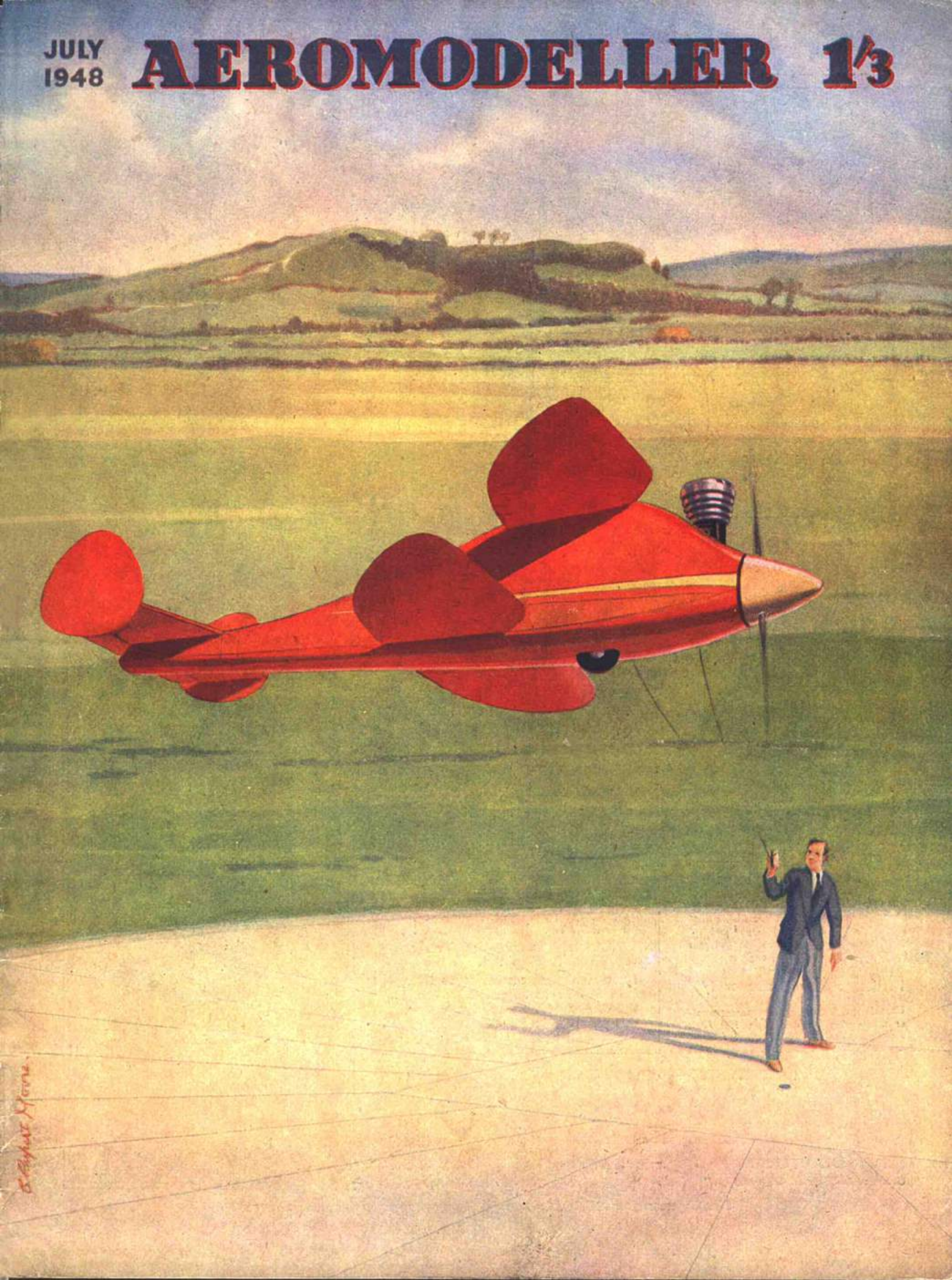
JULY
1948

AEROMODELLER

1/3



HALFAX

FIGHT OUT YOUR CONTESTS WITH A "SABRE"

CONTROL LINE Sensation!

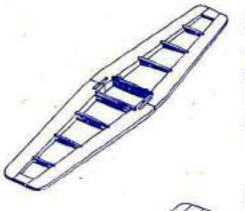
Designed by
J. T. LONDON

Wing Area, 60 sq. ins. Span, 18". Overall Length, 20¾". Weight (Mills, 13 ozs.) (E.D. "Competition Special", 15 ozs.)

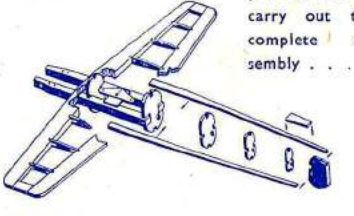
Kit contains pre-shaped leading and trailing edges, plastic Bellcrank, profiled tail surfaces, best quality "SOLARBO" Balsa, super detailed plan, with full construction and engine installation diagrams, etc.

Price Complete 16/6 With 2" diam. streamlined Rubber Wheels **2/6 Extra.**

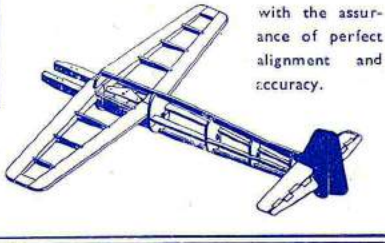
SIMPLE "THREE STAGE" CONSTRUCTION



Using the basic wing structure and our specialised form of construction . .



you are able to carry out the complete assembly . . . .



with the assurance of perfect alignment and accuracy.

the McCoy HOT-POINT

WIRELESS IGNITION

America's most famous product now available to Britain's Aeromodellers. Available in ¼" thread size and ⅜" adaptors for larger engines.

PRICE 5/9 (⅜" adaptor 1/6)

Use this new, fast drying, transparent proofer when using Methanol Base Hot Fuels

TITANINE FUEL PROOFER

STOP PRESS

HALFAX HAT-TRICK!

Wakefield Eliminating Trials Fairlop 1948

For the third successive contest Mr. LEN STOTT has secured a place in the Wakefield Team to visit America this year with his famous "FLYING MINUTES" Model.

HALFAX MODELS LTD

GREEN MOUNT WORKS HALFAX PRODUCTS **HALIFAX YORKSHIRE**

MANUFACTURERS • IMPORTERS • EXPORTERS

Grams: "AEROMODEL, HALIFAX." Phone: HALIFAX, 2729

This Month, it's POWER *Plus*

SIGN OF SERVICE

BRITAIN'S FINEST MODEL SHOP — HJN

STAND 18

SEE US AT MODEL ENGINEER EXHIBITION

Realising the increasing importance of **EFFICIENCY IN POWER MODELLING**, Henry J. Nicholls is concentrating more than ever on supplying Modellers with all they need to keep them right up to the minute. To do so has meant designing entirely new accessories, selecting only the best engines, kits and materials, and giving Modellers the 'gen' on their individual problems. This is why H.J.N. has built up what is today, the foremost supply house in the country, and no matter how small your order, you always get H.J.N's. famous "Service Plus" with the goods. *Please send stamped envelope for replies to queries.*

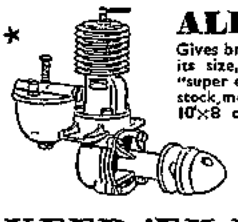
★ *Denotes a New Line*

GUARANTEED ENGINES

Plus H.J.N. Personal Service

ALL ENGINES, NEW OR REPAIRED, ISSUED WITH TEST BENCH REPORT AND CERTIFICATE OF PERFORMANCE

KEMP 0·2	£4-7-6
★**COMET** 0·4	£2-15-9
AMCO 0·87	£4-4-0
FROG '100'	£3-0-0
FOURSOME 1·2 c.c. ..	£5-5-0
MILLS MK. I 1·3 c.c. ..	£3-10-0
★**MILLS MK. II** 1·3 c.c. ..	£4-15-0
★**ELFIN** 1·8 c.c.	£4-0-0
★**FROG** 180	£3-15-0
E.D. MK. II	£4-4-0
E.D. COMP. SPEC. *Winner of 1948 Brit. Nat. Stunt c/l Championship (Gold Trophy)* ..	£4-17-6
E.D. MK. III 2·49 c.c. *with standard and Glow-Plug Heads complete*	£5-15-0
MAJESCO 2·2 c.c. .. now	£4-12-6
B.M.P. 3·5 c.c.	£8-9-6
ETA 5 (1948 version)	£8-16-8



★ **ALLBON 2.8**

Gives brilliant performance for its size, and is right in the "super engine" class. On test, stock model revved 6,800 with 10"×8 c/l Prop, which is far above average for this size job. A thoroughly good job. From stock

£4·16·0

KEEP 'EM FLYING!

Don't lose good flying time through delays to your repairs. Every engine sent to H.J.N. is handled by a staff of full-time trained mechanics in workrooms equipped exclusively for repair, test and research. We are officially appointed by the makers to service E.D., FROG and MILLS ENGINES, and all engines repaired by us are guaranteed to makers' standards.

- **TEST CERTIFICATE WITH EACH REPAIR**
- **WHOLE-TIME TRAINED STAFF**
- **MAKERS' STANDARDS AND PRICES**

SOLARBO PARCELS *Special Mail-order parcels of hand-picked best quality Balsa, strip and sheet.* **10/-** (Post free) **20/-**

TITANINE World renowned Dopes, Clear, Glider, Banana, Per half pint tin **3/6** Whole colour range Per half pint tin **4/-**

DUNLOP RUBBER—Quality 6000, ¼", ⅜", or ½"×⅝" .. .. per lb. **10/6**

FLIGHT-TESTED KITS

Whilst we regret not having enough advertising space to detail anything like the many lines we stock, we must point out that you can always obtain kits by K.K., I.M.A., HALFAX, MERCURY MODELS, VERON and other well-known makers from us. Prices are exactly as advertised, and we carry complete and up-to-date stocks. If it's good, H.J.N. stock it.

POWER ACCESSORIES

FOR C/L MODELLERS

MERCURY AJUSTALYNE *(Reg. Des.)* The most comfortable and efficient handle ever made 7/6
MERCURY Control Wire. 200' coils, Plated Steel 2/-
BAT "Baby" Tanks 5/-
BAT Large Tanks 7/6
PRECISION TANKS. Kits 5/-, Assembled 7/6
★**J-SLIPSTREAM TANK** 5/6
★**MERCURY FUEL-FEED TUBING.** Transparent, Ether, Petrol, Oil Proof. 1/- per ft.
MERCURY IMPROVED C/L PROPS. 8"—5/-, 9"—5/3 10"—5/6 11"—5/9
C/L PROPS BY FLO-AXIA, HI-THRUST, K.K.V.P. and TEKNIFLO, as advertised.
MERCURY FLY-WHEEL SPINNERS for 10 c.c. engines, 3 or 4 oz. .. Complete 14/6
WHEELS, 1½",2",2½", by K.K., STREAMLITE and S.J.A. as advertised.

FOR ALL MODELLERS

★**GLOW-PLUGS.** "K.K. or K.L.G. 6/- McCOY HOTPOINT 5/9
K.L.G. or LODGE SPARK PLUGS .. 5/-
BARKER COILS 18/6
M.I. COILS 23/6
SPRAGUE CONDENSER 0·1 m.f.d. 1/9
MERCURY UNDERCARRIAGES. Instantly detachable, with collets. 10 S.W.G. 2/3 12 S.W.G. 2/1
★**MERCURY** Booster Plug and Socket, and Ignition Switch 4/6
★**MERCURY UNIVERSAL "SPANNER"** for Plugs and Props. Very strong .. 1/6
★**DEKKO REV. COUNTER.** Simple. Accurate. Reads from 2,000 to 15,000 r.p.m. 10/-
FREE-FLIGHT PROPS BY FLO-AXIA, TEKNIFLO AND HI THRUST AS ADVERTISED. NEW SUPER K.K. RANGE
★**MERCURY AEROWHEELS**—2½", Streamlined; self-cushioning rims per pr. 4/6
BAT SPINNERS. All colours and sizes as advertised.

Postage on one or more above lines—6d.

BUYING FROM H.J.N.

We supply by post. Send cash with Order, or pay on delivery. Orders over £1 post free, under £1 send 1/- for postage and packing unless otherwise stated. ORDERS VALUE OVER 5/- INSURED FREE.

●**TRADE ENQUIRIES** are invited for all Mercury Lines and for E.D. Engines, Solarbo Balsa and Dunlop Rubber. SEND FOR LATEST TRADE LISTS.

H.J.N. INTRODUCES

MERCURY *Blended* FUELS

5 GRADES TO SUIT ALL DIESEL, GLOW-PLUG & PETROL ENGINES

★ *Specially developed to meet the exact requirements of modern miniature motors, by the Research Staff of Anglo-American Oil Co. Ltd. in collaboration with the Technical Department of Henry J. Nicholls Ltd. Blended by High-Flash Petroleum Co. Ltd. to our own specification.*

No. 1. "COMPETITION PETROL" (Red Label). For Petrol Engines with compression ratios up to 7·5 to 1. Per 8 oz. Bottle 1/9

No. 2. RACING FUEL (Green Label). Methanol-Castor Oil Fuel for Spark Ignition Engines of 8 to 1 Compression Ratio or higher. Per 8 oz. Bottle 3/-

No. 3. "COMPETITION DIESEL" (Orange Label.) Blended for standard Diesels, with added anti-knock fraction. For easier starting. Per 8 oz. Bottle 3/-

No. 4. "COMPETITION GLOW-PLUG" (Blue Label). For hot-wire ignition engines with compression ratios up to 8:1. An Ignition Friction is added. Per 8 oz. Bottle 3/-

No. 5. "RACING GLOW-PLUG" (Magenta Label). Blended Methanol Base for hot-wire ignition engines of 6·5 to 1 compression ratio or higher. With added Ignition Fraction. Per 8 oz. Bottle 4/9

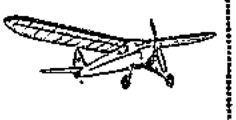
MERCURY Blended Fuels are obtainable from your dealer, and suit all engines.

Send 3d. in stamps for fully descriptive leaflet showing complete table of engines with the correct Mercury Fuel to use.

H.J.N's. PICK OF THE MONTH

I.M.A. CENTURION

★A new kit in the very best I.M.A. traditions and a worthy successor to the renowned "Frog 45." This magnificent free-flight job is one of the finest I have yet tried out. Modellers are going to have some grand times flying it. Takes Frog 180 or other 2 c.c. Diesels.



Completely "pre-fabricated" kit ready to assemble and fly, post free **63/-**

HENRY J. NICHOLLS LTD.

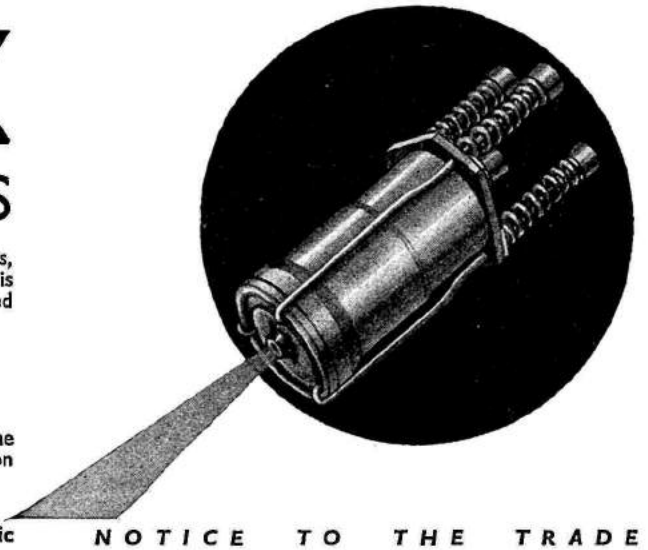
308, HOLLOWAY ROAD, LONDON, N.7.

Telephone NORth 5161 • OPEN ALL DAY SATURDAY • Two minutes from Holloway Road Und.

Britain's No. 1 Mail Order House

JETEX

MODEL JET MOTORS



In order to meet the overwhelming demand for Jetex motors, production has been immediately stepped up, and every step is being taken to ensure that all outstanding orders will be fulfilled by the end of July.

JETEX 100 OUTFIT .. 27/6
JETEX 200 OUTFIT .. 37/6

Complete with solid fuel charges, plastic igniter wicks, engine mountings and all accessories, etc., and fully illustrated instruction book, including model layouts.

Refill carton containing 10 Solid Fuel Charges
JETEX 100 .. 2/3
JETEX 200 .. 2/6

Tubes containing 12 plastic igniter wicks
JETEX 100 .. 6d.
JETEX 200 .. 9d.

NOTICE TO THE TRADE

All orders are being dealt with in strict rotation. To ensure the minimum delay, PLACE YOUR ORDER NOW to cover your future requirements, with one of the following appointed wholesalers.

WILMOT, MANSOUR & CO., LTD.,
SALISBURY ROAD, TOTTON, HANTS.

We have appointed the following Wholesalers to distribute Jetex motors :—
MILLARD BROS. LTD., 76 GREAT EASTERN ST., LONDON. E.C.2.
E. KEIL & CO. LTD., 195 HACKNEY ROAD, LONDON, E.C.1.
MESSRS. AIRCRAFT (BOURNEMOUTH) LTD., NORWOOD PLACE, BOURNEMOUTH, HANTS.
JOHN HUTWIN LTD., 17 WOOL EXCHANGE, BASINGHALL ST., LONDON, E.C.2.

J's Model Centre

OLYMPIC
SUPERB CONTROL-LINE SERIES

"NANCY" 'FROG 180' 52 M.P.H.

"SLIPSTREAM" CONTROL-LINE TANK
PROV. PAT No 3725
5/6
FOR FLYING AT ANY ANGLE. MADE FROM TRANSPARENT PLASTIC, WITH MOUNT, TUBE AND FULL INSTRUCTIONS.

"NANCY" 'MILLS' 38 M.P.H.

'OLYMPIC' ENGINE FIXING OUTFITS 6 BA and 8 BA PER 9d PACKET

CONTENTS OF "NANCY" KIT :-
WINGS, SIDES, FLOOR, FIN, TAILPLANE & WIRE GUIDE, READY CUT FROM BALSA & PLY. ENGINE MOUNT ETC. CUT TO SHAPE & DRILLED. 6 BA & 8 BA. NUTS & BOLTS. WIRE. TISSUE. CEMENT. WHEELS. CONTROL LINE HANDLE. BUILDING & FLYING INSTRUCTIONS. FULLY DETAILED PLAN & ALUMINIUM BELL CRANK.
SPAN 18" LENGTH 14" WEIGHT 9 ozs.
THOROUGHLY TESTED DESIGN BY DAVID W JACKSON
POSTAGE 14/6 TENPENCE

CRAFTSMAN BALSA PLANER
3/11 NEW BLADES FOR PLANER
1 DOZEN POST FREE 1/-
FOR SHAPING:- FUSELAGES, PYLONS, SOLID WINGS, T.E. ETC.
PROV PAT

YOU MAY RELY ON J'S TO SEND YOUR ORDER BY RETURN. ALLOW FOR POSTAGE WHEN ORDERING.

"NANCY" 'FROG 100' 38 M.P.H.

— M.S. AIR WHEELS —
HAVE ONE YEAR'S GUARANTEE
2" DIAM. 8/6 2½" DIAM. 12/6
3" " 16/6 4" " 19/6
PER PAIR.

MODEL ENGINEER EXHIBITION
— New Royal Horticultural Hall, 18th-28th August, 1948
Stand No. 11
Stand No. 11

"SLIPSTREAM" C/L PROPELLERS
8" 4/3 9" 4/9
10" 5/3
MADE FROM LIME

"NANCY" 'M.S. 1·24' 35 M.P.H.

"NANCY" 'FOURSOME' 35 M.P.H.

"NANCY" 'E.D. Mk. III' 65 M.P.H.

J'S MODEL CENTRE.
6, BLENHEIM GROVE, LONDON, S.E.15.
NEW CROSS 1882

J's 8/6/48 JS

Kindly mention AEROMODELLER when replying to advertisers

THE MODEL AERONAUTICAL JOURNAL OF THE BRITISH EMPIRE

ESTABLISHED 1935

Managing Editor:
D · A · RUSSELL, M.I.Mech.E.

Editor:
C · S · RUSHBROOKE

Assistant Editor:
H · G · HUNDLEBY

Public Relations Officer:
D · J · LAIDLAW-DICKSON

Published monthly on the 25th of the month previous to date of issue by the Proprietors:
The Model Aeronautical Press, Ltd.,
Allen House, Newarke Street, Leicester.
Subscription rate 18/6 per annum prepaid (including Christmas Double Number).
$3·75 in U.S.A. direct from the Publishers.

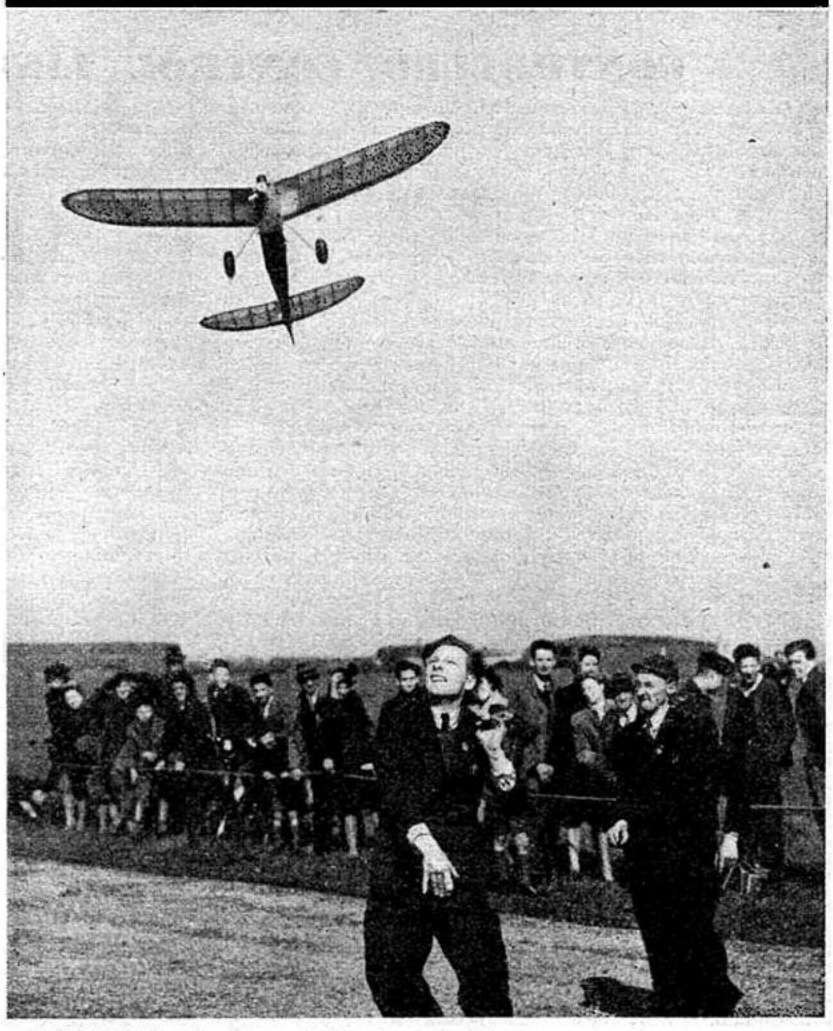
Advertisement Office :
THE AERODROME,
Billington Road, Stanbridge,
Nr. Leighton Buzzard, Beds.
Telephone: ---------- Eaton Bray 246

Editorial Offices :
ALLEN HOUSE, NEWARKE STREET,
LEICESTER. Tel.: LEICESTER 65322

Copies of all photographs appearing in "The Aeromodeller" which are marked "Aeromodeller Photograph" may be obtained from "The Studio," The Aerodrome, Billington Road, Stanbridge, Nr. Leighton Buzzard, Beds. (Cheques and P.O.'s to be made payable to the "Eaton Bray Studios".)
Price 2/- Post free, size 4 ins.×6 ins.
Price 3/- Post free, size 6 ins.×8 ins.

AEROMODELLER

INCORPORATING THE MODEL AEROPLANE CONSTRUCTOR



"HAND LAUNCH." The Masterton brothers of the Derby Club register a variety of expression as they make a successful getaway at the Nottingham Association of Aeromodellers' Club Rally held at Langar Aerodrome.

CONTENTS

VOL. XIII No. 150 JULY, 1948

EDITORIAL

CONTROLLED CONTROL LINE FLYING ?

WELL . . . . we suppose it just had to happen . . . sooner or later. One of the London Park Committees (Croydon) has decided to ban the flying of " mechanically-propelled model aircraft in the Town's Parks ". The reasons given by the Chairman of the Parks Committee, as quoted by a representative of the *Croydon Times*, are that, " there is always the danger that they may hit somebody when their flight is exhausted and they come down to earth—and in addition they make a loud droning noise, which is very annoying to people living near the parks ".

We forgive the worthy Chairman for his suggestion of " danger " when control line models are coming down to earth ; obviously, the " danger "—if danger there is—will be greater when a model is flying at *full speed*, and not when it is gliding in to land when its " flight is exhausted ".

On the question of a " loud droning noise " being " very annoying to people living near the parks ", this is a matter of choice for the individual. To the racing motorist the whine from a supercharger as a 150 m.p.h. racing car accelerates is sheer music ! A noise when considered as giving offence, must always be considered in relation to the object producing the noise. The local surroundings, and whether persons present are interested in the noise-producer, will also have an influence on an individual's opinion—favourable or otherwise.

Ever since the inception of this Journal we have regularly drawn attention to the possible, i.e. *potential* danger to onlookers and bystanders, and, in fact, the general public ; consequent on a power driven model aircraft flying amongst them or getting out of control. We organised the National Guild of Aeromodellists third party insurance some ten years ago. This has been made use of by many modellers, but certainly not by all those who fly power driven models.

