MARCH 1958

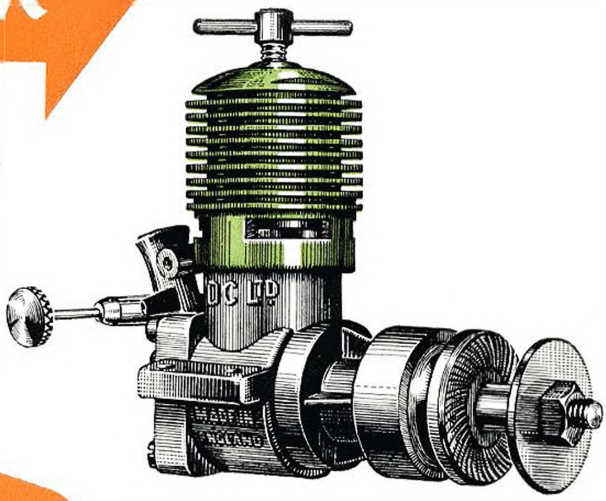
AERO MODELLER

Camel Close-up

1/6

RAPIER

Stands supreme in the 'International' Class



2·5 c.c., ·15 cu. in. 79/11

Twin ball races ensure friction-free running. A domed piston, 360 degree porting, and rear rotary valve induction ensure maximum efficiency of gas flow.

Downdraught carburettor has positive lock needle valve with provision for an additional needle valve or choke assembly to suit control line or radio-control enthusiasts.

Each unit is carefully checked and test run before leaving our factory as well as being backed by a comprehensive spares and accessories service.

For EXTRA performance

Use Allbon Ready Mixed diesel fuel which contains the finest ingredients and special additatives which promote easy starting, more revs, and ensure that your Rapier will last a modelling lifetime. Tank up with a bottle at your local model shop and note the sparkling increased performance. **3/3 per bottle.**

Engineered to last a modelling lifetime by

DAVIES CHARLTON LTD.

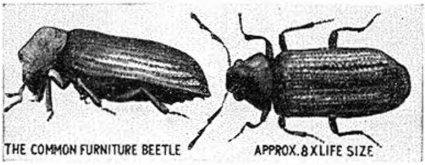
HILL'S MEADOWS DOUGLAS, ISLE OF MAN

THE SOLARBO BALSA STORY

This is one of a series of articles on Balsa Wood written by John Paterson, Managing Director of Solarbo Ltd.

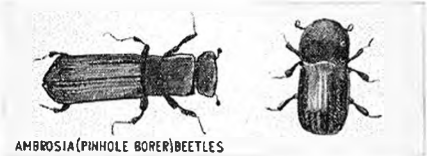
PART 10

ABOUT WOODWORM . . .


THE COMMON FURNITURE BEETLE APPROX. 8 X LIFE SIZE

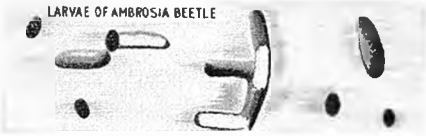
Most people in England have an unholy fear of a wormhole, but I want to assure you that the holes you may see in a piece of Balsa are not caused by the common furniture beetle—Anobium Punctatum, as he is called. With Anobium it is not the beetle that attacks the wood but the grubs (or larvae) who do the work. They seldom attack new timber. Wood has to be in use for several years before it becomes suitable for infestation. Anyway, they do not like Balsa wood. It is not meaty enough for them and I have never seen them attack it.

The damage in Balsa wood is caused by the Ambrosia (pinhole borer) beetle and in this case it is


AMBROSIA (PINHOLE BORER) BEETLES

the beetle itself that does the actual work. The beetles feed on a mould type of fungus they introduce into their tunnels. They are only associated with unseasoned wood in which alone their fungal food, known as "Ambrosia", can be cultivated. When the timber is dried growth of the Ambrosia fungus is stopped and the insects, deprived of their food, die. Nor is there any risk of a recurrence of attack.

Nevertheless in all specifications to do with Balsa wood these holes are referred to as "wormholes". We have our own buying specification and it reads: "No concentration of worm holes is allowed in any piece of wood". The American grading rules which


LARVAE OF AMBROSIA BEETLE

wree drawn up during the war and have never been superseded say (even with grade "AAA" which is the top grade):

> ". . . pin worm holes will be admitted provided the concentration in any single square foot of surface measure shall not exceed 10."

To aeromodellers this would mean that seven worm holes in a 3-ft. sheet would be permitted. For "B" grade this goes up to the horrifying figure of 40 holes to the square foot.


AMBROSIA BEETLE LARVAL CRADLES AND STAIN

I should think it is true to say that very few logs reach the mill without some worm attack. If they have not been lying around too long then the worms have not got very far in and the damage disappears when the logs are slabbed off. If they are old logs, however, they can be riddled with worm.

As all our Balsa wood is specified to be "Santobrite" dipped this has brought fungus attack within our control. I wish we could say the same thing about worm holes.

It is just not possible for me to specify that there shall be NO worm holes. If every piece of Balsa with


TYPICAL DAMAGE PRODUCED BY PINHOLE BORER

one or two worm holes had to be thrown away I am afraid that we would have difficulties in getting the quantities of Balsa wood we need.

What we do is to have our Agent on the spot watch out closely to see that we do not get badly-wormy wood—and then cut out such worm holes as we do get when we machine the lumber in our mill. Results speak for themselves in the quality of the Solarbo sheet and strip which reaches your model shop.

We have not finished with difficulties in cutting standard sizes of sheet and strip Balsa. Next month I will tell you about other troubles we experience, and how we overcome them.

An open letter

From: Air Marshal Sir John Whitley, K.B.E., C.B., D.S.O., A.F.C.

AIR MINISTRY (AM3b),
ADASTRAL HOUSE,
THEOBALDS ROAD,
LONDON, WC1

Dear Sir,

Suggesting a career is always a big responsibility - not least for parents with a son growing up. In the final analysis, the choice must lie with your son himself. But you can help him in his choice.

Here, therefore, are some facts about one career which is particularly attractive to an ambitious young man. I refer to a flying career in the Royal Air Force, about which there seem to be some misconceptions, at present.

First, let me assure you that flying will continue in the Royal Air Force for as far ahead as can be foreseen. The Royal Air Force has the prime responsibility for the air defence of this country. For young men therefore who are trained to tackle the problems of the air in the air, there will be more - not fewer - opportunities in the missile age. This is especially true of those who qualify now for a permanent or short service commission and come successfully through their Pilot's, Navigator's or Air Electronics Officer's training. In a service as complex and as forward-looking as the Royal Air Force, there is always a constant demand for the right kind of senior officers.

It is a well-paid job. In how many callings can a man of 25 earn £1,500 a year? It is a job of high responsibility. Quite apart from flying and its fascinating skills, there are the manifold duties of an officer; to men under him; in staff, liaison or training jobs; and perhaps, in high command.

You know yourself if your son has the character, intelligence and fitness for this magnificent (but exacting) life. If he is over 17½ and has G.C.E. or equivalent to the required standard, you may be doing him a service if you write to the Air Ministry for fuller information.

Let me add that the country needs the right kind of young men for this vitally important job, and it needs them now.

Yours faithfully,

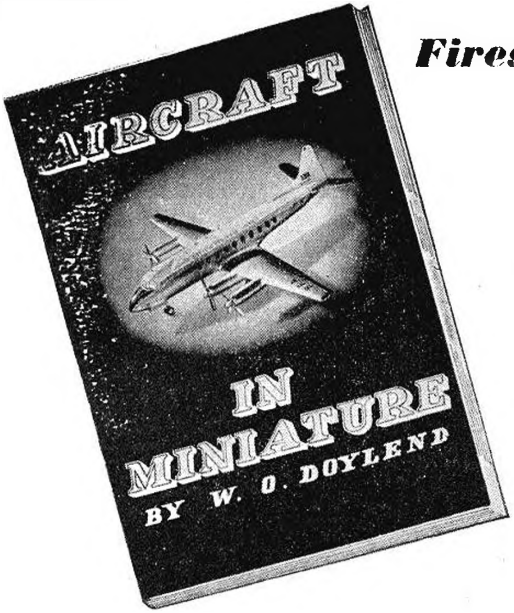
Air Member for Personnel

To any young man who wants to fly...

For further information write stating age and educational qualifications to: Air Ministry (AM3b), Adastral House, London WC1.

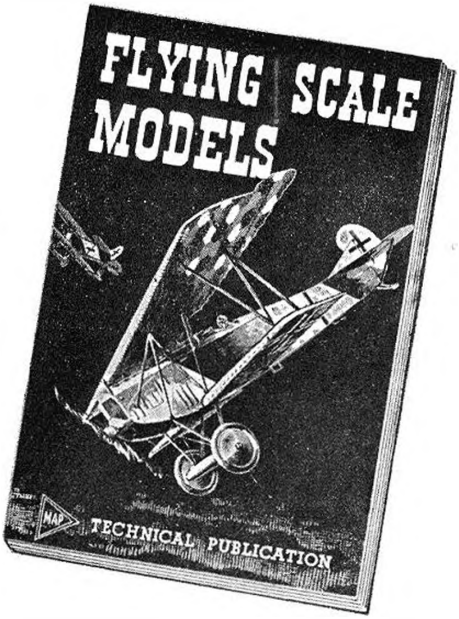
Fireside or Flying Field

whatever your inclination there is a MAP book to suit your interests. They are all practical books written for modellers by modellers and give the widest possible coverage on all model subjects.



The art and science of solid scale model construction demands only the most modest tools and the simplest of materials so that no high initial expenditure is required to make a start. With the aid of this book the complete tyro can be confident that his very first efforts will be highly rewarding of time and effort. The expert will find it a veritable mine of information gathered by the author over many years of practical experience. Every kind of aircraft is covered from historic types that laid the foundations of successful flight, through the perennially popular biplanes of the 1914-18 War, to more recent examples of the Battle of Britain, up to supersonic jets and civilian airliners. Nor are such interesting varieties as flying boats, seaplanes and helicopters omitted.

130 Pages $8\frac{1}{2}$ x $5\frac{1}{2}$ ins. 12/6



This comprehensive work on all aspects of Flying Scale Model Aircraft carries the enthusiast right through the difficult stages of design, building and flying every type of scale model. From selection of prototypes through the stages of plan enlargement and constructions detail with every type of power unit, diesel, glowplug or rubber drive, the reader is taken on a complete course of model-making leaving no branch of the subject untouched. Never before has it been possible for the keen scale modeller to obtain a book like this. It answers all queries and the intricacies of a detailed model, is packed with facts and invaluable sketch illustrations. Many photographs are collectors' items, revealed for the very first time to show special colour or constructional detail on ideal full-size subjects and all are printed on art gloss paper for finest quality reproduction.

128 Pages $8\frac{1}{2}$ x $5\frac{1}{2}$ ins. 10/-

MAP

USE THIS HANDY ORDER FORM

To: MODEL AERONAUTICAL PRESS LTD.,
38 Clarendon Road, Watford, Herts.
Please send me the book(s) marked X as under, for which I enclose remittance value £ s. d.

AIRCRAFT IN MINIATURE	(13/6 inc. P. & P.)	☐
AEROMODELLER ANNUAL 57/58	(11/- ,, ,,)	☐
FLYING SCALE MODELS	(11/- ,, ,,)	☐
SIMPLE RADIO CONTROL	(5/9 ,, ,,)	☐
DESIGN FOR AEROMODELLERS	(5/9 ,, ,,)	☐
CONTEST MODEL SAILPLANES	(5/9 ,, ,,)	☐
CONSTRUCTION FOR AEROMODELLERS	(5/9 ,, ,,)	☐
PLANS HANDBOOK CATALOGUE	(1/6 ,, ,,)	☐

NAME _____

ADDRESS _____

Or order on plain paper.

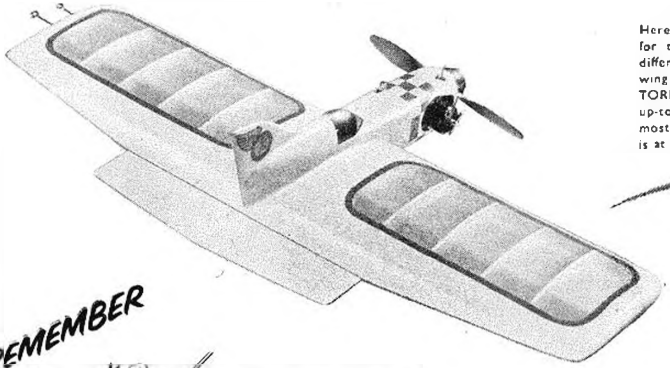
Send 3d. stamp for comprehensive book list to the Publishers:

MODEL AERONAUTICAL PRESS LTD

38 CLARENDON ROAD, WATFORD, HERTS

MERCURY

BRITAINS FINEST FLYING MODELS



Here is the ideal beginners control-line sport flier for the modeller who wants something a bit different. A rugged robust and full aerobatic flying wing based on the already well-established TOREADOR, the PICADOR is a smart, sleek, up-to-the-minute design by H.J.N. which will do most of the stunts in the present schedule and is at the same time stable and easy to fly.

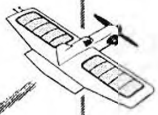
At only **19/6** this kit is really wonderful value for money.

REMEMBER THE NAME

PICADOR

The AM 10 is especially recommended for the PICADOR because it has ample power to fly the model, it is light in weight, it is easy to start, and having a front rotary intake it is easy to install and start in the model. Fit an AM 10 for the BEST results in your PICADOR.

PRICE **58/6**



SALIENT FEATURES

- Aerobatic flying wing.
- For diesels 1–1.5 c.cs.
- Stable flight characteristic makes model ideal for beginners to C/L flying.
- Especially recommended for the AM 10.
- Easy to build.
- As near unbreakable as a C/L model can be.
- Sleek modern lines with 1958 style swept-back fin.
- Rugged and simple construction.

Look for this bright blue and yellow box label in your local model shop. They will be displaying it as soon as the PICADOR is available. Then ask to see the wonderful kit contents.

Note the handpicked super quality SOLARBO balsa and the clear, fully-detailed plan. Then note the price again and you must agree that this is wonderful value for only 19/6.

MERCURY MODELS

HENRY J. NICHOLLS, LTD., (Wholesale) 308 HOLLOWAY ROAD, LONDON, N.7 Phone: NORth 4272

EXPORT ENQUIRIES: COURTNEY REED (EXPORT) LTD., 4 BRABANT COURT, PHILPOT LANE, E.C.3

AERO MODELLER

VOLUME XXIII
NUMBER 266
MARCH 1958

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

★

Special features

★

Regular features

★

AEROMODELLER Incorporates the MODEL AEROPLANE CONSTRUCTOR and is published monthly on the 15th of the previous month by the Proprietors:

MODEL AERONAUTICAL PRESS LIMITED
SUBSCRIPTION RATE (Inland) 23/-, (Overseas) 22/- per annum prepaid (including the special Christmas Number.)

Editorial and Advertisement Offices:
38 CLARENDON ROAD, WATFORD, HERTS
TELEPHONE: GADEBROOK 2351 (Monday-Friday)

Help us to help you and win £25

SINCE THE VERY EARLY days of AEROMODELLER it has been our practice to periodically conduct a survey of readers' opinions in order to accurately establish their current likes and dislikes.

Our last poll was taken in 1952, over six years ago, and since that date whole forests of balsa have been consumed by our readers, who we know have vastly increased in numbers and who have also changed their modelling habits quite considerably, at least that is our belief. The purpose of the Survey is to find out.

A Readers' Survey leaflet, which includes rules and entry form for our "Popularity Pick" competition, has been inserted in every copy of this March issue. Should by chance this be missing from your copy then a replacement can be obtained free of charge from the Editorial Offices. We are running this easy-to-enter competition in conjunction with the Survey to encourage more people to complete same. A sporting chance of winning £25, as well as the opportunity of shaping the future contents of his favourite magazine, will, we hope, spur every reader into putting pen to paper. The competition, we fancy, should whet the appetite of most readers, as it consists of placing ten well-known A.P.S. model designs illustrated on page 127 in order of popularity, as determined by their sales during 1957.

Modellers will find this task quite fascinating. For instance, what is the most popular kind of modelling? And here, do not let your own preferences cloud your judgment. Having settled this point, you may then have to decide between two designs. We fancy the final answer will correct quite a number of erroneous impressions held, as to the popularity of various brands of modelling.

Whilst completion of the Survey Form is a condition of entry to the competition, people who do not wish to enter the competition should not let this deter them from sending in a completed Survey. The more the merrier as far as we are concerned.

The Survey questionnaire has been classified into sections. Section "A" covers regular features, section "B" a personal questionnaire that will enable us to find out all your modelling habits, and section "C" a list of special features. This latter section covers most phases of modelling, but we have left a few blank spaces for those readers with out-of-the-run requirements. From sections "A" and "C" we shall gain an accurate picture of the type of editorial content that you, our readers, like best, and you can be sure that the valuable information obtained will be used to best advantage. From the personal questionnaire we hope to produce "Mr. Average Modeller", a gentleman of great asset to ourselves and to the model movement as a whole.

We have allowed ample time for even our most far distant readers to complete and return the questionnaire, and trust that every reader will spare a few minutes away from his building board. We want every reader, no matter how young or how old, no matter whether actively modelling or merely an armchair modeller; no matter whether a beginner or an expert; to play his part in shaping the future of AEROMODELLER.

And remember *someone* has to win that £25!

On the cover . . .

LAURIE BAGLEY captures the thrilling aerobatics by Captain Armstrong at Home Defence Station, Hainault, Essex, in 1918, so vividly described by Peter Gray on page 140 of this issue.

International Fare

The famous "Southern Cross" right, is the subject of yet another scale model addition to our Plans Service, as detailed on page 130, and coinciding with Her Majesty, the Queen Mother's visit to New Zealand, publication of this fine plan reminds us of the tremendous achievements credited to "Smithy" and the 'Cross.

The vast Pacific Ocean spreads twice as far as the N.Atlantic, yet the pioneering flight of the *Southern Cross* (on the same route as that followed by the Regal DC-7C last month) receives but little publicity outside of the Antipodes. This model design comes all the way from **New Zealand,** where authentic sources of information have enabled designer Laurie Ackroyd to give us nothing but the best.

Our other designs of the month are also from overseas, and similarly leaders in their class. From **Canada,** another Laurie Ellis Delta—this time with a new engine position and flying boat hull, while from Sweden we have **Swiss** expert Hansheiri Thomann's really outstanding A/2 "Aquila", with his own easy-to-understand yet technical explanation of the assymetric trim system.

New Zealand, Canada, Switzerland, this month, the best in control-line from the U.S.A., last month and Czechoslovakia for Wakefield next month. AEROMODELLER is truly an International magazine, offering only the very best of fare for your continued enjoyment of the hobby.

Trials Double

NO, WE DO NOT refer to a Tote system for aeromodelling, but the new conception of Team Selection for international contests, recently introduced by the S.M.A.E. In the past, competitors have progressed to the main selection contest via eliminating events held at Area level, by means of which the "rabbits" in the field were eliminated, thus leaving the Trials proper free for full attention to the proven fliers.

In response to competitor pressure, 1958 will see the Selection Trials open to all who care to enter, *but* this meeting will be conducted in two sections and the teams elected on the aggregate results of the two events. This year it will be Wakefield and Power classes that engage the attention of Championship aspirants, and the new method will of course, involve travel to two centralised meetings, instead of two Area and one Trials as in the past. We reserve judgement as to whether the new system will prove better than the old, for it will now be possible for a swarm of local fliers to outnumber the experts travelling long distances, and the new system may well favour those resident near to the actual venue(s).

A special entry fee of 10s. per class is required, this covering both sections of the contest(s). Pre-entry is a "must", and should be made to the Competition Secretary of the S.M.A.E. not later than May 17th, accompanied by a stamped addressed envelope. Entries arriving late, or omitting the s.a.e. will *not* be accepted.

P.Y.O.W. to Qualify

In future, Pay Your Own Way fliers for international events will be required to earn their official sanction by means of qualifying trials, thus eliminating (we hope) fiascos as happened with the party attending the 1957 King of the Belgians Cup event. We welcome this move, which is long overdue, for it should not be sufficient for a flier to have a deep enough pocket to be considered a qualified representative of his country at an International contest, and the S.M.A.E. in future will not recognise any contestant who has not proven his abilities at a special meeting.

June 22nd will witness a full-scale Control Line Trials meeting at a venue to be announced, at which contests for Speed, Stunt, and Team Racing will be conducted, from the results of which sanction (or withholding of such recognition) will be based. Similarly, on July 20th, a meeting will be staged for those desirous of obtaining sanction for International Radio Control contests, particularly that for the King of the Belgians Cup event, which this year takes place in Germany. Intending notice of participation is required by not later than May 31st for both these meetings, and particular attention is drawn to the requirement that all models must conform to the 1958 F.A.I. specification, which of course, embraces the general Model Rules.

Obituary

Aeromodellers are invariably individualists, and Bill Trevithick was no exception. He was a brilliant model engineer, built his own engines and his own style of power model, that he would be seen flying

way downwind from the crowd, at many of the popular rallies held in the home counties.

A member of the Norwich Flying Club, he held a pilot's licence, and was also a qualified civilian glider instructor. Love of all things aeronautical was also reflected in his profession of commercial artist, for his work often featured on the front cover of *Flight* and other aviation journals.

His interest in recent years centred on radio-control models, and he was an active member of the High Wycombe Club, flying regularly at aerodromes such as Benson and Henlow.

Bill, who was 58 years of age, died suddenly at his home at Ruislip on Friday, January 3rd. He will be sorely missed by his wife and brother, Richard Trevithick, well known as a veteran aeromodeller, to whom we offer our deepest sympathies.

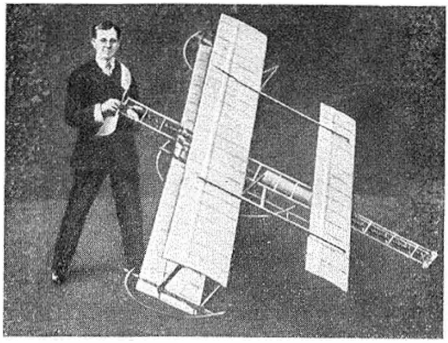
Passing of a great pioneer

Sir Alliott Verdon-Roe, O.B.E., who died on January 4th in his eighty-first year, was, like many other famous aviation pioneers, first an aeromodeller. In fact, with the large biplane rubber model illustrated on this page he won, in 1907, the sum of £75 in a competition organised by the *Daily Mail* at Alexandra Park.

With this money he built a full-scale biplane powered by a 9 h.p. J.A.P. that he endeavoured to fly on Hackney Marshes. A railway viaduct runs across the marshes beside the River Lea and "A.V." rented two of the arches and turned them into sheds which served as hangars and workshops. This information was sent by our old friend, Col. Taplin, who was an eye-witness of these early attempts, and we can do no better than quote from his letter on the subject of this famous pioneer.

"Having played around with model aircraft since my schooldays and subsequently as a youth, having built myself a 30-foot glider with which I nearly killed myself, it was not surprising when I heard that a madman was endeavouring to build a power machine on Hackney Marshes, that I hastened on my bicycle down to the marshes to see what it was all about. Thus, it was that in the early part of 1908 I made contact with 'A.V.' and we subsequently became very excellent friends. Having always been very useful with my hands, I very soon became his young assistant, arriving at the sheds in the early morning and working until breakfast time and then returning in the evening and working until the late hours.

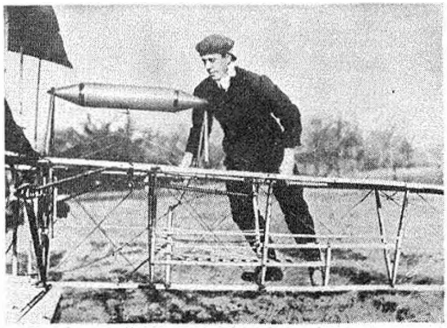
As most people will have read, the machine was a tri-plane with a fixed tri-plane tail, all three main wings warping for balance and pivotting up and down to give the angle of incidence for fore and aft stability. The engine was a 9 horse twin cylinder Jap engine and in the earlier part of the machine's history, the propeller was a four-bladed nine-feet diameter "paddle" driven by a whittle belt off a Vee pulley from the engine with a reduction ratio of about 4 : 1 giving the propeller revolutions as about 900 per minute R.P.M. After numerous attempts to get off with all sorts of alterations to centre of gravity, etc., during which attempts it was



my custom to lie face to ground level to see whether during any particular run I could see light under the wheels, after many such attempts extending over months, one bright and early morning 'A.V.' succeeded in getting the machine off the ground and travelling for a distance of 60 or 70 feet without any trace of the wheels in the grass — in fact, it rose to a height of three or four feet, landing heavily and buckling the wheels, which after all were only cycle wheels. This was the prelude to a number of quite reasonably successful flights as will be seen by some of the newspaper cuttings of that date. Finally, this machine, having served its purpose, was put into cold storage and 'A.V.' built a revised model fitted with a four-cylinder "Green" engine, which he flew successfully at the Blackpool meeting in 1910."

We are very grateful to Col. Taplin for this first-hand account which is particularly interesting for its reference to the wheels of the 9 h.p. machine actually leaving the ground. With a machine fitted with a larger engine the following year, and here some accounts refer to a 24 h.p. Antoinette and not a "Green" as quoted, "A.V." claimed to have flown for a distance of 75 ft. at a height of 2 ft. Witnesses of this achievement could not be found, and the Royal Aero Club could not accept it officially as the first flight on British soil. There is little doubt, however, despite lack of recognition at the time that to Sir Alliott Verdon-Roe goes the distinction of being the first Englishman to leave the ground in his own aeroplane.

Sir Alliott Verdon-Roe, O.B.E., is shown at top of page with his eight-foot span, eight foot long, rubber driven biplane that won the "Daily Mail" prize, and below, climbing into his 9 h.p. triplane. Note petrol tank and slatted seat that even sacrifices a cushion in the cause of lightness!



Handsome new Soviet trophy given for the Free Flight Power section of the Criterium of Europe

F.A.I. INTERNATIONAL AERO-MODELS COMMITTEE MEETING

Held at 6 Rue Galilee, Paris, 16th & 17th November, 1957

PRESENT:

Mr. A. F. Hoalberg (in the Chair)
Mr. A. Roussel, Assistant Secretary (Belgium)
Mr. Oskar Czepa (Austria)
Mr. F. Echtner (Czechoslovakia)
Mr. Z. Husicka (Czechoslovakia)
Mr. J. Desmes (France)
Mr. H. J. Meier (Germany)
Mr. R. F. I. Gosling (Great Britain)
Mr. T. van Hattum (Holland)
Mr. Beck Rezso (Hungary)
Mr. G. Barthel (Italy)
Mr. P. Follete (Monaco)
Mr. J. Bury (Poland)
Mr. J. Arraiza Goni (Spain)
Mr. Gomez del Barno (Spain)
Mr. A. Deigen (Switzerland)
Mr. A. Ermakov (U.S.S.R.)
Mr. A. Tattunchenko (U.S.S.R.)
Mr. H. R. Gillman, Director of the F.A.I.

1—Championships

After having discussed the question of grouping the Championships, the Committee decided that it would be better to start discussing the proposals to introduce new Championships and then to proceed with the question of grouping.

The Royal Aero Club of the Netherlands proposed that Team Racing, Aerobatics and Radio Control be accepted as Championships events in the future.

The Aero Club of Hungary proposed that Championships be introduced for Control Line Speed models with 5 and 10 cm3. engines.

A Championship for Team Racing was adopted by 12 votes to 2.

A Championship in Aerobatics was adopted by 12 votes to 2.

A Championship in Radio Control was adopted by 13 votes with one abstention.

The delegate from Hungary dropped his proposal for Championships for models with 5 and 10 cm3. engines in view of the acceptance of the other Championships.

With the addition of the three new Championships, there will now be seven F.A.I. Aero Models Championships as follows for:

1. Rubber engined Models
2. Mechanical engined models
3. Gliders
4. Control Line Speed
5. Team Racing
6. Aerobatics
7. Radio Control

Grouping of Championships

The Committee decided to deal with the years 1958 and 1959 separately.

The Royal Aero Club of Belgium asked the Committee to agree that the Aero Club be allowed to organise, during the forthcoming International Exhibition in Brussels, Championships for Team Racing, Aerobatics, and Control Line Speed. The three Championships being run in one combined event. The Club asked that the event be treated as an exceptional one and outside the ordinary arrangements for annual Championships.

The Belgian proposal was accepted by 13 votes with one abstention.

On the question of grouping generally, the Committee made the following arrangements:—

Championships in *Group I* for:
Rubber engined Models, Mechanical engined Models and Gliders.
that is to say, all free flight Championships together.

Championships in *Group II* for:
Control Line Speed, Team Racing and Aerobatics.

Championships in *Group III* for:
Radio Control

As the free flight Championships for 1958 had already been settled in 1956, the Committee decided that no change be made. Therefore, in 1958, Championships will be held for Rubber engined and Mechanical engined Models.

The Committee were informed that a letter had been received from the Royal Aero Club of Sweden offering to organise the Rubber engined Models Championship, if the Committee reverted to the former plan of holding all four Championships separately each year. However, as the Committee had already decided to group the Championships as described above and to retain, for 1958, the groups fixed in 1956, the offer by the Royal Aero Club of Sweden could not be accepted.

