AERO MODELLER

Christmas Issue

DEC. 1953

2/6

Digital Edition Magazines.

This issue magazine after the initial original scanning, has been digitally processing for better results and lower capacity Pdf file from me.

The plans and the articles that exist within, you can find published at full dimensions to build a model at the following websites.

All Plans and Articles can be found here:

Hlsat Blog Free Plans and Articles.

http://www.rcgroups.com/forums/member.php?u=107085

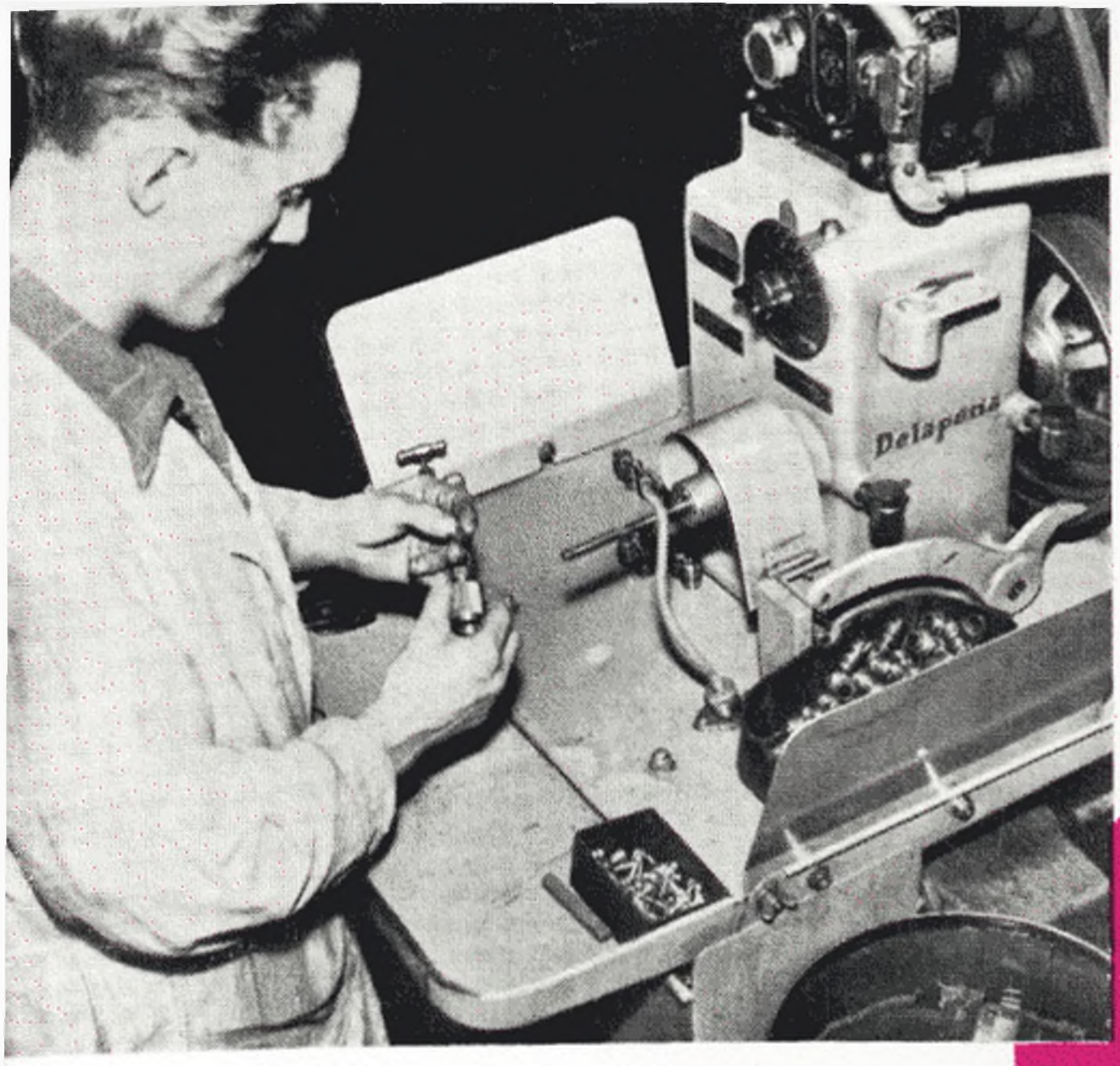
AeroFred Gallery Free Plans.

http://aerofred.com/index.php

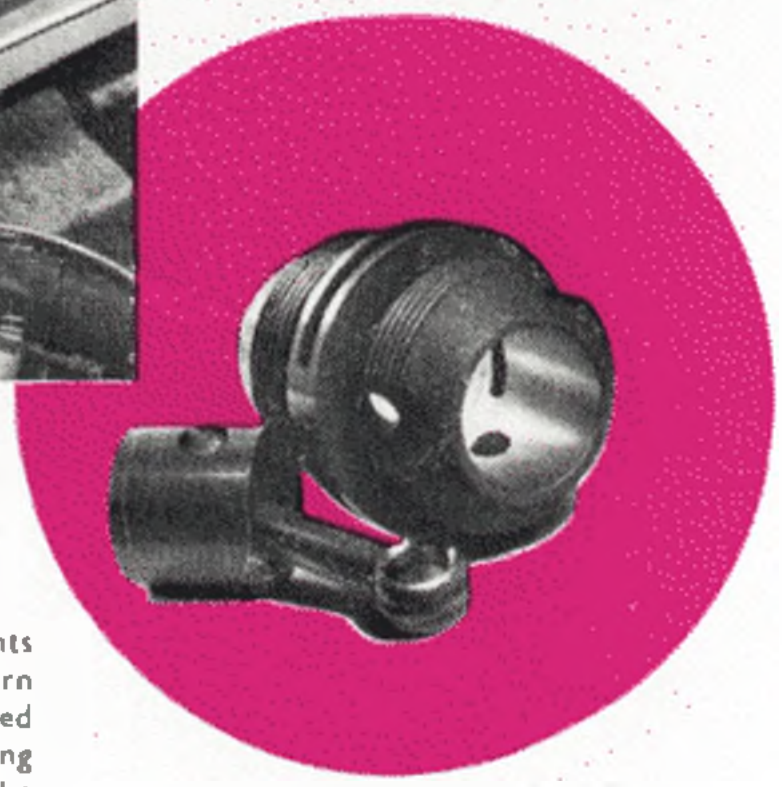
Hip Pocket Aeronautics Gallery Free Plans.

http://www.hippocketaeronautics.com/hpa_plans/index.php

Diligence Work by Hlsat.



Inside Your Engine



No. 1 Honing the Bore

This is the first of a series of advertisements which give you inside information on modern engine production. Above you see a skilled operator using the latest Delapena honing machine on the cylinder liner of a Spitfire. The liners, made from high tensile nickel-chrome steel are drilled, reamed, hardened and ground before the final honing, which ensures that each piston is a dead fit in its accompanying bore. The operator, holding the liner in a special chuck, is here " feeling " the fit by means of the piston, a job he does many times before a perfect compression seal is ensured. Note the absolute cleanliness of the machine platform, vital for precision honing, and the flexible pipe above the hone itself from which soluble oil continuously flows the whole time the job is in progress.

Skilled operations such as this, coupled with the very latest in machine tool equipment ensure that your Davies Charlton Allbon engine is the best that money can buy. Ask your Model Shop for the particular engine in our range that you require. They are all readily available.

Mk.II DART
0·5 c.c. 64 2 Inc. tax

Mk.II JAVELIN
1·49 c.c. 65 4 Inc. tax

Yes it was ours! The mystery engine featured in last month's "Aeromodeller" was the latest from our stable. We regret that owing to the many thousands of postcards received we cannot announce the name of the winner until next month. An announcement as to when the new point one will be available will be made in the same issue. Meantime place an order with your local model shop.

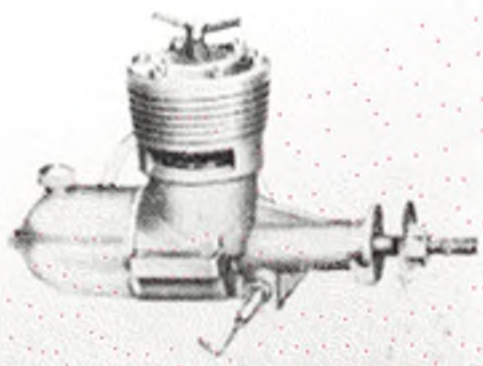
Engineered to last a modelling lifetime by

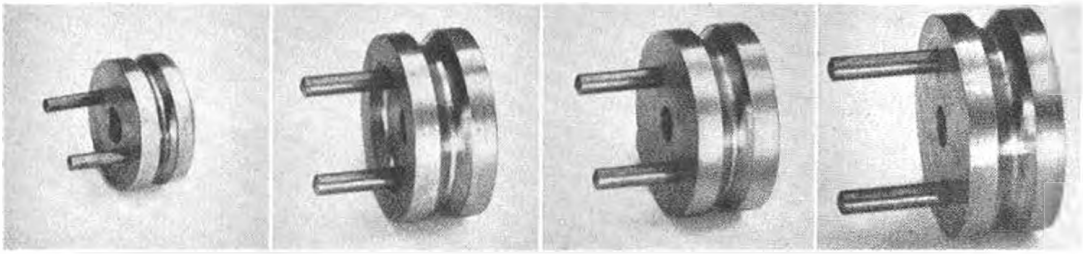
DAVIES CHARLTON LTD.

Barnoldswick via Colne, Lancs.

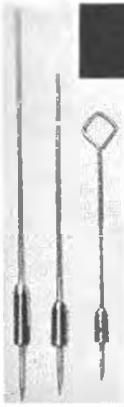
SPITFIRE
1 c.c. 64 2 Inc. tax

D.C. 350 (G)
D.C. 350
3.5 c.c. 78 5 Inc. tax





DAVIES CHARLTON ACCESSORIES



Trade Distributors E. KEIL & CO. LTD., 195, Hackney Road, London, E.2 Tel.: Shoreditch 5336

Always insist on Davies Charlton Accessories which are made with the same care and precision as our well known range of engines. Illustrated on this page are several useful items designed as a result of many requests from modellers themselves. We shall be making additions to the range from time to time, so why not write and let us know the accessory you have always wanted, but never been able to get ?

FLYWHEELS

Dart 9/6
Spitfire, Javelin and D.C.350 ... ... 11/11

RADIAL MOUNTS

Dart, Spitfire and Javelin 4/9

EXTENDED FUEL NEEDLES

Dart, Spitfire, Javelin and D.C.350 ... 2/5

ANGLED JET ASSEMBLIES

Dart, Spitfire, Javelin and D.C.350 ... 5/7

EXTENDED COMPRESSION SCREWS

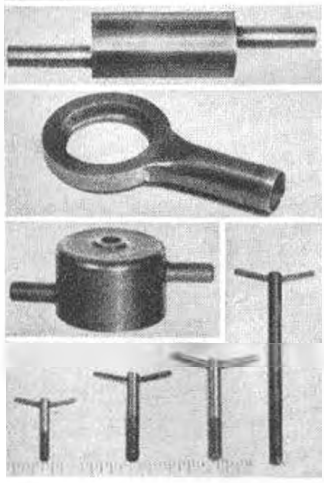
One inch for Dart, Spitfire, Javelin and D.C.350 ... ... 2/5
2¼-inch for Dart, Spitfire, Javelin and D.C.350 ... ... 2/10

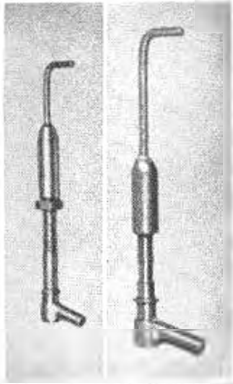
MARINE FITTINGS FOR JAVELIN

Exhaust Stack 11/11
Silencer 11/11
Water Jacket 19/–
Stern tube assembly, screwed 4 BA for propeller, but **not** including propeller 11/11

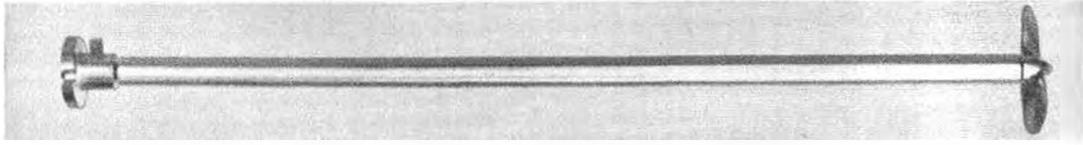
GLOWPLUG HEADS

D.C.350 ... ... 11/11





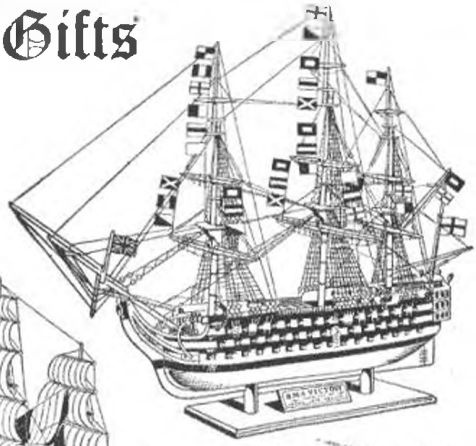
Obtainable from YOUR LOCAL MODEL SHOP



"Marinecraft" Kits

make Glorious Xmas Gifts

These magnificent galleons, beautifully coloured, exact in every detail are supplied in Kit form with step by step photographic charts which simplify construction and help the modeller to interpret plans and measurements. Kit includes beautifully coloured silk screen panels, sails, cannons, shaped hull, rigging, paints, plan and detailed building instructions. Obtainable from all first class model shops.



" **Victory** " 20 ins. long.
70/– including tax.

" **Ark Royal** " 19 ins. long.
62/9 including tax.

" **Cutty Sark** " 17 ins. long.
44/– including tax.

" **Santa Maria** " 19 ins. long.
49/6 including tax.

" **Mayflower** " 18 ins. long.
35/– including tax.

" **Golden Hind** " 24 ins. long.
58/8 including tax.

FREE COLOURED BROCHURE FEATURING ALL MARINECRAFT KITS

Hand this coupon to your model shop for free copy or, *send* 4d. *in stamps to :*

Model Aerodrome Ltd.

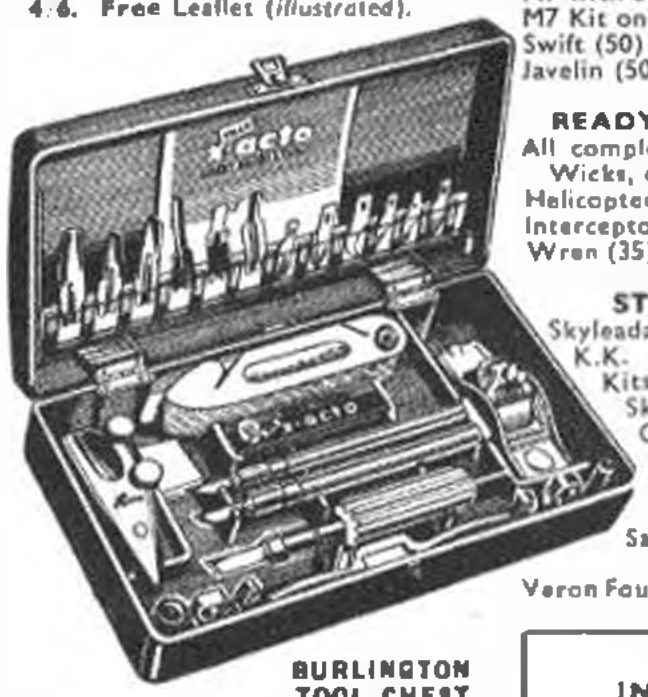
141 STRATFORD RD.
BIRMINGHAM, 11

NORTH SOUTH
EAST WEST

GREGORY'S

Service is the Best

X-ACTO TOOLS. From 3/0 to 84/0. All spare blades in stock. No. 82 Tool Chest, 30/0; No. 78 Wood Carving Set, 37/6; No. 77 Wood Carving Set, 23/0; No. 1 Knife (with No. 11 blade), 3/0; No. 2 Knife (with No. 22 blade), 3/6; No. 5 Knife (with No. 19 blade), 4/6; No. 51 Knife Set (No. 1 knife and 6 blades), 5/6; No. 52 Knife Set (No. 2 knife and 6 blades), 6/9; No. 62 Knife Set (No. 1 and 2 knives with 12 assorted blades) 12/3; No. 50 Plane 5/6; No. 52 Spokeshave 3/6; No. 41 Sander 3/6; No. 58 Stripper 5/0; X-acto Handbook 4/6. Free Leaflet (*illustrated*).



BURLINGTON TOOL CHEST
84/0 Post Free

ENGINES

The supply position varies from day to day, and apart from Allbon products it is impossible to forecast stocks at publication date.

		P.T.
Amco 8.B. 3.5	92/0	17/3
Amco P.B. 3.5	60/0	11/3
Allbon Dart 5 c.c. II	54/0	10/2
Allbon Spitfire	54/0	10/2
Allbon Javelin	55/0	10/2
D.C. 350	66/0	12/5
E.D. 46 Hornet	45/0	7/3
E.D. Bee 1 c.c.	47/6	7/3
E.D. 2.46 Racer	72/6	6/0
E.D. Mk. IV 3.46 c.c. Hunter	72/6	6/0
E.D. 1.46	52/6	4/6
E.D. 2.46 Watercooled	98/6	10/9
E.D. 3.46 Watercooled	98/6	10/9
Frog 150 Diesel	40/6	6/6
Frog 250 ,,	60/0	10/0
Frog 500 Red Glow	61/6	10/0
Mills P.75	50/0	8/0
Mills S.75	55/0	8/10
Mills 1.3	75/0	12/0
Elfin 1.49 c.c.	47/6	8/8
Elfin 2.49 c.c.	56/0	10/6
E.D. Miles Special 5 c.c.	140/0	26/3
E.D. Miles Special 5 c.c. Watercooled	160/0	39/6

JETEX MOTOR OUTFITS

		P.T.
Atom 35 Outfit	8/0	1/4
50 Outfit	10/11	1/10
50B Outfit with Augmenter Tube	10/11	1/10
Jetmaster Outfit	24/0	4/0
Scorpion Outfit with Augmenter Tube	39/0	6/6

TAILORED KITS

Voodoo (50)	6/4	1/1
Hawker Hunter (J)	15/6	2/7
Supermarine Swift (J)	18/0	3/0
Sparrow (35)	3/3	6d.
M7 with 50 Motor	8/7	1/5
M7 Kit only	4/1	8d.
Swift (50)	4/1	8d.
Javelin (50)	4/1	8d.

READY-TO-FLY MODELS

All complete with Motor(s), Fuel, Wicks, etc.

Helicopter (50's)	27/0	4/6
Interceptor Fighter (50)	27/0	4/6
Wren (35)	10/0	1/8

STANDARD KITS

Skyleada and K.K. Scale Jet Kits as advertised 3/0 + 6d.

Skyleada (for Jetmaster): Canberra, Comet and Vulcan ... 7/3½ + 1/2½

Veron, Sea Hawk, Attacker, Thunderjet, Sabre, all for 50 unit 5/6 + 11d.

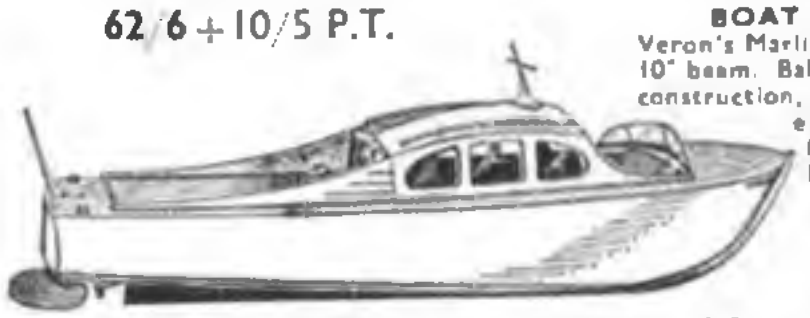
Veron Fouca Cyclone (50) 5/— + 10d.

ORDERING INSTRUCTIONS
PLEASE SEE PREVIOUS ISSUE.

E.T.A. 29 Series III
EX-STOCK
119/6 - 22/5 P.T.

SONIK COLOUR FINISHER
Non-cellulose, proof against all present fuels. Quick drying. Light weight. 12 colours.
1/3 per jar
Thinners 1/0 per bottle.
Free leaflet.

62/6 + 10/5 P.T.



BOAT KITS
Veron's Marlin 36" long. 10" beam. Balsa and ply construction, design expressly for R/C. For 1-5 c.c. engines.

RADIO CONTROL COMPLETE OUTFITS

E.D. Mk. II, 3-valve unit. Complete transmitter and receiver only. 296/0 - 55/6 P.T.

E.D. Mk. IV Tuned Reed. 3 channels unit. Including control box.

		P.T.
Complete	400/0	75/0
E.D. III (Hivac)	181/0	34/0
* E.D. Boomerang	200/0	39/6

TRANSMITTERS

E.D. III and aerial	92/6	16/6
E.D. II and aerial	112/0	21/0
E.D. IV control box and aerial	160/0	30/0
E.C.C. 1061	70/0	13/0

RECEIVERS

E.D. II	184/0	34/6
E.D. III (Hivac)	69/6	13/0
E.D. IV	240/0	45/0
E.C.C. 951A	70/0	13/0
* E.D. Boomerang Receiver Pack (incl. escapement)	109/6	17/2
* E.D. Boomerang Receiving Set only	89/0	16/0

COMPONENTS

E.D. escapement, compact and normal type	18/6 - 3/3 P.T.
E.D. clockwork escapement	47/6 - 9/6 P.T.
E.D. polarized relay	10/0
E.C.C. 5A relay	25/0
E.D. Standard relay	22/6
E.D. Reed Unit (high or low frequency, state which)	40/0
Hivac Valve	15/0 - 2/6 P.T.
Hivac Valve Holder	1/3
Milliameter, 0-5 M/A	15/0
E.D. IV Control Box	44/0 - 8/3 P.T.
E.D. Rudder Mechanism	48/0 - 9/0 P.T.

Venner Accumulators. Booklet available (free).

* Boomerang Receiver can be supplied in hard or soft valve type.

		P.T.
* Wavemaster, 2-7 c.c.	60/0	10/0
* Spraymaster, 1-3 c.c.	31/0	5/0
* Adamcraft seaplane tender	45/0	7/6

Above, all hardwood construction.

* Veron Police Launch 1-1.5 c.c.	36/0	6/0
Veron Seagull	16/6	2/9
Electrotor for Seagull	8/6	1/5
Veron Dolphin	30/0	5/2
Taycol Electric Motor for Dolphin	15/2	2/6

Flywheels, marine units, universal couplings for E.D. engines.

Your E.D. Comp., Mk. III or IV can be converted to watercooling. 35/6 and 42/6 respectively.

* Suitable for radio.

DEAR CUSTOMERS,

During 1953 we have had the pleasure of corresponding with many of you on your aeromodelling problems and trust we have been of assistance, particularly to those who are such a long way away from a source of supply.

Thank you all for your letters of appreciation. May we in turn thank you for your continued support and offer you the compliments of the season with our best wishes for 1954.

★ STOP PRESS ★
New E.C.C. Escapement Type 202 (self-centering)
WEIGHT: ¼oz. SIZE: 1¼" × 1/16" × ⅜"
15/0 - 2/10 P.T.

TOO GOOD TO MISS
10/6
Post free.

P. E. GREGORY & SON
(ALTON) LTD., ALTON *TEL. 3376* HANTS

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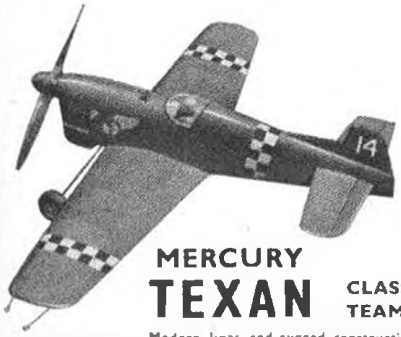
FREE-FLIGHT, GLIDER, C/L AND SOLID KITS BY LEADING MANUFACTURERS

2 NEW MERCURY KITS

Designed and produced in the Tradition that has made MERCURY world famous

Following in a line of famous designs that have become classics of their kind the world over, come two more Mercury Kits by the people who gave you the Monitor, the Chrislea Skyjeep, the Tiger Moth, the Marauder, the Gnome and a host of other well-known models that fly proudly under Mercury's name—**and there are more to come.** *GO TO YOUR MERCURY STOCKIST TODAY AND ASK TO SEE MERCURY KITS FOR YOURSELF!*

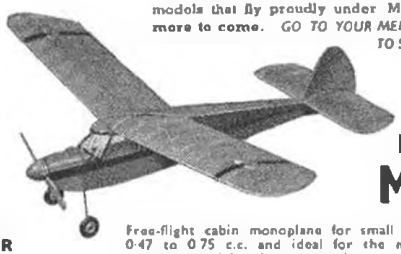


MERCURY TEXAN

CLASS "A" TEAM RACER

Modern lines and rugged construction are combined in this model which is to specification for S.M.A.E. Contests under 1953 rules. With printed and pre-shaped Solarbo, plan and instructions. (For engines up to 2·5 c.c.)

Price to be announced



MERCURY MAGNA

Free-flight cabin monoplane for small diesels from 0·47 to 0·75 c.c. and ideal for the newcomer to powered models. In construction, quality and performance, the Magna reflects the attractive features of the large de luxe Mercury Kits, and is a model to give endless pleasure in every way. 38" wing span. With pre-shaped and pre-printed Solarbo, easy-to-follow plan, tissue, etc.

Price (inc. P. Tax) **12/10**

MORE ENGINES ARE POWERED BY MERCURY FUELS THAN ALL OTHER MAKES OF FUEL TOGETHER

because

- ★ They are blended from the finest materials obtainable.
- ★ They are tested for consistency and quality over every one of the many stages of processing.
- ★ They are unvarying in quality.
- ★ They prolong engine life and reduce flying costs.
- ★ There is a specially developed type for every need.
- ★ There are years of specialised experience behind their production and research and experiment are continuously being pressed forward.
- ★ They carry the name of MERCURY and are therefore reliable always.

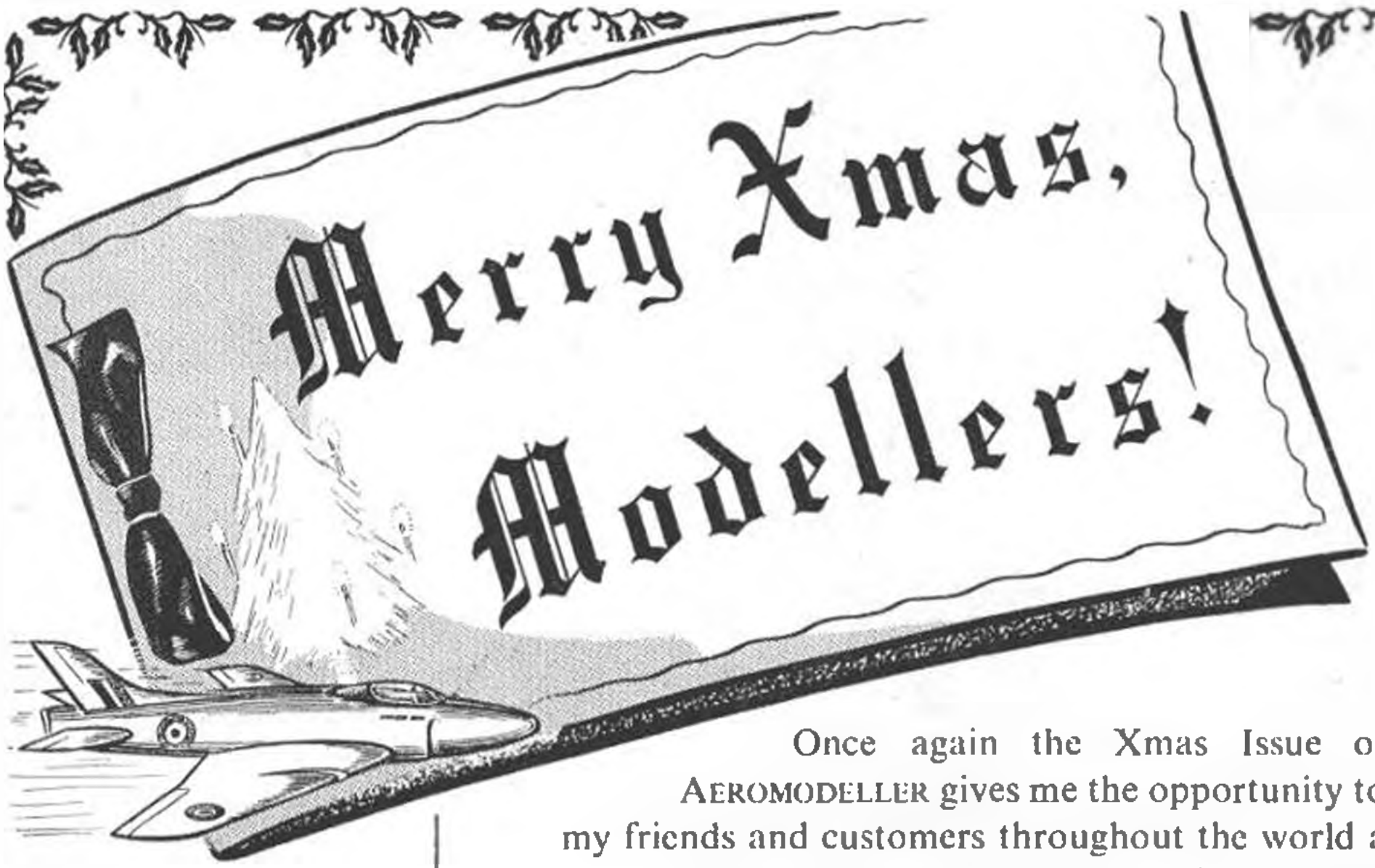
9 GRADES TO CHOOSE FROM

No. 1	**RED LABEL,** Petrol, per bottle	2/6
No. 2	**GREEN LABEL,** Methanol-Castor, per bottle...	3/3
No. 3	**ORANGE LABEL,** Standard Diesel (needs Ether added)	3/3
No. 4	**BLUE LABEL,** Economy Glow-Plug	2/9
No. 5	**MAGENTA LABEL,** Competition Glow-Plug...	3/3
No. 6	**YELLOW LABEL,** All-in-one Diesel	2/9
No. 6R	**SILVER LABEL,** Racing Diesel containing Redex additive	3/9
No. 7	**PINK LABEL,** Racing Glow-Plug containing Nitro-Methane	4/3
No. 8	**BROWN LABEL,** Castor Base Competition Diesel	3/3
	ETHER	3/3

MERCURY FUELS AND MERCURY KITS ARE DISTRIBUTED TO THE TRADE BY

HENRY J. NICHOLLS LTD. WHOLESALE

308 HOLLOWAY ROAD, LONDON, N.7 *Telephone NORth 4272*



Joyeux Noel

★

Felices Pasquas

★

Boas Festas

★

Buon Natale

★

Fröhliche Weinachten

★

Boldog Karácsonyi Ünnepekep

★

Wesolych Swiat

★

S Nowym Godom

★

If your language isn't here, put it down to ignorance if you like, but good wishes are the same everywhere.

Once again the Xmas Issue of the AEROMODELLER gives me the opportunity to wish my friends and customers throughout the world a very Merry Xmas. This year, particularly, I would like to add a special "Thank you" for the ever-increasing support you have given me, and for your very welcome news and letters. I consider myself lucky indeed to be able so successfully to combine work and pleasure, and I hope, for my part, to continue giving you the best service possible.

So Merry Xmas, Modellers, everywhere, and a Happy New Year to us all.

Arthur Mullett.

GREETINGS TO THE MAKERS OF

Allbon Motors, Amco Motors, E.D. Radio Control and E.D. Motors, Elfin Motors, Jetex, K.K., Mercury, Skyleada, Veron and Wavemaster Kits, Solarbo Balsa, Britfix and all those firms whose products I am so glad to be able to sell to modellers all over the world. *May 1954 find you able to produce still more of your excellent products to meet the demands of modellers who like best of all to fly British.*

ESTABLISHED 1935

AERO MODELLER

INCORPORATING "THE MODEL AEROPLANE CONSTRUCTOR"

VOLUME XVIII
NUMBER 215
DECEMBER 1953

"Covers the World of Aeromodelling"

Editor:
C. S. RUSHBROOKE

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D. J. LAIDLAW DICKSON

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Editorial and Advertisement Offices:
38, CLARENDON ROAD, WATFORD, HERTS. Tel.: 5445

Those Were The Days

I have just been browsing through the very first Christmas Number of your/our favourite magazine (actually the second issue of this now world famous modelling paper to be produced), and it is interesting to note the changes that have taken place since then. To recount a few of them illustrates very largely the manner in which the AEROMODELLER and the Model Aircraft Movement have gone forward together.