Whilst we emphatically deny that any danger arises whatsoever, so long as power driven model aircraft are correctly flown and due care is taken to fly models only in reasonably " Wide open spaces ", it would be stupid to deny that the *potential* danger arising from a " break-away " of a control-line model is not greater than that which might possibly be caused consequent on a " fly-away " with a free-flight model.

Anything and any person, under certain given conditions, can be a potential danger : the question is, can the *potential* be reduced to such a low " minimum " that it virtually ceases to exist ? In our opinion it can, and only requires responsible attention to certain obvious and simple requirements, such as ample strength in wire hooks and links, and adequately strong tethering wire. So far, despite the fact that there must be tens of thousands of control-line models being operated about the country, we know of only one " accident " having been reported in the press ; this, perhaps significantly enough, occurred in the Croydon area, when " suddenly the cord snapped and the model plunged through the wind screen of a car. Fortunately the car was standing empty ".

Now, there is absolutely no reason for an accident of this sort to occur. Any youth, let alone adult, can calculate with the aid of a simple formula the strain created in the tethering line consequent on the effect of centrifugal force when a control-line model is flying at its maximum speed. If a safety factor of not less than 3 is then allowed, and a sensible effort made to ascertain whether the tethering wire will stand this strain ; then there should be no question of line breakages, and the consequent possible damage arising therefrom.

We understand that vigorous protests have been made to the Croydon authorities regarding their ban, and we should like to be informed by readers of any other attempts to ban the flying of power driven model aircraft.

Meanwhile, once again, we emphasise the need to " Fly With Care ", and the injunction of all power driven aircraft enthusiasts to avail themselves of the N.G.A. Third Party Insurance. This Insurance is effected on Lloyds, and for a nominal premium of 2/- or 3/- per year, provides full Third Party Insurance up to a maximum of several thousand pounds. Particulars can be obtained from our Leicester Offices.

Aeromodelling Camps at Eaton Bray

WITH the partial restoration of the basic petrol ration, the Eaton Bray Model Sportsdrome Summer Programme has now opened, and until the end of October the various amenities and flying control will be available each Saturday and Sunday. In addition, the Sportsdrome is open during the week for the benefit of those who live within easy reach of it. The usual admission charge of 2/- per person (Juniors 1/-) will, of course, be reinstated from Saturday, July 3rd.

Seven-day Camps, which proved so popular last year are being organised on a considerably increased scale this season. Following are dates of six seven-day Camps, bookings for which have already been made in a number of cases ; in fact, the Second Camp is almost fully booked to capacity.

Full particulars of Camp facilities, charges, and so on, can be obtained upon receipt of a postcard addressed to the Camp Manager at the Aerodrome. Up to 50 campers can be accommodated in one of the main buildings and as we go to press, we note that the first of a number of large buildings for the accommodation of campers is shortly to be erected, and accommodation for up to 80 or 90 persons should be available by the end of July. In addition, campers who prefer to provide their own accommodation, in the way of caravans, tents, etc., will be welcomed as before : a separate site, with cloakroom accommodation, cold water supply, etc., being set aside for them.

Camp No. 1—July 17th–24th.
Camp No. 2—August 14th–21st.
Camp No. 3—August 21st–28th.
Camp No. 4—August 28th–September 4th.
Camp No. 5—September 4th–11th.
Camp No. 6—September 11th–18th.

Our Wakefield Team

BRITAIN'S 1948 Wakefield team has now been decided upon by the results of the final eliminators held at Fairlop Aerodrome on June 6th. As the full report given elsewhere in this issue mentions, the trials held under appalling weather conditions were indeed a most arduous test of both man and machine. One slight error of judgment ruined the chances of many experts which only reflects even greater credit on the leading six. It is also gratifying to note from their home clubs that an almost country-wide representation has been effected. From Northampton we have R. B. Chesterton who led the field, from Croydon A. D. Piggott, Northern Heights R. Copland, West Essex M. J. King, Birmingham C. Doughty, and Halifax L. Stott.

Readers will recognise two old timers in Bob Copland and Len Stott both of whom have represented the country before, whilst the others are all well known in their own areas for their skill in this particular branch of our hobby. We extend hearty congratulations to all members of the team and feel confident when surveying the list that there is every chance of Aeromodelling's most coveted trophy returning to this country in 1948. One thing is certain after June 6th—that no weather the Americans can produce will beat them !

THE HAPPY INVENTOR

This article which is also appearing in the July issue of our American contemporary "Air Trails" gives a brief biography of one of aeromodelling's most outstanding personalities. Ray Arden, shown right, in his test laboratory, has proved a genius in many fields and his amazing miniature engines are a byword wherever aeromodellers meet. So fascinating did we find this short account of his life history that we felt sure readers would appreciate its publication.

RAY "GLO-PLUG" ARDEN, the happy inventor, is probably one of the few persons in the model business who has been compared with Thomas Edison. He certainly is one of the few still active modellers who was an aeronautical contemporary of the Wrights, Langley, Manley, Stevens, A. N. Herring, Curtiss and the other early greats, many of whom he knew intimately. Only his many and frequent excursions into steam automobiles, surgical instruments, wireless, toys, X-ray machines, and only the Lord and Ray know how many other fields, side-tracked his fame in aviation until recent years. Then, fortunately for the model field, the man who successfully built and flew glow-plug ignition gas models as long ago as 1907, returned to his greatest love, the miniature gas engine.

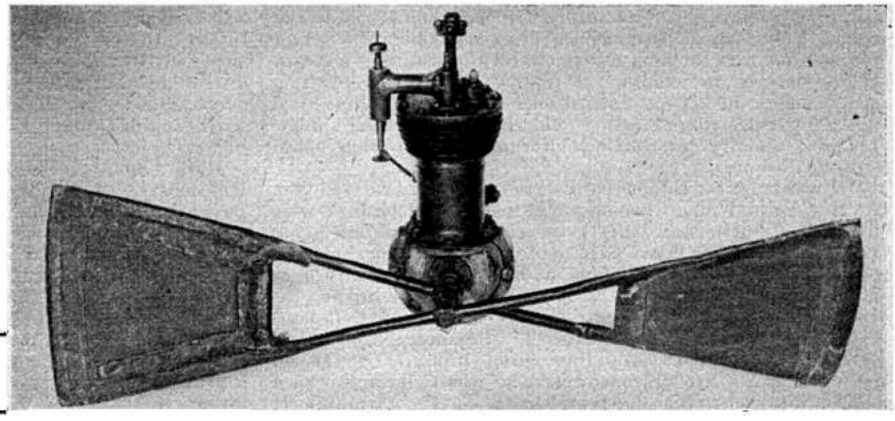
Edison, the wizard of Menlo Park, undoubtedly knew about Arden, for at the tender age of sixteen, Ray perfected a radio surpassing in some respects the then still-crude apparatus of Marconi and DeForest, an achievement which the newspapers found a natural. The *New York Evening Journal* devoted columns to illustrations under a three-line head "This Boy Edison Invents a Wireless Telegraph for Use on Balloons," and the *New York Journal*, on August 27th, 1906, headed their story "Boy of Sixteen a Rival of Edison."

"In the person of Thomas R. Arden," said the *Journal*, "a sixteen-year old boy living in the Bronx, an electrical genius who gives promise of becoming a future Edison, has been discovered. Young Arden has already invented an electrical storage coil, several improvements on the wireless telegraph and a means by which balloons can be kept in communication with the earth without the use of wires." Up to that time all attempts to send messages from balloons had been frustrated by the fact that Marconi and DeForest systems required "ground wires." Not only did Arden eliminate ground wires but he thoughtfully enclosed his radio in glass to prevent sparks from igniting the dangerous hydrogen with which balloons were inflated.

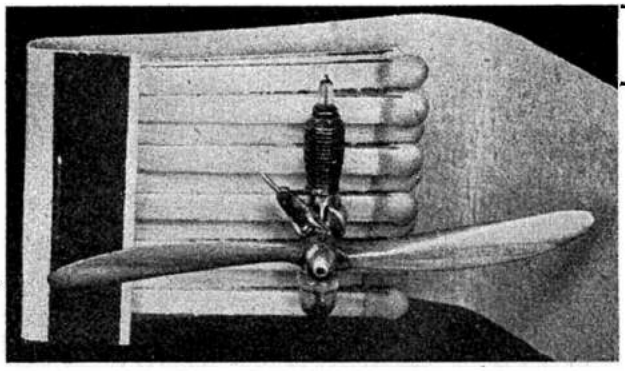
As a boy inventor, Ray offhandedly accumulated an amount of publicity that would make a modern high-powered press agent bug-eyed. He broke into the papers the first time at fourteen when the *New York Sunday Herald*, July 17th, 1904, ran a two-column picture of Ray, in short pants and long stockings, astride his steam automobile. Only four feet long and powered by a half-horsepower steam engine from his uncle's backyard machine shop, Arden's animated soapboxer could do five miles an hour. A toot of its magnificent tug-boat whistle could rattle all the windows on the block but took all the steam to do it. One day in 1910, Ray and an interested pal, Raymond Ditmars, who became famous as curator of the Bronx Park Zoo, chased Ray's first successful gas model for nearly a mile. When they found it a young lady was preparing to take it home. For Ray this proved a case of love at first sight. Soon after a three-column head in the *Evening Telegram* announced "He First Conquers the Air, Then Wins a Maiden's Heart."

Although Arden does not believe in destiny, only a remarkable chain of coincidence can explain the link between his first encounter with the miniature gas engine, glow-ignition, and the Arden engines and Glo-Plug evolved so many years later. There was, for example, the un-named musician who lived down the hall in Ray's apartment house.

Knowing Ray's interest in things mechanical, this chap took the boy to a sportsmen show at the old Madison Square Garden. As luck would have it, A. N. Herring, then a rival of the Wrights to be the first to fly, had on display a two-pound gas engine mounted in a miniature biplane. Until the doors were locked and the last of the late stayers had trickled homeward, Ray gawked at this fascinating engine. Day after day he played truant, spent all his money on tickets, and then sneaked in, to stare at that motor. He even got to talk with Herring, informing him that "Someday I will make the smallest engine ever built." When Herring advised him that the two-cycle engine was his best bet, Arden replied, curiously enough, "It is too elementary and doesn't lend itself to the intricacies of design." This Ray recalls with a smile, for in his search for the flexible, simple two-cycle engine he has spent untold hours over intricate scientific



An early engine of Ardens built in 1907-8. A four stroke, it weighed 1 lb., with a bore and stroke of 1¼". Note the prop!



A recent Arden miniature weighing ·23 grains, including plug, petrol tank, propeller, etc. Bore and stroke are ·125" and its normal revs 15,000!

apparatus in his lab at Danbury, Connecticut.

Arden made his first engine the hard way. Every day after school he would dash home to his basement workshop. He made his own patterns and even tried to forge the crankshaft over the kitchen fire. The cylinder was turned on a foot lathe from a twenty-pound chunk of cast iron. But finally he had an engine that weighed only half as much as Herring's. The vibrating spark coil and condenser weighed under two ounces, a phenomenal thing at the time. Herring's engine had make-and-break ignition. Arden's engine had a jump spark with a characteristic high-speed miss. He licked this problem on his engine by glow-ignition. Unlike today's glo-plug, this antiquarian glow plug supplemented but did not replace the spark for smooth running. Special fuels were not to come until years after. For this engine, Ray designed and built a biplane of six-foot span and twelve square feet of area. Having no dihedral, this design displayed what was probably the first spiral dive in gas model history which came at the end of a 100-yard flight near Woodlawn Cemetery in the Bronx. The second model had upturned outer panels on the top wing, like modern dihedral, and turned in numerous flights from 100 yards to nearly a mile, depending on the amount of gas.

Because of Herring, young Ray met the Wrights and other pioneers. His radio invention was tried by Leo Stevens, the famed balloonist, who promised to supply a gas bag for a nacelle Ray had built around a converted one-cylinder motor-cycle engine and a six-to-one chain-driven prop for a dirigible he planned constructing. But the young "aeronaut's" parents put down a couple of firm feet against Ray's personal participation in "aerial navigation." Nothing daunted, Ray designed and built in his apartment a full-size flying machine that swallowed some $2,000.00 of his money. The machine work was done in the sidewalk alley shop. This time the expenses of married life terminated the project. The untested machine was sold for an FN single-cylinder motor cycle, a 25/20 Winchester rifle, and $5.00 in cash.

Born in New York on February 24th, 1890, Ray Arden attended Public School 63 in the Bronx. No great shakes as a student, Ray tarried three times in 8A and twice in 8B, which was about the time of his interest in Herring's engine. His first recollection of an interest in mechanics was at the age of three, when his uncle Dave used to operate a set of toy steam trains, or amuse nephew Ray by running a steam engine outside the window. A few years later Ray put this steam engine in his toy automobile. "I had a pokey little nose, I guess," Ray recalls. "Got into all kinds of things. I had a faculty for getting information. Nothing could stop me."

"I was crazy for things that had motion," Ray will tell you. At five he had made two-speed autos from clockwork with large wood buttons for wheels. At six he was building steam launches and other boats. He made all his own toys, usually electrically operated. His first model airplane was a rubber-powered job from plans in *St. Nicholas* magazine in the year 1901. This was several years before the Wrights' famous flight. Then followed a series of Japanese "butterfly" ornithopters. At twelve, Ray hired himself out as an apprentice to a French machinist who was building his own automobile—a common enough occurrence in those triumphant but numbered days of old Dobbin. Shortly after Ray's steam auto had been chased up and down the block by all the kids in the neighbourhood, his father recognized the inevitable and gave him a used lathe. Over the next few years Ray developed a three-cylinder engine from NSU motor-cycle cylinders for the full-size flying machine he hoped some day to build.

For a time it looked as if Ray would follow the rags-to-riches routine of the Horatio Alger story-book heroes lionized by all ambitious boys of the day. Somewhere along the line, Ray confounded the poor-inventor tradition by displaying a fair ability for latching onto dollar bills, although his first jobs were humdrum and scantily paid. During his summer vacation in 1902, Ray started off as a messenger for Postal Telegraph at $5.00 a week. Once he delivered a message to Barney Oldfield, the demon race car driver of the day, and, as happened with Herring, chatted with the celebrity with far reaching results. In 1903, Ray had worked up to butcher boy, a dubious advance in view of the $3.00 a week salary and the twelve-hour day—fifteen hours on Saturday. In 1905 Ray was pulling down $5.00 a week as department head over six girls who did the "secret winding" of a Fireball Spark Coil, made by the New York Coil Company. His next job, Arden remembers with a chuckle, was for $18 a week with Sibley & Pitman, a downtown electrical supply house, where he was in charge of wiring floor lamps. This terrific boost in income was manna from heaven. Ray had left the New York Coil Company to work with the GeeCee Battery Company but the New York Coil people, fearing that their secrets would fall into strange hands, got Ray his handsome $18 a week position. This taste of the higher income brackets only sold Ray on becoming his own boss. In the form of a spark coil and an X-ray outfit, Ray speedily plunged two irons into the fire.

Although both products were good, Arden the capitalist soon discovered himself beating his head against a stone wall. When he approached the Maxwell automobile firm in Tarrytown, N.Y., he sorrowfully learned that big business was leery of little one-man operations. Lawsuits arising out of the early use of X-ray machines so scared New York doctors that Ray's paper orders evaporated while his X-ray business was aborning. The one machine he had delivered was inspected by a large manufacturer who speedily lifted the Arden ideas and made them their own. So Arden sold out.

With scant assets, the temporarily unhappy inventor, no doubt influenced by memories of Oldfield, bought a second-hand 1904 White Steamer. Automobiles being a toy of the idle rich in those days, Ray figured that if the man in the street could not buy a car he should be able to rent one. This scheme was a typical Arden bull's eye. By 1908 he had a fleet of five cars, including such nostalgic vehicles as a Corbin, Autocar, and an Upton. His income soared to $18,000 a year, which, for those days of 25 cent steaks and no income taxes, wasn't hay. It was during this lush period that Ray was building his gas engines and airplanes, big and little. In 1910, the year he was married and sold his apartment-built airplane, Ray moved over to the Brooklyn Y.M.C.A. as instructor and supervisor of the automobile school. His overheadless $300 a month salary wasn't peanuts either. At this point Dame Fortune saved Arden from the automobile business.

Riding home on his bicycle, Ray took a bad spill over the handlebars, thoroughly bashing his face on the cobbled pavement. During long sessions afterwards, while a dentist removed faulty crown pins, Ray concentrated on a new crown-pin extractor which was immediately snapped up by the Philadelphia firm of S. S. White, who still makes them by the thousand. Many a time the young inventor had fortune in his grasp but unwittingly preferred to invent when necessary to raise cash. Then he sold the device for whatever he happened to need at the moment, a charming but dreadfully inefficient way of making money.

(To be continued)

AEROMODELLER READERSHIP SURVEY

By C · S · RUSHBROOKE

AS promised to our readers—and, dare we say, as a gratuitous service to our honoured contemporaries!—we give herewith a resumé of the survey just completed from the special forms printed in the May issue.

Whilst, in the main, the result of the survey was a foregone conclusion in view of the current trend towards power modelling, it is something of a surprise to learn that 57% of our readers show a preference for this class of model flying—a ratio of some 24 to 1. Reference to the statement of preferences of individual features naturally follow this trend, and it is gratifying to learn that our newly-introduced feature, "Engine Analysis," rings the bell for top place among individual items.

With the advent of some of the older type of contests, and in particular the re-introduction of the Wakefield Cup event, rubber driven models now take a lead over the glider section—a very different state to that existing even two years ago. This pleases the writer, as it is his firm opinion that the trickiest thing in the aeromodelling game is to design, build and fly a really good rubber-driven model, calling for a greater application of painstaking work and trimming skill than almost all the other types put together. (We have tipped the postman to carefully segregate the expected shoals of vituperative replies from scandalised power and glider fiends!!)

Section A.	**Power Models**	**57·0% for**	**2·4% against**
Section B.	**Gliders**	**10·3%** „	**8·15%** „
Section C.	**Rubber Driven**	**12·5%** „	**6·45%** „
Section D.	**Non-Flying**	**6·0%** „	**62·6%** „
Section E.	**Technical**	**10·5%** „	**13·%** „
Section F.	**General Interest**	**3·7%** „	**7·4%** „

Though it has been obvious for some time past—in fact since the end of hostilities—that solid scale modelling has fallen from grace with the vast majority of aeromodellers, it is certainly a shock to find such a heavy weight of opinion voting against this section. Nevertheless, there are some very stalwart adherents to this phase of modelling, and though it may be politic to curtail the space devoted to solids, we bear in mind that we are here to cater for all tastes—and ask our more rabid enthusiasts to remember that fact.

The preference (or otherwise) for technical articles is evenly divided, but it is surprising to note the vehemence with which the dissenters state their case. This is rather hard to understand, as to our way of thinking aeromodelling definitely is a semi-technical craft, and as such is impossible to separate from formulæ and a certain amount of maths. Here again, we bear in mind that some people revel in complicated technicalities, and must be catered for occasionally, but we continue our search for that paragon of writers, the man who can write a technical article that is easily understood by the average modeller, dispensing with advanced maths. and all the other bugbears that bring forth such heartrending pleas from those—who like ourselves—had a job to get past the "pi-R-squared" stage.

A welcome sign is the very evident desire of readers to tackle articles with "meat" in them. The simpler form of constructional article and such slight topics as chuck gliders have no enthusiastic following. There seems also a trend away from the ultra lightweight models that the looser and all embracing wartime contest rules may have served to encourage. On the other hand there is a big demand for scale models, both in the power and rubber driven sections, though not quite the interest in "old timers" that the popularity of recent plans would seem to suggest.

As might be expected control articles have been well received, and as will be noted below general articles received a bigger vote than actual design articles. So many readers are experimenting that news of how the other chap is getting on makes the widest appeal. In the general interest section there is a preponderance of demand for news of models rather than modellers.

Whilst the majority of readers have no hesitation in stating their likes and dislikes, it is refreshing to find them realising that there are other tastes than their own, and in a large number of cases forms were returned accompanied by a letter stating that, whilst the writer had his obvious preferences, he was fully aware of and appreciated the other chap's point of view. It was also gratifying to learn from a number of readers that they are fully satisfied with the format of the magazine as it is, and congratulate us on producing something for every taste. It is not often that the weight of a letter indicates a bouquet instead of the more usual brickbat, but they are none the less welcome when they appear!!

The main complaint from readers was that it was cramping to be asked to state only one like and dislike, but we had to keep in mind the sorting out of such an accumulation of information, and to have allowed a graded list of preferences would have occasioned an impossible task for our hard pressed staff to operate. What was even more surprising—and dare we say pleasing to our ego—was that only three people asked for a new type of article under Section G—an indication that we are covering the field of aeromodelling fairly completely.

The number of votes awarded to individual features naturally followed Section preferences, so it is best here to indicate the top three in each Section in order of merit, with the exception of Section D (non flying) where only one feature received a worthwhile poll.

Power Models
Scale Moderns.
"Petrol Vapour."
"Control Line Commentary."

Gliders
High Performance.
Simple Duration.
F.A.I. Formulæ.

Rubber Driven
Wakefield. Scale.
Lightweight.

Non-Flying
"Aircraft Described"

Technical
"Engine Analysis."
Aerodynamics.
"Gadget Review."

General Interest
"Model News".
"Club News."
Competition Reports.

"Engine Analysis" should by rights go into Section A as being applicable to that section only. The popularity of "Aircraft Described" is borne out by the general liking for flying scale models, and this feature obviously is of assistance to those who like to scale up such information into flying jobs.

Diverse indeed was the voting for favourite author, preference again going to the writers of topics in which the voter was particularly interested. Over 40% did not state a preference, and the situation was best summed up by the writer who stated that his favourite was "anyone who knew what he was writing about"—but omitted to say how he differentiated between "pukka and diff gen." The comic, impossible to segregate from the modelling game, made his point when stating that his favourite author is George Bernard Shaw. We wonder if the great man would care to write an article for us on the age old problem of whether bearded gents sleep with their whiskers under or over the blanket!!

Finally, we thank all those readers who assisted in this census of aeromodelling opinion, and assure them that we shall keep improving the standard of the AEROMODELLER to the best of our ability, so that we can continue to justify the praise of those (surprisingly?) many readers who say—"you're doing a fine job, keep it up".

SIX OF THE BEST!

A REPORT ON THE FINAL WAKEFIELD TRIALS

BY H. G. HUNDLEBY

RESULTS

		1	2	3	Total
Chesterton, R.B.	Northampton	118·75	218	128·5	465·25
Piggott, A. D.	Croydon	121	177·5	151·5	450·0
Copland, R.	Northern Heights	206	212	Model Lost	418
King, M.	W.E.A.	131	124	114	369
Doughty, C.	Birmingham	214·5	92	61·75	368·25
Stott, L.	Bradford	123	111·25	117	351·25
	Possible Reserve.				
Knight, J. B.	North Kent.	210·25	59	64·6	333·85

The above results are subject to official confirmation.

R. B. Chesterton, top man of the team, anxiously watches his Jaguar at take-off.

NOT since the 1934 trials and finals at Warwick Racecourse have we seen such dirty weather for a Wakefield trial. With a cold gusty wind near gale strength at times, whistling down the runway, Fairlop aerodrome presented a bleak and uninviting spectacle. Assembled at the top end of the runway were 69 of Britain's leading Wakefield exponents together with a handful of officials and spectators. Competitors drew for flight numbers which decided the order in which they were to fly and soon the first group presented their models for weighing in at control.

Almost the "opening pair" were Bob Copland and Ron Warring and to mix our metaphors a little, they certainly kicked off with a bang! Warring's climb was little short of amazing in view of weather conditions, in fact his first and, we regret to say, only flight of 4 mins. 51·75 secs. was the best time of the day. Ron and a bevy of helpers, although knowing the approximate position of the model, finally gave up after an all day search. Such is the luck of the game and so ended the hopes of Warring who, in the writer's opinion, is probably Britain's leading Wakefield flyer. Copland was away in his usual polished style for a cracking 3 mins. 26 secs.

Another excellent first flighter was "Chuck" Doughty of Birmingham, whilst from farther North our old friend Len Stott made the "Flying Minutes" live up to its name. "Jaguars" from the Midland Area were a strong challenge, designer Evans and clubmate Chesterton handling theirs with accustomed skill.

We would mention here that in view of the importance of these final eliminators, timekeepers were required to bring their watches for checking at the completion of every flight.

It was unfortunate that a vast L.C.C. housing estate under construction, together with wooded country lay a few miles downwind. Dennis Lees, with a magnificent flight of 4 mins. 8·25 secs., fell a victim to this difficult terrain as did many others.

For those that went too well, there were many of course that did not go well enough—the high wind, not forgetting the unyielding tarmac, spelling disaster to those unfortunates who overdid that tight right-hand turn so beloved of Wakefield enthusiasts. However, on the whole the standard of models and flying was extremely high, as one would expect, and certainly the contest ran quickly and smoothly as a result. So much so that the first round finished in time for lunch and we were all encouraged by a slight improvement in weather conditions, which unfortunately did not last.

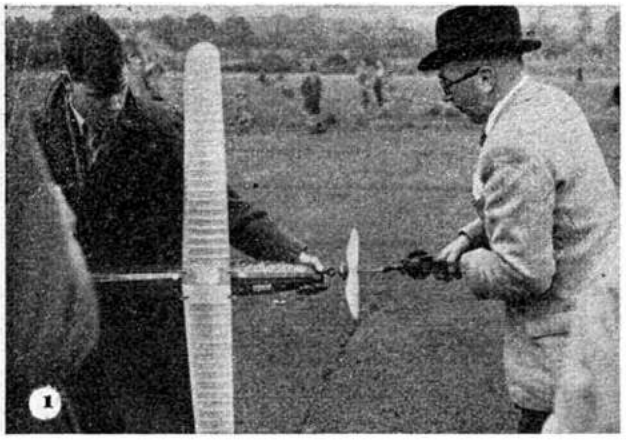
Of the original entry of 69, only 42 contestants entered the second round, and with the weather steadily deteriorating many more were destined for two flights only. Bob Copland went o.o.s. and lost his model, but even so, two Copland flights were sufficient to place him third in the final team.

