AERO MODELLER

OCTOBER 1954

Tiger Moth
Scale Feature

Fully Illustrated
Report on World
Championships

1'6

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.

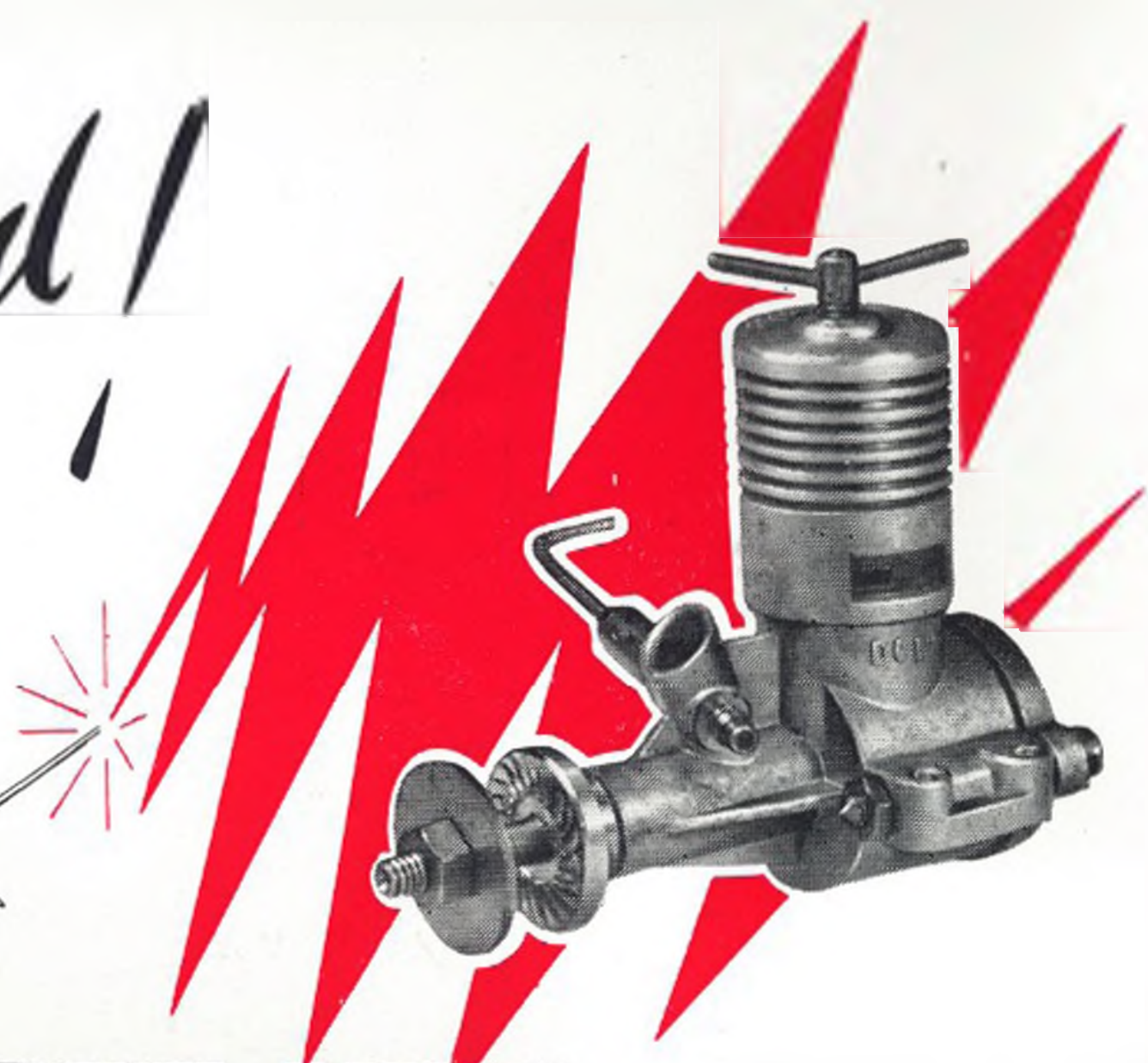
http://aerofred.com/index.php

Hip Pocket Aeronautics Gallery Free Plans.

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

Diligence Work by Hlsat.

Its Wizard!



THE NEW ALLBON

MERLIN

Capacity
.76 c.c. - .046 cu. in.

Bore .375 in.

Stroke .420 in.

Weight 1¾ ounces

Beam or Radial Mounting

Propellers :–
Free Flight 8" x 4"
Control Line 6" x 6"

And Only
47/6

YOU WILL be astounded at the magical performance of this new addition to the famous Allbon range. The world-wide demand for a "point eight" diesel has enabled us to spread tooling costs over a far greater number of engines, hence the amazingly low price which includes Purchase Tax.

In initial tests the "MERLIN" has already proved superior to any other diesel of equal capacity, and it is, of course, manufactured with the same quality and precision as our existing engines.

Rotary crankshaft induction; beam or radial mounting; angled needle valve to protect your fingers; a full range of spares and accessories . . . but you can see all these excellent features at your local model shop where examples of the Merlin are already in stock.

Engineered to Last a Modelling Lifetime by

DAVIES CHARLTON LIMITED

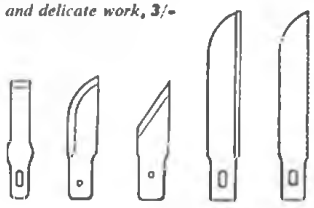
Barnoldswick via Colne, Lancs

points worth remembering

Whatever your hobby, *whatever cutting job you have on hand*, you'll find that X-acto knives and tools have an edge on any other instrument you have ever handled. Each tool is beautifully balanced . . . the interchangeable blades are each designed for a specific job . . . and each of them is supremely sharp, and made from the finest Surgical steel.

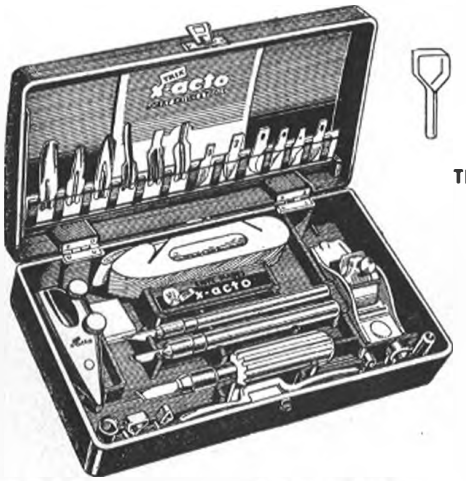
Available separately, or in complete kits, X-acto tools and knives add extra ease to the most difficult job, and extra precision to your workmanship . . . *points well worth remembering for those who strive for perfection.*

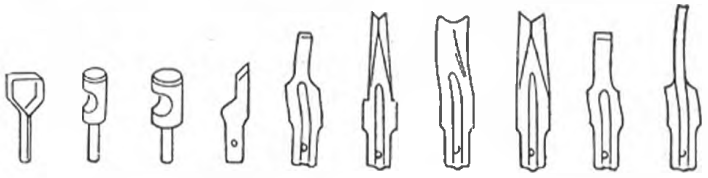
Illustrated are the X-acto knives.
No. 5 for really heavy duty, 6/6
No. 2 for normal cutting, 3/6
No. 1 for light and delicate work, 3/-



X-ACTO TOOLS ADD MORE SKILL TO YOUR FINGERTIPS

THERE'S AN X-ACTO BLADE FOR EVERY CUTTING JOB





The Burlington Hobby Chest

Compactly contained in a sturdy moulded chest are 3 X-acto knives with all blades, gouges and routers, a block plane, balsa stripper, steel rule and sanding block. It's a model-makers dream . . . 84/- complete

TRIX X-acto

See the complete range at your X-acto agent—or write for a fully illustrated leaflet.

TRIX LTD., 11 OLD BURLINGTON STREET, LONDON, W.1

G&G

Meet — Solarbo Sam

Tengo mucho gusto de encontrale. Me han permidido en
I am very pleased to meet you. They have let me show

senar mi cara viejo me al fin. Y estoy harto viendo todos
my old face at last. And am I fed up with seeing all

aquellas gentes otro a "Commerce Way" cada mes. Ellos
those other folk at Commerce Way every month They

son O.K. per yo soy el que tienen que buscar. Yo represento
are O.K. but I'm the one you ought to look for. I stand

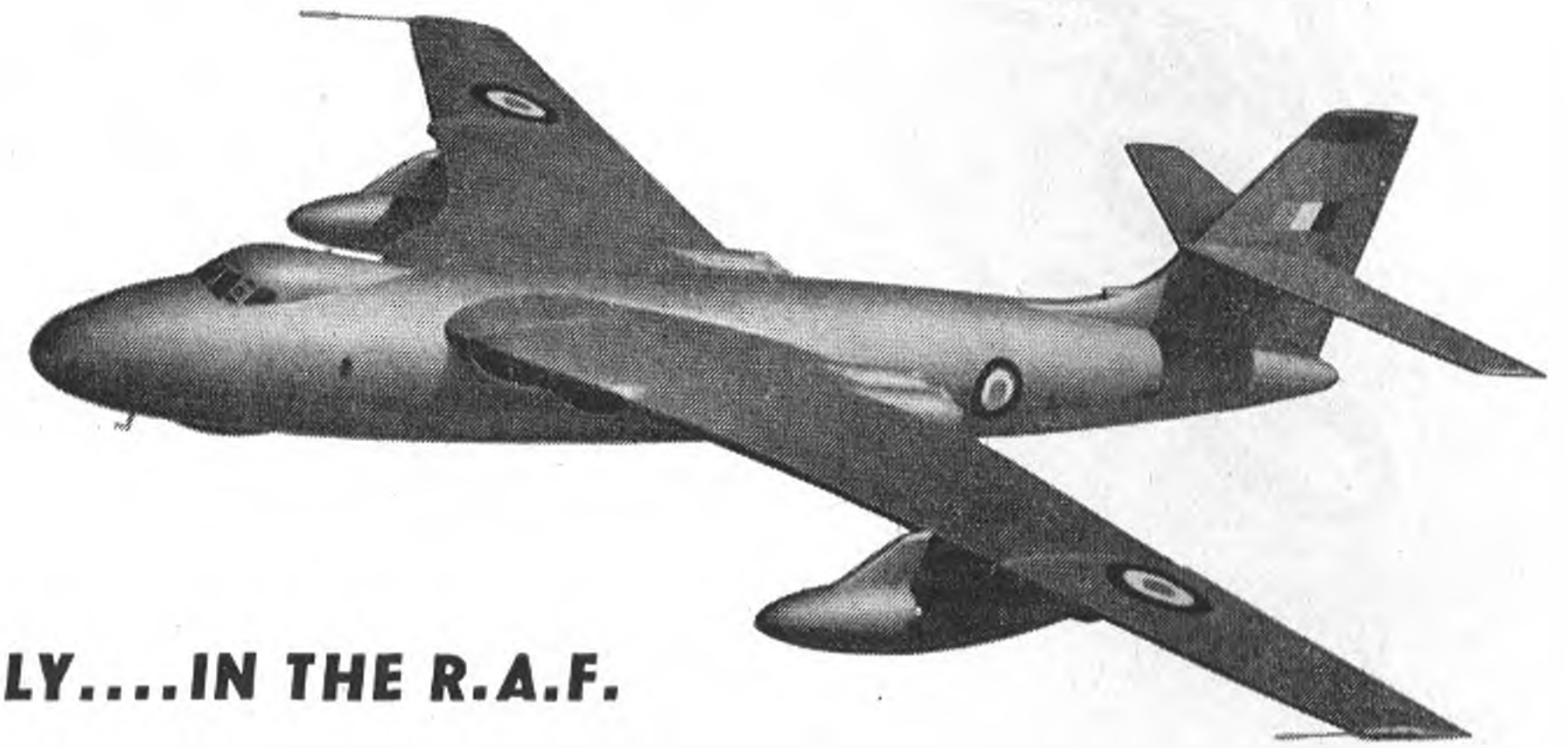
todo qu'es mejor a balsa, y quiere decir Solarbo.
for all that's best in balsa, and that means Solarbo.

Buscar el nombre ! Si Senor !
Look for the name! Yes Sir!

SOLARBO LTD.

COMMERCE WAY · LANCING · SUSSEX

Telephone : LANCING 2090-2099 Telegrams : SOLARBO WORTHING

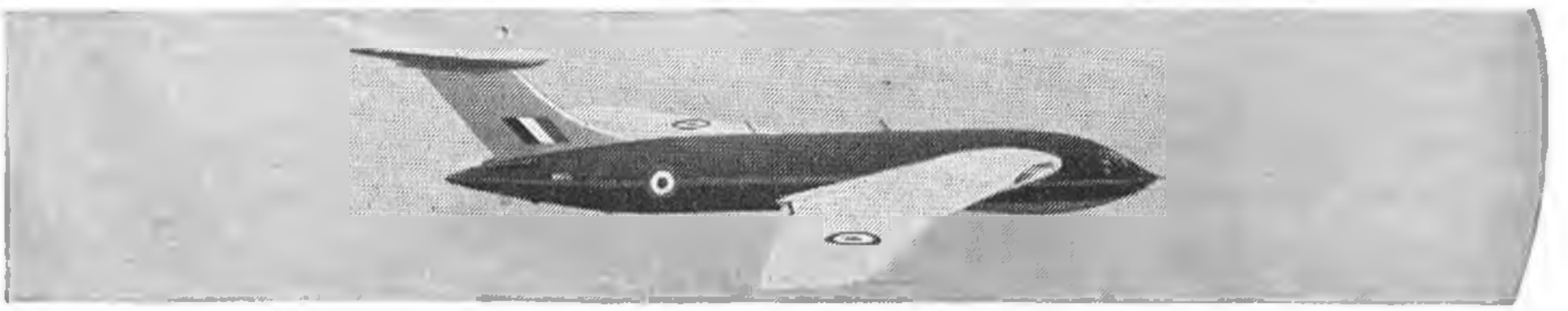


YOURS TO FLY....IN THE R.A.F.

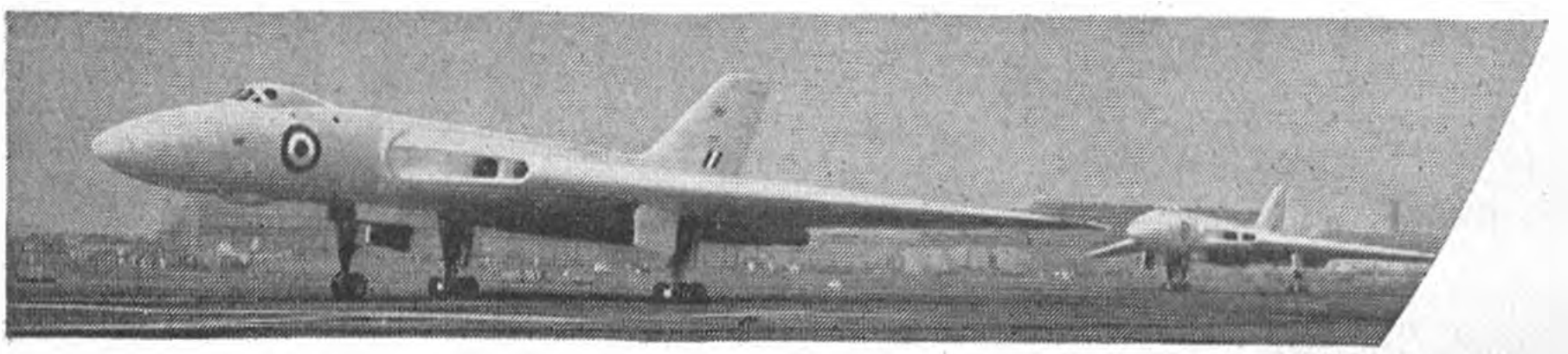
The Valiant, the Victor and the Vulcan—these are the brilliant new bombers with which the squadrons of Bomber Command will carry their great traditions into the future. Descendants of such famous aircraft as the Wellington, Halifax and Lancaster, the new 'V' Class four-jet bombers will give the Royal Air Force a strategic striking power second to none and add a vitally needed element to Western defence. Performance details of these aircraft are of course secret, but it is no secret that their future role in the pattern of defence is of the first importance—to be entrusted only to the finest aircrews the Royal Air Force can produce.
Young men who satisfy the Royal Air Force that they possess the personal qualities, the flying aptitude and the high medical standards needed to fly and navigate such aircraft are urgently needed to train as officers in the General Duties (flying) Branch.

Fly as an Officer . . . .

In addition to entry through the R.A.F. College, Cranwell, there are the new Direct Commissions for pilots and navigators which offer a good prospect of making a career in the Royal Air Force. As in all professions it depends largely on individual merit how far one goes in the Service. The best have excellent prospects of rising to high rank; for others there will be the opportunity of pensionable appointment normally up to the age of 50. Alternatively, an officer who wishes to return to civil life may leave the Service after twelve years with a gratuity of £3,000, or after eight years with a gratuity of £1,500, both gratuities tax-free. Why not write now for full information to: Air Ministry (A.M.206), Adastral House M.R.2, Kingsway, London, W.C.2? Please give details of your age and education and any other facts that may help the Air Ministry to assess your suitability for a commission.



THE ROYAL AIR FORCE



WORLD WIDE MAIL ORDER Service

EVERYTHING FOR THE POWER MODELLER

THE BEST KITS • THE BEST ENGINES • THE BEST R/C STOCKS

"I SPECIALIZE IN SUPPLYING MODELLERS THROUGHOUT THE WORLD"

KITS FOR R/C

Here are magnificent models for the Radio-control enthusiast. The large Mercury jobs in particular will repay the care and skill that the expert puts into his job.

MERCURY AERONCA SEDAN

A gem of design and construction. 65-in. fully scaled cabin monoplane. Up to 2.5 c.c. diesels ... P.T. 57/-+9/6

MERCURY MONOCOUPE

Another top-line scale job. 64-in. span. Up to 2.5 c.c. diesels ... ... 57/-+9/6

MERCURY MATADOR

A new, thoroughly dependable, 50-in. cabin job for diesels up to 1.5 c.c. ... ... 21/5+3/7

K.K. JUNIOR 60

A high-performing 60-in. cabin job and prime favourite for many years. For 1.5 c.c. diesels ... 39/6+6/7

—RADIO CONTROL—

E.D.

		P.T.
Mk. II	Miniature 3-valve Outfit, complete	£14/17/6+£2/14/6
Mk. IV	Transmitter, Control Box and Aerial	160/-+30/-
Mk. IV	Three Channel Receiver ...	240/-+45/-
Mk. IV	Tuned Reed, Three Channel Outfit, complete ...	£20/0/0+£3/15/0
E.D.	Boomerang Transmitter and Receiver	£9/15/0+44/6

E.C.C.

P.100	Polarised Relay	29/6
1061	Transmitter	68/-+11/4
951A	Receiver	68/-+11/4

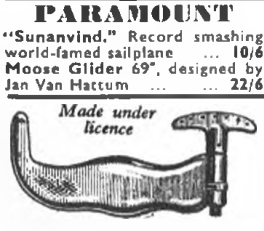
FENNERS PIKE

Unit	58/-+10/-
Pulse Box	58/-+10/-

Also in stock: Ammeters, Accessories, Valves, and brand-new fresh Batteries from local Ever-Ready factory.

PARAMOUNT

"Sunanvind." Record smashing world-famed sailplane ... 10/6
Moose Glider 69", designed by Jan Van Hattum 22/6



AM-PULL

IMPROVED C/L HANDLE

Light and comfortable to hold. Double adjustment facilities enable lines to be set exactly to suit size of model and flying distance, etc., and gives extra degree of control. Ideal for contests. (*Plus P/Tax* 11d.) **5/6**

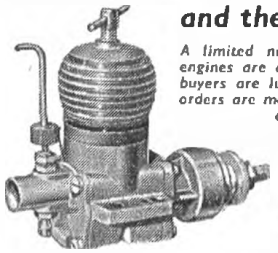
BRITAIN'S LARGEST ENGINE STOCKS

	P.T.		P.T.
Frog .5 c.c. ...	43/-+7/-	Allbon Javelin ...	55/-+10/4
Allbon Dart Mk. II	54/-+10/2	E.D. Comp. 2 c.c....	57/6+4/3
E.D. Baby .46 c.c.	45/-+7/3	Allen-Mercury 25	57/-+9/6
Mills 0.75 c.c. with cut-out ...	55/-+8/10	E.D. 2.46 c.c. Racer	72/6+6/-
Mills 0.75 c.c. without cut-out	50/-+8/-	E.D. Hunter 3.46 c.c.	72/6+6/-
Frog 50	42/9+7/3	Amco 3.5 B.B. ...	92/-+17/3
Mills P.75	50/-+8/-	Amco 3.5 P.B. ...	60/-+11/3
E.D. Bee I c.c. ...	47/6+7/3	D.C. 350	66/-+12/5
E.D. Watercooled Bee	67/6+8/9	D.C. 350 G.P. ...	66/-+12/5
Allbon Spitfire I c.c.	54/-+10/2	ETA 29	119/6+22/6
Mills 1.3 c.c.	75/-+12/6	Frog 500 G.P. ...	61/6+10/-
E.D. 1.46 c.c.	52/6+4/6	Frog 500 I.C. ...	70/-+11/6
Frog 150	42/9+7/3		

Also Jetex Motors, all sizes, and Jetex Fuels and accessories

NEW—ALLBON SUPER FUEL 3/3

and the wonderful WEBRAS



A limited number of these internationally famous engines are available on the home market (overseas buyers are luckier—their supplies are quicker!) and orders are met in strict rotation. Supplied in Britain only by Arthur Mullett.

RECORD 148
A good all-round performer ... 65/-

WINNER 15
Splendid power output ... 70/-

MACH I
B.B. 2.46 c.c. model and this year's sensation ... 90/-

AIDS TO GOOD MODELLING

CELSPRAY SPRAY GUN
Model No. 3. With 5 years' guarantee for 8/6

X-ACTO TOOLS AND KNIVES
Offer modellers a comprehensive range of first-class equipment. Blades are of finest surgical steel in shapes to suit all needs. Tool sets are ideal for all serious builders. Full range stocked as advertised.

BONDAGLASS
Today's miracle building material (for surfaces). Wonderfully tough and light. Can be sanded, coloured, etc. Complete kit with 72"x2" "Bondaglass" strip. Polyester, Catalyst and instructions. 7/7 (*P. & P. 9d.*)

"DROME" AIRWHEELS

2" wheels ¾ oz. per pr.	7/-
2½" " 1¼ " " ...	8/9
3½" " 2½ " " ...	10/6

ELMER

AUTOMATIC VARIABLE PITCH PROP

For Engines up to 5 c.c. Perfect for Radio Control. *Automatically* varies pitch to suit the engine and conditions of flight. Maintains constant engine speed. Ensures better landings by self-feathering when engine cuts out. Complete with spinner and instructions. Prop diam. 9". *Spare Blades (plastic) each 2/6d.* **18/6**

FROG NYLON PROPS

6"—4" ...	1/3½d.+2½d.
8"—5" } 8"—6" }	2/6+ 5d.
8"—8" } 9"—6" }	3/-+ 6d.
10"—6"	

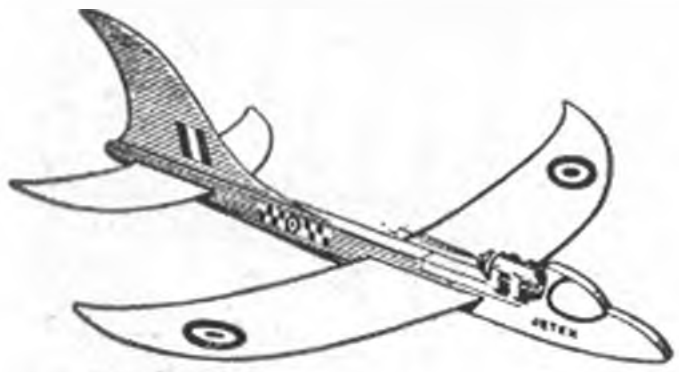
Frog Plastic Props also stocked.

FULL RANGES OF KITS BY K.K., VERON, SKYLEADA, MERCURY, FROG, JETEX, ETC.

Send for lists: If you have not had the complete A.M. list (issued earlier in the year) send 3d. in stamps for yours now.

ARTHUR MULLETT

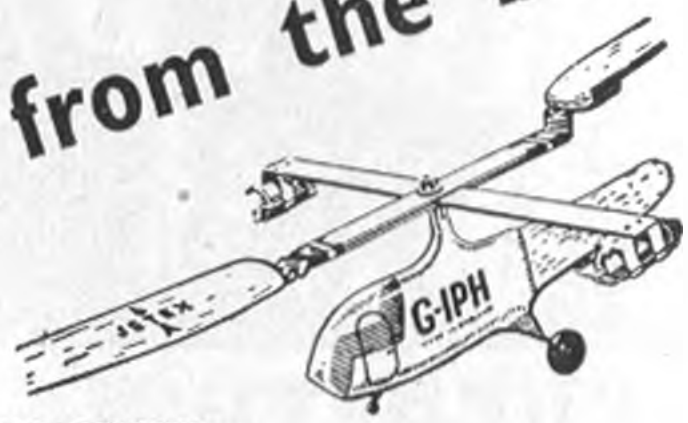
16 MEETING HOUSE LANE
BRIGHTON - SUSSEX - ENG.



SHARKY

SPEED BOAT

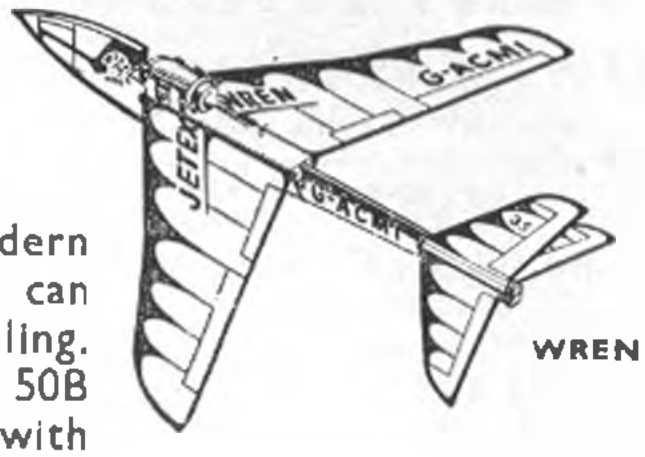
READY TO USE—Straight from the box



HELICOPTER

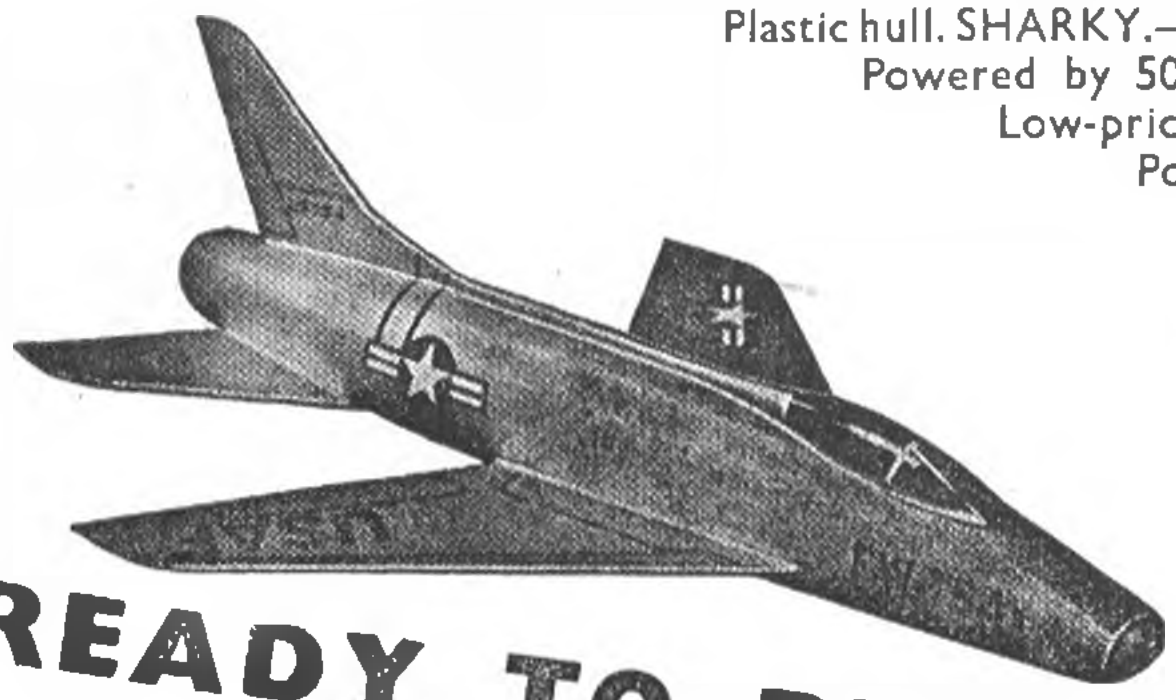
RACE CAR

Each of these models is complete and ready to run. They are of modern design, Jetex propelled, and are capable of performances which can be surprising. Try them as a relief from serious modelling. INTERCEPTOR.—Fully shaped Delta plan fighter. Powered by 50B with Augmenter Tube. Novel slide-in nose. Silver blue finish with R.A.F. markings. RACE CAR—Pylon controlled. Powered by 50 motor. Speed 40 m.p.h. Plastic body. SPEED BOAT.—Fastest for size in world. Powered by 50 motor. Plastic hull. SHARKY.—"Silhouette" type Powered by 50 motor. WREN.—Low-priced daredevil flyer. Powered by 50 motor. HELICOPTER.—Ascends 100 feet Powered by twin Jetex 50 motors.



WREN

INTERCEPTOR



JETEX HATCH CATCHES WITH THESE KITS!

(Bought separately. Hatch Catches cost 1/- for packet of 4 sets.)

READY TO BUILD—Glue, smooth, finish!

You can build these kits while others are are still cutting—and still beat them for design, finish and performance. They are Jetex "Tailored." All parts are ready cut to shape—no stringers, no tricky joints—and the fuselages are pre-formed in two moulded halves. Finished as no tissue and dope could ever be.

"Tailored" SKYRAY

For 50B with Augmenter Tube. Length 12 in.; span 9¼ in.; weight 1 oz. (with motor 1¼ oz.). 10/6 inc. Tax

"Tailored" SUPER SABRE

For 50B or Atom35, each with Augmenter Tube. Length 10 in.; span 7¼ in.; weight ¾ oz. (with motor 1 oz.). 10/6 inc. Tax

"Tailored" SKYROCKET

For 50B with Augmenter Tube. Length 11¾ in.; span 7½ in.; weight ⅞ oz. (with motor 1⅛ oz.). 10/6 inc. Tax

See them all at your model shop!

Manufactured by

WILMOT MANSOUR & CO. LTD.

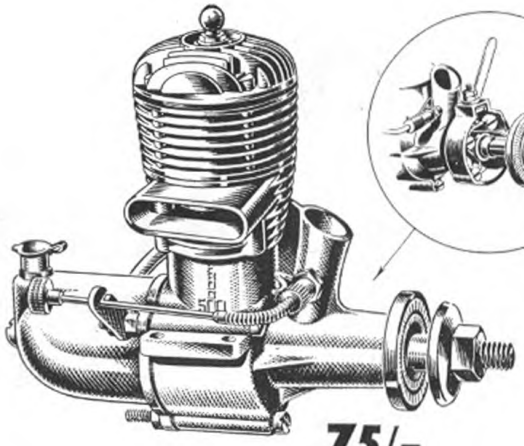
Totton, Southampton, England.