In 1935, this magazine was published by the Barron-Dean Publishing Co. of Fetter Lane, London, at a cover price of 6d. for a 36 page issue! No mention is made of an Editor—probably the rather ragged contents of that issue influenced the gentleman responsible to hide his light under a very big bushel! No sir, it was not me . . . I have only had that honour for the last thirteen of this magazine's eighteen years of life.

No less than 22 per cent. of the pages at that time were devoted to the activities of the Skybird League (forerunner of the Spotters Clubs, which did such yeoman service in the last World War), and a further 12 per cent. reported the varied interests of the Junior Section of the Air League of the British Empire. With another 22 per cent. taken up by advertisements, the keen aeromodeller was left with a meagre 16 pages of material from which to gain his modelling gen.

Advertisers, some of whom are still with us, included the New Kent Road shop of pioneer Harry York; Northern Model Aircraft Co., from which alas Joe Kenworthy has since passed on; Lines Bros., who were just starting their extensive range of Frog kits; Model Supply Stores of Manchester, then at their Prestwich address; and no less than three companies exhorting aeromodellers to stretch their height as well as their rubber, the ads. being suitably embellished with sketches of muscular males and buxom wenches.

And what of the contributors? It goes without saying that a certain Capt. C. E. Bowden was expounding the virtues of low-wing designs and excessive downthrust in the pioneer power models of that era, the illustrations being remarkably up-to-date when considering the many thousands of words he has contributed to the aeromodelling world.

Denis Fairlee (later to become a "staff" reporter, and still dabbling in 1953 with scale models) demonstrated how to instal a 10 c.c. motor in a model designed for rubber drive; and J. V. Connolly started the practice of including frightening formulae in articles on aerodynamics for aeromodellers, an "article padder" that very quickly went out of favour. The solid model was well catered for with an article and drawing for the Hawker Nimrod, and it is of interest to compare the rather sketchy draughtsmanship with that now enjoyed from our modern George Cull. Three club reports reminded me of the days when I was official can-carrier (Hon. Sec.) to the Lancashire M.A.S., and the many happy hours spent flying at Barton Airport in Manchester.

The British R.O.G. Record stood to the credit of Gordon Merrifield of Bournemouth M.A.C. with a time of 9 : 50, since raised to the staggering score of 35 minutes by F. H. Boxall of Brighton. The hand-launched Glider record of 3 : 10 by W. E. Evans has gone up to 24 : 30 (tow-launching was undiscovered in those days), and Bowden held the power driven model record with a time of 12 : 48. Engine capacity was not regulated by classes in those far off days, and there was no such thing as a limited engine run—cut-out took place when the hefty tank ran dry. Mr. D. A. Paveley held records in the compressed-air classes, a category of model never seen nowadays except when D.A. gives a demonstration at an occasional gala.

Yes, many changes have taken place in models and modellers since that first Xmas "AEROMODELLER", and it will be interesting in another eighteen years to compare conditions then with our present activities.

It remains but for me to wish you all, on behalf of our enthusiastic staff and myself, a very merry Christmas, and all the thermals and contest wins you could wish for in 1954.

Too Good to miss

Though the A.G.M. of the Society of Model Aeronautical Engineers migrates this year to Birmingham (remember, November 22nd at the Grand Hotel), the very popular annual Dinner and Prizegiving remains in London, and will again be held at the " Horseshoe Hotel ", Tottenham Court Road, on the 5th December.

Tickets are now available from H.Q. at Londonderry House, Park Lane, London, W.1, priced at 21/- each, and in view of the ever increasing demand early application is essential. Cash *MUST* accompany orders, and in order to avoid previous last-minute crowding of tables, numbers are very definitely limited in order to make everybody comfortable. So, it's a case of first come, first served, and no tick under any circumstances !

F.A.I. Power Comp. Questionaire

Response to our Questionnaire, published in conjunction with Ron Warring's article in our September 1953 issue, did not exactly require us to set on additional staff in order to cope with the mail ; nevertheless, the opinions recorded make interesting reading—and strangely enough play havoc with Warring's plea for an adjustment of engine sizes !

Opinion had apparently been swayed by the sweeping success of the Americans at Cranfield, indicating that manufacturers in the U.S.A are no longer ignoring the International requirements, and it is little surprise therefore, that no less than 43 per cent. of readers voted to retain the 2·5 c.c. top limit.

Opinion was again overwhelmingly in favour of retaining the current power and wing-loading, 64½ per cent. being satisfied with the latter requirement.

As expected, the vexed question of fuselage cross-section came in for the biggest hiding, for whilst some 35½ per cent. voted in favour of retaining the total-area/80 formula, no-one wanted a fixed minimum, the balance of 64½ per cent. wanting a free hand on the design of this vital component. (In view of the various " wangles " perpetrated in order to get around the cross-section requirements, there seems little point in confining design in this direction. Whilst the intention behind the cross-section rule was admirable, many designs produced in recent years have no consideration for the unposition of such a ruling, *i.e.*, that the model should retain some relative looks with its full-scale counterpart. Whether or not model design should be " handicapped " for the purpose of such idealism has long been a hotly debated point.)

A large majority voted in favour of reducing the motor run, but this is so obviously a question that must be altered *immediately* in view of recent changes to maximum flight times that there is little point in debating the issue. The majority plump for a 15 secs. engine run, but the whole question must be deliberated with the new maximum flight time of three minutes in view, and the number of quintuple maximums in recent eliminators makes a reduction a foregone conclusion. Pray that the F.A.I. may be persuaded that timers *can* be accurately adjusted for less than 20 seconds!

Horse Sense

We have no hesitation whatsoever in fulfilling a request to publish the following letter which was addressed to the S.M.A.E. Those whose habit it is to enjoy the open spaces of Epsom Downs should read, mark and observe this friendly warning. The loss of Fairlop was serious enough, and the inadequacies of Chobham common are all too obvious. Epsom remains an easily accessible flying area with good amenities for sport flying—let's keep it that way, London modellers.

The Epsom and Walton Downs Conservators,
Town Hall,
The Parade,
Epsom.

Dear Sir,

FLYING MODEL AIRCRAFT—LITTER

I beg to inform you that the trainers and owners of bloodstock using the Downs are very much concerned about the litter, particularly bottles, which is left by flyers of model aircraft and the friends accompanying them at weekends. The deposit of litter is, of course, an offence under the Bye-laws, but the matter goes much further than that when the safety of valuable horses is jeopardised. If you can bring this matter to the notice of your members by including reference to it in any bulletin or circular it would be much appreciated, not only by the trainers and owners, but also by the Conservators who are concerned with the appearance of the Downs.

Yours faithfully,
Clerk of the Conservators.

The AEROMODELLER PAA-Load Contest

It is no exaggeration to say that judging the number of entries received in our Design Competition was a truly formidable task. As September drew to a close, envelopes, rolls, and parcels of plans came tumbling in at the rate of four or five by every post, and we honestly began to wonder how on earth we were going to cope with them.

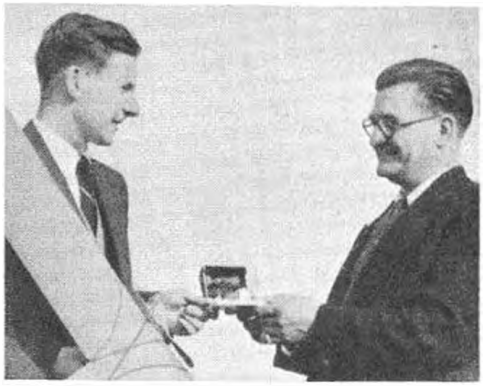
It was apparent that the specifications fired the imaginations of all sorts of people, and entries were received from all over the British Isles as well as from several overseas countries. High wing, mid wing, low wing, pusher, canard, tandem—everything, it seemed, except biplanes and deltas. Many original ideas and methods of construction left us in no doubt as to the continuance of the ingenuity and inventiveness that model building encourages in a mass-production age, and the few points between winners and others were indicative of the very high standard of almost all the entries.

Several designs unfortunately invalidated themselves by failure to qualify in flight, due usually to lack of time, and several excellent entries had reluctantly to be disqualified because not everything required had been sent in. A few lost what were possibly winning points because of incomplete drawings; the main point-dropper, however, was

P. Wood of Sketty, near Swansea, received a gold watch for his Top Junior entry, Atlas 40.

dummy stowage—really, a vertical former of 1/16 in. sheet is *not* enough to prevent the 4 oz. occupant from hurtling forward in a heavy landing! One would-be entrant wrote protesting the impossibility of achieving a 60 sec. flight on a 20 sec. run; some submitted qualifying flights of around the 4 min. mark. There was a marked similarity to "PAAgeboy" in some of the designs, not only in appearance but in dimensions and details too! A junior entry which just failed to place was the competitor's first own design, a very creditable effort.

We could go on like this almost indefinitely, were it not for space limitations. However, on page 710 will be found plans and a description of the winning design; photographs on this page show the other gold watch winners, and next month we shall publish three-view sketches and details of all the prize winners, and one or two of



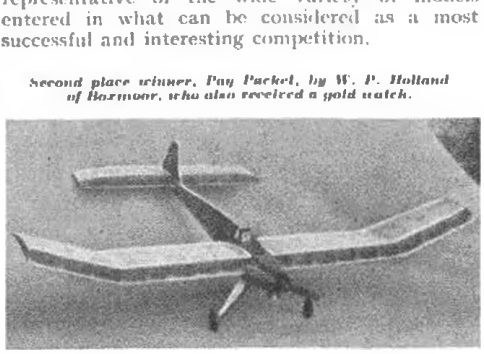
W. A. Pollard receives his magnificent gold Rotora watch, presented to him on behalf of Pan American World Airways by "Aeromodeller" Editor C. S. Hushbrooke. Three watches were given by P.A.A., in addition to the cash prizes provided by the "Aeromodeller", who also decided to award twelve one-year subscriptions as "consolation" prizes.

the most interesting designs. The list of winners is as follows:—

1st. Gold watch—W. A. Pollard, Wilmslow, Cheshire.
2nd. Gold watch—W. P. Holland, Boxmoor, Herts.
3rd. £5. 0s. 0d.—J. A. Lang, Winterbourne Gunner, nr. Salisbury.
4th. £3. 0s. 0d.—B. T. Faulkner, Cheadle, Cheshire.
5th. £1. 0s. 0d. and 1 year's subscription—R. Das, Haarlem, Holland.
Top Junior. Gold watch—P. Wood, Sketty, nr. Swansea.

In addition, we have decided to award consolation prizes of a year's subscription to the next twelve entries, in recognition of the tremendous amount of work put in. It is interesting to record that of the top six designs two are high wing, two shoulder wing and two low wing, and the next six included a pusher, two near pylons and three normal high wing designs. A mixed bag, thoroughly representative of the wide variety of models entered in what can be considered as a most successful and interesting competition.

Second place winner, Pay Packet, by W. P. Holland of Boxmoor, who also received a gold watch.



PAA-DAY★ WINNER OF

Designed by W. A. Pollard. Age 25 . . . married with one child . . . a "Geordie" . . . was apprenticed at Blackburn's, Brough, later moved to Avro's . . . spent eighteen months at Boscombe Down with deltas . . . now in Flight Testing Dept. at Woodford analysing delta stability.

AT FIRST glance, this model appears to be quite a conventional little cabin machine, of pleasing lines and general neat appearance. However, since every member of the panel of judges quite separately awarded this design top marks out of the considerable number of first-class designs submitted, there is obviously more in it than meets the eye. Examination of the drawing indicates that a tremendous amount of thought has gone into the model.

The designer's first aim was good appearance consistent with an aerodynamic lay-out using a long moment arm and a fairly powerful tail. To employ the Bee engine, this meant a short nose, and numerous small sketches suggested that an inverted motor could be placed well back and hidden, bringing the C.G. to the desired well-aft position and still allowing a good slope on the windshield. Inversion also meant that the thrust line could be reasonably high and the undercarriage shortened, with a consequent reduction in weight and drag. The dummy is placed on the C.G. to avoid alteration of trim. Shallow curves soften the lines of the fuselage, and the straight dihedral and twin fins are designed to contribute to the aesthetic appeal of the machine. Constant chord was used for reasons of time and simplicity.

A total area of roughly 350 sq. ins. was felt to be desirable, based on previous performance factors obtained with models of similar weight and power. This is broken into a 260 sq. in. wing and 90 sq. in. tail, which are given fairly high incidence angles on the assumption that models glide at a high angle of attack; it also provides some "built-in" downthrust. Aerofoil sections were dictated by previous practice and are "type" only, since the designer feels that type is the important thing, minor variations having very slight effect.

With this broad approach settled, the designer then got down to structural considerations, where he scored heavily in points. The model is intended to be built of light wood of medium strength, and many ingenious features are incorporated. In the flying surfaces, use is made of laminated spars to strengthen the root ends, while the leading and trailing edges are each constructed of two pieces, giving an angle which ensures positive line-up and extra strength; the trailing edges are not notched in any way. Riblets of an unusual type are used to prevent tissue sag on the wing upper surface.

The fuselage is sheet-sided, with doublers added in stressed areas, while the after end is made rigid but light, with cap strips on the top and bottom; a perfect covering job is easy with this construction. The engine mount, dummy, and undercarriage are cleverly interconnected to make a remarkably strong and virtually crash-proof assembly built with the minimum of weight. The dummy drops out through the bottom of the fuselage upon removal of an ¼ in. dowel and ¾ in. packing piece. A neat "buried" fuel tank remains fully visible, and, while nicely cowled, the motor is fully accessible and easily removable. One of the cleverest touches is a slip-in celluloid exhaust deflector, and it is interesting to learn that the engine runs very noticeably slower without this deflector in place.

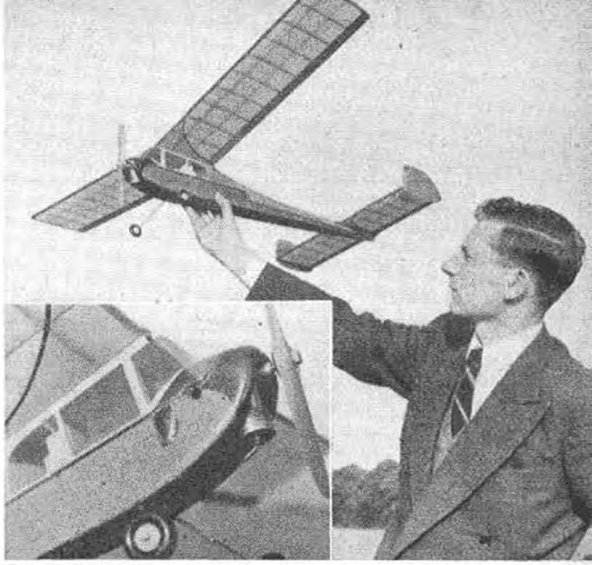
Built with the material on hand, which proved unnecessarily hard and heavy for the job, Paa-Day came out at 10¼ oz. empty. Probably an extra ounce of this can be attributed to the heavyweight Modelspan and large amounts of dope used—there is a large lake near Mr. Pollard's local flying ground, and "ditchings" are by no means uncommon! Test flights were made to achieve the qualifying time only, and early on, after the addition of 2 degrees down-thrust and 2 degrees side-thrust, times of 1¼ mins. on a 20 secs. run became regular. Several 85 sec. flights from 22 sec. runs were made with consistency in pouring rain!

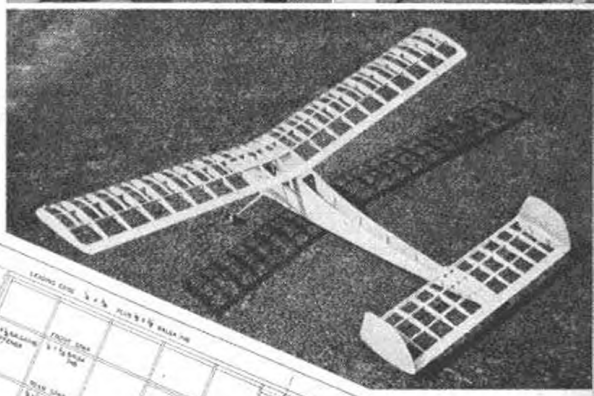
In addition to the excellence of the design work

THE PAY LOAD DESIGN CONTEST

and the lucid write-up that accompanied the entry, mention should be made of the high standard of the submitted drawing. It was well laid out and completely clear on every part of the construction, as well as being of a standard above many of the drawings by professional draughtsmen received.

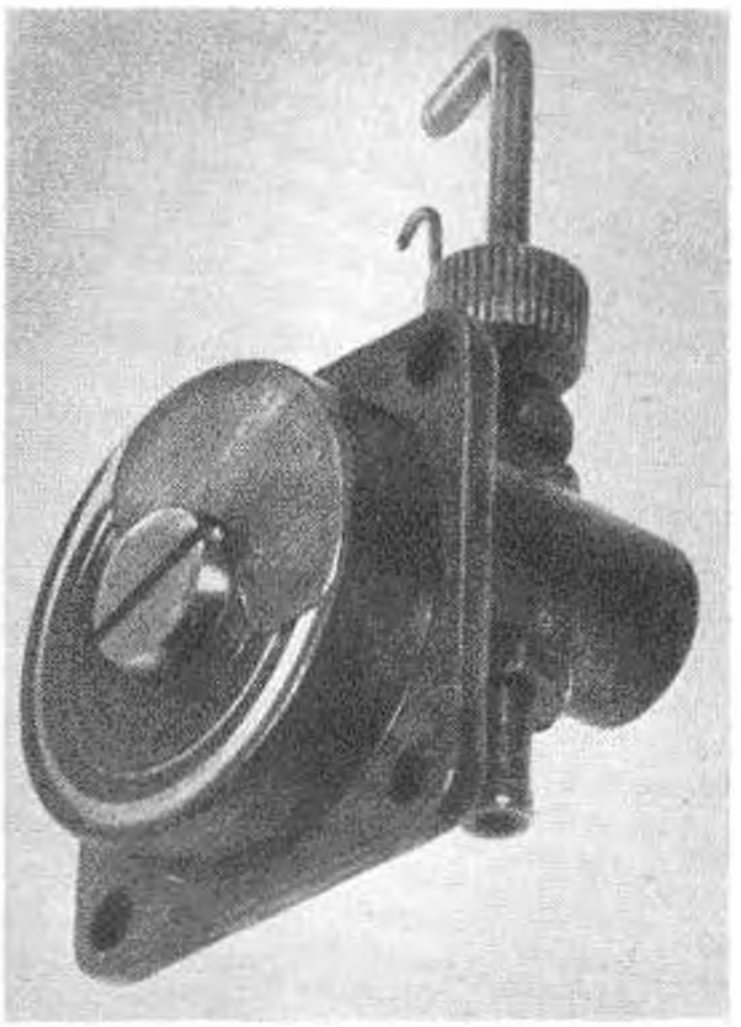
It was thus no surprise to us when, on the designer bringing his model along to the offices, we found it to be neatly and accurately constructed with a very good finish. We took the opportunity of photographing it and also seeing its performance, and we are bound to admit that the glide in particular would be the envy of many contest fliers, despite the loaded weight of 14¼ ozs. We feel sure that readers will join in offering hearty congratulations to Mr. Pollard on a well-deserved win with this very attractive and clever model.





Full size copies of this 1/3 scale plan can be obtained price 4/6, post free, from A.P.S.

A SIMPLE FLUTTER VALVE AND "CURLY CARBURETTOR"



By L. R. HALL and R. E. ROSS

Coincident with the arrival in Great Britain of a few privately imported examples of the revolutionary L. M. Cox Space Bug and Thermal Hopper glow engines with reed valve induction, comes the news of converted standard motors, using this relatively new development. Brian Harper of Outlaws reports improvement, but a tendency to reverse starts with his altered McCoy 29. From Bristol we learn of greater team race lappage with a converted E.D. Racer, and now, from the Nottingham enthusiasts we have these details of their experiments.

With a particular view to team racing, economy of fuel is a factor of great importance, and following observations of a motor on test, it was decided (1) to cause fuel blown out of the air intake to run back into the engine, and (2) To *prevent* any " blow back " out of the crankcase. An E.D. Racer 2·46 was chosen for its suitability, and the first step was to fit a " Curly Carb.". This was made from Perspex and polished so that fuel blow-back, etc., could be observed.

The principal of operation is simple. Fuel blown-back is collected and then sucked in again on the next induction stroke. Like those employed by the model racing car fans, the Curly Carb. need not be like that illustrated here; but could well be a curved tube arranged to face the slipstream. Up to 10 per cent. extra running time per tank is claimed.

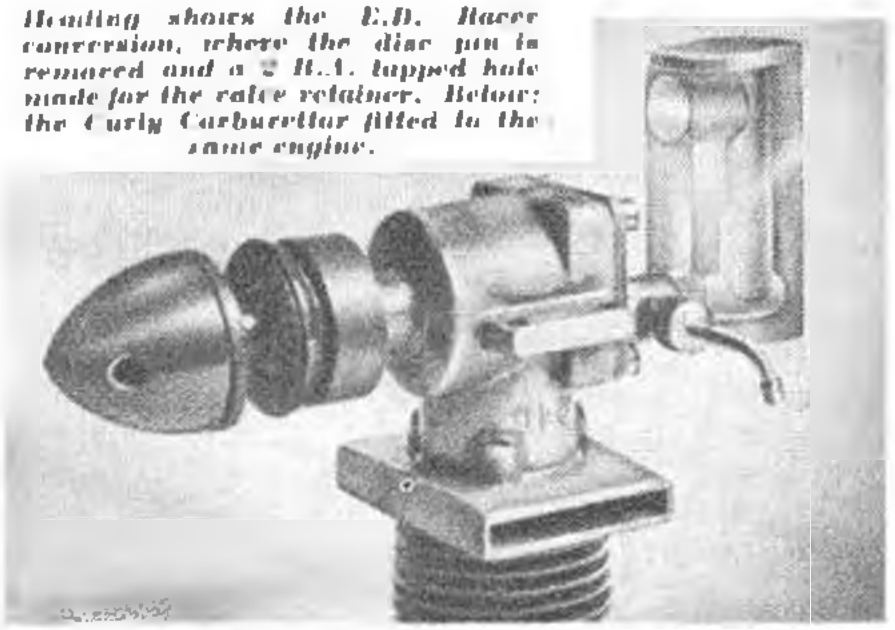
Second approach, to point (2) is the Flutter Valve. This prevents blow-back, dispenses with the disc and its associated losses in friction, etc., and is easy to make and fit. For the E.D. Racer, an experimental Perspex backplate was made and a Mills Carb. fitted. The effect of the brass shim valve could then be watched. First surprise came with the revelation that the carb would suck fuel up a height of 12 inches, and maintain that head of fuel with ease. The engine started after only two choked turns, and after closing the needle down to a bare half-turn open, ran as good as, if not better than, with normal disc induction. There was no blow-back. On normal porting the consumption was 10 c.c. fuel in 150 seconds. With the Flutter Valve, the time jumped to 250 seconds, giving an expectancy of up to 6½ minutes running time from a Class A team race 15 c.c. tank.

The valve is cut from 6–10 thousandths shim brass and is necked in order that it may work easily. Care should be taken to ensure a good seal between the valve and back-plate, and a paper gasket (blotting paper soaked in linseed oil is good), fitted to seal the crankcase and back-plate.

Final Valve as applied to E.D. 2·46

(1) Remove disc by gently driving the pin through from the outside using a punch. (2) Tap the hole from which the pin was removed 2 B.A. (3) Cut a piece of shim brass as shown in the photo ensuring that it does not overhang the back-plate. (4) Secure brass valve to back-plate with 2 B.A. cheese-head screw. (5) Ensure that the crank pin and connecting rod do not foul the valve or screw. (6) Screw on back-plate, connect engine to fuel supply, cross fingers on left hand and swing prop with right.

Heading shows the E.D. Racer conversion, where the disc pin is removed and a 2 B.A. tapped hole made for the valve retainer. Below: the Curly Carburettor fitted to the same engine.



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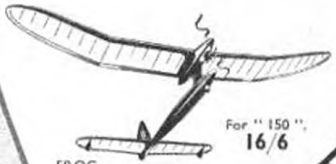

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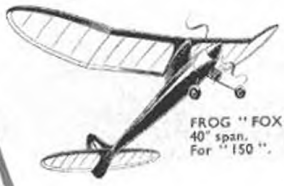

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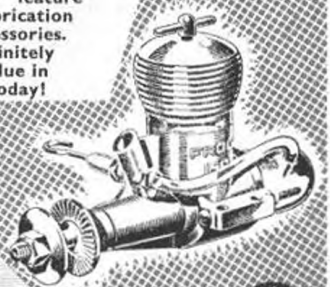

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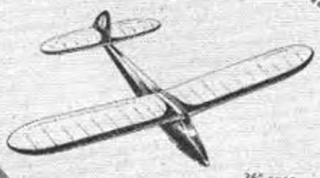

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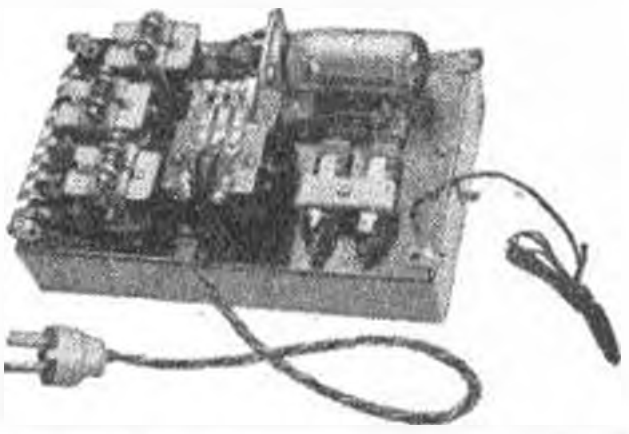

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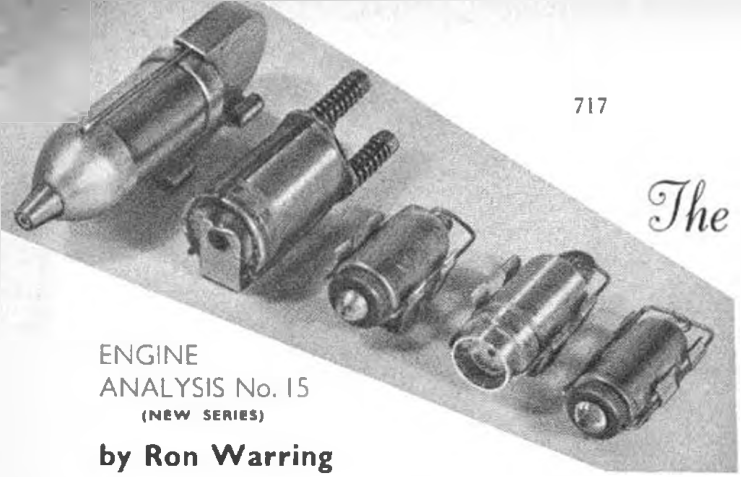


The JETEX 35, 50, 100 & JETMASTER

ENGINE ANALYSIS No. 15

(NEW SERIES)

by Ron Warring

CONCLUDING the series of thrust tests on Jetex motors, comments on the performance and handling characteristics of individual units are given under separate headings. A number of general observations can be made, however, applicable to the whole range.

The same thrust-measuring apparatus was used as in previous tests (AEROMODELLER, November, 1953), with some slight modification of the technique.

The question of *consistency* in Jetex performance would appear of slightly greater significance with the smaller units. Inconsistency, largely, can be caused by one or more of four major factors. There is the variation in individual charges, due largely to the fact that to produce these at a reasonably low cost fairly generous performance tolerance is necessary (actually this is of the order of plus or minus five per cent.). The fuel has to be prepared in batches, individually tested and proved. Like many photographic solutions, just preparing a mixture " to formula " is no automatic guarantee of an acceptable product.

The other three factors are, to a large extent, under the control of the Jetex user. First—and this can have a most marked influence—is the effect of air temperature and humidity. Damp charges, like damp fireworks, are relatively useless. Also on hot days (or with warm charges on cold days) appreciably higher thrust figures are realised than on colder days. Exposed to a damp atmosphere charges do, in fact, appear to attract moisture and beads of " sweat " may actually appear on the surface.

Ideally, therefore, charges should be kept in a warm, dry place. On the flying field this would indicate that charges are best kept in the pocket—not in the model box and certainly never laid out on damp grass. Drying out of " suspect " charges, *e.g.* by gentle heat, such as on top of a radiator, is recommended.

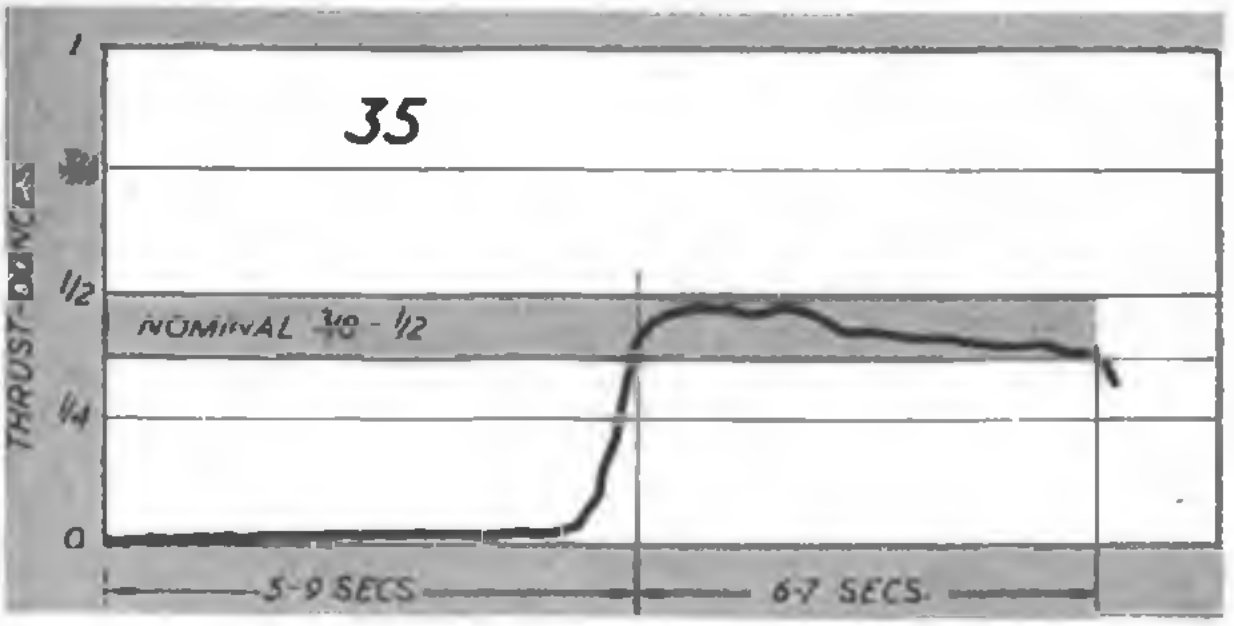
The other major faults which can also lead to inconsistency or poor performance are " blow back ", caused by improper sealing of the case (*e.g.* a faulty washer, lack of adequate spring tension, etc.) or a blocked or damaged jet (*e.g.* wick core wire not ejected, or a partially blocked jet through lack of cleaning ; both these faults tending to build up pressure inside the case, aggravating the tendency for the end cap to lift and leak). Unless cleaned with the proper tool or correct wire diameter, the jet hole may be enlarged, when a permanent loss of thrust is almost certain to result.

Another common fault with many *Jetex* users is to find that the charge fails to fire, due to improper loading, allowing the fuse to fizzle out before the charge itself has ignited. In this respect it is interesting to note that throughout the whole series of these tests with several dozen or more different units and something like three hundred separate runs, on only four occasions was ignition failure experienced—three with the same motor. In this particular case, almost certainly the motor or the charge was excessively damp.

No special care was taken over reloading each unit, except to note each time that the gauze was pressed down securely and firmly against the charge and gauzes were replaced, on average, every three runs.

The loss of thrust resulting from a badly fitting end cap is most alarming. The initial mechanical reaction on the charge firing is for the end cap to blow open or lift, reseating itself almost at once. Unless it does re-seat itself with a perfect gas seal, some of the expanding gases will inevitably escape between the end cap and the casing, with resulting loss of useful thrust. Replacement of sealing washers, therefore, is a most important feature of successful Jetex operation whenever there is marked indication of " blowing ". In this respect, those units which made replacement of the cap washer easy proved more acceptable than older designs, from the point of view of ease of maintenance.

A second, equally alarming feature of Jetex units is the corrosive nature of the gases generated when the charge is burnt. Unfortunately this is something which is inevitable. Rocket fuel is notoriously corrosive, setting exacting specifications for materials to stand up to the job. The manufacturers investigated the properties of no less than thirty different alloys before adopting the present materials used—an aluminium alloy with high hot strength and retaining good corrosion-



resistance properties. Where greater strength is required, a stainless steel has proved the most satisfactory material. The whole *Scorpion* endplate, for example, is to be made of this material.