It was decided to confirm Great Britain's offer to organise, in 1958, the Rubber engined and Mechanical engined Models Championships as already proposed.

It was made clear to the Committee that there would be no Championship for Gliders in 1958.

The Committee decided by 13 votes in favour with one abstention, that the Championships for 1959 would be for Rubber and Mechanical engined Models and for Gliders, all held together in the same place and organised by the same Club.

In 1960, the Championships would be for all the Control Line Events, that is to say, Speed, Team Racing and Aerobatics.

Also for the first time, Championships would be held for Radio Controlled Models. The Radio controlled events in 1958 and 1959 would be for the "King of the Belgians' Cup": organised in 1958 by Germany and in 1959 by another country.

2.—Calendar of Championships and other International Aero Model Competitions in 1958

August 2-4. *The Championships for 1958 will be for Rubber engined and Mechanical engined Models and these will be held in Great Britain.*

September 17. *The Aero Club of Belgium will arrange the Championships for Team Racing, Aerobatics and Speed.*

September 21. *The German Aero Club will arrange the Radio controlled Competition for the "King of the Belgians' Cup".*

In addition to these events, the following were accepted for the calendar:

February 16, *at Helsinki in Finland: Competition organised by Nuorisoilmailijat for Gliders and Rubber engined Models.*

May 24-26, *at Barcelona in Spain: A European Championship for Team Racing and Aerobatics.*

May 25-26, *in Monaco: Competition for Radio controlled Seaplanes. The Committee agreed by eight votes for and three against to a request from Monaco that hand launching be permitted for the Radio controlled Seaplanes.*

July 18-20, *at Jomi jarvi in Finland: International Competition for the Northern countries for Gliders, Mechanical engined and Rubber engined Models in free flight.*

August 18, *at Split in Jugoslavia: Competition for the "Jugo Hydromodel Cup", organised by the Aeronautical Union of Jugoslavia.*

September 13-14, *at Twiel in Holland: Competition for Flying Wings organised by the Royal Aero Club of the Netherlands.*

September 28, *at Turku in Finland: International Competition for Northern countries for Rubber engined and Mechanical engined Models in free flight.*

Criterium of Europe. *It was understood that a Criterium of Europe would also be organised, but it was for the Aero Club of Finland, the winners last year, to decide whether their Club would organise the event or offer it elsewhere.*

The Hungarian delegates mentioned that their Club would be organising an International Competition for Microfilm Models in May, 1959.

3.—Additional F.A.I. Championships

The Committee accepted the proposal by the Royal Aero Club of the Netherlands to hold F.A.I. Championship events for Team Racing, Aerobatics and Radio controlled Models.

The Aero Club of Hungary had suggested that Championships should be introduced for Control Line Models for 5 and 10 cm3. engines, but as the Committee had already adopted three new Championships, the Club withdrew their proposal.

4.—Championships' Cups

The Committee were informed that the Royal Aero Club of the Netherlands had suggested that the Committee investigate its authority for establishing or changing rules for events for which Cups had been offered, and referred to a suggestion made by one Club to withdraw from the F.A.I. a Cup which had been given for one of the F.A.I. Championships.

The Royal Aero Club of the Netherlands thought that once a Cup had been given for a Championship or Competition, the original donor of the Cup should not be

able to prevent any change in the rules for the Competition if these changes were found to be necessary.

Mr. Gillman said that the position of the F.A.I. was, that it was bound to respect the conditions under which any Cup had been given, but that these conditions should be clearly stated at the outset.

The Chairman remarked that in the particular instance under discussion, which affected the Wakefield Championship, the Wakefield Cup had not been given to the F.A.I. but the F.A.I. had been asked to accept the Wakefield type Model Competition as one of the F.A.I. Championships.

An important condition under which the Wakefield Cup had been given, was that it should be held annually.

The present arrangement for holding the Wakefield Championship every second year was contravening this condition.

The Members of the Aero Models Committee, while agreeing that the original rule was being disregarded as a result of the new arrangement, thought nevertheless, that the spirit of the Competition was maintained and that Lord Wakefield would not have objected to the new arrangement being introduced, therefore in view of the Committee, the S.M.A.E., which had raised the objection would be invited to reconsider the matter.

The Committee also agreed that if the S.M.A.E. insisted upon withdrawing the Wakefield Cup, the F.A.I. be requested to provide another Cup which would then become the Cup for the Championships for Rubber motored Models in free flight.

Mr. Gillman said that he would take up this matter with the S.M.A.E. He also said that he would take the opportunity of the present Meeting to establish again the list of Cups and events for which they were given, and he asked the Committee to assist.

The following list was established:—

Glider Championships

The Swedish Cup for the individual champion and the Daumerie Cup for the team champion.

Mechanical engined Models in free flight Championships

The Jugoslav Cup for the individual champion and the Victor Tatin Cup for the team champion.

Rubber motored Models' Championships

The Wakefield Cup for the individual champion and the Alphonse Penaud Cup for the team champion.

Control Line Speed Championships

The Aero Club of Holland Cup for the individual champion and the Leonardo da Vinci Cup for the team Champion.

In addition to these Championship Cups, there was a second Jugoslav Cup for the Criterium of Europe, for which also the Central Aero Club of the U.S.S.R. asked the Committee to accept a Cup for Mechanical engined Models in free flight to be competed for in the Criterium of Europe.

This Cup had been won in 1957 by Finland.

The representatives of the U.S.S.R. said the Cup was offered to the F.A.I. without any conditions attaching to the donation, except that the Cup would be for competition amongst all European nations and it would be called the Cup of the Central Aero Club of the U.S.S.R. "V. P. Tchkalov".

5.—Radio Controlled models—Rules for Competitions

The draft rules prepared by the Sub-Committee in May, 1957 were adopted in the form attached to these Minutes.

These rules will be brought into use for Competitions and Championships from January 1st, 1958 (*copies can be obtained from the S.M.A.E., price 1s. plus S.A.E.*)

The question of marking for Spot Landing will be reviewed after the proposals put forward by the S.M.A.E. and by the Royal Aero Club of Sweden have been tried out in practice.

The Committee agreed that the number of competitors in each Radio controlled event be left to the discretion of the organisers until 1960.

6.—Team Racing

A proposal by Hungary to introduce records for Team Racing was not accepted. Members of the Committee pointed out that possibilities of making speed records already existed for Control Line Speed Models and there seemed to be no object in introducing a speed record for Team Racing.

On the other hand, it would be possible for the highest speeds set up during any Team Racing events to be registered at the F.A.I. A record of these speeds could be maintained by the F.A.I. for the information of other competitors.

From January 1st, 1958, there would be four teams in each race instead of three; this proposal was adopted by eight votes to two against, and four abstentions.

A proposal by the Aero Club of Holland that the start of a race be signalled by a flag and whistle, was adopted by 11 votes with three abstentions.

Another proposal by the Aero Club of Holland that a disqualification should, in the first instance be made known to the mechanic in a Team Race, was agreed, and it was decided to insert a note to this effect in the rules.

A third suggestion that, in order to avoid damage to control lines, Models should not be fitted with metal wheels, was unanimously agreed.

A proposal that three judges should be posted in order to follow the race was not finally adopted, but it was agreed that this point should be considered in connection with each event.

7.—Competition for Training Gliders

It was reported to the Meeting that, since the last occasion, when the matter had been discussed, it had not made any progress because of the difficulty in the way of its adoption.

It appeared that each country had its own ideas about the type of training glider necessary. The matter was further complicated by the element of commercialism and design rights which were matters in which the F.A.I. could have no part.

The Committee agreed that any further attempt to introduce a Competition for these gliders be dropped.

8.—Microfilm Models

Hungary proposed that these Models, commonly known as "indoor' models be recognised officially for International Competitions and Records.

The Committee agreed that these Models were of a very interesting kind and were worth developing.

It was agreed that further information concerning the technical details of the models be obtained, as well as specimen rules in various countries, particularly from the U.S.A., where there was a lot of experience with this kind of model.

The Hungarian delegation reported that there would be an International Championship in Hungary in May, 1959, for these models, and they hoped that many countries would take part.

The Committee thought that this would be a good occasion on which to try out the organisation of F.A.I. Championships.

9.—Rules for Records in Control Line Speed

The Aero Club of Hungary proposed that rules be adopted which required the technical characteristics of models entered for Record attempts to be the same as for those used for Control Line Speed Championships.

The Committee agreed that this proposal be referred to all Clubs, for their opinion.

The Meeting thought that the best way of dealing with this question, would be to set up a Sub-Committee which could consider all the details and make proposals to be brought up at the next meeting.

In view of the interest taken in the matter by Hungary and Czechoslovakia and Italy, the representatives of these three countries were asked if they would agree to serve on the Sub-Committee. As these countries agreed, a Committee of representatives from these three countries was set up and it was left to the Committee to meet at the most convenient time and in the most convenient place.

10.—Competitions under the Matt Ewing Formula

The proposal by the All-India Aeromodellers' Association, that this formula be recognised for International Competitions was considered.

A Member of the Committee mentioned that a similar competition, called "The American Load Carrying Competition", had already been adopted in several countries.

The Committee agreed that both these competitions were very interesting, but there was no need for any official recognition from the F.A.I., because there was nothing to prevent an Aero Club organising same as an International Event.

There were other competitions, such as the "King of the Belgians' Cup" for Radio controlled Models, and so on, which had become well-known and were now International Events. They could be included in the F.A.I. Sporting Calendar, but they were not official F.A.I. Events. These official events at the present time were only the Championships, and the Committee thought that only World Championships should have official recognition.

11.—Matters decided by Postal Ballot

The Committee were reminded of decisions which had been reached after a postal ballot following on instructions given by the General Conference of the F.A.I. at Vienna.

The final results of the ballot had been as follows:—

Question No. 5—Weight of rubber in **RUBBER** motored models

Decision: The weight of rubber reduced from 80 gr. to 50 gr.

Rules Summary

Total area—17 to 19 grammes (263.5 to 294.5 square inches).

Total minimum weight—230 grammes (8.113 ounces).

Total weight of Rubber motor—50 grammes (1.763 ounces).

Question No. 6—Weight per cubic centimeter of cylinder capacity in **POWERED** models.

Decision: To abandon the previously adopted weight of 400 gr. per cubic centimeter and to adopt the formula put forward by Switzerland.

Rules Summary

Maximum cylinder capacity 2.5 cc.

Load per cc. of cylinder capacity, 300 grammes (10.6 ounces).

Load per unit of area:

Minimum 20 gr. dm2 (6.56 oz sq. ft.)

Maximum 50 gr. dm2 (16.4 oz sq. ft.)

Engine run: 15 seconds.

Question No. 9—Rules for **TEAM RACING.**

Decision: To adopt the new formula of constructional characteristics described in the Minutes, as follows:—

Maximum cylinder capacity: 2.5 cm3.

Total area (wing plus tail unit): 12 dm2 min. (186 sq. ins.).

Minimum dimensions of the fuselage at the "pilot's cockpit":
Height: 100 mm. (3.94 ins.).
Width: 50 mm. (1.97 ins.).
Maximum total weight: 700 gr. (24.7 ozs.).
Maximum capacity of fuel container: 10 cm3.

Question No. 14. Class of Model for CONTROL LINE SPEED.

Decision: To adopt the formula of constructional characteristics proposed by Czechoslovakia as described in the Minutes, *i.e.*:

Maximum cylinder capacity: 2.5 cm3.
Total minimum area: 2 dm2-cm3.
Wing loading for unit of area: 100 gr/dm2 max.

These decisions were final and will be applied on and from January 1st, 1958.

(In addition, to complete the picture, we add the rules for GLIDERS)

Glider Models—Rules Summary

(The World Championship class is officially designated F3, but popularly known as the A/2).
Total area 32 to 34 square decimetres (496 to 527 square inches).
Total minimum weight 410 grammes (14.5 ounces).
Length of launching cable, 50 metres (164 feet).

12.—The Sporting Code for Aeromodelling, Section 4

Copies of the first draft of a re-arranged Section 4 were handed around to the delegates at the Meeting.

The delegates were informed that there was no intention at the present Meeting to go into the details of the draft. The Section had been re-arranged in order to make it easier to use, and all information necessary concerning any particular activity such as Records, Free Flight Events, Control Line Speed, Radio Control and Team Racing, had been put into each appropriate section.

The contents of the existing Section 4 have not been changed, but have merely been re-arranged, all the rules were the rules as they existed with the exception that here and there, a word or a sentence had been altered, in order to make the meaning clearer, but there had been no change in meaning or intention.

Although it was not intended that the Committee should study the draft in detail, as several Clubs had sent in proposals for modifications, these were reviewed and the following decisions were reached:—

Aerobatics. Method of Marking.

The Royal Aero Club of Spain proposed that only one flight (the best) be marked instead of the mean of the two best flights, because meteorological conditions, particularly the wind, have a great influence on the completion of figures and manoeuvres. The Regulations should be framed to eliminate the "chance" factor from all Championships.

This proposal was discussed at great length, but the Committee decided by 12 votes with one against, and one abstention, to retain the present method of taking the mean of the two best flights out of three.

The decision affected another proposal by Spain to calculate the marking by a formula, which would divide the result of either one flight or more, by two.

This proposal was defeated by 14 votes.

A further point raised by Spain concerned **unsuccessful attempts.**

After a long exchange of views it was agreed to alter the rules about unsuccessful attempts as follows:

An attempt is unsuccessful when:

(*a*) the competitor comes on to the track, and for a reason beyond his control, the model does not take off.
(*b*) any attempt during which the model takes off.
(*c*) when the model does not take off within three minutes.

Number of attempts

Each competitor has the right to two attempts for each official flight.

These rules were adopted unanimously.

The Committee also unanimously adopted a rule proposed by Czechoslovakia, that during an attempt, the competitor may only once place his wrist in the fork of the pylon.

Length of time on the course

The Royal Aero Club of Spain pointed out the difficulty that is encountered in knowing at what moment the Jury has commenced to count the three minutes to which the competitor is entitled in commencing a flight, and suggested that this time should be signalled by an optical or an acoustic signal, which would be evident to the competitor and to all the other competitors.

As the method of signalling can vary and as one method can be preferred to another by an Aero Club, the Committee agreed with the Aero Club of Spain and accepted the proposal that the organising Club should on each occasion, use a system of signalling which would clearly indicate to all concerned the start and the end of the three minute period after the competitor has indicated his readiness to start.

A proposal by the Royal Aero Club of Spain that the Committee examine the possibility of eliminating unsuccessful attempts in free flight for gliders, motor models and rubber engined models, was not accepted by the Committee, which decided by 11 votes for, with one against and two abstentions, to keep the present rules.

A proposal by the Aero Club of Italy to alter the all up weight of gliders from 650 to 700 gr. was rejected by 13 votes to one.

Further proposals by Italy to mark four out of five launches for all sub-classes of free flight and to carry 40 grs. of ballast in these sub-classes, were not accepted. The voting was 10 to four against and 13 to one against respectively.

A proposal by the U.S.S.R. for three and not four competitors in a team was agreed by 12 votes to one against and one abstaining on the understanding that the proposal be put to all the Clubs in writing, for their views; *this proposal if finally adopted, will come into force only on January 1st, 1959.*

Hand-launching of Speed Models which was proposed by the Royal Aero Club of Sweden, was not agreed and the present rule of rise off ground was retained.

Sweden also asked the Committee to settle whether *control lines* of any *thickness* could be used for breaking records in speed.

The Committee decided to ask the Sub-Committee which had been set up to look into this question.

The subject of *nylon cables* raised by Sweden, was discussed. The Committee agreed that as the conditions were the same for all concerned and as there is practically no stretch in the cable at the time the model is released there were no objections to the use of nylon.

The Central Aero Club of the U.S.S.R raised the question of measuring altitude for models making attempts on altitude records. They asked that it be allowed for the model to be followed by an aircraft in which a recording barograph would be installed.

The Committee did not reach any decision on this point, but agreed that it be further considered and that the possibility of obtaining suitable barographs to be carried in model aircraft is investigated.

The delegate of the Aero Club of France reported that two types of a very light barograph had been produced in France but, as yet, only on an experimental basis. He thought that production types could be made if there were a sufficient demand.

The Central Aero Club of the U.S.S.R. also raised the question of following Radio controlled Models by an aircraft carrying the Radio control apparatus, in order to allow these Models to attempt long distance record flights.

The Committee agreed that this suggestion be referred to Member Clubs, for their opinion.

A proposal that the rules in Section 4 of the Sporting Code, remain in force without change for the next four years, was thought to be unpractical because it would be ridiculous not to alter a rule if an alteration were necessary. However, the rule of a two-thirds majority vote for a change would be applied and each alteration proposed would be very critically examined before any change was accepted.

The discussion on the rules in the Sporting Code having terminated, the Committee agreed unanimously that all comments on the new draft must be sent in to the F.A.I. by January 1st, 1958.

13. Aeromodellers badges

The Aero Club of Poland had suggested that the F.A.I. produce badges for aeromodellers.

The Committee were informed that badges had been produced several years ago and that information concerning the badges had been sent to the Aero Clubs, but none had shown any interest.

The model badges produced had, in one corner, a letter signifying the country; this created a complication and prevented the F.A.I., as distinct from the Clubs, making the badges.

If the Committee thought that a badge without the national letter would be acceptable, the F.A.I. could try again to interest its Members.

The Committee agreed that a proposal to this effect be again made to Member Clubs.

14.—Election of Officers

By a unanimous vote, Mr. Houlberg was re-elected President.

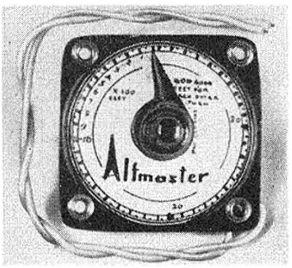
Mr. Meier will continue to serve as Vice-President.

Mr. Gillman said that Mr. Guillemard, who had been Secretary for some years, now found that his duties prevented him from devoting himself further to this work, and had asked the Committee to accept his resignation. The Committee felt bound to do in view of his request, but decided that a special letter be written to Mr. Guillemard, to be signed by all Members of the Committee present, thanking him for all the work which he had done for the Committee, and for his services to Aeromodelling.

The Committee unanimously elected Mr. A. Roussel as Secretary.

This concluded the business of the Meeting.

New British height recording instrument and barometric relay records maximum altitude and can operate a D.T. or similar device at selected heights. Size approximately 1¾ x 1½ x ⅞ ins., weighs only ½ ounce and costs 23/-



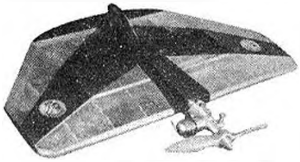
"POPULARITY PICK" COMPETITION

£25 CASH PRIZE

Full details of this competition, including rules and entry form are with the Readers' Survey leaflet inserted in this issue. We will, however, repeat the basic theme of the competition, which is a real test of aeromodelling knowledge.

On this page are illustrated ten well-known A.P.S. designs together with brief descriptions. All you have to do is to place them in order of popularity according to their sales during the year ending 31st December, 1957. Remember that your favourite brand of modelling is not necessarily the most popular class with modellers as a whole!

A panel of judges that include Messrs. H. J. Nicholls, Mr. A. A. Hales, two well-known personalities in the modelling world, as well as our own Managing Editor and Editor will select the winning entry as determined by the actual audited sales figures.

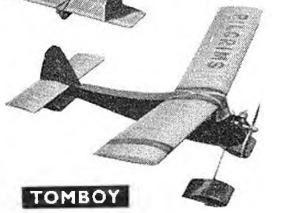


UNLIMITED

INVADER

MOSQUITO

R-6-B



TOMBOY

UNLIMITED by **R. Smith.**
This most unusual flying wing type of control-liner has proven practically indestructible in the hands of absolute novices. Capable of all known stunts, the method of construction is simple yet amazingly rugged. Span 20 in. Ideal for combat, takes a variety of engines.
CL/369 **F, G.** **2s. 6d.**

GOLDEN WINGS by **Vic Smeed.**
Simple 44½-in design to A/1 specification. Already very popular for Club "one model contests" this design is a great success.
G/594 **2s. 6d.**

DOUGLAS A26 INVADER by **D. Deeley.**
Accurately detailed scale model of one of the most attractive WWII twins. 46-in. span for two engines. Speed 55 m.p.h. with two 1.49 c.c. Ideal for metal-paper covering.
CL/520 **E, F, G, H.** **6s. 0d.**

DEBUTANTE by **Vic Smeed.**
As the name implies, a pretty model with high performance and unblemished character. Specially printed plans include full photo detail and instructions for this 40-in. sportster
PET/493 **C, D, E.** **2s. 6d.**

D.H. MOSQUITO by **A/M Staff.**
A beautifully accurate scale control-liner of 40-in. span, suitable for any pair of diesels over 1.5 c.c. All sheet covered and robust.
CL/570 **F, G or H.** **7s. 6d.**

BLACK CHIFFON by **C. M. Milford**
Class "A" team racer. 22-in. span and approximately 13 oz. weight. Easy to construct, easy to fly—and very easy on the eye!
CL/486 **F, G.** **3s. 6d.**

R-6-B by **Allan Rowe.**
A 60-in. contest winner in New Zealand and a perfect trainer for beginners, this unusual pusher design takes many of the risks out of one's first R/C venture. Glider type structure eliminates undercarriage, etc.
RC/578 **E, F or G.** **6s. 0d.**

TIGER MOTH by **A/M Staff.**
A magnificent 44-in. span model of one of the best known aircraft ever. Flies extremely well with magnificent air of realism.
FSP/555 **D, E or F.** **6s. 0d.**

TOMBOY by **Vic Smeed.**
Simple cabin power model designed especially for the beginner. Either 36-in. or 44-in. span, both on plan, and also Seaplane version
PET/398 **C, D, E.** **3s. 6d.**

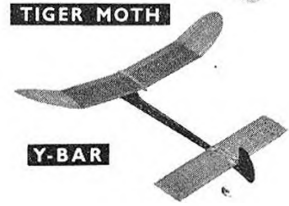
Y-BAR by **A. J. Brooks**
Profile fuselage contest winning pylon design with large tailplane and rear mounted fin, for F.A.I. or Open events. Span 40 in., it has a great reputation for National successes in Australia, New Zealand and S. Africa.
PET/390 **E, F.** **4s. 6d.**

GOLDEN WINGS

DEBUTANTE

BLACK CHIFFON

TIGER MOTH

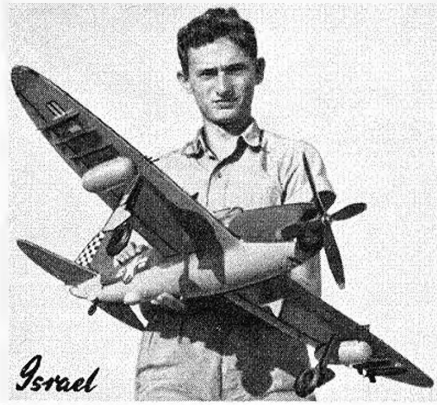


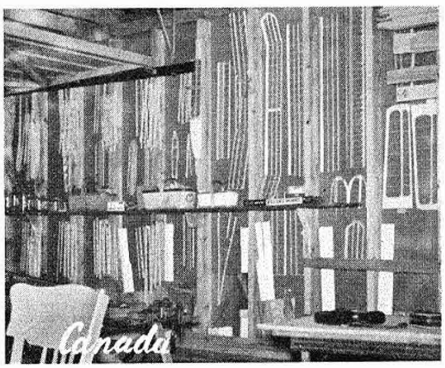
Y-BAR

FOLLOWING ADMIN. problems at their '57 Nats., the A.M.A. in the **U.S.A.** have cut back on the number of events for this year at Glenview, Illinois. One to suffer if PAA, and it seems that instead of the five separate load carrying contests there will only be the two Jetex classes for "150" and "50" sizes and Clipper Cargo. They are also having serious thoughts regarding Speed Team participation in the '59 Moscow Championships: only eight entered the '57 elims and a census of interest is being taken to decide whether it will be worth while participating in future. Incidentally, the ½A speed record set by Ralph Lindsay and Lou Mazza with their commercial "Magna" light alloy model stands at 112.46 and might have been faster had the pilot been able to get around the pylon quicker. This speed with the diminutive 0·8 c.c. Thermal Hopper and 4½ x 7 in. prop is faster than most can do with three times the power!

In the listing of AMA records, APS plans take a bow with an *Aiglet*, holding the Open A/1 time at 13 : 08. This is one of the most popular glider designs in the U.S.A.

In **Canada,** the Dundas MAC in Ontario have a beginners' class under Wilf Weisensee, and the "one-model" subject chosen was the APS *Golden Wings* beginners A/1. Pics. below show the degree of interest, and at the December 1st contest, D. Stoakley, aged 11, placed top of the list with a three flight total of 163·8 secs. Models are made in the





In Singapore civilian and R.A.F. modellers who competed in the national contest on January 5th have many A.P.S. designs, including a scale Hk-J. In Israel U. Rubinstein displays his radio Thunderbolt built from an American Berkeley kit and equipped with underwing stores. German scale Mustang is by Alfred Kleinespel with an Eta 29. Has completely detailed cockpit, retractable undercarriage and two-speed throttle coupled with flaps. Swedish modeller is Anders Edlin with his A.P.S. R.E.8, which has won contests for its fine detail

clubroom and walls used as convenient storage bays. Elsewhere in Canada, the advanced Montreal MFC bulletin for December contained a fine feature on the A/2 by Tammy Thompson, who advises 15 per cent. tail with thicker, higher undercamber than wing, 26-in. tail moment and the ability to make the model disappear up its own d/t snuffer tube while being towed. This can be achieved by having the hook 15 per cent. wing chord forward of the C.G., says Tammy.

Singapore Aeromodellers Society had their annual big event on January 5th, and interesting items culled from the results are the Ipoh modellers' victory in Class A team racing with an OS 15 against Oliver Tiger opposition. R.A.F. Seletar lads featured in many of the contests using APS designs, with the rather unfortunate penalty of O.O.S. flight taking models out over the wide blue sea.

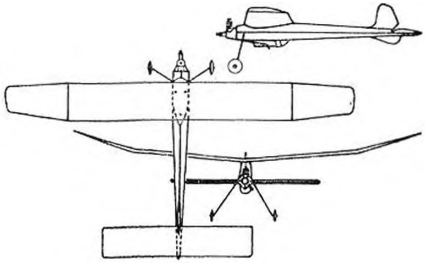
Finland always opens the aeromodelling world's season with the annual New Year's Day indoor event. This time only one new record was established, and it is most novel to find that it was a microfilm wing tail and fin, tissue fuselage *scale* type! Contours for this class must be to scale, and the time of 6 : 32 is a very good effort by R. Hyvarinen.

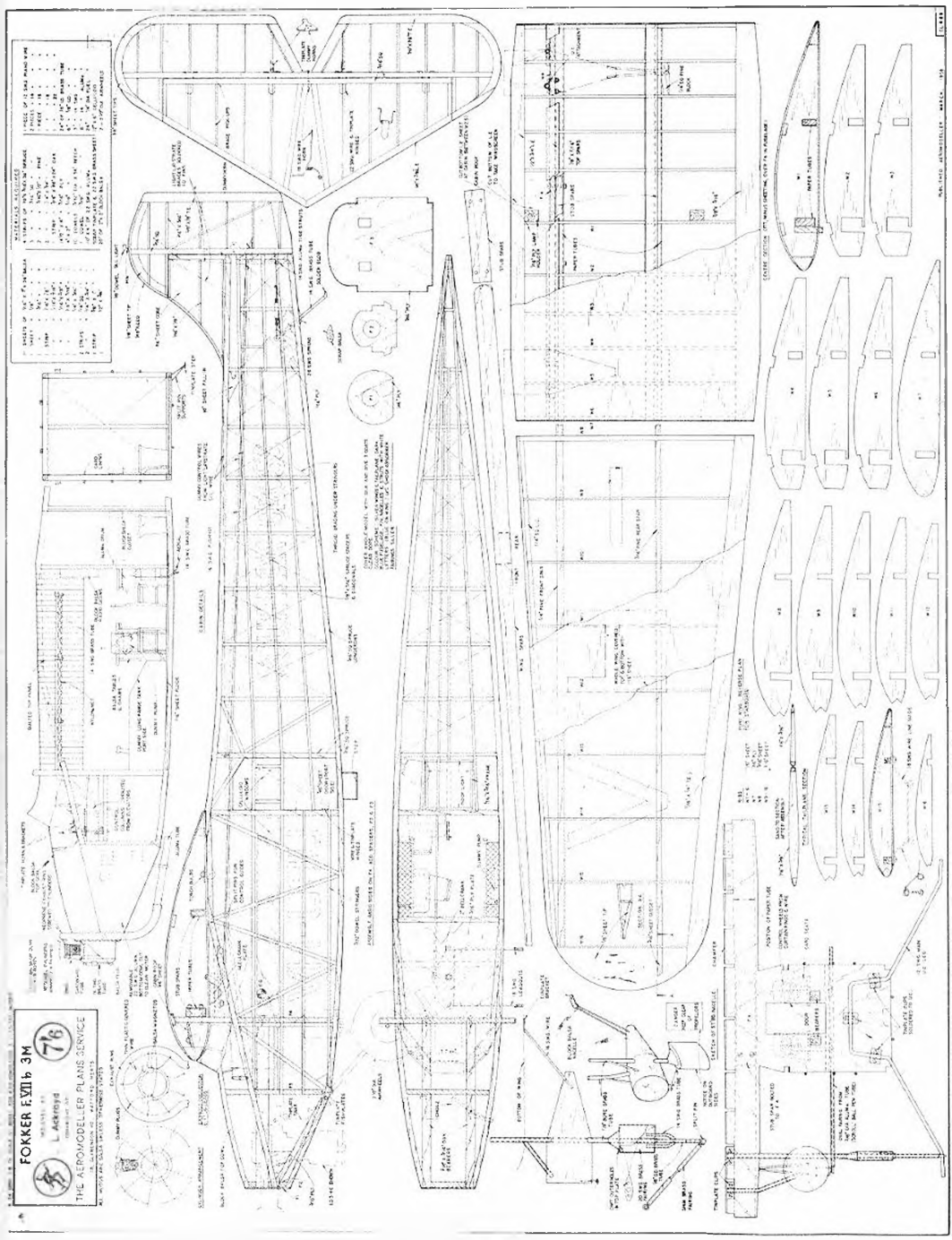
Australian *Model News* has taken on a new format including no less than seven pages this size for club news. From which we cull the delightful story of one Pete Scott from the Banana Festival Champs, Murwillumbah (yes—that's right!) who is said to have made his *Thunderbird* do things which would make Bob Palmer take up Chuck Gliders. His repertoire includes a square seven, eight and nine, and was all set for the ten when it appeared to come into the centre for further instructions. However, it must have misunderstood the pilot's commands, for it did a roll, one hamburger and a marshmallow. This set the judges in a flap, but it was ruled that since no-one else could attain the same standard, they could not award points for the manoeuvres.

