional 8-foot aerial. This transmitter will double the range of any known carrier-operated receiver. Prototype satisfactorily checked by G.P.O. for frequency stability and output within ¼ per cent. limits.

BATTERIES: 120 volt Ever-Ready Winner.
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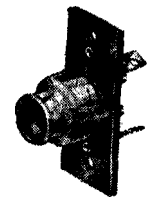
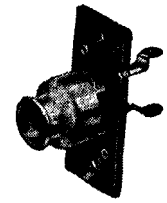
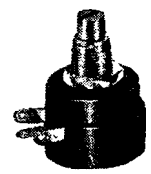
Price only **£4 · 12 · 6**



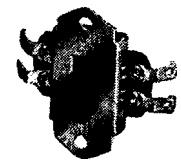
4-pin Battery Socket and Plug.



2-pin Phone Socket and Plug.



Potentiometer.



On and Off Switch

Price, complete with Transmitter and Aerial, Receiver Unit, Escapement Unit, Meter Socket and Plug, Battery Socket and Plug, On and Off Switch. Potentiometer, 5 strands of thin covered coloured Wiring, cored Solder (less batteries) — £7 · 19 · 6

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E.D. ELECTRONIC DEVELOPMENTS (SURREY) LTD
DEVELOPMENT ENGINEERS
1223 18, VILLIERS ROAD, KINGSTON-ON-THAMES, SURREY, ENGLAND.

Mac blowing the gaff again blokes— just want to thank you for the support you've given to our new service. The number of customers who prefer to order by telephone has surprised even us, and we're born optimists at this end.

By the way, a point you might remember is that if Oswald the office boy answers the 'phone instead of me don't write into the Manager about it, I shall be down the road having a crafty one. I'd get my cards if the big noise knew about it.

Engine Service

We still maintain the most efficient engine servicing department today. We overhaul *all* recognised types of engines, and issue the usual test certificate with all repairs.

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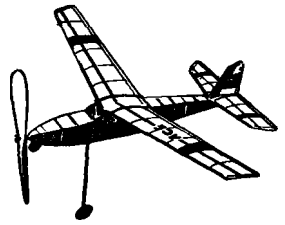
Making idle boasts is not part of our policy, but we'll tell you quite frankly that we couldn't employ people, pay C.O.D., packing and postage charges if the volume of trade wasn't there—which speaks for itself we think.

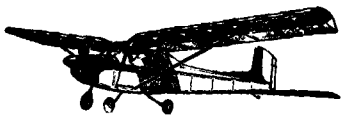
Telephone Order Service

This new service of ours has proven its worth straight away, and many regulars say they will make all their orders by 'phone in future.
Your order can be despatched within 20 minutes, and we pay all charges.

Designed with the young modeller in mind, the **Keilkraft Pixie** makes a sturdy, attractive, semi-scale model of unusual qualities.
It features knock-off wings and free wheeling prop, and spans 23 ins.—the kit includes semi-finished prop and rubber motor. It costs only 4/-.

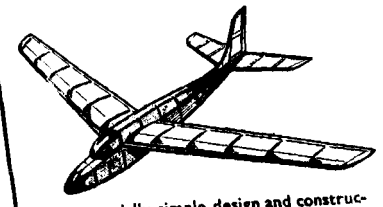


Another **Keilkraft** design to suit the pocket is the **Ace**, which is easy to build, and easier to fly. This kit will give no trouble to the beginner, and we strongly recommend it. It spans 30 ins. and costs 5/-.



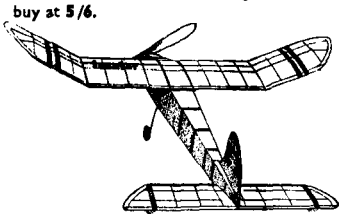
The **Veron Sky-Skooter** *is a kit with an appeal all its own. It's one of those kits you feel like getting down to as soon as you see the plan. Many pre-cut parts, and an excellent plan together with first-class materials make up a fine kit. It is ideal for lightweight R/C work, and costs but 25/-.*

Your Phone Order



Of essentially simple design and construction, the **Veron Coronette** is ideally suited to the newcomer to modelling, and has an unmatched flight performance for its class. Wingspan is 26 ins., and represents one of the finest kits offered at the price of 13/3.

Another excellent model design that will encourage the beginner on to bigger things in the right way is the **Keilkraft Senator** 32 in. span rubber job. It has the added attraction of being unusual in appearance, whilst still retaining simplicity of construction. A good sound buy at 5/6.



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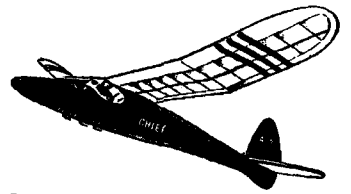

For the keen contest fan, the **Keilkraft** *"* **Chief** *" is tops in performance. It features tip-up tail D/T, auto rudder and plug-in wings, it is designed to the upper limits of the* **Nordic A – 2** *specifications and is absolutely complete as a kit at 18/6*

Extra Special

For C/L fans who like to be well equipped— the Royce Reel at 39/6

Raylite

Radio Control

Have you got your copy of "Radio Control for Models" by G. Honnest-Redlich ... Price 8/6

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In the Esso Laboratories, over 80 formulations for diesel fuel and 150 for glow-plug engines have been investigated. Frequent checks maintain the high standard demanded of Mercury blended fuels. Constant research results in new fuels for improved engines.

SPECIALLY DEVELOPED IN ESSO LABORATORIES

Here they are — a range of fuels to give you trigger-quick starting and a superb flexibility that will make even 'vertical eights' easy — a power output that will put you away out in front in Club Competitions. The name is MERCURY, the most successful and popular range of fuels in the aero-modelling world.

Unlike home-made 'dopes,' there is no hit-or-miss method in the make up of MERCURY fuels. Eighty diesel and a hundred and fifty glow-plug mixtures have been evolved and rigorously tested by Esso Laboratories in close co-operation with the Henry Nicholls Research Group and practical aero-modelling experts.

The result is a range of eight tip-top fuels that get absolute peak performance from every type of engine. There is one listed below which has been specially designed for *your* engine. If you would like further details, we will gladly send a fully descriptive leaflet.

MERCURY FUELS GIVE

- SWIFT STARTING
- STEADY RUNNING
- TOP PERFORMANCE
- MAXIMUM ENGINE LIFE

There is a **MERCURY FUEL** *specially blended for every type of Model Engine*

1 For all spark ignition engines

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3 For all diesel engines

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5 For all racing glow-plug engines

6 For all diesel engines — requires no ether

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8 Ready-mixed first-pressing castor lubricant for diesel engines.

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AEROMODELLER
INCORPORATING "THE MODEL AEROPLANE CONSTRUCTOR"

FURTHER PROGRESS . . . IN PARISH PUMP POWER FLYING

OUR Editorial reference in last month's issue to the number of "authorities" who continue to think in terms of restricting the flying of model aircraft has brought us a very interesting letter from Mr. "Corded," who, at the end of his letter gives a list of the positions which he holds "to give weight to my remarks and to support my right to speak at all."

Mr. "Corded" is Councillor of a London Borough, Vice-Chairman Highways Committee, Vice-President Borough Youth Council, Chairman Nautical Training Corps, and a Member of the Surrey County Council Education Committee.

On this count, at least, we will not dispute Mr. "Corded's" qualifications for writing, from what he calls "the other person's point of view."

We print below most of this gentleman's letter, omitting only his opening and closing paragraphs which are not in any way contentious.

"You say your stupefaction continues to grow at the attitude adopted by those who have been elected to promote the amenities of the Districts concerned (the roman is mine) and I feel you have a misguided conception [as to why the Burgesses elect their Councillors.

Whilst always bearing in mind the promotion of amenities on a very broad conception for the benefit of the majority, I am sure that any Councillor would consider himself very ill-advised did he fail to concern himself with some of the many other vital questions which come before him in the course of his duty.

Your attitude in dubbing Councillors 'Rural Hitlers' is unfortunate, because approached in the proper manner, and made acquainted with the designs and difficulties of the situation, I would safely guarantee that there is no Councillor, or Committee of Councillors, who would not sanely and with due care, weigh every fact in the light of local conditions.

I am sure that you realise the Insurance position, your interest in this matter with regard to Rallies, etc., proves it, but what I am certain you have overlooked is the fact that Local Authorities are bound, in the interests of safeguarding the money of their ratepayers, to cover themselves from all possible angles against the many liabilities which present themselves from time to time.

Authorities must take the precaution for cover against such possibilities as accident to a spectator being hurt by a cricket ball whilst watching play on one of their pitches. Why should they not then consider the possibility of a spectator being hurt by a run-away control-liner?

No, Local Authorities are not considering the Home Office Model Bye Laws as restricting, they are considering those very amenities—from the view-point of the majority—which you accuse them of neglecting.

You may have guessed by now that I am myself a Councillor, but what I am sure you cannot have guessed is that I am as well a MODEL ENTHUSIAST, and whilst I do not use Fuel Power, I have made quite a few Rubber models and sailplanes.

This fact I feel gives me the right to say my piece, and I will enhance that right by adding that as a member of our own Highways Committee, I had the very problem of power flying on public open spaces to discuss.

It may interest you to know that this question—one of many on the usual long 'Parks and Highways' agenda—was given very deep consideration. I may say I for one did not skip over it, and the decision which we ultimately reached was:

'That for the present, Power Flying (by fuel-driven engines) would be stopped, but that no restrictions should be placed upon rubber models and gliders.'

Well, what's wrong with that? We did this in order that the legal position could be explored and the question of compensation clarified.

What I would have preferred to have read in the 'Aeromodeller' would have been some constructive criticism.

How do you expect Councillors to know the facts unless someone takes the pains to make them known, or perhaps to provide some helpful suggestions. Conclusions are always reached in the light of the known situation.

Having said that, I will make a suggestion, and it is one which I intend placing before my own Council.

It is, that Model Aero Clubs should be allowed to hire a football pitch (suitably roped off) which would be available on Sundays. Clubs would have to put in their list of dates at the beginning of the season, like all the other Clubs, and they would then receive their appropriate allocation. It must be argued that Model Aero enthusiasts have as much right to enjoy their sport and/or pastime as any other member of the community, but for goodness sake let us get this thing into its perspective.

I cannot say, of course, how the suggestion will work out. In some Boroughs there may be some strong opposition, just as there is opposition for other kinds of sport, but I feel that once Members of Councils are assured that this Power Flying is really under control, that there is not legal liability upon a Council, and that the usual amenities existing in the area will not be interfered with, then, and not I fear until then, will you get the 'take-off' signal."

On first reading Mr. "Corded's" letter it may be regarded as sound and justified, particularly the reference in the third paragraph to an approach being made to the local Council in the proper manner, and Councillors being acquainted with the "desires and difficulties of the situation."

We certainly know of a number of cases where little or no attempt has been made by local model flying clubs to stage a demonstration and show Councillors just what modern aero-modelling amounts to.

On the other hand, we do not agree with Mr. "Corded's" claim that no Councillor, or Committee of Councillors, would not soundly, and with due care, weigh every fact in the light of local conditions.

Our experience during the past two or three years has been that on a number of occasions there has been a distinct bias against any form of co-operation being given to model flyers, to enable them to indulge in their hobby.

The question of Insurance is fairly raised, but, again, there is the "other side"—*our side*—in that we have plugged for so many years that full Third Party Insurance is available to all aeromodellers. Councillors can obtain all the "protection" they need against third party claims from the public by making it a condition of permission-to-fly that all fliers are properly covered by insurance.

It may be said, perhaps by Mr. "Corded" for one, that we are quick off the mark to assume that Councillors take an obstructive or negative viewpoint. He may be right! But had he sat in our Editorial Chair and read as many press notices as we have received from our Press Cutting Agency during the past few years, which inevitably refer to the banning of model aircraft rather than to even some concession

Contents

VOL. XV. No. 177. OCTOBER, 1950

THE MODEL AERONAUTICAL JOURNAL OF THE BRITISH EMPIRE

ESTABLISHED 1935

Managing Editor:
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Published monthly on the 15th of the month previous to date of issue by the Proprietors :
The Model Aeronautical Press Ltd.,
Allen House, Newarke Street, Leicester.
Subscription rate 21/- per annum prepaid (including Christmas Double Number).

Available to subscribers and Model Shops in the U.S.A. from Gull Model Airplane Co., 10 East Overlea Avenue, Baltimore, 6, M.D. Subscription rate 3.50. Trade enquiries invited.

Advertisement Office :
THE AERODROME,
Billington Road, Stanbridge,
Nr. Leighton Buzzard, Beds.
Telephone:----------Eaton Bray 246
Editorial Offices :
ALLEN HOUSE, NEWARKE STREET, LEICESTER. Tel.: LEICESTER 65322

DOUBLE TOP. Arne Ellilä with the Wakefield model that brought him Aeromodelling's most coveted trophy for the second year in succession.

having been granted, then *he, too,* might get " hot under the collar " at times !

Only a few days ago, we noted in one of the leading National Dailies—the *Daily Telegraph and Morning Post*—the following news item :—

" MODEL AIRCRAFT BANNED.

All local authorities have passed Bye Laws banning the flying of model aircraft in public parks, except in specified areas."

This notice was so completely incorrect, and liable to do the model aircraft movement, and the trade, such harm, that we immediately communicated with the Ministry of Civil Aviation, drawing their attention to this notice. Within a day or two we received a reply, in which the Ministry confirmed that " the notice in the *Daily Telegraph and Morning Post* on August 1st, to which you refer, is, of course, entirely wrong."

We duly passed this information on to the Editor of the *Daily Telegraph and Morning Post,* and are pleased to record that within a few hours of receipt of our letter we received a 'phone call from the Acting Managing Editor, expressing his regrets at the publication of this notice *which he admits was incorrect.* A day or two later the *Daily Telegraph and Morning Post* published a further notice as under :—

" MODEL AEROPLANE RESTRICTIONS.

Bye Laws suggested by the Home Office to restrict flying of power driven model aircraft to restricted areas have been adopted by about fifty local authorities."

From the above, readers will see the truth in that well-known expression, " the price of liberty is eternal vigilance " !

We will never object to fair restrictions being imposed by authorities after (but *only* after) full and fair consideration has been given to the matter ; but so long as Councils take a short cut by imposing a 100 per cent. ban rather than giving proper consideration to the lawful and legitimate interests of aeromodellers, we shall wage a campaign against notices of this sort.

As we end this editorial, there is laid before us a cutting from the *Surrey Times and Weekly Press,* of August 19th, in which the headings are " Model Planes Grounded " and " New Bye Laws Death Knell of Guildford Club."

Mr. R. Reffel, Chairman of the Guildford Aero Club, is reported as saying that " I am very surprised that, although this bye-law has been up before the Council at least twice, not one member of the Youth Committee, or anyone else, put in a word for us."

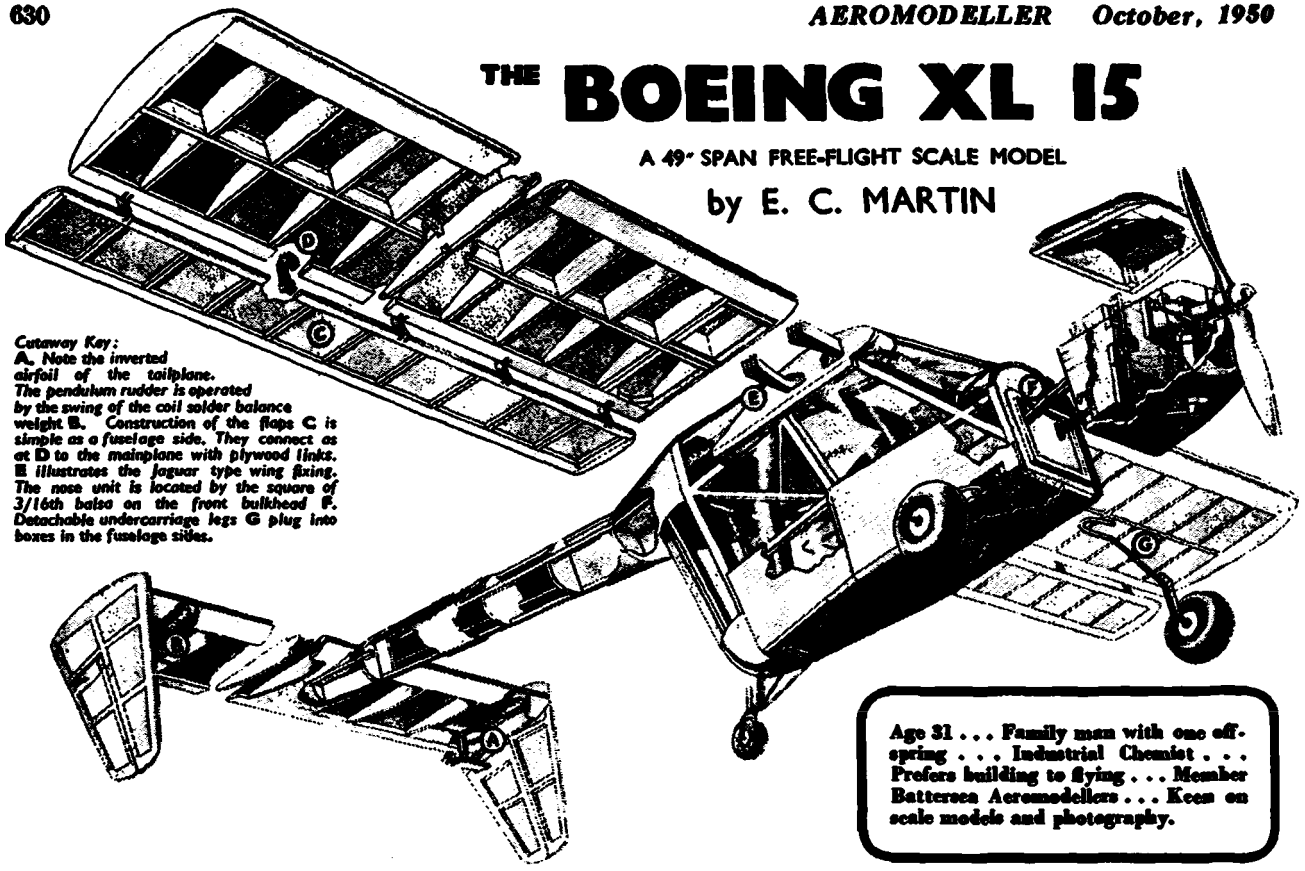
We must defer until a later issue our comments on this latest injustice, but it is clear from the detailed report given in the newspaper that the aeromodellers in the Guildford district need support—and they may rely on the AEROMODELLER if no one else !

What about it, Mr. " Corded " ?

THE BOEING XL 15

A 49" SPAN FREE-FLIGHT SCALE MODEL

by E. C. MARTIN



Cutaway Key: A. Note the inverted airfoil of the tailplane. The pendulum rudder is operated by the swing of the coil solder balance weight B. Construction of the flaps C is simple as a fuselage side. They connect at D to the mainplane with plywood links. E illustrates the Jaguar type wing fixing. The nose unit is located by the square of 3/16th balsa on the front bulkhead F. Detachable undercarriage legs G plug into boxes in the fuselage sides.

Age 31 . . . Family man with one offspring . . . Industrial Chemist . . . Prefers building to flying . . . Member Battersea Aeromodellers . . . Keen on scale models and photography.

UNUSUAL in outline, and outstanding as a scale model, the Boeing XL 15 is ideal for 1–2 c.c. diesels. Its simple structure and crash-proof wing mount enhance the unique appearance of its pod and boom layout.

Wing fixing. An explanation of the wing fixing given first may make the construction more understandable.

The idea, borrowed with thanks from Evan's Jaguar Wakefield, is the use of a pair of wing pegs made from four laminations of m/m. ply, cemented together over the middle portion only. When turned sideways these pegs can be pushed through the fuselage centre section, and when turned upright are locked into position. The protruding ends are a push fit into peg boxes in the wings. These peg ends, not being cemented, are flexible in the backwards and forwards direction, but are rigid up and down, so giving a good knock-off wing mounting. Other advantages are that the pegs are easily replaceable if broken; dihedral angle is easily altered if necessary; and the interior of the fuselage can be kept clear of non-scale protuberances, which in this model would be very noticeable.

FUSELAGE.

Laminated Formers. Because of peculiar shape and open construction of the fuselage, the assembly is based on the use of laminated formers, F1, F2, F3, F4, F5 and F6. Laminated formers are strong, rigid and make for accurate alignment in assembly, and they are definitely worth the extra trouble.

Construct as follows. Strip 1/16 in. sheet into $\frac{1}{8}$ in. wide strips, and cut from these the shapes shown on the plan; one set for each lamination. Pin a sheet of waxed paper on the plan, and cement the pieces forming the first layer on to this paper, when they will be held in position sufficiently well. The next layer is now cemented on top, so that the strips overlap the joints of the first layer, and so on; it is this overlap that gives the strength at the angles. When dry, the formers can be stripped from the wax paper, and chamfered where necessary.

Fuselage Top. Make the centre section ribs R1 from m/m ply with $\frac{1}{8}\times\frac{1}{4}$ in. hardwood strips to take the wear and strain of the pegs. Pin laminated former F5 on the plan, and cement a rib to one side. Cement laminated cross-piece F6 and 3/16 in. balsa cross-piece in position, then add second rib. Fill in with balsa block where shown.

Fuselage Bottom. Cut the floor to shape from 1/16 in. sheet and cement on the 3/16 in. sheet reinforcement under the undercarriage box, and then the undercarriage box. This box is made from m/m. ply and $\frac{1}{8}$ in.$\times\frac{1}{4}$ in. hardwood, bound well with strong thread. Cut the two holes for the rear wheel fixing and cement in the $\frac{1}{8}\times\frac{1}{4}$ in. support. Cement on to the bottom and front bulkhead, F1 and formers F2 and F3, and fill in the 3/16 in.$\times$3/16 in. spars round the edges. After cementing the 3/16 in. sheet reinforcement to the 1/16 in. sheet sides, these can be cemented in position. Former F1 now slips into the slots formed by this reinforcement and butts up against the front bulkhead, where it is cemented. 3/16$\times$3/16 in. spars are now cemented round the top of the sides with 1/16 in. protruding, to which the celluloid side screens will be cemented.

Assembly. The top can now be fitted onto the bottom and is cemented on formers F1, F2 and F3.

The Boom. Pin the top longeron to the plan, add the 3/16 in. sheet webbing W1 and W2 and the bottom longeron. Remove from plan and cement on the circular formers and the $\frac{1}{8}\times\frac{1}{4}$ in. longerons. The boom is now covered with hard 1/32 in. sheet in two pieces. Make a pattern from stiff paper and cut the sheet to this. A $\frac{1}{4}$ in. wide band of cement smeared round the ends of the sheet will stop it splitting on bending. Cement sheet to top longeron first, then work round to bottom longeron, using plenty of pins.

Fill in the tail platform with soft block, and cement on the m/m. ply facing, and insert the two tailplane locating pins.

Boom-Cabin Assembly. The boom is now fixed to the cabin by the cementing of the upper longeron in the slots in the cabin top cross-pieces and webbing W1 to former F3. The two 3/16 in. sheet pieces are now cemented to give the

boom rigidity. Be very careful here that the boom and cabin are lined up properly. The three 1/16 in. sheet shapes forming the roof of the rear observation windows are assembled and cemented under webbing W1 and to former F3. The boom-cabin junction is now sheeted with 1/32 in. hard sheet in two pieces. Cut a paper pattern first to shape shown on plan, and adjust until it fits. Cement first to top longeron and then work round. It will fit more easily than it would appear.

The former F4 is now fitted and soft block carved to shape fitted to the bottom. A rolled paper tube is fitted at the bottom of this former to take the rear wheel fixing.

Celluloid Fittings. The celluloid can now be fitted. The cabin top and windscreen is fitted in one piece with plain bending and tucking in. First, make a paper pattern to the shape shown on the plan, and adjust until it fits. Then cut out the celluloid and cement in place. A 1½ in. length of 18 gauge aluminium tubing pushed in the cement tube nozzle will facilitate getting cement in awkward places. The side screens and observation windows are fitted similarly.

Undercart. The undercart is from ⅛ in. steel wire. Bend to shape and plug in undercart box. The rear wheel fixing is from 20 gauge wire. Bend the pieces to shape and push into the short length of 16 gauge brass tubing. Hold with a spot of solder. Spring the ends of the wheel fork into the 20 gauge brass tube axle and hold with a spot of solder. One strut now plugs in the paper tube, and the other two spring over the ⅛ × ⅛ in. glued on the cabin bottom.

Cowling. The cowling is all from 3/16 in. sheet. Pin bottom on board, cement on bulkhead, then side pieces, and finally front, built up from 3/16 in. sheet laminations. Remove from board, chamfer edges and cement on triangular pieces cut oversize. When dry, finish to section shown by carving. The cowling top is straightforward.

Motor Mount. If using Frog 100 or 180, glue in motor plate locators with m/m. ply facing. The motor is bolted on the ⅛ in. ply motor plate which will drop in the cowling after the needle valve is removed. This is inserted through a hole in the side of the cowling. The motor and cowling are then both held in place by rubber bands to the fuselage, as shown. This method allows the motor to be adjusted for thrust without disturbing the fit of the cowling to the cabin. Note that the *real* plane has 10° downthrust, so the apparently excessive downthrust is scale.

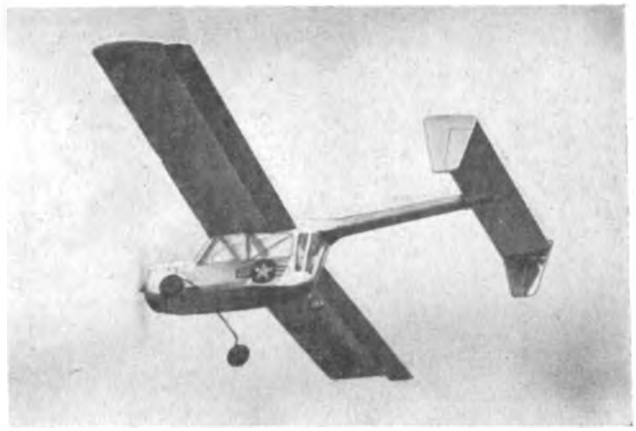
Wings. First make the peg boxes from m/m. ply and ⅛ × ⅛ in. hardwood, glued with a slow setting glue.

The feature of the wings is the completely enclosed torsion box leading edge. Pin to the plan the 1/16 in. sheet lower L.E. covering, the ⅛ × ⅛ in. spar and shaped and slotted trailing edge. Start by cementing the root rib, made from m/m ply with 3/16 in. sheet backing, cement in one inter-rib webbing made from 1/16 in. sheet, the wing boxes, and then the second rib. Then another web and the third rib, and so on. In this way the webbing between the ribs is cemented in a more secure fashion than if all the ribs were first in position and the webs were pushed down between them, which wipes all the cement off and makes a weak joint. When all ribs are in place, cement on the 3/16 in. × 3/16 in. leading edge spar to the bottom L.E. sheeting and the rib tips, and shape to profile. The top L.E. sheet is now cemented along the top of the webbing, and when dry to the L.E. It is not necessary to cement to the rib tops, which makes it easy. Finish off tips with soft block.

This method of construction gives a wing which is very strong and almost warp free.