The fact that all parts of a *Jetex* are subject to corrosion means that if units are left idle for some time, permanent damage to the metals can result, since the corrosive action is progressive all the while the metal surfaces are contaminated with burnt charge. This can only be avoided by a *thorough cleaning* after use. Dunking the whole unit in a bath of paraffin after a day's flying is to be recommended, which appears to arrest corrosion. Units may then be cleaned down later by scraping, etc., at leisure. Cleaning in soapy water, followed by a rinse in clean water and thorough drying is a normal procedure. The unit then requires reassembling with a new cap washer, lightly oiling the ferrous metal parts which are, in fact, more subject to corrosion than the non-ferrous components.

These particular features have been mentioned in some detail since their prevention and cure lies entirely in the hands of the operator—and to emphasise that although it has no " working " or " moving " parts, a *Jetex* engine needs proper maintenance, just like any other engine.

The loss of thrust resulting from failure of the igniter wick core to eject itself can be overcome by a new method of loading. Normally the first explosive burst as the charge fires (*i.e.* the one which momentarily lifts the end cap) also blows out the fuse core remaining in the jet hole. Here it was noticeable that the units with a large combustion space (*i.e.* a relatively large " free " volume between the charge and the jet) were more effective in blowing out the spent wick (wire). A method of loading designed to ensure positive ejection is to terminate the fuse *inside* the loaded unit—Fig. 1—with a coil both above and below the gauze. A short length of fuse is then inserted from the outside, through the jet nozzle, to contact the main fuse. This method is thoroughly to be recommended, both for the fact that it does ensure positive wick ejection and also because it simplifies loading, particularly on units with an extended end cap as in the 35, 50B and *Jetmaster*).

Jetex Atom 35

This is the smallest and lightest of the *Jetex* units with a nominal or rated thrust output of ⅜ to ½ ounce. It has one or two different features compared with older *Jetex* units.

The design is essentially a simple one, which makes maintenance and loading easy. The end cap has a tapered combustion chamber leading to the actual jet nozzle (hole), the external shape of the end cap making it suitable for use with an augmenter tube.

Another particularly interesting feature of the " 35 " is the hollowed charge. Unlike the *Scorpion*

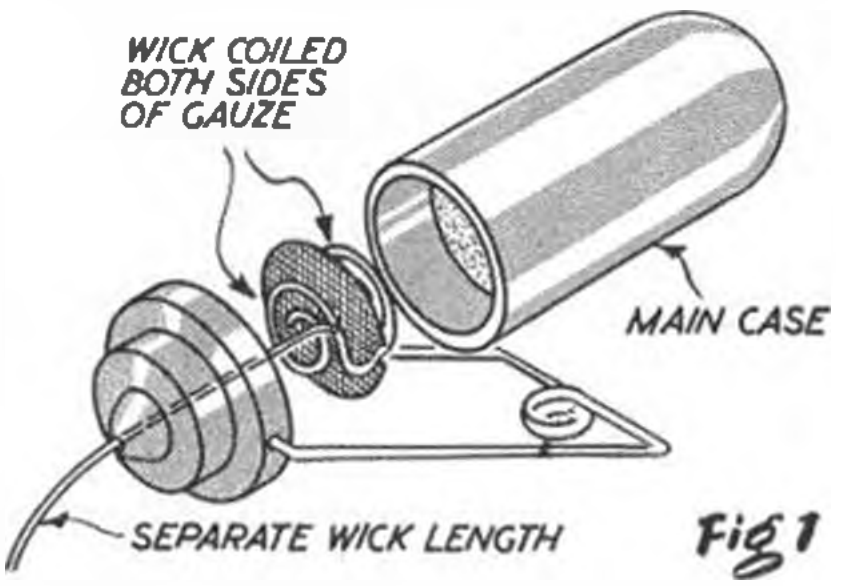
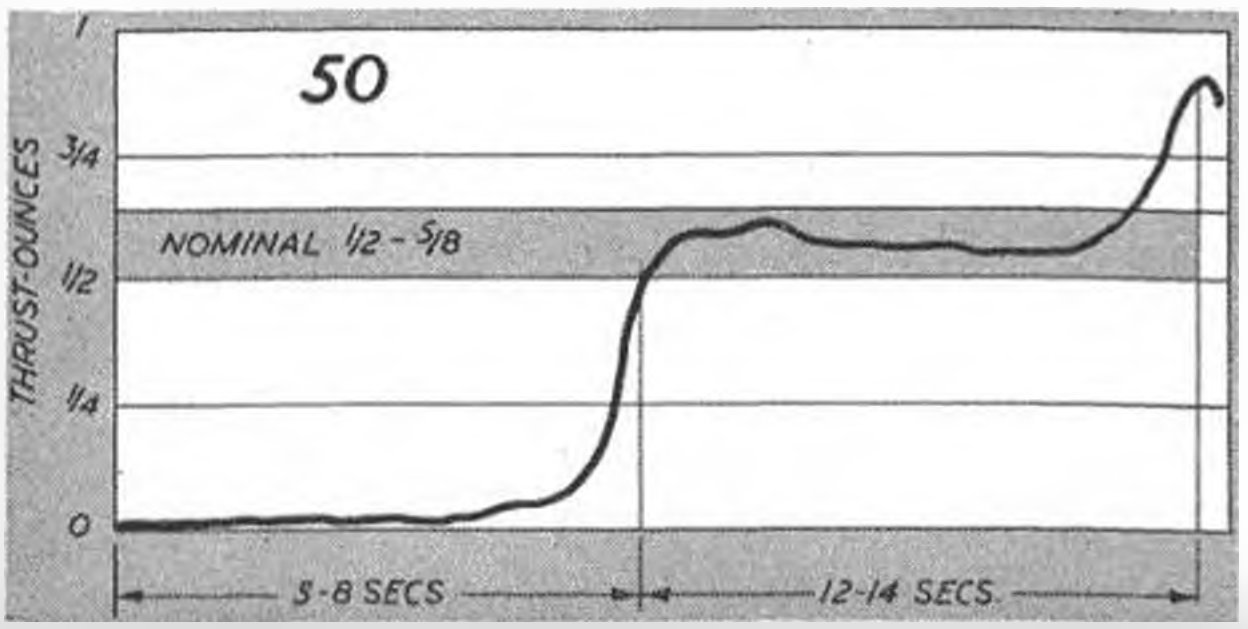


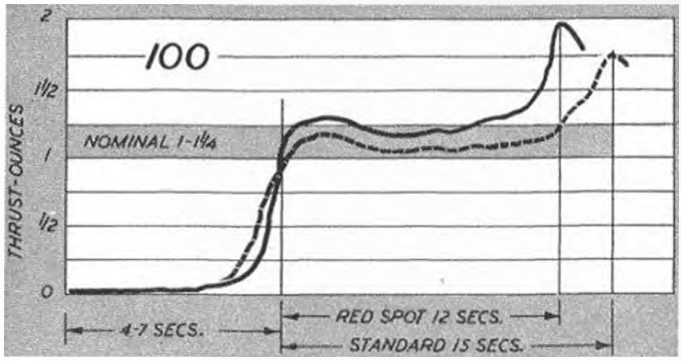
Fig 1

the hollow end of the charge is inserted first, and it matches up with a dome-shaped bottom shield—Fig. 2. The object of this is to reduce the burning area towards the end of the charge and thus prevent the surge of thrust common with the smaller *Jetex* units and normal solid cylindrical charges.

On test this feature did appear responsible for a reasonably flat thrust output curve. Occasionally, however, charges did show a momentary peak of power at the end of the run, although this was the exception. The characteristic thrust pattern is shown in the graph, the maker's claim for thrust figures being well substantiated, with an average thrust approaching the half-ounce mark. It is difficult to give true figures for the duration of run since the thrust builds up very slowly at first and may take some ten seconds from first lighting the fuse to the development of full thrust. The effective run at rated thrust is between 6 and 7 seconds, on average.

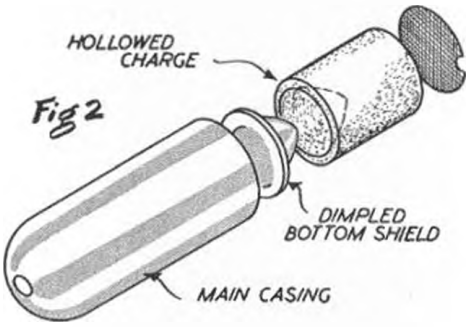
Some eight " 35's " were actually tested during the series. A tendency to " blow " on one or two would undoubtedly have been improved by a





slight increase in spring tension to ensure more powerful re-seating on the end cap after the initial burst. This is something which the user can readily adjust himself and might well be attempted if signs of leakage occur (indicated by dark stains on the outside of the case). Check first, however, that the fault is not the sealing washer. Sometimes a washer will fail after the first run. Others will last a large number of runs, giving good sealing each time. The first run is, in fact, probably the most critical, as far as the sealing washer is concerned. The first heating vulcanises the rubber content of the impregnated asbestos washer and, virtually, stabilises it. Subsequent failure is then the result of mechanical damage to the washer.

The charges for the " 35 " were found to be quite a tight fit in the case, calling for adequate cleaning



out each time to avoid the fresh charge jamming. Some charges, too, have small blobs or projections on their outer surface, tending to make them slightly oversize. These are readily rubbed off.

If a charge jams, about the only thing to do is to carve it out with a knife, taking care not to damage the soft metal of the case. The charge can, also, be ignited with a slow burning fuze and allowed to burn out, although this may be only partially successful in a damp atmosphere. In any case, this method heats the case and there is a time delay before re-loading until the case has cooled down again.

Jetex 50 Units

Some dozen " 50 " units were tested in all comprising the new 50B, the original (Standard) 50 and the export 50. Main differences are in the shape and length of the case. The standard 50 (which is to be dropped from production) has a ribbed case. The export 50 and 50B have nozzle-shaped end caps to use with augmenter tubes, the 50B being slightly longer. The idea in making the 50B longer was to increase the " free " combustion space to give better wick-ejection properties.

All units use the same standard charge and all give substantially the same thrust figures. Average thrust is of the order of ¼ to ⅜ ounce, peaking to ⅞ ounce, or even higher, at the end of the run. In other respects, the export 50 and 50B are essentially similar to the 35.

Jetex 100

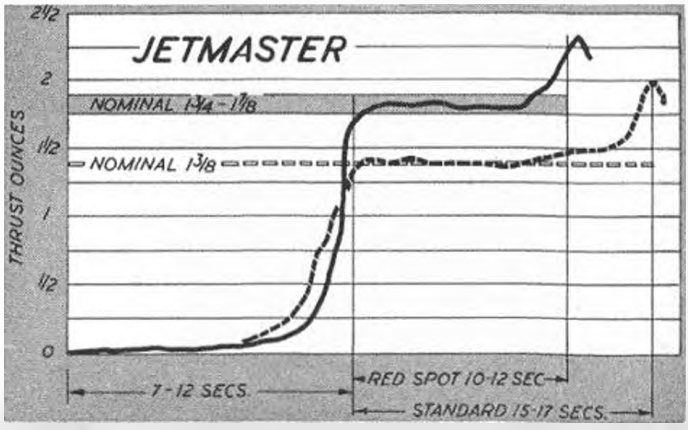
The 100 retains its original form with turned, instead of drawn case, and rather elaborate triple-spring ; although these probably give a higher sealing pressure, it is far more troublesome to load and unload than its modern counterparts.

Test figures indicated an average thrust in excess of 1 ounce with an end surge of up to 1⅛ to 1⅞ ounce, with standard fuel. Effective duration was of the order of 15 seconds. With Red Spot fuel average thrust is increased to 1⅛ ounce plus, with effective duration cut to 12 seconds.

The 100 is actually being withdrawn from production, in favour of the *Jetmaster* which develops appreciably more thrust with the same charge. It has, nevertheless, proved a popular and useful unit over the past few years and many thousands will undoubtedly continue in service. All spares, etc., will continue to be available.

Jetmaster

The Jetmaster features an extended cap, designed expressly as a matching fit to an augmenter tube.



Particular care has been given to the design and shape of the combustion chamber with plenty of free space, and the venturi section employed for the jet nozzle. The unit is simpler than the 100 for loading, etc., but features more parts for dissembly when cleaning and calls for a special tool for cleaning the jet nozzle, working from each end in turn. *The latter must be cleaned out after each flight.* If not cleaned, then there is a very real danger of the fuse core jamming in the nozzle and blocking the jet, instead of being ejected. The best that can happen in such cases is an almost complete " blow-back" with little or no thrust. The worst—a split casing.

The *Jetmaster* takes either standard or *Red Spot* fuel, both of the same physical dimensions but slightly different chemical composition. A higher gas pressure, and higher thrust, results from the latter, at the expense of a decrease in duration time (*i.e.* a higher rate of burning).

Average thrust with Red Spot fuel was consistently of the order of 1⅞ ounce, peaking to 2¼ ounces at the end of the run. Effective duration was some 10 to 12 seconds. With standard fuel average thrust was 1⅝ ounces, peaking to 1¾ to 2 ounces. Effective duration in this case was around 15 seconds.

Standard fuel will no longer be available after present stocks are exhausted. Red Spot, with its improved performance, will then be the only fuel available for both the 100 and Jetmaster. Another point of interest as regards fuels is that owners of old Jetex units —or of old standard fuel—may find they get lower thrust and higher duration figures than those given by the test results. All " standard " fuel—and this applies to all sizes of fuel—has been of revised composition for the past ten months or so giving higher thrust and lower durations than previous " standard " fuel.

Since the *Jetmaster* is undoubtedly one of the most popular units to consider for contest work, certain points must come in for criticism—mainly the method of mounting. Interesting as it may

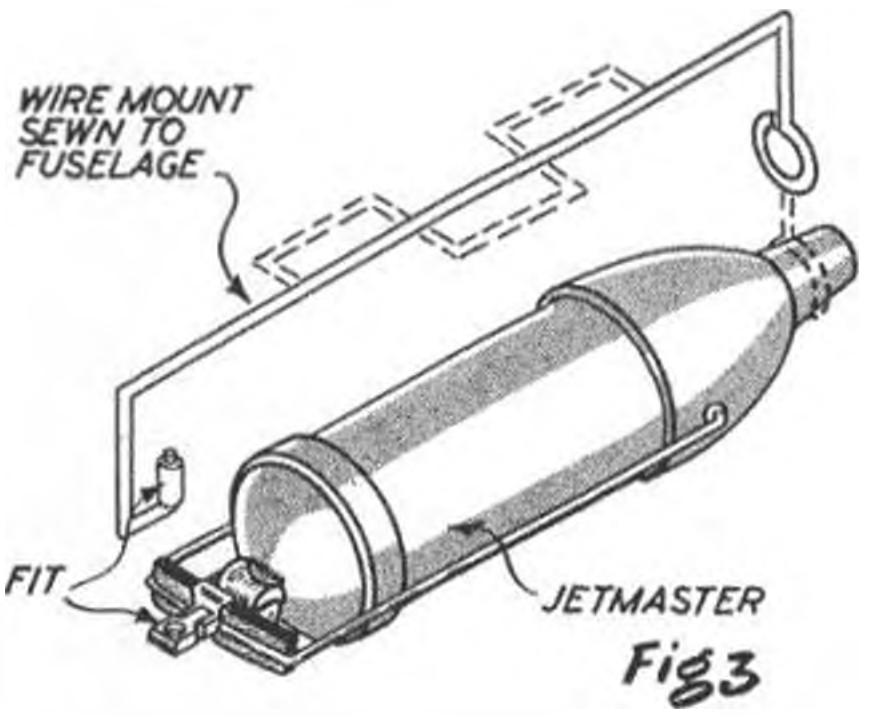


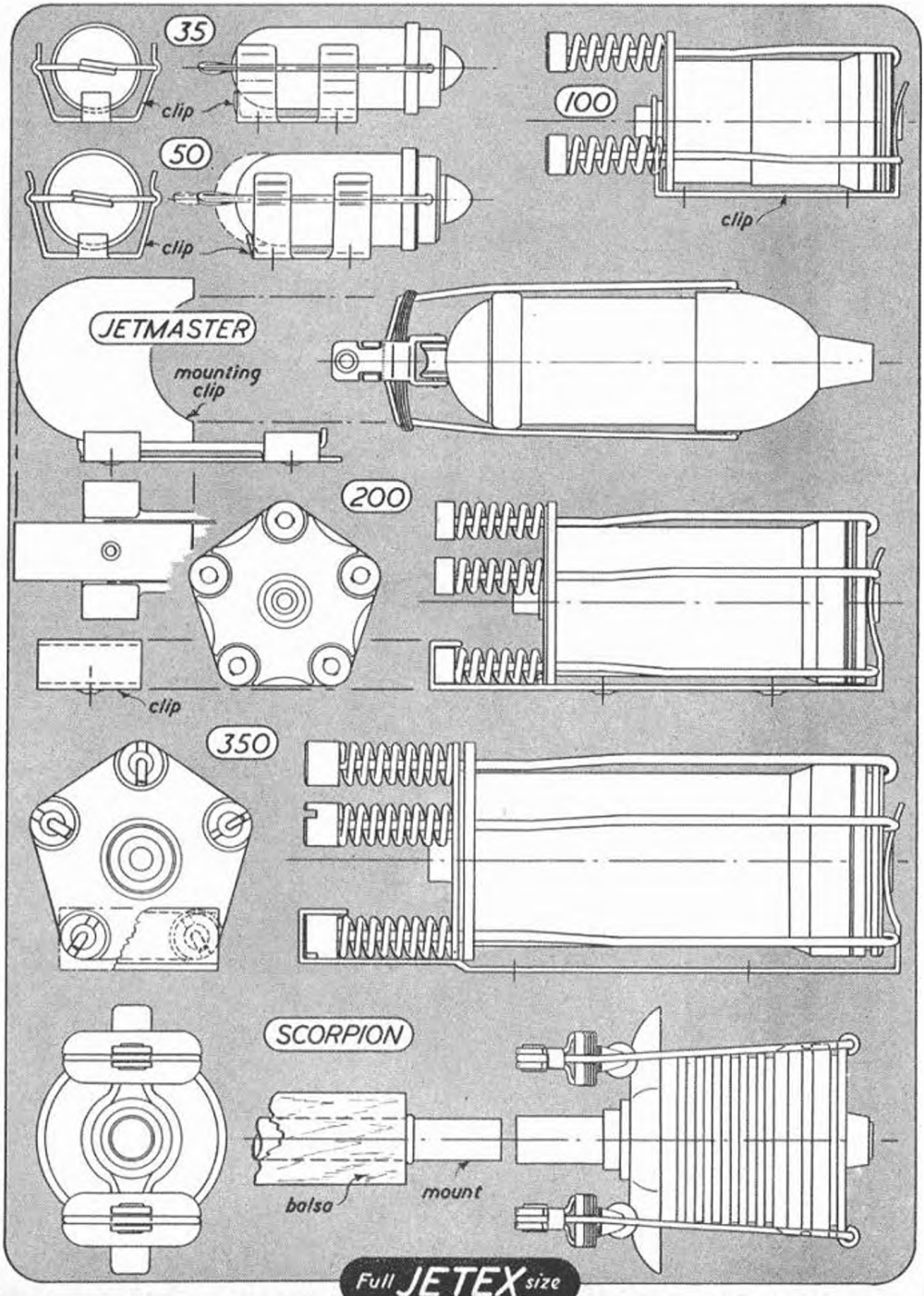
Fig 3

appear—and however admirable an example of light production engineering—the mount supplied for the *Jetmaster* is virtually useless. It fulfills the ideal of providing a simple clip-in mount, but that is all. The unit is barely secure and there is no guarantee of obtaining a consistent thrust line setting each time. This has been apparent on the flying field where contest modellers using the *Jetmaster* have employed own-design mounts—a typical example being shown in Fig. 3.

Another point is that the " wick injection " method of loading is the only satisfactory method of loading the *Jetmaster*. Fiddling an over-length piece of wick through the inside of the combustion chamber and into the jet venturi is too trying on one's patience. Another point is that it would be nice if some of the nine or more separate parts forming the main end cap could be eliminated or re-designed for greater ease of dissembly for cleaning.

Some data on the effects of augmenter tubes Jetex units will be published in an abridged report next month.

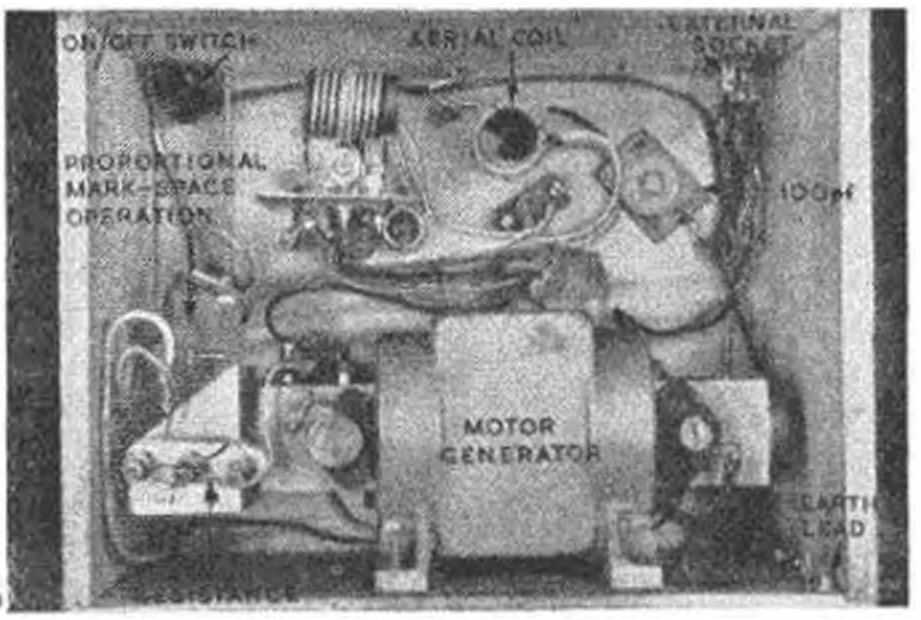
Jetex	Weight (Loaded) ounces	Weight (Empty) ounces	Weight Charge ounces	Nominal or Average Thrust	H.P. Equivalent at 30 m.p.h.	H.P. Equivalent at 60 m.p.h.	I.H.P. at 30 m.p.h.	I.H.P. at 60 m.p.h.	Effective Duration (seconds)	Model Size Span (in.)	Model Size Max. Total Weight (ounces)	Dimensions Length ins.	Dimensions Diameter ins.
ATOM " 35 "	¼	5/32	3/32	¼–¼	·0019–·0025	·00375–·005	6·2–8·4	3·1–4·2	7–8	10–12	¼	1¼	9/16
50 (Standard)	23/64	¼	7/64	¼–⅜	·0025–·003	·005–·00625	7·2–9	3·6–4·5	14–15	12–16	1¼	1¼	11/16
50 (Export)	19/64	3/16	7/64	¼–⅜	·0025–·003	·005–·00625	6·0–7·4	3·0–3·7	10–12	12–16	1¼	1¼	1
50 B	21/64	7/32	7/64	¼–⅜	·0025–·003	·005–·00625	6·6–8·2	3·3–4·1	10–12	12–16	1¼	1¼	¾
100	½	⅜	¼	1–1½	·005–·006	·01–·0125	8·8–11·0	4·4–5·5	14–15	16–24	3	2.5/16	1
JETMASTER	15/16	11/16	¼	1⅜–1½	·0019–·0095	·0175–·019	6·2–6·7	3·1–3·35	12–15	20–30	4½	3½	1.1/16


35
clip
50
clip
100
clip
JETMASTER
mounting clip
200
clip
350
SCORPION
balsa
mount
Full JETEX size

RADIO CONTROL NOTES

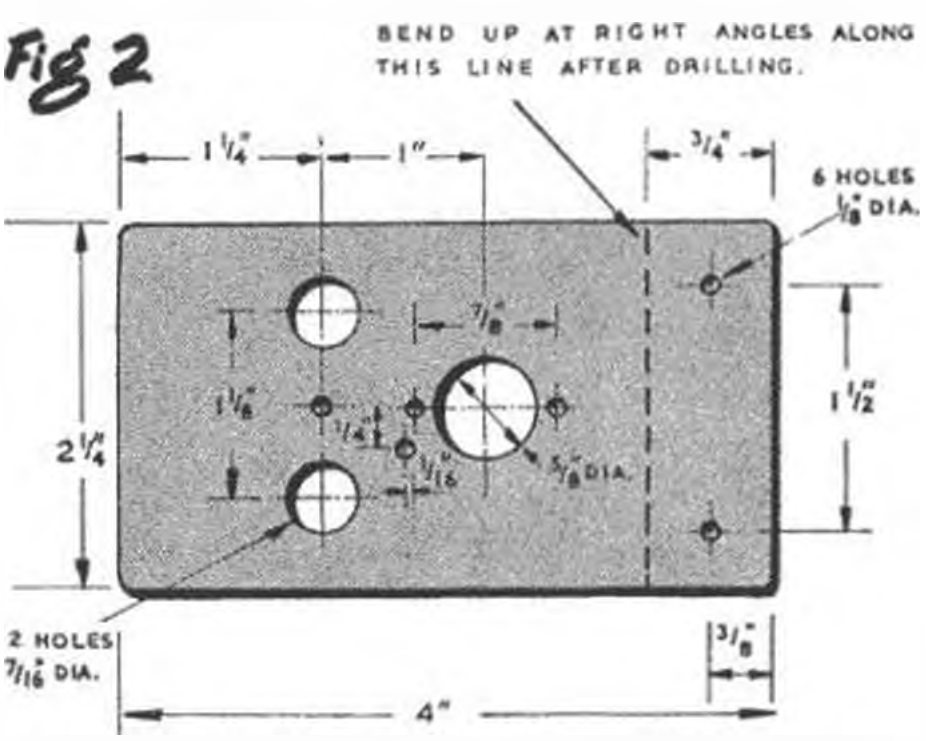
Howard Boys describes his

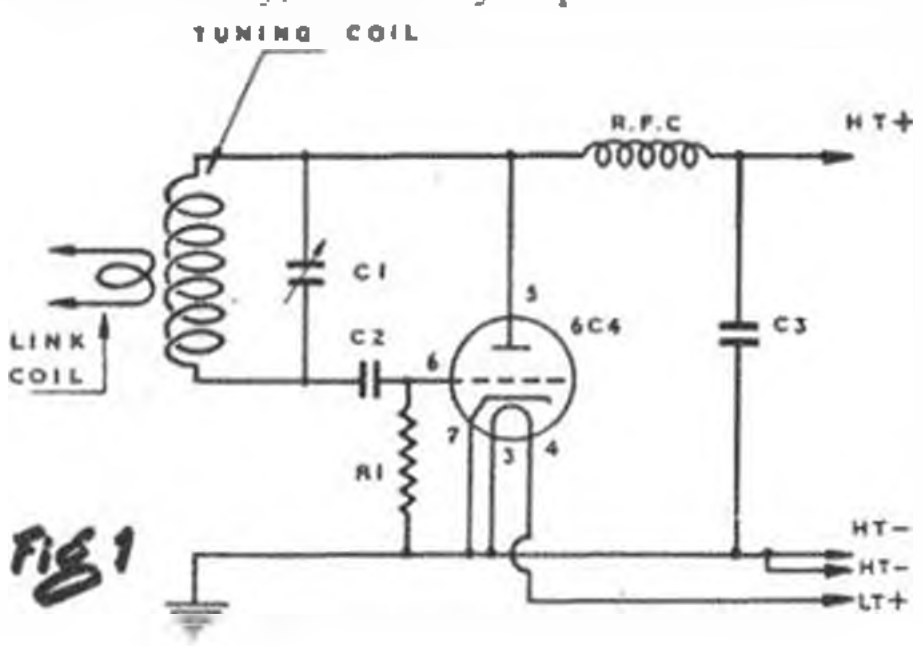
HIGH POWER TRANSMITTER



QUITE a number of people have taken an interest in the writer's transmitter, and others have at times asked for details of a complete transmitter. This one is made mostly from government surplus equipment which is still obtainable, and has given trouble-free service for nearly four years. All that has been necessary has been to keep the six-volt accumulator charged, and since this is done at home the cost of upkeep has been negligible.

The circuit of the oscillator is given in Fig. 1 and is as simple as possible. A drawing of the panel is shown in Fig. 2, and this is made from aluminium of 18 or 20 s.w.g. The only insulation required is the coil mount, and this is of paxolin about 1/16 in. thick, and is shown in Fig. 3. In the writer's case, this was taken from the ex-government 7 pf beehive condenser used for the AEROMODELLER hard valve receiver, but any odd bit will do. This is bolted to the aluminium panel so that the eyelets appear in the centres of the 7/16 in. holes. A 6 B.A. bolt is used, but if the centre hole is larger than ⅜ in. as is the case with the paxolin from the condenser, a large washer also will be required. The tuning coil consists of ten turns of 18 s.w.g. wire, wound on a paxolin tube ¾ in. diameter, but a few layers of gummed paper could be wound on the cardboard tube of a No. 8 battery to serve, or the tube could be made entirely of gummed paper if the paxolin could not be obtained easily. If the wire is wound first on a No. 8 battery, it will stay in place better on the tube. A suitable thickness of string should then be wound between the turns to space them to give a length of coil of just over an inch. The ends of the wire should be left about 1¼ in. long, and bent at right angles. Either enamelled or tinned copper wire can be used, but if enamelled, these legs should be cleaned and tinned. The R.F.C. can be made by winding 70 turns of thin insulated wire on a ¼ in. former. The most convenient wire is 28 or 30 s.w.g. double cotton or silk covered, but enamelled will do. The former can be made from paper, gummed and wrapped round a pencil or





similar rod. The valve is a 6C4 and is obtainable new, or ex-government. Price ex-government about 8/–. The other components are best purchased new since cost is low anyway. They are :— C1 30 pf Beehive, or concentric. C2 100 pf silvermica. C3 ·1 mfd 350 volt working. R1 4,700 ohms ½ watt. Valve holder B7G preferably ceramic, though paxolin or amphenol will be quite all right. A metal clip is needed to hold the ·1 mfd condenser to the panel, and four 6 B.A. screws and nuts for other parts. As can be seen from the photographs there is very little wiring up to be done. 18 s.w.g. wire should be used for rigidity. Ordinary coloured plastic covered flex is used for the battery leads. The link coil is just a piece of single flex, plastic covered, wound twice round the

tuning coil. The ends can be bound together with a rubber band or thread. In the writer's outfit the link coil and battery leads are taken to plugs which connect with sockets in the case.

The power supplies for this oscillator are obtained from a 6 volt accumulator and motor generator, both ex-government. The accumulator consists of three 2 volt cells connected together, and the motor generator is a 20 watt type arranged for 11 volts input to give an output of 480 volts 40 milliamps. With an input of 6 volts an output of 280 volts at 25 milliamps is obtainable, a matter of 7 watts, which is more than we are allowed. To cut this down to 5 watts, a resistance has been put in the 6 volt lead to the motor part, though it would be equally effective to put a resistance in the H.T. output lead. The value of such a resistance will need to be found by trial. In the writer's case it consists of about 1 in. of wire from an old electric fire element. The actual current drain from the accumulator is about 4 amps. on load, with or without this resistance.

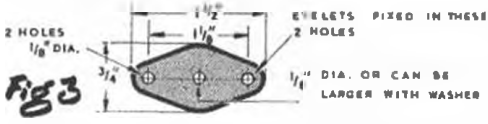


Fig 3

On the particular motor generator used, the shaft extends at one end and has on it a worm or screw thread. A small gear wheel was found that would mesh with this and has been used to drive the proportional mark-space switch. The pulse speed given by this is a bit slow for proportional control though it does work very satisfactorily. The effect is merely to wag the model slightly in straight flight. The pulse speed is however very convenient for tuning in receivers when working alone. A socket is also provided so that a push button or other switch can be used instead of the built-in switch. Also in this socket is a pair of connections direct to the accumulator, which can be used for a supply to drive an external pulse switch, and for charging the accumulator. The wiring for this power supply part is given in Fig. 4. If the mark-space switch is not used, the external socket connections can have a push button plugged in. This is also a convenient point in which to plug a meter to measure the H.T. current.

A wooden box was made to hold all this transmitter equipment, the size being determined from the following considerations. The accumulator cells were 2¾ in. square by just over 7 in. high. The motor generator with the built-on switch was 9½ in. long 3½ in. wide and 4 in. high. The oscillator was 3½ in. long, and 3 in. high. A length inside of 9½ in. then would clear the motor generator and the three cells. A height inside of 7½ in. would clear the cells and also the motor generator with the oscillator above it. The width required would be 3 in. for the cells, plus ½ in. for a partition, plus 4 in. to clear the motor generator.

