AERO MODELLER

Christmas Issue

DEC
1952
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

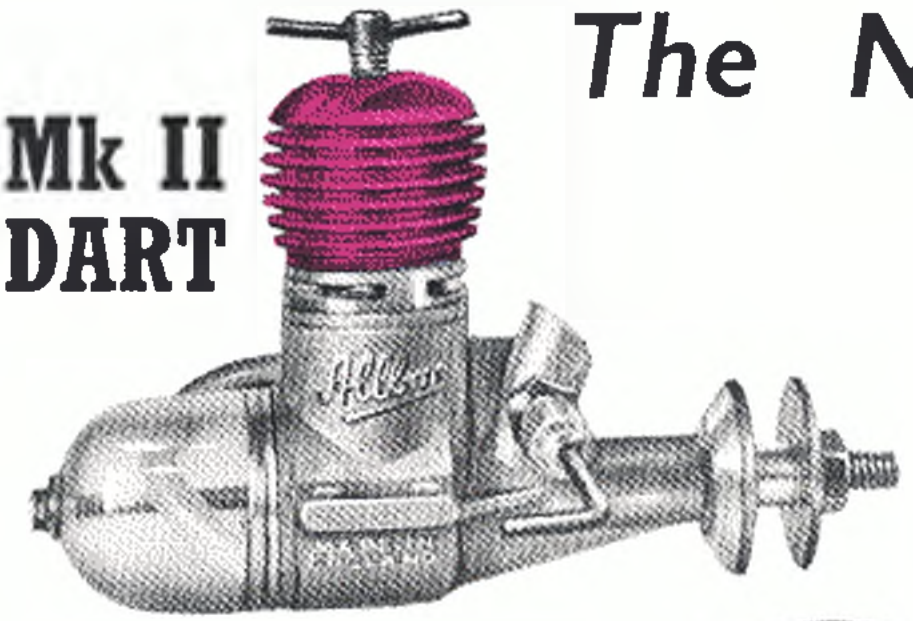
Hip Pocket Aeronautics Gallery Free Plans.

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

Diligence Work by Hlsat.

The New REDHEADS Allbon

Mk II DART



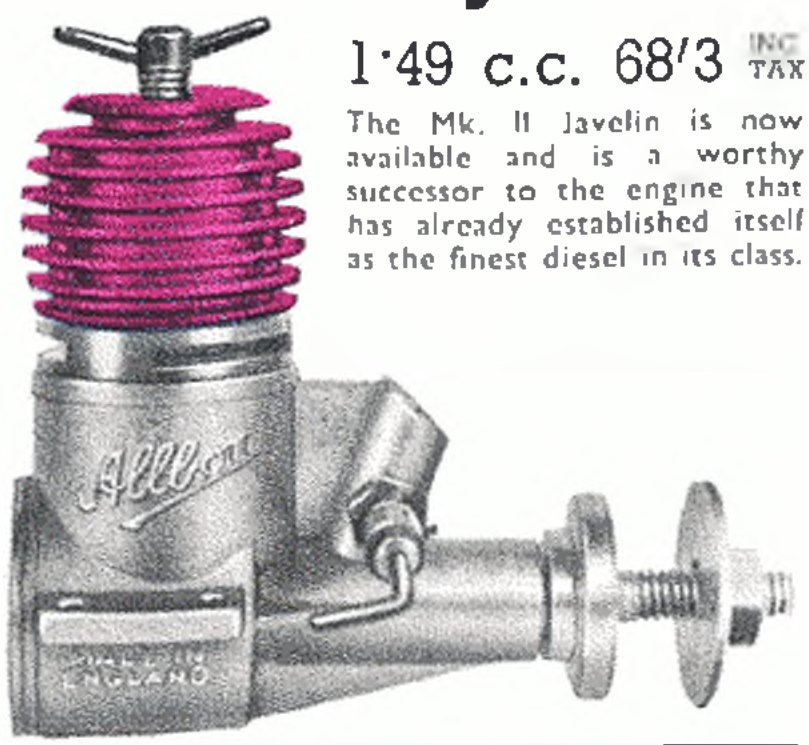
0·5 c.c. 67/6 INC. TAX

The Dart is still maintaining its reputation as the world's most popular diesel and this new Mk. II version incorporates many improvements which have raised efficiency and reliability to the highest possible peak.

BRITISH DIESELS LEAD THE WORLD

HERE ARE TWO ENGINES THAT BY PERFORMANCE & RELIABILITY WILL HELP TO INCREASE THAT LEAD

Mk II JAVELIN



1·49 c.c. 68/3 INC. TAX

The Mk. II Javelin is now available and is a worthy successor to the engine that has already established itself as the finest diesel in its class.

Sole Distributors: E. KEIL & CO. LTD., 195 Hackney Rd., E.2. Tel. Shoreditch 5336

Raeburn

YES, WE CAN STILL SUPPLY

Halfax Sabre	16 6
Halfax Javelin	22 6
Halfax Hermes	15 6
Halfax Mills Bomb	18 6
Mercury Musketeer	24 9
Junior Musketeer	20 10
Frog Strato D	17 6
Skyleada Jeep	4 0
Skyleada Hawk	4 6
Skyleada Grasshopper	3·8
Skyleada Skylark	4 6
Elf King	12 6
Keil Kraft Stuntmaster	23 10
Keil Kraft Pixie	4 11
Jetex 200 Contest	10 7
Lil Lulu, 27" Team Racer	14 6
Veron Martinet	25 8
Mercury Junior Monitor	17 6
Veron Fouga Cyclone	6 1
Veron Sea Hawk	6 8
Veron Thunderjet	6 8
Jasco Scout	5 6
Jetex Rota Kite	10 0

(continued)

Challenger (Ready to fly)	44 0
Frog Avenger (Ready to fly)	2.9
Frog Spitfire (Ready to fly)	9 11
Frog Mk. IV Fighter (Ready to fly)	12 6
E.D. Radio Queen	84 0

GLIDERS

Vortex A.2 Sailplane	22 7
Soarer Minor 48"	9 9
Cadet 30"	4 11
Chief A.2 Sailplane	22 8
Veronette 40"	11 7
Norseman A.2 Sailplane	29 3
Marauder A.2 Sailplane	17 9
Prince 60" wingspan	25 0
Diana 36"	9 0
Fortuna 48"	15 0

JETEX UNITS

Jetex 50	13 4
Jetex 100	27 5
Jetex 200	38 9
Jetex 350	52 9
Jetex 50 (motor only)	9 2

NEW ENGINES

	Cash Price
E.D. 46	55 0
Elfin 0·5	67 6
Allbon Dart 5 c.c	65 2
Mills S·75 c.c.	67 3
Mills P·75 c.c.	61 2
E.D. Bee I c.c.	57 6
Mills 1·3 c.c.	91 8
Allbon Javelin 1·49 c.c.	68 3
Elfin 1·49 c.c.	59 6
Frog 150	49 6
E.D. Mk. II 2 c.c.	62 6
E.D. 2 c.c. Comp Spec.	65 0
E.D. Mk. III 2·5 c.c. Series II	82 6
E.D. Mk. IV 3·46 c.c.	82 6
D.C. 350 3·5 c.c.	82 6
Frog 250 2·5 c.c.	76 0
Amco 3·5 c.c. (GP)	97 6
Amco 3·5 c.c. (D)	97 6
Frog 500	78 9
E.T.A. 29	149 5
Yulon 49 (GP)	124 5
Elfin 2·49 c.c.	70 0
Frog 150	49 6

FREE FLIGHT KITS

Southerner Mite 32"	12 10
Pirate 34"	14 8
Bandit 44"	22 8
Ladybird 41"	22 8
Outlaw 50"	37 6
Robot 56"	00 0
Junior 60, 60"	48 3
Southerner 60	48 11
Falcon 96"	131 5

PYLON MODELS

Slicker Mite 32"	11 7
Slicker 42"	21 5
Slicker 50 50"	30 6
Super Slicker 60	42 9
Skylon 38"	12 10
Junior Mallard 34"	18 4
Mallard 48"	22 4
Stentorian 72"	84 11
Sky-Skooter 48"	30 6
Martinet 36"	25 8
Streaker 37"	24 1
Cardinal 37"	17 8

IMP

Lavochkin 17, 37"	30 6
Frog " 45 " 45"	31 6
Strato-D 42"	17 6
Cirrus 48"	25 6
Zephyr 33"	12 6

JETEX MODELS

Gore Space Ship	9 3 1
Cub, 20"	3 1
Skyjet 50, 18"	4 7
Skyjet 100, 24"	6 9
Skyjet 200, 32"	9 2
Saunders Roe	10 7
200 Contest M.'s	10 7

SECOND HAND ENGINE LISTS

De-Long 30 (Spark Ign.)	80 0
Yulon 29 (GP)	55 0
Allbon Arrow (GP)	30 0
Frog 175 (Sub. Ign.)	30 0
" K " Falcon 2 c.c. Diesel	40 0
E.D. Mk. II 2 c.c. Diesel	27 6
E.D. Mk. III 2·49 c.c. Diesel	45 0
E.D. Mk. III 3·46 c.c. Diesel	50 0
D.C. 350 3·5 c.c. Diesel from	45 0
Elfin 1·8 Radial Mount	50 0
Elfin 2·49, Radial Mount	42 6
Elfin 2·49, Beam Mount	42 6
Ohlsson 23 Glo-Plug	45 0
Ohlsson 19 Glo-Plug	39 6
Mills 1·3 c.c.	45 0

RADIO UNITS

E.D. Mk. I Unit	£17 19 9
E.D. Mk. III Unit	£9 17 11
E.D. Mk. I Transmitter	£6 1 0
E.D. Mk. I Receiver	£9 12 3
E.D. Mk. I Escapement	£2 18 11

(continued)

E.D. Mk. III Transmitter	£5 14 9
E.D. Mk. III Receiver	£3 14 5
E.D. Mk. III Escapement	£1 2 11
F.C.C. Receiver	£4 7 6

CONTROL LINE

VERON

Nipper 17"	12 10
Bee-Bug 22"	14 8
Speedee	22 7
Stunter	23 10
Focke Wulf 190	25 8
Midget Mustang 24"	27 6
Sea-Fury 25½	28 8
Wyvern	28 8
Philibuster 28½	28 8
Minibuster 19"	18 4
Spitfire 27½	33 7
Panther 41"	30 6

FROG

Vanfire 40"	29 6
Vantage Team Racer	21 0
Vandiver 27"	15 0

MERCURY

Monitor	22 4
New Junior Monitor	23 6
Midge, Class " A "	6 5
Mk. II Team Racer Class " A "	23 3
Mk. I Team Racer Class " B "	28 1

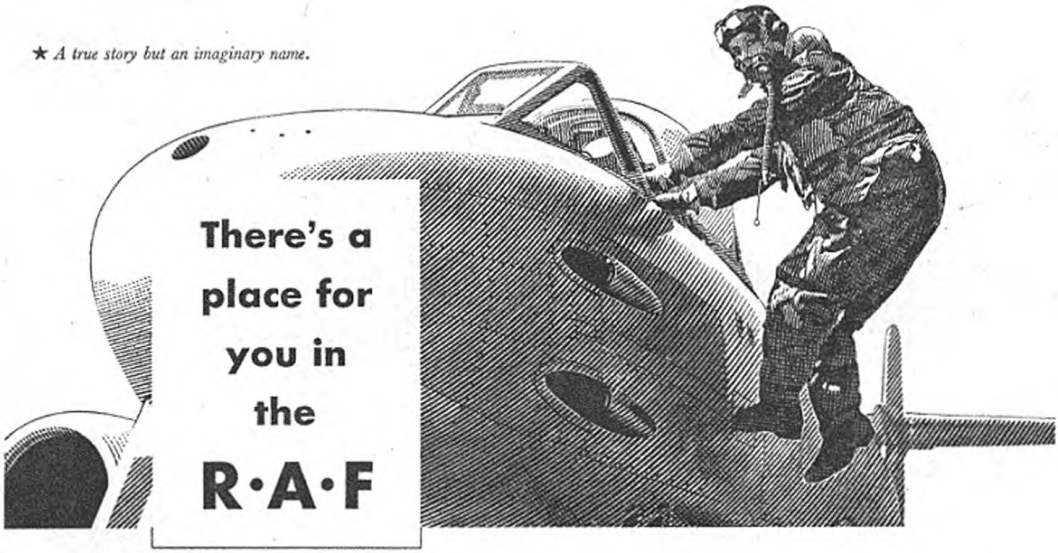
RAEBURN-COLNE

9 ARCADIA, LANCS

As in the case of Pilot Officer Proudman....*

PROUDMAN left his public school intending to take up aeronautical engineering after doing his National Service. He 'opted' for the Royal Air Force when he registered, and took his flying aptitude test (which you can now take as early as 16). He passed the test and volunteered for aircrew duties. Within three weeks of call-up he was training for pilot; within 18 weeks he received his probationary commission. After qualifying as a pilot he found that he liked the R.A.F. so much that he put in for a short service commission. He hopes to stay on as a regular with a permanent commission. The picture below shows him about to take off in his 600 m.p.h Meteor jet.

★ *A true story but an imaginary name.*



Proudman's story is by no means unique. The Royal Air Force today offers real opportunities to young and ambitious men. With the expansion that is going on, promotion is rapid — and pay is exceptionally good: inside 8 years, a pilot or navigator can be earning over £1,000 a year as a married Flight Lieutenant. There are several ways in which you can be granted a commission: through Cranwell . . . via the University . . . or during your National Service. Post the coupon now for fuller details. You do not commit yourself by doing so.

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E.C.C. 951A hard valve receiver. 70/0+17/6 P.T.
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E.D. polarized relay. 30/0
E.D. Standard relay. 22/6
E.C.C. 5A relay. 25/0+6/3 P.T.
E.C.C. escapement. 17/6+4/5 P.T.
E.D. Reed Unit (high or low frequency, state which). 60/0
Frequency Meter. 21/6
Hivac Valve 17/6+3/10 P.T.
Milliameter 0·5 M/A 12/6
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See October & November issues for complete list of countries which accept. C.O.D. delivery.

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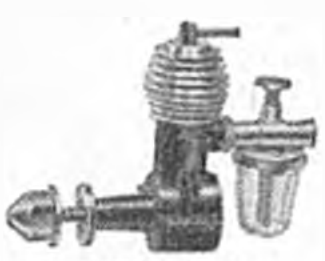
ENGINES

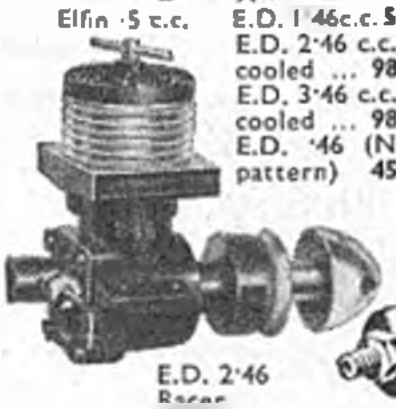
The supply position varies from day to day, and apart from E.D. products it is impossible to forecast stocks at publication date. We have been fortunate in obtaining large stocks to cope with the additional Christmas demand. In very short supply ETA 19 & 29.

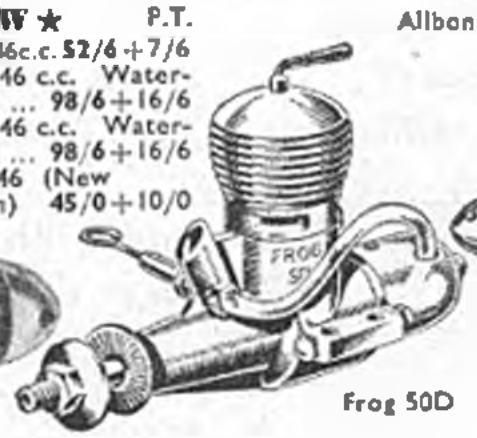

Mills ·75 c.c.


E.D. 3·46 c.c.


Elfin ·5 c.c.


Allbon Javelin


E.D. 2·46 Racer


Frog 50D


D.C. 350D

	P.T.
Allbon Arrow G.P.	55/0+Nil
D.C. 350	53/4+13/4
E.D. Bee I c.c. ...	47/6+10/0
E.D. 2·46 Racer ...	72/6+10/0
E.D. Mk. IV 3·46 c.c.	72/6+10/0
Frog 150 Diesel ...	40/6+9/0
Frog 250	59/6+13/0
Frog 500 Red Glow	61/8+13/4
Frog 500 Petrol ...	69/9+15/3
Mills P.75	60/0+10/9
Mills S.75	55/0+11/9
Mills 1·3	75/0+16/1
Allbon Dart ·5 c.c.	52/6+12/8
Elfin ·5 c.c.... ...	54/0+13/6
E.T.A. 29	119/6+29/11
Frog 50; ·5 c.c. ...	40/6+9/0
Elfin 1·49 c.c. ...	47/6+12/0
Elfin 2·49 c.c. ...	56/0+14/0
Allbon Javelin ...	55/0+13/3
E.D. ·46	45/0+10/0

★ NEW ★

	P.T.
E.D. 1·46 c.c.	52/6+7/6
E.D. 2·46 c.c. Water-cooled ...	98/6+16/6
E.D. 3·46 c.c. Water-cooled ...	98/6+16/6
E.D. ·46 (New pattern)	45/0+10/0

JETEX KITS P.T.

Zyra Space Ship complete with motor	10/11+2/5
Zyra Space Ship kit only ...	5/9+1/3
Jeticopter 50 ...	5/9+1/3
Jeticopter 100 ...	8/8+1/11
Flying Wing 50 ...	5/9+1/3
Hot Dog 50 ...	3/6+9d.
Durajet 350 ...	16/8+3/9
Contest 200 ...	8/8+1/11
Avro 707b 50 ...	5/9+1/3
Vampire 50 ...	5/9+1/3
Vampire 100 ...	8/8+1/11
Meteor 50 ...	8/8+1/11
Saunders Roe Flying Boat ...	8/8+1/11
Plastic Race Car complete with 50 unit	15/6+3/5
Plastic Speed Boat complete with 50 unit ...	12/6+2/9
Helicopter complete with 2-50 units (ready to fly)	27/0+6/0

GLIDERS P.T.

K.K. Soarer Minor, 48"	8/0+1/9
K.K. Soarer Baby, 36"	5/0+1/1
K.K. Soarer Major, 60"	11/6+2/7
K.K. Minimoa, 50"	7/0+1/7
K.K. Invader, 40"...	6/6+1/5
K.K. Cadet, 30" ...	4/0+11d.
Veron Coronette, 26"	3/6+9d.
Veron Verosonic, 46"	10/6+2/4
Mer. Norseman, 58"	29/3
Frog Prince ...	20/6+4/6
Frog Diana, 36" ...	7/5+1/7
Mer. Grebe, 49" ...	12/0+2/8
Frog Vespa, 30" ...	5/9+1/3
K.K. Chief, 64" ...	18/6+4/2
Mer. Marauder 65"	17/9

Frog C/L KITS P.T.

Vanfire	24/2+5/4
Vandiver	12/3+2/9
Vantage	17/2+3/10

Keil Kraft

Ranger	10/6+2/4
Pacer	15/0+3/4
Stunt Queen ...	21/0+4/8
Skystreak 26" ...	9/6+2/1
Skystreak 40" ...	10/6+2/4
Phantom	18/6+4/2
Scout Biplane ...	22/6+5/0
Phantom Mite ...	11/6+2/7

Veron

Beebug	12/0+2/8
Panther	25/0+5/6
Minibuster ...	15/0+3/4
Philibuster ...	23/6+5/2
Midget Mustang ...	22/6+5/0
Focke Wulf 190 ...	21/0+4/8
Sea Fury Mk. IX ...	23/6+5/2
Spitfire Mk. XXII	27/6+6/1
Wyvern	23/6+5/2

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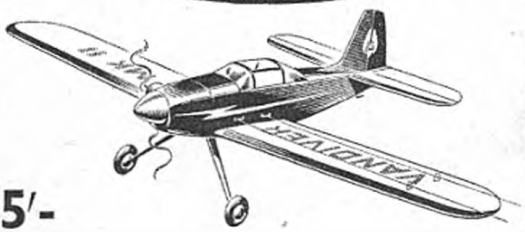

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Simple to build and EASY TO FLY!

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SKIPPY—"V" tail sportster

MIDGE—Racing special

PUP—Super biplane

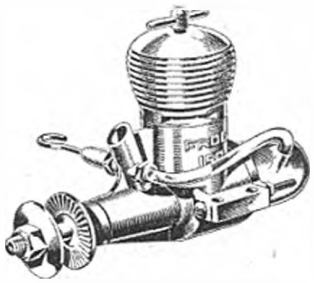
SCAMP—Mid-wing winner

Anyone can build and fly these 12 in. span racing midgets! The FROG Kits have everything—all cut-out parts, plastic airscrews, nose bushes, wheels, etc., special easy-to-read drawings, in fact there is nothing to equal a FROG JUNIOR Kit!

The price is — Only **3/6**

The VANDIVER II *PLUS* The FROG "150"—

The perfect stunt combination



For only 49/6 including tax, YOU can have a precision built, contest proved, CLASS A motor which has a speed range of 2,000 to 15,000 r.p.m. with absolute ease of starting and tough construction. The FROG "150"—the best, the lowest priced of all and the ideal motor for the new "Vandiver II."

49/6

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FROM OUR SELECTION OF HUNDREDS OF DIFFERENT DESIGNS WE OFFER YOU BELOW SOME OF THOSE WHICH HAVE BEEN MOST POPULAR IN 1952 . . . .

MADCAP. Vic Smeed's highwing beginner's design for E.D. Bee I c.c. diesel tops the list. Span 45½ ins. You can get it too by quoting PET/470. **Price 4/6**

ENVOY. Tricycle u/c semi-scale power by Cyril Shaw—last design before he left for Canada—suitable for ½—1½ c.c. Span is 40 ins. Quote PET/461. **Price 4/-**

LULU certainly is a "Lulu" for glider beginners though performance is up with the experts. Parallel chord wings, slabsider fuselage, span 50 ins. Quote G/338. **Price 3/6**

SNARK. A Dick Twomey Nordic A/2 model with aerofoil shape fuselage. Span 63 ins. Quote G/469. **Price 6/-**

AMBASSADOR. Alan Hewitt's Champion winner is still "tops" for looks and stunts. 2·5 c.c. engine, span 35½ ins. Quote CL/457. **Price 4/-**

UNLIMITED. The unbreakable flying wing model for novices. Does all the stunts (almost by itself). Engine 1·5—2·5 c.c. Span 20 ins. Quote CL/369. **Price 2/6**

COMPER SWIFT. Highwing flying scale power with pendulum ailerons and rudders. 1·3—1·8 c.c. engines. Span 36 ins. FSP/464. **Price 5/-**

SUPER SAINT is winning for Team Racers everywhere, since first taking the Davis Trophy. Engine 5 c.c. Span 29 ins. CL/465. **Price 4/-**

FLIP FLOP. A Warring design in lighter vein for Open Contests—parallel chord, slab, single folder. Span 36 ins. D/463. **Price 4/-**

Then there are these models that you may fancy for a change—

BILL BAILEY—FREE LANCE TRAWLER. Electrically driven scale model 27 ins. long—ideal for Radio Control. Suitable beginner. **Price 5/-**

MENANG—AIRDRIVEN HYDROGLIDER. Your ½ c.c. diesel and aircrew will drive this model boat. 17½ ins. long. **Price 3/-**

LE MANS TD MIDGET. Super detail scale model for ·75 c.c. Mills or similar by *Model Maker* Co-Ed. Deason. **Price 5/-**

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JALLOPY. 16 in. Hydroplane for latest ½ c.c. engines. Built and tested by *Model Maker* staff. **Price 2/6**

SAILING YACHT—DUTCH AUXILIARY TYPE. For sail or power. 16½ ins. long, beam 7 ins. Scale 1/12 th. **Price 3/6**

ADMIRAL'S BARGE. Magnificent R/C Naval Pinnace 33½ ins. long, 9½ in. beam. For diesel 2—2½ c.c. On 3 sheets and detailed 8-page instruction folder. **Price 10/-**

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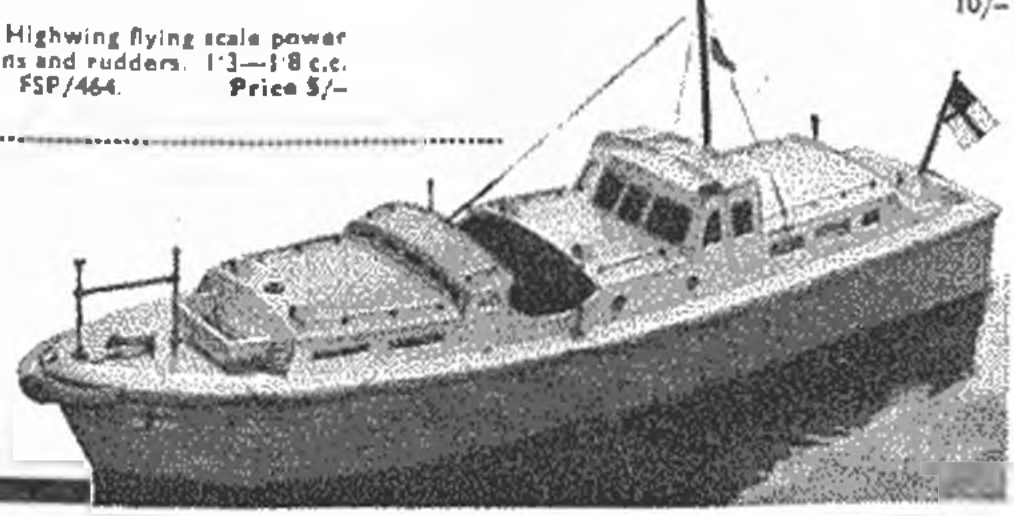

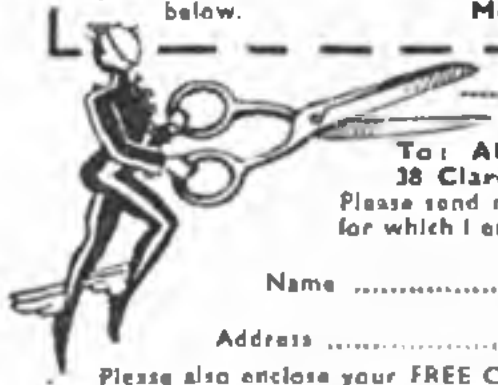

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An Open Letter to all my customers

This year, I am pleased to say, has been one of steadily increasing business, and for your co-operation and confidence in my service I thank you. As usual, it has been my policy to get the goods off per return, leaving the correspondence to be answered later, so if there has been a little delay in answering your queries, you will know that this is due to pressure of business. While I would like to reply personally to those of you who have written letters of appreciation for prompt service received, this is not possible, as I would want at least six typists to cope with it all, so please take this letter as my reply to all who have written me such nice letters. I thank you for them and enjoy reading them.

The joy in creating is evidenced by the swing back to Solid and all types of Flying Scale Models ; this section of modellers is indeed fortunate in having such famous firms as Messrs. KeilKraft, Veron, Skyleada, Halfax and Bateman to look after their interests. A complete range of their products is always in stock.

Orders from our Overseas friends continue to pour in, thus proving that British Kits, Motors and Accessories represent the best value for money in the world today. As usual, the American aeromodellers are high in their praise of British Kits ; their orders are more than welcome, for the more we export the more raw materials we can import—Balsa Wood being an import, you see what I mean! I am happy to say that only the finest Solarbo silky cut Balsa Wood is being despatched for export.

From those of you in the Forces it is very gratifying to hear that such good progress has been made in the formation of Clubs and to know that the authorities recognise aeromodelling as being a good occupational hobby. As usual, you can rely upon only the best being sent in the quickest possible time.

I cannot conclude without reference to my service to Retail Model Shops abroad. Judging by the way repeat orders are coming in, this service is one which has proved most welcome, enabling the retailer to obtain a complete range of all the best modelling products from one source. The benefit of this is obvious, as it cuts down clerical work, applications for licences, etc. Furthermore, you only receive items that I know are good sellers—a knowledge that is backed by my 17 years in the model trade.

To One and All, my Staff and I wish you a Very Happy Christmas, with lots of Good Flying in the New Year.

Arthur Mullett

ARTHUR MULLETT
16 MEETING HOUSE LANE
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Contents

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A Good Year

LOOKING back, 1952 has been fairly kind to aeromodellers, for the majority of contest dates have produced flyable—and in some cases almost unbelievably fine—weather. This unusual toleration on the part of the Clerk of the Weather has been nowhere more noticeable than at the major Rallies, for perfect model flying conditions attended the Northern Heights Gala (as usual!) and the All-Herts. Rally in the South, similar conditions obtaining farther North for the "Yorkshire Evening News" and "Daily Dispatch" Rallies, an unfortunate postponement of the latter meeting being perhaps fortuitous in the long run.

This clemency extended to the Wakefield and Glider Trials at Digby, though the abundance of thermals at this meeting made Team selection more of a chancy affair than usual. Unfortunately, conditions were just the opposite at Fairlop for the Power Team selection, and yet again that arch-enemy of aeromodellers, Wind, spoilt what could otherwise have been a memorable Nationals.

In the International field, Great Britain has cause for satisfaction. Our control-line stalwarts again swept the board at the Championships in Belgium, following up with a similar performance at an invitation meeting at Namur plus a World Record gained through the good offices of Mr. P. Wright, British control-line champion for 1952.

Success followed the sending of a team to Switzerland, and 1953 should provide a feast of motored flying should the S.M.A.E. find itself able to stage both the free-flight and control-line Championships. Though not in the recognised Championship programme, the success of the fellows who travelled to Italy at their own expense and won the F.N.A. Cup is deserving of special mention.

Though similar success eluded us in the Wakefield and Swedish Cup events, Great Britain has no need to feel disheartened, for our lads showed themselves to be every bit as good as the next, providing Lady Luck proved to be on our side.

A dimmer side of the aeromodelling picture is the increasingly difficult situation relative to suitable flying grounds, a condition now making itself felt all over the country. Rumours of the early loss of Fairlop Aerodrome to the London folk are not reassuring, for very few spaces are available to the large number of keen modellers in and around the London district. May 1953 see a speedy solution that will ensure the continued use of this ground.

For our part, 1952 has been a year of change and readjustment, and we look forward to the new year with every confidence, and the hope that we shall continue to please our readers more and more in the coming months. This special issue is perhaps a sign of things to come, though necessarily our enthusiastic hopes must be dictated to some extent by the financial angle!

If 1952 has been good in parts, we trust it is not too much to hope that 1953 will serve us even better, and we close with the sincere wish that each and every aeromodeller has better flying next year, and a Christmas that will be outstanding.

Christmas again !

Once more it is our pleasant duty to convey to one and all our "Happy Christmas" wishes, wherever you may be and whatever clime you may enjoy. For us it is the seventeenth occasion on which we've had this opportunity to pass on our blessings for the yuletide season, and we can happily reflect on the many memories from each of those past seasons.

We celebrate by including with this enlarged issue two free plans of models especially designed by popular Vic Smeed and Bill Dean. "Débutante" will be a stablemate for the already favourite "Tomboy" and "Madcap". It caters for the smaller class of engine, and is, with the Rev. F. Callon's excellent photographically illustrated building instructions, destined to be one of the most popular designs ever published. From Bill Dean's board we have a slick, up-to-the-minute revised version of that little rubber job that has started so many successful aeromodelling careers . . . The *New* A.M. Cabin Monoplane. We know that you'll like both of them.

AEROMODELLING TYPES.—

"The dog lover."

Three Golds !

Confirmation has been received from the F.A.I. that three British applications for International Records have been ratified. Two go to the credit of John O'Donnell of Whitefield, who set a duration of 4 : 20 and covered a distance of 1,720 metres with his Giro-glider, thus qualifying for categories in the special Aircraft section.

The other achievement is the speed of 165·708 km/h. set up by Peter Wright of St. Albans at Namur last August, capturing the Class 1 control-line speed record. Congratulations to both of them for again placing Great Britain in the International lists.

The C. Rupert Moore Cover

There will be many among our readers who will sigh with satisfaction at the temporary return of Mr. Rupert Moore's cover painting, which we have already announced as a special Christmas extravagance re-introduced for this bumper issue. Writing about the cover, Rupert tells us that the incident he has depicted was one frequently observed in 1917 at the Advanced Training School of the R.F.C. at Doncaster, where the F.E.8. was issued for training in aerial combat. Rupert goes on to say, "My memory of the F.E.8 is of a very refined and agile little machine with many features of advanced thinking. Rigging wires were very complicated and I have been careful to show these accurately on the painting."

"The F.E.8. was a product of the Royal Aircraft Factory (now called the Royal Aircraft Establishment) at Farnborough. In those days, not only did it design but it also built aircraft, though it was not supposed to. The letters F.E. meant 'Farman Experimental' and were so named because those in control wrongly attributed the origin of the 'pusher type' to Farman. A total of 103 F.E.8's were delivered to France during 1916. Though a small number were clear doped all over, with, presumably, bare aluminium nacelle, most were 'camouflaged' as on the cover painting with one of three colours, 'Nivo', 'P.C.10', or 'Light Earth'."

"'Nivo' was a dark green within a shade of 'Dark Green' of the last war, the 'Light Earth' was not unlike the 'Dark Earth' of 1940 but with less red and more ochre, and 'P.C.10' was almost a 50/50 mixture of both. Undersurfaces were clear doped, this usually applied to fabric wheel discs but not always. Early dopes were sensitive to damp, and were apt to slacken unless varnished. Not only did this make all planes glossy, but 'clear varnish' varied from a deep transparent mahogany colour to the palest amber, which is colourless when applied."

" Varnish darkens rapidly, making examination of historical aircraft useless until the varnish is removed. Roundels were painted on after varnishing, with pure vermilion, white and ultramarine glossy pigment. Struts and tail booms were varnished ash, and the four bladed airscrew french polished mahogany."

With that much authoritative information, and the perfect colour rendering so carefully provided by our skilled blockmakers and printers, we shall now expect to see some very accurately decorated F.E.8's on the flying field in 1953.

Quiet please !

A recent letter from that versatile American Jim Walker touches on a subject that British aeromodellers would do well to seriously consider, particularly in view of the many instances where they have fallen foul of local residents and authorities on the question of noise.

To quote Jim : " I wonder how much longer we are going to suffer the noise problem before we all wake up to the importance of muffling this irritating sound. I don't think automobiles would have reached their present popularity if they exhausted directly out of the engine block without even a hood on the automobile—it is a cinch that life in the larger cities would be almost unbearable."

" We have developed a means of silencing that is very satisfactory and costs practically nothing. It does take away some of the power, but even so, with almost total silencing we can fly our models through the complete stunt pattern with ease. (When I say almost complete silence, I mean the sound cannot be heard more than 200 feet away at the maximum.) We would have introduced this sooner, but it seems that the average modeller wants to make as much racket as he can, even though his joy may be short-lived by nosing his flying sites."

Coming from the originator of control-line flying, this opinion is all the more worthy of the urgent attention of all power fliers, for no-one can deny that the noise factor has brought more than its fair share of troubles to the aeromodelling movement.

This year—Next year !

Under the present highly favoured method of selecting teams to represent Great Britain in International contests, the beginning of a season becomes rather too crowded for comfort, for it must be remembered that two Area Eliminators plus a Trials proper must be fitted in well enough ahead of the Finals to give adequate time to the lucky (skilful) top men to make their individual arrangements for overseas travel.

It is proposed therefore to only hold one Area Eliminator plus Trials in 1953, but to cater for 1954 and future seasons by holding a first Area Elim. in the latter end of the previous year. In this way contests will be spaced much farther apart, and should give competitors a much better chance to show their true capabilities—and maybe produce even more efficient teams than has been possible under the present rushed conditions.

For the 1953 Teams, therefore, it is proposed to hold an Area Aliminator in April, with the Trials to follow in May. For 1954 requirements the 1st Area Eliminator will take place in September, 1953, the 2nd Elim. in April, 1954, and the Trials again in May of that year.

We favour any system that will ease the pace for those keen modellers who uphold our prestige overseas, for the past method has meant vital contests taking place within a few weeks of each other, giving no time for proper practice.

Another " Control " Axed

Since the beginning of the last War, power model fliers who wished to enter National contests were obliged to be registered with the S.M.A.E., this requirement being quite a separate obligation to Insurance, though many modellers have found it hard to remember or reconcile this fact.

They—and particularly Area Insurance Officers —will therefore welcome a recent decision by Council to waive this requirement in the future, though naturally proper and full insurance remains an imperative safeguard for all those who favour the engine-powered machine.

All Balsa

All balsa exports, we learn from M.A.T.A. Secretary, are being co-ordinated for monthly returns to the Board of Trade—and have been for a considerable time. What so many traders do not realise, however, is that what goes out has a considerable bearing on what comes in, so that their possibly modest exports will all be of value in helping to swell what is already a formidable export total. Like so many governmental returns these figures are apt to be overlooked or lost in departmental renderings, and the M.A.T.A. are therefore anxious to see that they are offered up in the most readily accepted form. Retailers doing *any* exports therefore—whether or not they are members of the association—are urged to send in monthly reports to Secretary M.A.T.A., 14 Ladbrooke Drive, Potters Bar, Middx. In so doing they will be helping to ensure a regular supply of good building material for home use.

Gunic's A/2 Design

We are pleased to announce that this winning A/2 design will be appearing in our next issue. Readers will remember that we originally promised this for our November issue. Unfortunately the drawings were lost in the post between Yugoslavia and this country, which (dare we say it !) upset our plans ! Happily a replacement set has been received.

The B.G.44, as the model is named, is one of the cleanest and most efficient glider designs to appear in the last few years. Plans and full size parts will be given in the January issue and the design will also be available in the Aeromodeller Plans Service.