Flaps. The flaps are straightforward in construction, and can be built in pairs like the two sides of a slab-sided fuselage. Carve L.E. and T.E. to shape afterwards.

The flaps are rigidly fixed to the wings at a slight negative angle, which makes them, in effect, extra stabilisers, and gives good longitudinal stability to the model. However, unequal line up will give a fatal turn



to the model, so care must be taken in assembly to the wings.

Fins and Rudders. Each fin has an independent pendulum rudder with the pendulum in the tailplane, and these undoubtedly contribute to spiral stability.

The fin and rudder construction is straightforward, and they can be built in pairs like the flaps.

The pendulum rudders are assembled after the fins and tailplane are covered. The rudders are hinged to the fins with tape, clothes horse fashion, and the fins then cemented on the ends of the tailplane. The pendulums are from 20 gauge wire, swivelling in brass tube bearings which are a tight push fit in 3/16 × 3/16 in. hard wood block. The weights are a few turns of coil solder round the end.

When the fins are on the tailplane, the pendulum can be inserted in the tailplane through the slot provided, into which the 3/16 × 3/16 in. bearing block should be a push fit. The pendulum is adjusted to swing freely, and the block then cemented in position. The rudder is then joined to the pendulum by a push rod of thin aluminium sheet. No soldering is thus necessary.

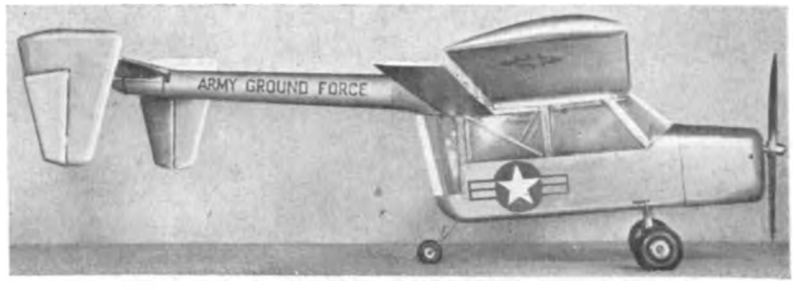
Covering and Finishing. Cover the wings in heavy rag tissue and the flaps, tailplane and fins in light-weight rag tissue. Finish silver.

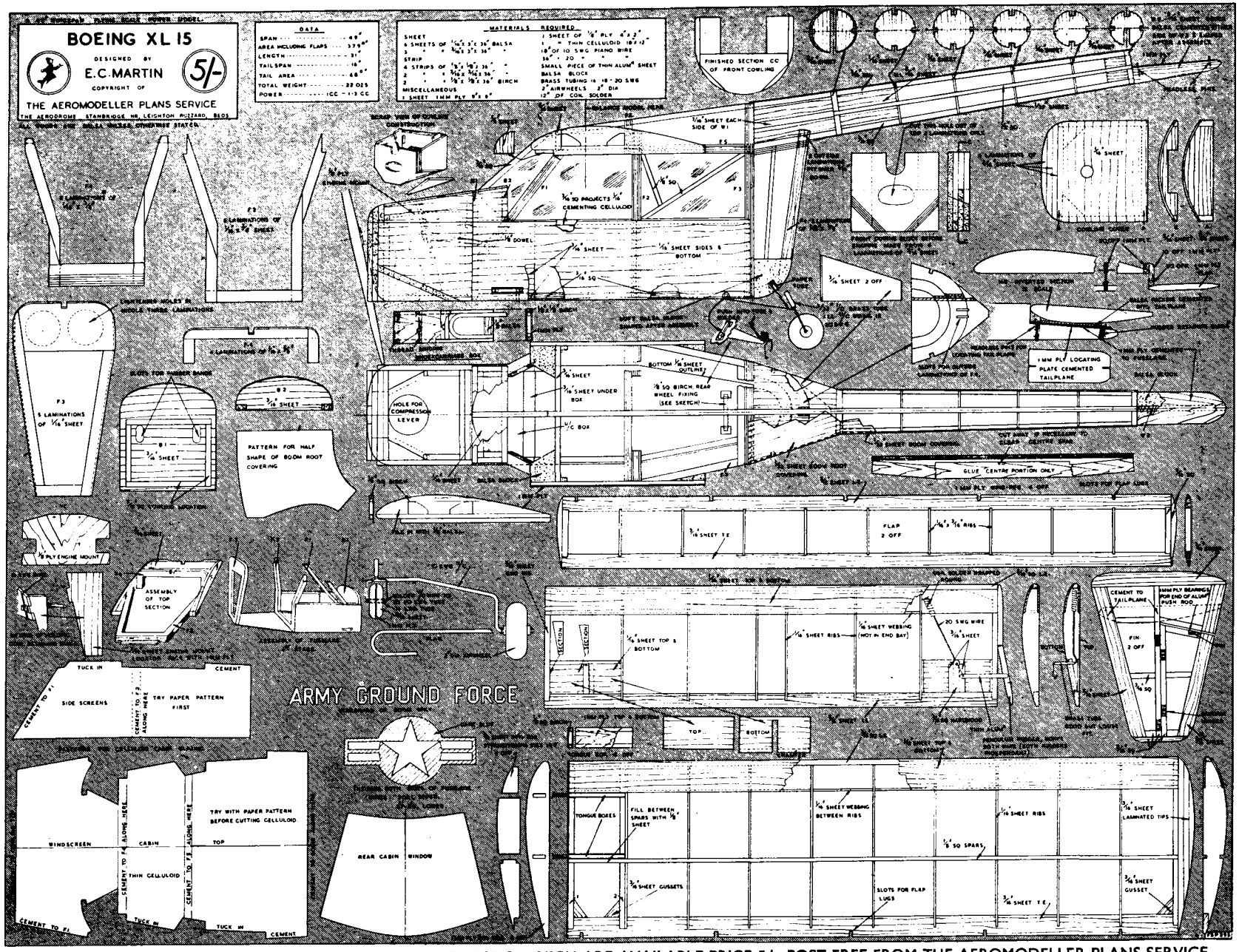
A good silver dope can be made by adding a few teaspoonsful of aluminium powder to a quarter-pint tin of clear dope. The aluminium powder (pigment grade) can be obtained from an oil and colour shop. This dope is quick drying and tautening, and does not need a preliminary coat of clear dope. The first coat will bring up the hairs on the tissue, so as soon as the covering is taut (about half-an-hour) rub it down lightly with fine emery or sand paper, and give a second coat. The improvement is startling.

Lettering and insignia can be painted on with poster colour with a little soap or wetting agent in the water to make it take. When dry, fix from rubbing off with a coat of clear dope.

The sheeted parts are best finished by doping, sanding, doping, sanding, etc., until a finish is obtained, or use your own method.

Trimming and flying is straightforward, except that a right turn under power tends to be dangerous.





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

WORLD NEWS

BY ARIEL

AMONG a selection of official literature received from the Academy of Model Aeronautics, Washington, is a copy of the 1950 Radio Control Flight Regulations, drawn up by the Chairman, Dr. Walter Good. These are being used as Rules for the American R.C. Contests, and are an interesting revelation of what is expected of Radio Control operators.

To quote more than a few highlights from the four and a quarter pages of single-space typing would take more space than we have available, but the allocation of some of the possible maximum of 435 points in the schedule will be of interest to aspiring R.C. enthusiasts.

Contestants are allowed a maximum of thirty minutes for testing, checking, launching and flying, and may make as many flights as they wish during the allotted time.

The intended manœuvres must be written on a flight plan which is handed to the judges before flying, and each manœuvre must be called out by the contestant.

For take-off, the highest points which can be obtained are 25, and these are awarded if the model taxies at least 50 feet to the runway and then takes off. For take-off on runway from a stand-still (no person within 20 feet of the model), 15 points will be awarded. Two-speed engine control would be necessary for both these take-offs. An assisted R.O.G. rates only 5 points.

Under Direction Control, 6 points are awarded for a straight flight of 500 feet.

Points are awarded for Elevation Control, both for gaining and losing a specified altitude, and any means of doing so may be used. A spot landing at 100 feet from the marker would gain 50 points; ½ point is awarded for each foot nearer to the marker. Straight cross-country flying to objectives at set distances and straight return can make 40 points.

Under the Stunts which are deemed possible to execute, are exact 90 degree and 180 degree turns, allotted 5 points each, whip-stalls, wing-overs, 200 foot power dive, rolls, 200 feet of inverted flight (15 points), inverted spin, pylon eights around pylons spaced 200 feet apart, outside loop, smoke writing and lazy eights below 100 feet.

The above is a selection of some of the more advanced manœuvres, and as the schedule was drawn up by one of the best known exponents in the U.S., R.C. winner at the 1949 Nationals, it can be assumed that some of them, at any rate, will be attempted in this year's contests.

Malta, G.C. Thanks to a new correspondent on the Island, we have further news of aeromodelling, this time from the R.A.F. Navigator I. E. H. Norman, Hon. Sec. of the Luqa M.A.C., which operates at the aerodrome of that name, wrote :—"I am compelled to write in protest to the statement by Mr. Joe Caruana of Sliema (*World News*, May 1950) that there are no modelling Clubs in Malta. The Luqa M.A.C. is a very going concern, with some thirty members. The enclosed programme (of a display of Model Aircraft Flying), which was fully carried out with some twenty models, will bear me out, together with some relevant details of progress and types. Our flying is somewhat curtailed in the summer, due to heat, but flying boats and seaplanes liven up our swimming outings. I am sure that the Safi Model Club and the Malta Scouts Model Club would add their words to mine *re* Mr. Caruana's non-existent clubs."

A copy of the programme mentioned was included, and from it we see that the Luqa Club was formed in March of this year. Accent is on Power Models, as the heat has a very bad effect on rubber. Apart from a varied display of flying, there was a static exhibition of models and accessories.

We are sure that Mr. Caruana will be most interested to learn that there is considerably more activity in the aeromodelling line on his Island than he had previously believed.

New Zealand. A steady flow of news comes in from our correspondent Frank Bethwaite, but due to space limitation it is not possible to do justice to all the interesting material which we receive. However, on this occasion a selection of items and events which have taken place during this summer will bring us practically up to date.

In early April, Ira Pepperil, of speed model and engine repute built a microscopic speed model around a stock "29". His intention was to find out whether oxygen injection would give extra urge. He built in some radical flight adjustments and reworked the engine so that it no longer resembles the original motor. First test flights, without oxygen, turned in 135 m.p.h., and this has been improved since. As might be expected with this performance, he has applied for official timing for a World Record.

Interested 5 c.c. Speed Class enthusiasts might like to know that the model has a thinned Clark Y wing, outer wing washed in ⅛", a thrust line 2 degrees inset and flies with little line tension. From a photograph of this ultra fast model, which is unfortunately unsuitable for publication, we observe that its design is similar to the now popular "Hell-Razor." Judging by enthusiasm for this design in this country, on the Continent, and now in New Zealand, it would appear that the American George Fong has started something to oust the already well established "Little Rocket."

Rise-off water activity received a boost with the good weather, various clubs in and around Auckland having combined to hold a series of meetings. Two main points were revealed: the ability of the small English diesel to run with absolute reliability on an abrasive mixture of salt and sand, and, despite enthusiasm, the inability of the average N.Z. aeromodeller to design a float system that will get his model airborne with reasonable regularity.

As with most other countries, Control Line gained its following of fanatics and even diehard free-flighters took quite happily to the handle for their winter flying.

Bethwaite has sent us various photographs and we intend publishing some of them in an early pictorial edition.

The N.Z. winter begins at the end of May and the weather was so unusually good that outdoor modelling activity continued for longer than usual. New records were coming in early in June; 11 minutes for a flying wing glider and 10 minutes for a hand-launch glider.

A picture of N.Z. aeromodelling at the end of their last summer season is given in a résumé, as follows :—

Rubber and Glider classes are healthy. Activity is fairly evenly spread, most records are high and going higher. Nordic A2 has been added, with the sincere hope that it will become a second, if junior, Wakefield, internationally.

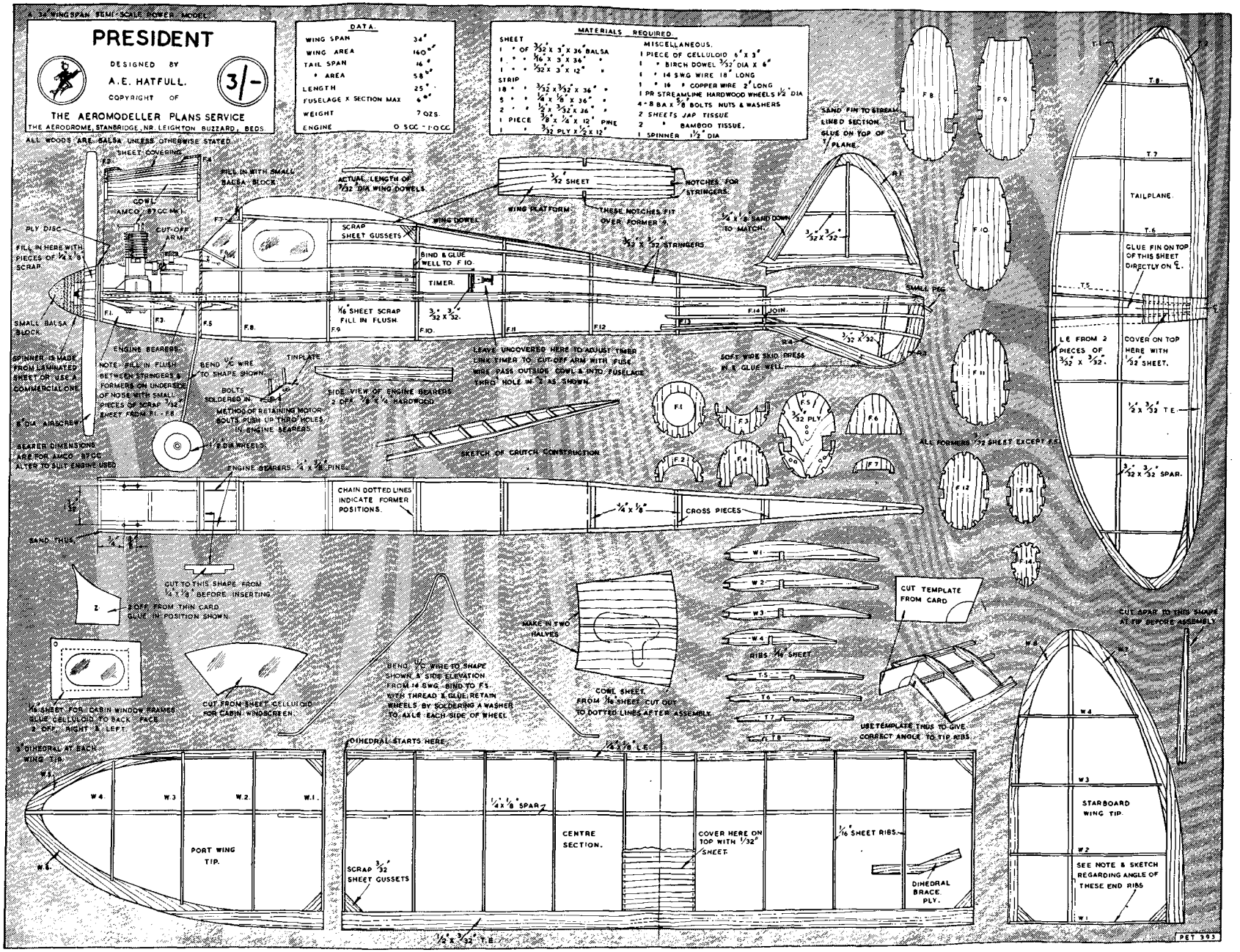
Power classes showed a mixed picture. Limited motor run events were beginning to be dominated by the 3½ to 5 c.c. motors, while the popular small motor models were out of the running. To rectify this, there will now be more than one class, the difference being based on the engine capacity.

The Aggregate Class, which has proved so popular with the permissible hand-launch, has now been expanded to include R.O.G., R.O.W. *and* Hand Launch. The Contest requires the maximum airborne time in flights of over 30 seconds and under 3 minutes, during a fixed two hours period. Present record, about 1·57 minutes.

The Payload Class has been tied to power loading instead of 25% of the model's all-up weight. The new rules call for a dead weight to be carried of 5 ozs./c.c. of engine capacity, maximum motor run 30 seconds, average of three flights.

Control line stunt modellers are clamouring for the adoption of the "English" Stunt Schedule; that in use at present gives "quality" points for simple manœuvres and "block" points for the more advanced stunts, regardless of quality. This encourages further efforts, but means that as long as the manœuvre is completed, the smoothness or roughness of its execution do not affect the points awarded.

Finally, and this brings us up to date, a new N.Z. record (official). Class III Speed Rules: ·30 to ·625 cu. ins., 70 feet minimum line length, 20g pull test, flight on pylon. Record claimed by Mervyn McCrorie, engine, Dooling 61, "Little Rocket" type model, speed, 146·37 m.p.h. Flown on a cold wet day; engine gloplugged, fuel probably heavily doped . . . and that is all for this month, from N.Z. and from World News.



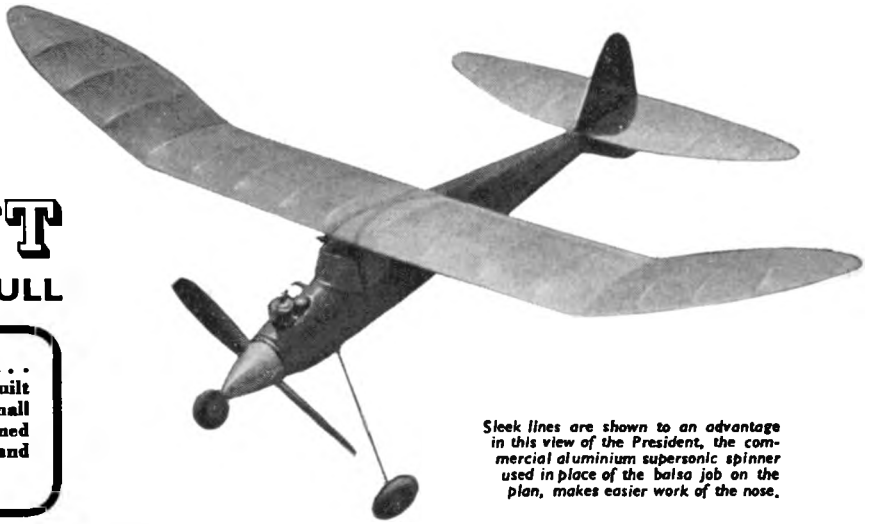
THIS IS A 1/4 SCALE REPRODUCTION OF THE FULL SIZE PLANS WHICH ARE AVAILABLE PRICE 3/- POST FREE FROM THE AEROMODELLER PLANS SERVICE

A 34" SPAN FREE-FLIGHT POWER MODEL

THE PRESIDENT

BY ALBERT E. HATFULL

Age 23 . . . Engineering Draughtsman . . . Single . . . a modeller since 1936 . . . has built all types of model aircraft . . . keen on small diesel and rubber models . . . designed Keilkraft's Flying scale range, Senator and the famous Junior 60.



Sleek lines are shown to an advantage in this view of the President, the commercial aluminium supersonic spinner used in place of the balsa job on the plan, makes easier work of the nose.

IN keeping with the present trend toward power models for the small diesels and gloplug engines, Mr. Hatfull's handy-size cabin monoplane, combines the stable layout with clean lines.

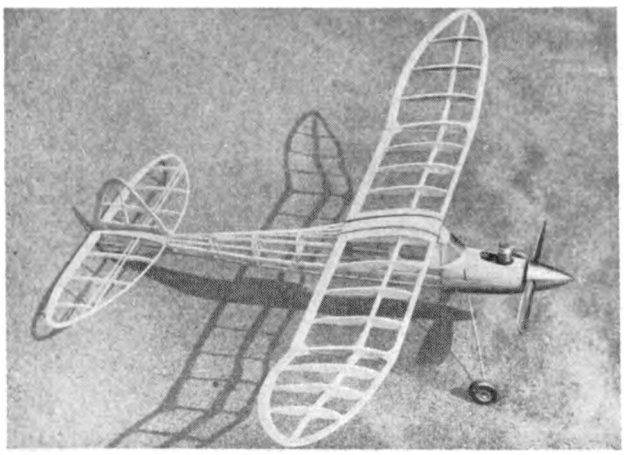
Elliptical flying surfaces and streamlined fuselage give The President contest model appearance. However, the construction is as simple as could be desired, the good lines being obtained without any structural complications.

Although the original model was powered with a ·87 Amco diesel, other suitable motors would be the Mills ·75, E.D. Bee. Allbon Arrow and Frog 100. Slight modifications to the engine bearers and housing would be necessary according to the motor used, and it should be remembered that, in the case of the Frog 100, the mounting is radial.

There would be some variation in the performance of the model in relation to the motor used, and the differences in motor weights would have to be taken into consideration in relation to the C.G. position.

BUILDING INSTRUCTIONS.

Fuselage. Lay the two side members of the crutch on the plan and hold in place with pins on either side of the wood. Glue these two pieces together at the rear. Cut the front crosspiece to shape shown, and glue this and all the other cross-pieces in place. Bend undercarriage wire to shape, bind the wire in place on former 5. Remove crutch from plan and glue formers 5, 8, 9, 10, 11, 12, 13 and 14 squarely in their correct positions. Glue wing platform in position shown, add former 7 and glue small balsa block to it. Glue pieces R3 and R4 together on plan, and add to body when dry; R4 pushes into notch in former 14. Add 3/32 in. square support for R3 and 4 as shown. Cut motor bearers to shape, mark position of former 3 on them with pencil, and push them through holes provided in formers 5 and 8; glue them well in place. Add former 3 in place where previously marked, glue front former 1 in place, note how crutch ends locate in notches in former 1. Tap small pins through former 1 into motor bearers. Drill holes in bearers and push bolts in place. Add bottom stringer and four other lower stringers, join short pieces to these at former 14 to carry to rear edge of R3 as shown. Install timer and fuse wire link at this point, if used. Add top stringers, stop first down at former 12, and the second pair down at 13. Glue former 6 in place. Glue wing dowels into corners shown, add gussets. Make and glue cabin window frames and windscreen in place. Glue pieces "Z" in place, thread timer link wire through hole in left hand piece "Z". Fill in underside of nose as instructed. Build cowl in place on fuselage; take care it doesn't stick there. Cover sheeting on cowl with small piece of muslin. Sandpaper body smooth all over and remove all sharp corners. Drill holes in underside of nose sheeting to drain away spilt fuel.



Wing. Centre Section—Pin spar and trailing edge in place, cement ribs vertically in their correct positions, and raise the spar into notches in ribs. Glue leading edge into notches in ribs, add gussets. **Tips**—pin spar and trailing edge and tip piece W6 or W7 to plan, glue ribs in place, and raise spar into notches. Tilt end ribs as shown. Add leading edge and tip pieces W5 or W8 and gussets. Glue tips to centre section and leave to dry with tips propped up to 3 ins. dihedral. Cover centre section where shown with 1/32 in. sheet. Enlarge slots behind spar and add dihedral braces where shown. Sand leading and trailing edges to typical section.

Tail. Build tail in similar manner to wing, use two pieces of 3/32 in. square curved round as shown for the leading edge. Build fin, sand streamlined, and glue on top of tailplane as indicated.

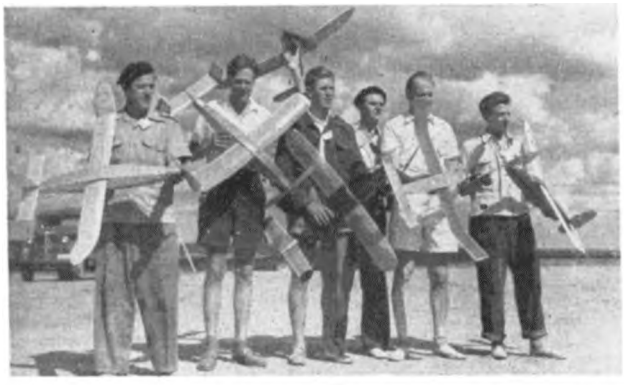
Dope or fuel proof the fuselage interior between F1 and F5, and also the inside of the cowl. Mount the motor and fit the ply disc behind the airscrew, then add balsa sheet discs to build up the spinner as shown in the side elevation. Fill between the ply disc and front portion of the spinner with scrap $\frac{1}{8}$ in. $\times \frac{1}{4}$ in. balsa.

Cover in the usual way avoiding wrinkles; cover body with long narrow strips of tissue; cover wing with 3 pieces on top and 3 below; tail with 2 pieces on top and 1 below, and fin 1 piece each side. Spray with water to shrink. When dry, dope fuselage 1 coat of clear dope and 1 coat of colour dope, 1 coat of fuel proofer. Wings, tail and fin, 2 coats of clear dope.

Trimming for flight. With wing and tail held firmly in place with rubber bands add plasticine to nose or tail of fuselage until model balances level on the fingertips at $\frac{1}{4}$ in. behind the wing spar. Test glide over long grass. If glide is steep insert 1/16 in. under rear of tailplane, if the model stalls remove weight from tail or insert 1/16 in. under the front of tailplane until a long flat glide is obtained.

THE 1950 WAKEFIEL

DESCRIBED BY C. S. RUSHBROOKE



I HAVE been privileged to witness no less than nine Wakefield Finals in four different countries, but undoubtedly the 1950 affair was the most interesting from many points of view. This year's event was unique in many respects, and I can honestly say it is the first time I have ever gone to sleep in the middle of a contest !

Don't think from this statement that the 1950 Contest was slow or boring in any way. Far from it, for interest was high from start to finish, with the battle for top honours as keen as ever, and for the first time in the history of the Contest the winner was decided on pure flying ability without any assistance from thermals or other aeromodellers' good fairies.

Held at the site of the Finnish Gliding School at Jämijärvi, the scene was probably the most unusual yet witnessed for a Wakefield event, the field being a long sandy airstrip set in the midst of dense pine woods, with a number of steep hillocks culminating in a high ridge which practically cut the length of the field in two. Had the usual conditions prevailed, this factor would have been a serious handicap for timekeeping, but in the non-thermal weather, with only a very slight amount of drift, the majority of models were easily kept in sight to the end of flight, though a few did lose valuable seconds owing to drifting out of sight behind the trees.