JETEX

FROG

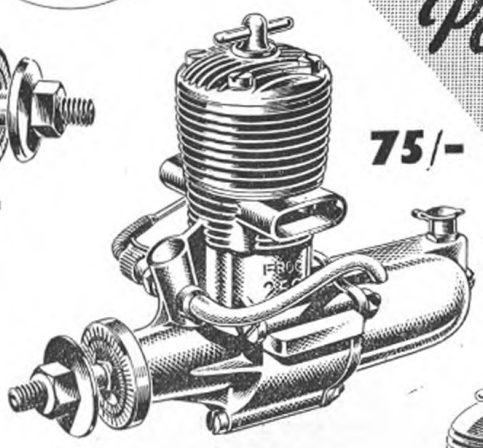
Trade Mark

Power Plus Motors



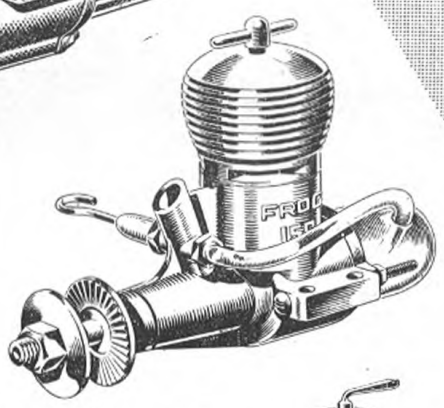
75/-

The world's most famous 5 c.c, glow motor—leader in reliability. power and low initial cost! The "500" is 4.92 c.c. capacity, weighs 7¾ oz., and has a speed range of 4,000 to 15,000 r.p.m. A spark ignition version is also available at 85/-



75/-

The "250" is a tough, hard-working diesel suitable for everything from stunt C/L to R/C models. Speed range of 2,000 to 10,000 r.p.m. makes flight testing safe and simple!

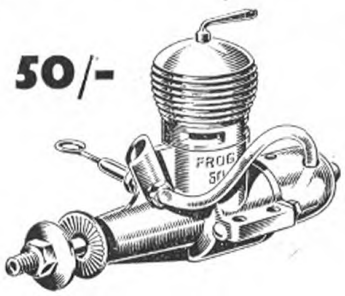


★ FROG ★ SUPER FUELS

Frog "Powa-Mix" for all Diesel Engines. Ready mixed. Contains ether. Blended by Shell Mex and B.P. Ltd. Tins with spout 2/6. Frog "Red-Glow" Fuel. For all Glow Plug Ignition motors. Shell Mex, B.P. Blend. 2/6 per tin

Britain's best buy in diesels! The "150" is a hot, contest standard motor that features also, easy starting and long life. 15,000 r.p.m. and weighs only 3 oz.

50/-



★ AIRSCREWS ★

FROG PRECISION MOULDED PLASTIC AIRSCREWS

8 in. dia. × 5 in. Pitch	1/3 each
8 in. ,, × 6 in. ,,	1/3 ,,
8 in. ,, × 8 in. ,,	1/6 ,,
10 in. ,, × 6 in. ,,	1/6 ,,
9 in. ,, × 6 in. ,,	1/6 ,,
6 in. ,, × 4 in. ,,	9d. ,,

FROG NYLON AIRSCREWS 100% increase in strength, 20% saving in weight.

8 in. dia. × 5 in. Pitch	2/11 each
8 in. ,, × 6 in. ,,	2/11 ,,
8 in. ,, × 8 in. ,,	3/6 ,,
10 in. ,, × 6 in. ,,	3/6 ,,
9 in. ,, × 6 in. ,,	3/6 ,,
6 in. ,, × 4 in. ,,	1/6 ,,

50/-

The FROG "50" is the best and the lowest priced baby diesel—precision built by FROG! This .49 c.c. snarler packs terrific power at up to 15,000 r.p.m., but starts at a flick every time!

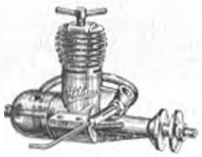
See FROG Model Kits and Engines at your Local Stockists!

Products of the LINES BROS. GROUP OF COMPANIES.

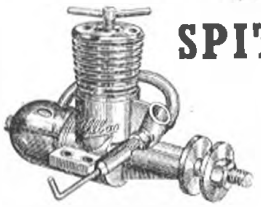
ALLBON ENGINES and ACCESSORIES

Without exception the finest and most comprehensive engine service in the world. Every item guaranteed, and built with care and precision by skilled engineers. Everything listed on this page should be in stock at your local model shop, but in case of difficulty the manufacturers will be pleased to hear from modellers direct.

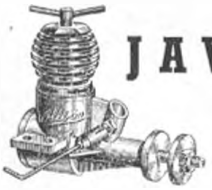
BAMBI
·15c.c.
108/11



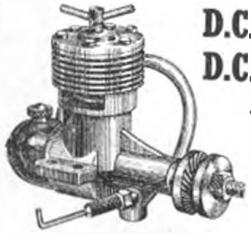
DART
·5c.c.
64/2



SPITFIRE
1·0c.c.
64/2



JAVELIN
1·49c.c.
65/4



D.C. 350 & D.C. 350 (G)
3.5 c.c. 78/5

Available in either diesel or glowplug form. The diesel version is illustrated here.

Combined CUT-OUT & Jet Assembly

Positive in action and fitted with an anti-vibration collar, this neat assembly completely dismantles for cleaning. It fits the Allbon Dart, Merlin, Javelin and Spitfire, and most other engines up to 2.5 c.c. capacity. The extension permits the timer to be fitted outside the fuselage if desired. **Price 9/6**

UNIVERSAL TEST STAND. Fits any motor up to 3.5 c.c. capacity, beam or radial mounted. **Price 12/6**

The New MERLIN

Top line performance at low cost make this the finest engine value on the market.

·76c.c. 47/6

Use the right FUEL!

ALLBON SUPER FUEL

Improves performance and prolongs engine life through friction-free running 3/3 per bottle

EXTENDED FUEL NEEDLES
Dart, Spitfire, Javelin, D.C. 350 2/5

EXTENDED COMPRESSION SCREWS

One inch for Dart, Spitfire, Javelin, D.C. 350 ... ... 2/5

2½ inch for Dart, Spitfire, Javelin, D.C. 350 ... ... 2/10

ANGLED JET ASSEMBLIES
Dart, Spitfire, Javelin, D.C. 350 5/7

RADIAL MOUNTS
Dart, Spitfire and Javelin ... 4/9

GLOWPLUG HEAD FOR D.C. 350 ... ... 11/11

Obtainable from your

Local Model Shop

Manufactured by:

DAVIES CHARLTON LTD.
Barnoldswick via Colne, Lancs.
Tel.: **Barnoldswick 3310**

MARINE FITTINGS

FLYWHEELS

Dart 9/6

Spitfire, Javelin and D.C. 350 ... ... 11/11

JAVELIN

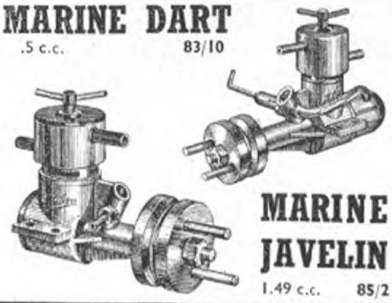
Exhaust Stack 11/11

Silencer 11/11

Water Jacket 19/–

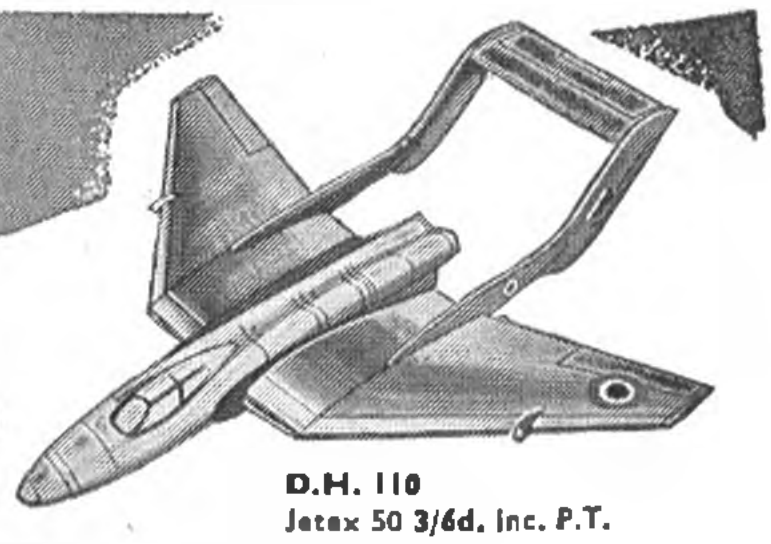
Stern tube assembly, screwed 4 B.A. for propeller, but *not* including propeller ... 11/11

MARINE DART
.5 c.c. 83/10



MARINE JAVELIN
1.49 c.c. 85/2

Skyleada



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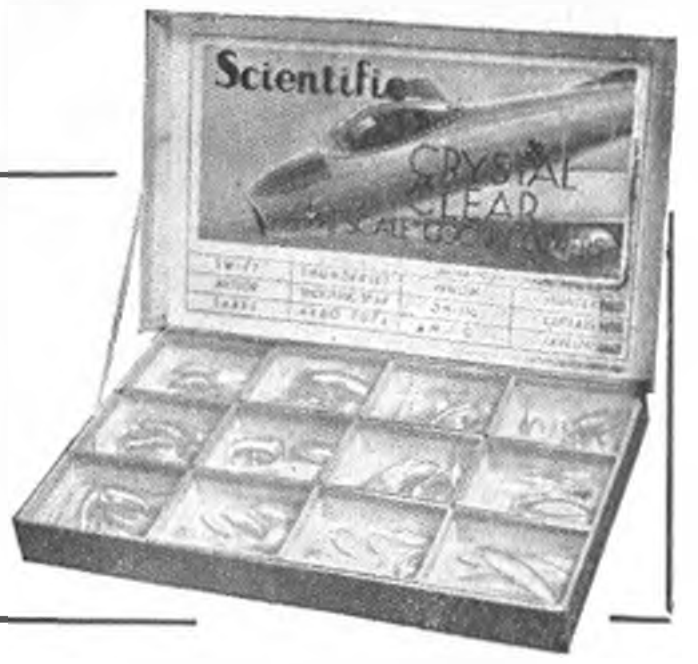

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Assistant Editor - - - R. G. MOULTON

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In this issue

Special features

★

Regular features

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World Model Olympics

ALMOST EXACTLY four years ago we voiced the view that, International aeromodelling having achieved a greater degree of popularity than ever before, it is high time that the current system of "scattering" the various Championship events be discontinued, and in its place an annual series be instituted on similar lines to the widely appreciated athletic Olympics.

Under the proposed system, all categories of World Championship model flying would be grouped at a single meeting, spread over as many days as deemed desirable to cope with the resultant programme, the venue going from country to country on a pre-arranged rota. National financial commitments would be eased by such a scheme, for in many cases it is cheaper—and definitely more convenient—to travel one large party to a single venue than to follow the present system of multiple teams going to three or four countries in the course of a season.

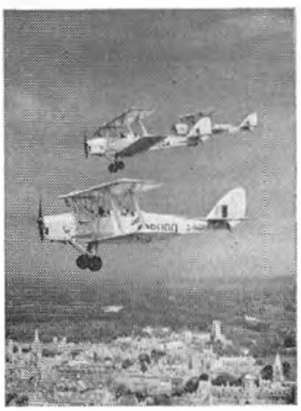
We know from many personal contacts that such a scheme would be welcomed, and the recently concluded double Championships held in America was evidently influenced by this feeling, for the meeting was publicised as the "World Model Air Olympics." What is more to the point is that "Model Aviation," official journal of the Academy of Model Aeronautics, draws particular attention to this matter, and suggests that their representative should make a definite proposition to the F.A.I. that a Model Olympics series should be instituted.

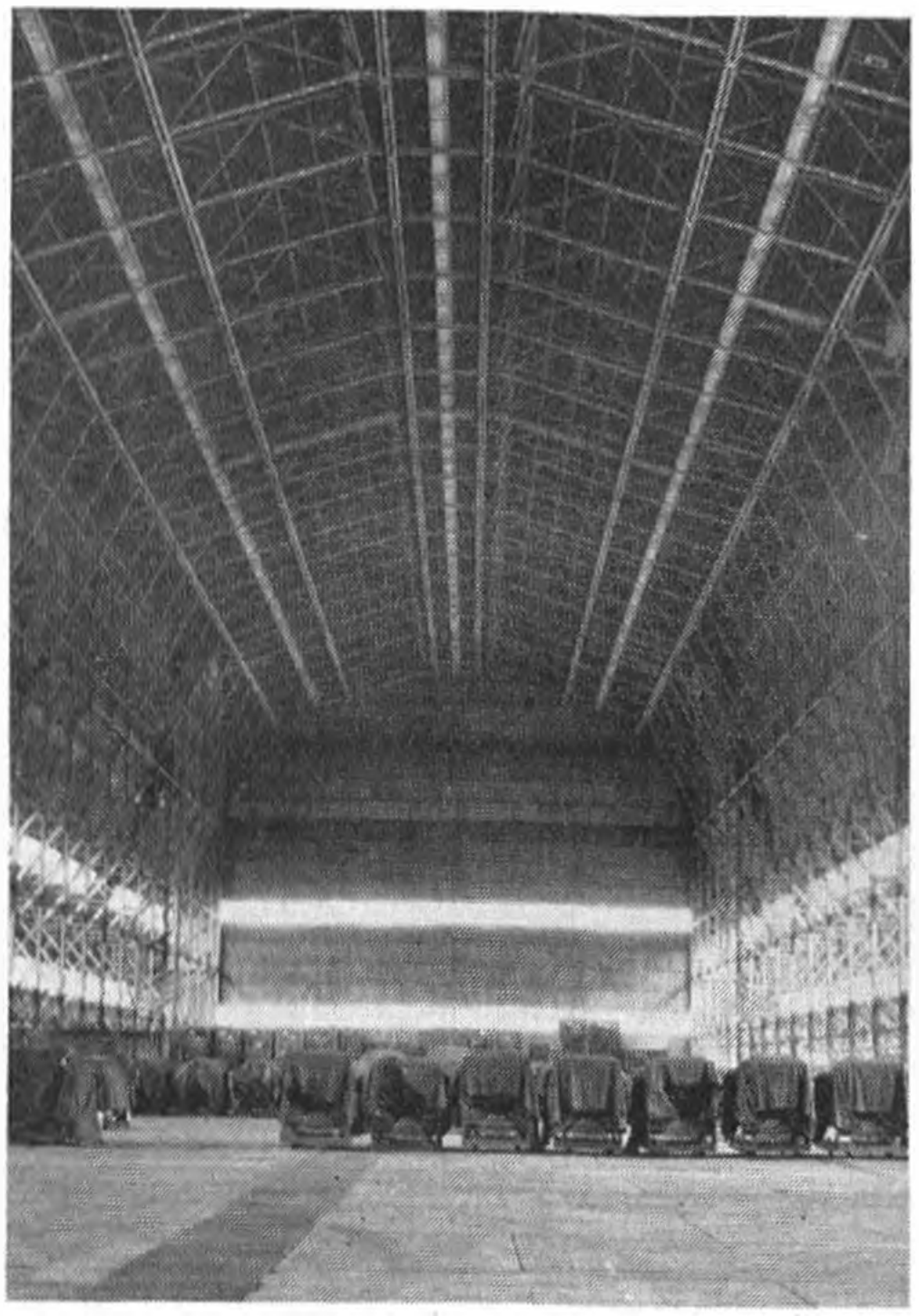
Whilst welcoming the move by such a strong proponent as the A.M.A., we would prefer that the credit for the institution of a World series of this nature should be with Great Britain, for it was from this country that the idea originated, and it is for this reason that we have asked the S.M.A.E. to reconsider their earlier opposition to the scheme, and submit a fresh proposition to the Models Commission of the F.A.I.

So much for the future, but let us not forget the recent past. Great credit is due to our American cousins for the conduct of the 1954 Wakefield and Power Championships, from all accounts a fine meeting, though not as well supported as it should have been. Outstanding from all reports is the standard of proxy fliers provided by our hosts, and we are sure we confirm the thanks of all British enthusiasts for the good showing they put up on behalf of our representatives.

On the cover

A flight of De Havilland Tiger Moths from the Oxford University Air Training Squadron based at Abingdon are seen over the towering spires of the famous University city. The foremost Tiger Moth was selected for colour scheme and markings to be represented by our own power version, described on pages 525-527 and some idea of the realism of this accurate scale model can be attained by comparison with the cover picture.





. . . heard at the Hangar Doors

Inner Sanctum

To anyone with normal frame of mind, first sight of the interior of the airship hangars at Cardington, Beds, is no less than breathtaking. An almost sanctimonious atmosphere exists within the vast cathedral like volume of the steel building, and one is naturally inclined to whisper conversation as though visiting a famous temple.

Competitors at the Indoor Nats. treated the magnificent opportunity of using the hangar with deserving reverence, and records tumbled quickly through the two-day meeting. In the photo above, three models are actually airborne and wafting their way round the half-way up mark; but such is the immensity of the structure that 1/32nd square wings are soon lost to sight against the girderwork. Using as much as anyone of the possible 180 ft. ceiling height, Bob Copland's model could only be watched at one time by virtue of its slowly rotating balsa prop. Bob set the old R.O.G. record up to 14 : 22 after a series of improving attempts by himself and Ray Monks, but the highlight of the Saturday was a new HL stick time of 21 : 12 by Reg Parham.

The lads speak highly of J. H. Maxwell's efforts to see that high grade wood, rubber and nichrome wire are made available to indoor fans, for there is little doubt that with Cardington available for future meetings, the only hold back on new record times will be on the question of first-rate supplies.

For services rendered

A pleasant occasion in Birmingham recently saw the presentation of a wallet and tankard to our Managing Editor as a mark of appreciation of work carried out for a number of years on behalf of the Midland Area of the S.M.A.E. A suitable inscription on the tankard gives future imbibers all the gen, whilst an inscribed 10s. note inserted in the wallet ensures that he will never be broke!

New Radio Control rules

Constant successes by the few multi-channel stalwarts such as Sid Allen and George Honnest-Redlich, during this year's Radio Control Contests, have made it apparent that revision of the present Rules is a necessity. At present under the S.M.A.E. Radio Control Rules, impecunious rudder-only flyers have a distinct disadvantage when flying against multi-channel outfits, particularly in stunt.

Whilst it is possible to run a contest which places everyone on the same level, irrespective of equipment (witness the Radio Event at the South Midland Area Rally mentioned below), this is by no means the final answer. Advanced equipment must be encouraged, otherwise Radio Control experimentation will stagnate. On the other hand, the rudder-only boys, particularly the younger and more penniless flyers, must be accommodated from the Contest angle. The big problem seems to be where to define the dividing line. Multi-channel and single-channel would, at first sight, appear to equitably divide the two Contest classes. There is, however, the problem of single-channel outfits using compound intergear to give multi-control operation. We invite readers to give their opinions.

Aeromodelling Vandals again

The Organisers of the South Midland Area S.M.A.E. Rally at Cranfield on August 22nd, report a very successful meeting, held under ideal weather conditions. The Radio Control event based on the A.M.A. Precision Pattern Rules proved an experiment worth repeating, and Clubs from as far distant as Scotland scored happy maximums in the free flight events.

All the more regrettable, therefore, that the happy relations which this Area enjoy with the College of Aeronautics should be impaired by the unthinking visitor or visitors who stole a Perspex notice from the entrance to the main aerodrome Control Tower. The mentality of such people is beyond our comprehension. They invite the withdrawal of the excellent aerodrome facilities that this and other S.M.A.E. Areas enjoy, curtailing their own flying facilities as a result.

Our own Editor happens to be the Secretary of this particular Area and would appreciate any information relating to this theft that other visitors can give. This type of vandalism, which was also experienced at the British Nationals, must be stamped out if the Society hopes to hold the few precious aerodromes still at its disposal.

Dynamometers modelled

MESSRS. HEENAN & FROUDE, who provided us with much invaluable advice on the design of Eddy Current Dynamometers for our "Engine Analysis" test equipment, are exhibiting at the Farnborough Air Show this year. Of interest to aeromodellers will be the models on their stand of full scale dynamometer and torque rigs, and we illustrate a model of a torque reaction stand for testing turbo-prop engines. In the outdoor section of the show, Messrs. Heenan & Froude will be demonstrating a "Field-type" jet engine cradle capable of dealing with thrusts up to 14,000 lb. A far cry from the fraction of an ounce produced by the "Bambi"!

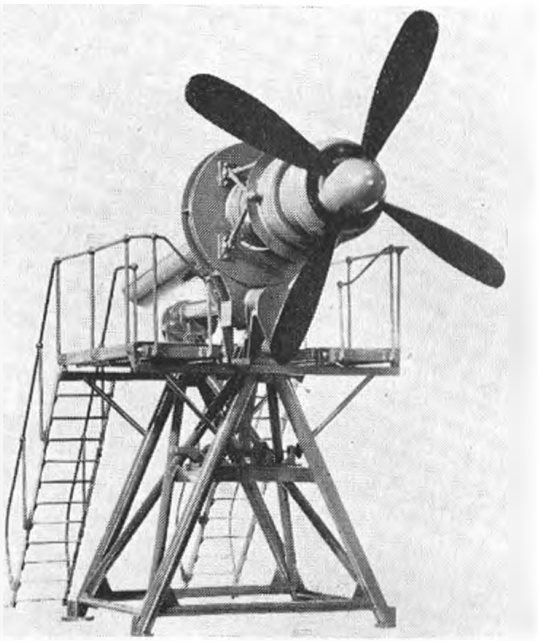
Spot check

From now onwards, organisers of flying meetings must insist on production of S.M.A.E. Membership Cards, thus ensuring that (*a*) the entrant is a duly enrolled member with a current membership, and (*b*) that the correct entry fee is paid.

Non-members of course, should produce evidence that they are currently covered for Third Party claims. Many cases have occurred recently whereby non-members have entered contests at the special fee restricted to members, and the new Membership Card system should obviate recurrence of this trouble.

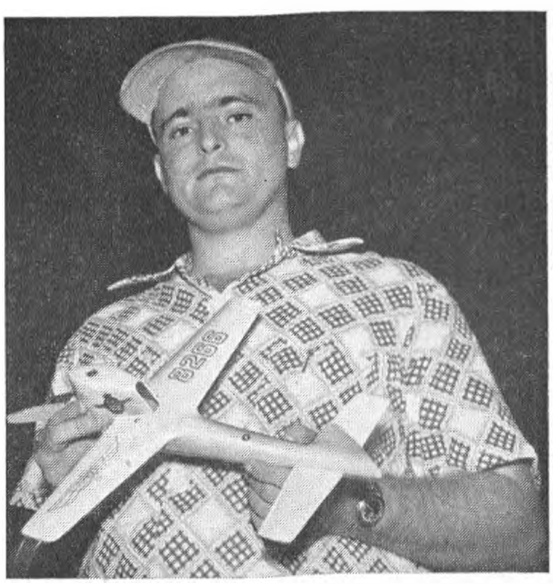
World C/L Champs

To U.S.A.F.E., the American Air Forces in Europe, goes the honour of holding the 1954 World Speed Championship title, thanks to A/2c Bob Lutker's new record performance in 5 c.c. at The Hague on August 21st. Bob is a Texan, currently posted in Tripoli, and only recently returned from the U.S. Air Forces Nats. at El Paso and the U.S. Nats. at Chicago, where he flew radio and combat. His model is of typical Texas layout, weighing only 16 ounces inclusive of metal underpan and Dooling 29, and recorded three flights of 218, 222 and 222 k.p.h., thus qualifying for the title, though Olle Ericsson of Sweden made 222 k.p.h. once to equal the record speed (138 m.p.h.). Though somewhat outclassed in 5 c.c., the British "Private Enterprise" team of Pete Wright, Pete Smith, Brian Dunn, Dick Edmonds and Arthur Andrews, acquitted themselves well, bringing back no less than six trophies and winning the 2.5 speed and team race by honourable margins, Unfortunately, the much vaunted Italian 2.5 c.c. contingent, including new record claimant, Prati, did not arrive, so there was little on which to speculate for the '55 event where Class 1 will be dominant: but the Dutch meeting was nevertheless a colourful and exciting affair as will be seen in our photo-report to appear next month.



ADVANCE RESULTS

2.5 c.c.	P. Wright	G. Britain	111.85 m.p.h.
	E. Fresl	Yugoslavia	104.4 m.p.h.
	J. Desloges	France	97.61 m.p.h.
5 c.c.	R. Lutker	U.S.A.	138.02 m.p.h.
	O. Ericsson	Sweden	138.02 m.p.h.
	R. Labarde	France	133.00 m.p.h.
Team Race	P. Smith	G. Britain	6 m. 7.3 sec.
	J. Janssens	Belgium	6 m. 55 sec.
	R. Edmonds	G. Britain	7 m. 00 sec.
Stunt	H. Stouffs	Belgium	1279 pts.
	R. Lutker	U.S.A.	1276 pts.
	P. Smith	G. Britain	1212 pts.



THE 1954 WORLD

Ernie Currington was for many years an enthusiastic North Western Area modeller, and is particularly well known in the Northern counties. Emigrated a few years ago, and now works for the aviation company Canadair, who sponsored the Canadian entries.

Berni Schoenfield who took the pics. is an old friend of ours from way back in pre-war modelling days. Is a professional photographer; lives in Greenwich Village; and throws parties for all visiting enthusiasts!

1. Francisco Stajer who placed 6th for the Argentine tests the timer on his Torp 15. 2. James Graves of Canada takes his turn at the processing table for a weight check. 3. Smooth design by Oscar Lastra of Argentine had tip-down tail d/t. 4. Popular design is Mahieu's Kiwi, this one by Keith Bousfield of Canada placing 13th. 5. Arne Blomgren looks on as Anders Hakensson decompresses the Webra on Rolf Hagel's model which came 9th for Sweden. 6. Julio Quevedo and his brother up from Guatemala had a novel underfin arrangement that could be useful as a VTO stand. Model was built whilst fighting in Guatemala City was going on during the recent revolution. 7. Watch out, here comes a Champ! Dave Kneeland in characteristic pose releases Vapour Trail which placed 3rd. Dave lost the contest through a colossal downdraught on his last flight after the model had climbed to 650 ft.

THE 1954 "World Model Air Olympics"—as our American cousins have called the contests—were run at Suffolk County Air Force base, Long Island, N.Y., through July 24 to 26. Sponsorship was by Convair, who provided quarters at the Henry Perkins Hotel, messing arrangements at the aerodrome, and transport to and from the hotel. The hotel will never be the same again after the impact of one hundred contestants, proxy fliers, and officials, and on arrival on Friday, July 23, we were greeted by the sight of bods and model boxes strewn all over the lobby, people trying to get rooms, and hotel officials running around putting extra beds up to cater for an overflow of "helpers."

The issue was somewhat complicated by the arrival of a Japanese entry whose knowledge of the English language consisted of "Yes," "No," "Maybe" and "Wakefield." All this was grist to the mill for the "New England Wakefield Group" who did sterling work finding people rooms, and the general organisation of the contests.

Saturday was set aside for entry, processing, and test flying, and two Air Force buses set off from the hotel at 6.45 a.m. First stop was at the mess hall for breakfast, then on to the main hangar, which was a hive of industry by 8 a.m. with folk unpacking models, talking, and generally behaving like aeromodellers. All that is except for an unhappy little group in one corner, the proxy fliers! It was not certain whether the models themselves or the instructions were the cause of the shock, but it is certainly no joke to be presented with, say, Pete Buskell's "Slick Stick" the day before the contest.

All was going well—the contestants had been briefed on the use of the airfield (much grumbling about the fact that all flying was to cease at 5.30 p.m.)—when the news got around that there was no fuel for the English diesels. The Canadian team members, who usually use diesels, went over and offered what they had to spare, and formulae for fuel mixes, when the missing bottles were found in the far corner of the hangar!

Processing continued up to and after the lunch break, and the boys then started to wander slowly out on to the airfield for test flying. Weather was hot (about 85 degrees) and with a 15 m.p.h. wind, and by the time everything closed down for supper quite a few contestants had trouble through rubber breakage.

MODEL AIR OLYMPICS

Described by ERNIE CURRINGTON
Photographed by BERNI SCHOENFIELD

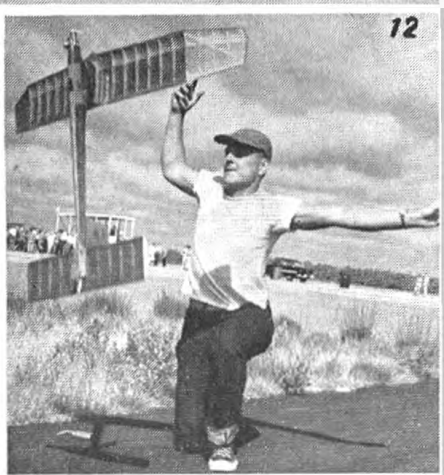
Following supper a procession of cars went off to a private air strip nearby and before long it was apparent that the American proxy fliers were very happy with the British models. All went well until two models were lost; Frank Parmenter, flying George Upson's model, and Mexican Carlos de Cosio being the unfortunates. Upson's ship was found after the searchers had been drenched by a heavy thunder shower, but Carlos' model was never found. The whole area is very heavy bush, varying from 3 to 10 feet in height, and the airstrip is just cleared down to the sand. (The main airfield is similar except that the extent of clearance is greater, but once outside the boundaries it is an almost impossible task to retrieve models.)

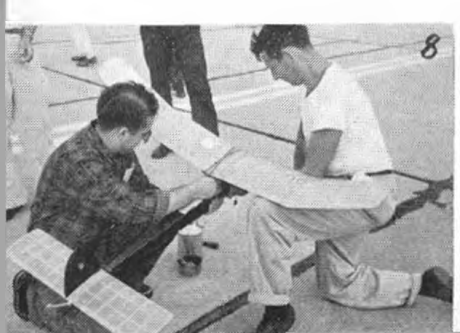
With the power event due to start on the Sunday at 7 a.m., buses left the hotel at 5.45 a.m., but a shifting wind delayed commencement for an hour. Early morning test flying was the order of the day, and it appeared that the people to beat would be Kneeland, Lanfranchi, Gotham, Buskell or Moulton.

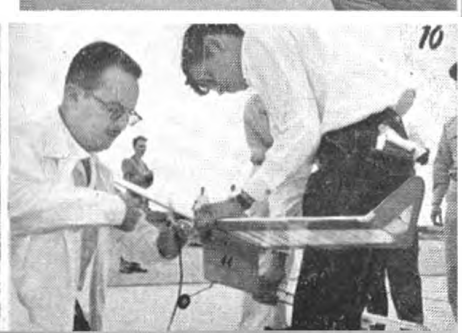
When the opening round was called, Dave Kneeland (the defending champion) was first away, and showed that his win last year was no fluke. Flying the same model as in 1953 he roared away to catch a riser for a 3 min. flight. Silvio got away early in the round for another maximum, and the contest was on. It began to look as if the earlier prediction about top places was correct when Fran Hager let the "Slick Stick" go, only to have it take off very slowly despite the motor running well, do a sharp right turn, and wind in.