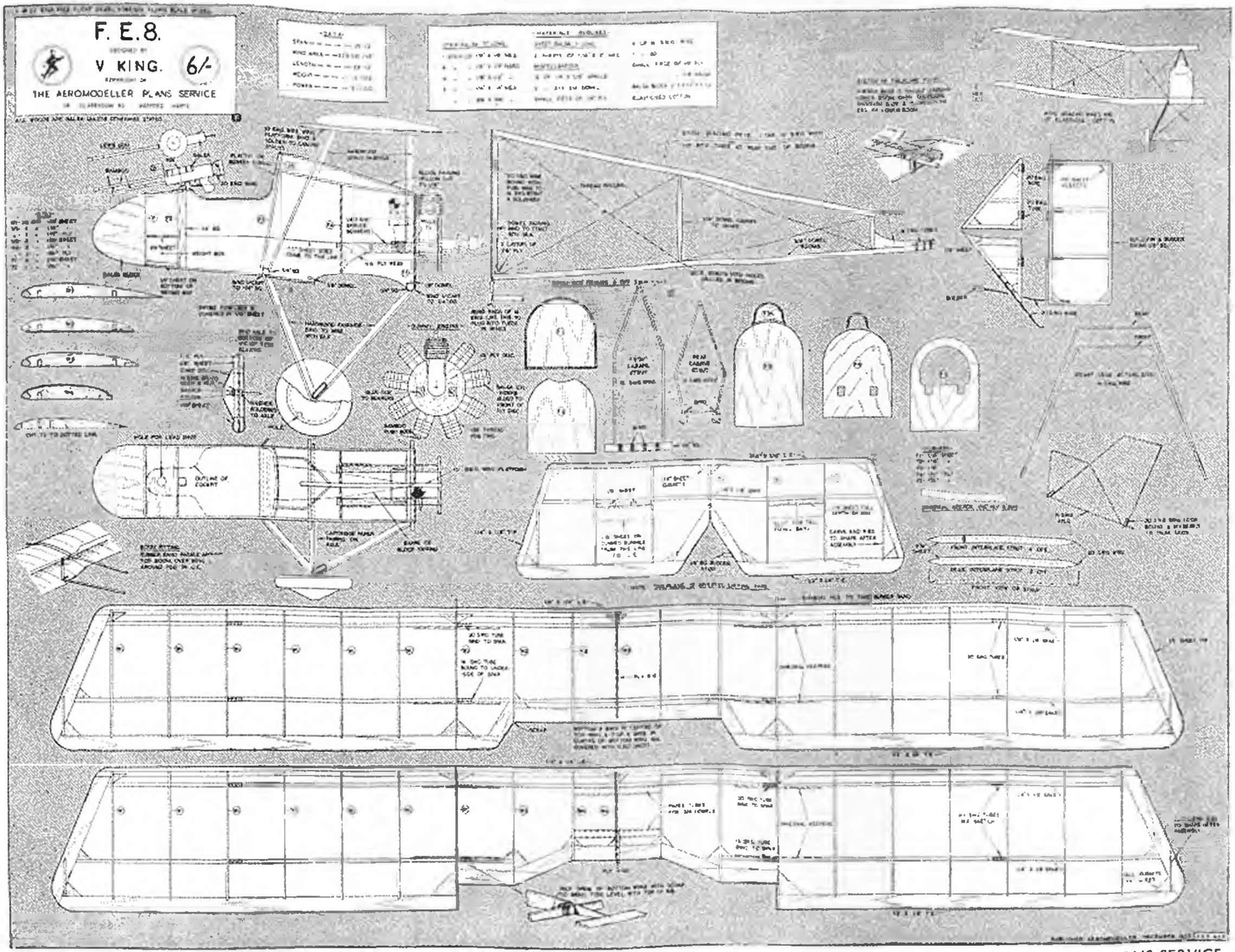
F. E. 8.

DESIGNED BY

V. KING.

6/-

THE AEROMODELLER PLANS SERVICE



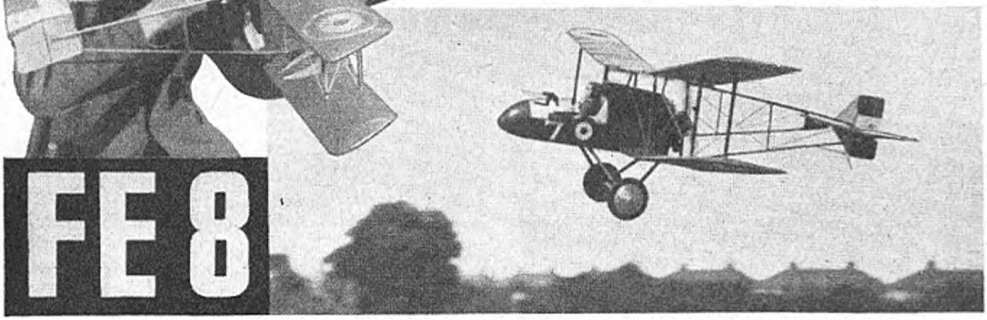
THIS IS A ½ SCALE REPRODUCTION OF THE FULL-SIZE PLANS WHICH ARE AVAILABLE, PRICE 6/-, POST FREE, FROM THE AEROMODELLER PLANS SERVICE.

The 'plane on the cover!

A SCALE VERSION OF THE FAMOUS SCOUT FIGHTER DESIGNED FOR ENGINES OF ·5 to 1 c.c.

BY VIC KING

Aged 19 . . . employed at National Physical Laboratories . . . member West Middlesex club . . . keen on rubber, scale, helicopters and contest flying but does not like control-line . . . other interests are swimming and reading, including a study of '14–'18 aircraft.



A PUSHER model is not everyone's choice, and a scale pusher is one of the most difficult selections it is possible to make. The reason for this being the need for so much nose ballast to compensate the engine weight, that wing loading becomes too high for reliable flight. But if the model is relatively small, this difficulty is minimised to a great extent, and in choosing the famous F.E.8. and building to a scale suiting his Mills ·75, Vic King has proven that the pusher can be as realistic and reliable an old timer as any could wish to see.

Few can grumble at its 14½ ounces for 350 sq. ins. wing area, a far more generous loading than we find on many a conventional scale model, and the hundreds that have been fortunate enough to witness the prototype's flights at Fairlop and thereabouts will verify that here's a model that definitely carries the air of 1914-18 about it.

The full-size aircraft has been magnificently portrayed by artist Rupert Moore on the cover, to give builders as accurate a colour guide as possible, and in " Hangar Doors ", Mr. Moore writes further on the subject. The F.E.8. was produced in company with the D.H.2. to combat the " Fokker Scourge " and gave a very good account of itself during its ten months of front-line service. Fokkers were using interruptor gear to synchronise machine guns firing through the airscrew : but with the engine at the rear, such a device was not necessary, hence the series of pusher " Scouts", before we developed the synchronised gun.

Construction

Cut the **fuselage** sides from sheet, add formers, cement in engine bearers and cover top and bottom with sheet. Insert wire struts then cut outline of cockpit. **Wings** are perfectly conventional, except for the brass tube fittings which must be packed to protrude just outside the wing contour.

Unfortunately the **tailplane** had to be altered slightly from true scale in that it is placed on the model in the inverted position to provide a downward lift. Its construction, like the **rudder** and **fin** halves, is perfectly straightforward. Make certain that the pendulum rudder will swing freely, and that movement is limited by the stop and also by the pendulum arm on the fin. Good quality spruce dowel is essential for the **booms**, which should be glued together and not cemented. It is most important that the brass tube at the end of the boom receives the wire spacing piece smoothly. At the forward ends, the booms are connected to the wings by the tube fittings, and a securing elastic band goes over the top wing as shown. Use elastic thread for the **rigging**, build up a dummy machine gun and engine from scrap, colour à la Rupert Moore, add a pilot, and you are ready for trimming.

Bring the C.G. to 50 per cent. wing chord by adding weight in the ballast box. Check the glide as flat and slow, then get used to the awkward position for flicking the engine. After a time this becomes very easy indeed. Have the engine running at three-quarters throttle (8 in. by 4 in. prop) and launch into wind gently. Avoid a right turn, trim if need be for left hand circles. If there is any tendency to hedge-hop, insert washers under the engine bolts nearest the prop—remember, it's a pusher !

To date, the original has made well over 150 flights without major damage and has frequently shown how it can take a vertical bank without losing height, at times it has even shown itself to be thermal-conscious !

Above, the happy British contingent and their models, left to right, Jack North, Silvio Lanfranchi (manager), Ray Monks, Peter Buskell and Max Byrd. Although skill took a second place to lady luck in this contest, it is worthy of note that our two best performers were 1·5 c.c. powered and are remarkably similar in outline. (Wheeler's, held by Lanfranchi, and Monks') To the right: Swiss congrats Swiss! Silvio shakes with second man, Heinz Lauchli of the Brown Boveri Club, Switzerland.

Dubendorf Aerodrome, Switzerland

GREAT BRITAIN competed for the first time this year in the World Championship International Power Contest, and was indeed lucky to bring home the magnificent trophy for best individual performance. But then, if luck is to receive any mention in this account, I should, in fairness to our official team, state that skill (in which our lads excel) fought a losing battle with a constant string of misfortunes, whilst in marked contrast, team Manager Silvio Lanfranchi seemed blessed by chance and good fortune.

For your reporter it was a memorable meeting, impressively preceded by crossing the Channel by Silver City air ferry service. Within an hour of arriving at Lympne airport, the family " Golden Flash " was on the road in France headed for the Swiss border and our first opportunity of assessing the standard of " Power duration " on the continent ! Less than an hour from England to France ! (The sea crossing and its attendant discomfort is definitely a thing of the past as far as we are concerned, and we thoroughly advise all aeromodellers taking their own transport to the continent to invest a few extra bobs in what is really a novel and invaluable " by air " service.)

Saturday, September 13th.

At Dubendorf airfield, which is the centre of Swiss military aviation and the base for countless numbers of Vampires, Mustangs, Moranes and C. 36's, security was enforced up to M.I.5 standards. Every hangar door was bolted and barred, and the entire field completely deserted, all for the purpose of the two-day meeting. This scrupulously clean Swiss scene was but one more example of the intense co-operative effort by no less than eight separate committees which were appointed to organise the meeting.

Arnold Degen, " Oberexperte fur Modelflug " of the Swiss Aero Club, upon whom so much of the contest arrangements rested, plied me with lists of who's who, from which I deducted that there were 38 competitors, and no less than 57 individuals with jobs to do, plus 40 Boy Scouts delegated for retrieving.

With that kind of organisation what could possibly go wrong ? Yet something wrong there was, and it came to us suddenly as we scanned the list of teams and managers. We were fielding a team one man short of a permissible five ! ! Hurried confab followed among the British group, and Silvio stated that he had foreseen such a happening, and had accordingly brought along a spare job " just in case " ! That it was Barry Wheeler's model and not the next in line (Tony Brook's), smote the conscience of five English heads, but there it was. Here was a model that conformed to the rules, and could be flown to bring us up to full complement. The job was test flown and a request made for an additional British entry in the name of Wheeler, to be proxy flown by the Manager. (Silvio was not exactly unique in being a competitor, for the French Chef d'Equipe also flew to make his country's full complement.) The Organisation authorised the additional entry they said " for the sport ", and if we could bring our number up to full strength, then so much the better. Now there were 39 entries !

And so to the processing. All the brains in the Aero Club and technical types in Swiss aeromodelling were lined up with slide rules and scales to give the models a thorough working over. With previous International team experience in Yugoslavia, Sweden and Austria, Monks and Byrd both remarked that for thorough checking this collection of back-room boys should take top honours, and from the slivers of balsa used to make up cross sections, or taped on grammes of ballast weight, it was obvious that things were strict.

Once models were passed, stamped and numbered, the next item on the programme was test flying. Weather was just about right with only a trace of wind so that any exceptional thermal-free flights of up to 4 : 30 could be contained safely within the field.

Our lads were not altogether content. The altitude change was negligible yet something or other was playing havoc with airdraulic timers, and neither Byrd nor Buskell could get the best tones from their engines in their first-line models. Silvio, who negotiated many of his managerial obligations with singular dexterity, then turned his attention to Wheeler's model, which, by good fortune, was fitted with a clockwork timer. Even

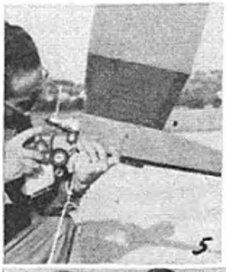
Described & photographed by Ron Moulton

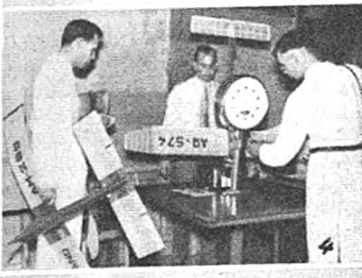
that was not running with the exact precision normally associated with clockwork; but son Tony and Papa Silvio examined the works and were soon happily acclimatised to full-length 20-second engine runs.

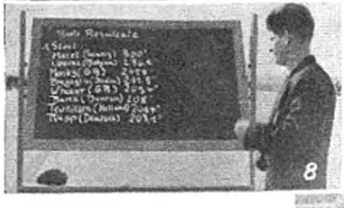
With Silvio content, Pete Buskell and Max Byrd working hard to get their best, Ray Monks getting very high on 10–15 secs. power and happy about his two models, attention turned to the unfortunate Jack North, whose chapter of accidents seemed to be never-ending. First misfortune came with an inexplicable change of trim, which shattered the wing of his newest model. Whilst concentrating on the second job, a wayward Dutch model made a power dive into the British group, and poor Jack's model had its fuselage broken in half. Small wonder that Jack was quite ill in the evening and yet still further beset by trouble when his tailplane caught fire in the dormitory. By late afternoon, all except the Yugoslavs were checking up on trim, and there was little doubt that the very formidable teams from Italy and Switzerland were going all out, with 20-second power runs and early d/t's. Others were making less spectacular efforts with, like ourselves, shortened power runs.

The Italians, a colourful group ably managed by Ing. Frachetti, were using one type of motor only for all of their ten models. During the afternoon their number was reduced to six, but there appeared to be little to choose between the first-line and reserve for they were all haring upwards at a commendable rate with G.20 Super Tigres revving well into the 13,000 range on tiny 8×4 in. props. Bacchi was obviously well in the running for a win. His models were exceptional for climb, glide and construction, and were of the shoulder wing, flatfish fuselage type. With similar layout, but box fuselage, and with the same engine, Roger Maret and Ramseier of the Swiss team were also obviously in the top class for a high climb. Their compatriots, Lauchli and Schnabel flew a quite different type of job with a large area and Swiss made Castor 2·5 c.c. diesels to get a steady slow climb to medium height. In glide they excelled. As one of our lads remarked, " I've been up and down since that chap

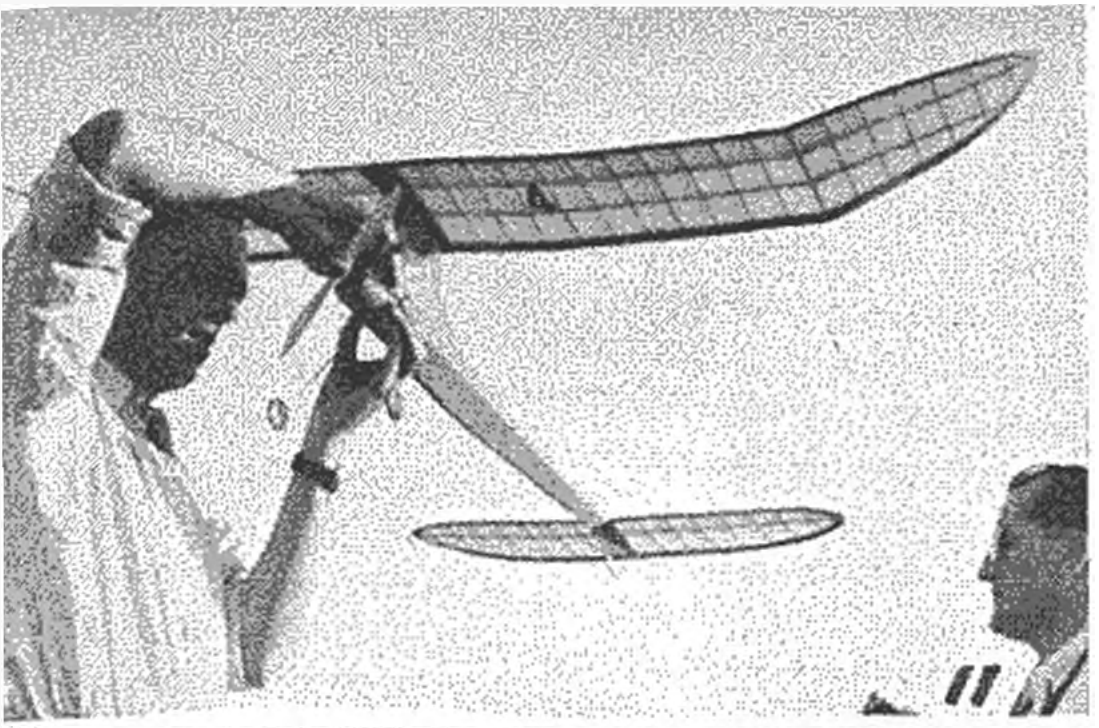
(1) Peter Buskell and E.D. 2·46 'Slick Stick' was hard hit by downdraughts. (2) The best way to cross the channel, and the only way as far as we are concerned. (3) They'll go that'a'way, Silvio tells the Scout retrievers. (4) Dutchmen in smart white overalls at the processing tables. (5) Ramseier of Switzerland primes his Super Tigre with nitrated fuel.







(6) Roberto Bacchi attends to his engine. Model has a normal average of 3:25; but suffered with downdraughts on this occasion. (7) Austrians and toothpick entry follow another's flight. (8) Round one leading places are viewed by Jacques Morisset of France. Note that only Wheeler and Rupp (Germany) kept in the first eight throughout the contest. (9) Yugoslav Teodor Strasberger, ready to launch his fast climbing, almost profile entry. Engine is an Oscar 1·5, note tip fins, also observed on other Yugo entries. (10) Georges Lippens of Belgium and his heavy model, which did very well.



(11) Hugo Leppert's beautifully finished entry had an ultra-high gloss due to special varnish applied over dope. To the right is German team manager A. Schiltenhelm. (12) Karl Barth, Herbert Lange and Gunter Rupp of the German team. The last two placed high, each using the new "Webra" diesel. Model at left has a papier mache fuselage. (13) A technical highlight was Max Byrd's pendulum controlled "Skyscraper". At the angle shown here, the pendulum actuates down-elevator to limit the climb angle and prevent a loop. (14) The press in action! Daylight flash is stopped in this case by Maurice Dufey's photograph of Swiss Roger Maret releasing his "hot favourite" model for its fatal second flight. One of the fastest climber's, this model uses a Super-Tigre G.20.

launched, and he's still on the glide!" From that it was apparent that the Swiss, with two good climbers and two good gliders, were the people to be watched.

In the Austrian group we found evidence of "toothpick" influence in two huge models with long fuselages, boasting large forward fins, but they seemed to be dogged by motor troubles. The French too, were not without misfortune, for during the course of test flights, two of their entries spun-in with wing flutter, and a third repeated this hair-raising performance during the contest.

If lacking in performance, the German entries were not to be discounted by any means, and if finish counted at all, Hugo Leppert's red and white pylon job would certainly take first place for Concours d'Elegance. Belgian reps., Lippens and Ferber, also had a pristine pair of models, each with that "Cow-horn-hedral" which characterises the "Flanders Flier" type designs.

Retiring to the dormitory for repairs the British Team was now more confident and each happy in his own way, though still sceptical of timer trouble. What could be expected of the morrow? Tests had shown us to be in line with the best that Italy and Switzerland could field, and if the big day was to be at all windy, it might just give us the edge over the others. One thing we noticed was that less than 50% of the entries were pylon models, and the majority of the remainder had the wing mounted very close to the thrust line. Might this be an indication of a new European trend?

At that evening's dinner, which included the official opening of this "Championship of the World" by Herr Director Landolt, President of the town of Zurich, a strangely accurate forecast was made by Herr Director Hermann, who welcomed the teams in their own languages and said that if Silvio won, then he would take the liberty of putting a Swiss flag on the trophy.

Sunday, 14th September, 5.30 a.m.

Not yet light enough to see quite who, but someone was making sufficient noise in the yard of Hotel Hecht to remind us that it was time to get out of bed smartly and hie down to the airfield for early breakfast and the scheduled six o'clock start of the first round. Within minutes it became light enough to observe 5/10ths cloud, no wind whatsoever, the grass very wet and temperature quite low. By the time the first man got away soon after seven o'clock, these conditions changed to a slight breeze, with warm sun and definite evidence of lift, so all hope of a thermal-free contest was abandoned. Reason for the delay could only have been the late arrival of the Yugoslavs, with whom everyone had the greatest sympathy, for they had to get straight into the contest without tests.

B. Lapierre, French team manager, was first away, and though he showed that thermals were about, he returned only 1 : 43. Pete Buskell followed soon after, and missed the lift altogether but managed his usual average of 3 : 12; then in quick succession, Ray Monks and Silvio (Wheeler) caught a bump apiece to bring us on the leader board for the first round. Timer trouble dogged North and Byrd, so much that Max, in desperation (which earned him the nickname "Frantic") removed the timers from each of his models to sort out which might possibly be best! He was last man away in this round; but scored almost the same time as Lapierre, though from a pitifully short power run.

The Italians were well on form. Little Franchetti had his boys keyed up to high pitch, and each time a

model went off, grass was flung into the air for direction, and one and all howled advice in vain effort, for once the Super Tigre was reeling off 13,000 r.p.m. nothing else could possibly be heard! However, it was big Bragaglia with his "hatchet" model who caught the lift, and favourite Bacchi had to be content with 3 : 15. A sizzling climb in a perfect spiral to easily best height of the round announced that Roger Maret was away, and it proved to be a maximum. Lippens too had found lift, and the close of the round found Great Britain in third and fifth places, in each case with 1·5 c.c. models (see photo 8).

With a brief pause between rounds, second flights began soon after 8 a.m., and by that time the sun was well up, the sky clearing fast, while local church bells added tone to a very peaceful scene.

Thermals were popping off the drying field, the runway and tarmac to such an extent that other less desirable features appeared in the form of large areas of downdraught. Soon it became a question of having to check ground run to sort out the timer, then wait in readiness for any evidence of a thermal. Silvio was lucky with what amounted to a maximum, yet only a few minutes after his flight, Max Byrd's model was literally sucked down out of the sky for only 65 seconds.

This second round was the decider of the contest. Hot favourite, Roger Maret, went up like a rocket and spun in at the same rate to record only 17 seconds; Bragaglia flicked his Tigre so hard that he snapped both engine bearers; Pete Buskell caught disheartening downdraught to be downed in 1 : 47 from a certain "max." height, and Lederer of Austria almost made a maximum on power run only when both timer and d/t refused to function. The motor he was using, happened to be on loan from Ray Monks!

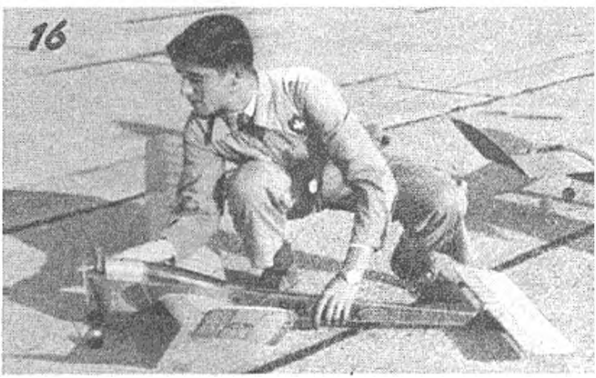
Thanks to the thermals, the Swiss slow climb, good glide entries were doing exceedingly well, and Kempens' low aspect ratio "Powavan" type climbed straight and high for a maximum. Both Monks and North missed thermal and downdraught to record "average" times of around three minutes. There were nine thermal-assisted flights, thirteen affected by downdraughts, ten "average" performances and the remainder subject to crashes. The order was now :—

1.	Wheeler, B.	G. Britain	507·6 secs.
2.	Lange, H.	Germany	451·5
3.	Kempen, C.	Holland	447·6
4.	Lauchli, H.	Switzerland	445·8
5.	Barth, K.	Germany	444·6
6.	Castiglione, S.	Italy	435·2

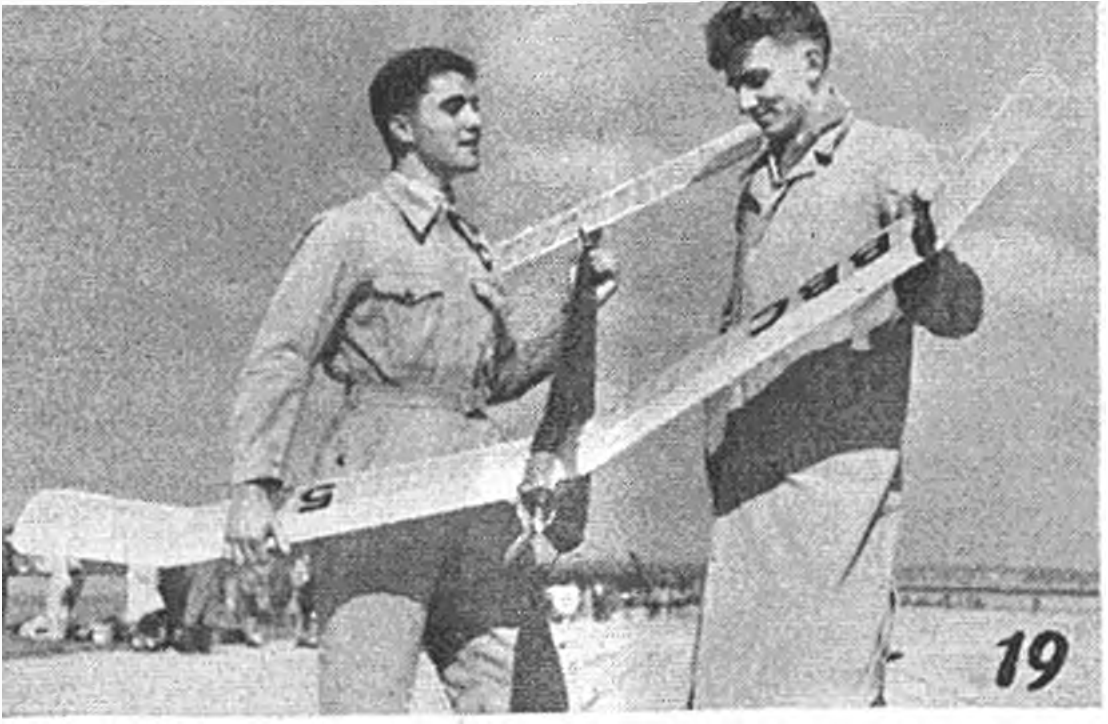
A good assortment, with the Germans contradicting all forecasts based on their previous evening's showing. Monks was now down to 10th, and if lay press opinion was to count, the number of flash photos taken of Kempen and his "Kemphaan" ("Fighting Cock") made him odds-on favourite for the next round, a prospect upon which manager J. van Hattum did not speculate.

At this stage, genial Herr Professor Dr. J. Fritschi, President of the organisation, came around to announce to each team that a strong wind was on its way, and everyone agreed an immediate start of the final round. Anticipating drift, Tony Lanfranchi was despatched to the boundary to retrieve Wheeler's model, which was flown as soon as possible. Already in the lead, a maximum would make a British victory certain, and the tension of this possibility was affecting the entire British contingent with the commendable exception of Silvio.

A quick engine check run, the timekeepers readied, and the little red, white and black model was sent away



(15) At processing, Hans Dejaco, destined to be last man, explains the point of the forward fin on his tooth-pick entry, to Maurice Dufey of "Swiss Aero Revue". Maurice recorded the meeting with still and ciné camera, and showed the films to the British team before they left Zurich. (16) Away for the third time, to gain second place, Heinz Lauchli trips his timer before release. Note absence of fin. (17) Carlo Bergamashi tunes up at the right angle, whilst team manager Nino Frachetti checks the timer run. (18) French équipe, Bourtheoumieux, Mme. Lapierre, Guidici and Mme. Guidici, Rennesson, Lapierre and the indefatigable Jacques Morisset.



(19) Heinz Lauchli chats with Gerhard Schmid last year's winner, over the "Komet" which Schmid designed and Lauchli flew to second place this year. (20) Dutch Kempen shows plan and side elevations of his impressive "Fighting Cock" design. Model uses Dutch "Typhoon" diesel.

(21) Dragan Prohaska, only man to make two "maximums", waits his turn at the Yugoslavian take-off point. He manufactures a 1·5 c.c. disc valve diesel, known as the "Oscar". (22) Setting his Super Tigre for climbing attitude, is Castiglioni of Italy, who placed third. His compatriot is caught in the act of throwing grass for wind direction. (23) Forward side area was a major point to be observed among continental designs. Lederer of Austria has the fin above his wing, Bragaglia of Italy, favours an underrudder. The latter was on the leader board for the first round, but had the misfortune to break his engine bearers.

for a terrific climb on 19·8 seconds power run. Within seconds it was obviously in the middle of a thermal, and with due regard to the drift, all eyes were strained and hopes raised for 300 seconds. We need not have worried. The magnificent Omega stop-watches (returned from use at the Olympics, for which they were specially made) were well over that figure when clicked off as the model disappeared into the village. Our jubilation was heard for the length of the runway, for Wheeler's score was unbeatable, and with almost everyone else yet to fly, the highest any could hope for was a second place.

Minutes later, Ray Monks caught another thermal and made over 5 minutes, but the gremlins were against us now, for his flight was ruled as an "attempt" after a motor run of 21 secs. A great pity this, as his placing would have been sixth, some compensation for the string of downdraughts which brought Peter Buskell down again for a 1 : 53 sink that was heartbreaking to watch after so impressive a climb. Max Byrd reeled off a maximum which helped a lot, but Jack North was thoroughly off his stride and his model spun in for no apparent reason. Just as we were collecting the downdraughts, so others were fortunate with thermal aid. Of the leading six from the second round, only the two Germans and Ch. Kempen missed the lift in this very chancy air. Thirteen maximums were made in this final round, representing 38% of the flights made. Two other flights were near maximums, thirteen were affected by downdraught, leaving only six flights as unaffected averages.

What can we deduce from the results? Wheeler's model went as though on rails. It had a good clockwork timer and shut-off valve to get ultimate height with as near to twenty seconds power run as possible, and it is a real thermal hooker. The engine is an Elfin 1·49 c.c. More impressive perhaps was the second place winner, a *low wing* design known as the "Komet" by Gerhard Schmid of the Brown Boveri Club, which *won* first place last year. This time it was clubmate Lauchli's replica, fitted with a Swiss Castor 2·5 c.c. diesel and reliable clockwork timer which flew so well. Then in third place, a model based on the "Super Phoenix" using a Super Tigre 2·5 glowplug engine (which to the British lads, was the surprise power unit of the day). So pylons were first and third, fifth and sixth. The shoulder wing entries gained fourth and ninth; but that second place with a low wing bears thinking about. If it is to be our turn to arrange this World Championship in 1953, and early morning flights are adhered to, I have little doubt that it will again feature on the leader board by virtue of its exceptional glide.

Anti-climax follows to a certain extent after each of these major events; especially when the contest is finished and the field cleared by 11 o'clock in the morning. We had plenty to think about, with the unexpected happening and a proxy flown model placing first. But even that was forgotten as we enjoyed a coach tour of the scenery around Zurich, a succession of meals to tax our internal capacities, and finally, the dinner and prizegiving.

As a pointer to overseas readers, this win by a proxy flown model could very well be repeated next year, for we have a vast store of experienced fliers to draw upon for proxy duties.

We have no doubt that this contest in 1953 will be as memorable an event as the Wakefield in 1949 at Cranfield, which set the standard for organisation of International contests.

Silvio and Sou, the pair that flew Harry Wheeler's model to victory for Great Britain. In this photo, Tony Lanfranchi holds the model for a pre-flight timer check. Although fitted with a clockwork timer, a test run was made before each flight to ensure a power run of as near to 20 seconds as possible. This, and other wise pre-flight precautions contributed greatly to our success. Model is a typical Birmingham club design, ancestry of which can be traced to the "San de Hogan". A plasticine weighted drag flap is fitted on the port wing, fuselage is all-sheet, wing section has flat undersurface and Elfin 1·49 diesel is side-mounted. Beyond that, the model is conventional. Below: Silvio Lanfranchi looks speculatively into the World Championship trophy after receiving it from Herr Professor Dr. J. Fritschi, president of the Organization Committee. Central is Dr. Walter Dollfus, the editor of "Swiss Aero Revue".

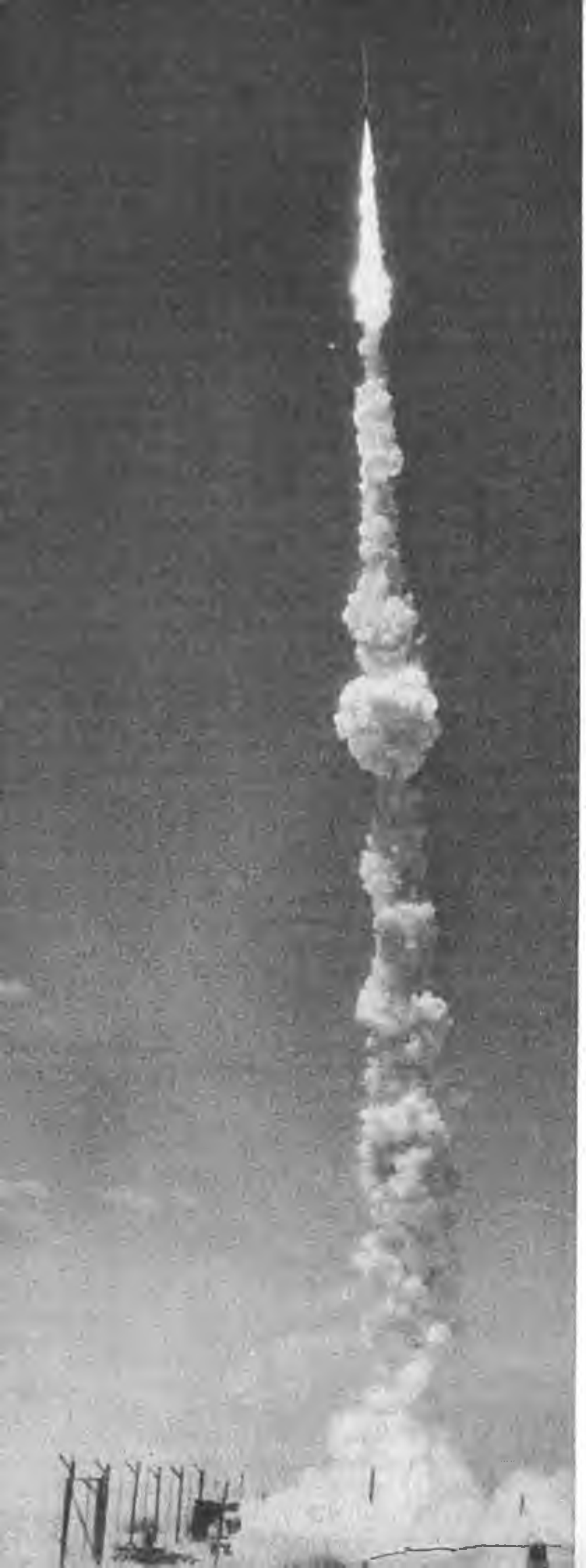
RESULTS

			Round 1	Round 2	Round 3	Total
1.	WHEELER, B.	Great Britain	3 : 29·4	4 : 58·2	5 : 00	13 : 27·6
2.	Lauchli, H.	Switzerland	2 : 42·6	4 : 43·2	5 : 00	12 : 25·8
3.	Castiglioni, S.	Italy	2 : 39	4 : 36·2	5 : 00	12 : 15·2
4.	Schnabel, H.	Switzerland	2 : 44·7	4 : 19·3	5 : 00	12 : 14
5.	Prohaska, D.	Yugoslavia	2 : 12·4	5 : 00	5 : 00	12 : 12·4
6.	Rupp, G.	Germany	3 : 23·1	3 : 36	5 : 00	11 : 59·1
7.	Lange, H.	Germany	2 : 31·5	5 : 00	4 : 06·4	11 : 37·9
8.	Bergamashi, C.	Italy	2 : 34·3	2 : 51·3	5 : 00	10 : 25·6
9.	Lippens, G.	Belgium	3 : 56·5	1 : 24·5	5 : 00	10 : 21
10.	Teunissen, H.	Holland	3 : 24·4	1 : 56·1	5 : 00	10 : 20·5
11.	Skalla, G.	Austria	2 : 44·7	1 : 56·5	5 : 00	9 : 41·2
12.	Kempen, C.	Holland	2 : 27·6	5 : 00	1 : 46·6	9 : 14·2
13.	Barth, K.	Germany	3 : 28	3 : 56·6	1 : 35	8 : 59·6
14.	MONKS, R.	Great Britain	4 : 07·8	2 : 47·6	1 : 56·6	8 : 52
15.	Forber, M	Belgium	1 : 39·3	1 : 46·9	5 : 00	8 : 26·2
16.	Maret, R.	Switzerland	5 : 00	0 : 17·2	3 : 06	8 : 23·2
17.	Guidici, G.	France	3 : 09	0 : 11	4 : 54	8 : 14
18.	BYRD, M.	Great Britain	1 : 41·4	1 : 05·5	5 : 00	7 : 46·9
19.	Bacchi, R.	Italy	3 : 15	3 : 28·8	0 : 31·4	7 : 15·2
20.	Rennesson, A.	France	0 : 46·3	1 : 16·5	5 : 00	7 : 02·8
21.	BUSKELL, R.	Great Britain	3 : 12·5	1 : 47·8	1 : 53·6	6 : 53·9
22.	Tasic, T.	Yugoslavia	2 : 43·9	2 : 19·5	1 : 19·5	6 : 22·9
23.	Krill, E.	Austria	2 : 13·1	2 : 05·4	2 : 03·8	6 : 22·3
24.	Bourthoumieux, G.	France	2 : 15·2	1 : 12·5	2 : 20·3	6 : 08·3
25.	Morisset, J.	France	2 : 55·7	1 : 51	1 : 17	6 : 03·7
26.	Lappierre, B.	France	1 : 43	2 : 06	2 : 08·5	5 : 57·5
27.	Ramseier, F.	Switzerland	2 : 19·8	1 : 01	2 : 22·2	5 : 43
28.	Strasberger, R.	Yugoslavia	2 : 59	—	2 : 31·5	5 : 30·5
29.	Bausch, L.	Holland	2 : 55	0 : 48·6	1 : 44	5 : 27·6
30.	Maibach, F.	Switzerland	—	2 : 20·3	2 : 42	5 : 03·3
31.	Kainz, H.	Austria	1 : 26·5	1 : 18·8	1 : 39·7	4 : 35
32.	NORTH, J.	Great Britain	0 : 41·2	3 : 10·9	0 : 13·2	4 : 05·3
33.	Bragaglia, G.	Italy	4 : 01·3	—	—	4 : 01·3
34.	Leppert, H.	Germany	1 : 49	1 : 58	—	3 : 47
35.	Slejadinovic, V.	Yugoslavia	—	1 : 59·8	1 : 11·6	3 : 11·4
36.	Prhave, Y.	Yugoslavia	0 : 33·8	0 : 46	1 : 36·2	2 : 56
37.	Lederer, A.	Austria	2 : 32·6	—	—	2 : 32·6
38.	Wenzel, H.	Germany	—	—	0 : 51·6	0 : 51·6
39.	Dejaco, H.	Austria	—	—	0 : 49·3	0 : 49·3

TEAM RESULTS

(Best three men in each to count)

1.	Switzerland	1,983 seconds	5.	Holland	1,502·3 seconds
2.	Germany	1,956·6 ,,	6.	Yugoslavia	1,445·8 ,,
3.	Great Britain	1,806·5 ,,	7.	France	1,284.8 ,,
4.	Italy	1,796 ,,	8.	Austria	1,220·5 ,,
		9. Belgium	1,127·2 seconds		



Model Roc

A diversion from aeromodelling; but never concerned with models that go into the air wit article is based on material sent to us by ou in Los Angeles. Two major snags would b need for a flying ground at least 100 miles fro

TO all followers of Willy Ley, Arthur Clarke, and to all other interplanetary enthusiasts the unknown quantities of space travel are matters of great interest, and aeromodellers being what they are, we are sure that the items revealed on these pages will capture the attention of all and sundry.