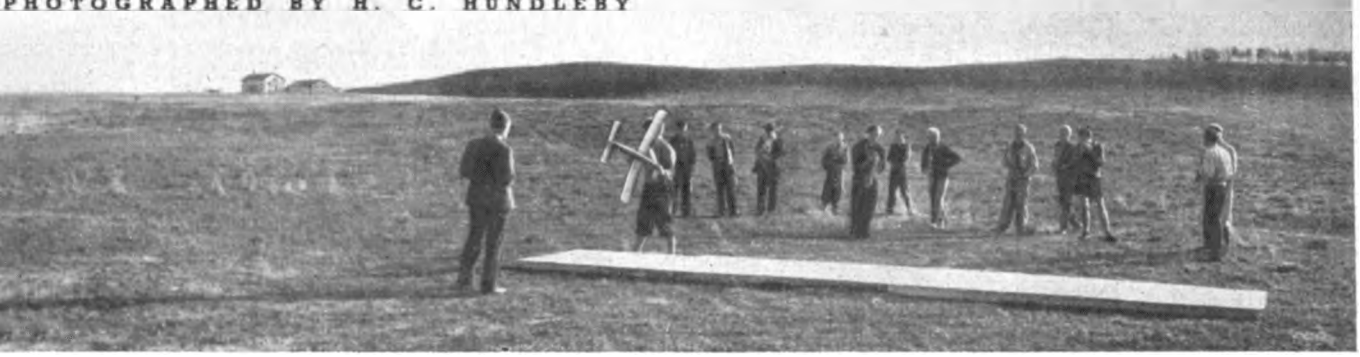
Before describing the contest itself, credit must be paid to the first class organisation initiated by the Finnish Aeronautical Association. From the moment we set foot in Finland till the time we left, every facility was placed at our disposal and the comfort and welfare of all visitors was a major consideration. We landed at Helsinki Airport to be met and quickly conducted through Customs, etc., by Lt. Lansdorff of the Finnish Air Force, who afforded us a conducted tour of the city itself until it was time to catch the 'plane to Tamperé, the nearest we could get to Jämijärvi. Here the procedure was repeated by the Brothers Hamrén, and we finally left by bus on the final stage of our journey to the contest venue.

In the meantime, the British contingent had left Croydon by special charter 'plane (" Anson ") and, travelling by way of Holland and Denmark, arrived at Pori, another airport to the west of Jämijärvi, thence proceeding by road to their final destination. (Incidentally, their pilot David Prowse and navigator decided that the contest would provide more interest than awaiting the team's return at Pori, and as a consequence became immediate converts to aeromodelling, having never seen anything like it before !)

Our heading photograph, taken just before the close of the contest, gives a good idea of the contest site. The last competitor is about to place his model on the board and over on the left in front of the trees is the control point. There was approximately the same amount of open ground the

D TROPHY CONTEST

PHOTOGRAPHED BY H. C. HUNDLEBY



As a distinct contrast to British practice, the Finnish aeromodelling section received every assistance from the whole of their aeronautical movement, and high standing officials of every order were on hand, assisting in every way to make the function a great success for the honour of their country. The British Air Attaché, Wing Commander Fleet, also attended, and all in all, the event was treated on the highest levels.

Professor Arvo Ylinen (President) and Col. R. Winter (Secretary General) worked throughout the contest period, and full credit must be accorded C. Hagelstam, C. Stude, A. Sirén, and other officials, and in particular our very good friend P. Virkki (public relations officer to Finnish Airlines) who finally bade us God-speed with the very anxious hope that they had done everything that was expected of them. We soon reassured him on that point!

Our travel arrangements (boat from Tilbury to Göthenburg, car to Stockholm, and plane to Helsinki) did not allow us to arrive at Jämijärvi until midnight on the 21st, and the majority of processing of models had taken place during that day. However, a number of late arrivals had to be checked the following day, and this gave us the opportunity of studying the methods adopted for this very important operation. Processing Officer Stude and his assistants are to be congratulated on a very well thought out system, which gave the maximum of assistance to the competitors by means of a number of simple yet accurate calculation set-ups. With each competing country expected to report in turn, no congestion was experienced, and in only one case was a competitor required to make any major change to his model to bring it within the formula.

This was Seton of Holland, whose tailplane proved to be oversize, but the necessary alterations were duly carried out with little effect on the model's capabilities, as will be seen from his flight times. This chap had a most interesting gadget installed which consisted of a fuse operated variable down-thrust device. A fairly high degree of downthrust employed on take-off was decreased after some 25 seconds, and in practice this system proved most effective.

The Yugoslavian models were excellently constructed, and also featured a number of interesting fittings. One model employed a 24 inch folding prop and a very high aspect/ratio wing with thin curved plate section, but in flight the model tended to yaw, evidently due to the covering slacking off in

other side of the ridge which forms the skyline and then all around nothing but dense forest stretching as far as the eye could see. Teams taken from top left, anti-clockwise:—Sweden, France, Swedish Proxies, Great Britain, Yugoslavia and Italy.

the extremely humid atmosphere.

Generally, all the models were well constructed, and of a much higher standard than 1949, with the Yugo and Swedish models outstanding. Ellilä had a completely new job based on his successful model of last year, and the excellence of construction and finish brought many well earned words of praise. However, the most beautifully built model there was undoubtedly Ted Evans', "Vansteed", which was perfect in every detail. His feathering propeller created a great deal of interest, and in practice proved both effective and efficient there being no chance of timekeepers mistaking the model on the glide with the prop just ticking over, for all the world like an indoor model.

Saturday the 22nd July was spent in processing late arrivals, with most of the visitors keenly watching glider flying indulged in by members of the club. Many interesting machines were on view, ranging from primaries to high performance sailplanes, including a beautifully constructed two-place job. Take-off ranged from winch launch to towing by Auster and a small Polish biplane, and fine thermal conditions produced many duration flights with machines popping in and out of the clouds with machine-like regularity.

At 16.30 hours all competitors were briefed on the procedure to follow during the contest, and here again the attention to detail so prominent throughout the meeting was well stressed. Explanations were conducted in English, French, German and Swedish, and no competitor can say he did not understand what was expected of him, for ample opportunity was given at this stage to ask questions and thoroughly go into all aspects of the contest.

Dinner followed, and, after a heavy downpour of rain at 6 p.m. the flying got under way promptly at 7 p.m. under bright conditions, but a very damp atmosphere.

Regulations were simple, and it was the obligation of each team manager to ensure that his members took their flights within certain time limits. Each round was scheduled to be concluded within 1½ hours, and this period was strictly adhered to in each of the three rounds. Competitors could take their flights at any time within the round limit, and arrangements were made for flight order by nation in the event of congestion. In practice this was not necessary to apply, and the whole affair ran very smoothly, with each nation allotted a separate enclosure, and competitors reporting to control for weight checking and timekeepers. Timekeeping was well organised, with a panel of men specially selected for the job, and equipped with standard watches of high quality.

Round 1—19·00 to 20·30 hours, Saturday, July 22nd.

In what appeared to be a dead calm, the contest got under way with a minimum of fuss, and the air was soon filled with models climbing with effort in the absolutely non-thermal conditions. Five long take-off boards were in use, and it made no difference in which direction the flight was made, there being no wind to either assist or complicate the take-off. (What a difference to last year's contest, when models were pranged right, left and centre in the high wind ! !)

However, it was soon demonstrated that above tree-top level a slight drift was in existence, and a number of models were soon circling over the dense pine woods on the boundaries of the field. This naturally cut down the actual durations recorded in many cases, and protests were made to the officials in an effort to get the starting area shifted further up the field. Quite rightly the decision was made to keep to the same area for the duration of the first round.

Some models had difficulty in getting away cleanly, and had evidently been trimmed with a breeze to assist the take-off, and a number of delayed flights were experienced. The rule here was that all delayed flights (and repairs) were to be carried out within the stipulated period of each round, and the rounds were closed dead on time.

Kannenworff ended his chances with a ground loop, and

Teams from top to bottom are as follows:—Belgium, Switzerland, Holland and Finland. Not all of the latter team are present!

Ferber (Belgium) saw the wings rip off his model a few seconds after take-off, the model then doing a hectic series of barrel rolls before hitting the deck. As a whole, the Belgian models had good climbing characteristics, but were poor on the glide.

Both Evans and Adams got away cleanly and climbed beautifully, and Ron Warring displayed his expected technique to good purpose. Stevens (who had experienced trouble the day before on preliminary trimming) seemed to have ironed the bugs out in time, and turned in a flight of just under three minutes, but Pitcher was evidently underpowered for take-off under the conditions, and had two delayed flights before getting away for a 61·3 seconds official flight. This was unfortunate, as his " competition nerves " built up to an even higher pitch, and in spite of every assistance from the rest of the team and myself, he could not strike his normal form.

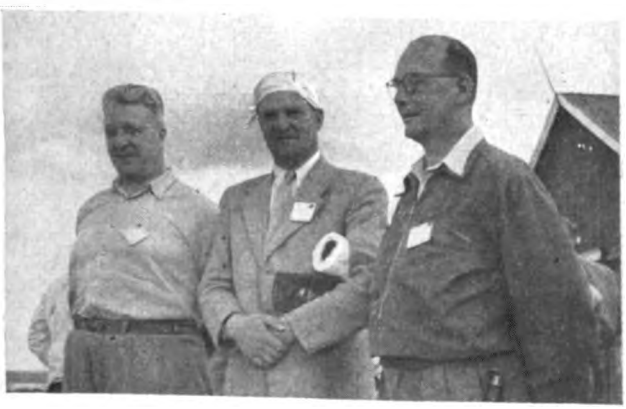
With attention on Evans' take-off, I did not witness Ellilä commence his first flight, but it was very interesting to observe both these " first favourite " models in the air together. Flying characteristics were markedly different, with Evans' machine fairly fast on both climb and glide, Ellilä's stooging around in a slower but extremely stable manner. The very interesting turbulator on Ellilä's wing probably had a lot to do with the stable attitude of the model, and it was almost an impossibility to note the change from power to gliding flight.

Models took off with commendable regularity, and the system of putting the onus on the flier soon made itself felt. Here was no hanging back for better conditions—all knew the time they had in hand, and no one was going to spoil his chances by leaving it too late to take care of emergencies.

Many machines were landing in the trees, and the retrieving gang (a squad of Finnish soldiers equipped with jeeps and ladders) were soon busy answering calls in all languages for assistance. I must here give full credit to the Contest Recorder, A. Sirén, for his linguistic abilities, for he seemed able to cope with all emergencies in any language. I did not discover just how many languages he knows, but I heard him conduct

Top photo shows a general view of the buildings at the Finnish Soaring School at Jämijärvi where competitors were housed. Centre, B. Lindh, Swedish proxy flier, trims for Hansen of New Zealand. Above, a queue at the Processing table—note the sliding scale for checking overall lengths.

Below are: left, Sirén, Contest Recorder, and right, Hagelstam, Contest Director. Right are: centre, Professor Ylinen, President of the Finnish Aeronautical Association, left, Professor Wegelius, Vice-President, and right, Colonel Winter, Secretary General.



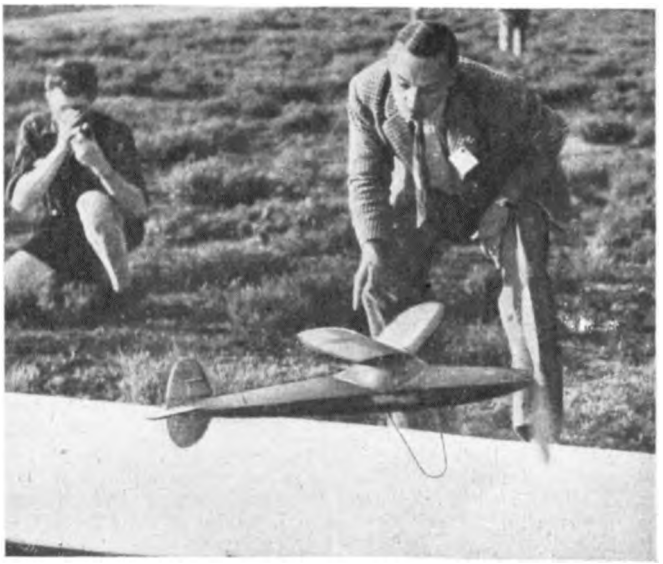
announcements in Finnish, Swedish, French, English and German. At least I was told so—for my part, I wouldn't know!!

The Italians were putting in some creditable times, and Leardi demonstrated that his showing in 1949 was not his usual standard. As the times were chalked up, it was soon seen that Ellilä led the field with a 14 second lead over Leardi, Evans being half a minute behind, probably owing to a certain amount of caution on his first attempt. Seton of Holland and proxy-flown Salisbury (U.S.A.) were very close behind, and it was very evident that a first class fight would develop as time went on.

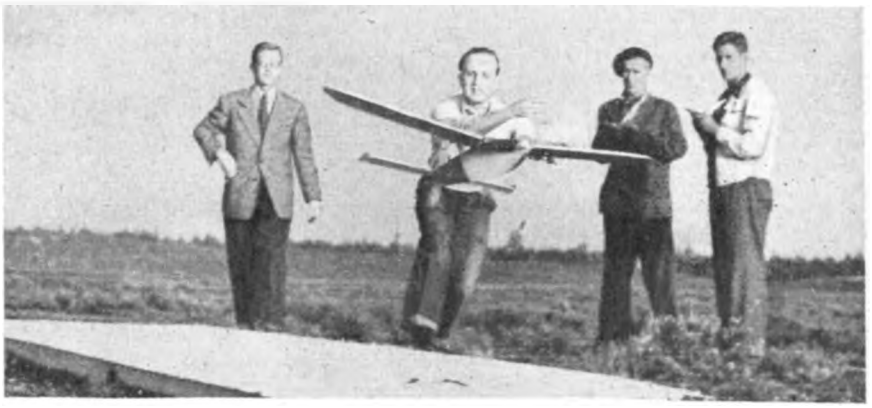
A few models were already out of the contest, for a poor first flight left no chance for a place in the lead with such expert opposition. However, the unexpected can always happen in aeromodelling, and the majority pressed on in the hopes that they could retrieve their fortunes later in the contest.

As will be seen from the Round 1 list, Ellilä managed nearly 4 minutes, as did Leardi. Nine competitors managed over 3 minutes, and nearly a third of the entry clocked over 2 minutes, which was good going under conditions so unfamiliar to the majority of those flying.

And so Round 1 drew to a close, Hagelstam sounding a car horn to announce the end of the round—and that was that. A quarter hour break was given before the start of Round 2, and everyone was very busy readying for their second chance at the Trophy.



Ted Evans appears to be suffering as he releases "Vansteed" on its first flight. As it happened, the model behaved perfectly throughout the contest and made three impeccable flights. Below, Ellilä seen in action during his first take-off. Bottom: left, Gerland of France with his rather unusual Wakefield, and right, S. Relander, one of the Finnish proxy fliers, releases a slabsided Canadian entry belonging to C. A. Ford, who certainly believes in large props, or is it that the undercart is short?



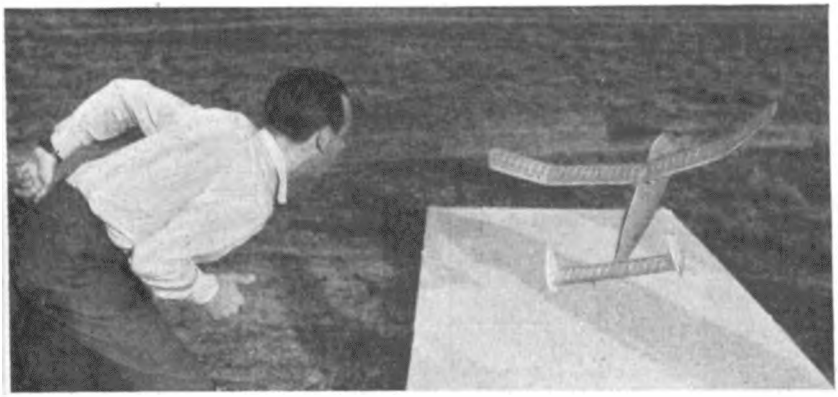
POSITION AT END OF FIRST ROUND

1	Ellilä, A.	Finland	238
2	Leardi, A.	Italy	224
3	Evans, E. W.	Great Britain	209·6
4	Seton, P. W.	Holland	208·5
5	Salisbury, L. L.	U.S.A.	207
6	Blomgren, A.	Sweden	197·5
7	Lustrati, S.	Italy	193
8	Deschepper, P.	Belgium	188·5
9	Bachli, B.	Switzerland	184·1
10	Warring, R. H.	Great Britain	182
11	Stark, S.	Sweden	180·4
12	Fea, G.	Italy	179·6
13	Stevens, H. R.	Great Britain	177·6
14	Sadorin, E.	Italy	176·8
15	Petersen, J.S.	Denmark	173
16	Follet, P.	Belgium	169·6
17	Marsh, B. B.	New Zealand	163·5
18	Morriset, J.	France	158·2
19	Kennedy, D. R.	New Zealand	147·5
20	Joostens, Y.	Belgium	142
21	Adams, F. J.	Great Britain	140
22	Bernard, A.	France	139
23	Bouche, J.	France	137·3
24	Wood, J. H.	Canada	136·1
25	Dijkstra, A.	Holland	135·9
26	Knight, J. B.	Great Britain	135·8
27	Prhavc, J.	Yugoslavia	134·3
28	Bickel, A.	Switzerland	134
29	Dijkstra, G.	Holland	131
30	Johanson, A.	Finland	127
31	Mickelsen, W. R.	U.S.A.	125·7
32	Wannberg, H.	Sweden	118·6
33	Butler, A.	Australia	114·5
34	Eliasson, H.	Sweden	114·2
35	Kapic, D.	Yugoslavia	113·9
36	Beaujean, M.	Belgium	113
37	Schmitt, R. E.	U.S.A.	110
38	Petersen, C. J.	Denmark	108·6
39	Bernfest, S.	Yugoslavia	105·2
40	Waiter, L. J.	Canada	103·5
41	Blomberg, S.	Sweden	102·3
42	Lippens, G.	Belgium	101·5
43	Takagi, F.	U.S.A.	101·1
44	Fresl, E.	Yugoslavia	100·1
45	Bathwaite, F. D.	New Zealand	97·1
46	Haslach, T.	Switzerland	94·9
47	Aubertin, R.	Monaco	91·9
48	Breznikar, R.	Yugoslavia	90
49	Leftwich, A. W.	U.S.A.	78·5
50	Silmunen, T.	Finland	78·1
51	Kivikataja, A.	Finland	78
52	Pitcher, J. L.	Great Britain	61·3
53	Meader, A.	Australia	56·4
54	Ford, C. A.	Canada	49·1
55	Sanatia, L.	Finland	35·5
56	Hakansen, A.	Sweden	33·4
57	Ovrin, H.	Norway	10
58	Gerland, E.	France	5·7
59	Farber, M.	Belgium	3
60	Kannenworff, L.	Italy	2·8
61	Hansen, R.	New Zealand	3·
62	Wallenius, R.	Finland	—
	Maret, R.	Switzerland	—

Left, "Papa" Joostens with son Yves' model which he flew proxy. Centre left, Kannenworf surveys the damage, assisted by Fea. Deurell of Sweden, flying proxy for A. W. Leitwich of U.S.A., gets away very slickly. One of Sweden's top fliers, we saw him in action over here in 1949.

Right, Kivikataja of Finland puts on those last all-important turns.

Right centre, Member of Finnish Army with Walkie Talkie recovery outfit. Bottom photo shows general "pit" scene during the last round.



Above are competitors queuing for their second round flights. There was, of course, a large queue at the beginning of this particular round as most people realised that conditions were rapidly deteriorating, as did indeed prove to be the case. Below, Rushy holds for Pitcher on his second flight with Ted Evans lending a steadying hand on the winder. Bottom, Harry Hundleby, left, and Alec Houlberg, right, find time for a natter in between their bouts of photography.

Round 2—20·45 to 22·15 hours, Saturday, July 22nd.

In response to requests, the take-off area was placed further out from the enclosures, but contrariwise, the slight drift upstairs had now changed direction, and for the second round models were travelling away from instead of towards the official area! However, this made matters easier for all, and though one or two models did get treed, the proportion was much smaller in this round.

In view of the steadily failing light, and generally worsening conditions, there was a long queue at the Recorders' table awaiting the signal for the start of this round, and with the distance to the take-off boards increased, things did not go with quite the swing that was experienced in Round 1. Here again, the advantages of making the contestant instead of the official do the work paid dividends, and it was quite amusing to see flier, helpers and timekeepers running as hard as they could go to get out to the take-off boards! (Incidentally, each man was allowed ten minutes from the time his flight card was handed to his timekeepers to the time he must get his model airborne, hence no time was lost out in front.)

Much consternation was witnessed during Round 2 owing to a steadily thickening mist that rose from the edge of the woods and gradually spread over the ground. Tissue slackened off alarmingly, and I actually saw models streaming with water towards the end of the round! Weight checks were considerably eased in consequence!!

First man off was Stark of Sweden, who improved on his first flight by one second. Morriset (France) was next, and here again first round time was improved upon. Marsh (N.Z.) had the bad luck to ground loop and only scored 6·6 seconds, thus putting paid to his chances—a great pity in view of the consistently high position this fellow has always secured in previous contests.

Adams came unstuck here. In an effort to improve his Round 1 position he wound on more turns than usual, and, though the model appeared to get away well, torque took over and forced the model into a tight right hand spin, and the job piled in after only 6·6 seconds. This was a blow, as his best model with which he won his place in the team was destroyed on the journey back from the Trials to Northampton, and his contest machine was the result of some very hard building and trimming in the short period left between the Trials and the Finnish trip. However damage was not too severe, and he had plenty of time for repairs in readiness for Round 3.

Conditions above the ground mist had apparently improved in a small degree, for Ellilä made a perfect flight to clock 4 : 31·5 which proved to be the top duration in the contest. Evans was now determined to " wind or bust ", and got an extra half minute out of his model, which, with Leardi dropping a similar amount, brought him up into second position some 40 seconds behind Ellilä. Once again, both machines were in the air together, and in spite of the late hour (nearly 10 p.m.)

the light was still good enough to make timekeeping quite easy.

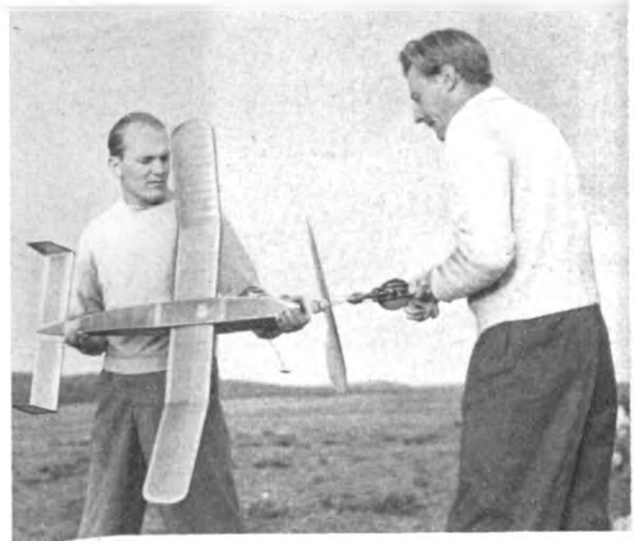
Many good men had dropped in the list by this time, and quite a number were as good as finished. Stevens managed a very good flight to bring him from 13th to 7th place and Knight also had made up six places. Pitcher had a repeat of his Round 1 troubles, but even so, slightly improved on his time, whilst Warring dropped 8 seconds and two places.

Deschepper had trouble this time, and lost 80 seconds from his first round time, but managed to pull back some of his losses later in the contest. Over half the entry scored over the 2 minute mark this round, and it is remarkable to note that again the top times were almost on a par with the first round, though both Ellilä and Evans had considerably boosted their times.

Matters were now reaching something of an anti-climax. Many drifted away with repairs to carry out, and in fact Round 2 ended in something of a fizzle! With most competitors having crowded into the beginning of the period, only a few were left to make their attempts, and when the hooter sounded closing the round, only a mere handful were left at the contest area carrying out last minute jobs. With the last few scores recorded, everyone adjourned to the clubhouse for a very welcome supper and bed.

Yes—bed! With the light now almost gone, the starting time of Round 3 was given as probably 3 a.m., but an announcement would be made after the Jury (Messrs. Houlberg, Dérantz and Hagelstam) had studied the conditions at that hour. With the forecast that it would probably be 4 a.m.

Left, Haslach of Switzerland with his slabsider, and centre, his fellow countryman Bachli, provides a study in concentration. Right, Fea assisted by Lustrati.



Below, winding from the rear is Santala of Finland. Right, Lustrati, assisted by Kannenworf, reaches that critical "unhooking moment" we all know so well. Centre, two large Swedish gentlemen featuring Sune Stark, left, and Blomgren right.

before a start was made, we went to bed for a few hours of badly needed sleep—an experience unique in my aeromodelling career ! !

Cat-napping until 2.30, we were up and out (minus shave !) in good time, only to find that within a very few minutes what light there was had almost disappeared. Reason—a thick, clammy mist that just rolled over the whole field within a matter of minutes and blotted everything out in a pall of cotton wool. The only "clear" spot was the top of the ridge on which the clubhouse was situated, and it was a strange sight to be there and look down on a sea of white mist, the tops of pine trees sticking up here and there for all the world like islands.

Well, there was nothing else to do but wait for conditions to improve, and coffee was served in the clubhouse while we all settled down to wait, bleary eyed and very scruffy looking ! Round-table discussions were soon under way, and so we continued until 4.30 a.m. when it was announced that Round 3 would start at 5 a.m. —if the mist did not return !

POSITION AT END OF SECOND ROUND

			Second Flight	Total.
1	Ellilä, A.	Finland	271·5	509·5
2	Evans, E. W.	Great Britain	232·8	442·4
3	Leardi, A.	Italy	192·1	416·1
4	Seton, P. W.	Holland	200·7	409·2
5	Salisbury, L. L.	U.S.A.	199·2	402·2
6	Blomgren, A.	Sweden	196	393·5
7	Stevens, H. R.	Great Britain	214·1	391·7
8	Bachli, B.	Switzerland	207	391·1
9	Lustrati, S.	Italy	196·5	389·5
10	Sadorin, E.	Italy	192·6	369·4
11	Stark, S.	Sweden	181·2	361·6
12	Warring, R. H.	Great Britain	174·8	356·8
13	Fea, G.	Italy	161	340·6
14	Morriset, J.	France	167·3	325·5
15	Dijkstra, G.	Holland	186·3	317·3
16	Follet, P.	Belgium	146	315·6
17	Kennedy, D. R.	New Zealand	165·2	312·7
18	Deschepper, P.	Belgium	108	296·5
19	Bernard, A.	France	152·1	291·1
20	Knight, J. B.	Great Britain	154·2	290
31	Eliasson, H.	Sweden	169·5	283·7
22	Johanson, A.	Finland	149·6	276·6
23	Haslach, T.	Switzerland	173	267·9
24	Dijkstra, A.	Holland	124·5	260·4
25	Schmitt, R. E.	U.S.A.	142	252
26	Lippens, G.	Belgium	144·1	245·9
27	Fresl, E.	Yugoslavia	137·5	237·6
28	Walter, L. J.	Canada	133	236·5
	Wood, J. H.	Canada	100·4	236·5
29	Butler, A.	Australia	116·3	230·8
30	Wannberg, H.	Sweden	101·8	220·4
31	Kapic, D.	Yugoslavia	105	218·9
32	Takagi, F.	U.S.A.	114·8	215·9
33	Silmunen, T.	Finland	120·1	198.2
34	Brezniker, R.	Yugoslavia	99	189
35	Bernfest, S.	Yugoslavia	79·5	184·7
36	Bathwaite, F. D.	New Zealand	85·9	183
37	Blomberg, S.	Sweden	79	181·3
38	Aubertin, R.	Monaco	87·4	179·3
39	Mickelsen, W. R.	U.S.A.	53	178·7
40	Bickel, A.	Switzerland	40	174
41	Petersen, J. S.	Denmark	—	173
42	Marsh, B. B.	New Zealand	6·8	170·3
43	Joostens, Y	Belgium	9·6	151·6
44	Santala, L.	Finland	117	152·5
45	Adams, F. J.	Great Britain	6·6	146·6
46	Kivikataja, A.	Finland	66·3	144·3
47	Prhavc, J.	Yugoslavia	8·4	142·7
48	Bouche, J.	France	4·4	141·7
49	Pitcher, J. L.	Great Britain	71	132·3
50	Beaujean, M.	Belgium	3·8	116
51	Petersen, C. J.	Denmark	—	108·6
52	Ford, C. A.	Canada	49·1	106·8
53	Ferber, M.	Belgium	101·5	104·5
54	Gerland, E.	France	93	98·7
55	Leftwich, A. W.	U.S.A.	11·5	90
56	Meader, A.	Australia	—	56·4
57	Orvin, H.	Norway	42	52
58	Hakansen, A.	Sweden	11·2	44·6
59	Kannenworff, L.	Italy	—	2·8
60	Hansen, R.	New Zealand	—	·3
61	Wallenius, R.	Finland	—	—
	Maret, R.	Switzerland	—	—

From top to bottom: Leardi is safely away on his last flight. Fresle of Yugoslavia looks anxious. Stevens of England, complete with traditional trilby, makes a real prop and wing tip effort. He did incidentally prove a most consistent flyer and suffered not the least from contest nerves. Silmunen of Finland, who appears to have added forward fin area. Seton of Holland, who won a very well earned fourth place. His model would appear to be a modified "Dick Korda."