Then Joe Elgin released Ron Moulton's "Amazon 440," the ship gaining very little height to do a moderate 2-minute flight. At the end of the first round seven

8. Dave Call assists proxy flier Frank Parmenter with British George Upson's model. Had the misfortune to break a crankshaft and place 14th on only three flights. 9. Joe Elgin also had his troubles with Ron Moulton's model, including one dft hand failure on power and two over-runs. Proxy fliers are to be praised for their stout efforts with strange models. 10. Carlos Gonzales DeCosio of Mexico lost this beautifully finished high thrustline model and was applauded for his sportsmanship. 11. John Tatone, West Coast member of the U.S. team had fastest climber. 12. America's Bill Dean had timer trouble but made a Trojan effort with Johnny Gorham's Vertigo to come 4th. Above, Silvio Lanfranchi, 2nd for Switzerland, watches take-off of his Swiss-Miss.







these men as it was felt that due to the heat and white sandy base of the airfield a perfect score would result.

Dave Kneeland also opened the second round, only to hit a photographer on his first attempt. A change of prop, a quick glance at the flying surfaces, and then—with the Torp 15 screaming, a clean take-off saw a sizzling climb for an easy max. Gorham's job was soon away to another max., as were Etherington and Bousfield. The latter was very unlucky when his motor cut out at about 100 feet and the model went up fast in a thermal, only to be lost. Silvio Lanfranchi was off in about the middle of the round to a good climb, only to find a downdraught—a presage of things to come.

This state of affairs was still apparent when Carl Wheeley flew. Upson and Moulton could not get off in this round, and thus lost their flights, and Buskell's job piled in for the second time. The end of the round found Kneeland, Gorham, Etherington and Bousfield leading with Silvio and Wheeley close behind.

Round 3 started with Kneeland first off again to a fast climb, but a very fast sinking glide, for downdraughts were making themselves apparent. Silvio followed very soon after Dave, but this time for a max, the model dethermalising at 4 minutes, and landing in heavy bush. A crowd of helpers went off in Frank Zaic's car, thence into the thick undergrowth, and luckily the model was found after one and a half hours of searching, lunch being missed in the process.

The Canadian team, with two double maxs. on the board, watched Bill Etherington—their bright hope—with bated breath, only to see him launch the ship with a poor motor to do 88 seconds. Wheeley had racked up another max. and Gorham a poor two minutes.

At this point Frank Parmenter was trying to start Upson's Elfin 2.49 when a loud click was heard. This proved to be a broken crankshaft, and Frank rushed back to his team mates and borrowed a Webra 15. Using the top two holes of the Elfin mounting, a metal strap was bound over the bottom lug of the Webra. All this time the round was drawing to a close, and poor Frank checked in for his flight just 30 seconds too late!

And so to lunch, with Kneeland, Wheeley, Gorham and Lanfranchi in that order at the end of three rounds, first and fourth places being separated by only 24 seconds.

CARL WHEELEY (*below*)

Aged 24, bespectacled, member of the 1953 American Power team. Designer of the famous "Senator," his winning machine being a scaled-up "Little Senator." Quiet and unassuming, didn't know if he should stand for the team as he works for the A.M.A., and was directly concerned with the organisation of the contest. Lives in Washington, D.C., and when last seen had his head down with Russ Nicholls and Keith Storey, working on the final arrangements for the U.S. Nationals.

Whilst the contestants were at lunch preparations were made for the big show, one of the penalties incurred by sponsorship being that the sponsor must have his say! In this case it consisted of a Beauty Queen—Miss Model Air Olympics—being introduced to the crowd; a delegation of U.S. Congressmen; a demonstration of control-line flying with a model of the Convair F.92; and a parade of the contestants. The show ended with a fly-past of F.94 Starfires, then the contestants went on up the runway to start the fourth round.

Kneeland was off first again, only to hit the same photographer as in the second round, but got away to a max. on his second attempt. Wheeley and Gorham also did 3 minutes, but Silvio's model dethermalised too early to score only 173 seconds. Alan King (Australia), who had been doing well up to now, launched out of wind, causing a loop and scoring only 60 seconds. Etherington, the only Canadian left with a chance, fluffed his two attempts, leaving the top four, Kneeland, Wheeley, Lanfranchi and Gorham 2 minutes ahead of the field.

As usual, Dave was first off in the final round, and the climb was checked to be 650 feet. A spontaneous cheer went up from the crowd, to be followed by a groan. From that height the model caught the king of downdraughts to score only 101 seconds. This, of course, broke the contest wide open, and Silvio was away immediately as he needed only just over 2 minutes to beat Kneeland. This he did with a comfortable max., giving him a total of 831 seconds.

Then along came Carl Wheeley, who had been piling up good flights in every round and seemingly playing second fiddle to the clash between Kneeland, Silvio and Gorham. Such is his unassuming personality that he had been discounted! He needed 156 seconds to win, and after a good take-off and climb followed by a steady flat glide without lift, made 169 seconds to win by a mere 13 seconds.

Bill Dean (not to be confused with "Gipsy") launched Gorham's "Vertigo" for an attempt to take second place, but the motor cut at 7 seconds for a total time of 64 seconds.

No blame can be attached to the proxy fliers, for they ran into difficulties that were by no means their own fault. For instance, Gorham's model suffered from timer trouble caused by oil seeping down the fuselage. A more accessible timer and a supply of spare sponges might have removed the danger of an over-run, or a short run as on the last flight. Parmenter put another coat of dope on Upson's model, improving the glide tremendously on the last flight! As for the "Slick Stick," Fran Hager and his fellow proxy fliers worked like Trojans repairing both ships. After the last crack-up Fran was almost sick with disappointment. We were particularly impressed with the way the proxies worked as a team, referring to the ships as if they were their own. ("Slick Stick" appears to be like Goldberg's "Cumulus"—a one-man aeroplane.)

Of interest were the Swedish models, using a pylon mounted clockwork timer 1¼ in. diameter by ¼in. thick. Etherington's model was similar to Kneeland's with the addition of a retracting undercart, this being the cause of his fourth round zero.

Noticeable was the superb finish on Cosio's models—12 coats of clear dope, each rubbed down, on Jap tissue, then two coats of very thin fuel proofer. Also John Tatone's white and red ships with the pylon used as a U.S. flag. His two models were built in three weeks, but an over-run and a bad launch lost him his third flight, and kept him out of the top six.

Mention must be made of the altimeter—or, as it was vulgarly known, the "Lie Detector"—built by Fred max's had been put up, and interest was focused on

Pearce. In principle a camera range-finder with a spread of 30 in., the model and its mirror image were brought into focus by means of a micrometer head, which operated a sliding scale giving the slant height, the angle of elevation, thus giving the true height of the model.

A special mention also for the entry from Guatemala, built and flown by Julio Quevedo. The model is interesting in that the fin is underneath, also that it was built during the fighting in Guatemala City at the time of the revolution! Wars may come and parties go, but the model game goes on for ever ! !

A minor headache in the power contest was the number of people milling around taking photographs. This was particularly evident when Kneeland was flying. There were eight diesels on the field, the remainder being K & B 15's. The combination seemed to be a Torp 15 well run-in (three hours), an 8 x 3½ power prop, K & B gloplug, and Thimble Drome fuel. It is rumoured that Cox (makers of the Thermal-hopper) are making a 15; should be hot.

With the power event over, contestants drove back to the mess hall for supper, and then on to the Coca Cola airstrip for Wakefield test flying. By dusk it was becoming obvious that competition was going to be stiff. Fifty per cent. of the models were doing easy maximums, but with the memory of the day's peculiar weather conditions no rash forecasts were being made.

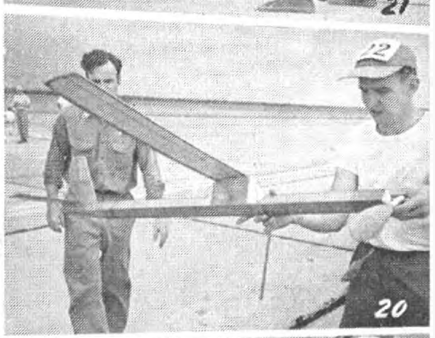
And so back to the hotel, and—for the more serious competitors—bed. Naturally, not all the boys were in bed early. Your reporter visited one room to see how one of the Canadian team helpers was faring after an attack of asthma, then called the doctor who was attending Anders Hakansson, who had developed a bad case of hives. On return to the room with said Doc., found the lad almost unconscious, two people breaking in motors, one doping patches on his Wakefield, another having a shower, and a lively discussion on the merits of various radio systems by four ardent radio men!

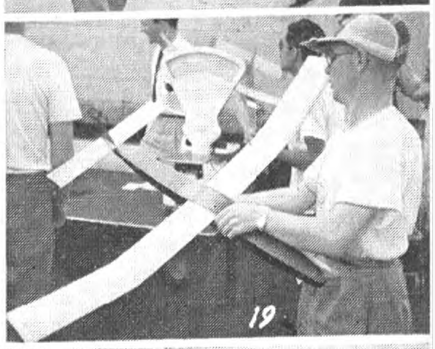
The Doc. picked his way in over and around the various bodies, examined the patient, shrugged his shoulders, and walked out in a daze. Needless to say, the lad recovered well enough to chase models the following day, and behave like a typical junior on the 550 mile bus trip back to Montreal!

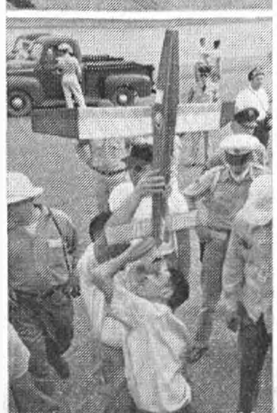
WAKEFIELD CONTEST

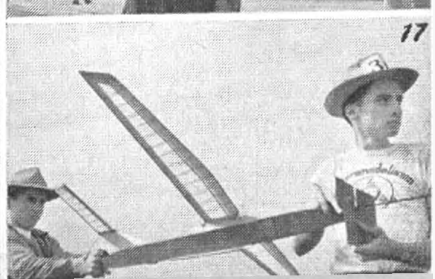
Monday dawned overcast, with a cold wind which had swung through 120 degrees from the previous day, and was blowing across the main runway instead of straight down as before. The system was announced to be as the day before, one hour per round plus 15 minutes for

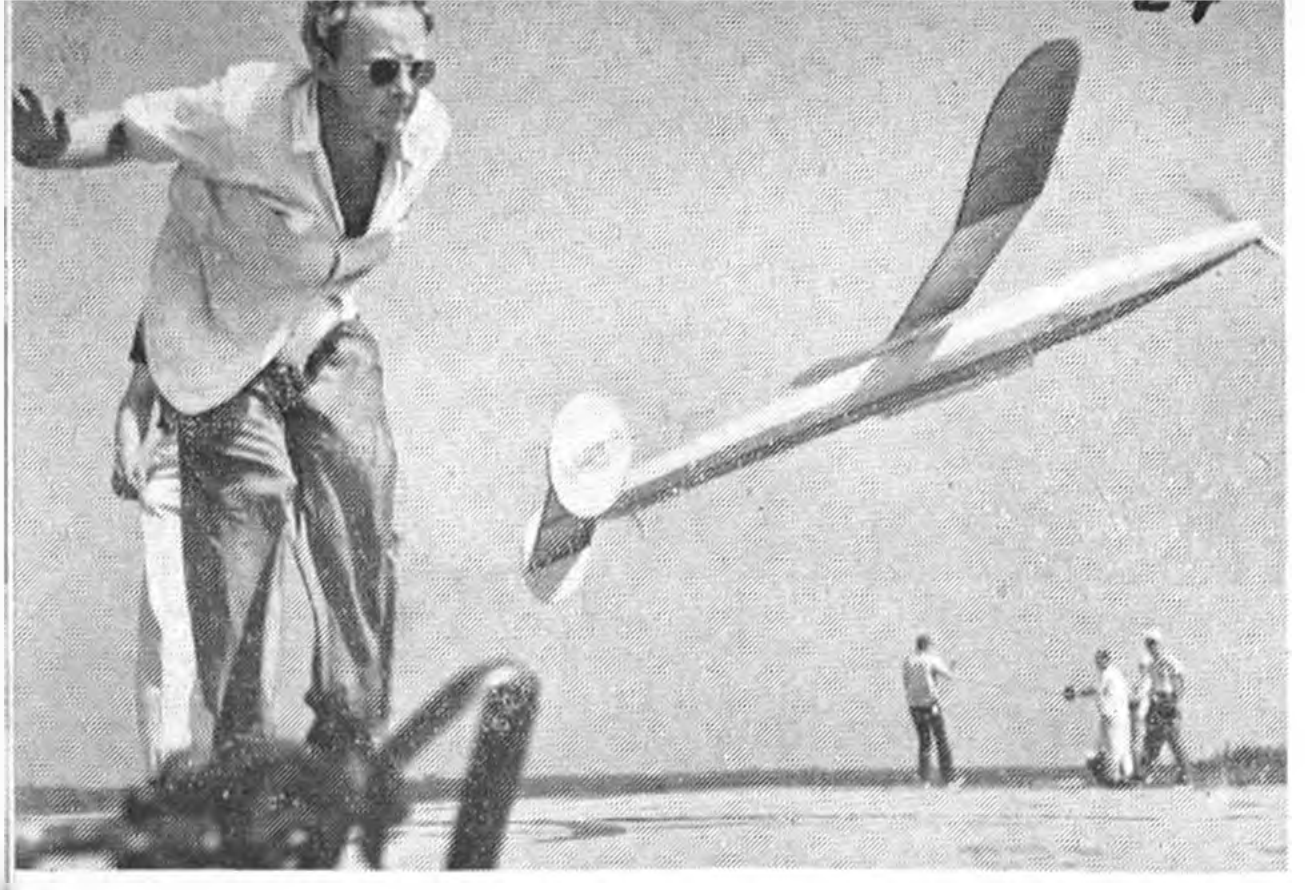
14. Entering in person, Kiyotatsu Miyoshi of Japan surmounted language difficulties but had trouble in first two rounds. 15. Proxy flier Bob Hatschek releases for Alfred Leong of New Zealand. 16. Cesar Altamirano feeds the rubber into his Wakefield. 17. Guatemalan Quevedo Bros. hold for Andy Bobkowski; note the nose protector. 18. Timers and take-off judges shield Hugh O'Donnell's motor as Cliff Montplaisir winds. 19. Cyril Mayes, now a full-blooded Canadian, placed 12th. 20. Dick Quermann who flew Bill Rockell's British entry. 21. Prayer pose by Don Mackenzie of Canada on take-off. 21. Carl Hermes who did so well with Charlie Jackson's model, here being fused up by Dave Kneeland. 23. Joe Elgin hangs on while George Reich piles on the turns for John Upton (4th).











ALAN KING (above)

Aged 26, sandy haired. No other adjective than "friendly" would adequately describe his personality. Three times Australian National Champ, his "Flying Pencil" powered with a Tarn 15 (see AEROMODELLER ANNUAL, 1950, *page* 28) *very nearly gave him the world's first double win Comes from Melbourne and is now in Toronto looking for a job. An industrial chemist, he is another of these globe-trotting Aussies. What is it about Australia that makes them want to go around the world?*

delayed flights, each round split into four periods with one man from each team to fly per period. No check seemed to be taken to ensure that this was adhered to, but most contestants followed it automatically. Models were taken to the process table, motors weighed and installed under the supervision of the timekeepers, then back for a check on the complete weight of the model.

First man off in the 1954 Wakefield was Colombo of Argentine to score 77 seconds. The Dick Baxter, of the U.S.A., flying a very interesting model, powered by 18 strands of ¼ in. Pirelli geared down to a 14 in. prop to give a two-minute motor run. Take-off was slow, and the model hardly got above 50 feet for the first minute, the total altitude being not much more than 200 feet. The long motor run, coupled with obvious lift, gave an easy max.

Cyril Mayes (Canada, and formerly of West Essex) was away third for another max., followed by Charlie Jackson's ship flown proxy by Carl Hermes. Carl had been asked to fly the No. 1 machine, which he did though not happy with it. As the flight was only 2 : 26 he switched to the No. 2 ship, which he preferred, for the second round. Arne Blomgren (1953 winner) was away early in the round, and suffered a broken shaft on his geared entry; switched to his reserve and scored a max. Hughie O'Donnell's entry was ably flown by Cliff Montplaisir, but landed just short of a maximum due to lack of lift and bad down currents.

The American team—other than Baxter—were out of luck in this first round, their flights all being around the 2 minute mark. This was not good enough with seven men having scored 3 minutes, also test flying had shown Jackson and O'Donnell to be dangerous, and their proxies among the best in the U.S. By the end of the round the clouds had cleared, the sun was out, and a few models had suffered from rubber breakage. Both the Argentine and New Zealand models were prepared for hot weather, and were wound up outside the machines.

The second round saw Baxter's geared entry away for a max. in which the model was never above 200 feet. Mayes, King (Australia), Upton (New Zealand) and Joyce (Canada) all racked up double maxs. Jackson and O'Donnell had broken their jinx, but the downdraught sufferers were still there. Hakansson, who had not fully recovered from his illness, refused help to fly his model—a small sheet fuselage ship with low dihedral which scored 180 secs. His team mate Blomgren, this time flying his old square fuselage mid-wing, only managed 2½ minutes.

Of the Americans, Bob Dunham, with a simple slab high-wing with twin fins, improved on his times, but his team-mates De Batty and Gillespie—the latter with a high A/R flat-bottomed laminar flow wing and long, thin fuselage—just didn't seem to find any lift.

The sole Japanese entry had been found an interpreter, and despite his good showing on test, could not get anywhere in the first two rounds. His models were beautifully constructed, but rather bulky. Andy Bobkowski, from Guatemala, was flying a diamond fuselage model with swept back wing and tail, the latter mounted on top of the fin. The climb of this ship was good, but the glide was lacking in the early rounds.

25. Snappy getaway by Alan Lim Joon's model (3rd) flown by Manny Andrade. 26. Sweden's Arne Blomgren puts on the turns, Hakensson holding on. 27. Lou Vargo proxy flew for Guatemalan countryman Jose Pardo, had two poor first rounds. 28. The Canadian team, Sorjo Ranta, Don Mackenzie, Phil Joyce and Cyril Mayes. 29. Fabi Mursep of Argentina sorts out his gimmicks with plenty of advice from team-mates.

The third round saw little change in the standard of flying, King and Upton being the only ones to collect a third successive max., many of the leaders slipping due to poor lift conditions. Miyoshi (Japan) switched to his spare with definite improvement in this round, working under difficulties for he was helpless without his interpreter, and had to rely on anyone handy for retrieving.

This requirement was better organised than the previous day, as the U.S.A.F. laid on open trucks for the use of contestants. The Canadian team were lucky in having two cars for this purpose, one of which had been brought down from Saskatoon (2,400 miles) just to help out. It is a moot point as to who had the greater team spirit, the Canadians or the Argentinians, but your reporter's fondest memory was the sight of a crowd of Argentinians, one holding a fully wound model over his head, with duft fuse burning, dashing madly through the crowd out to the take-off point, shouting for timekeepers, take-off judges, etc., all in Spanish. If the flight was poor—gloom and despondency, if a max., scenes of jubilation.

In this round Baxter's ship was up for a seeming max. when it turned on its back at a very low altitude and dived in. The model was retrieved, but severely damaged.

Positions at the end of the third round were King and Upton with 540 seconds, Baxter 537, and O'Donnell, Altamirano and Jackson well up. It was anybody's contest, especially when it started to rain at lunch time. Luckily it was only a slight shower, and cleared before the fourth round started.

Jackson's model had been lost in the third round, but a sigh of relief went up when Carl Hermes arrived back with the machine. It was generally accepted that the fourth round would be the critical one, and difficult to forecast due to the effect of sun and drying wind on the damp ground.

Before long it was clear that the thermals were good and strong, many models being upwards of 700 feet before dethermalising. Great amusement was caused in the American team when Baxter's "Ground Hopper" dethermalised at 300 feet, but two of the leaders—Blomgren and Upton—in spite of height glided down fast for 2 minute flights. Cliff Montplaisir and Carl Hermes were obviously on their best form with their proxy models, both scoring picture book maximums.

With Upton's perfect score shattered, all attention was on Alan King, and after an unhurried launch and a moderate steady climb to 300 feet, a further perfect max. went to his total. This put Alan at the top of the heap, but with a lost ship. Luckily he had his spare, but it was a gamble. At the end of the round it was King 720, O'Donnell 699, Jackson 686, Loon 683, Joyce 681 and Benavidez 680. Barring accidents, anyone could win.

Cyril Mayes, of Canada, was first away in the final round, scoring a max.—incidentally using a brand new Pirelli motor not even broken in, in an attempt to get high over the take-off point. This strategy worked, and despite very little lift the ship passed out of sight behind a radar tower at 3 : 01. Hermes put Jackson's ship up for another max. and temporarily into the lead.

Then Baxter was off: the usual slow left hand circle due to opposite rotation of the gears, and what promised to be his normal flight pattern, when the model suddenly dropped into the bush after 81 seconds. Phil Joyce then flew No. 2 for Canada. With over a 1,000 turns on the 12-strand motor, the ship climbed like a rocket, and a max. would have given him a top place. However, the glide was fast and a score of 125 seconds put him into a final 7th place.

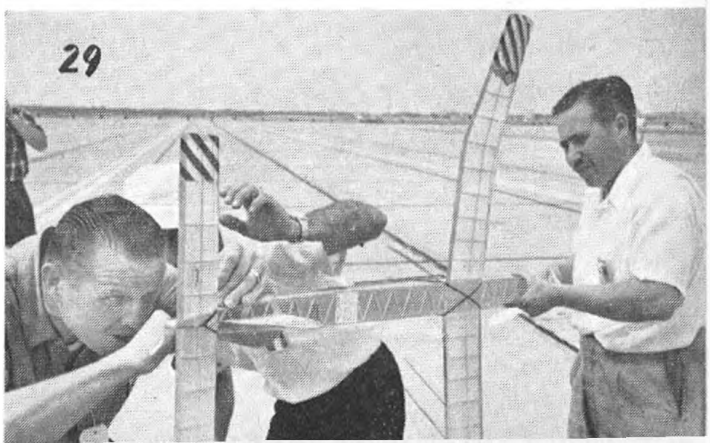
George Reich flew Upton's model to a max. and just behind Jackson's score. Tension mounted as Alan King went out to the take-off point with this spare model. Perfectly calm, he wound up and prepared for launching. With the eyes of the crowd on him, he released for a perfect flight and his fifth maximum to return a perfect winning score.

With the contest won, interest was half-heartedly focused on the remaining men in the lead. Jim Loon's model, ably flown by Manny Andrade, scored its fourth max., to give him third place.

The contest was now over with the exception of Hughie O'Donnell's last flight, and Cliff Montplaisir went out in an attempt to secure him second place. The model was launched, but something seemed to be wrong. The model was not showing its usual climb, but in spite of that it managed 2 minutes. Hurried calculations showed that this gave Great Britain the team trophy—but then the tragic news began to circulate amongst the crowd. Montplaisir had been disqualified for an illegal launch! There can be no criticism of the take-off judge's ruling, for photographs have proven their vigilance.

With Alan King having been congratulated, photographed, slapped on the back, and talked at by nearly everyone on the field, the buses arrived to take contestants and officials back to the hotel to change and get ready for dinner. It was interesting to note that the fliers in the Power event on the previous day wasted no time in returning for supper, but the Wakefield men just hung around chewing the fat, until the Air Force personnel had to be firm with them! Perhaps it is a psychological fact that the Wakefield flier is keener and more on edge, thus needing longer to taper off after a contest.

At the final banquet, everyone mixed with the Air Force staff, and, the meal over, presentation of the Trophies began. Keith Storey, President of the A.M.A., acted as Master of Ceremonies, and announced that the sponsors had kindly donated replicas of the Convair Turboliner to the individual winners, and Convair F.92's



To the Victor the honour of filling the coveted Wakefield trophy with appropriate liquor. Alan King pours the champagne as Keith Storey, President of the A.M.A. holds the cup. As first Australian winner of the Wakefield, Alan has set many a European tongue wagging in speculation as to the site for the 1955 event!

to the team members. Further, the Beauty Queen donated a kiss to each team member!

With this, the assembly broke up and the majority headed for the bar, either to celebrate or drown their sorrows. One of the loudest and longest celebrants was Bill Etherington, of Canada, who had become a proud father at noon that day, and had just heard the news. He was still celebrating when we left at 6 a.m. on Tuesday ! !

So ended the 1954 Wakefield and Power Championships, and certainly the best men won. It may not have had the super organisation that existed at Cranfield in '53, but it did have an exceptionally friendly and co-operative atmosphere. I must put on record the courtesy and co-operation shown by the Air Force boys at the station; theirs was not the easiest of jobs, for some of them were standing at various points of the airfield all day, but they never ceased to be friendly and courteous, a fine example to the visiting modellers.

1954 WAKEFIELD RESULTS

1.	Alan King, Australia	180	180	180	180	180	900
2.	Charles Jackson, Great Britain (Carl Hermes)	146	180	180	180	180	866
3.	Allan Lim Joon, Australia (Manuel Andrade)	180	143	180	180	180	863
4.	John Upton, New Zealand (George Reich)	180	180	180	124	180	844
5.	Bob Dunham, U.S.A.	120	175	180	180	180	835
6.	Arne Blomgren, Sweden	180	146	180	128	180	814
7.	Phillip Joyce, Canada	180	180	141	180	125	806
8.	Fabi Mursep, Argentina	152	169	120	180	180	801
9.	Dick Baxter, U.S.A.	180	180	177	180	81	798
10.	Warren Gillespie, U.S.A.	123	138	180	180	150	771
11.	William Rockell, Great Britain (Dick Quermann)	103	152	154	180	180	769
12.	Cyril Mayes, Canada	180	180	141	79	180	760
13.	Sorjo Ranta, Canada	102	180	180	114	180	756
14.	Anders Hakansson, Sweden	118	180	147	180	126	751
15.	Donald Wilson, New Zealand (Edward Naudzius)	107	180	98	180	180	745
16.	Robert DeBatty, U.S.A.	121	161	111	180	165	738
17.	Alfred Leong, New Zealand (Bob Hatschek)	107	180	84	180	180	731
18.	Andy Bobkowski, Guatemala	112	101	131	180	180	704
19.	Hugh O'Donnell, Great Britain (C. M. Montplaisir)	171	180	168	180	...	699
20.	Cesar Altamirano, Argentina	157	180	180	...	180	697
21.	Eduardo Benavidez, Argentina	140	180	180	180	...	680
22.	Donald MacKenzie, Canada	154	95	129	117	180	675
23.	Vic Dubery, Great Britain (Jerry Kolb)	128	157	180	95	73	633
24.	Jose Pardo, Guatemala (L. Vargo)	42	53	180	142	180	597
25.	Kiyotatsu Miyoshi, Japan	28	25	180	116	180	529
26.	Ernesto Colombo, Argentina	77	70	180	88	...	415
27.	F. A. Macauley, New Zealand (Stan Colson)	...	...	...	34	...	180	214
27.	F. A. Macauley, New Zealand (Stan Colson)	51	...	158	40	...	249
28.	Oswaldo V. Pellecer, Guatemala (Lee Renaud)	...	...	34	...	180	214

TEAM RESULTS (F.N.A. Team Trophy)

U.S.A.	2404	New Zealand	2320	Sweden	1565
Great Britain	2334	Argentina	2178	Guatemala	1511
Canada	2322	Australia	1763	Japan	529

1954 F.N.A. (F.O.M.) RESULTS

1.	Carl Wheeley, U.S.A.	180	135	180	180	169	844
2.	Silvio Lanfranchi, Switzerland	180	118	180	173	180	831
3.	Dave Kneeland, U.S.A.	180	180	142	180	101	783
4.	John Gorham, Great Britain (Bill Dean)	180	180	119	180	64	723
5.	Alan King, Australia	180	92	148	60	180	650
6.	Francisco Stajer, Argentina	112	92	180	138	107	629
7.	Bill Etherington, Canada	180	180	88	...	180	628
8.	Jose Meduri, Argentina	47	151	180	94	130	602
9.	Rolf Hagel, Sweden (Anders Hakansson)	113	180	48	80	180	601
10.	Oscar Lastra, Argentina	62	72	101	180	180	595
11.	John Tatone, U.S.A.	102	180	...	115	180	577
12.	Ray Lagermeier, U.S.A.	...	...	180	180	180	540
13.	Keith Bousfield, Canada	180	180	...	26	65	451
14.	George Upson, Great Britain (Frank Parmenter)	105	...	...	125	180	410
15.	Julio Quevedo, Guatemala	76	112	57	126	34	405
16.	Federico Hillicoat, Argentina	34	54	69	68	169	394
17.	Bob Mackenzie, Canada	51	33	180	51	75	390
18.	Carlos DeCosio, Mexico	88	180	...	...	...	268
19.	James Graves, Canada	...	...	86	...	63	94	243
20.	Ron Moulton, Great Britain (Joe Elgin)	120	...	48	...	...	168
21.	Pete Buskell, Great Britain (Fran Hager)	...	...	...	...	...	...

TEAM RESULTS (Franjo Kluz Trophy)

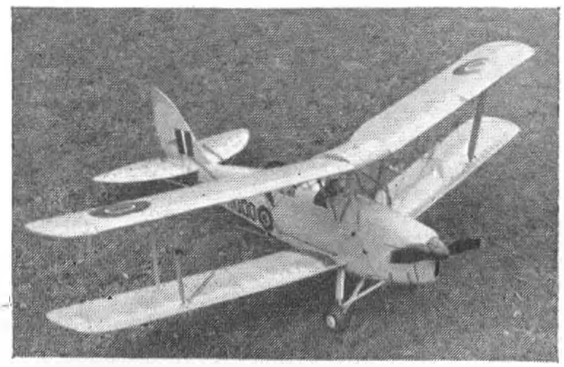
1.	United States	2204	4.	Great Britain	1301	7.	Sweden	601
2.	Argentina	1826	5.	Switzerland	831	8.	Guatemala	405
3.	Canada	1712	6.	Australia	650	9.	Mexico	268

● **By request . . .**

an accurate 1/8th scale free-flight model for 1 c.c. or larger engines of the

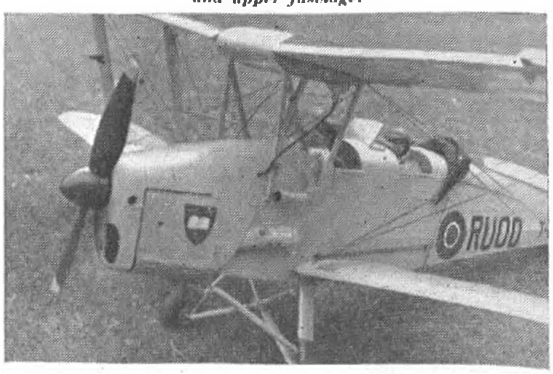
D.H. 82 Tiger Moth

designed by Aeromodeller staff



Javelin version in '47 colouring is fitted with dummy pilots, uses KK 9½ × 4¾ plastic prop painted black with yellow tips.