What is seen here, represents the state of progress eighteen months ago. Current experiments and their results are not known; but the reader might well deduce that the efforts of the American rocket development societies has proceeded at a pace which is only rivalled by the speed of their amazing products.

Two Rocket clubs exist in Los Angeles, California. The Pacific Rocket Society operates liquid-fuelled rockets, and the Rocket Reaction Society use solid fuel. They share the same launching site, and the inter-change of information in the form of published test reports, enables all astronautic enthusiasts to keep abreast of latest developments. To a large extent, members are employees of the large aircraft plants situated in the Los Angeles area. They all have a keen interest in interplanetary travel, and their experience in aircraft construction stands them in great stead when it comes to making a new rocket. Launching equipment as well as the rockets are designed and built by members, each rocket costing between £20 and £30 to make.

On the day when these photographs were taken, 100 miles from Los Angeles in the wilderness of the Mojave desert, six rockets were fired. Three in the morning were liquid propelled, three in the afternoon were from the solid fuel club, and the peak altitude achieved was close to 20,000 ft. We take the liberty of extracting the following from a Pacific Rocket Society report which was issued after the event :—

Rocket Details

The two single stage rockets, designated XDF-21 and XDF-22, were of the same basic design originated by E. G. Ewing and further developed by J. Nuding, each having 4 in. diameter oxygen tanks of about 10 lb. and 8 lb. capacities re-

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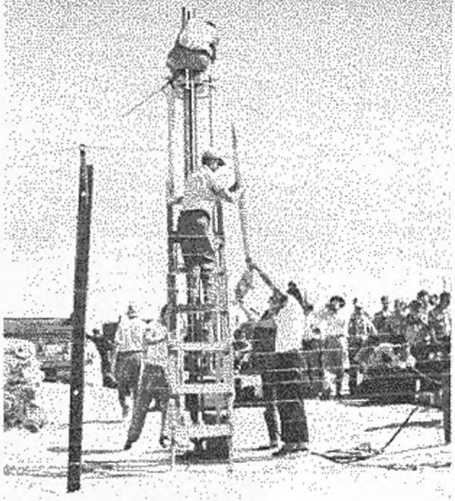
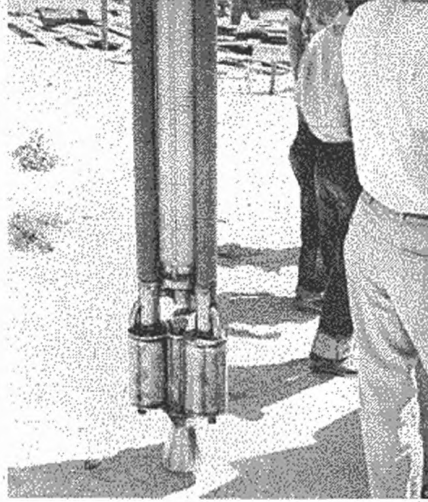




spectively and a 2·5 in. diameter engine with a cast-in fuel charge of ceresin wax loaded with carbon black and organic dye stuff. The charges were stabilized and made more resistant to erosion by ramming the chambers full of cotton prior to pouring the molten wax. The engine of the XDF–21 was 20 in. long and carried 2·5 lb. of fuel, and the engine of the XDF–22 was 13 in. long and carried 1·6 lb. of fuel. The fuel charges were designed and installed by E. V. Sawyer. The two rockets were fabricated by R. W. MacCarthy, who also designed the recovery (parachute) installation for the XDF-22.

Flight histories of the two rockets are so similar that they may be described as one. At an indicated oxygen pressure of 250 p.s.i. occurring close to 6 minutes after the tank was sealed, the ignition circuit was closed. The engine came up to full thrust immediately and the rocket took off under strong acceleration, suggesting that maximum design thrust was being developed. The take-off was smooth and stable but the staccato roar of the engine indicated pulsating or resonant combustion. Within a few seconds before burnout as the vehicle approached maximum velocity the tail fins were observed to break away, destabilizing the rocket and causing it to fly into a fit of violent powered gyrations during which the nose was broken off in one case (XDF–21) and ejected in the other (XDF–22). The velocity was too great for successful parachute deployment, and in consequence the exhausted and destabilized rocket fell to the ground in a flat spin. However, the nose cone of the XDF-22 descended safely and the altitude recorder it carried showed that separation had occurred at a height of approximately 4,000 ft.

The XDF-23 Two Stage Rocket

The primary stage of this rocket was very similar in design and configuration to the XDF–21 and XDF–22 units, having an oxygen capacity of 10 lb. However, the 2·5 in. diameter engine was shorter and carried a cast-in fuel charge of 2 lb. of Thickol synthetic rubber, which has proven to be the most satisfactory fuel for this type of solid-liquid propellant design. The synthetic rubber provides a fuel of high density, high fuel value, and great cohesiveness and, when cast in place, is a good thermal insulator for the chamber walls.

Booster rocket was a solid propellent unit 2·5 in. in diameter and 4 ft. long. The design was based on the "micro-Grain" powder rockets developed by members of the Reaction Research Society.

The peak altitude recorder indicated that the rocket attained a maximum height very close to 20,000 ft.

A special timing device performed as designed on the descent, the nose cone of the rocket, containing the main parachute, two recording altimeters and its own parachute was blown off without damage at something under 5,000 ft. altitude and landed only a few hundred feet from the launching site.

The rocket was completely undamaged, needing only to be reloaded to be ready for another firing.

On its way up at extreme left, is Rocket XDF-22, which reached a height of beyond 4,000 ft. Smoke is generated on the way down to assist in retrieving. Rocket descends by parachute. Right: The heavily protected control base. Top, left: Loading a rocket into the launching ramp, go easy, don't drop it! Top, right: Close up of a rocket motor shows that it is more than the average aero-modeller would care to tackle.

THE provisional tables published here are based on the S.M.A.E. contest programme completed to date, and include all the main events in each class. Results of the various international events, the Area Championships and the United Kingdom Challenge match, together with one outstanding open National event in both power and glider have still to be added in compiling the final tables, which will be published in our February issue.

There are several good reasons for publishing the average tables in two parts. In the first place the provisional tables summarise individual performances in the main programme of open events almost as soon as the season is over. Then it gives the opportunity for a full check before any further outstanding figures are added.

Compiling averages is quite a frightening task. Starting with the first glider event of the year, the "Pilcher Cup," some four hundred names appear on the full list, and logically each of these names should be catalogued and traced throughout the rest of the season. The fact that a fair proportion of these names do not appear again, whilst still others come forward to increase the running total, means that such a comprehensive system cannot be adopted in practice. As a result, possibly several names whose performances qualify for inclusion in the table are omitted. This we do our best to avoid, but the odd omission or two is unavoidable.

AEROMODELLING TYPES.—
"Our Friend, the Farmer."

Before discussing the tables themselves, let us get some idea of what "average flight" time over a whole season really means. In nearly every case it is *lower* than the true potential performance of the model, and there are a number of good reasons why it is so. In the first place some of the possible flights have not been taken (due to the model being lost or damaged at an early stage in that particular contest). Some flights may also have been timed out of sight; here the model has certainly *flown* longer than the official time recorded. A single mistake in a contest, resulting in a poor flight, can make all the difference to the season's overall average.

Average figures, therefore, are more truly an indication of consistency rather than actual performance at any particular time. Take any individual flyer in the top ten in any contest and you would be fairly safe in betting that, given reasonable luck and conditions, his three-flight average on that occasion will be better than his overall contest average by anything up to one minute. With this fact in mind we are in complete disagreement with our contemporary journal which recently implied that the 1952 British Wakefield team had not the potential performance to win the event. A season's overall results are a far more arduous test than the results of a single contest, where luck can play such an important part. The figures speak for themselves in the table. If a man does worse in any one contest than his overall average performance, then he has either paid the price for making a mistake on that day, or he has just been right out of luck.

Rubber

Since we have brought in the question of Wakefield models, let us start with the Rubber Averages Table. As in previous years it is this competition class which has again produced the closest and more consistent competition. Most of the 1951 names are right there in the top of the list, too, although shuffled around somewhat this year.

Ron Warring, seventh in averages in 1950, and fourth last year, now climbs into top place. In achieving this he has deserted the "Zombie" design and flown geared models exclusively this year. The result has been that his contest average has jumped to exactly the four minute mark.

PROVISIONAL **RUBBER CONTEST AVERAGES**

(Gamage, Weston, Gutteridge, Trials, Nationals, Farrow, Flight)

Position	Name	Club	Contests	Flights	Grand Total mins. : secs.	Comp Placings 1	2	3	First 10	Average Flight mins. : secs.
1	R. H. WARRING	Zombies	5	14	55 : 55		1	1	4	4 : 08
2	N. G. MARCUS	Croydon	4	12	46 : 27			1	3	3 : 52
3	R B. CHESTERTON	Northern Heights	4	12	42 : 05				1	3 : 31
4	A. BENNETT	Whitefield	7	20	67 : 41				3	3 : 23
5	E. W. EVANS	Northampton	4	12	39 : 51				1	3 : 19
6	J. GORHAM	Ipswich	6	17	55 : 52		1		2	3 : 17
7	J. NORTH	Croydon	6	18	57 : 44	1			1	3 : 12
8	H. J. KNIGHT	Kentish Nomads	4	12	38 : 27					3 : 12
9	H. TUBBS	Leeds	4	12	36 : 10					3 : 01
10	J. L. PITCHER	Croydon	5	15	44 : 40			1	1	2 : 59
11	R. COPLAND	Northern Heights	6	17	50 : 49				2	2 : 59
12	J. ROYLE	Littleover	6	17	50 : 19	1			3	2 : 58
13	E. BENNETT	Croydon	6	18	52 : 01		1		1	2 : 53
14	A. ALLBONE	Croydon	4	12	34 : 36			1	1	2 : 53
15	B. HAISMAN	Whitefield	4	12	34 : 20					2 : 53
16	R. ATKINSON	Ipswich	5	14	38 : 02			1	1	2 : 43
17	J. O'DONNELL	Whitefield	7	20	54 : 06	1	1	1	3	2 : 42

Qualification : minimum of four contests entered.

Yet he has placed no higher than second in a National event. Last year's leading man, Johnny Gorham (who also achieved his 1951 success with a geared design) has not had such a good year and slips back to sixth place.

In second place comes all-rounder Norman Marcus. Last year power models and gliders gave him his main contest successes, but it seems that however good you are you just cannot maintain a top place in all three. Third place sees a very welcome return to the top of Roy Chesterton, now with the Northern Heights club, and who can almost certainly be relied upon to improve next year. Bennett of Whitefield, by entering all the possible rubber contests throughout the year and maintaining an average of 3 : 23 is a welcome newcomer to the list. (What Ipswich achieved in the contest field last year, Whitefield have done this, with Bennett also placing well up in the power averages and John O'Donnell achieving the " impossible " double of winning both rubber and glider events at the Nationals, as well as gaining a place in the Wakefield team.)

Ted Evans, flying in only four major contests, has this year achieved an overall average more consistent with his undoubted abilities. In previous years, outstanding performances in some events have been offset by bad luck in others. His " three year record " reads : 1950, fifth (av. 3 : 03); 1951, eleventh (av. 2 : 20) ; 1952, fifth (av. 3 : 19). The top ten, it is interesting to note, all had average flight figures of over three minutes.

Glider

The 1952 glider contests table comprises an almost completely new list of names ! Top glider flyer, without a doubt was W. Farrance of the West Yorks club—a 4 : 17 overall average being way ahead of the next man, '51 A2 team member Mike Thomas. (Farrance was not listed last year, only his brother.) Mike Thomas considerably improved on his 1951 performance, as did J. Lamble who climbed from eighth to fourth place. B. Faulkner of Cheadle appears in the list for the first time and Loughborough College is again well represented by fifth and sixth places.

PROVISIONAL **GLIDER CONTEST AVERAGES**

(Pilcher, S.M.A.E., K. & M.A.A., A2 Trials, C.M.A. Cup, Thurston)

Position	Name	Club	Contests	Flights	Total mins. : secs.	Comp. Placings 1	2	3	First 10	Average Flight mins. : secs.
1	W. FARRANCE	West Yorks	3	10	42 : 45	2			2	4 : 17
2	M. THOMAS	Blackpool	4	12	41 : 52				2	3 : 29
3	B. FAULKNER	Cheadle	3	9	29 : 23					3 : 16
4	J. LAMBLE	Wayfarers	3	8	26 : 01		1		1	3 : 15
5	M. BYRD	Loughborough	4	13	42 : 05				1	3 : 13
6	D. SUGDEN	Loughborough	3	9	28 : 06				1	3 : 07
7	P. LAW	W. Middlesex	3	8	24 : 58				1	3 : 06
8	G. JACKSON	Littleover	6	17	52 : 29				1	3 : 05
9	L. BISS	Littleover	5	15	46 : 03					3 : 04
10	H. O'DONNELL	Whitefield	5	15	45 : 41	1			1	3 : 03
11	P. GIGGLE	Brighton	5	14	42 : 36				1	3 : 03
12	R. J. NORTH	Croydon	5	15	43 : 59					2 : 56
13	P. J. ROYLE	R.A.F. St. Mawgan	3	10	29 : 01		1		2	2 : 54
14	J. O'DONNELL	Whitefield	6	17	46 : 06	1			1	2 : 43
15	F. HOLLAND	Swansea	3	9	24 : 14					2 : 42
16	R. YEABSLEY	Croydon	4	12	32 : 16					2 : 41
17	M. KING	Belfairs	4	13	34 : 17			1	1	2 : 38
18	D. BUTLER	Surbiton	3	8	20 : 29					2 : 33

Qualification : minimum of three contests entered.

PROVISIONAL **POWER DURATION AVERAGES**

(Halfax, Astral, Hamley, Keil, Power Trials, Shelley)

Position	Name	Club	Contests	Flights	Grand Total mins. : secs.	Comp Placings 1	2	3	First 10	Average Flight mins. : secs.
1	G. PERKINS	Croydon	3	9	32 : 51		1		2	3 : 39
2	A. BROOKS	Grange	5	15	50 : 21	1		1	4	3 : 21
3	P. BUSKELL	Surbiton	4	11	34 : 29	1			1	3 : 08
4	R. J. NORTH	Croydon	3	9	24 : 03			1	2	2 : 41
5	R. MONKS	Birmingham	5	15	40 : 04		1		1	2 : 40
6	W. DALLAWAY	Birmingham	4	11	28 : 38				1	2 : 36
7	J. GORHAM	Ipswich	6	17	43 : 22				3	2 : 33
8	A. BENNETT	Whitefield	5	14	35 : 07	1			2	2 : 31
9	J. BICKERSTAFF	Accrington	4	11	27 : 30				2	2 : 30
10	P. WYATT	Ipswich	4	11	26 : 30	1			1	2 : 25
11	S. LANFRANCHI	Leeds	5	15	36 : 11	1			1	2 : 25
12	N. MARCUS	Croydon	3	9	20 : 44				1	2 : 16
13	J. LAMBLE	Wayfarers	3	9	18 : 41				1	2 : 05
14	E. HORWICK	Whitefield	5	15	30 : 36				1	2 : 02
15	P. J. ROYLE	R.A.F. St. Mawgan	3	9	17 : 47					1 : 59

Qualification : minimum of three contests entered.

Probably the most significant fact about the 1952 Glider Average Table, apart from the almost complete re-arrangement of names, is the overall higher average. Right down to eleventh place the average is over three minutes per flight, while last year we had only to go down to fourth place to reach this limit. In other words, more than in rubber or power, contest flights just *have* to be higher to place anywhere. Glider contests are so popular that there are always literally dozens of comparatively unknown flyers to top a good '51 average performance. Take the " Pilcher Cup ", for example. A three-flight 12 minute aggregate is pretty good in any contest ; in the " Pilcher " that would have placed you 55th ! At the A2 Trials, unless you did three " maximums " you just did not make the team !

The fact that winning glider times are so high and the *average* individual performances somewhat lower than rubber, by comparison, points to the fact that the luck element is greater with this class of model. Hence the inconsistency of so many of the experts. Winner of the " K. & M.A.A." Cup with an aggregate of 13 : 29, H. O'Donnell did not place in the first ten in any of the remaining four contests he flew in. All the more credit to the top men for maintaining such high times.

Power

The Power Duration results are, on the whole, rather disappointing, and this type of contest did not seem to enjoy the popularity it has had during recent years. The fact that a proportion of the contests were decided on a ratio basis and the others on flight duration times added to the difficulties of analysis. In compiling the tables we took actual flight times in each event, which seemed the fairest overall method. Judging by the results—only three people topping the three minute flight average—we would say that this is the easiest class of competition to break in to—if any would-be competition flyer has ambitions in the " pothunting " direction. However, again the luck element seems quite high and the final list of names is considerably changed from 1951.

Wyatt and Gorham both maintain good places in the overall results, but with greatly reduced contest averages. Other top men of '51 have slipped right out of the picture. A. Brooks of Grange has probably been the most consistent power flyer in 1952, although pushed into second place by Perkins of Croydon with his three-contest flight average of 3 : 39.

How have the Areas fared ? Once again, as far as gliders are concerned, top performances belong almost exclusively to the North and Midlands. It was the same last year. Whilst possessing many excellent individual glider flyers, London and the Southern areas have never really got a look-in in glider results during the past two years. Rubber evens this up, for fifty per cent. of the top men listed come from the London area. Power is rather more open, although once again the strength of the Croydon club is apparent, with first, fourth and twelve places.

AEROMODELLING TYPES.—
"The Wayward Spectator."

1952 "Superman" J. O'Donnell has reason to look pleased with his Trophy-winning lightweight model. Accompanying cheque was very welcome.

The 1952 JETEX Contest

DULL but calm weather greeted the 37 finalists for the 1952 contest organised by Wilmott Mansour & Co., Fairlop again being the venue for this hotly contested event. In addition to the "home" competitors, there were four models from New Zealand, one from Canada, and two from Belgium, all proxy flown by staff members with the exception of that of R. Tournois who is a regular attender.

Competitors were drawn from widely separated districts, earning their way to the culminating meeting via qualifying flights, and expenses were paid to the venue for the combined fly-off for the very generous prizes donated by the organisers. This affair proved to be most enjoyable, with the still afternoon barely disturbed by the hiss of Jetex units.

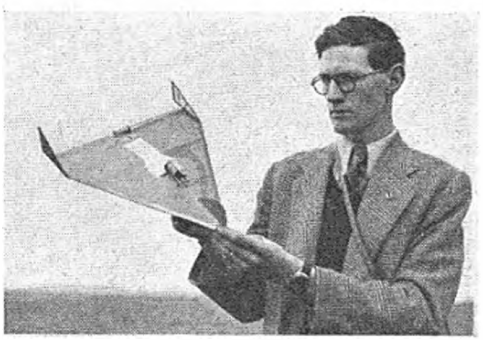
Maintaining the 1952 tradition, top honours went to John O'Donnell, whose best flight of 4 : 25 with a superlight Jetex 200 powered model produced the extraordinary ratio of 18 : 01. This model, designed we understand by younger brother Hughie, has a span and length of 30 ins. and uses geodetic construction. Tear-drop fuselage is made from 1/64th sheet.

Close behind with a ratio of 15 : 44 came '52 Power Champion Barry Wheeler of Birmingham, and Bill Henderson of Farnborough again secured 3rd place.

The overseas models were well flown by men who obviously knew their Jetex, and the New Zealand models in particular were extremely well built.

We learn that the 1953 contest will take place at one of the large Rallies, and we welcome this decision to make better known to the general public a type of flying that produces fine flights with a minimum of noise and nuisance.

1.	J. O'Donnell	(Whitefield)	18·92
2.	B. Wheeler	(Birmingham)	15·44
3.	W. Henderson	(Grange)	12·37
4.	Cpl. Edwards	(R.A.F., Binbrook)	11·28
5.	D. R. Lipscombe	(Cambridge)	10·04
6.	W. Houghton	(Rhyll)	8·25



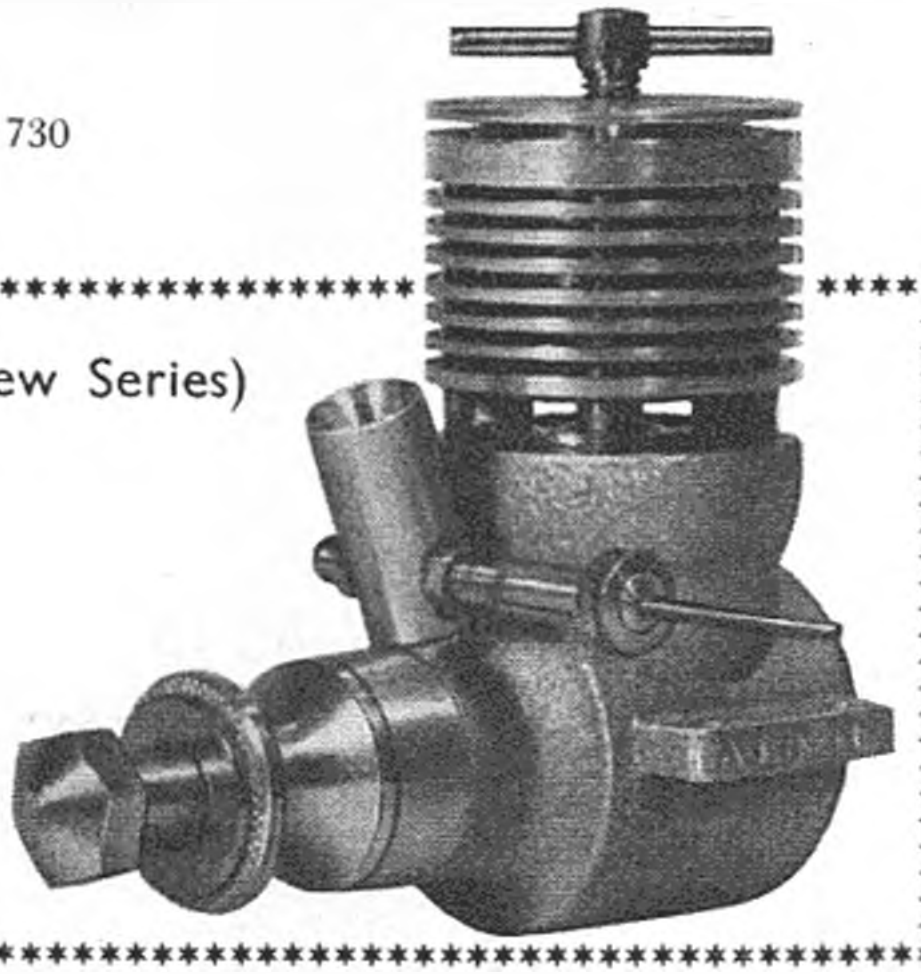
(Top) W. Henderson (Grange) used a "350" unit on this latest version of his A.P.S. design. (Next) Pete Cock of Southampton flew this well-built Canadian entry, powered by "Jetmaster". (Next) D. E. Smith (Southampton) shows his interesting "100" powered Delta weighing 11 oz. Model was very stable. (Bottom) Mrs. Mansour presents Johnny O'D. with the fine I.C.I. Trophy just prior to his dash back to Manchester for another winning session at the D.D. Rally.

ENGINE ANALYSIS No. 5 (New Series)

By Ron Warring

THE MARK 11

OLIVER TIGER



THE new Oliver 2·5 c.c. aero-motor is a most impressive power plant. It is, in fact, a model aircraft version of a famous British model car engine. What the Dooling is to speed fans in the 5 c.c. and 10 c.c. class, the Oliver is in the smaller class. It has all the characteristics of a racing engine. It " Explodes " into life on starting and the distinctive crackle of the exhaust is akin to that normally associated with McCoys and Doolings rather than a small capacity diesel.

Truly the Oliver has been designed and built by model engineers, and highly competent model engineers at that. Workmanship and finish is first class, and the whole job gives one a feeling of here is a power plant produced by someone who really knows his job.

Starting was particularly easy. Procedure adopted was generous choking with the compression slackened off somewhat and a smart flick of the propeller. Hand starting was used on all test runs, even with the smallest sizes of propeller, and was accomplished with the minimum of trouble in each case. The Oliver bursts into rough running which then settles into high speed bursts with " missing " when the compression is increased again until smooth running is obtained. Both the compression setting and the needle valve adjustment were delightfully non-critical.

The Oliver ran smoothly and steadily at all speeds tested. It was just as happy at 8,000 r.p.m. as batting round at 14,000 r.p.m. The controls, however, come in for a certain amount of criticism. The contra-piston is a tight fit in the cylinder and the usual tommy bar adjusting lever is close to the cylinder head. The top of the cylinder itself gets hot quite quickly after starting and so adjustment of the compression can be difficult and uncomfortable. And when there is a propeller spinning round at some fantastic revs just an inch or so away, caution is the watchword ! It would be better, in fact, if the compression control lever was angled upwards, V-fashion, as in some other motors, so that it could be grasped more readily.

OLIVER TIGER Mk. II

Displacement, 2·5 c.c. (0·150 cu. in.).

Bore, ·550 in.

Stroke, ·625 in.

Bore/stroke ratio, 0·88.

Bare weight, 6½ ounces (less tank and propeller).

Mounting—beam, $\frac{3}{16}$ in. × 1 $\frac{11}{32}$ in.

Material Specification

Crankcase, LAC.113.B.

Cylinder liner, EN.8 steel.

Cylinder jacket integral head), aluminium alloy.

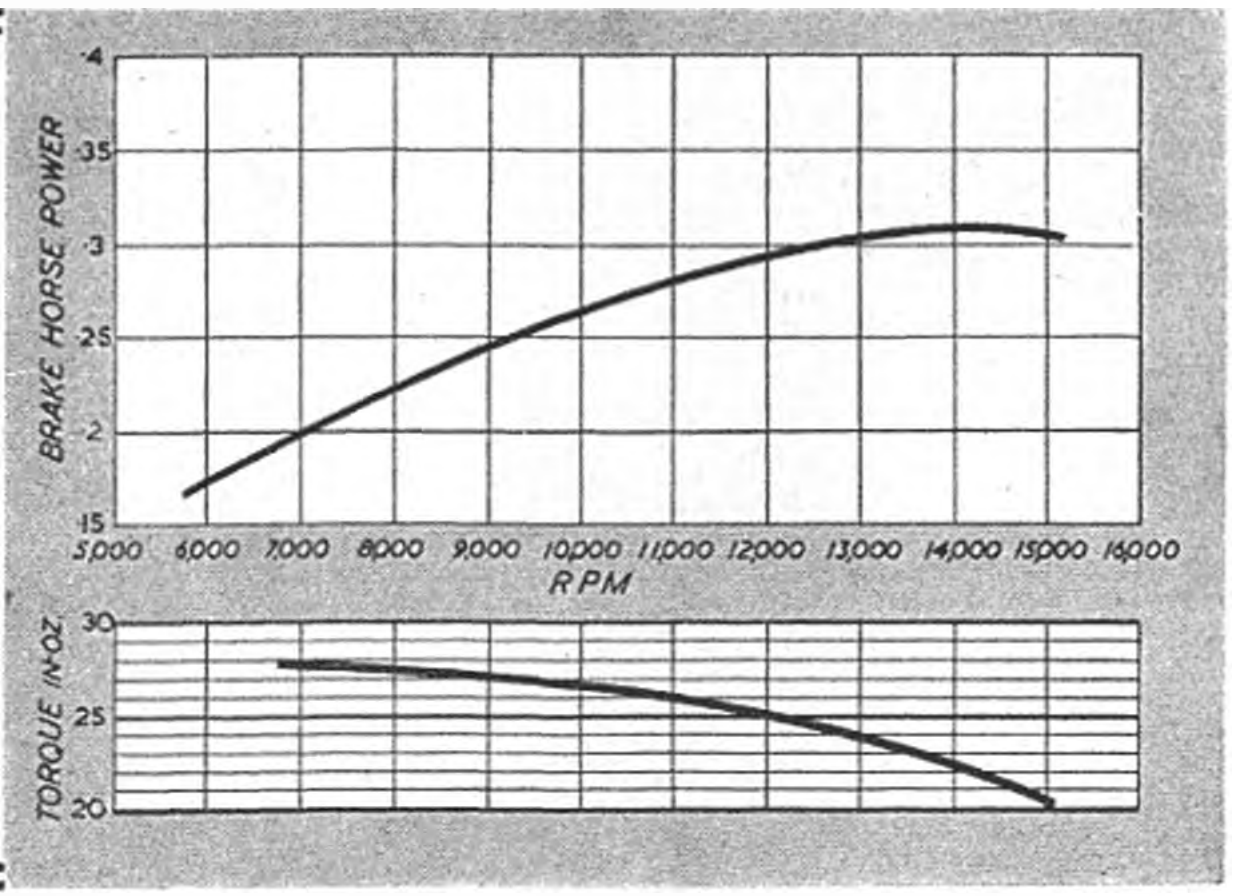
Piston, ' Uniflow ', cast iron.

Contra piston, cast iron.

Manufacturers

J. A. Oliver (Engineering),
136, Radford Road, Nottingham.

Retail price : £6. 10s. 0d.



The choke tube (crankshaft rotary valve) is screwed into the crankcase casting and can be slackened off slightly to angle the needle valve back away from the propeller disc—another wise precaution. Before the writer realised this, and using the engine as supplied with the needle valve mounted on the left hand side of the engine, he had drawn blood on the protruding end of the needle valve in flicking the propeller over. The needle valve control is *much* too near the propeller disc for comfortable handling unless angled back and it is doubtful that the control could be reassembled on the (normal) right hand side and still be angled back far enough by twisting the choke tube without danger of stripping the threads. A small point, perhaps, but this is a noisy, powerful motor which literally warns people to keep their fingers away from the propeller disc.

Highest 2·5 c.c. Torque

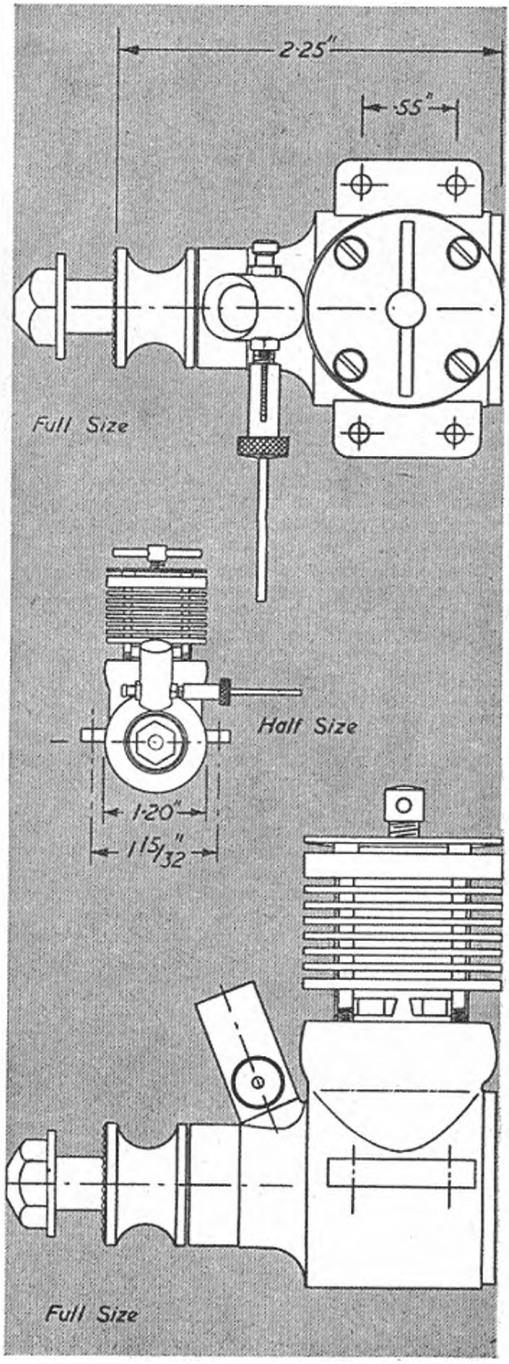
Torque figures achieved on test were higher than those of engines of similar size so far handled in this new series, and the main graph summarises power output characteristics over a wide range of speeds. These figures should be comparable with data published in the previous AEROMODELLER series.

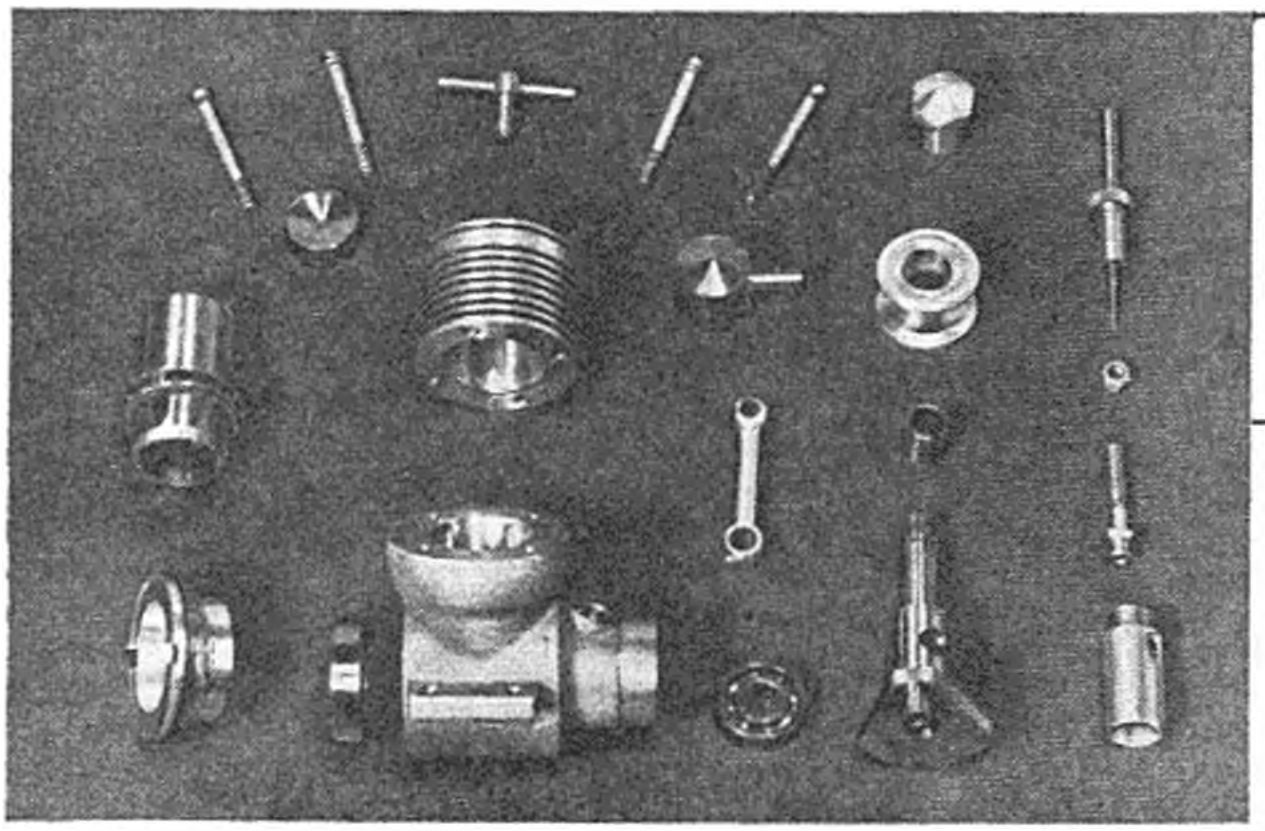
Even better results might be achieved with an Oliver run in for a longer period. There was still a slight trace of stiffness in the bore after a running-in time of over one hour, but the resulting peak B.H.P. determined in excess of 0·3 must rate the Oliver as a very powerful motor for its size—perhaps the most powerful in its class.

Being a racing engine its main appeal will, undoubtedly, be to the control line speed fan. Here, no doubt, the propeller speed figures will be of interest. All the tests were made on a standard fuel—Mercury No. 8. Actual propeller test figures have been related in the form of a graph showing the speeds relative to a different range of propeller diameters and pitches. These graphs must be regarded as approximate and a selection of actual test figures are given for comparison. The graph should, however, be a guide for control line speed design.

From the tests one would anticipate a maximum speed of somewhat in excess of 90 m.p.h. with a 6 or 7 inch propeller, diameter being trimmed for the motor to run at peak r.p.m. in the air, which is in the region of 14,000. Actually, in practice, these figures could probably be bettered, especially using a different fuel with added amyl nitrate, or even by giving a longer running-in period. The figures given are the minimum that could be expected. Personally, we would say that the Oliver is a potential 100 m.p.h. plus engine.

The makers recommend a "doped" fuel for normal operation, consisting of Mills diesel fuel: ether in the ratio 2 : 1, plus 3 per cent. amyl nitrate. On test we found this fuel gave more critical adjustment for smooth running, with a





Taken apart, the Oliver Tiger Mk. II reveals a very high standard of workmanship. With the crankshaft mounted on two ball-races, this engine comes well within the racing class. Concessions have been made to overall weight for increased performance.

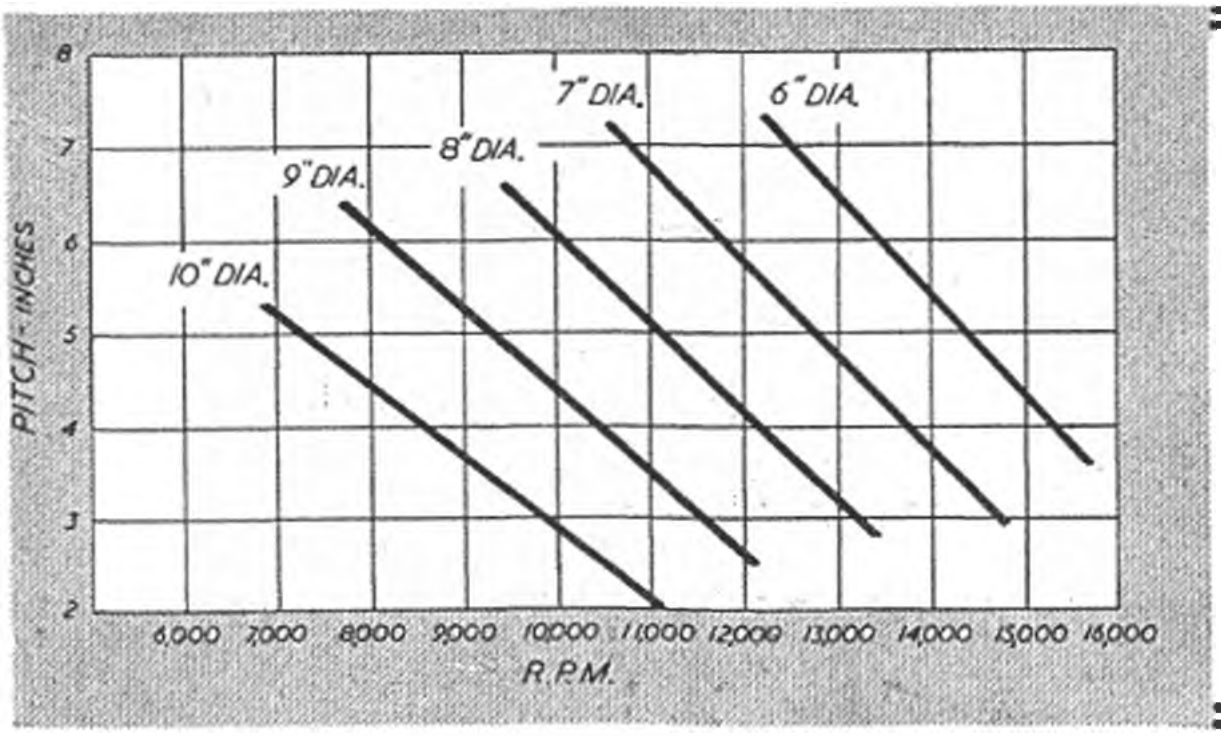
definite tendency to hunt at speeds below 10,000 r.p.m. With the same propeller, in fact, speeds tended to be lower with doped fuel below this mark, but some seven to ten per cent. higher above.