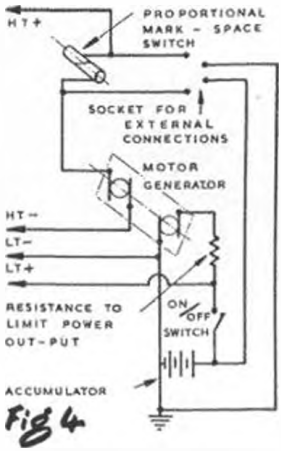


Fig 4

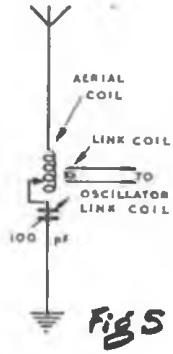
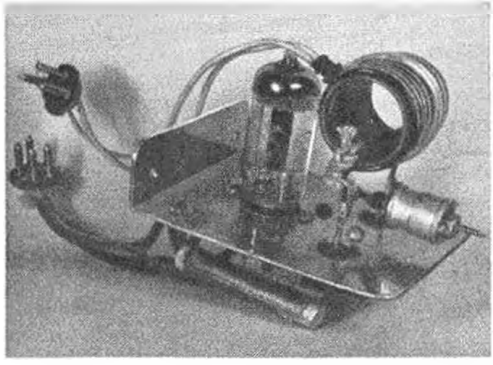
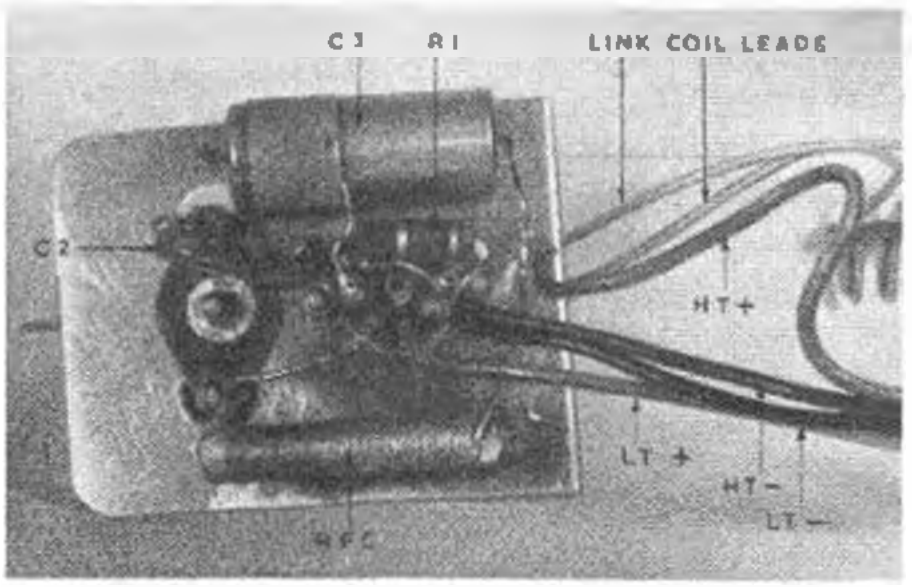


Fig 5

A little thought was given to the construction of the box to ensure adequate strength. All the weight would rest on the bottom, and this had to be transferred to the handle. By extending the sides to the level of the underneath of the bottom, screws could go through the sides into the bottom, and thereby take the load in shear, the strongest way they could be used. Using a strap for a carrying handle enabled it to be fixed to the sides with a clamping plate and screws, this also being very strong. The partition isolating the accumulators, being near the middle would prevent the box distorting. All that was needed then was a removable cover for each compartment, and plywood or hardboard is suitable for this. To avoid the necessity of a spike stuck in the ground for an earth, an aluminium plate was screwed underneath the bottom, and a bolt right through is connected to the earth side of the transmitter wiring. An ex-government whip aerial mounting was fixed to the top of the box, to hold a collapsible whip aerial. The particular type of aerial is not available these days, but the next best thing is a number of rods 12 in. long each, which will plug into each other.

Disposition of components on the "top" side.





Disposition of components underneath the mounting plate.

These are available at as little as 2d. each (plus postage), and nine are enough. Also available are some telescopic dinghy mast aerials that extend to about 7 ft. 6 in. which have been used successfully by some people. The aerial length required is about 8 ft., though it can be a little less.

Connection to the aerial can be direct from the link coil on the tuning coil, one end going to aerial and the other to earth. A slightly more efficient method is shown in Fig. 5. The aerial coil has 9 turns on a former similar to the tuning coil, but should be tapped at 3 and 6 turns. The 100 pf. condenser is ex-gov. a ceramic trimmer and actually marked 8—115 pf. but a vane type will do quite as well, and in some ways is more convenient. The link coil is 2 turns again like the link coil on the oscillator. The aerial is attached to one end of the aerial coil, and the condenser to a tapping. The best tapping and setting of the condenser is found by trial To do this a frequency, or field strength meter is best, one such as that described in the Dec. 1950 AEROMODELLER being just the thing for the job. Something of this sort is required anyway for tuning the transmitter in the first place, and for frequent checking.

Tuning is carried out by setting up the meter a foot or two away from the transmitter, and tuning condenser C1 to give maximum deflection of the meter needle. After first finding the approximate position it may be necessary to move the meter further away. With the meter at a set distance, the tapping on the aerial coil and setting of the 100 pf. condenser is then adjusted to give the greatest reading on the meter. This is where the "field strength" of this meter comes in. These adjustments should be made with the meter and transmitter on the ground, with hands and body kept well away from the aerials.

The photographs show a view of the inside of the motor-generator and oscillator compartment, and two views of the oscillator. A fairly full description has been given so that anyone can build a close copy, even though identical components cannot be obtained, particularly with regard to the motor generator and accumulator.

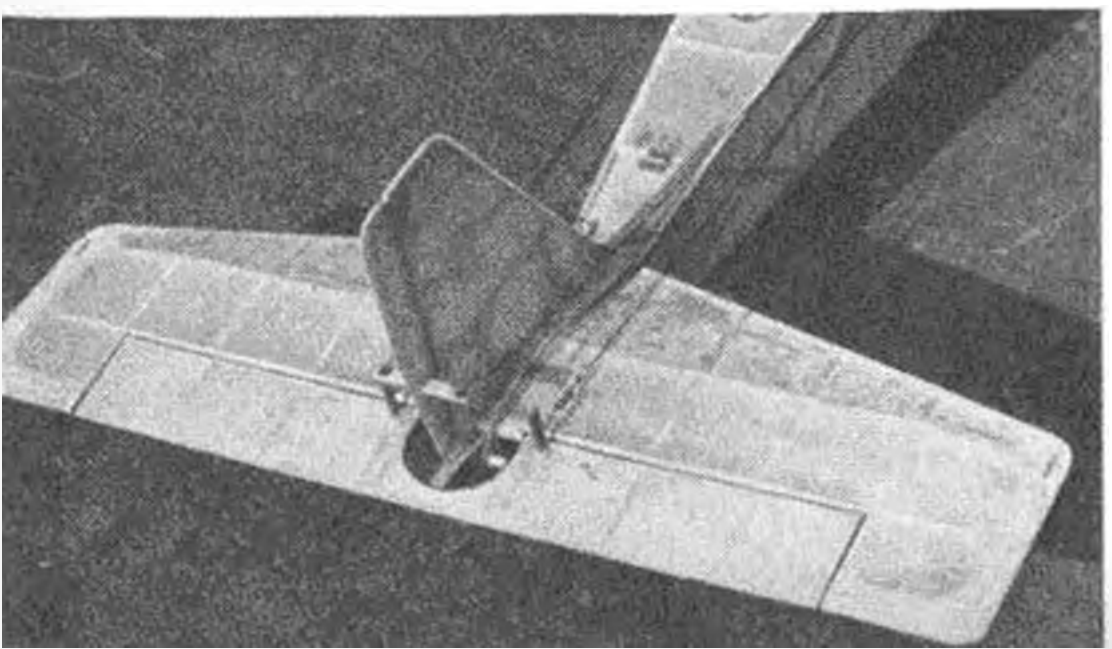
The Bolton Receiver

Mr. C. H. Lindsey, the Hon. Sec. of the International Radio Controlled Models Society has sent an interesting letter regarding the Bolton receiver described in the May AEROMODELLER. He writes:

"In the diagram of the quench coil, half way down the left hand side of Fig. 2, the ends of the coil Nos. 1, 2, 3, 4 are marked as 'outer,' 'inner,' 'inner,' 'outer' respectively. Two of these have been marked wrong way round, because if the coil is connected that way the receiver will not work.

Whilst on the subject of this receiver, you may be interested in the results I obtained with it, once the connections to the quench coil had been put right. However, in the course of quite a lot of fiddling about with it, the grid leak (2 megohm) got connected to earth, and the quench condenser was changed to ·003 mfd. I did not do enough fiddling to be sure that these changes made any real improvement, but I mention them because the set was eventually tested in that condition. Otherwise it was the same as in the article except that 63 volts H.T. was used, and a 3S4 valve.

Adjustment of the 30 pf condenser produced a sudden increase of current from 2 to 3 ma. at one point. If it was set at 3 ma. there was no hiss in the receiver, and the current dropped to 1 ma. on signal. If it was set at the 2 ma. position, the current dropped to 1 ma. on signal, but on the other hand the range of the receiver was appreciably greater than with the other adjustment. Thus one can have a big drop with a short range, or vice versa. Now the point is this, that at the 2 ma. setting, the usual hiss was heard, whereas this was not so with the 3 ma. setting. Therefore, with the 3 ma. setting, the receiver was not acting as a super-regenerative receiver at all, and it is doubtful whether it ought to be called such when used in this way. The transmitter was the usual arrangement with two 3S4's, input 1·14 watts. Quarter wave aerial Range measured along a main road in a built-up area, with sundry trees, etc., around. The range with the 3 ma. adjustment was 570 yards, and with the 2 ma. setting 1,140 yards. Receiver aerial was about 1 foot vertical.



The superb aerobatic performance of Jean Pierre Gobeaux's converted Radio Queens is now famous throughout Europe. Works' end is shown here. Fin is fixed to a detachable tailplane, and controls linked to actuators by flexible wires. Elevator cutaway permits rudder movement plus up elevator, or alternatively, a steep "down" angle. Gobeaux has 12 such machines, with slight control variation in each.


Photo Quiz
WHAT ARE THEY?
Test your aeromodelling knowledge by identifying these eight commonplace items photographed in Raymond Cripps' workshop. Answers to be found on page 767
1
2
3
4
5
6
7
8

1953 Contest Average Tables

(Qualification : minimum of three contests entered)

Rubber

(Gamage, Farrow, Weston, Model Aircraft, Wakefield Trials, Wakefield, Area Championships, Flight, U.K. Challenge Match)

Position	Name	Club	3-Minute Contests				5-Minute Contests				Overall Performance				
			Comps	Flights	Total	Flight Average	Comps	Flights	Total	Flight Average	Comps	Flights	Possible Total	Actual Total	Percent.
1	**D. SUGDEN**	Loughborough	1	3	9 : 00	3 : 00	2	6	26 : 52	4 : 29	3	9	39 : 00	35 : 52	92
2	**H. O'DONNELL**	Whitefield	6	17	47 : 10	2 : 46	3	9	39 : 40	4 : 24	9	26	96 : 00	86 : 50	90
3	**J. O'DONNELL**	Whitefield	6	17	44 : 28	2 : 37	3	9	40 : 07	4 : 27	9	26	96 : 00	54 : 35	88
4	E. MUXLOW	Sheffield	2	6	13 : 07	2 : 11	2	6	25 : 18	4 : 43	4	12	48 : 00	41 : 25	86
5	W. ROCKELL	Lincoln	2	6	18 : 00	3 : 00	2	6	23 : 18	3 : 53	4	12	48 : 00	41 : 18	85
6	F. HOLLAND	Swansea	2	6	17 : 26	2 : 54	2	6	21 : 57	3 : 40	4	12	48 : 00	39 : 23	82
7	E. W. EVANS	Northampton	—	—	—	—	3	9	36 : 59	4 : 06	3	9	45 : 00	36 : 54	82
8	P. ALLAKER	Surbiton	5	14	36 : 45	2 : 38	2	6	21 : 02	2 : 30	7	20	72 : 00	57 : 47	80
9	R. BALDWIN	Wigan	2	6	14 : 09	2 : 22	2	6	23 : 06	3 : 51	4	12	48 : 00	37 : 15	78
10	R. COPLAND	N. Heights	—	—	—	—	3	9	33 : 17	3 : 42	3	9	45 : 00	33 : 17	74
11	E. BENNETT	Croydon	4	11	27 : 42	2 : 31	2	6	18 : 42	3 : 07	6	17	63 : 00	46 : 24	74
12	R. PARHAM	Worcester	1	3	7 : 34	2 : 31	2	6	20 : 28	3 : 25	3	9	39 : 00	28 : 02	72
13	B. HAISMAN	Whitefield	1	3	7 : 52	2 : 37	2	6	19 : 40	3 : 17	3	9	39 : 00	27 : 32	71
14	J. PALMER	Croydon	1	3	8 : 57	2 : 59	2	6	18 : 08	3 : 01	3	9	39 : 00	27 : 05	70
15	P. BISS	Littleover	2	5	14 : 05	2 : 49	2	6	17 : 29	2 : 55	4	11	45 : 00	31 : 34	70
16	I. DOWSETT	W. Middlesex	3	5	20 : 27	2 : 33	2	6	17 : 04	2 : 51	5	14	54 : 00	37 : 31	69

Power

(Hamley, Astral, Keil, Shelley, Power Trials, World Championship, Area Championships, U.K. Challenge Match)

Position	Name	Club	3-Minute Contests				5-Minute Contests				Overall Performance				
			Comps	Flights	Total	Average	Comps	Flights	Total	Average	Comps	Flights	Possible Total	Actual Total	Percent.
1	**F. BUSKELL**	Surbiton	3	8	20 : 17	2 : 32	3	9	35 : 44	3 : 58	6	17	69 : 00	56 : 01	81
2	**G. FULLER**	St. Albans	1	2	2 : 36	1 : 13	3	9	34 : 13	3 : 48	4	11	51 : 00	36 : 49	72
3	**E. HORWICH**	Whitefield	3	8	17 : 09	2 : 09	—	—	—	—	3	8	24 : 00	17 : 09	71
4	S. LANFRANCHI	Leeds	4	12	26 : 28	2 : 12	2	6	18 : 53	3 : 09	6	18	66 : 00	45 : 21	69
5	N. BUTCHER	Croydon	1	3	7 : 34	2 : 31	2	6	18 : 12	3 : 02	3	15	39 : 00	25 : 46	66
6	P. CAMERON	Croydon	—	—	—	—	3	9	29 : 04	3 : 14	3	9	45 : 00	29 : 04	65
7	A. COLLINSON	Bradford	3	9	14 : 43	1 : 38	2	6	20 : 07	3 : 21	5	15	57 : 00	34 : 50	61
8	J. HANCOCK	Surbiton	1	3	5 : 01	1 : 41	2	6	18 : 49	3 : 08	3	9	39 : 00	23 : 52	61
9	R. MONKS	Birmingham	3	8	14 : 45	1 : 51	1	3	8 : 46	2 : 55	4	11	39 : 00	23 : 31	60
10	G. UPSON	Regents Park	3	8	15 : 32	1 : 57	3	9	24 : 36	2 : 44	6	17	69 : 00	40 : 08	58
11	R. WARD	Croydon	1	2	2 : 44	1 : 22	2	6	17 : 55	2 : 59	3	8	36 : 00	20 : 39	57
12	A. WRIGLEY	Whitefield	3	9	14 : 14	1 : 35	2	6	16 : 53	2 : 49	8	15	57 : 00	31 : 07	55

Glider

(Pilcher, Trials, Thurston, C.M.A., Area Championships, Model Engineer, U.K. Challenge Match)

Position	Name	Club	3-Minute Contests				5-Minute Contests				Overall Performance				
			Comps	Flights	Total	Average	Comps	Flights	Total	Average	Comps	Flights	Possible Total	Actual Total	Percent.
1	**A. BROOKS**	Grange	3	8	18 : 05	2 : 16	1	3	13 : 01	4 : 20	4	11	39 : 00	31 : 06	80
2	**G. M. BYRD**	Loughborough	5	14	29 : 40	2 : 07	1	3	15 : 00	5 : 00	6	17	57 : 00	44 : 00	78
3	**J. LAMBLE**	W. Herts.	3	8	19 : 19	2 : 25	—	—	—	—	3	8	24 : 00	19 : 19	77
4	G. LINFORD	Loughborough	3	9	16 : 44	1 : 52	1	3	14 : 16	4 : 45	4	12	42 : 00	31 : 00	74
5	R. YEABSLEY	Croydon	4	12	29 : 32	2 : 28	1	3	7 : 57	2 : 39	5	15	51 : 00	37 : 29	74
6	B. BOWER	Salford	3	8	20 : 14	2 : 32	1	3	8 : 21	2 : 47	4	11	39 : 00	25 : 35	73
7	L. LEADER	W. Herts.	3	8	18 : 51	2 : 21	1	3	8 : 46	2 : 55	4	11	39 : 00	27 : 37	71
8	D. SUGDEN	Loughborough	3	8	18 : 26	2 : 18	—	—	—	—	3	5	24 : 00	18 : 26	69
9	M. THOMAS	Blackpool	3	9	18 : 29	2 : 03	1	3	9 : 14	3 : 05	4	12	42 : 00	27 : 43	66
10	B. FAULKNER	W. Yorks.	4	11	21 : 50	1 : 59	—	—	—	—	4	11	33 : 00	21 : 50	66
11	P. ALLAKER	Surbiton	2	5	11 : 26	2 : 17	1	3	8 : 20	2 : 47	3	5	30 : 00	19 : 46	66

Eliminators for 1954 contests are not included and will be used to compile '54 averages.

Pete Buskell and his now famous "Slick Stick", top in power.

THE 1953 average tables are given in a slightly different form to previous years. In view of the fact that a number of this year's contests have been run to a 3-minute flight maximum, whilst others have been to a 5-minute maximum, flight averages no longer remain a true assessment of overall performance. A man who concentrated on the 5-minute events should, in other words, maintain higher *average* flight time over the season, although on comparative merit his performance may be lower than a more modest flight average gleaned all on 3-minute contests.

Overall performance is therefore computed on the basis of the percentage time achieved (*i.e.* actual flight aggregate as compared with a "possible" score), whilst individual averages in the two types of contests are noted rather more as a matter of interest than for direct comparison.

A qualification for inclusion in the tables is a minimum of three contests entered. Of the three, the rubber averages table should be reasonably complete; there may well be several omissions in the power table with the likelihood of even more in the glider table. The top placings, however, are unlikely to be affected by any "qualifying" performances which may subsequently come to light. The task of completing the averages tables in the short time between the close of the season and the printing date of the December issue is a difficult one. Some one hundred different names were analysed in completing *each* of the final tables; but even so, some worthy of inclusion may well have been omitted. To these gentlemen we can only extend our apologies and emphasise that any such omissions are entirely accidental.

For the first time since the AEROMODELLER average tables have been published the rubber results show an almost complete change. Top of the list is D. Sugden of Loughborough College, with a 92 per cent. possible score achieved in three major contests. Close, very close, behind come the O'Donnell brothers, Hughie leading John by a matter of a couple of minutes aggregate out of a possible 96 minutes total. The O'Donnell's too, have flown in more contests than any other rubber flyer this year, including the World Championship, Area Championship and U.K. Challenge Match events. There is every chance that they will again be Senior and Junior Champions this year.

D. Sugden, top of the rubber table, flew proxy for Hewetson (N. Zealand) at Cranfield.

To see Pete Buskell topping the power table is no surprise. One of the most consistent of contest power flyers over the past few years Pete jumps from third last year to an easy first this. Nor is it any further surprise to find George Fuller second to him. These two held British honours high in the World Championship event at Cranfield.

Horwich of Whitfield is no newcomer to the averages tables either, although he has stepped up his last year's performance considerably. Few, too, will fail to be delighted to see Silvio Lanfranchi so near the top. Any important post-war power contests without Silvio taking an active part has been something of a rarity. He will also be remembered as the proxy flyer of Wheeler's model which brought the World Power Championship Cup to Britain in '52.

Club merit in this table would appear to go to Croydon, with three in the list. More than half of the listed names are from the London area. Rubber honours were more evenly distributed, although in previous years London has tended to dominate this particular category.

Glider leader, A.J. (Tony) Brooks, a great all-rounder.

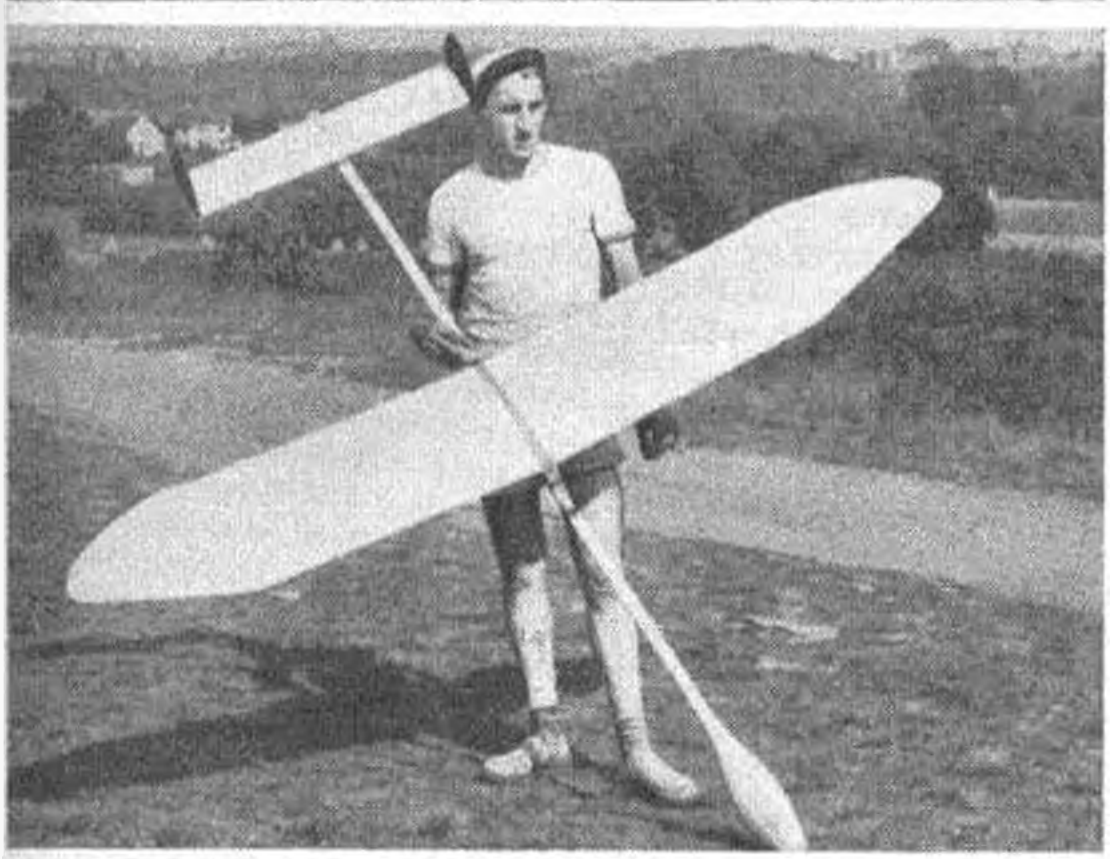
Loughborough College is undoubtedly the glider centre of the year—two members in the '53 Nordic team and three in the averages table. To Tony Brooks of Grange, however, goes top honours with an 80 per cent. score in only three contests. Possibly better known for his success in the power field, Tony Brooks is, nevertheless, one of our best all-rounders.

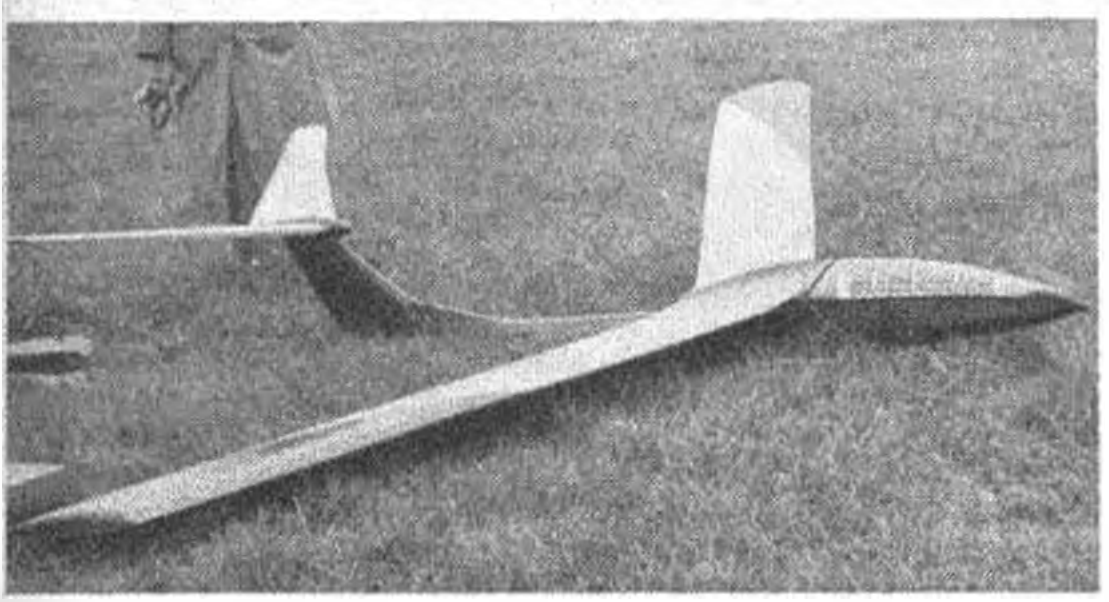
Compilation of the glider table has been made more difficult by the cancellation of the S.M.A.E. Cup results—the Trials Eliminator—due to a different interpretation of the rules by different areas. (Actually there was considerable confusion at the start of the contest season concerning many of the new rules attendant on 3-minute maximums, new towline lengths, etc. Nor is this problem completely cleared up. A few areas submitted *three* flight totals for the '54 eliminators instead of five; hence immediate clarification of the current rules appears a matter of pressing urgency.)

Eliminating the S.M.A.E. Cup results has also meant the elimination of several top-line names from the list, simply because they did not then compete in a minimum of three major contests. To have computed the averages on only two contests would have been unfair to the four-, five- and six-contest contenders.

Hence the glider table is not as satisfactory, nor as comprehensive as we would like to have made it for an accurate survey of the season's activity. Be that as it may, however, the men listed have well earned their places.

World News

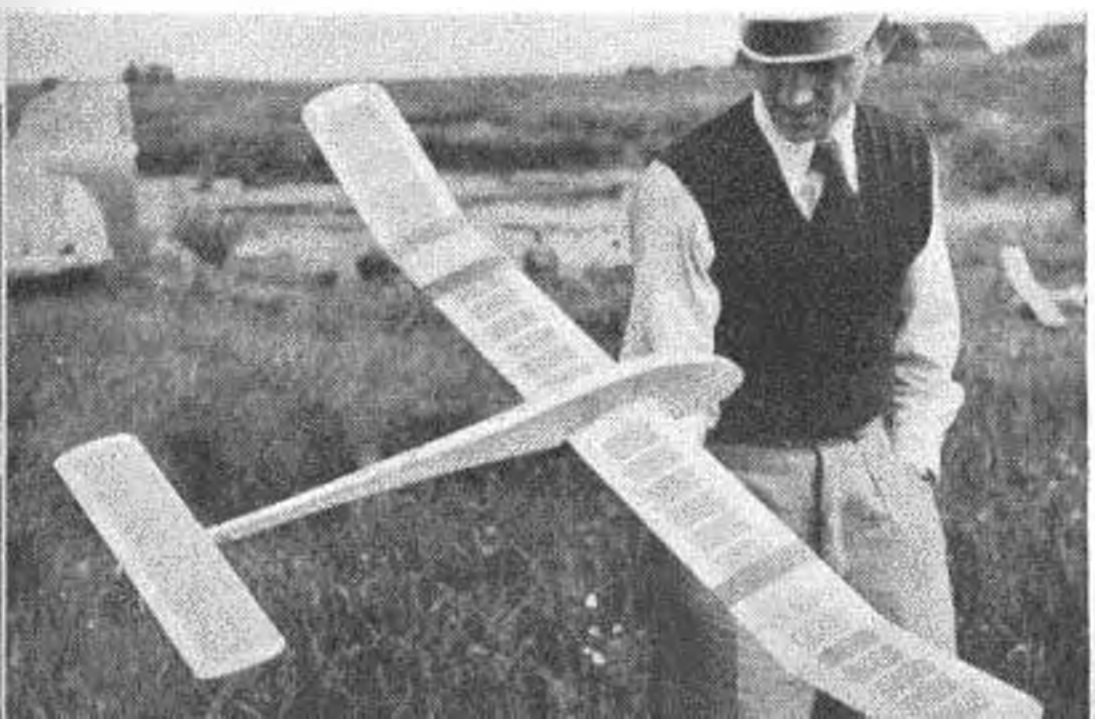


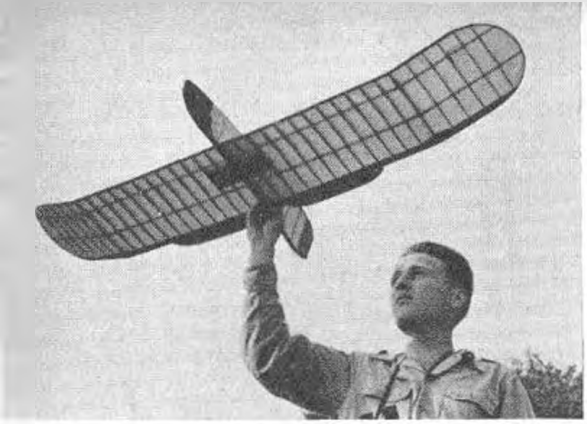


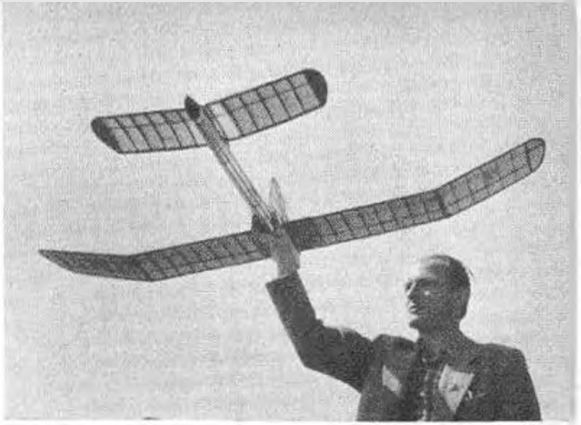
WHAT has happened? Practically every foreign picture received in the past month has been of a glider, and this from all quarters of the world. Have we gone glider-happy?—or is it an enforced economy? Anyhow, there is enough variety in the seven we have chosen to publish to give you food for thought in considering next year's designs. First news we have is from down-under in **AUSTRALIA.** The control-line team of Derry Brown, Don McLaren and Monty Tyrrell is back home, circulating in the sunshine. Monty reports a few comparisons of British and Australian standards, mentioning the fact that the Aussie has a greater choice of modelling material to hand, with imported *and* locally produced kits and engines, plus the fact that on a wage basis, he gets his stuff cheaper than we do. In flying, their Class B racers would give us a run for our money, and in Class A, the British would be laps ahead. Stunt is a different story, for Monty thinks the better Aussies would outpace the top men we could muster; but he sums up the general differences under "We play the game harder as a rule . . . rules are stricter . . . and in a contest, the Aussie is definitely more ruthless".

Nearer to home, Sgt. Heard of the Greys M.A.C. in dusty **CYRENAICA** reports one of the mammoth thermals on his flying field as taking hold of his Dart powered Mercury Tiger Moth from a gliding height of 15 feet. Up and up she went until at about 500 feet the oil-soaked under-carriage springing bands broke under the scorching sun. The shifting undercart then performed like a perfect d/t and brought the Moth back to terra

Glider with the extra long nose moment is to be seen regularly in Germany. Construction is mostly of spruce and hardwoods. Below it is a "Victor" style crescent wing and tail glider from Holland, 10 ft. span, and made by a member of the Scheveningen Club. Below left: Karl Heinz Denzin and his experimental A/1 class glider, which has 3 alternative wing positions, high, mid or low. High is best, he reports. Below right: Wolfgang Zwilling's amazing glider, presumably influenced by the Hockenheim "Ring" racing track.







Left : Maurice Bodmer of Switzerland and one of the very efficient typical French/Swiss tailless designs he developed. Right : Canard by J. Barbey of Levey shows originality. Heading opposite is the magnificent Swiss site at Lostorf/Olten for slope soaring.

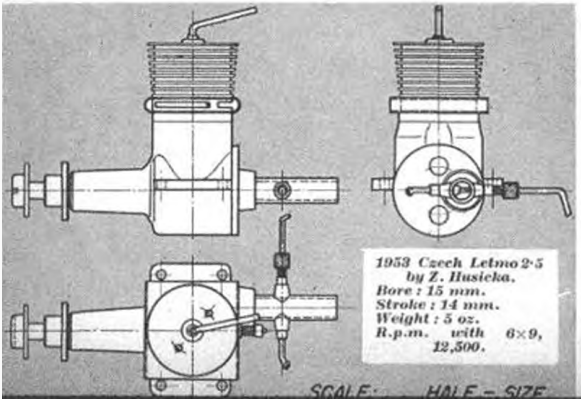
firma in grand style. Sounds like you don't have to use any d/t fuse at all in those parts, Sgt. Heard! Just a spot of oil on the rubber bands! In cooler climes of **SWITZERLAND,** they had a relatively late Nationals this year: but judging by the results they were hotly contested, no less than 101 entries in the glider class alone, and remember the modelling movement is small by comparison in Switzerland. Here's a lesson too—the last six places in glider were filled with single 300 second maximums and no other flights recorded—who forgot to fit a d/t?