E.D. Bee version built by M. G. Rose of Burslem is all-yellow. Alternative scheme is to camouflage top surfaces and upper fuselage.



Oxford University Squadron crest on cowling is blue shield with gold edged open book between three gold crowns.

OF ALL THE aircraft that have borne R.A.F. roundels, the one dearest to most hearts is the De Havilland 82 Tiger Moth. Thousands of pilots have received their aerial baptism in the rear cockpit of a "Tiggy" and such was its service versatility that, in case of dire necessity, it became an operational bomber in the cause of defending the British Isles in 1940. Fighter pilots delighted in throwing the squadron "relaxation" Tiger around the sky between duty calls for it was, and still is said, that the true sensation of flight is only felt when the wind roars about one's ears and the slipstream buffets the cheeks as an open cockpit Tiger is put through its paces.

Modellers, too, have a soft spot for this, the almost original of "swept-wing" aircraft, and for many years the A.P.S. plan for a rubber-driven accurate scale version by C. Rupert Moore has been one of the most popular *Aeromodeller* scale plans. Many were the conversions made for diesel power, and great the variety of engines used in such a modification. Requests for a special conversion plan have now been met with this latest introduction to the A.P.S. range of an entirely new drawing, type-tested with two prototypes, and made as accurately to scale as only the closest study of the full-size aircraft will permit.

One prototype has an E.D. Bee, the other an Allbon Javelin. Each has identical flight characteristics, and we have little doubt that the power could even be extended to include the 2.5 c.c. size of engine, so docile and automatically stable is the basic design. A typical flight pattern is a smooth left hand circle after take-off or handlaunch, with a slow rate of climb up to perhaps fifty feet in 20 seconds. With a pair of dummy pilots in the cockpits, the Tiger can hardly be distinguished from the real thing as it occasionally jerks its wings a fraction to correct the bank just as though a midget pilot was applying a spot of aileron. We've had the Javelin version holding altitude in a circuit no more than 50 feet across and flying like a Goodyear racer around imaginary pylons. We have also tried—for fun—to see how much elevator packing can be added for maximum range of trim, and as much as 3/8 inch can go under the trailing edge without

John Darnell built the Javelin version and flight tests required few trimming adjustments, all of which are incorporated on the plan. Flight speed is delightfully slow, the fixed "open" slots at the tips doubtless adding to the auto-stability of the design. Simple rudder alteration allows choice of turning radius, this prototype favouring a left turn of about 75 ft. diameter.

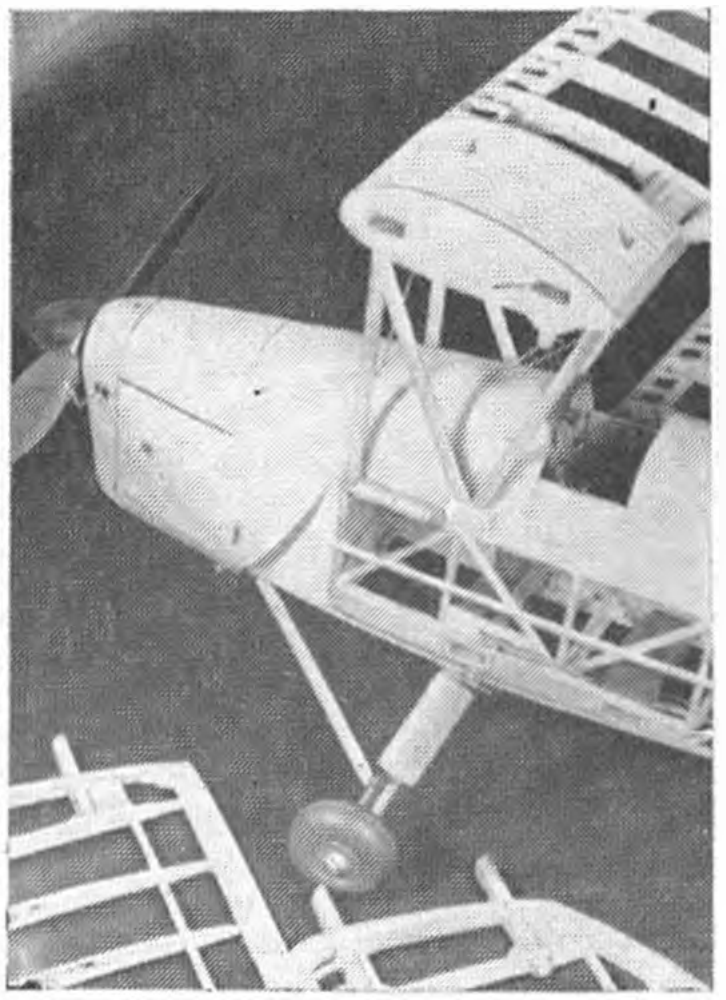
untoward effect. This, then, is a tried and tested design that is as flexible and as *in*sensitive to trim as any scale model of our knowledge. For the modeller with a little building experience, and a zest for making something accurate in detail with plenty of opportunity for a fine colour finish, the Tiger Moth should be an absolutely first choice.

Constructional details are stencilled on the full-size plans to make it self-explanatory; but a few points of emphasis would not be amiss for the prospective builder.

Key unit of the fuselage structure, which is built in the customary sides-box-top former system, is the wing centre-section strutting, and every care should be taken to see that each important joint is securely bound or soldered as the case may be. Any movement here can nullify all the care and attention devoted to the rest of the model as dihedral sweepback and incidence of the top wings depend on accuracy in centre-section assembly. Wings are of normal structure, the multiple false leading edge ribs adding scale detail as well as maintaining an important part of the scale aerofoil. Dihedral and sweep differs on top and bottom wings so that the sweep is built into the wing peg boxes and dihedral set by the shape of the pegs. Note the different angle required for setting T.1 and B.1 to match up with centre-section and fuselage. Interplane struts are hinged to aid transport, and each pair of wings will readily knock-off in the event of an awkward landing.

Tail, cowling and rigging details are explained in full on the A.P.S. drawing leaving only the final touches of realism to be added in the form of dummy venturi tubes, control wires, exhaust, etc., after covering with lightweight Modelspan.

Colouring the Tiger allows as wide a range as any modeller could desire, for apart from service aircraft, civilian D.H. 82's have appeared in decor varying from all-red to all-silver with intermediate combinations of blue and cream, green and silver, etc., according to the whims of club or private owners. Service colouring was used for the two test models and the Bee version bore the markings given on the plan which are for a 1939 vintage trainer, over an all trainer yellow scheme. The Javelin version was also all-yellow, but with the Oxford University Air Squadron insignia on the cowl, and 1947 type roundels plus the large registration and code lettering in black on the fuselage side. Strictly speaking, all aircraft with these markings should also carry the tailplane strakes fitted to all later Tigers, as seen on the Cover photo.



Constructional detail of the Javelin version shows a detachable nose-block modification that permits access to the engine if need be. Tests showed that additional sheeting was required in the forward fuselage, accounting for the difference between these photos and plan. At right, wing fixing pegs and boxes in fuselage and centre-section illustrate how wings can knock-off.

Full-size copies of the 1/5th scale plan opposite are obtainable, price 6/- post free from "AERO-MODELLER" Plans Service.

A 44" SPAN FLYING SCALE POWER MODEL FOR 10C - 15CC ENGINES

D.H. TIGER MOTH.

DESIGNED BY AERODMODELLER STAFF.

DRAWN BY J.W. COASBY.

6/-

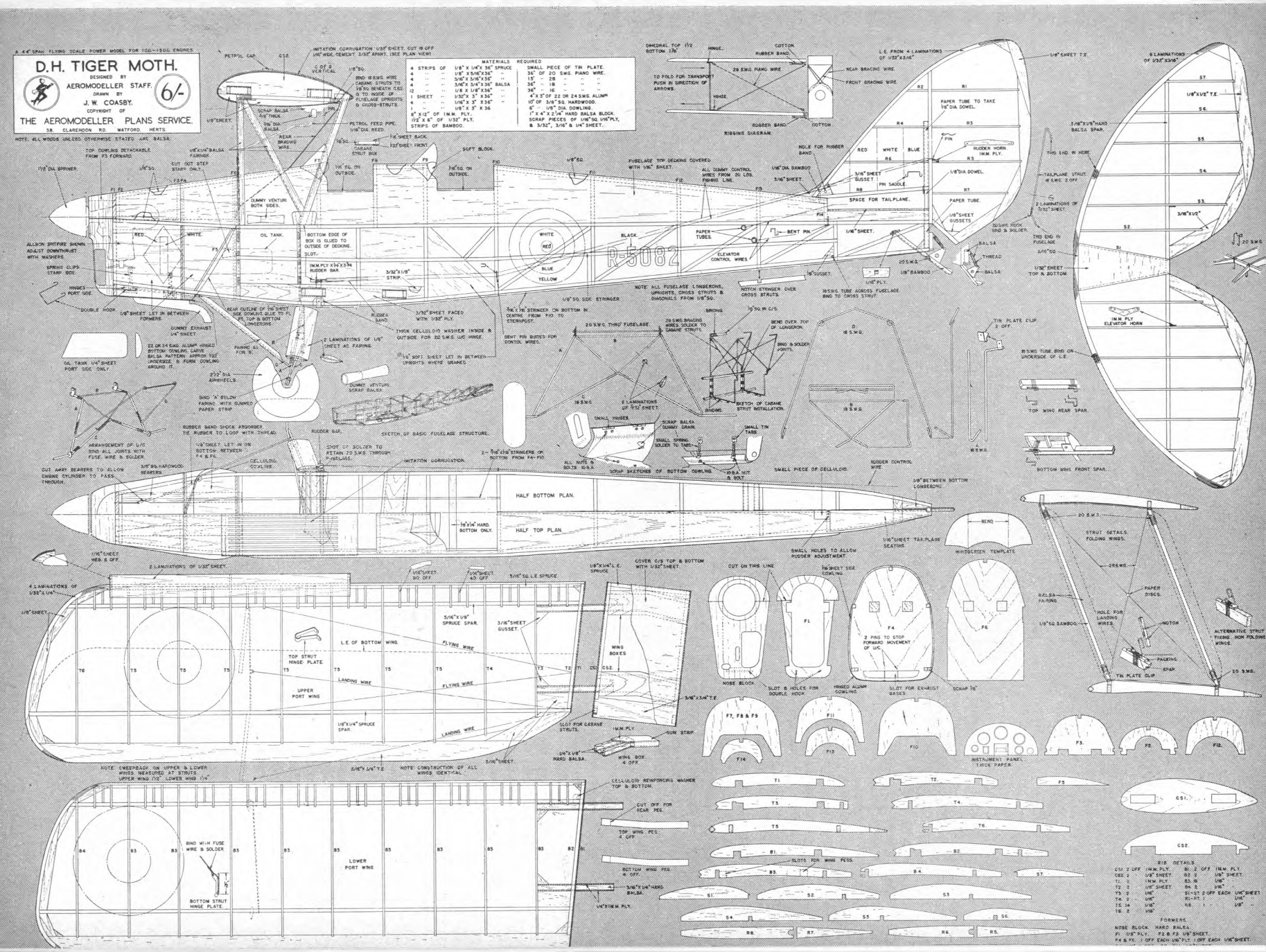
38. CLARENDON RD. WATFORD. HERTS.

NOTE: ALL WOODS UNLESS OTHERWISE STATED ARE BALSA.

MATERIALS REQUIRED

4 STRIPS OF	1/8" X 1/4" X 36"	SPRUCE
4 " "	1/8" X 5/16" X 36"	"
4 " "	3/16" X 3/16" X 36"	"
4 " "	3/16" X 3/4" X 36"	BALSA
12 " "	1/8 X 1/8" X 36"	"
1 SHEET "	1/32" X 3" X 36"	"
4 " "	1/16" X 3" X 36"	"
" "	1/8" X 3" X 36	"
8" X 12" OF 1/M.M. PLY.		
1½" X 6" OF 1/32" PLY. STRIPS OF BAMBOO.		

SMALL PIECE OF TIN PLATE.
36" OF 20 SWG. PIANO WIRE.
15" " 28 " " "
36" " 18 " " "
36" " 16 " " "
4" X 3" OF 22 OR 24 S.W.G. ALUM.
10" OF 3/8" SQ. HARDWOOD.
6" " 1/8" DIA. DOWLING.
1" X 4" X 1/4" HARD BALSA BLOCK.
SCRAP PIECES OF 1/16" SQ. 1/16" PLY, & 3/32", 3/16" & 1/4" SHEET.

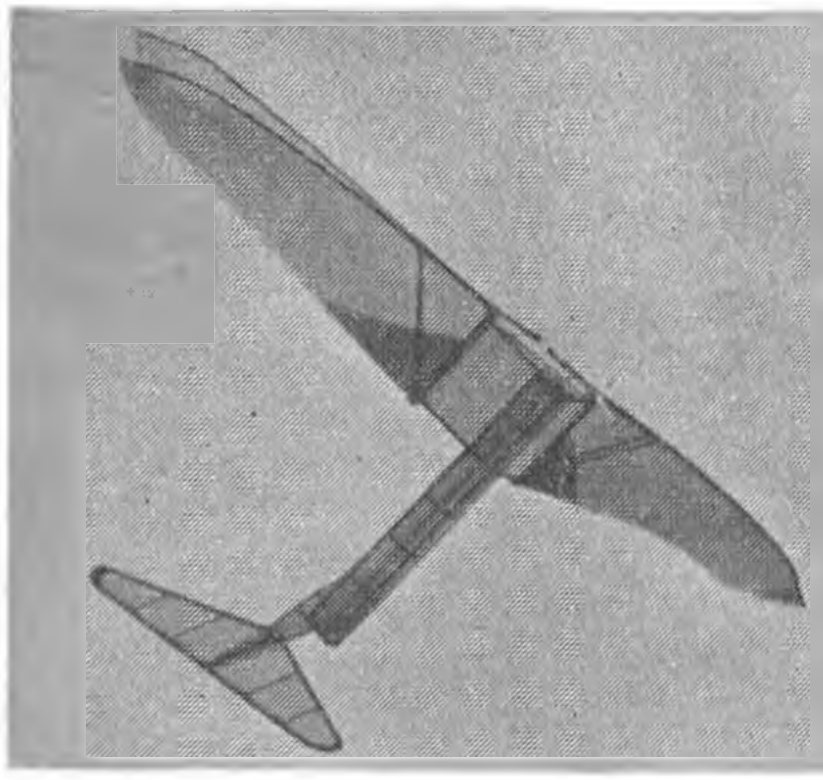


RIB DETAILS

C.S.1. 2 OFF	1/M.M. PLY.	B1. 2 OFF	1/M.M. PLY.
C.S.2. 2	1/8" SHEET.	B2. 2	1/8" SHEET.
T1. 2	1/M.M. PLY.	B3. 18	1/16" "
T2. 2	1/16" SHEET.	B4. 2	1/16" "
T3. 2	1/16" "	S1-S7. 2 OFF EACH	1/16" SHEET.
T4. 2	1/16" "	R1-R7. 1	1/16" "
T5. 14	1/16" "	R8. 1	1/8" "
T6. 2	1/16" "		

FORMERS

NOSE BLOCK. HARD BALSA.
F1. 1/8" PLY. F2. & F3. 1/8" SHEET.
F4. & F5. 1 OFF EACH 1/16" PLY. 1 OFF EACH 1/16" SHEET.



Dragonfly

A MULTI-WING ORNITHOPTER

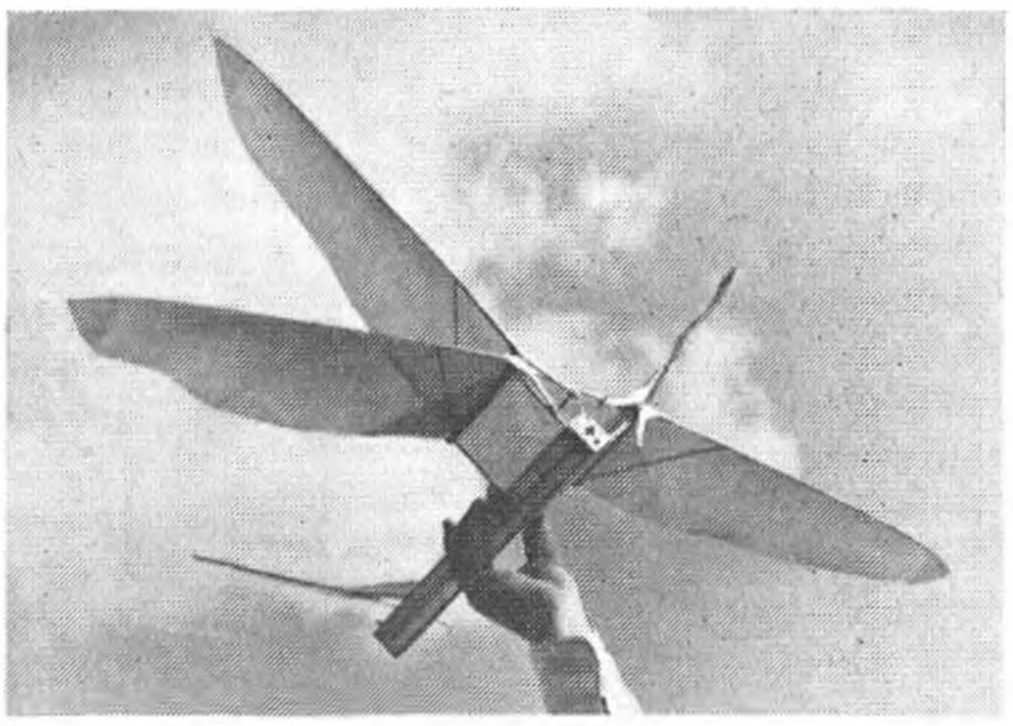
By J. S. White

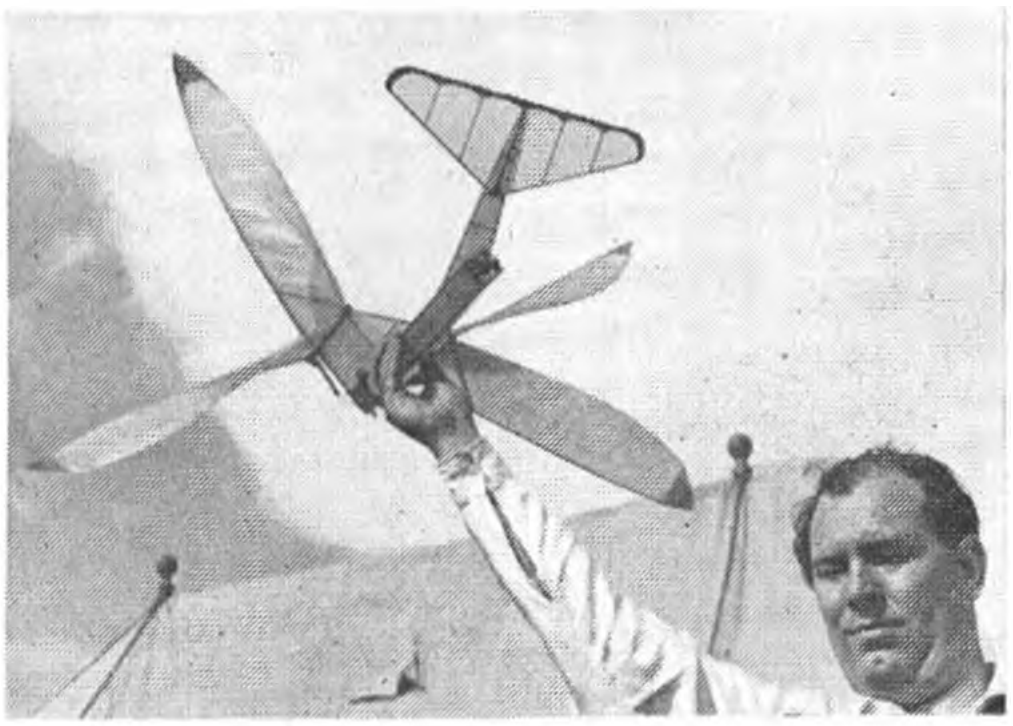
THE SCENE was the Nationals at Waterbeach . . . the occasion was the judging of the Gold Trophy aerobatic contest. Enter—one extraordinary model flapping its wings as though it were a Dragonfly and displaying a remarkable disinclination to return to terra firma. That was our introduction to John White and his remarkable ornithopter! Needless to relate, this intrusion of the highly unorthodox into the control line area evoked more than a little interest, and SMAE records officer "Rushy" was hot off the mark with stopwatch at the ready for a new National record. 34 seconds was the best time for the day and that alone was quite an achievment, but Mr. White was far from satisfied and after building a new fuselage and adding sundry modifications to the crank mechanism, he raised the time to 1 : 55 at the Northern Heights Gala which figure stands as a British record.

Now the ornithopter is by no means new. It dates back to man's first thoughts of flight, before gliding or airscrew propulsion were ever considered, and model ornithopters take their part in portraying the history of the early days of aviation. Immediately before the war there were numbers of German rubber and petrol engine-powered ornithopters taking part in regular contests. Alexander Lippisch, whose pioneering of the high-speed delta holds world-wide fame, and Dr. Von Holze of the Rothenburg school were responsible for many varied flapping wing models. All of them suffered however, from a common fault in having intermittent crank action. Loss of power through irregular flapper motion and vibration are sufficient to handicap the established ornithopter layout to such an extent that to make any height at all is a mammoth achievement.

John White, 36-year-old games-master at Erkenwald school, found all these faults in his single-flapper model and then proceeded to design an entirely different crank system. Two extra "wings" are added to partly follow, and partly flap against the original pair in such a way that at no time are any of the four wings in a hesitant or power-wasting position. Vibration is eliminated, all of the power from the rubber motor is absorbed and utilised, giving us one of the first ornithopters of our knowledge that is capable of climbing flight. Full building instructions are included on the full-size A.P.S. plan and for the modeller who likes to add variety to his hobby, we endorse the Dragonfly as an easily built ornithopter that will provide hours of amusement.

Three angles of Dragonfly show the flight attitude and extent of flapper motion. Flexibility of the tissue surfaces is an essential, to obtain full power from each wing "beat," the only solid structure being the tapered cane leading edge. Launching is made downwind, and flight is in a series of elongated turns. Note the absence of a fin and the extreme tailplane angle.





A 38" SPAN RUBBER POWERED ORNITHOPTER.

DRAGONFLY

DESIGNED BY

J. S. WHITE.

4/6

THE AEROMODELLER PLANS SERVICE
38, CLARENDON RD. WATFORD. HERTS.

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED.

MATERIALS REQUIRED

2 STRIPS OF 1/16"SQ. BALSA.	1 LENGTH OF 18 S.W.G. WIRE.
1 " " 1/16"x3/32" "	1 " " 16 " "
1 " " 1/16"x1/8" "	2" " " 18 " BRASS TUBE.
3 " " 3/32"SQ. "	1 " " 16 " " BUSH.
2 " " 1/8"SQ. "	SMALL SHEET OF CELLULOID.
1 " " 1/8"x3/16" "	" PIECE " TINPLATE.
SMALL PIECE OF 3/32" SHEET.	2 CUPWASHERS.
" " " 1/8" "	1 THRUST RACE.
4 STRIPS OF CANE 1/16"x3/32"x18".	2" OF NEOPRENE TUBING.

NOTE TO RETAIN CRANK RODS TO WING ELBOWS & ROD 'B' TO CRANK, BIND FIRST WITH COTTON & THEN COAT WITH CEMENT.

DO NOT COVER FRONT OR REAR OF CABANE WITH TISSUE.

3/32" DIA. ALUM. TUBE.

POWER.
8 STRANDS OF 1/4" STRIP RUBBER TIGHT BETWEEN CRANK HOOK & ALUM. TUBE.

LOCUS OF CRANK.

FRONT VIEW

SKETCH OF CRANK ASSEMBLY

3 OFF.
CRANK RODS FROM 18 S.W.G. WIRE.

1 OFF.

CRANK ROD SOLDERED INTO TAG.

SOLDER TAG.

ALTERNATIVE METHOD OF SECURING CRANK RODS TO CRANK.

FUSELAGE CONSTRUCTION

1/8" SQ.

THIS PANEL COVERED WITH TISSUE.

3/32" SQ.

3/32" SHEET.

FUSELAGE SIDE.

3/32" SHEET

SPACERS 1/16" x 3/32"

3/32" SQ. LONGERONS.

RECESS FOR TUBE.

3/32" SHEET GUSSETS.

3/32" SQ. CABANE TOP

PLAN VIEW OF COMPLETE FUSELAGE.

TOP OF CABANE COVERED WITH TISSUE.

1/16" x 3/32" AT TOP OF CABANE.

1/8" SQ.

BIND & CEMENT.

NEOPRENE TUBING

3/32" SHEET COVERED BOTH SIDES WITH CELLULOID.

BRASS BUSH.

THRUST RACE.

CUP WASHERS SOLDERED TO SHAFT.

1/8"

18 S.W.G. WIRE SHAFT.

3/32" SUPPORT AT FRONT & REAR OF CABANE.

FRONT VIEW OF CABANE

3/32" SHEET GUSSETS.

SHORT LENGTHS OF 10 S.W.G. BRASS TUBING INSERTED TO ACT AS WING PIVOTS.

18 S.W.G. HOLE.

BIND FIRMLY WITH COTTON & COAT WITH CEMENT.

REINFORCE WITH CELLULOID ON BOTH SIDES.

3/32" x 1/16" CANE TAPER TO 3/32" SQ.

80°

18 S.W.G. BRASS TUBE INSERT.

1/8" SHEET GUSSETS

1/8" SQ.

1/8" SQ. L.E.

1/16" x 1/8"

NOTE: COVER TAILPLANE WITH LIGHTWEIGHT TISSUE & STEAM SHRINK ONLY.

1/8" x 3/8" T.E. CUT AWAY FOR LIGHTNESS.

1/8" SHEET TIPS

3/32" SHEET.

3/32" SHEET GUSSET.

1/16" x 3/32"

3/32" SHEET GUSSET IN VERTICAL PLANE.

3/32" SQ.

NOTE: COVER WITH LIGHTWEIGHT MODELSPAN ON UNDERNEATH SIDE.

DOUBLE COVERING.

TOP WING. 2 OFF.

DOUBLE COVERING.

EDGE OF TISSUE.

1/4"

3/32"

BRACKET FROM TIN. 4 OFF.

3/32"

BIND & CEMENT.

BASE OF TAIL BOOM. CEMENT IN PLACE AFTER COVERING & DOPING. FUSELAGE: ADD TOP STRINGER & SIDE STRIPS & COVER WITH LIGHTWEIGHT TISSUE.

SECTION X-X

1/16" SQ.

PIN TO TAKE RUBBER BAND HOLDING TAIL IN POSITION.

80°

3/32" SHEET

BIND FIRMLY WITH COTTON & COAT WITH CEMENT.

1/16" x 3/32" CANE TAPER TO 3/32" SQ.

REINFORCE WITH CELLULOID ON BOTH SIDES.

18 S.W.G. HOLE.

THIS SPACER TO REST ON EDGE OF FUSELAGE.

30°

GRIND WITH EMERY PAPER TO FIT SMOOTHLY INTO DOWEL AT REAR OF FUSELAGE.

WINDING HOOK FORMED FROM 10 S.W.G. WIRE.

DOUBLE COVERING.

18 S.W.G. BRASS TUBE INSERT.

3/32" SHEET GUSSETS.

1/16" x 3/32"

BOTTOM WING. 2 OFF.
PLAN AS FOR TOP WING.

3/32" SQ.

DOUBLE COVERING.

NOTE: COVER ON UPPER SIDE.

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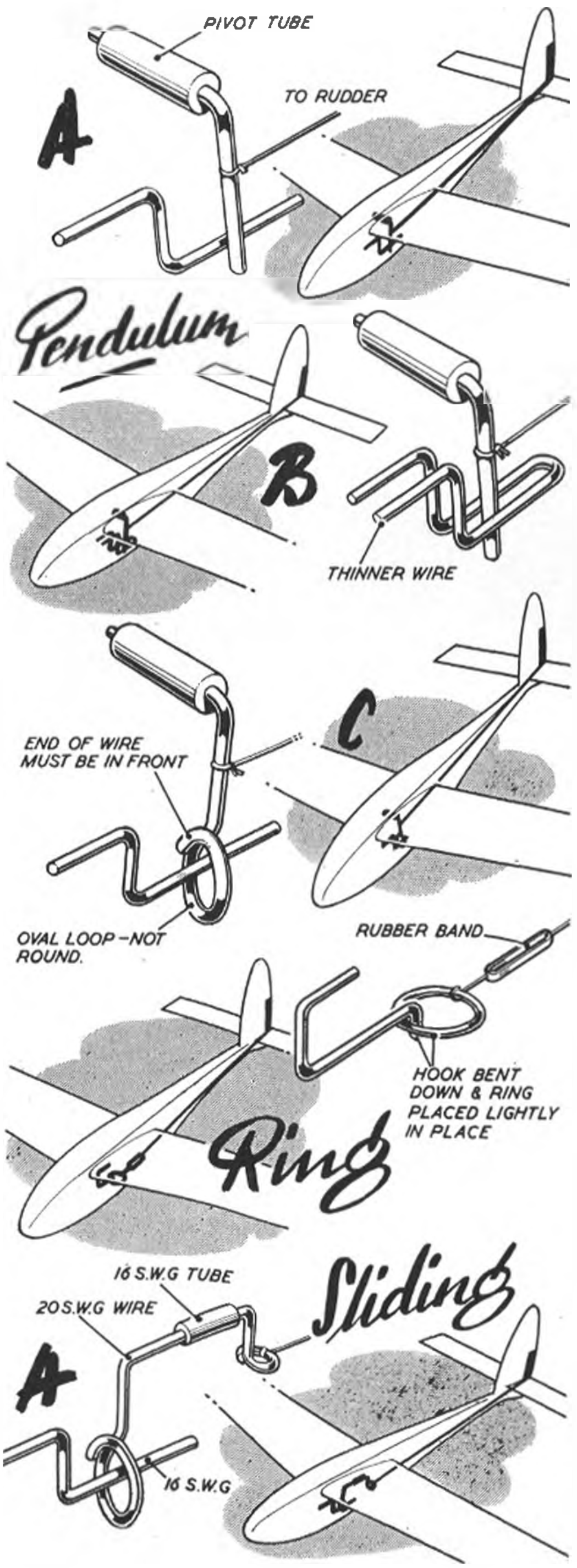


FOCUS ON...

Auto-rudders

ONE OF THE most essential factors in contest gliding today is the amount of height gained on the tow, and anything short of the permissible 164 feet represents a valuable loss. To get maximum height on the line, we must have towline stability, and with rudders set at up to 45° angles for turn trim on the glide, some form of automatic neutralising rudder device has to be employed. Thus we have an auto-rudder of sorts on every contest glider. It pulls to neutral as long as the model is on the towline, and flips to turn trim on release.