Fuel consumption was somewhat on the high side, as was only to be expected on a racing engine, but not exorbitantly so. No attempts were made in this case to measure actual consumption, but the makers quote a running time of 2 mins. 12 secs. per 15 c.c. of fuel at 14,000 r.p.m. This data should interest team race enthusiasts. For free flight we, personally, would favour a 9 × 4 propeller, although this would be operating the motor at below peak power. To make full use of the power available something like a 9 × 2 or 8 × 3 propeller would be called for.

Thinking of free flight use, a criticism can be levelled against the use of an alloy stub propeller shaft screwing on to the crankshaft. Maybe this is purely a personal preference but the writer has always preferred the smaller hole and simpler fixing resulting from locking the propeller directly on to the end of the crankshaft. To accommodate a pitch of below 4 inches either the stub shaft must be shortened or extra packing washers used. The shaft itself, ¼ in., is of generous diameter and certainly robust enough. Incidentally, with the length of stub shaft provided, 6 in. pitch is the maximum safe thickness of propeller which can be accommodated without cutting back the propeller hub itself. Use of the stub shaft calls for a ⅛ in. diameter clearance hole through the propeller.

Of the main constructional features of interest, the crankcase is cast in LAC. 113 B alloy, whilst the cylinder liner is EN.8 steel in an aluminium alloy cylinder casing. The assembly is held by four screws from the top of the cylinder casing down into the crankcase. Incidentally, the fit of the cylinder liner in its casing is as good as the piston-cylinder fit on many engines. The hold-down screws have a slight tendency to loosen up after prolonged running and need re-tightening periodically.

Summarising we would rate the Oliver an excellent engine for the competition-minded enthusiast who is after top performance and does not mind paying the high initial price for a power plant which should give him long and faithful service. Being individually made and tested, consistency is more or less automatically guaranteed.



PROPELLER TESTS

10 × 4	8,650 r.p.m.
10 × 3	9,800 r.p.m.
9 × 6	8,450 r.p.m.
9 × 5	9,400 r.p.m.
9 × 3	11,400 r.p.m.
8 × 6	9,950 r.p.m.
8 × 4	12,200 r.p.m.
7 × 6	11,800 r.p.m.
7 × 4	13,750 r.p.m.

Test propellers used, carved wood type, constant geometric pitch, normal outline, parallel blades with squared tips.

Recommended propellers :

Free flight : 9 × 4 or 9 × 3.
Control line speed : 6½ or 7 in. pitch (diameter trimmed for operational r.p.m. (static) of around 12,500 r.p.m.).

The NEW A.M. CABIN DURATION

BY BILL DEAN

Avril Warwick admires the prototype of this new version of an old favourite.

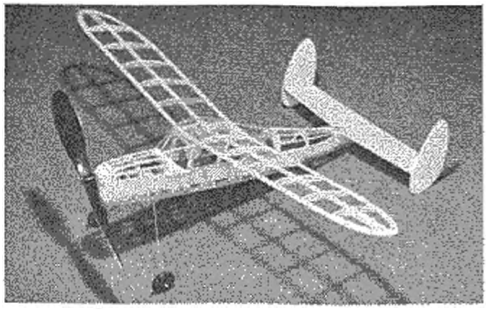
This, the 97th design from Bill Dean's drawing board, is a revival of an old favourite which has never failed to arouse interest. With latest construction methods and use of commercial plastic propeller and wheels, both appearance and performance are even better than before!

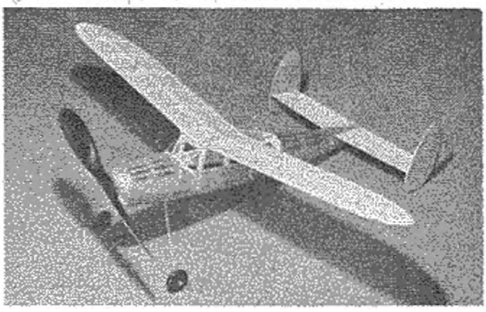
BACK in 1941, one of the writers' first magazine designs — the " A.M. Cabin Duration " — appeared in the August issue of the AEROMODELLER. Its neat semi-scale appearance soon made it one of the most popular models in the A.P.S. range and over the years many thousands have been built and flown. Looking over the plans recently, we decided to simplify and generally clean up the design in order to bring it into line with present day constructional trends. The result is this completely new version of an old favourite—the " *NEW* A.M. CABIN DURATION ".

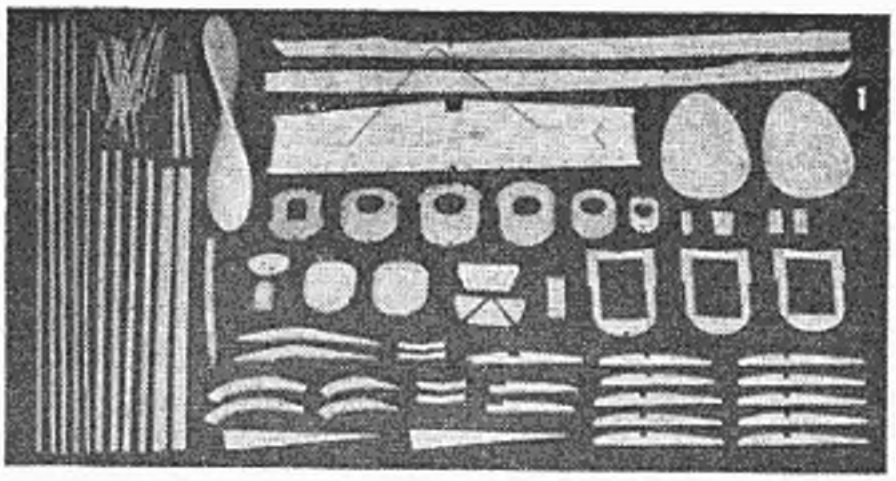
Simple stage-by-stage instructions are to be found on the next two pages. Before you start construction, let's pass straight on to flying hints.

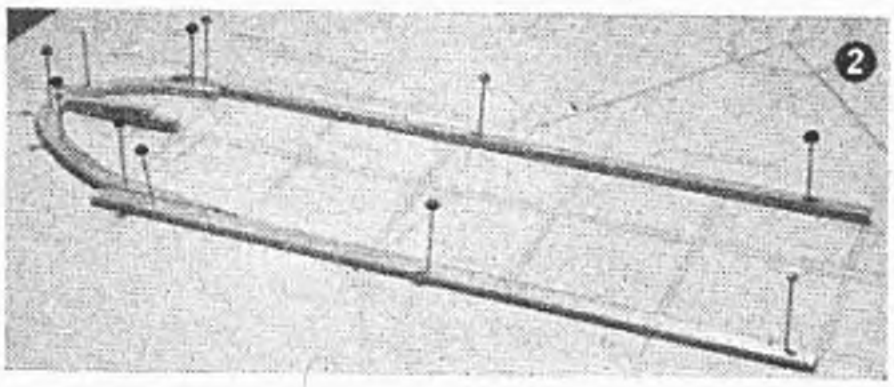
Check glide first—adding or taking off nose weight until a stall-free flight path results. Adjust the wing trim tab to give a gentle right turn. When satisfied with the glide, wind up 125 times (clockwise) and launch the model into wind from shoulder height. If the model shows a tendency to spin in either direction, check carefully for warps as these are usually the cause of erratic flight. Gradually work up to full turns (about 350), correcting any tendency to stall by increasing the downthrust. Average duration when fully wound is about half a minute, but longer flights are possible in thermal conditions.

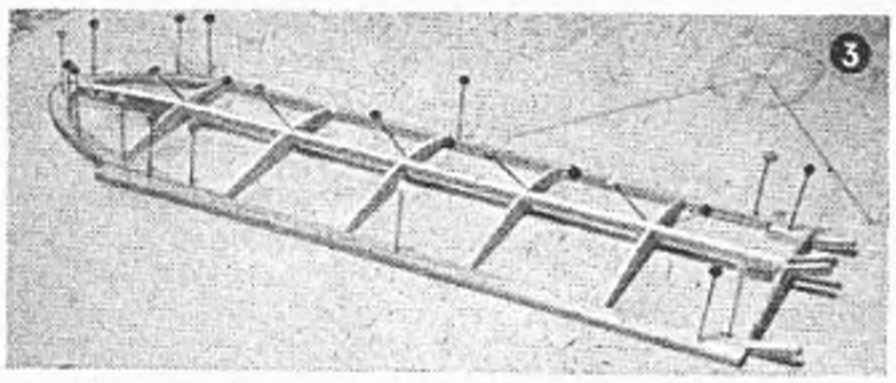
Below, left, the model uncovered, and right, ready to fly. Plastic prop and wheels simplify construction.

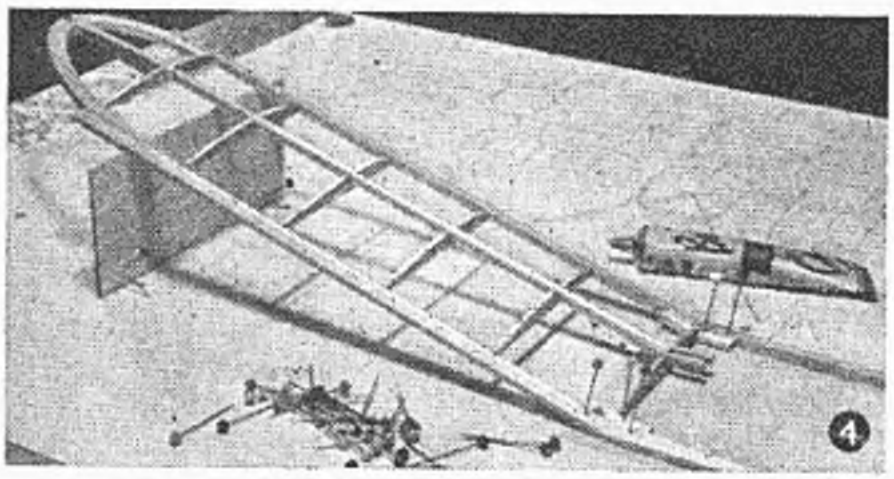


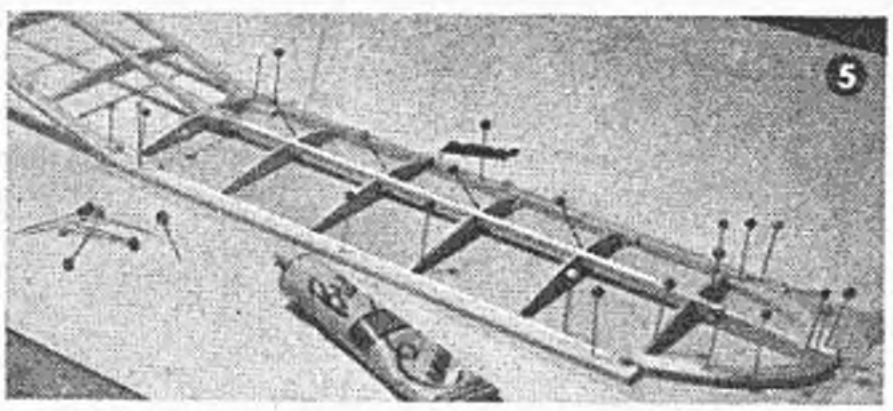


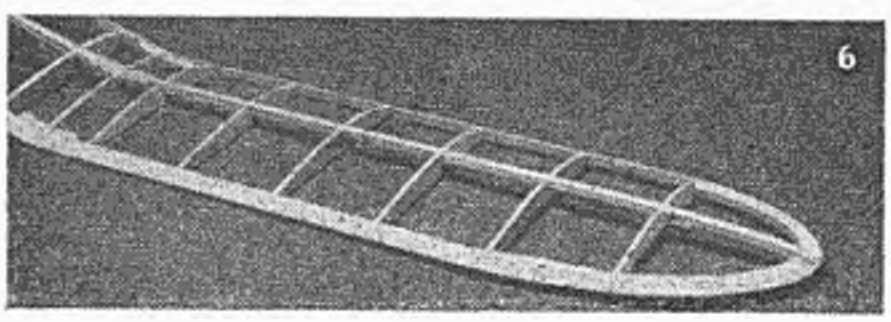












Follow this simple Stage-

1 Begin by cutting out all the parts, tracing or pin-pricking the patterns on to 1/16 in. and ⅛ in. sheet grain along longest dimensions. Choose soft sheet for the tailplane and fins—to keep the tail light. Build up formers 2, 4, 5 and 6 flat on the plan. Select good medium-hard strip for the wings and fuselage. Bend the undercarriage, prop shaft (hook end) and tailskid from 20 gauge wire. Protect the plan with grease-proof paper

2 Wing construction is conventional—an upper spar being featured to prevent tissue sag. In the final version it was decided to add an additional rib to each wing panel (as on plan). The photos (3-5) show an earlier wing panel with six instead of seven ribs, but the construction is similar. Pin LEFT L.E., T.E. and W3 pieces to plan—then cement the tip pieces (W4-W6) to them.

3 Cement W1 dihedral braces to L.E. and T.E., then add ribs (A, B and C), tilting the root rib with the aid of the angle template (W) to allow for the dihedral. Note the use of pins to hold the ribs vertically in position. Cement the W2 dihedral braces to either side of the upper spar and slot the latter into the rib notches.

4 When dry, unpin wing panel from plan and pack up tip 2½ in.—checking with a celluloid square that the L.E. still lines up with the plan. Secure left panel to plan with pins and start construction of RIGHT panel by cementing L.E. and T.E. pieces to W1 dihedral braces.

5 From this point the construction is the same as for the left panel—the tip pieces, ribs and upper spar being added in that order.

6 When quite dry, unpin the wing from the plan and trim away the surplus T.E. portions at tips (shown dotted on plan). Carefully sand down the tips from ⅛ in. at the L.E. to 3/32 in. at the T.E., then shape the outlines to the indicated sections with a sharp razor blade and sandpaper.

7 Sheet sides simplify the fuselage construction and ensure accurate wing and tailplane rigging angles. Use a ball-point pen to mark the positions of the formers on the inside faces of the fuselage sides. Begin assembly by cementing sides to formers 4, 5 and 6. Check that front and rear of fuselage sides are level with each other, then add ⅛ in. sq. wing supports.

8 Pull in sides at tail and cement triangle F5 in place. Insert formers 7, 8 and 9 and add motor peg reinforcements (F_7). Pull in sides at nose and insert former 1, followed by former 2. Place former 3 in position over plan, then position undercarriage over the top of it. Now add U1-U3 pieces, allow to dry—then sand down until the level of the wire is reached. Secure the undercarriage by well cementing U4 over the top of U1-U3. Join nose block pieces together (F1-F4), using the cross lines to obtain correct alignment.

9 Cement former 3 to fuselage sides, attach nose keel F6 and add upper and lower 1/16 in. sq. stringers. The position of the rear cabin struts is clearly shown in the photo and on the plan.

by-Stage Construction

10 Cut pattern "Z" from cartridge paper and cement to fuselage sides and former 3. Cement front cabin "V" struts in position. Trace front and rear cabin templates on to notepaper, check fit on model and trim if necessary. Place templates flat on building board, lay thin celluloid over the top of them—then cut out the latter and carefully cement in position on the model. Add the wheels and hold them in place with solder or cement. Cement the 3/32 in. dia. dowels in position—for the wing retaining rubber bands. Cement scrap balsa to tail (underneath) and hold tailskid securely in place with silk patch, cemented on.

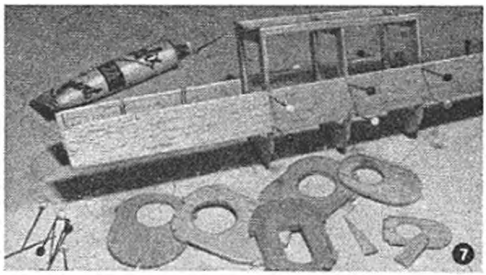
11 Round off the leading and trailing edges of the tailplane—and the edges of the fins—then cement the latter in place, checking that they are at right angles to the tailplane. When dry, cement the tailplane to the fuselage and check carefully for correct alignment in the front and top views. Add the rubber access hatch (F8)—hinging at the front edge with a small piece of silk or cloth.

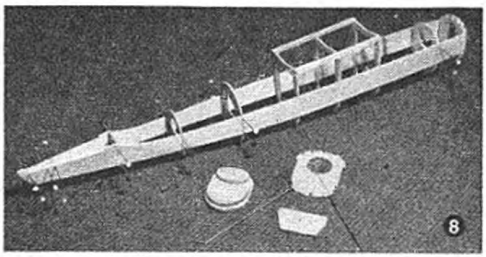
Hold the noseblock in place with a dab of cement, then carve and sand until it flows smoothly into the lines of the fuselage. Remove the noseblock and drill to take a piece of 20 gauge brass tubing. Note that the tubing is inserted at right angles to the noseblock—downthrust already having been incorporated in the fuselage. Push the airscrew shaft through the noseblock from the rear, then thread on a cup washer, followed by a 7½ in. dia. KK plastic airscrew. Bend over the shaft at the front as shown or alternatively, instal a simple free-wheel device of your own choice. A single loop of ¼ in. flat rubber provides the power. Knot, bind with thread and *then cement* before treating the motor with rubber lubricant.

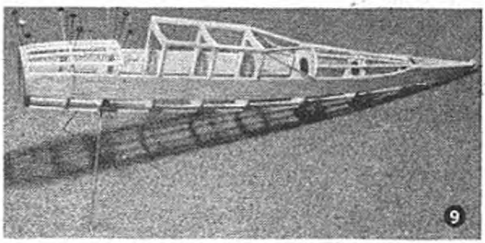
This completes the framework, but assemble the model and check that the nose plug fits snugly in the front former and the wing sits firmly in place. Check carefully for broken joints and sand the entire framework smooth in preparation for covering.

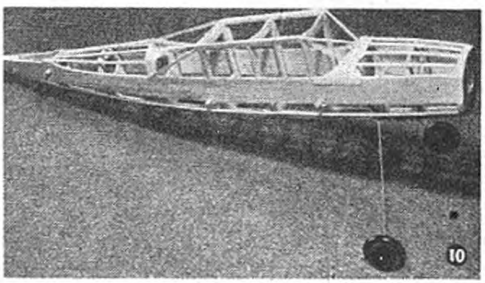
This brings us to the covering—the point at which most modellers seem to run into difficulties. Work carefully and methodically and be prepared to strip and recover any portions that are badly wrinkled. Use coloured tissue for the fuselage and fins. Cover the wings with white tissue, but leave the tailplane uncovered. Several long strips will be needed for the fuselage and the wing requires four pieces. Use tissue paste as adhesive and tighten the covering by spraying with water. When dry, give the wings two coats of thinned dope pinning to the building board (with edges packed up) to prevent warps developing. The fuselage, fins and tailplane may be given three coats of thinned dope.

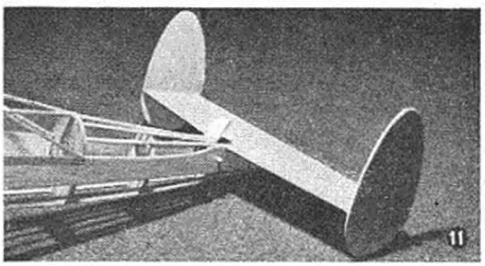
Instal the rubber motor, securing at the tail end with a 3/32 in. dia. peg. Hold the wing in position with small rubber bands looped from the dowels and check that the model balances level at 1/3 of the wing chord back from the L.E. (*see* plan). If tail heavy, add a small piece of old cement tube behind former 1, to give correct balance. If nose heavy, weight the tail. Cement a celluloid trim tab to the left hand wing tip (*see* plan).











EIGHT HUNDRED individual entries were registered at this popular North-Western area rally which finally got under way (after the false start reported in November "Hangar Doors"), on sunny October 5th. It is with some gratification that we find the names Monks, Wheeler and Lanfranchi at 3rd, 4th and 5th places respectively in Power to verify their successful combined efforts at the World Championship reported elsewhere in this issue. Brother G. C. M. Byrd, and not G. M. (Max) made certain of his first place in Glider by reeling off a 14 : 43 flight after two max's. But it was a Whitefield benefit meeting, the O'Donnell's taking home six prizes and the Bennett's, including Mum, another two. The Eddie Riding Memorial Trophy for scale was very keenly contested by a large entry ranging from a Jetex Lavochkin to the large radio-controlled Ercoupe illustrated here. All credit to Avro man Fred Lees who produced a larger version of his last year's winning Luscombe 8a to make a perfect flight with a perfect model. R.G.M.

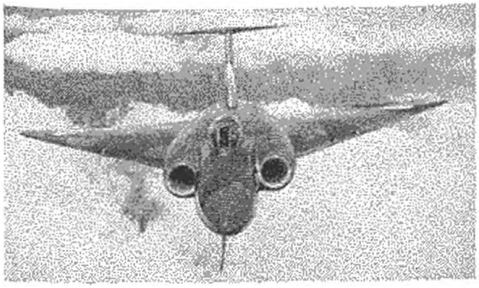
6. Almost tandem wing "Mauboussin Hemiptere" by Ivan Cameron flew well. 7. Fred Lees releases his "Skypal", a red beauty, was first in scale. S. J. Bridgewood and planked Curtis Owl, was second.

1. Ambitious r c ercoupe has elevator, rudder and throttle control on Dennymite engine. By H. Keble of Crosby. 2. "Weltmeister" Barry Wheeler and world champion model was 4th in power with same model that went to Switzerland. 3. T. Simpson's glider, from Timperley, had endplates all over and novel anti-warp zig-zag structure. 4. Barry and Mrs. Haisman were there with a Wakefield. 5. Smallest scale power entry, a Kalper 0·32 c.c. Sopwith Camel by P. Ward of Ashton.

AEROPLANES IN OUTLINE — No. 6

BY G. A. CULL

The GLOSTER *G.A.5* Javelin



Two views of first prototype WD 804 by Gloster Photographer Russell Adams, show absence of parachute fairing above tail, and modified fuselage extremity.

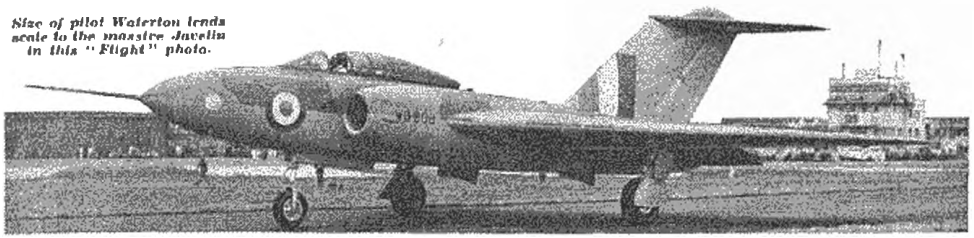
ON November 26th, 1951, the Gloster G.A.5 took off from Moreton Valence for the first time, and was airborne for 35 minutes in the hands of S/L. Waterton. This was a notable "first flight" for the G.A.5 is the first twin-jet delta and will be first delta fighter to enter squadron service.

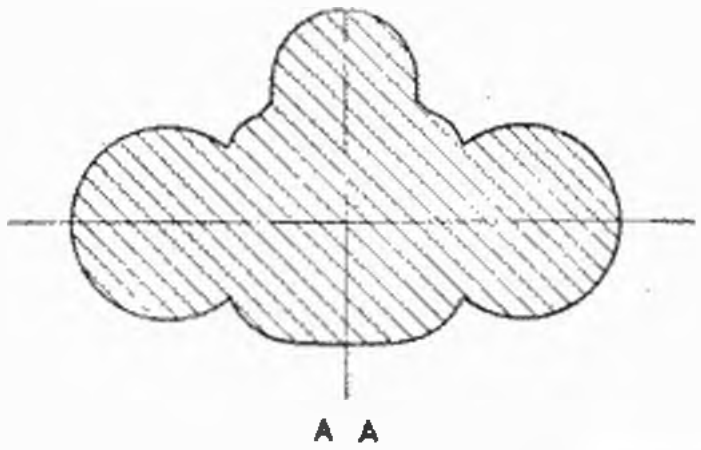
In 1948 an Air Ministry specification was issued for a heavy all-weather fighter with interceptor performance and capable of long patrols in any weather and at night, resulting a design known initially as the Gloster F.4/48. Later designated G.A.5, and now named Javelin, this big fighter underwent evaluation trials in competition with the D.H.110 in the same class, and a super-priority production order favouring the Gloster design was announced on June 7th. The delta lay-out was chosen as the best to meet all requirements without sacrificing aerodynamic cleanness. Apart from its superior high speed characteristics, the stiff delta wing provides ample stowage space for a wide-track undercarriage (which is fitted with taxi-lamps) and the large fuel load for patrol work without recourse to drag-creating drop-tanks. To ensure maximum manoeuvrability and enable the fullest use of flaps, a delta-form tailplane is employed. This has a short fixed centre section but the main outer panels are movable in conjunction with elevators, which, together with the relatively low wing loading, endow a tight turning radius as well as dealing with fore and aft trim changes. To offset the delta's short moment arm, the fin and rudder are very large to provide directional stability for high speed gunnery. Large flaps are fitted forward of the trailing edge so as to reduce the usual nose-down couple, and the Javelin touches down without exaggerated incidence. These flaps may be lowered at high speed when their strong braking effect may be added to that of the dive brakes on the wing top surface. Radar equipment is very extensive and fills the nose of the Javelin which will so be enabled to intercept bombers flying at speeds and heights where human vision can easily miss the target in the few moments it would be in sight. The radar operator is housed under the same sliding canopy as the pilot and both have ejector seats. Although very much subject to official secrecy, the Javelin is reported from foreign sources to be armed with four 30 m.m. guns, but neither prototype has any visible armament.

The first Javelin was numbered WD 804 and on June 30th, 1952, was wrecked at Boscombe Down in a crash landing which tore off one wing. Waterton had experienced severe elevator trouble but managed to get the G.A.5 down and so made possible the salvage of vital test films. Numbered WD 808, the second machine first flew on 21st August, 1952, and was demonstrated at the 1952 S.B.A.C. Show where its docile manoeuvrability was apparent with a fast rate of roll.

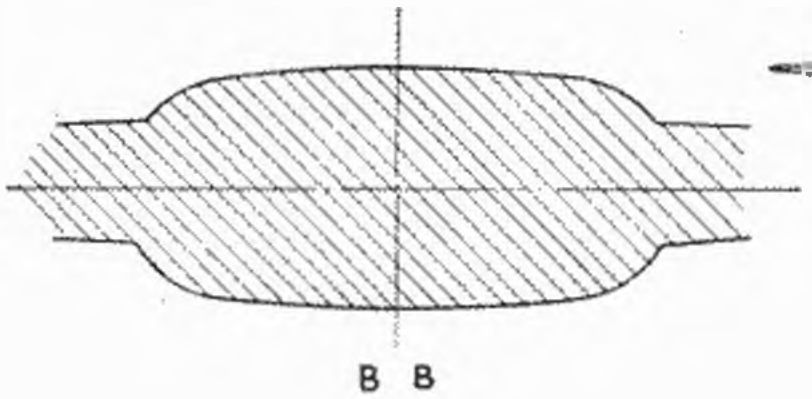
The Javelin has not yet demonstrated its high speed capabilities, but it is known that thrust in excess of 14,000 lbs. from the two A.S. Sapphire jets puts this new fighter in the supersonic class.

Size of pilot Waterton lends scale to the massive Javelin in this "Flight" photo.





A A



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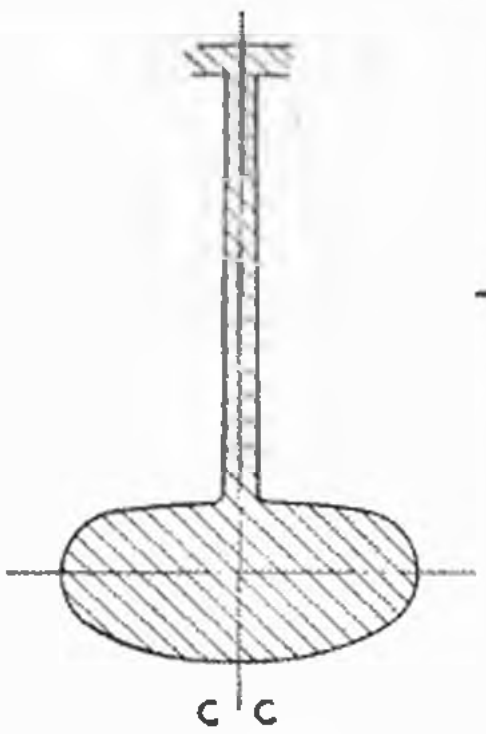
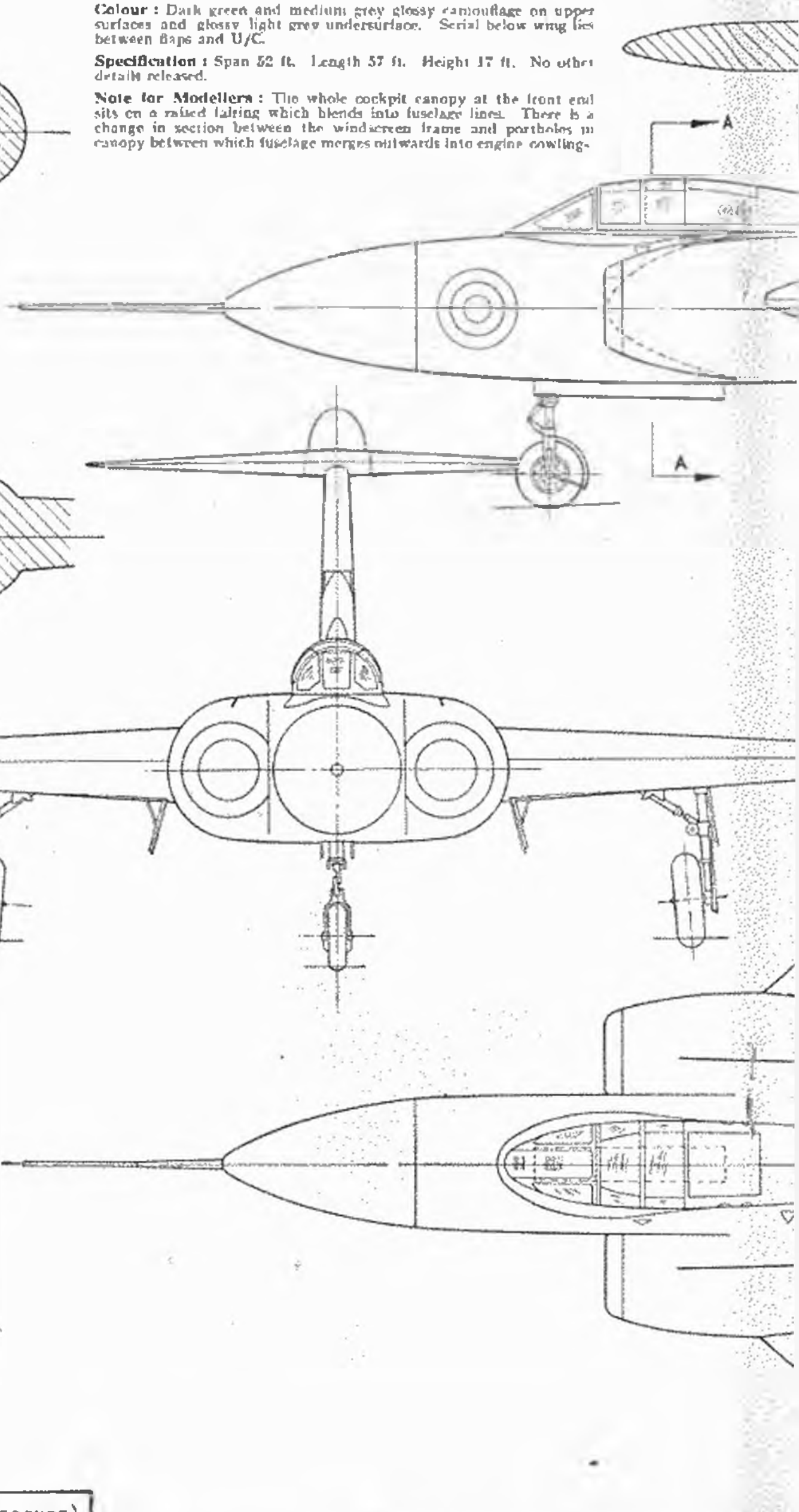


C C

Colour : Dark green and medium grey glossy camouflage on upper surfaces and glossy light grey undersurface. Serial below wing lies between flaps and U/C.

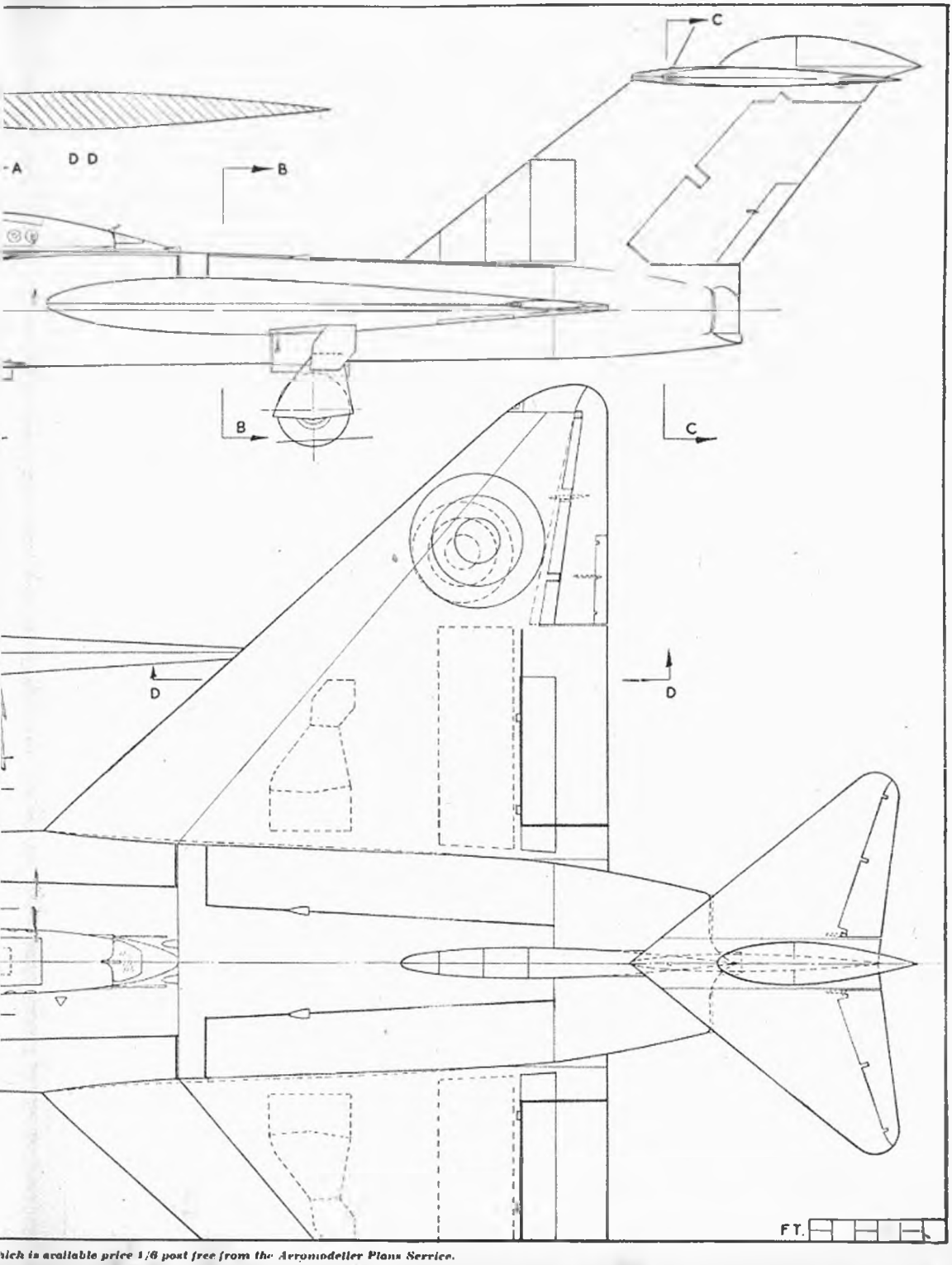
Specification : Span 52 ft. Length 57 ft. Height 17 ft. No other details released.

Note for Modellers : The whole cockpit canopy at the front end sits on a raised fairing which blends into fuselage lines. There is a change in section between the windscreen frame and portholes in canopy between which fuselage merges outwards into engine cowling.