Round 3—5 a.m. to 6.30 a.m. on Sunday, July 23rd.

With everybody on the spot, and eager for a return to bed, little time was wasted in starting the final round, and with the last vestiges of mist rapidly disappearing in the bright morning sun, models took off with commendable rapidity.

Criticism of Ellilä's method of launching having been voiced earlier, attention was centred on him for this final flight, but knowing the conditions probably better than anyone else there, he was in no hurry to fly off his remaining flight. Perhaps the British team would have done well to have delayed their starts until towards the end of the period, as conditions were improving steadily, but it is always easy to be wise after the event and they followed out their agreed flight order.

Fea of Italy spoilt his good position here, scoring no points in this final round. However, his team mate Leardi, following a drop in time in Round 2, improved matters to such an extent that he was able to return the top time in Round 3 with a duration of 3 : 48·7, and Stevens with a flight only 2 seconds lower improved his final listing to 5th place.

Ted Evans could not repeat his round 2 effort but was well enough up to retain his 2nd place behind Ellilä, and the other high placemen maintained their earlier efforts to produce little change from Round 2 placings in the final result.

With all eyes on Ellilä, he wound up for his last flight in an atmosphere of tension, but there can be no criticism of his third attempt. With one knee on the ground to prevent his criticised " follow-up " run, the launch was perfect, and away the model went to clock 3 : 42·6 and clinch matters for the second year in succession. Thus for the second time in the history of the Wakefield Trophy one man has won two years in succession, the previous holder being Joe Erhardt of the U.S.A. who won similar honours in 1931 and 1932.

By returning the top time in two of the three rounds, and producing just enough on the third flight to keep ahead of the opposition, Ellilä showed that he has all the skill in designing, building and flying to be duly acknowledged one of, if not the, top men in the rubber driven model field to-day, and his win was accorded all the congratulations he so richly deserved. As Ted Evans, his closest rival said, "Ellilä beat the rest of the field fairly and squarely, and under conditions which produced actual results according to the model and its flyer's abilities".

In my opinion, the winning model could have easily made maximum times under our thermal conditions, and the fact that it could average over four minutes per flight under the handicaps of absolutely dead air and dampness says much for the overall soundness of the design. Many competitors are already seriously studying the application of gears to their next year's entries ! Furthermore, some people were made to realise that the durations they were claiming in " still " air are not achieved in " dead " air.

From top to bottom: View of Control Tower at exactly 03.00 hours. This thick white mist eventually cleared in time for the third round to start at 05.00 hours. An excellent job of proxy flying was done by B. Johansson of Sweden on behalf of L. Salisbury of U.S.A. whose model he flew into sixth place. Another American machine, W. R. Mickelsen's, being made ready here by proxy flyer E. Lumes of Finland. Harold Orvin, the only Norwegian entry, looks somewhat uncomfortable as he performs a long stoop to release his model. Below, Blomgren holds Blomberg winds, and Eliasson ties a broken strand.

Meantime, Warring had improved in times to bring him back into 10th place (similar to the position he held last year) and both Knight and Pitcher produced their best flights of the contest after installing more powerful motors. Adams, after spending a long session during the night in repairing produced a flight only just below his first attempt with the model in new condition, and all round the British team did themselves full credit under completely unaccustomed conditions.

With the rest of the field straggling along behind the winners, proceedings drew to a close at 6.30 a.m. prompt, and everyone aimed straight for breakfast and more bed !

So ended one of the most interesting Wakefield's I have had the pleasure of attending, and though the " night-flying " was strange to many of us, the experiment was extremely interesting, and has a great deal to be said in its favour. Naturally, there are objections to its use, but there is no doubt that as a means of finding the very best model, ease of conducting the contest (with no worries with men away looking for lost models and being missing for hours at a time) and last but not least the novelty of the experience, this type of contest flying has much in its favour.

Proceedings officially ended with an informal banquet, at which a minimum of speeches preceded the presentation of the Trophy to Ellilä by our own Mr. A. F. Houlberg, who heartily congratulated the winner on his great feat.

The top six men were presented with some extremely fine specimens of Finnish glassware, suitably engraved with details of the event, and I am sure they will serve for many years to remind them of the 1950 Wakefield contest.

A special award went to Ellilä, this being a gold wrist watch donated by Pan American Airlines, and it is not to be wondered at that Aarne appeared somewhat bewildered by the time he was freed to sit down and sustain the inner man!

Much was the chatter, and many doodlings appeared on the tablecloths during the meal, and the evening finished up with dancing in one of the workshops, partners having been brought in from surrounding villages and brightening up the proceedings with their very attractive national costumes.

With final details concluded, departure was made the following morning by bus for Tamperé, where the party was entertained to lunch by members of the local Aero Club, after which train was taken for Helsinki, where we arrived at 5.30 p.m. Thence by plane next morning for Stockholm, being the first stage of our journey to Göthenburg for the A/2 Glider meeting a week later.

Thus ended a memorable meeting. The standard of flying was very good, accommodation was adequate and comfortable, and the detail work evident in our Finnish friends' system of welcoming and seeing visitors through all the difficulties met in foreign travel, could not be excelled. Truly a great meeting.

These three photos show the winding technique of the winners. Ellilä, top, fits his prop after winding by means of press studs, and uses a substantial looking drill. Leardi, centre, appears to be taking things comfortably, whilst Ted Evans would appear to be putting a lot of beef into his effort.

Extreme left shows Ellilä's final launch which is certainly of the copybook type. Above, A. F. Houlberg, President of the model section of the F.A.I. and Chairman of our own S.M.A.E., offers congratulations to the winner. Right, Ellilä with the most famous of all Trophies. In the background on the right Arnold Degen, Swiss team leader, displays that new moustache to its fullest advantage! On the left is Colonel Winter of the Finnish Aero Club.

FINAL RESULTS

			Third Flight	Total
1	ELLILÄ, A.	Finland	222·6	732·1
2	EVANS, E. W.	Great Britain	217·6	660
3	LEARDI, A.	Italy	228·7	644·8
4	Seton, P. W.	Holland	210·4	619·6
5	Stevens, H. R.	Great Britain	226·7	618·4
6	Salisbury, L. L.	U.S.A.	199·8	606
7	Lustrati, S.	Italy	208·2	597·7
8	Bachli, B.	Switzerland	206	597·1
9	Sadorin, E.	Italy	204	573·4
10	Warring, R. H.	Great Britain	196·9	553·7
11	Blomgren, A.	Sweden	155·1	548·6
12	Stark, S.	Sweden	169·6	531·2
13	Dijkstra, G.	Holland	177	494·3
14	Knight, J. B.	Great Britain	201·2	491·2
15	Follet, P.	Belgium	168·5	484·1
16	Morriset, J.	France	141·2	466·7
17	Deschepper, P.	Belgium	166·5	463
18	Dijkstra, A.	Holland	159·8	420·2
19	Schmitt, R. E.	U.S.A.	167	419
20	Fresl, E.	Yugoslavia	180	417·6
21	Barnard, A.	France	124·4	415·5
22	Lippens, G.	Belgium	160·4	406
23	Eliasson, H.	Sweden	115·8	399·5
24	Haslach, T.	Switzerland	115·1	383
25	Fea, G.	Italy	—	340·6
26	Wood, J. H.	Canada	103·1	339·6
27	Silmunen, T.	Finland	132·7	330·9
28	Butler, A.	Australia	99·3	330·1
29	Takagi, F.	U.S.A.	112·7	328·6
30	Kapic, D.	Yugoslavia	104·5	323·4
31	Walter, L. J.	Canada	82·9	319·4
32	Brezniker, R.	Yugoslavia	129·8	318·8
33	Blomberg, S.	Sweden	135·5	316·8
34	Wannberg, H.	Sweden	96	316·4
35	Kennedy, D. R.	New Zealand	—	312·7
36	Johanson, A.	Finland	11·5	288·1
37	Adams, F. J.	Great Britain	134·2	280·8
38	Pitcher, J. L.	Great Britain	148	280·3
39	Bathwaite, F. D.	New Zealand	82·5	265·5
40	Bickel, A.	Switzerland	86·6	260·6
41	Bouche, J.	France	111	252·7
42	Marsh, B. B.	New Zealand	73·9	244·2
43	Bernfest, S.	Yugoslavia	58	242·7
44	Kivikataja, A.	Finland	91·8	236·1
45	Mickelsen, W. R.	U.S.A.	56·2	234·9
46	Gerland, E.	France	134·2	232·9
47	Aubertin, R.	Monaco	28·7	208
48	Prhavc, J.	Yugoslavia	52	194·7
49	Petersen, J. S.	Denmark	—	173
50	Santala, L.	Finland	11·8	164·3
51	Orvin, H.	Norway	111·2	163·2
52	Leftwich, A. W.	U.S.A.	72·5	162·5
53	Hakansen, A.	Sweden	112	156·6
54	Joosten,s Y.	Belgium	—	151·6
55	Ford, C. A.	Canada	17·4	124·2
56	Beaujean, M.	Belgium	3·8	119·8
57	Farber, M.	Belgium	12·5	117
58	Petersen, C. J.	Denmark	—	108·6
59	Meader, A.	Australia	—	56·4
60	Kannenworff, L.	Italy	—	2·8
61	Hansen, R.	New Zealand	—	·3
62	Wallenius, R.	Finland	—	—
	Maret, R.	Switzerland	—	—

DETAILED RESULTS

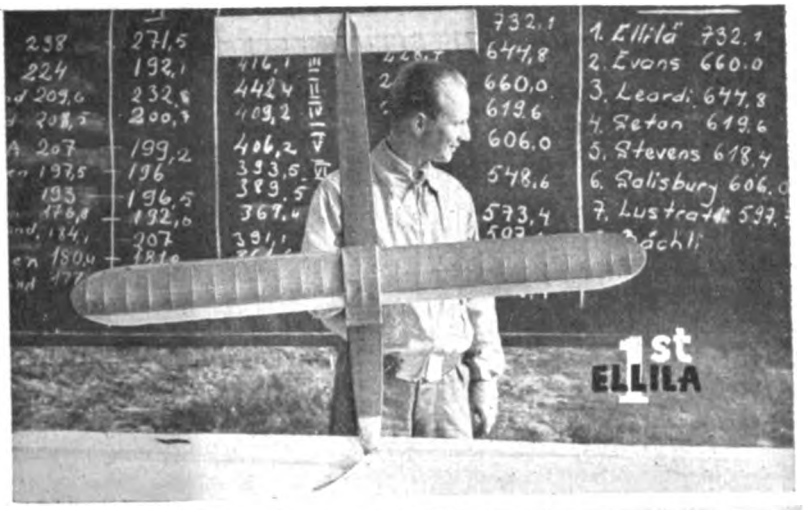
		II	III	Total	Place
Australia					
A. Butler (K. Vuoripalo)	114·5	116·3	93·3	324·1	29
A. Meader (J. Salonen)	56·4	—	—	56·4	59
Belgium					
P. Follet	169·6	146	168·5	484·1	15
P. Deschepper	188·5	108	166·5	463	17
G. Lippens	101·5	144·1	160·4	406	22
Y. Joostens (G. Joostens)	142	9·6	—	151·6	54
M. Beaujean	113	03	3·8	119·8	56
M. Farber	3	101·5	12·5	117	57
Canada					
J. H. Wood (R. Andersson)	136·1	100·4	103·1	339·6	26
L. J. Walter (L. Kalervo)	103·5	133	82·9	319·4	31
C. A. Ford (S. Relander)	49·1	57·7	17·4	124·2	55
Denmark					
J. S. Petersen	173	—	—	173	49
C. J. Petersen (T. Pulkkinen)	108·6	—	—	018·6	58
Finland					
A. Ellilä	238	271·5	222·6	732·1	1
T. Silmunen	78·1	120·1	132·7	330·9	27
A. Johanson	127	149·6	11·5	288·1	36
A. Kivikataja	78	66·3	91·8	236·1	44
L. Santala	35·5	117	11·8	164·3	50
R. Wallenius	—	—	—	—	62
France					
J. Morisset	158·2	167·3	141·2	466·7	16
A. Bernard	139	152·1	124·4	415·5	21
J. Bouche	137·3	4·4	111	252·7	41
E. Garland	5·7	93	134·2	232·9	46
Great Britain					
F. W. Evans	209·6	232·8	217·6	660	2
H. R. Stevens	177·6	214·1	226·7	618·4	5
R. H. Warring	182	174·8	196·9	553·7	10
J. B. Knight	135·8	154·2	201·2	491·2	14
I. J. Adams	140	6·6	134·2	280·8	37
J. L. Pitcher	61·3	71	148	280.3	38
Holland					
P. W. Seton	208·5	200·7	210·4	619·6	4
G. Dijkstra	131	186·3	177	494·3	13
A. Dijkstra	135·9	124·5	159·8	420·2	18

		II	III	Total	Place
Italy					
A. Leardi	224	192·1	228·7	644·8	3
S. Lustrati	193	196·5	208·2	597·7	7
E. Sadorin	176·8	192·6	204	573·4	9
G. Fea	179·6	161	—	340·6	25
L. Kanneworff	2·8	—	—	2·8	60
Monaco					
R. Aubertin (P. Huhtinen)	91·9	87·4	28·7	208	47
New Zealand					
D. R. Kennedy (L. Segerfeldt)	174·5	165·2	—	312·7	35
F. D. Bathwaite (K. Savolainen)	97·1	85·9	82·5	265·5	39
B. B. Marah (S. Sandberg)	163·5	06·8	73·9	244·2	42
R. Hansen (B. Lindh)	03	—	—	0·3	61
Norway					
H. Orvin	10	42	111·2	163·2	51
Swe den					
A. Blomgren	197·5	196	155·1	548·6	11
S. Stark	180·4	181·2	169·6	531·2	12
H. Eliasson	114·2	169·5	115·8	399·5	23
S. Blomberg	102·3	79	135·5	316·8	33
H. Wannberg	118·6	101·8	96	316·4	34
A. Hakanson	33·4	11·2	112	156·6	53
Switzerland					
B. Bachli	184·1	207	206	597·1	8
T. Haslach	94·9	173	115·1	383	24
A. Bickel	134	40	86·6	260	40
R. Maret	—	—	—	—	62
U.S.A.					
L. I. Salisbury (B. Johansson)	207	199·2	199·8	606	6
R. G. Schmitt (U. Hokkanen)	110	142·8	167	419	19
F. Takagi (H. Spring)	101·1	114	112·7	328·6	28
W. R. Mickelsen (E. Lumes)	125·7	53	56·2	234·9	45
A. W. Leitwich (A. Deurall)	78·5	11·5	72·5	162·5	52
Yugoslavia					
E. Fresl	100·1	137·5	180	417·6	20
D. Kaplc (E. Fresl)	113·9	105	104·5	323·4	30
R. Breznikar	90	99	129·8	318·8	32
S. Bernfest	105·2	79·5	58	242·7	43
J. Prhavc	134·3	8·4	52	194·7	48

(Names in parenthesis—Proxy Fliers.)

TOP TRIO

A REVIEW OF THE TOP THREE WAKEFIELD MEN, NOT FORGETTING THEIR MACHINES.



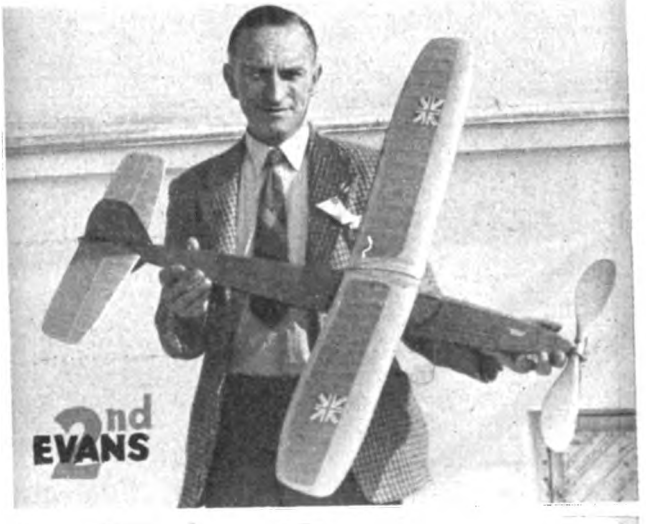
FOR a man who was unheard of in model aeronautics until two years ago, Arne Ellilä has reason to be proud. In two successive seasons, under first of all, English weather at its worst, and then absolutely non-thermal conditions in his own country, he has beaten fairly and squarely the best of the World's Wakefield fliers.

When this flying Finn pulled it off at Cranfield in 1949, the general reaction was that anything could happen under such appalling conditions, and there were many who took his win as being a mere flash in the pan. That it was not so he has proved beyond all doubt, for the conditions prevailing at Jamijarvi were an absolute test of both men and machines under conditions that eliminated any element of luck.

Ellilä, a quiet and earnest young man of some 27 years, was born at Mantta in central Finland and has been modelling for 15 years. He holds an International Certificate for full-sized gliding, and is by profession a Research Chemist at the University of Helsinki. He is a strong advocate of the principle that all major contests should be held under absolutely non-thermal conditions, and does, in fact, only fly himself when such conditions prevail.

So much for Ellilä, and now for his machine. At first glance it would appear to be very similar to his 1949 model, but a close study reveals several differences, most of them improvements. One of the most unusual features is, of course, the turbulator. Ellilä would not claim any improved performance from this device, but stated that it definitely improved stability. The wing is further back than the 1949 version and the angle of incidence has been increased. His wing section was designed, so he assured us, by cutting it by eye from a piece of plywood! The fuselage is wider at the rear and of Warren girder construction, the airscrew increased in diameter, and the fin area decreased. 20 m.m. brass gears are again used and drilled for lightness. His motor run was, as near as one could estimate from flight performance, approximately 120 seconds, which can be compared with Ted Evans' 75 seconds. As a matter of interest a-weight-of-rubber to total-flying-weight ratio was calculated for both Evans' and Ellilä's models, and there was a difference of ·04 in Ellilä's favour. He uses, incidentally, 14 strands of ¼ Dunlop and managed 1,200 turns for the first time at the contest.

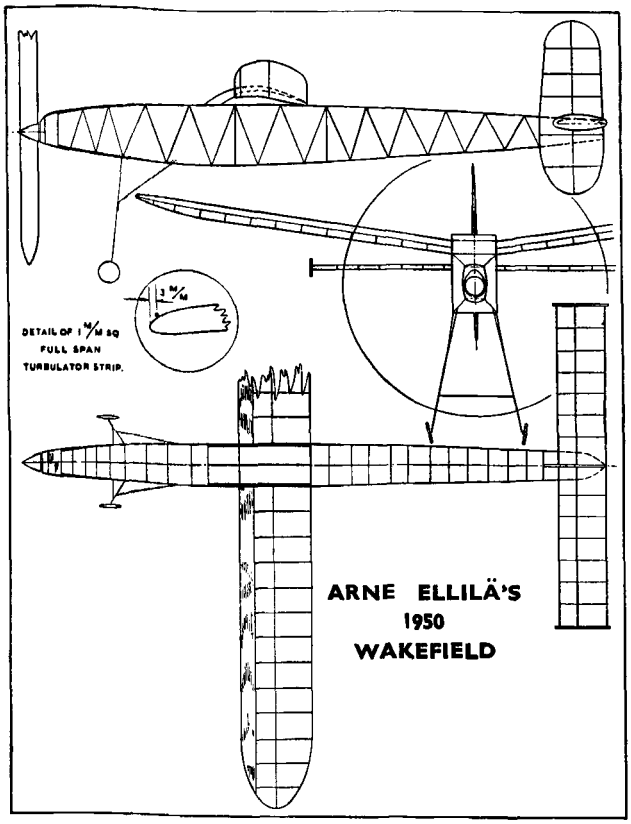
Finally we would quote the answer given to us by Ellilä and his friends when we enquired as to the reasons for his success :—"Careful preparation and accurate trimming *under conditions similar to that experienced at the Contest*".

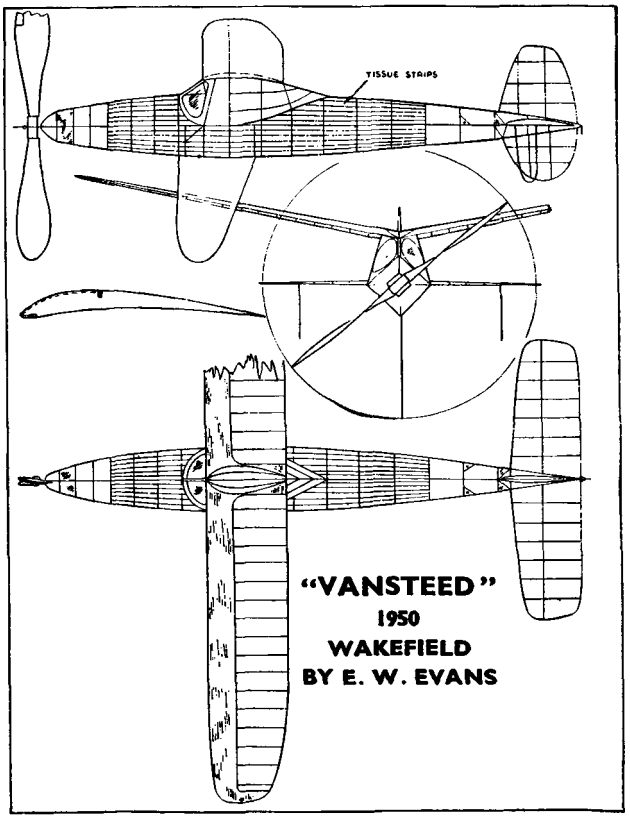


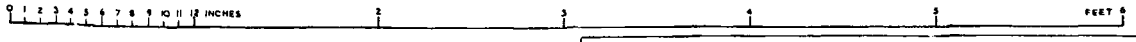
Ted Evans is well known to us all and hardly needs introduction. Designer of the famous "Jaguar", not to mention the "Clipper", which followed in succession, he is probably one of the finest Wakefield builders in the world. His models are built with meticulous care and reach a standard of construction and finish which few can equal.

Ted is 45 years of age, has been modelling for 30 years, and does, in fact, run a thriving model shop in Northampton. He is married and has two boys who, we trust, are following in father's footsteps.

"Vansteed", like most of his designs, is not just an improved version of its forerunner. He does not go on modifying and improving existing designs, but starts afresh each year, using the experience and data gleaned from the previous season's models. He has a weakness for cabins and builds







down to only a fraction of an ounce above the minimum 8 ounces. The most unusual feature on "Vansteed" is the feathering prop, described in detail in our last issue. Another is the strips of tissue laid lengthways along the fuselage to prevent the covering shattering. One new feature is the Benedek wing section, which appears to be No. 8356B. There is no provision for trimming on the model whatsoever, as careful design and accurate building eliminate the need. Power is supplied by either 20 strands of $\frac{1}{4} \times 1/30$ or 15 strands of $\frac{1}{4} \times 1/24$, both of which take 870 turns.

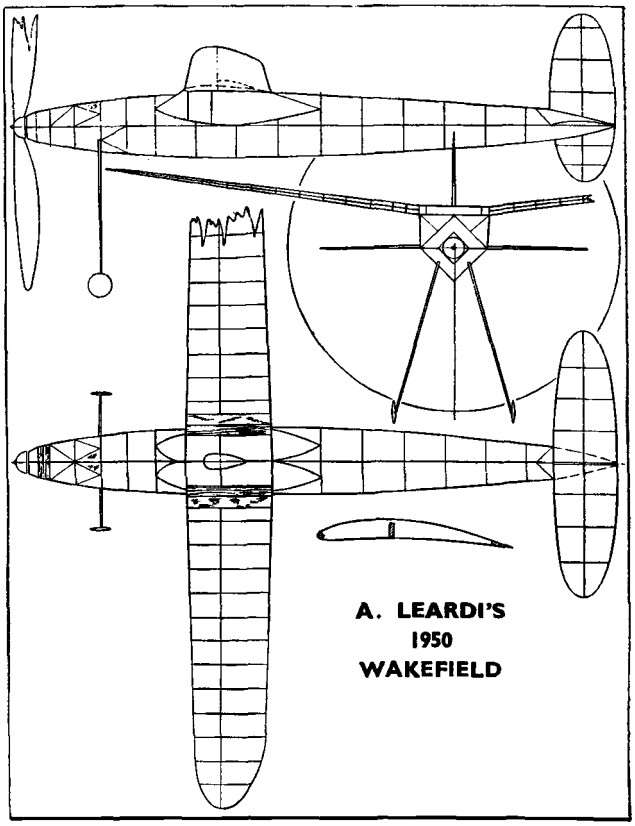
At the conclusion of the Contest, Ted confirmed our own opinion that "Vansteed" was trimmed and flown to its limit, and that no more could be expected of it. This means, in view of Ellilä's performance, yet another Evans design for 1951, and we would not be at all surprised if it included gears!

Leardi of Italy made up for his disappointing performance in the 1949 Wakefield in no uncertain fashion, and thereby justified his place in the Italian team.