There are however, auto-rudders of many varied types, and the beginner in aeromodelling can now take advantage of other's misfortunes by avoiding the pitfalls of earlier types. Making a survey of the subject we begin with the **"Pendulum"** variety, a built-in version which frequently appears on A.P.S. glider plans. The elementary form is shown as **A** and has a single towhook with a plain swinging arm beside it to operate the rudder. Though simple, this one has a serious snag in that the ring on the end of the towline can slip between the hook and pendulum to allow the rudder to go back to the turn position. By making the towhook double back upon itself as in **B**, we overcome this problem; but there is still another disadvantage to remedy. This is when the model makes a de-thermalised descent, the exposed end of the pendulum having to take the brunt of the pancake landing and becoming bent or even forced right into the fuselage. So yet another variation is made, this time with the earlier type single hook of 16 guage or larger wire, and having a swinging loop of oval shape. This works perfectly, but care is needed in bending the loop to make sure that the end of the wire comes on the front and not behind, where it might catch and lock in the neutral rudder position.

There we have the pendulum types, and they work well, the overall fault being the constant tension on the return elastic band at the rudder end which tends to make the swinging arm or pendulum force the towing ring off the hook should the line go momentarily slack.

To avoid this "ejection" of the line, and to make construction more simple, the **Ring** type of rudder catch is a popular favourite. As well as the elastic band return system on the rudder, there is another band introduced to the auto-rudder line and this maintains a tension when the ring is engaged on the towhook. Too much tension may prevent release, too little means a possibility of early accidental release. The happy medium is soon found, and as the line can be entirely external, this ring method is good for modification on gliders without prior

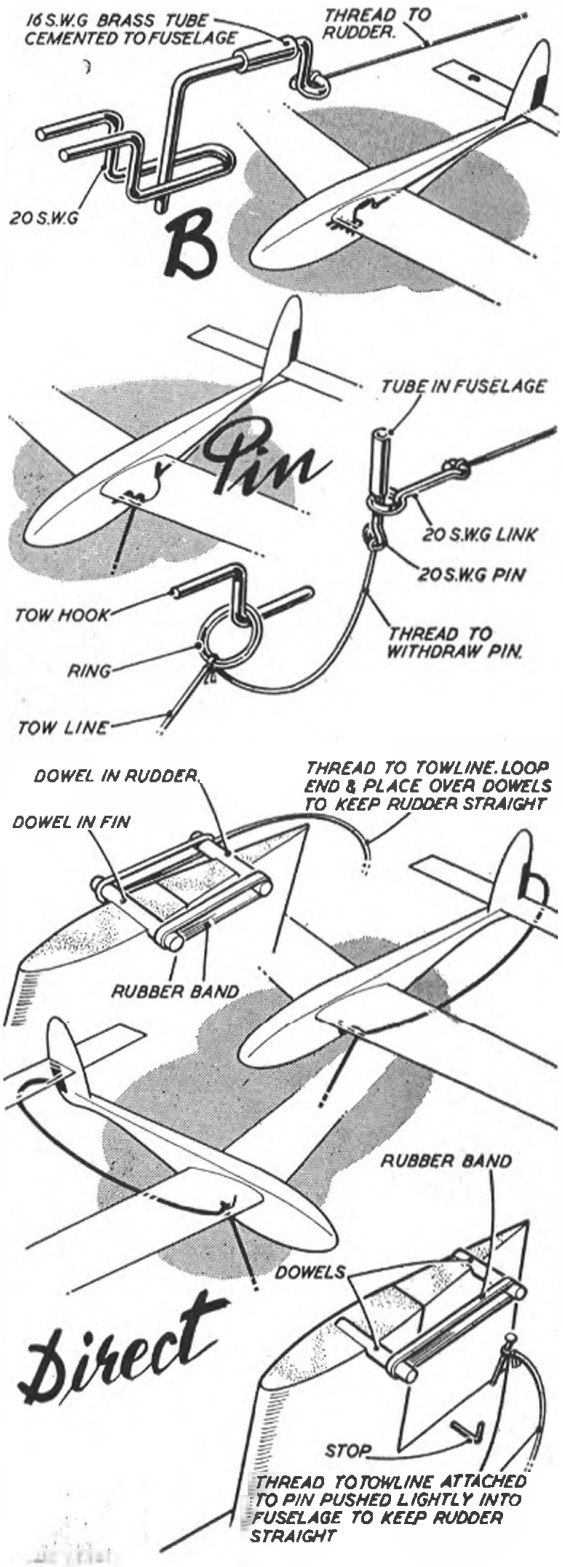
auto-rudder arrangement. Unlikely disadvantage is that in the case of a towline break, the flight is a long one straight downwind!

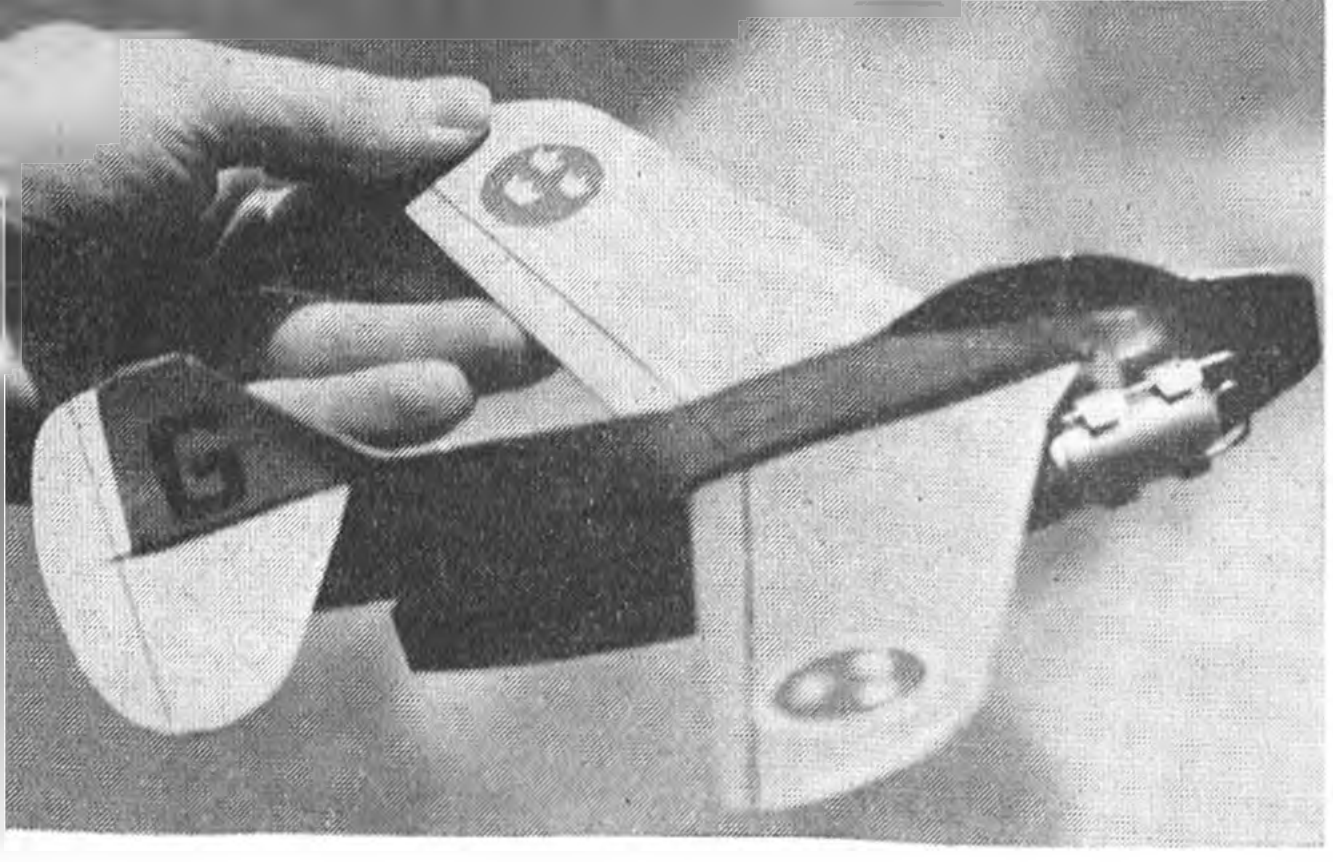
Combining the assets of pendulum and ring, the **Sliding** rudder trigger has a large following. For single hook as in **A**, a looped "slider" is essential and as with the pendulum, the end of the loop must come to the front. Double hooks are preferable however, and **B** shows how this aligns the slider in the towhook to prevent it from swivelling. Use 16 s.w.g. tubing with only 20 s.w.g. wire for the slider, and this will ensure an easy motion with a certain resilience should a heavy dethermalised landing give the short projection below the hook a nasty jolt.

Also external, and frequently used to avoid "ejector" action as with pendulums and sliders, is the detached **Pin** method with a short extension line from the towing ring. A split pin makes a handy end for the rudder line, and this is so arranged to come in-line with a tube in the bottom of the fuselage so that just a little tension is required to pass a locking pin through and into the tube. When the towline is slackened and the ring detaches itself from the hook, the weight of the line is sufficient to withdraw the locking pin and the rudder trips over to turn trim. Two points need to be watched with this system, the first that the tube is not placed too far behind the C.G. to affect the launch, and secondly, that the free rudder line be held in some way after the launch and not allowed to thrash about in the airflow around the tailplane.

For modification to older gliders or kit models without provision for an auto-rudder, the **Direct** system is simple and effective, if not quite as good as the Pin or Sliding methods. Two short lengths of dowels in the fin and rudder are linked on the one side by a rubber band tensioner, and held on the other side by an extension of the towline. So that the line can release easily from the dowels, the actual loop should be a slip knot and the care should be taken to see that it will come undone without needing a tug on the line. Even more simple is a variation of this method with a pin to hold the rudder neutral, though repeated use of this might reduce the tail end of the model to a very dilapidated pinholed state.

Size of the trim tab determines the amount of offset it will need for the desired turn, and small low aspect-ratio tabs are most common with movement of up to 45 degrees before affecting trim to any serious extent. Two square inches of tab area are ample for the A/2 size of glider, most modellers prefering to use slightly less than this. But whatever the tab area, or the automatic mechanism employed, the last and most important task of any glider launcher before model release, should be to check the rudder action and see that it works perfectly.





SAAB J 29

Round the pole or free flight, this chubby little profile scale model is a winner . . . by RAY MALMSTROM.

WATERBEACH R.A.F. Station, the scene of the two most recent British Nationals, also happens to be within close distance of the Malmstrom abode and the place where Ray strives to indoctrinate younger Cambridgeshire with Art and like subjects at the local Impington College. It so happens, too, that the large aerodrome is also an arrival point for visiting aircraft from overseas, and when a squadron of tubby swept-wing J.29's came in from Sweden last year, we fancy that Ray was rubbing his hands in glee. For as his name suggests, Ray is of Swedish extraction, and the sight of these remarkable fighters just called for balsa and razor blade.

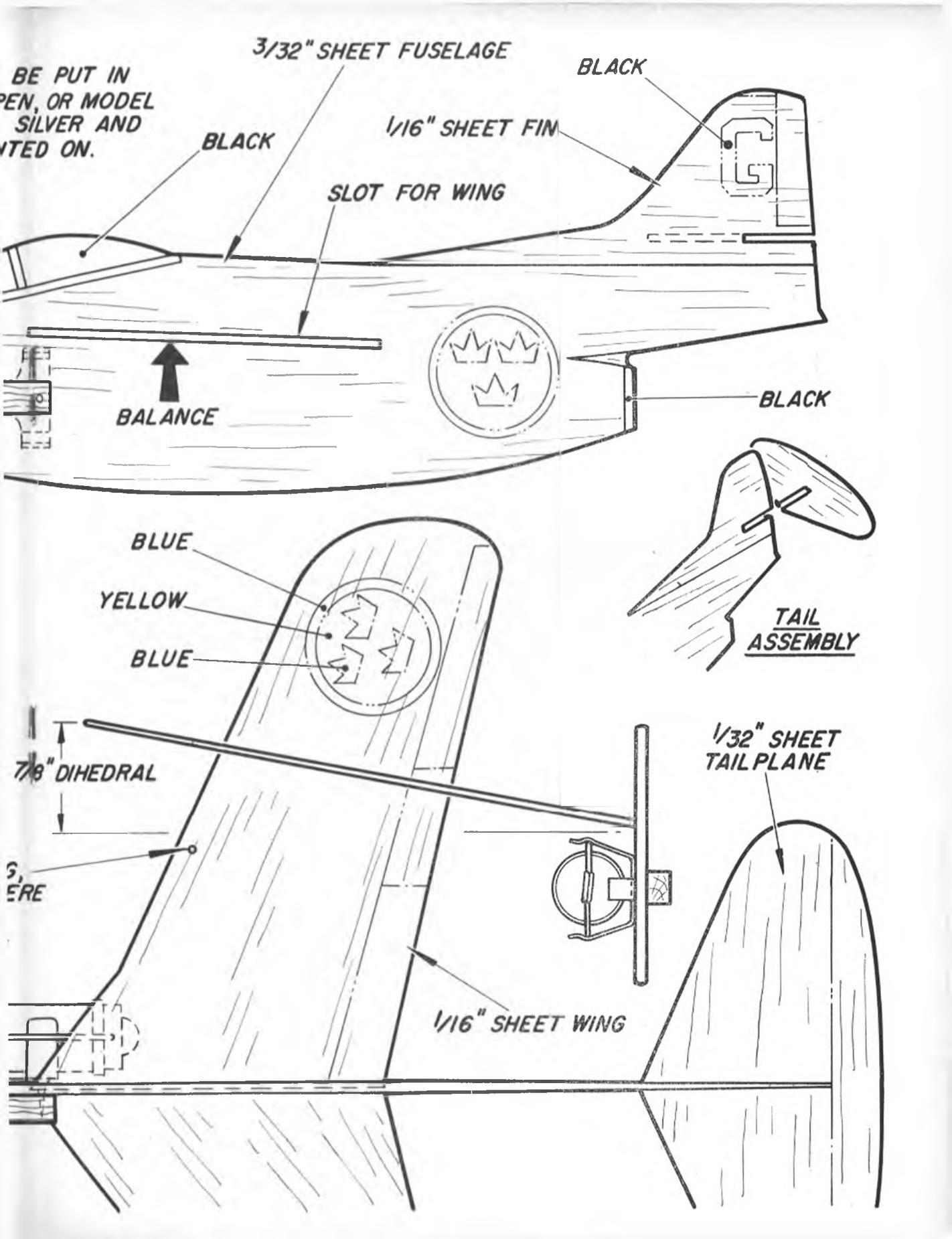
A newly-acquired Jetex Atom 35 was fitted to the nose for power, and within an hour or two of inception this profile scale job was airborne on its first of many a thrilling free-flight. Not satisfied with daylight activity alone, Ray tried it as a round-the-pole project in the living room, and smell and fumes notwithstanding in his jolly household, the J.29 showed a turn of speed that makes it closely resemble the full-size jet in establishing a world's closed-circuit speed record.

Some 1/32, 1/16 and 3/32 ply scrap and a small hardwood block are all that you will require, and construction begins with transferring the fuselage profile, less fin, on to the 3/32. Sliver out the wing slot, and cement on the Jetex block, then add the ply reinforcing at the nose and fit the 1/16 fin.

The wing is cut in two separate halves, which are fitted to the fuselage slot and dihedralled at the same time. Be liberal with the cement at this stage and also see that the tail fixing is secure. A coat of Sanding Sealer, then silver dope and painted National markings complete the "29" and with an Atom 35 in the clip we are ready for a glide test.

Take it over long grass and check through a few straightforward hand launches. Plasticine added at nose or tail will find the best trim; but Ray's original flies perfectly without any additional ballast. A slight warp to lift the leading edge on the righthand (starboard) wing will induce a gentle left turn in the very fast glide, and violent banking to either direction can be cured with lifting the leading edge of the wing on the inside of the bank. Now try a power flight and launch into the natural turn as the Atom 35 begins to develop thrust. You'll be surprised at the performance, it's terrific!

Size of the hand gives a good impression of the finished proportions of this baby all-sheet scale job. Build it in a couple of hours, and you are assured of weeks of zippy flight performance with a Jetex Atom 35. Fit a "50" unit and you'll be set for some realistic aerobatics.


BE PUT IN
PEN, OR MODEL
SILVER AND
NTED ON.
3/32" SHEET FUSELAGE
BLACK
BLACK
1/16" SHEET FIN
SLOT FOR WING
BALANCE
BLACK
BLUE
YELLOW
BLUE
TAIL
ASSEMBLY
7/8" DIHEDRAL
1/32" SHEET
TAIL PLANE
1/16" SHEET WING

Reply to Isacson*

when Sigurd Isacson decried Joe Foster's airfoil selection in his "Airfoils and the Wakefield" article, August issue, he stirred up a hornets' nest of controversy. This is one of many opinions received and comes from:—

John Barker

THIS ARTICLE is to contribute some practical findings to the general fund of knowledge on airfoil sections and also to take Sigurd Isacson to task for some of his statements in his article "Airfoils and the Wakefield." Let us take a few statements from his article and analyse them.

He states that Ellila won in Finland due to using one of these new style airfoils. Ellila himself stated that he drew it by eye on a piece of m.m. ply, plus which he added a turbulator which seems out of place on a self turbulating section. Don't think I decry Ellila's efforts. I think his performance was marvellous, but like most other people I put success down to 54 per cent. rubber on return gears. Later we are told that in 1951 no expert in Sweden doubted that the Swedes would win. Well, Stark did win, but the next highest Swede was 30th and the highest Finn 34th, which doesn't seem to show a consistent superiority. Again the winning effort was a fine one with 4½ oz. rubber and return gears.

Aarne Blomgren won in 1952, but we may note he lost his model on its last flight in a thermal.

There is a funny paragraph later on about models just happening to come out of thermals after 5 minutes. Haven't they heard of D/T's in Sweden?

Of course the main part of the article was spent in pulling to pieces the 1953 Wakefield Event in general and Joe Foster's performance in particular. I was glad to see the Editor reply so rapidly to the nasty remarks about why the competition was run in England. I don't know if Sigurd Isacson had the pleasure and privilege of seeing the 1953 competition; I did, and it was the most marvellous contest I had ever seen and everybody I spoke to acknowledged the superiority of Foster's model.

Isacson, in his supposedly technical article, does an unpardonable thing. He assumes Joe Foster's wing section with its turbulating spars is the same as a smooth wind tunnel model of N.60. He then sorts out some of Schmitz's old figures for N.60, which enable him to make the preposterous statement that "the Champion won by the assistance of thermals using an obsolete model without special consideration to the airfoil . . ."

The figures in the article mean little as the point at issue is not really clear and there are no figures for the magical SI 63008 with which to compare them. It would be interesting to know more fully how some of these wonder model sections are "designed." I well remember a couple of years ago another Swedish expert delved back 30 years in the aerodynamic books and "revealed" to us the Joukowski airfoil system and boosted it as a winner. Actually Joukowski's transformation has never been claimed to give exceptional airfoils, it merely allowed him to deduce the flow round an airfoil by considering the flow round a cylinder.

If Isacson really wants to know what wins Wakefields he should look at the propeller and power combination. The Nordic countries won for several years chiefly because they used plenty of power on the return gear system. Foster won in 1953 because he had even more power on return gears and a 22-in. diameter propeller, and to really guarantee victory Foster made that magnificent propeller a folder. Sigurd Isacson is presumably an aerodynamicist; he should look at his formula for propeller efficiency. I think he will find it contains D (for diameter) to the fifth power. Also the lower pitch of these propellers very rarely allows them to stall.

I do not say these airfoils are no good, but their merits, if any, have been emphasised out of all proportion in the article and also they do not appear particularly consistent. I first noticed the inconsistency when flying gliders with flat bottom sections with sharp leading edges. Some flew well, but others just sank. Even the same model trimmed slightly differently would vary a lot. At the time I put this down to the stagnation point sharply changing from upper to lower surface or *vice versa*.

More recently I have tried Sune Stark's wing section (*Fig.* 1) on a folding propeller Wakefield model. Occasionally this would turn in a good flight, but nine times out of ten it would develop a stall when the power ran out and continue stalling the whole way down. This could not be cured by any trim which still gave any performance. A new multi-spar wing of NACA 6409 (*Fig.* 2) was then produced as a replacement. The model immediately settled down to stable flight with no trouble at all.

Some time later I again tried the Stark wing section with the same results—violent glide stalls with probably 15 ft. dips right into the ground.

* *Correct spelling carries only one "a."*

In desperation I took a piece of string out of the model box and pinned it in front of the wing with six pins to form a turbulator, or disruptor as we used to call them when Mattioli Randisi first started the ideas. The model was then flown and although the glide was nothing like as good as the NACA 6409, there was no stall. Several flights were made afterwards changing nothing but the piece of string. Results were amazing; no string—violent stalls, with string—flat glide.

I have now tried a Gail Cheeseman section as in *Fig.* 3, which is about as unlike a turbulent flow section as it could be with its blunt leading edge. The performance is, if anything, better than the 6409.

With the present enthusiasm for flapped trailing edges the section shown in *Fig.* 4 may be of interest. It is a section I evolved in 1951 to incorporate a flap effect in the basic section. Two parabolic curves were joined at the maximum camber position to form the centre line and a Hawker symmetrical fairing of 10 per cent. thickness/chord ratio was plotted about this median line. Performance of this airfoil appeared to be good, but the model was unfortunately lost before a lot of methodical testing could be undertaken.

This idea of flapped trailing edges is, of course, not at all new. It has been advocated for models since at least 1940 and, of course, many years before this the NACA developed the 6712 section with just such a flap effect. *Fig.* 5.

6409 is favourite section

To attempt to sum up the position with regard to airfoil sections is almost impossible, but I would put forward the unoriginal suggestion that the NACA 6409 is a reliable section and hard to beat. Of more importance in Wakefield models, however, is the correct propeller and power combination and attention to the details that produce reliability.

Fig. 1

STN.	0	1·25	2·5	5·0	10	20	30	40	50	60	70	80	90	100
UPPER	0	2·00	3·14	4·81	6·86	8·55	8·85	8·44	7·56	6·31	4·87	3·31	1·70	·2
LOWER	0	-·48	-·54	-·51	-·26	+·55	1·13	1·32	1·22	·95	·59	·19	-·1	-·2

Fig. 2

STN.	0	1·25	2·5	5·0	10	20	30	40	50	60	70	80	90	100
UPPER	0	2·06	2·96	4·30	6·31	8·88	10·13	10·35	9·81	8·78	7·28	5·34	2·95	0
LOWER	0	-·88	-1·11	-1·18	-·88	+·17	1·12	1·65	1·86	1·92	1·76	1·36	·74	0

Fig. 3

STN	0	1·25	2·5	5·0	10	20	30	40	50	60	70	80	90	100
UPPER	1·80	3·25	4·65	6·35	8·85	11·70	13·25	13·80	13·60	12·75	11·05	8·45	4·55	0
LOWER	0	-·75	-1·10	-1·25	-·95	+·05	1·10	2·15	3·09	3·55	3·70	3·15	1·70	0

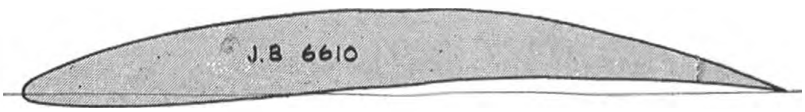
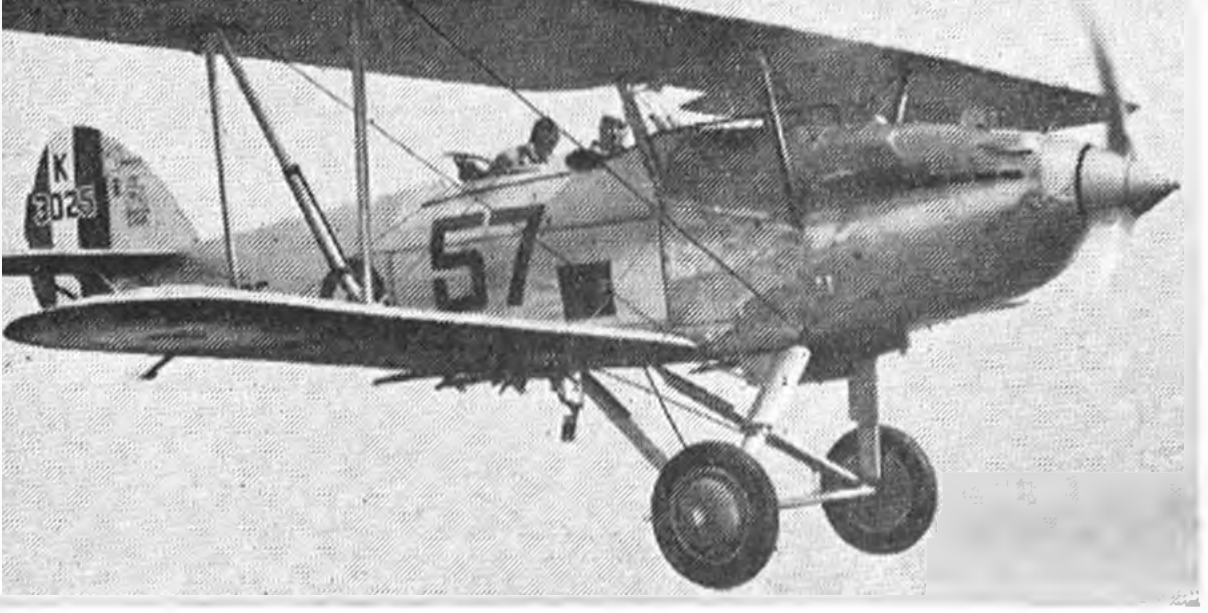


Fig. 4

STN	0	1·25	2·5	5·0	10	20	30	40	50	60	70	80	90	100
UPPER	0	1·8	2·4	3·5	5·45	8·0	9·5	10·2	10·35	10·1	9·1	7·1	4·0	0
LOWER	0	-·9	-1·2	-1·45	-1·45	-1·0	-·25	+·5	1·2	1·9	2·2	2·0	1·25	0

Fig. 5

STN	0	1·25	2·5	5·0	10	20	30	40	50	60	70	80	90	100
UPPER	0	2·34	3·28	4·60	6·44	8·75	10·07	10·70	10·80	10·44	9·67	8·02	4·88	0
LOWER	0	-1·5	-2·03	-2·59	-3·02	-2·80	-1·99	-·92	+·19	1·31	2·34	2·73	1·88	0



AIRCRAFT DESCRIBED No. 64

. . . . by G. A. CULL

The Hawker Hart

PROBABLY the best-known R.A.F. machine between the wars, the Hart was first flown in 1929 by George Bulman at Brooklands, from which historic place the Sopwith types made their maiden flights and where, today, Valiant bombers make first test flights.

The Hart set a new standard for day bombers and was of neat single-bay layout with a finely-streamlined cowling over the 525 h.p. R.R. Kestrel IB engine, which sharply contrasted with the larger types like Gordons, Wapitis and Horsleys, it was to replace. The Hart's lively performance was a marked increase over these and the new machine was welcomed into service as quite a superior aeroplane and the last word in day bombers. The pilot's view was improved over previous designs by virtue of the slim, downwards sloping nose plus the positive stagger and narrow bottom wing. Bomb load was 500 lb., carried on wing racks, and was aimed by means of a hatch beneath the pilot. When in this position the observer could also make use of the window in the starboard side of the fuselage. A Lewis gun was mounted on the rear cockpit's gun-ring and the pilot had a fixed Vickers gun. The 12-cylinder engine was cooled by a retractable radiator between the oleo legs of the undercarriage.

First squadron to receive the Hart was No. 33, and others that followed were 11 (India), 12, 15, 18, 39 (India), 40, 57, 600, 601, 602, and 24 communications squadron also had some Harts. No. 12 was the only squadron to have the earlier Fox bomber to which the Hart has been said to owe much. The combination of Hart airframe and Kestrel engine was a great success and led to a profusion of developments, variants and sub-versions which in number have been estimated as high as 75! The best-known of these were the Demon fighter, F.A.A. Osprey, and Army Co-op. Audax and the improved Hind. Versions were built for other air forces some with radial engines, and a fair number of Harts had experimental careers, *e.g.*, the cabin-Hart K1102, R.R.PV.12 (Merlin) test-bed, K3036 and K2434 fitted with a Napier Dagger to become the Hector prototype.

In 1935 the Hart Trainer entered service with dual-control installed. The gun-ring was replaced by a neat cockpit for the instructor who had an additional Aldis sight mounted in the starboard panel of his windscreen, and exhaust pipes sweeping below the leading edge of the lower wing were fitted. These advanced trainers were still in service at the outbreak of war in company with Hind Trainers.

Today, a solitary specimen of this prolific breed remains in this country, and is kept in flying trim by Hawkers who have operated it since birth. Registered G-ABMR, this Hart was the 13th machine built, has often been used as a mount for air-to-air photography over the years—the Hunter photo on page 499, August, 1952, issue was taken from 'BMR flying at full bore while the Hunter used flap to avoid overshooting. In postwar years 'BMR has enlivened many sporting flying events with the crackle of its special Kestrel 16, and wearing the racing number of 91 has often raced in the hands of Hawker test pilots. On the last occasion Frank Murphy averaged 136.5 m.p.h. in the Kemsley Trophy race on June 20 last year. Another civilian Hart was G-ABTN which was fitted with a Bristol Pegasus radial engine. Although replaced in some cases by the Hind, which was merely an improved version, the Hart may be regarded as the R.A.F.'s last biplane light bomber before the Battles and Blenheims of the monoplane age ousted them for ever. Nevertheless, their eight years' service all over the world, immaculate performances at Hendon displays and sheer beauty of line are not forgotten by those who knew the Hart as one of the finest service machines of the between-wars period.

Specification: Span: 37 ft. 3 in. Length: 29 ft. 7 in. Height: 10 ft. 6 in. Wing Area: 350 sq. ft. Empty Weight: 2,530 lb. Loaded Weight: 4,550 lb. Max. Speed: 180 m.p.h. Cruising Speed: 140 m.p.h. Initial Climb: 1,500 ft. per min. Climb to 10,000 ft. in 8 min. Service Ceiling: 21,320 ft. Range: 470 miles.