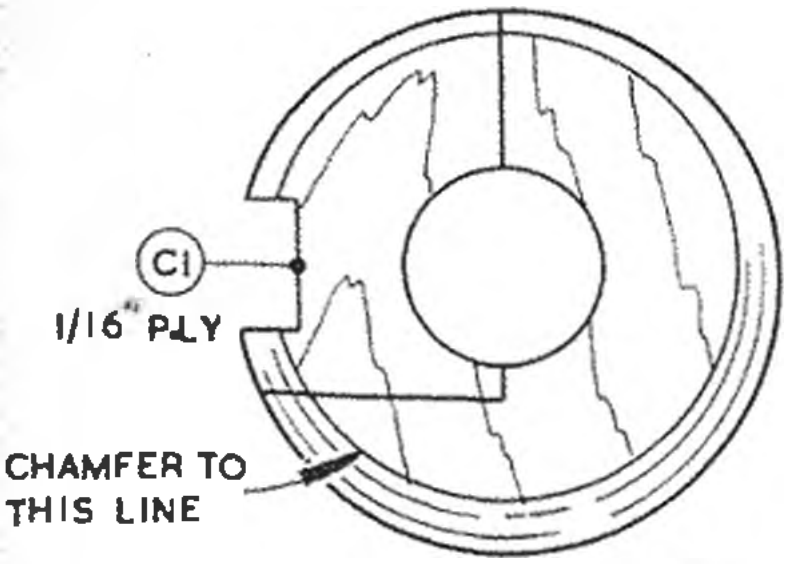


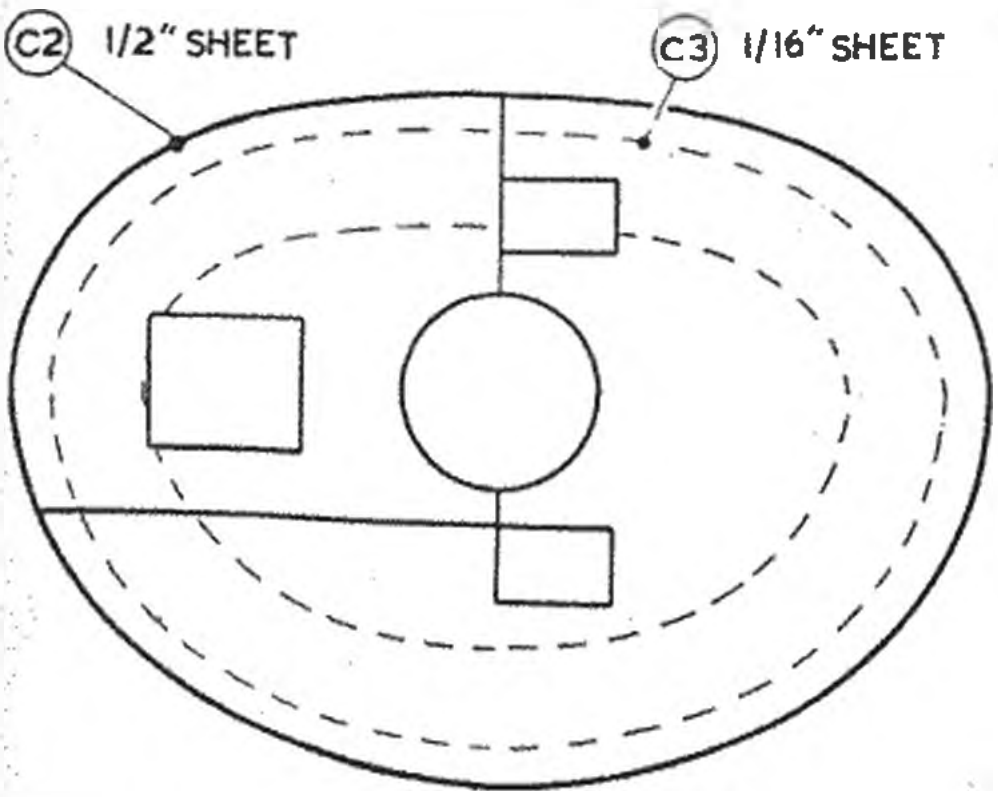
GLOSTER G.A.5 "JAVELIN" (2ND PROTOTYPE)

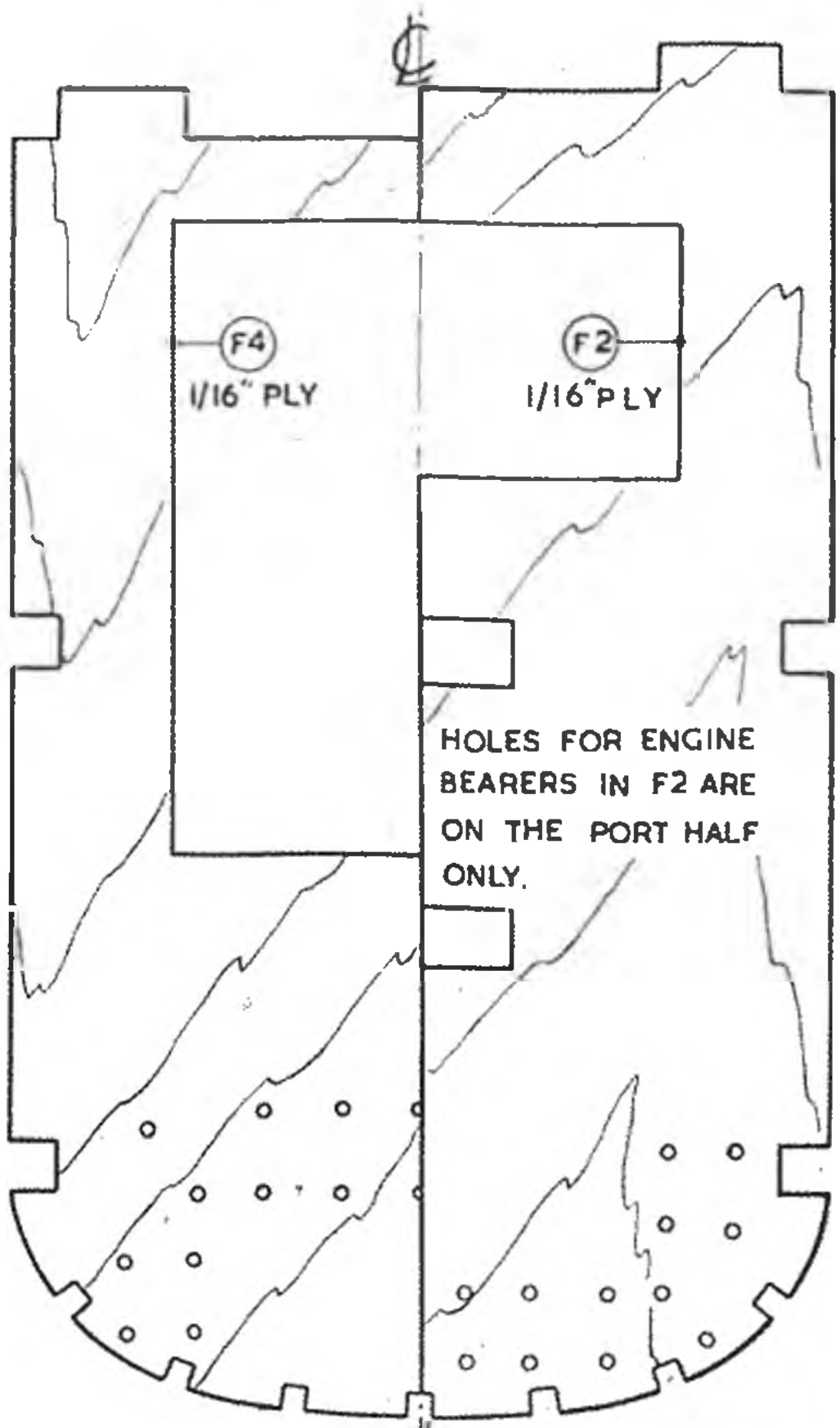
This is a 1/72nd scale reproduction of the 1/48th scale plan which is ava



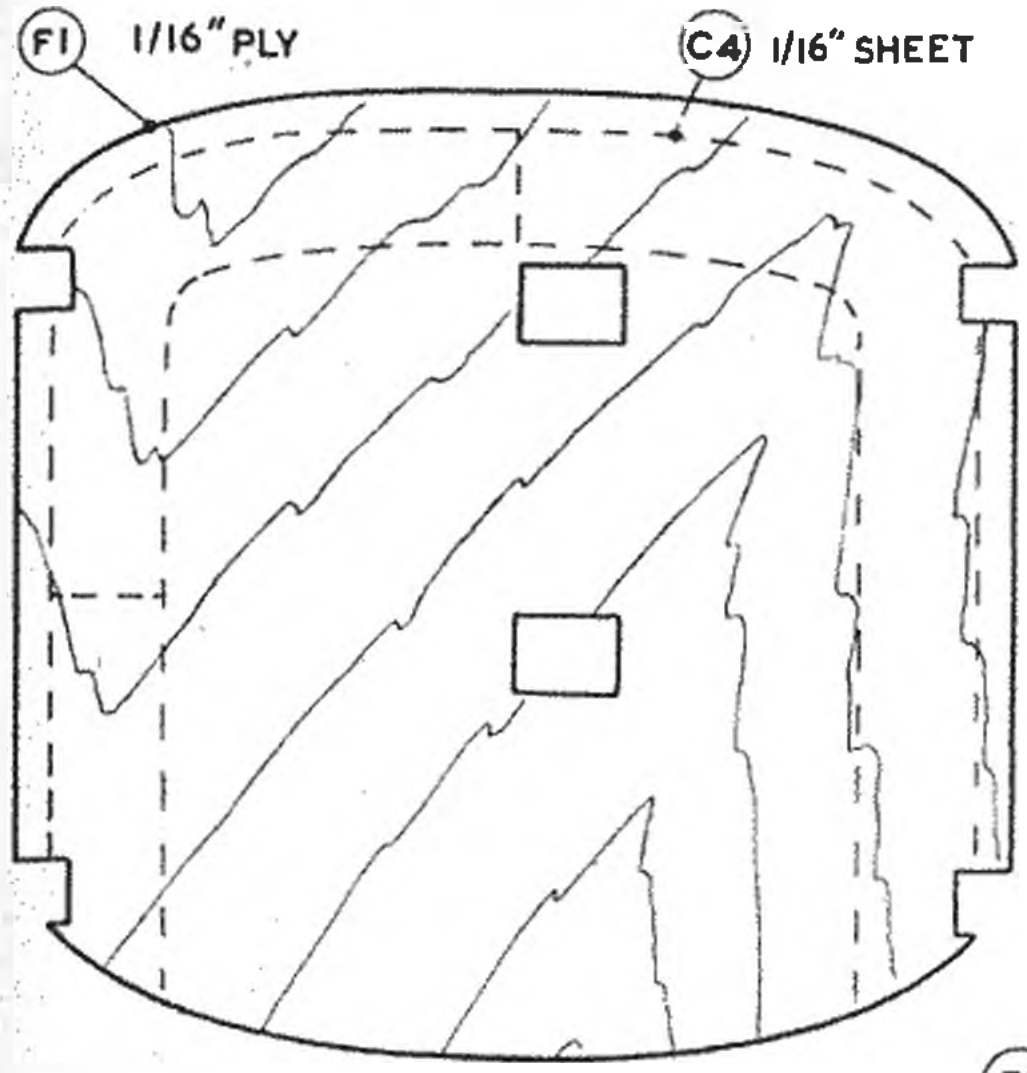
hick is available price 1/6 post free from the Aeromodeller Plans Service.

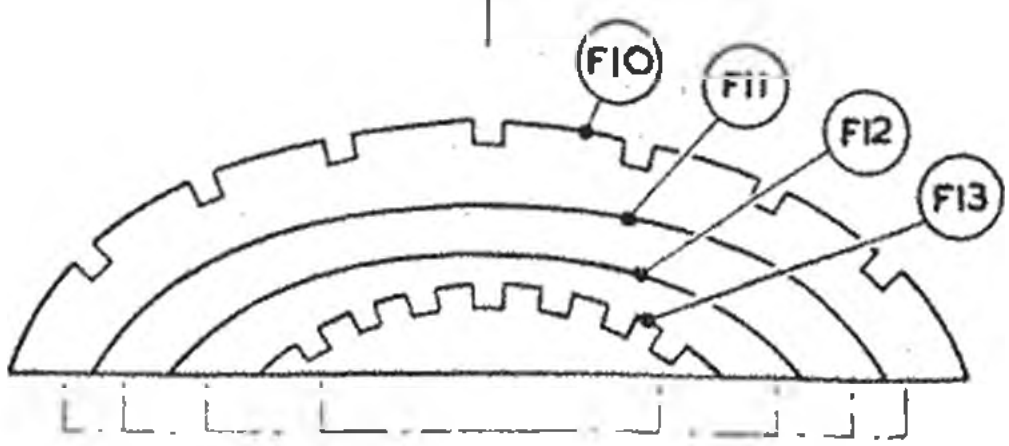




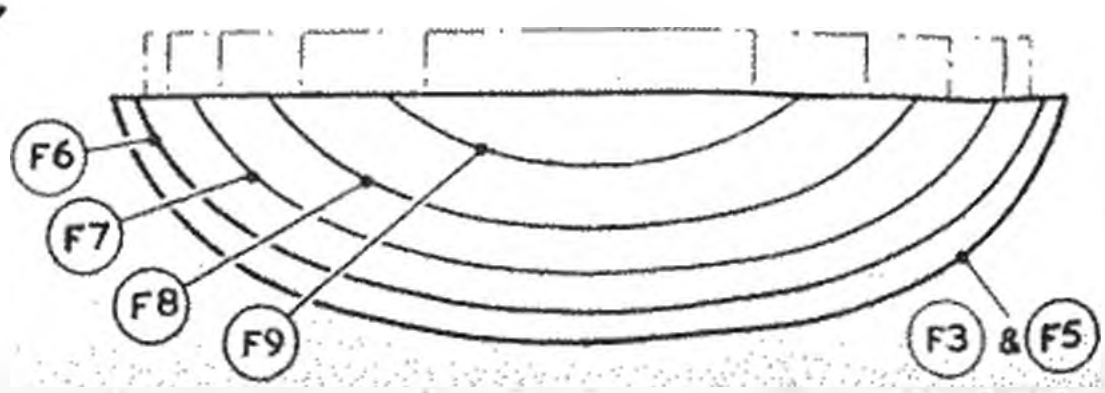


BIND & CEMENT U CART TO F2 & F4





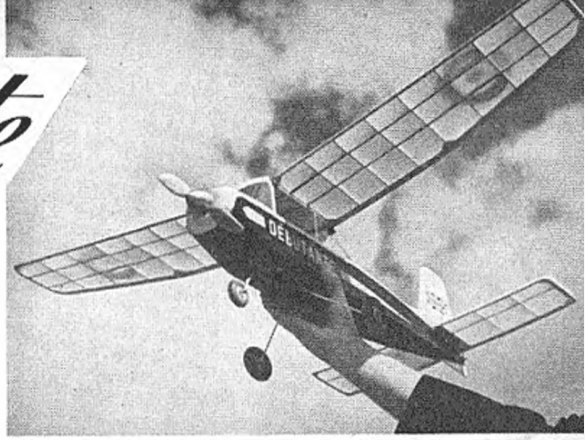
LENGTH OF FUSELAGE CROSS PIECES AT FORMER POSITIONS IS SHOWN BY CHAIN DOTTED LINES. FORMERS F3, F5-F13. 1/16" SHEET.



DEBUTANTE.

FULL SIZE FORMERS

Débutante



Designed by Vic Smeed for the "Especially for the Beginner" series, and described photographically by the Rev. F. Callon.

IN many ways Débutante is the ideal model. It caters for any of the popular range of small engines from .5 to 1 c.c. It combines a very pleasing appearance with a robustness of construction which should outlast many seasons' regular flying.

Building the Wing

Trace the central wing rib outline W.2 onto two pieces of 1/16 in. ply; cut out, sand to uniformity, and then pin together a sandwich of balsa rectangles between the ply ribs—nine 1/16 in. and two ¼ in. Ribs W.3–W.6 will have to be traced and cut separately in pairs. Next, trace and cut out the 1/16 in. ply dihedral keeper and cement the three sections of the ¾ × ¼ in. mainspar against it, checking the tip dihedral.

Fig. 1 shows the first stage in the construction of the wing. The top edge of the three W.1 ribs (two ¼ in. and one 1/16 in.) must first be lowered by trimming off 1/16 in. all the way along to leave room for the sheeting and the mainspar slot widened. The flat centre-section of the mainspar is pinned down over the plan together with a short length of trailing edge and secondary (3/16 × ¼ in.) spar, the latter packed up about 3/64 in. off the board with scrap balsa to accommodate the undercamber of the aerofoil. The three W.1 ribs are then cemented in place, a short length of leading edge is added, and gussets secured into the corners. When set, the overlap of L.E., T.E. and secondary spar is trimmed off square with the outside ribs.

Fig. 2 shows what is virtually the same process repeated in the construction of the port half of the wing; mainspar and T.E. are pinned down, secondary spar packed up, and ribs cemented into place.

In Fig. 3 the L.E. all necessary gussets has been added. The same method is used for the starboard half of the wing, the completed port half being packed up with a block of wood.

All that remains is to cement rectangles of soft ¼ in. sheet to the tips and sand them to shape when dry; to sheet over the centre-section, and to build up the scrap balsa fairings on to the L.E. and T.E. of the centre-section. (The T.E. fairing was omitted on the original.) Final shaping of the fairing is best left until the fuselage has been completed, when the wing can be put temporarily in place on the wing mount.

The Fuselage

Start by tracing and cutting out the thirteen formers, F.1, 2 and 4 in plywood, the rest in balsa. Bend the U/C legs to shape, drill all necessary holes through F.2 and F.4, and bind and cement the legs against them. Bind together with fuse wire, and solder the two vertical wires of the single front U/C strut, but do not add the wheels as yet.

Fig. 4. Choose four longerons from equally hard 3/16 in. sq. stock, and build the two sides of the basic fuselage (shown shaded on the plan) one on top of the other on the workboard.

Fig. 5. Cement the two sides against the ply formers F.1, F.2 and F.4, and draw the sides together and cement at the tail. Engine bearers are cut to length and the bolt holes marked and drilled to suit your particular engine. Use Durofix, not balsa cement, for securing the engine bearers to formers F.1 and F.2 and bolt the engine temporarily in place to keep the bearers properly spaced as they set into position.

Fig. 6. Cross spacers (cut to follow the natural curve of the fuselage sides) and cabin roof are next added, followed by the sheet balsa stringer formers F.3 and F.5 F.13.

Fig. 7 shows the underside stringers with plenty of thin, straight pins pushed through at the joints to ensure a firm hold.

Fig. 8. Side panels of sheet are next added, and then comes the rather tedious job of filling in between the lower stringers between formers 2 and 5, ending in a fluted edge between formers 4 and 5 if preferred.

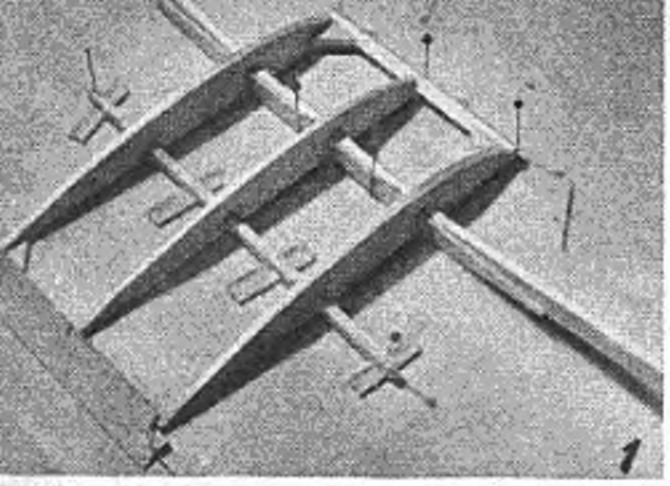
Fig. 9 gives details of the incorporation of the trim-tab into the fin, the last item itself being quite a straightforward job. The tab starts by being nothing more than two extra lengths of 3/16 in. sq. built into the inside of the top rear panel of the fin but cemented only to each other and to the T.E. and top of the fin. When all the joints are dry and the fin sanded to shape, cut through the top and T.E. of the fin so that the top rear corner comes away. A metal foil or soft wire hinge is then inserted into the top of the cut away face and a pin pushed partially up through the spar supporting the tab corner to form a pivot. All that now remains is to put the tab back in place with the hinge half in the main fin and half in the tab, and push the pivot pin up into the hingeing vertical edge of the tab, which latter should be sanded slightly round in order to permit a free to and from movement. The completed fin is now cemented firmly to the fuselage.

Fig. 10. Shows the rear of the fuselage with the upper forward fin fairing and the underfin added and the T.P. slipped into position.

Engine Cowling

A cowled-in engine certainly looks very pleasing and professional, but it often calls for some careful modelling. The following method is suggested for those who cannot think of a better one.

The outline of the noseblock C.2 is traced onto soft ¼ in. sheet and cut out with a slight overlap all round. The 1/16 in. former C.3 is traced and cut out accurately with the centre-section left in and the engine bearer slots cut out so that correct registration may be made with the corresponding slots cut into the ¼ in. sheet. These latter are best constructed by drilling ¼ in. holes just *inside* the bearer rectangles traced from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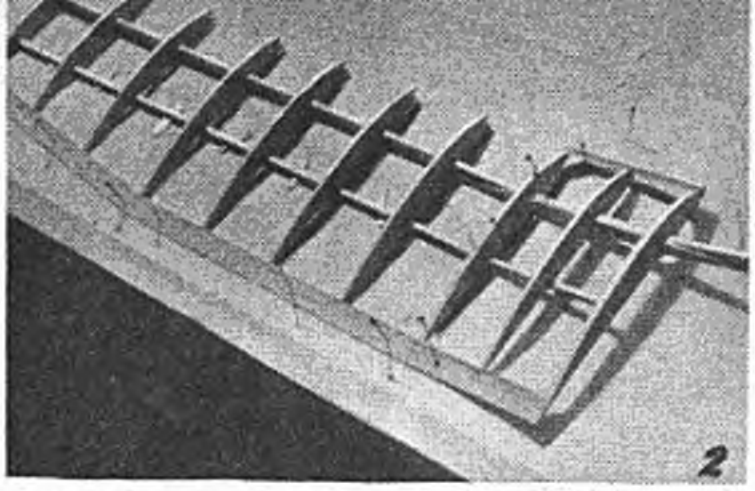
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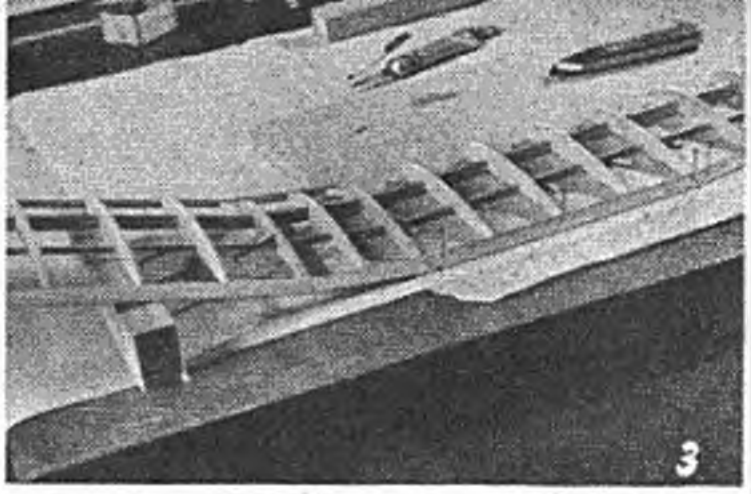
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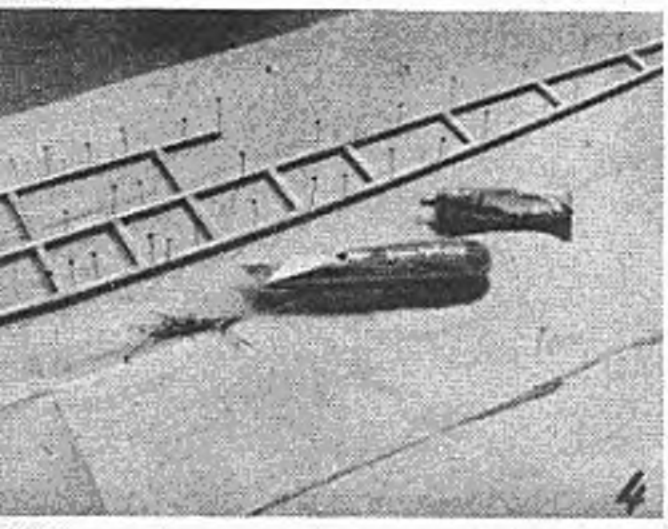
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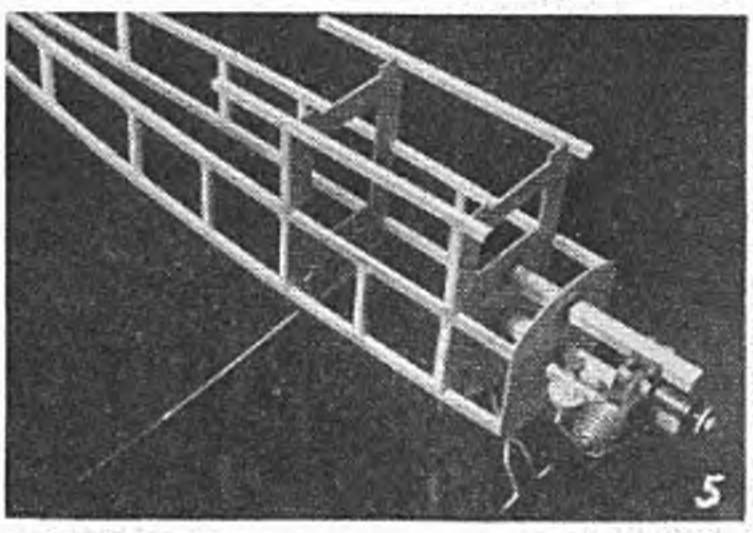
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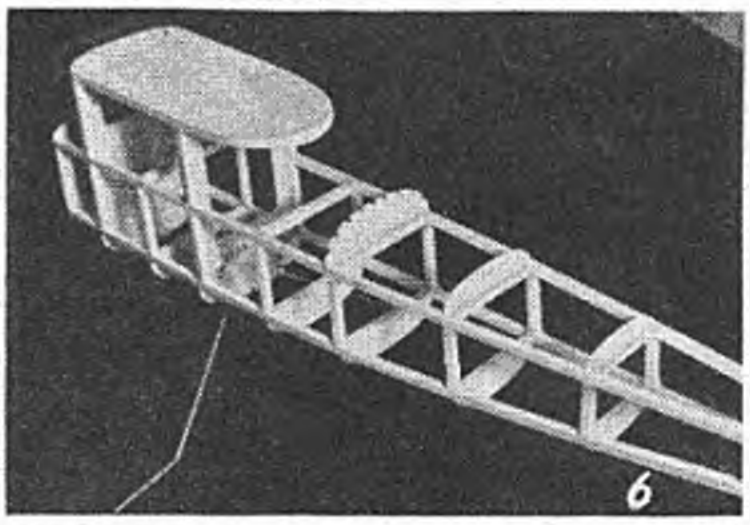
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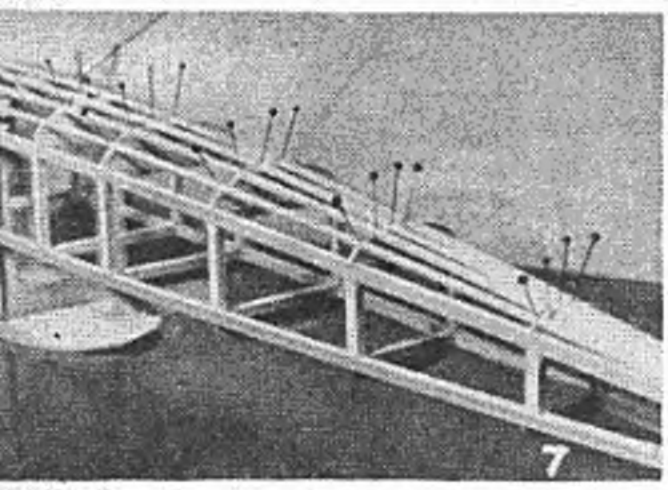
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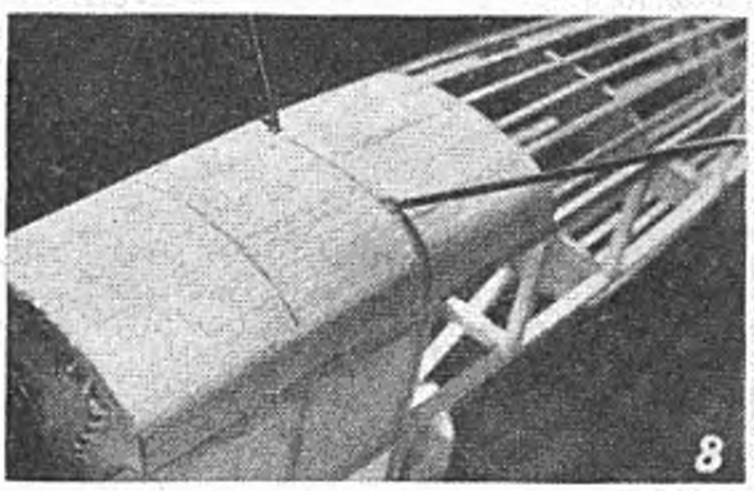
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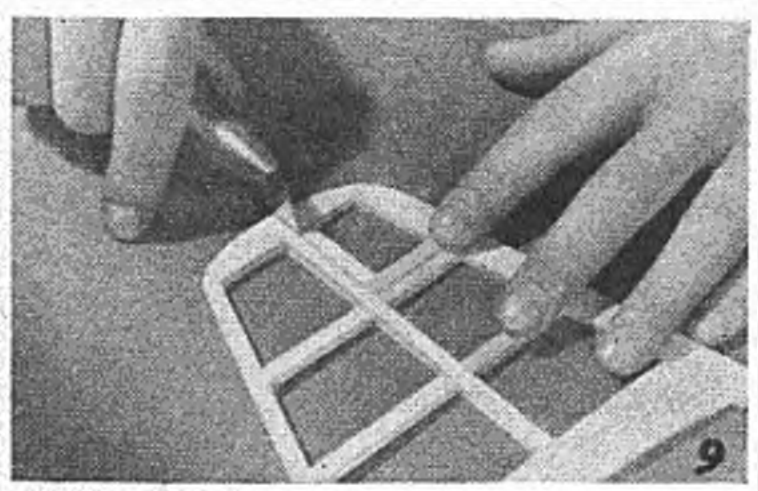
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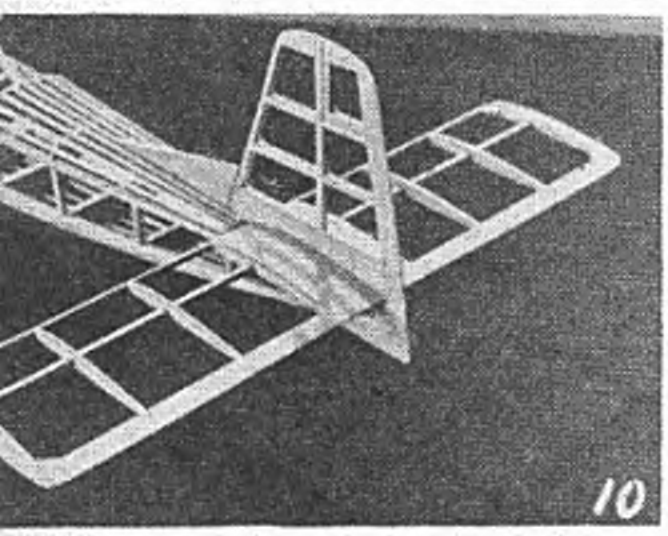
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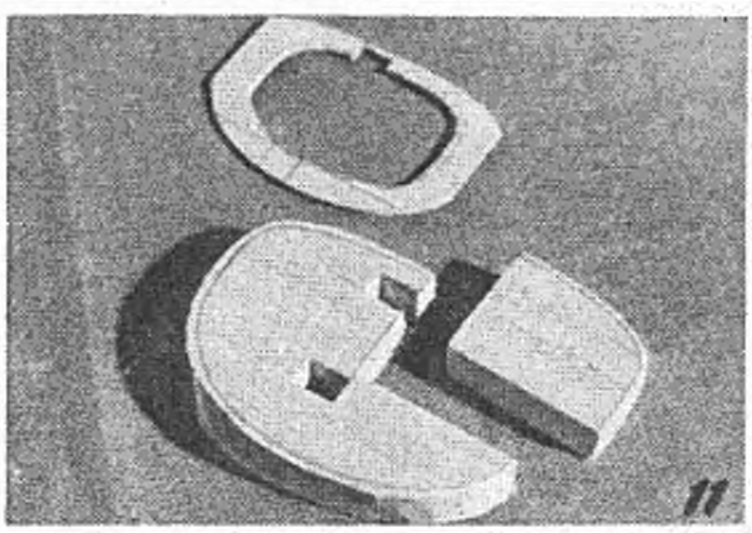
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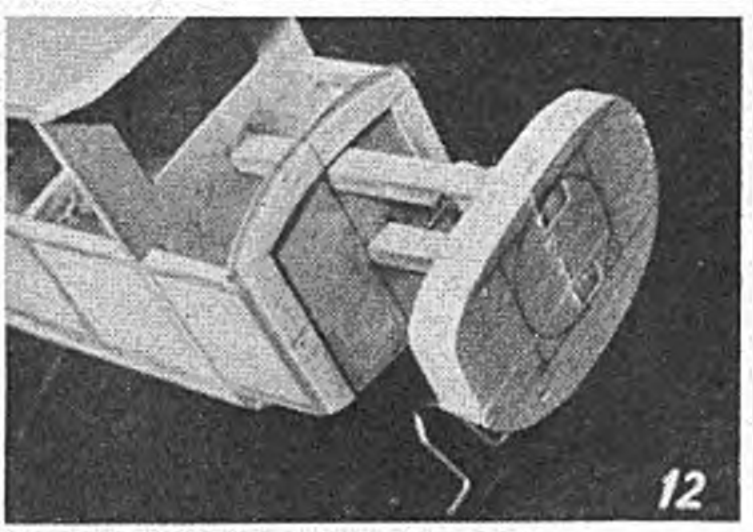
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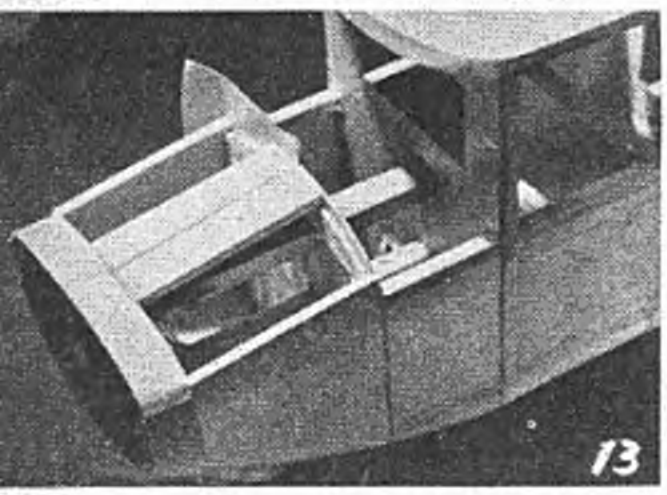
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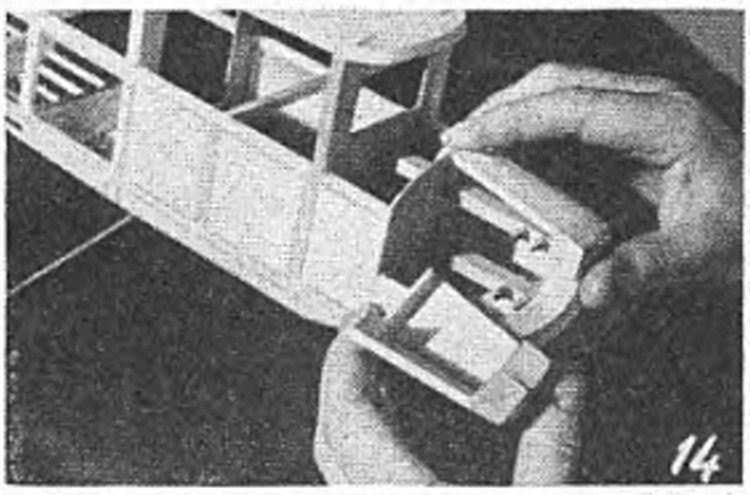
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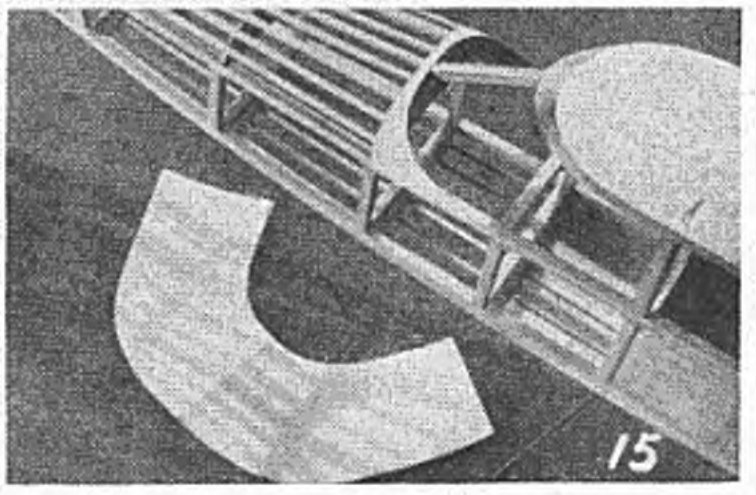
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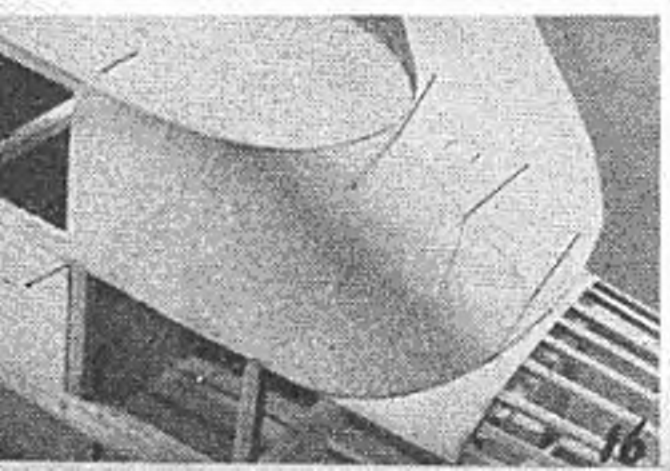
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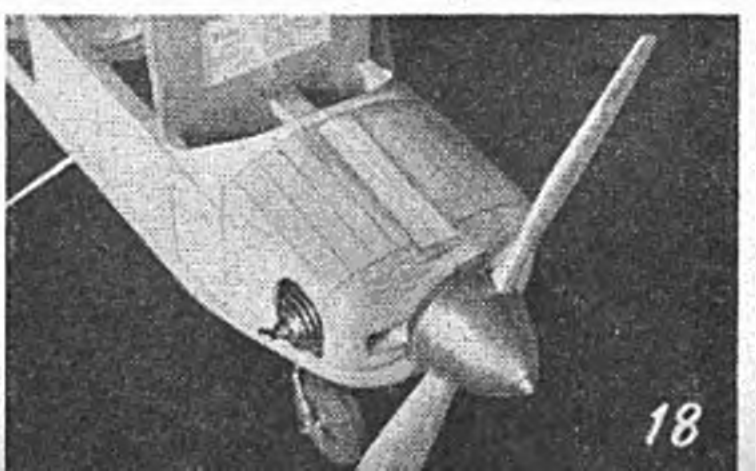
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the plan. The actual rectangles can then be cut out by means of a narrow blade or preferably a coping-saw, working from one drilled hole to the next, and cleaning up afterwards with a nail file or sandpaper wrapped tightly round a thin strip of wood. Check the position of the bearer slots against the ends of the actual engine bearers on the model. Now place C.3 in position against C.2, mark its outline onto the latter, remove it, and trim out the centre portion of C.3.