Slope soaring in Germany is at the world-famous Rhoen glider site where many modellers participate in vane and radio steering contests. In inset at right, Hans Gremmer is seen releasing his Windbird in the face of rough weather. From Malta G. Curmi shows his 5-ft. span radio control Piper Tri-Pacer (D)C Manxman) with radio equipment designed by J. Anastasi

Photo below shows Canadian modelling activity at Dundas, where junior modellers are encouraged to build the A.P.S. Golden Wings in their club room

Three-view drawing below shows the new world record-holding Russian model by G. Ljubuskin which flew to 16,741 ft. followed by an obsolescing AN-2 biplane. Power was 5 c.c., and the device under the fuselage appears to be a special long-range fuel tank





ILL SIZE COPIES OF THIS 1/5th SCALE REPRODUCTION ARE AVAILABLE PRICE 7.6 PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE AS PLAN CL 688

A gem for the control-line scale enthusiasts, this 'single' engined 54″ replica of the famous trans-Pacific pioneer flier has authentic internal detail. For 3.5-5 c.c. by LAURIE ACKROYD

FOKKER F. VIIb. 3M. 'SOUTHERN CROSS'

FIRST AEROPLANE to fly across the Pacific Ocean, the famous "Southern Cross", and her pilot Captain Charles Kingsford-Smith made headlines in news reports throughout the world during 1928-1935. She began life in an unfortunate way when two Fokkers operated by Captain Sir George H. Wilkins the explorer met disaster in Alaska. The wing of an F.X. was fitted to an F.VII fuselage to make one out of the two wrecks, and minus motors or instruments it was sold for £3,000 to "Smithy" and his co-pilot Captain C. P. T. Ulm, a fellow Australian.

First she was called the "Spirit of California" and made a 49-hour attempt to break the World Duration record; but in May, 1928, she left Oakland as the "Southern Cross" and was flown 7,938 miles via Hawaii and Fiji to Brisbane, Australia, and then began a seven-year career of pioneering and pleasure tripping.

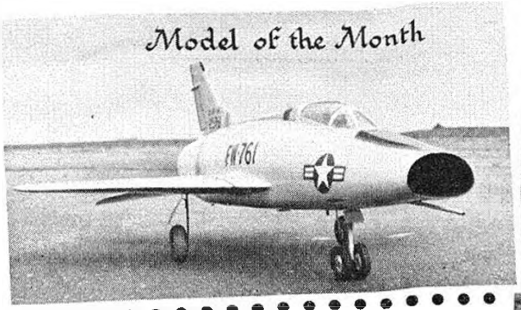
Several changes were made during her active life, mainly affecting the rudder and internal arrangements; but Laurie Ackroyd has been fortunate in being able to consult John Stannage, radio operator on many flights with "Smithy" (later Air-Commodore Sir Charles Kingsford-Smith, A.F.C.) and George Bolt, Chief Engineer of Tasman Empire Airways Ltd., so that his model is authentic to the last detail. So impressive is Laurie's original with cockpit controls working the elevators, etc., that it has won the New Zealand Scale Championship for three successive years, rumbling round the circuit on 42-ft. lines with an E.D. Hunter 3·46 c.c. driving the central airscrew. Airspeed of the full-size was 120 m.p.h. flat-out and 94 m.p.h. cruising, so the drag of the windmilling outer props is used to advantage.

"Southern Cross" now holds an honourable position in excellent preservation at Brisbane, its blue and silver colour scheme leaving no doubt as to its identity and reminding visitors of its great flight 30 years ago.

The model is a relatively easy subject for construction, outer wing panels being arranged to detach for transport, and the centre-section dropping over the spar which is integral with the main fuselage former. This ensures true line-up and gives terrific strength where needed most.

There is another 40-in. version of the "Southern Cross" already established in A.P.S. as Plan FSP 445, 4s. 6d. post free, also "single"-engined but free-flight for ·32 to ·5 c.c. engines.

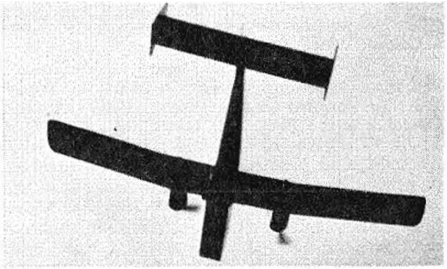
Below: the real Southern Cross, fitted with over-wing exhausts, and at right, a close-up to reveal the detail on Laurie Ackroyd's model. The E.D. 3.46 cylinder can just be seen under the nose

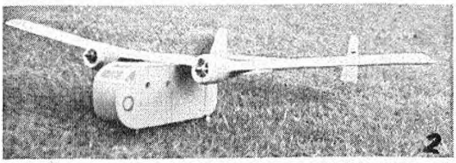


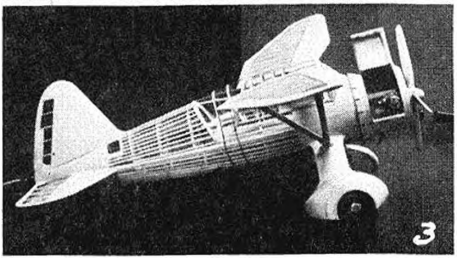
MODEL NEWS

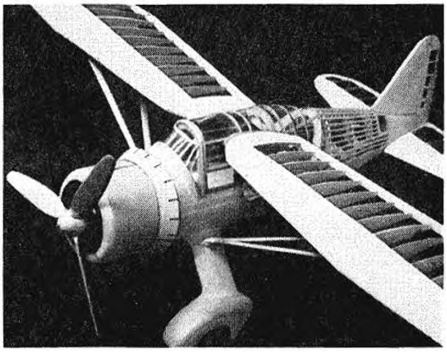
SIX-AND-A-HALF pounds of nearly solid flying scale model is seen as "Model of the Month". This impressive Dynajet-powered model, span 38 in. was recently test flown by builder John Claydon of East Ham, assisted by Brian Dunn and other stalwarts, and flight trials were apparently most successful. As the tank capacity is fourteen times that of a Class B Team Racer, the duration was considerable in spite of the heavy rate of consumption by the red hot jet which remained glowing throughout its entire length, even with a straight through air flow and insulation in a 28 s.w.g. alloy tube. Rear of the fuselage is fibre-glassed and bearing in mind earlier misfortune with their Shooting Star (June, 1957, *Model News*), the lads have made the motor quickly detachable, sliding out from the rear fuselage of the Super Sabre.

Our "Aircraft Described" feature on the Edgar









Percival E.P.9 has already inspired a number of scale enthusiasts and as an example of how successful a scale subject can be made of this aircraft, we reproduce picture **1** of Joe Fergusson's model of the prototype which first appeared at the last year's British Nationals. The rotten weather hampered flight tests during the Nats., but Joe tells us that the model flies like a bird and won the Aeromodeller Trophy in the Scottish National Scale Contest which was, incidentally, flown in half a gale.

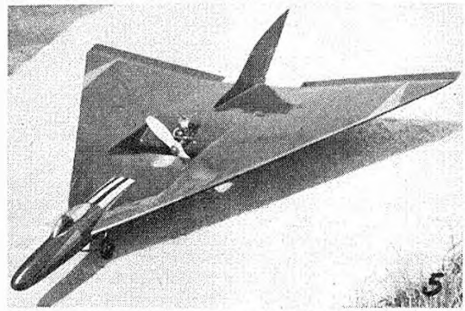
Variety is the spice of life so they say, and Senior Technician Bryant of R.A.F. in Germany has a very original thought in picture **2** with an action photo alongside. This "twin", which he calls Luftwagen, is meant to represent a freighter type, engine nacelles being dummies with free-wheeling props and the power supplied by a Jetex Jetmaster in the hollow fuselage at the forward end of the boom. Though it never exceeds 40 ft. altitude, flying, is most realistic and usually lasts about 45 secs. Not so strange to our eyes is the Lysander seen in two views (**3**) at the bottom. This is a fine example, and was built by T. Airey of Kingston-on-Thames, who used an Elfin 2·49 BR and fitted a dummy three-blade prop for static exhibition only. Subsequently covered entirely with a silk, and finished in silver as the prototype, it was test flown at Epsom Downs, and the results will probably be of interest to all Lysander builders. Most successful prop was a 14 x 6 which gave greater efficiency due to the fact that the large radial cowling gives a reversing effect unless holes are made on the rear of the cowl to allow through flow of air as though through the gills. Mr. Airey also modified the undercarriage to give flexibility in the legs and the A.P.S. drawing is going to incorporate a note on this point by advising a small section of silk covered foam plastic in the upper leg to allow movement. Other minor mods by Mr. Airey were a change to tongue and box root fittings for the wing and the need to have 1½ ozs. ballast weight in the tail cone to bring the c.g. into the right place.

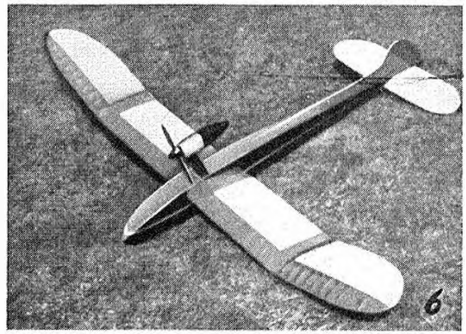
Photo **4** is a familiar sight in Italy where it is the subject of several kit models and magazine plan designs. G. R. Denny of Winchester made this Macchi MB.308, incorporating his club initials realistically as part of the National insignia. The Italians seem to favour the use of special registrations for any occasion, so this is not entirely out of order! No. **5** is an excellent example of coincidence if one refers to Laurie Ellis's *Sea King* design on page 156. This slotted prop Delta was made by G. J. Andriesson of Bristol for an Elfin 1·49. Span is 33½ in., length 36½ in. and weight 20 ozs. An earlier prototype was only 24-in. span for the E.D. Baby and was flown over five years ago.

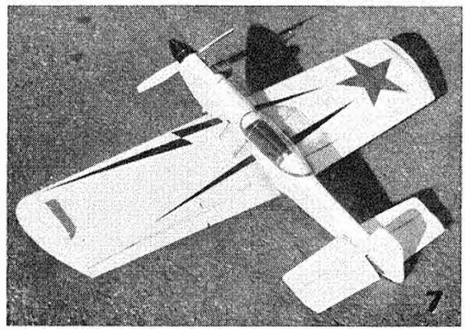
Now for a neat modification to the popular A.P.S. Hoverking design which was originally created for slope soaring and has been used with radio control conversion. This is the Hoverking in photo **6** built by C. P. Warren at Charterhouse, Godalming, who has fitted an auxiliary engine on a pylon mounted above the wing. This is suitable for a wide range of engines from ·5 to 1·3 c.c., and converts the Hoverking into an all-purpose machine suitable for slope soaring, sport power flying and radio control.

Lastly, yet another variation of those colour schemes suggested in our May issue on S. A. C. Cardash's Veco 19 33-in. span Stunter which weighs only 19 ounces and flies through the S.M.A.E. schedule very fast on 65-ft. lines. Colour is basically white, with a gold star and black lightning flash with the undersides in white, yellow and red. Being stationed in Gloucester, with the R.A.F., S.A.C. Cardash has joined up with the Glevum Club to keep his modelling going while in the Service.

4


5


6


7

Introduction to . . . . . One of the most advanced A/2 designs in Europe

ASSYMETRICAL BALANCED WING

STUDENTS OF HIGHLY developed A/2 glider designs will be familiar with the outstanding performance put up by Hansheiri Thomann in the three World Glider Championships in which he has competed. Now engaged as a Diploma Engineer at the Aeronautical Research Insritute in Sweden, Hans Thomann comes from Frauenfeld, Switzerland, and has long been an exponent of the high aspect ratio wing—slender fuselage model. Aquila represents a culmination of his experiments, and it is worthwhile for those who have not studied earlier results to note that his individual performance in World A/2 Championships is probably higher than that of any other single person.

The figures are as follows:

			Round					
Year		*Position*	1	2	3	4	5	*Total*
1954	...	8th	180	68	20	180	40	488
1955	...	6th	166	180	137	180	180	836
1956	...	3rd	139	142	180	180	180	821

Because he was resident in Sweden in 1957 he did not compete last season, but instead he entered Swedish contests and won the first major event in which he entered!

In the article which follows, he tells us how he has been able to maintain the desirable thermal-holding tight circle with the unusual use of wing ballast in asymmetric trim, and whilst the design is certainly no beginners project, we recommend it to those who have patience, for it quite obviously represents many years of study and practical experiment.

Hans has provided a few notes to help builders, which will probably be of interest to others contemplating his type of design and construction. Ribs should be of hard balsa, weighing between $1\frac{1}{4}$ and $1\frac{5}{8}$ ozs. for a 36 x 4 in. sheet of $\frac{3}{16}$ in. The sheet should then be covered on *both* sides with lightweight Modelspan before cutting the ribs. Wing tongues should be of soft aluminium so that they bend in the event of hitting an obstruction and can be straightened for required dihedral after every hard landing. A tongue will stand up to ten or more corrections before it becomes hopelessly soft and can then be easily replaced. The only part of the fuselage likely to produce difficulties is, of course, the boom. One should select a uniformly straight grain sheet of soft balsa weighing up to 1 oz. for 36 in. x 4 in. x $\frac{1}{16}$ in., and this should be then sanded to 1 mm. thickness at one end, using coarse paper. Cut it to a width approximately $\frac{1}{8}$-in. wider than the circumference of the core and sand one edge to a bevel to provide a good joint. Soak the sheet in hot water and bend it slowly around a core and allow to dry, clamped in position. When dry remove from the core and cover with thin Modelspan and trim the "odd" edge to make a clean joint throughout the length. Formers can be pushed down into position afterwards or, by wrapping the sheet around them carefully during the course of construction. Use one of the slow-drying glues. To get the nylon auto-rudder line through the boom, attach a small lead ball to one end and shake until it falls through the holes in the formers.

Low component weight in the tail surfaces is very important and castor oil should be added to the dope to prevent warping. Most important component weights are: tailplane, 7 grammes (·24 ozs.); boom, fin and rudder, 23 grammes (0·81 ozs.); wingtips, 27 grammes each (·95 ozs.).

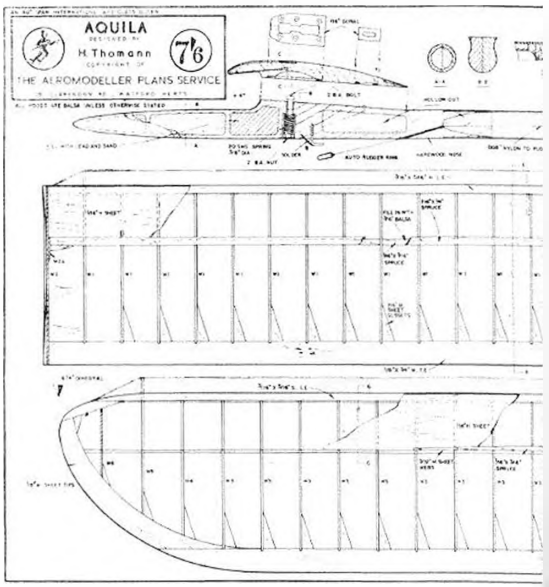
Now for Hansheiri's own explanation of his unusual trimming method; even if you cannot grasp the mathematical calculation, the idea behind the system will be obvious to all keen A/2 Glider exponents.

LUCK ALWAYS PLAYS a big role in a contest where thermals are around. To get good times it is necessary to manoeuvre the model into a thermal bubble during the launch and to make sure that it stays there and the best way to hold a thermal is to have a tight turn trim. But if we trim our model for small turning radii there will be a tendency to side-slip in gusty weather and much height could well be lost as a result. How can we prevent this?

When a model has flown a full circle the outer wing will have covered a greater distance than the inner wing. That means the outer wing will fly quicker and will generate more lift.

This difference (more lift on the outer than on the inner wing) will tend to rotate the model about its longitudinal axis (fuselage) which will often cause the inner wing to drop. To keep the model equilibrium the lift of the inner wing has to be increased in some way. This can only be achieved by yawing (caused by the increased drag of the outer wing). Because the inner wing is slightly leading, its angle of attack will be greater and it will, in spite of the lower speed, be generating sufficient lift.

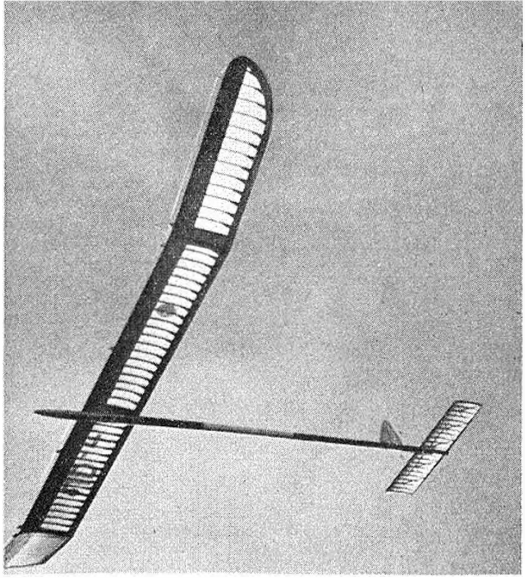
In *Figure* 1 the new flight condition is shown. In straight flight both wings are flying at the same point *N*. Because of the yawing the angle of attack



March, 1958

AQUILA

SYSTEM DEVISED BY HANSHEIRI THOMANN



of the inner wing will be increased by Δ and it will be flying at point J on the graph, dangerously near to point G, the stalling point.

The outer wing, the angle of attack of which has been lowered, is safe at point A. It needs now only a small gust to increase the angle of attack which will stall the inner wing and the model will sideslip.

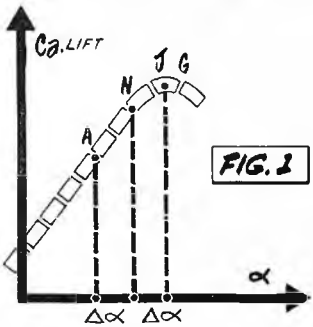
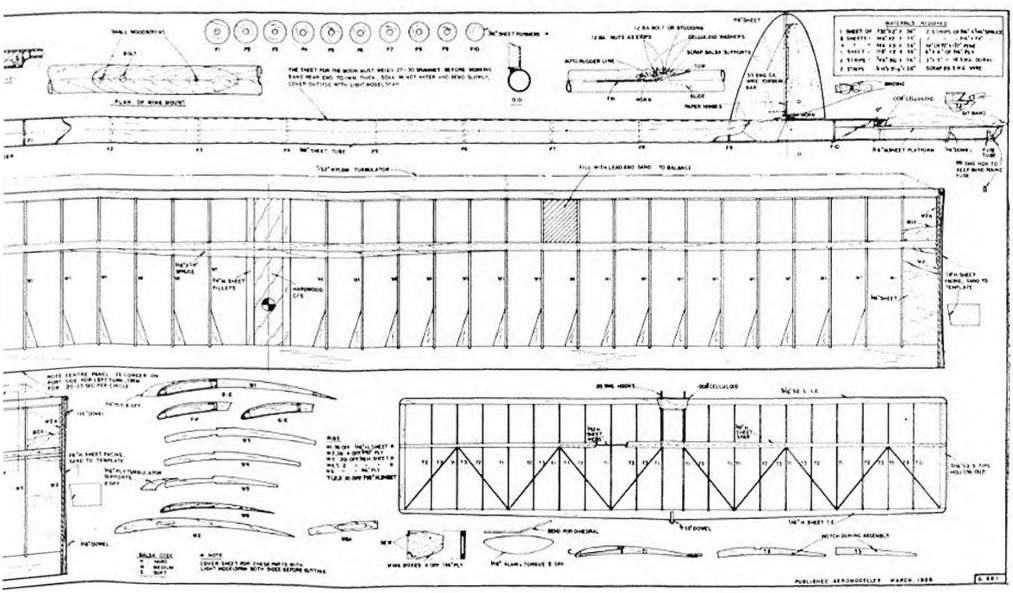


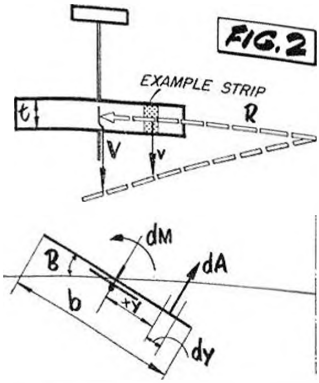
FIG. 2

With a glider which is turning in only one direction, we can easily correct this tendency. We load the outer wing with ballast to suit its increased carrying capacity sufficiently to bring the model to equilibrium without yawing. In other words we shift the centre of gravity towards the outer wing.

What do we gain? Firstly the model flies with both wings at the point of optimum lift N. Therefore it takes a stronger gust to stall the model. Secondly, the model stalls straight with a very good sink rate. Thirdly, the model has a strong tendency to make a steep turn after a stall or semi-stall. Therefore it will recover quickly and will remain in the thermal

FULL SIZE COPIES OF THIS 1/5th SCALE REPRODUCTION ARE AVAILABLE PRICE 7/6 PLUS 6d. POST AS PLAN G.681 FROM AEROMODELLER PLANS SERVIC





Naturally this solution has disadvantages. One has to decide during building, which way the model must turn in flight. If the model ends to turn to the other side because of bad building (warps), then one has trouble. As the model will tend to sideslip when flying straight it cannot be used for slope soaring. These two disadvanatges are not important for a well-built towline-glider, which in any case is not suitable for slope soaring. It is important to know how far towards the outer wing the centre of gravity must be moved. As we are concerned with a correcting factor only we may simplify the calculation. We consider a small strip of wing (for example a bay between two ribs). This strip moves with the speed

$$v = V \cdot \left(1 - \frac{y \cdot \cos \beta}{R}\right)$$

and gives lift

$$dA = t \cdot d\,y \cdot \frac{\rho^2 \rho \cdot Ca}{2}$$

(See *Figure* 2: ρ = air density.) When we add all the contributions dA of all the strips of wing, we get the total lift A, the vertical component of which must equal the weight G ($G = A \cdot \cos \beta$). Moreover the lift of dA is triyng to rotate the model about its longitudinal axis. The moment of this force is: $dM = y \cdot dA$ (Effort x moment arm). When all these moments are added together we reach the following value for an elliptical lift distribution:

$$M = G \cdot \frac{b^2}{16 \cdot R}$$

For a rectangular lift distribution we arrive in the same way at

$$M = G \cdot \frac{b^2}{6 \cdot R}$$

As we do not know how the lift is distributed over our model, but can assume somewhere between these two, so that without large error we can take as correct

$$M = G \cdot \frac{b^2}{12 \cdot R}$$

This formula then tells us that we must move the centre of gravity of the model toward the outer wing by

$$\frac{b^2}{12\,R}$$

to get a model that is in equilibrium without yawing when it is flying in a circular flight pattern with the radius R.

If the wing span b is, for instance, 6 feet, and we want the radius of turn R to be about 50 feet, then we must move the centre of gravity

$$\frac{6 \cdot 6}{12 \cdot 50} = 0{\cdot}06 \text{ ft.} = 0{\cdot}72 \text{ in.}$$

The outer wing will therefore be $\frac{3}{4}$ in. shorter, the inner by the same amount longer. During trimming we must set the rudder so that the model flies with the desired degree of turn.

The turning radius R can be easily found. We know that a good A/2 model flies with a speed of about 14·5 ft. per second. The time T which it will take to fly a full circle can be measured in the still evening air. Therefore

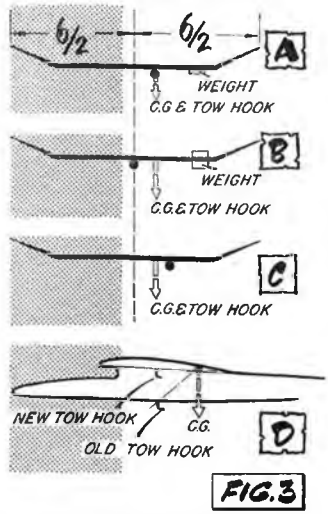
$$R = \frac{T \cdot V}{2 \cdot \pi} = 2.3\ T$$

If the model takes 21·5 seconds to fly a full circle, that gives a radius of 2·3 x 21·5 = 50 ft.

Naturally the towline launch must not suffer. It is important that the centre of gravity and the towing hook lie in the same line. (When the model is suspended by the towing hook, the wings must lie horizontal in balance.)

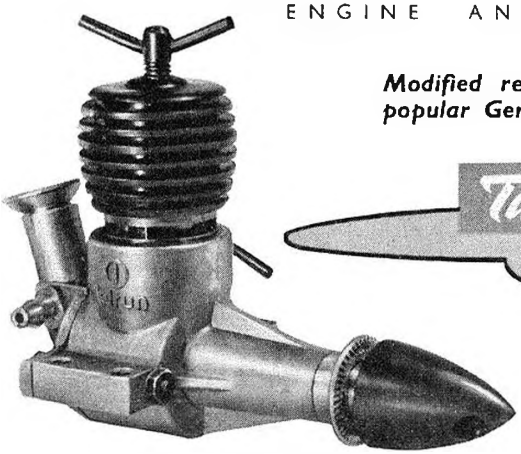
In Hansheiri Thomann's models he has moved the fuselage to the C.G. and fixed the towhook on to it. (*Fig.* 3A.) On the other hand we can leave the fuselage in the centre line and fix the towing hook to the wing (under and in front of the c.g.). In this way we can easily carry out the necessary trials with an existing model. The disadvantage is that we get a big moment of inertia because one has to add considerable weight to the outer wing (*Fig.* 3B). The best solution is to shift the fuselage so much to the outer wing that you get the c.g. into the right position without adding weight to one wingtip. (*Fig.* 3C). For the position of the tow hook see *Fig.* 3D.

However there are disadvantages, the wings of different length will twist and bend differently during towing, which can cause difficulties in towing straight if there is too much pull on the line. In addition the model will yaw during towing which might cause the short wing to stall. Small points these when one considers the high performance he has moved the CG by as much as $1\frac{1}{8}$ in. without having any trouble during towing.



With aknowledgment to Swiss "Aero Revue"

ENGINE ANALYSIS NUMBER 45



Modified reed-valve version of the popular German 1 c.c. diesel engine

Taifun HOBBY RS

reviewed by R. H. Warring

A DELIGHTFUL EXAMPLE of German engineering, the Hobby RS appears to be, essentially, an adaption of the earlier 1 c.c. "Hobby" to reed valve induction. Size is diminutive, but the engine is extremely robust whilst retaining an impressive overall appearance.

Main difference between the "RS" and the original "Hobby" is the entirely new crankcase unit and the new backplate incorporating an unswept induction pipe and the reed valve assembly. The needle valve, in consequence, is taken to the back of the engine in the most convenient position for handling. Unfortunately the thicker mounting lugs do not coincide with the thrustline on the bearer face.

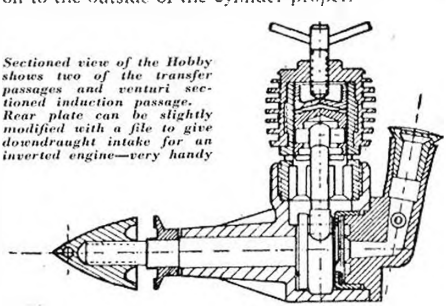
Starting and general running characteristics were found to be very good, with little or no viciousness hand starting on propellers down to five inches diameter. For high speed operation (above 12,000 r.p.m.), better consistency was obtained using a nitrated fuel in place of a straight diesel fuel but with little or no appreciable gain in power output.