As we progressed with the second round it became apparent that consistent performance was going to count. Too long a flight invariably led to a lost model and ruined chances, furthermore the slightest error in trim or launch in the howling wind was fatal as many discovered to their sorrow. Chesterton made his best and also *the* best flight in this second round with 3 mins. 38 secs.; Piggott of Croydon improved slightly on his first and even more important, recovered his model; Evan's "Jaguar" seemed to lack its usual climb; and Knight of North Kent who made an excellent first flight barely managed the minute for his second. With times coming in thick and fast one and all were beginning to speculate as to who would be amongst the lucky six. Warring and Lees were in the first six places at this stage but were still out looking for their models as the second round closed.

We hate to mention yet again the distasteful subject of the weather, but must report that with the opening of the third round only ducks could have waxed enthusiastic. That is, if they could have stood up in the wind! Shelter in the shape of Eddie Cosh's car had to be provided for our unfortunate Editor, who at his table in the middle of the runway, was finding time-recording a wet and miserable task. We must also pay tribute here to the timekeepers who had a most uncomfortable and extremely busy day in very exposed positions, with everything dampened except their spirits. Twenty-six contestants were left to fly in this third and last round and to describe the contest as an aeromodelling Grand National would be a very apt analogy. R. B. Chesterton thoroughly deserved his top place, clocking over 2 mins. in spite of conditions. Incidentally those readers who keep rabbits' feet can throw them away as Chesterton's flight number was 13! Piggott of Croydon, very close behind Chesterton in final placing, produced the best time of the third round with a brilliant 2 mins. 51·5 secs. and is certainly a beautifully consistent performer. Evans who we had imagined to be a certainty, muffed his last take off and hurried away for repairs after crashing on the runway. Even so, he was destined, like many others, to watch his final hopes blown down the runway in scattered fragments of balsa and tissue.

As seven o'clock, *i.e.*, closing time for the contest drew near, Val Turner, who had been nobly struggling with figures throughout the day, rapidly produced the final placings. Imagine the feelings of No. 6 on the list at about 6.45 p.m. with one or two well placed rivals yet to fly! Such was the fate of Len Stott who "sweated it out" at control and Oh! My! the minutes didn't fly very quickly this time!

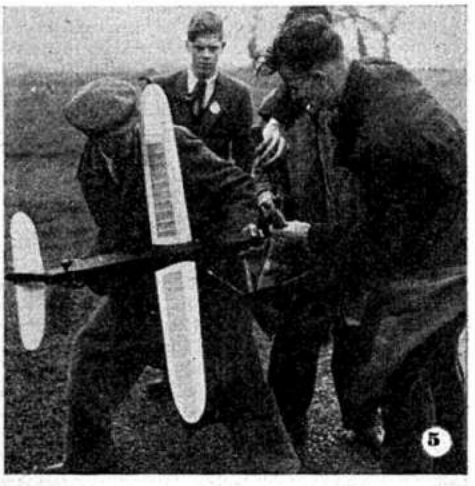
1. *Anxious moments as Len Stott, assisted by Dennis Lees, puts on those last few turns.*
2. *"Rip" right, and Mr. Haulberg centre, weighing in a competitor's model.*
3. *Stoffel of Ilford gets down to his winding.*
4. *Knight's model demonstrates the wind strength by vertical ascent.*
5. *Chesterton "unhooks" prior to flying.*
6. *Warring adopts "Bhuddist" stance at take-off.*
7. *Copland's model gets away. Note the dethermaliser fuse.*
8. *Clements of Luton does a "quick march" whilst his model an unhappy "left turn."*
9. *Bringing back the pieces are right, B. Haisman of Wallasey the unfortunate owner, assisted by N. Wakefield, left.*
10. *E. W. Evans lights up Northampton clubmate Buck's Jaguar.*


1


2

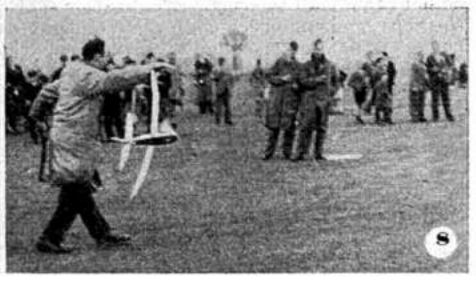

3


4


5


6


7


8


9


10

TYRO TRAINER

DESIGNED AND DESCRIBED BY WALTER MUSCIANO

The designer with his beautifully finished model which incidentally is featured on our front cover this month.

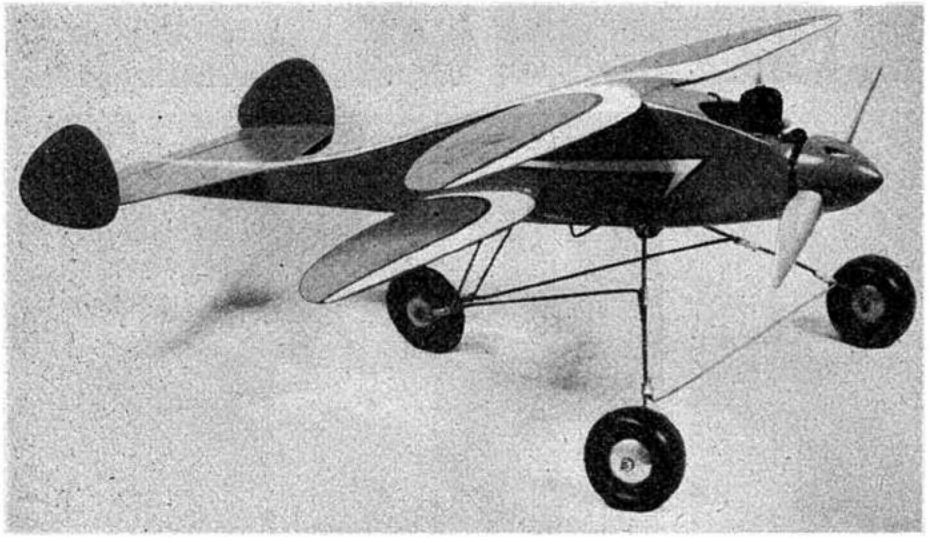
CONTROL line speed flying has attracted many new enthusiasts since its conception. Unfortunately, many modellers become discouraged because their attempt proves unsuccessful. This failure can be attributed to the fact that they have had no training in handling fast ships. Naturally one cannot expect to fly a De Havilland 108 before having flown at least a Miles Master. It was because the author observed numerous incidences where inadequate training was at fault that the "Tyro Trainer" was designed for his younger cousin and, when the easy handling and fine speed were apparent, the author proceeded to build one for himself!

Primary consideration was given to simplified construction. Anyone familiar with solid models can carve the wings and empennage and no special experience is required for the fuselage. A take-off dolly was used in order to increase the speed and give the modeller experience in flying from these carriages which are used for all speed models. Many speed designs have a low stalling angle but the "Tyro Trainer" has been power stalled on many occasions and incidentally the flyer derives much satisfaction when performing this manœuvre. The speed is moderately high, approx. 72 m.p.h., to make it an excellent transition trainer.

Cut the sides from 1/8 in. hard sheet balsa and cement the engine mounts in their proper location. (This will depend on the type of engine used) while this is drying, cut the fuselage bottom of 3/8 in. stock and the bulkheads of 1/8 in. Cement the bulkheads to the bottom and attach the sides in place. The bellcrank can be assembled on the foundation and this assembly cemented well between the mounts. The nose is carved from a block of balsa in order to form the transition from the rectangular fuselage section to the circular spinner section. This also provides additional strength. The fuselage top is not attached until later but the sponge rubber belly wheel can be attached at this time.

The tail surfaces are cut from 1/8 in. hard sheet balsa. Aluminium or other tubing is used as a hinge. This must be well cemented to the elevator. Attach the rudders to the stabiliser before assembling the elevator. Cut the control horn from aluminium or brass sheet and bend as shown. Connect the 1/16 in. wire control rod to the bellcrank and horn, cutting away the bulkheads where necessary, and then cement the empennage to the fuselage.

Select a straight grained 3/8 in. thick piece of medium soft balsa for the wings. Balsa planks the entire chord of the wing will be difficult and expensive to obtain, therefore, two narrow pieces cemented together span wise under pressure will prove satisfactory. Both wings are identical. The platform is cut first with a coping saw and then carved to the correct airfoil section. When sanded complete, a coat of clear dope and a light sanding will prepare it for assembly. Because of the fact that the root chord is less than the maximum chord, a rectangle must be cut out of the fuselage side to install the lower wing. This need not be larger than the maximum chord and thickness of the wing. The lower wing is inserted and cemented well to the bulkhead, fuselage side, and bottom through the open fuselage top. When dry, the rectangles may be replaced with space removed to accommodate the wing root. Cement the upper wing in place and cover the fuselage top with 1/8 in. sheet balsa.



For the beginner who is fearful of wrecking his creation, two coats of clear dope and three of coloured will present an attractive appearance. The experienced flyer should endeavour to polish the model using wood filler before and rubbing compound after the application of the colour.

(*Continued on page* 413)

A 22½" WINGSPAN CONTROL LINE SPEED TRAINER

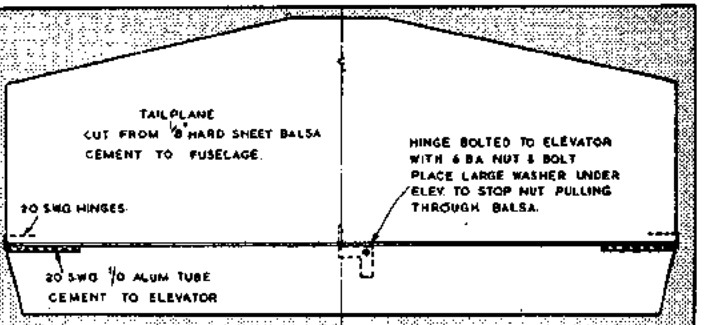
THE TYRO TRAINER.

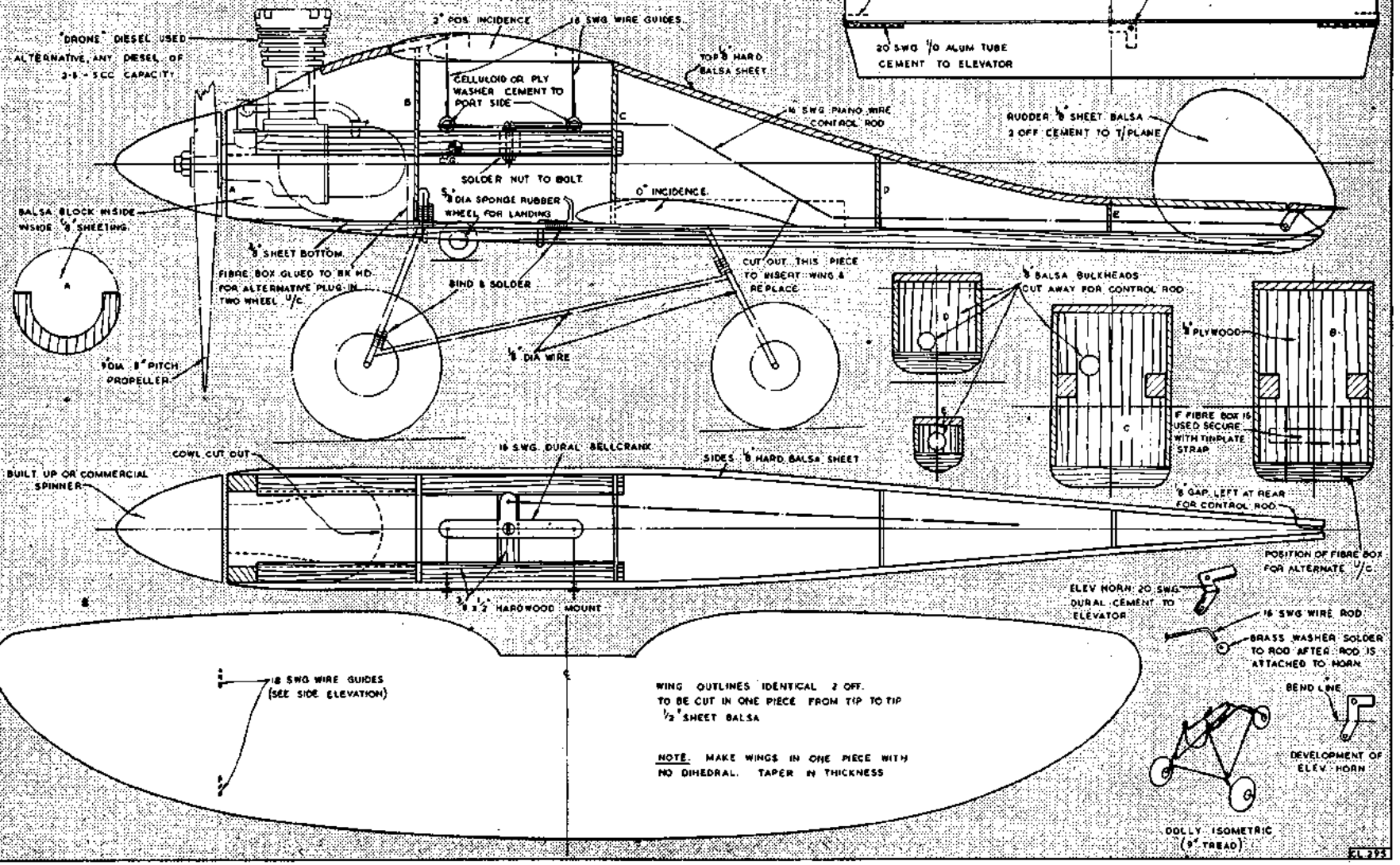
DESIGNED BY
W. MUSCIANO.
COPYRIGHT OF
ALLEN HOUSE, NEWARKE STREET, LEICESTER

2/-

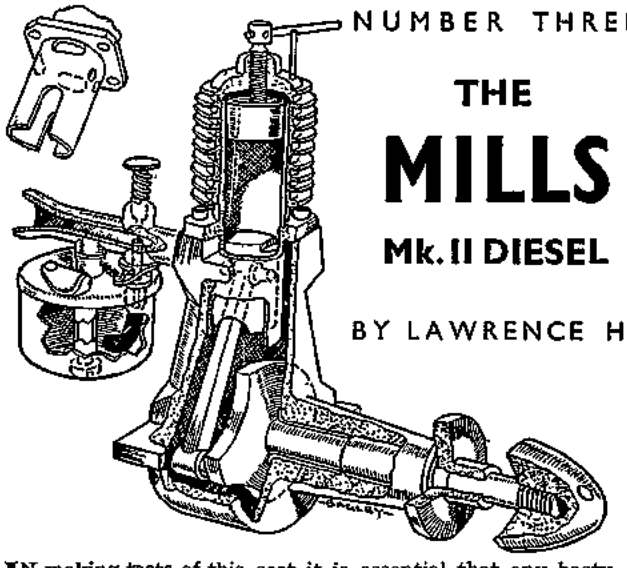
ALL WOODS UNLESS OTHERWISE STATED ARE BALSA

MATERIALS USED	
3 SHEETS 1/8" X 3" X 36" HARD BALSA	1 - 2½" DIA WHEEL
3 " 3/16" X 3" X 36" MED "	18" OF 16 S.W.G. PIANO WIRE.
1 BALSA BLOCK 3" X 2" X 4"	10" " 18 " " "
2 STRIPS OF 3/8" X ½" X 7½" HARDWOOD	60" " 10 " " "
5/8" DIA SPONGE RUBBER WHEEL	3" " 20 " 1/10 ALUM TUBING
2 - 3" DIA WHEELS	2" DIA SPINNER.
	3"X3" OF 16 S.W.G. DURAL SHEET.





FL 295



NUMBER THREE

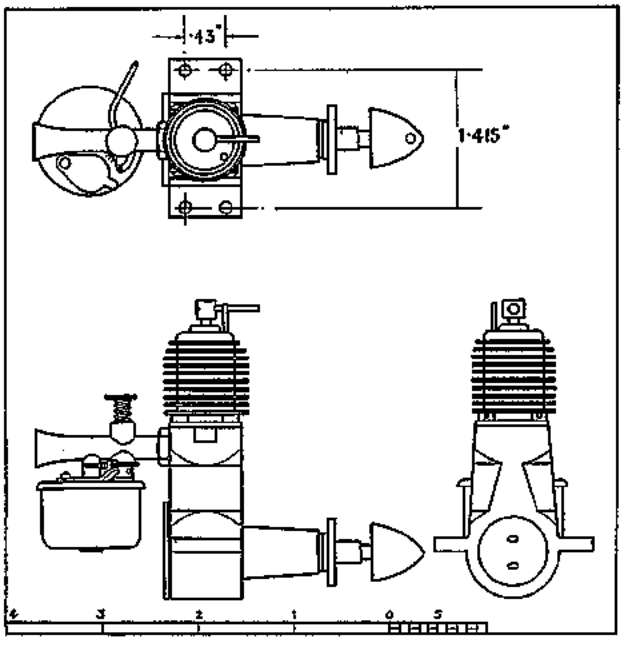
THE MILLS Mk. II DIESEL

Engine Analysis

BY LAWRENCE H. SPAREY

IN making tests of this sort it is essential that any hasty conclusions be avoided, and that each figure obtained be checked and rechecked beyond all possible doubt. For this reason each engine is subjected to some fifty or more independent tests, which occupy the better part of two days, and the figures obtained compared for consistency. Especially is this necessary when results are obtained which seem to run contrary to accepted belief, as all possible fallacies must be eliminated.

During these tests a sufficient number of engines has now been tested to bring forward a very remarkable fact, the consistency of which should put it beyond any doubt. In every engine tested, the maximum power was obtained when the engine was started *from cold*, and power fell off as the engines warmed up! It has been possible to measure this falling off in power output, and it may be taken that an average decrease of about 4 per cent. occurs when the engine is hot. Although this is but a small amount, it is so contrary to general belief that it warrants special emphasis, and might lead to some possible improvement in engine design, where particular attention might be paid to the cooling arrangements.



TEST

Fuel. Mills " Blue Label " 2 parts; Ethyl Ether, 1 part.

Starting. Hand starting was used throughout. Engine started easily at recommended settings from cold. The engine started when hot with equal facility. Ran consistently over a wide range of speeds (actually, 4,400 to 11,000 r.p.m.) and seemed capable of higher r.p.m. than was used in the tests. The cut-out is effective at speeds between 4,400 and 7,500 r.p.m., but has a delayed action between 7,500 and 10,000 r.p.m. Above this figure the cut-out does not operate.

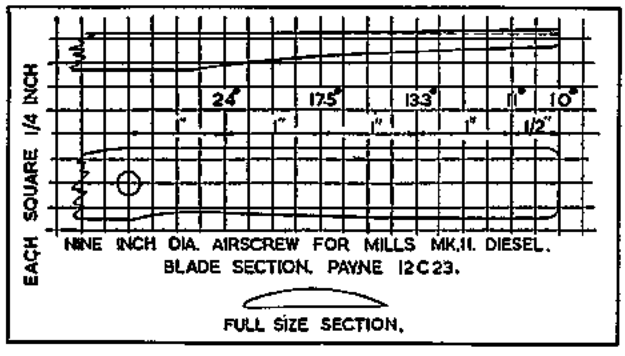
Running. Ran well and consistently over a wide range of speeds. The actual limits of r.p.m. on which tests were carried out were 4,400 to 11,000, but the engine seemed capable of a higher r.p.m. than was actually tried.

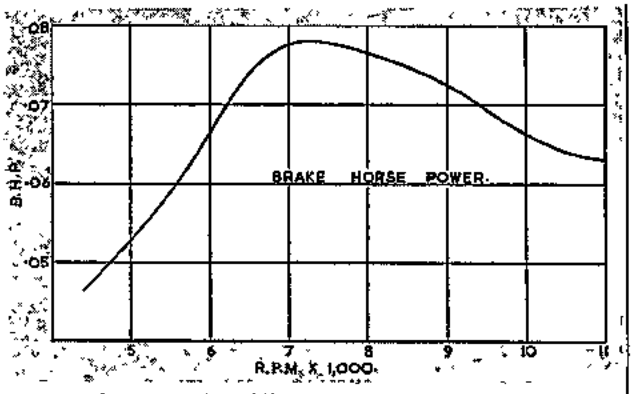
B.H.P. Starting at ·0466 b.h.p. at 4,400 r.p.m. power rose steeply to a maximum of ·078 b.h.p. at 7,250 r.p.m. A curious feature of this engine is that the power does not fall steeply after peak output is attained, as is usual with diesel engines, but flattens gradually to ·063 b.h.p. at 11,000 r.p.m. The considerable figure of ·078 b.h.p. maximum, is in keeping with the figures obtained with other high class diesel engines.

Power Weight Ratio. ·3566 b.h.p./lb.

Static Thrust. As there is no standard propeller supplied with the engine, an airscrew of 10 ins. dia. 6 ins. pitch, with a maximum blade width of 1 in. situated 1 3/4 in. from the tips, was used. Blades were of symmetrical shape, and the propeller was chosen as being the most efficient of the orthodox types. Maximum r.p.m. with this airscrew were 5,400, at which speed a thrust of 14 ozs. was developed. Minimum r.p.m. for steady running, was found to be 4,100, when a thrust of only 8 ozs. was delivered. The decrease in thrust is, therefore, very marked as the r.p.m. falls.

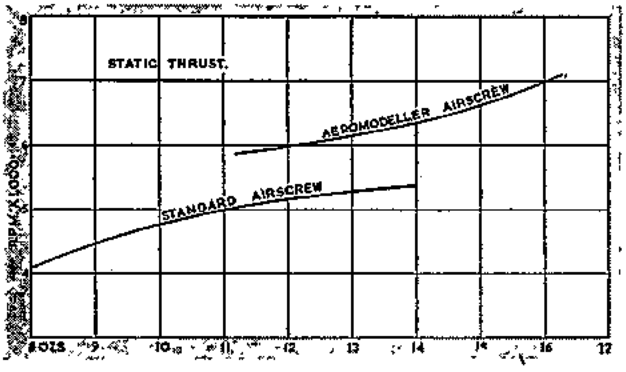
A maximum thrust of 16·2 ozs. at 7,060 r.p.m. was obtained using the Aeromodeller airscrew. The increase in thrust, using this airscrew, is not so marked as in previous experiments with other engines using the makers' airscrews, and this is due to the fact that the standard propeller used in the present test was one of the most efficient of the orthodox type. The gain of 2·2. ozs. however, is quite considerable, especially as the minimum thrust was still 12 ozs. at 6,000 r.p.m. In this test it will be noted that the maximum thrust, using the Aeromodeller airscrew, is again obtained at a point corresponding to that of the peak b.h.p. of the engine.





General Constructional Data.

Name :—Mills Diesel (Mark II).
Manufacturer's Name and Address :—Mills Bros. (Model Engineers), 2, Victoria Colonnade, Southampton Row, W.C.1. Telephone No. Holborn 9630.
Retail Price :—£4 15s. (excluding airscrew).
Delivery :—Immediate.
Spares :—24 hours service.
Type :—Compression ignition " diesel ".
Specified fuel :—Mills Diesel Fuel, or X.L. lubricating oil 1/3, paraffin 1/3, ether 1/3.
Capacity :—1·3 cubic centimetres. ·08 cubic inches.
Weight :—Bare 3½ ozs.
Compression Ratio :—14 : 1 to 17 : 1 according to speed.
Mounting :—Beam, upright and inverted.
Recommended Airscrews :—Ultra steep climb 9 by 4 ins. Natural climb 9 by 6 ins. Control-line 8 by 8 ins. to 8 by 10 ins.
Recommended Flywheel :—1¾ in. dia. by ½ in. (approximately 5 ozs.).
Tank :—Capacity 3 to 4 minutes.
Bore :—13/32 inches.
Stroke :—5/8 inches.
Cylinder :—Nitrous steel, two transfer and two exhaust ports.
Cylinder Head :—Dural (screwed to cylinder).
Contra Piston :—Carbon Steel, ground and honed.
Crankcase :—Magnesium, gravity cast, machined and polished, with final black chromated finish.
Piston :—Tool steel deflector top.
Connecting Rod :—Forged high duty light alloy.
Crankpin Bearing :—Plain.
Main Bearing :—2 part Plain Bearing.
Little End Bearing :—Plain. Silver Steel Gudgeon Pin.
Special Features :—Engine speed is variable by adjustment of compression. Flexible jet tubes ensure steady fuel feed during steep climb. Built in cut-out. Compression lever screws into an adjusting screw which is tapped crossways to facilitate resetting to any condition which may otherwise be outside the range of the usual full turn of the lever. Extended needle valves are available and the fuel needle is also drilled to take a 1 millimetre wire for the convenience of those who wish to add an extension of non-standard length.



TYRO TRAINER *continued from page 411*

The take-off dolly is conventional in design and simple to construct. Bend the 1/8 in. wire to shape and wrap all joints with soft fine wire and solder well. The wheels can be solid rubber at least 3 ins. in diameter. Large wheels perform better than smaller ones Portions of the dolly that come in contact with the model can be wrapped with tape to prevent scratching.

The original model was powered with a " Drone Bee " diesel engine developed by Mr. Leon Shulman. Other models have used power plants from a "(Bantam)" ·19 in. to a " Mighty Midget " ·45 in. the former operating without electric ignition using a " glow plug " and special fuel. Regardless of the power plant, the model should balance 3/8 in. behind the front control wire. The author disapproves the use of " shot lockers " or other methods of adding useless ballast unless it is unavoidable. Instead, the modeller should decide on the power plant he will use and construct the model accordingly. Considerable power should be used on the test flights in order to avoid " mushing." Flight lines about 45 feet long of ·014 in. stranded stainless steel wire have been used successfully. The model should be lifted gently from the dolly in about one lap. Do not try to climb into the wind and be sure to maintain tension in the lines. Loss of tension means loss of control. If this does occur a step or two to the rear should prove a remedy.

Full size plans, see ¼rd. scale reproduction, are available price 2/– post free from the Aeromodeller Plans Service Ltd., Allen House, Newarke Street, Leicester.