In Fig. 11 this has been done, and the top right-hand quarter of C.2 has been cut away. Use a small hacksaw for this, and keep the cuts absolutely square. (Note that it might be simpler at this stage to drill a ¼ in. hole through C.2 for the propeller shaft, *before* cutting out the quarter segment.)

Replace the quarter of C.2 lightly cemented, and securely cement C.3 to C.2 all the way round. The edge of C.3 must coincide exactly with the outline marked for it on C.2.

Fig. 12. Cement the noseblock unit (C.2 plus C.3) onto the bearers—using Durofix—and C.4 against F.1, leave a margin of ¼ in. along top and sides.

N.B.—The top right-hand (starboard) quarter of C.4 should *not* be cemented against F.1, since it has to lift up with the moving part of the cowling.

Secure the four bolts with cement through the bearers, and prevent them from turning by means of a pin or piece of thin wire keyed across the screwdriver slots of each pair and soldered or liberally cemented in place, the nuts being screwed home beforehand.

Fig. 13. Slip a piece of waxed paper in between F.1 and the top starboard corner of C.4 to prevent the planking sticking to F.1 and cement the port side of the cowling in place.

The starboard side of the cowling is cut through along a line coinciding with the horizontal cut in C.2, lightly cement together again and then firmly cemented in place in contact all the way down with C.4.

At this point it is a good idea to give two or three coats of banana oil to the engine bearers and those parts inside the cowling which will later become inaccessible, but see that no banana oil touches any parts which will later have to be cemented.

The bottom cowling planks are now added (¼ × ¼ in.) extending from C.2 past the bottom of F.1 to F.2. Start with the two outer planks, shaping them to fit snugly against the sides of the cowling. The first two planks on the top should be the centre pair, with a gap of 1/64 in. between them opposite the vertical cut in C.2. Next shape the two outer planks and cement into place, then work your way back from these two to the middle. Make sure of a tight edge-to-edge fit; vertical unevenness can be sanded away later.

Cement C.1 (thin ply) in place. This was omitted on the original. Remove the piece of waxed paper, and thoroughly sand the exterior of the entire cowling to shape, the top planking being flush with the top of F.1. If the ¼ in. hole has not yet been drilled for the propeller, now is the time to do it. The hole can later be filed out a little if necessary to suit the engine.

Using a large sharp blade, cut out the quarter segment from the cowling. It will come away quite neatly (see Fig. 14). Replace it, and cement a strip of linen tape down the centre joint on top of the cowling to form a simple and effective hinge. The wheels can now be soldered on.

Now is the time to colour the cabin interior and include a name and address label if desired.

Cut out the card fairings from postcard-weight material and cement them in place fore and aft of the cabin. Trace the two windshield templates onto writing paper, cut out and try in position, trimming as required. Then paste the paper template onto sheet celluloid and cut round the outline with sharp scissors. N.B.—This part of the job is much simpler if the wing mount dowels have not yet been attached. Pin the celluloid shields temporarily in place down the middle, and then fold round the sides to make sure they are the correct shape. Remove them, and cement the wing dowels in place. When these have set, it will be possible to cut out small sections of the windshields to fit round them. The celluloid sheets may then be cemented in place and secured with thin pins while the cement sets. The side cabin windows are then added. Fig. 15 shows the paper template for the rear of the cabin, and in Fig. 16 it has been pinned in place for checking and possible further trimming.

Fig. 17 shows the cowling opened up. The aperture for the cylinder head and compression lever has been cut out and shaped to suit the engine. For the Mills ·75 it may be necessary to enlarge the aperture as compared with the size suggested on the plan. Remember that the quarter segment must swing up quite freely when the engine is in place. On the original it was found necessary to unscrew the cylinder head in order to bolt the engine in position. A tube spanner was needed for this. It will be noted that a couple of small vertical dowels have been added to assist a firm joint when the cowling is closed.

Fig. 18. The cowling closed over the engine. Note the air vent cut through the noseblock unit against the cylinder head.

Covering

The model is now ready for a final sanding and covering, heavyweight Modelspan for the fuselage, and lightweight for the wing and tail units. Two coats of clear dope should be given all over, then if desired the fin, fuselage top and centre-sections of wing and T.P., cabin outline and U/C wires may be painted with white dope. A coat of banana oil (thin) was added to the wing for extra strength. (Incidentally it was discovered that "O-MY" banana oil could be painted over transfers without any bad effect—and some sort of an over-varnish is necessary for the transfers which are liable to become smeared with diesel oil).

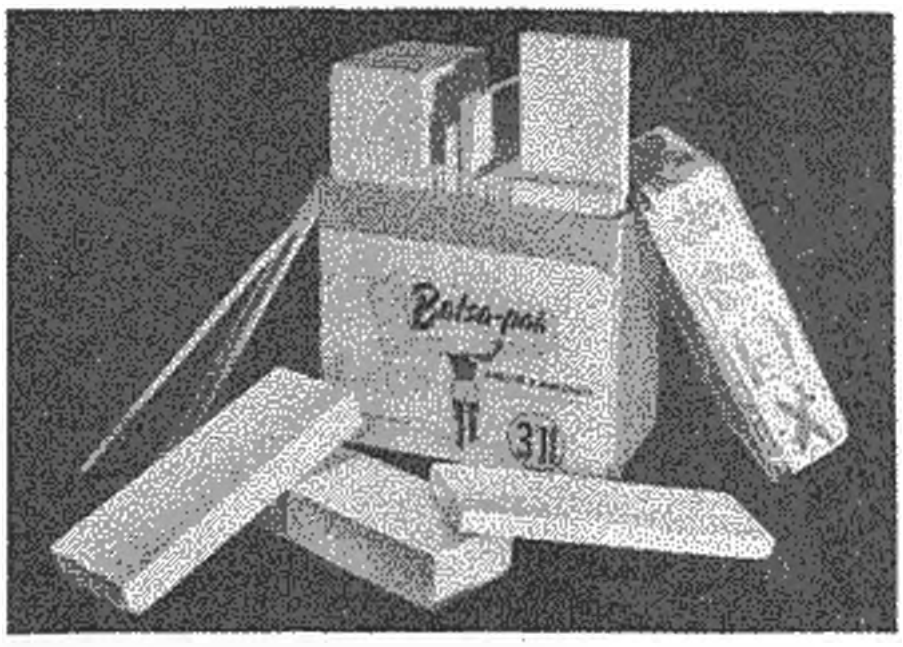
For holding the cowling closed a wire spring catch may be installed, or Sellotape may be used as long as it is kept away from contact with diesel oil, while a rubber band, though not very professional, is most effective.

Flying

No trouble should be experienced here. Trim for a wide right-hand glide—10 degrees of right turn on the tap should be ample. With a wooden 8 × 4 in. propeller the model then climbs in steady *left*-hand circles and glides to the right. It may be of interest to know that on the original, solid sponge rubber wheels were used throughout, instead of a pneumatic pair at the rear, and the model weighed 14 ounces instead of the scheduled 12, but in spite of this the glide was beautifully flat and called for a one-mile retrieving sprint after a 20-second engine run on the second flight! Moral: choose calm weather . . .

TRADE NOTES

A whole miscellany of modelling accessories have come to our attention in time for the festive season. Just in case you happen to be looking for something that Auntie Aggie might consider within the bounds of her purse, here are some items for your selection.



WE always build and test fly "trade review" kits; for that reason there is always a delay between the kit reaching the market and our published review. The many events of the recent flying season have clipped the editorial building time to a regretted minimum, so on this occasion, we are unable to include all the kits we have undertaken to construct. There are two among them that we can thoroughly recommend on the strength of part completed structures lying patiently in the workshop, and the flights we have been fortunate enough to witness in the past season. First of them is the now very famous Veron **"IMP", LAVOCHKIN 17,** for ducted fan propulsion. This kit is in the "super" class with beautifully stamped parts and hard stringers, plus a fully detailed brochure of building instructions that leave nothing to doubt. We've seen quite a number of customer built La 17's this season, most of them with Allbon Dart's (the new ones have a red-head, integral tank and go even better than ever), and one La had an E.D. Bee that sounded as though it might blow-up any moment! All of them flew the same way. Slow to gain height, and tending to fly in very large circles, the high revs giving the impression of a real turbine. It's quite a big model that sells very reasonably at 30/6, and one which by virtue of its propulsion, appears to be very difficult to prang.

Another fighter kit will soon be on the counter from Wilmot Mansour Ltd., this time of the famous **HAWKER HUNTER.** Prototype shown, held by Miss Pat Deane, was demonstrated at the recent Jetex contest; actual kit will be entirely preformed.

The other kit we feel confident to review as a very good buy for as little as 10/7, is what must be the most novel flying scale kit obtainable. A twin Jetex 50 powered model flying boat would in the normal way, be classified as perhaps a novel "one-off" experiment. Yet here is one in kit form that all can build with the sure satisfaction that it will be a success. We refer of course to the Jetex **SAUNDERS ROE A/1,** a fine kit with a neatly printed fully detailed plan, and a good selection of balsa.

A block, 2×3×6 in., two feet of $\frac{1}{4}$ in. sheet, four feet of $\frac{1}{16}$ in., a foot of $\frac{3}{16}$ in. and more of $\frac{3}{8}$ in., $\frac{1}{2}$ in., 1×2 in. and $\frac{3}{4}$×1 in., all neatly contained in a cardboard box and sold for 3/11. That's the **BALSA-PAK** recently put out by Plantation Wood (Lancing) Ltd., and of course it's all first class "Solarbo" balsa. A very handy pack to keep around for odd items in your modelling, and, as many will realise, a two-shilling saving in the overall price helps the modelling budget considerably.

Attentive as we always are when looking for something needed in the house (which might serve a double purpose for our modelling), we were agreeably pleased to find a new household lubricating oil in a very attractive container which sells for as little as half-a-crown. It's the **BIGREN** oiler, a smart plastic four-ounce pack of green coloured fine lubricating oil, that has already found its way into stored engines and bicycle hubs in our domain. With offset spout to get into awkward places, and the distinct advantage of displaying its contents, the oiler will no doubt be subjected to aeromodelling ingenuity when its supplied contents are exhausted. We have plans for it as a priming can, it is methanol-proof—need we say more?

A couple of very interesting, bright yellow coloured handbooks have appeared in recent weeks, and we can recommend each of them as items that should certainly be handy to any aeromodeller's building board. The **KEILKRAFT HANDBOOK** for 1952–53 can be bought for a modest 1/3, and far from being a tabulated list of all the many

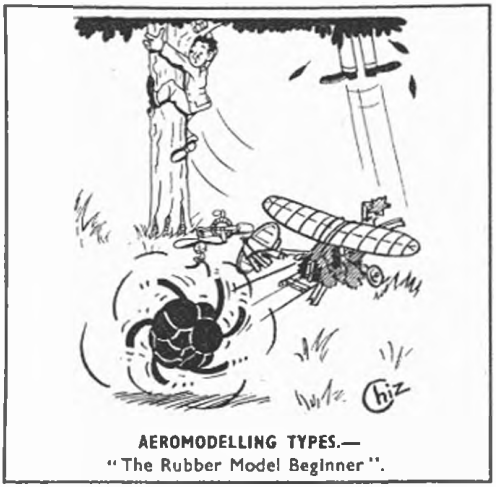
and varied desirable items to be obtained from the house of Keil, it reads pleasantly as a booklet designed to put beginner or expert on the right track to the hobby. Seventeen articles, copiously illustrated with excellent photographs to outline everything from "introduction" to "covering", "Jetex" or "team racing" make this more than just one evening's reading. The other bright booklet deals with a more specific subject, and it is the **X-ACTO** handicrafts manual, known as "More skill at your fingertips" written by W. A. G. Bradman and published at 4/6

X-ACTO tools are by now well-known enough in this country to be classified as a household name in the modelling fraternity. We counted ourselves fortunate to obtain a tool-chest of this breed when serving overseas in the last war, and through kitbag and suitcase, the little box of tricks has travelled thousands of miles and clipped hours off our modelling in many a strange climate. But though the tools have been in use for all this while, it was not until we read this book, that we realised the many applications of **X-ACTO**.

And now a couple of kits, which, shame on us, but all praise to our secretarial staff, were made in recent weeks by two of the fairer sex, seen in the photo below.

FROG MINX Rubber model. Span 30 ins., Length 24 in. Area 118 sq. in. Weight should be 3½ ounces. Our weight 3 ounces. Price 8/-

This is yet another of those "press-the-parts-out" Frog series, which have already achieved high reputation for easy building. The Minx is no exception, it is easy to make, very pleasing in appearance, and the kit



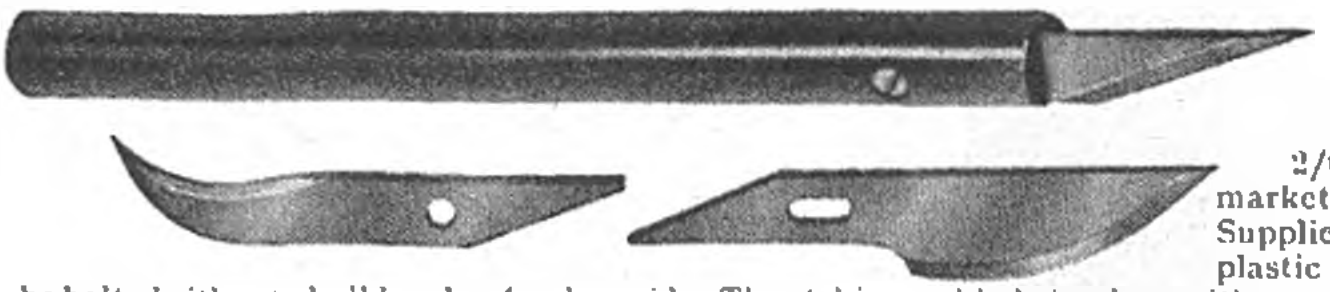
AEROMODELLING TYPES.—
"The Rubber Model Beginner".

is complete to the last detail. For the money, it is remarkably good value and we have no hesitation in recommending it for novice or experienced modellers. We particularly like the simple yet very practical 11 inch prop which is built up from parts supplied. On test, the Minx flew remarkably well, sufficient, we might say, to spur the novice builder to further efforts, which we trust will appear in future kit reviews.

FROG VESPA Glider. Span 30 in., Length 22 in., Area 118 sq. in. Weight should be 2½ ounces. Our weight, 3 ounces. Price 7/-

As may be seen by the similarity of dimensions, the Vespa uses the same wing and tail as that on the Minx. The fuselage and fin are smaller but follow the same general lines, and of course, the kit is to the same high standard. A few of the press out parts showed reluctance to part from their sheets, but a prise with a pointed blade is enough to free the part where die-cutting has not penetrated right through. On test the Vespa, like the Minx, flew very well indeed. If you are looking for a beginner's kit that has been recently introduced to the market, this would be an ideal choice.

J's model centre have always specialised in various types of transparent plastic tanks, and in consequence, yet another **SLIPSTREAM** product comes as no surprise. The latest item is a neat, round faced tank with an etched transparent front. The coloured back has integral mounting lugs and a conveniently disposed "spout" for detachable fuel tube, so that the tank may



An inexpensive modelling knife, supplied with three surgeon's scalpel type blades and yet costing only 2/6, is the **SUPER 51** Knife marketed by Woodside Model Aircraft Supplies of Croydon. A simple coloured plastic handle effectively locks the blade in place with a small screw so that no matter what the cutting pressure, the blade will not flex in any direction. Also from Woodside M.A.S., we have purchased a very useful bundle of 2 m.m. dia reed, of the type that was so popular at one time for wing tips. In our bundle we had just over 150 12 in. lengths for 2/6, or in other words, enough wing-tips for 75 monoplanes, for a half-crown . . . a very good buy.

be bolted either to bulkhead or fuselage side. The etching is on the inside of the tank, and these finely spaced lines will give reasonably accurate judgment for timing the power run, all that needs to be done is to "spot" whichever of the graduations is correct for your engine, with a dab of colour dope. The price is 2/3.

NYLON, the wonder material that has almost ousted the unfortunate silkworm in the lady's underwear business, also invaded the aeromodelling world some time ago. Buying "by the yard" over the millinery counter has not been possible until recent months, and even now, we find it hard to locate a suitable grade at a price to make it a proposition for covering. However, W. K. Smith of Blackpool, sent us a sample of the grade he sells at 1/11 per yard, and this we find to be just the right thing. A good strong grade, suitable for four-footers and above, the material comes in plain white, 40 inch wide lengths. Satisfaction or money back offer by Mr. Smith makes this worth a try.

Having bulkhead trouble? or bother with ellipses? All would be solved if you have a **GYRO ELLIPSE TRAMMEL**, price 32/6 from Messrs Gyro Developments, Yeovil. An all plastic instrument, the trammel enabled us to construct perfect ellipses of any proportion, right up to 10 in. deep, which should be large enough for the largest of cabin models. If you want perfect drawing without tears, this is just the job.

How good can a model be? The maximum performance allowed in competitions is a flight of five minutes, and three of these five minute flights in one contest should surely constitute the best that can be attained. Add to that a fourth consecutive maximum of no less than 0 min. 47 secs. and certainly you'll have a performance par excellence. Such were the times recorded by E. T. Upfold of Headley Club when he won the Hamley Trophy on July 6th with his standard **MERCURY MALLARD.** All credit to Mr. Upfold and this performance with a kit model that has become a most popular selection among the power fraternity. An Arden 199, running glowplugged, using Mercury No. 7 fuel and a Stant prop was the power-plant in this case, the same combination also took first place at the Southern Area Gala.

NEW "FROG" MINIATURE SERIES

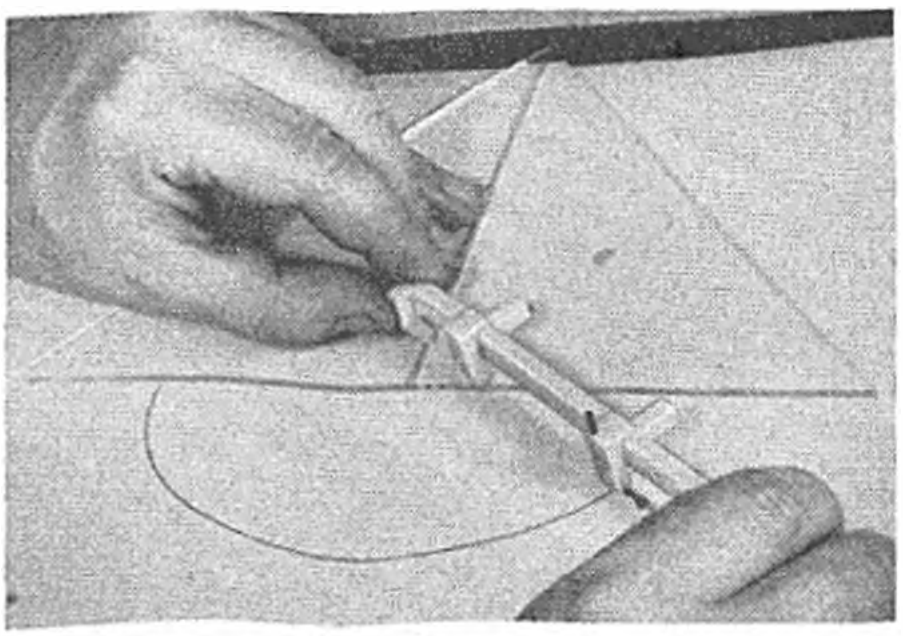
SCAMP	Midwing. Span 12 in. Length 9¼ in.
PUP	Biplane. Span 10 in. Length 8¼ in.
MINNOW	Highwing Cabin. Span 12 in. Length 9¾ in.

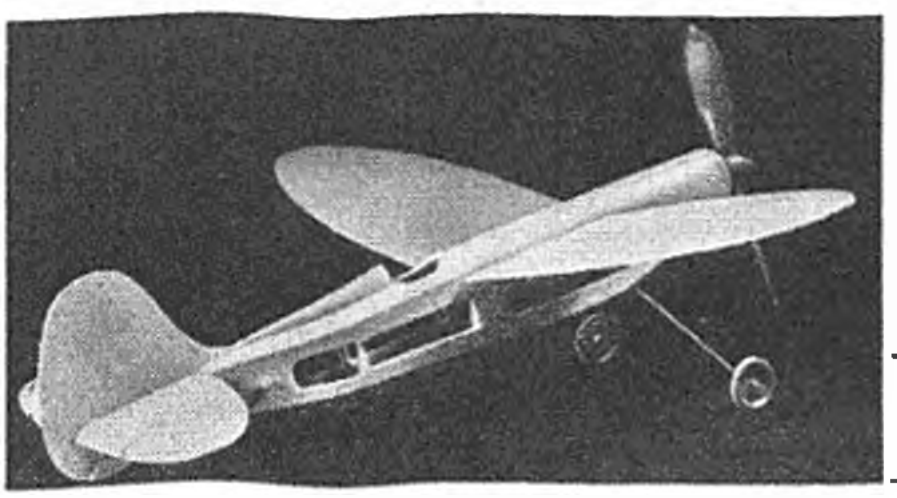
Price **3/6** each.

To use an Americanism, this latest Frog series of die-cut, easy-build prefabricated kits are definitely "cute" in appearance, and in addition are attractive enough to tickle the taste of the seasoned aeromodeller. Of the three models built and tested, one was easily constructed by a nine-year-old, and the ease of assembly clearly demonstrated the accuracy of the formed components.

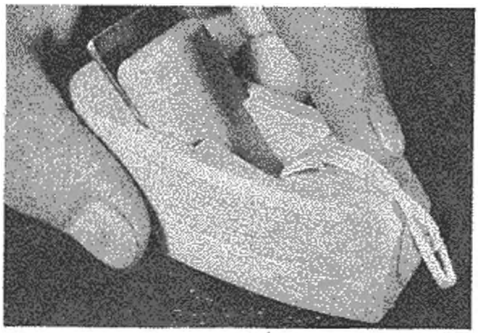
Each kit is complete with plastic prop. and nose-plug, ready formed undercarriage plus plastic wheels, and a fully detailed step-by-step illustrated sheet of building instructions that can be understood by the veriest novice. In producing these neat and inexpensive kits, International Model Aircraft Ltd. provide models that should appeal to all classes of modellers, and we have no doubt that many club nights will be enlivened by contests staged between these light and very flyable quickies.

Our one criticism is levelled against the difficulty of discovering certain un-numbered parts, no doubt occasioned by the fact that die-stamping was not always thorough according to the differing texture of the balsa sheet. Apart from this, our experience of these kits shows them to be of the highest quality, the extraordinary degree of prefabrication ensuring accurate assembly with little effort, and producing models that flew really well with practically no trimming time.





The neat lines of this simple series of models are shown to good example in this uncovered view of "Scamp."



An exact scale reproduction of a joiner's plane has been marketed by the Multicraft Tool company and sells for 4/6. We checked this baby plane on an odd piece of balsa and it worked just as efficiently as its full-scale counterpart . . . and balsa really does require a sharp blade. We understand that it is made by a firm who have been making the big stuff for over a century, which accounts for the smart polished finish on its well made beech parts. Look for it at your model shop, it is known as the **MINIPLANE.**

An eye-dropper shaped graduated **FUEL TANK,** with a special, " Easy-to-fill, hard-to-spill " top and nozzle bottom is now available from the Model Shop, Newcastle-on-Tyne in two sizes. The standard size is now 5 c.c. capacity, and the " Baby ", for smaller motors, 2·5 c.c. Mounting lugs are provided, and a typical installation is shown in the accompanying photograph. Prices are 2/9 for the larger, and 2/3 for the " Baby ".

The new **E.D. 1·46** diesel will be coming into your local model shop shortly, in fact, this latest motor from a famous stable, is on fourteen days' delivery at the present time. Motto, get your orders in now!

Mark II versions of old favourites, the **ALLBON DART** and **ALLBON JAVELIN** recognisable by their red cylinder heads, are available on immediate delivery.

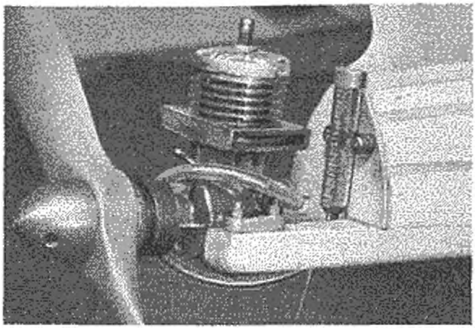
All the above engines will shortly be appearing on test in our Engine Analysis series.

AERO-MODELLING TYPES.—

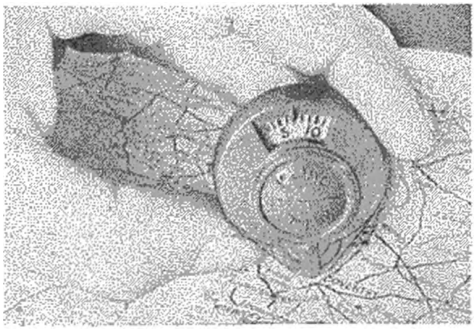
"Girl friend right type."

AERO-MODELLING TYPES.—

"Girl friend wrong type."



How far is it ? How long would it take to get there ? We ask ourselves those questions before travelling to each rally or distant meeting. Now, with the **MAP MEASURE** sold by John Buck and Co., we can easily check the answer as to distance, by quickly running the small plastic device over our route. A calculation in case of a change in scale, some mental arithmetic, and we soon know how far we have to go, and how long the journey will take. For 5/- this little gadget will be a boon to all who like to plan their travels.



GADGET REVIEW

ANOTHER Christmas issue here already! Seems like only a month or two ago we were sorting out the last Christmas selection of useful gadgets, and here we are again at the end of another season. Must be the high concentration of contests we've had in '52, hardly a week-end to spare but that there was another comp. to prepare for, time has passed by very quickly. With so much activity, the gadgets and gimmicks have popped up faster than mushrooms in a fertile field. So much so in fact, that we've had to weed a few of the less useful out to make way for the brighter brainwaves. Not that we are turning away ideas . . . if you have one, just send it along, we'll soon tell you whether we can publish it or not.

Let's start the ball rolling with one we found on the flying field at the '52 U.S. Forces Nationals held at Weisbaden in Germany, in the hands of Lt. G. Evans Codding, who is stationed at Shaftesbury in Dorset. Principally used where the tip-up tail d/t is not a practical proposition, the split rudder dethermaliser shown as **A** is an effective method of bringing the job down swiftly but safely. A double thickness rudder is made, the halves being held together by a fuse loaded rubber band. When the band is burned through, the other rubber around the front hinge post pulls the halves apart and so the rudder becomes a super drag producer, also destroying part of the tailplane lift.

Scale models present many difficulties, and not the least of them is true scale reproduction of the undercarriage. Wheels have to be held in place securely and axles or legs should be scale thickness; but how often do we see this part of a scale model sadly out of true proportion? In **B**, J. Bridgewood of Doncaster, whose photo appears in the "Daily Dispatch" rally report, shows us how to have 16 s.w.g. legs and yet use airwheels bushed for 12 or 14 gauge. Flattened brass tube solves the problem here, and in **C** we have another means of holding wheels in place, this time by R. Duncan of Farnborough, Hants. P.V.C. plastic insulating material can be found on most electrical wiring and will fit right down to 18 gauge wire. For larger sizes, fuel tube can be used to the same effect.

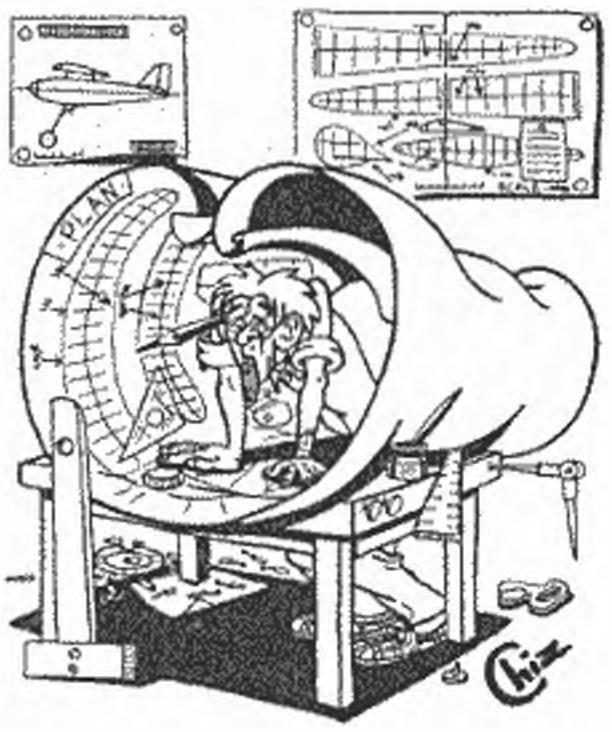
For radio fans, D and E are similar means of obtaining a turn without tears. **D** was submitted by Fl./Lt. Burton of Knaresborough, Yorks., and he christens his idea the "Kick elevator". Whichever way the rudder is turned, the elevator is pulled upwards by the threads. Of course, if a spin is required, one thread can be left off, so that a climbing turn results one way, and a spin, or to be correct, spiral dive results in the other direction. From Exeter in Devon, Sam Hecker suggests his elevator idea in **E** for radio-controlled gliders, each half of the elevator works independently to assist in maintaining height throughout the turn.

Inexpensive one comes from David Webster in Scotland, who suggests in **F** that an old dis-used toothbrush can be effectively employed on Jetex units as a scrubber-out. Grind or file the handle so that it has a sharpish edge on one side, and use that to loosen up the carbon, then brush out with the bristle end, and the unit is de-coked for another session.

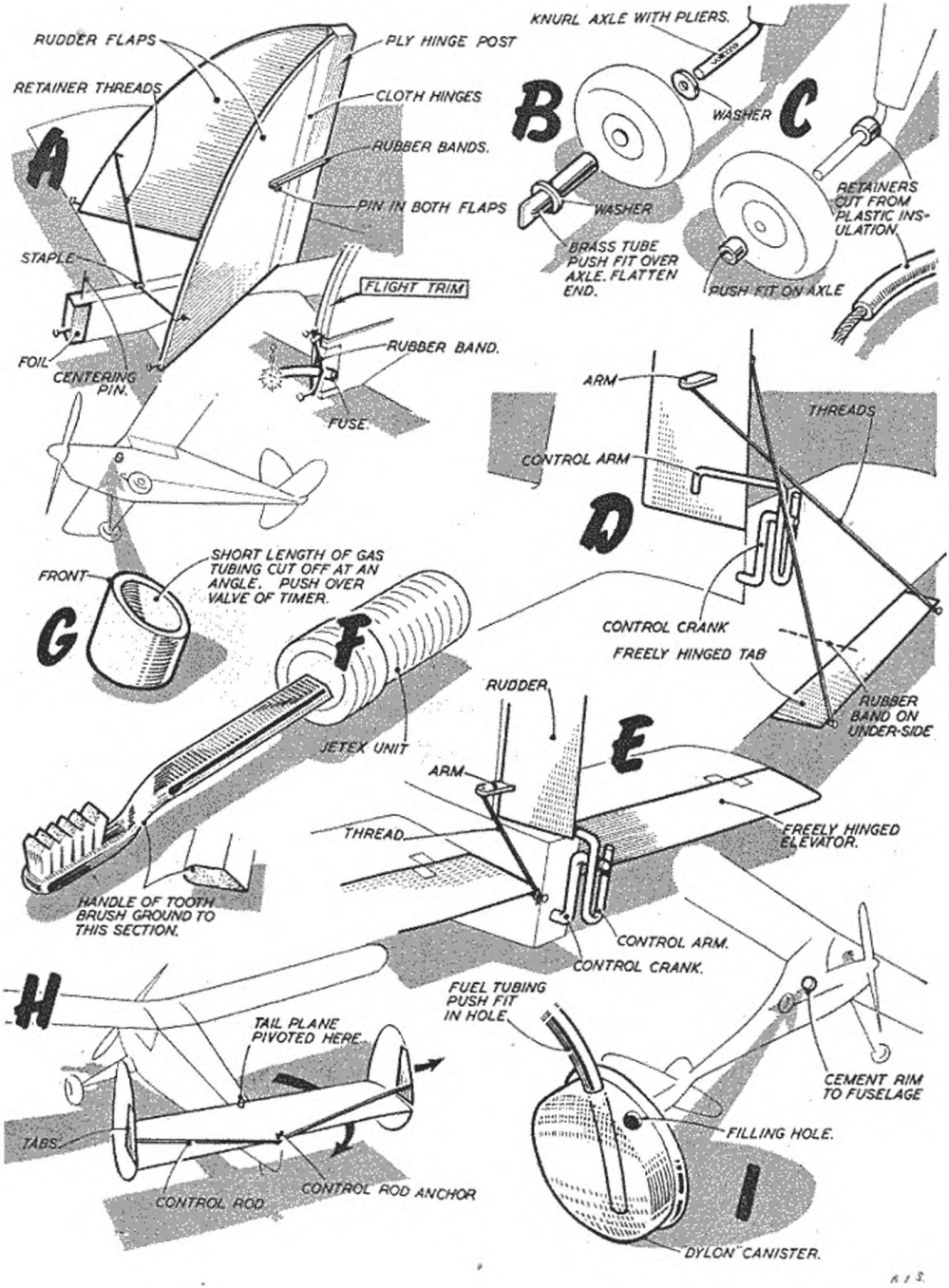
Simplest of this month's ideas is a quickie **G**, borrowed from Peter Wyatt of Ipswich, who finds that fuel or exhaust can certainly affect the efficiency of an Elmic timer. To protect the valve if you are in the habit of handling it with oily hands or it is placed in the slipstream, cut a small length of rubber gas hose, and slip it over the end with the widest side forwards to deflect the goo and sludge.

In **H** we have something, J. Chacksfield of Dorking, has found to be the answer to extra sensitive trim of twin-finned 'planes. Attach the tabs to a central pin, then when the tail is swung to trim for a turn, the tabs move in an opposite direction to give partial correction and reduce the effect. Try it, it really works!

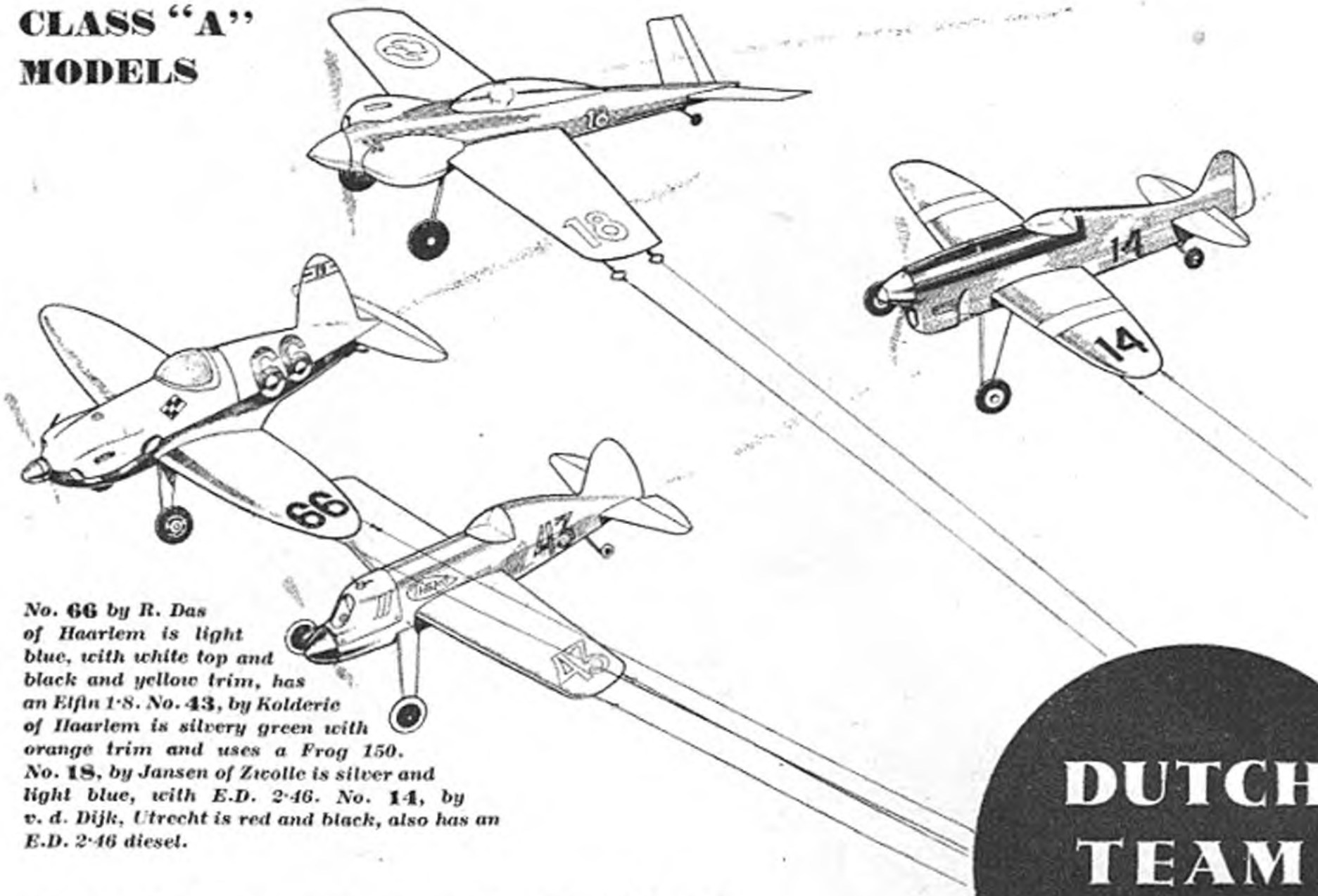
Last but not the least is **I**, yet another ready-made tank off the grocer's shelf, this time a thin aluminium Dylon dye container (price 6d., with dye) which can be cleaned out and cemented direct on to the fuselage side.



AEROMODELLING TYPES.—
"The plan enlarger"


A
RUDDER FLAPS
PLY HINGE POST
RETAINER THREADS
CLOTH HINGES
RUBBER BANDS.
PIN IN BOTH FLAPS
STAPLE
FLIGHT TRIM
FOIL
CENTERING PIN.
RUBBER BAND.
FUSE.
B
KNURL AXLE WITH PLIERS.
WASHER
WASHER
BRASS TUBE PUSH FIT OVER AXLE. FLATTEN END.
C
RETAINERS CUT FROM PLASTIC INSULATION.
PUSH FIT ON AXLE
D
ARM
THREADS
CONTROL ARM
CONTROL CRANK
FREELY HINGED TAB
RUBBER BAND ON UNDER-SIDE
E
RUDDER
ARM
THREAD.
FREELY HINGED ELEVATOR.
CONTROL ARM.
CONTROL CRANK.
F
JETEX UNIT
G
FRONT
SHORT LENGTH OF GAS TUBING CUT OFF AT AN ANGLE. PUSH OVER VALVE OF TIMER.
HANDLE OF TOOTH BRUSH GROUND TO THIS SECTION.
H
TAIL PLANE PIVOTED HERE
TABS.
CONTROL ROD
CONTROL ROD ANCHOR
I
FUEL TUBING PUSH FIT IN HOLE
CEMENT RIM TO FUSELAGE
FILLING HOLE.
DYLON CANISTER.
R I S.