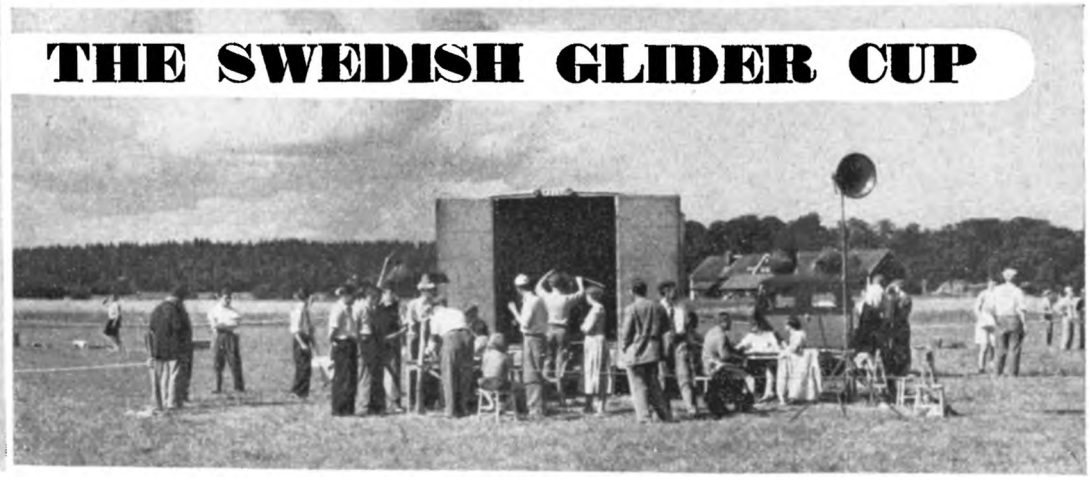
Hailing from Milan, he is the same age as Evans, and has the same number of children. He is a member of the C.A.M. (Centro Aeromodellissimo, Milano), has been modelling for 23 years and is by profession a freelance commercial pilot. He does not believe in gears, in spite of Ellilä, and feels that the latter gentleman's performance can be bettered by other means which our limited Italian vocabulary failed to cope with.

His model is fairly orthodox in appearance, apart from the peculiar cabin-cum-wing fairing arrangement. He obtains a maximum of 1,200 turns on his 3·7 ounce Pirelli motor, which consists of 12 strands of 6 m.m. × 1 m.m. Wing section is the well-known N.A.C.A. 6409, and unlike the other two top men, Leardi uses a bamboo undercarriage. A tip-up tail, fuse-operated, D.T. is used, similar to Evans', and the total all-up weight of the model is 8·44 ounces.

So much for the top trio and their models. We can but now speculate as to what next year will bring, especially if the contest is again held under the same dead-air conditions. A spate of geared machines? ? ? ? Who knows? ? ? ?



THE SWEDISH GLIDER CUP



Left is the trophy itself, one of the most beautifully designed cups we have seen. Above is a general view of the control point. The Gota Canal runs just in front of the trees in the background.

WITH the conclusion of the Wakefield event, next in our Scandinavian itinerary came the International Glider Contest in Sweden, and as this was due to take place a week later at Trollhättan, some fifty miles north of Gothenburg, we took the opportunity of a couple of days in Stockholm before setting out on the 360 mile return trip across Sweden to the West coast. (I have no intention of deputising for the usual travel bureau, but I can heartily recommend a stay in Stockholm with its beautiful surroundings and extremely interesting buildings.)

Eight countries were represented in this, the first really international model glider event to be held, and I have no doubt that future years will see a much greater participation now that the A/2 class of model is accepted for World Championship purposes. France and Belgium were also to have had teams on hand, but difficulties connected with their return travel from Finland did not allow time enough for the side-track to Sweden, and the promised Italian entries were also missing on July 30th.

Visitors were welcomed on the 28th, and were accommodated at the Skåtas Camp, one of a series of special cantonments set up for the conduct of skiing schools during the winter. These camps are excellent for the purpose, and Skåtas comprised a number of wooden chalets ranged around a square, with a communal dining-cum-recreation hall to one side. The nearby location of a lake for swimming completed the picture, a final touch of colour being the flying of flags of the competing countries as can be seen in the photograph below.

Saturday was free, and modellers adjourned to nearby Gothenburg for a bite of lunch (which on an average takes two hours to consume !) and a tour of the shops—only to find that Saturday was early closing day, and very few managed to make their souvenir purchases before the deadline of 3 p.m.

Official affairs got under way during Saturday evening, when the teams and visitors were entertained to " beer and snacks ". This event was on typical Swedish scale, and the boys were left wondering where they would have put all the grub if they had been invited to dinner instead of " just a snack ". Fraternisation was the keynote of the evening, and many interesting discussions took place in many tongues. Fortunately most of the local lads spoke some English, which was fortunate for us, our Swedish progressing little beyond " please " and " thank you ".

Team managers were briefed on contest requirements, and supplied with numbered linen squares for their team members. Contest equipment was very complete, and in practice the whole affair ran extremely smoothly, due largely to the carefully thought out preliminary details.

Sunday, the day of the contest, dawned fine and bright, and two coaches were quickly loaded up with models and modellers, and headed for the airfield at Trollhättan. A very pleasant run through an extensive valley brought us to the field, which is a grass 'drome comparable in size to Cranfield, and with flat open country extending for miles in all directions, which made model recovery reasonable. The famous Göta Canal running across one side of the field, caused little trouble, and I believe only two models required the attention of the " water-borne service ", two small boats placed at strategic points being just another indication of careful planning.

Enclosures, P/A equipment, and other features were quickly erected, and the contest got under way promptly at 10 a.m., unfortunately without one of the Danish models, which disappeared into the blue whilst on a test flight.

With all team managers guaranteeing that their models complied with the formulæ, machines were merely check weighed before each round, and the flow of competitors through the control centre was steady and orderly. One very interesting piece of equipment was that supplied to the selected group of timekeepers, and comprised a shaped board somewhat on artists' palette lines, with stop-watch enclosed in a case, and a spring clip for holding cards, papers, etc. Further shaped to the body, this inexpensive gadget is well worth copying, and proved most useful and comfortable in use.

All models were built to a high standard, with the accent on pod and boom types. Schioll of Norway had an interesting trio of twin boom jobs that proved quite effective in flight, but probably the most interesting (and best constructed) model was that of Danish Høst-Aaris, a veteran of some 70 summers. His model employed a fuselage of diamond section merging into a fully streamlined front portion, and an evenly tapered wing using an almost transparent covering. A plunger

type timer located in the nose operated a push-off release for the tip-up tail, making positive resetting an easy task.

Most models used a fairly high aspect ratio mainplane, with tip dihedral almost universal. Silmunen's model was a fine example of careful workmanship, the fuselage consisting mainly of a single sheet of ·04 m.m. 3-ply shaped around formers, with a solid pine nosepiece. This machine made the top duration of the day, being lost to sight after 18 min. 3 secs.

Timed to last from 10 a.m. to 12 noon, the first round went smoothly into action, and it was soon apparent that we in England have a lot to learn when it comes to launching technique. The British models were as well constructed as the majority, and from a design point of view we were not too far behind, but the way some of the more experienced Scandinavian fliers got their models right up on the line made us scratch our heads! Investigations showed that a number were using light nylon lines, but the best launches were undoubtedly those employing a fine steel wire similar to the normal control-line material.

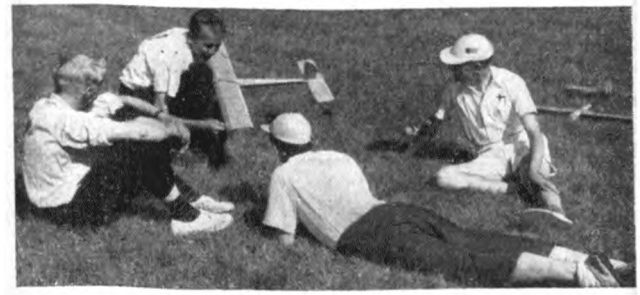
We were told that it takes practice to properly use the steel wire, but once the knack has been acquired it is possible to actually feel the action of thermal lift on the model itself! This undoubtedly accounted for some of the perfect launches after the model had been played on the line for some minutes.

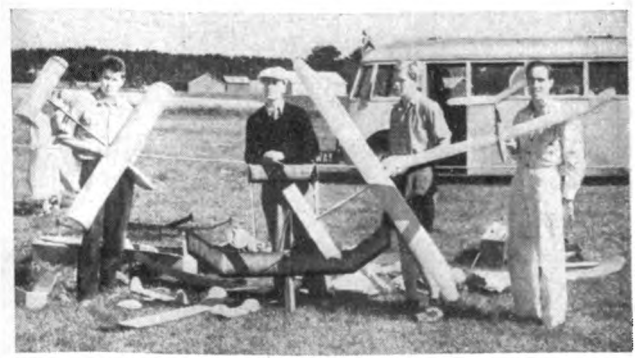
Models were filling the sky, and it soon became obvious that plenty of thermals were about, for models were passing out of sight into the heat haze with great consistency. With only four flights to get in during the two-hour period, each team had plenty of time to sort itself out, and Manager Gosling used a draw system to decide who should be first man off in the British team. This honour fell to Hanson, who made a good launch but unfortunately into a downdraught which forced his model down after only 65 seconds. (Here again the " feel " of a model on the line is something to be cultivated, for it is well known that for every thermal there is a corresponding downward current somewhere, and this factor eventually led to the defeat of the British effort, of which more anon.)

Finland and Sweden were soon fighting it out neck and neck, with three members in each team getting maximum flights of 6 minutes each. Ragnar Odenman of Sweden (who placed top in their eliminators with three maximum flights) was regarded as the chief threat, but his team-mate Persson clocked a higher time, as also did Bernfest of Yugoslavia.

Second man off in the British team was Bennett of Yeovil, and here our morale started to hit the upgrade. Following an average good launch, his model started to sink fairly fast, and we were resigned to another low time, when the model caught a weak thermal which took it up to a fair height and drifted the job away to be eventually lost after clocking 7 : 37.

Hinks came next, but his model was out of trim following a shaking up in transit, and with slight over-elevation and not enough turn, the model stalled around for 2 : 46 finally landing quite close to the take-off spot. Bootland also could

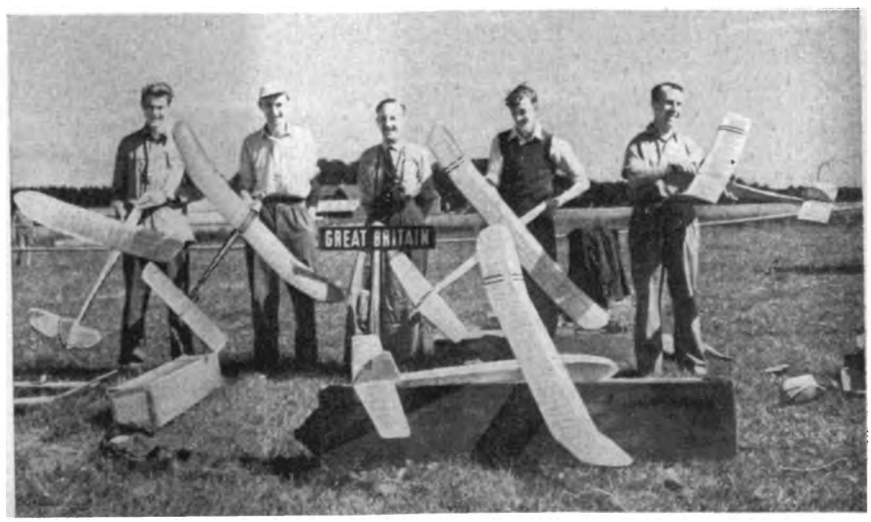


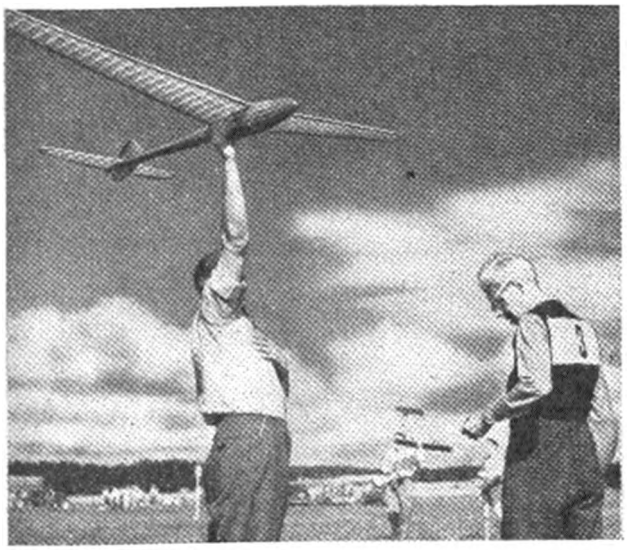


Top we have the Swedish team, Odenman who placed second in the contest being on the extreme right. Centre, the Finns find time for a comfortable canfab on the grass, and above, the Norwegians display a varied selection of models. The line up below needs no introduction. Bennett, the baby of the team, who put up the best performance is on the left, followed by Hanson, Gosling, Bootland and Hinks.

ROUND I POSITIONS

1.	Silmunen	Finland	360	(1083)
	Bernfest	Yugoslavia	,,	(717)
	Santala	Finland	,,	(707)
	Wallenius	Finland	,,	(637)
	Persson	Sweden	,,	(601)
	Odenman	Sweden	,,	(560)
	Hansen, A.	Denmark	,,	(486)
	Bennett	G.B.	,,	(457)
	Sandberg, K.	Sweden	,,	(387)
2.	Hagen	Norway	323	
3.	Schioll	Norway	295	
4.	Davis	Monaco	290	
5.	Prhave	Yugoslavia	283	
6.	Spring	Finland	203	
7.	Hinks	G.B.	166	
8.	Host-Aaris	Denmark	165	
9.	Lauridsen	Denmark	160	
10.	Bickel	Switzerland	158	
11.	Sandberg	Sweden	138	
12.	Freel	Yugoslavia	135	
13.	Hansen, B.	Denmark	131	
14.	Bootland	G.B.	122	
15.	Bachli	Switzerland	97	
16	Marat	Switzerland	87	
17.	Meibach	Norway	81	
18.	Antonsen	Norway	75	
19.	Haslach	Switzerland	71	
20.	Hanson	G.B.	65	
21.	Juresa	Yugoslavia	22	





not get normal flight from his model, and only just topped the two minute mark, so Bennett appeared to be our sole hope.

With Davis of Croydon forming a one-man Monaco team (presumably a " country member ") he was able to " manage " himself with no difficulty, and turned in a flight of 4 : 50. Meanwhile, others were pressing on, and no less than nine maximum scores were recorded for the first round, which finished half an hour ahead of schedule.

With models put away in a huge furniture van, and guarded with due care, the meeting adjourned for lunch in the nearby town of Trollhättan where a very tasty meal was disposed of with little delay, and a return was made for tackling Round 2.

The sun still blazed, and competitors were raring to go. In fact, Bernfest was out all ready for take-off well before the starting time of 1.30 p.m. and quickly launched as soon as the starting whistle went. However, conditions were apparently not quite as good as before lunch, and his model missed maximum to clock 3 : 20 in a series of slight stalls.

Hansen of Denmark turned in what proved to be the top time in this round, his perfect launch giving him the benefit of a good thermal flight of 10 : 37, and Odenman (Sweden) just qualified for the double with a nicely judged flight of 6 : 10. It was in this round that the Finns came unstuck, for the best time they could manage was Wallenius's 3 minutes, Silmunen having trouble with what was obviously a second string model, his first having been lost on the first round.

With our attention centred on Bennett, some of the second round flights were missed, but we were able to notice Hanson's improvement on his first round flight, though both Hinks and Bootland returned poorer times than at the first try.

It soon became apparent that a number of the top class men were coming up against troubles, and our own hopes were somewhat dashed when we learnt that Bennett's reserve model was practically untested, and furthermore had no D/T equipment. However, a handkerchief having been pressed into service as an emergency parachute, and suitable fuses fitted, he went out for his attempt with our sincere good wishes, but I must admit with little real hope in our hearts.

In a few minutes, we were raised from the depths to sublime optimism, for following a near-perfect launch the model struck a riser and circled perfectly well within sight for a flight of 6 : 48, the model answering well to the makeshift D/T and coming down within easy reach of the airfield.

This put a different aspect on British hopes with a vengeance ! With the end of the round duly signalled, a quick check-up on times showed that Hansen, Bennett and Odenman had made best times in Round 2, and were level in the lead with two maximums each. Bernfest was next with a total fairly well below that of the top three men, and it all depended now on whether or not a triple maximum could be achieved.

Top photo shows one of the most outstanding models in the contest, designed by Host Aaris, who is on the right. Above, Fresle of Yugoslavia has his model processed by F. Karlsson. He, incidentally, uses a tip up tail D.T. operated by a pneumatic timer in the nose.

The photographs below amply demonstrate the way the Continental and Scandinavian fliers get their models directly overhead before casting off. The launchers are from left to right : Maret of Switzerland, Hagen the 1949 Norwegian Champion, and one of the Danish team members whose name we do not know.

ROUND 2 POSITION

				Total
1.	Hansen, A.	Denmark	637	720
	Bennett	G.B.	408	"
	Odenman	Sweden	370	"
2.	Bernfest	Yugoslavia	200	560
3.	Hagen	Norway	226	549
4.	Wallenius	Finland	180	540
5.	Santala	Finland	125	485
6.	Persson	Sweden	113	473
7.	Schioll	Norway	165	460
8.	Silmunen	Finland	91	451
9.	Host-Aaris	Denmark	256	421
10.	Sandberg, K.	Sweden	48	408
11.	Davis	Monaco	71	361
12.	Maret	Switzerland	244	331
13.	Sandberg, S.	Sweden	190	328
14.	Spring	Finland	111	314
15.	Prhavc	Yugoslavia	14	297
16.	Hansen	Denmark	158	289
17.	Haslach	Switzerland	214	285
18.	Hinks	G.B.	110	276
19.	Molbach	Norway	162	243
20.	Fresl	Yugoslavia	91	226
21.	Bickel	Switzerland	66	224
22.	Bootland	G.B.	98	220
	Hanson	G.B.	155	220
23.	Lauridsen	Denmark	59	219
24.	Antonsen	Norway	60	135
25.	Bachli	Switzerland	—	97
26.	Jureas	Yugoslavia	—	22

It was during this round that the entry of Juresa (Yugoslavia) was disqualified when it was discovered that his team-leader had launched the model, presumably owing to a misunderstanding of the rules. Bachli of Switzerland had not recovered his model, and having no reserve had to drop out of the contest.

Round 3 following immediately with no interval, matters reached something of an anti-climax, at any rate for the first hour. Attention was naturally riveted on the three leaders at Round 2, and much consternation was witnessed in the Danish camp when Arne Hansen could only get 2 : 27 from his model as a final effort.

With Hansen (almost) out of the running, all eyes were on Odenman when he went out, and with his reputation and showing in preliminary events Swedish hopes ran high. However, once again conditions played havoc with optimism, and here again a top man made his poorest flight in the contest, his time being 3 : 03.

Plenty of models were taking the air, the old axiom that " a contest is never won until the last flight " being well in the minds of many of the " also-rans ". Lauridsen (Denmark) pulled something out of the bag and scored 13 : 15, but was too far behind with his first two flights to become a serious threat. Persson and K. Sandberg also scored maximums on this round, but their totals were still lower than team-mate Odenman's.

Then Bernfest raked in a maximum, which with his second flight being higher than Odenman's third, placed him in the lead, and it now remained to see whether Bennett could score more than 3 : 20 to head the Yugoslavian.

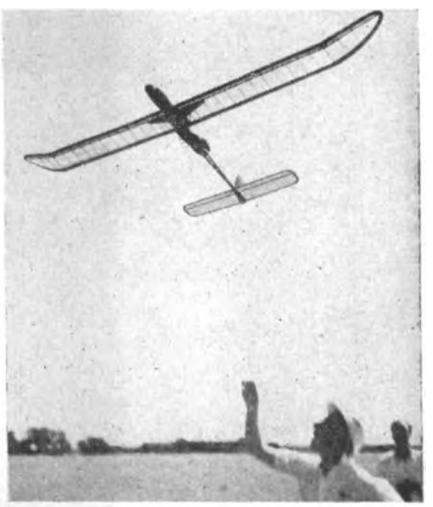
You can imagine the tension in the British enclosure as all hands turned to to help Bennett ready for his last effort ! Naturally, he would have preferred to use his No. 1 model, but this was still missing, and the performance of his second string maintained hopes as he went through the control check and out onto the take-off area.

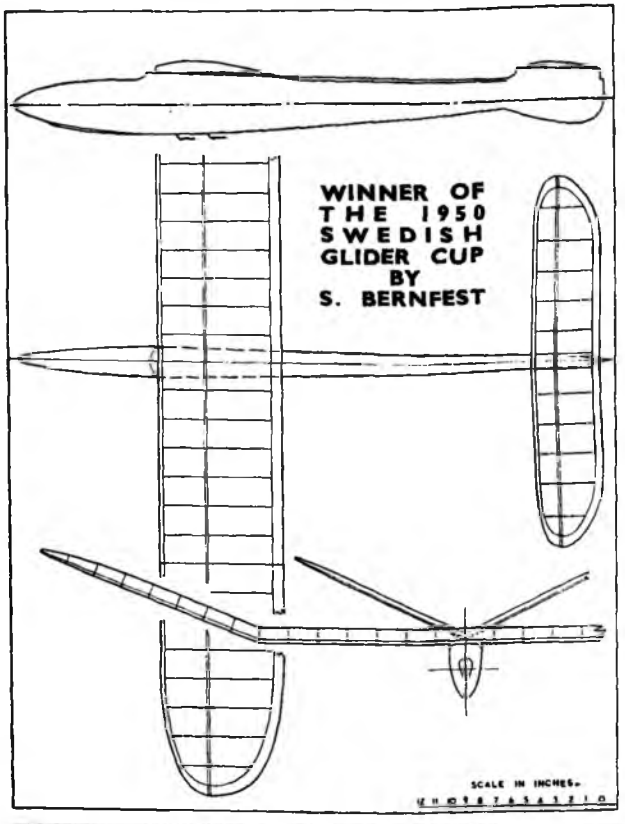
Here possibly a better knowledge of met. conditions may have helped, for the slight breeze that had been blowing before had completely died out, and the launch was made in a flat calm. In spite of yeoman efforts, Bennett could not get the height attained on previous attempts, and the model took off eventually into dead air, and slowly sank to score only 62 seconds. So near—and yet so far ! !

The state of the score board showed that Bernfest could not now be beaten, and he was immediately the centre of a shower of congratulatory competitors, with photographers and newsmen trying to get a flying wedge to the beaming winner. The remaining flights were ignored by all but the actual fliers, and so ended the first of what I sincerely trust will be many Glider Contests of a like nature. There is something so easy-going and calm about a glider contest—no noise of screaming motors, no flinching sounds of rubber motors parting and rending fuselages in the process !

Finland having struck trouble after the First Round,

Top we have Schioll of Norway with his collection of twin boom sailplanes. They have swept back wing tips which use tip fins and rock slightly about their lateral axis in flight. Above, Mrs. Haslach lights the fuse on her husband's model, whilst Arnold Degen (Swiss team Manager) prepares to launch. Haslach does of course hold the World Glider Record. Right, we have Davis of Croydon, who, as a member of the Monaco Club, was representing that country at the contest. Below left, Hanson launches Hinks' model, centre shows Bennett's model going steadily up on the line launched by Magson, who was lucky enough to win the free trip to Sweden in the Wakefield draw. Right, a typical Finnish high aspect ratio design, this one belonging to Wallenius, launched by Santala.





Sweden took the lead in the Scandinavian event, and ran out eventual winners as follows :

Sweden	**2504**	**points**
Finland	**2171**	,,
Denmark	**2131**	,,
Norway	**1964**	,,

That this contest was an unqualified success is unquestioned, and full marks must go to the very keen band of contest organisers headed by G. Lind, Chief Marshal. Everyone knew his job perfectly, and carried it out correctly, and it would be invidious to single out any person or duty for special mention. They all did a grand job, and the competitors had one of the smoothest passages I have yet witnessed at any contest.

The return to Gothenburg was made through startlingly sudden thunderstorms, which almost amounted to cloudbursts. So heavy were the squalls the car windscreen wipers could hardly cope with the weight of water, and speed had to be reduced considerably. How fortunate that the Clerk of the Weather had delayed such action till the contest had finished!

An extremely pleasant dinner at the Liseberg Gardens concluded the official period, and all will remember that very enjoyable—and at times hectic—evening, where most of us had our first introduction to Schnapps and Swedish Punsch. Speeches were commendably few and brief, one of the best coming from Director Arnulf-Olsen, donor of the magnificent Swedish Glider Cup which will symbolise to model gliding what the Wakefield does in the rubber model class. Nearly a hundred sat down to dinner, and all were welcomed in detail in a most friendly manner, even the much maligned journalists coming in for their share of mention ! All speeches were made in English, a concession well appreciated by the British contingent, and duly acknowledged later in the evening when my tongue had become sufficiently loosened ! !

With the Cup presented to Stjepan Bernfest, and other cups and trophies awarded to other high place men, all competitors were presented with commemoration plaques which will afford a permanent memory of a most pleasant and enjoyable meeting. Thank you, Sweden.

ROUND 3 FLIGHTS AND FINAL POSITION

				Total
1.	**BERNFEST, S.**	**Yugoslavia**	**508**	**920**
2.	Odenman, R.	Sweden	183	903
3.	Hansen, A.	Denmark	147	867
4.	Hagen, K.	Norway	301	850
5.	Persson, L.	Sweden	857	833
6.	Bennett, J.	G.B.	62	782
7.	Sandberg, K.	Sweden	378	768
8.	Santala, L.	Finland	268	753
9.	Silmunen, T.	Finland	301	752
10.	Schioll, S.	Norway	244	704
11.	Host-Aaris, A.	Denmark	264	685
12.	Wallenius, R.	Finland	126	666
13.	Lauridsen, J.	Denmark	795	579
14.	Bickel, A.	Switzerland	300	524
15.	Bootland, T.	G.B.	256	476
16.	Sandberg, S.	Sweden	138	466
17.	Prhavc, J.	Yugoslavia	166	463
18.	Maret, G.	Switzerland	117	448
19.	Hinks, R.	G.B.	169	445
20.	Hansen, B.	Denmark	143	432
21.	Davis, S.	Monaco	67	428
22.	Molbach, T.	Norway	167	410
23.	Spring, H.	Finland	95	409
24.	Hanson, M. L.	G.B.	179	399
25.	Fresl, E.	Yugoslavia	145	371
26.	Haslach, T.	Switzerland	70	355
27.	Antonsen, S.	Norway	56	161
28.	Bachli, B.	Switzerland	—	97

On the left is Bernfest dismantling his model after the contest and at the same time endeavouring to answer a barrage of questions in all languages. In the lower picture he is receiving the Swedish glider cup from Arnulf Olsson, President of the Gothenberg Aero Club, whilst between them is G. Lind who was mainly responsible for the contest organization. Top right is Krook, one of the timekeepers; note the special timekeeping outfit. Left, Santala of Finland prepares to unwind his line, assisted by Wallenius.

TRADE REVIEW

THE popularity of American G. Fong's 159·23 m.p.h. Hell-Razor layout, uisng a magnesium cast fuselage bottom, shows that the solid metal base is the answer if one wishes to preserve the speed model for a reasonable number of flights.

Such a base (1) has recently passed flight tests in this country and is marketed by Heset Model Supplies of Croydon. It is available in two sizes, the 5 c.c. length being 13 inches and that for 10 c.c. being 17½ inches. Weight of the smaller base as supplied is 3½ oz. which can be reduced with judicious filing. Pads cast integral with the base can be tapped to suit the engine and drilled for dolly plugs, while lugs are provided for holding down bolts and tank lugs. Priced at 14/6 and 17/6, these bottoms, which are finished smooth on the outside are a sound investment for speed enthusiasts.

Stunt and speed tanks marketed by Roland Scott of St. Helens are shown as (2) and (3). Finished with black fuel proof lacquer, each tank is individually boxed and made from ·010 inch brass foil. BAFFLO speed tanks come in right or left hand version in two sizes, $\frac{3}{4} \times 1\frac{3}{4} \times 2\frac{1}{2}$ inches and $1 \times 1\frac{1}{2} \times 2\frac{1}{2}$ inches to suit all six of the British speed classes.