Across the Atlantic to **CANADA,** where the Nats. were held most successfully in the manner of an Area semi-centralised event as in Britain. A number of competitors from the neighbouring **U.S.A.** seem to have collected all the speed prizes, but the Canucks had their own way in free-flight. Among the glider placings was Ernie Currington at 5th in A/2: Ernie is one of the many active British modellers to have emigrated to the New World. Interest is reaching a new high in International Wakefield and Power in Canada, now that the finals are to be held in the U.S.A. in '54.

An East Zone of **GERMANY** sport and modelling paper reached our post-box the other day, and among the illustrations we found a view of a Berlin May Day parade including a marching squad of aeromodellers, each with model at the slope: but shame on them, no two models were alike! Aeromodelling seems to be a recognized cultural sport east of the Iron Curtain.

In Africa, the **MATABELELAND** M.A.C. reports on the recent 4th **RHODESIAN NATIONALS.** (It's summer there right now—though they seem to hold their Nats in midwinter!) Bill Heckler turned up 125 m.p.h. in Class D speed which is reckoned to be good out there considering the 4,500 ft. altitude, while another A.P.S. Ambassador collected 1st in stunt. One novel event, we believe it is unique to the Rhodesian meeting, is the team relay race. Class A models are flown over 80 laps and then swiftly ditched and the same crew take over a Class B model for another 160 laps. Depends how ruthless the competitors are, as to how many models actually finish: but it must be quite an exciting race while it lasts. We gather that, with the removal of the R.A.F. training scheme from Rhodesia, the movement there will be sadly depleted. Let's hope the civvy boys will have caught on enough to keep the modelling flag flying. One of them, H. Dimmock of Hunyani Poort Dam, is most active with free flight floatplanes and his scale Aeronca with D.C. 350 has recently amazed the locals with regular aerobatics that result from a warped tailplane. Apparently the same take-off, half-loop, half-roll evolutions are followed every time and were so entertaining that Mr. Dimmock is reluctant to fit a properly true and flat tail.

Below left : Mr. Leslie, Chairman of the Matabeleland Club, and his A.P.S. Icarus stunter. Note the take-off dolly. Right : Heinz Grass of Germany likes the A.P.S. Pauseboy design and has fitted his with a Wehra diesel.



Christmas . . . .
time for reflection

With the traditional goodwill to all men, the Editorial Staff draws your attention to points you might overlook in the—ah—warmth of the moment when the mistletoe stems cease to remind you of Igor Sikorsky and become, instead, the potent allies of that original ornithopter, Dan Cupid.

For ladies, there is " Modelholics Anonymous ", which also gives gentlemen an insight into the female view of our innocuous pastime. A further warning is contained in " More Deadly than the Male " ; finally, we suggest a suitable form of insurance in answer to this—to be suitably framed and hung in a conspicuous position . . .

MODELHOLICS ANONYMOUS —

a word of

advice by

Ida November

YOU probably realise that model airplanes are here to stay. You also know that hobbies are very important to certain people, almost as much as those people are important to you. Honestly though, you never thought hobbies could mean *so* much, did you ? When you first learned of this addiction, you looked with fond amusement upon his hobby, and, being a woman, you assumed an air of great interest and respect, which of course made him love you more . . . as you knew it would. But, when you finally got your man, you didn't expect you had married the hobby also. As you can now see, being a wife (or mother, or sweetheart) of a model builder brings forth a serious problem of emotional adjustment ; the power of love must be very great indeed to transcend such barriers. For the help of all females attached to these addicts, and for the good of mankind generally, let us summarise the position. The case study may be divided into four stages :

(i) *Devotion* . . . when love is as yet stronger than his hobby, he spends long, blissful hours in your company, listening to you talk about him.

(ii) *Despair* . . . comes shortly after marriage, when the spirit of conquest for a mate has been fulfilled and he is once again free to sniff the air for thermals. (Danger sign—when he speaks of new conquests with his models.) Coincident with this phase, he starts to pore over his old model mags. (N.B.—Many years' collection of these magazines are usually kept in a large corrugated box which mellows through the years. The older the box, the greater the man. Special note to young wives—it is pain of death to part with any of them, and to destroy the entire collection means divorce.) When he surreptitiously starts to patch up his " old crate " your honeymoon is definitely over.

(iii) *Acceptance* . . . occurs when he finally leaves " with the boys " for a Sunday's outing (the first of many, many more, honey) and is coincident with a deep, dull sense of helpless acquiescence on your part.

(iv) *Acclimatisation* . . . completes the saga. Womanly wiles avail nothing—you just have to accept it. The two alternatives that remain to the woman are (*a*) raise a family, or (*b*) build your own plane.

MORE DEADLY THAN THE MALE — *a grim warning by G. C. Stubbs*

I'M not going round the bend, honestly I'm not. It's only recently that I've got into the habit of glancing nervously over my shoulders. My hands tremble and I've developed a twitch in my left cheek. In fact, I have all the earmarks of an aero-mod haunted by a wife interested in her hubby's hobby. For the benefit of those bods who may be thinking of acquiring a wife this summer, instead of that new 5 c.c. " Glow ", let me tell you how I got into this sorry state.

It began on a lovely warm day, early last Summer. Brother Bill and I were thermal bashing with a couple of new sport jobs, while my fiancée watched the clock and plied us with endless questions. Inured as we are to queries of the " what's that funny man doing that for, Daddy ? " type, we were soon reduced to nervous wrecks trying to explain why we flew the kite nose first, why we didn't turn the wings upside down and why the " elastic " was pretensioned. In desperation, I gave the garrulous girl an old chuck glider and orders to repair to the farthermost corner of the field. It says a lot for female adaptability when I assure you that within half an hour the two new sport jobs languished under a hedge while their owners gaped at an astonishing repertoire of flick rolls, bunts and upward

charlies performed by the female flung solid job.

That was only the beginning. On the next Saturday, Joan was the proud owner of a kit, and the small duration model (much modified on the advice of the two experts) flew a week later. Much to the surprise of the experts, it flew very well. To our unbounded relief, the next few flying days went by in an atmosphere of peace and quiet, with the two experts only too willing to pour a kindly word or two of advice in the novice's receptive ear. Alas for such comradely solicitude; the hands that fed were well and truly bitten when the novice, aspiring to even greater heights, proposed a three cornered contest for the best duration, to be held on the following Sunday, no holds barred and the drinks on the losers.

Bill and I bodged up two old models of similar size to Joan's during the week and Sunday afternoon saw the three antagonists, with models; Lobengula, the pet cat, and numerous onlookers arranged in artistic groups around the flying field. A quick draw for flying order and Bill opened the proceedings with a deft hand launch. His model climbed steeply, too steeply, stalled and hit the deck nose first. Result: one bust prop, a grin from Joan, and howls of derision from the onlookers.

Joan stepped forward and sent her model off on a perfect circling flight of 38 seconds. The experts breathed sighs of relief and condescendingly bestowed a few words of praise. " Not bad for a small job—but just wait until the boys get going." The second boy got started with a daisy-cutting flip of 12 seconds. The kite landed near Lobengula, who thrust his paws into the tail surfaces in an ecstasy of feline destructiveness. Again roars of derision from the onlooking rabble

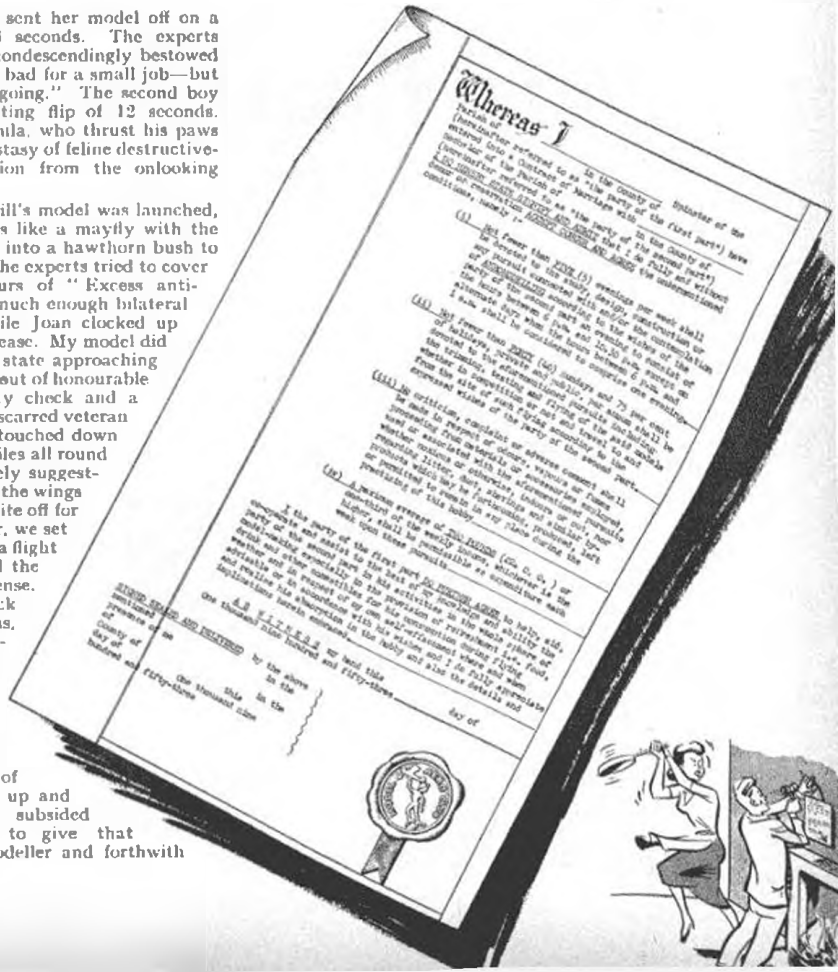
Armed with a new prop, Bill's model was launched, danced around for 20 seconds like a mayfly with the D.T.'s and finally plummeted into a hawthorn bush to go the way of all write-offs. The experts tried to cover their confusion with murmurs of " Excess anti-macassar effect " and " Too much enough bilateral hemispherical stability ", while Joan clocked up 33 2/5 seconds with effortless ease. My model did a duck-like 27 seconds. In a state approaching panic Bill dug " Klunkhead " out of honourable retirement and, after a hasty check and a rubber transfusion, the battle-scarred veteran was hurled into the blue. It touched down to the tune of 30 seconds—smiles all round from the experts. Joan merely suggested that it should be flown with the wings on upside down and sent her kite off for a beautiful 40 secs. In answer, we set about preparing my model for a flight to over-shadow all others and the atmosphere was becomingly tense. All respiration was held in check while we piled on the turns, when . . . to the accompaniment of cheers from the audience, sympathy from Joan and murmurs of an extremely pithy nature from the experts, the rubber snapped.

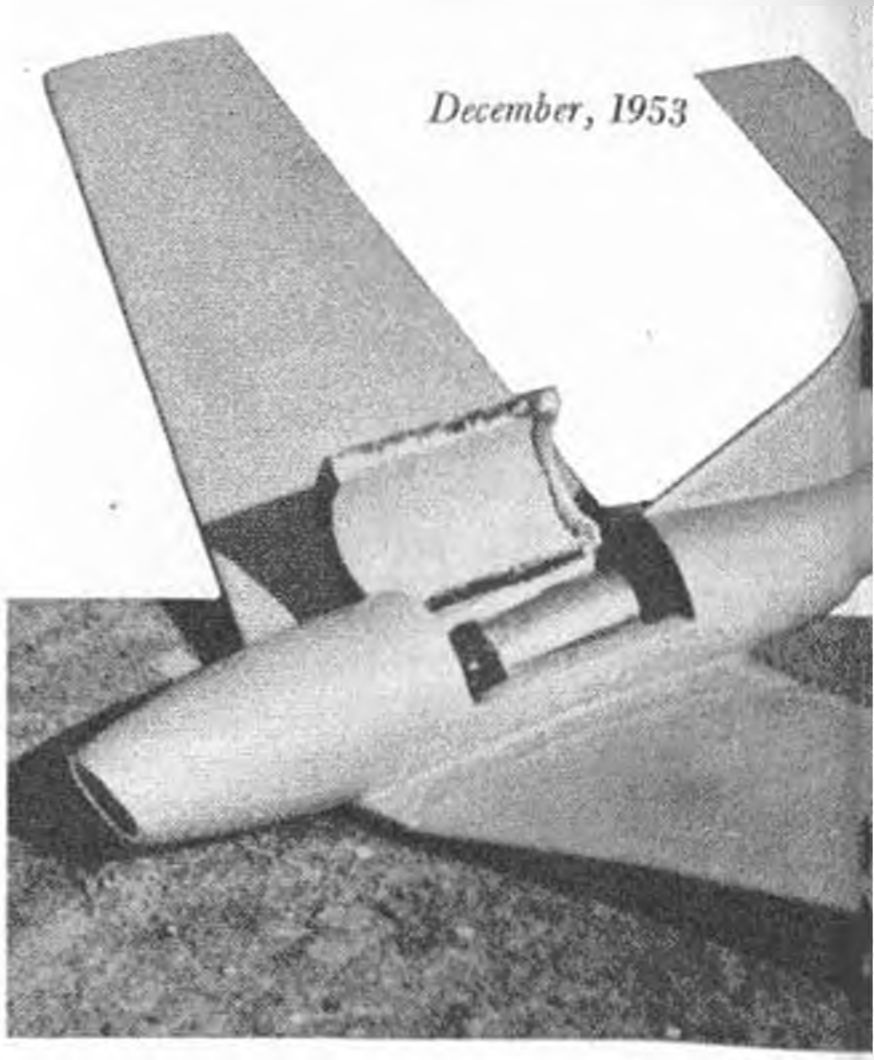
After the shattered remains of our aircraft had been swept up and our blood pressure had subsided a few notches, we agreed to give that day to the female aeromodeller and forthwith trudged off to the workshop to drown our sorrows in drink.

Since that catastrophic day, the winner has become Mrs. S. and my leisure hours are spent listening to plans for C/L Stunt and Team Racing models, with a small pinch of Wakefields and Radio Control thrown in. I even hear of inter-planetary travel, rockets, escape velocities and synergic curves. Hence the nervous glances, trembling and twitch.

And what is more, I've actually seen my wife's model fly with its wings on upside down.

I think . . .





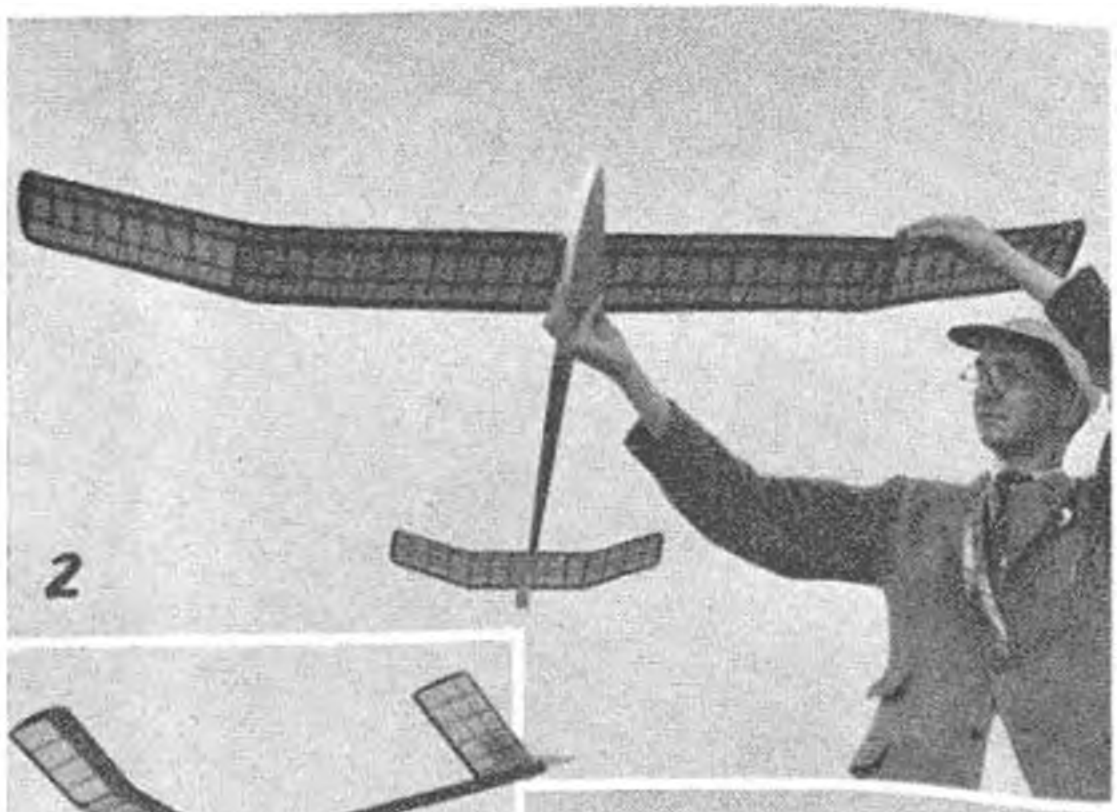
Yuletide Model News

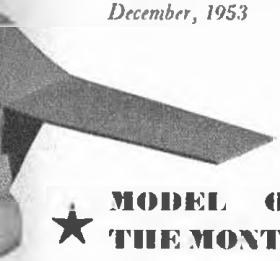
GREETINGS modellers everywhere. To those at home in Britain, our festive wishes come a trifle early ; but for our overseas brethren, the AEROMODELLER arrives nearer to the Christmas date so to them especially do we offer our hopes for even bigger and better modelling activity in the new year 1954.

Our choice for Model of the Month is Corporal Pulford's (R.A.F. Colerne) idea of the ideal full-size fighter. A Jetex 200 is mounted amidships in the double skin fuselage which is made by placing circular formers over a 1/32nd tube and then planking the outer 1/16th skin. Span is 32 ins., and length a mere 10 ins. Cpl. Pulford reports, however, that a smaller tail and longer tail moment will simplify trimming the Mark II.

Ten c.c. team racers have often been discussed in our columns and we have occasionally heard of activity in this direction in Britain. At the All-Britain rally we managed to track down J. Horne of the Wimbledon Club, seen in 1, who was awaiting the opportunity to check out his class "C" design. A McCoy 60 series 20 sits under the red and yellow cowl, and 60 c.c. tank is just waiting to be topped up for a first race. What about it, other modellers? Area, by the way, is 175 square inches.

E.D. Barks, secretary of the Ware & D.M.A.C. is featured in 2 with his new "follow the flow" wing rib arrangement. Ribs are split in two and twisted, result, added strength, and, Mr. Barks claims, the ribs follow the natural tangential airflow on top and bottom surfaces. Tail is interesting too. In 3 we have yet another novelty from that man Snodin of Northampton. This is a tractor canard with an E.D. Bee on a movable centre pod, and we wouldn't be in the least surprised if Mr. Snodin turned up with it as a Payload entry when the big AEROMODELLER 1 c.c. class contest comes off in '54. Now one without any kind of a tail, and which thousands



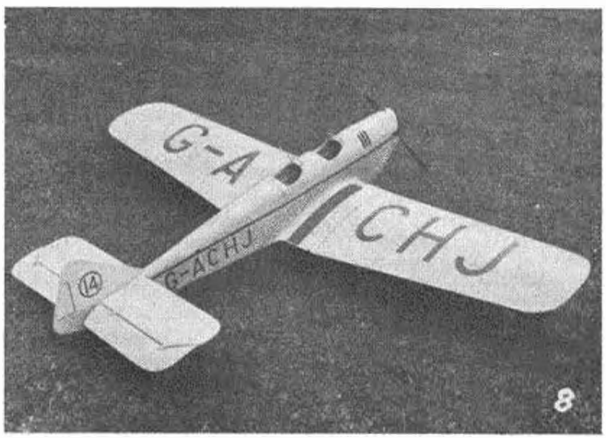


★ MODEL OF THE MONTH

observed at the All-Britain Rally, making countless stable flights in the stiff breeze. No. 4 is T. Hargreaves and his flying plank which he built with the co-operation of Jim Torode. An E.D. 3·46 with acute down-thrust provides the power. Over now to top right, where in picture 5, J. McArthy of the "Southend Seniors Club" shows off his near to scale Cierva C.40 Autogiro. This job is not quite finished, and we cannot report anything on flying performance; but we note the increased blade chord and light weight at 8 ounces, so Mr. McArthy is reasonably assured of success. Rotor diameter is 36 ins., and the engine a Mills ·75 c.c.

Twice a winner of the I.C.I. Challenge Trophy for International Jetex is no mean achievement, and in No. 6 we see W. Houghton of Rhyl in North Wales, who has managed to collect the huge trophy again this year. Flying this unusual Jetmaster model, Bill's best time on the windy finals day at Radlett was 3 · 12, making a ratio of 10 : 66. Like the San de Hogans, this Jetex job has a drag tab on the left wing—just a length of Sellotape with a blob of Plasticine to weight it down.

Next door in 7 are a few of the high speed Jetex R.T.P. models by the Epsom & D.M.F.C. boys. Remember W. Tinker's article in February issue on 200 m.p.h. with Jetex? Well the boys are getting very near to that figure! Swept tail wing model has a Jetmaster, and Lavochkin, a 50, whilst the hand holding them gives an idea of size for comparison. Last, but by no means least, a superb scale model by John Fozard who wrote those illuminating articles on Delta's in the Feb./March issues, and has contributed another magnum opus to the 1953 "Aeromodeller Annual". In 8 is his 1/6th scale Miles Hawk. 66 in. span, 3¼ lbs. weight and with an E.D. 2·46 diesel, the model is accurately finished in the colouring of a competing Hawk in the 1933 King's Cup air race.



SERAPH

Your full-

Two easy-to-build designs specially selected for your enjoyment—build one, or both, for the 1954 season!

A high performance A 2 by Don Butler, Designer of "Fugitive" and "Jader 60"

THE "Seraph" is the latest of a series of long-moment A/2's and, although the designer states that it just falls short of a still air maximum from a 164 ft. line, its performance in the preliminary 1954 eliminator suggests that the design will be well among the top dozen in the finals.

The lay-out follows the almost standard pod and boom approach, but additional strength is gained by running the boom right through to the nose-block and building the pod round it to obtain the necessary cross-section. Construction starts with cutting out the sheet parts for the fuselage and gently steaming the bottom panel to a slight curve from F7 forwards. Secure the towhook in place and add formers 3, 4, 7, 8 and 11 to 21 inclusive. The auto-rudder line is threaded through and the D.T. hook cemented in position before adding the sides and top of the basic stick. After fitting the side pieces P.3, add the pod formers, the sheeting P1 and P2, and the rear wing peg.

Cut the pod sides from 1/16 in. sheet, chamfering the rear edges, and fit in place, steaming to the gentle curve if necessary. Complete the remainder of the structure and sand smooth. The wing fairing is not cut through until after sanding; the fairing, incidentally, is left loose and held in place by the wing retaining bands for flight. Cover the assembly with lightweight Modelspan, doping the tissue on and applying several coats of sanding sealer and coloured dope, depending on the finish required.

The wing and tailplane are of straightforward construction, the former covered with heavyweight Modelspan and the latter with Jap tissue. The outer wing panels should be given 2 degrees washout.

Ballast the nose until the correct C.G. position is obtained and check the final weight. If less than 14½ ozs. move the ballast to the next compartment back and increase till the C.G. position is once again correct. The designer suggests that if the incidences and C.G. position are correct and the flying surfaces free from warps, there is little point in hand glides and a tow launch may be tried straightaway.

MATERIALS

2, ¼" × ¼" × 36". 2, ¼" × 1" × 36" t.e. 1, ¼" × ¼" × 36". 1, 3/16" × ¼" × 36". 2, 3/16" × 7/16" × 36". 2, ¼" × ½" × 36". 2, 1/16" × ½" × 36". 1, ½" × 3" × 36". 1, 3/32" × 3" × 36". 1, ½" × 3" × 36". 3, 1/16" × 8" × 36". Odd 1/16" ply, ¼" square hardwood, etc.

Below: Don Butler strongly advises the one-piece wing for contest work; but alternative dowelled halves are given on the plan for those with restricted means of transport. Hauling view shows Pete Allaker's variation with rounded tips.

size plans

A scale model for .5-1 c.c. engines

Eric Fearnley's

LUTON MINOR

THE publication of the Luton Minor in the "Aircraft Described" series, in the May, 1953, AEROMODELLER, resulted in a minor flood of letters requesting a flying scale version of this delightful little ultra-light. As it happened, a few weeks later we received flying photographs of the model detailed here, and immediately investigated this machine with a view to its suitability for the average modeller.

Many modellers have avoided flying scale jobs for various reasons, the main snags being the amount of work required and the greater susceptibility to damage likely to be encountered. The Minor is the complete answer to all that—so much so that even a comparative novice can build and fly it with confidence. Construction is very simple and the model so strong and light that it will absorb a tremendous amount of rough handling during the trimming stage with little likelihood of serious damage.

As shown, any motor up to 1 c.c. may be used; the prototype used a Dart, which meant a little nose ballast, but with a 6×4 prop take-off was accomplished in about fifteen yards in still air. The climb was slow and steady—true to scale—and is extremely pretty to watch.

The fuselage is of conventional box construction, the two sides being first joined at the cockpit and the ends then drawn to position. Add formers and stringers and motor mount; with larger motors it is advisable to drop the thrust-line slightly, to allow sufficient ply all round. Add noseblocks and form the wire centre-section struts, binding securely to the longerons. Check incidence and fuselage line-up before fitting the top and bottom fuselage sheeting. Fair the struts and insert the tubes for the wing strut retaining bands and top undercarriage shock absorbers, then sand all over and cover.

The wing ribs are cut from medium balsa (hard will raise the C.G. severely, due to the amount of material) and quarter-grain spars are recommended. The full-size machine has no dihedral, but it is safer to employ a little on the model, as shown. The strut-fixing tubes must be firmly cemented to the undersurface.

The tail poses no problems, and the 3/16 in. sq. construction of the fin is straightforward.

One-eighth inch dowels and shaped trailing edges are used for the wing struts. The lower hooks are bound and cemented in place, but the top fitting should not be completed until the rigging stage is reached. The undercarriage passes through brass bushes in the fuselage at the rear, the front fitting flush to the fuselage bottom. The shock struts are well soldered in position, hooks being formed at the top for the rubber. Heavy wheels are advisable.

After covering and doping (heavyweight Modelspan was used on the prototype), cement the fin in place and fit wing and tail. Hook struts in place and, with the model square on the table, prop each tip to the required dihedral and complete the top strut fittings. Add details—tailskid, headrest, etc.—and instal the motor, using washers to obtain the indicated sidethrust. The dummy cylinder forms the fuel tank. Add other finishing details.

Balance where indicated, using ballast, and check for warps and alignment. The flying speed is low, so first glide tests should be made with care. The glide must be straight, and the rudder fixed in position when straight flight is obtained. Using low power, a gentle turn to the left should occur—if the turn is steep, adjust the thrust-line before attempting further flights. Do *not* touch the rudder. Increase revs, following this procedure. The glide is a gentle float, but avoid trimming too near the stall or a tendency to drop a wing on the last part of the glide may appear.

MATERIALS

8, 3/16" × 3/16" × 36". 8, ¼" × ¼" × 36". 2, ¼" × 3" × 36". 1, ¼" × ¼" × 36". 2, ¼" × ¼" × 36 t.e. 1, 1/16" × 2" × 36". 1, 1/32" × 3" × 36". 2, ⅛" × 36" dowel. 2, 36 × 16 s.w.g. wire. Scrap ¼" sheet, 3/16" ply, block, etc.

FAIREY SWORDFISH MK I

H.T.N. BATCHELOR

THE AEROMODELLER PLANS SERVICE

A ¼" - 1' DETAILED SCALE VERSION OF THE FAMOUS

Fairey Swordfish

FOR ·75 —1·3 cc. ENGINES

by

Lt.-Col. H. T. N. Batchelor

Regular Army . . . age 33 . . . married, has two sons . . . member of R.A.E. Farnborough Arts and Crafts Guild . . . main interest is Free-flight scale with radio control . . . also keen on scale model ships, sailing and photography.

IF a modeller wishes to build a scale model, the chances are ninety-nine in a hundred that one of his requirements is that the prototype shall be well-known. How admirably does the " Swordfish " fulfil this requirement ! The last biplane to see service in quantity in the British Forces is an obvious choice for a scale biplane fan, and Lt. Col. Batchelor's model has captured the exact atmosphere of this last survivor of the " wind in the wires " era.

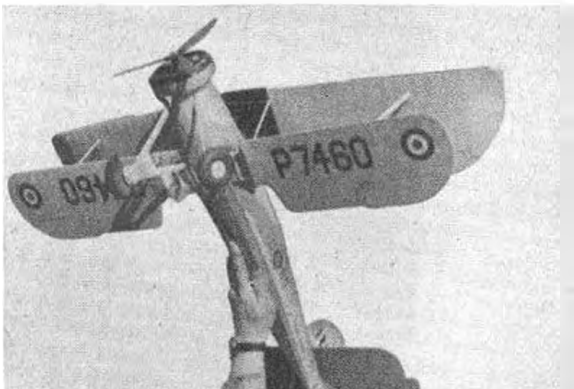
The model is not for the beginner, but any average modeller with a little experience should have no trouble in building it - there are no really difficult parts, but a fair amount of work is required and the construction cannot be hurried. Standard building techniques are employed throughout, but an instruction leaflet summarising the construction sequence and so forth accompanies each plan.

Being a fairly heavy model, and rather underpowered (by competition standards, at least) the Stringbag is a steady flyer, at its best in relatively calm air. A stately climb and glide, with little marked difference in speed, were features of the original, and the Amco ·87 used entailed a take-off run in the region of forty feet. A minimum motor size of ·75 c.c. is necessary for flight, with a top limit of 1·3 c.c., and the machine should be trimmed to fly in left-hand circles of at least 100 ft. in diameter. The glide should be in slightly wider left circles. No bad habits have become evident, except that in rough air the model can be upset at a height of three or four feet by ground turbulence.

In the event of any mishap, the rugged, knock-off structure is hardly likely to suffer extensive damage. Just as in the full size aircraft, the actual rigging in the model holds the flying surfaces in their true positions, the knock-off ability relying on small balsa shear pins passing through the tongues.

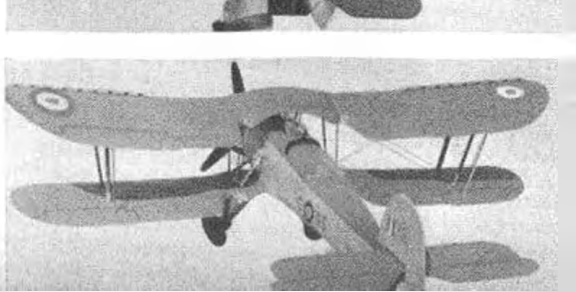
This model " Swordfish " is definitely designed for the connoisseurs' building board, and, as such, we anticipate seeing a good many of them in the concours and flying scale events throughout next season.

Full size die-line prints of the 1/5th scale plan opposite, can be obtained, price 6/- post free from the Aeromodeller Plans Service, 38, Clarendon Road, Watford, Herts.



Heading shows the prototype model on an Aeromodeller proving flight. At right : Sky type " S " or duck egg green undersides with black lettering and standard roundels, plus drawn aileron and elevator lines make for authentic appearance.

Below, left : Side view emphasises the long tail moment, a safe stabilising feature of this model. Right : Rear three-quarter view shows wing slots, centre section hump and capacious rear cockpit which typify the famous " Stringbag."



ARMCHAIR AERONAUTICS

A review of new books of aeronautical interest

The mystery explained

How Planes Fly, by Sydney E. Veale and "Wren" (Penguin Books Ltd.), 2/6, 32 pages. Illustrated.

When an author as qualified as Sydney Veale in the explanation of the whys and wherefores of aviation, and an illustrator as experienced as Chris Wren get together in this Puffin Book No. 04, the result is bound to be good. It takes one through an explanation of control surfaces and their effect, to aerobatics, and to an elementary interpretation of lift as it is derived from the airfoil. With Wren's coloured sketches to unravel these mysteries of flight, the reader cannot fail to grasp the hitherto elusive theory, and for this reason we recommend circulation of "How Planes Fly" among aeromodelling's beginners.

Night fighting fact and fiction

Tumult in the Clouds, by Andrew Cunningham (Peter Davies), 10/6.

This facto-fictional account of night fighter and intruder operations over England and the Mediterranean is written by one who actually participated in this vital phase of the last great war in the air. Andrew Cunningham, the author, was, in fact, trained as a navigator and completed two tours of operations in night fighters. The fact that he was awarded the D.F.C. and left the Service with the rank of Squadron Leader is an indication of his experience. He vividly portrays the frustration experienced by those who used the early radar equipment in that frightening aircraft the Beaufighter, and the aerial antics that ensued as a result. His description of R.A.F. Squadron life in wartime, coupled with very real accounts of night fighter interceptions, hold one's interest to the last. What a pity the fictional side of this book was ever introduced. The style is factual and there are even footnotes beneath pages that describe various fictional successes, explaining that "Wing Commander So and So actually achieved such a success in 1940". Far better the author had written a war-time biography.