Despite having all the apparent characteristics of a racing type engine, performance on test was quite moderate and, in fact, no better than the original "Hobby". The piston was, if anything, a shade on the tight side at the top of the stroke and the shaft running on "point contact" at the front and rear —both possible contributors of excess friction— but the "RS" showed no signs of distress when running and the bearing remained reasonably cool. Peak power output was obtained at 12,000 r.p.m., after which power fell off quite rapidly although running speeds in excess of 15,000 r.p.m. could readily be obtained with propeller loads. In fact the only troubles experienced at all during running was a tendency for the cylinder barrel to unscrew itself from the crankcase which could only be cured by tightening up really hard.

For its overall size, the crankcase casting is quite a substantial unit, machined internally to provide an annular groove for big end clearance and also at the front end to accommodate the crank disc. The upper section is tapped to take the screw-in cylinder, sealing being accomplished by means of a thin copper gasket. The main bearing is plain and honed to finish.

The cylinder is of chrome-nickel steel, screwing into the crankcase unit, as mentioned, with a $\frac{3}{16}$-in. length of thread. The bore is finished by grinding and honing with a generous taper relief at the lower end. Four transfer ports are milled on the inside of the lower cylinder, equidistant circumferentially, finishing in a step a good 3/64 in. below the exhaust port openings. The latter—four in number—are milled through the cylinder wall.

The contra-piston is also of chrome-nickel steel, very well fitted and with just the right amount of "grip". Adjustment and setting are both positive and easy, both with the engine cold and hot. The cylinder jacket is of dural, anodised black, screwing on to the outside of the cylinder proper.



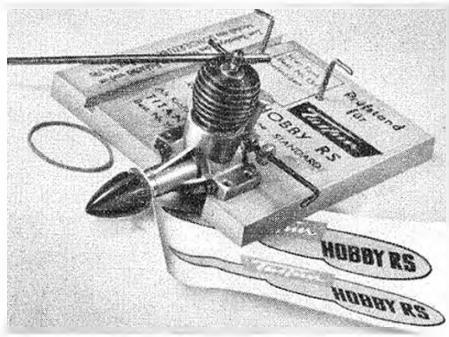
Sectioned view of the Hobby shows two of the transfer passages and venturi sectioned induction passage. Rear plate can be slightly modified with a file to give downdraught intake for an inverted engine—very handy

The piston is of cast iron, ground to finish, and an excellent fit in the bore. Top face is slightly conical, with a matching contra-piston shape. The gudgeon pin is of silver steel (or equivalent), 3 mm. diameter and fixed. The connecting rod is machined from dural with a generous section but with metal around the big end reduced to a practical minimum to be accommodated within the crankcase (which even so has to be relieved, as noted). The big end fit was noted as exceptionally good, although there was a fairly generous clearance on the little end. Crankpin diameter is ·157 in. (4 mm.), the crankpin being machined integral with the shaft. The crank disc is purely circular with no attempt at mass balancing.

The crankshaft itself is ·236 in. (6 mm.) diameter, stepping down to a 5 mm. metric thread for the spinner nut. A parallel shoulder is machined at the end of the thread, the dural propeller driver being force-fitted on to this section. Bearing length is approximately $\frac{7}{8}$ inch and threaded length of shaft $\frac{1}{2}$ inch. The propeller driver incorporates a short boss of $\frac{1}{4}$ in. diameter, to which size propeller hub holes must be drilled to fit.

The reed valve unit is basically the same form as that introduced in America by Cox. A valve seating is incorporated in the rear cover casting, this seating having been finished either by grinding or linishing. The valve assembly consists of an aluminium outer ring mounting an alloy stamping to form a stop for the reeds (limiting opening movement), and two stamped reeds, one in steel and one in phosphor bronze. This assembly is a very tight press fit in place, retained by the outer ring.

The downdraught intake tube incorporated in the backplate casting angles back slightly, the actual intake passage connecting through to the centre of the reed assembly. The intake tube is capped by a pressed in funnel shape incorporating a wire mesh air filter—an attractive feature and one highly desirable with this type of induction valve to keep foreign matter from reaching the valve seating. The efficiency of the relatively coarse mesh as a filter, however, is perhaps problematical.



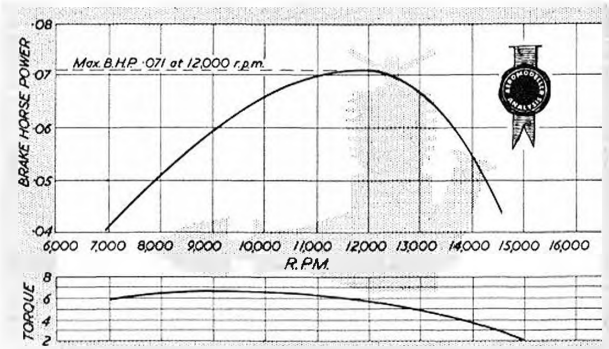
Packaging of the Hobby, and other Taifun engines is a lesson to all other European manufacturers. Comes with test mount, printed to show tank position and includes hooks and rubber band to hold tank in place. Well produced instruction ABC for starting and transfers complete a well-packed beginner's purchase. Price is equivalent of £2 11s.

The spraybar assembly is quite conventional, of brass, and with a threaded needle valve stem. A ratchet lock is provided by a short wire spring trapped under the assembly nut bearing against the serated brass disc which is tapped and screwed on to the threaded length of needle valve, rather than soldered or brazed. It is possible—but did not occur on test—for the needle valve to vibrate open with this form of assembly.

The backplate unit is mounted on the crankcase casting as a loose plug fit, sealed with a paper gasket and clamped up with two screws which go through the length of the mounting lugs. Mounting holes for the hold-down screws come outside this, the lugs being of substantial depth to leave nearly $\frac{1}{16}$-in.

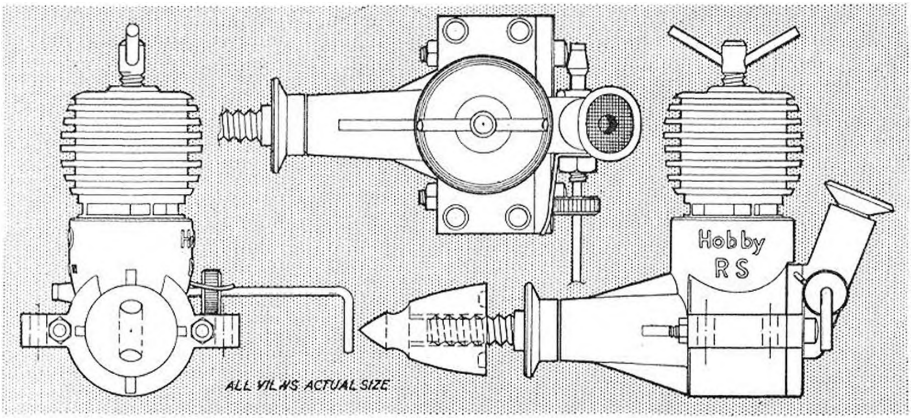
PROPELLER—R.P.M. FIGURES *Fuel used on test: Mercury No. 8*

dia. x pitch	*r.p.m.*	*dia. x pitch*	*r.p.m.*
7 x 5 (Trucut)	7,200	6 x 4 (Frog Nylon)	13,400
8 x 3 (Trucut)	8,000	9 x 3 (Stant)	6,800
6 x 4 (Trucut)	11,200	7 x 6 (Stant)	9,500
6 x 3 (Trucut)	11,500	6 x 8 (Stant T/R)	12,200
5 x 3 (Trucut)	13,200	7 x 4 (Tornado)	11,000
7 x 4 (Frog Nylon)	10,100		



SPECIFICATION

Bore: ·4215 in. Stroke: ·434 in.
Displacement: ·995 c.c. (·0605 cu. in.)
Bare weight: $2\frac{3}{16}$ ounces
Max. B.H.P.: ·071 at 12,000 r.p.m.
Max. torque: 6·8 ounce-inches at 9,000 r.p.m.
Power rating: ·071 B.H.P. per c.c.
Power/weight ratio: ·028 B.H.P. per ounce.
Material Specification (and finish):
Crankcase: light alloy pressure die casting
Cylinder: chrome-nickel steel (ground and honed)
Contra-piston: chrome-nickel steel (ground and lapped)
Piston: cast iron (ground)
Connecting rod: dural (machined)
Crankshaft: chrome nickel steel (ground between centres)
Backplate assembly: light alloy pressure die-casting
Induction: reed valve (one bronze, one steel reed, mounted together) light alloy
Cylinder jacket: light alloy (anodised)
Spinner nut: light alloy (anodised)
Propeller shaft thread: 5 mm. metric
Manufacturers: Johannes Graupner, Kirchheim-Teck, Germany.



metal thickness at the narrowest point. Lug breakage would, therefore, appear unlikely.

As a general summing up of the Hobby "RS", it was disappointing in power output for the whole design looked far more promising than the result actually achieved. Nevertheless it was a very easy engine to handle, started readily with all sizes of propeller loads and was quite flexible as regards control settings. As such we would classify it as a useful sports engine where its compact size will undoubtedly endear it to fans who like close-cowled engines without odd bits of cylinder sticking out.

We found, too, that it was somewhat happier running on the heavier plastic propellers than wooden ones, a 7 x 4 nylon prop appearing a good choice for average work. It was not too happy accommodating higher pitches and maximum performance would be given with a 6 x 4 prop.

S.M.A.E. 1958 CONTEST CALENDAR

Under the new conception of World Championships, the annual calendar issued by the S.M.A.E. assumes a radically changed appearance for 1958. With no Glider Championships taking place until 1959, the list has been further modified to incorporate the double-trials, and the elimination of qualifying meetings. Where practical, contests have been thrown open on an "unrestricted" basis, which should make for a larger entry to the National contests than hitherto.

Attention is drawn to the requirement that Junior entries *must* be clearly indicated, for omission in this direction has created a lot of unnecessary trouble in the past when a disgruntled junior finds that he has not qualified for the special junior award made in each S.M.A.E. contest. Also, Competition Secretaries are reminded that they must supply the names and addresses of the top three contestants in any results forwarded' as only in this manner can the winners be correctly scheduled in the annual awards list.

March 16
Gamage Cup: U/R Rubber.
C.M.A. Cup: U/R Glider. *D/C*

April 6
Pilcher Cup: U/R Glider.
Lady Shelley Cup: Open Tailless.
Women's Cup: U/R Rubber/Glider. *Area.*
Jetex Trophy: Jetex.

April 27
*Keil Trophy: Team Power. *Area.*
R.M.A.A. Cup: U/R Glider.

THE BRITISH NATIONALS.—

May 25-26
R.A.F. WATTISHAM (Provisional).
Thurston Cup: U/R Glider.
Short Cup: International Class PAA-Load.
Gold Trophy: Control Line Stunt.
S.M.A.E. Trophy: R/C "Multi"—Stunt and Course.
Davies Trophy "A": Team Race Class "A".
Speed: Classes 1, 2 and 3.
Combat: Heats.

May 26
Sir John Shelley Cup: U/R Power.
Model Aircraft Trophy: U/R Rubber.
Super Scale Trophy: Free Flight Power Scale.
Knokke Trophy: Control Line Power Scale.
Ripmax Trophy: R/C "Rudder"—Course.
Davies Trophy "B": Team Race Class "B".
Speed: Classes 1, 2 and 3.
Combat: Final Rounds.

June 7-8
WORLD CHAMPIONSHIP TRIALS.—First Part. *Centralised.*
Wakefield and F.A.I. Power.

June 22
CONTROL LINE TRIALS.—*Centralised.*
International Speed, Stunt and Team Race Classes.

July 5-6
WORLD CHAMPIONSHIP TRIALS.—Second Part. *Centralised.*
Wakefield and F.A.I. Power.

July 20
AREA CHAMPIONSHIPS.—Rubber/Glider/Power. *Centralised.*
RADIO CONTROL TRIALS.—International Classes.

August 2-5
AT COLLEGE OF AERONAUTICS, CRANFIELD, 1958 WORLD CHAMPIONSHIPS.—Wakefield and F.A.I. Power.

August 23
UNITED KINGDOM CHALLENGE MATCH to be held with Scottish gala.

August 24
SCOTTISH GALA.
Caton Trophy: U/R Rubber.
Glider: Unrestricted.
Power: Unrestricted.
Taplin Trophy: R/C "Rudder"—Stunt.
Team Race: "A" and "B" Classes.

September 7
NORTHERN GALA.
Flight Cup: U/R Rubber.
Glider: Unrestricted.
Frog Senior Cup: U/R Power.
AEROMODELLER Trophy: R/C "Multi"—Stunt and Course.
Pan American Trophy: America Class PAA-Load.
Team Race: "A" and "B" Classes.

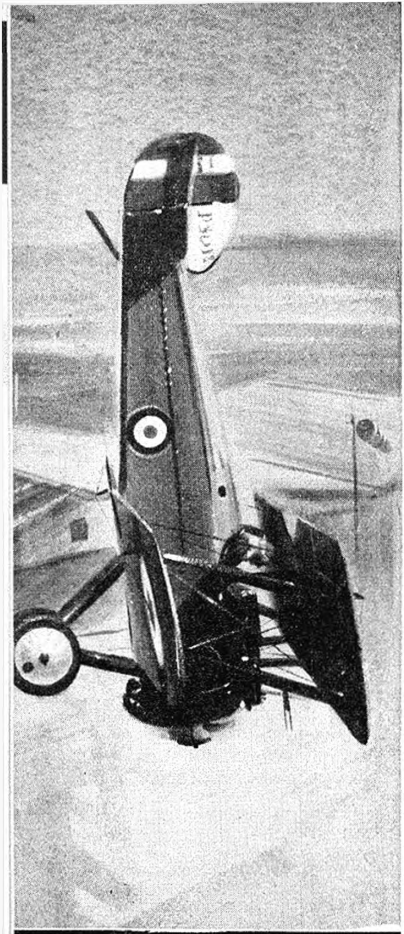
September 21
**Model Engineer* Cup: Team Glider.
Halfax Trophy: U/R Power. *Area.*
Gutteridge Trophy: Wakefield.

September 28
Team Racing: "½A", "A" and "B". *Area.*

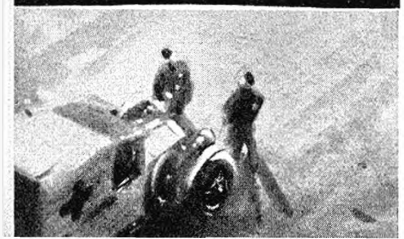
October 12
*Farrow Shield: Team Rubber. *Area.*
S.M.A.E. Cup: A/2 Glider.

October 26
Hamley Trophy: U/R Power.
Frog Junior Trophy: U/R Rubber/Glider. *D/C.*

* *Plugge Cup Events.*



CAMEL CLOSE UP



THE CAMEL WAS a Killer! Such was the reputation of this aeroplane in the eyes of trainee pilots. Perhaps the view was something of an exaggeration but certainly the Camel was a character; and one without high moral principles either—it was an adept at "polishing off" ham-handed pilots, even to the extent of destroying itself in the process. It had scant regard for timorous hands; courage and intelligence were demanded from its pilots, and with these qualities forthcoming the Sopwith Camel was quick to co-operate and its vagaries would become virtues almost. Certainly it killed off many pilots: not only tyros but veterans too, if they were apt to take liberties with it—but it killed a great many hostile aircraft too, in fact this vicious little aircraft was credited with more enemy aircraft destroyed than any other single type.

Not only was ordinary flying skill needed, but a considerable "flair" for the type was necessary for the really successful Camel pilot. With all the main weight concentrated in an extremely short forward fuselage a high degree of manoeuvrability was obtained, and the general proportions of the aircraft contributed to its considerable sensitivity.

The initial difficulty facing pilots flying Clerget Camels for the first time was the correct setting of the fine adjustment in conjunction with the throttle. If this was not correctly adjusted just after take-off, when the mixture required to be leaned out a bit, the motor would invariably cut out at about 200 feet with resultant spin if prompt action was not taken.

Another eccentricity of the Camel to be learned was its differing characteristics in right- and left-hand turns, due to the torque reaction of the wildly spinning engine in the nose. On right-hand turns the nose had a considerable tendency to drop which a goodly measure of "top

by P. L. Gray

rudder" was needed to correct; on left-hand turns the opposite was the case as then the nose tended to rise. It may be imagined that the Camel did not take kindly to coarse handling and needed little provocation to spin—however, that the Camel could be brilliantly flown the following anecdotes may exemplify.

In the bright summer air the muted hum of a distant aero engine rapidly rose in a crescendo to a full-throated open exhaust roar, as a diminutive Sopwith Camel raced fast and low across the aerodrome. It was so low that on occasion the wheels would scythe through the longer grasses.

As it reached the proximity of the hangars it zoomed past the vertical, gracefully curling over into a loop. Figures emerged from the nearby hangars and buildings to watch the phenomenon—here was a Camel being looped from ground level, flown by a madman—or a genius! As the throttle was cut at the top of the loop a buzz of conjecture could be heard—"would he pull out of it or dig his own grave as the machine drilled into the field?" The Camel continued its curving flight path and was soon plunging vertically down; slowly the nose came round as the speed built up again and the onlookers held their breath as the machine tore earthward. With a roar the whirling rotary cut in again, and as at last the snub-nosed Camel pulled out, the wheels seemed to momentarily reach down and touch their shadow in the grass, now blasted flat by the slipstream.

Swinging round in a vertical turn it streaked back towards the sheds with a little more altitude this time—all of fifteen feet—and suddenly flipped completely over in a staggering flick roll, its wingtips clearing the ground by no more than a foot. Such flying was unheard of—on a Camel, unbelievable! However, it was no flash-in-the-pan for the stocky little fighter nimbly pirouetted at the end of the hangar line and gave a repeat performance in the opposite direction, flaunting the greasy streaks on its belly for all to see. For good measure before leaving, the Camel threw five consecutive, near ground level, loops, then finally departed in a slight haze of castrol exhaust, the nostalgic aroma of which persisted long after the sound of the engine had died.

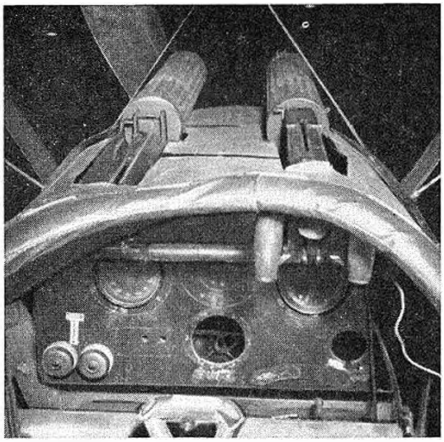
Camel Miscellany at right: A 2F.1 with 150 h.p. A.R.1 engine and single offset Vickers gun on fuselage, extra Lewis on a special reloading mount above centre-section. (Imperial War Museum photo.) Centre is an F.1 used for Home Defence Flights at Hainault in 1918 and fitted with a flare under the nearside wing, while at right is one of the special night fighters with blackened roundel, rear cockpit and twin-Foster gun mount above wing to avoid flash and permit upward firing. These pictures of 41 Sqdn. a/c by B. T. Gibbins

Such was the artistry of Capt. Armstrong of 44 Sqdn. (Home Defence) which, during the summer of 1918, was stationed in Essex, and there were few airfields in the area that did not enjoy his impromptu aerobatic performances at one time or another during that summer. He shot down no Huns, he received no decorations, but his stupendous stunting became legendary. Major Oliver Stewart has said of Armstrong "the fellow had the hands of a surgeon".

As an instance of the Camel's lethal qualities the occasion on which Capt. H. W. Woollett, D.S.O., M.C., shot down six Huns in a single day may be quoted. The date was significant: April 12th, 1918, the day on which Sir Douglas Haig's famous "backs to the wall" message was issued.

43 Sqdn. in which Woollett was a Flight Commander at the time, made its not inconsiderable contribution to the effort by downing some thirteen hostile aircraft. Three of these the redoubtable captain shot from the sky before lunch. He took off again in the early afternoon, patrolling towards Estairs; soon he espied a solitary—and unwary—Pfalz D III which he immediately attacked and destroyed. Shortly after, his eagle eye spotted another aircraft in the distance which, on cautiously closing, proved to be a two-seater making a reconnaissance, doubtless intent upon establishing the extent of the German advance so that G.H.Q. might know the position more clearly. Woollett prepared to despatch this intruder with as little delay as possible and climbed underneath the Hun's rear quarter in order that he may attack from the "blind spot". Closing the range, he crashed a burst from his twin Vickers into the two-seater, which, until then seemed unaware of his existence. The enemy now, however, took violent evasive action but bullets from the Englishman's accurate burst must have inflicted severe structural damage, for the wings folded up and the fuselage, bearing its luckless occupants, hurled to destruction below.

On his way home Woollett had yet another skirmish, this time with a Fokker triplane, which was about the only other machine that could in any way match the manoeuvrability of the Camel. However, its pilot's skill could not compare with that of his adversary, and he too shortly joined his comrades in Valhalla. The time was yet only 14.30 hours and Woollett had destroyed six enemy aircraft—a feat seldom equalled and never surpassed.

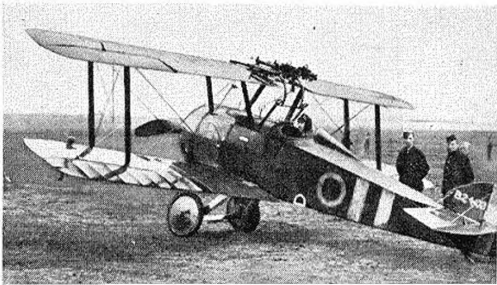


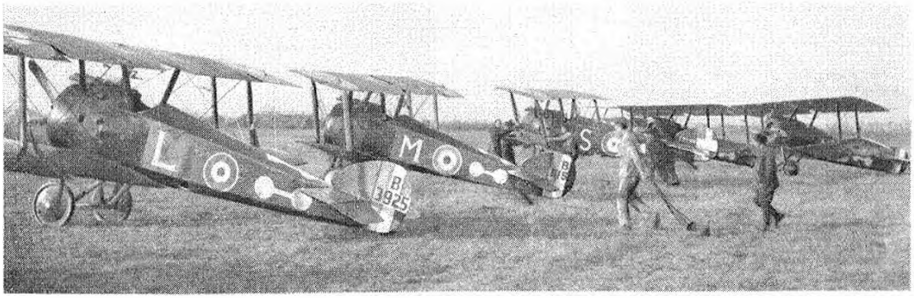
Pilot's view of the Camel's guns gives one an appreciation of the twin-Foster mounting as seen on the night fighter below. This is the Nash collection Camel, once thought to be a night fighter because of its modified centre-section

Although he scored 35 official victories, Capt. H. W. Woollett seems to have been one of the unsung heroes of the war and not a lot is known of his Service career. It is pleasant to know that he survived and became a Sqdn. Ldr. in the Royal Air Force. Just before the second World War he was connected with the organisation of the Air Cadet Corps—one wonders how many future pilots were inspired by his exploits.

Strange as it may seem, only one Victoria Cross was won by a Camel pilot, and this was awarded to Lieut. Alan Jerrard of 66 Sqdn. when flying on the Austro-Italian Front in the Spring of 1918. On March 30th, Camels flown by Capt. P. Carpenter, and Lieuts. Eycott-Martin and A. Jerrard met, and engaged, a patrol of five Austrian Albatros Scouts. A short burst from Jerrard's guns was sufficient to send one crashing to a fiery grave while the remainder fled. The Camel trio then set about shooting up an Austrian aerodrome, whereupon they were attacked by some score of enemy fighters. Although so greatly outnumbered—nearly seven to one—the Camels continued their aggression, each shooting down a Hun. Eycott-Martin soon found himself to be the focal point of no less than eight extremely belligerent Austrian gun-sights, whereupon Jerrard quickly went to his aid and once again was in the thick of it. His companions managed to extricate themselves from the fracas and beat a strategic retreat while the E.A. concerned themselves with the destruction of Jerrard. His Camel was gravely damaged and practically all his controls were shot away; however, he managed to contrive some sort of crash-landing in the enemy lines, where he was captured. It was for this heroic self-sacrifice that some weeks later he was awarded the most covetted decoration, the Victoria Cross.

Such then was the Camel: some blessed it, others cursed it, but there is no doubt about it—the Camel was certainly a Character.





AIRCRAFT DESCRIBED
Number 90
By P. L. GRAY

SOPWITH F.1. CAMEL

THE SOPWITH CAMEL is almost a legend and probably the most well-known aeroplane of the first World War. Much has been written about it and a lot that purported to be fact was, indeed, fiction; it has probably been ill-drawn more than any other machine of that era. It is hoped that the drawing presented here gives a true representation of what the aeroplane really looked like; it is based on original Sopwith drawings kindly lent by Mr. J. M. Bruce and material loaned by Mr. A. R. Weyl.

The Camel derived its name (unofficially at first) from the humping of the panels which faired the breeches of its twin Vickers guns. It was the first British operational scout to be fitted with this classic armament arrangement.

Official designation was Sopwith F.1, and the prototype had 110 h.p. Clerget engine; production machines had the more powerful 130 h.p. version fitted: a fair number of F.1s had the 110 h.p. Le Rhone installation. Deliveries began in the summer of 1917 and Pup squadrons of the R.F.C. began to trade their somewhat docile mounts for the more vicious Camels, likewise the R.N.A.S. squadrons began to swop their much-liked Sopwith triplanes. These latter squadrons were not solely equipped with Bentley Camels as has been stated in the past, F.1s fitted with 150 h.p. B.R.1. Bentley motors did not begin to appear operationally until the end of the year.

One of the most hazardous duties the Camel was called upon to perform was that of ground strafing. When thus used additional slots were fretted in the face of the cowling to allow extra cooling air to enter, and four 25 lb. Cooper bombs were carried under the fuselage.

There was nothing unorthodox about the construction of the Camel, it was in its flying characteristics that the word unorthodox was apt to creep in, to wit, the differing turning moments and the hyper-sensitive elevator control.

The fuselage was a simple braced box girder with ash longerons, the vertical and cross members were spruce: bracing wires were of 8 and 10 s.w.g. back to the cockpit, aft of which 14 s.w.g. was used. Except for the underneath the circular contour of the cowling was tapered in back to the cockpit, the first panel being aluminium sheet and the second panel ply covered.

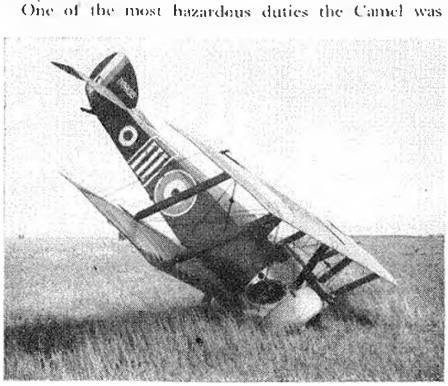
Wings were built on spruce spars, the ribs being of ash three-ply with spruce flanges while the trailing edges and wingtips were of steel tube. The outline of the empennage was also steel tube. The whole airframe, apart from the aforementioned panels, was fabric covered. There were variations in the amount of "window" space in the centre-section, also the shape of the "cut-out" varied.

Streamlined steel tube Vees formed the undercarriage chassis with an ash and plywood axle fairing. The axle itself being in two halves, hinged at the centre to allow the wheels to travel as the elastic cord shock absorbers took the weight of the aircraft, gave the machine a somewhat ungainly appearance when on the ground and taxiing.