CLASS "A" MODELS



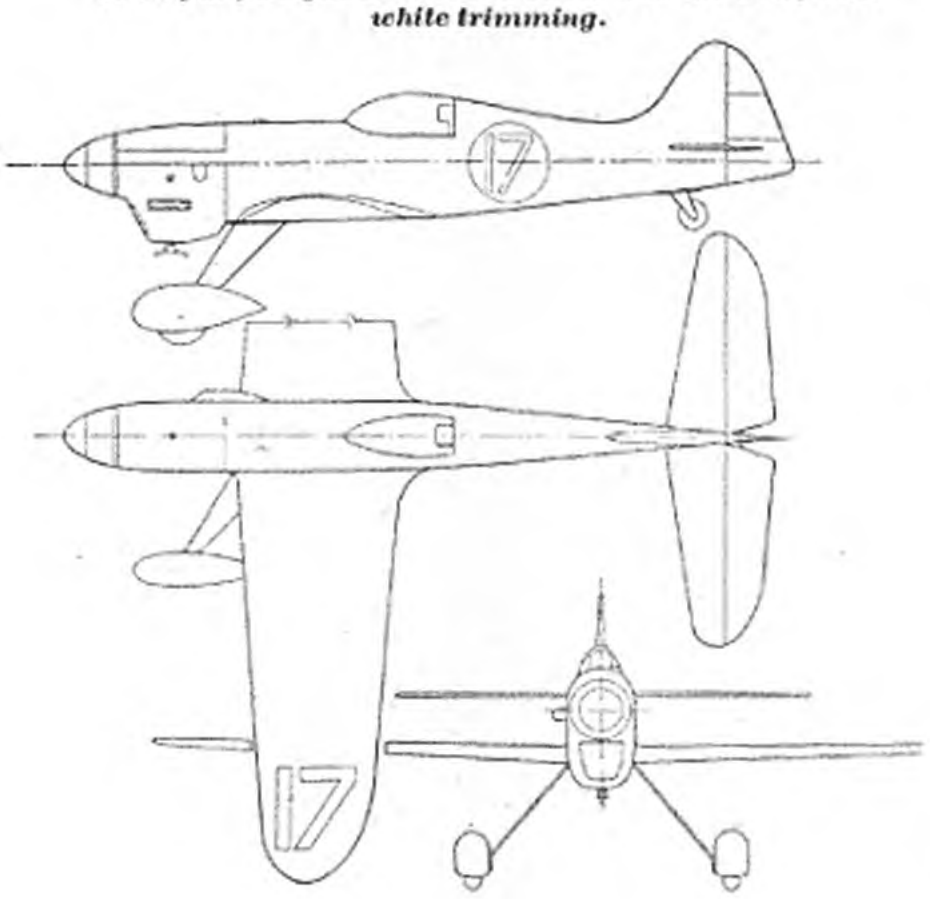
***No. 66** by R. Das of Haarlem is light blue, with white top and black and yellow trim, has an Elfin 1·8. No. **43**, by Kolderie of Haarlem is silvery green with orange trim and uses a Frog 150. No. **18**, by Jansen of Zwolle is silver and light blue, with E.D. 2·46. No. **14**, by v. d. Dijk, Utrecht is red and black, also has an E.D. 2·46 diesel.*

DUTCH TEAM RACERS

A REVIEW WITH PEN AND SKETCH PAD

BY R. DAS

Design below is known as "ALB 17", a class A racer which won the second K.N.V.v.L. contest, held at Schipol airport on June 8th. Designer/builder is Aarts of Haarlem, the engine an E.D. 2·46 Racer top speed 63 m.p.h., weight 18 ozs. and colour red all-over, with white trimming.



ALTHOUGH team racing originated in the U.S.A., the following of the branch of the hobby in Holland may be regarded as a child of British parenthood. S.M.A.E. rulings for both class A and B racing were adopted, and after a period of trial use, were slightly altered in three ways to suit the Dutch modellers.

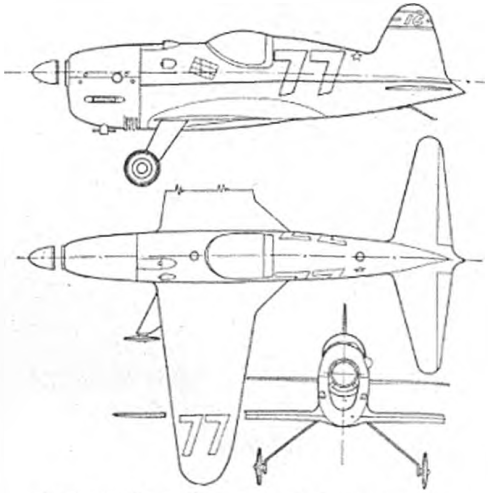
First alteration came with a shortening of class A line length to 37 ft. 11 ins., making them equal to F.A.I. Class 1 speed and also enabling the Dutch lads to take advantage of smaller sized flying fields. Then the rule regarding pilots came up for review, and with due regard to the ugly monsters fitted in some cockpits, it was decided to make pilots optional. Thirdly, the wheel size rule was dispensed with altogether.

Towards the end of the 1951 season, a more or less standard system of construction became the fashion, with built-up fuselages, solid balsa wings and duralumin undercarriage legs. Though heavier than the average British model, the Dutch equivalent was then tougher and because of high wing

loading, could be flown in almost any wind force and remain unaffected by gusts. Loadings of up to 43 ozs. per sq. ft. are not unknown, requiring, of course, heavier gauge control line wire as a safety margin. With everyone flying heavy type designs, more effort can be spared for appearance and general realism. Side-mounted engines with dummy cowlings sometimes housing the tank, and neat inverted engine cowls are most realistic, although there is a feeling among many Dutch enthusiasts that upright mounting is more practical.

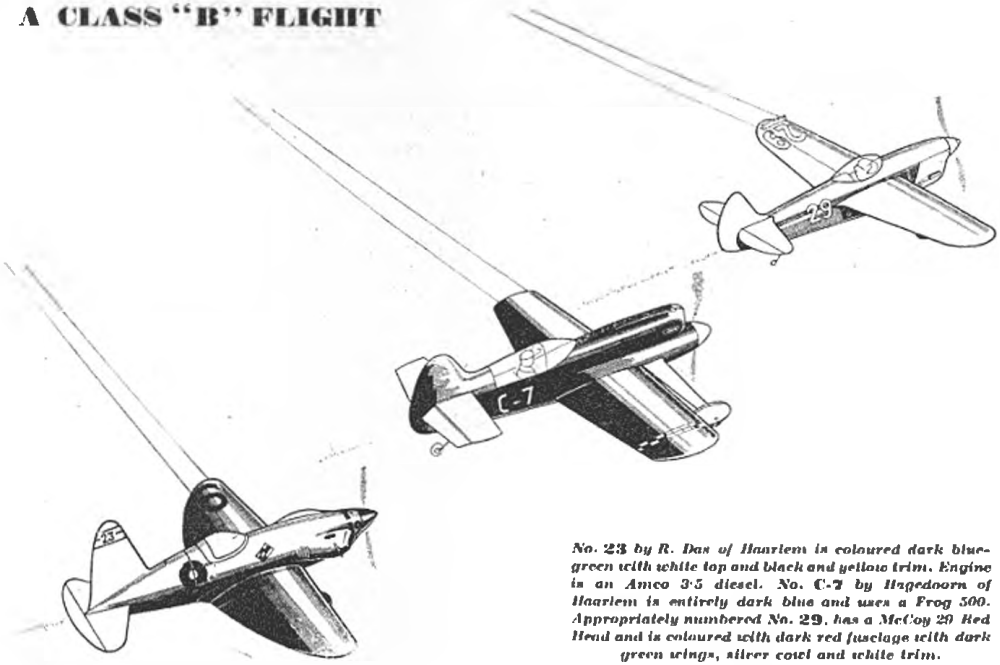
Coupled with the trend to " uprights " is also a trend to what are referred to as " fly only " efforts of questionable semi-scale appearance. Fortunately the number of un-realistic entries is in the minority; but recognising that it is all too easy for a low standard of appearance to become commonplace, beginners are instructed how to finish a team racer attractively. Some attention to realism may be appreciated in the sketches on these pages.

Approximately 80 per cent. of the team racers in Holland are Class A and the favourite motor is the British E.D. 2·46 diesel. Enthusiasts have banded themselves into groups of three, each member capable of being pilot, starter or refueller, and usually each member has his own model so that the three men constitute three different teams. This can of course, be somewhat embarrassing when all three models manage to win the semi-finals !

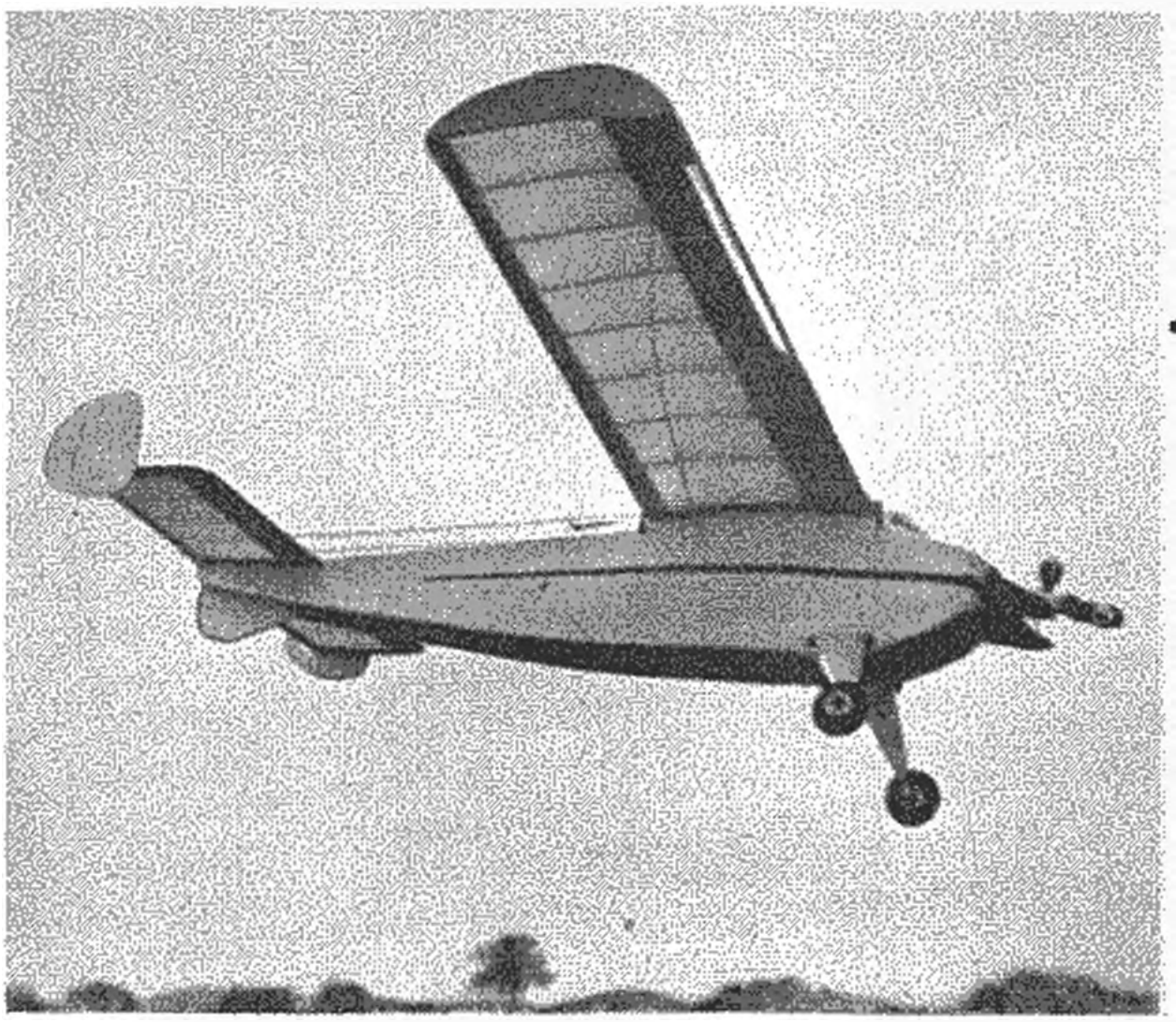


Above, is the author's class A racer, known as " Cheerful Charley ". Winner of the first K.N.V.v.L. contest at Schipol, on April 27th, this job has a top speed of 70 m.p.h. Colour is orange with white top, metal cowl and black trim, engine an E.D. 2·46 diesel and weight, 20 ozs.

A CLASS "B" FLIGHT



No. 23 by R. Das of Haarlem is coloured dark blue-green with white top and black and yellow trim. Engine is an Amco 3·5 diesel. No. C-7 by Hagedoorn of Haarlem is entirely dark blue and uses a Frog 500. Appropriately numbered No. 29, has a McCoy 29 Red Head and is coloured with dark red fuselage with dark green wings, silver cowl and white trim.



SLOTS AND

A DISCOURSE ON A

By Colone

Col. Bowden's 6 ft. span radio controlled model is fitted with long slots and tall endplate fins. Full circle can be held by radio whilst gaining height steadily. On opposite page, M. Pilon of France, with a full span slotted model demonstrated at Eaton Bray in '47.

SLOTS and related devices should have a particular interest for aeromodellers because experiment is cheap, and models generally fly at greater angles of attack than their full-size counterparts. Furthermore, the model often gets into some odd stalled attitude in the air, and slots properly applied can both increase lift and flight after the stall.

I believe that even the stereotype pylon duration model could try with advantage these devices to increase lift for rapid gaining of height, provided it shuts the slot and returns the flap for the glide.

AEROMODELLING TYPES.—"The Coward."

Some readers will remember, back in the dark ages of aeromodelling, that I was one of the earliest individuals to fit wingtip slots to my landplane models, and watercraft. These were crude affairs at the wingtips only, as I then knew little of the subject. Some of my models performed better with slots, whilst others were upset by them. I remember one case of a flying boat that turned violently in one direction whatever I did regarding rudder and offset of power. This was found to be due to varying gap of the two slots. One slot was effective whilst the other one was merely causing loss of lift, a fact that can happen as we shall see later in this article. One has to learn ! Incidentally, flying boat enthusiasts should cover their craft with cheap butter muslin, and dope it like a real aeroplane with full strength aeroplane dope. This makes them waterproof, like the real thing, cutting out the soggy warps from seawater usage that assail the average model covered with nylon and model dope. Slots will keep their shape and gaps if kept waterproof.

Now, why this article on slots from my pen ? Well, during the past few years I have been actively engaged on " Wingsail " research in an effort to apply the lower drag and greater lift of aeroplane wings to boats, in lieu of soft sails. This has meant a careful and intensified study of all things slotted, flapped, and yielding greater lift at high angles of attack, such as when a boat is " broad reaching " across the wind, and even " running " before the wind. Many of the things I have found to suit the subject have first been tried on radio-controlled model aircraft. This has led me to the discovery of how to make a radio model hold turns and gain height on the turn instead of the more usual spiral dive with loss of height. The use of slots, endplates, twin rudders and fins and a suitable fuselage shape can do this. To my way of thinking it is more intriguing to gain height on turns than to start " stunting " involuntarily on a turn. One can radio fly more smoothly, and I am

RELATED DEVICES

RELATIVELY UNEXPLORED SUBJECT

C. E. BOWDEN

now interested in using a third (elevator) control having a limited down movement. Slots also permit a slightly over-elevated model that glides in nose high for landing.

I pay respect to four sources of knowledge on slots, namely, a little smoke wind tunnel of the Lippisch type which "shows the spray" when I want to check up on theory; that magnificent library on everything aeronautical of the Royal Aeronautical Society, and two full-size aircraft designers of great experience.

One of my simple radio-controlled low wing models was fitted with nearly full span slots and twin endplate fins and rudders, with delta tailplane, and started its life under-powered and over-elevated, a nasty and dangerous condition for a model! Instead of a crash on the first flight, the slots ironed out each stall so that the nose sank back on an even keel until the model landed on its squashy torsion bar undercarriage (acknowledgments to Dr. Thomas). An unslotted low wing under these circumstances would have been something to marvel at after the crash. The model is 6 ft. span and now has a more powerful 3·46 c.c. E.D. diesel instead of a 2·5 c.c. motor to keep the climb going. Incidentally the new baby Mark II, three-valve E.D. radio set, is a wonderfully reliable source of control for the radio minded.

Delta Shapes

An interesting fact that explains the remarkable, nose cocked right up in air attitude, of the experimental Delta machine displayed for slow flight and slow landing at the last S.B.A.C. Farnborough show, and also explains the satisfactory flying feats of our schoolboy paper dart days, is that a delta wing can fly at angles up to 40 and 45 degrees before the stall gets really busy. I have photographs of an unslotted delta wing with its wool tufts showing good airflow up to these angles of attack. This is of course a tremendous angle for an unslotted wing, and it is evident that the old Fokker delta tail and the triangular tail of the 1913 Blackburn monoplane were not too bad as stabilizing planes! One might almost term a delta wing a "related device" for us aeromodellers. Does that start a train of thought?

The Slot

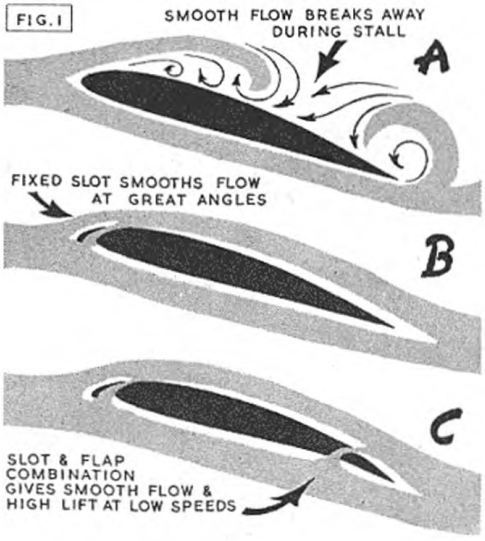
As a matter of interest, G. Lachmann's patent in 1918 of a slotted thick wing was refused in Germany because the increase of lift by way of slots through the wing did not seem credible. This was almost as odd as the disbelief in the first

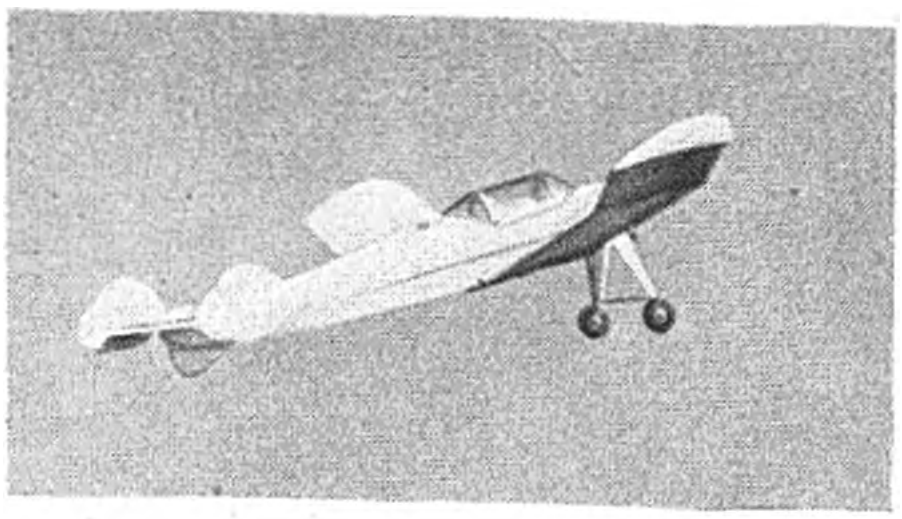
Whittle jet motor. The slot has been one of the great milestones of aerodynamics of the aeroplane, whilst the continuous combustion jet engine has been the greatest advance in the aeroplane's power unit. Both in their way have revolutionized flight.

The beginner to aeromodelling should examine the simple Fig. 1, which gives an indication as to why a slot is desirable to smooth out the airflow and increase lift at high angles of a wing's attack to the air.

It must be understood that slots *can control an aircraft after the stall* as well as *provide greater lift at high angles of attack*, but open slots at low angles of attack give increased drag, or resistance. At high angles of attack, the slot reduces drag.

The flying display at this year's Royal Aeronautical Society Garden Party, provided the most convincing demonstration of the value and use of slots for certain purposes. The German Fiesler Storch, and the little low powered Zaunkoenig,





Col. Hairden's radio controlled low-wing model has nearly full span slots and endplates on a delta tail. This set-up gives great stability.

both full span slotted and flapped, and with permanently open slots gave wonderful displays of slow flight at great angles of attack, and of quick take off in a few yards with nose right up, with correspondingly impressively short landing runs. It is difficult to see how anyone with a reasonably careful nature could hurt themselves on these aeroplanes however small the flying field.

The open slots at low angles of attack, when in the higher speed range, certainly reduce maximum speed through drag, but this is nothing to really worry about. For instance, the Zaunkoenig (Wren) with only 51 h.p. has a top speed of 87 m.p.h. with its permanently open slots.

The Prestwick Pioneer is a far more powerful aircraft, having the same slow landing and flying attributes, but is fitted with slots that close when desired, and flaps that withdraw. Naturally the high speed is greater, but the complication to close slots and withdraw flaps can prove alarmingly expensive for light aircraft.

For model purposes the fixed open slot appears to provide the answer for all except the duration power model, or the soaring glider, which must reduce drag to a minimum on the glide. The little Zaunkoenig was described as a model in the AEROMODELLER, September, 1950. This aircraft is of great interest to the modeller, for the fixed slot has a leading edge carried a little below the leading edge of the wing, and the slot shape thus provides shrouding at low angles of attack when the aircraft is flying fast. As the nose is put up at a high angle of attack, the air runs through the slot and brings it into action gradually, thus preventing violent changes of trim. See Fig. 2.

The full-size Zaunkoenig at rest displays its leading edge slots and large trailing edge flaps. This aircraft can be flown at remarkably low speeds, and the same flight characteristics are duplicated exactly by the 39 ins. span scale model which can be built from Aeromodeller Plans.

Slot Opening

If a slot is open, shall we say 1 in. at the front and also 1 in. at the back, *i.e.*, having an equal opening front and rear, there is up to a 25 per cent. loss of lift. If on the other hand the slot is opened so that there is a smaller rear orifice than front opening, there is a big increase of lift at large angles of attack by the wing. The gains to be expected are given later.

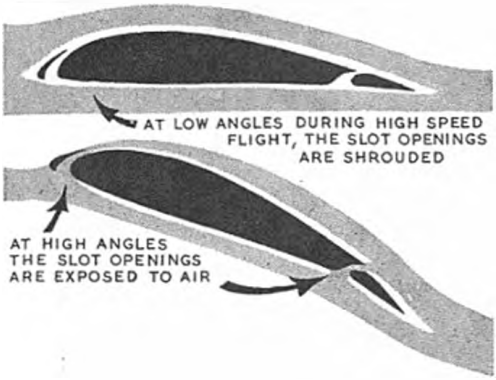
If the main flaps of an aeroplane are pulled down and the slots opposite the flaps are opened, but the slots opposite the ailerons are left closed, then the aircraft becomes vicious in flight. When the ailerons have a slot opposite them opened, a change comes over the aircraft. It becomes quite stable when stalled. A stalled landing can then be made with nose well up, and flaps down. In 1937 a Miles Falcon, during R.A.F. flight tests, with highly tapered wings exhibited unpleasant behaviour in flight, the stall being vicious. By fitting wingtip slots, satisfactory lateral stability at the stall was obtained. Numerous other examples can be quoted regarding tapered wingtips. Tip slots have cured many of my powered models having tapered wings with spiral instability. In flight tests 1930, using R.A.F. 31 section, square tips instead of rounded tips cured wingtip stalling. The best qualities were found when a square tip with slot was used.

The above facts are highly useful for model designers, where tip stalling can prove so disastrous. No one can deny that the slabsided square wingtipped Wakefield models are very stable in rough weather. Beautiful tapered tips look delightful, but are they worth it? If washout is given to counter tip stalling, loss of lift is also provided! The square slotted tip is certainly wonderfully stable for radio models, as I have personally found.

Angles of incidence

Handley Page (a household name in connection with slots) found on R.A.F. 19 section that the maximum slot effect was at an angle of incidence of 45 degrees, with the stall being delayed for 30 degrees above the ordinary angle. Also, that with R.A.F. 15 section, the lift was increased by 60 per cent. above the normal value with the slot in action at big angles of attack. But although R.A.F. 15 gave this 60 per cent. rise in lift the average lift on a thick slotted airfoil is in the region of 35 per cent. In some of these experiments by Handley Page, the model wings used in the wind tunnel were 36 in. span, whilst others were up to

FIG.2 THE ZAUNKÖNIG SHROUDED SLOT



5 ft. span with 1 ft. chord. Mr. Editor, can we have an R.A.F. Section 15 shown? Sounds kind'a interesting. *(a pleasure Col. Bowden-Ed.)*

A slot is of value at high angles of attack. At lower angles it is desirable to close the slot, if structural complication and cost warrant this. If this is not done for the higher speeds at lower angles of attack, an actual decrease of lift is found. For angles below 12 degrees incidence, opening the slot causes loss of lift, but on the other hand the considerable increases of lift already mentioned were noticed at low speeds and large angles of attack, *when there is an actual decrease of drag.*

From the model angle, if we use slots (full length) to give increase of lift at low speeds, such as on the inner wing of a turn under radio, we must design our models with a good high angle of attack. If we merely want to make a tapered wing laterally stable by adding slots at wingtips only, we can keep the normal angles of incidence. The tapered tips will then be controlled as the model comes to a stalling angle. But I repeat, decrease of drag at large angles of attack is of interest to modellers who dabble in radio, and power duration too.

Maximum performance drops rapidly when the maximum size of slot is exceeded. See sketches with this article, which give reasonable proportions for correct relationship between slot and wing.

Lachmann's original design of slots contained sharp angles on the upper surface, and it was only after their removal that satisfactory results were obtained. See Fig. 3 (B).

If a wing is flapped with a rear slot, when the flap is pulled down the slotted entry does not affect the efficiency of the front slot. The rear flap should have a rounded off upper surface which must form a smooth line with the wing's curvature. See Fig. 3 (C).

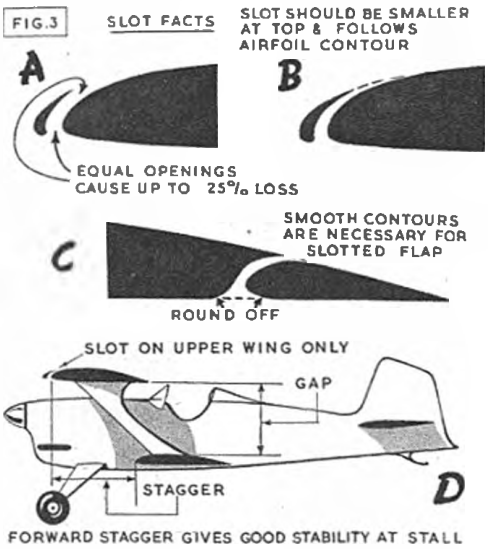
Stagger (positive) has been found to have a much greater effect than " gap ". See Fig. 3 (D). The staggered wing arrangement has a considerable effect on the characteristics of a biplane at large angles of incidence. Above the stall, lift is less on a non-staggered biplane due to shielding. A machine with a large stagger will recover from a stall quicker than one without stagger. Modellers should use the above facts found in the wind tunnel and in full-size flight. My model biplanes have always had this feature of large positive stagger, with wings flying at slightly different angles of incidence, and they have always been very stable. My first " record holder " biplane Kanga, way back in 1931 had this feature, and even in those early days that model was found to be very stable. Slots should be fitted to the top wing of biplanes, the top wing forms a slotted effect for the bottom wing.

Endplates and square wingtips

Elsewhere I have remarked on the tests made with endplates and square tips, providing great lateral stability in a stall. In 1940 R.A.F. tests with endplates fitted to slotted and flapped wings, it was found that the greatest lift measured was 3·06 at 15 degrees wing incidence, and 55 degrees flap angle, for both circular and eliptical endplates, whilst a wing without endplates gave a maximum lift value of 2·89.

Let us hope to see some exciting slotted, and perhaps flapped, models in the Bowden Trophy Competitions of the future, now that they have returned to precision flying for this event. Perhaps we shall see heavily staggered slotted biplanes, with delta tails doing the most beautiful take-offs and landings ?

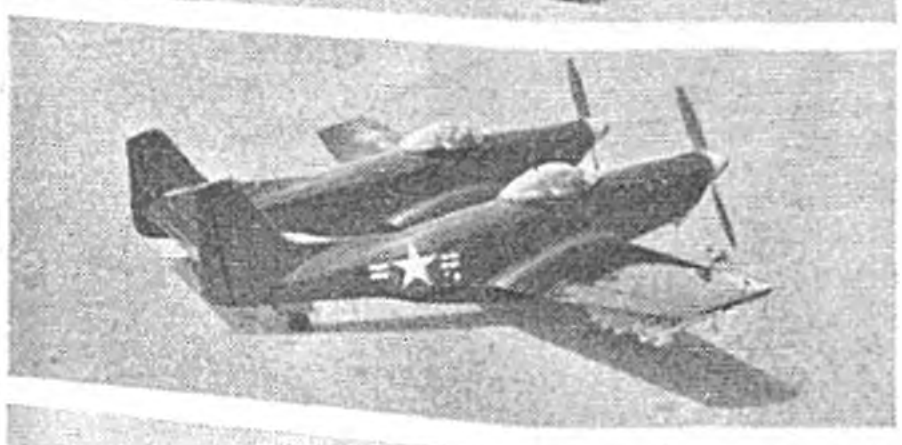
FIG.3 SLOT FACTS



FORWARD STAGGER GIVES GOOD STABILITY AT STALL

Realism among American team racers is shown in the heading line-up of a few of the many models entered at the Los Alamitos Nationals site. Number 61 at bottom right is a 31 oz. all-metal racer.

WORLD NEWS



Impression of the 1952 U.S. "Nats."

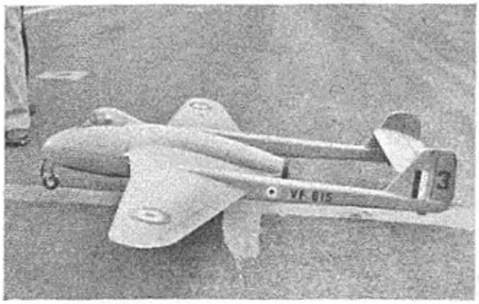
This report does not pretend to be a play-by-play account of the 1952 National Model Airplane Meet, but the impressions an Englishman (ex Chingford M.F.C.) brought away with him. There were too many events, too widely scattered, running simultaneously for me to get complete coverage.

The meet was held at Los Alamitos Naval Air Station out from Los Angeles, California, just 1,289 miles from my home in Bremerton, Washington, quite a drive for my buddy, Bob, and myself, but well worth the effort. We were housed and fed by the U.S. Navy, on the Base, and I must give them credit for a fine job, they really worked hard to give us a wonderful time. My most vivid memory was of the Indoor Flying held in the Santa Ana blimp hangar. A building 1,100 feet long, 200 feet wide, and 187 feet high ! What a paradise for the microfilm maniacs. Everyone moved around on tip-toe, breathing lightly. It even proved sufficiently contagious to effect my dyed-in-the-wool U-control fan, friend Bob, who looked so silly cranking a 50 to 1 winder for Bill Atwood. It proved to be the winning flight in the Stick Class of 27 : 58. That's a long time, and you really " sweat it out ". The hand launch glider boys fascinated me too, flipping their ships right up to the roof and comfortably exceeding a minute. I believe someone did 1 12. My mind went back to the Albert Hall. Some difference !

In radio control the first place winner was a modeller from San Francisco. His plane is a semi-scale job resembling a Piper Cruiser 7 ft. span. Power is a .645 Cu. in Anderson Spitfire with two-speed ignition. His name is Alec Schneider. The radio unit is patterned after the Rockwood system, using a tuned reed audio filter to operate 5 channels of control. Alec built all his own gear except his transmitter. The receiver is a three-valve set which receives a tone modulated carrier.

On the whole, the system is very similar to the E.D.3 channel set. The servo system uses two electric servos with neutralising and limit switches. One channel is used for each control direction. That is, one each for left, right, up and down. The fifth reed is used to operate the motor speed, giving high, low and cut off by means of an escapement.

Top to bottom of left hand column. Five foot span, this huge control-line Waco Cabin 'C' was entered in the 'beauty' event. The twin Mustang, P.82C fighter apparently has two McCoy 29's, complete cockpit details and full complement of rockets beneath its wings. Most complete scale model entered was the Great Lakes trainer biplane which had elevator trim from the cockpit, all inspection plates duplicated and every other possible detail. At bottom is one from our own plans service, beautifully made but most unfortunately incorrectly marked on this near fuselage side.



Left: Dynajet powered Vampire weighed 9 lbs. and was about 5 ft. span. Each u/c leg has an electric motor for retraction, was finished during the meeting. Right: For the Carrier event, the Douglas AD/1 appears to have everything. All photos on these pages from the U.S.A. Nationals.

Alec flies in a most spectacular manner making elevator take-offs, consecutive *round* loops, vertical dives, perfect stalled landings and several varieties of Immelman and reversement turns. Altogether a hair raising performance. He deserves more credit than meets the eye because his radio knowledge is non-existent. The gear he makes is the Japanese copy variety.

In speed the old battle of experts continues. I became very friendly with "Babe" Hall and Pat Massey one of the most potent speed teams over here; and in their models I saw some of the most perfect workmanship I have ever examined. Their models are an example of the model builders art both inside and out, and their motors (all McCoys) are a picture of good machine and fitting work. Apparently their big secret is the fuel they use, commonly called "Blast". Should you ask what they use, as I did, the reply is always "Methyl-Alcohol, castor oil, nitro methane, 'n stuff". I did notice, however, that they carried it in two bottles, one labelled "Nitro M" the other "'N Stuff", and that they mixed only enough for each individual flight, and the mix would sometimes vary from flight to flight. On one occasion they mixed some and gave it to another entrant who couldn't get all the speed he wanted, only to have him turn in faster time than they had made. Such is sportsmanship.

The event with the greatest amount of fun, per flight, was the Navy Carrier Event, in which I assisted Bob, who flew an Atwood Triumph '49 powered "Hell Cat", featuring tail hook release, two-speed motor control (twin needle valves) and single acting flaps (down flap with up elevator), all controlled from the bell crank. Simple as compared with the majority of other contestants, but effective enough to give him a ninth place.

Stunt followed the old pattern but with more good looking aeroplanes all the time. To my mind, the best of the bunch was "Smoothie" Palmer's "Smoothie", which he flew into second place, although the new "Kenhi Cougar" takes some beating. This is the first kit stunt job, to my knowledge, that has the landing gear mounted on the wing, this is really a step in the right direction.

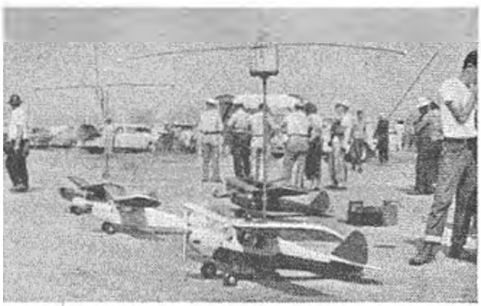
Looking around the free flight area, I would say Lew Mahieu's "Zeek" was the most popular model, and when powered with a suitable motor they really gave the stiffest competition, however, I must note that I saw several that folded their wings at the centre dihedral break, a rather undesirable feature. There does seem to be quite an increase in the r.p.m. a lot of the boys are using. McCoys, Doolings, Torpedo 19's, running on small diameter props, with nitro methane in the fuel mix, made me wonder sometimes if I had not strayed over to the speed circles. Half A was by far the most popular, and the area appeared to be the centre of a mosquito cloud. How the timers kept things straight I will never know.

In rubber there was little originality except for a few Californian style long jobs. Hank Cole was flying a model with a fuselage almost 6 feet long, built with ¼ in. square, covered with undoped jap tissue. When it turned into the concrete runway, immediately after take-off the results were disastrous. Towline jobs were in even a deeper rut, and I only noted one model which showed any advancement along European lines, I missed seeing it fly so cannot say if it made any impression. Frank Zaic seems to have the whole business sewn up, with the boys solidly behind the impression that "it takes a Floater to beat a Floater".

Team racing proved a popular event with some very beautiful entries, outstanding to my mind were the all metal scale jobs of the "Long Midget" and "Ballerina" type Goodyear racers. These models showed superior workmanship, in sheet metal bending and riveting. I was surprised to learn that ready to fly, they weighed only 32 ozs.

A McCoy Diesel ! ! !

You may think that after the day's flying was concluded we would be allowed to rest, but this was not so. We attended discussions and on one evening we were treated to a conducted tour of the new McCoy factory,



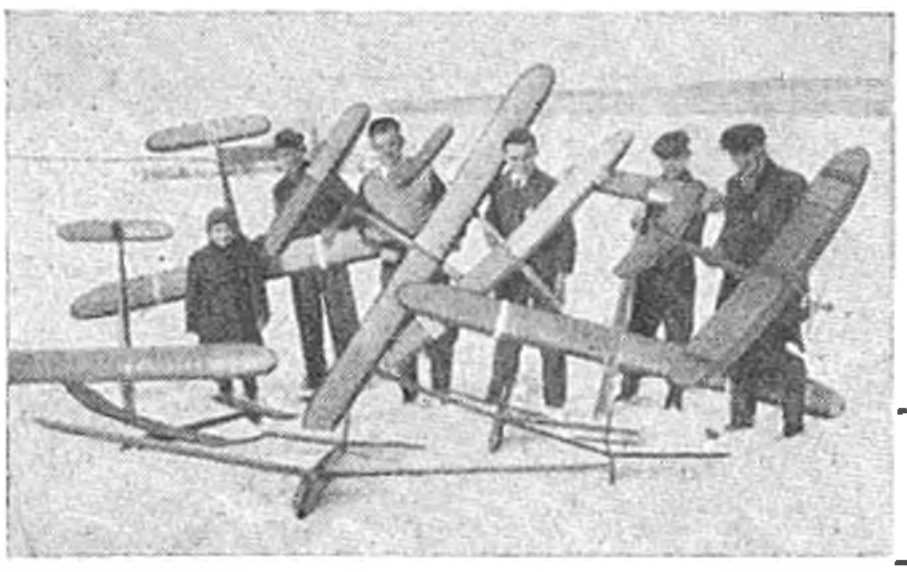
Right: The Mustangs from San Francisco took 1st and 2nd in R/C with 5 channel receivers on 27 mcs. Winner in foreground bears a close resemblance to the Piper Super Cruiser and is remarkably good looking for its spectacular aerobatic performance.