EVERYTHING UNDER CONTROL LINE, *continued from page 430.*

the kit is well up to standard. We would only question the need for a kitted " goat " like this. However, it certainly makes up into an attractive little model.

* * * * * NANCY, by J's Model Centre. 18 in. span stunt model. *Review.* Quite the most complete kit we have inspected, even down to thread to bind the undercart, and eyelets to bush control wires exit from the fuselage. The wood is plentiful and best hard Solarbo, *accurately cut.* For 14/6 this kit is outstanding.

* * * * SPEEDEE, by Model Aircraft (Bournemouth). 24 in. span sport model. *Review.* As for Stunter. Worth the 17/6.

* ORBIT, by Law and Sons. 17 in. span speed model. *Review.* Disappointing on the whole. Wood not up to standard and ready shaped portions very rough. Wood badly matched. Makes a pleasing model, but at the price of 18/6 we hope the kit will improve.

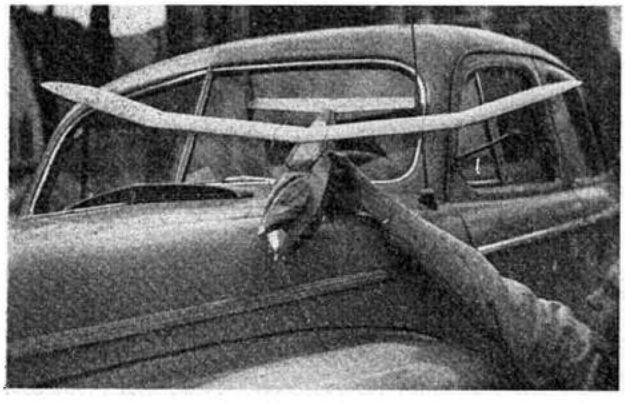
* * * * * MAGNETTE, by H. J. Nicholls Ltd. 24 in. span stunt model. *Review.* One of the best we have handled. Solarbo balsa—well matched and *accurately cut.* Only just enough wood for planking though, and undercarriage fixing does not seem too secure. A full airfoil section on the plan would also be a help. Most useful is the full stunt chart enclosed with the kit. Good value for 25/–.

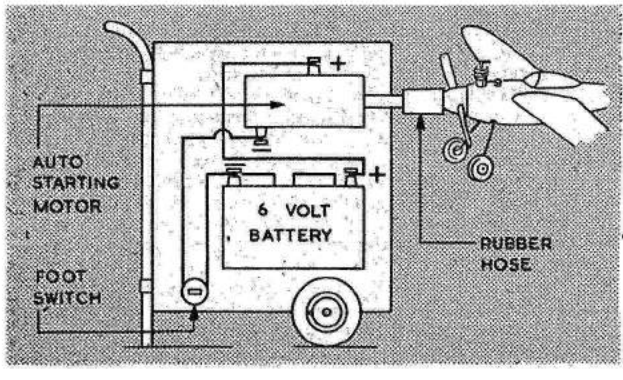
* * * * PHANTOM, by Keil. 21 in. span sport trainer. *Review.* Wood could be a trifle better, but otherwise very good value. Good strong undercart. Well cut wood. Very comprehensive building sheet and plan. Price 18/6.

* * TRAINER, by Halfax. 32 in. span sports trainer. *Review.* First class wood and accessories, derated only for one very bad point. Printed sheet is supplied for ribs only, it being necessary to trace all other formers and shaped pieces onto the balsa or ply. The nose block and wheels are the only pre-cut pieces. At 20/– this is rather hard on the purchaser.

* * * COPPER HEAD, by Astral. 32 in. span sports model. *Review.* A very complete kit of a largish model well up to standard though in places plan and printed wood do not entirely tally. At 25/– is far better value than its stable mate.

Before we finish and leave the actual designs I must mention the plans supplied by Messrs. Watkins of Cardiff. Three intriguing designs are available, the Bambara 18 in. span sportster for the Frog 100 at 3/–, and two excellent flying scale models of the S.E.5 (26½) span and the Gloster Gladiator. (32 in. span) at 5/– and 5/3 respectively. The plans are easy to work from and clearly drawn. An interesting innovation is the marketing of graded kit packs in standard, popular and de luxe editions for the latter designs.





BY JIM NOONAN

WITH the arrival of the flying season, contests are in full swing and countless flying fields buzz to the motors of free flight and U-control models. The Nationals (they ain't what they used to be!) are scheduled for August 3–7 near Kansas City. The Plymouth automobile people will again sponsor an international meet in Detroit, from Aug. 18th to 23rd. This, my friends, is *the* contest to head for. You must qualify by previous accomplishments and character references, etc., a limit of 500 entrants being set. Write to Plymouth division of Chrysler Corporation, Detroit, for details.

Many old timers are quietly working on Wakefields in anticipation of the contest supreme, but to date my information consists of rumours from the Continent, AEROMODELLER write up and not a single word of confirmation regarding either eliminations or finals in the U.S.

Certain guys both in the U.S. and in England have been taking of late to copying ideas and plans from German magazines and selling them to the AEROMODELLER, *Model Airplane News* and *Air Trials*, as original material. Here's a warning that your scribe (who takes *all* magazines old and new) will expose the next culprit in this column. Most of the material in American magazines originates in the heavily populated East Coast area; the boys carrying manuscripts and drawings direct to the editorial offices. This makes for rough competition, which should, but does not always give us extraordinary material.

The next time you go to the model shop in search of coloured tissue of silky fine texture and find you must use a glorified wrapping paper substitute don't feel too bad about it. I am not sure that they have any even in Japan, although Japanese products are beginning to appear here in the U.S. That is products apart from modelling materials which have so far failed to show up. We use Silkspan in white only and inferior in quality to pre-war supplies. This is an American product, can be covered wet and is finding wide use for tea bags, dish cloths and other household products. Apparently the small market for model planes does not warrant the manufacture of coloured tissue of good quality. Most experts have secret stocks of Jap tissue, having worked for large model houses at one time or another.

The U-control speed bugs continue to whirl their hollowed-out baseball bats madly around their heads and a Hornet powered model using Glo-plug and single bladed prop recently did 150 m.p.h. plus. Glo-plugs are used almost universally. Hot motors turning tiny props can only be started by mechanical starters, see drawing left.

Stunt U-control is all the rage now. Weird long winged packing cases flying at 40-70 m.p.h. and as heavy as a bar-bell are sensations when whipped into various gyrations called loops, figure eights, etc. The mortality rate on all U-control models is high and consequently average workmanship is poor. But free flight is by no means dead, any well run

Top photo shows author Noonan with his lightweight pylon model "Mon Petit Chou" powered with a ·8 c.c. Micron and guaranteed O.S.S. on a 25 sec. engine run. Centre, a very pleasing octagonal fuselage Wakefield model built by Fred West, note the folding prop.

contest bringing them out of hibernation in good numbers.

Now about this radio control myth—to read U.S. magazines you would think that the sky was dark with them. Several complete transmitter-receiver units are available at reasonable prices and kits for larger models to accommodate them were also on the market, but sales on all of these were so bad that they are no longer being advertised. Some dealers unloading their stocks at wholesale prices in order to avoid a total loss. The reason for this was the fact that only the government licensed amateur could operate one of these sets with heavy penalties preventing violations. A " citizens band " is stated to be set aside for experimenters, including modellers, but there is no indication of when this will be brought into effect. National contests attracted from three to ten entrants, sometimes half of them got their planes into the air. Incidentally we were shown a unit made by the Aero Spark people, that could be used in a model weighing 8 ozs. complete. The transmitter is carried on the operator's belt.

Jim Walker is undoubtedly tops in radio controlled flying and few can match him in view of the technical knowledge and expense involved. Dr. Walter Good pioneered radio control to the extent that he developed the first consistent performing model and first mass produced apparatus.

Air Trails magazine has made a sensational come back under the able leadership of Al Lewis. It is full of excellent articles, drawings and advertising.

Indoor modelling has eased off somewhat locally now that good weather permits outdoor flying. Neighbourhood records in the school gym (20 ft. ceiling) are 100 sq. ins. stick H.L. model 10 min. 2 secs. Baby R.O.G. 30 sq. ins. 5 mins. 9 secs. H. L. all balsa glider 19.7 secs.

The C.O.2 powered reciprocating motors are by now known throughout the world. Newest is the A.100 of $\frac{1}{8}$ in. bore and stroke. It has been used to fly microfilm models and a tiny scale model of 12 in. span flies nicely with it. Cost is $12.50 (£3 3s.) These motors are the invention of Bill Brown of Brown Junior fame.

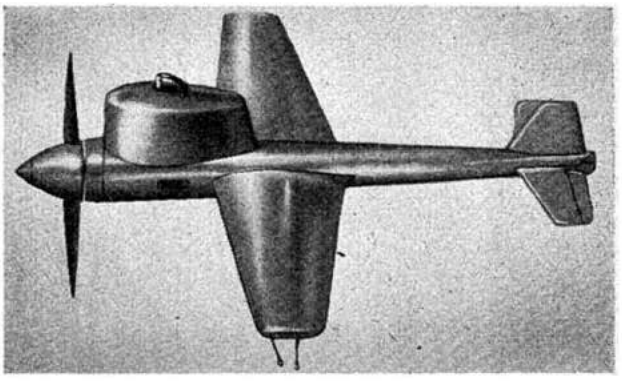
Latest U-control kit is all prefabricated in aluminium and is assembled in a few minutes. A high speed design by the McCoy motor people it sells for $8 (£2).

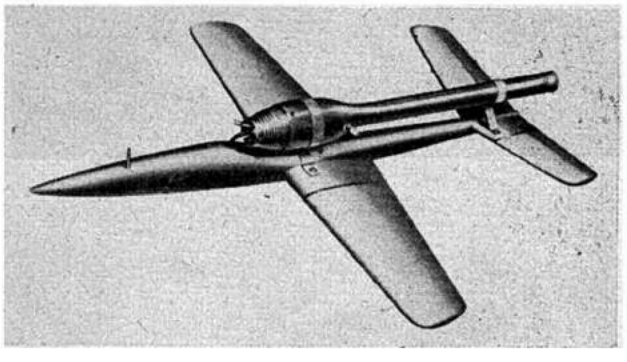
A new Taylorcraft (Auster to you) is the top prize at a meet scheduled at Ottumwa, Iowa, on July 4–3–5.

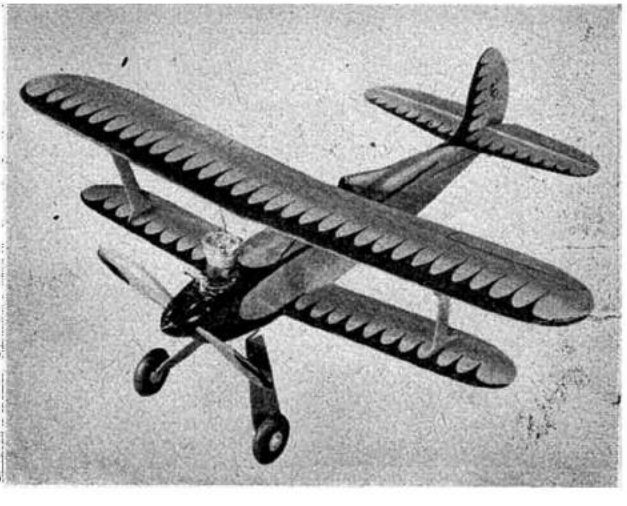
American diesels—The Drone is the best motor with the biggest sales. It is a copy of the Micron 5 c.c. and the Bonnier 5 c.c. and performs as well or better than either of them. Easy to handle and start, it is popular for stunt and scale U-control models. Arden motors with " D–D " diesel heads are also popular, since they combine the remarkable Arden motor with the ease of diesel running. Glo-plugs have one disadvantage against diesels in that the fuel residue dissolves doped lacquered and painted finishes of the models. At the best the diesel will be slowly pushed out by the Glo-plug.

Balsa wood is not as plentiful as it used to be. The awful drain of natural resources during the war hit the balsa forests of Ecuador so badly as to leave large areas stripped of good lumber. Now it must be hauled from the interior to the rivers and most of this is immature. The heaviest plank I have seen since 1941 was 4 ft. by 9 ins. by 10 ft. Pre-war planks were often 24 ins. square by 20 feet long ! The price has nearly tripled. Balsa is so plentiful in Italy that prices are lower than in America. Countless rafts from war surplus were sold there. Many boys report seeing and using balsa wood in the Pacific and Far Eastern areas during the war.

Brown rubber (T–56, MRL etc.) is known by all modellers. It hit the market again last year and we found that it was not quite as good as pre-war but is still the best obtainable here. Having heard of English black rubber we tried it and must report that we did not like it. A sample of rubber from Italy (origin unknown) seems to be the most powerful yet. In pre-war years an excellent black rubber was available here, but tests proved that brown was slightly superior.







Photos from top to bottom are as follows :—The McCoy aluminium prefabricated speed control line model. A nicely detailed U-control scale Hawker Tempest by a Milwaukee builder. The new Dynajet powered "Squirt" which has been timed at 159 m.p.h ! Finally Jim Noonan's " Acrobat " bipe, a sportster of very pleasing lines.

ONCE again Fliar Phil climbs out of a horrible tangle that makes it look more as though he has been knitting rather than control-lining and wearily sharpens his pencil for a go at Model News—which at least is one thing he can do.

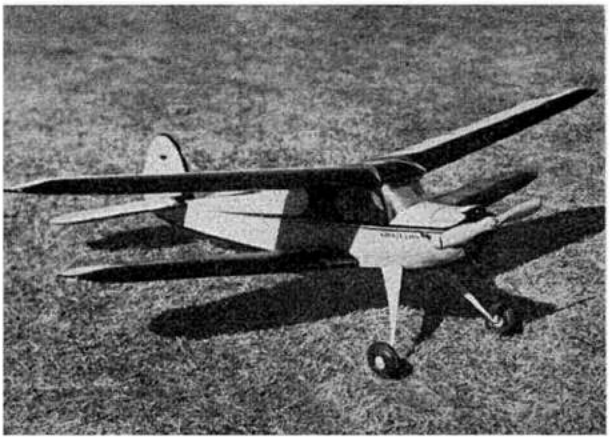
Our Model of the Month is again one of those cases where one finds it hard to differentiate between "Model" or "Modeller". Taken at the British Nationals it shows Peter Cock of Southampton with his unique little E.D. powered stunter that won him the coveted Gold Trophy. This little model follows the increasing preference for "sidewinders", having its Comp. E.D. mounted horizontally on the flat ply "fuselage". The wings are normal built-up construction, the tailplane also following more or less standard British practice, balsa sheet with fin of similar material.

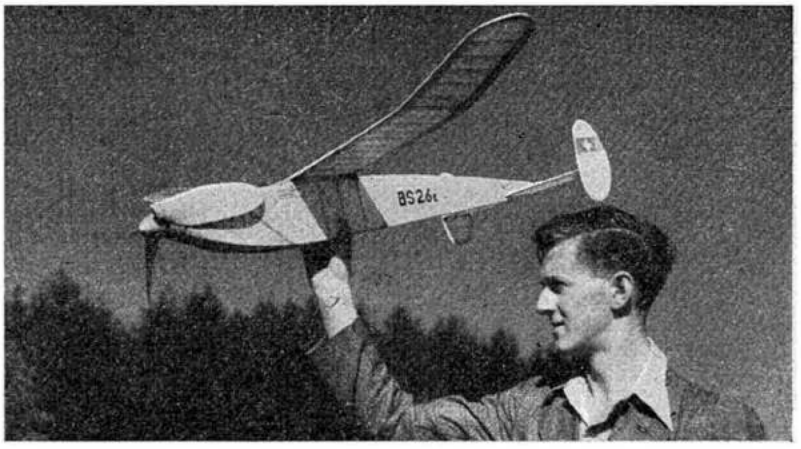
Consus boobed in recent months as explained in last month's Gadget Review, but here is the promised photograph, centre left, of the tailless glider by B. K. Hersey to which the effective pendulum aileron control was fitted. The model was designed by Mr. Hersey and features a modified R.A.F. 33 section with a sheeted leading edge. The span is 60 ins.

We turn now to the photograph bottom left of the Sunderland built by W. Battley of London, N.W.4, cleverly photographed against a background that shows just enough to suggest that the model is the real thing.

Below left is an elegant power model whose prototype won a fair degree of popularity owing to its attractive lines. Designed by Phil Smith, this photograph is of the original prototype Stentorian, modified to a biplane. Note the elegant semi-scale appearance of the design and its beautiful finish, which has won notice at many a meeting.

Young reader R. A. Twomey of Ampleforth College, York, sends the photograph top left. Already holding one British Glider record, he has designed and built nearly a hundred models. His diminutive model shown above is a baby electric





R.T.P. pusher flown by means of an Electrotor power unit turning a 3½ in. diameter propeller.

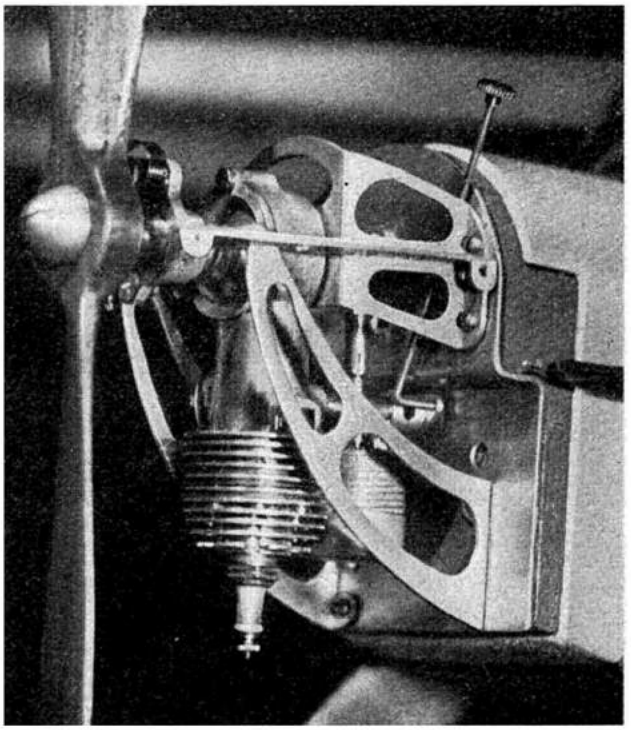
This month's Continental flavour is given by our contribution from Switzerland shown top right, where a Swiss competitor is seen with his contest rubber model. Note the low-set tailplane, the slightly " bellied " fuselage, single leg backwards retracting undercart, and folding airscrew. Another interesting feature is the twin fins.

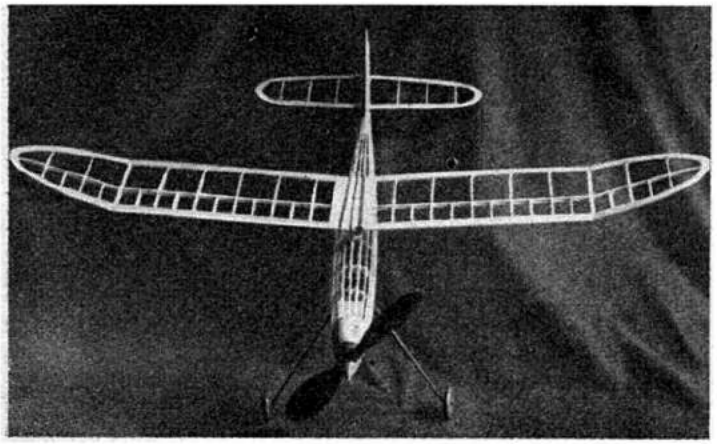
Down to detail and photo centre right, which is a close-up of A. C. Shuffle's " power egg " engine mount as fitted to his Bowden Contest. With a sheet aluminium cowling fitted for greater realism, all controls are operable from outside and in addition the petrol tank screws right off for easier filling.

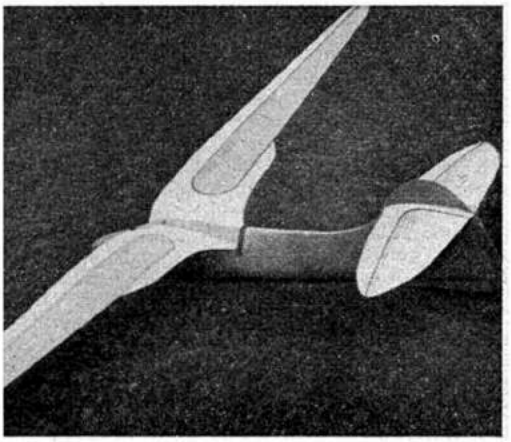
Doodle-bug days are far off now but it is interesting to recall the slight stir amongst the inhabitants of Fulham a couple of years ago when the original " Old Nog " by P. E. Norman arrived one evening near dusk, having flown all the way from Eaton Bray that afternoon. Bottom right is a replica of the original design built by F. E. Smith of Northampton which has not at the time of writing had time to emulate its predecessor as it has not yet been up on a line, though it has already displayed a fine glide from a handlaunch.

Last on our list is a very nice bit of rubber modelling from C. F. Amor, of Devizes, whose Frog " Stratosphere " is shown below left. 42 in. span, it is a pylon streamliner with a polyhedral wing. He threatens to send along some flying shots—" if it lasts that long ". Fliar Phil's models never collapse through death watch beetle either !

Before he signs off till next month Fliar Phil blushes to point out that friend Consus was not the only unfortunate in error in recent issues. In his own last double page effort he managed to tell you everything about the Model of the Month by G. Adcock of Ipswich—everything except telling you that the model was a Vickers Virginia !







WARRING'S LIGHTWEIGHT

DESCRIBED BY BILL DEAN

THIS lightweight is the latest of a long line of models which started with Ron Warring's British H.L. record holder of 1940.* The model featured here is the 1946 winner of the much coveted Gamage Cup—one of the most important annual contests held in the country. With the dethermalizer set for 15 minutes, its top flight was 22:48 and the aggregate sets a new record as the highest ever obtained in an S.M.A.E. contest.

On 80% turns, the still air duration is 3½ minutes—amazing yet true. On good pre-war rubber it should do at least 4 minutes. A dethermalizer is a must, as the model recently turned in 10 : 8 at 8 p.m. in the evening, when all thermals were practically non existent.

Brief history of this outstanding lightweight follows. First of the series had an orthodox square nose and a high wing. After several months flying, a shoulder wing fixing was incorporated. The performance improvement was tremendous—as it was soon lost o.o.s. after 6 : 30. Next model was fitted with a dethermalizer unit, but on its first test flight was also lost on only 200 turns, as it hardly seemed worth while setting the unit for such a small amount.

It became apparent from this point, that the many hours of work put in on design and experiments were really beginning to pay off in a big way—so model number three was built almost overnight. A slight tendency to spin was experienced, so small tip fins under the tailplane were incorporated with good results. In a few days this model had gone the way of all the others, disappearing into the clouds after 17 : 30.

The fourth model was definitely a hot contest design, but although it turned in two minutes every time on less than half turns, it spun in on any more power. It was finally decided that the C.L.A. (centre of lateral area) was to blame, as the C.G. is basically too low on most shoulder wing jobs. The centre fin was also partially useless at certain flight attitudes due to the airflow breaking away from the fuselage. Increased area anti-spin fins again proved to be the solution and this model won 2nd place at the Chingford 1946 Gala with 5 : 30. Yes, this model was also lost and by this time the plan was getting just a little tattered, what with the modifications, razor cuts and cement.

Which brings us up to the present model, of which many have been built by the designer and others. Incidentally, it was decided to build one to Wakefield size and although it flew just as well as the others (it was this model that won the Gamage Cup) it didn't seem worth it, as the smaller size was so much quicker and cheaper to produce. That is why the small version has been detailed here—although you can tackle the Wakefield size with confidence if you like a bigger model.

Fuselage. Begin in the usual manner by first laying out the side frame directly on the plan. Make the second side directly on the first to ensure that the two are identical. When quite dry, remove from the plan, slice apart, and join together by the upper and lower spacers situated on either side of the wing box. Pull in at the nose and tail and add all the remaining spacers.

Next fit the detail parts, such as the rear peg anchor, dethermalizer box (if desired), wing box and undercart tube. Silk-cover the nose up to the second spacer, before adding the ply nose former and the super stringers. Small pieces of 1/16 in. reinforcement are fitted in the fuselage sides where indicated, to avoid tearing the covering when the wings knock off in a bad landing or crash.

Make a paper tube by wrapping round a piece of 1/10 in. dia. dowel and cement it in place in the tail. Then shape the underfin over a lighted candle and attach to the fuselage. Undercarriage and wheel details are shown on the plan.

Wings. Wing construction is normal except for the fact that two panels are featured instead of the usual one-piece wing. This plug-in method absolutely avoids breakages through crack-ups and makes a cleaner, more efficient fixing than the old type in which rubber bands are used. Auxiliary spars transmit the tongue loads out along the wings. Tips are laminated for strength and also to ensure that identical tips result (both tips being cut from one piece of lamination).

Start the wings by making the two wing ribs W1 and W2. Sandwich ten pieces of 1/32 in. oblongs, of the approximate size, between them—using about a dozen pins to keep the whole thing rigid. Then cut and sand away the surplus to make ten perfectly accurate ribs. Repeat for the other panel. Cut out W3 and W4, using the rib patterns provided and attach to the lower 1/8 in. × 1/16 in. spar, which should be pinned down on the plan. Add the upper spar followed by the two wing tongues. Next comes the leading and trailing edges —the latter being slotted to receive the ribs. Shape these components after assembly. Add the laminated tips and the ¼ in. strengheners at the root ribs.

Remove from the plan and cut slots 3/8 in. × 1/16 in. to take the spar reinforcements for the tongues. A 1 mm. ply fairing underneath and a 1/32 in. balsa one on top, complete the wing panels.

Tail Unit. Make the ribs by the same method as that just described for the wings. Pin down the 1/16 in. square lower spar on the plan and cement the ribs to it. Add the upper spars, leading edge, trailing edge and tips in the usual manner.