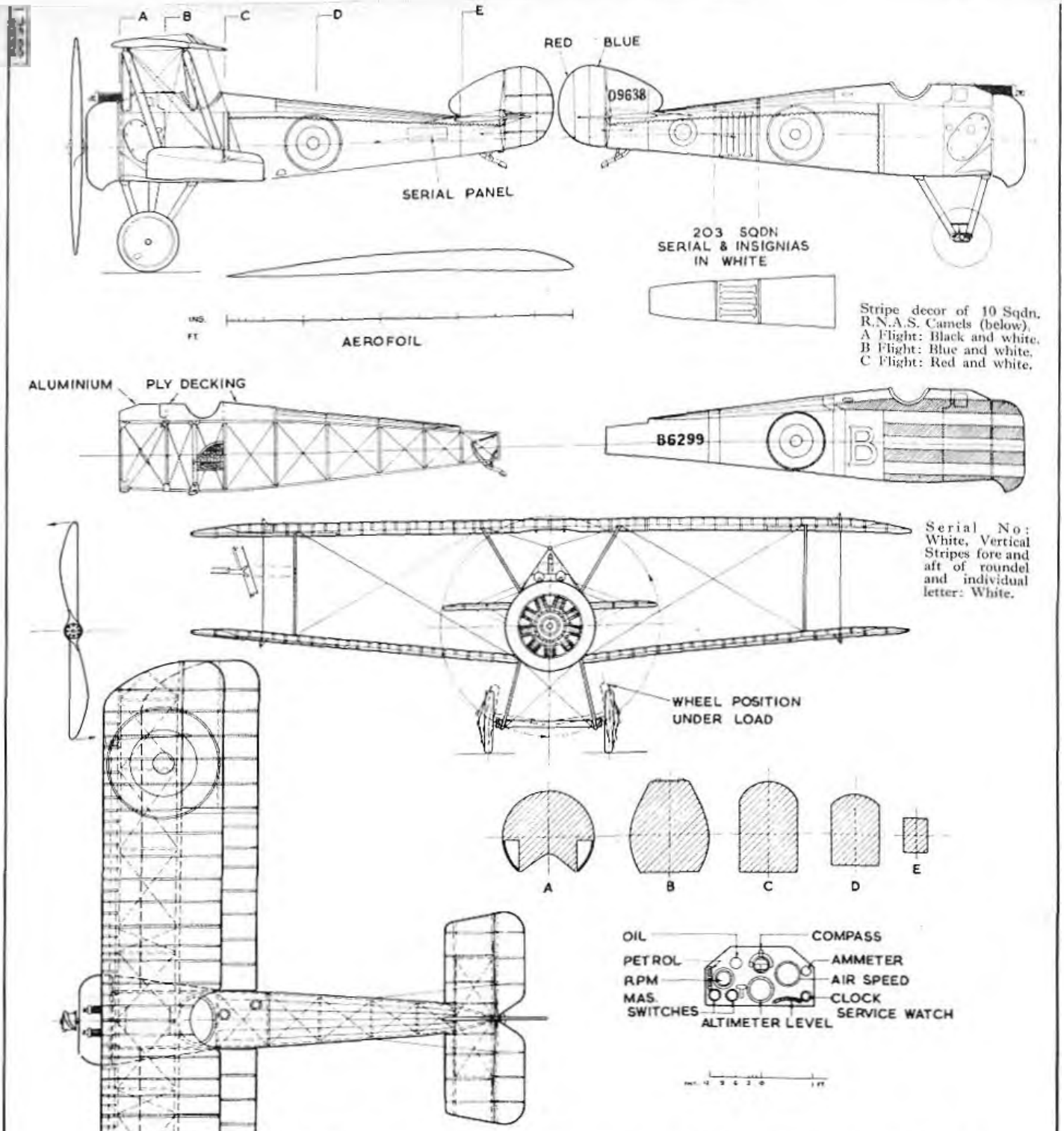
Some of the Western Front squadrons to use the Sopwith Camel were as follows:

130 h.p. Clerget	R.F.C. Sqdn.	28	34	45	54	65	70	71	73	
	R.N.A.S. Sqdn.	6	8	9						
110 h.p. Le Rhone	R.F.C. Sqdn.	3	46	54	71	73	80			
150 h.p. B.R.1.	R.N.A.S. Sqdn.	1	3	4	8	9	10			
(These squadrons became Nos. on formation of R.A.F.)		201	203	204	208	209	210			

The aircraft was built by several sub-contractors and altogether construction totalled some 5,490 machines. The number of enemy aircraft destroyed by Camels is reported as 1,294.



Heading line-up of Camels being prepared for action shows the markings of 210 Squdron at the time of the Armistice. At left, a 203 Squadron Camel (formerly of 70 Sqdn. R.F.C.) which has apparently had an argument with a ditch. (Both Imperial War Museum photos.)



Stripe decor of 10 Sqdn. R.N.A.S. Camels (below).
A Flight: Black and white.
B Flight: Blue and white.
C Flight: Red and white.

Serial No: White, Vertical Stripes fore and aft of roundel and individual letter: White.

DATA:

Span: 28 ft.; Length: 18 ft. 9 in.; Height: 8 ft. 6 in.; Chord: 4 ft. 6 in.; Gap: 5 ft. (at fuselage); Stagger: 1 ft. 6 in.; Incidence: 2°

Performance (with 130 h.p. Clerget): 115 m.p.h. at 6,500 ft., time taken to climb to that height 6 min. 0 sec.; 113 m.p.h. at 10,000 ft., time taken to climb that height 10 min. 35 sec.; 106·5 m.p.h. at 15,000 ft. time taken to climb that height 20 min. 40 sec.

Service ceiling: 19,000 ft. Endurance: 2½ hours.

Fuel tankage: 37 gals. Petrol, 6½ gals. Oil.

Weights: 1,453 lb. loaded, 929 empty.

Armament: 2 synchronised Vickers guns. Additionally external racks to carry four 25 lb. bombs.

Costs: F.1 airframe, without instruments and guns, £874 10s.; Engine, 130 h.p. Clerget, £907 10s.; Engine, 110 h.p. Le Rhone, £771 10s.

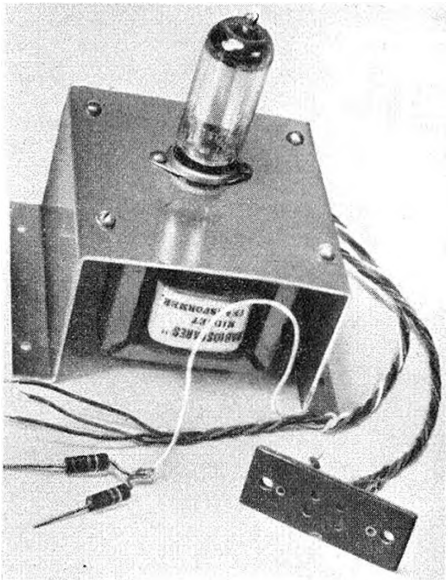
COLOUR DETAIL: Aircraft were finished ex-works with khaki-green dope on upper and side surfaces, underneath they were clear doped natural linen fabric with protective varnish producing a warm creamy shade which rapidly darkened (and dirtied) with age and usage. Red, white and blue roundels were carried above and below the wings and on the fuselage sides: those against the khaki-green background being additionally narrowly outlined with white. The rudder was equally divided into red, white and blue sections, the blue being foremost. Metal and ply panelling was usually painted grey, but not invariably so, sometimes the metal was left bright. Application of the serial numbers appeared to vary among the several contractors: painted black on a white rectangle on the rear fuselage; in the same position in plain white; on the rudder in black; on the fin in white.

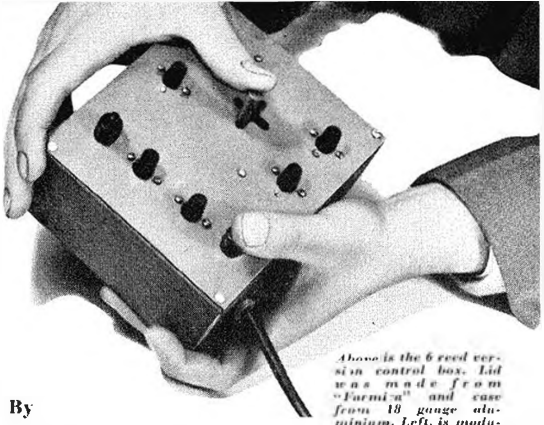
SOPWITH FI CAMEL (CLERGET)

FT.

TRANSMUTONE

Part 2. A modulator unit and control box for operation with the transistorised reed receiver described in our January issue.





Above is the 6 reed version control box. Lid was made from "Formica" and case from 18 gauge aluminium. Left, is modulator unit ready for installation in any standard carrier TX

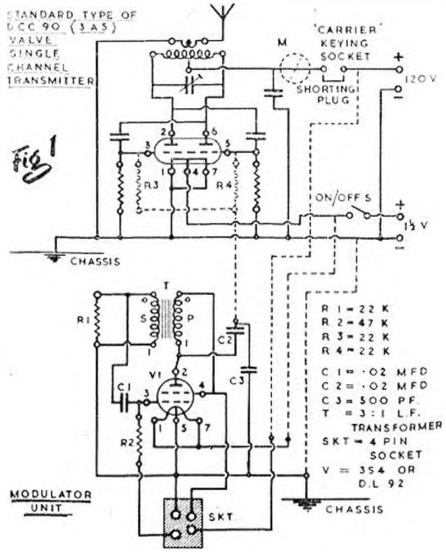
By

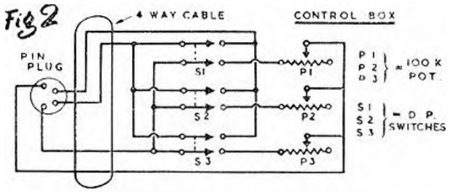
George Honnest-Redlich

THE GREATER PERCENTAGE of "carrier" transmitters used for the single-channel receiver in Great Britain are of the twin triode push-pull R.F. oscillator variety. Putting this into understandable language, a double (or two single) valve, and one coil wired up in a circuit which produces an R.F. power that is radiated via the aerial. Usually a hand-operated switch or key is used to switch the power on or off at will. Basically, the so-called "modulated" transmitter radiates a carrier which is interrupted at a rapid repetitive frequency by the "modulator" stage. The choice of frequency of interruption is controlled by the "control box". A means of varying the frequency is necessary in order to tune to the natural frequency of the required reed of the receiver.

As the majority of those using, or intending to use, multi-channel reed equipment, have already passed through the "single channel" stage and possess "carrier" transmitters, it is a great saving in cost to add a "modulation" stage and control box to their existing equipment. The modulation stage described can be connected to any transmitter using a 3A5 or DCC.90 valve. It is compact enough to fit inside the existing case. Further, the complete transmitter can be used for either single-channel or modulated multi at will. Several examples have been fitted to both the "Aeromodeller" and E.D. transmitters. (Fig. 1.)

The 3S4 valve is used in a "blocking oscillator" circuit. The valve and transformer produce a fierce oscillation the voltage of which at once chokes up the grid cutting off the anode current. The oscillation is thereby cut off until the negative charge at the grid end of C.1 leaks off to the chassis line, via R2, and the appropriate control box potentiometer. The oscillation and grid blocking sequence then reoccurs. Hence we have a sudden cut off and restart of valve anode current at a repetition frequency chosen by the setting of the switched potentiometer. This sudden cut off of current in the transformer primary produces very high voltage surges at the valve anode end of the transformer. Via C2, these negative going voltage pulses are fed to the two grids of the R.F. oscillator valve (3A5 or DCC.90) via R3 and R4. These negative voltage pulses block the R.F. oscillator valve and stop radiation for the duration of the pulse. Therefore we have the required result of interrupting the carrier wave at a frequency chosen by the potentiometer settings and switches of the control





box (Fig. 2). These switches are of the double pole types. One pole selects the required potentiometer, and the other pole switches the H.T. supply to the modulator valve. Additions are: R1 in parallel with the transformer secondary gives a better response at the lower frequencies. R2 is in series with the potentiometer in order to limit the higher frequency range. C3 prevents any stray R.F. from the 3A5 (DCC90) stage feeding back to the blocking oscillator.

Construction

A 3-in. by 3-in. aluminium chassis $1\frac{3}{4}$-in. high (*see photo*) will accommodate the transformer, valve holder and a tag strip for connections. A point to point wiring diagram is given in Fig. 3. It is of major importance that the connections to the transformer are as given. Inside and outside (beginning and end) of the windings are given in the circuit diagram as "1" and "0". Whatever make of transformer used it is imperative that "outside" secondary goes to grid via C1 and "inside" primary goes to anode. If these connections are wrong, then the valve will not produce oscillations and the anode current will be excessive. The seven-way tag strip should have both end tags as common "earth" connection to chassis, the others are insulated from the chassis.

The connections from the modulated unit to the transmitter are shown in dotted lines so that the basic carrier circuit can be identified. If a meter is used in the carrier transmitter it should be connected at "M" so that it will indicate the DCC.90 (3A5) anode current only.

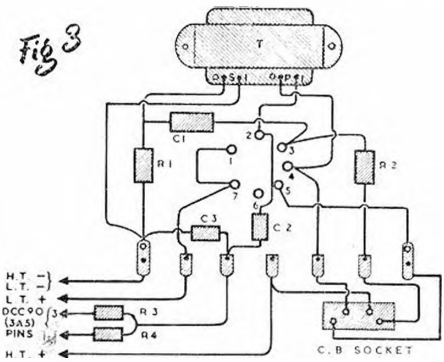
Control Box

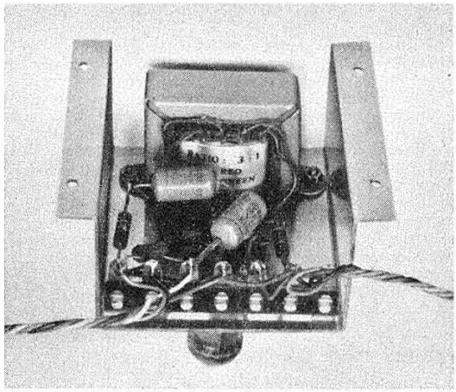
The amount of switches and potentiometer is determined by the amount of channels required. The circuit diagram (Fig. 2) gives three channels. Further channels require each, one double pole switch and one potentiometer. The double-pole switches can be push-button type (Castelco) or lever switch types. The lever switch should have enough contacts to give double-pole make circuits in either direction. Therefore for a three-channel job, S1 would be a push switch; S2, S3 a two-direction lever switch. The lever switch obviously being used for the steering control of the model. Telephone type lever switches are quite suitable.

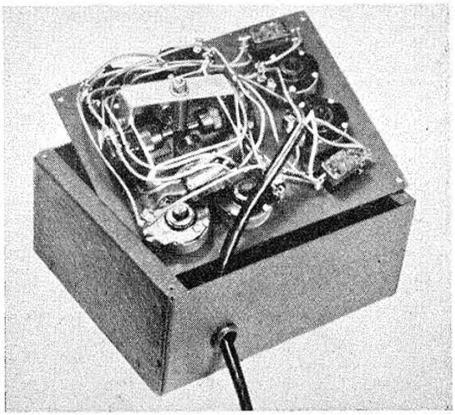
A "joystick" control switch for four channels (elevator and rudder) can be constructed by using four D.P. switches, pairs of which are at right-angles to each other and are individually operated by a central lever running in right-angle guide slots in the control box panel (*see photo*). A good flexible four-way cable from the box should terminate in a four-pin plug to suit the modulator four-pin socket.

Setting Up

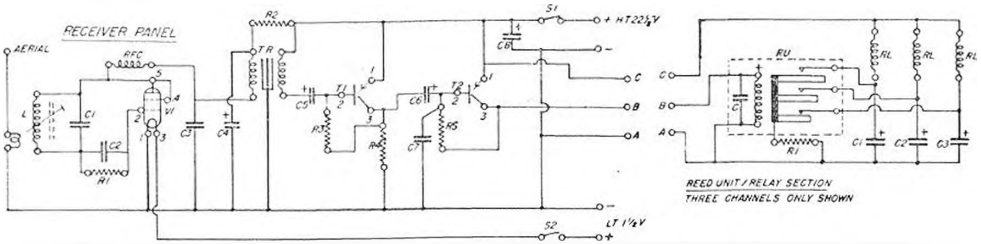
The circuit is so simple, and if good components are used, it is not necessary to employ any test instruments.







At right are views of underside of modulator unit. Note tag panel, and control box. Joystick is fabricated from Paxolin rod tapped for a bolt at lower end to secure it to aluminium strap. Spring washer and oversize hole permit easy movement



It is, however, essential to know that the carrier transmitter is in working order and is radiating on the correct G.P.O. frequency. The normal carrier keying socket should be bridged by a shorting plug and the control box connected to the modulator unit socket. Assuming that a reed receiver is available, switch on both transmitter and receiver. Then proceed as given in the previous article in the January, 1958, AEROMODELLER, "Setting up and testing".

Now if an anode milliampere meter and/or a Field Strength Meter are available, the following tests can be made.

With the m/A. meter connected where shown, it will indicate approx. 25 to 30 m/a. with the transmitter switched on. When a control box switch is operated it will *fall* slightly. A high note (potentiometer turned out) will show a greater fall of current than a low note (potentiometer turned in). Reduction of resistance of the potentiometer gives a higher note frequency. If a F.S.M. is used it will show the same characteristics. Tune the F.S.M. to the carrier, operate a C.B. switch and the F.S.M. meter will drop slightly.

Now, there is one further important point. The range of tuned reed equipment is far greater than any normal carrier equipment, but note frequency stability is essential. A carrier transmitter is usually working to the limit of its power in order to obtain range. A full load on the R.F. generator can induce some "pulling" in the modulator section. Therefore we require to reduce the power of the carrier. If we still wish to use the transmitter for a single-channel receiver using the "carrier" keying socket, then for modulated use it is better to work with a very much shorter aerial. Five feet is quite adequate. This gives the required power reduction and increases note stability. If, however, the transmitter is not ever going to be used for a single-channel operation, the aerial coupling coil (usually two turns in the centre of the main coil) should be reduced to only one turn or just a hairpin loop tucked into the coil.

There is one particular point I like to stress. For good easy R.C. flying it is *essential* to have a control box one can handle. Lever and pushbuttons should be so positioned that one can operate them blind without fumbling. They should be neither so small that cold fingers cannot feel them nor so large and stiff that it requires a blacksmith's hand to operate them without being a physical wreck after a ten-minute flight.

Errata

We regret that there was an error in the receiver and reed circuit diagrams in Part I published January, 1958. The + and — signs for the LT were reversed and are shown correctly above. Reed/Relay section should also be connected exactly as circuit above and not as originally shown.

what's the answer?

Derek's flapped stunt model was well and truly pranged—unfortunately not by Derek himself but by his close friend John who had borrowed it to try out. Now those two are anything but friends!

The trouble was caused by the elevator horn coming adrift. Derek takes the view that anyone who knew *anything* about flying should have been able to maintain control on the flaps alone. John says he didn't have time to remember that flap action is the reverse of elevator action. He just put on full "up" and the model dived straight in. What's the answer?

Control-line flaps and elevators —what happens when they part company?


First solo


But Jim Walker's flown two at once!

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

ANSWER. Flap and elevator *movement* to get the same control *response* is opposite, but on a model fitted with both flaps and elevators the flaps are, of course, hooked up the opposite way round to the elevators. Hence John's argument is idle. But whether you could effectively control a model on flaps alone with the elevator trailing and flapping about is questionable. Flap control is very much less effective than elevators.

We think, too, that the real fault lies with Derek—for not mounting the elevator horn properly in the first place!

MANNOCK'S MARKINGS

DEAR SIR,

I have had several letters from Mr. K. L. Caldwell of Auckland, N.Z., who commanded 74 Squadron during 1918 service on the Western Front. He was most obliging in giving me information on the markings of the famous Tiger Squadron of that era.

He states:

1. Identification letters or numerals were NOT painted on the wings.
2. Captain Mannock had his "A" painted aft of the fuselage roundel and NOWHERE ELSE

Now regarding photographic evidence of these two statements:

1. I have two photos of 74 Squadron S.E.5a's clipped from pre war aviation magazines. One is a rear view of Captain Roxburgh-Smith's S.E.5a, which shows the identification numeral "1" painted below the exhaust manifold but NO numeral "1" can be seen on the top surface of the upper wing. The second photo is a front view of a line-up of B flight and this time no identification numerals can be seen under the lower wing.
2. I enclose a photo originating with Mr Caldwell. It shows Captain Mannock seated in his S.E.5a and indicates the location of his identification letter "A" as Flight Commander of A Flight, 74 Squadron. It has Mr. Caldwell's own handwriting on it stating rather indistinctly, "Taken at London Colney . . . just before I and the Sqdn flew to France". The aircraft in this photo is almost certainly D276, the first of two S.E.5a's Captain Mannock flew with 74 Squadron. The Squadron flew to France on March 30th, 1918, and carried out its first patrol over the lines on April 12th, 1918. According to his combat reports Captain Mannock flew D276 on April 12th, 1918, the day of the first patrol and C6468 on June 1st, 1918.

G. SLATTER.

Christchurch, New Zealand.

Three photos mentioned by Mr. Slatter are reproduced here showing "Grid" Caldwell in aircraft 2 of B Flight, and letters aft of roundel in C Flight. Historian J. M. Bruce credits D276 as aircraft A shown by Mannock, seen in centre picture.—Ed.

DEAR SIR,

I was most interested to see in your Christmas number, one or two items about the famous Major "Mick" Mannock, V.C.

With reference to the free plan of his S.E.5a, may I point out that the number of his first machine in 74 Squadron was D.278, and not D.276 as shown on the plan. My information is taken from Major Mannock's combat reports at the Air Ministry.

The article on Mannock by Arch Whitehouse was most interesting and comprehensive. The incident to which Mr. Whitehouse refers as "One of the classic duels of the war" on July 28th, 1917, this was described by MacLanachan—a close friend of Mannock, as follows:

The Flight had already landed at the Advanced Landing Ground known as Mazingarbe, and MacLanachan was in the office making out his combat report, when he heard shouts and a commotion outside, and Mannock's voice shouting "Well, I'm damned, he's coming right over our lines!" MacLanachan rushed out to see what was happening and noted that Mick had jumped into his Nieuport and was taking off in a great hurry. Looking to the eastward he saw an Albatros approaching one of our balloons at a height of only 800 feet. But before the German reached the balloon he spotted Mick's machine flying to intercept him, so he turned away. By the time he had completed his turn Mannock was about 100 yards behind him. The German was flying a faster machine and should by rights have been able to outstrip the Nieuport; but Mick gave a burst from his Lewis gun and his aim was so accurate that the German began to twist and turn to avoid the Nieuport's fire.

Finally, the German—seeing he could not escape—turned on his relentless pursuer to give battle. Immediately Mannock dived and zoomed up under his opponent's machine and a half roll brought him into position on the tail of the enemy. One burst sent the German to the ground in flames. The pilot—who was wounded—turned out to be the redoubtable von Berthab, Iron Cross! (*See page 81, Feb.'57 issue.*—Ed).

The whole action from the time Mannock took off—lasted less than four minutes, and as it all happened at a height of only 800 feet, it was eagerly watched by all our troops in the trenches who waved and cheered wildly. Needless to say, Mannock received a tremendous ovation from them when he went to try and salvage the remains of the German machine.

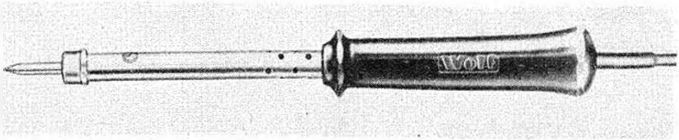
Incidentally, I have had letters on the subject from "Grid" Caldwell (Mannock's C.O. in 74 Squadron, and now an Air Commodore in New Zealand) and many more of Mick's former comrades in the Royal Flying Corps.

V. SMYTHE.

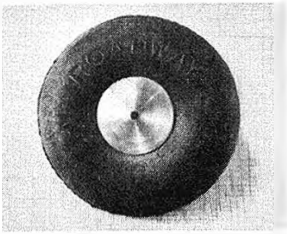
Hampstead, London, N.W.3.

Mannock flew S.E.5a's C6468, D276, D278 and E1295, those in pics here are "E" series, with ungeared Vipers. Mannock flew C6468 on 1/6/18 and wrote to Capt. C. M. Dixon, K.B.S., the following day, "Look out for the A—no streamers", indicating all his a/c carried this marking.—Ed.

TRADE NOTES



Wolf Electric Tools Ltd. send details of two new products. Firstly, a special adaptor collar that enables Wolf "*Quartermaster*" or Wolf "*Cub*" drill owners to fit their drills to the heavy duty Wolf "*Eso*" Drill



Roadway Wheels in 1¼, 2 and 2½ sizes at 2s. 10d., 4s. and 5s. 2d. through Mercury stockists are extremely light in latest form sponge rubber

Stand. The stand enables users to drill to a maximum depth of three inches and costs £5 10s. The adapter collar retails at 2s. 6d.

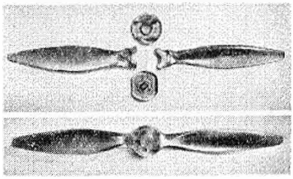
Second (*photo above*) is the new *Wolf Lightweight Electric Soldering Iron* which weighs only three ounces, has a 25-watt consumption and can be obtained in voltages from 25 to 250. The nickel-plated copper bit is pencil shaped and is designed for easy replacement, being secured to the barrel by means of a locking nut. On the sample we tried the heat up was extremely rapid and for any of the smaller soldering jobs we modellers know so well this is the ideal iron retailing at 22s. 6d.

Star Models, Germany, produce a new plastic propeller with interchangeable blades designed by a well-known German aeromodeller, Hans Kaufhold. The blades interlock in the rear portion of the hub with the front portion acting as a clamping plate to lock the whole assembly.

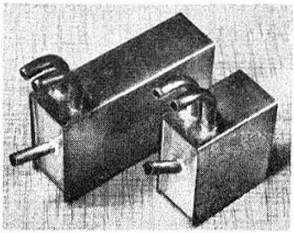
Five sizes of propeller are being prepared initially 10 x 4, 9 x 6, 8 x 8, 8 x 6, and 7 x 3 and the price is standard DM 1.95, about 3s. 3d. for a complete propeller. A three-bladed hub is also produced for the same blades. (*See pic. below.*)

PLANNING YOUR HOLIDAYS? You You might like to know that the proprietors of **Morse's** Hol. Centre at Potter Heigham on the Broads is "one of us"—a nice thought, having an aeromodeller looking after your welfare while enjoying yourself in this lovely area.

Enterprise by **Howtel Models** in Solihull is to be commended, for they run a free aeromodelling instruction course each Thursday evening, only condition being that one purchases 15s. worth of goods



from their shop. From the advt. agents for **Sebel Products** we have a request to clarify that the Jetex "Tailored" models do *not* include motor in the kit; but do include the augmentor tube and clip for a Jetex 50B unit. Latest item in the exten-

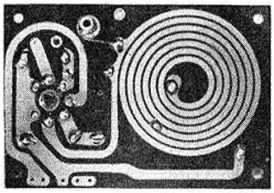


Mercury team race tanks for 15 c.c. and 7½ c.c. have new type forward facing vents for pressure feed

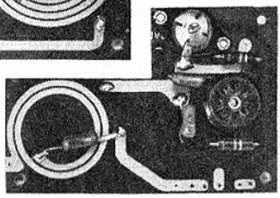
sive **Mercury** accessory range is the 7½ c.c. team race tank with pressure vents. Perfect for the up-to-1 c.c. RAFMAA spec. or for free-flight, they retail at 3s. 7d. incl. tax.

Gloplug and radio transmitter L.T. accumulators are not always conveniently dimensioned. We can, however, thoroughly recommend the lead acid 2 volt, 4 x 1 x 1¾ inch ex-R.A.F. accumulators supplied dry for 7s. 6d., plus 1s. 3d. postage by **Quality Electronics** of Kingston-on-Thames.

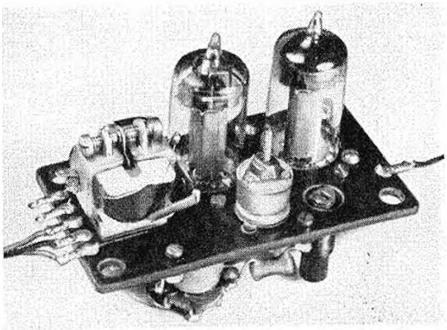
They also market a 12-volt unit at 22s. 6d., plus 2s. 3d. postage.



Latest Hill Rx on right has smaller components, saving weight and size. 30s. kit by J. Dockerty is complete, less valves and relay



Printed Tx base for DCC90 circuit by Radio and Electronic Products has absolute coil and frequency stability and is coming out in kit form



AERO MODELLER

AIRCRAFT IN SERVICE
Number 4

By G. A. G. COX

REPUBLIC F84F THUNDERSTREAK

AEROMODELLER photos show cockpit, undercarriage and air brake detail on the F-84F. That's George Cox at work sketching detail on the wingtip at left

When Republic Aviation Corporation undertook an "economy" swept variant of the well established F-84E Thunderjet in 1950, they could hardly have envisaged its world-wide success as a fighter-bomber with twelve air forces. The first prototype, temporarily known as the YF-96A but later reverted to F-84F was a 167-day production with swept surfaces for a standard fuselage. In production for the Curtiss-Wright licence built Sapphire J-65, it called for extensive fuselage modification, and with press-forgings extensively used in the wings, it became an entirely new design.

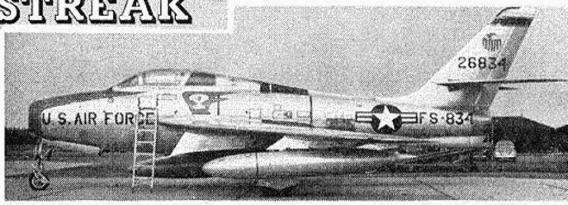
The F-84F-1RE, first production aircraft, serial 51-1345, was test flown on November 22nd, 1952, and modifications have included application of an all-flying slab tail on the -25RE and enlargement of the "sucker doors" below the cockpit for static running on the F84F-45RE variant now forming the Luftwaffe's first tactical wing (to be assembled and maintained by Heinkel and Messerschmitt) as well as the eight other NATO forces in Europe.