The final chapters of the book describe the preparation and incident of a low level bombing raid on a Gestapo headquarters in Amsterdam. Here the narrating navigator breathes a little more freely in the cockpit of a "Mossie", having by now left the terrors of "Beaufighting" well behind him. There was much enjoyment in this dramatic finale to "Tumult in the Clouds". But again, was the final episode fact or fiction?

Introduction to flight

How to Fly, by Laurence C. Bagley (Blackie & Son Ltd.), 7/6, with 56 line illustrations and 13 plates in colour, by the author.

Laurie Bagley will be remembered in the aeromodelling world for his magnificent S.P.A.D. S-7C1 Scout and his Bishop's Nieuport 17C. "How to Fly" thus holds additional interest, as it is written and illustrated by "one of us".

The book is designed for the rather younger reader—anyone above twelve years old should have little difficulty in following it—and takes the form of a pilot discoursing about aircraft generally to a youngster who is going to have a crack at flying a Vampire. Opening with very simple explanations of the principles of flight, the text goes through control systems, construction and function of various parts, propellers, an excellent chapter on the principles of the gas-turbine jet engine, cockpit layout and instruments, flight preparation, and, in the final chapters, actual flight technique and handling, with a little speculation on the future. Excellent line drawings and first-class colour work amplify the text.

We particularly enjoyed the jet engine chapter and the actual flight description, although the latter, we felt, didn't quite manage to get over the concentration and sense of "everything happening at once" which would be characteristic under such circumstances. However, the procedure and details are of absorbing interest to anyone who has never flown.

focus on . . .

The OFFICIAL APPROACH

by Peter J. Hoskison

Inside "gen" on Local Government and Byelaws that affect aeromodellers.

Alderman Wale, Mayor of Leicester, was keen to recognise the value of the hobby, and opened the club exhibitions.

DURING the 1952 flying season the flying ground situation began to deteriorate and many modellers found themselves without a suitable ground. Several local authorities have already imposed bans on flying model aircraft in parks and other open spaces, whilst others are looking on aeromodellers with suspicion and are considering "taking action". On the brighter side of the picture, however, some councils have been most helpful towards the modelling movement and have given all the assistance possible. However, two wrongs do not make a right and do not help "groundless" modellers. It is with a view to helping these unfortunates that this article is written. Its purpose is to get this very vexed question into its proper perspective, and to give modellers a few tips that might be of help in persuading local councils to let them have the use of public parks.

It is important to bear in mind that the local council is there to help you! Its members are elected by citizens of the town, county, or district it represents, and each member tries to do his or her utmost for the welfare of the inhabitants.

Local Government

The term Local Government is the one used to describe the system by which local areas are allowed to manage certain of their own affairs. In the same way as the aeromodelling movement is divided into different classes, such as free flight, control line and radio control, the local government system in this country is also divided up, the chief classes being counties, cities, various types of boroughs, urban and rural districts and parishes. Each of these areas has a council to look after it. A council is representative of the people living in the area to which it administers. The size of the council itself depends upon the number of inhabitants under its care, and its powers are dependant upon the type of council.

Each town is divided into a number of "Wards", the number of wards depending upon the size of the town. Each ward has its own representative on the council, and the person who is elected into that office is known as a Councillor. Make a point of getting to know yours—remember, Councillors are there to help you!

Council meetings are held at regular intervals, but it is not the council as a body that does the work. The council only discusses and, should it think fit, approves the resolutions of individual committees coming under its jurisdiction.

Of particular interest to modellers will be the Parks and Commons Committee. It makes sure that the open spaces are well cared for and made attractive to town dwellers. It hires out commons and recreation grounds to local football and cricket clubs and other sporting organisations. The committee also has the power to recommend imposing a byelaw regarding flying if it should think fit.

Local authority committees have to have their actions approved by the council as a whole and until this is done, the committee's decisions are not legally binding. An official report of the committee proceedings, containing the resolutions passed by it, is laid before the council and is studied carefully. The council goes into important questions, byelaws for instance, in very great detail. The making of laws is considered as being very important and is not "rushed".

You may wonder why on earth you as an aeromodeller should be confronted with all the foregoing facts about committee procedure, but these explain very briefly the inside workings of local authorities and help to show that everything is "above board". They also explain why sometimes one must wait for a considerable time before hearing the council's decision, after application has been made to use the local park for model flying.

Group taken at a past Ilford & D.M.A.C. dance includes their Worships, the Mayor and Mayoress. In the heyday of Fairlop, the Mayor of Ilford was always keen to support meetings at that venue. R/C Dakota in foreground was built by "Taxi" Borders, third from left.

It is worth remembering that the powers of all councils are limited and the legality of their actions may be questioned and tested in a Court of Law.

That important letter

Let us suppose that members of a model club want permission to fly on a local open space. To whom should the club apply, and what is likely to be the result ?

Application must be made to the clerk of the authority in whose area the ground in question is situated. The secretary or other responsible official of the club should write a letter to the Town Clerk explaining exactly what is required. It should be pointed out that the park will be required only for certain periods of the week—say Saturday afternoons and all day Sunday in the winter, and in the summer, each evening as well. It should also be stated that the ground required is the most suitable one in the area and that to travel out to the country to find a suitable spot is impracticable or even impossible. It is very important to mention also that each model flyer using the ground will be insured for third party risks (accidents to persons and damage to property) and the Council will not be held responsible for any accidents.

After the letter has been received it will be acknowledged and placed on one side until the next meeting of the Parks and Commons Committee is called ; then it will be placed on the committee's agenda and discussed. In due course of time the club will receive formal notification of the council's decision. If the club is lucky, the committee will have been impressed by the facts laid before it,and convinced that aeromodelling is a worthwhile pastime and should be encouraged.

Why Permission may be refused

Suppose the worst has happened, however, and permission has not been granted. Why should a Council take this view and be so narrow-minded ? Well, there are several possible reasons, all good enough to merit the refusal of permission. A few possible ones are :

(1) The flying field required is near a housing estate and the noise issuing from motors is regarded as being too much, as this might cause a nuisance to neighbouring householders.

(2) Models might have been regarded as being " lethal weapons " and thereby a potential danger to spectators, even though their operators were insured.

(3) Models have been flown on council ground in the past without the council's consent.

If these or other reasons applicable to local conditions are obviously not the answer to the question then perhaps the answer is that none of the councillors had ever heard of the M.A.C. before, and therefore looked upon it as an association that should be left well alone for the good of the public.

This is probably one of the reasons why some councils prove difficult. They have never heard of the organisation making application to them, and are rather loth to grant permission for something they know nothing about. To the majority of councillors the terms " free flight " and " control line " mean absolutely nothing. Therefore local councillors must be initiated into some of the intricacies of aeromodelling. The club and its activities must be brought to the notice of local townsfolk.

Advertising Aeromodelling

Model aircraft clubs should be every bit as well known as any other local organisation, and to achieve this end a club must publicise its activities. Local publicity is all-important, and should never be neglected. People must be made to realise that aeromodelling is not a " kids' sport " but a highly technical hobby which is educational and healthy.

Try to arrange an exhibition in a local cinema in connection with a flying film. Cinema managers are usually very co-operative and more than willingly throw open their cinemas (the foyer anyway !) to aeromodellers. Exhibitions should be as grand as possible and cover all aspects of modelling.

About the best medium for local publicity is, of course, the local newspaper, so endeavour to persuade the editor of the local " rag " to send along a reporter and, if possible, a photographer as well, to the club room one evening. But instil into the reporter, should he come, that aeromodelling is to be taken seriously. If, however, the newspaper editor is unwilling or unable to send along a representative, send to him a report of club activities. This is the P.R.O.'s job so make sure he can do it, and do it well. Editors are usually very co-operative people and will put aside a little space, each week or so, in their papers for some news of local aeromodelling activities.

Byelaws

Let us now examine the other side of the question —the side seen by local authorities. What right have they to impose bans on flying and what can be done about them ?

Local authorities have powers which have been vested in them by Parliament to make byelaws under four "statutes". These are the Public Health Act 1875, the Open Spaces Act 1906, the Local Government Act 1933, and the Public Health Act 1936. The last mentioned Act does not really concern aeromodellers as it deals with byelaws from a public health point of view. The first two Acts apply only to urban councils, whilst the Local Government Act applies to local authorities generally. They confer powers on local authorities to make byelaws for good rule and government and for the prevention and suppression of nuisances.

The local authorities, therefore, have to consider whether flying models constitutes a danger to the public and whether the noise made by diesel and glow-plug motors creates a nuisance. In those cases where authorities have made byelaws against aeromodellers it would appear that they were of the opinion that a nuisance existed. Again, perhaps local parks were considered too small and therefore wholly unsuitable for model flying. On the other hand, of course, it is possible that modellers have not been given a fair chance, inasmuch as very few members of the council are interested in this kind of hobby. This is where becoming "established" locally can be of help!

Appealing against Byelaws

Luckily, everyone has a chance of appealing against byelaws. Remember, it was stated earlier on that the legality of local authorities' actions can be questioned and tested in a Court of Law. Therefore, it is possible to have a byelaw declared "ultra vires" (this rather formidable phrase means quite simply "beyond one's legal powers") or unreasonable as being not in the best interest of the community.

After a local authority has made a byelaw it is submitted to the confirming authority, usually the Secretary of State, for confirmation. At least one month before application is made, notice of the council's intention to apply for confirmation must be given in the local press. That means all local newspapers circulating in the area to which the byelaw applies. Incidentally, copies of the byelaw can be purchased from the authority concerned. The cost varies of course, but it must not exceed 6d. for every 1,000 words.

During this period anyone affected—or should we say "aggrieved"—by the byelaw can make a representation to the Secretary of State. This representation MUST be made before the byelaw is confirmed. If, however, in spite of objections, the byelaw is confirmed, the matter can be taken to the Courts, for them to decide if the authority was right in making the byelaw. Should the Court decide that the authority had exceeded its powers, or was being unreasonable, it can declare the byelaw void.

Home Office Suggestions

In February, 1950, the Home Office issued a circular letter to many local authorities in England, making suggestions about imposing byelaws against flying. The circular says:

"*Developments in the size and speed and the recently increased availability of those types of model aircraft to which the model byelaws are expressed to apply have made them potentially dangerous, and also capable of creating a nuisance through noise, so that it may often be desirable to regulate their flying in some degree. On the other hand, local authorities will recognise that through the construction and flying of model aircraft a real contribution may be made to the science of aviation; that they help to stimulate interest in national aviation; and that, under suitable conditions, they offer to many young people a legitimate pastime and good hobby. The byelaws are not intended for the restriction of flying, but to make it possible to permit flying in areas where permission for this pastime would otherwise have to be witheld. Any restrictions should be limited, therefore, to what is really necessary under local conditions to protect the community at large from danger or nuisance.*

"*Some of the smaller recreation grounds may be wholly unsuitable for flying power-driven model aircraft. In many of those, no one is likely to try flying them, and no byelaws will be needed.*"

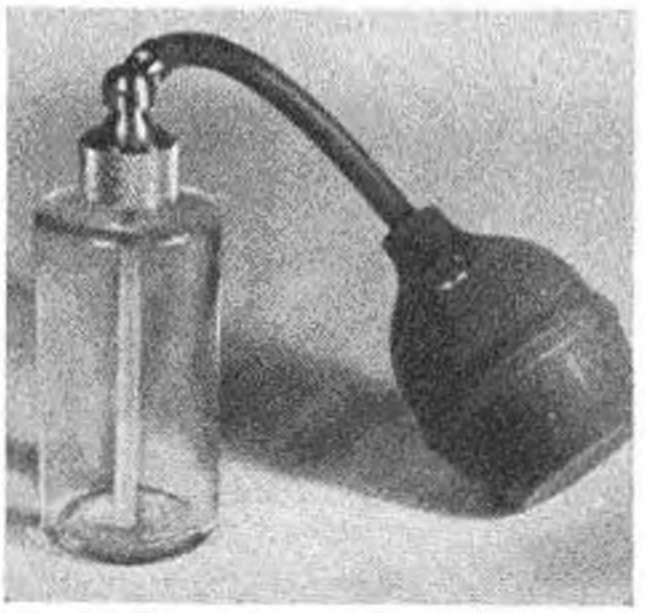
In fairness to modellers the Home Office suggested that proposals to make byelaws should be brought to the notice of any local M.A.C.'s and their views considered.

Insurance Schemes

All modellers should be insured in case of accidents. The S.M.A.E. operates a scheme to cover aeromodellers' requirements. For the very small sum of 3/- per year all persons availing themselves of the Society's third party insurance scheme are covered for a sum of money with a limit of £25,000. In other words, if an insured person's model strikes anyone or anybody's property, the insured person can be awarded up to £25,000.

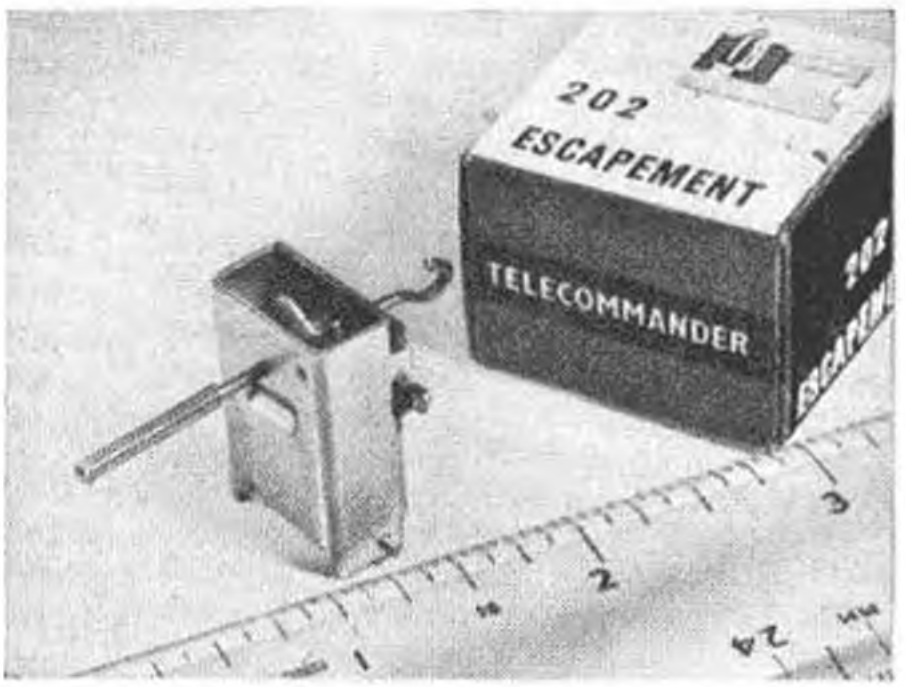
In addition the Society also arranges on request a special insurance for clubs using R.A.F., Ministry of Civil Aviation, and Admiralty' dromes, at an annual premium of 25/- per club.

Port Talbot M.F.C. ran a Cinema exhibition to help A.T.C. recruitment and played safe by inviting both Conservative and Labour party candidates to officiate. Models were also flown from the Cinema roof.

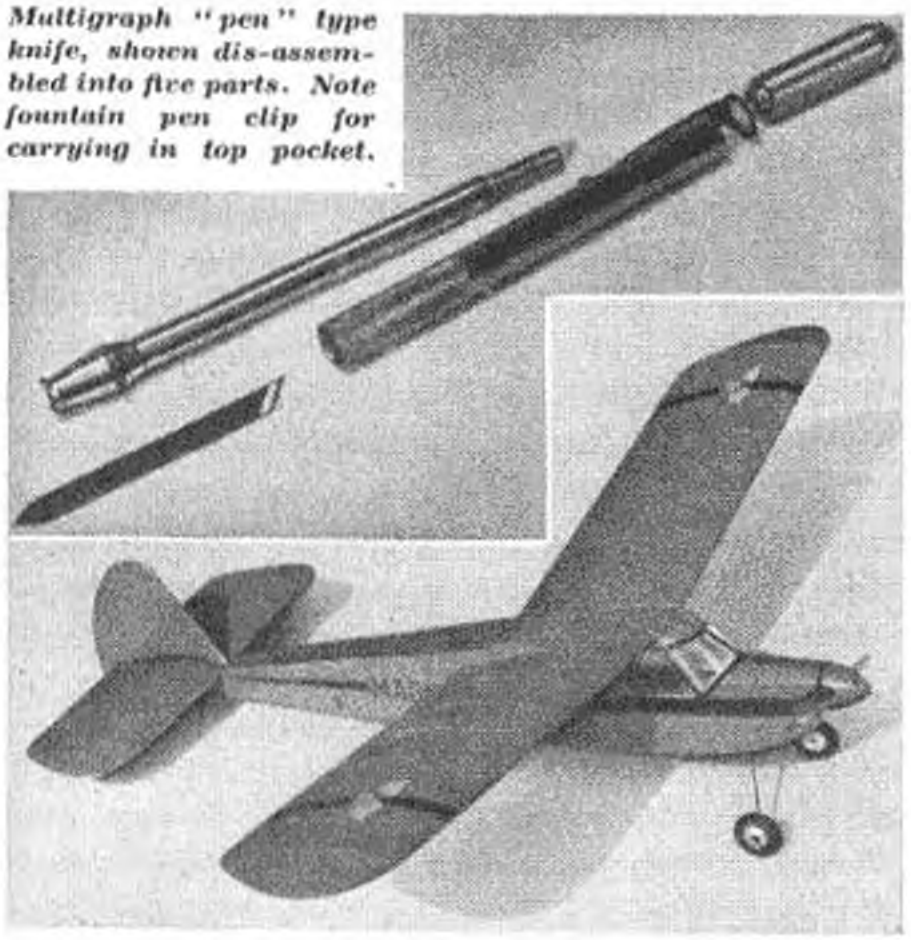


Trade Notes

WITH the imminent Christmas spending spree, manufacturers are hastening to introduce many new lines and reinforce their existing products with improved standards. From B. Relf & Company of Southport we received a test batch of colour, clear and fuel proof dopes, plus their two brands of cement, **Puk-ka** and **H.M.G.** The dopes we vouch for as good, reliable material, well pigmented with adequate covering power, and good shrinking qualities in the case of the clear dopes. The fuel proof dope does *not*, as indicated on the label, need the addition of hardener, and is virtually transparent, an asset when going over coloured finish. Puk-ka balsa cement has distinctly different smell to other brands, is quick drying, and makes a joint "first-time" which is an aid to quick building. Its brother cement, H.M.G. Heat and Waterproof Adhesive, is the type we would especially advise for hardwoods—it is also invaluable for sticking licence holders to windscreens and replacing detached false teeth—actual unofficial A/M tests ! !



Coupled with dope, comes the subject of spraying, and we are happy to report great success when trying out the new Yebb Accessories product, the **Model Makers Spray Gun.** This is a self-contained unit, retailing at 8s. 6d., direct from the Works, and complete with five-year guarantee on the spray unit and full instructions. A feature of this handy gadget is the non-return valve in the spray head which eliminates all tendency to blobbing. The glass container holds two ounces at each filling. Full marks too, for the latest **Multicraft Junior,** a neat pencil size modelling knife that is extremely practical, carrying its double ended blade *inside* the handle, and also most respectable in appearance. So much so in fact, that the fortunate staff member who opened the package on arrival, has been toting the Junior around clipped in the top pocket of his suit for weeks ! Price is 3s. 0d. from any model shop.



Multigraph "pen" type knife, shown dis-assembled into five parts. Note fountain pen clip for carrying in top pocket.

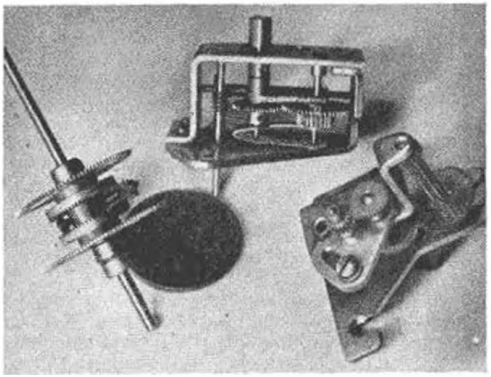
We always keep our promises, and down at bottom left is the picture of the new **Mercury Magna** mentioned last month. Designed by Ron Young for ·5–·75 c.c. this neat sports model will sell well at 12s. 10d., including tax.

Latest item from the E.C.C. Radio stable is their

new **202 Escapement** which really is the smallest yet. Weighing only half an ounce its overall measurements are 1 × ¾ × ⅜ inches and attachment is by means of two P.K. self-cutting screws. The armature is mounted vertically inside the coil winding and engages with two pawls soldered to the shaft. Shaft is 17 s.w.g. and linkage to the control rod is by means of a spring coupling. The escapement is, of course, self-centering and is designed for rubber drive using a single strand of 1/16 sq. At 17s. 10d. a good buy.

Messrs. E.C.C. have asked us to point out that supplies of all their well known **Transmitters** and the **915A Receiver** are readily available and no difficulty should be experienced in obtaining them from your local model shop.

A very useful variety of precision made **Miniature Gears,** suitable for radio control purposes can be obtained from Messrs. H. Franks of 58, New Oxford Street, London, W.C.1. Amongst



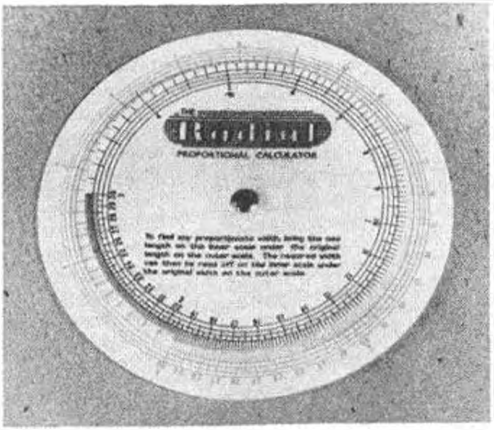
them are worm gears of 2,500–1, spur reduction gears, and differentials, as illustrated. In addition to the types shown in the photograph there are many other varieties and we recommend that radio enthusiasts pay a visit to New Oxford Street for a good rake round. Prices from 1s. upwards.

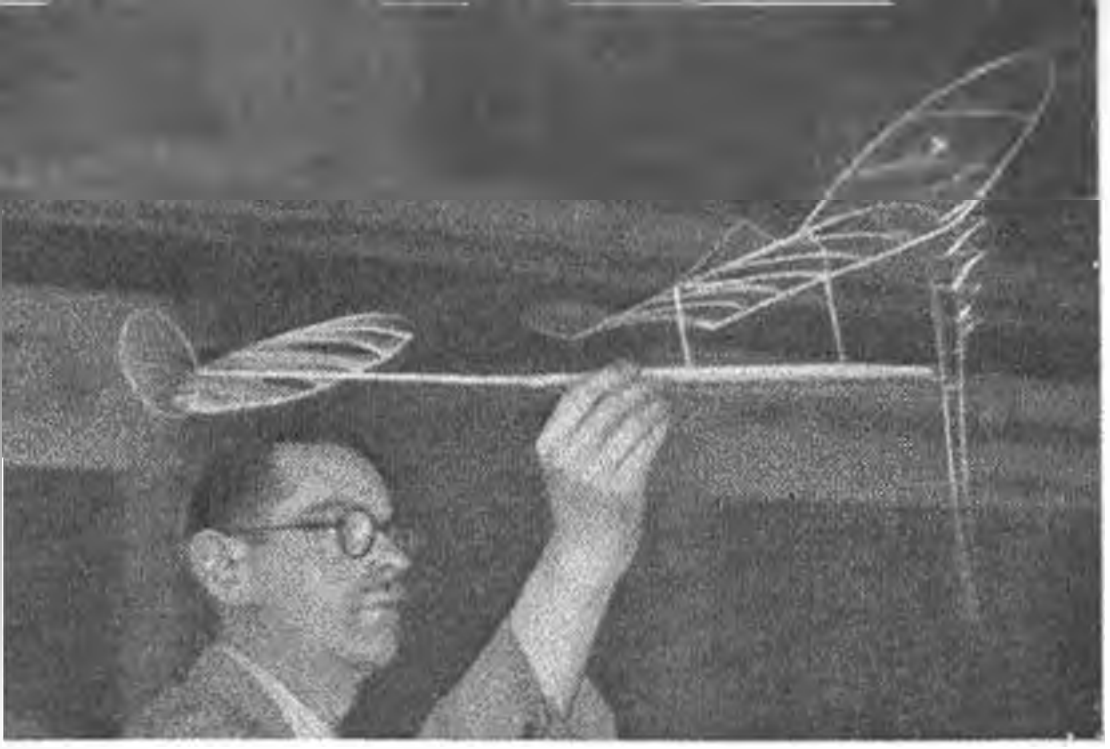
Those who went to Long Marston to see the Ripmax Trophy won for the third time running by Sid Allen (now of **Electronic Developments**) with his Radio Queen were also treated to a demonstration flight by his 1¼ times Rudderbug that really gives promise of great things to come. With a new 6-reed receiver and 3 E.D. motorised actuators for elevators and engine control, plus a new type electronic actuator on the rudder, Sid took off and landed with perfect motor control. " Just like flying the real thing " said Sid, who is seen with the outfit at top right. Beep box has a joystick for progressive control on the elevator and rudder, plus two buttons for fast or slow motor. Rx is in a small maroon box, and we gather that production begins at the Kingston factory in the New Year. Incidentally, a special note for 2·46

owners is available from E.D.'s warning mechanical types of the correct way to re-assemble this engine — it's worthwhile sending a S.A.E. for.

Scale modellers in particular will welcome the **Radial** proportional calculator marketed by Angier, Akers & Company of Ceylon Place, Eastbourne, Sussex. Primarily intended for artists and editorial types like ourselves, the calculator shows at a glance the revised scale dimension no matter what the proportion. For example, an A.P.S. 1/48th scale solid drawing is frequently used by modellers to develop a larger scale flying job. Just set the calculator for one known figure, say ¼ in. equals ⅞ in., and every other dimension can be read off round the scale. Price is 5s. 6d., and ours has been in use daily for more than three years.

Traders in the North will be pleased to know that Messrs. **Wilmot Mansour & Co. Ltd.** are opening a new distributing centre for the convenience of retailers in the North at 26, Chester Road, Macclesfield. Incidentally, with the introduction of the Scorpion the 350 unit is being withdrawn from production, though supplies of fuel and accessories will remain available.





Getting the best out of . . .

Ted Marlow of Sheffield demonstrates a smooth launch of his free-flight microfilm job. Note the built-up propeller.

INDOOR models have never achieved the same degree of popularity in this country as, say, in the United States. Yet the indoor free flight model is probably one of the most " scientific " of all types of model since its performance is almost entirely dependent on the model's ability, truly reflecting the skill of the owner in both building and trimming it.

Indoor models can be divided into two main groups—the free flight models and the tethered or round-the-pole (R.T.P.) models. The former require large obstruction-free halls or enclosed spaces for operation in order to achieve high durations and it is largely lack of suitable facilities which has been responsible for the general lack of interest in this field in Britain. American modellers, on the other hand, have been rather more favoured. Large aircraft hangars have been made available for indoor contest meetings and indoor events have been a feature of the American Nationals since their earliest days.

Tethered or R.T.P. flying, which is basically a British development, started back in the mid-1930's as a means of providing for " duration " flying under restricted indoor conditions. The fact that it gave model club members the means to conduct contests during the winter months and so sustain practical interest in flying throughout the year led to it becoming very popular, with peak interest reached towards the latter end of the war years. Now R.T.P. flying has receded into the background and, in fact, even the method itself may be unknown to the relative newcomer to aeromodelling.

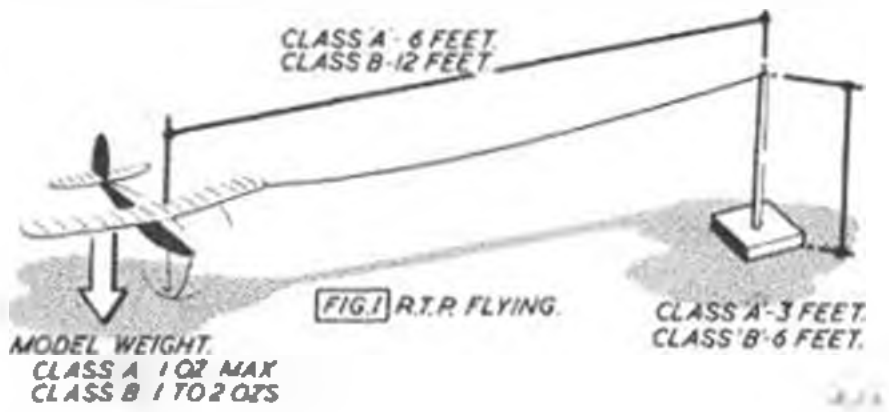


FIG. 1 R.T.P. FLYING.

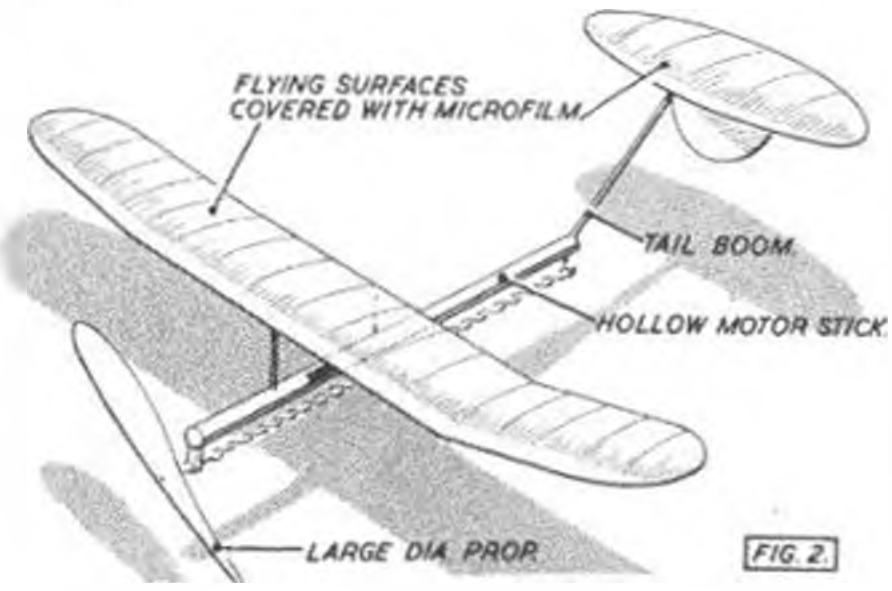


FIG. 2.

Even in America a parallel falling off in interest in free flight indoor flying has been noted during recent years. The basic cause seems to be the primary characteristic of all indoor models mentioned at the beginning—performance is, in the end, a reflection of individual skill and after a period of development this breeds a " winning circle " of the experts with the average modeller put out of the running in all the contests. A similar trend has been apparent with outdoor control line contest flying, but with outdoor *free flight* the luck element in the form of unpredictable weather conditions (updraughts or thermals and downdraughts) continues to keep contest results more open.

From the point of view of pure contest flying, therefore, getting the best out of indoor models demands first an inherent skill with the type of model concerned—if you hope to end up in that " winners circle ". On the other hand, indoor contests now are so few and far between that there are few established experts in this country. About the only outlet for the " duration minded " indoor builder, in fact, is the indoor records list where, if the *facilities* for flying indoor duration models are available, the field is relatively open.

Alternatively there is the possibility of considerable enjoyment during the winter months in flying indoor models just for the fun of it. For the most satisfying results they will still be duration types, but record-breaking times need not be of primary importance. In fact potential duration, as largely reflected in the size and type of model, will be governed almost entirely by the size, etc., of the indoor flying space available. The latter may range from the use of a local cinema during Sunday mornings (permitting the use of ten minute plus free flight microfilm models) down to the average sitting room with a nine foot ceiling (where " baby " microfilm models may be capable of two to three minute flights, but R.T.P. models will probably be more practical).

Dealing with the free flight models first, duration is almost entirely dependent on the propeller-power combination, as expressed by the length or duration of the *effective* power run. This means,

INDOOR MODELS

in effect, the largest possible propeller used with the minimum possible cross section of rubber—calling in turn for the lightest possible airframe. There is also the factor that the efficiency of the model increases with size and so, potentially at least, the best duration models are those of the largest size group practical (up to 30 in. span, on average).

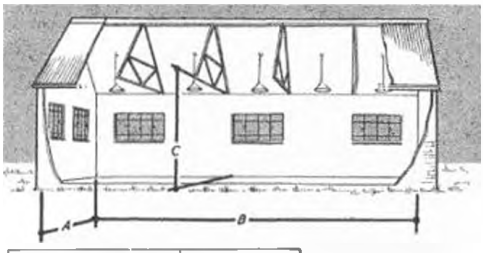
Design of such models is more or less standardised—Fig. 2—as a stick tractor with pylon-mounted wing. Propeller diameter may exceed one half of the wing span but powered, in the largest size of model, possibly only by a single loop (two strands) of $\frac{1}{8}$ in. strip rubber! To climb on such low power the weight of the airframe has to be reduced to a fantastic degree—of the order of one hundredth of an ounce.