BAFFLO stunt tanks come in the now accepted wedge shape and pass all tests with flying colours. The larger ($1 \times 1\frac{3}{4} \times 2\frac{1}{2}$ inches) tank has been used to good effect through all manœuvres with a particularly thirsty glo-plug motor and the smaller version ($\frac{3}{4} \times 1\frac{1}{2} \times 1\frac{3}{4}$ inches) proved perfect for a 1·5 c.c. diesel stunter. Priced at 4/- and 4/9 according to size, each tank incorporates an anti-surge baffle, as the BAFFLO trade name suggests.

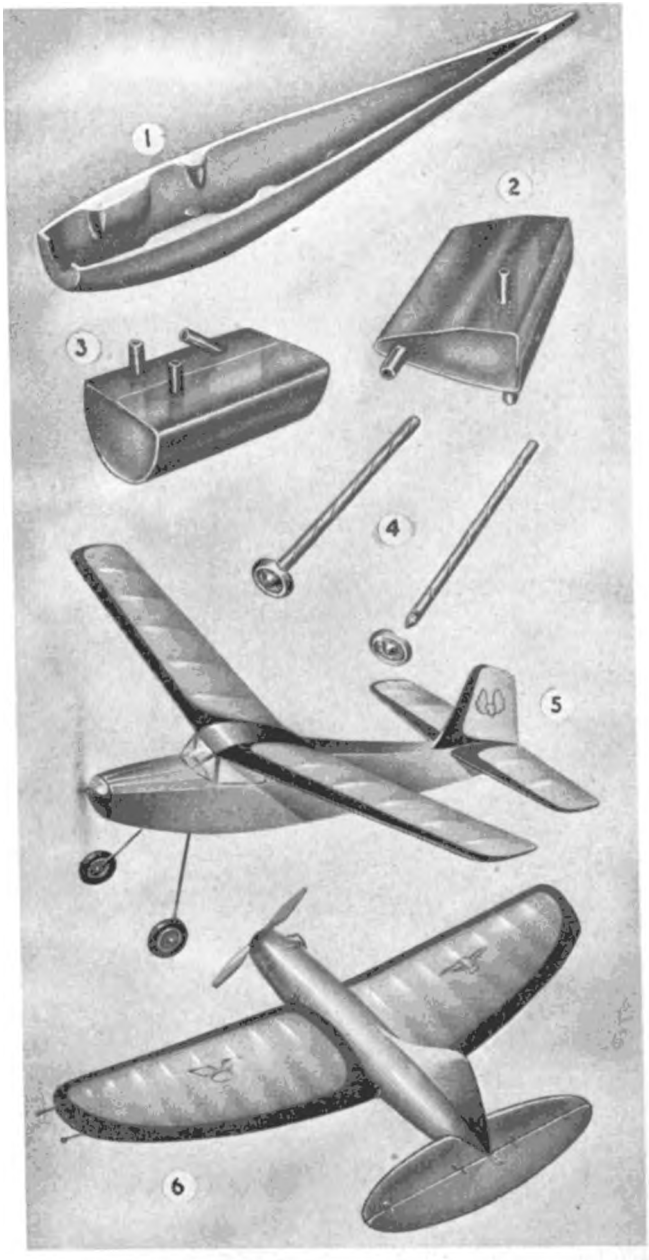
Latest from the Mercury Models company is an inexpensive 9d. package of six KLIPON fasteners (4). Ideal for cowlings or strut fittings, modellers will readily appreciate their " knock-off " advantages. The long rod, 1/16 diameter, can be stuck into the fuselage and offers a semi-universal joint fixing to the snap fastener, on the cowl.

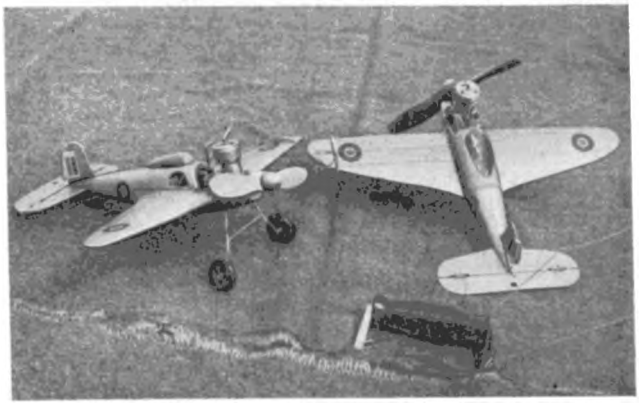
Beginners will find the 4/9 FROG GOBLIN kit (5) more complete than average. Our review kit was completed by a raw beginner in aeromodelling, after several small queries had been settled by our experienced staff. Flight tests required a fresh and more powerful length of elastic ; they also required additional nose block adjustment before flights of 45 seconds duration could be attained. Rating as a kit is definitely five star, ★★★★★.

No stranger to aeromodellers the world over is the MERCURY MUSKETEER (6). At 19/6, the pre-fab hollow-log type fuselage, keyed engine mount and spun aluminium cowling make it a very attractive kit, which can be built and flown within even the busiest of aeromodeller's weeks. Our review model was completed in three evenings and proved its hot stuntability by placing well in two Continental contests.

Now, Mercury have produced the JUNIOR MUSKETEER, a 152 sq. in. version of its 300 sq. in. big brother, at 14/6. Keen eyes will notice the reduction in elevator area in the Junior version—an advisable modification for the larger model. Both models have the same top rating for kit quality and flight ability, five stars . . . plus ★★★★★.

The first ever fully finished, ready to fly control-line model has appeared as the CHALLENGER (*at right*) by Cascelloid Ltd. of Leicester. Claimed to be unbreakable and an ideal *ab initio* model for any newcomer to aeromodelling, two of these plastic moulded 13½ inch span models arrived, complete with E.D. Bee motors, propellers and handles with lines, all neatly boxed, ready to be tested to destruction ! That they are still, with the exception of propellers, " as new ", reflects well, considering that they were subjected to several arduous afternoons with 14 AEROMODELLER campers, some of whom were making their first control-line flights. Having identical tanks and engines, these most definitely unbreakable trainers were team raced by beginners through one afternoon until 16 oz. of fuel had been consumed, the only sign of wear being the somewhat shrunken appearance of the reduced diameter propellers. At 39/- or £4. 4s. 0d., complete with engine, the CHALLENGER is the perfect short cut to control-line training and an ideal present for those who wish for aeromodelling at its easiest.





BANK HOLIDAY AT FAIRLOP

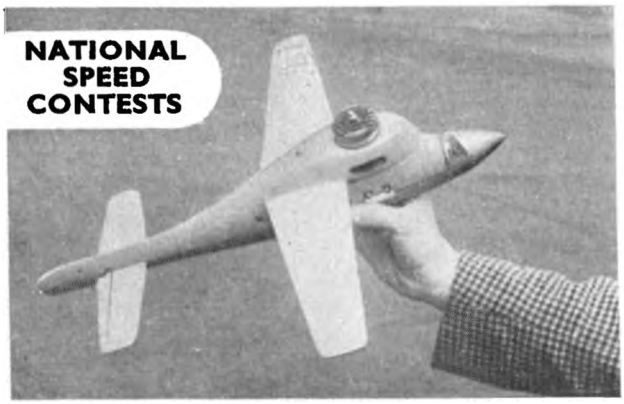
BOWDEN CONTEST

ATTRACTING 25 British entries, the 1950 Bowden precision contest provided an unusual result with four out of the first five places taken by biplanes. Father Amiard of Flers and Mike Rutherfoord of the South African M.A.A. were interested overseas spectators, providing the only international aspect to this F.A.I. calendar event.

The picture below shows the winning biplane by B. Yeaxlee of Portsmouth & District Club. The model is coloured with green fuselage and white wings, and has an unusual cabin position below the centre section struts. "Taxi" B. Brookes of Blackheath took a well deserved second place with his 2·8 c c. Ouragon diesel powered red and cream biplane shown at the left. The ever popular A.P.S. "Sporty" finished third, flown by S. Allen of Battersea, with a "bullseye" on the barbed wire barricade selected as the landing target. The only low-winged entry, lower left, a Reeves 3·5 c.c. diesel job, by J. Newton of Blackheath, was severely handicapped with its ballet-like tendency to pirouette on take-off.

RESULTS

	Pts.		Pts.
1. B. Yeaxlee (Portsmouth)	90	4. C. Edwards (R.A.F. Binbrook)	151
2. B. Brookes (Country Member)	121	5. B. Body (Portsmouth)	155
3. S. Allen (Battersea)	123	6. P. Treddaway (Belfairs)	156



NATIONAL SPEED CONTESTS

ENTHUSIASM for the National Speed Contests appears to have reached a new low at the two day contest. Only 31 entries were received for six out of the seven speed classes, and only six clubs provided competitors for what was supposed to be a centralised contest to provide national results. However, the 5 c.c. class attracted quite a fair proportion of the entrants and the 103 m.p.h. record was smashed twice during the first day. The above right-hand photograph shows F. E. Deudney with his "Eta" 29, 107·13 m.p.h. model which features swept forward wings. Above left is a genuine replica of the American Speed Record Holder, "Hell-Razor", made from an American kit, and fitted with a McCoy motor. Unfortunately, the single-blade propeller left its spinner before take-off with unhappy results to engine.

RESULTS

Class I.	1.	F. Deudney	(West Essex)	72·58 m.p.h.
Class II.	1.	D. W. Free	(Surbiton)	83·23 ,,
Class III.	1.	J. W. Claydon	(East London)	76·43 ,,
	2.	C. Bergman	(Surbiton)	72·65 ,,
Class IV.	1.	F. Deudney	(West Essex)	107·13 ,,
	2.	P. Wright	(St. Albans)	104·95 ,,
	3.	E. Wallis	(Surbiton)	99·17 ,,
	4.	R. Davenport	(East London)	97·82 ,,
	5.	L. Sparkes	(East London)	84·31 ,,
	6.	C. Fox	(Worthing)	79·12 ,,
Class V.	1.	P. Kelsey	(Croydon)	88·01 ,,
Class VI.	1.	B. Dunn	(East London)	101·69 ,,

TAPLIN CONTEST

THE most popular contest held at Fairlop over August week-end was undoubtedly the Taplin Trophy for radio controlled models. Unlike the previous radio control events the meeting was blessed with excellent weather and gave the baby radio models an equal chance to win over the larger heavy-weights. However, despite the large proportion of Allbon Javelin powered entries, the small models lost heavily in the spot landing requirements which provided the essential deciding points.

Though two loops were recorded during the day, neither could be called perfect circles and a small proportion of the 50 points possible for this manœuvre were given. Far more important were the 100 points possible for a touch-down within 25 yards of the transmitter, and the number of competitors who were able to land within reasonable distance after flights of between five and ten minutes, reflects considerably on the progress of radio enthusiasts this year.

Of the twenty-eight entries, one had full proportional control but met with disaster within its first few seconds, and another was fitted with ruddervator but showed a clean pair of heels down-wind when the soldering failed and the ruddervator rotated continuously despite frantic signals.

It was the plain and conventional two-pawl escapement connected to simple conventional rudder which won the day from first to sixth place. The long duration of flight by the winning models to complete their schedule, comprising level turns to the right and left, figures of eight and spinning, also necessitated long rubber driven escapements.

Popular with most entries was the overhead four-leaf clover as a special manœuvre for 50 points. Both Allen and Sutherland were particularly good at this, while Sam Collins put up a spectacular display of aerobatics with his modified " Banshee ". Utilising a standard wing and tail assembly Sam has fitted a simple box fuselage, using an Allbon Javelin with 15 degrees down thrust. His own equipment operates a simple rudder, but readers who already know the antics of a " Banshee " when the tailplane has gone askew, will readily appreciate what happens when Sam sends a signal to his model. Immelmans, stalled turns, rolls off the top and a vague form of looping made the course of his model more than somewhat unpredictable ; but nevertheless displayed a great future for big tip dihedral angles in aerobatic radio control.

RESULTS

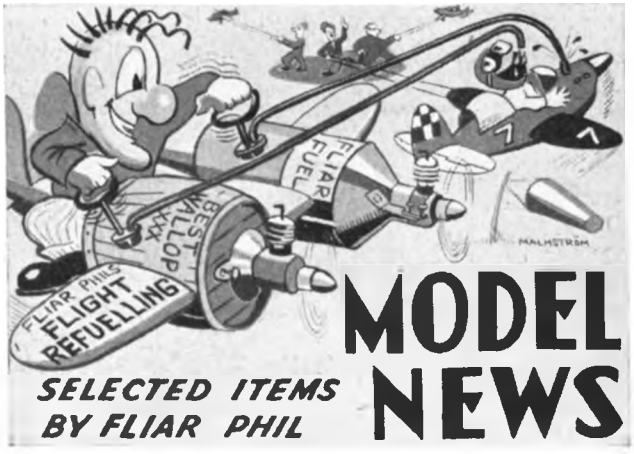
	Pts.		Pts.
1. D. Allen (W. Essex)	345	4. O. Hemsley (Bushy Pk.)	314·5
2. S. Sutherland (W. Essex)	339·6	5. W. Tickner (W. Essex)	276
3. J. Gorham (Ipswich)	319·6	6. C. White (Eastleigh)	242·2

Top Left : O. Hemsley of Bushy Park prepares his ignition Forster 29, cabin model for flight. Taking fourth place with smooth inconspicuous flying, he used a modulated receiver made by Mr. G. Hannest-Redlitch.

Top Right : Dennis Allen of West Essex with his winning Frog 500 model. Using Flight Control equipment, his model is reminiscent in appearance to his larger " Dumbo ". Note the panel of switches in place of the windscreen and the inset trimming tab.

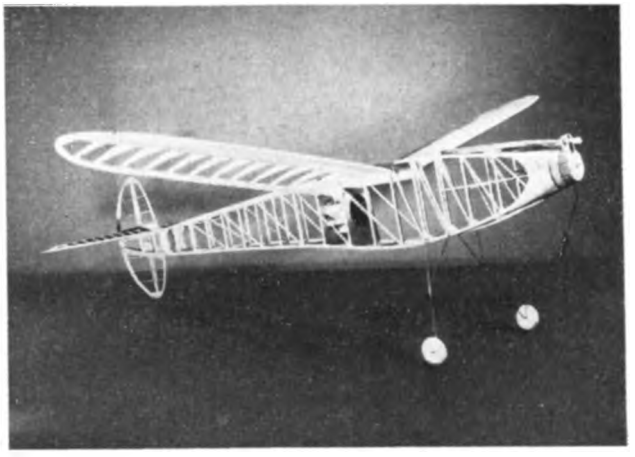
Below : J. Gorham of Ipswich tunes his E.D. 3·46 c.c. in his Rudder Bug which was one of the few models to R.O.G.

Below : Sam Collins starts his Allbon Javelin while Bob Copland steadies the model. Generous dihedral on the Banshee wings provided some spectacular flying. Bottom : It was a typical Fairlop day, with little boys and bicycles, litter and cider bottles, keen to obstruct every radio control enthusiast. Note these two rabid modellers who are oblivious to the danger surrounding.



MODEL NEWS

SELECTED ITEMS BY FLIAR PHIL



ONCE more, team racing takes the stand in Fliar Phil's heading picture: but this time its team racing with a refuelling difference. While the motor gets its one ounce dose of rejuvenator, the pilot has an extra ration of wallop to keep from getting thirsty. Nice work for F.P.'s animated pilot, but not so refreshing for the man on the control handle.

When Maurice Pithers of London, W.11, showed F.P. his magnificent Bristol Fighter, its adherence to accurate detail and high standard of construction made it a certain Model of the Month. But now Mr. Pithers has completed his latest, and largest model, Fliar Phil bows a humble head to the Consolidated Privateer, which doubly wins the honours this month. Built from works drawings to a scale $\frac{1}{8}$th full size, and weighing $3\frac{1}{2}$ lbs., the Bristol F2B Mk. II took over six months to complete. Its span is 54 ins. and the cowling encloses a 10 c.c. Anderson Spitfire petrol engine. Everything works through scale controls—the throttle and advance/retard from the cockpit, the elevators through a correct wire rigging and even the scale exhaust pipes do their proper job. For flying, Mr. Pithers detaches the perfect Lewis gun.

His other model, made in the last four months, was only undertaken after a check on whether or not it could be carried from the upstairs workshop! The 91 in. wingspan and 54 in. fuselage make transportation a delicate problem, but a detachable outer wing panel aids negotiation of awkward doors. Made from "Aircraft of the Fighting Powers" 1/72nd scale drawings, the model weighs $11\frac{1}{2}$ lbs. and features a sprung nose wheel to take heavy landings. Four ignition Ohlsson 29 motors provide ample power. It is possible to cut out the two outer motors by means of a third line and it is hoped to maintain height on these two motors, while a final tug on the third line cuts the two inners and switches on cockpit illumination.

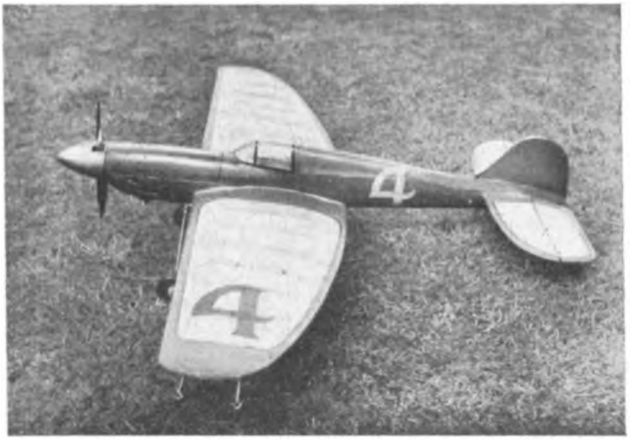
Further emphasise on the high standard of these models comes with the results of the recent M.E. Exhibition in London, where the Bristol F2B was awarded the Bristol Cup and the Championship prize as well as the Silver Medal for first place in the control-line section.

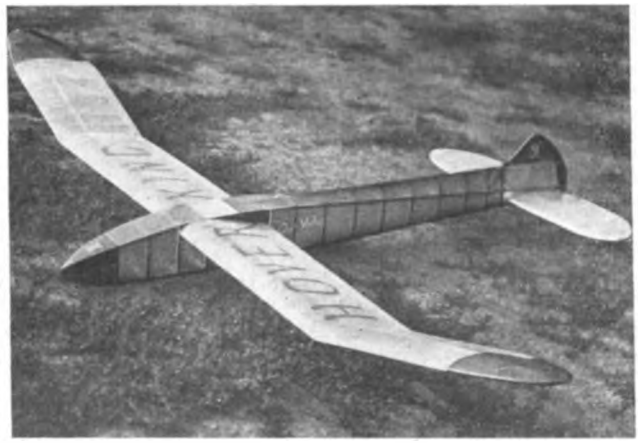
Close behind in the results and winning a Bronze Medal came the massive Privateer, with colourful Midnight blue and white finish.

Top right is a first class example of how to take photographs of an uncovered model. It is M. Garnett's (Bristol) 46 in. span Grimalkin Wakefield, which features opposite camber on upper and lower fins, a torsion box leading edge, and weighs $4\frac{1}{2}$ ozs. when covered. Amidships you'll notice an unusual tube arrangement intended to minimise thrashing of the 4 oz. motor . . . particularly when it chooses to break! Wing section is Isacson 73507.

Over on the opposite page, top left, is a streamlined 36 in. stunter by John Hulme of Alderly Edge, Cheshire. With a comparatively small wing area of 242 sq. ins. for its Amco 3·5 c.c. power this good-looker is fast, yet fully stuntable. Weight is 20 ozs., prop a 9×6 in. Really F.P. should refer to this model in the past tense for builder Hulme regretfully admits a serious collision with a block of concrete.

To the right, is another popular A.P.S. glider, the slope soaring Hoverking from June AEROMODELLER. Made by G. Gray of London, W.2, this red and white model has been well tested at North London's Parliament Hill fields, the scene of many a first flight in the days of spruce and oiled silk. The picture was taken by a plate camera at 7.30 p.m. on a bright day, 1/200th second at f 6.5.

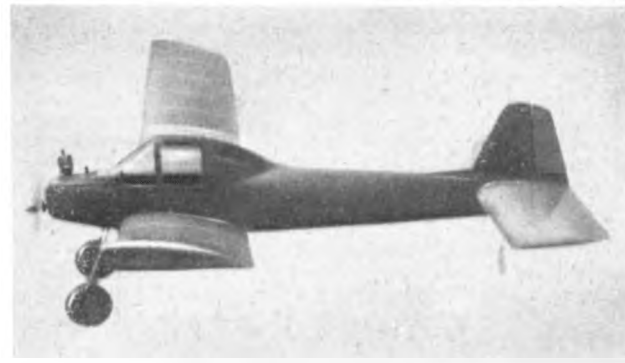




Here is a tailless power model familiar to Fairlop habitues. Four foot wingspan and once powered by a Mills 1·3 c.c. diesel, now by an Allbon Javelin, the motor is mounted sidewinder fashion on a keel above the mainplane. Being a pusher, poet L. Ransom, West Essex (remember his " Little Ivan " ?) has little trouble with broken props with his consistent model. Immediately below is a 52 in. Allbon 2·8 c.c. diesel-powered low-wing by A. Bailey of Wheclock, Cheshire. Designed as a sport plane of the Bowden calibre, it proved so simple to fly that it has since been given away to make room in the workshop. Ah well, Fliar Phil always did say that its the difficulties of aeromodelling that make it so interesting. Once a model is mastered, there's little left to do, but then who can claim to have mastered a model ?

Making a flotation test in the bottom left picture is W. Clark-Hall's (Kensington) model Seabee, made from A.P.S. drawings. Mr. Hall has modified construction to give a fully corrugated wing, just as on the real thing. The airscrew is also to scale and the tip floats moulded from acetate sheet to increase buoyancy. Inside the cabin Mr. Hall has fitted all the gear a sea-going aviator might require in his real Seabee. Boat hooks, anchor, sea drogues, auxiliary buoy and a klaxon horn are there beside the usual necessary seating and controls. Mr. Hall reports trouble-free flying and no scratches, so quite obviously he is not flying in Kensington gardens !

Lastly is a picture most of us could have taken at some time or other during our modelling careers. Sincere congratulations to Mr. H. Holman of Farnborough, Hants, for thinking to send his camera up the tree when retrieving his Competitor. Ever had that nice comforting view, fellows ? The model resting so peacefully, you so precariously, and only those few impossible feet between you two. Luckily, Holman junior was able to fish this one out. Mr. Holman senior was a modeller in the Dover club in 1911.



Especially for the Beginner

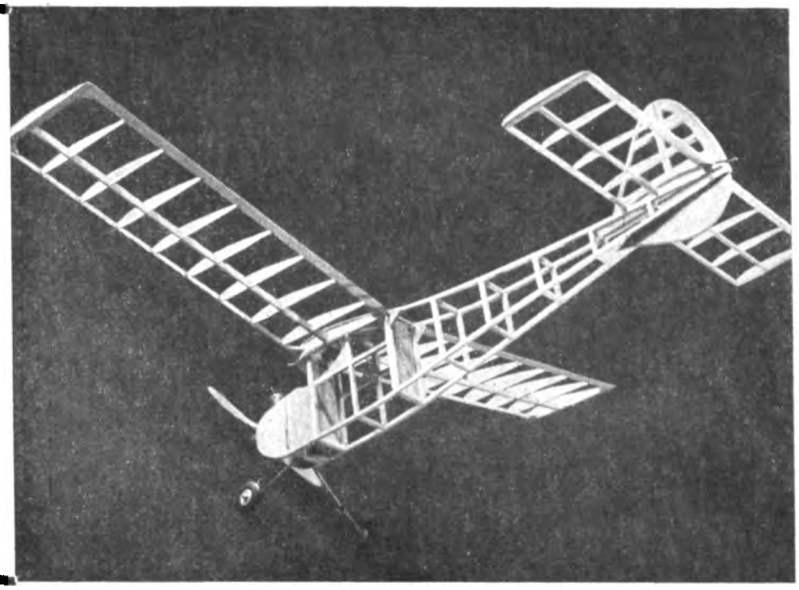
PART IX.

Introduction to Power

By REV. F. CALLON

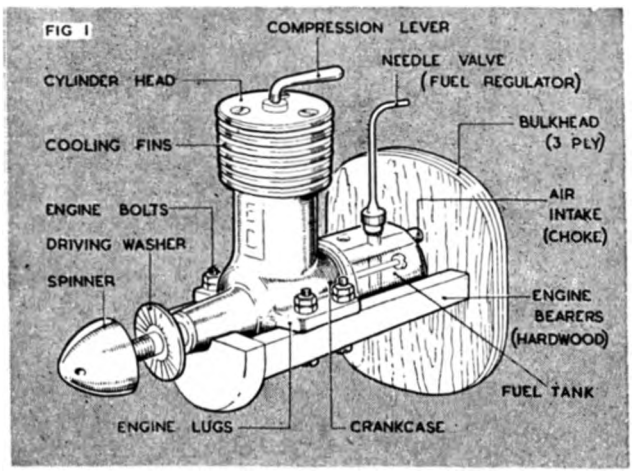
The TOMBOY, shown in its uncovered state at right, has been especially designed as a beginner's power model. Despite its extreme simplicity, designer Vic Smeed has produced a model capable of contest performance, for both the AEROMODELLER and the Rev. Callon's prototypes have disappeared O.O.S. on short motor runs.

Plans appear next month. Can you wait?



WHEN I was about eleven years old, one of my favourite ways of spending Saturday afternoons was to jump on the bicycle and set out for a certain suburban house. I would open the gate as quietly as possible, and with hopes of avoiding the grown-ups with their embarrassing "How d'you do, young man; how are you today?", would tiptoe round to the garden at the back and tap at the door of the workshop. Almost invariably there would come the cheery "Hello there!" from within, meaning that Jim was at work. Jim was a grown-up himself, but a grown-up with a difference. He did not say," How d'you do, young man?", but merely kicked a stool across the floor as I closed the door, and carried on working while I sat and watched him enthralled.

Jim was one of the pioneers of aeromodelling. There was no AEROMODELLER in those days, very few commercial plans, and as far as I know, no kits available. Yet he used to turn out some really wonderful models, drawing up his own plans and solving the difficulties as they came along. The walls of his workshop were lined with rubber models varying in wingspan from 8 or 12 inches to six feet. That was where I first got to like the smell of dope, and came across Jap tissue, balsa wood cement and rubber lubricant. The difficulties of building models were so great in those days that it never occurred to me to have a try myself; I was quite satisfied to watch and admire.



I mention all this merely to give some idea how much aeromodelling has been simplified during the last few years. Some people think it has been over-simplified. At any rate, nobody aged eleven need think that he cannot quite easily build a model that will fly. The only danger is that with plans, kits, materials, and instructions all provided, the newcomer to modelling may take things too much for granted and become careless in his building methods. But care, accuracy and patience are just as important in modelling now as ever they were, and without them, you are missing half the point of the hobby, and will never make much of a success of it. And nowhere is strong, accurate modelling more necessary than in a power driven model.

General Construction of Power Models.