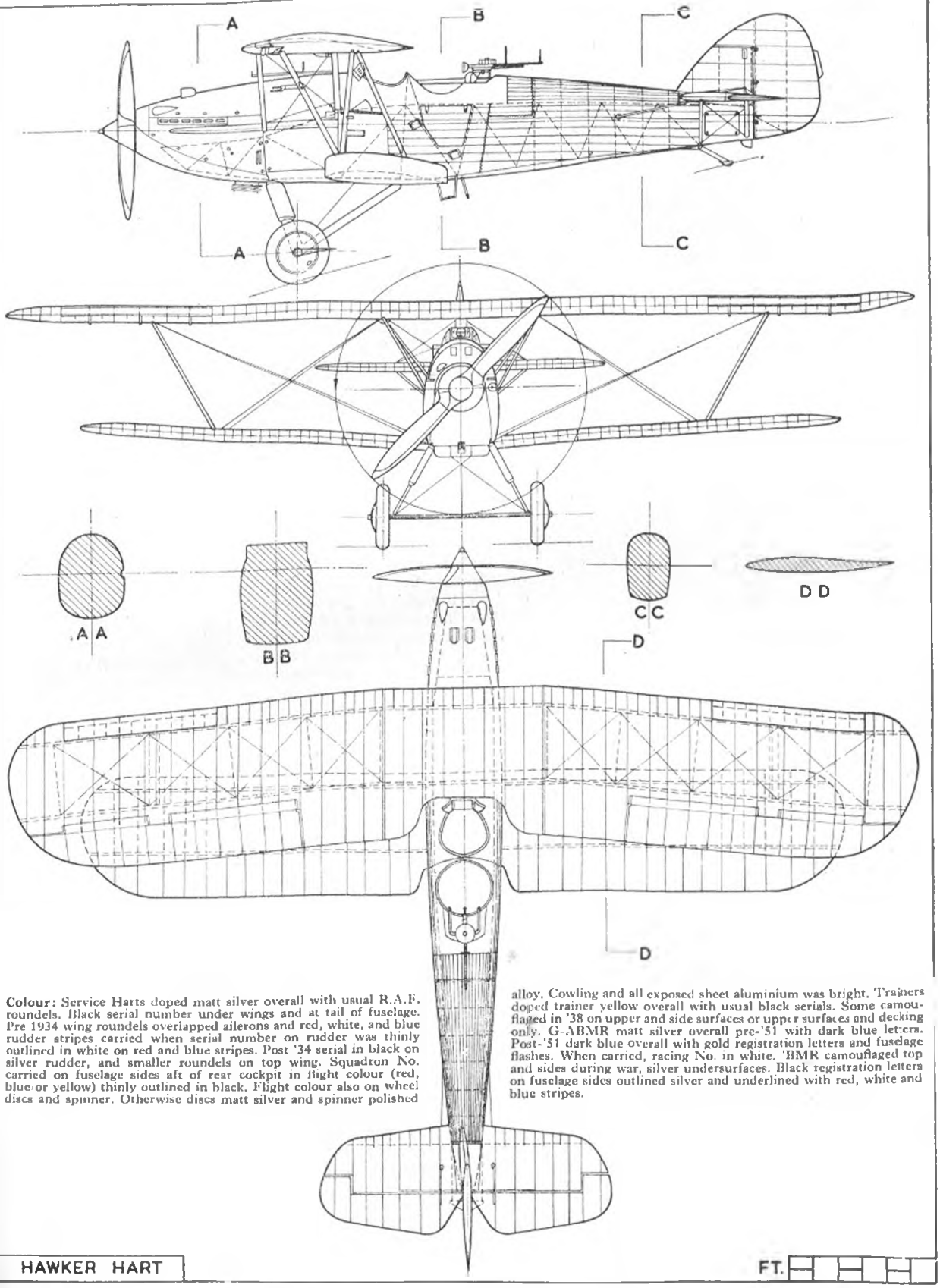
Construction: All metal with fabric covering. Fuselage typical Hawker Warren girder structure with round steel tube longerons squared at joints with dural tube diagonals and cross struts. Faired top and sides with spruce stringers on ply formers.

Wings have two spars of rolled high-tensile steel strip with compression struts and dural lattice ribs. Interplane and centre section struts of streamline steel tubing with adjustable end fittings. Ailerons are differential Frise type on top wing only. H.P. automatic slats on top wing.

Tail unit similar to wings with two tailplane struts per side. Tailplane incidence adjustable by screw jack under rear spar. Fairing under tail for bottom of jack. Main tank in nose decking and gravity tanks in top wing roots.

Heading: A 57 Sqdn. Hart in post-1930 markings (blue rudder stripe at rear). The metal wheel discs, spinner and "57" are in Flight colour, blue in this case. This side of the fuselage shows the bomb-aimer's square window and has no gun. (Photo by courtesy of "Flight.")

Right: a 1951 photo of "BMR" in silver dope. Below: she is shown in her present coat of blue dope in single-seat racing trim with white race number also carried above top and below bottom wing tips. (Photos by G. A. Cull.)



Colour: Service Harts doped matt silver overall with usual R.A.F. roundels. Black serial number under wings and at tail of fuselage. Pre 1934 wing roundels overlapped ailerons and red, white, and blue rudder stripes carried when serial number on rudder was thinly outlined in white on red and blue stripes. Post '34 serial in black on silver rudder, and smaller roundels on top wing. Squadron No. carried on fuselage sides aft of rear cockpit in flight colour (red, blue or yellow) thinly outlined in black. Flight colour also on wheel discs and spinner. Otherwise discs matt silver and spinner polished alloy. Cowling and all exposed sheet aluminium was bright. Trainers doped trainer yellow overall with usual black serials. Some camouflaged in '38 on upper and side surfaces or upper surfaces and decking only. G-ABMR matt silver overall pre-'51 with dark blue letters. Post-'51 dark blue overall with gold registration letters and fuselage flashes. When carried, racing No. in white. 'BMR camouflaged top and sides during war, silver undersurfaces. Black registration letters on fuselage sides outlined silver and underlined with red, white and blue stripes.

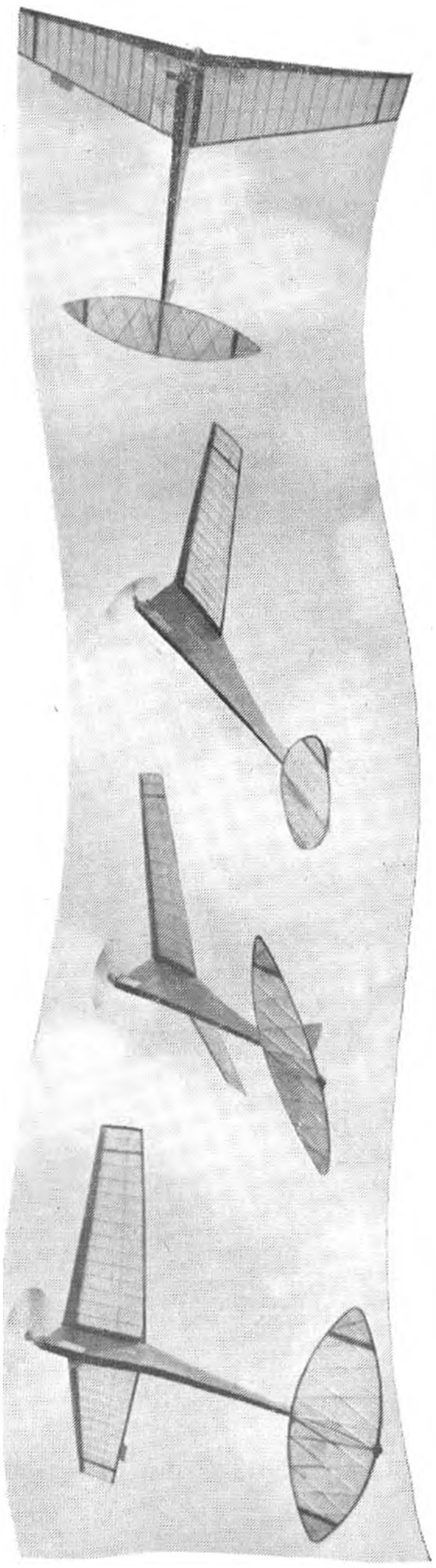
HAWKER HART

FT.

"J" type 1/72nd scale reprints and "A" type 1/48th scale die-line prints of this drawing are available from A.P.S. price 6d. and 1/- respectively.

Tom Smith's Nationals winner...

Fried Fritter



Two years in development, this is Britain's most outstanding open-power design to date

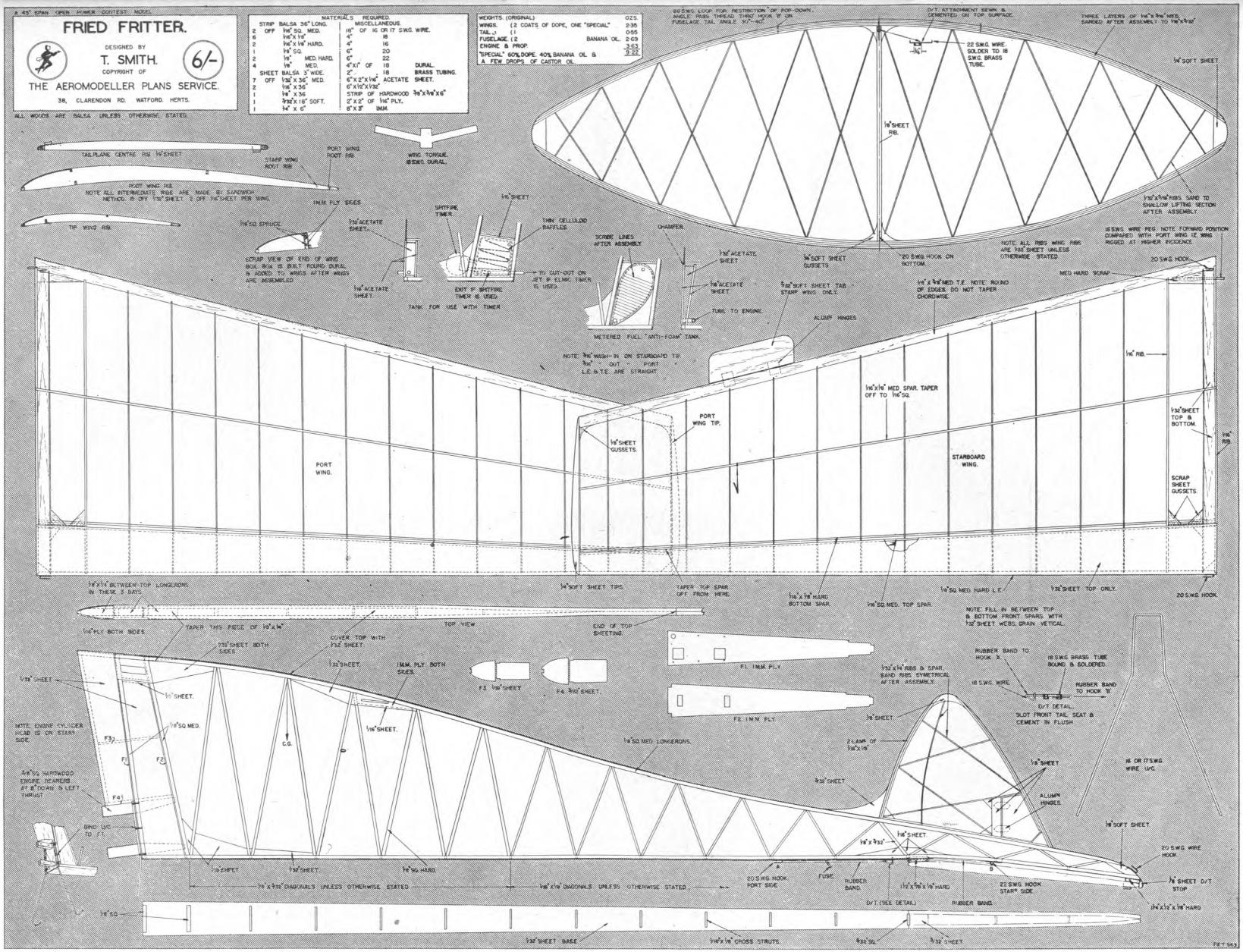
THERE are three different approaches to be made to power contest modelling—the design for glide type which has but a small following; the "happy medium" group, which is by far the most popular; and the all-out for climb designs, of which Tom Smith is one of our leading exponents. Anyone competing in rallies and National contests over the last three seasons cannot fail to have been impressed by the projectile ascent of the "hot" series of "Toasted Crumpet", "Fried Fritter" and earlier "Scalded Kitten" functional layouts with their unique wing-plan, profile fuselages and alarming amounts of engine offset. They were at one time considered in humorous light by the less adventurous, but gradually the fact that they were gaining considerably more altitude than conventional models began to sink in until now in 1954 we have quite a following for the Annenburg/Smith cult.

As skilled aerodynamicists, employed daily in the highly involved scientifics of supersonic flight, the originators of this school of thought for high-speed climb are at a fortunate advantage in knowing what they are talking about—a facility which escapes the majority of aeromodellers—and Tom Smith has developed "Fried Fritter" to a stage where it becomes easy for anyone with power experience to build from his plan and fly to a now well established trimming procedure. Full details of his methods are given on the A.P.S. plan.

Suffice to say here that this trim involves setting the wing halves with opposite wash-in/out to get that tremendous near-vertical spiral climb, and you will begin to realise that this is one model not intended to be flown for fun. However, the cautious should not be put off by the unconventional and extreme angles included in the "Fritter" assembly, for this is now an everyman's model, and only one special requirement is demanded of the builder. That is precise workmanship, for the whole performance of this advanced design will depend upon accuracy of construction and light overall weight. Tom Smith's original scales only 9·35 ounces complete with an Elfin 2·49 and regular flight ratio is about 23 : 1.

For the record, let's study the contest record, starting with predecessor "Toasted Crumpet" which placed 2nd in open power at the first Y.E.N. Rally. "Fritter" won the first event entered, the '52 Bolton Rally with an aggregate ratio of over 50 : 1 (first flight was 4 : 05 from 11 seconds power run). In the '53 Hamley Trophy "Fritter" flew through below par weather as though on rails to make a perfect triple maximum time from three ten-second runs and followed up with a fly-off 5 : 28 to take the Trophy in conditions which the low National entry indicates were sufficient to keep most models in their boxes. Then there was a 5th in the '53 Shelley, the result of a poor first flight due to travel warps, and more lately, a beautiful first, against extremely keen competition in the '54 Sir John Shelley, with a time of 11 : 34 for three flights.

Now that it can be safely said that "Fried Fritter" is out of its two-year session in the oven and is done nicely "to a turn," why not try one yourself and trim through the coming months ready for the '55 season?

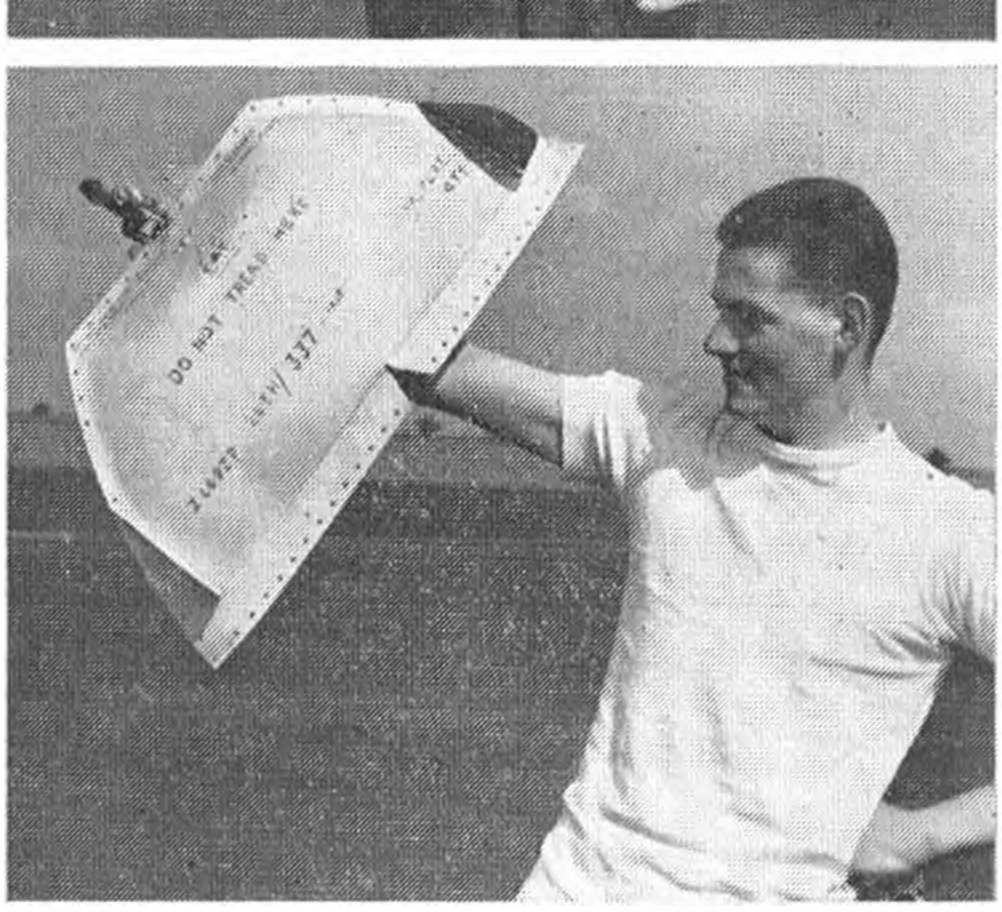


THIS IS A 1/5 SCALE REPRODUCTION OF THE FULL SIZE PLANS WHICH ARE AVAILABLE, PRICE 6/- POST FREE FROM THE AEROMODELLER PLANS SERVICE

The 1954 R.A.F. CHAMPIONSHIPS

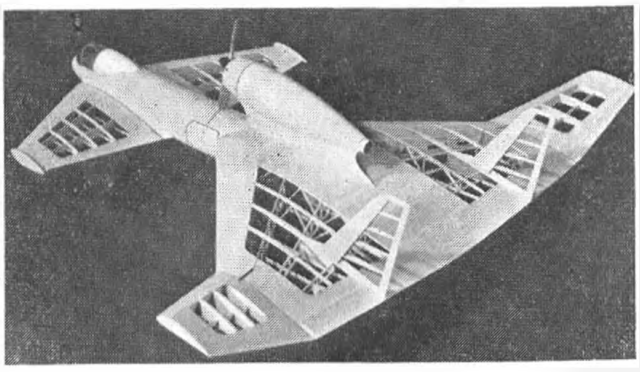
HORSHAM ST. FAITH, a short distance from Norwich, was the venue for the 1954 United Kingdom Championships of the R.A.F., and the Met. Department had obviously been given due warning of the "fizzers" that would come their way if they did not lay on the right kind of weather! As a result, for three-quarters of the two-day meeting perfect model flying weather was enjoyed, and full advantage was taken of this break in the infamous English summer to get in some of the best flying yet witnessed at an R.A.F. meeting. (Of the remaining portion of the time, the less said the better—but it is no exaggeration to say that the skies literally opened, to such an extent that your reporter was soaked before he was able to run the very few steps to a car!)

As is usual at these meetings, flying scale and the unorthodox models were of great interest, and many fine examples of both types were seen, the majority flying extremely well. Sgt. McHard of Wellsbourne-Mountford was well to the fore with wins in two



Concours sections, and a well deserved win with his very unorthodox, but aerodynamically sound double-canard-delta (originally named "Canta", but subsequently dubbed "D-canter" on editorial suggestion!), these successes bringing him the Victor Ludorum trophy.

In the scale section F/Lt. A. Coutts-Smith flew a really beautiful "Luscombe", spray finished in cream and green, this model also winning his Concours class hands down.

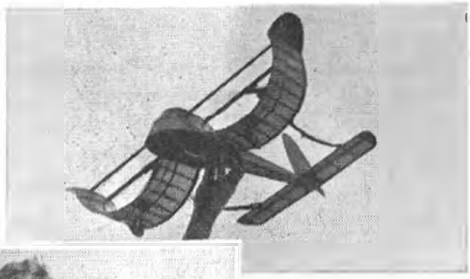


Left: F/Lt. Roberts on of Wattisham created amusement with his twin-balloon effort, bleed off of gas being operated by an Elmic timer.
Centre and above: Sgt. McHard fully deserved his wins with this most unorthodox layout. With prop almost invisible at speed, the efflux of exhaust gases through the "jet" tube was most realistic.

In the flying section however, F/O Norman of Abingdon, just pipped him with an excellently flown "Tiger Moth" in one of the best scale flying contests it has been our pleasure to judge.

Johnny Gorham of Ipswich came through to win the Thurston Trophy, open this year to non-service modellers, though surprisingly few took advantage of this invitation.

G/Capt. Saw, C.B.E., Chairman of the R.A.F. Models Association, introduced the President, Air Vice-Marshal Sir Dermot A. Boyle, K.C.V.O., K.B.E., C.B., A.F.C., Prizes were distributed by Air Chief Marshal Sir Hugh Lloyd, the Command shield going to Fighter Command.



Heading picture shows a portion of the interesting line-up of models for the Unorthodox event.
Centre: F/O Norman of Abingdon with his winning scale "Tiggy" which proceeded to beat up the tarmac with advertising banners attached.

Bottom left: J/Tech. Parkinson of Worksop actually tried to fly this "flying wing." constructed from part of a Meteor undercarriage cowling

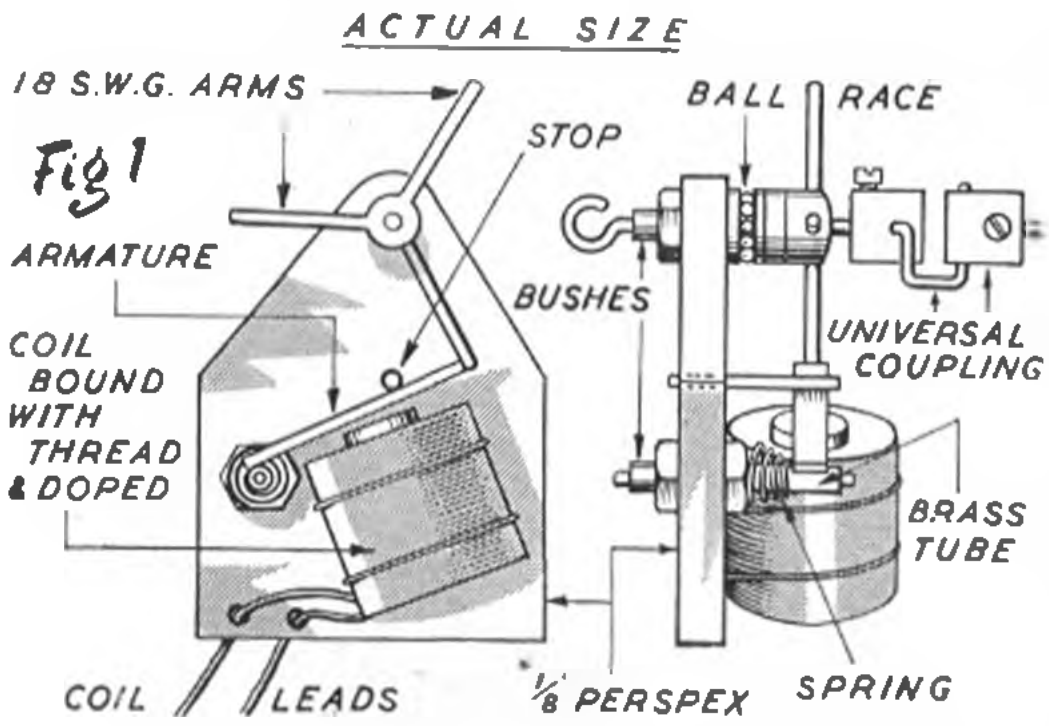
Bottom right: F/O Mills of Horsham shows his beautifully constructed model of the H.P. Victor. Machine is powered with two Jetex units, access being obtained through retracting undercarriage doors.

Left: F/Lt. Coutts-Smith with his spectacular "Luscombe" takes time out from his arduous organising duties to "watch the birdie."
Above: Chief/Tech. Edwards again showed his aptitude by ably flying his Custer wing model, powered by twin rubber motors, and Jetex assisted on take-off.
Centre: J/Tech. Percival of St. Athan made many fine flights with this "Seagull" prototype, though running out of runway on a number of occassions.

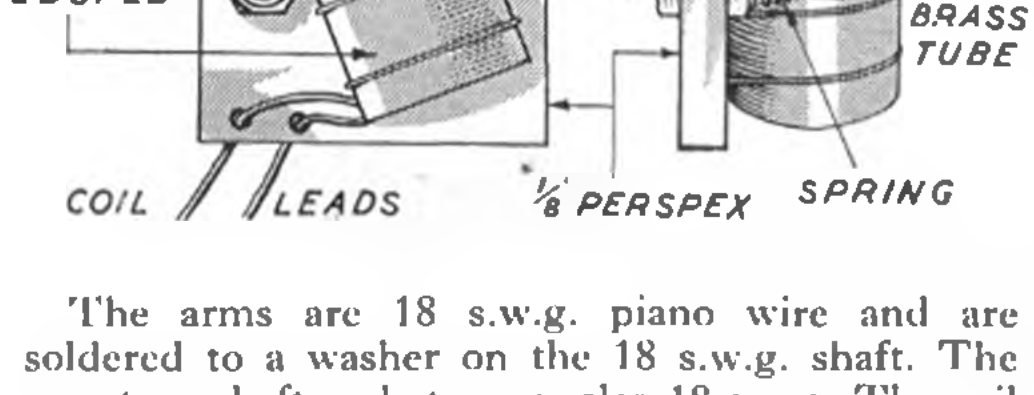
A new home-built actuator and two different approaches to engine throttle control are introduced by HOWARD BOYS in

Radio Control Notes

MR. B. H. SHAW, of Bristol, has made an interesting escapement working of the capacitor discharge principle as first given to us by Mr. Sommerhoff. It is shown in *Fig.* 1, with a wiring diagram in *Fig.* 2 and has been put into an E.D. Baby powered low wing model of 42-in. span with 300 square inches area. With the Bolton-Aeromodeller receiver, the total weight is 17 ounces. While any number of arms can be fitted this escapement has three: for right, left, and neutral rudder.

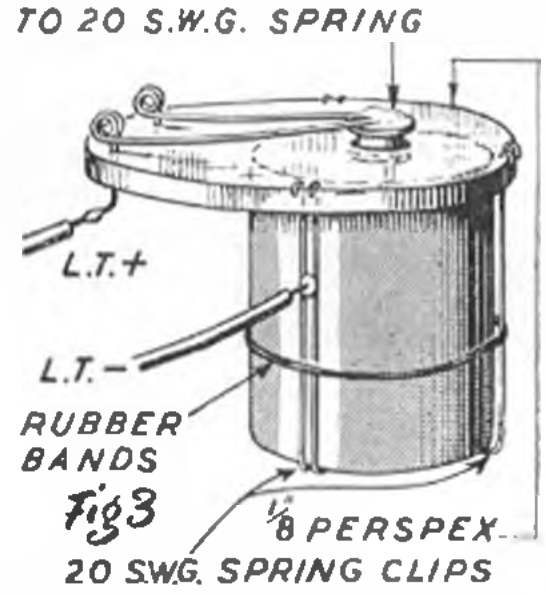


The arms are 18 s.w.g. piano wire and are soldered to a washer on the 18 s.w.g. shaft. The armature shaft and stop are also 18 s.w.g. The coil is made from a cut-down E.D. Standard escapement, wound full with 38 s.w.g. enamelled copper wire. The armature was also taken from the escapement and filed thinner and soldered to a piece of brass tubing for a bearing. Thin springy wire is wound twice round the tube, one end put under the armature and the other soldered to a screwed bush through which goes the armature shaft. The armature shaft is fused into the perspex base plate with a hot soldering iron.



The receiver H.T. of 60 volts is used for the escapement circuit, and the condenser takes about half a second to charge, peak current being probably about 4 milliamps. A 12 in. long loop of ⅛ in. x 1/24 in. rubber handles 200 turns, giving a snappy action and it has never skipped a position.

Mr. Shaw has also made a very convenient holder for U8 cells as shown in *Fig.* 3. Perspex ⅛ in. thick is used for the top plate, though paxolin would do. A hole is made to clear the positive terminal, and the connection is made by a brass washer which is soldered to a spring which presses it on to the brass cap of the cell. The spring is made of 20 s.w.g. steel wire and has three turns to give more springiness. The ends are pushed through the Perspex and turned up underneath. The top plate is held on by two more 20 s.w.g. springs which also form the negative connection. These are pushed through the Perspex and turned over on the top. The bottoms are bent round under the cell to hold it against the top plate. Rubber bands keep the cell between the wire clips.



Mr. Shaw's first radio controlled model was a sailplane of 80 in. span with a wing area of 500 square inches and a weight including radio of two pounds three ounces. Receiver was the Aeromodeller hard valve with 60 volts H.T. The first time out he had two perfect flights, launching from a hill. No doubt the absence of engine vibration contributed to this success.

Another scheme for operating an engine control from one of the neutral rudder positions has been sent along by Mr. Atkinson of Sheffield, and this works on the capacitor discharge system. It has been fitted in a model of 48 in. span powered by a Mills 1.3 c.c. Total weight of radio and ancillary equipment is about ten ounces, with an all-up weight of the model of just over thirty ounces. *See Fig.* 4.

An E.D. Standard or similar self-centring actuator is used for rudder control, and on each neutral position a wiper arm rests on a springy brass contact strip. In one position a condenser is charged through a resistance, and in the other it discharges through the engine control actuator, momentarily pulling in the armature and allowing the shaft to make half a turn. An old type E.C.C. actuator was used because it was handy, but any similar self-centring type could be used. One made to Mr. Shaw's design would be all right if fitted with two arms. This can be used to cut out the engine, change its speed, or operate another control such as elevator. Only one rudder neutral position can be used unless it is desired to operate the auxiliary actuator. A control box for the transmitter is useful here, and a suitable type was described in these "Notes" in October, 1953.

The rudder actuator is bolted to a suitable bulkhead and the fixed contacts put on. These are made from springy brass or phosphor bronze about 5 thou. thick and $\frac{1}{4}$ in. wide. They are bent to shape and fixed with 8 B.A. bolts, leaving a small tag for soldering. The wiper arm is made from thicker brass sheet $\frac{1}{4}$ in. wide, drilled for the actuator shaft and soldered in position. It is bent to shape so that it makes good contact on the springy strips. The condenser is 25 mfd. 50 volt working electrolytic type, and the resistance is chosen to give a suitable charging time. A value of 27,000 ohms gave a delay of about 3 seconds. The 45 volts for charging the condenser can be taken from the receiver H.T. supply, but Mr. Atkinson found that this can upset a critically-adjusted super-regenerative receiver causing the rudder actuator to skip. Two B 122 batteries can be used, or two of the B 145 type, which are only half the weight. The engine actuator can be mounted horizontally in the fuselage with the motor vertical. This allowed a motor length of only $2\frac{1}{2}$ in., but provides plenty of turns for engine control.