Record breakers

Record breaking models in this category demand the use of special light grade balsa in order to achieve minimum weight. Bracing with hair-thickness tungsten wire may also be used to provide rigidity and even the thickness of the microfilm covering is controlled during its making. Broadly speaking, size for size the lighter the model the greater its potential duration since it can be flown on a smaller cross section of rubber (more turns possible), a longer motor of the same cross section (more turns for the same overall weight), or a larger diameter or higher pitch propeller (longer power run).

Such models are definitely in the expert class. Balsa selection alone would eliminate the majority of would-be record-breakers. Constructional problems in assembling that lightweight balsa airframe would put most of the rest out of the running. That, however, is talking in terms of the thirty-minute plus indoor model, which is the present American top level. Our own record figures are much more modest, especially in some of the non-standard classes, and so there is opportunity for the modeller with a flair for indoor construction (and the available flying facilities) to break into the news.

A far better proposition for the average flyer who would like to build an indoor duration model is to duplicate the *layout* of these record breakers but strengthen up the construction. In other words, follow the same general outline but build a more rigid model. Its maximum duration will be lower, but it will be more consistent and more readily capable of holding its trim. Hence it can even be a better "contest" proposition than its lightweight counterpart which is on the weak side and may become unstable when flown under full turns since its surfaces twist under the increased flying speed. The current British record holder (18 mins. 52 secs.—a record established before the war, in 1937, incidentally) is a typical example of "sturdy" indoor construction.



SMALLEST DIMENSION (A OR B)	MODEL SIZE (SPAN)
UNDER 10 FEET	TOO SMALL FOR SATISFACTORY FLYING
15 FEET	10 INCHES
20–25 FEET.	15–20 INCHES
30 FEET	24–28 INCHES
100 FEET.	30 INCHES.

PROPORTIONS OF HALL

EFFECTIVE HEIGHT (C) LARGELY GOVERNS TRIM LENGTH(B) OR WIDTH(A) GOVERN MODEL SIZE.

FIG. 3

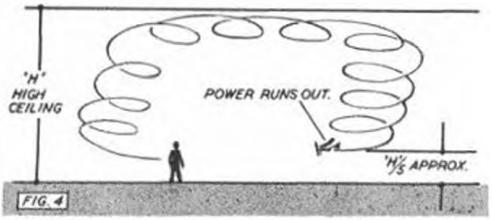
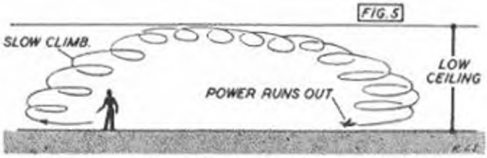


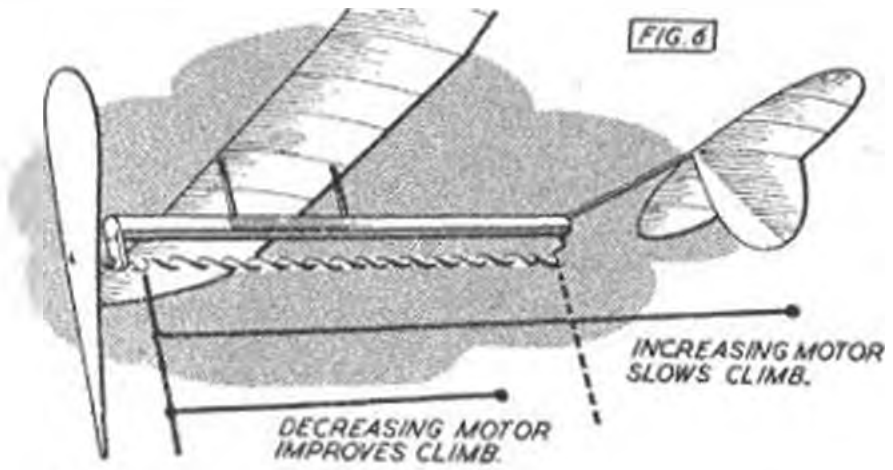
FIG. 4

FIG. 5



The design and construction of indoor models has been covered quite fully in a previous articles (It's Designed for You—Indoor Models, A.M., May, 1951.) We concern ourselves here with getting the best out of a particular model. If it is one of your first indoor models, almost certainly it will be too heavy and so will probably want more power, or a smaller propeller, than that specified as the optimum for the size of model concerned. Be that as it may, we can still adjust the model for optimum performance within the handicap of excess weight.

The first requirement is to match the model to the available size of the flying space. It is difficult to give general rules here since, obviously, the greater the available flying space the better,



irrespective of the size of the model. With limited space, however, it becomes more important to scale down the size of the model and so Fig. 3 is a rough guide as to what size of model to build related to typical flying areas.

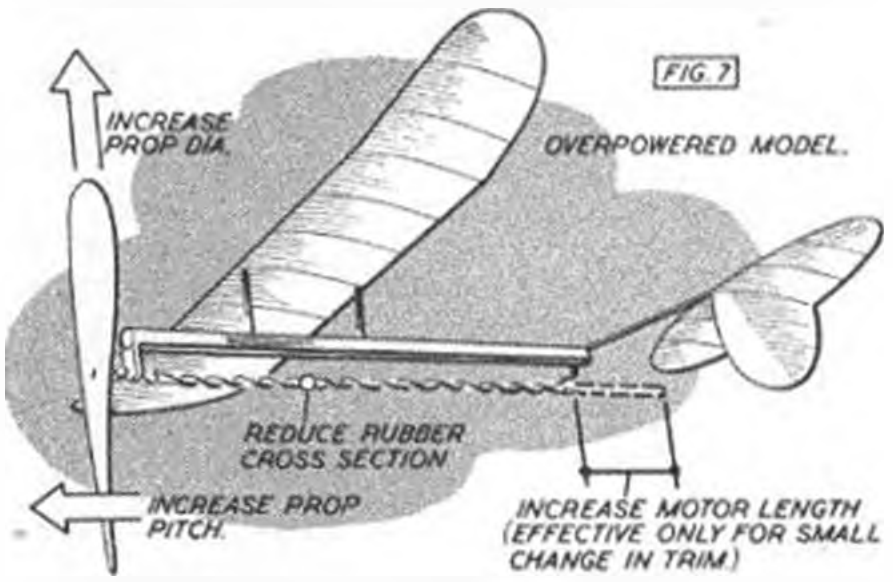
Trimming for height

The second thing to consider is the height of the effective ceiling of the hall or room. This does not affect the size of the model so much as the length of the motor used As a general rule, if the ceiling is high then the flight pattern should be a slow, steady climb to just under ceiling, settling down into a long cruise, gradually losing height towards the end of the power run, with the power finally running out with the model still some one-fifth of the ceiling height above the floor (Fig. 4). If the ceiling is *low*, then maximum duration is normally realised by arranging for a very slow, almost non-existent climb and the model eventually touching down still under power, but with nearly all the turns run out (Fig. 5).

Taking the same model and same propeller, the first trim can be changed into the second, and vice versa, by *shortening* the length of the motor until the power runs out in the air ; or, conversely, lengthening the motor to increase total weight and result in a slightly " underpowered " condition for low ceiling flying (Fig. 6).

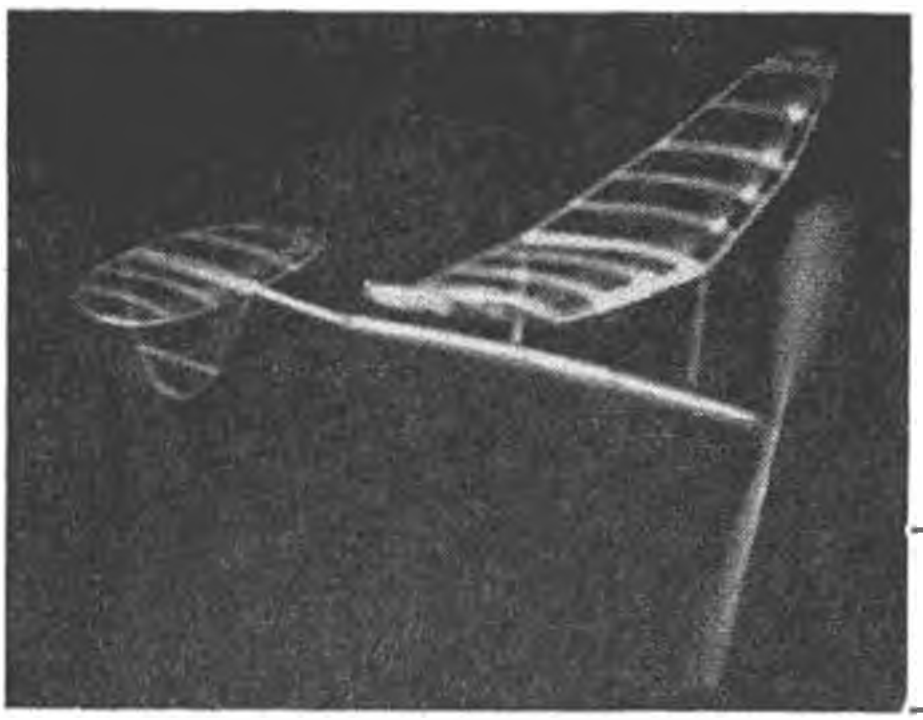
Trimming for circle

These two basic trims, of course, assume that the model is adjusted to fly circles of a sufficient diameter to confine the flight pattern to the centre of the flying space so that the flight is not terminated prematurely by striking a wall, etc. Provided there are no draughts (*i.e.*, no drift) this should not be difficult in large halls, but becomes increasingly difficult in smaller rooms. A combination of sidethrust and rudder offset should be used to provide a circle, although sidethrust and a tilted tail is finding increasing favour. A more or less constant diameter circle should be aimed at throughout the power run—normally to the right. With a *high* ceiling, some models may trim out best with a left hand circle throughout the flight. As far as possible the use of downthrust to kill a stall under the initial burst of power should be avoided. This will tend to " kill " the power on the cruise part of the run. If initial stalling troubles are apparent and cannot readily be cured, a good solution is to let the propeller revolve for about five to ten seconds before launching the model. The initial urge from the rubber motor will then have died away.

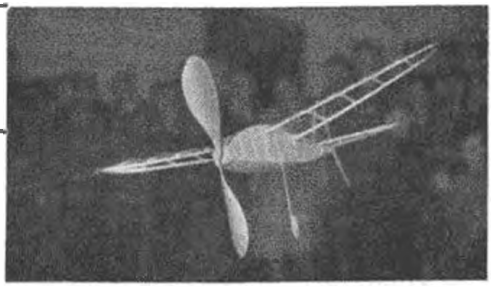


Propeller/Power adjustment

For a model which is obviously overpowered (climb too rapid) or underpowered (complete lack of climb), adjustments must be made to the propeller-power combination. As a check on the former condition, if the model deadsticks in the air (*i.e.*, the power runs out in the air) on 75 per cent. full turns, then almost certainly the propeller is turning too fast. Cures are : increase the pitch of the propeller, increase the diameter of the propeller or reduce the cross section of the rubber (Fig. 7). Whilst, theoretically, it would be fairly simple to adjust the rubber cross section to find the optimum for any particular propeller, rubber only comes in stock sizes and these sizes are not close enough to accommodate the extremely small changes in motor cross section which might be called for. Hence propeller-power adjustments are normally best made by altering the characteristics of the propeller or using a new propeller.

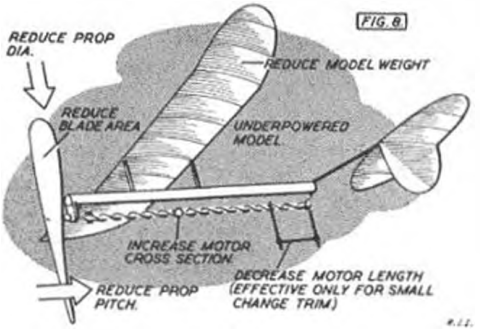


Coming or going ? ? ? This view of a microfilm model is one of those confusing shots which could be taken either way. Model was actually photographed from below, i.e., going away from the camera.



Not a "dead-stick" landing: but a fast flash photo of an r.t.p. model with a slow veering prop. Taken in '48 during a demonstration at the Campbell Youth Centre, Dagenham, the photo shows Frank Hull's model on a 2 : 26 flight.

A sign of an underpowered model is that the model persists in landing with a high proportion of turns left on the motor. Even for low ceiling flying the motor should be almost run out on landing. An increase in rubber cross section may change the trim to an overpowered condition where it becomes impossible to stop the model from climbing. In a majority of cases, however, it is usually better practice to increase the motor cross section on an underpowered model than decrease the propeller size. In such cases, climb can generally be killed by increasing the original propeller pitch, or using a new propeller of increased diameter or pitch, or both. Final adjustment can then be made by altering the motor length, as described previously. On the other hand, if an



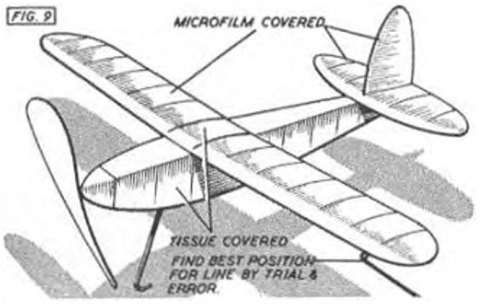
increase in power would bring the motor size outside the range normally acceptable for duration flying, a decrease in propeller diameter or blade area or possibly pitch, in that order, would be a better solution (Fig. 8).

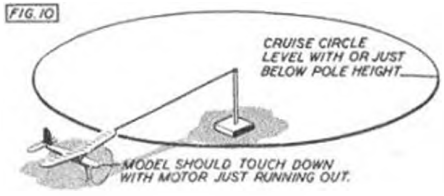
Round-the-pole models

Trimming for best performance with an R.T.P. model is based on somewhat similar considerations except that the model is not required to climb. In tethered flight, too, higher power is required, size for size, than with free flight models. The same principle of building the lightest possible model for maximum duration applies. All the high-time R.T.P. models, for example, employ wing and tail surface construction essentially similar to free flight indoor designs, and also microfilm covered (Fig. 9).

The thrust line of an R.T.P. model is normally left straight (no side or down) with the fin offset to aid the circle if the model is flown in right hand circles (*i.e.*, against torque); or fin offset against the turn if flown with torque (left hand circles). Actually which direction of circle is best, and also which is the best position of the line attachment, is dependent on individual designs and can be used as the basic criteria for trimming out for the most satisfactory flight pattern. Optimum performance, consistent with the size of rubber motor used, comes when the model behaves in a similar manner to a low-ceiling free flight model, *i.e.*, the power run is just on the point of being exhausted when the model finally touches down (Fig. 10).

Practical experiments in trimming (*e.g.*, altering line position, etc.) may be necessary to overcome a tendency for the model to dive and zoom during the initial part of its flight and, possibly develop a tendency to stall in during the latter part of the flight. Ideally the trim should be such that the majority of the flight is made at a height approximating to that of the height of the pole (*i.e.*, line horizontal or inclined slightly below the horizontal) and the model itself holding a flat turn, *i.e.*, not banked inwards or outwards.



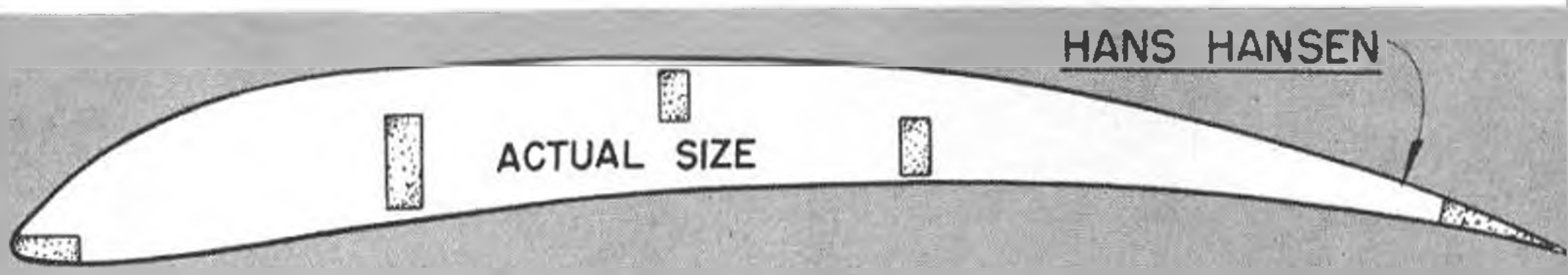


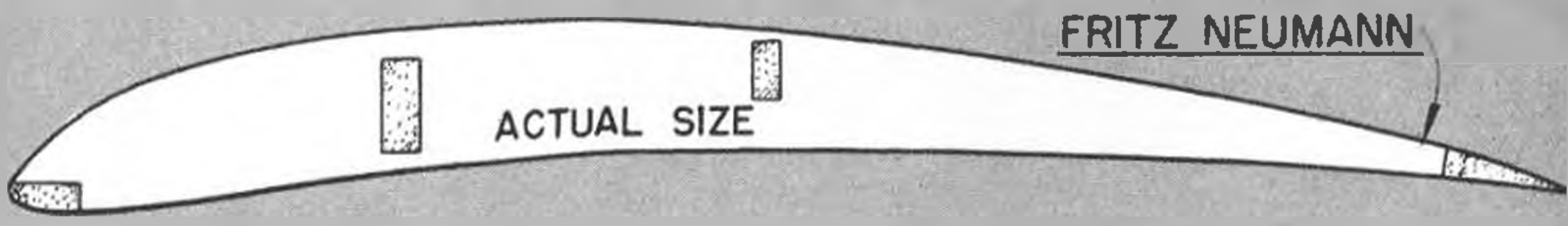
1953 World Glider Champion, Hans Hansen of Denmark, displays his very successful Aurikel.

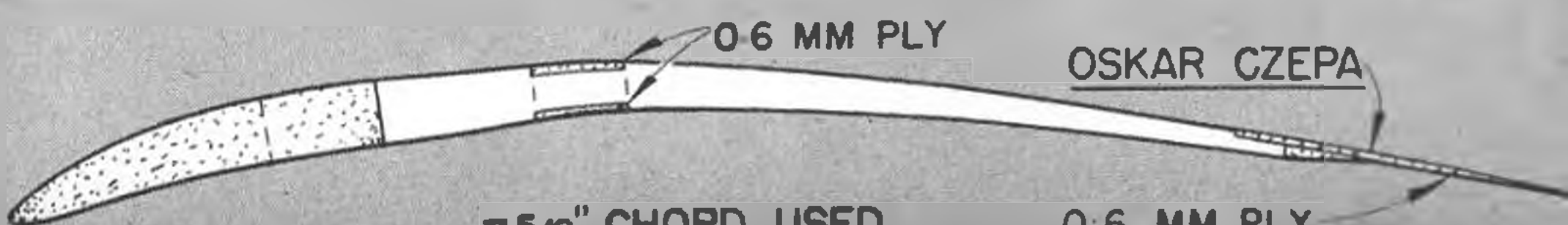
A.2 Airfoil Topics

The inside story of the Danish "Flapped" Gliders and other new airfoil trailing edge developments

WHEN Hans Hansen carried back the World Glider Championship Trophy to his native country, Denmark, the home of the A/2 class, his achievement reflected a double triumph. For more than a year, the members of his Copenhagen club had been experimenting with variations on the trailing edge, and in "Aurikel" he utilised the airfoil derived from these tests. Story begins back in 1952, when one of the club lads, who remains nameless, built a glider ready for the A/2 eliminators and, in error, allowed the T.E. to droop excessively. Flight tests in still air showed the model to be superior to most, and it was obvious that the T.E. had something to do with this. Other wings made by Copenhagen club men were arranged to have adjustable "flap" edges, as mentioned in Model News, June issue, and the same scheme was tried by our own Roy Yeabsley. Results were still good, older wings were modified with plates of that beautiful Scandinavian 0·4 mm. ply to extend and droop the T.E. (A system already used for several seasons by Austria's Oskar Czepa), and a new type airfoil was derived to accommodate the correct amount of droop found in tests on hack models. Result was that the new Hansen section won the A/2 trophy in '53. The full-size section is given below, together with Fritz Neumann's more conventional, but equally efficient airfoil. Below, also is another development of the fine T.E. in Max Hacklinger's section for his MP.11 model, reproduced by courtesy of *THERMIK*. Note the Nylon thread turbulator.







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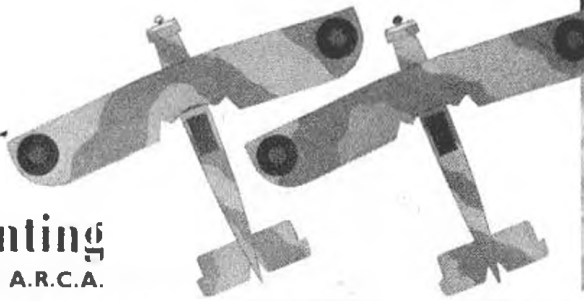


The Cover Painting

by C. Rupert Moore, A.R.C.A.

ON May 22nd, 1941, Vice Admiral Sir John Tovey, acting on information from reconnaissance, put to sea with the Home Fleet to prevent the German battleships *Bismarck* and *Prince Eugen* from breaking out into the Atlantic, via Iceland and the Denmark Straits. With him, he had the new *H.M.S. Victorious*, carrying a consignment of dismantled Hurricanes for delivery to Gibraltar, nine Swordfish and six Fulmars.

Contact was made with the enemy on the evening of May 23rd. Shortly before daylight on the 24th the *Hood* and *Prince of Wales* brought the enemy to action in the Denmark Straits. The *Hood* was sunk and the *Prince of Wales* damaged. To slow the enemy ships, the *Victorious* was detached with an escort of four cruisers, and ordered to steam within striking distance of the enemy.

In this high latitude sunset was not till after midnight *so it was still daylight when the whole squadron of Swordfish took off at* 10.10 *p.m.* The cover painting depicts this take off. Aircraft 5A, in the foreground is flown by Lt. Com. E. Esmonde, later awarded a posthumous V.C. for leading the desperate attack on enemy battleships in the Channel. The other three Swordfishes shown, 5F, 5B and 5J are piloted by Lieuts. Gick, McClean and Pollard respectively. *Victorious* can be seen, steaming against a background of showers. A very gallant attack was made on the *Bismarck* soon after midnight and enough damage inflicted to slow down the ship. By 2.30 a.m. all the Swordfish had " landed on "; by 3 a.m. the *Bismarck* in spite of damage managed to elude her pursuers and she was not seen for more than a day when she was sighted by a Catalina, 1,000 miles away. *H.M.S. Ark Royal* which had steamed from Gibraltar to intercept " flew off " fifteen Swordfish which attacked in foul weather and so damaged the *Bismarcks'* steering gear that she was helplessly steaming in circles. The official citation finishes " there can be little doubt that the hit (by Esmondes squadron) was largely responsible for the *Bismarck* being brought to action and sunk ".

Colour

Unlike R.A.F. aircraft which had already been camouflaged, the aircraft of the Fleet Air Arm were resplendent in peace time aluminium dope and had vermilion, white and ultramarine cockades at the outbreak of war. Land camouflage *i.e.*, " Dark Earth " with " Dark Green " shadow shading was used on the top surfaces shortly after the declaration of war, the undersurfaces sometimes being doped very pale grey. There seemed some confusion as to treatment of the fuselage sides, some were pale grey right up to the top longeron whilst others were doped pale grey up to the centre line, again, others were shadow shaded right down to the bottom longerons. Roundels were as pre-war at first. No fin flash was carried at this date. Struts and undercarriage legs were pale grey.

By the end of 1940 "Temporate Sea Camouflage" was introduced. Various combinations of colours appear to have been used but finally, by 1941 " Dark Slate Grey " with " Dark Sea Grey " was standardised for top surfaces. So called " Duck Egg Green " was used on all undersurfaces. Roundels were concentric circles of equal width, of indigo, white, and vermilion below the wings. On the fuselage side this was outlined by a fourth circle of cadmium yellow while the roundel above the wingtip was indigo and vermilion only. At a slightly later date the roundels were removed from below the wingtips. The camouflage on the cover painting is from a sample of Swordfish fabric of this date and is " Extra Dark Sea Grey " with " Dark Sea Grey " the under surfaces being " Duck Egg " *i.e.*, " Sky type S ". The fin flash was introduced in the summer of 1940 being three vertical stripes of red, white and blue (red leading), but by the end of that year was standardised as a rectangle of 24×27 inches.

1942 saw the further modification to the roundel and fin flash, the white and yellow circles being reduced to thin lines and the red changing from vermilion to indian red. Swordfish belonging to Coastal Command appeared doped white except for the decking of the fuselage and upper surfaces of wings and tail which were " Dark Sea Grey ".

The scheme now in force for Naval Aircraft was introduced on 1st October, 1946 and is: All undersurfaces, flanks of fuselage, rudder and fin, " Sky type S " (*i.e.*, " Duck Egg "); upper surface of wings, tail and fuselage, " Dark Sea Grey ". Pre-war equal width ultramarine, white and vermilion roundels are used. Very few Swordfishes could have seen this scheme.

Two plan views of " Swordfish " are shown above, the one on the left being typical of 1940-41 and the other a typical pattern of the standardised scheme of 1941 onwards. Top surfaces of the bottom wings in each case are camouflaged in roughly the same pattern as the top wings so that when seen from above and behind the pattern carries on.

GADGET REVIEW

MERRY Christmas, Joyeux Noel, Buon Natale and Wesolych Swiat to one and all wherever you may be, for this end-of-the-year edition of Gadget Review takes you round the world with an assortment of gimmicks for every type of model.

Let's begin at home with idea **A**, submitted by Sidney Kemp of London, S.W.2. It's an engine starter, built from a standard bench grinder and was created by force of necessity. Mr. Kemp had one of those engines that just would not start by hand flicking, and was just about to consider a classified advert. in the A.M. for " Engine, new condition, bench run only ", etc., when he thought of this excellent starter. Originally it had a double arm starter dog ; but it was found to be best with single arm as illustrated. The hand grinder is geared at 7 : 1, with 3 revs. per second; this means a starting speed of 1,200 r.p.m. so the hand flick sinks right out of the picture. Procedure is simple, just one choke, turn over past compression, engage the spinner in the locating hole and crank smartly, withdrawing the engine, plus model of course, when things begin to work. Grooves in the casting and an extra packing clamp block enable one to fit the starter to a bicycle cross-bar for field work, whilst a similar fitting could be made for clamping to a car running board.

Over to Ben Dutton now, at Yucatan in Mexico. He gives us in **B**, a simple and effective method of simulating landing gear legs on scale or semi-scale models. Add a right-angled arm of wire to the top of the cantilever undercarriage leg, and cut from thin aluminium sheet the desired fairing shape. This should have an allowance for " wrapover " to go around the wire leg and arm, and the fairing is then crimped *in situ* by squeezing around with pliers. From the same inventive gent. comes gadget **C**, for making odd size wheels for a scale job. All too often we need tailwheels of 17/32 in. diameter and similar odd dimns. Ben suggests that a chunk of India rubber cut to a square section ring and fitted over a hand carved or lathe turned boss does the task perfectly, and the " tyre " is easily rounded off after fitting on the hub. Should be specially useful to the solid fans.

Northwards, in the American continent, to Baltimore, Maryland, from where Jim Horton sends a kink on auto tow control for gliders. **D** is his idea, and a quick glance at the sketch shows how the standard auto rudder line is bifurcated at the rear end and another auto tab fitted to the tailplane in the form of an elevator. So for a tow, the rudder is pulled straight, and the elevator goes up—a considerable asset for a job with a 100% C.G. position otherwise inclined to be unstable on tow.

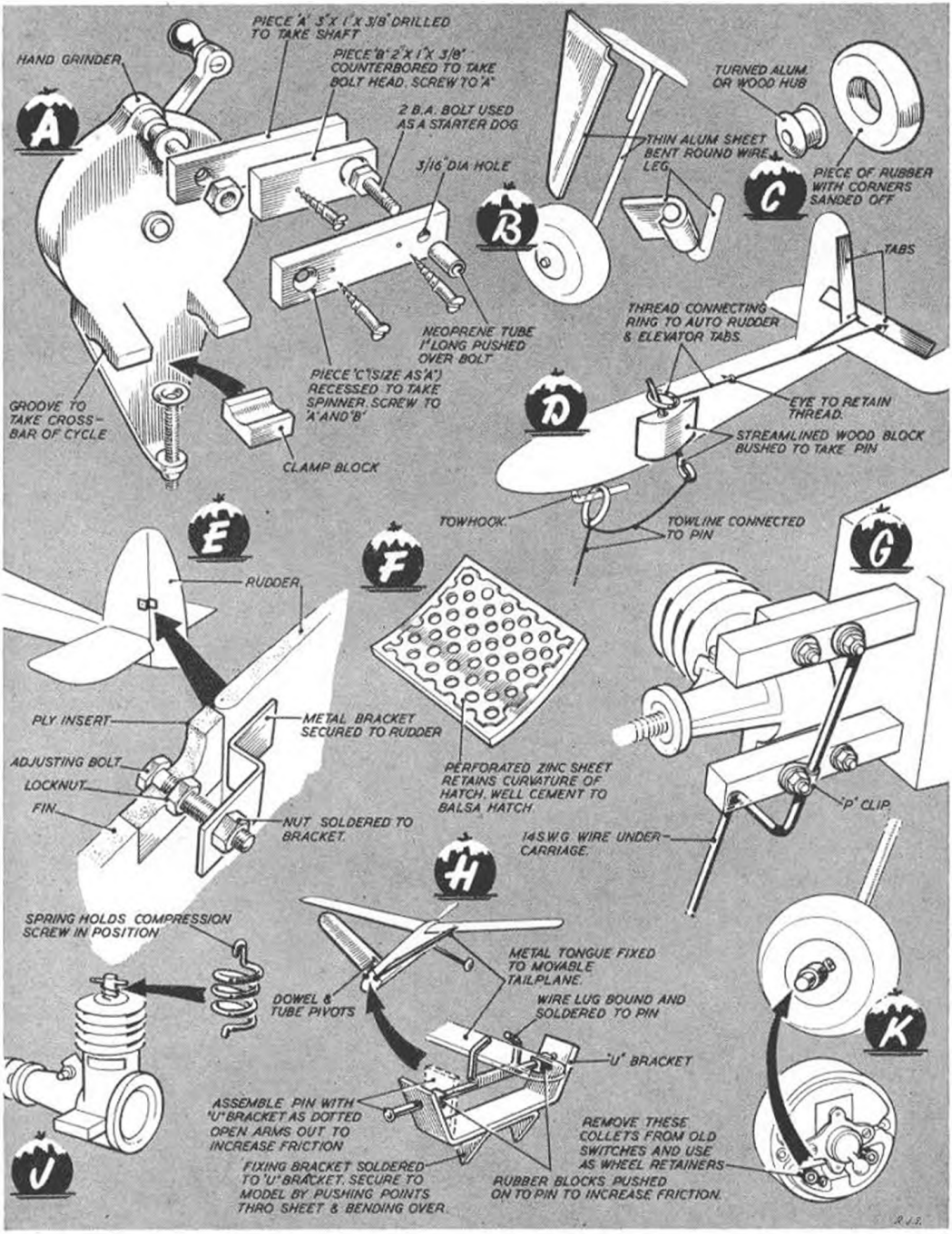
Back to Blighty with sketch **E**, a positive rudder adjustment device submitted by J. W. Stafford of Mansfield in Notts. The drawing is self explanatory ; but to keep weight down and make the adjuster neat in appearance, it is best to use an 8 B.A. screw size and cut the metal bracket from thin tin. From Leicestershire—Hinckley to be precise—T. A. Payne sent us **F**, which is a means of making curved detachable panels for scale models. Mr. Payne was involved with a scale Spitfire with a retracting undercarriage and the great need was to make a hinged panel that would keep its shape permanently. Thin gauge perforated zinc sheet provided the answer, and it keys itself to the balsa if plenty of cement is used, and allowed to " rivet " through the perforations.

Jumping across the globe to Malaya, **G** is a suggestion from Ho Loon Shu, at Bidor. He uses it as a single leg undercart for stunt models up to 1·5 c.c., especially where the plan or kit makes no provision for this prop.-saving component. It is also a good idea for a peg-leg on a free-flighter. Just bend a loop on one end of the leg, make a " P " clip for a second bolt fixing, and fit to the engine bolts. For small bearers, or engines with large crankcases, an extra kink will have to be bent between the bolts.