Power models are built in basically the same way as gliders, with the heavy engine taking the place of the lead weight at the nose. Since the total weight of a power model is much more than that of a glider of the same size, its flying speed is also greater, and so it has to be more strongly built in order to withstand the shock of landing. Thicker spars, longerons, and spacers are used—generally 3/16" or ¼" square—and all joints must be accurately cut and carefully cemented. Tougher covering material is also called for, and plenty of dope and in order to protect the fabric from the bad effects of the fuel which gets blown all over the place, it is usual to finish off with a coat of banana oil or special glossy fuel-proofer.

The Engine.

Without any doubt the most suitable type of engine for a first model is a small diesel. Petrol and Glow-plug engines need batteries or accumulators and need wiring up, whereas all that a diesel needs is fuel. The size or capacity of the engine depends of course on the size and weight of the model. It is better for a first model to be slightly under-powered; that means installing an engine slightly smaller than that recommended in the kit or on the plan for highest performance. For instance, I have had excellent results when using a 1·3 c.c. engine in a 48-in. wingspan model weighing 15 ounces for which the plan recommended a 2·5 c.c. engine. When the model is under-powered the flying speed is reduced and with it, the possibilities of early smash-ups. For the TOMBOY a 1 c.c. engine such as the E.D. Bee is ideal.

Mounting the Engine.

This is really the only big difference between a power model and a glider, and will probably be where the beginner

will find some difficulty. The engine must be mounted as rigidly as possible, and so hardwood and plywood are used here. And since balsa cement is of little use with hardwood, something stronger such as Durofix must be used. This takes about twelve hours to set thoroughly but is well worth waiting for, and it resists the effects of diesel fuel very successfully.

The front former or " bulkhead " is always of plywood. If the engine is a radial mounted type, it is bolted against this front bulkhead. The majority of engines are what is called " beam " mounted ; a small shoulder projects from either side of the crankcase, and these shoulders are bolted down onto two hardwood bearers which pass out through the bulkhead and are cemented (i.e. Durofixed) to it. See Fig. 1. The bolts are passed up through the bearers from below and left there permanently. The engine may thus be removed merely by unscrewing the nuts from above and lifting it off. Particular care is needed when marking and drilling the four bolt holes through the engine bearers, to make sure that they coincide exactly with those on the engine itself.

Even the smallest diesel engines have such a terrific thrust that it is almost always necessary to give them some downthrust if the model is not going to loop or stall This is easily done by slipping one or more washers over the two rear bolts between the bearers and the engine. Then when the engine is replaced, it will be pointing slightly downwards. A small amount of right thrust is generally necessary, too, to counteract the torque. This must be arranged for when the bolt holes are being drilled through the bearers. I have found that the most successful trim for power models is attained by right thrust on the engine and sufficient *left* trim on the rudder or trim-tab to give a fairly wide left glide. This means that the model climbs under power in right-hand circles, and when the engine cuts out, it glides in left-hand circles.

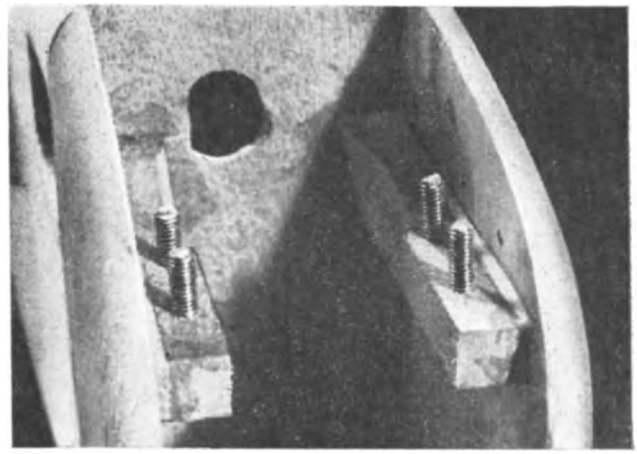
Propellers.

Most modellers will admit that if there is one snag to the hobby, it is the ease with which hours of work can be ruined by a smash-up. With rubber models the most easily broken unit seems to be the prop., and before plastic props. were introduced for power models, the same thing was true of them. Given anything like a bad landing, one used to light a cigarette before summoning up sufficient nerve to go and retrieve the model. And as often as not the prop. would be in two or more pieces—another 3/6d. gone west ! I remember once putting a brand new prop. on a model and smashing it on the first hand-glide. Tut-tut !

But plastic props. have finished all that, and I strongly recommend all beginners to use nothing else for the time being. Never mind what the experts say. They will tell you (and quite rightly) that wooden props. give far more thrust, and that you cannot do justice to your engine with any other type. So what ? Just at the moment we are not winning contests, but want something which will give good, consistent results with a minimum of cost. Another objection is that plastic props. are dangerous at high speeds. This is also quite true ; certain types disintegrate at about 14,000 revs. per minute. But for free flight sport flying nobody needs or wants 14,000 r.p.m., and in any case, the engine you will be buying will probably not be capable of such a high speed.

Undercarriage.

The only other difference worth mentioning between power models and other types is the undercarriage. This has to be extra strong owing to the weight and flying speed of power models. 14 gauge piano wire is about the thinnest which can be used with success, and for heavy models anything up to 8 gauge may be needed. The U/C may be detachable or permanent. The simplest method for a detachable U/C is to build a small plywood " box " against the front former, and bend the " U " shaped centre of the U/C wire to a tight push fit into this box. Otherwise the centre of the wire must be "sewn" and Durofixed against the ply front former. This " sewing " is of the most primitive type. The shape of the U/C wire is marked onto the plywood



former (before this is fixed into position in the fuselage), and small holes are drilled through on alternate sides all along the path so marked out. The wire is then placed against the former and bound there by means of thin string or stout thread passed round it and through the holes. A liberal amount of Durofix is then spread over the string and wire and left to set.

Wheels should be of balloon or (preferably) sponge rubber with metal bosses. They are easy to obtain and cost about 3/6 a pair. The only way to attach them is by means of a soldered nut or cup-washer. Make sure when you buy them that they are the right size for your particular gauge of U/C wire, otherwise you will have a wobbly wheel, or you will have to drill out the boss to a bigger size as the case may be.

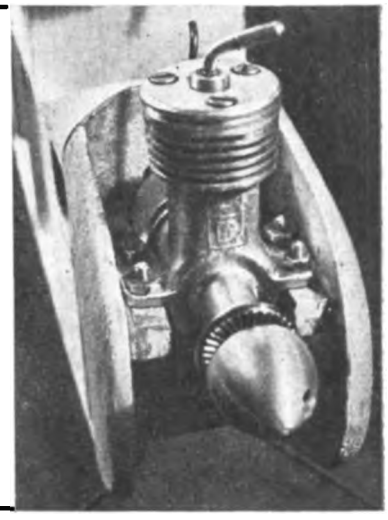
The TOMBOY.

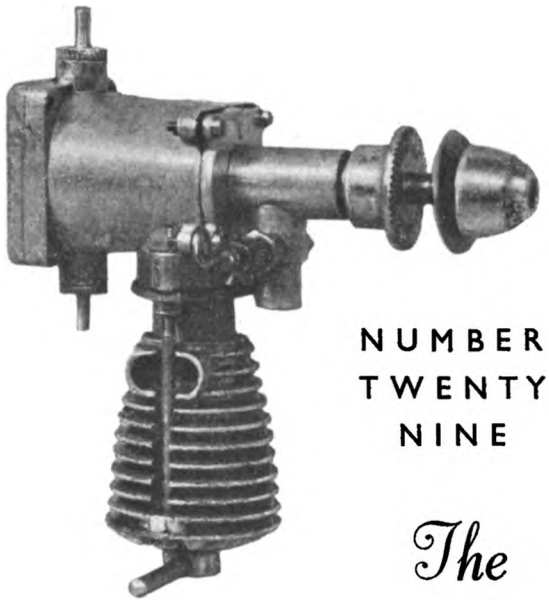
It is my honest opinion that the TOMBOY is one of the best things that has happened in aeromodelling—and that is not just sales talk either ! It is easier to build than the average rubber model, and a real pleasure to fly. Even with a plastic prop. it has a genuine contest climb when the engine is tuned up—so much so that I have not had the nerve to try it out with a wooden prop. as yet. I passed on Vic Smeed's original working plan to a youngster who had not previously done any power modelling, and the result was so satisfactory that he lost the model o.o.s. the first day out.

If you have not already got an E.D. Bee engine, get one now, and have it properly run in so as not to waste any time when the TOMBOY plans are ready next month !

The upper photo is a close view of the TOMBOY nose before engine installation. The hole in the front former or bulkhead is for the air intake, which may then be choked for starting by inserting a finger through the fuselage side. For accurate fitting it is essential to have the engine bolts coincide exactly with the holes in the engine lugs.

At right, the installed engine with complete access to all controls. Note it is only necessary to remove the nuts from the engine bolts to detach the engine, which receives ample cooling with the sideplate cowling.





NUMBER TWENTY NINE

The

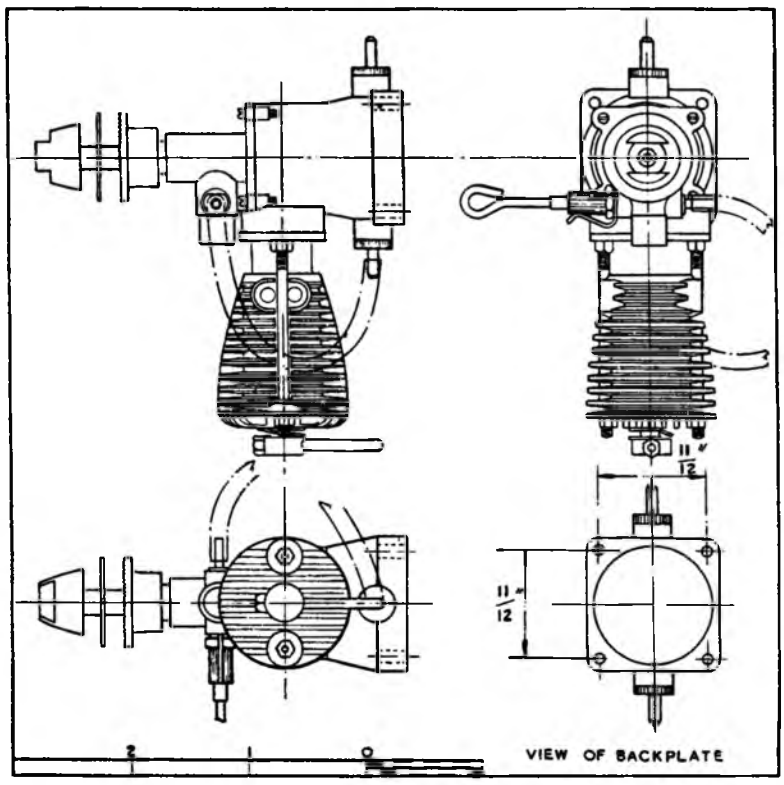
FROG 100

MARK II DIESEL ENGINE

ONE of the first engines to be tested when this series began in 1948 was the Frog " 100 ", so that it is particularly interesting to compare the Frog " 100 " engine of to-day with its ancestor. Not only has this engine altered considerably in external appearance, but there appears to be a marked improvement in performance, as the new engine shows an increase in B.H.P. of over 25 per cent.

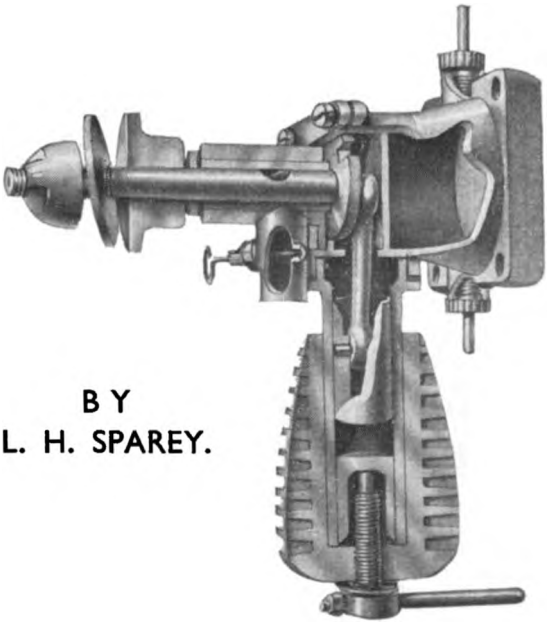
It is dangerous to attribute this improvement to any specific cause—such as improved design—because to arrive at a true comparison between the two engines it would be necessary that they be tested under identical conditions. During the test of the new engine the conditions were not identical with the first. For one thing, the fuel was different, and as considerable research has been devoted to the question of diesel fuels in the years between, it is quite probable that some, at least, of the increased power is due to this factor. In any event, it is not highly important to the average user to know the exact cause of the improvement—the salient fact is that from an engine of identical capacity the aeromodeller may now expect a much improved performance, if the specified fuel is employed.

As with all the Frog range, the engine is remarkable for the great flexibility it displays, as it ran evenly and steadily at speeds from around 1,000 r.p.m. to 9,000 r.p.m. In this connection it may be remarked that the makers claim a maximum of only 6,500 r.p.m. They also claim that the engine weighs *heavier* than the checked weight obtained by me. In view of the exaggerated claims made by some manufacturers in the early days, it seems that it is being realised that a modest claim—or even an understatement—is more likely to create confidence ; and is in the long run a much sounder form of advertisement. This tendency has been noted before in these pages.



The Frog engine should be of particular interest to free-flight flyers, in view of the fact that the greatest output lies around the 8,000 r.p.m. mark. This is the approximate speed at which propellers usually turn in free-flight work. It is also not a difficult speed to attain if the airscrew is carefully selected. Furthermore, the speed is reasonably low, so that the engine need not rack itself to pieces in an endeavour to obtain maximum output at some phenomenal rate of revolution.

An interesting experiment on this motor was carried out in addition to the usual B.H.P. test. The Frog 100 engine is very easily convertible to upright or inverted running, and a series of figures was obtained for the engine in both positions. These results showed so little variation one from the other that it can be said that the performance remains the same irrespective of the engine's position. I am not aware that any concrete facts on this



BY
L. H. SPAREY.

subject have hitherto been available, and from that point of view the findings may be helpful. It must be remembered, however, that data applicable to one type or make of engine may not necessarily apply to other engines of different design and manufacture.

While the Frog 100 diesel engine is of quite pleasing appearance and general proportions, it does seem to be rather on the large side for its capacity. The chief criticism is that it is too high. On taking the engine to pieces, the reason for this height is easily discovered, as the contra-piston is extremely long. This is probably done in order to ensure a good seal in the cylinder.

TEST

Engine : Frog " 100 " Mk.11 Diesel.

Fuel : Frog " Powa-Mix."

Starting : Extremely good under all conditions.

Running : Shows great flexibility, and ran well at all speeds between about 1,000 and 9,000 r.p.m. It was not found possible to exceed 9,600 r.p.m.

B.H.P. : The curve shows a flat characteristic between 7,000 and 8,800 r.p.m.. with a maximum output of ·071 b.h.p. at around the 8,000 mark. (The Frog " 100 " engine tested in 1948 gave ·0575 b.h.p. at 8,100 r.p.m.). Output declines fairly steadily down to about 1,000 r.p.m., below which a steep drop is indicated, so that at 700 r.p.m. the output is only ·0094 b.h.p. At 9,600 r.p.m. the output is down to ·05 b.h.p.

Checked Weight : 3·75 ozs. (with tank)—Maker's weight, 4 ozs.

Power/Weight Ratio : ·304 b.h.p./lb.

Remarks : This new Frog engine displays all the characteristics of easy starting, flexibility, and reliability, associated with the range.

FROG " 100 " MARK II GENERAL CONSTRUCTION DATA

Name : Frog " 100 " Mark II.

Manufacturers : International Model Aircraft Ltd., Morden Road, Merton, London, S.W.19.

Retail Price : 48/– including Purchase Tax.

Delivery : Immediate.

Spares : Immediate.

Type : Compression Ignition.

Specified Fuel : Frog " Powa-Mix ".

Bore : ·375 inch.

Stroke : ·55 inch.

Capacity : ·99 c.c., ·06 cu. in.

Weight (bare) : 3·75 oz.

Compression Ratio : 8 : 1 to 16 : 1.

Mounting : Radial, upright, inverted, or sidewinder.

Recommended Airscrews : Free Flight 8 × 5 inches ; Control Line 8 × 5 inches, or 8 × 6 inches.

Recommended Flywheel : 2½ oz.

Cylinder : Steel, hardened, ground and honed.

Cylinder Head and Fins : Aluminium Alloy. Die-cast, attached by 2 8BA holding-down bolts to Crankcase.

Piston and Contra Piston : Meehanite ground and lapped.

Crankcase : Aluminium Alloy. Die-cast. Integral Fuel Tank.

Front End : Aluminium Alloy. Die-cast attached to crankcase by four 10BA screws.

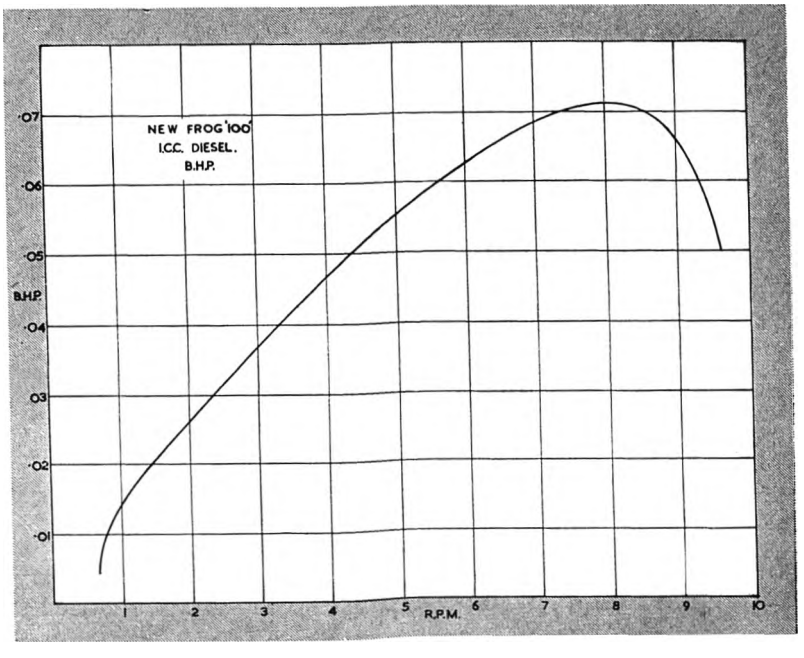
Connecting Rod : Forged, Hiduminium RR56.

Crankpin Bearing : Plain.

Little End Bearing : Plain.

Crankshaft : Steel Hardened and ground.

Induction : Crankshaft rotary valve.

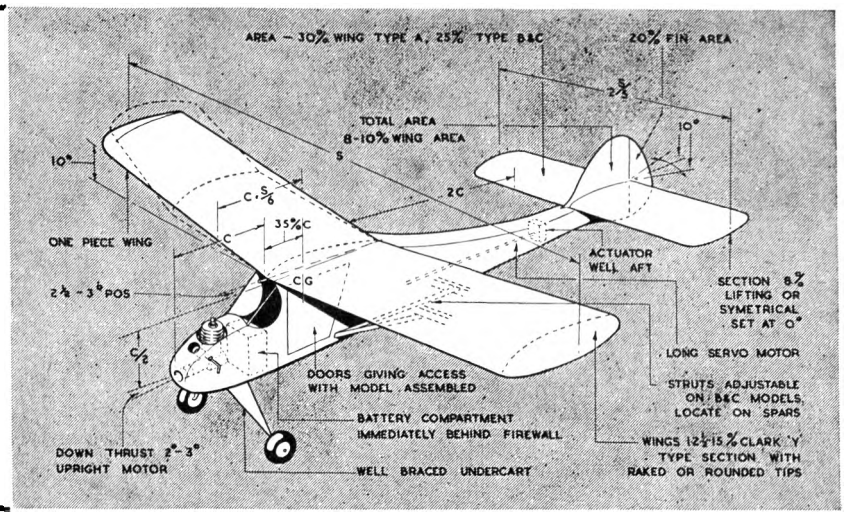


It's DESIGNED for YOU!

NUMBER SIX

RADIO CONTROL MODELS

PART ONE



TAKE one Rudder Bug. Build as per plan or modify . . . " That appears to be the present widely accepted formula for radio control model design, both in this country and America. One American authority, in fact, has quite openly stated that as far as the high wing cabin layout is concerned, the Rudder Bug is just about the complete answer.

The Rudder Bug has many excellent features. For a beginner it *is* almost the ideal project, for it has a sufficient reserve of inherent stability to put up with considerable differences in both rigging and trim without serious results. But as for being the ideal model for all types of radio control flying—that is quite another question.

It is very difficult to compare the state of radio control *model* design in this country and America. The only way in which a true comparison could be drawn would be to fly together—the much-favoured Rudder Bug handled by an expert American modeller, and a typical British model flown by a British modeller. Since this is not possible we can only draw conclusions based on the flying of this American design ourselves, in this country. Frankly, our conclusion is that it is not suitable for contest work in this country. At the same time it does include very many desirable features which are worthy of attention and for purely sports flying can give many hours of satisfactory service. The Rudder Bug may be the American standard," but we think that the British " standard " must be somewhat different.

Successful radio control flying can be quite easy—and not all that expensive—provided you go about it the right way. The main thing to aim at is to keep everything as simple and straightforward as possible, so that the chances of anything going wrong are minimised. Nobody in this country has, as yet, achieved *consistent* success with any multi-control system and we are firmly of the opinion that *every radio control flier should start off with a model employing simple rudder control only.*

Now your attitude towards modelling will largely determine the type and size of model to build. If you are building the model to do some radio controlled *flying*, then the model part of it wants to be as simple and straightforward as possible. At the same time, the model itself need not become too functional. It can, for instance, incorporate a cabin to improve appearance, but it should not be elaborate. The more refined design, with semi-scale features, should follow later—after you have gained sufficient experience in radio control work. For even stronger reasons a flying scale project should not be attempted for an initial model.

A radio controlled model is, in a sense, a payload model. It has to carry around a certain amount of dead weight in the form of radio gear, batteries and so on. Thus it is to be expected that it is both heavier and more heavily loaded than a comparable free flight power model. It also has to fly differently. The motor on the radio control model is allowed to run for some three or four minutes at a time, or even longer, and hence a "duration" climb is both unnecessary and undesirable.

By duration or normal free flight standards, in fact, the radio model is heavily loaded and underpowered. The former is a disadvantage only as regards take-off and landing, particularly landing. The undercarriage unit has to be robustly constructed to stand up to abuse and the single wire cantilever leg is no longer satisfactory. The fact that the model is relatively underpowered is an advantage. Stability is far less critical and thus there is a considerably greater margin for design proportions.

Wing loading is one of the most important design factors. With increasing wing loadings, the risk of damage to the model in landings is increased. Thus, whilst a model might *fly* quite successfully with a wing loading of perhaps as much as 2 lb. per sq. ft. wing area, it is not considered advisable to work beyond a maximum figure of 16 ounces per sq. ft. wing area or roughly 11 ounces per 100 sq. ins. wing area.

Unfortunately, this does not hold true for all model sizes. Wing loading becomes less important as the model size increases, and conversely. Working down to the smaller sizes of models, a 16 oz. wing loading is too high for comfort. For a 400 sq. in. wing a 12 ounce loading is really quite enough—Fig. 1. The small radio model, therefore, starts at a disadvantage.

AERODYNAMIC DATA

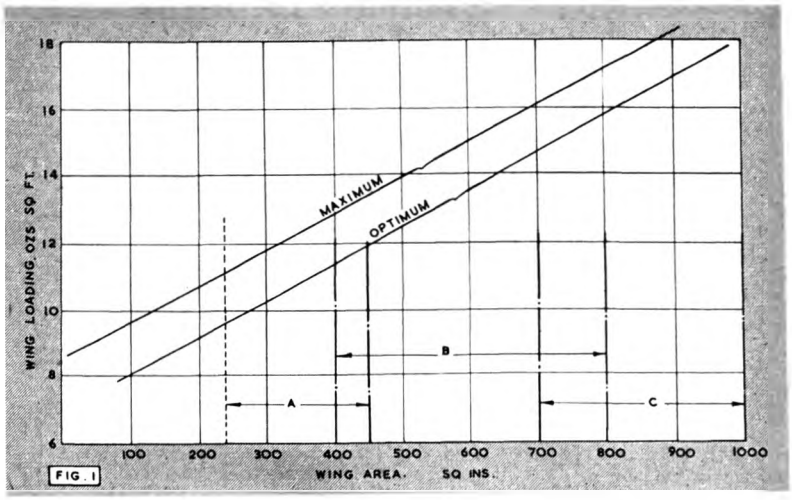
Model	Motor c.c.	WING Area sq. in.	WING Span	WING Chord	TAILPLANE Area	TAILPLANE Span	TAILPLANE Chord	L.O.A.	Total Weight oz.	WEIGHTS Radio† oz.	WEIGHTS Motor oz.	WEIGHTS Airframe oz.
A	1·5	396	50	8	120	20	6	36	30	10	4	16
B	2·5–5 5*	850	74	12	215	29	7½	50	80	18	6–12	40
C	10*	1300	100	13	300	35	8½	60	160	24	16	120

* Spark ignition.

† Including actuator, etc.

It is obvious that the size of the model must be determined by the weight of equipment which has to be carried, and the weight of the motor used. Broadly speaking, we can divide receiver units into two classes—the standard type employing ordinary miniature valves and reasonably sized batteries, weighing about 16 ounces complete, and the thyratron receivers with smaller batteries weighing somewhat less than one half this amount—say 8 ounces.

Since weight is critical in the smaller sizes of model, the lightest power units are required. This immediately rules out spark ignition under about 5 c.c. motor capacity, which is a pity. For reasons which are not clearly defined, most modellers now appear to have a definite prejudice against spark-ignition motors. Yet from the standpoint of ease of starting and running, consistent and *flexible* performance, and economy, they have much to recommend them. Radio control models do not need a lot of power. They need steady, consistent power, which is the essential feature of any good spark ignition motor with a reliable ignition circuit. Such a set-up lends itself particularly well to two-speed motor hook-up for later development. Thus, spark ignition should be given serious consideration for the larger sizes of model.



In general, diesel and glow motors are rough running by comparison and trouble has been experienced on some smaller designs on this count. Motor vibration has, at times, reached prohibitive proportions, causing the receiver relay or actuator itself to skip and get out of sequence. Some motors are worse than others in this respect, particularly those which are initially unbalanced due to the employment of a relatively heavy piston. Experimentation with different propellers—and even locking the same propeller in different positions—can often reduce vibration to an acceptable level.

The net result of the discussion so far is that, broadly speaking, there are two distinct " sizes " for radio controlled models, one relatively small for the lightweight radio equipment and the other considerably larger and suited to a 5 c.c. spark ignition motor or its equivalent. There is, of course, really no upper limit—except on the score of economics—for if we can get the " standard " radio gear into a 6 ft. span model it will go equally well into a 9 or 10 ft. model. Obviously such models will have a more limited appeal due to their greater complexity and cost, but nevertheless they are to be found. Our main sizes are, then, as follows :—

Model A. Lightweight radio equipment. Wing loading 12 ounces per sq. ft. Glowplug or diesel motor 1 to 2 c.c. capacity.