Pin the tailplane to the fuselage and build up a 1/32 in. sheet fairing to continue the fuselage curves. The 1/16 in. sheet anti-spin fins are cemented in place after the covering has been applied.

Make the fin outline, then thread the two ribs on to the central dowel spar and cement the ribs in place. A movable rudder can be cut out of the 1/16 in. sheet trailing edge if desired. Use several pieces of copper wire for hinges. The fin spar should be a snug fit in the paper tube in the underfin. A press stud in the L.E. completes a firm fixture. No tailplane bands are needed, provided that a really tight fit is achieved in the fin tube.

Covering. The original model is covered with black tissue for the fuselage and white for the flying surface. This combination sounds drab, but stands out well against most cloud and sky backgrounds. Give four coats of dope to the fuselage, three to the wings and two to the tail unit.

Prop Details. Cut out the blank as detailed on the plan and start by carving the back of the blades first. Completely finish the back before starting on the front. These should be undercambered 1/8 in. at the widest part of the blade.

Build up the spinner from scrap and cut out the nose block (A and B) from 1/16 in. sheet. Insert a piece of brass tube in the nose block as a bearing for the shaft, soldering a cup washer on both ends to ensure a sturdy fixture. Bend the rubber hook in the 16 gauge shaft, push it through the nose block, then solder on the freewheel loop. Bend the freewheel clutch so that a circle is provided for a pin to be pushed through into the spinner. A ring of 3/16 in. sheet is cemented to the back of the spinner to enclose the freewheel parts. Attach the prop and bend a winding loop in the front of the shaft.

Power consists of eight strands of ¼ in. by 1/24 in. strip, pre-wound to tension. We won't give any advice on the number of turns as we found that the quality of rubber varies considerably. In any case work up to the maximum number of turns gradually if only to avoid losing the model.

Full size plans, see quarter scale reproduction, are available price 3/-, from the Aeromodeller Plans Service Ltd., Allen House, Newarke Street, Leicester.

* *26 : 45'6 Hand Launch.*

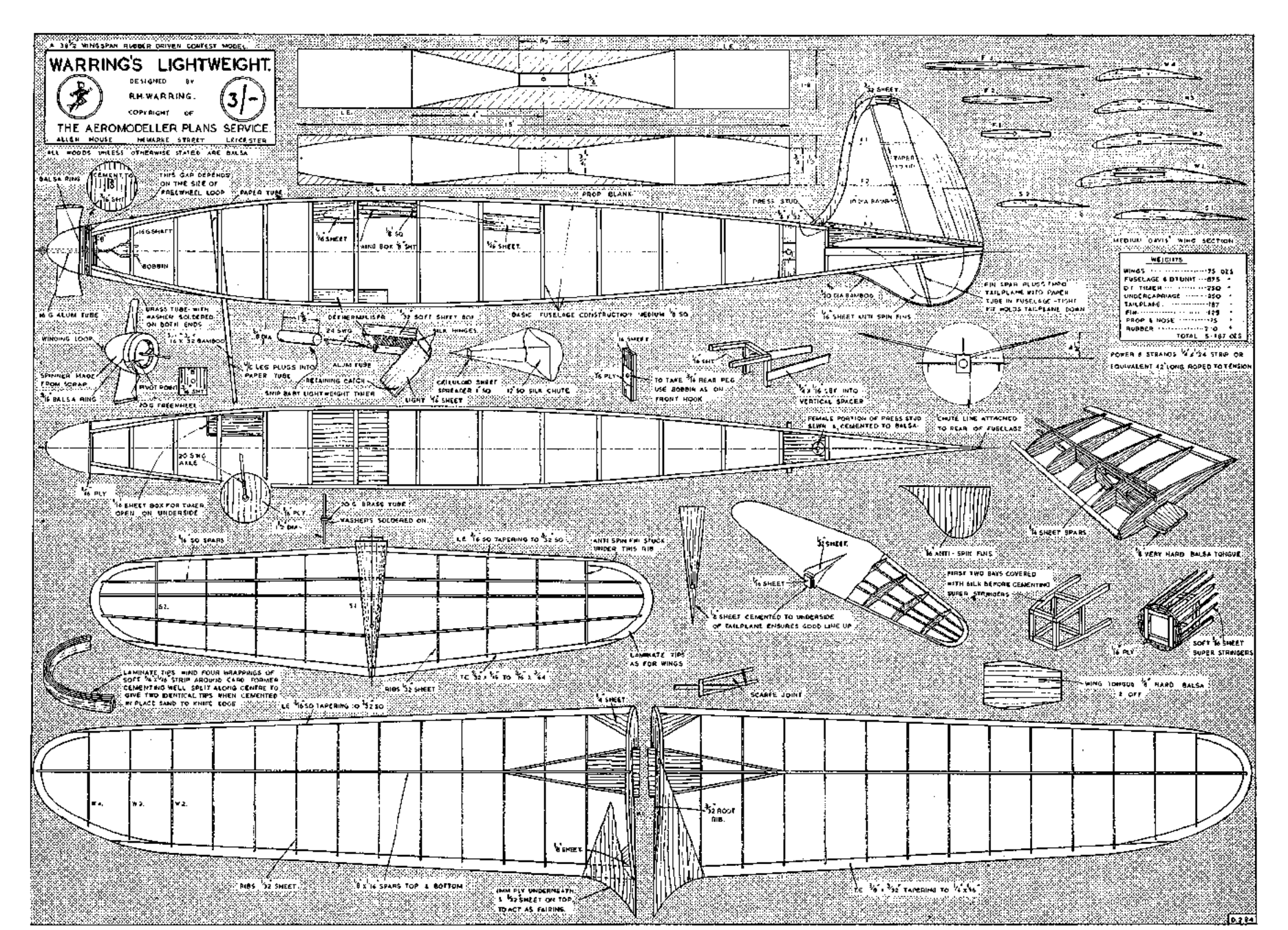
A 38½ WINGSPAN RUBBER DRIVEN CONTEST MODEL

WARRING'S LIGHTWEIGHT.

DESIGNED BY
R.H. WARRING.

3/-

ALL WOODS UNLESS OTHERWISE STATED ARE BALSA



MEDIUM "CAMBER" WING SECTION

WEIGHTS	
WINGS	.75 OZS
FUSELAGE & BTUNIT	.875 "
D.T. TIMER	.250 "
UNDERCARRIAGE	.250 "
TAILPLANE	.187 "
FIN	.125 "
PROP & NOSE	.75 "
RUBBER	2.0 "
TOTAL	5.187 OZS

POWER 8 STRANDS 1/4 x 1/24 STRIP OR EQUIVALENT 42" LONG ROPED TO TENSION

D.2.84

THE 1948 BRITISH NATIONALS

Aeromodeller Photographs.

Above is a general panorama taken during the Sir John Shelley Cup, whilst the glider launch, lower left, gives some idea of the strong wind that was present.

Right is a graceful parasol wing sailplane flying in the Pilcher Cup.

Centre, Mr. Lindgren, Parliamentary Secretary to the Ministry of Civil Aviation, opening the Nationals whilst on the extreme right readers will recognise Mr. A. F. Houlberg, Chairman of the S.M.A.E.

Not entered in any of the contests, but nevertheless present was the Aeromodeller van, in front of which are left, Mr. D. J. Laidlaw-Dickson, and right, Mr. H. G. Hundleby enjoying a breather.

DESCRIBED BY H. G. HUNDLEBY

THE second post war British Nationals held at Sywell Aerodrome, near Northampton, were well blessed with sunshine, large crowds, and magnificent support from competitors. Entries totalled some 1,700 and presented a formidable task to the organisers, but a strong and gusty wind that prevailed throughout the two day meeting proved a ruthless eliminator. Undoubtedly a high percentage of contestants were disposed of far more quickly than either they or the organisers expected.

Entrants in the Pilcher Cup suffered most and if anything this event reminded one more of a pheasant shoot than a model aeroplane contest. It was in fact a sickening sequence of folding wings and plummeting fuselages. Skill on the tow-line was all important and those few enthusiasts who tempered the pressure on their line to the strain on their mainplanes were on the whole successful. Even so, the top placers' times were on the low side owing to the rapidity with which models were blown out of sight and also to a heat haze and an unfortunate rise in the ground which did not make the task of the timekeepers any easier.

By early afternoon on the Sunday the Pilcher Cup was drawing to its conclusion, and reinforced by an excellent lunch at Sywell Club House we settled down to a rubber session in the shape of the "M.E. No. 2." Cup. This, an unrestricted event, saw a variety of models with accent on the lightweight. Again the wind made take-off conditions precarious and those lightweights that did get away were literally blown off the boards, many of them hurtling skywards at an astonishing rate. Croydon enthusiasts Ladd and Piggott occupied first and second places (need we mention that they were flying lightweights !) closely followed by Evans of Northampton, from the opposite school with his now famous Jaguar.

By the late afternoon, and with the last of the rubber competitors making their flights, the desultory running of engines from various parts of the drome increased until it became a cacophony of sound. This heralding the approach of the Sir John Shelley Cup, which with its total of 456 entrants, was the best supported event of the Nationals and certainly, contained the highest proportion of "prangs". It was unfortunate that hardly had the contest got under way when it was announced that the aerodrome was required for the landing of full sized aircraft which resulted in a postponement of the event to the following morning. A decision was made to restart afresh cancelling those flights that had already taken place. Whilst this pleased those competitors who had "suffered" through the wind, we do indeed sympathize with members of far distant clubs who were travelling back on the Monday and thereby denied the chance of flying in the Shelley.

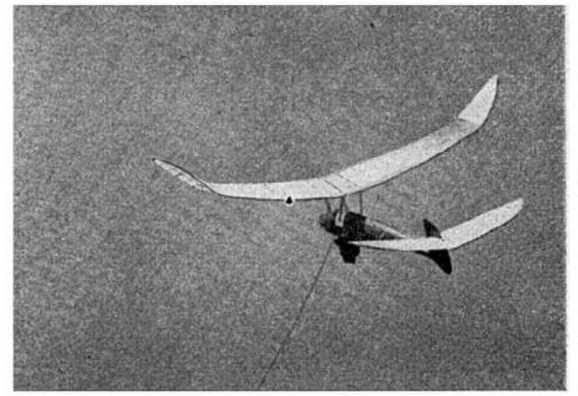
In view of the full day's programme on the Monday a nine o'clock start was made on the Shelley Cup which continued unabated until well into the afternoon. As mentioned previously, crashes, particularly power spins were two a penny. Admittedly R.O.G. was not easy with the high wind and many were of the opinion that hand launching should have been allowed—a debatable point. However, in spite of these difficulties, it was obvious that the standard of flying was poor and it was apparent that much has to be learnt in the way of trimming. Another disappointing aspect was the complete lack of originality on model design, almost every other machine being of American design. "Banshees" in particular dominated the field and it was in fact a "Banshee" flown by W. Archer of Cheadle, that won the event. His was a well deserved win and brought a new name into National power events. Two old favourites Eddie Keil and Norman Lees took second and third places respectively, Eddie Keil's down wind climb with the "Slicker" being most impressive.

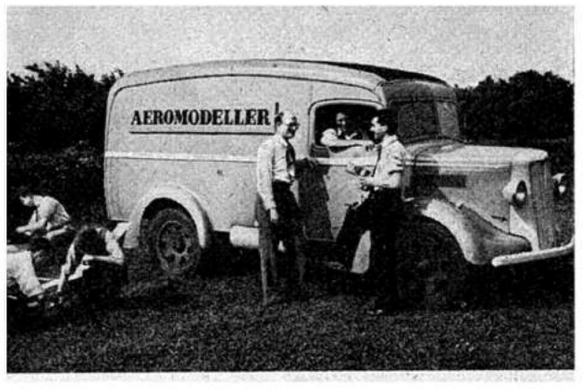
Monday found a change of method in the running of the contests. The previous day only one contest was run at a time, apart from slight overlapping, and this in view of the large entry proved to be a slow business. The revised method saw the running of four contests simultaneously and was a vast improvement. So we had the Gold Cup, the Weston Cup, and the Thurston all being dealt with at the same time by small groups of officials, not forgetting the ladies who enjoyed themselves in a quiet corner.

The Weston Cup brought forth a bevy of Wakefields, once again a machine in that certain condition leading the field. This was flown by Revell, of Northampton, with Bob Copland close at his heels. Congratulations to young Jimmy Wingate for placing third, and proving that age is no handicap in National contests !

The Thurston whilst providing a fair number of breakages was an improvement on the Pilcher, as can be seen by the finishing times. A tussle between veteran Gosling of "Ivory Gull" fame and Roy Yeabsley, well known for his "Sunspot," eventually resulted in Roy coming out on top with Gosling second and Teasell of Northern Heights third.

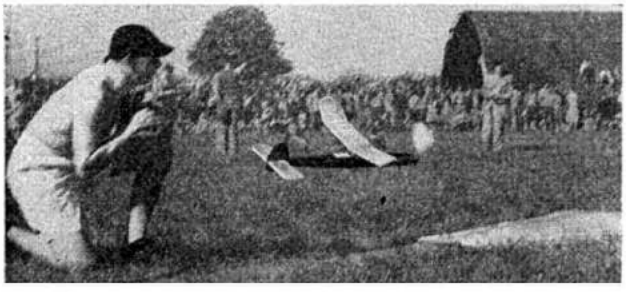
In the Women's Challenge Cup, Mrs. Buckeridge proved too much for the other competitors and wore a few inches off son Jim chasing her rubber model. Other less experienced ladies received a deal of advice from those males present but succeeded in putting up quite presentable times in spite of this.







Aeromodeller Photographs

COMPETITION RESULTS

Senior Champion. W. Archer Cheadle.

SIR JOHN SHELLEY CUP. (456)			
First	Archer, W.	Cheadle	300
Second	Keil, E.	West Essex	281·2
Third	Lees, N.	Bradford	237·2
Fourth	Kimberley, G.	Birmingham	220·1
Fifth	Knight, J. H.	North Kent	197·5
Sixth	Gunter, Mrs.	Bushey	186·5
MODEL ENGINEER No. 2 CUP. (344)			
First	Ladd, R.	Croydon	301·6
Second	Piggott, A. D.	Croydon	291·8
Third	Evans, E.	Northampton	262·2
Fourth	Parham, R. T.	Worcester	258
Fifth	Allaker, P. B.	Surbiton	235
Sixth	Revell, H. W.	Northampton	229·4
PILCHER CUP. (361)			
First	Palmer, J. W.	Norwich	296·05
Second	Hansom, M.	Kingsbury	267
Third	Guilmant, P.	Southampton	237
Fourth	Harrison, D. W.	Birmingham	232
Fifth	Butler, D.	Surbiton	229
	Woollams, B. E.	Watford	229
Sixth	Clark, J.	Wolverhampton	212
THURSTON CUP. (290)			
First	Yeabsley, R. N.	Croydon	493
Second	Gosling, R. F.	Merseyside	487

As we reluctantly left the ladies a wail of motors and flashing of wings in the sun drew our attention to the Gold Trophy that was taking place at the far corner of the field near the club buildings. In view of the great interest in this first National control-line contest we give a special report on following pages by D. J. Laidlaw-Dickson.

Summing up the two days' activities, we would say that modellers generally enjoyed themselves, but would have enjoyed their flying a great deal more without the wind. Certainly the contests were well supported, too well supported from the organisers' point of view. In fact had it not been for the much maligned wind we doubt whether the organisers could have coped. Undoubtedly the dispersed system of running the contests used on the Monday speeded things up tremendously but we do feel that some form of pre-entry elimination will be essential for future occasions.

S.M.A.E. officials generally did a grand job of work with accent on the work. For them it was two days of concentrated effort without the pleasures of participation. A point we hope will be appreciated by all contestants.

Photographs on the left, from top to bottom are as follows :—Ray Yeabsley together with assistants launching a clubmate's sailplane in the Thurston Cup (who said only one helper allowed !)

Mr. Page of Harrow, who shields his eyes if nothing else, making a vertical ascent from the take-off board with his lightweight in the M.G. No. 2 Cup.

A competitor in the Weston Cup has anxious moments as his Wakefield veers from the board.

It is not hard to see why this 'lady competitor was receiving extensive assistance from a bevy of males during the Women's Challenge Cup.

TO FIRST SIX PLACES

Junior Champion. J. Clark Wolverhampton

Third	Teasell, B.	Northern Heights	417·2
Fourth	Wilson, P. F.	North Downs	357·5
Fifth	King, E.	Leighton Buzzard	354·8
Sixth	Salt, G. E.	Birmingham	337·2

WOMEN'S CHALLENGE CUP. (16)

First	Buckeridge, Mrs.	Brentford	247·5
Second	Smith, Mrs.	Northampton	165·9
Third	Hinks, Mrs.	Luton	154
Fourth	Gallagher, Miss	Northern Heights	97·2
Fifth	Stothers, Mrs.	Leicester	94
Sixth	Clements, L.	Luton	76·6

GOLD TROPHY. (67)

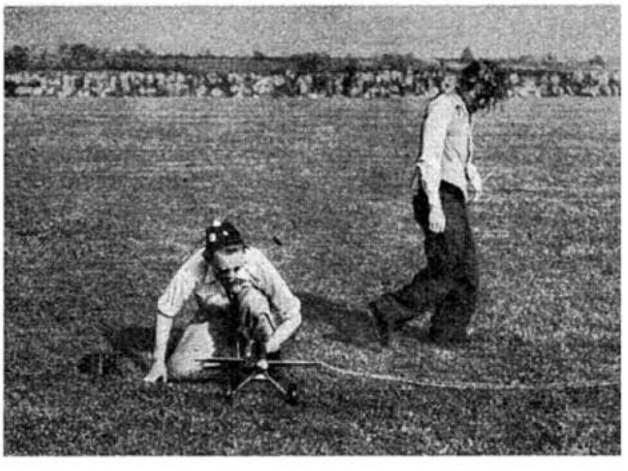
First	Cock, P.	Southampton	385
Second	Allen, D. J.	West Essex	375
Third	Norris, R.	West Essex	229
Fourth	Booth, M.	C. M. Zombies	194
Fifth	Taylor, W. H.	West Essex	177
Sixth	Gregory, K.	C. M. Zombies	162

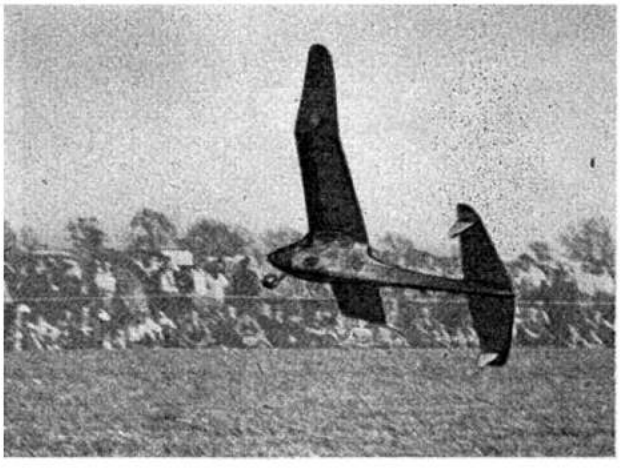
WESTON CUP. (210)

First	Revell, J. W.	Northampton	342·1
Second	Copland, R.	Northern Heights	297·6
Third	Wingate, J.	Streatham	244
Fourth	Butt, J. M.	Eastbourne	207·2
Fifth	Clements, R. J.	Luton	197·9
Sixth	Hinks, R. A.	Luton	187

Photographs along the top of the page show various prize winners receiving their prizes from Mr. A. E. Houlberg. They are from left to right, Mr. R. F. L. Gosling, Mrs. B. C. Gunter, Mr. J. W. Revell, Mr. R. N. Yeabsley, Mrs. Smith and Mr. R. Ladd.

Right a British version of Sal Taibi's "Pacer" climbing steeply over the heads of the crowd during the Sir John Shelley Cup.



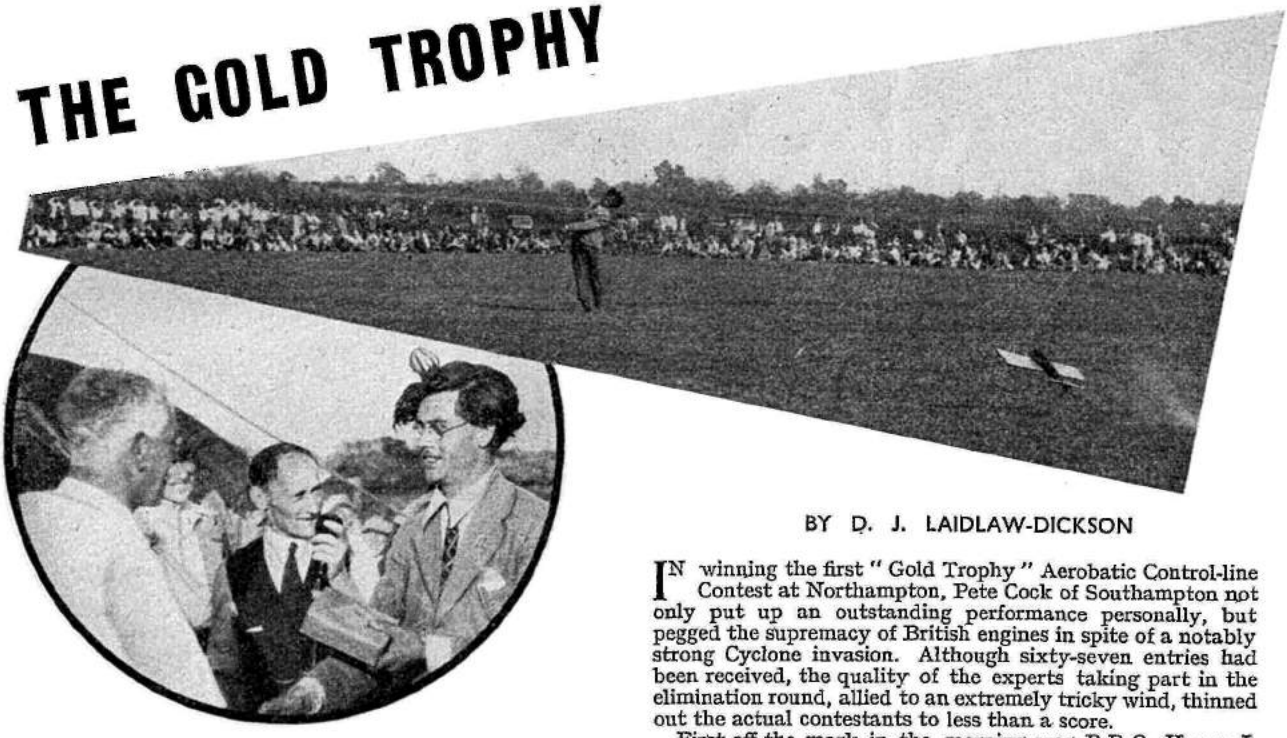


Above, an interesting sidelight to the Gold Trophy was an attempt on the British Speed Record with a model powered with the new British Glo-Plug "Nordec." Model is held by Mike Booth whilst "Frenchie" who is to fly same walks away with some trepidation.

Right, one of the many "Banshee" in the Sir John Shelley commencing its characteristic climbing turn.

Lower photograph shows a lady competitor (sorry we don't know her name) getting away nicely with a typical pylon model.

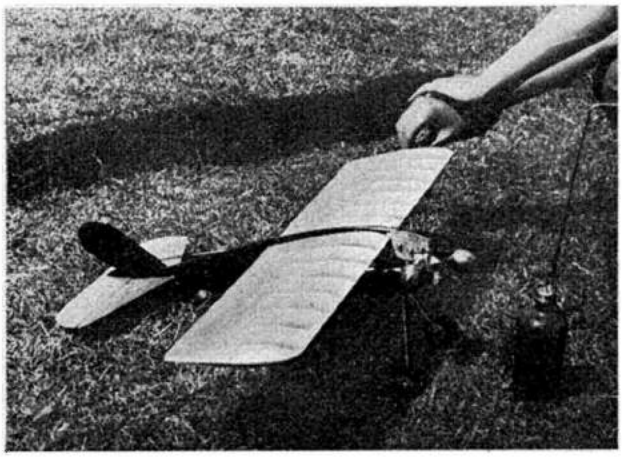
THE GOLD TROPHY

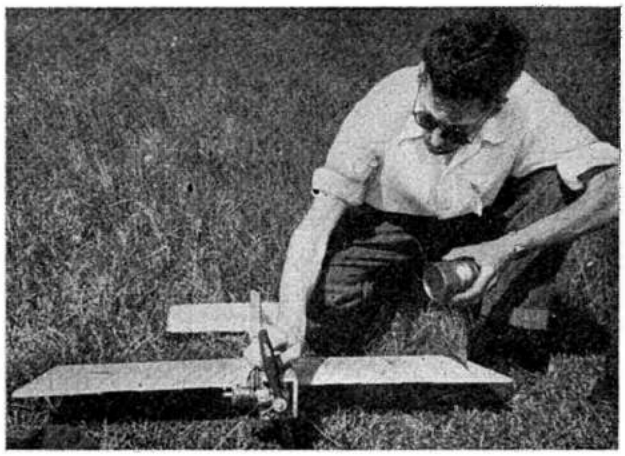


BY D. J. LAIDLAW-DICKSON

IN winning the first "Gold Trophy" Aerobatic Control-line Contest at Northampton, Pete Cock of Southampton not only put up an outstanding performance personally, but pegged the supremacy of British engines in spite of a notably strong Cyclone invasion. Although sixty-seven entries had been received, the quality of the experts taking part in the elimination round, allied to an extremely tricky wind, thinned out the actual contestants to less than a score.

First off the mark in the morning was P.R.O. Henry J. Nicholls with a polished performance exactly within the framework of the preliminary round, take-off, level flight, climb, dive and wingover and a single inside loop, bringing the model sweetly in to a down-wind dead stick landing. Mike Booth of the Zombies followed with "The Barge," powered with an E.D. Comp. Special, and treated spectators to the full works, including inverted flying and figure eights in addition to minimum requirements. After this hardly an elimination passed without the entrant putting in some "extras." By the time some dozen had been through their paces there was a complete lack of enthusiasm amongst the outsiders who sadly put away their models confident that they were outclassed, and sat down at the feet of the masters, and, unfortunately in all too many instances, on their lines in the absence of any official "line pits."