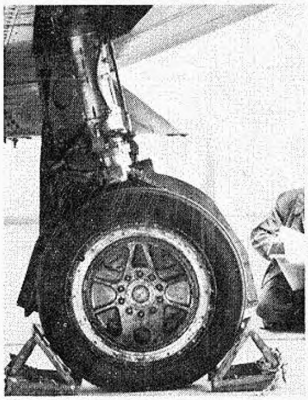
Directly comparable with the Hunter V (detailed in June, 1956) of almost identical dimensions and performance, except perhaps for range on internal tanks, the F-84F is a formidable aircraft. Unfilled rivets on the plain surfaces contrast greatly with the R.A.F. fighter finish and the solid appearance of the wings and huge long-range tanks give the impression of brute Sapphire power being the main lift component. In fact, the 'Streak needs a long runway, 10,000 ft. being the NATO figure, and USAF stations have nylon crash nets for overshoots in case of drag 'chute or brake failure. Range is no longer a problem now that 450 and 230 U.S. gallon drop tanks can be fitted to the underwing pylons, and for active duty as a LABS (loop bombing) Fighter-Bomber it can carry a variety of 22 different combinations of armament and tanks. Built in armament is six 0·5 M3 guns and up to 24 5-in. rockets can be fitted right out to the tips in four batches of six. RATO provides a 4,000-lb. thrust boost if attached by jettisonable collar under the fuselage and a Nuclear Weapon carried on the starboard inner pylon which is of different shape to that on the port side.

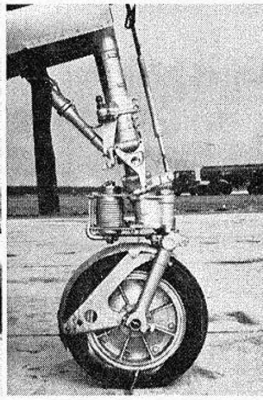
Clearly the 'Streak is a valuable tactical weapon, and the insignia of the 81st FBW is significant of its purpose.

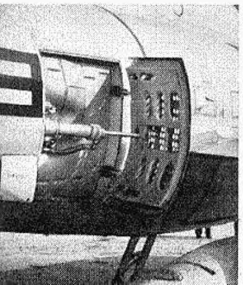
Thanks are due to Lt.-Col. Moreland, O.C. 91 Sqdn., USAF, and his Officers for their fine co-operation which has enabled our contributor George Cox to prepare the drawings on these pages. 91 Sqadron proudly bears the Championship badge of the USAF Tactical Weapons Meet aft of the canopy on its aircraft, and is currently based at Woodbridge, Suffolk.

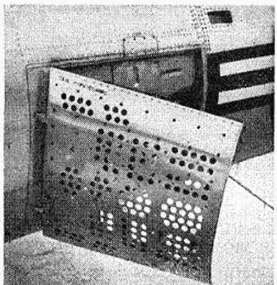
Span: 33 ft. 7¼ ins. Length 43 ft. 4 ins. Height 14 ft. 4 ins.

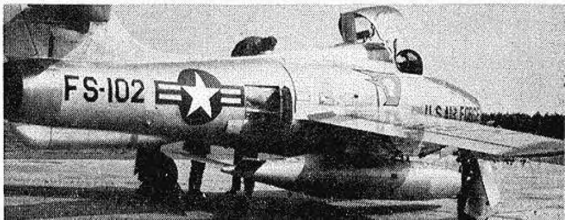




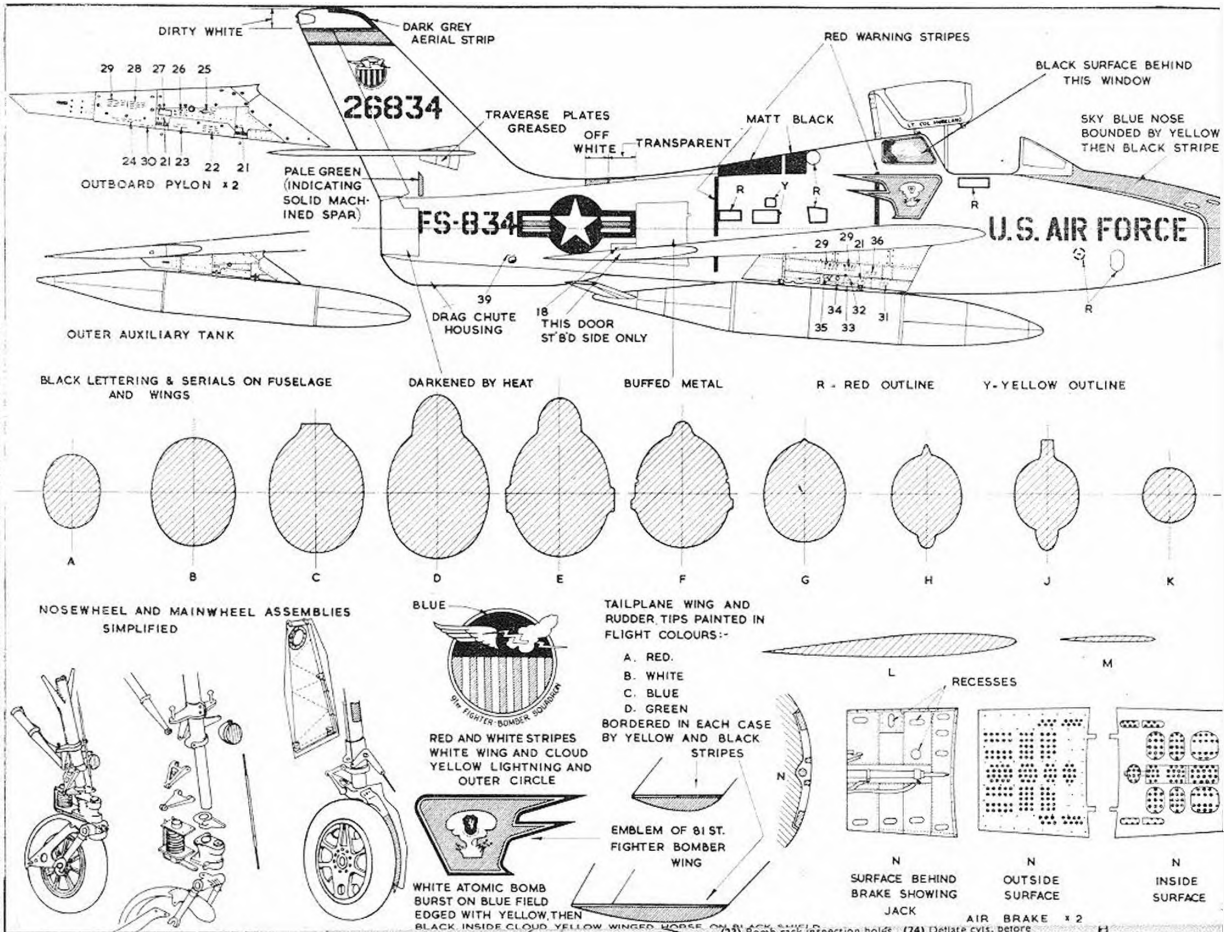








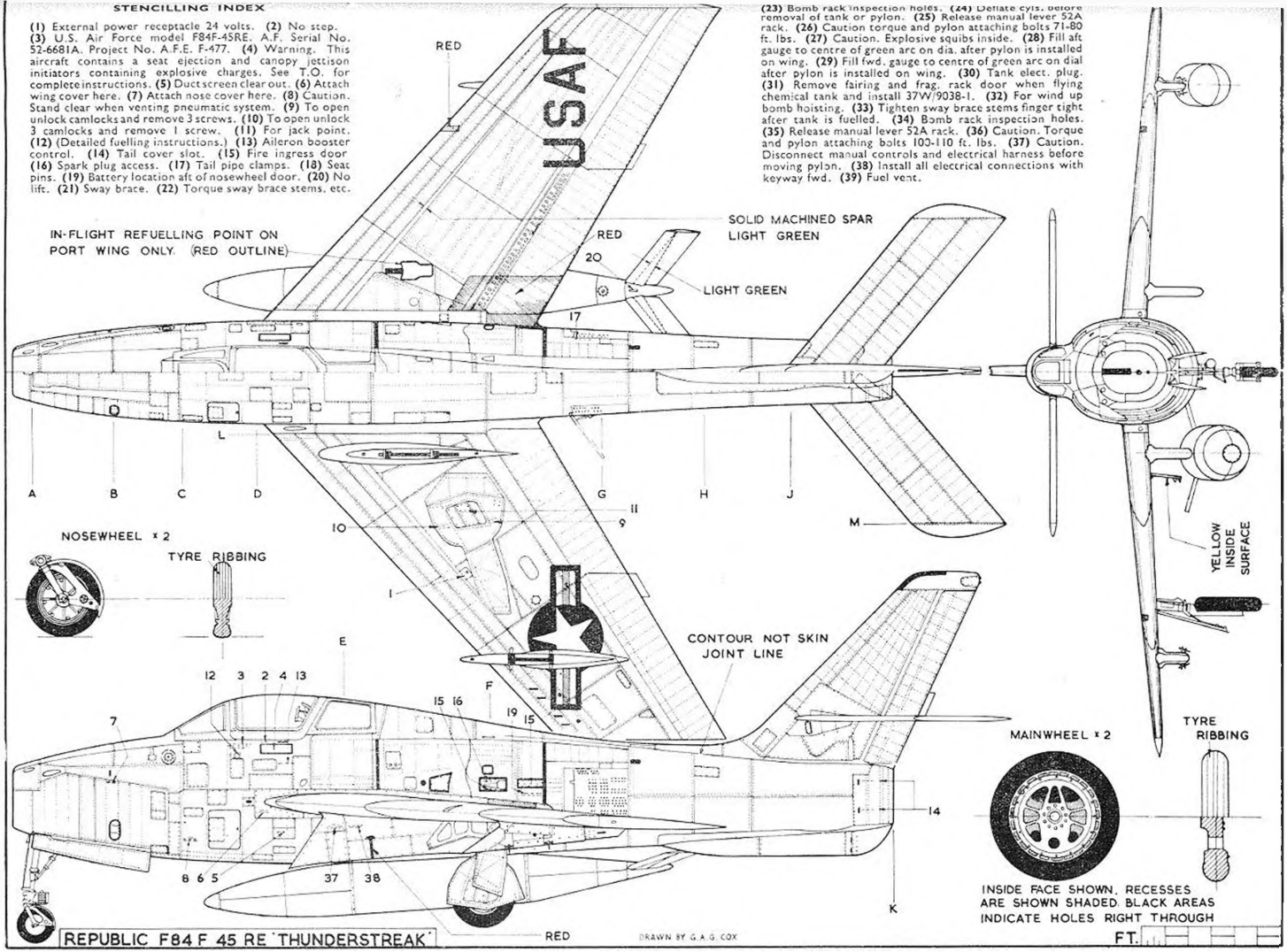
1/72nd SCALE REPRINTS OF THIS "S" TYPE PLAN AND 1/48th SCALE "T" TYPE DYE-LINE PRINTS ARE AVAILABLE PRICE 1s. 6d. and 2s. 6d. RESPECTIVE



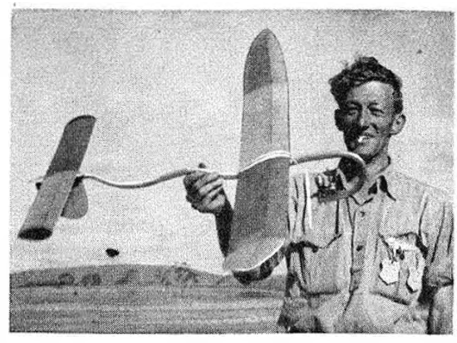
STENCILLING INDEX

(1) External power receptacle 24 volts. (2) No step. (3) U.S. Air Force model F84F-45RE. A.F. Serial No. 52-6681A. Project No. A.F.E. F-477. (4) Warning. This aircraft contains a seat ejection and canopy jettison initiators containing explosive charges. See T.O. for complete instructions. (5) Duct screen clear out. (6) Attach wing cover here. (7) Attach nose cover here. (8) Caution. Stand clear when venting pneumatic system. (9) To open unlock camlocks and remove 3 screws. (10) To open unlock 3 camlocks and remove 1 screw. (11) For jack point. (12) (Detailed fuelling instructions.) (13) Aileron booster [illegible] (14) [illegible] (15) Fire ingress door [illegible]

(23) Bomb rack inspection holds. (24) Deflate cyls. before removal of tank or pylon. (25) Release manual lever 52A rack. (26) Caution torque and pylon attaching bolts 71-80 ft. lbs. (27) Caution. Explosive squibs inside. (28) Fill aft gauge to centre of green arc on dia. after pylon is installed on wing. (29) Fill fwd. gauge to centre of green arc on dial after pylon is installed on wing. (30) Tank elect. plug. (31) Remove fairing and frag. rack door when flying chemical tank and install 37W/9038-1. (32) For wind up bomb hoisting. (33) Tighten sway brace stems finger tight after tank is fuelled. (34) Bomb rack inspection holes. (35) Release manual lever 52A rack. (36) Caution. Torque and pylon attaching bolts 100-110 ft. lbs. (37) Caution. Disconnect manual controls and electrical harness before



Modellers "down-under" have a fine weather Nats —reported by Jim Fullarton



THE MEETING WAS conducted by the Tasmanian Model Aeronautical Association at Campbell Town from December 28th to January 3rd, and they did a very fine job, Keith Leonard (Contest Director), Garth Wilmot (Treasurer), Ken De Bomford and George Allison. There were just short of 90 entries, not as many as usual, but quite good in view of the cost of travelling to Tasmania.

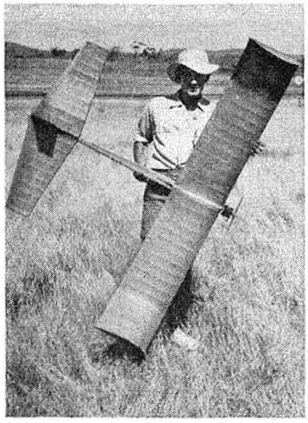
The new National Champion is young Graham Sinclair, who performed well in both Free Flight and Control Line, and set a new record time of 10 mins. 43 secs. in Class I team race. Veteran Tony Farnan was only half a point behind him.

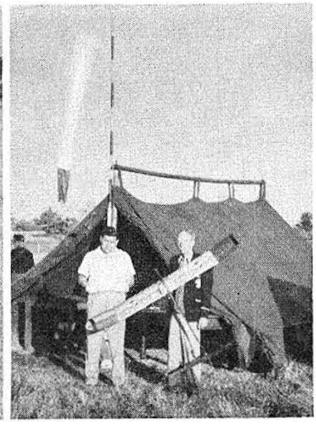
The Victorians, who chartered a Douglas DC-6 to come over the 200 miles of water in the Bass Strait, took the Aeromodeller Shield for top State by sheer weight of numbers. It was only natural that there was much interest in the Wakefield and F.A.I. Power to see how they would go under the new rules. The best of the Wakefields were probably capable of about 2½ mins. in dead air, and the power jobs a shade better, though these times will probably be raised as builders become more used to the changes. The power jobs were still quite lively, but the weight could be noticed on the glide. Healy's winning model was a development of the *Stomper* design, with a Webra Mach I, and flew very consistently. The next three places were all filled by AM.10s which showed up very well.

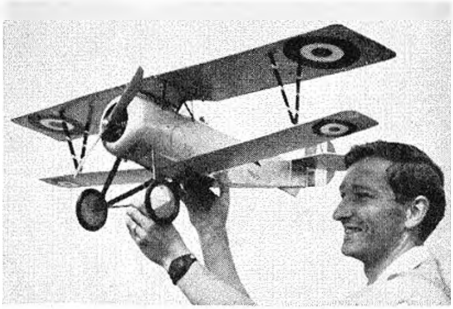
Behind the author's win in the Wakefield lies a story of a fine sporting gesture. At the end of the third round, I was lying second, 20 seconds behind former Italian flier, Bruno Chichilla. Then I was laid low by a germ that was going around the town and was unable to continue. Hearing that I was ill, Barry Winters insisted on flying for me, with the results as shown. My model used a single blade folder on 12 strands of Dunlop, and had about 35 secs. motor run. Bruno was unlucky not to win, as he had a fine power flight, but suffered a persistent stall on the glide. He also flew well in F.A.I. Power, Nordic, and even had a speed model there.

A.P.S. *Nebula's* seemed very popular in sailplane events, though the Nordic winner, Arthur Cooper, had an original design developed by his brother-in-law, Les Fahey. The so-called "F.A.I. Sailplanes", a hangover from the past, are flown on 328 ft. lines, and made some mighty flights.

Heading: Russ Hammond, co-Editor of Australian "Model News", shows what can be done with Tasmanian King William Pine for his Mills .75 Scramble entry. First pusher we've seen with a nose engine! Below: at left, the "Ramrod" (K. & B. 35) flown by George Pickers into 1st in Class III Power, George travelled 1,500 miles from Queensland. Centre: Fed. Sec. Bill Grabowsky and J. McGregor Lowndes at the official tent before the 5.30 a.m. start. Right: Only lady entrant Mrs. Phil Carney was 4th in F.A.I. Sailplane event with an "Altair"







Beautiful DH Comet by Garth Wigston for two O.S. 15's was 2nd in C/L scale. Jack Elliott's freeflight Nieuport 17 was 2nd in F/F class. At right: F.A.I. power winner, a streamlined Stomper by Basil Healey

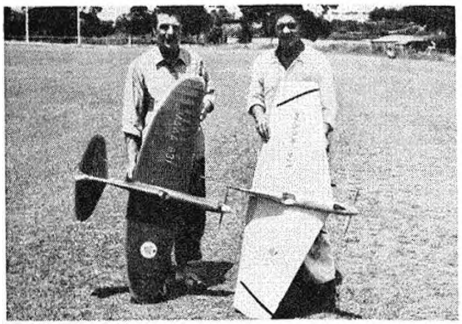
Outstanding novelty item was the night scramble over half an hour, models being illuminated by pencell batteries. It seemed like hard work for competitors, starting motors by torchlight and chasing models over rough paddocks and through barbed wire fences in the dark, but the spectators enjoyed it immensely. Visibility of the small lights was amazing, at least half a mile.

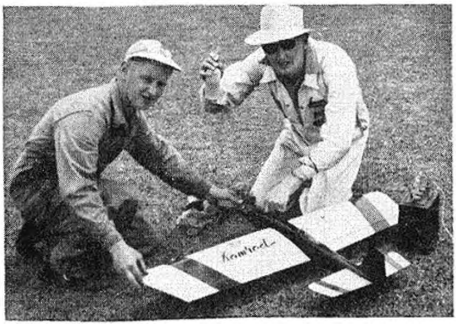
O.S. motors again predominated in Control Line taking first three places in Stunt, winning the Class II team race, and being used by nearly all Combat fliers. The main exception was the Class I race, where the mighty Oliver Tigers filled their usual first and second places. Young Doug Harlow showed up as one of the most promising juniors for a long while and caused the surprise of the meeting when he beat favourite, Bob Hyde in the Combat.

Of Speed, the less said the better, most places being taken by team racers. The lone exception was Farnan's dash with a hand-launched O.S.15 entry, featuring a fibreglass pan. Scale was thin this year, transport difficulties having apparently deterred the four-engined specialists from the mainland. Main interest in F/F was whether Bas. Healy's Jetex 350 Heinkel Volksjager could possibly confound the gloomy prophesies of the pundits by lasting out the required 20 seconds. It didn't, but it was a gallant failure.

Another fine effort by a junior was by 17-years-old Greg Waddle, of Launceston, in Radio Control. Greg has been flying for two years, in conjunction with his father, who is also an enthusiast. Model was an R.C.2 with E.C.C. receiver and A.M. 3·5 motor. All rudder only, unfortunately, the boys out here are very cautious about embarking on the complexities of multi-channel stuff.

Results on page 155





Bob Hyde won stunt with the usual Thunderbird (O.S. 35), seen here with Mick Faulkner and his Fierce Arrow. At right: 2nd man Tony Farnan and O.S. 29 powered Ramrod, and Australian Kit model

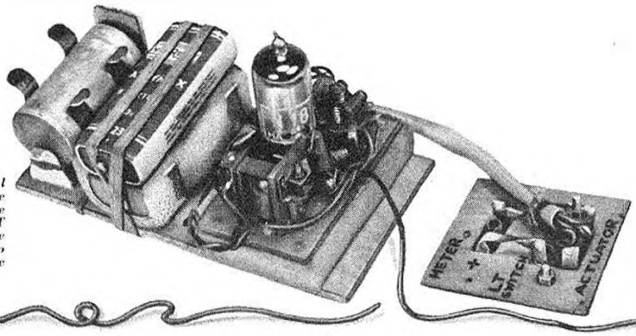


FIG. 2.
Author's actual unit for ECC type installation. Note Terry clips for LT and the way the sleeving is bound to ply panel to relieve strain on joints

By
C. C. Badger

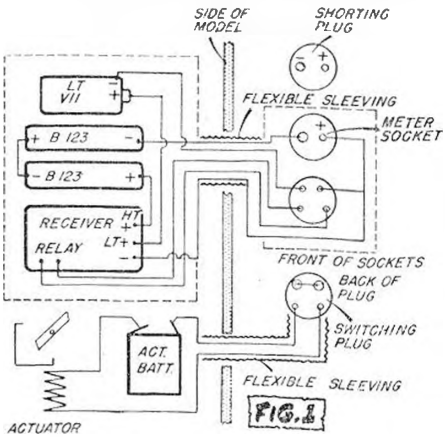
Unit Installation for Radio Control Equipment

HERE IS a system which makes R/C installation very easy and has been arranged to have the following advantages:

1. The elimination of as many soldered joints as possible.
2. The elimination of switches.
3. The receiver and relevant batteries are assembled as a single unit.
4. The receiver unit can be easily removed from the model and worked without extra wiring.
5. Easy interchange of receivers and models.
6. Resistance of vibration effects on the relay.
7. Resistance to crash effects.

Points 6 and 7 are explained as follows: any vibrations which do reach the receiver/relay unit via the sponge mounting are smoothed out by the damping action of the relatively heavy L.T. and H.T. batteries. Similarly the loads imposed upon the receiver and airframe in crashes will be less serious because of the greater travel allowed and because they will be applied to a greater area of the fuselage floor.

Several important points should be noted in the construction of the system, the prime one being that on no account should hard rubber of the Sorbo variety be used to support the receiver unit, it is too springy.



The correct material is nylon or plastic foam as used in Woolworth's bath sponges and mats. There should be only just enough rubber bands used to retain the unit or the foam will not be able to do its job. Plugs and sockets used are the normal types encountered on portable radio batteries. The sleeving used is waxed linen sleeving as used in automobile electrical work and can be purchased in various diameters (1 to 5 mm. bore) from garages and electrical stores. Suitable sockets may be salvaged from old batteries (4 pin from a B136 and 2 pin from D18). It is most important that all connections are properly made, and this does not involve merely making a good soldered joint. Every lead should be supported by binding the insulated portion of the wire to an appropriate point. NEVER let the soldered portions of lead take the strain on its own for eventually it will fracture.

The nylon foam should be fixed to the receiver and base with Goodyear Pliobond Cement.

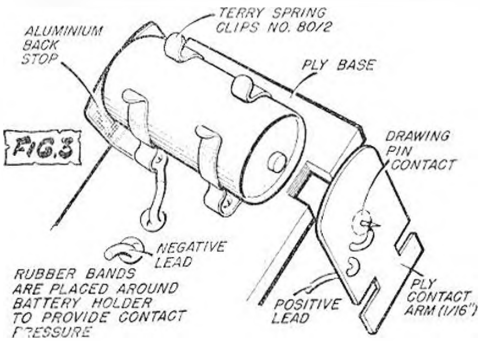
The writer has been using a system of shorting plugs to switch on for four years now. There is no difficulty in inserting the plug even with the engine running provided that the plug has a dab of paint on one side for visual positioning.

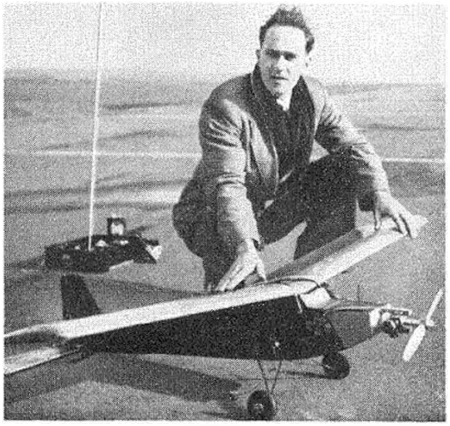
INSTALLATION for ECC 951 A or B

or similar receiver using 60v. H.T. and 1½v. L.T. and a normal escapement (E.D. Standard, Typhoon, etc.)

Figure 1 shows a pictorial wiring diagram of the installation.

As will be seen from Figure 2 the plug sockets are





Author on left with model that he has been flying since 1953. A development of the American "Citizen" it is powered with an E.D. 3.46, weighs 4 pounds and spans 64 inches. Unit installation is used with centrifugal actuators, now being replaced by cascaded escapements

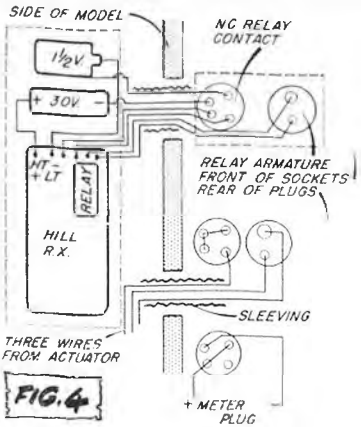
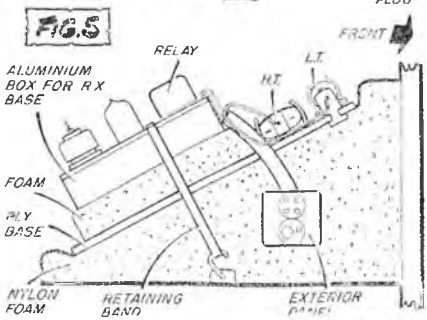


FIG. 4

FIG. 5



mounted on a small panel of 1 mm. ply which is passed out through the fuselage side, via a slot and then fixed with two small wood screws. The hole for the switching plug lead should similarly be large enough for the plug to pass through so that the actuator wiring may be easily removed. It is well worth while making the fuselage floor from the receiver forward of thin ply, the increase in weight is little but there is a real gain in strength.

The H.T. batteries clips are cut from soft 16 s.w.g. aluminium sheet and are one quarter of an inch wide bent up to "U" shape and rivetted to the base with aluminium rivets. An enlarged detail of the L.T. battery clip is shown in Figure 3.

INSTALLATION FOR "HILL" Two Valve Receiver *or similar type using 30v. H.T. and 1½v. L.T. (Three wires available for relay). (See Fig. 5 above.)*

Figure 4 shows the installation circuit for a receiver of the "HILL" type and it allows use of both relay contacts. The plugging arrangement is slightly more complicated but the two-pin plug can be left in normally provided that the normally closed relay contact is connected through the four-pin plug. The four-pin plug is then used for switching and meter insertion. Most modellers use a milliampmeter with a two-pin plug permanently attached so that for use with this system an adapter made from a two-pin socket soldered to the back of a four-pin plug must be made.

When using both of these circuits it would be wise to mount the two-pin sockets with the large holes on opposite sides. This would discourage any chance insertion of the M/A meter into the actuator circuit on the "HILL" receiver.

Figure 5 gives a side view of the "HILL" installation.

AUSTRALIAN NATIONALS RESULTS

F.A.I. POWER
1. B. Healy, N.S.W. 712·7
2. B. Winter, Vic. 670
3. C. Stones, Vic. 589·7

WAKEFIELD RUBBER
1. J. Fullarton, Vic. 699
2. B. Chinchilla, Tas. 686·7
3. P. Van Leuvan, W.A. 589·9

NORDIC A/2 SAILPLANE
1. A. Cooper, N.S.W. 662·4
2. M. Cameron, Tas. 631
3. D. Jacobs, Tas. 625·6

POWER RATIO CLASS 1
1. B. Baker, Qld. 12·36 ratio
2. R. Ellis, Vic. 10·91
3. M. Cameron, Tas. 10·87

POWER RATIO CLASS 2
1. R. Ellis, Vic. 16·6
2. G. Sinclair, Vic. 15·1
3. D. Boughton, Vic. 14·9

RADIO CONTROL
1. G. Waddle, Tas.
2. D. Saxby, S.A.
3. N. Abletthorpe, Vic.

POWER SCRAMBLE, 1 hour
1. C. Marsden, Vic. 950
2. R. Brown, Vic. 919
3. A. Cooper, N.S.W. 819

TEAM RACE CLASS 1
1. G. Sinclair, Vic. 10·43 (new record)
2. D. Jacobs, Tas.
3. T. Farnan, Vic.

TEAM RACE CLASS 2
1. B. Turner, Vic. 9m. 8·5 sec.
2. B. Tucker, Vic.
3. T. Farnan, Vic.

TEAM SPEED CLASS 3
1. J. Pfeifer, Vic.

POWER RATIO CLASS 3
1. G. Pickers, Qld. 12·8
2. E. Ellis, Vic. 10·6
3. A. Cooper, N.S.W. 10·3

CHUCK GLIDER
1. G. Pentland, Vic. 168 (3 flights)
2. C. Stones, Vic. 167·7
3. D. Boughton, Vic. 139·5

JETEX
1. J. Sinclair, Vic. 375
2. G. Sinclair, Vic. 221·6
3. R. Brown, Vic. 133·6

OPEN F.A.I. SAILPLANE
1. D. Jacobs, Tas. 791·8
2. B. Healy, N.S.W. 728
3. R. Greenhill, Vic. 684·8

F/F FLYING SCALE
1. K. De Bomford, Tas. (Norseman)
2. J. Elliot, Vic. (Nieuport)

F.A.I. SPEED CLASS 1
1. T. Farnan, Vic. 100 m.p.h.