Left, 17 year old Shlomo Breitstein of Jerusalem is Israel Power Champ. Model is a McCoy 29 Sandy Hogan. Right, Jacob Lore of Ra'anana and his S.51 Helicopter which he demonstrated flights at the Israel Nationals.

and here was the biggest surprise of the meet. Keith Storey and Dick McCoy introduced the new McCoy '049 Redhead Diesel. It bears a strong resemblance to current British motors, most particularly the Frog 150. I immediately enquired about fuel, and was informed a suitable fuel would be marketed as soon as the motors became available (the date provisionally set was October). I hope it is better than that which has been sold in the past. I have carefully stored my trusted E.D. and Mills as I did not have the heart to use local concoctions on them, and could not obtain materials to mix my own. I do not know what effect this move will have on the British Manufacturers, but if the motor brings with it a good fuel, it might serve as a shot in the arm. At least, I could boost British Diesels which I cannot do now.

At the discussions I worked hard to get some interest in the F.A.I. even to aligning the A.M.A. Classes with the F.A.I. and at least found a strong ally in Dick Everett, the contest manager (and pen friend of Ron Warring, apparently). To the average modeller here, I am afraid the F.A.I. is a completely unknown quantity, so it will take some time. There was some interest, however, in the Nordic A2 Class and at least that is a step in the right direction.

One last impression. Bob and myself usually managed to get to bed at about 1.30 or 2.00 and climb out again at about 6.30. The last parting sound and first to greet us, was the scream of a motor or motors running wide open, from the direction of the hangar set aside for building and repairing. Here day and night a bunch of fellows could be found, building, rebuilding, and checking for the coming events.



Of course, throughout the meet, Jim Walker, the "Grandpappy of U-Control" could be seen, flying, fooling, and talking to everyone. He had the misfortune to wreck his R/C model the second day of the meet, but rebuilt it in time to place third. He put on his usual demonstrations with "Fireballs", Arden 19 powered, "Firebabys", Wasp powered, and his various other creations.

Looking back this was probably the greatest landmark in my modelling career, and I had thought I had seen a great deal.

DOUG BEAGLEY.

Rhodesian Nationals

Held at R.A.F. Heany, a very large airfield with a vast surrounding area of flat "bundu", the meeting opened with two blustery days and closed with perfect weather for third and fourth days. Highlights of the many events were: a 95 m.p.h. Class B team racer by Bill Heckler of Salisbury, who also put up a new record of 135·4 m.p.h. with his McCoy 60 speedster (at 4,500 ft., on a hot day) . . . a combination team race with 80 laps of Class A, followed by 160 with Class B . . Rubber was won by that hardy perennial a Korda Wakefield . . . Jetex (more powerful at this altitude than at sea level) taken by a Little Stinker with extra span . . . P.A.A. Load, for the first time in Rhodesia . . . A marathon for one hour, open to glider or power teams of two, won by a Frog 150 model averaging 100 secs . . . and of course, the "natural" native recovery service which is encouraged by substantial rewards. Incidentally the Rhodesian entry for the S. African Nationals, reported in our August issue, were forced down en route in the veld. They say the next trip will be made by train!

Israel National Championships

Held at Meggido airfield, the first National contests of this country were elementary in nature, being for most of the modellers, the first competition ever. Winners aggregates in the region of 10 minutes are indicative of better standards to come, and if the practice of using the Aero Club's Piper Cubs to chase o.o.s.'s is continued, we might say that there at least the Israeli boys are ahead of the rest of us.

Czechslovakian modellers go in for big gliders, and in some parts are operating over snowbound fields. If you are interested, we have addresses of several Czech modellers keen to have British pen-pals.

Our correspondent in Israel tells us that after the contests, he can claim to know every bush in the district for miles around, as he was " aerial spotting " in the Piper Cub. On one flight, with Major Tuvia Sinai, he chased the winning Sandy Hogan seen in the photo on the opposite page. The total airborne time of the model was 22 minutes 26 seconds, far greater than that recorded on the ground, of course. During this unusually interesting aerial chase (surely the only organised service of its kind outside Russia ?), we learn that the Sandy Hogan became involved with a particularly strong thermal, shooting upwards at the rate of 600 ft. in perhaps 6–8 seconds. At that rate of climb, the Cub was hard pressed to remain above the model ! ! It was successfully chased to its final landing spot, six miles away on the Little Hermon mountain, one of Israel's gliding centres.

As intimated in his reply to Col. Bowden by N. Kadmon, published in October issue, aeromodelling in Israel is organised from the beginner stage upwards as an education and grounding for later " full-size " aviation careers. Typical of this high standard of organisation, was a points system used to find their Champions and leading club. Competitors had to serve as retrievers, dispatchers or clerks in events in which they did not compete, and officially approved timekeepers (who have to qualify with certified good eyesight, as aeromodelling instructors and pass an examination), had to function as timekeepers in all contests they did not enter. Most coveted job at this nationals, was the post of " flying timekeeper ", a job which was taken in turns by the older and more active lads. Incidentally, *all* competitors were under 18 years old.

An unorthodox subject taken along for exhibition by Jacob Lore of Ra'anana is pictured on the page opposite. Modelled on the Sikorsky S.51 it is a semi-scale Helicopter, using a McCoy 29 fitted with a normal airscrew, and mounted on the hub of the main rotor blades. The engine is started up in the normal way ; but prevented from twisting by being held in the manner demonstrated, then when released, the torque reaction of the motor drives the rotors around in the opposite direction to the smaller prop.

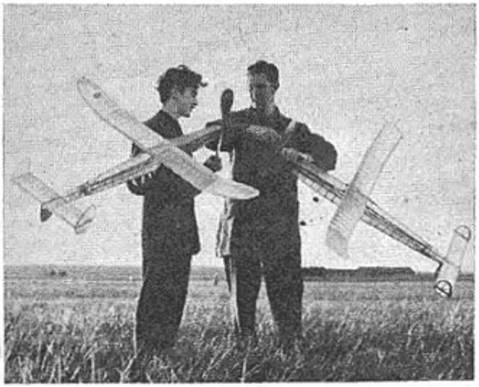
Swedish Nationals

Halmstad, a beautiful town on the west coast of Sweden, was the venue for 105 competitors at the Swedish National Championships. Thermal activity, with accompanying downcurrents, made the contests something of a lottery, and it was not until the last flights of the day were made, that a decision could be reached on the champion Wakefield, Nordic A/2, and F/F Power fliers. A six-minute maximum time was used, and quite a number of top duration flights appear in the results. Anders Hakansson, member of the '52 Wakefield team, won that class with a total of 13 : 51, a performance that helped greatly to bring his Malmo club as Team leaders with a gross total of 34 : 15 for one entry in each event.

In the Nordic Glider class, at which the Swedish boys excel, Ebbe Carlsson headed the list with 13 : 30. Power champ is our old friend Börje Börjeson, flying his own design " Pladuska " to raise 10 : 49 without maximums, a figure which would top our own recent power championships, which were run in very similar weather conditions.

Australia

The " Saints " M.F.C. of Manley, Sydney, ran a comp. for their special glider class limiting total area to 350 sq. ins. Top times were somewhat limited by terrain and wind ; but a good close contest can be run on these lines in restricted areas, and the idea might well be used by other clubs. From Ararat in Victoria, we learn of a four-member club trying hard to spread the good word among the populace. At a local air pageant they aided considerably in raising £80 towards improving the local aerodrome, which we trust will be available for model as well as full size flight. Already well established in the public eye is the M.A.A. of Queensland, for that active promotor of aeromodelling " sold " the hobby at the Royal National Show, Brisbane, by arranging a regular show on six nights in the main arena before crowds of up to 20,000. Known as the 1952 Royal National Control Line Championships, highlight of the meeting was a new Queensland speed record established by 15 year old Ted Ward at 113·88 m.p.h. with his Dooling 29. The Boys out there are currently crazy about combat flying (streamer cutting) with up to four in the same circle.



Swedish Wakefield men, Roald Olsson and Helge Eliasson, with their almost transparent covered twin skein geared models. Right, Swedish Power Champ. Borje Borjeson displays the specially made faience awarded for first place. The book apparently goes with it, other copies were given to each winner.

THE UNITED KINGDOM CHALLENGE MATCH

REPORTED BY P. FOULKES

FOLLOWING England's win at the initial contest staged last year in Scotland, the North Western Area Committee was requested to handle the organisation of this year's event, and arrangements were made at the official Area battlefield, Tilstock Aerodrome, near Whitchurch in Cheshire.

Weather conditions were very close to that almost mythical " still air " about which we hear so much, but never encounter. Wind was almost absent, the sun certainly was, and rather low cloud reduced visibility to a fair extent.

RUBBER

IRELAND.					
Osbourn, N.	4 : 54	2 : 49	3 : 44	11 : 27	
Drew, G.	4 : 08	2 : 03	2 : 19	8 : 30	36 : 33
Gray, L.	1 : 41	4 : 36	2 : 03	8 : 20	
Clelland, T.	3 : 51	1 : 33	2 : 52	8 : 16	
SCOTLAND.					
Finlayson, J.	4 : 43	3 : 40	3 : 16	11 : 39	
Owston, R.	2 : 12	3 : 07	2 : 50	8 : 09	30 : 29
McConachie, W.	1 : 52	2 : 01	2 : 44	6 : 37	
Simpson, G.	: 53	2 : 05	1 : 04	4 : 04	
ENGLAND.					
O'Donnell, J.	3 : 49	5 : 00	4 : 17	13 : 06	
Palmer, G.	: 30	4 : 55	2 : 55	8 : 20	
Marcus, N.	: 38	3 : 15	4 : 04	8 : 04	29 : 50
Bennett, A.	: 20	—	—	: 20	
WALES.					
Holland, F.	2 : 40	3 : 13	3 : 36	9 : 29	
Quick, B.	1 : 51	2 : 47	2 : 56	7 : 34	24 : 24
Evans, B.	2 : 37	: 58	2 : 32	6 : 07	
Crumplin, E.	1 : 14	—	—	1 : 14	

Whilst competitors fairly regularly recorded flights of 3 to 4½ minutes in all classes—as was to be expected with so many seeded International Team members present, only two maximums were obtained during the day. All contest flights ended within the airfield boundaries, with the exception of one case of timer failure in the power event, though most models landing in the far corner of the field lost a few seconds owing to poor visibility against the wooded background. Sparse thermal activity was about at considerable altitude, but was more than balanced by reverse effect from downdraughts, this being well illustrated by Faulkner of the English glider team who made two excellent 4½ minute plus flights, but with identical trim and from a perfect launch could only record 1 : 35 for his last flight, the model sinking remarkably fast.

POWER

ENGLAND.					
Bickerstaffe, J.	3 : 50	2 : 27	4 : 58	11 : 25	
Brookes, A.	3 : 18	3 : 32	4 : 00	10 : 50	43 : 13
Dallaway, W.	5 : 00	3 : 45	2 : 02	10 : 47	
Perkins, G.	2 : 29	2 : 49	4 : 53	10 : 11	
WALES.					
Birch, A.	3 : 30	3 : 09	2 : 53	9 : 32	
Barker, D.	2 : 39	4 : 07	2 : 13	8 : 59	26 : 38
North P.	2 : 43	2 : 16	3 : 01	8 : 00	
Madge, J.	: 07	—	—	: 07	
IRELAND.					
Gardiner, R.	2 : 52	1 : 37	2 : 32	7 : 01	
McMiller, —	1 : 42	1 : 19	2 : 09	5 : 10	20 : 26
Piddington, B.	: 47	1 : 48	1 : 55	4 : 30	
McDonnell, F.	—	2 : 01	1 : 44	3 : 45	
SCOTLAND.					
Parsons, R.	1 : 45	3 : 51	2 : 45	8 : 21	
McMaster, J.	: 51	2 : 06	1 : 52	4 : 49	20 : 26
Gilroy, —	2 : 23	: 11	2 : 03	4 : 37	
Howitt, S.	2 : 39	—	—	2 : 39	

Some of the victorious English team are shown the Challenge Trophy by S.M.A.E. Vice-Chairman R. F. L. Gosling. Left to right they are: Palmer, Marcus, Lamble, O'Donnell, Farrance, Perkins and Brooks.

Models for the most part fell into the International specifications, though a few of the Scottish boys favoured a larger power job. Only one " toothpick " was seen, and no exceptionally long Wakefield fusclages. It should be noted that whilst most models were conventional in design, all were extremely well built, and many showed—as was to be expected at this class of meeting—evidence of very careful trimming. This was evident from A. Birch (Wales) who topped the glider men with three very consistent flights with a conventional but well constructed model.

Main impressions of the meeting were of an excellent sporting occasion held in fair conditions that gave a genuine test of the models themselves and not their thermal capacities. There were some surprising failures in the England Rubber Team in the first round, only 4½ minutes coming from four top class men. Bennett wrote off his model

GLIDER

ENGLAND.					
Faulkner, B.	4 : 42	4 : 38	1 : 30	10 : 50	
Farrance, W.	2 : 56	3 : 23	3 : 37	9 : 56	39 : 05
Thomas, M.	2 : 39	3 : 25	3 : 49	9 : 53	
Lamble, J.	3 : 07	3 : 44	1 : 35	8 : 26	
SCOTLAND.					
Robertson, J.	1 : 26	3 : 35	4 : 46	9 : 41	
McArthur, J.	2 : 47	2 : 58	2 : 42	8 : 27	33 : 11
McConachie, W.	2 : 28	1 : 30	3 : 50	7 : 58	
McGill, W.	3 : 34	2 : 15	1 : 20	7 : 09	
WALES.					
Birch, A.	4 : 00	2 : 58	4 : 17	11 : 15	
Maunder, R.	2 : 05	2 : 37	1 : 57	6 : 39	30 : 01
Parsen, P.	2 : 05	2 : 05	2 : 12	6 : 22	
Phillips, J.	1 : 32	2 : 40	1 : 33	5 : 45	
IRELAND.					
Bennett, D.	1 : 56	3 : 06	3 : 25	8 : 27	
Armstrong, R.	2 : 20	1 : 30	: 47	4 : 37	19 : 57
Ivor, R.	: 58	1 : 57	2 : 14	4 : 09	
Drew, G.	: 38	1 : 14	: 52	2 : 44	

completely, and only a " backs-to-the-wall " effort by the remainder kept them in the rubber picture. Scotland obviously had some very good material present, and a very small variation could have sent the Trophy back to North of the Border. Ireland gave the impression of individual quality, only limited by lack of opportunity to compete in larger events prevailing on the " mainland ".

Someone always has to be last, and this time Wales filled the position with considerable honour, for their performance was very consistent indeed.

	R	G	P	Total
ENGLAND	2	5	5	12
SCOTLAND	3	3	1	7
N. IRELAND	5	–	1	6
WALES	–	2	3	5

Club News

Sutton-By-Pass Modellers make a Christmas card scene at Epsom Downs last winter. Youngster in foreground is Peter Pearce.

A MERRY CHRISTMAS to my readers (all three of them!) May the festive season bring good cheer, goodwill, and happy landings for those types who creep out early Christmas morning for the odd flip.

From correspondence received to date, it is obvious that the proposed contest rules changes are creating plenty of discussion, and it is to be hoped that responsible modellers will not just dismiss the matter as restricting their designing abilities, or just another attempt by the " non-flyers " to alter rules just for the sake of it. It should be borne in mind that these fellows have practical experience of the fliers' requirements, but what is more important, they are much closer in touch with matters affecting the future of aeromodelling than the average contest man. It can only be by a judicious consideration of all factors that the activities of the latter can be safeguarded by the former, and anyone with any knowledge at all of the situation must be aware that the greatest difficulty facing the movement at present is the flying field bogy.

Ireland

BELFAST M.F.C. provided eight members to represent Northern Ireland in the U.K. Challenge Match at Tilstock, and are naturally proud of the fact that they won the Wakefield event against so many stalwarts. This success was mainly due to the sterling efforts of Norman Osborne, Gordon Drew and L. Grey, who for once had no bad luck ! Their power team had to be satisfied with 3rd place, but the glider boys were obviously not experienced enough with the tow-line. the next club comp. is a power precision event to be staged on Boxing Day.

To round off the most successful contest season they have yet enjoyed, the control-line boys of the **DUBLIN S.M.E.E.** gave an excellent demonstration of flying at the Midget Car Club meeting at Swords on October 5th. The programme included a masterly exhibition of stunting by Johnny Carroll with his speciality—aerobatics whilst holding the handle in his teeth ! A thrilling combat event between junior members Ridgeway and Murphy, and some hectic dicing between John Thompson and Rory Deale ended in the complete write-off of the latter's D.C.350 " Stunt Queen ".

East Anglian Area

The first East Anglian Team-Racing Rally, staged by the **CAMBRIDGE M.A.C.** was an outstanding success. Watched by a crowd of over 2,500 spectators, some 30 competing teams put their models through their paces in conditions far from ideal. However, despite a strong, biting easterly wind and intermittent showers, competitors and spectators alike thoroughly enjoyed the event.

The majority of the eliminating heats were flown off " two in a circle " to give competitors an easier task and spectators more to see.

The star attraction of the Rally was the first organised " ½A " race. Although this did not attract so many entries as was anticipated, it was a gallant attempt to kindle interest in " ½A " racing in England. The race itself was flown over 75 laps and was well worth seeing. The sight of " six-footers " Butcher and Timms, with shorter Mason rotating rapidly in the centre of the circle, flying their tiny models on 20-ft. lines, brought forth many a laugh and cheer of encouragement from the crowd. The eventual winners proved to be the Harrow club.

In an exciting four in a circle class " A " final, Butcher (Croydon) flew his all red E.D. 2·46 powered " Sorcerer's Apprentice " to a well deserved victory. Although a long way behind at the start, he finished up several laps ahead of his closest rival. A notable achievement during this race was a 4 second pit-stop by the Croydon Team.

Butcher again piloted the winning model in Class " B ", the model this time being the very fast ETA 29 powered Wrangler V owned by Pete Wright.

Considering that this event was the first Team Racing Rally ever organised by the club, things ran extremely smoothly. The only criticism levelled against the administration was that processing of the models was very slow and needed speeding up. No doubt this " trouble " will be cured at future Rallies.

Class ½ A	**Crowe**	**(Harrow)**
	Mason	**(Bushy Park)**
	Millford	**(St. Albans)**
Class A	**Butcher**	**(Croydon)**
	Mason	**(Bushy Park)**
	Elton	**(Mill Hill)**
Class B	**Wright**	**(St. Albans)**
	Mason	**(Bushy Park)**
	Crowe	**(Harrow)**

Ken Lloyd, formerly of the Solihull club, has moved to Essex, and is hoping to start a club in his district, where a new town is in course of construction. Anyone interested should contact him at 37, Luncies Road Vange, Essex.

Southern Area

Torrential rain greeted competitors arriving for the Area Rally at Andover on September 28th, but it cleared a little in the afternoon. The Grange boys found themselves hard-pressed to maintain their team lead over Bournemouth in the M.E. Cup, two coast boys filling the first two places in the individual placings. However, Grange managed to total up 44 : 53 with Bournemouth following very close on their heels. The least said about the 1·5 c.c. event the better—though one very well known member of Grange (who shall remain anonymous) managed a 75 second engine run ! Yes—he did have a d.t. At the Surbiton Gala the boy had a final fling, placing 2nd in the team event, and Tony Brooks 2nd in the individual placings.

South Eastern Area

This was another Area to suffer from poor conditions on September 28th, a boisterous wind persisting throughout the day with rain towards the evening. Despite the weather there was an encouraging attendance, and the towline technique of the Brighton boys showed evidence of their considerable experience of flying A/2's in all weathers. Men of Kent completely dominated the rubber event, and Brighton were again supreme in the power class. One feature of this meeting was the enthusiastic co-operation of the farmer, whose son is himself an aeromodeller ! Results were :—

GLIDER	Giggle, P.	(Brighton)	4 : 41
	Puttock, F.	(Tun. Wells)	4 : 03
	Boxall, F.	(Brighton)	3 : 05
RUBBER	Green, M.	(Men of Kent	5 : 45
	Hope, B.	" "	3 : 49
	Brodie, H.	" "	1 : 09
POWER	Holoway, P.	(Brighton)	6 : 30
	Lockyer, E.	(Eastbourne)	1 : 43
	Mussell, A.	(Brighton)	1 : 13

In the Area Championships, Brighton led with 14 : 16 over Men of Kent 12 : 00 and Tunbridge Wells 8 : 03.

On the 12th October, the **SOUTHAMPTON M.A.C.** beat Portsmouth in the " Hobart Trophy " by 27 points to 10, making this the fifth win in succession. Each entrant in the teams of six had two flights each, top men being D. Smith 2 : 42 (glider), D. Gordon 2 : 14 (rubber) and A. Sanger 2 : 50 (power), all being from Southampton.

SOUTHERN CROSS A.C. news-sheet has the right answer to the flyaway model difficulty when stating that the " solution to the problem lies not with the models or their design, but with the modellers ". We've preached that for years, but in so many directions it has fallen on deaf ears. I would like to correct a misunderstanding however—there is no attempt to alter actual model specification, only to modify launching. Keith Donald still leads the club championship with 9·8 points, next being Bill Gravett with 8·36 who also won the club Nordic contest on October 5th, with a total of 9 : 07½.

Midland Area

The **FORESTERS (Nottingham) M.F.C.** finished the contest season quietly at Woodford, and now take a breather until the club winter comps. The most spectacular prang seen for some time occurred recently when a new member rolled up and paid his subs ! (Treasurer ?) He produced a beautiful new cabin job and proceeded to test fly—but right in the path of Johnny Howard's new Class B racer. The problem about immovable objects and irresistible forces was solved with a bang ! The racer was being clocked at at about 100 m.p.h. with occasional bursts of 105 from the still stiff ETA.

SOLIHUL M.F.C. lads had a good day at the Y.E. News Rally, and were well satisfied with their prizes. Next meeting was the Area Rally at Loughborough, where wet though calm weather was experienced. Solihull supplied top team with J. Rogers as best individual with just over 12 mins. including one maximum. Arrangements are under way for the annual Glider Rally to be held sometime this winter, so look out for further announcements.

Though not securing any top places, the **WOLVES M.A.C.** have had some success, with L. Haywood, P. Richmond and K. Foster gaining places in the A/2 and Power Trials. Like most clubs, members are being lost to the Forces, so roll up all you modellers in the Wolverhampton district. Club meets every Tuesday night at Bingley Street Schools.

The former Cedars club has amalgamated into the **HINCKLEY M.A.C.**, with one of the finest H.Q. in the Area at the local community centre. Young members are being particularly cared for, with a series of lectures and demonstration classes by Mr. Nixon, a prize being awarded for the best model at each stage in construction.

South Western Area

The final Area rally was held at Chagford Common in poor weather, when S. Gibbons (Exeter) made best showing in the Frog Senior event with 5 : 13, and the Plymouth Team scored 14 : 07 in the M.E. event. Other events staged by the Area placed Gibbons top in open power with 5 : 18 ; D. Brock (Plymouth) 5 : 39 in open rubber ; and Junior M. Hurren (Exeter) top in the nomination event. Exeter won the Area Shield with 109 points against runners-up Plymouth scoring 105.

The 6th and final round of the **PLYMOUTH M.F.C.** championships was held on September 21st in dry but windy weather. D. Brock won the rubber class after a tussle with the Richards, while G. Lynn increased his lead to win the glider section. In power, A. Thomas, a junior, repeated his 1951 success with a total of 69 points, two other juniors finishing 4th and 5th. New club records were established in rubber, 12 : 43, power 5 : 08 and Jetex 7 : 57 during the course of the championship.

North Eastern Area

Formed just over a year, the **WEST HARTLEPOOL & D.M.A.C.** membership stands at 35. Almost all flying is done at Greatham Airport, where a hut houses models and bods when repairing. Some very good flights lately have pushed the power ratio record

AERO-MODELLING TYPES—

" The Glider Beginner."

up to 28 : 1 by W. Hunter, and the sailplane record to 14 : 31 by K. Lacy. Indoor flying has become quite popular since the acquisition of a clubroom, where meetings are held every Friday night.

October 12th saw a gala day organised by the **TYNEMOUTH M.A.C.** when members turned up in force to fly in fine but breezy weather. Outstanding success was Ron Pollard trying out a brand new " Jaded Maid ", and winning the power event with 4 : 28. Other club successes are K. Mole's 2nd concours place at Sherburn, and the Area knock-out finals.

Western Area

SOUTH BRISTOL M.A.C. scored some 43 minutes in the M.E. glider event at Lulsgate, following up with a control-line display at Filton for the Battle of Britain show. A single line team-racer has been designed and flown by Ron Hillman, success to date encouraging him to go ahead with the idea.

Despite a poor share of the better weather, **SWINDON M.A.C.** have had a good season, with new records being the order of the day right up to the last meeting of the season, which by some welcome miscalculation was blessed with fine conditions ! Trowbridge beat the S.M.A.C. for the first time by two points in the annual inter-club challenge match. The Slope Soaring Meet was flown off in almost continuous rain, but in spite of this some 60 flights were made to give a win to R. (Pencil) Smith of Swindon who scored 4 : 36 against the 4 : 26 of Trowbridge's R. Taylor. After settling down to the shock of fine weather at the end-of-season meeting, a grand day's flying was enjoyed. Jim Russell's " Marauder " scored a triple max. in the open glider event, followed by Junior J. Scandling, whose " Lulu " clocked 6 : 24. The power event produced another club record, that of 14 : 22 put up by " Flip " Turtell's 1·8 c.c. powered " Mallard ". His three flight aggregate of 13 : 45 gave him an easy win. Open rubber winner T. Rogers did not exert himself to score a modest 2 : 51.

North Western Area

G. Evans of Cheadle won the glider section of the Area Championships held on October 13th with a total of 11 : 24 power honours going to Gig Eifflander 5 : 29, and rubber to Johnny O'Donnell (Whitefield) with 7: 24. Overall champ. was announced as Garth Evans by virtue of his win plus 5th place in the rubber class. 32 entries were received for the M.E. Cup event won by A. Wrigley of Whitefield with an aggregate of 11 : 25, whilst S. R. Targett (Whitefield) topped the 1·5 c.c. power event with 8 : 57. Continuous rain from 11 a.m. to approximately 4 p.m. did not improve matters.

The fine weather experienced at the postponed D.D. Rally probably helped D. Keane of the **OLDHAM & D.M.A.C.** in winning the junior power class. The model is his own design, and the two-flight total of 7 : 25 shows the normal standard flying of this member.

WALLASEY M.A.C. organised a trip to Pwllheli Butlin's contests, with the result that they picked up two 1sts. Jim Done won the power event with a two-flight score of 2 : 30, and the team-race boys Pumford, Alexander and Worthington cleaned up for the second time this year. Most members are now looking forward to that long forgotten Sunday dinner, such meals having consisted for many months of a hurried bite from a sandwich and a swig from a thermos flask !

The **WHITEFIELD M.A.C.** has been somewhat hectic for the boys, with contests at the rate of one a week ! Two members were selected for the English team in the U.K. Match, and places were also scored at Pwllheli. The club topped the Area scores in the M.E. with 40 : 46. The weekend of October 4/5th was a profitable one for the O'Donnell family. On the Saturday, J. and H. flew in the Jetex finals at Fairlop, John being successful in winning both the Trophy and a very generous prize. Winning flight was 4 : 25 on a 14 second motor run, the model being a very light 200 powered model—weight without Jetex unit 0·8 oz.! Construction was mainly 1/64 sheet. At Woodford the following day, the club collected no less than 10 prizes. Alan Wrigley won the rubber with 2 max's flying the inevitable diamond-pylon-feathering-prop club design model, while Hughie O'D was top junior with 6 : 31, flying a similar job. In the junior glider H. O'D placed first with 8 : 57 flying a 12 ft. maximum area design called the " Demoraliser ". Among other wins, Mrs. E. M. Bennett won the Woman's Cup with 7 : 15, and to round things off A. D. Bennett collected the Senior Championship, and H. O'Donnell the Junior ditto.

" DAILY DISPATCH " RALLY RESULTS

SENIOR CHAMPION		
A. D. Bennett	(Whitefield)	
JUNIOR CHAMPION		
H. O'Donnell	(Whitefield)	
WOMEN'S TROPHY		
Mrs. Bennett	(Whitefield	
E. J. RIDING TROPHY	(Scale)	
F. Lees	(Ashton)	Luscombe 8a
J. Bridgewood	(Woodlands)	Curtiss Owl
JETEX		
H. O'Donnell	(Whitefield)	5 : 44
J. O'Donnell	(Whitefield)	3 : 29
Junior		
M. O'Donnell	(Whitefield)	
GLIDER		
G. M. Byrd	(Loughborough)	24 : 43
L. Batty	(Salford)	16 : 30
G. Burton	(Outlaws)	12 : 57
Junior		
H. O'Donnell	(Whitefield)	8 : 57
POWER		
J. Arden	(Ashton)	12 : 51
E. Lord	(Accrington)	12 : 42
R. Monks	(Birmingham)	9 : 19
Junior		
D. Keane	(Oldham)	7 : 25
RUBBER		
A. Wrigley	(Whitefield)	10 : 00
E. Dewick	(Swallownest)	8 : 27
A. Anderton	(Cheadle)	8 : 21
Junior		
H. O'Donnell	(Whitefield)	6 : 31
TEAM RACE Class A		
S. Cooper	(Cheadle)	46·5 m.p.h.
Class B		
B. Harper	(Outlaws)	63·6 "

With the end of this year's competition flying, the **CHEADLE M.A.S.** can look back on a very active contest season. The Farrow Shield team, Messrs. Harrison, Evans, Faulkner and Taylor put up a good show to aggregate 35 min. 18 secs. The day's activities included a rebuild of Harrison's fus., Faulkner's wings, and a hectic recovery of Taylor's Wakefield, o.o.s. after only 1 minute.

The superb Sherburn Rally weather had lots of the boys worried, but as the wind freshened several maximums were recorded, Ian Harrison flying his 2 oz. 40 in. span lightweight into first place. Charlie Gardiner flew his curious 41 in. " Sizzling Liz " extremely long moment-arm, 10 per cent T/P and an E.D. 2·46 up front. Woodford cast its usual hoodoo over the Cheadle models, Garth Evans's new 12 ft. 4-minute job caught a nasty downdraught on its second flight, having " treed " on its first, breaking off a wing-tip. Andy Anderton (now R.A.F.) hooked some lift and took home 3rd in rubber. Mr. Cooper's 1st in Class " A " team-race builds up the C/L boys.

London Area

The **REGENTS PARK M.F.C.** season ended with a glider comp., when, despite poor weather, times were quite high. G. Butt was the worthy winner, his last flight being a maximum. Recently the juniors flew against the seniors, and this time received a thrashing.

CROYDON & D.M.A.C. spent a really miserable day at Fairlop on the last of the Area comp. days. Strong wind blew in the worst possible direction, and later gave way to steady rain. R. Gilroy topped the London Area glider results with 9 : 12 and the club managed just over 30 minutes for the M.E. Cup team. "Daffy" Dilly did three flights of 3 min. plus in the 1·5 c.c. event, his model being returned each time by a different person. Lucky lad—it wasn't his motor ! ! Just to show they could fly gliders, the boys cleaned up at the Surbiton Gala, Des Yeabsley winning the individual with 14 : 45, flying his 12 ft. monster, and, assisted by Cameron, Davis and Miller took the team event with over 51 minutes. Late in the day Ed. Bennett was out airing his geared Wakefield, using a 24 × 24 prop and 16 strands of ¼ in. Pirelli. Although showing promise, it hardly came up to the Bilgri standard. Mr. Pitcher has joined the big prop brigade ; with a "straight" motor his model showed a slight improvement over the original layout.

South Midland Area

Starting in good weather, the Area Rally, held at R.A.F. Halton on 28th September, was deluged with rain from 2.30 onwards—apart from a ten minute break at about 5 p.m. Even so, hardy types flew free-flight in the rain when it became apparent that it was not going to let up, and all the team-racing finals were held during this wet period. The open rubber event for the "Battle of Britain" Cup was won by Rowe of St. Albans (5 : 12) with Knight (Northampton) second with 5 : 10 and Cooke (Henley) making best flight of 3 : 04 but getting treed. Painter of Henley won the glider event with 7 : 01 for two flights including one max., Pete Holland (Apsley) placing second with 5 : 28. Open Power went to Fuller of St. Albans with 7 : 49, with an Irish visitor Knight as runner up with 6 : 16. Other winners were : Sills (Bedford) radio control ; Muscutt (West Essex) class A team-race ; Crow (Harrow) class B team.

LUTON & D.M.A.S. Junior G. Moss won both the power ratio and scramble events recently—certainly a feat of endurance, as most of the seniors were whacked out before the day finished. Following week, the committee members turned out with models to fly off their own comp. while club members ran the comp. ! (Good idea that.) Sid Miller won with a glider converted from his Wakefield. (Shades of pre-war glider comps.)

HENLEY M.F.C. are naturally pleased to learn that A. W. M. Cooke won the "Flight Cup" with a time of 14 : 15, this being their first national win. On the same day D. Painter placed 2nd in the C.M.A. Cup only 9 seconds behind the winner, this incidentally being his first national comp. He has since raised the club lightweight glider record to 15 : 14. Success again came his way at the Club Glider Cup comp. held in very windy conditions, score being 7 : 04 for two flights.

Northern Area

For the Filey Butlin's Contest the Area boys had the duty gale, accompanied in the early stages by rain squalls. Wise men used 2 mins. or less d/t's, and an A/2 at 2 : 59 took some seeing. Many were the lost and o.o.s. models, some under 2 minutes. At first Silvio Lanfranchi thought his one flight of 2 : 40 in the power was sufficient but he had to make another when Les Fox of Leeds somehow managed a phenomenal 4 minutes on his 2nd flight—by far the best flight of the day. Vic Dubery's first two flights put him well in the lead in rubber, but he took no chances and put up a third flight to make certain. The glider event was won by R. A. English of Woodlands with Ernie Farrance chasing him closely. All flights of 2 minutes or more entailed a 1,500 yard assault course effort—a sprint on soft mud through the camp, scramble through a large over-grown ditch, up a hill, through a farm, across a road, a meadow and then a ravine 100 ft. deep choked with brambles, thistles, and a muddy stream. While all the steeplechasing was going on, the happy band of control-liners were tearing up the air in the team race (by courtesy of Barnsley Enterprises Ltd.), W. Lavery and team won the Cup for this, while the Concours went to J. D. Broughton of Bridlington for his enormous Gipsy Moth.

In spite of the fantastic conditions of wind, rain and terrain a reasonable day was had by all and a highly profitable day by a baker's dozen of modellers who netted £70 between them.

GLIDER	R. A. English	(Woodlands)	3: 41
	E. Farrance	(W. Yorks)	3 : 10
	R. Firth	(York)	3 : 06
RUBBER	V. Duberry	(Leeds)	5 : 58
	P. Guest	(Barnsley)	4 : 09
	E. Jackson	(Leeds)	2 : 54
POWER	S. Lanfranchi	(Bradford)	5 : 23
	L. Fox	(Leeds)	5 : 11
	G. Lundy	(C. Member)	1 : 58
CONCOURS	J. D. Broughton	(Bridlington)	
TEAM RACE	W. Lavery	(Barnsley)	

A stunt-scale C/L contest is of course a very specialsed event. It was therefore gratifying to see a line-up of eight scale models for the Jess Woolland contest staged by the **LEEDS M.F.C.**, though these had dwindled to five by the time the comp. started. Chairman Tony Mann won first place at the expense of some damage to a beautiful model, his flying being an example of excellent control over a relatively low-powered model in a tricky blustering wind. Second placeman Ken Foster earned applause for his skilful playing of a model Fokker Tripe equipped with a baulky motor, while Gordon Butler flew a Tipsy with over twice the b.h.p. into 3rd place, though here again troubled with engine gremlins. Results were very close, showing judges Trevor London and George Wilkin to be fair but exacting.

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Take two examples from this season's results.

Mr. Tony Upfold of the Hadley and District Club won the Sir John Shelley with a Mercury Mallard built from a kit bought " over the counter ". The contest was flown in ideal conditions of thermal flying, and his times were exceptional : three maximum flights of over five minutes each and a final decider of 9 mins.

The Southern Area free flight Championship was won this year by Lt.-Col. R. L. Yates, a member of the S.M.A.E. Council, also flying a standard Mallard built from a kit, the contest being held under the most appalling conditions of wind and rain.

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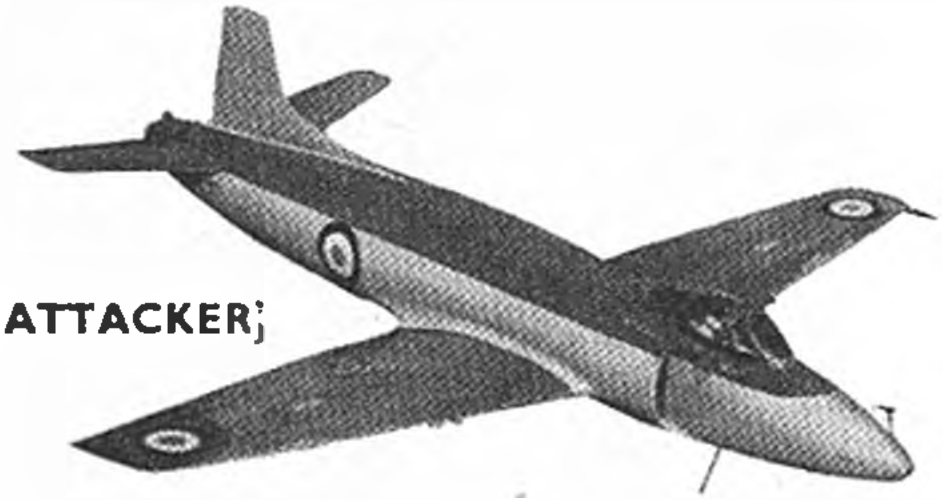

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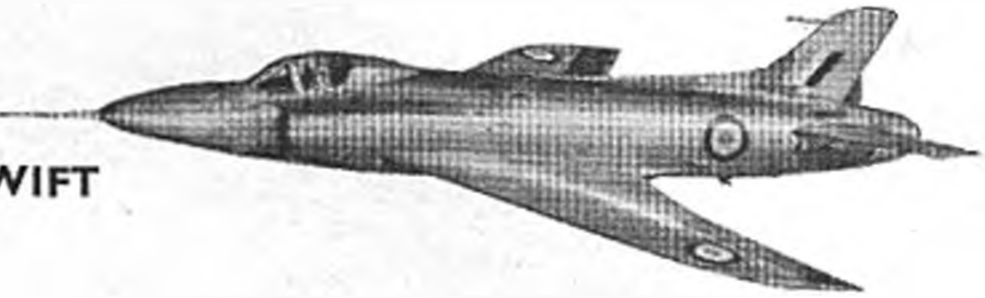

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