The competition proper commenced after lunch when the elimination round was waived in favour of those desiring to take part in the final direct. In spite of this concession there were literally no flights that could not have won with a little more luck of the wind or mixture. Henry J. was washed out with a balky American engine that just would not two stroke, and in spite of two brilliant landings and hectic borrowing of tools, could do nothing in the ten minute limit. Ron Moulton, flying the De Bolt "Bipe," as his Glo-Plug powered low-wing was off colour, crashed within half a dozen circuits and withdrew. Ted Buxton did much the same, though he struggled manfully to get going and had three re-starts, but was completely out of form. First sensational exhibition came from Dennis Allen of the West Essex Club with his Super Cyclone-powered "club model," a slab-sided side-winder, wide chord high wing of basically simple design, modifications of which seemed the regular West Essex machine. He went through the set evolutions, including five inside loops and two inverted circuits, and was ready for his bunts when the engine cut. He could not restart in the limit, but seemed set to win, barring accidents, with 375 points.

Ken Gregory of the Zombies, now Mike Booth's partner in the Isle of Man, went to town with his "Mills Bomb," powered with the new Mark II Mills, but the wind proved too much even for his skill and he constantly lost height in evolutions with disastrous results. In spite of running hand-launch starts—about four of them—he could only cover the fringe of the machine's obvious fair weather possibilities. Mike

Booth followed to retrieve his partner's honour, but failed to get the revs from his E.D. and had to be content with a performance much below his morning standard, finally crashing " The Barge " when the handle slipped out of his moist hand. Two more West Essex entries in the shape of Lewis and Taylor put up quite creditable performances but lacked fellow clubman Dennis Allen's ability to cope with the wind, though flying similar " goat " models—one in a hideous shade of mauve !

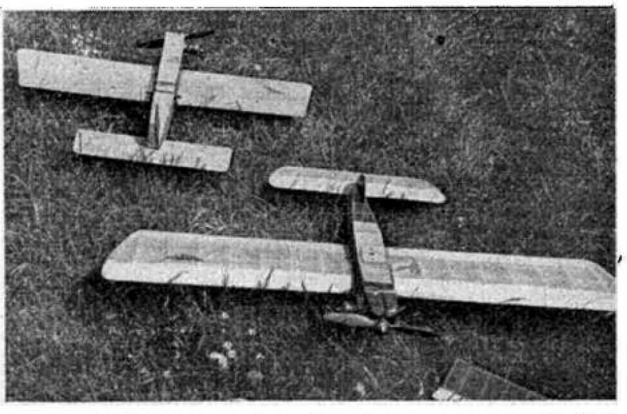
Almost at the end came Pete Cock, who gave no indication of his prowess at the start. A shock-headed bespectacled young man, evidently conscious of the crowd, his flying stance was awkward and his E.D. Comp. Special-powered model came in almost at once. Restarting, he came again and seemed to shed his gawkiness with a remarkable display of normal and inverted flying including five inside loops and two outside loops from the inverted position. It was noted that his hand was not turned for inversion, but controls reversed with cross lines, a style approved by the best American masters. Marking was difficult as in all he had several stops and restarts, so that it was not till some time after completion of his set patterns that it was realised he had passed Dennis Allen with 385 points, and become the first British Control-line Champion.

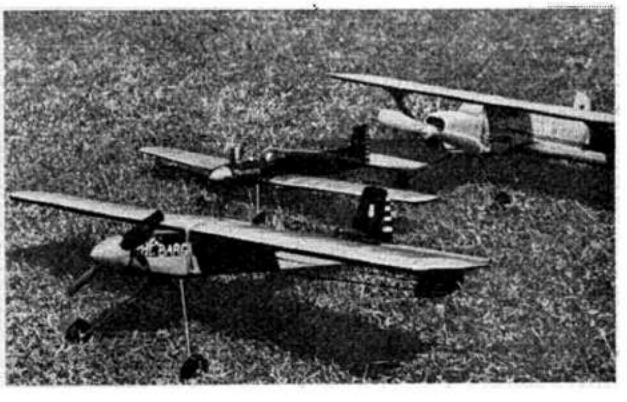
His model is the essence of simplicity, being a solid ply and balsa sheet fuselage, reinforced with ply at the bearers, mounting the engine as a side winder.* High wings of about seven inch chord and symmetrical section, ribbed and tissue covered, fifty-fifty tail unit and " yacht rudder " fin, which he claims is less susceptible to blanketing during the transition from normal to inverted position. His E.D. incidentally was tuned to perfection, unlike the unlucky Mike Booth's.

A review of the main entries showed eleven out of twelve side-winders—only Gregory's Mills Bomb being conventionally mounted ; eleven out of twelve using Tekni-flo props ; seven American engines, mainly Cyclones, two Italian Super-Tigres, one a Mk. 16B and very hot, the other an obsolete Mk. 13, two E.D. Comp. Specials and a Mills Mk. II. The British engines occupied first, fourth and sixth places.

We would comment on the high standard of flying generally, with the interpolation that contestants were mainly trade or semi-trade, which suggests that at present only trade or trade-supported entrants have either the finance or spare time necessary to attain a "national" standard of skill. The performance of the low-powered light-weight diesel entries was exceptional in the prevailing weather conditions, and might have been better had the judges consented to 35-feet lines in lieu of the minimum 40 feet specified. Pit work of assistants in getting restarted was commendable, and the punishment models took and yet still flew is a tribute to the strength/weight ratio of these high performance machines.

* *Side winder—a machine where the engine is mounted with the cylinder horizontal to line of flight, with the head facing out of the circle. This is claimed to make for smoother running where model is to be flown in both the normal and inverted position.*

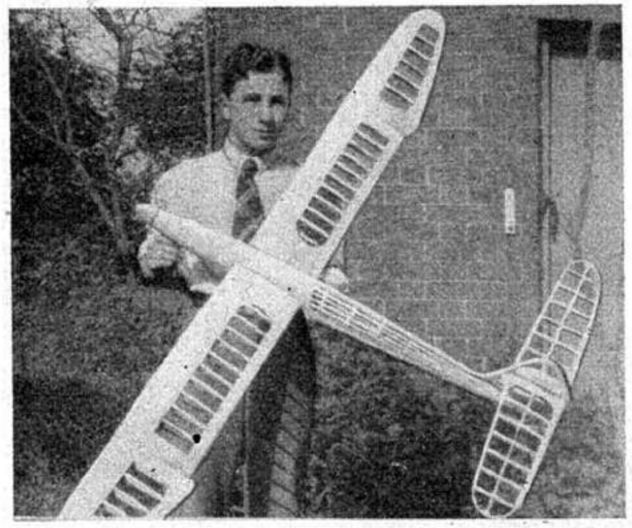




Heading left : Whirling Dervish ! The winner completes his flight pattern in a cloud of dust. Below : To the winner the spoils—Pete Cock collects his prize. Centre left : The winning model before the contest —note longest spouted filler at the meeting. Bottom left : Dennis Allen—close second— with his model.

Top right : Ron Moulton's De Bolt "Bipe," unexpected casualty. Below : Typical West Essex "club" designs. Lower centre: Mike Booth's "The Barge," Ken Gregory's "Mills Bomb" and Henry J.'s unlucky biplane. Bottom right : Editor and Mrs. Rushbrooke with Bill Dean at the Judges' table ; with the benevolent eye of the law on the pits.

Aeromodeller Photographs.



IOLANTHE II

BY N. M. BRAUN

IOLANTHE I first flew in the Spring of 1945. I wanted to design and build a model having a reliable and consistent all-weather performance. Furthermore it should possess pleasing lines coupled with straightforward and strong construction. In those days a six foot glider represented a major venture in my aeromodelling career, so I summed up all practical knowledge, and straining my matriculation mathematics to its limit drew up plans for Iolanthe I. Some two weeks later the model was completed and launched upon its maiden voyage. To my delight it flew straight off the drawing board, but little trimming being required.

This model had twin tow hooks and auto rudder control. The fuselage was sheet-covered on balsa formers but without a central boom.

Iolanthe II had a larger span with a corresponding higher aspect ratio. Twin tow hooks and auto rudder control were cut out, since the rudder could be set for a fantastically tight circle without any sign of towline instability.

The model flew away on its first day out from a hillside hand-launch; it was timed for seven minutes before the small red speck was finally lost to view amongst the woodland glory of the Mendips. Flights of seventy seconds were usual off a hundred foot line.

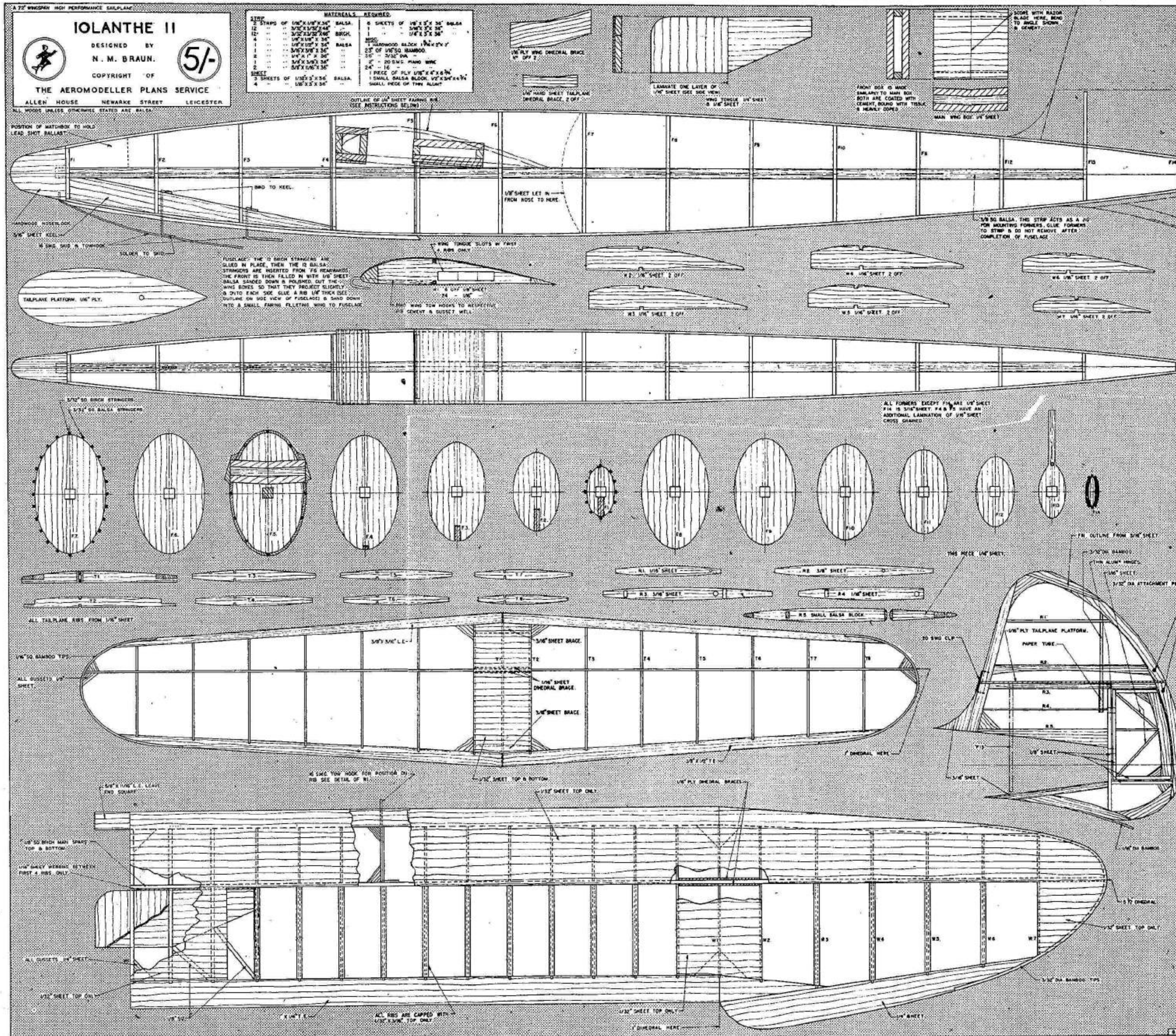
Building the model is simplicity itself, and if the following sequence of construction is carried out even a novice will be ensured of a correctly aligned model. In a job such as this, true assembly is more important than a first rate finish. Commence construction with the wings and wing boxes. When this unit is completed the formers are made and glued to the boom. It is advisable to use Durofix for all hardwood to balsa, and hardwood to hardwood joints.

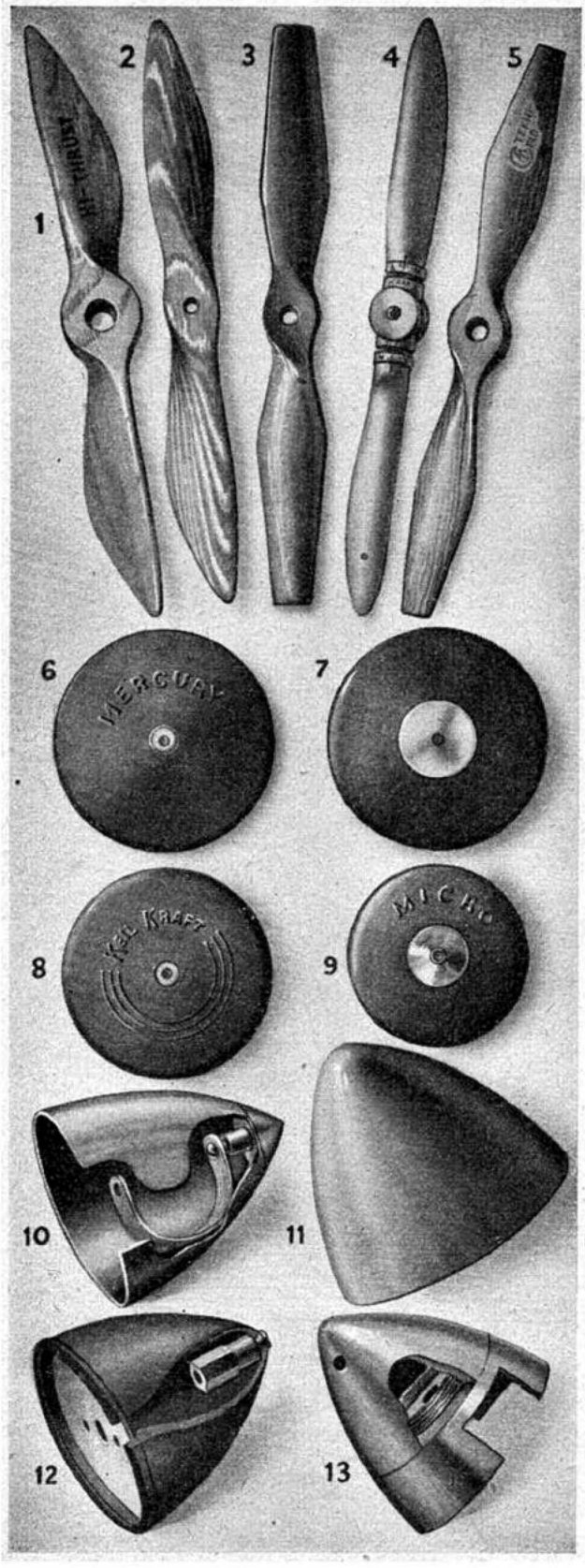
The fin is built and aligned with the fuselage which is now completed. The balsa stringers are added after the front half has been planked. Finally the tailplane is made, and used as a guide when the tail platform is glued to the fin. The upper fin completes the construction.

The drawings provide all other details. The model is double covered with the exception of the tail unit which is single covered. Two coats of glider dope, with one coat on the tail unit, and on the original the fuselage and leading edges were painted red, using Nu-Brik.

The model will be found to possess pleasing glide characteristics, its descent being majestically slow and stable and if accurately built will reward its constructor with good and consistent flying.

Full-size plans (see ⅛ scale reproduction) price 5/–, post free, are available from the Aeromodeller Plans Service Ltd., Allen House, Newarke Street, Leicester.





EVERYTHING UND

RECENTLY INTRODUCED CONTROL-LINE THE AEROMO

All opinions expressed in this review have been formed

LEAVING the extensive kit range until last, first on our list come control-line airscrews. The importance of correct airscrews for control-line work is soon found out by the veriest tyro, and several manufacturers have sent us samples of their products. Probably the best known are TEKNIFLO and HI-THRUST, both with distinctive blade shapes. Tekniflo (5) are now being made from Hydulignum, making them far less prone to breakage. They give very good results provided the correct pitch is chosen for the engine concerned, and at their price range from 4/3 to 5/9 are outstanding value. Standard Tekniflo (non-Hydulignum) are still available at 1/– less. Not so attractive in appearance, Hi-thrust (1) props are quite effective, although the blade shape is not the most efficient owing to the lack of area at the tips. They cost from 4/9 for an 8×8 in. to 6/9 for a 11×12 in. Also in hydulignum are WATKIN'S Mills Airscrews (2), in fact this firm was the first to produce model hydulignum airscrews from the original Jablo material. ELECTRONIC DEVELOPMENTS are marketing a control line airscrew at 5/– for their E.D. Diesels (3), which gives quite satisfactory results although one cannot but feel that a little more attention to manufacture would have improved the performance, the section on the blades in particular being very much in doubt. An innovation by KEIL KRAFT which should receive a welcome is a 10 in. VP prop. (4) of practical design which is good value for the price of 8/3. The blades are held in a graduated metal centre piece by the pressure of the spinner or retaining nut. By slackening off and adjusting the blade the prop may be used for free flight or control line and for almost any engine, having a pitch range from 4 ins. to 12 ins. In addition the blades, which are the only part likely to break, are replaceable.

For control-line models airwheels are only extra drag producers, and as a result several commercial streamline section wheels have arrived on the market. MERCURY wheels (6), produced by H. J. Nicholls are of the solid rubber type bonded to a brass hub, being of very thin section, at the circumference to reduce drag to a minimum, 2½ ins. diameter, they retail at 4/6 a pair. CATON wheels are 2 in. diameter solid rubber of streamline section bonded to a brass hub, as are KEIL wheels (8) which are almost indistinguishable from the former—both are perfectly satisfactory. MICRO wheels (9) distributed by KEIL are another satisfactory type which can be obtained in two sizes, 2½ in. at 5/6 and 2 in. at 4/9. A slight disadvantage is their tendency to slightly jump the hub in a heavy crash although there is no tendency to tear off while flying. About the best that we have tried WOODCRAFT Streamlite wheels (7) are of streamline section, but are unique in that they are made from hard sorbo thus giving a rather greater cushioning effect than the solid type, yet with no tendency to tear off the polished aluminium hubs. They are lighter and naturally rather more expensive (5/6 a pair) than the other types, but all the wheels described here have been found most satisfactory.

In company with the best modern theory ultra streamlining has proved its worth in control-line flying even more than in free flight. As much as 2/5ths of the airscrew may be enclosed in a large spinner with beneficial results, and such spinners not only improve the appearance of all models but are essential for speed types. Probably first in this country were the BAT spinners (10) hollow gauge aluminium, which can now be obtained plain or in fascinating anodised finishes. They have a simple positive fixing—their only disadvantage being their pointed shape which is very difficult to fair into a fuselage with other than a flat top unless the spinner is made the greatest cross section. They are priced from 1½ in. at 4/– to 2½ in. at 6/6, anodised 1/– extra. MERCURY spinners (11) are plain polished aluminium of a more useful shape. They are thinner gauge, and come without any fixing attachment, with prices ranging from 1/9 to 2/6 according to size. They are easily fixed by a small bolt and tin clip in the usual way. A useful addition to the metal spinner

ER CONTROL LINE

PRODUCTS REVIEWED BY MEMBERS OF DELLER STAFF.

only after examination and use of the actual products.

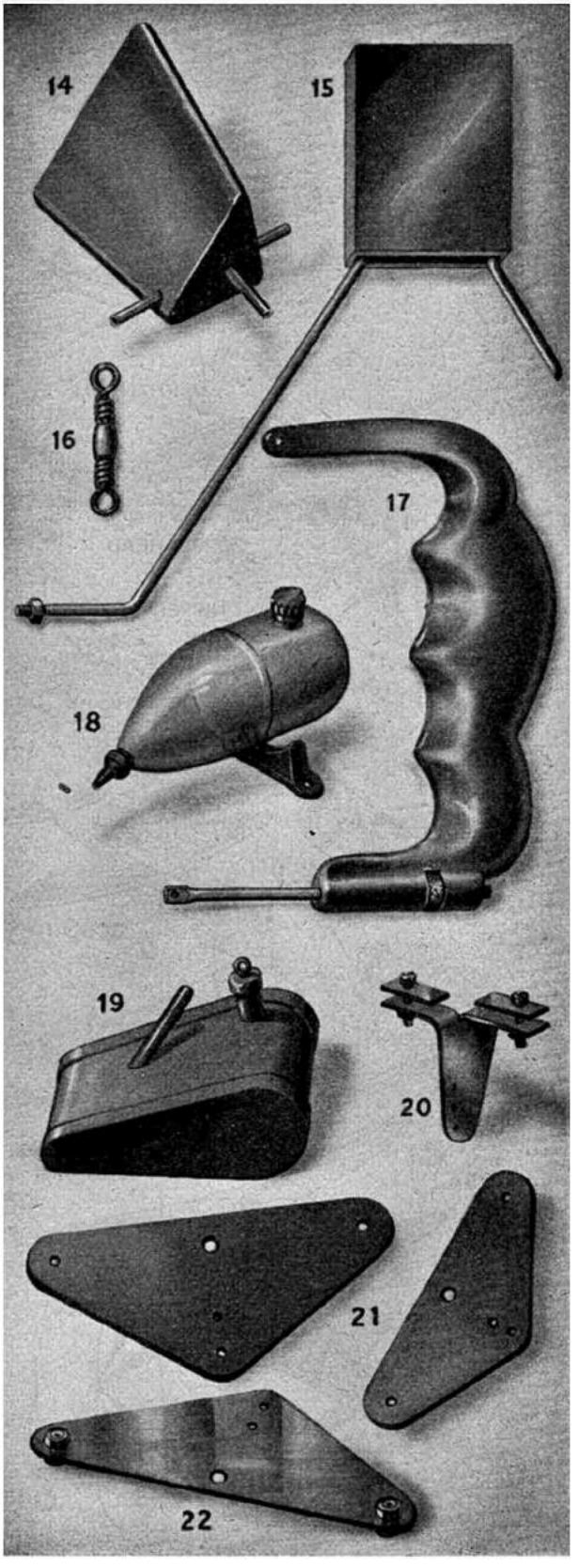
range is a semi-solid 1¼ in. spinner distributed by KEIL (13) for the Phantom and Mills engined designs generally. Being a fair mass it gives a very helpful flywheel effect, but its design brings it right to the top as instead of the rather fiddlesome fixings of the spun type of spinner, this spinner is in two halves which screw together the larger half being ready cut to fit on to the prop on which it is retained by means of the ordinary prop retaining nut. The forward part is finger tightened on and can be finally tightened with a tommy bar thus giving absolutely positive and wobble free fixing. At 7/6 this is well worth the extra. The last spinner is again of unique type but most effective nevertheless. Manufactured by WOODCRAFT of Leicester (12) it is made of rubber to a pleasing shape and is retained by a simple screwed brass collar, which fits on to the crankshaft. A small grub screw passed through the forward end of the spinner fits into the collar and together with a metal back plate holds the spinner firmly in position. Price is only 3/–.

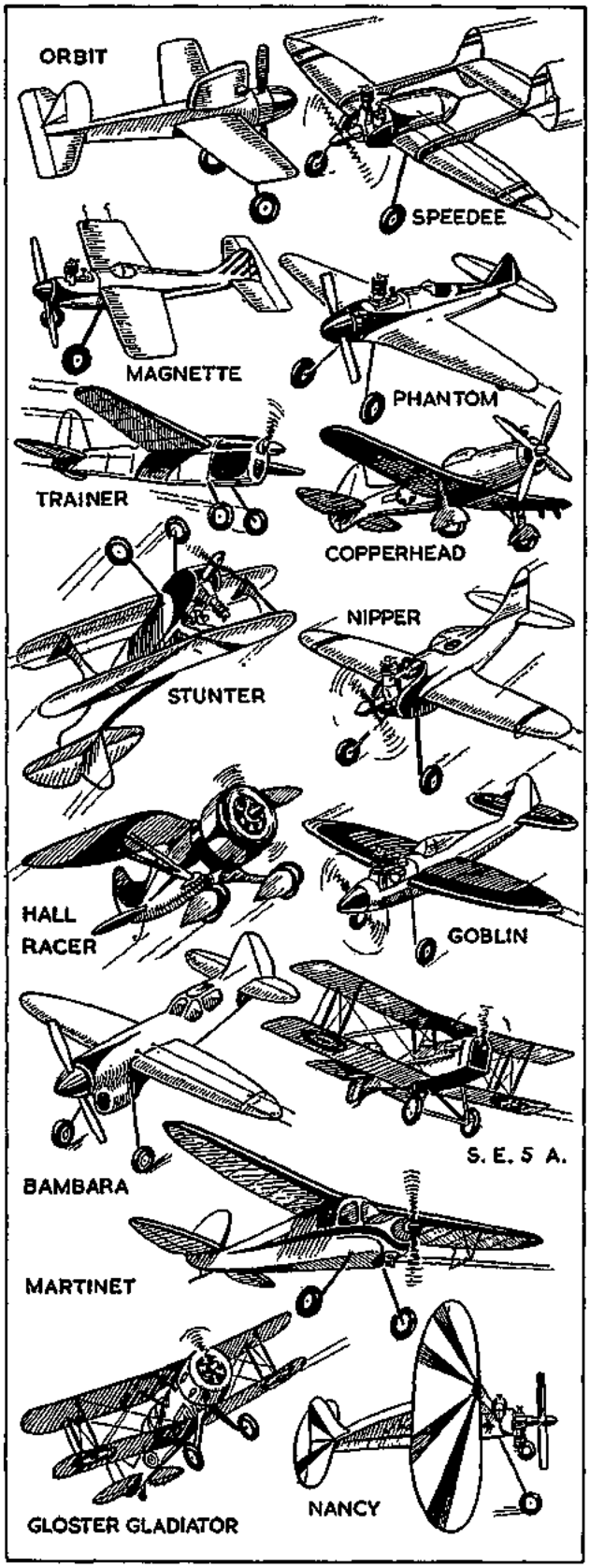
With the increasing popularity of stunt control line it is not surprising that several stunt tanks for constant feed in any position have appeared on the market. Quite the best of these for other than very long runs is J's SLIPSTREAM tank (18) of transparent plastic, It is very reasonably priced at 5/6 and is fixed most effectively and simply by cementing to a special lug provided which is then screwed in any desired position on to the model. Its transparency is of course exceedingly useful and it gives quite uninterrupted feed in flight. Its only disadvantage is a slight tendency for the fillercap socket to break away from its seating, often resulting in its loss. Its rather small size is a handicap for big petrol engines and we hope we shall soon see a larger and deeper, though preferably no wider version at an early date. The BABY BAT tank (14) distributed by KEIL is a quite effective tank, our only criticism is that at 5/– the customer might well require a little more than the bare tin plate finish which is all he gets at the moment. Shaw's PRECISION stunt tank (19) at 7/6 is a handsome black crackle finished creation of thin brass perfectly effective, and which can be obtained for either left hand or right hand flying. It is a pity that the pleasing finish is not as enduring as the rest of the tank, which incidentally can also be obtained for 5/– as a kit of prefabricated parts requiring only soldering to make up.