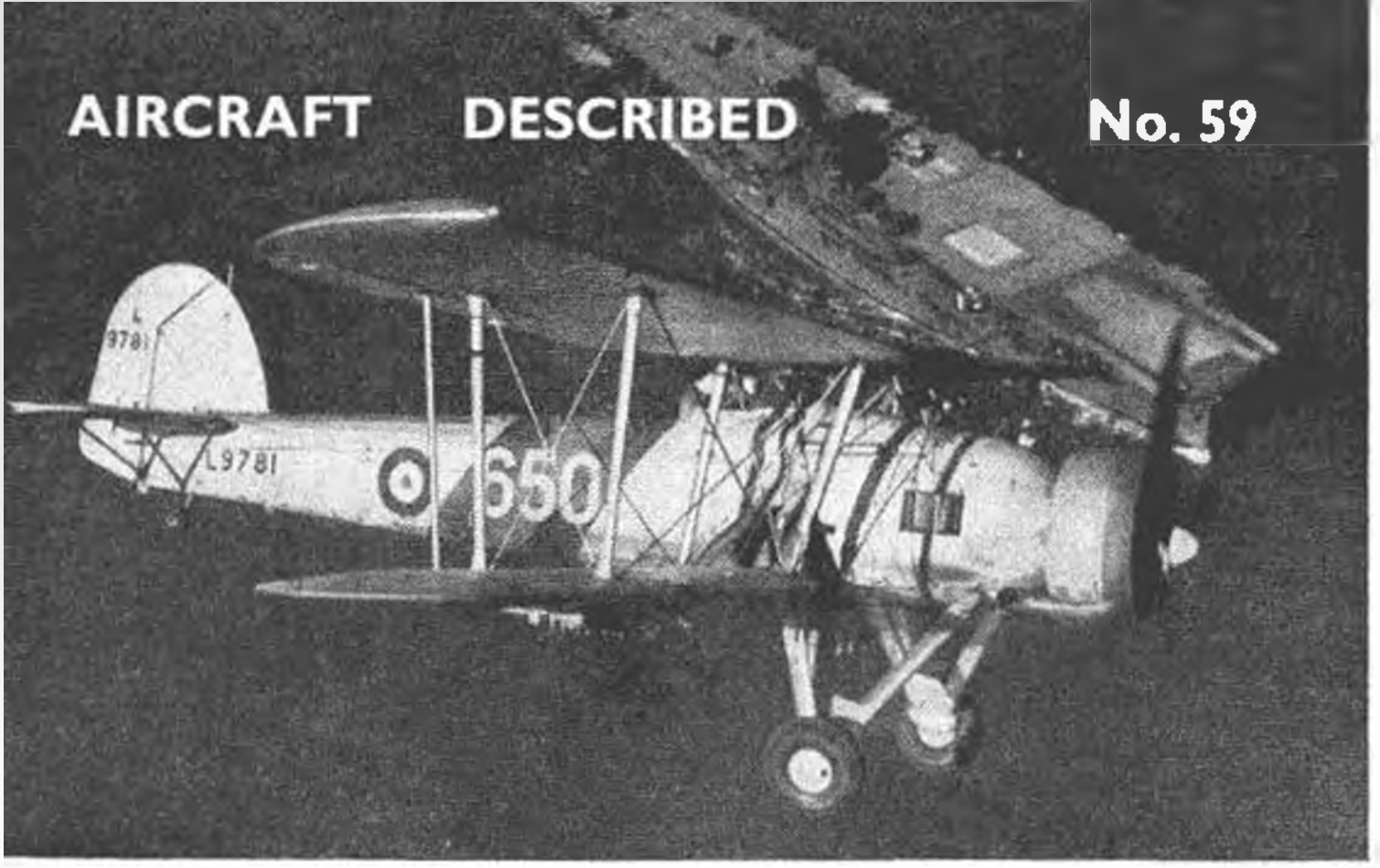
Back again to Ben Dutton in Mexico for **J**, a locking device for diesels with loose contra pistons or sloppy compression screws. Wind a piece of 22 gauge piano wire round a piece of dowel or a nail to form a coil spring, bend the ends as shown in the sketch, and slip over the comp. screw. The odd piece at the bottom will dig into the cylinder head, and the other end will lock itself over the tommy bar on the screw.

In last month's Model News feature, we published a flying view of F. Adcock's (Toton, Hants) vee tailed rubber model. In sketch **H** we have an insight on the novel trimming method for the two independent tailplane halves. Fixing brackets go on the fuselage, and through them passes a pin with a " U " section attached. On the trailing edge of each tail half there are small extension bars, and these pass into the " U's ". To adjust incidence, the pin can be shifted up and down to a range of several degrees, and for turn trim, the tails are given different angles.

K, our last, but by no means least ingenious of ideas this month, is another from Ho Loon Shu. It concerns wheel retaining for bigger models, and his suggestion is that an admirable collet is to be found in every light switch, and a good many other electrical fittings as well—most useful, Mr. Shu . . . at which we switch OFF and wish modellers everywhere a specially Merry Xmas and all the very best for a successful new season's flying in '54.


A
HAND GRINDER
PIECE 'A' 3"X 1"X 3/8" DRILLED TO TAKE SHAFT
PIECE 'B' 2"X 1"X 3/8" COUNTERBORED TO TAKE BOLT HEAD. SCREW TO 'A'
2 B.A. BOLT USED AS A STARTER DOG
3/16" DIA HOLE
NEOPRENE TUBE 1" LONG PUSHED OVER BOLT
PIECE 'C' (SIZE AS 'A') RECESSED TO TAKE SPINNER. SCREW TO 'A' AND 'B'
GROOVE TO TAKE CROSS-BAR OF CYCLE
CLAMP BLOCK
B
THIN ALUM SHEET BENT ROUND WIRE LEG
TURNED ALUM. OR WOOD HUB
C
PIECE OF RUBBER WITH CORNERS SANDED OFF
TABS
THREAD CONNECTING RING TO AUTO RUDDER & ELEVATOR TABS.
D
EYE TO RETAIN THREAD.
STREAMLINED WOOD BLOCK BUSHED TO TAKE PIN
TOWHOOK.
TOWLINE CONNECTED TO PIN
E
RUDDER.
PLY INSERT
METAL BRACKET SECURED TO RUDDER
ADJUSTING BOLT
LOCKNUT
FIN
NUT SOLDERED TO BRACKET.
F
PERFORATED ZINC SHEET RETAINS CURVATURE OF HATCH. WELL CEMENT TO BALSA HATCH.
G
'P' CLIP.
14 S.W.G. WIRE UNDER-CARRIAGE.
H
SPRING HOLDS COMPRESSION SCREW IN POSITION
DOWEL & TUBE PIVOTS
METAL TONGUE FIXED TO MOVABLE TAILPLANE.
WIRE LUG BOUND AND SOLDERED TO PIN
'U' BRACKET
ASSEMBLE PIN WITH 'U' BRACKET AS DOTTED OPEN ARMS OUT TO INCREASE FRICTION
FIXING BRACKET SOLDERED TO 'U' BRACKET. SECURE TO MODEL BY PUSHING POINTS THRO SHEET & BENDING OVER.
J
K
REMOVE THESE COLLETS FROM OLD SWITCHES AND USE AS WHEEL RETAINERS
RUBBER BLOCKS PUSHED ON TO PIN TO INCREASE FRICTION.
R.J.S.

December, 1953



In pre-war finery a Swordfish, flown solo, circles its carrier.
(Photo by C. F. Brown.)

THE

FAIREY SWORDFISH

by G. A. CULL

THE direct ancestor of the Swordfish was the experimental S.9/30 which was destroyed in a crash, but the design was revised to become the S.38/34 with a longer fuselage to cure the previous spinning trouble. The prototype appeared in 1934 numbered K.4190 and soon went into production as the Swordfish I with a three-blade fixed-pitch Fairey-Reed propeller replacing the prototype's large two-blader of the same type. Being a torpedo/spotter reconnaissance type, the design called for a crew of three, patrol range and the ability to operate from the confined deck of a carrier with an 18-inch torpedo or other war loads. With the ample wing area thus dictated and fitted with the trusty nine-cylinder Bristol Pegasus, the Swordfish was adequate for F.A.A. needs. Armament comprised one .303 gun on a Fairey high-speed mounting in the rear cockpit and a fixed machine gun mounted on the starboard side of the nose. Prior to the war the Swordfish was in service with Nos. 810, 811, 812, 821, 823, 824, 825 and 837 Squadrons and had also flown with floats when it was available for catapult operation from cruisers. War called for increased production and the major share of Swordfish production was transferred to Blackburn Aircraft, whose products were named "Blackfish" though the affectionate name "Stringbag", earned by the Swordfish's wire-work in a monoplane age, applied to all machines.

Loaded with flares, bombs and torpedos, twenty Swordfish flew from *H.M.S. Illustrious* to attack the Italian fleet in harbour at Taranto on November 11th, 1940, and they sank and immobilised the best part of the enemy navy. Extra fuel for the six and a half hour trip replaced air-gunners, and it was declared that success was due to the Swordfish's great manœuvrability. Only one machine was lost.

In 1942 when U-boat activity was at its worst in the N. Atlantic, the Swordfish provided cover from the small decks of merchant aircraft carriers for the middle 500 miles which was beyond the range of shore based aircraft. Whilst standard disposable loads amounted to depth charges, mines and rocket projectiles, less harmful *external* loads have been a motor-bike and a bag of golf clubs. As many as five standing passengers have been carried in the rear cockpit! Naval squadrons operated from shore bases, in N. Africa, and at night, flareladen Swordfish became "Pathfinders" for R.A.F. bombers. It was here that a determined pilot established a take-off record, for his Swordfish was so loaded that the take-off run was found to have continued for seven miles across the desert before a bump sent the staggering biplane into the air. Another Swordfish was put down on a beach after the lower starboard wing had been severely hit, and the pilot evened things by stripping the other wing of its fabric before flying the "monoplane" back.

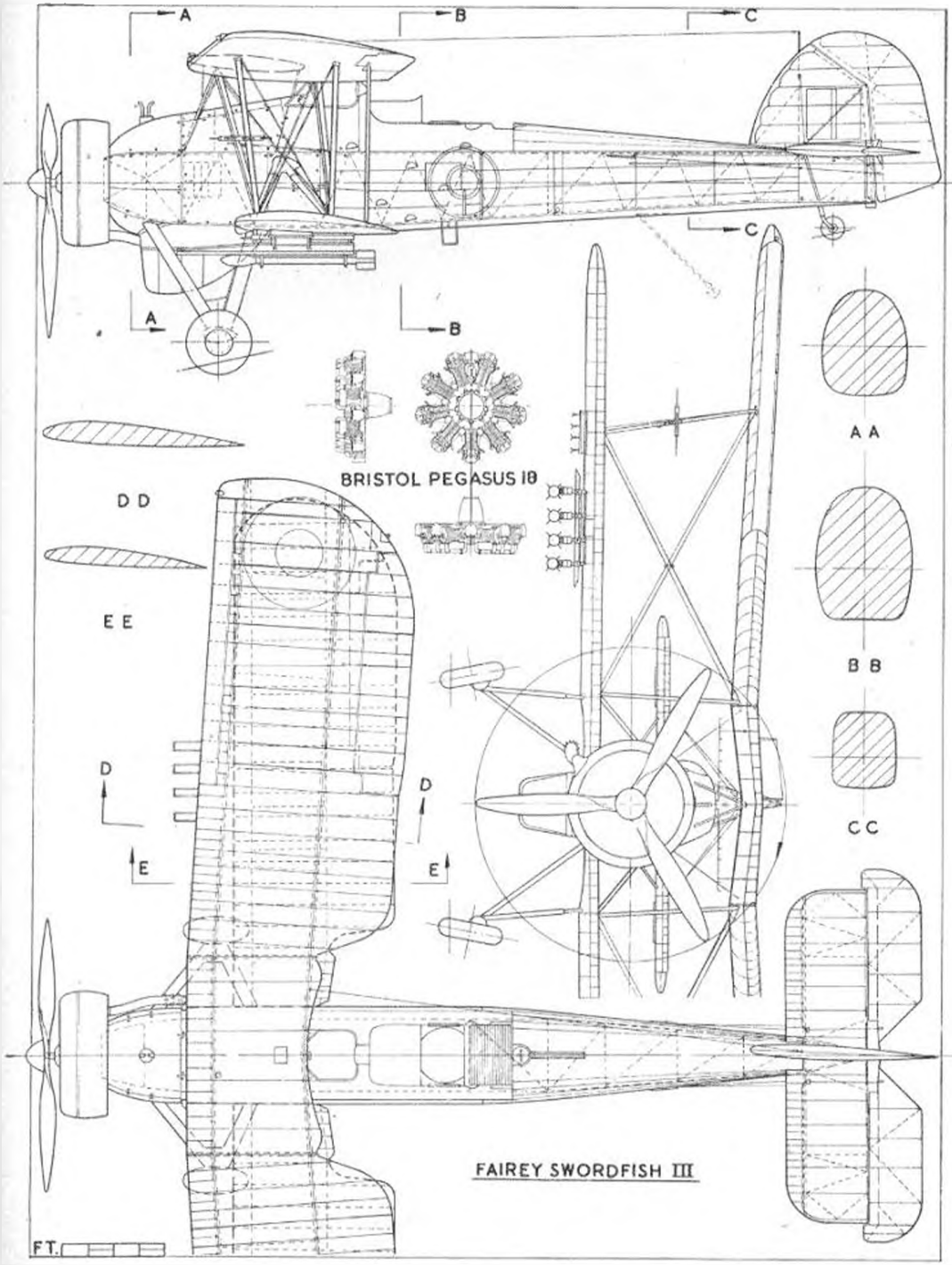
The tracking and continual attack by carrier Swordfish led to the destruction of the *Bismarck* in the N. Atlantic, and another historic action was at Matapan. Most heroic of all Swordfish exploits was the attack by six aircraft on the three enemy warships making a break through the Channel on February 11th, 1942. This won the first V.C. for the F.A.A. but all Swordfish were lost, mostly shot down by fighters which had to lower flaps and wheels to keep on the tails of the slow Swordfish.

During its long stay in production the Swordfish I's 750 h.p. Pegasus III M.3 gave way to the 1,065 h.p. Pegasus 18 and 30 of the Mk. III but the 2,390 Swordfish built remained substantially similar to one another. The last built was an A.S.V. radar-equipped Mk. III "Blackfish" NS.204, but it is NF.389 which is preserved in flying trim at R.N.A.S. Lee-on-Solent for all time.

Specification. Span 45 ft. 6 ins. Length 36 ft. 4 ins. (Floatplane) 40 ft. 11 ins. Height 13 ft. 5½ ins. (Floatplane) 14 ft. 7 ins. Wing Area 542 sq. ft. Empty Weight 4,700 lbs. Loaded Weight 7,510 lbs. Bomb load 1,500 lbs. Maximum Speed 120 m.p.h. at 5,000 ft. Cruising Speed 118 m.p.h. at 5,000 ft. Climb 1,220 ft./min. Landing Speed 57 m.p.h. Service Ceiling 19,250 ft. Range 769 miles.

Construction. All metal single bay biplane with folding wings. Fuselage of steel tube frame with stringer fairing at sides, bottom and decking. Forward fuselage covered with detachable Alclad panels, rear is fabric covered. "A"-frame deck hook fitted. Wings have two steel spars each with steel compression struts and dural lattice ribs. Whole fabric covered. Steel interplane struts outboard and at fold. Dinghy in upper port wing. Four ailerons with tie-strut, slats on top wing only. Normal wire bracing. Tailplane strut and wire braced with variable incidence. Tail unit of mixed steel/dural construction and whole is fabric covered.

Colour. The Swordfish served in so many roles, in so many theatres and over so long a period that very many schemes are applicable. Full colouring information appears on page 753. The surviving machines are silver overall and modellers favouring "invasion" stripes should apply these to all four wings. Some machines on Channel night ops. were matt black all over with no roundels or markings at all except serial numbers.



1/72nd scale "J" type reprints, and 1/48th scale "A" type Dyeline prints of this drawing are available price 6d. & 1/- respectively, post free, from the Aeromodeller Plans Service.

CLUB NEWS

AS the active flying season closes, so the number of club reports creeps up—this month we are fairly inundated with them. Keeping this preamble to a minimum means one or two more clubs mentioned, so without further ado let's go over to :

Scotland

It's reported that new lochs have been formed by Scottish tears, shed at the results of the U.K. Challenge Match held at Toome airfield, North Ireland, on Oct. 18th. With the English team winning the honours and Ireland second, the Scots were "also rans". **GALSTON & DISTRICT M.A.C.** held their first contest for junior members on Sept. 27th with all models competing in the one event, regardless of type. R. McCrorie and W. Wilson, both juniors, flying their first power and only their second models, put in many fine flights. Results of the contest were as follows :— 1st, W. Wilson (power) ; 2nd, H. Bowman (A.2 Glider); 3rd, J. Hood (power) ; 4th, R. McCrorie (power). W. B. Brenner, P.R.O. of **WICK M.A.C.**, dips his quill in thistle-juice to write :—"With the North Wind beginning to blow again and snow clouds looming up on the horizon, the thoughts of club members turn to winter building programmes. The club has recently procured some premises right on the main street, and half way between the local model shop and the airport, in fact ideally suited in every respect. The present activity is very varied and well up with times, a **Paageboy** being a regular performer and a **Pushy-cat** coming off the board shortly. Team racing has also been popular, a selection of **Philibuster, Hornet, Courier, Old Slippery** and **Dumpy,** has regularly been bashing the circuit. A veteran **Debutante** has also been doing well, with only one major repair in over 200 flights (this occurred in an argument with a car—the car won). There is also promise of big things to come, with a **Calamity Jane** nearing completion and a Bowden **White Wings** on the boards". Latest dodge seen on the flying fields these days is the wing trim tab used by Bill Meechan, West of Scotland area comp. secy. This is used for tow and turn trim on Bill's A.2 and takes the very simple form of a "Star" type razor blade placed sharp edge to the wing's trailing edge, and hinged there to with a piece of Scotch (of course !) tape. The method of affixment allows easy span-wise adjustment until correct trim is found. Bill then marks the position and when finished flying, removes the blade. "After all", he comments, "a fellow has to shave ! !"

Ireland

The 13th Irish Nationals proved one of the finest on record, being particularly lucky with the weather. J. Carroll won glider with 12 : 01 and also cleaned up stunt ; G. Drew collected 9 : 54 to win Wakefield and G. Woodworth scored 13 : 40 to head the power fliers. **DUBLIN S.M.E.E.** took home the Club Championship trophy. Among notable visitors was Mr. F. Aiken, Minister for External Affairs ; the Irish boys are now wondering if the 1954 Wake & Power can be classified as "external affairs" !

Western Area

Lack of support from the area clubs has spoiled several of the area meetings this year, but those who have rolled up have had some enjoyable flying. **BRISTOL & WEST M.A.C.** came up with a contest for biplanes, limiting rubber to ½ ozs. J. Berryman won with 2.05. A fortnight later K. Richards discovered a new contest hazard—man-made downdraughts (in the shape of a helicopter) which beat his **Hoppity** into the deck ! The club were a distant second to **SOUTH BRISTOL** in the M.E. Cup.

Ian Davies (centre) congratulates Peter Cameron (left) of Croydon and Dick Edmonds of High Wycombe, winners of the Davies Trophies at Long Marston on Oct. 18th.

East Anglian Area

Some ninety static models from **NORWICH M.A.C.,** plus non-stop combat flying, attracted considerable interest at the Battle of Britain exhibition at R.A.F. St. Faiths. A club visit to Radlett and much team-race practice have occupied members' time lately ; research into home-brew fuels threatens some motors with untimely ends.

South Wales Area

A visit to the Sophia Gardens Pavilion, Cardiff, between November 30th and December 5th, will interest modellers in the area. **CARDIFF M.A.C.** is supporting the "Model Engineering and Hobbies" exhibition there and should be able to put up a good live show, since a 65 ft. circle with 30 ft. headroom will permit short-line C/L demonstrations.

Southern Area

The **BOURNEMOUTH M.A.S.** journal tells us that a thoroughly enjoyable day was spent at Radlett by a group of club members, despite several prangs. R. Hirdes used several rolls of cellulose tape to hold his **Quickie** together long enough to place 4th in glider, and the same flier has done well in local and area glider comps. J. Manville topped the area Open Power event. A wide range of contests keeps interest high.

Radlett also attracted a coachful of **FARNBORO' M.A.C.** members and gave the club a much-needed boost. Only one record is claimed at present—F.F. power, 3 : 05 o.o.s. by J. Wetslea. About half-a-dozen **Paageboys** are flying in this club.

Northern Area

Radio is attracting attention in the **FORESTERS M.F.C.** G. Pike has converted a 7 ft. sailplane (by adding a tiny u/c and an Amco ·87 with 10 oz. pressurised tank and Walker regulator) for a duration record attempt. An ingenious touch is the automatic shut-off should no signal be received for one minute. After a preliminary 22 minutes hop the Amco lifted its

JETEX INTERNATIONAL CONTEST

1.	W. Houghton	Rhyl	10.66 ratio	(Jetmaster)
2.	H. Tubbs	Leeds	9·61	(100)
3.	F. O Cannell	R.A.F.	9·18	(50)
4.	R. Twomey	Cardiff	9·07	(200)
5.	N. Warr	—	8·38	(100)
6.	H. O'Donnell	Whitefield	7·48	(350)*

* Top junior.

U.K. CHAMPIONSHIPS

Rubber			
1.	J. O'Donnell	England	9 : 00
2.	H. O'Donnell	England	9 : 00
3.	L. Gray	Ireland	6 : 53
4.	G. Drew	Ireland	6 : 09
5.	J. Blackmore	England	5 : 52
6.	N. Osbourn	Ireland	5 : 47
Power			
1.	G. Upson	England	7 : 34
2.	S. Lanfranchi	England	7 : 14
3.	J. Bell	Scotland	6 : 06
4.	T. Kearns	England	4 : 35
5.	F. McDonnell	Ireland	4 : 20
6.	N. Marcus	England	4 : 17
Glider			
1.	A. Brooks	England	7 : 10
2.	L. Gray	Ireland	6 : 49
3.	G. Drew	Ireland	6 : 12
4.	P. Russell	Scotland	6 : 02
5.	G. Linford	England	4 : 52
6.	G. Byrd	England	4 : 38

England 15 pts., Ireland 8 pts., Scotland 7 pts. No Welsh team

RIPMAX TROPHY

1.	S. Allen	West Essex	405 pts.
2.	M. Rhodes	Harrow	397
3.	W. Merrick	Malvern	339
4.	E. C. Sills	Bedford	326

3½ lb. load at the end of a 50 yard run on the first official attempt. Darkness approached when the model had been airborne for 26 minutes so he cut the motor and brought the model in after a 38 min. total. On the next Sunday, a two-hour flight was anticipated, but after 15 mins. the little Amco gave a moan and seized.

BRADFORD M.A.C. placed well in all the Area eliminators, as witness rubber : 1st N. Lees (14 : 22) 2nd D. Lees, 3rd C. P. Miller ; Glider, 2nd S. Eckersley ; Power, 3rd S. Lanfranchi. A. Collinson was top area man in the Halfax, returning 8 : 32 with an **Eliminator.**

South Western Area

A concours d'elegance marked the commencement of **ILMINSTER D.M.A.C.'s** third year. R. Peppitt's **Stinson 105** proving the winner. The club have taken greater interest in contest events this season, with a steady improvement in the standard of flying ; K. Priest and R. Lattin placed first and second with their **Eliminators** at the Seaton Rally.

Outdoor Jetex R.T.P. speed is the craze in the **WEST BUCKLAND M.C.** G. Snell's 72 m.p.h. is fastest so far, but the 100 m.p.h. is the target. A development of this type of flying is 50-powered near-scale models, conforming to plan and side view, which ruling has led to many six-sided jobs being produced. J.A.T.O. experiments with an E.D. 3·46 powered **Eros,** boosted by two Jetex 200s and a Jetmaster, are planned.

London Area

Mention of the **NORTHWICK PARK M.A.C.** in these columns has swelled the ranks to over 40. Contest successes include D. Leech winning glider at the All-Britain Rally with his O/D A2, G. Upson's 3rd (in area) in the Hallax with five maxs. and a 4 : 53 fly-off, and the same flier's top place in the U.K. Challenge Match. The club team raised 30 : 28 in the M.E. Cup, special credit going to 14 yr. old A. Syine, who returned 7 : 10 with his **Corsair**—his first comp. model and his first comp. Sport and R/C models are coming off the boards in droves, ready for some steady winter flying.

Jetex speed jobs, R.T.P., were shown at Radlett by **EPSOM D.M.F.C.,** V. Bolt's Jetmaster model turning in over 100 m.p.h. The clubroom is always full of this type of model, though rubber R.T.P. is getting a look-in, 1 : 51 being top duration so far. Latest bombshell is a small kit job, modified to take a Dart.

J. Palmer and A. Albone both produced five maxs. and fly-offs of nearly 5 mins. and 3 mins. respectively to put **CROYDON D.M.A.C's** name at the top of the Gutteridge list, while the 33 : 00 agg. of Catland (3 maxs.), Palmer, Cameron and Marcus, all flying A2's, won the M.E. Cup for the club. At the All-Britain, R. Yeabsley collected the Victor Ludorum on top of 1st rubber and 2nd glider ; N. Marcus topped power, and G. Perkins ran 2nd in power floatplane. P. Cameron's fastest T.R. heat of the day ended in a calamitous final, when the ETA " blew its top ".

Winter contest fans have several weeks left before **BLACKHEATH M.F.C.** stage the Bill White Memorial Cup (open rubber) and the Winter Glider Contest, on Epsom Downs, January 10th, 1954. Pre-entry is requested (1s. per contest, both for 1s. 6d.), entry forms available from J. Snewin, 249, Eltham High St., Eltham, S.E.9.

North Western Area

Fortnightly meetings of the **BLACKPOOL & FYLDE M.A.S.** have recommenced at the Kite Club, Squires Gate Aerodrome, Nov. 19th, Dec. 3rd, 17th and so on at 7.30 p.m. After a busy season, attention is being turned to local competitions with the accent on novices, chuck gliders, and similar enjoyable events. In the 1954 Wakefield eliminator at Tilstock, H. O'Donnell ran second to B. V. Haisman, who recorded only 10 secs. short of five maxs. Another **WHITEFIELD M.A.C.** member, A. Bagnall, was third. In the Davies eliminator P. Criddle flew Harrison's E.D. 2·46 job over 10 miles in 11 : 52 to place second. A junior, A. Crane, headed the A.2 elim. a fortnight later, returning 12 : 09, with J. Parrott 2nd and J. O'D. 3rd. Top club power scorer was yet another junior, E. Mordin with 12 : 34. Other successes include A. D. Bennett's scooping the Northern Power Championships, J. O'D. taking the Area Rubber Championships (3 maxs.) and H. O'D. collecting top junior award in the International Jetex contest. A hint as to why this club is so successful is given by J. Trainer who cycled fifty miles to hunt his power job, lost at Tilstock. Keenness counts !

J.O'D. pops up again as secretary of the new **ENGLISH ELECTRIC M.A.C.** Formed at the Wharton branch of the firm, interest is stimulated at the Preston and Salmsbury divisions, and the management are all for it. With the Chief Designer and Chief Aerodynamicist as patron and president, and several " names " already members, this is a club to watch.

CHEADLE D.M.A.S. have enjoyed an active season, despite several members in the R.A.F. and slightly over average share of bad luck. Eric Taylor has proved that B.R. can do it too—his model box got lost on a train, though it was after the contest ! Despite one of the rubber team waiting three hours at the wrong venue, one model losing itself, one disappearing into cloud, and one written off with a motor breakage, the club team managed to win the Greenhalgh Trophy at Bolton. Other successes include topping the area's team glider results on September 13th with 24 : 09, W. Nield taking glider, B. Faulkner rubber, and C. Gardiner power, at the Hyde rally, and B. Hooley's collection of the " Area Champion " label.

Midland Area

Flying for fun is the shot for **WORKSOP AERO-MODELLERS,** and many elderly jobs are staggering skywards under their loads of dust. Interesting has been the emergence of P. Russell's 6 ft. R/C glider fitted with D.F.S. type spoilers which greatly facilitate spot landings. The customary Boxing Day get-together is again scheduled for this year, with impromptu contests, etc., as required.

CRESWELL W.M.A.C. ask for any French or Belgian club to get in touch with them (S. Poole, 49, Bevin Estate, Creswell, nr. Worksop.) J. Thompson recently won the club power trophy for the third year running, using an **Eliminator** fitted with O/D wings, and W. Hancock took home the glider cup with his O/D model. R. Ray provided diversion with a Mills ·75 scale **S.E.5A.,** which had a steady climb but a glide which made everyone slightly seasick, he changed the motor to his **Paageboy** and promptly lost it, for the third time in as many months.

CHESTERFIELD SKYLINERS number over forty keen members, but are always pleased to welcome more at the Settlement, Packers Row, any Thursday, 7 p.m., or any Sunday on Old Walton Golf Course.

In the recent eliminators F. Young of **SUTTON COLDFIELD M.A.C.** scored 13 : 30 with his O/D A2 and A. C. Ward recorded 13 : 14 with an **Eliminator.** Both these members obtained their "A" certificates on this day. A recent C/L show (on 35 ft. lines, no less) for Sutton Youth Council went over very well; interest is now turning to gliders.

WOLVES M.A.C. members have found their pay-load dummies arguing with the fuselage structures and coming off best, but this has not spoiled interest in this type of flying. P. Hardwick led the club's scores in the F.A.I., aggregating 13 : 07, and not one entry piled in—a pleasant change. This club would like to see fewer area contests and eliminators, with big free-and-easy meetings, organized between areas, in their place.

South Midland Area

The 1954 eliminators were all flown at Henlow under excellent conditions. Top Wakefield man was Cooke of Henley with 12 : 09, top glider J. Lamble (West Herts), 13 : 30, and R. Moulton (West Herts) returned 11 : 18 to head the power list with his **Komet.** In the M.E. Cup, Cripps of West Herts was top individual flying a **Tadpole.** On A. Cooke's second Gutteridge flight, he set a new **HENLEY M.C.** Wakefield record with a fine flight of 11 : 10 o.o.s.

R. Brown of **LUTON D.M.A.S.** won both the Collins Shield (Wakefield) and Emmerton Prize (open rubber) with his Wake, followed in each event by R. Clements, who took the Sanderson Trophy (glider) with his A2. F. Chapman's **Lulu** was second in the Sanderson. A great deal of sport flying is going on, and J. Symmond's delta A2 (!?) and S. Miller's radio job are noteworthy.

Several coach trips and much local activity are reported by the **MAIDENHEAD REBELS M.A.C.** R. Chandler's **Corsair** holds the club glider record, 7 mins. o.o.s., found 13 miles away. The local fire brigade turned out to retrieve M. Plummer's **Eliminator** from a 90 ft. poplar, but had to leave it to the wind. A radio receiver has been presented to the club by F. O. Godfrey and should provide much interest.

D. Mander, of 22 Cherry Tree Walk, Coney Hall, West Wickham, Kent, tells us that **SPRINGPARK M.A.C.** members have found an unidentified model in a wood. It is a 36 in. black, white and grey cabin job, built apparently from a kit and powered by a Mills 75. If there was a name and address on it, it must have been on the fin, which remained up the tree.

With which, and the wish that your Christmas stocking contains that new motor you've been hankering for, we will leave you to get on with that heavy building programme for another month. Merry Christmas . . .

The CLUBMAN

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W. J. Knight, 30 Chobham Road, Woking, Surrey.

FALMOUTH M.P.B. & A.C.
L. F. Barham, 7, Trevethan Rise, Falmouth, Cornwall.

ENGLISH ELECTRIC M.A.C.
J. O'Donnell, c/o Stress Office, English Electric Co., Ltd. (Aircraft Division), Wharton Aerodrome, Wharton, nr. Preston, Lancs.

HARRIS ACADEMY (DUNDEE) M.A.C.
D. W. Kennedy, The Shellin, Auchterhouse by Dundee.

SECRETARIAL CHANGES

GLASGOW M.A.C.
J. Robertson, 24, Anenster Drive, Anniesland, Glasgow W.3.

SOLENT HEIGHTS M.F.C.
J. Hitchman, "Welcome", The Square, Godshill, nr. Ventnor, I.O.W.

HUDDERSFIELD D.M.A.C.
G. Calverley, 126, Weather Hill Road, Lindley, Huddersfield.

MALTON, NORTON, D.M.A.C.
W. Turley, 82, Howe Road, Norton, Malton, Yorks.

WHYTELEAFE A.M.F.C.
J. Salmon, 36, Banstead Road, Caterham-on-the-Hill, Surrey.

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N. J. Braybrook, 37, Thorngate St., Kettering, Northants.

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R. Rowland, 179, Houghton Road, Thurnscoe, nr. Rotherham, Yorks.

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P. Maraghan, 16, Adair Road, Larkhill, Liverpool 13.

MAIDENHEAD REBELS M.A.C.
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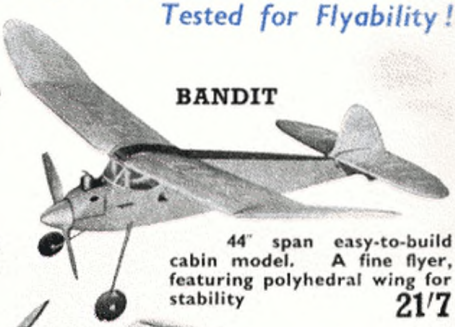

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