Mr. D. Paton, of Fife, who evolved a pendulum system for preventing dives due to the rudder sticking over has carried the scheme a bit further so that the dive can be used to operate an engine control. It can be used either to change engine speed or cut the engine out, or to hold a reduced engine speed when the model attains a predetermined nose-down angle. *Fig.* 5 shows the general principle diagrammatically. The pendulum is made by mounting the actuator battery at the bottom of a plank of balsa that is hinged at the top to the top of the fuselage. On this plank, which is as long as possible, is mounted a light rubber motor to drive a rotating wiper arm. This arm rubs against the contact plates, which are small strips of brass fixed to the bottom of the fuselage, the engine control plate being mounted a little further forward than the other. The width apart of these plates must be a little less than twice the radius of the wiper arm. The front end of the rear plate is adjusted so that when the model is tipped nose down to what is considered a safe diving angle, the pendulum swings forward so that the wiper arm slips off the

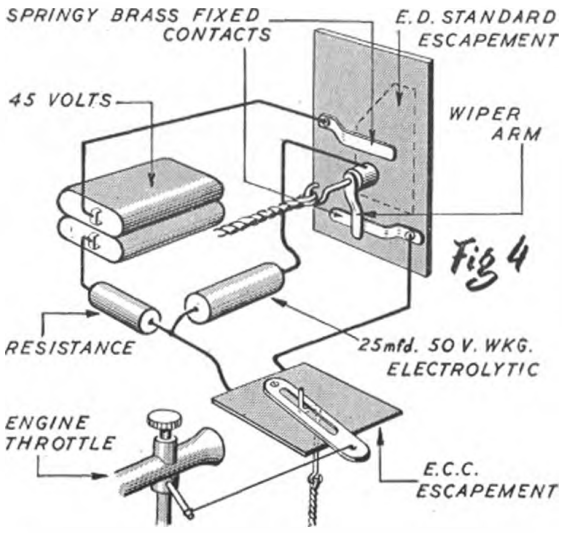


Fig 4

rudder actuator plate and swings round to bear on the engine control plate. This breaks the battery supply to the rudder actuator and allows the rudder to centralise. It also operates the engine control to give reduced speed, change of speed or anything else. It could if desired be used for some form of elevator control. In this case the rudder actuator could be used without the cut-out feature, and the forward contact plate used to give up elevator. For the people who want stunts rather than safety, Mr. Paton suggests that the rudder actuator be connected to the receiver in the ordinary way with no cut-out system, and the pendulum used just to change the engine speed. In use the rudder could be held on to produce the usual spiral dive, when at a certain angle of dive the engine will go to slow speed. Rudder is then released, the model levels out, and rudder is then applied again. When the spiral dive reaches the predetermined angle again the engine changes to full speed and the model performs a loop in the usual way. Just over the top of the loop the engine would go to slow speed again, but that should not matter.

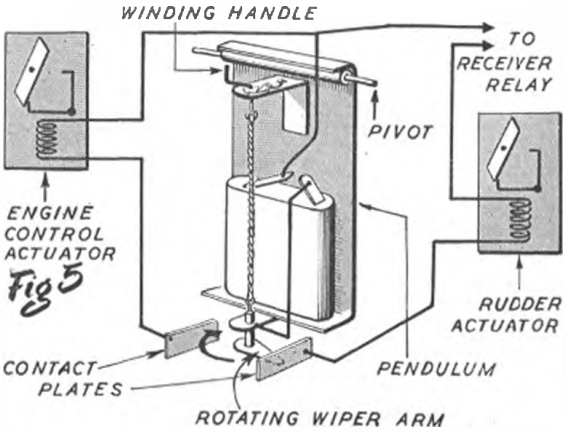
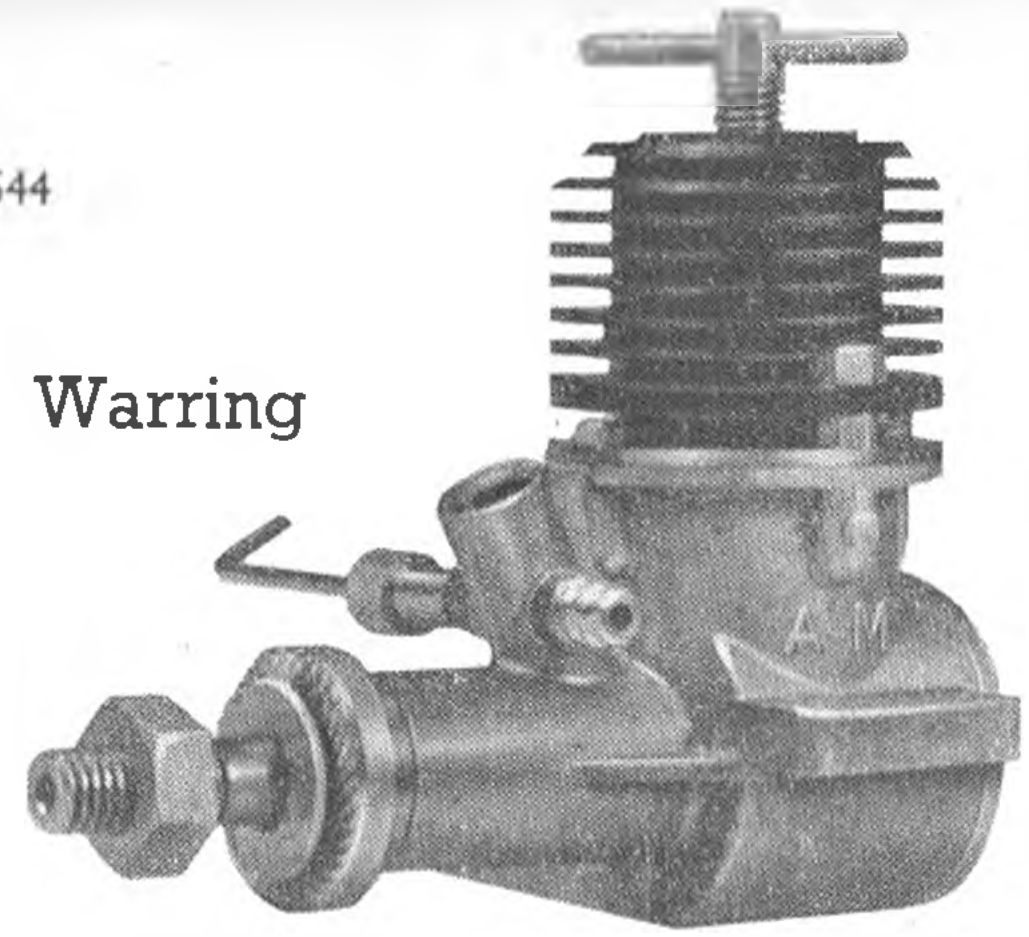


Fig 5

Engine Analysis No. 4 by Ron Warring
(Using the Eddy-Current Dynamometer)

ALLEN-MERCURY '25'



THE APPEARANCE of this new British motor renews a business acquaintance between Dennis Allen (well-known as a first-rate practical modeller, particularly in the control line and radio control field) and Henry J. Nicholls of *Mercury Models*. When "308" (H. J. Nicholls, Ltd.) ran a highly competent engine repair service many years ago, Dennis Allen was the man in charge. Wonders were performed in that backroom workshop on "reluctant" or badly damaged engines—and at quite modest charges—to the delight of hundreds of customers.

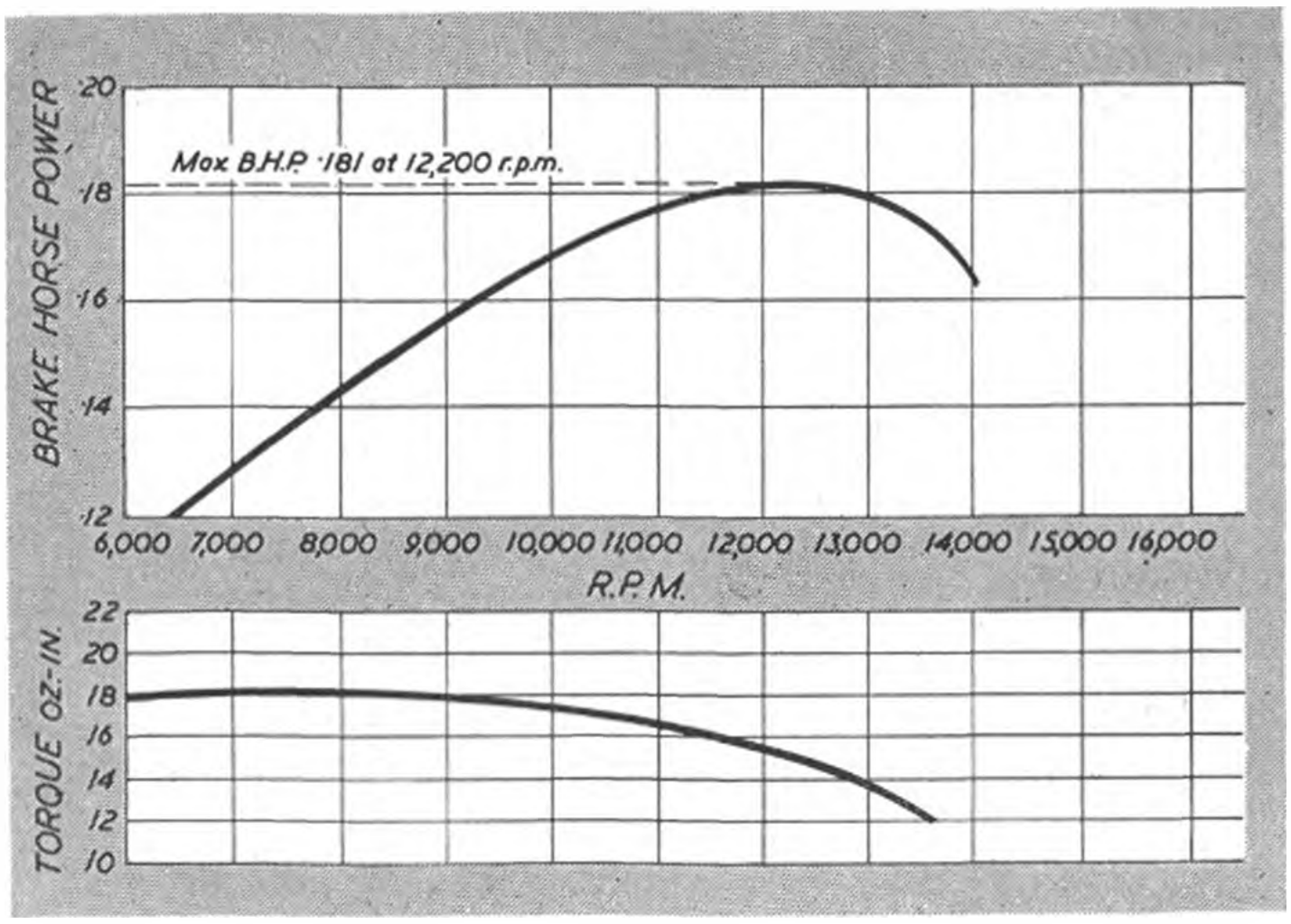
Largely for economic reasons, Henry J. had to drop his engine repair service. Shortly afterwards, Dennis Allen (still a "Mercury" man) was "lent" to Allbon Engineering, who were at that time concerned with getting out their new 2·8 c.c. diesel and developing other designs. There was a close link between these two companies at the time and Den Allen eventually became a full-time Allbon employee, playing a considerable part in the production of the not-so-successful "Arrow" and its diesel counterpart, the world-renowned "Javelin."

Dennis Allen's association with Allbon motors finished when that company's designs and products were taken over by Davies-Charlton—and their progress since those days is too well known to need further elaboration. Still intensely interested in motors, however, we now find Dennis working for the recently re-organised Amco company, then concerned with restarting production of their 3·5 c.c. designs. In spare time he worked on some of his own ideas for a popular engine—sound design, straightforward construction and high performance. Having got out a suitable design, Henry J. was approached again on the possibilities of getting together on the marketing side. The result is the Allen-Mercury "25"—Allen Engineering the manufacturers with H. J. Nicholls, Ltd., as trade distributors. No doubt the first of many engine productions under this name.

We say "no doubt" for, with the "25," Allen-Mercury appear to have got off to an excellent start. Everything is clean and neat about the "25." The dies are brand new. The machines used for production are new (no garden-shed production, this, with over-age equipment). The job of *producing* engines has obviously been tackled with enthusiasm and the result is very definitely a modeller's engine—produced by a modeller.

Superficially, the most striking aspect of the "25" is its compact appearance and small size for a 2·5 c.c. motor. This is also reflected in the moderate total weight—a shade over 4 ounces, bare. Appearance is pleasing—far more so than the photographic illustration on the box and advertisements convey. This view is an unfortunate choice in that it gives undue emphasis to its squatness.

Design and construction-wise the "25" follows (largely) orthodox practice. Every component appears to be made to "sensible" sizes and there is no doubt that weight could be cut off here and there if it ever became



PROPELLER				r.p.m.
dia.		pitch		
9	x	6		9,500
9	x	4	(STANT)	10,250
9	x	4	(K-K)	10,000
8	x	6	(STANT)	10,850
8	x	6	(K-K)	10,600
8	x	6	(TRUCUT)	10,500
7	x	6	(STANT)	12,000
7	x	6	(K-K)	11,800
9	x	4	PLASTIC	7,800

Fuel used: Mercury No. 8.

Data:
Displacement: 2.4
Bore: .570. Stroke: .562
Bore/Stroke ratio: 1.01
Bare weight: 4 ounces
Max. B.H.P.: .181 B.H.P. at 12,200 r.p.m.
Power rating: .0725 B.H.P./c.c.
Power/weight ratio: .045 B.H.P./ounce

Material Specification:
Crankcase: L.M.2
Cylinder: Meehanite
Cylinder jacket: Dural
Piston: Meehanite
Contra-piston: Meehanite
Connecting rod: Dural
Crankshaft: S14. Case hardened
Crankshaft bearing: Meehanite bush

Manufacturers: Allen Eng., (Edmonton)
Retail Price: 66/6

necessary to produce a lightweight version. Cylinder walls are a good 1/16 inch thick, for instance. Roughly one-half of the total weight is accounted for by the crankshaft and cylinder—rugged strength where it is most needed on a general-purpose engine. The compact crankcase unit (die cast in light alloy) represents a further one ounce, complete with pressed-in bushing for the crankshaft.

Full 360 degree transfer and exhaust porting is employed. The steel cylinder drops into an oversize housing giving clearance all round for the transfer. Four circumferential slots milled into the cylinder walls provide what is virtually a complete 360 degree transfer port just below the mounting flange, uncovered by the conical-top piston as it approaches the bottom of its stroke. Exhaust porting is similar, but the slots are slightly deeper, just above the cylinder mounting flange. No doubt one of the main reasons for using relatively thick cylinder walls is to ensure adequate strength in the small volume of material left between ports to produce a continuous cylinder. We are assured that considerable thought and research went into the design of the ports which are aimed at providing an efficient, economical fuel transfer, with the emphasis on good starting characteristics.

The method of securing the cylinder to the crankcase is unusual. The cylinder actually bolts down with four screws, except that two of these are studs with a centrally located nut section. The light alloy cylinder jacket is then slipped in place, to be held down by nuts run on to the two projecting studs. The cylinder jacket has to be removed before the cylinder head can be tightened up should the latter vibrate loose (or even to check if it has worked loose). In practice, however, no trouble of this kind was experienced. In fact, in discouraging the owner to take his "25" to pieces, the designer has probably done a good thing.

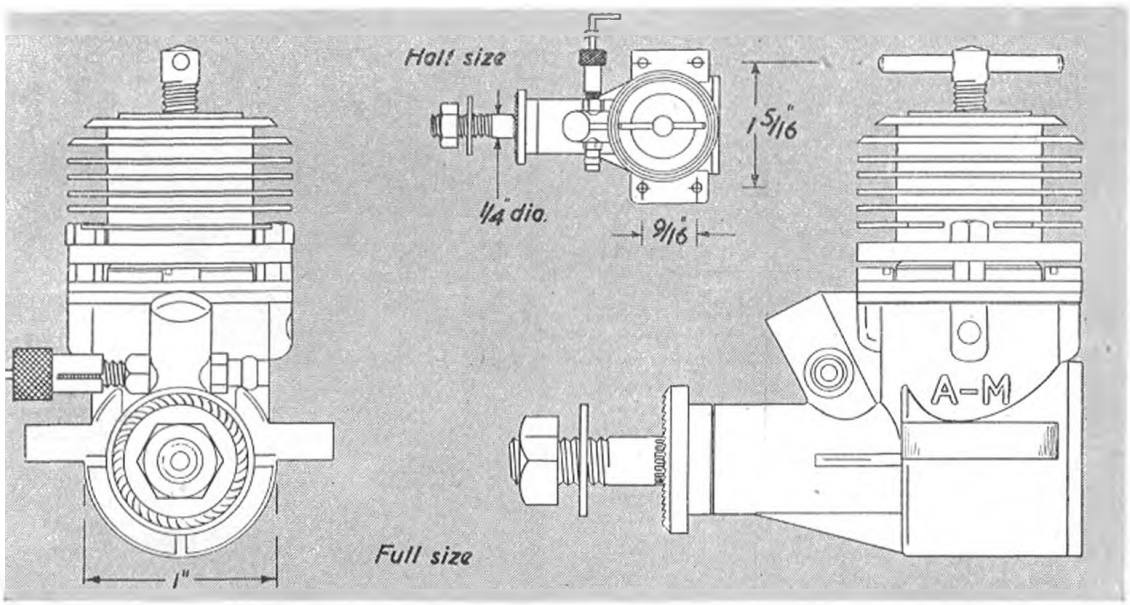
One final word on the design—the crankshaft. This is a most sensible unit. Full diameter 3/8-inch over the bearing length reducing to a 1/4-inch diameter propeller shaft. The light alloy propeller backplate is forced on to a milled section for absolutely positive grip. We would have suggested a fillet at the change in radius point to avoid a stress raiser, but the size of the unit is sufficient to inspire confidence in its resistance to most severe crash strains.

Mercury No. 8 fuel is recommended for general use, although it is mentioned that an improved performance will result by increasing the proportion of paraffin. The "best" fuel for the "25" is a blend of 40 per cent. paraffin, 20 per cent. castor, 3 per cent. amyl nitrate and balance ether. A new *Mercury* fuel to this formula is expected shortly (substituting nitrite for nitrate), but present "25" owners can get comparable results by adding up to 15 per cent. paraffin to standard *Mercury No.* 8. Straight *Mercury No.* 8 fuel was used in the tests.

As supplied new, the *Allen-Mercury* "25" is set up pretty tight. It therefore needs quite a lot of running-in before all working surfaces bed down to a perfectly smooth running fit. Although not tried, it would seem that this is just one of those engines which would benefit from the use of colloidal graphite in the fuel—for the whole running-in period, if not for subsequent use.

Although exceptionally easy starting is claimed as one of the features of this engine, the "25" is not superior in this respect to any other good modern diesel. It starts quite readily, hot or cold, either on finger choke or priming through the exhaust. It does, however, have two starting characteristics which at least partly justify the claim. In the first place it has a good "suck" when choked, which makes filling the fuel line easy *without* having to open up the needle valve an extra turn or so (some engines are little brutes in this respect). Also if started over-rich, it burbles into life quite readily, four-stroking or eight-stroking, accelerating as the mixture clears. This means that hand starting with small diameter propellers is quite a safe business, rather belying the exceptionally high performance with a properly adjusted mixture.

Response to needle valve control is extremely non-critical. The compression control, on the other hand, is possibly more responsive on contemporary engines of similar size. We have to criticise this particular control on several scores. The cylinder gets very hot after a short period of running; the tommy bar has a marked tendency to vibrate loose and unscrew itself; being



of small size, burnt fingers can result from attempting compression adjustment after about half a minute's running; the contra-piston was also prone to seize, making adjustment difficult; also at some speeds, contrary-like, compression setting worked off by itself.

Undoubtedly many of these faults were peculiar to the individual engine tested. We would, however, suggest an easier-to-get-at compression control. The fact that the engine runs so hot means that readjustment of settings after warming-up is absolutely necessary for maximum performance with any particular propeller.

(*We understand from the manufacturers that modifications have already been made to combat the above criticisms. The cylinder has been lengthened internally, without increasing the external dimensions, which permits a larger surface area for the contra piston. This eliminates the need for too tight a fit between the contra piston and the bore, removing the possibility of the contra piston seizing. The limits between the vernier adjusting screw and the threaded hole in the cylinder head have also been reduced to prevent this working loose.*—Ed.)

There was also a marked loss in power as the "25" warmed up to its normal running temperature, only part of which could be recovered by re-adjustment of the controls. This tendency is most noticeable when the engine is new and stiff and tends to diminish with running-in. Hence it is imperative to give the "25" a full run-in period before installing in a model. For example, relatively new an r.p.m. figure of 10,000 was obtained a few seconds after starting with a 9 x 4 propeller, dropping to 9,200 on warming up and then down still further due to stiffness. Eventually that same propeller gave 10,500 initial r.p.m., dropping to 9,950, which it would hold consistently. After an hour or more running time the consistent "hot" r.p.m. remained about 10,000 r.p.m., but by careful re-adjustment of the controls could be brought back to about 10,300 r.p.m.

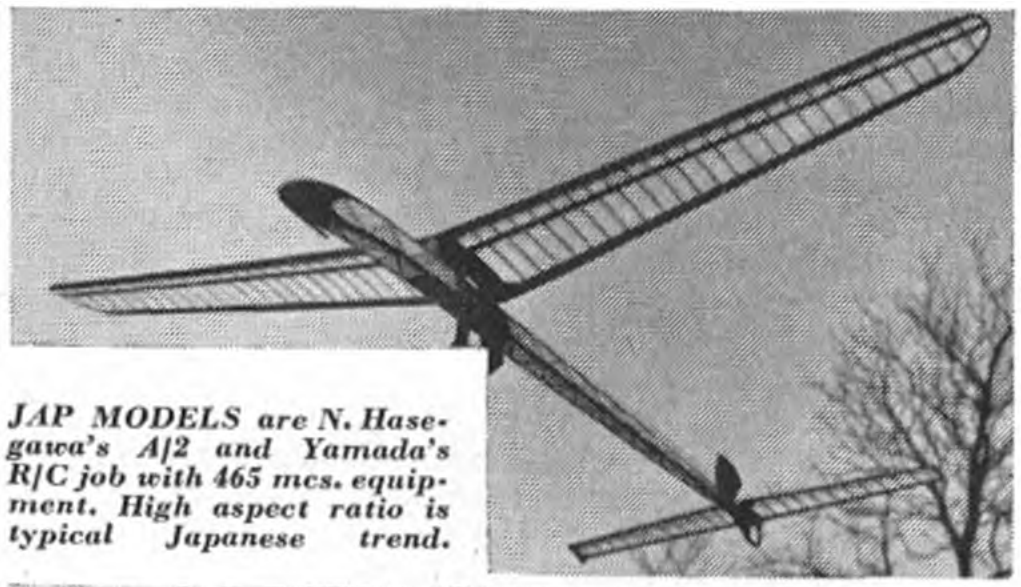
Summarising, we would rate the *Allen-Mercury* "25" an extremely good general-purpose 2·5 c.c. engine. Performance is in the "excellent" class for speeds up to 12,000 r.p.m., where peak power output is achieved. It is, as we said before, a modeller's engine peaking at a moderate r.p.m. figure. It will compare directly with most racing engines on propeller loads up to this peak speed, but, of course, is not happy trying to be forced further.

In practice this means that small diameter propellers should not be used on the "25." The makers recommend 8 x 5 and 9 x 4 for free flight (which seems just about right); also 10 x 4 and 10 x 5 (which appear oversize). Propellers 8 x 4 or 8 x 5 are about correct for control line stunt. Team race propellers specified in the leaflet are 7 x 9, 8 x 8 or 8 x 9. We had a feeling that these pitch values might drag the r.p.m. figures well down below peak B.H.P., but with a little re-working of the blades static r.p.m. figures in excess of 10,000 r.p.m. should readily be obtainable with any of these sizes. The "25" should, in fact, be an excellent team race engine as it appears to have a favourably low fuel consumption.

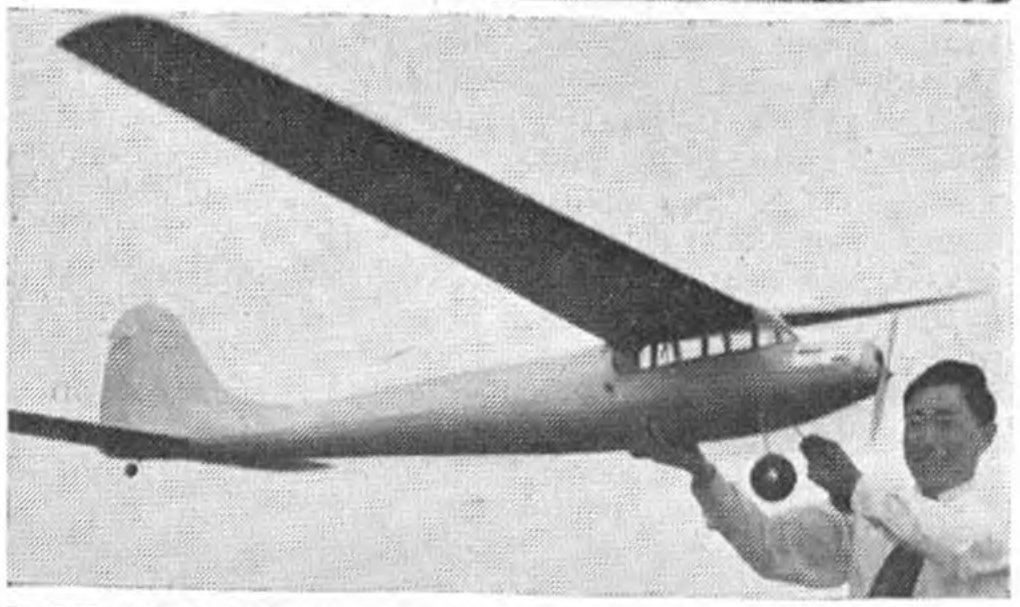
Price is also a most attractive figure—undoubtedly bargain value for first class workmanship and a generally excellent power plant. The most annoying thing of all—a stupid point, really—was the prominence given in the leaflet to the fact that the engine is supplied "complete with extra set of gaskets FREE"—value sevenpence! The Allen-Mercury "25" is a good engine. It will sell on its merits. A re-design for the contra-piston adjustment and it could become outstanding in its class. It does not need catch-penny phrases to make modellers appreciate its value.

World News

With all the World Championships over for '54, speculation on next season's events is apparent in all countries. Higher aspect ratios can be taken as a general trend in all free-flight classes and the no cross-section ruling is producing some extremely slender fuselages. In control-line, interest centres on the 2.5 speed class, the next World Championship rating. One thing is certain and that is the fact that personal participation of all teams is an essential to these International meetings, and an Olympics in Europe (and Gt. Britain is a European country) would be the most direct means to obtaining such a happy state of affairs.



***JAP MODELS** are N. Hasegawa's A/2 and Yamada's R/C job with 465 mcs. equipment. High aspect ratio is typical Japanese trend.*



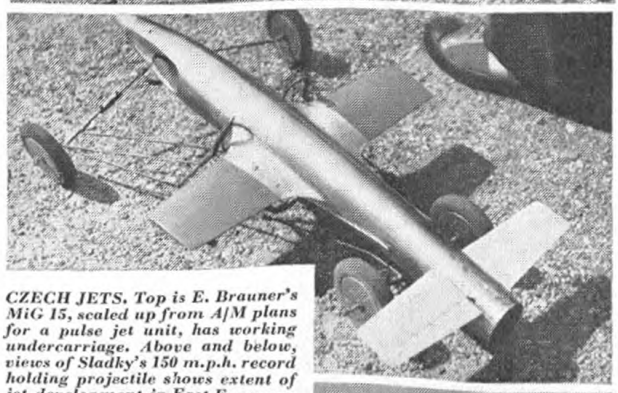
***GERMAN TAILLESS** at Nats. are Mach 1 power model by Wildhack and geared rubber by Seidel.*

***SWEDEN'S CHAMP** in free-flight power is Eskil Falk with enlarged Lil Aud.*

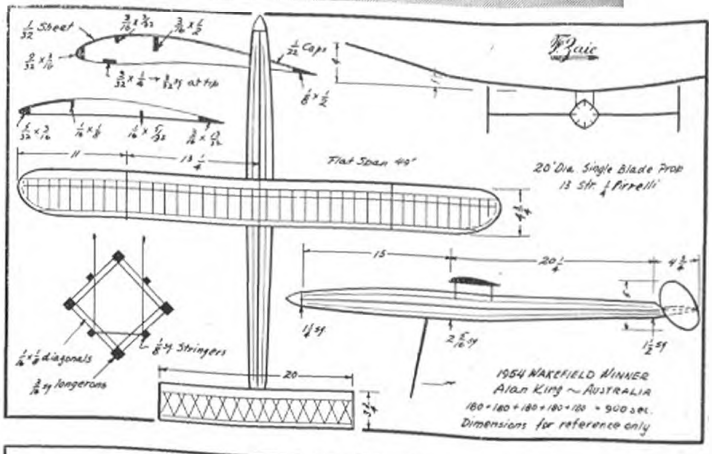
If the glowplug is superior in speed, and such a high proportion of the Power Championship competitors used Torpedo 15's, one might think that the diesel is taking a back seat. We hasten to correct such an impression with the news that two of the **U.S.A.** '53 power team members that came to Cranfield have turned to the Mach 1 and Oliver Tiger for more consistent and increased climb power. The USAFE team at the C/L Championships were also impressed by the performance of the British Tiger powered team racers and passed on a few tips for extending the range of Class B racers with glow motors. Experiment with plugging the air intake not only improves the "suck" of the carburrettor but allows a less wasteful, leaner, needle setting. Flying on their 60 ft. lines, American Class B racers average 85-90 m.p.h. or faster and manage up to 50 or even more laps with 28 c.c. tanks.

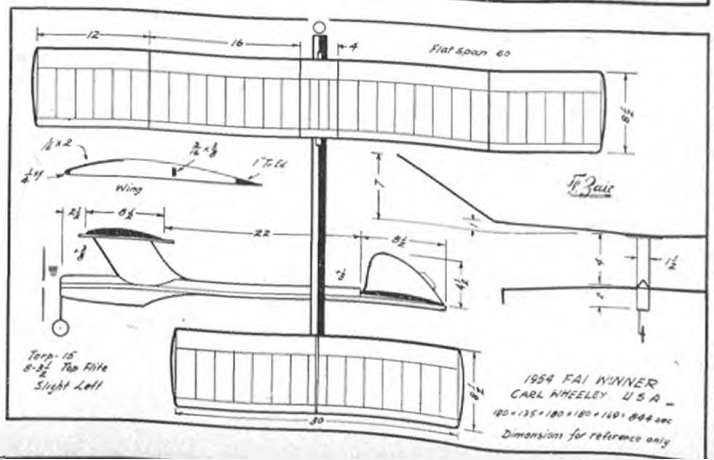
The **Swedish** Nationals were held on August 1st to FAI rules and produced a five-maximum win for Stellan Knoos in Wakefield. This was another victory for gears, and in third place came Anders Hakensson who touched down at a Norwegian 'drome that very day after flying back from the United States meeting, and took a taxi to the Swedish site just in time to enter. Anyone who knows how tiring a long flight can be will appreciate that Anders' effort of a 164 and four max's was pretty terrific. Second man was Charles Moberg, the man whose tail dee-teed away at Cranfield, using a straight motor of 14 strands. Stick fuselages dominated the A/2, won with 800 seconds by Rune Andersson who apparently made an exception by being practically the only competitor with a "normal" fuselage. In power, the Oliver Tiger diesel made its mark by taking Eskil Falk's enlarged Lil Aud for a total of 820 to beat a Mach 1 job by Per Hakansson.