Model B. " Standard " radio equipment. Wing loading 14/16 ounces per sq. ft. 2·5–5 c.c. glowplug or diesel motor ; or 5 c.c. spark-ignition motor.

Model C. " Standard " receiver. Wing loading 16–18 ounces per sq. ft. 10 c.c. spark-ignition motor.

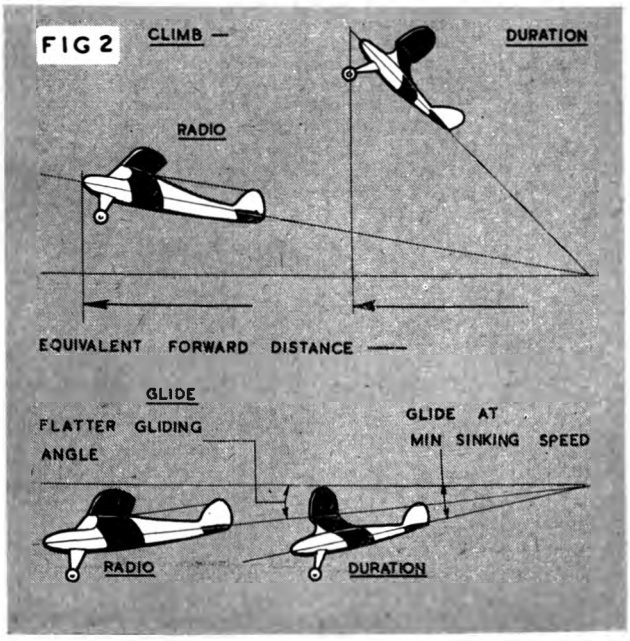
Type A models present the greatest scope for ingenuity in design and construction, saving weight to reduce model size and produce a proportionately smaller model. They are also the most inexpensive, both as regards time and materials.

Type B models are about the best to start with. Weight control is less critical. Construction can be relatively more robust, without becoming complicated. Crutch construction can be used for fuselages—or normal box construction with sheeted sides in highly stressed regions. They will, however, cost more than type A models and take some four times as long to construct. But to offset that, is the fact that they will be less critical on adjustment.

The large type C models lend themselves readily to experimental work—the fitting of additional equipment, etc., and can be most impressive in flight. They will, however, demand far more time than the average flier is likely to be able to afford, unless he wishes solely to concentrate on radio control flying and has a car for transport.

The same generalised design outline can apply throughout this range of sizes, about the only noticeable difference being that the smaller models demand a larger tailplane area for adequate longitudinal stability. Design proportions are not critical, for all we need is a reasonably stable free flight model which is to be underpowered—by duration standards. The only special feature is that we are going to control this model by means of rudder movement and so we need a design layout which is reasonably stable in turns. Moving the rudder over some 15 degrees on most orthodox free flight models would immediately put them into a spiral dive.

Another difference between a normal free flight model and the radio model is that we want a fast forward speed under power with only a shallow climbing angle. A radio model is no good if it cannot make headway against a moderate wind drift. If trimmed to have a steep climb, although flying fast, its *groundspeed* will be low. We need a reasonably high groundspeed. We also need a fairly high gliding speed, with as flat a gliding *angle* as possible for the best landing approach. So, ideally, the radio model is trimmed for an under-elevated power flight (either with excessive downthrust or under-elevated rigging condition), and a glide flight corresponding to flattest glide—Fig. 2. (*Continued next month.*)



AIRCRAFT DESCRIBED No 35 By G · A · CULL

The DART KITTEN

WITH the needs of the shallow-pocketed amateur flyer in mind, A. R. Weyl, A.F.R.Ae.S., commenced design of the Kitten in October, 1936, and as a result of enthusiastic work by the staff of Dart Aircraft Ltd , the prototype made its first flight on January 15th, 1937. Powered by a French 24/27 h.p. ' Ava ' flat-four two-stroke engine, Kitten I was registered G–AERP (airframe No. 121) and was flown by many pilots, both expert and novice.

In the light of experience gained from this intensive flying of the prototype, modifications were embodied in Kitten II, the main one being the discarding of the offensively noisy ' Ava ' in favour of a 36 h.p. J.A.P. engine, which increased the rate of climb and cruising speed. Airframe revisions included a re-designed fuselage decking, larger windscreen with an additional canopy which completely enclosed the cockpit if desired, and a neater undercarriage. Each leg of this consists of two telescopic steel tubes in which rubber discs absorb landing shocks, further blocks taking the rebound.

June, 1937, saw the maiden flight of this second machine which was registered G–AEXT (airframe No 123) C. G. Alington flew this new mount in many pre-war races and proved the Kitten's capabilities when demonstrating just how to take off in eighty yards in still air, and in " ballooning " down almost vertically until within a few feet of the ground. In his one hundred odd hours of flying the Kitten this pilot found it to be the best ultra-light yet produced—an opinion verified and shared by others such as Dawson Paul who also raced Kitten II, and who found that he could fly 'XT into and out of fields too small for a Moth—which really does mean small ! Other comments by these two experienced pilots were that the Kitten was easily taxied and, C. G. Alington considers the machine perfect for beginners, with its light controls, freedom from flick-stalling in tight turns (a valuable feature for racing), and the high degree of mishandling the Kitten will take without harm. Most notable of the flying qualities, however, he found to be the very gentle stall in which little height is lost, and this is due to the interesting design of the wing. The thick root section changes in two steps to a thin, undercambered profile at the tip, which brings about a droop in the leading edge, and this creates an illusionary gull-wing appearance This system has the peculiarity that, with increasing incidence, the stall first occurs at the middle of each outer panel and then progresses inboard, there causing warning buffeting, the tip stalling last, so that aileron control is retained up to a rather high incidence.

Structurally the Kitten is striking for its reassuring size and its unusually strong construction. The fuselage is completely ply-covered and the roomy cockpit is lined with ply which ensures that the pilot would come to little harm in event of a crash. The equally strong wings are detachable by means of simple screw-fastening tapered pins, enabling the Kitten to be housed in a small shed. All parts have a high safety factor as is evidenced by the welded 14G engine bearer tubes, which would need to be of 22G only to satisfy all stress requirements. In practice, this means that no weakening due to corrosion, such as is likely to occur under amateur conditions, would constitute a danger. The Kitten is robust to such a degree that it seems unfitting to class it as ultra-light, for it has none of the frailties that that term suggests and is altogether an immensely practical, long-living single seater, which combines simplicity with strength, ease of maintenance and safety.

Dart Aircraft Ltd. are to resume production of the Kitten with stringered fuselage decking and optional closed or open cockpit and will make available sets of parts to long-neglected enthusiasts. A Type C. of A, probably in the semi-aerobatic category, is expected after completion of A.R.B tests.

Colour

Both existing Kittens were turned out with red fin and fuselage with silver letters, and silver wings with red letters.

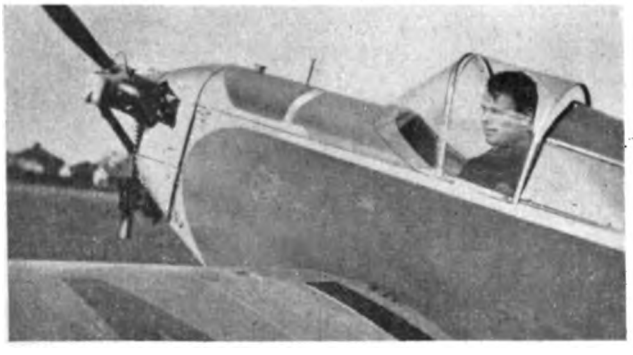
Construction

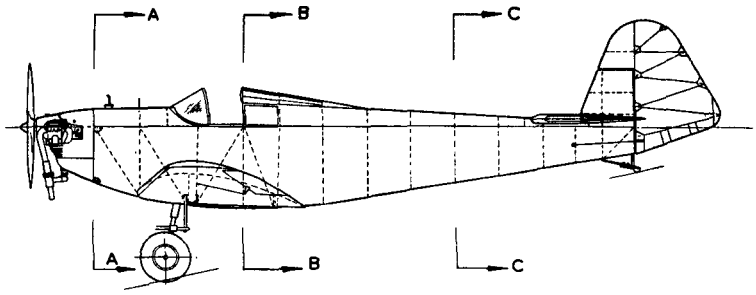
The whole airframe is of spruce and ply with M.S. fittings. All control surfaces are fabric covered. *Wings* are of single-spar construction with centre-section entirely ply covered, as is the leading edge of the outer panels which forms a torsion box, and much of the wing is ply covered aft of the mainspar. Fuel is carried in a 10-gallon tank in the decking forward of the cockpit and there is a locker for 20 lb. of luggage. The engine is a 36 h.p. J.A.P. J.99 flat-twin.

Specification

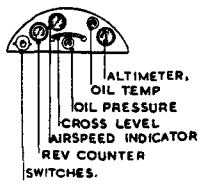
Span 32 ft. 0 in., length 21 ft. 9 in., height 7 ft. 11 ins. Wing area 129 sq. ft. Empty weight 507 lbs. Loaded weight 749 lbs. Maximum speed 95 m.p.h. Cruising speed 83 m.p.h. Climb 600 ft. per min. Range 340 miles (4½ hours).

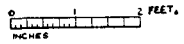
Top. The late F. D. Bradbrooke running up Kitten II at Hatfield. The gull wing effect is evident in this photo, also in bottom right where 'XT is shown with temporary spats on its sturdy undercarriage. Bottom left shows the fully enclosed version of the same machine.





INSTRUMENT PANEL.





SCALE FOR
INSTRUMEMENT PANEL &
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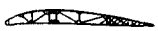

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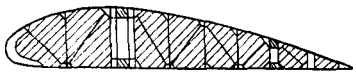

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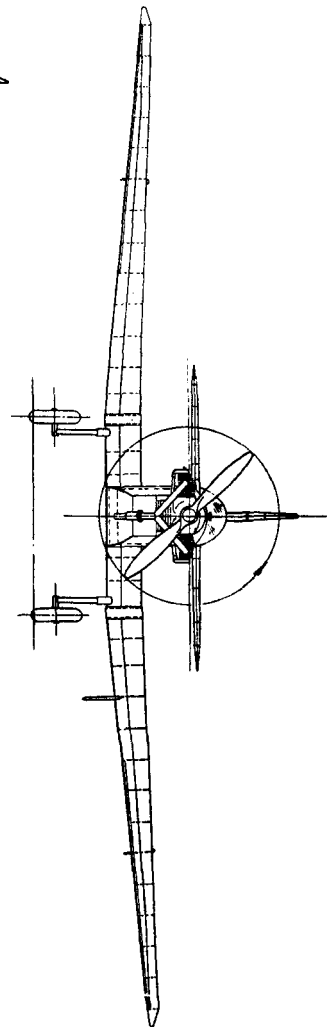

A A B B C C

DART KITTEN II

FT

CLUB NEWS

BY CLUBMAN

Left: Cpl. N. Barker, champion of 22 Group R.A.F. Model Aircraft Field Day, receives one of the trophies from Mrs. E. Maitland, wife of Air Vice Marshal P. E. Maitland, C.B., M.V.O., A.F.C.

HAVING heard for some time past of the Continental system of conducting contests, I was naturally a keen observer of procedures adopted both in Finland and Sweden for the conduct of the Wakefield and A–2 Glider events.

A careful study of the methods adopted confirms my opinion that it is high time competitors themselves shouldered more of the responsibilities at major events, and the handful of officials gave up the usual practice of wet-nursing competitors and stuck to their technical tasks, issuing reasonable instructions to competitors which they should insist on being carried out.

Apart from the ordinary club meetings and decentralised national contests where the usual happy-go-lucky system can still apply, I think it is time that National centralised and Area semi-centralised events were conducted on a stricter basis with a view to giving both competitors and officials a reasonably good time.

I therefore strongly advocate the allocation of set periods for the conduct of each round in a competition, the onus being on the competitor to see that his flight is made within the specified time limits.

Further, the system adopted at this year's Wakefield is well worth introducing. Uhder this method, following weight check of a model the flight card was handed to timekeepers, one of whom immediately started his watch. A competitor had 10 minutes in which to make his way out to the take-off area, wind up and get his machine airborne. This limiting factor was adequate, but most important of all, it prevented the hanging back which is such a common occurrence at most of our contests, and ensured that timekeepers were not detained by any individual for an unreasonable period.

The success of the above scheme of course depends largely on the number of timekeepers available, but I am certain that if the competitors themselves know they have a deadline to work to they will ensure there is somebody on hand to time their flights. With the greatly increased entries at most meetings I am definitely of the opinion that the time has passed when the whole of the responsibility is carried by a mere handful of voluntary workers, and it is high time we stopped spoon-feeding the flyers and made them toe the line to a reasonable extent.

I write this on the day following the highly successful " Daily Dispatch Rally organised this year by the **NORTH WESTERN AREA** at Woodford, my old stamping ground The number of competitors and visitors is probably the biggest yet witnessed at an aeromodelling function in this country, and the organisation is to be congratulated on the way the contests were put through to timetable. " Stop press " results are given here, and a fully illustrated and detailed report will follow in the next issue, time not allowing in this number.

The **MIDLAND AREA** are naturally pleased at their showing at this meeting, Ray Monks of Birmingham carrying off the Championship Cup, and a first and second in the power and gliding events respectively. With D. Hill (Wolves) winning the glider comp. and juniors Whittall and Poole of Birmingham taking top honours in the rubber and glider Junior sections, plus second in the Jetex by D. James (Flying Saddlers) and third in the power by K. Lloyd of Solihull, the Midlanders reckoned that they had their fair share of the awards plus a jolly good day's flying.

In view of the unusual temperature—125 in the sun—at the **LONDON AREA** meeting at Chigwell for C/L stunt and speed, motor performances were affected, and many jobs could not keep going for the requisite half mile. F. Guest made top speed when clocking 107.2 m.p.h. in Class 4 (Dooling 29), and also scored second top speed with 104 m.p.h. in Class 6, engine this time being a Dooling 60. F. Deudney of West Essex clocked 65 m.p.h. with his Javelin powered Class 1 machine, and A. Becker (East London) won the Class 5 event with a speed of 84.08 using a McCoy 49. Ken Muscutt of West Essex won the stunt event by a fair margin of points from Prentice of Chingford.

CALLING the holder of Wakefield Draw ticket Y/566, held under the name of G. Morris. We have tried to effect delivery of the prize, but all correspondence has been returned from Marchwood Camp marked " unknown ". It the gentleman in question will contact us he will receive his prize by return.

FOUND. One " Elfin " powered " Mallard " model, which landed at Slough apparently from the Northern Heights Gala. Anyone able to give description and engine number please inform Mr. J. Puttock, 157 Stoke Road, Slough, Bucks, when they can collect the offender !

STOLEN. A " K " Tornado engine, No. 7297 from the Palace Model Shop, 13 Central Hill, Upper Norwood, S.E.10. Anyone effecting recovery will be rewarded.

Following up the saga of R/C flying with the **OLDHAM & D.M.A.C.**, valuable publicity was gained through the local papers at the first demonstration by members. Beginners luck attended L. Gabriels (ten weeks radio experience, and using home-made equipment) to make successful flights, and a spot landing right in front of the Press did much to convince the hard-bitten reporters. C/L fiying and free flight gave a well balanced picture of the club's activities.

Following a move from Middleton St. George, the members of the old club have now reformed at their new station, and will henceforth be known as the **THORNEY ISLAND (R.A.F.) M.A.C.** Immediate teaming up with the Portsmouth boys has brought mutual interests together, especially as the latter chaps now use the aerodrome !

The Boxall Brothers of the **BRIGHTON & D.M.A.C.** have been cleaning things up in local comps. recently, taking all three club Cups in events for Wakefield, " All-in " and Power. Lucas was unlucky to lose his power job (a Banshee) after only one flight of 300 secs. but he nevertheless secured second position. R. J. Boxall lost his Wakefield 100 model in a peculiar fashion ! Keeping the model well in sight over houses bordering the 'drome, he retrieved the model and was on his way back when he encountered his brother, his model also being househunting. Not wanting to be encumbered with a model whilst retrieving, he left the job at a nearby house bordering the field. Having found the other plane, he was quite unable to relocate the house in which he had deposited his model—and that is the position to date !! Well well, that's surely one for our Tall Story box.

Members of the **HUDDERSFIELD AIR LEAGUE M.A.C.** put it across their opponents from Rotherham in the inter-club knock-out event held at Rotherham. Teams of three flew gliders in almost perfect weather, top time being returned by G. Paxman, whose A/2 went o.o.s. after time of 13 : 18. Huddersfield finally totalled 1309 against their opponents' 941 seconds, Paxman's flight of course being subject to the five minute limit.

A junior member, Roy Tasker, showed the seniors how to fly power jobs when the **BLACKPOOL & FYLDE M.A.S.** incorporated their own contest with their efforts in the

Hamley Trophy contest. With a total score of 10 : 34.5 he headed J. P. Clark who totalled 6 : 58.2 and Cliff Davey, whose one flight of 6 : 51 had to be scaled down to 5 : 00. Davey still leads the rest of the boys in the club champs. point table to date.

Though only recently formed, the **BARGOED EAGLES POWER CLUB** has almost doubled its membership in the past few months, their good facilities undoubtedly helping in this direction. With C/L flying in the local park, a wide open space only 20 minutes walk from the town, and a good sized lake only two miles away, everything seems laid on. Pride of the club at present is a 10 ft. span " Brabazon ", which will be control-lined. Power is expected to be two Frog 500's, with two idler props completing the four engine layout.

Held in co-operation with the North Eastern Area, the **NORTH EAST COAST MODEL AIRCRAFT COMPETITIONS** were held on the Town Moor, Newcastle-on-Tyne on July 30th, after a postponement of one week owing to weather. Seven clubs participated in weather which could have been better, some of the finishes being quite close and exciting. Full results were :

Open Glider	**S. C. Fairless**	**(Newcastle)**	**3 : 37**
	D. Lilburn	**(N. Shields)**	**3 : 10**
	F. Fox	**„**	**3 : 02**
Open Rubber	**T. L. Dunn**	**(Blaydon)**	**6 : 41·5**
	S. C. Fairless	**(Newcastle)**	**6 : 41·4**
	R. Hartley	**(Seaham)**	**3 : 43·5**
Open Power	**B. Tweedy**	**(N. Shields)**	**13·2 ratio**
	D. Lilburn	**„**	**12·6 „**
	J. Ramsden	**„**	**12·4 „**
C/L Stunt	**D. Shawcross**	**(N. Shields)**	
	G. H. Cowen	**„**	
	H. Clayton	**„**	

A controversy has arisen in the **BRISTOL & WEST M.A.C.** between D. Wilson and C. H. Middleton, the former maintaining that a pylon is not necessary, and the latter that it is where power is concerned ! Any comments ? In the C/L field A. Coles has done 112 m.p.h. with his Frog 500 powered speed job, and placed second in the Area events on July 9th with 106 m.p.h. D. Pavey's team racer, weighing only 15 oz., is doing 80 m.p.h. with a Frog 500 (9×8 Truflex) and over 30 laps per tank.

There has been a spate of record breaking in the **WHITEFIELD M.A.C.** in recent weeks, no less than six applications being in for British Record recognition, mainly in the newly created lightweight classes. This club did well at the Bolton Rally, J. O'Donnell winning the unrestricted glider event with his " Pothunter " with an aggregate of 3 : 50.6, second going to B. J. Williams with 2 : 10 for two flights. Weather was bad, which accounts for the poor times.

Attention in the **ARDINGTON & D.M.A.C.** is currently centred on big stuff, C. P. Williams' " Thermalist " distinguishing itself by a flight of 13 : 04 in the morning, and folding its wings up in the afternoon ! They now believe in wet weather thermals, D. G. Brodie's glider vanishing between downpours on June 18th, to be found five weeks later in a cornfield. The biggest dim-wit has been encountered by this club ! Finding B. Cross's glider in a hedge some six miles from its launching point, he pulled it out, read the instructions to notify the owner, and pushed it back again !! He duly notified Cross, but as can be expected, when the searchparty arrived, there was no further trace of the job, and it is still missing.

Radio control is the main activity of the **BATTERSEA & D.M.A.C.**, with Sid Allen as leading light. He also won the R/C event at the West Essex gala, and is a most consistent flier.

Co-operating in a show put on by the local model engineers, members of the **ROCHDALE & D.M.F.C.** are pleased with their showing, which included C/L flying inside a rather small hall, much to the amusement of the local visitors. Geoff Barlow hit a pillar with his job, but the model carried on quite well with only one wing panel ! A cup has been presented to the club by their President (Kings Cup winner) Mr. Dunkerley.

The **WEST BROMWICH M.A.C.** are just realising what a hazard the newly erected power lines on their field can be, practically every member having had a free flight job wrecked or damaged by the pylons, etc. J. Penn is getting good results from his R/C glider, and S. Vaughan is installing similar equipment in his " Centurian ".

Forthcoming meetings of the **INTERNATIONAL RADIO CONTROLLED MODELS SOCIETY** are as follows :

London : Sept. 10th. 2 p.m. at St. Ermins Hotel, Caxton Street, S.W.1.

Manchester : Sept. 17th. 2.30 p.m. at 2, Victoria Street, Manchester.

Birmingham : Sept. 2nd. Contact G. F. Golding, 32, Beechfield Road, Smethwick.

Tyneside : Sept. 20th. Contact N. F. Armstrong, 3, Lilburn Gardens, South Gosforth.

This month's Tall Story comes from G. Nutting of Wolverhampton. He tells of the " Junior 60 " which decided to land on what appeared to be telephone wires following its fifth flight of the day. Upon the reappearance of the unfortunate owner, carrying only the engine and tailplane, it transpired that the wires were power conducting types, and the wide undercarriage on the model had shorted the current, creating quite a little bonfire of the model, the engine and tailplane being the only parts to fall to ground undamaged ! I've heard of models being written off in various ways, but this takes the biscuit.

And so, for another month, cheerio, and let's hear from you

THE CLUBMAN.

NEW CLUBS

HERNE HILL DISTRICT M.F.C.
K. Dean, 34, Chaucer Road, Herne Hill, London, S.E.24.

BARGOED EAGLE POWER CLUB.
R. Morris, 53, South Street, Bargoed, Glam.

THORNEY ISLAND (R.A.F.) M.F.C.
P. Managhan, R.A.F. Thorney Island, Hants.

BROUGHTON & D.M.C.
K. E. Watts, 3, Green Drive, Fulwood, Preston, Lancs.

SECRETARIAL CHANGES.

BIRMINGHAM BLACK EAGLES M.A.C.
F. Hathaway, 1, Stanville Road, Sheldon, Birmingham 26.

DEFFORD M.A.C.
K. S. Whitehouse, M. of S., Defford Air Station, Worcs.

SUTTON COLDFIELD M.A.C.
M. F. Petrie, 16, Knighton Close, Four Oaks, Sutton Coldfield, Warwickshire.

WINCHESTER M.A.S.
P. H. Ivory, 64, Gordon Avenue, Highcliffe Park, Winchester, Hants.

DAGENHAM & D.M.A.C.
J. W. Bell, 255, Dagenham Road, Romford, Essex.

STOP PRESS
" DAILY DISPATCH " RALLY RESULTS

Open Glider	**D. Hill**	**(Wolves)**	**409·4**
	R. Monks	**(Birmingham)**	**442·3**
	J. O'Donnell	**(Whitefield)**	**393·6**
	H. R. Thomas	**(Blackpool)**	**393**
	L. Gabriels	**(Oldham)**	**378·5**
	W. Farrance	**(West Yorks)**	**376**
Open Power	**R. Monks**	**(Birmingham)**	**475·4**
	J. K. Marshall	**(Sheffield)**	**370·2**
	K. L. Lloyd	**(Solihull)**	**365·5**
	G. Cartwright	**(Sheffield)**	**317**
	H. Preston	**(West Yorks)**	**302**
	E. Clutton	**(Five Towns)**	**286·6**
Open Rubber	**E. C. Muxlow**	**(Sheffield)**	**461·2**
	P. Royle	**(Sale)**	**425·75**
	R. Woodhouse	**(Whitefield)**	**404**
	C. S. Davey	**(Blackpool)**	**391·5**
	A. E. Reynolds	**(Flying Saddlers)**	**369·2**
	S. A. Ward	**(Ashton)**	**369·2**
	S. A. Ward	**(Ashton)**	**333·4**
Jetex	**H. O'Donnell**	**(Whitefield)**	**5·6 ratio**
	E. Taylor	**(Manchester)**	**3·9 „**
	D. James	**(Flying Saddlers)**	**3·159 „**
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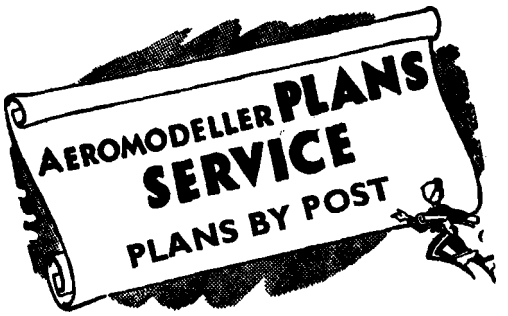

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Made and printed in Great Britain by Alabaster, Passmore & Sons, Ltd., London and Maidstone, for the Proprietors and Publishers, The Model Aeronautical Press, Ltd., Allen House, Newarke Street, Leicester. Trade Distributors: Horace Marshall & Son, Ltd., Temple House, Tallis Street, London, E.C.4—C1601.
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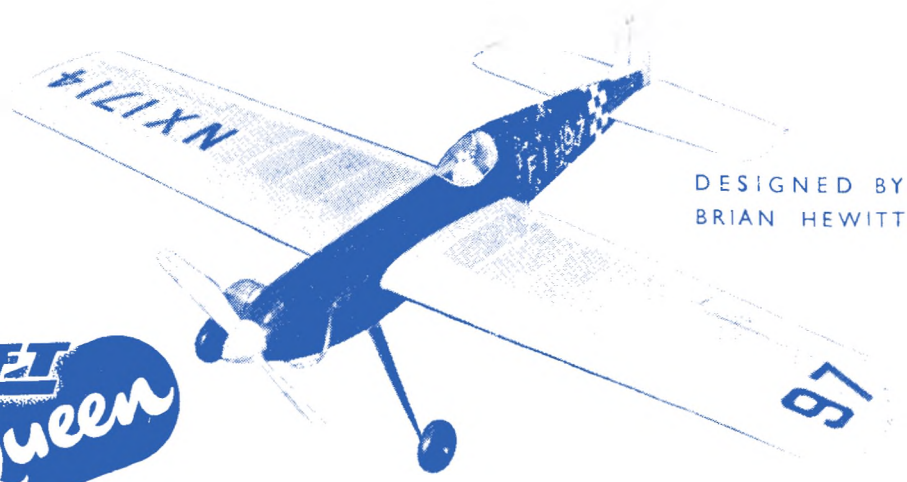

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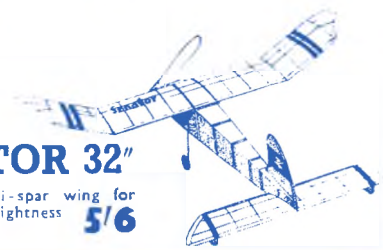

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