Further commercial accessories are the almost complete MERCURY range marketed by H. J. Nicholls which includes control plates in two sizes in paxolin, a small size for smaller models (4½d.) and large for bigger stunt models (21) (6½d.) which do not require bushing owing to their resistance to wear. A large super heavy type is also made in bushed aluminium (22) price 9d. A large aluminium control horn (20) is obtainable for 4½d. which fixes very simply by means of small bolts to the elevator, which is protected by the flanges of the horn on one side and two small plates supplied with the horn on the other. The MERCURY control handle (17), which is cast in metal to a most comfortable hand fitting shape, is at 7/6 finished in a most attractive brilliant red and has the unique " Ajustalyne " feature which allows of line adjustment on the field without altering the line fixing at the handle on the model.

Last and newest of the MERCURY range is the Mercury prefabricated undercarriage (15), consisting of a pre-bent undercarriage wire of either ten or twelve s.w.g. whose axle ends are suitably threaded to take retaining nuts. This undercarriage plugs into a special unbreakable fibre box which can be strapped round and glued in any desired position in the fuselage. Thus the undercarriage can be removed at will, yet is held firmly in place throughout all flight conditions. It is equally useful of course for free flight models as well as control line and completely solves the sometimes perplexing problem of transportability combined with rigidity. The units cost 2/1 (12 s.w.g.), 2/3 (10 s.w.g.), and if the spring of the plugged in part is suitably adjusted can also be made as a " drop-off " speed model undercarriage.

Samples of that very necessary control line accessory,





namely lines, come from H. J. NICHOLLS, PARAMOUNT and EAST ANGLIA MODEL SUPPLIES. Paramount wire is supplied in useful short lengths of 60 ft. (33 s.w.g. 1/3) and 145 ft. (30 s.w.g. 2/-) whilst H. J. N.'s Mercury control-line wire is sold in 500 ft. reels which is much more economical but needs some experience in handling when unwinding. We understand that he is hoping to be retailing this soon properly wound on spools after the American fashion. The East Anglian line is woven line instead of steel wire and is very handy for lighter models flying on fairly short lines where the extra drag does not matter. The great advantage of these flax lines of course is the freedom from that control line bugbear kinking, thus enabling one to wind in and out the lines without the help of half a dozen assistants. It can be obtained in breaking strains of 30 lb., 35 lb., 40 lb. and 65 lb. lengths of 25 or 30 yards, from 3/6 to 10/6. Another gadget marketed by this firm is a two way swivel (16); which is very useful for attaching to the control rods on the model. Its cost is 3d., 4½d. or 6d. according to size.

Before turning to the kits on the market, let us close this review of accessories with a word on one or two which while not exclusively control-line have a considerable bearing on this type of model. Particularly useful are J's Craftsman " Planer and Saws', " Alton Valvespout ". The former has a thousand uses where solid balsa requires shaping, and new blades are made out of old single edged razor blades, or can be bought for 1d. each, whenever needed; for 3/11 it is a very handy addition to the modelling box. For 3/9 to the control-line enthusiast the " Valvespout " can be a godsend. It holds sufficient fuel for a whole afternoon's control-lining or just about a week's free flying, and any left over is kept perfectly fresh by the special sealing valve until it is next wanted. J's have also sent us a sample of their Hi-shine gloss finish, which gives a highly polished surface that is also waterproof.

Now to perhaps the most diverse section of all. There are many control-line kits on the market, and while there are none that are too bad to construct a reasonable model from, some are undoubtedly far better value than others. One point stands out particularly—the general price of all the kits is high in proportion to what the purchaser receives. This appears to be caused by the current passion for pre-cut parts. Now it is very pleasant for some people to have all their work done for them, but unfortunately the quality and accuracy of the cutting seldom justifies the extra price. In several kits the cut out parts do not tally at all well with the plan and have to be reshaped from other wood if an accurate model is required. This leads one to suggest that manufacturers might well leave a bit more for the modeller to do and reduce the price accordingly. Note that this section will review only the material and the kit itself, for we hope to give an account of the flying characteristics at a later date.

**** STUNTER, by Model Aircraft (Bournemouth), 24 in. Sports stunt model. *Review.* A good average kit, worth the money by comparative standards. Pre-cut parts reasonably accurate, and wood well selected. Tin wheels are a drawback and the undercart wire is not heavy enough a gauge.

*** NIPPER, by Model Aircraft (Bournemouth), 17 in. span sport model. *Review* generally as Stunter. Tin wheels are bored far too large for gauge wire supplied. Better inspection also would obviate the dud tube of cement and torn cockpit cover in our specimen kit. For 19/6 however, good enough value.

* HALL RACER, by Astral. 30 in. sports span scale model. *Review.* At first inspection—de luxe kit, with everything cut to shape. Unfortunately on a closer inspection—usually the wrong shape. Inaccurate cutting and high price of £4.4s.0d. spoilt what would have been a good kit at 30/-. The wood is good, but two contradictory plans included are confusing—in our kit a beautifully made hardened former is supplied which is nowhere to be found on either plan.

*** GOBLIN, by Shaw's. 23 in. span sport and speed model. *Review.* Fine quality wood and a good kit, spoilt only by poor cutting, as some of the shaped wood supplied does not fit the plan. It was not bad enough to spoil the model, however, but due allowance had to be made.

*** MARTINET, by Model Aircraft (Bournemouth). 36 in. span free flight or control line. *Review.* Here again

Continued on page 413.

MONTHLY MEMORANDA

BY OWEN · G · THETFORD

Last Avro York.

More details are now forthcoming about the cessation of York production, as mentioned briefly in an earlier article. The last Avro York left the Woodford assembly factory and test aerodrome during the final days of April. Serially numbered PE 108, this York was the 253rd machine to be built since production commenced in 1943.

The majority of Yorks are serving with the various squadrons of R.A.F. Transport Command, but about fifty were built for civil airline use. Major operator of the civil York is B.O.A.C., but it is also in service with British South American Airways, Skyways Ltd. and the Argentine transport company *Flota Aerea Mercante Argentina*. The three F.A.M.A. Yorks are registered LV–AFV, LV–AFY and LV–AFZ and are employed on the route from Buenos Aires to London *via* Rio de Janeiro, Natal, Dakar, Lisbon and Paris.

The prototype York first flew on 5th July, 1942, and production began in 1943. The first machine, MW 100, and the second, MW 101, were used respectively as V.I.P. transports by the Cabinet and the Chiefs of Staff in attending conferences at Cairo, Teheran, Yalta, Moscow and Potsdam. Another famous York was MW 102 which was allotted to S.E.A.C. for the use of the Supreme Allied Commander.

Brigand Bomber.

Presumably reflecting high level decisions on the nature of modern bombing tactics, it is now reported that the Bristol Brigand (described and illustrated in the December, 1946 issue) is not to be employed as a torpedo-bomber and is to be supplied instead to squadrons of Bomber Command as a long-range attack aircraft. About fifty Brigands already built for torpedo work are to be retrospectively converted to the new requirements and an accompanying illustration shows RH 798, one of the first Brigands to be so converted. Replacing the familiar white camouflage of Coastal Command is the new pattern for bombers which is grey on the upper surfaces and black below and on the sides. Red, white and blue roundels appear above the wings and on the fuselage, but there are no roundels beneath the wings where the serial number is reproduced in white.

The Brigand B.I. is officially described as a long-range three-seat general purpose bomber capable of operating as a dive-bomber or mine-layer. New radio equipment and revised bomb-sighting and bomb-racks distinguish the bomber version from the torpedo variant. Bombs are carried externally beneath the wings and fuselage and the forward-firing armament of four fixed 20 mm Hispano cannon is retained in the nose. We are not permitted to reveal which squadrons are to receive the new aircraft.

Demonstrators and Prototypes.

Recent additions to the British Civil Aircraft Register include a number of interesting prototype and demonstrator aircraft.

Seeking export markets, British aircraft manufacturers are evidently favouring brilliant colour schemes for their demonstrators. Gloster's Meteor VII two-seat trainer, now touring Turkey, is registered G–AKPK and is finished in vermilion with cream letters. Hawker's Fury I (Centaurus), formerly NX 798 and now registered G–AKRY, is painted white with red spinner and letters. This aircraft is touring Egypt and the Middle East. The first of the two Sabre-Furies, LA 610, has now been registered G–AKRZ.

NEW CAMOUFLAGE: The production Firefly IV above was photographed over Fairey's test aerodrome at White Waltham. Serially numbered VT 369, it bears the new Naval glossy green and grey camouflage. Note absence of fin flash. The Bristol Brigand below displays the grey and black camouflage of Bomber Command where this type of aircraft is now to be employed.

Other recently-registered prototypes include the Auster Avis, G–AJXW, the Tipsy "M" Trainer, G–AKSX, the first wholly Westland-built Sikorsky S.51 helicopter, G–AKTW and the second Airspeed Ambassador, G–AKRD.

Polish Civil Register.

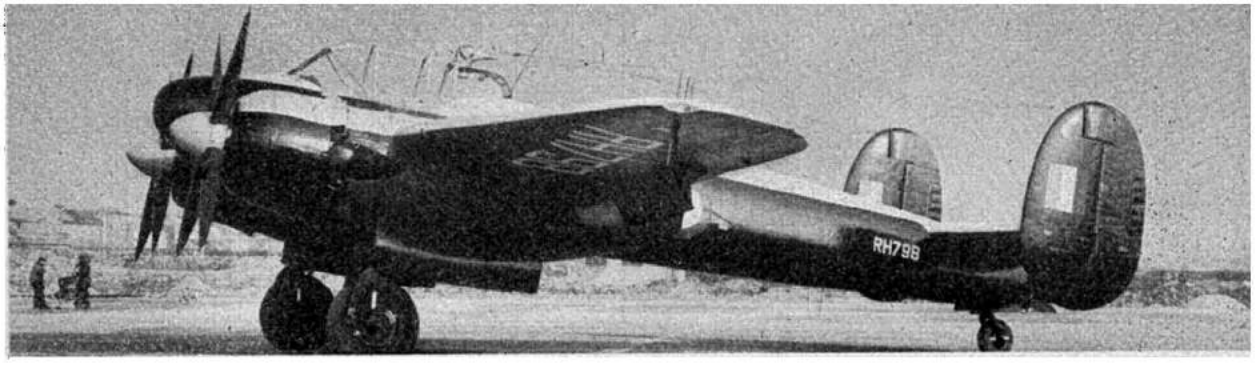
In common with military aviation in that country, Polish civil aviation appears to be heavily dominated by Russian technics and equipment. Recent examination of the Polish civil register shows that a total of 136 aircraft is in operation, of which no less than 115 are Russian PO–2 two-seat biplane trainers. Apart from the regular transport aircraft of L.O.T. the remaining aircraft are relics of German occupation including Bucker Jungmanns, Klemms and Heinkel Kadetts.

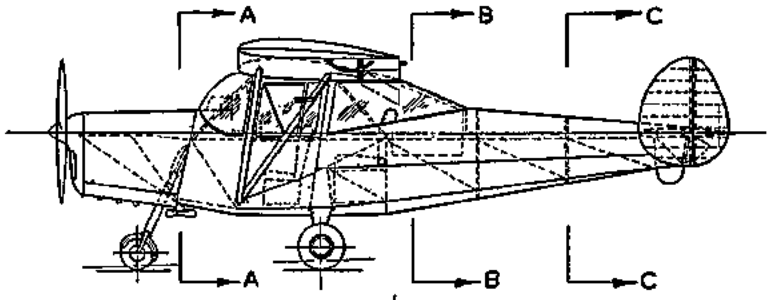
The Polish national airline company L.O.T. currently operates a fleet of 24 Li–2 (Russian-built Dakotas), 5 American built Dakotas and 5 French Languedoc 161 airliners. The registration letters of the aircraft are as follows:—(Languedoc 161): SP–LDA, SP–LDB, SP–LDD and SP–LDE (Russian Li–2): SP–LAA, SP–LAB, SP–LAC, SP–LAD, SP–LAE, SP–LAN, SP–LAO, SP–LAP, SP–LAR, SP–LAS, SP–LAT, SP–LAU, SP–LAW, SP–LAF, SP–LAG, SP–LAH, SP–LAJ, SP–LAK, SP–LAL, SP–LBA, SP–LBD, SP–LBE and SP–LBC. (American Dakotas): SP–LCA, SP–LCB, SP–LCC, SP–LCE and SP–LCF.

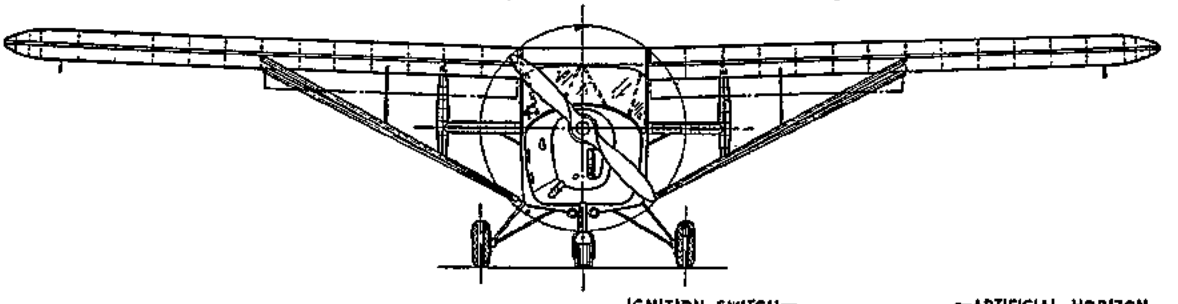
Spanish Charter.

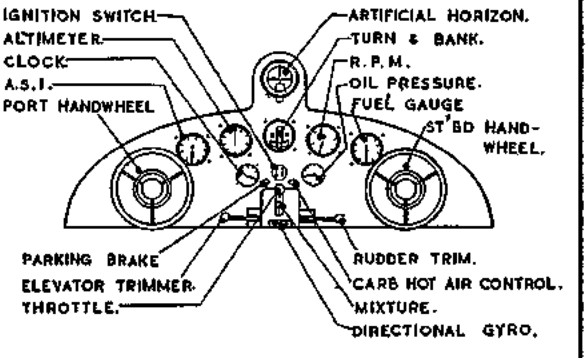
The Spanish charter company C.A.N.A. of Madrid, avowed enthusiast for British equipment, has recently completed its fleet of eight assorted Miles aircraft by taking delivery of the Messenger EC–AGU. Other aircraft operated by C.A.N.A. include four Aerovans, EC–ABA, EC–ABB, EC–ACP and EC–ACQ; three Geminis EC–ACR, EC–ACS and EC–ACT; one Auster EC–ACJ and one Siebel Si 204 EC–ACM.

Another Spanish charter firm, *Aviacion y Commercio*, has taken delivery of four New Type Bristol 170 Freighters.





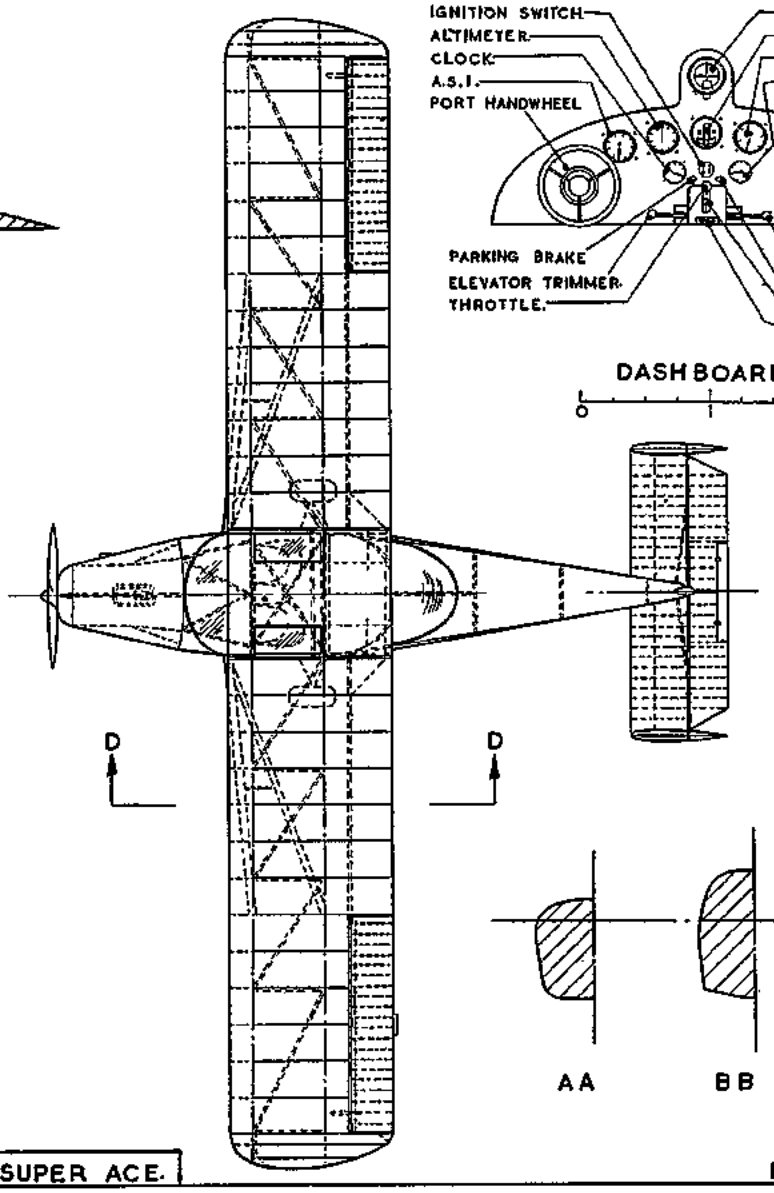


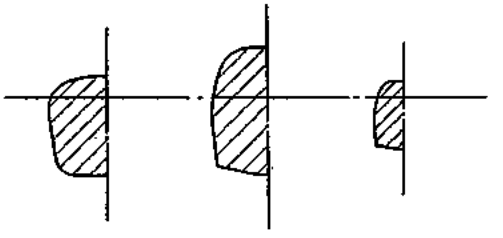


DASH BOARD

0 2 FT.

D D





A A B B C C

CHRISLEA C.H.3. SUPER ACE.

FT.

Aircraft Described No 9

The CHRISLEA C.H.3 "SUPER ACE"

(*Aeromodeller Photos.*)

BY E·J·RIDING

DURING the past twelve months preparations for the quantity production of the Series II Super Ace have been going ahead at the new Chrislea factory at Clyst Honiton near Exeter, and recently we were able to examine and photograph the first production machine, G–AKFD, which at the time of writing has completed over fifty hours test and demonstration flying.

At the moment two batches of twenty-five aircraft are going through the works, and the first of these will be registered from G–AKUV to G–AKVT inclusive.

The firm of Chrislea was started in 1936 by Messrs. Christoforides and Leak, their first design being the little "Airguard" G–AFIN, a two-seater low wing cabin monoplane equipped with a 62 h.p. Walter Micron engine.

The Ace is the firm's first post war design, the prototype G–AHLG being constructed and test flown at Heston. Its first public appearance was at the Business Man's Air Show at White Waltham Aerodrome on September 28th, 1946.

The prototype differed from the production machines in that it had a single fin and rudder and was fitted with a 125 h.p. Lycoming four cylinder horizontally opposed aircooled engine. The twin fin and rudder layout was adopted after flight trials had shown that the machine had insufficient directional control.

The most interesting feature of the Super Ace is the control system. Briefly this consists of two interconnected hand wheels mounted on universally jointed shafts in such a manner that the wheels can be turned to the left or right (ailerons), raised or lowered (elevators), and moved bodily from side to side (rudders). All trim controls, throttle and mixture levers are situated on a pedestal in the centre of the dashboard where they are accessible to pilot or pupil. The throttle pedal, used similar to the accelerator pedal in a motor car, and the two brake pedals are located on the port side of the cockpit, from which seat the machine is normally flown.

Construction: All metal with fabric covering. The fuselage is constructed of welded steel tubing, the primary frame of which is topped by a 26 s.w.g. light alloy decking aft of the cabin. The wings have two steel tubular spars carrying light alloy ribs, and they are internally braced by steel tubular diagonal members as shown in the G. A. drawing. The leading edge portion forward of the front spar is covered with Alclad, and the remainder with fabric. The tailplane and elevator, rudders and fins, ailerons and flaps are also Alclad covered. The tricycle undercarriage is made from welded steel tube, shocks being absorbed by rubber cord. The wheel brakes are of the hydraulically operated Goodyear pattern.

Fuel is carried in two tanks of 25½ gallons total capacity situated beneath the rear seats. Power is supplied by a 145 h.p. four cylinder in line aircooled inverted D. H. Gipsy Major X engine driving a two bladed fixed pitch wooden airscrew.

Colour: Aluminium all over. Royal blue fuselage decking, stripes, letters, struts, etc.

Specification: Span: 36 ft. 0 ins. Length: 21 ft. 6 ins. Height: 7 ft. 2 ins. Wing Area: 177 sq. ft. Total Loaded Weight: 2,350 lb. Tare Weight: 1,344 lb. Max. Speed: 126 m.p.h. Cruising Speed: 115 m.p.h. Landing Speed: 45 m.p.h. Range: 420 miles. Ceiling: 16,000 ft. Price: £1,875.

¼ in. to 1 ft. reproductions of the general arrangement drawing may be obtained price 1/– from our Leicester Offices.

Sets of four flying or static views of the Super Ace, size 6½ by 4½ ins. Price 6/–, from Eaton Bray Studios.

Mr. T. Shine of Surbiton D.M.F.C. getting away with it under really adverse weather conditions at this year's "Damage" Cup.

THE "Nationals" being fully reported elsewhere in this issue, I confine my remarks on that extraordinary event to one or two personal observations, restricted by virtue of my own confined activities on those memorable two days. Being tied to the competitors' enclosure on the first day, and in charge of the control-line event on the Monday meant that my general view of activities was somewhat restricted—nevertheless some incidents were too prominent for anyone to miss, and the following remarks, though purely my own opinion, will I am sure be backed by those thinking aeromodellers who form the back-bone of our hobby.

I regret to see the infiltration into our sport of a certain light-fingered minority, who are making a practice of purloining engines at most of the big meetings. One is used to hearing of goods missing from a model shop, but to find such actions taking place on the flying field is too thick, to put it mildly, and it is my sincere wish that a severe example is made of any person caught in the act. One light-fingered gent was considerate enough to carefully dismount the engine (a 3·5 cc. Ouragan), from Derek Barne's model, but his action was no more welcomed than the "perfect gentleman" who smashed Sam Collin's fuselage in two in order to carry off the engine!

I also deprecate the "win at any cost" attitude which is becoming more noticeable at some meetings, and sigh for the days when one went out onto the flying field with the sole object of enjoying some flying, with position in the final list as a secondary consideration. Maybe things are passing me by too rapidly, but if the current attitude is modern, then I prefer to be old fashioned! With this I couple the exhibitions of poor sportsmanship witnessed in some contests, and wonder just where present day aeromodelling is heading.

Probably the biggest lesson learned from this year's Nationals is the need for elastic organisation, even at the expense of departing from a printed schedule. The simultaneous running of contests on the Monday proved that this is the only way to conduct a multiplicity of events with large entries, allowing a much greater freedom of action on the part of both organisers and competitors. Still, we learn with each event, and it is my considered opinion that the authorities will now have to take into consideration some form of eliminator for the Nationals, which you remember I advocated last year, only to have the rule rescinded by those who clamoured for a "free-for-all".

The most unfortunate happening was the enforced close-down at six p.m. on the Sunday, and I wish to place on record here that the S.M.A.E. was in no way to blame for this occurrence. No one can buck against an Air Ministry order, least of all officials, and it was not until the last minute that it became known that an earlier closing time had been sanctioned than that applied for. Efforts at a compromise failed after a seeming solution had been secured, and that was that!

I write this a few days before the holding of the Wakefield Trials (at Fairlop and not Leavesden as reported in error in last months' AEROMODELLER) but it is our intention to fully report this important event separately. Reference to the current (April) edition of the A.M.A. journal notes that sponsorship for the Wakefield has been virtually settled, and that the American team will be selected at their Nationals, due to take place in early August. An airfield mid-way between Cleveland and Akron is being prospected for the event, which is planned to be a two day affair.