OPEN STUNT
1. R. Hyde, Vic.
2. T. Farnan, Vic.
3. I. Wright, Vic.

JUNIOR STUNT
1. D. Harlow, Vic.

C/L FLYING SCALE
1. B. Chandler, Tas. Zero
2. G. Wigston, Tas. Comet
3. A. Moy, Tas. Invader

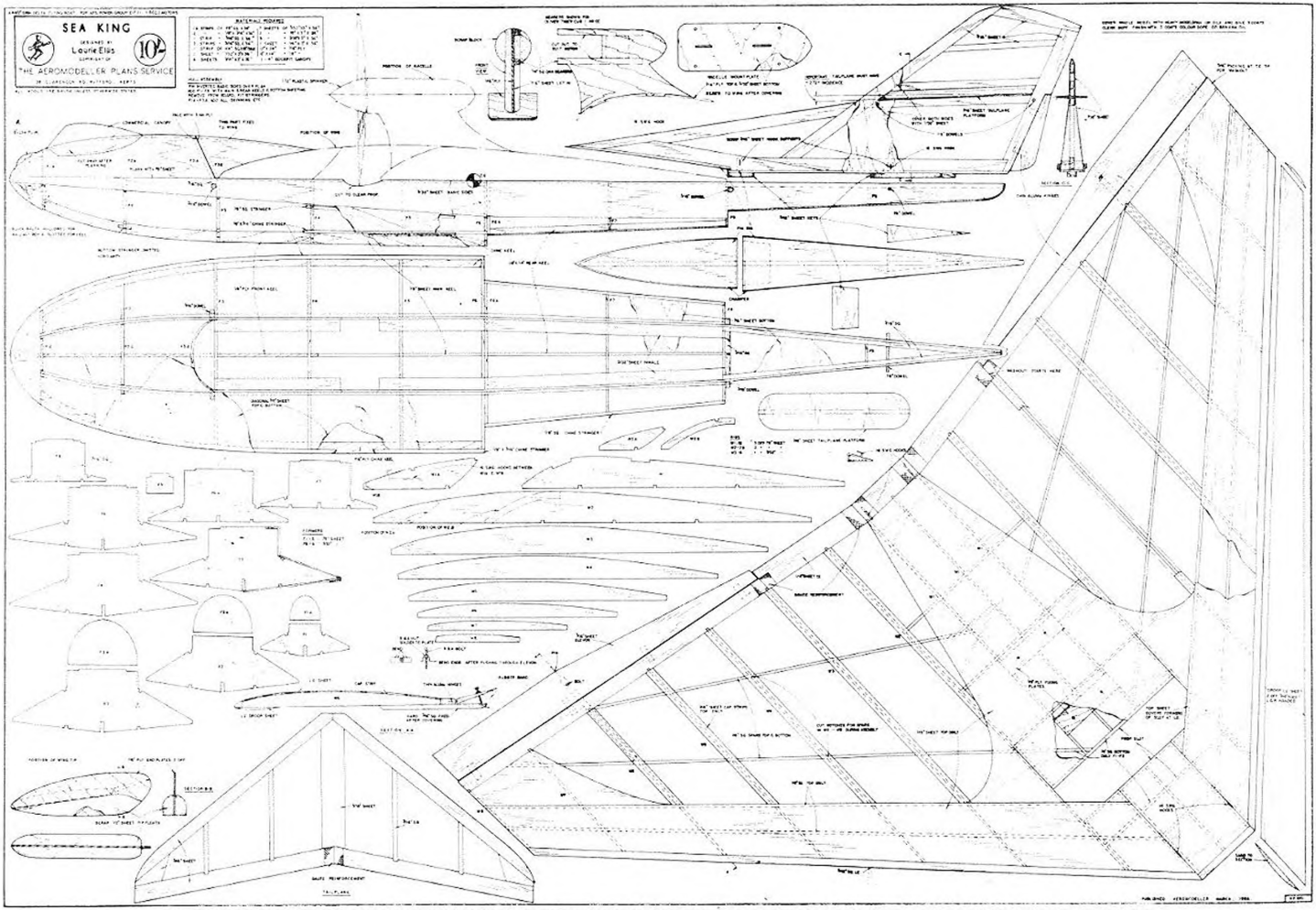
COMBAT
1. D. Harlow, Vic.
2. R. Hyde, Vic.

JUNIOR COMBAT
1. D. Harlow, Vic.

SENIOR CHAMP OF CHAMPIONS
1. G. Sinclair, Vic.

JUNIOR CHAMP OF CHAMPIONS
D. Harlow, Vic.

AEROMODELLER STATE SUPREMACY SHIELD: Victoria.



FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE PRICE 10/- PLUS 6d. POSTAGE AS PLAN WP 689 FROM AEROMODELLER PLANS SERVICE

A super slotted-prop 45-inch Delta Flying Boat for 1.5 c.c. engines

SEA KING is the perfect "follow-on" for all who have built and enjoyed Laurie Ellis's VULTAN and JAVELAN Deltas available in Aeromodeller Plans Service. Anyone who has made a power model should not have any difficulty with the construction and will be rewarded by a model which will give hours of flying pleasure. The machine may be flown over ground but it will not take off from ground, the strengthened hull being particularly robust, it is not in the least fussy where it lands! Its water stability is excellent but, because of its low free-board, it should be flown from calm water. Its stability in the air is perfect—it has excellent stall recovery but it is imperative that the G.C. is not aft of the position shown and the tailplane MUST be at 2½° incidence.

Sea King has been flown as a free flight sport model only. The hull is spacious enough for radio gear and the area of the wing is such that the additional weight can be carried with ease. The wing tip floats are not entirely necessary as Sea King has not been in the habit of digging a wing in except on the odd occasion on landing. The aerodynamic qualities of the "droop-snoot" section are also open to debate but we use it on this type of wing because of the tremendous strength given to the wing.

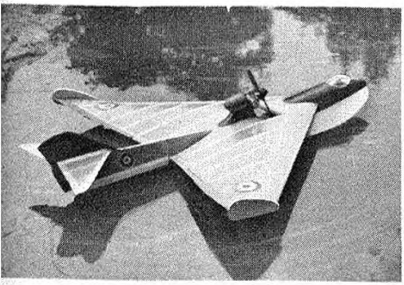
Delta Trimming Technique

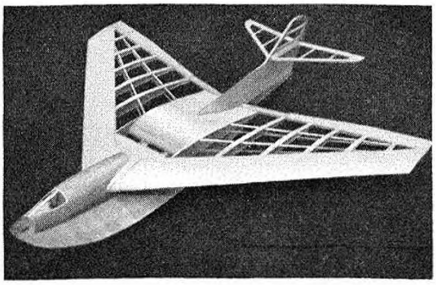
Now a word about the trim. Ensure that the model balances where indicated. The original weighs 26 ounces, with 2½ ounces lead ballast in the nose. Screw the elevons to about 10° UP with the rudder trim tab neutral. Hold the model overhead, run into whatever wind there is and push into a glide in a slightly nose down attitude. If the model glides too steeply, the elevons should be raised slightly, if it dives, they should be lowered. Proceed with caution at this stage and remember that this is a big model with a fairly fast glide. Continue adjusting until you get a long flat glide in a straight line. In a delta remember that the model will turn toward the higher elevon. When you have adjusted for a long straight flat glide, raise the LEFT elevon just a shade and lower the RIGHT elevon the same amount. About one-third turn on the vernier screw is enough. Glide the model to see if it shows a tendency to turn to the left. As soon as a left turn is indicated, set the rudder trim tab ⅛ in. to the RIGHT and glide again. the model will now glide straight or show slight turn to the right. It is now ready for powered flights.

Perhaps an explanation of this trim might not be amiss. Having built numerous deltas we have found that a delta can be dangerous under power in a RIGHT turn and equally dangerous in a LEFT glide. So, initially, we want to avoid these. After you get used to your delta boat you will know what liberties you can take with it. Thus we have adjusted the model so that torque, assisted by elevons, will turn the model to the left but the trim tab is trying to turn the model to the right. Under the higher speed of powered flight the torque and elevons win out and the model goes into a left turn with the trim tab holding the nose up thus preventing a spiral dive to the left. When the engine stops and the model slows down, the trim tab takes over to turn the model to the right in a turn but now the higher left elevon prevents the model from dropping into a right spiral dive. That is just a brief outline of what happens and it will give you something to work on for the first flight.

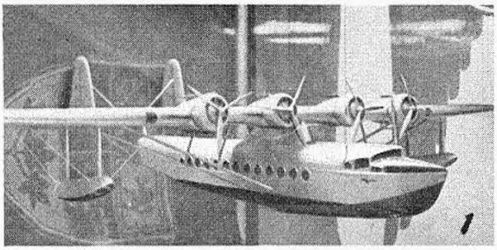
The take off run is dependent on conditions. On flat calm water it will need almost full power from a 1·5 c.c. and a run of about 100 feet. With a very slight breeze and small ripples it will unstick in about 40 feet.

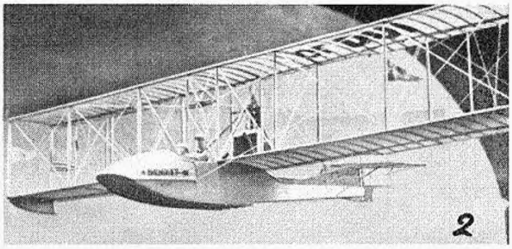
For those who build this model we will predict hours of fun and also quite a stir of interest wherever you appear with it.

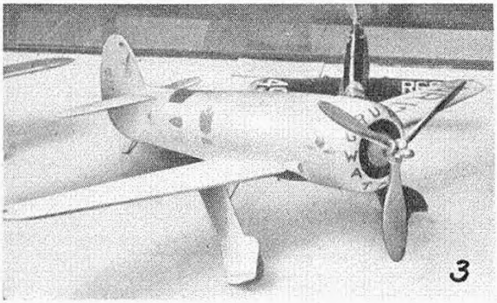


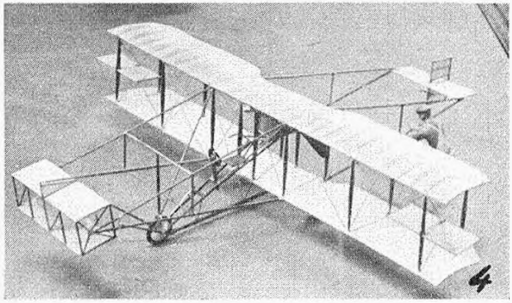


Two prototypes of Sea King have already achieved fame in Canada, where Laurie Ellis has frequently demonstrated their remarkable all-weather flyability over land and water. Structural view shows fairly simple construction, before power pylon is added



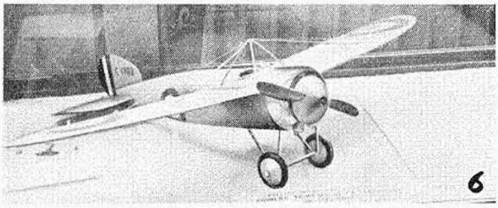






SMITHSONIAN INSTITUTE MODELS

WHAT BETTER TO DO on a rainy day than visit the aeronautical section of your National Museum? Captain M. E. McGuinn took his camera along to the U.S. National Air Museum at the Smithsonian Institute, Washington, and with the permission of the director, took these views of a few of the many historic model exhibits found in this fine establishment. They illustrate that, like the Imperial War Museum, Lambeth Road, S.E.1 (Weekdays 10-6, Sundays 2-6) and the Science Museum, S. Kensington (Weekdays 10-6, Sundays 2.30-6) the value of expert modelmaking is keenly appreciated by Museum Curators. Solid modelling enthusiasts would profit greatly by study of these beautifully made exhibits.



(1) Pioneering Sikorsky S-42 Clipper of P. A. A. which established the trans-Pacific airlines and started a design trend in four-engined monoplane flying boats. (2) World's first-ever regular passenger service was operated in January, 1914, from Tampa to St. Petersburg, Florida, with a two-seat Benoist, similar to the famous Curtiss F-boat. (3) "Time Flies"—by courtesy of Gruen Watches, who sponsored the super streamlined Twin-Wasp powered racer with flush cockpit in 1930. Frank Hawks flew it from coast to coast across the U.S.A. in 11 hrs. 50 mins. East to West, returning in 12 : 25. (4) Another racer—of an earlier era, the Curtiss 1910 Biplane which could take off in 98 ft. and fly at 55 m.p.h. (5) Douglas "Cloudster" of 1921, first of what has became a legendary line of officiat transports, and was equipped to fly the U.S. Continent non-stop. (6) First over the Andes—and its a British Bristol military monoplane M.1C. flown by Capt. Godoy of the Chilean Air Force in 1919. (7) The elegant high-powered Delgada Flash flown by Clarence McArthur in the 1937 Greve Trophy. (8) The Seversky Amphibian which had wheels retracting into the floats

A THREE-HOUR film show at Caxton Hall, Westminster, drew a record attendance of about 200 enthusiasts from places as far apart as Norfolk and Bristol. Unfortunately, entertainment regulations did not permit me to announce this free showing of the Howard Bonner, British Nationals, and many other interesting films, but apparently the word soon got around and the announcement in the official S.M.A.E. Newsletter was sufficient to overtax the seating accommodation. More film shows of this nature are being planned in the near future, including some promised films from the U.S.A. and South Africa when customs formalities have been concluded.

Now is the time for rally organisers to submit their date bookings for the year, a few have already arrived as will be seen under our "For Your Diary" heading and the season is going to be a very full one in 1958 if the early booking of the popular Woodford Meeting is to be any indication.

The Aircraft Radio Control Club (A.R.C.C.) holds its first flying meeting at Chalgrove Aerodrome on March 2nd. For the benefit of travellers, the nearest point to Chalgrove is Watlington Village, Berks. Meeting will include both single-control and multi-control events, also pylon racing if sufficient entries turn up. Points secured in this contest will go towards the two new A.R.C.C. Annual Trophies, one for multi, one for single, to be awarded at the end of the season.

North Western

Messrs. A. V. Roe have notified the area that the only possible date for their rally sponsored by the *Stockport Express* is May 11th, and coming two weeks before the Nationals, this should cause a more than usual rush to the model board in that hectic pre-Nationals period. **COLNE AND D.M.A.C.** had their second winter rally on December 15th, which was extremely successful, attracting 97 competitors in excellent conditions and not a single model was lost. As usual, the combat final had to be cancelled due to insufficient moonlight.

Power

1. A. Collinson (Baildon) ... 11 : 37
2. S. Lanfranchi (Baildon) ... 10 : 50
3. B. Eggleston (Baildon) ... 10 : 04

Glider

1. Watson (Whitefield) ... ... 10 : 00
2. Moreton (Chorlton) ... ... 8 : 49
3. L. Hutton (Wallasey) ... ... 8 : 33

Rubber

1. J. O'Donnell (Whitefield) 12 : 00 + 5 : 12
2. K. Horry (Bristol and West) 12 : 00 + 4 : 28
3. J. Trainor (Whitefield) 11 : 21

Combat

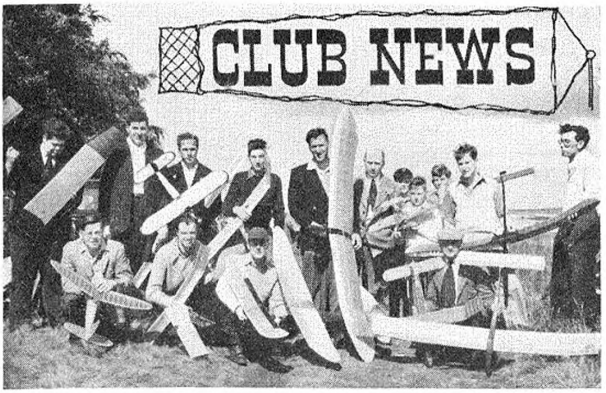
R. Boardman (Leigh) ... } Tie
R. Edwards (Wharfedale) ... }

Radio Control

1. R. Donahue (Kersal) ... ... 80 pts.
2. G. Parkinson (Kendal) ... 79 pts.
3. W. Nield ... ... 65 pts.

Members of the **CHORLTON M.F.C.** club were very pleased with R. Moreton's 2nd place in the Glider event above, and I understand that the 8-ft. span radio control glider will soon be seen flying the radio waves at the club's flying field, Stretford Meadows. **SOUTHPORT M.A.C.** are keen on Combat and Sunday, January 13th, was the date for a club event and even though they only had eight competitors, darkness prevented a final deciding tourney. It's about time they fitted lights. A new club has been formed by members from Crosby, Merseyside and Wavertree group amalgamating to form active competition and the club is now the **LIVERPOOL D.M.A.C.**

Congratulations are due to Brian Faulkner who was married last October (they have only just announced it in the **CHEADLE** Newsletter!) He should by now have got things organised so that he can carry on with a spot of modelling, and I see that at the recent A.G.M. his position has been established as club chairman. There is an interest in indoor flying and one recent contest was for scale models limited to the 3s. 9d. kit series.



Sunny days are coming. Devonian fliers at Woodbury Common near Exeter last season are members of Exmouth M.A.C.

London

At last I have definite news on the *Bill White* Memorial Cup for rubber and the associated glider contest run annually by **BLACKHEATH M.F.C.** The date will be during October this year, not the customary January, as you will have now presumed. Reason for that change is, I believe, due to a lot of discourse on the occasion of the last contest held in almost impossible conditions when it was generally decided that October is a fairly good flying month. Full details of the events will be announced later, and anyone wishing to join the club should contact P. Crossley, 11 Broadfield Road, Catford, S.E.6.

Sunday, January 5th, was the date for the **WANSTEAD** C.L. Rally, and in spite of wet and windy conditions a fair number of modellers turned out, although model entries were low. Yet once more I have to report that combat was decided by a draw due to lack of moonlight. Unfortunately, during the course of the event, the club's cash box containing £7, including entry fees and prizes, disappeared and prize winners had to go without temporarily, although I understand the club has managed to rake up some more cash to send on by post. A. Fisher of **PECKHAM** was the winner of the Class A Team Race, George Oswell of **ASHFORD** took both stunt and Class B, and Allen of **ENFIELD** Class A Team Race. **DAGENHAM M.A.C.** were pleased with Dave Chislett's success in stunt at the Sidcup Rally, and for his 2nd place in the Gold Trophy last year. Current Jetex R.T.P. record stands at 94 m.p.h., with H. Spiller's Jetex 50 unit, and in the coming season, the club intends to become more competition minded entering in all London rallies and National events. Meetings are held on Thursdays in Hut 3, the Old Dagenham Fire Station, Rush Green, Dagenham. **EPSOM AND D.M.F.C.** was one of the dozen clubs represented at Caxton Hall film show and thoroughly enjoyed the programme, but want to know what happened to the film cameras at the Nationals while the F.F. Power event was being run. High point of last years season was Brian Jones' 4th place in the Halifax Cup contest, and the club has now formed a C.L. team for displays at local functions during 1958. **SURBITON M.A.C.** had a very good season last year due to an influx of new members and there is a flow of ballasted F.A.I. models for the new rules, coming along. Peter Buskell doing 2 : 40 on seven seconds (a witnessed performance). Among the clubs successes in 1957 was the winning of the Plugge, S.M.A.E. and the Queens Cup. The club is running a Gala on April 20th on Chobham Common for open rubber, glider, power. Entry fees will go back as prizes and no Surbiton boys will be flying. As mentioned earlier, **ENFIELD AND D.M.A.C.** came top once more in the Class A Team Race at Wanstead and they remarked that it might have been a better approach had the models been fitted with floats to get off the sticky surface. Indoors, one evening was livened up recently by a paper dart comp. Members were each given a standard sheet of paper, and told to get working for flight performance within 20 minutes.

"Thermal" magazine of the **ST. ALBANS M.A.C.** now extends to including drawings of overseas designs obtained through general exchange of correspondence. The club was very pleased with its performance during the past season and with its representation in the S.M.A.E. film of the British Nationals. Flying takes place

For Your Diary

February 22nd.23rd
Indoor Nationals, Corn Exchange, Manchester, Chuck Glider, Microfilm, Tissue Covered classes.

February 23rd
Southern Area Rally, R/C, Open Rubber, Glider, Power, T.R. Beaulieu, Hants.

April 20th
Surbiton Gala, Open Rubber, Glider and Power. Chobham Common.

May 4th
Midland Area Rally, F/F all classes, Class A Team Race, C.L. Stunt, Chuck Gliders. Venue to be announced.

May 11th
Stockport Express Rally, All Classes F.F. Scale, Team Race, Combat. A.V. Roe Aerodrome, Woodford, Manchester.

June 15th
Godalming C.L. Rally, Team Race, All classes, Combat. Godalming, Surrey.

June 26th
Northern Heights Gala—all classes f/f, combat. Concours D' Elegance, Queens Cup A/2, R.A.F. Station Halton, Bucks.

regularly at Nomansland between St. Albans and Wheathampstead and as a matter of interest I have a note from a local unattached modeller to tell me that a kind farmer is looking after an A.P.S. *Rhona* with a D.C Manxman 3·5 c.c. diesel and Hill receiver which has been residing in his farmhouse since last September harvesting. If anyone cares to give me further identification, I will be pleased to tell them where to go and collect. Combat is the main feature of the **NORTHWOOD M.A.C.**, and Peter Tribe was still going strong when had light stopped play at the Wanstead meeting on January 5th. A slant on combat flying was discovered after a recent session when all the models had been grounded, surplus streamers were attached to push-bikes and the contest proceeded forthwith, pit stops and all. They have sent along a sample of their latest acquisition, a club transfer in bright blue and yellow with a witch astride a broom as the centrepiece. I hope this is not significant of bubble, bubble, boil and trouble! **FARNBOROUGH M.A.C.** had an amusing experience when junior M. Brown's Alag-powered model disappeared and was found by a woman who announced to the local police that a plane from Farnborough had come down on her land. Minutes later, squad cars arrived at her home! In spite of the numbers of hot 2·5 c.c. engines that have appeared in the club recently, it is rewarding to know that Junior member Beech is giving them a run for their money with his appropriately named *Rhubarb*, powered by a Frog 1·49. **SIDCUP A.S.** included a Sputnik made by Ray Meborn in their stand at the Fayre at Eltham. It included sound effects with an authentic tape recording of the Bleep Bleep and there is no connection between this display and the recent disappearance of a local Belisha beacon top. The club's Scramble on December 1st saw the finest flying that they had had for some time, but the best time was only 7 minutes in the allotted half hour.

Western

CHELTENHAM M.A.C. now have the happy news that Brockworth (Gloster Aircraft Aerodrome) is permanently available to them, and this could be sufficient to stir up keen interest in the locality. The club intend to bring their famous model aircraft carrier once more into the focus National eye when attending the bigger rallies. A new club has been formed known as the **BRISTOL RADIO CONTROLLED M.A.C.** which came up in force to the Caxton Hall film show and with an initial membership of eleven active modellers they have an eight-channel Smog Hog and a number of other prominent designs operating on single channel. Meetings are held at the chairman's home on the first Thursday of every month, and enquiries should be addressed to the Secretary at 33 Whitehouse Lane, Bedminster, Bristol 3. **EVESHAM AND D.M.A.C.** has been re-formed, and new members are welcome at Wallace House, High Street, Evesham, on the second Thursday of the month.

South Eastern

George Oswell's success at the Wanstead Rally has already brought the name of **ASHFORD M.A.C.** into this feature, and it is interesting to know that he was using a chicken hopper type of tank in the winning Type B race. All those interested in reforming the **TUNBRIDGE WELLS M.A.C.** should contact J. Whittaker, 4 Court Road, Tunbridge Wells, or telephone T.W. 21088. **MEDWAY M.F.C.** have obviously access to a large and easy-going club room, for they enjoy R.T.P. diesel flying. Largest engine being an 1·49 Elfin, the majority of engines being 1 c.c. New members are welcome and should contact the Secretary at 7 Herbert Road, Rainham, Kent.

Southern

Revival of a very successful team race meeting last held in the Festival year, 1951, is planned by **GODALMING AND D.M.F.C.** This was one of the most pleasant controline meetings in my experience and initiated that impressive full-size aircraft propeller trophy for Class B Team Racing. Combat is to be included in the programme, and the date is Sunday, June 15th, the site is right beside the main road from London down to Godalming.

South Midland

R.O.I. (rise off ice) has been a possibility during the freezing conditions on the **WELLINGBOROUGH** flying field, and a competition for juniors was won by D. Toyer with a Keil Kraft Senator, placing top with 2 mins. 10 secs. This junior was also 5th in the Golden Wings Contest at Radlett last year.

Midland

The Nationals film is to be shown to **STRATFORD-ON-AVON M.A.C.** on March 3rd at Central Chambers Clubroom, Stratford-on-Avon, and this would be an ideal time for all unattached modellers to go and join up. The **LEICESTER** Club Bulletin includes a full-size plan for indoor lightweight rubber design called Junior Juggernaut, which would make a very good subject for a "one model" contest and is to be commended. A winter film show is scheduled for March 12th, and up till then regular indoor meetings including interesting talks are planned to maintain interest. **LITTLEOVER M.A.C.** had a run of 2nd and 3rd places in Combat during 1957, culminating by 1st at the Loughborough Winter Rally. The club winter controline contest was run at Burnaston Airport and arrangements are being made to hold an inter-club event with the local **ASHBOURNE M.F.C.** Interesting example of quick thinking by **WALSALL M.A.C.** is of the use of a toffee during a team race as an effective wheel retainer. Although this proved inferior to the generally accepted process of a soldered washer it was sufficient to get the model safely to the ground! The date has been announced for the *Midland Area Rally*, although no venue is known yet, and it is hoped that this meeting on May 4th will include a C.L. stunt event. **HUCKNALL AND D.M.A.C.**, a newly formed club, have a main interest in C/L, but negotiations are under way for planning a free-flight area. New members would be welcome at the address given at the end of this feature. 90 m.p.h. is the claim for some Class A team race models in the **NUNEATON A.M.**, and a sleeved down Oliver Tiger is being used for 4A. They have been given permission to use R.N.A.S. Bramcote, which will give the F.F boys some scope, and regular club meetings are held at the Corner House Inn, Bulkington, every Friday evening at 6.30.

Northern

The success of **SHEFFIELD'S** annual model exhibition last year has prompted the organisers, the city's Society of Aeromodellers, Ship Model Society and the Society of Model and Experimental Engineers, to extend it from three to four days during Whit week this year. The exhibition will be held at St. Mary's Community Centre, Bramwell Lane, Sheffield.

East Anglia

American members from the local Air Force Station, joined the **NORWICH M.A.C.** at Horsham St. Faith just before Christmas, and it proved to be an eventful afternoon, one of them flew a large Piper Cruiser on extendable controlines using a U-Reely handle and made everyone run for cover. This is the only club to my knowledge which is able to extend hospitality to American modellers in this country, and if any lonesome American modellers at other bases care to contact me, I would be only too pleased to give them the name and address of a local model flying club.

Ireland

BELFAST M.F.C. held a contest on Boxing Day, and this was a precision event with 45 secs. as the target, run in three classes for scale, semi-scale and open. No scale models were able to fly, but the semi-scale was won by the diminutive Bambi powered *Tom Thumb*, with flights of 44 and 46 secs. by R. Armstrong. Open going to N. Taylor. Three new rule F.A.I. power models are at present flying in Belfast, and during a recent contest, an Oliver-powered example made successive flights of 2 : 30, 3 : 30 and 3 : 50 at 15 seconds engine run, and with that progressive thought, I leave you.

The CLUBMAN

Club reports should be submitted to the Editor not later than the 15th of each month. They should be factual and informative, and will appear in the issue published exactly one month after the above press date, e.g. reports received in March appear in the May issue, published April 15th.

For Your Diary

NEW CLUBS

BRISTOL R.C. M.A.C.
R. Barnett, 33 Whitehouse Lane, Bedminster, Bristol 3.

EVESHAM & D.M.A.C.
D. Grove, 121 Kings Road, Evesham, Worcs.

HUCKNALL & D.M.A.C.
P. Watson, 24 Rockwood Crescent, Hucknall, Notts.

LEATHERHEAD & D.M.F.C.
M. G. Dias, 21 Orchard Close, Fetcham, Nr. Leatherhead, Surrey.

LIVERPOOL & D.M.A.S.
D. G. Thomas, 2 Wortley Road, Fazakerley, Liverpool 10.

SECRETARIAL CHANGES

BERNARD'S MODEL CABIN
Bernard Pryer, 112 Albert Road, Ilford, Essex.

BLACKBURN WELFARE M.A.C.
R. N. Kinroy, 32 The Oval, Brough, E. Yorks.

BOREHAM WOOD M.A.C.
G. R. Stokes, 7 Cowley Hill, Boreham Wood, Herts.

CHEADLE & D.M.A.S.
L. Whalley, 45 Cranleigh Drive, Cheadle, Stockport, Cheshire.

EPSOM & D.M.F.C.
M. Garwood, 106 Elistead Gardens, Worcester Park, Surrey.

FARNBOROUGH M.A.C.
M. S. Young, 10 Lye Copse Avenue, Hawley Estate, Farnborough.