Results of the **German** free-flight Nationals at Brunswick show a big entry in all classes, especially A/1 and A/2. G. Saemann topped Wakefield with a retracting undercarriage (by fuse) job that skyrockets up on high power with five max's. Naturally enough, Webra's dominated power, and one unique design, by Koenig—virtually a large glider trimmed out to take a Mach 1, was very impressive. The Schleswig-Holstein modellers publish an annual summary of model contest achievements that makes interesting reading. In A/2, top times have risen from 418 seconds in '51 to 592 secs in '54, though presumably in '51 they were using the older 3-flight 5 minute max rule. A/2 has similarly risen from 430 to 740 secs. and A/3 from 636 to 747 seconds. The latter class is for 40 to 150 sq. decimetres total area—and that's big!



CZECH JETS. Top is E. Brauner's MiG 15, scaled up from A/M plans for a pulse jet unit, has working undercarriage. Above and below, views of Sladky's 150 m.p.h. record holding projectile shows extent of jet development in East European countries.





WORLD CHAMPION MODELS

Last year, AEROMODELLER had great pleasure in seeing its copyright drawings of the Wakefield and Power winning models reprinted in many another modelling magazine from all parts of the World. This time we have the pleasure of "lifting" such drawings from another publication and it is with due acknowledgement that we credit these informative plans by Frank Zaic to "MODEL AVIATION," the news magazine of the Academy of Model Aeronautics.

Round the Rallies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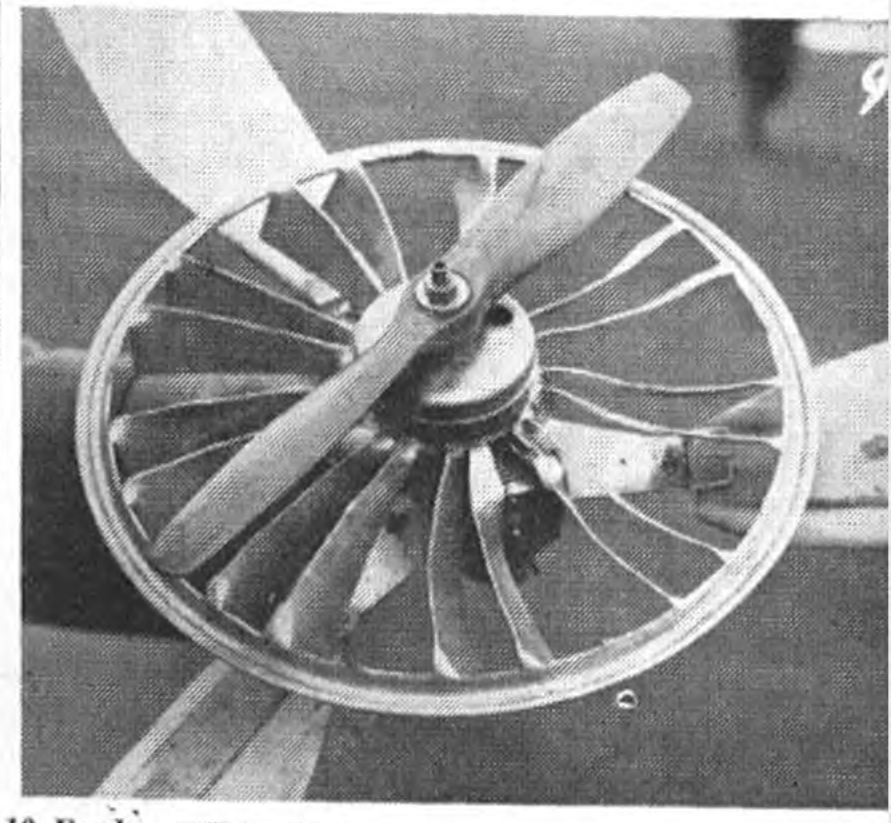
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1. C. Peacock, aged 15, of Novocastria, built this neat A/2. 2. Sid Allen's double r/c win was enhanced by loops using large elevator motion. 3. Smooth A/2 by D. Petrie of Montrose is underweight. 4. N. G. Harrison (W. Middx.) had Elfin and Atwood .049 jobs. 5. Ed. Bennett flew from deep grass, lost both prop blades. 6. Toreador a la McMaster from Glasgow. 7. Jock Finlayson returns with two max's. 8 and 9. Latest Hodgson Helicopter. Slipstream augments torque reaction via an aluminium fan. 10. Freda Shirt accepts the Huddersfield DMAC entry. 11. Gordon Yeldham and 90 m.p.h. t/r winner, has 7 degrees inset, uses Oliver Tiger.


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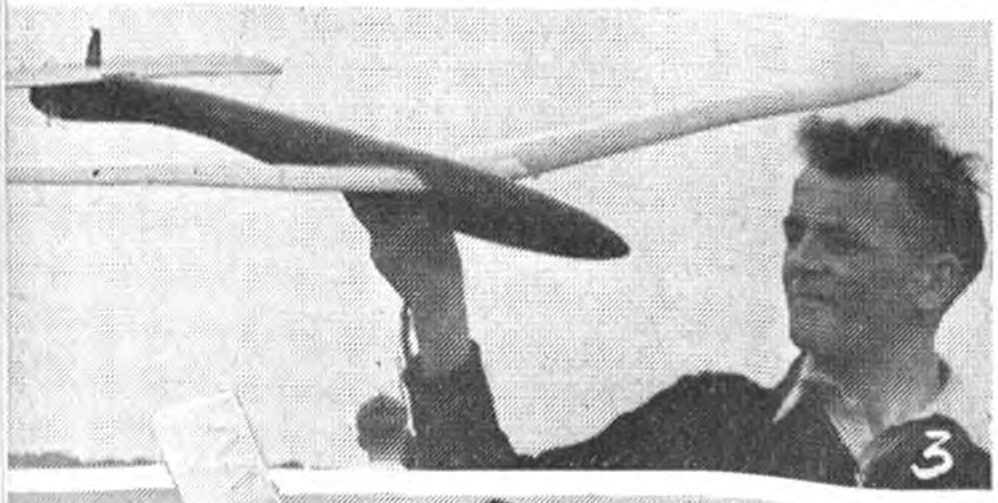
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Northern Model Flying Gala . . . Darlington

We hesitate to think that the meeting which went under the above title could possibly have been truly representative of the North, for to us it seemed more like a Scotland versus the South meeting place with the renowned Northern individual experts stepping in to take the free-flight prizes. Monday's poor attendance came as an anti-climax after a fair showing on the Sunday, being the first Gala or National meeting of our knowledge where the day's events were not attended by even a single visiting club coach.

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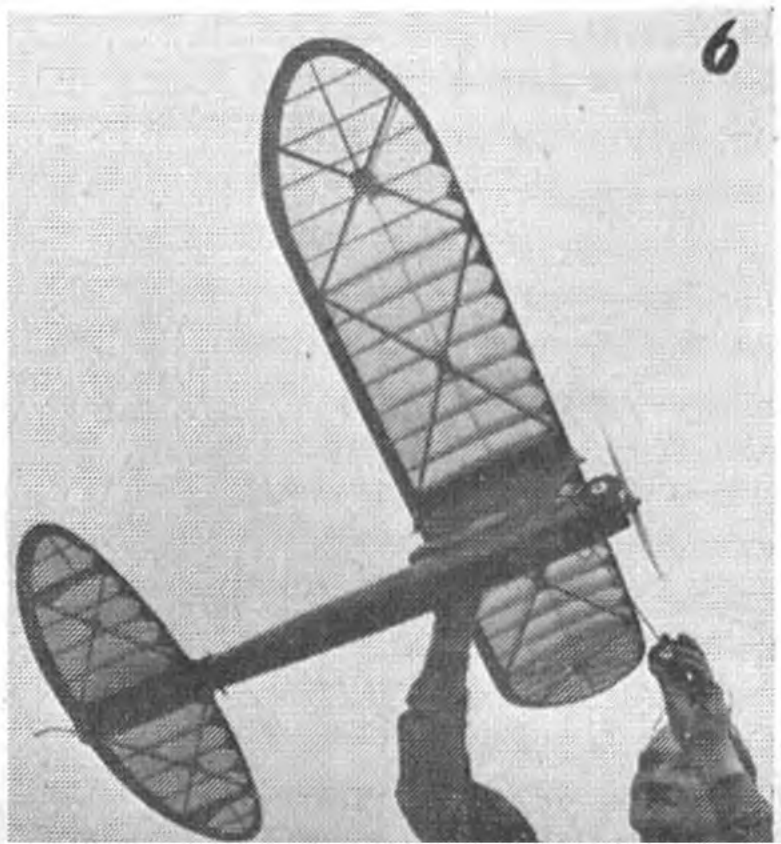
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12. No fake, this is the F/flt. section at Darlington, taken at the height of the contest period, 3 p.m. Wide open spaces and good weather are evident. What kept the Northerners from attending? 13. E. Perry and W. McFarline, Glasgow Barnstormers, sport a pair of APS Electra's 14. fresh back from the U.S.A., Silvio cured over-runs on first day to win 2nd power contest.

Northern Gala Results

Frog Senior Cup (open power)

T. Smith	English Electric	11 : 54
M. Caster	Country Member	11 : 44
G. French	Country Member	10 : 30

Ripmax Trophy (radio control)

S. Allen	Bushey Park
G. Parkinson	Kendal
O. Hemsley	Bushey Park

Combat

—. Perkins	Meanwood

Davies Trophy (Team Race B)

L. Steward	West Essex	8 : 25

PAAload (1.5 c.c.)

B. Faulkner	Cheadle	5 : 36
V. Jays	Country Member	2 : 40
T. Woods	St. Albans	2 : 35

Flight Cup (open rubber)

J. O'Donnell	Whitefield	12 : 00
R. Firth	York	9 : 01
G. Upson	Northwick Park	7 : 21

C.M.A. Cup (open glider)

H. O'Donnell	Whitefield	10 : 26
C. Peters	Northwick Park	10 : 24
P. Guest	Barnsley	9 : 45

Aeromodeller Trophy (radio control)

S. Allen	Bushey Park
O. Hemsley	Bushey Park

Davies Trophy (Team Race A)

G. Yeldham	Belfairs	10 : 03

Speed

Class I P. Wright	92 m.p.h.
Class II D. Powell	124 m.p.h.

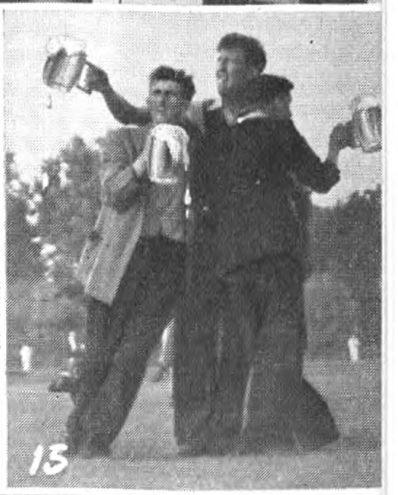
Open Power

S. Lanfranchi	Bradford	7 : 12
C. Chester	Country Member	3 : 50
G. French	Country Member	3 : 20

U.K. Challenge

Power:			
England	26 : 57	Scotland	22 : 27
Rubber:			
Scotland	34 : 34	England	31 : 45
Glider:			
England	30 : 46	Scotland	16 : 34

At the Cambridge Team Race Meeting West Essex took class B and High Wycombe the class A prizes. Some of the needle evident at Darlington in class A continued at Cambridge and jostling in the centre was quite entertaining. 15. Shows close action by W. Essex/H. Wycombe/Belfairs pilots, each of whom appears to be thirsty, so our artist has added a pint to their handles to maintain the knees-up-mother Brown atmosphere.



Indoor Nationals

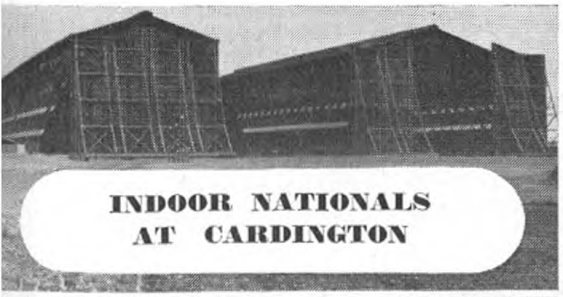
Agg: of three Flights:					Total
R. Copland	Northern Heights	19 : 00	19 : 58	19 : 59x	58 : 57
P. Reid	Birmingham	17 : 16	17 : 44	21 : 09x	56 : 09
R. Parham	Worcester	19 : 19x	16 : 32	16 : 38	52 : 29
R. Monks	Birmingham	16 : 36	18 : 03x	17 : 41	52 : 20

x Denotes best individual contest flights.

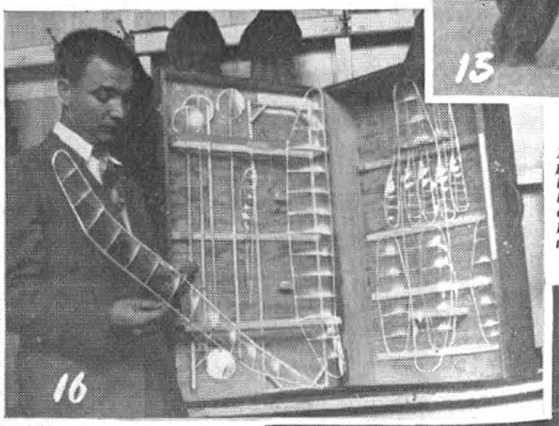
Other best Flights: Robson 14 : 19; Poole 14 : 13; Muxlow 13 : 32; Young 13 : 06; Chamberlain 9 : 18

NEW RECORDS:

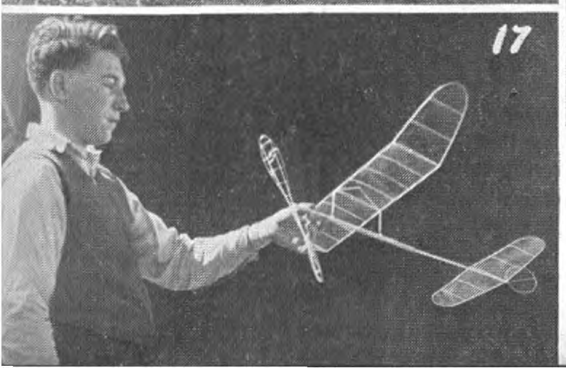
H.L. Stick: R. Parham 21 : 12. ROG. Stick: R. Copland 14 : 22.
H.L. Fuselage: R. Monks 10 : 36. ROG. Fuselage: R. Monks 10 : 37



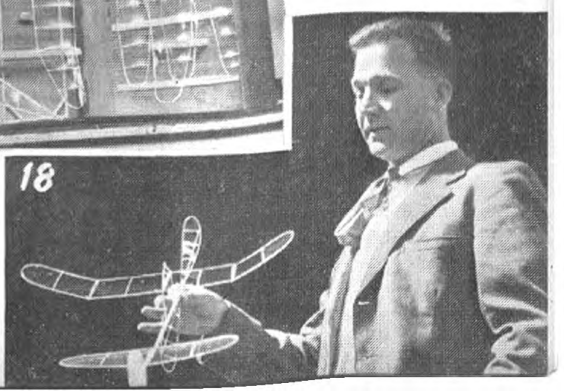
INDOOR NATIONALS AT CARDINGTON



16. Pandora's box o Parham record breakers was specially built for the successful Cardington meeting by Reg, who is assembling the 21 : 12 model.



17. Ray Monks flew this uselage design for two new records, HL and ROG, with only a second difference between them. 18. Reg Parham and one of his smaller featherweights.



WE NEVER cease to wonder at the ingenious adaptations of modelling materials for use in other spheres of activity. Latest idea was used by a 13-year-old boy, who, in court at Lowestoft, admitted silver doping nine farthings and changing them, with one genuine sixpence, for two half-crowns from a bus conductor. He'd have got away with it too, if the conductor hadn't noticed that the coins were sticky—after the boy had left the 'bus. Apart from the thought that we should always let dope dry thoroughly, the thing we want to know is, who makes the dope with a good enough silver finish to fool a hardened 'bus conductor?!

Southern Area

Blown out on July 4th, the radio glider event staged by **WEST HANTS A.A.** is now scheduled for October, in conjunction with the Area eliminators.

In the Davies eliminators, West Hants felt the loss of many of their C/L members (emigration and National Service). **SALISBURY M.A.C.** won class A and **AMESBURY** class B, **SOUTHAMPTON M.A.C.** coming second in each. In one A heat, only ten laps separated all four machines. One of the very few Southampton juniors who does any noticeable modelling, N. Worley, was rewarded by collecting a *Swift* kit, with motor, etc., for 1st in Jetex at the Area rally.

High winds have caused postponement of three **BOURNEMOUTH M.A.S.** comps., including the glider round of the Bournemouth *v* West Hants challenge match, now moved to October 24th. The club have a new patron, in the distinguished name of Lord Ventry.

East Anglian Area

Perfect weather—except that perhaps the thermals were a little *too* frequent—graced Waterbeach for the Area Gala Day. Main attractions were the Area Scale Trophy and Mike Gate's stock of ices. The former attracted a good number of entries, including an *Avro* 504*K*, a *Westland Widgeon*, etc., not to mention a clutch of *Luton Minors*. Winners were J. McCarthy (scale), D. Willmott (power and rubber) and B. Lavis (glider).

Bad weather has upset the **CAMBRIDGE M.A.C.** comp. programme, though an open power event was flown off in rain and wind. After two near maxs., P. Firman damaged his model and was forced to use a brand new reserve. With two short test hops safely negotiated, the model made an official, disappearing into a corn field after a max., which won the contest but lost the model, despite a subsequent Auster-eye view of the locality.

CLUB NEWS

Winner of the Scottish "Aeromodeller" Scale Trophy K. Plummer (Airdrie and Coatbridge M.F.C.), with detailed Piper Super Cruiser.

"Blue-eyed" junior in **NORWICH M.A.C.** claims sixteen models in flying condition—and no chuck gliders. (Is this a record ? ! ! ! !). Three fete displays in quick succession have kept the control-line boys on the jump, with satisfactory results to the fliers (free teas) and to club funds.

Speed is attracting **GRAYS D.M.A.C.** members, R. T. Cox having been clocking 131 with a McCoy 60 job on straight fuel. R. Oliver, a junior, is building a *Harlequin* merely to prove that it will fly on 55 ft. lines with an 8 x 8 prop. Only free flighter braving the appalling weather appears to be K. Johnson, who is getting a consistent 1 : 30 in bad conditions from his *Mick Farthing* glider.

Northern Area

Silvio's exploits in America caused great satisfaction in **BRADFORD M.A.C.**, and his account of the goings-on, given at a subsequent club meeting (in, no doubt, the best Silvio-ese), had everyone rolling on the floor. An experimental evening contest at Baildon was favoured with still air, and under the conditions, Miller's Wake had a fairly easy win, 6 : 06 against 2nd placer Pannett's *San de Hogan* with 5 : 37. The Croft Gala is viewed with mixed feelings, but at least the Lanfranchi kept consistent, with top English power time in the U.K. Challenge Match, and first place in Open Power.

What might be termed the "BB club," **MEANWOOD I.M.**, has been circulating at the C/L rallies, and members have continued to place high in combat and stunt events, using chiefly the *Ker* design.

South Western Area

Though little is heard, the activities of **SALCOMBE M.A.C.** are still on the top line. R/C, glider, and unorthodox models are flourishing, but no C/L or rubber flying takes place. Some members have R/C boats for non-flying weather, and one ambitious type has a scale *Brabazon*, not yet flown due to difficulties in keeping all four motors going. H. O'Heffernan's Channel attempt has left him a wet model, but undampened spirits, and another attempt is expected.

North Eastern Area

In the **NOVOCASTRIA M.A.S.**, winner of the Cockle Shield, a half-hour scramble, was K. Mole, whose deliberately out-of-trim duration job aggregated 9 : 18. Last year's winner, an oversize Sporty, disappeared O.O.S. at 3 : 20 on its first flight, and T. Christer's first was a good 5 : 08, but the model hit a house and gave up. The P.R.O. we understand, came 6th with 7 : 28.

London Area

A good crowd turned up for **ENFIELD D.M.A.C.'s** team race rally—57 entries all told and apart from some confusion over lap-counting in class B, the event was successful enough to encourage hopes of making it an annual fixture. Biggest news of the meet was the speed times—the boys brought some speed jobs along on the off-chance and with a pylon and S.M.A.E. sanction, proceeded to circulate fast. Davenport, using a Carter 61 Special, turned in 152·17 m.p.h. for a new British record—on overlength lines, at that—and Hall,

using Carter/Checksfield McCoys, did 131 with a .49 and 121·9 with a ·19; it is hoped that these officially abolished classes may be reinstated with these as standing records.

A second place in the above meeting was the first contest laurel for **ICKENHAM C.A.M.A.C.**, now seven months old and concentrating on team racing and C/L generally.

Useful publicity, in particular as regards to aero-modelling's value in occupational therapy, resulted from an exhibition and demonstration by **REGENTS PARK M.F.C.** for the benefit of the Phoenix Club, Bayswater. With an eye on similar shows in a similar connection, members are experimenting with electric R.T.P. Recent outstanding flight was a verified 61 mins. by a Bee-powered *Cardinal*, Tattenham Corner to Banstead. A real gentleman saw it land, timed it, retrieved it, phoned the club, entertained the member who collected it to tea, and insisted on running him to the station by car. (If only *our* models fell into such hands!)

"Self-lifting ducted fans" is the description of the centre of experiments in **BROMLEY M.A.C.** Just a duct, a fan, and a motor. Don't ask us why!! Contest-mindedness is on the increase and clubmen are entering more comps.; with the ex-secretary gone off fo Canada, supplies of Transatlantic motors, etc., are anticipated.

South Midland Area

Shoulder wing power jobs are definitely in with **HENLEY M.C.**, D. Painter's placing 2nd and J. G. Waldron's 5th in the Hamley. A spate of new contest models are all on the same lines. The Waldron *Icarus* 6 ft. glider design also looks like becoming a club standard—1st at the N.A. Gala (Waldron), 2nd in Thurston (Painter) and a new club record of 23 : 32 (Cooke). Tony Cooke has also established a new A2 time of 23 : 41. Club champion and glider winner was Waldron, power and C/L cups went to Painter, and the club rubber cup was won by junior P. Larcey.

North Western Area

Another Cook has captured another club glider record—D. Cook of **SHARSTON D.M.S.** with 12 : 17. Same man has upped Jetex to 6 : 48. Also raised is the club power record, A. Selby's *Eliminator* turning in 10 : 13. The third annual exhibition by this club attracted quite a good crowd, despite bad weather.

One of those coincidences occurred when B. Leather-barrow of **MAGHULL M.A.C.** travelled three miles to the field and made an O.O.S. flight of 11½ mins. with his Elfin 1½ *Mallard*. He eventually found it himself—200 yards from his own house!

Yet another Elfin 1·49 *Eliminator* scored a success, this time for Clarke of Crewe at **CONGLETON M.A.C.** annual rally (see heading photo), with a treble max., the last flight of which finished seven miles away. W. S. Neild of Cheadle won glider with another treble max. and clubmate K. Metcalf came in ahead in class A team race. One of the most interesting sport models there was a C/L *Constellation* by R. Mills of Stockport; alas, it ended its days with a spectacular crash.

The **SOUTHPORT M. and E.C.** will be running its annual exhibition at the Chapel Street Congregational Hall, from September 25th to October 2nd. Live demonstrations will include ·5 R.T.P. flying, a race-car track, and a railway lay-out, and the show will be open all day Saturday and from 2-10 p.m. weekdays.

Apologies to anyone who rolled up for the **HYDE M.A.C.** rally on August 15th—we were informed too late that it was posponed to September 19th.

Members of **BLACKPOOL and FYLDE M.A.S.** enjoyed a day at the U.S.A.F. Burtonwood Model Airplane Meet, and took second in power (Tom Smith) second in ½A power (G. Alan of English Electric with a small *Fritter*), and in chuck glider the boys took every place down to 7th, with Cliff Davey 1st. A free buffet-cum-banquet finished the day. At Croft, club members placed 1st in Jetex (Mike Thomas) 3rd in rubber (F. Marsden) and 3rd in power (T. Smith).

The A2 event at Clwyd was won for the fourth consecutive year by a **WALLASEY M.A.C.** member, this time G. M. Hutton with a magnificent flight of 12 : 39. J. Done's 2 : 39 with a flying plank A2 will, it is hoped, stand as a record. The club's open day was a toss-up due to the bad weather; however, everyone agreed to fly with a 1½ min. max., and J. O'Donnell (Whitefield) topped glider with 3 : 37 and rubber with three 1 : 30's. J. Done's two flight total of 2 : 40 was enough to win power. The flying part of the scale contest was scrubbed, but the winning model was a D.H.4 by S. Hinds.

R. Nichols flew a lightweight to win **CHESTER M.F.C.'s** open glider comp. at Sealand on August 8th. A hot sun and a light breeze made conditions excellent for the entrants, who flew a variety of designs, mostly either lightweights or A2s.

A reflection on the Northern Gala is that **CHEADLE M.A.S.** estimate that they provided 15% of the total entries. Interesting rubber model was J. Venn's 40 in. ltwt. with a vast slotted paddle-blade prop., which obliged with two 3½ min. flights, but then broke its motor. Amusing sight was Faulkner's 650 sq. in. Elfin 1·49 payload winner, which gains on glide what it loses on climb. This flier also took ½A power at Burton-wood with a new Wasp ·049 on a bitzer composed mostly of old rubber job parts, and at this meeting T. Jolley took 1st in B racing and 1st in A stunt.

South Wales Area

Working hard on displays is **NEWPORT M.A.C.** who find scale and saucers the big attractions at demonstrations, though other C/L activities go down well. A now-defunct star was A. Westmuckett's 7 ft. *Brabazon* which piled in at a recent show. The club entered their first comp., at Fairwood Common, recently, and were delighted when G. Daniels won stunt with a small (1·49) model and R. Jones flew his *Sorcerer's Apprentice* (E.D. 2·46) to second in A racing.

East Midland Area

Three attempts at the world R/C duration record have brought Geoff Pike of **FORESTERS M.F.C.** to 1 hr. 40 : 45, some 9 mins. better than the Russian claim which pipped him a month or two back. Team race members have recently taken 1st and 2nd in A at Woodford and Spilsby, 1st in A and B at Chester, 3rd at Croft, despite having the model knocked out of the sky, necessitating changing lines, and second in ½A at Cambridge. Free-flight is as good as at a standstill until the crops are cut.

CONTEST CALENDAR

Sept. 19th	GUTTERIDGE TROPHY 1955 Elim.	Area
	M.E. CUP Team Glider	
Sept. 26th	All-Britain Rally	Radlett
	Aeromodeller PAA-Load Contest	
Oct. 3rd	K. & M.A.A. CUP 1955 Elim.	
	HALIFAX TROPHY 1955 Elim.	Area
	West Hants R/C Glider Tropny	Larkhill
Oct. 17-19th	International Glider, Power, Team Racing	Spain

South Eastern Area

Reasonably successful this season on the contest field, **SOUTHERN CROSS A.C.** has experienced a gradual decline in membership, and a recruiting drive is now starting. Winter activities will start with a film show for all interested prospective members, and instructional films, building sessions, etc., will be regularly featured. Out-doors, the "summer's" postponed contests will be held. Anyone interested call or write to G. K. Gates, 45 Boundary Road, Hove 3. Biggest shock lately was K. Donald's *Javelin* powered job, no less than 10 ft. 9 ins. span. The first flight was just a tight loop!

This month we have a trio of bods asking for correspondents: J. D. King, 15 Letaba Street, South Hills, Johannesburg, Transvaal, South Africa, is very interested in R/C. 2. E. Carl Wayne, 216 12th Street, S.W., Washington D.C., U.S.A., wants back issues of model mags., and will swap new merchandise. 3. Alan Murray, Tillygonny, Tarves, Aberdeen, S. Scotland, would like a 14-15-year-old keen on gliders and taking up power.

Finally, someone who lost a model something like a Frog *Vixen* eighteen months or so ago, somewhere between Blackpool and Preston, should write to J. Roberts, 28 Wray Crescent, Wrea Green, Preston, describing it. He should also write his name and address on future models. How often do we end up by saying that? ! !

The CLUBMAN

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A. R. Bradshaw, 12 South Grove, Allerton, Liverpool 18.

SWINTON M.A.C.
M. W. Cowles, Whitefriars, 145 The Green, Worsley, Manchester.

SECRETARIAL CHANGES

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A. J. Longstaffe, c/o Oakview, Station Road, Smallford, nr. St. Albans, Herts.

SALCOMBE M.A.C.
L. F. Long, 4 New Buildings, South Milton, Kingsbridge, Devon.

ICKENHAM C.A.M.A.C.
J. F. Robinson, 16 Tudor Way, Hillingdon, Middx.

WRAITHS M.F.C.
A. Bassett, 24 Merchland, New Eltham, London, S.E.9.

BROMLEY M.A.C.
B. H. Grimston, 45 Homesdale Road, Bromley, Kent.

KNUTSFORD D.M.F.C.
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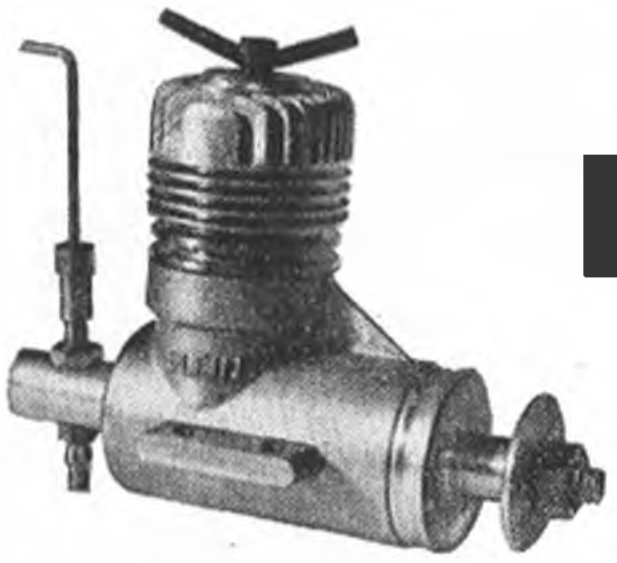

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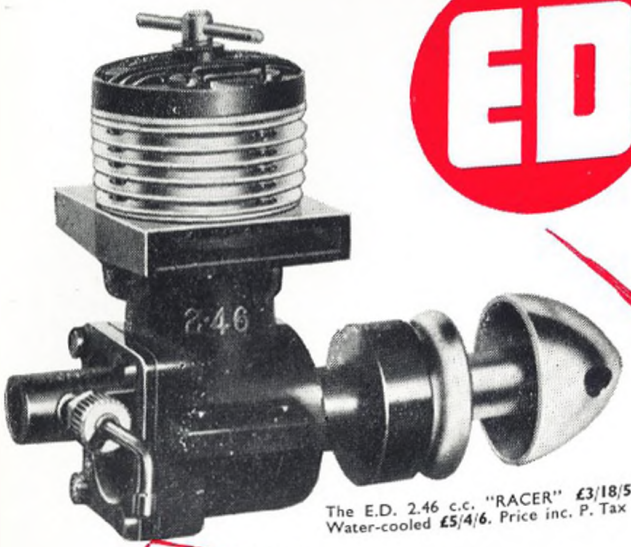

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