GLASGOW BARNSTORMERS
R. Forrest, 15 Avons Park Street, Glasgow, N.1.

ILKESTON M.C.
E. Barratt, 118 St. Norbett's Drive, Kirk Hallam, Ilkeston, Derbys.

LAPWORTH & D.M.F.C.
H. E. Connolly, Arden Hill Cottage, Lapworth Street, Lapworth, Solihull, Warks.

LOUGHBOROUGH COLLEGE M.A.C.
G. H. Pritt, 84 Albert Promenade, Loughborough, Leics.

NUNEATON AEROMODELLERS
M. E. Bates, 30 Sandon Road, Nuneaton.

SPRINGPARK M.A.C.
D. A. Williamson, 60 Links Way, Eden Park, Beckenham, Kent.

STRATFORD-ON-AVON & D.M.A.C.
L. E. Downing, c/o 3 Glebe Road, Stratford-upon-Avon, Warks.

TYNEMOUTH M.A.C.
R. Nichols, Clifton, 151 Regent Terrace, North Shields, Northumberland.

ROLAND SCOTT

THE MODEL SPECIALIST

147 DERBY STREET BOLTON, LANCS.

★ ★ ★ TO ORDER ★ ★ ★

Home: List your requirements and forward P.O. or Cheque. **I WILL DO THE REST.** C.O.D. Service Available.

Overseas: List your requirements and forward British Postal Orders, International Money Order, Dollar Draft, Dollars, Commonwealth Notes (NO £5). Please allow for Postages. *Tax*

★ ★ ★ ENGINES ★ ★ ★

E.D. Baby .46 c.c.	46/–	9/11
E.D. Bee 1 c.c., Mk. II	45/–	9/9
E.D. Hornet 1.46 c.c.	46/–	9/11
E.D. 246 Racer	65/–	14/–
E.D. 346 Hunter	66/6	14/5
E.D. Miles 5 c.c.	168/–	36/3
Mills Popular .75 c.c.	50/–	9/8
Mills Standard .75 c.c.	55/–	10/7
Mills 1.3 c.c., Mk. II	75/–	14/5
Frog 80 .79 c.c.	40/–	5/–
New Frog 149 Vibra	46/7	7/3
Frog 250 BB	66/6	12/9
Frog 500 Glow	65/–	12/–
FROG 249, modified	78/–	16/9
ALAG X3 2.5 c.c.	65/–	10/–
Allen-Mercury 10	50/6	8/–
Allen-Mercury 2.5 c.c.	56/–	12/6
Allen-Mercury 3.5 c.c.	58/6	13/3
Allbon Bambi .15 c.c.	65/–	13/6
Allbon Dart .5 c.c.	54/–	10/5
Super Merlin .76 c.c.	44/–	8/7
Allbon Merlin .76 c.c.	37/6	6/4
Allbon Sabre 1.49 c.c.	44/–	8/7
Allbon Rapier 2.5 c.c.	66/–	13/11
Allbon Spitfire Mk.IIIc.c.	44/–	8/7
Allbon Manxman 3.5c.c.	65/6	14/7

Oliver Engines as available. All Allbon, E.D. and Frog Water-cooled Engines in Stock.

★ CONTROL LINE KITS ★

Mercury Wasp .5 c.c. Stunt	12/7	
Junior Monitor Stunt	23/1	
Mercury Mac "A" T.R.	18/–	
Monarch 2.5–3.5 Stunt	36/–	
Marvin 1.5 d.c. Stunt	19/6	
Frog Aerobat 2.5 c.c.	25/–	
Mercury Spitfire V	37/6	
Mercury Toreador	26/9	
Mercury P51 Mustang	32/6	
Combateer 2.5–5 c.c.	28/2	

★ FREE FLIGHT POWER ★

Sabre F86E Ducted Fan	30/–	
Skyskooter 48" 1–1.5 c.c.	30/–	
Cardinal .5–1 c.c. 36"	17/4	
Matador 47" R/C Kit	25/10	
D.H. Tiger Moth 33"	34/2	
F.D.2 Delta 39"	49/6	
Aeronca Sedan 65" 1.5–2.5	69/2	
New Junior 60"	54/–	
Calypso Major	35/–	

★ ★ GLIDER KITS ★ ★

Verosonic 46"	12/7	
Vortex 66" A/2	22/2	
Cadet 30" Trainer	4/9	
Chief 64" A/2	22/–	
Magpie 24" Beginners	4/9	
Martin 40" Intermediate	9/4	
Contest Empress A/2	29/6	
Contest XC4 Novelty	6/11	
Inch Worm 64" A/2	19/6	

★ ★ PLASTIC KITS ★ ★

I carry the full range of Frog, Lindberg, Airfix, Revel and Lincoln Plastic Kits.

LINDBERG B.17G	27/11
FROG BRITANNIA	17/6

N.B.—Eta 29, Series V Engines are now available from stock at 119/6 plus 26/10 P.T.

★POPULAR ACCESSORIES★

Celspray Airspray	9/6
D.C. Test Stand	12/11
E.D. 246 Jet Assembly	6/–
Britfix Paint Set	8/11
Fuel Filters	2/6
D.C. Fuel Cut-off	9/6
Starlon Enamel, per tube	1/–
Class "A" Pilots 2/5, "B"	3/1
Elmic Limitank	7/6
Elfin Jet Assembly	4/3
Revell Plastic Cement	1/–
Britfix Cement 7d., 1/–,	1/8
Britfix Fuel Proofer	2/6
Dunlop 6010 ⅜" Rubber per lb.	15/–
15 c.c. T.R. Tanks	3/3

SECOND-HAND ENGINES

E.D. Bee 1 c.c., Mk. I	32/6
E.D. Bee 1 c.c. Mk., II	35/–
Elfin 149 1.5 c.c.	35/-
Eta 29 Series IV	85/–
J.B. Atom 1.5 c.c.	32/6
Frog 80 .8 c.c. Diesel	35/–

Full List forwarded on request.

THAT ENGINE YOU ARE NOT USING WILL BE TAKEN IN PART EXCHANGE FOR ANY MODELLING GOODS IF IN GOOD CONDITION.

★ ★ X-ACTO TOOLS ★ ★

No. 1001 Knife 12 Blades	1/6
Set of 4 Clamps	10/6
Saws for No. 5 Knife	2/– & 2/6
Balsa Stripper	5/6
Spokeshave	3/9
Plane 5/9 Sander	3/9
Spare Blades, all Knives	6d.
Gouges and Routers	1/–
Wood Carving Sets 23/– &	39/6
Burlington Hobby Chest	87/6

X-ACTO LEAFLET ON REQUEST

★ RADIO EQUIPMENT ★

★ RECEIVERS ★

E.D. Boomerang Escapement Ready Wired	106/–	+ 22/11
E.D. Transitrol Rx	105/–	+ 21/6
Ripmax Pathfinder	100/–	+ 19/6
E.D. Mk. IV Rx 3-Reed	192/–	+ 41/6

★ TRANSMITTERS ★

Boomerang	91/6	+ 19/10
Ripmax Pathfinder	83/6	+ 16/–
Mk. IV Complete	156/–	+ 33/9
Tri-ang Radiomaster	107/–	+ 23/–

★ R/C ACCESSORIES ★

Mk. III Escapement	19/–	+ 4/1
Mk. I Escapement	48/–	+ 10/8
0.5 M/A Meter	25/–	
Ripmax C/L Box	43/–	+ 8/3
E.D./Taplin Actuator	62/6	+ 13/4
Ripmax Geared Servo	47/3	+ 9/1
Magnatox 2-volt Accs.	3/–	
Ripmax A.30 Relay	18/6	
Ripmax Steering Unit	50/3	+ 9/3
XFG 1 Valves	15/–	+ 3/–

My 10-Page Catalogue of Modelling Goods will be forwarded upon receipt of 3d. stamp.

I can supply Spares for all Allbon, Elfin, Mills, E.D., A.M., and Frog Engines from Stock.

★ ★ FOR BEGINNERS ★ ★

Frog Junior Kits, Scamp, Midge, Skippy, Speedy, Sporty	3/6
Frog Senior Kits, Raven, Linnet, Heron, Tomtit, Widgeon	4/6
Polaris 20" Solid Glider	3/–
K.K. Sedan, Ready-made	3/9

★ ELECTRIC MOTORS ★

Ever-Ready 4½ v.	10/3
Electrotor 3–6 v.	9/11
Taycol Supermarine 12 v.	79/2
Taycol Torpedo 6 v.	36/–
Mighty Midget, Geared	15/9

★ ★ ★ HIRE PURCHASE TERMS are available on all purchases over £2. Send for lists and simplified agreement form ★ ★ ★

Mr. RETAILER

If you are satisfied with your range of goods and deliveries, you need not take any notice of this advert.

But, if you want to try a good firm, our new catalogue will be of enormous interest to you. Your customers will appreciate the wide range available.

Also worth noting: you can always obtain that odd screw, spring, or piece of brass, fibre, etc. We supply the trade only.

ATLANTIC MODELS

335 Bradford Street, Birmingham 5

RADIO & ELECTRONIC PRODUCTS

G. Honnest-Redlich

8 Station Parade, Sheen Lane, Mortlake, S.W.14

Telephone: PROSPECT 9375

Single channel carrier transmitter unit

"A Printed Circuit addition to the R.E.P. range"

Pretuned to G.P.O. R.C. band. Complete component package includes printed Circuit, all Resistors, Condensers, Valve holder and flex. **Price** less D.C.C. 90 valve, 18/6

Aeromodeller single-channel transistor receiver

Component package includes: 1 valve, 2 transistors, 4 condensers, 5 resistors, 1 RF choke, flex, wire, sleeving, drilled and pre-assembled panel complete with coil former, valve and transistor holders, and potentiometer. **Price 62/-**

"Transmutone" multi-channel transistor receiver

Component package include: 1 valve, 2 transistors, 8 condensers, 5 resistors, 1 RF choke, flex, wire, sleeving, drilled and tagged pre-assembled, panel complete with coil former, valve and transistor holders and transformer. **Price 82/-**

"Modulation unit"

Component package includes: valve, transformer, all condensers and resistors, tag strip, wire, socket and drilled pre-assembled chassis 38/-

★ **A full range of engines with throttle control to suit RC models.**

★ **Prompt Mail Order Service.**

★ **S.A.E. for price lists and information.**

6-reed tuned relays	60/–	8-reed tuned relays	70/–
"Uniac" motorised actuator	45/–;	"Speediac" motorised actuator	30/–
Relays from	22/6	"Solenoid" actuator	25/–

Modellers can be assured of personal service coupled with expert knowledge of aeromodelling requirements at any of the following shops.

MANCHESTER Tel.: BLA 6159

MODEL SUPPLY STORES

17 BRAZENNOSE STREET, MANCHESTER 2

Manchester's Main "Mecca" for every make of KIT, ENGINE & ACCESSORIES. Solarbo, BALSA, etc.

Northern SKYLEADA Factory

AUSTRALIA Tel.: Melbourne Cent. 918

CENTRAL AIRCRAFT CO., PTY.

5 PRINCES WALK, MELBOURNE C.1

Australia's Main Distributor for: "Aeromodeller", "Model Maker" and their Plans Service.

GLASGOW

CALEDONIA MODEL CO.

Model and Precision Engineers

5 PITT STREET, C.2

Our works at your service for engine repairs, rebores and rebuilds

Everything for beginner and enthusiast

OXFORD

HOWES MODELS

9-10 BROAD STREET

Everything for the Modeller

BIRMINGHAM Tel.: CALthorpe 2554

A. J. REEVES & CO. (B'HAM) LTD.

416 MOSELEY RD. 12

Specialists with a world wide reputation

AIRCRAFT, BOATS RAILWAYS and accessories. Radio Control

By return postal service

GUILDFORD Tel.: Guildford 2274

PASCALLS MODEL SHOP

105 WOODBRIDGE ROAD, GUILDFORD

The shop devoted entirely to scale models of all kinds. Kits—Materials—Accessories

SOLIHULL Tel.: Shirley 5854

HOWBEL MODELS

NEWBOROUGH RD., SHIRLEY, SOLIHULL

Agents for all leading Kits, Trains, Engines and Radio Control

We have a "FREE" model advice and instruction class every Thursday 6.30 to 8 o'clock to all purchasers of Kits over 15/- in value.

BIRMINGHAM Tel.: MIDland 9072

HORNTON'S

(Models and Toys) Ltd.

32 STEPHENSON STREET, BIRMINGHAM 2

(Facing Stage Door of Theatre Royal)

& 1 NAVIGATION ST., BIRMINGHAM 2

(adjoining Queens Hotel)

Stockists of Model Aircraft Railways and Ships

HONG KONG Tel.: 62507

RADAR CO., LTD.

2 OBSERVATORY ROAD

TSIN SHA TSUI, KOWLOON

The most complete stock of aeromodelling and hobby supplies in the Far East. Run by an experienced modeller. Agents for Solarbo, Britfix and Sole Agents for O.S. engines and radio control equipment

ST.-HELENS Tel.: 3972. Ext. 1

GEORGE WEBSTER (St. Helens) LTD.

CORPORATION STREET, ST. HELENS

ALL LEADING AIRCRAFT KITS AND ACCESSORIES. X-ACTO TOOLS, PLASTIC CAR AND PLANE KITS, BOAT KITS

BLACKBURN

RAWCLIFFE'S

FOR MODELS

38 WHALLEY RANGE, BLACKBURN

MODEL BOAT KITS
AIRCRAFT KITS
ENGINES & ACCESSORIES

LONDON Tel.: HOP 3482

MODEL AIRCRAFT SUPPLIES LTD.

171 NEW KENT ROAD, S.E.1

The oldest established aircraft shop in London

Service with satisfaction

Harry York

WATFORD

CRAMER'S

The Hobby Haven of West Herts.

172a High Street, Watford

Near Watford High Street Station (Bakerloo), full stocks of all that's new—special aeromodelling section on first floor. Fishing, Trains, Boats, Games

BOLTON Tel.: 7097

ROLAND SCOTT

The Model Specialist

147 DERBY STREET

The obvious shop for all Model Aircraft Requirements

LONDON Tel.: PAD. 8827-8-9

BURLEIGH'S

303 EDGWARE ROAD, W.2

THE MODEL MAKERS' PARADISE

BURLEIGH of Edgware Rd., Ltd.

WIGAN

J. J. BRADBURN

76 MARKET STREET

Extensive stocks. Experienced Modeller in charge. Specialists in Radio Control. Nothing is too much trouble. Try us and see!

DONCASTER Tel.: 2524

B. CUTTRISS & SONS

MODELS AND HANDICRAFTS

49-51 CLEVELAND STREET

Call and see our Shop

LONDON Tel.: EAL 8978

BARDSLEY'S

263 HIGH STREET, BRENTFORD

Specialising in E.D. Engines.
Running-in and Testing Facilities.
Mail Order Service Available.
Special Turned Parts to Order.

WORTHING Tel.: 7662

A. J. JEX

13 SOMPTING ROAD

Model aircraft specialist. All types of engines, kits and accessories stocked, by return postal service.

CLASSIFIED ADVERTISEMENTS

PRESS DATE for issue April, 1958, February 20, 1958

ADVERTISEMENT RATES

Private **Minimum 18 words 6s. and 4d. per word for each subsequent word.**

Trade **Minimum 18 words 12s., and 8d. per word for each subsequent word.**

Box numbers are permissible, to count as 6 words when costing the advertisement.

COPY and Box No. replies should be sent to the Classified Advertisement Department, The "Aeromodeller", 38 Clarendon Road, Watford, Herts.

FOR SALE

Several well finished plastic aircraft models. Apply Box No. 542.

Glow Amco 3·5 with semi-scale stunt model ready to fly, 65s. Williams, 38 Garfield Ave., Bridgend, Glamorgan.

Mk. III Eta 29, £4; K. & B. Torpedo 19, £4; excellent condition, hardly run. McCoy 60 series 20 spark (minus prop-drive hub), £5, or offers. Anderson, 19 Sedgewick Road, Bexhill, Sussex.

Good E.D. Racer, 45s. Little used A.M.35, 45s. Worn Webra Mach 1. Runs well, 20s. Palmer, 69 Halsteads Road, Torquay.

E.D. 2·46 in "Unlimited", £2; Mills ·75, £1; Arden ·199 Aluminium Model Box, 54 in. x 9 in. x 9 in. 70 Aeromodelling Magazines. Various Books, etc., s.a.e. full list. Underwood, 3 Kelway Terrace, Wigan.

One Bowden "White Wings" R.C. Silk covered, E.D. Clock. Esc. Good Engine—Blow up Airwheels, etc. Bargain, £5. Russell's "Vulcan" 8 ft. span silk covered 10 c.c. Super Cyclone Twin Coil, etc., £6 10s., worth treble. E.C.C. Transmitter, £2 10s. 2 E.C.C. 951 B's, 35s. each. Simpson, 53 Holywell Road, Studham, Nr. Whipsnade, Beds.

New Taycol Supermarine electric motor. Atwood ·049 E.D. Bee Mk. I, good condition, offers. Smith, 3 St. Margaret's Road, Hoylake, Ches.

8 c.c. Madewell Glow, £2; Jetmaster, 5s.; 2 Jetex 50, 5s.; E.D. clockwork Timer, 2s. 6d. Stan. Allan, Mossband, Newhouse, Lanarkshire, Scotland.

Brand new, latest type German Taifun Tornado 2·5 c.c. Twin Ball Race Diesel, £3 5s. Moulton, 285 Gammons Lane, Watford.

Cessna 170 span 72 in., finished blue and cream, £4; Double size Sporty biplane, span 60 in., finished black/red, complete with 4½-in. ZN airwheels and new Everson 29 spark ignition, £5. "Vulcan" Delta, slight repair to wingtip, 10s.; Control-line Stunt Model, 60-in. span, 25s.; 1 pr. 4½-in. ZN airwheels, 15s.; JB 14 c.c. Diesel, 15s.; DC Merlin ·76 c.c., 15s.; DC Javelin complete with "Midge" speed model, 30s.; Elfin 1½ c.c. diesel, £1. Curry, 13 Byron Road, N. Wembley.

Hot Barbini TR40 2·5 diesel, mint condition, £6; Elfin 1·49, Elfin 1·8, Mills ·75, 30s. each; Frog 500, £2; Royce-Reel, stranded lines, 30s.; C/L's "Marvin", 15s.; "Dervish", 10s. (both unflown); "Minibuster", "Stunt King", "Unlimited" 10s. each; "Junior Musketeer", "Senator" (rubber), 7s. 6d. Peter Hoskison, 4 Hale Street, Cambridge. All letters answered.

Latest Max OS-29 Glow, still boxed (Guaranteed, never run), £8, or offer. Box 540.

Factory modified Oliver Tiger Mk. III, £5; Jim Walker u-reely, £2; Barclay reworked Eta 29 IV, £5. Must sell—exams. Carroll, 112 Wellmeadow Road, Glasgow.

New E.D. 2·46, 50s.; Latest type Bee, 32s. 6d.; A.M.25, 40s. S.A.E. please to L. Isaac, 11 Bryn Terrace, Llanelly, Carms.

Hill 2-vale receiver with unused Manning-Car 3·5 K. relay, £4 complete, or best offer, will sell separately. Ripmax 10K relay, for quick sale, 12s. 6d. New K. & B. 19, £5; De Bolt 3PN Servo, £4. R. Pask, 29 Hightborne Drive, Moortown, Leeds 17.

Super Cyclone 10 c.c. with Electrics, £3; AM. 3·5 c.c., 35s.; Solenoid actuator, 15s. G. Goldsmith, 57 Bishops Ave., Bromley, Kent.

56 AEROMODELLERS, between March, 1947 and July, 1953, plus all 1956. 7 *Aeromodellers Annuals*, 1948-1954. Offers: Stennard, 15 Spanbourn Ave., Chippenham, Wilts.

Several plastic 1/72nd amphibian "Walrus" professionally jig rigged, matt tyres, etc., 16s. 6d. each. Pro-rata Hurricane, Hart, Mosquito, etc. Excess refunded. S.A.E. please. Hobart House, Overnorton, Oxfordshire.

E.D. Racer, £3, as new, many improvements; Frog 1·5 Glo, 40s., as new. R. Le Moine, 186 Herlwyn Ave., Ruislip, Middlesex.

U-Reely Handle, Atwood ·8 c.c. Wasp. Both excellent condition. £2 each or offers. Joyce, 27 St. Marys Road, Braintree, Essex.

REPLIES TO ADVERTISEMENTS should always be accompanied by a stamped addressed envelope in the event that the advertiser is unable to accept your offer due to prior purchase, sale or exchange.

EXCHANGE

New Allbon "Sabre" 1·5 for new Allbon Dart ·5. J. Mansell, 28 Esher Road, Hersham, Surrey.

WANTED

Bonner or Babcock Escapement. Graupner Escapement. ·35 Spark Ignition, motor new. Box 541.

Plan of Dick Korda's 1939 Wakefield Model. Mellor, 30, O.M.Q. Airfield Estate, Honington, Suffolk.

Wanted, urgently, following books in top condition. Very high prices paid if satisfactory. "Flying Fury"—McCudden, "King of Air Fighters' and "An Air Fighter's Scrapbook"—Ira Jones. "Fighter Pilot" by McScotch, "Capt. Albert Ball, V.C.", by R. H. Kiernan. "Flying Section 17" and "Double Becker C666" Haupt Heydermarck. "Recollections of an Airman", by Lt.-Col. M. Strange. "Ace of the Black Cross", by Ernst Udet, and any similar books. Apply R. Smith, Commerce House, Garnant, Carms., S. Wales. State prices and condition

Any Allbon, Allen Mercury, E.D., Frog, Mills engines and parts, any condition. Box No. 538.

Wanted—urgent.—Nos. 1-4 of Vol. I of *Aeroplane Spotter*, also indices to all vols. State price. King, 8 London Road, Warmley, Bristol.

WANTED—*Continued*

Good K. & B. 19 or Veco series 100 19 wanted. Apply: Bramley, Little Trees Farm, Kinsbourne Green, Harpenden, Herts.

For private collector Not for re-sale. No dealers *Air Trails, Model Airplane News, Flying Models*, in almost any condition. Also Wylams Master Plan Book, Vol. 1 *Aviation Magazine* 1-60, any photos, plans, silhouettes not published or printed in this country. *Inter-Services Recognition Journal*. Replies MUST give details and PRICE. P. A. Tilley, Flat Three, 37 Coolhurst Road, London, N.8.

BOOKS

Modern and pre-war books on aeromodelling. Wonderful condition S.A.E. for list. Box 539.

Sailplane and Gliding—published every month. Send stamped addressed envelope for descriptive leaflet, or 2s. 6d. for current copy; or 17s. for a year's subscription to British Gliding Association, Dept. A, 19 Park Lane, London, W.1.

Illustrated Catalogue No. 13. Containing over 450 items of Government Surplus and Model Radio Control Equipment, 2s. Post Free refunded on purchase of goods, 2s. 6d. overseas seamail. Arthur Sallis Radio Control, 93 North Road, Brighton. Phone 25806.

American Magazines. Year's subscription *Model Airplane News*, 35s. Full catalogue free. Willen Ltd. (Dept. I), 9 Drapers Gardens, London, E.C.2.

Offers wanted for Books, Bristol, Westland aircraft, Hurricane, camouflage 1907-1954. Hill, 41 Newbery Road, Slade Green, Erith, Kent.

RADIO CONTROLS

ED TRADE MARK

Equipment which will enable the user to operate, independently, more than one control, is now demanded by most enthusiasts.

The reliability and ease of control of the Tuned Reed System, pioneered by E.D., has, after long and exhaustive tests, been amply demonstrated by continual successes in open competition.

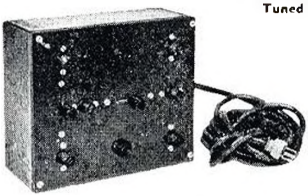
E.D. now produce four models which will adequately meet the demands of most Radio Control enthusiasts.

E.D. Mk. IV MINIATURE

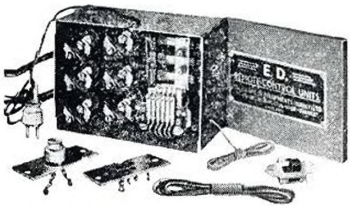
3-VALVE RADIO CONTROL UNIT comprising Transmitter, Receiver and Escapement. Receiver, Batteries weigh only 10½ oz. Price complete **£20 9s. 7d.** (sold separately)

The Mk. V EVEREST

Tuned Reed 6 Channels MULTIPLE RADIO CONTROL UNIT. Includes CONTROL BOX size 6" x 5½" x 2¼" giving up to 6 controls.



TRANSMITTER RECEIVER with 8 ft. Sectional Aerial fitted with Standard Hard Valves and 6 Standard Relays. Price complete **£29 3s. 11d.** (sold separately).



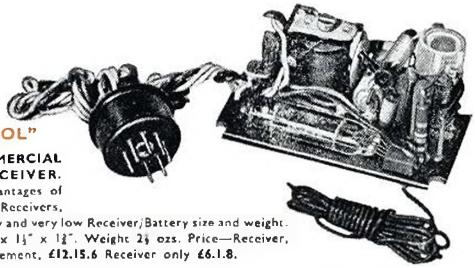
E.D. BOOMERANG

A Radio Control Unit completely wired and ready for use in model planes or boats. Supplied with soft or hard valves. The set provides five different tappings which enable the aerial load to be matched to the valve. Price, including Transmitter, Receiver and Escapement **£11 18s. 6d.** (sold separately).

(All prices include P. Tax)

The "TRANSITROL"

The FIRST COMMERCIAL TRANSISTOR RECEIVER. Combines all the advantages of multi-valve modulated Receivers, together with simplicity and very low Receiver/Battery size and weight. **RECEIVER:** Size 2½" x 1½" x 1¾". Weight 2½ ozs. Price—Receiver, Transmitter and Escapement, **£12.15.6** Receiver only **£6.1.8.**



Full information and technical details of all E.D. Radio Controls, Units, Mechanisms, Spare Parts, and Accessories, etc., are given in our illustrated list, free on request. Information concerning the full range of E.D. Engines and other E.D. Productions is also included.

E.D. ELECTRONIC DEVELOPMENTS (SURREY) LTD
DEVELOPMENT ENGINEERS
ISLAND FARM RD, WEST MOLESEY, (SURREY) ENGLAND.
PHONE: MOLESEY 6037-6038
GRAMS "EEDEE" EAST MOLESEY

Order from your Model Shop.

Made and printed in Great Britain by the Croydon Times Ltd., 104 High Street, Croydon, for the Proprietors, The Model Aeronautical Press Ltd., 38 Clarendon Road, Watford, Herts. Published by the Argus Press Ltd., 42-44 Hopton Street, London, S.E.1, to whom all trade enquiries should be addressed. Registered at the G.P.O. for transmission by Canadian Magazine Post.

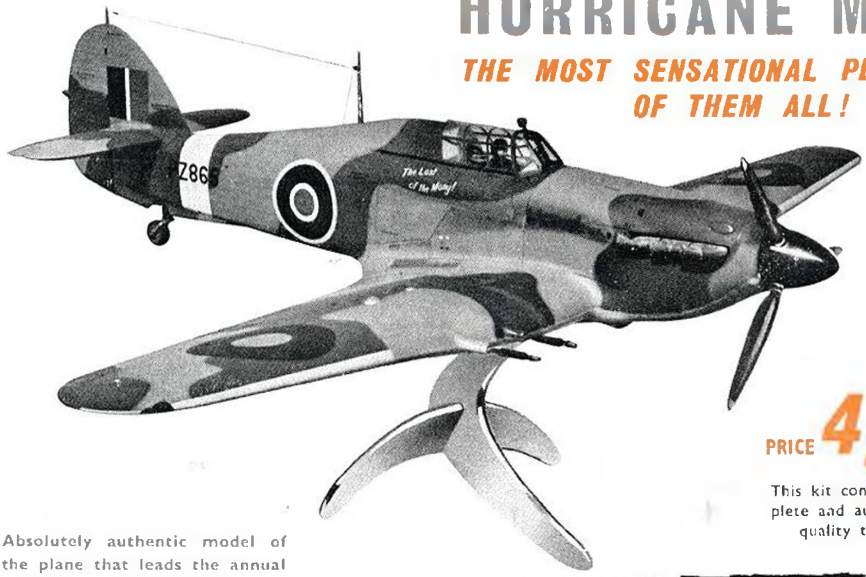
It's New-and it's Terrific!

A KEIL KRAFT PLASTIC

A GENUINE 1/72nd SCALE PLASTIC MODEL WITH WORKING RETRACTABLE UNDERCARRIAGE

HURRICANE Mk. 2c

THE MOST SENSATIONAL PLASTIC KIT OF THEM ALL!



Absolutely authentic model of the plane that leads the annual "Battle of Britain" fly past

PRICE **4/9** INC. TAX

This kit contains the most complete and authentic set of high quality transfers possible

At your favourite Model Shop NOW

If no model shop convenient order from Keilkraft. Please add 6d. postage

Moulded in High-impact Polystyrene

Kit complete with polystyrene cement and plastic mounting stand

100 per cent realistic and easy to build

KEIL KRAFT

THE GREATEST NAME IN MODEL KITS

KEIL & CO. LTD., WICKFORD, ESSEX