Some interesting facts are gleaned from the above mentioned journal, probably the most illuminating being the sum of $16,000 plus for salaries. This takes care of six full time and four part time employees—a vastly different state of affairs to that operating in our own S.M.A.E. where 90 per cent. of the work entailed is carried out in an honorary capacity.

Reference to the list of Wakefield Trials finalists published last month gives the Gutteridge Trophy results, but to formalise the matter, here are the top twelve.

GUTTERIDGE TROPHY

E. W. Evans	Northampton	624
H. W. Revell	Northampton	619
R. H. Warring	Zombies	590·4
R. Copland	Northern Heights	544
D. Harrison	Birmingham	537·4
B. Haisman	Wallasey	513
N. Coxon	Southampton	504·2
P. Elton	Birmingham	502·4
P. J. Snowden	Northampton	483
C. Doughty	Birmingham	477·8
R. Clements	Luton	477
F. Smith	Northampton	470·5

Owing to pressure of work in connection with the Nationals entry etc., the Comp. Sec. has not been able to supply us with the results of other contests held on the same date, but these will be reported in due course. (I learn that the above mentioned gentleman's biggest headache is created by those Area officials who cannot yet work out motor run/glide ratios correctly. How about brushing up the old simple maths?

Six clubs took part in the **EAST MIDLAND AREA** meeting held at Cranwell, the event being exceptionally enjoyable owing to the top line organisation put on by the R.A.F. apprentices and the Lincoln club. Contests included Gutteridge and Open Power S.M.A.E. events.

Gutteridge	R. L. Roberts	Lincoln	5 : 00
	L. Trotter	Scunthorpe	3 : 33
Open Power	G. Rockwell	Gainsborough	11·4 ratio
	D. Naylor	Lincoln	9·9 ,,
	P. Clark	Lincoln	5·96 ,,
Open Rubber	J. Storrar	Newark	1 : 35
	W. H. Sharman	Scunthorpe	1 : 10
	T. Bootlend	Scunthorpe	0 : 52
Open Glider	G. J. Barker	Grantham	7 : 15
	P. Spalding	Grantham	5 : 25
	J. Storrar	Newark	2 : 32

Welsh readers—and of course any others interested—are asked to note the following **SOUTH WALES AREA** events due to take place later this year. First is the Llanwern and Bishton Gala at Llanwern on August 3rd, when events will consist of the Palmer Cup (rubber), Thomas Cup (glider), the Garnett-Baker Cup (power duration) and control line events. A fortnight later on the 15th the Welsh Rally will be held at Clyne Common, Swansea, and include the S.M.A.E. power duration contest and the Tod Lewis Cup for rubber models.

D. Rutherford of Glasgow won the Allison Trophy staged by the **SCOTTISH AEROMODELLERS ASSOCIATION** with a three flight aggregate of 6 : 45·6 (best flight 3 : 29). M. T. Mackay of Edinburgh placed second with a total of 5 : 34 and M. L. Mackay third, time 5 : 04. Paisley won the

R.T.P. League contest with 18 points, with Kirkcaldy runner-up with 16 points, P. Montgomery of the latter club being top points man with 19.

The **MIDLAND AREA RALLY** held at Worcester proved a most enjoyable affair for both competitors and officials. With all contests running simultaneously, things went smoothly, in spite of tricky weather conditions, and activities finished up twenty minutes ahead of schedule—a very satisfactory state of affairs! Good times were general, as the Area contingent qualifying for the Wakefield Trials show, and all voted this the most successful Rally yet held in the area.

Gutteridge	E. Evans	Northampton	10 : 24 agg.
	H. W. Revell	Northampton	10 : 19 ,,
	D. W. F. Harrison	Birmingham	8 : 57·4 agg.
Power	N. Pilgrim	Birmingham	16·27 ratio
	R. H. Smith	Wolverhampton	12·33 ,,
	D. S. Gamble	Leicester	11·25 ,,
Junior	P. Elton	Birmingham	8 : 22·4 agg.
	G. Watts	Northampton	7 : 24 ,,
	D. Hill	Wolverhampton	3 : 40 ,,
Open Rubber	E. Evans	Northampton	10 : 24 ,,
	F. Smith	Northampton	7 : 50·5 ,,
	E. Kendrick	Birmingham	7 : 02·2 ,,

The **IRISH NATIONALS** will be held at Baldonnell Aerodrome, Dublin, on July 25th, and intending competitors should apply without delay for entry forms etc., to the Secretary, 67, Merrion Square, Dublin. Those requiring accommodation are urged to apply immediately, as rooms are difficult to obtain.

The Third Annual Rally of the **CAMBRIDGE M.A.S.** will be held at Marshall's Airport July 3rd, from 11 a.m. to 7 p.m.

In association with the **LONDON AREA** Council, the West London clubs will again stage a Gala at Langley Aerodrome, Slough, on Sunday, September 5th, proceeds of which will be devoted to the R.A.F. Benevolent Fund.

Membership of the **EWELL M.C.** has jumped from 8 to over 40 in twelve months of working, and they are set for making a name for themselves. Club records to date are :

Rubber	H. Grist	1 : 00
Glider	H. Bromley	4 : 28
Power	J. Bryant	4·1 ratio
C/L Speed	M. Struck	44 m.p.h.

That up and coming group, the **ALTON & D.M.A.C.** enrolled a good bunch of new members as a result of their recent exhibition, and have a scheme for their junior members that I recommend to all other clubs. At all meetings where a coach is hired for transport, juniors are subsidised half fare by the club, providing they take a model along and fly. Failure to comply with the proviso results in their paying full fare. Not a bad way to encourage activity among the younger end! A. Cox has designed (?) and built a Wakefield based on the A. M. Wakefield, the Fugitive and the Sunnanvind. With such an ancestry, you can guess it looks horrible!

A Spring Rally staged by the **MAIDSTONE & D.M.A.C.** on March 25th produced the following results :—

Glider	M. Morris	Thanet	3 : 39·5
	J. D. Watkins	Croydon	3 : 18·5
	W. Mason	Maidstone	2 : 16·3
Rubber	R. Ladd	Croydon	6 : 13
	A. Piggott	Croydon	4 : 21
	J. Eldridge	Maidstone	4 : 15·7
Power	M. Green	Maidstone	13·91 ratio
	I. Beresford	Maidstone	8·36 ,,
	L. Sorby	Thanet	8·28 ,,

The following tit-bit from the **SOUTHAMPTON M.A.C.** "Digest" is too good to keep to a local readership, so what do you think of the following ?

LAMENT

The "Kite" is my plane ; I shall not want another.
It maketh me to lie down in strange places ; it leadeth me beside the deep marshes.
It blighteth my soul ; it leadeth me into the paths of ridicule for it's name's sake.
Yea, though I run through the valley and miss the first bog, I fear great evil ; for thou art with me ; thy con-rod and shaft do trouble me.
Thou performeth a prang before me in the presence of mine enemies ; thou annoinieth my head with oil ; thy tank runneth over.
Surely to goodness and mercy thou shalt not follow me all the days of my life or I shall dwell in the house of the insane forever.

Four contests formed the programme for the interclub meet staged by the **PLYMOUTH M.F.C.** for their visitors' Torquay M.A.C. Mr. Perritt of Torquay won the rubber duration contest with a model of his own design, total time 2 : 29·3, followed by T. Cruise—also of Torquay—who totalled 1 : 57 for two flights. Babbage of Torquay won the glider event with an aggregate of 4 :12, setting up the top time of the day with a flight of 2 : 30. Power event went to J. Worral (Torquay), with a ratio for three flights of 2·93–1. (Mr. Lidstone (Plymouth) lost his Slicker on a test run, the job going some 9 miles following a thermal chase on a 5 second engine run, and arrived home to find that the model had already been delivered!

A spot of hard work on the part of the comp. sec. of the **ILFORD & D.M.A.C.** is bringing results, the members being gradually educated to the fact that they are "as good as the other bloke" and getting competition minded. The majority of the following list of records having been set up within the past six months proves the point.

Wakefield	E. Stoffel	7 : 00 o.o.s.
Lightweight	R. Aymor	5 : 24 o.o.s.
Canard	K. Baynes	1 : 27·5
F.A.I. Glider	J. Greenwood	7 : 25 o.o.s.
Light/Glider	E. Richards	6 : 20 o.o.s.
Indoor	P. Master	1 : 11·5
Power	Hyde	4·75 ratio

Efforts are being made form an S.M.A.E. Area in North-East Scotland, one of the main supporters of this being the **ABERDEEN M.A.C.** A comprehensive competition list has been drawn up for the club, and new members will be welcomed any Saturday afternoon at 36, Woolmanhill, Aberdeen.

Some pretty useful flying has been evident in the **RAVENSBOURNE M.F.C.** of recent weeks, March 28th apparently being a red letter day if the number of lost models is anything to go by. D. Fullerton's Sunnanvind did a disappearing act after being timed for 5 : 52·2, to be followed later on by Jock Simmonds' "Mick Farthing" with the slightly lower time of 5 : 40·3. T. Plumpton's "Frog 45" turned in a flip of 3 : 10 after a motor run of 45 secs.

Welcome back to our old friends **PHAROS M.A.C.** This well known club disbanded a couple of years ago, but now makes a comeback under the secretaryship of Jim Buckeridge at the old address, and proposes using the balance of the season getting in trim for a repeat of past successes in 1949.

A new club, the **LITTLEOVER M.A.C.** is finding the usual difficulty in securing a suitable clubroom, but this does not deter the members from having a go at all and sundry. J. A. Monk holds the top club record with a time of 6 : 12 o.o.s., best junior time so far being Peter Royal's 1 : 40.

CHEADLE & D.M.A.S. members suggest that, if Glow Plugs become generally available over here, we shall have to reconsider our airframe and trimming ideas to make the best use of the power available, otherwise it will be expensive on models! They have secured a number of these "gadgets" and their use in Arden motors gives devastating revs.

Two club records have gone west in the **ERDINGTON & D.M.A.C.** during the past few weeks, D. Brodie's "Ajax" going o.o.s. in 4 minutes, and Harry Smith's glider version of the "Polydi" clocking 7 : 11·4 before being lost to sight.

The same story comes from the **GLASGOW M.A.C.** following a couple of hectic thermal flights with E.D. powered models on the 25th April. F. Jee's "Scorpion" stayed up for 8 : 17, whilst E. Startup's "Airflo Baby" made use of the same thermal to clock 6 : 40. Both motors were run for 40 seconds, and the P/G record now stands at 12·75–1. Final arrangements for the K.L.M. Power contests and the C. M. Dockyard Trophy event have been finalised, and will take place at Abbotsinch, Paisley, on July 18th.

BARNSLEY & D.M.A.C. records went for a burton when the club visited York for the M.E. and Flight Cup contests, no less than seven new figures being recorded as follows :

Rubber ROG	P. R. Dafrington	6 : 41
,, HL	P. H. Brown	5 : 32·2
Glider T. L.	K. Rowbottom	7 : 43·2
,, H.L.	E. Lewis	1 : 05
,, FAI	P. G. Ellison	2 : 12
Lightweight	A. L. Window	4 : 55
Power	J. Hibbert	5 : 30

May 9th saw members of the **BURY & D.M.A.C.** entertaining the Bolton boys, when F. Clark of the latter group won both the Rubber and Power events with times of 4 : 24·4 and

4 : 24 respectively. S. Kay of the home team won the glider event with a total of 8 : 03·1. W. Hinks raised the club duration record to 3 : 30 o.o.s.

The first field day of the **ANGUS & DISTRICT AERO-MODELLERS LEAGUE** took place under very poor weather conditions, the rain coming down in buckets until a late hour, thus washing out the projected programme. However, some fine flights were witnessed in a short spell at the end of the day, best being 5 : 27 by D. Inglis (Dundee) following a 60 second motor run. Future field days for this group are 4th July at Condor, 29th August at Perth, and 12th September at Condor.

Members of the **ENFIELD & D.M.A.C.** cycled the seventy miles to Sywell, abandoning one trailer on the way! There's enthusiasm for you. Recent flyaways include J. Warren's "Fifi", which disappeared after a hectic half hour chase, and a fine flight of 18 : 30 with Vic Spence's brand new red and white Wakefield. Two contests held in filthy weather resulted in wins for Alan Redman in the sailplane class with a two flight aggregate of 4 : 31, and for Doug Francis in the power section with a two flight aggregate of 1 : 40.

Please note that the **NORTH KENT M.A.S.** contest for the C. H. Roberts Cup (flying boats) has been brought forward to August 22nd in order to avoid clashing with the Eaton Bray contest date for similar models.

The first inter club contest held between the **LEICESTER M.A.C.** and their American friends has been completed. The American times were E. Heyn (rubber 1 : 13, H. Kriedel (CO_2) 1 : 50, 4 : 10 and 13 : 26 o.o.s., and P. Orleans (power) 2 : 33, 6 : 34 o.o.s. Leicester times were 4 : 35 by Dennis Hall flying a 10 ft. sailplane, and 2 : 54 by Doug Gamble with his Arden powered pylon job.

The "oldest club in the South"—**BRIGHTON D.M.A.C.** report a new record of 8 : 14 set up by Mr. Clark's "Goose". Three of the five South Eastern Area entries for the Gutteridge came from this club, and disappointment is expressed at the poor support received from an area covering three counties.

Latest club magazine to make its appearance is the "News" of the **UPLANDS M.F.C.**, quite an ambitious effort, with the usual editorial bind about having to do the darn thing himself!! Recent cup winners are B. Smith, who aggregated 4 : 04·4 to carry off the sailplane pot, John Newton, 4 : 12·2 in the rubber class, and B. Wills who scored 60 out of a possible 70 points to win the control line event.

BIRMINGHAM BLACK EAGLES M.A.C. have decided to hold their usual weekly business meetings only once a month, spending the other evenings outdoor flying. Prospective members are therefore asked to contact the club sec. at his address before going along to the clubroom.

I note with great personal regret that the hon. sec. of the **MERSEYSIDE M.A.S.**, W. A. ("Bill") Edwards passed away on May 6th after a short illness. Bill was well known, especially in the North, and many times have he and I nattered over this and that, and his loss will be keenly felt. Fellow member R. F. L. Gosling distinguished himself by taking second place in the Thurston Cup event at the Nationals, and is expected to captain the British team in Holland for the Anglo-Dutch sailplane contest in August.

The impossible sometimes happens in acromodelling, and an extraordinary event is reported from Southwick. Two members were towing their models on 200 ft. towlines, one of 5 ft. span, the other some 30 inches across. The small job shot up to the maximum line length, whilst the larger model hung around about 100 feet up. Both lines cast off at the same time, and the small plane line by some freak chance attached itself by the ring to the tow hook of the larger sailplane! Imagine the surprise of the small plane owner when he found he was towing someone else's machine. Any more queer happenings that would interest readers?

An unusual happening is to report the decease of a club, this one being the **PITSEA D.M.A.C.**, now disbanded.

W. Marshall of 755, Warrington Road, Risley, near Warrington, Lancs., is trying to help a friend of his in Germany, whose model club wishes to link with a similar club in this country. Any takers?

Well, that's all for this month fellers, and let's hope we have seen the last of this wet and windy spell that started at the Nationals and doesn't seem to know when to finish. Till next month then, all the best of thermals. The CLUBMAN.

NEW CLUBS

ONSLOW & D.M.A.C.
J. May, "Overdales," High View Road, Guildford, Surrey.

CLACTON-ON-SEA M.A.C.
B. Cotterill, 10, Warwick Crescent, Clacton-on-Sea, Essex.

SITTINGBOURNE & D.M.F.C.
B. Cullen, 31, Berry Street, Sittingbourne, Kent.

WELWYN GARDEN CITY M.A.C.
A. W. Smith, 23, Newfields, Welwyn Garden City, Herts.

OXFORD METEORS.
P. Duffy, 44, Swinburne Road, Iffley Road, Oxford.

MIDGET SPEED CLUB.
Hon. Secretary, 238, Eastcote Lane, South Harrow, Middlesex.

ST. HELIER M.F.C.
W. Blandford, 171, Glastonbury Road, Morden, Surrey.

GREENOCK COMMUNITY CENTRE M.F.C.
R. McGill, 73, Wren Road, Greenock.

PHAROS M.A.C.
J. Buckeridge, "Pharo," Blossom Way, N. Hillingdon, Middlesex.

GRAYS POWER CLUB.
J. A. Leggatt, 91, Chadwell Road, Grays, Essex.

BLYTH M.A.C.
R. P. Jerman, "Roys," Bath Terrace, Blyth, Northumberland.

TEIGNMOUTH M.C.C.
F. F. Wilson Smith, 10, Courtenay Place, Teignmouth, Devon.

CRYSTAL PALACE M.A.C.
N. Whisler, 60, Maberley Road, Upper Norwood, S.E.19.

SCUNTHORPE M.A.C.
W. L. Trotter, 14, Portman Road, Scunthorpe, Lincs.

EVESHAM & D.M.A.C.
H. R. Whatcott, 31, Avon Street, Evesham, Worcs.

NORTHWOOD HILLS PISTON PUSHERS.
R. Woods, 18, Joel Street, Northwood Hills, Middlesex.

R.A.F. DISHFORTH M.A.C.
Sgt. R. W. Watson, Sgts'. Mess, R.A.F. Dishforth, Nr. Thirsk, Yorks.

RADIO CONTROLLED MODELS SOCIETY (London Area).
Lt. C. C. Chapman, R.N., Pine Corner, Firwood Rise, Heathfield, Sussex.

NORWOOD M.A.C.
L. G. Sparrow, 4, Gladstone Terrace, Gipsy Road, West Norwood, S.E.27.

NOTE OF APOLOGY

We regret that owing to an unfortunate error the author's name for the article "More on Nylon" in our May issue was given as V. Dubery. This article was in fact written by R. Williamson, to whom we tend our sincere apologies.

EDITORIAL CHEQUES

We are holding a cheque for the following contributor F. Alberici, Esq. This has been returned as insufficiently addressed" by the postal authorities. Will he kindly notify us of his new or present address and his cheque will be forwarded immediately.

CLASSIFIED ADVERTISEMENTS

PRESS DATE for August issue—July 1st.
ADVERTISEMENT RATES:
Private **Minimum 18 words 6s., and 4d. per word for each subsequent word.**
Trade **Minimum 18 words 12s., and 8d. per word for each subsequent word.**
Box numbers are permissible—to count as 6 words when costing the advertisement.
COPY and Box No. replies should be sent to the Classified Advertisement Dept., The "Aeromodeller," The Aerodrome, Billington Road, Stanbridge, Beds.

Owing to shortage of space many advertisements are being held over until next month.

FOR SALE

"E.D." Comp. powered "Slicker 50" "Clan" powered "Nipper," details on request. Wells, 62, Whitson Road, Edinburgh, 11.

"Skybird" and "Penguin" Scale model aircraft for sale. Also hangars and aerodrome equipment. Excellent condition. Seen London. Box 143.

Surplus Stock brand new engines. "E.D." Mk. 2. 7s/6. "Mills," 70/-, E.D. Comp. 83/6, details apply Box No. 144.

"Aircraft of the Fighting Powers". Volumes 2, 3, 4. £1 each. "Aeroplane", 1942-46. £10. "Aeronautics", 1944-46, offers? all perfect. Box No. 145.

34 AEROMODELLERS, June 1945 to March 1948 inclusive, 30/-, or offer. Box No. 146.

"De Long 30", "Mechanair" 5·9 c.c., 5 c.c. "Clansman" diesel, all perfect and bench tested only. Partly constructed "C/L Typhoon". Offers. Box 147.

New "Ohlsson" 23, "McCoy" 60, 49, "Delong" 30, "Hornet" 60, "Arden" 199, etc. Write for list. Box No. 148.

"A.O.F.P's" complete. AEROMODELLERS, September, 1939-December, 1947; August 1942-October 1945. "Spotters," 35 early issues. "I.S.J's," September 1943-May 1945. Bennett, 43, Orchard Drive, Woking, Surrey.

"Frog 45" complete engine, airwheels, timer, beautiful finish. Price £4. 10s. Seward, 17, Linacre Lane, Bootle, Liverpool, 20.

Finished "Goshawk" with "Stentor 6", also complete but uncovered "Scorpion" with "E.D." Lilley, 88, Blagreaves Lane, Littleover, Derby.

New Mills powered "Phantom." Complete and ready for flying. £5. 10s. R. Scott, 28, Clarke's Crescent, Eccleston, St. Helens, Lancs.

American "Buccaneer" petrol plane, 7 ft. span, silk covered, complete with "Baby Cyclone" engine, prop, coil, cond. Austin timer, 4½ ins. Z.N. Airwheels, "Nife" Battery. Offers over £12 to R. Fowler, 21, Somerford Grove, London, N.17.

Powerful "Brown Junior" complete with new airscrew, coil, condenser, plug, £5. Hammond, Colonnade, Leamington Spa.

£7 10s. or nearest. "Astral" 5.9 c.c. plus prop, cond, American coil, "Kell" timer, lightweight spinner. All as new. Sherriff, 15, Compton Park Road, Plymouth.

TRADE

AEROMODELLER back issues can be obtained from W. H. Forway, Elizabeth Villa, Coventry Corner, Hockley, Essex. Early copies bought.

Special offer for Collectors. Two brand new bound volumes "Air Review" (Vol. 7, Nos. 1-7), 30/- each. Limited supplies of issues 4-7 at 3/- each or 4 for 10/-, post free. Containing 300 aircraft photographs on white art paper, 27 scale plans, 4 cut-away drawings. Test Reports on Meteor, Mc.109, Firefly and Tiger Moth. Articles on historic and modern civil and service aviation by well known authors. Remittances to Box 151.

Delicious Cotswold Vintage Cider and Perry Wine now available again. Supplied in returnable 6, 10, 25 and 30 gallon casks. Order now and avoid disappointment in the Summer. Send for price list. The Cotswold Cider Co., Newent, Glos.

Copies of all photographs appearing in any issue of this magazine and which are marked "Aeromodeller photo" can be obtained from The Studio, The Aerodrome, Billington Road, Stanbridge, Nr. Leighton Buzzard. Prices, post free: 6"×4", 2/-; 8"×6", 3/- each.

Reeves diesel engines—3·4 c.c. rotary valve, £5 7s. 6d. weight 6¼ ozs. hardened and ground cylinder and piston, hardened and ground crankshaft. Every engine guaranteed. Also die castings and materials, £1 7s. 6d. Petrol engines 5 and 6 c.c. and castings. Send S.A.E. Reeves Model Power Units, Church Street, Shifnal, Shropshire.

"Wildcat" 5 c.c. diesel part-machined engine kits, specially produced for modellers who do not possess lathes. 62s. 6d. Send S.A.E. for full information. Davies-Charlton & Co., 13, Rainhall Road, Barnoldswick, via Colne, Lancs.

Any 12 issues of the AEROMODELLER bound for 10/6, post free, cloth binding with gilt lettering on spine, delivery 8-10 days. Send your 12 copies to the North London Bookbinding Co., The Aerodrome, Billington Road, Stanbridge, nr. Leighton Buzzard.

Four Westbury winners. Apex 15 c.c., New Atom 6 c.c. New Atom III 6 c.c. with rotary valve, and Atom V 30 c.c. Engine castings of DTD 424 alloy 9 tons tensile sp. gr. 256, lighter and stronger than die cast. Sets of castings, blue prints, gearing, ball-races, piston rings, plugs and all equipment. Send us your requirements for special castings. Trade enquiries invited. The Headingley Motor and Engineering Co. Ltd., 8, Otley Road, Leeds.

Part Exchange of engines. A large range of guaranteed engines in stock. American engines specially wanted. We guarantee satisfaction. North East Engine Depot, 6, Victoria Street, Goole.

Students: Obtain your reference books in "as new" condition at two thirds published price. Piercey's Elementary Aerodynamics, 14/-; Weem's Air Navigation, 24/-; Colvin's Aircraft Handbook, 20/-; Tharratt's Aircraft Production, 14/-; Warner's Aeroplane Design, 24/-; Judges Aircraft Engines, 18/6; Frau's Aircraft Power Plants, 18/6; Davis' Tables, 14/-; Jost-Crodt's Explosion and Combustion processes in Gas, 20/-; Judge's Engineering Materials, 16/6; Beaumonts Metallurgy, 16/6; Petterson's Weather Analysis, 20/-; All books sent per return, post free against cash with order. Box 150.

SITUATION REQUIRED

Ex Officer, engaging personality, pleasing appearance, seeks position with genuine prospects in Model Aircraft Trade, as representative. Smith, 125, Lynton Road, W.3.

BUSINESSES FOR SALE

Owing to the bereavement of the manager. Well established retail model business in Liverpool. Comprehensive stock. First class fittings. Further particulars from Crafts & Co., Rialto Buildings, Upper Parliament Street, Liverpool.

Model Craft, Toys, Stationery, Tobacco and Newsagent. Multiple pos. Nr. Wembley. 5 rooms, bathroom, garage, etc. 18 years lease at £300 p.a. Trade exceeds £250 p.w. Excellent quotas for stationery. Gross profit approx. £53 p.w. A business of this type is seldom on the market and we advise interested applicants to communicate with us quickly. £5,500 S.A.V. (Part on mortgage). Sole Agents, Russell & James, Latymer Court, Hammersmith, W.6. 'Phone Riverside, 2263/4401.

Model Aircraft Radio/Electrical business, 4 main bus routes stop at door. Busy West London area. Lease, low rent, £450 p.a. Box No. 149.

WANTED

Expert model makers able to undertake spare time work at home should communicate with Box No. 129.

Made and printed in Great Britain by Alabaster, Passmore & Sons, Ltd., London and Maidstone, for the Proprietors and Publishers, The Model Aeronautical Press, Ltd., Allen House, Newarke Street, Leicester. Trade Distributors: Horace Marshall & Son, Ltd., Temple House, Tallis Street, London, E.C.4—C1601. Sole Agent for Australasia: G. Mason, 4, Princes Walk, Melbourne. Registered at the G.P.O. for transmission by Canadian Magazine Post.

Ⓢ

NEW!

"DIESEL" Flying Scale MODELS

A FURTHER ADDITION TO OUR "DIESEL" FLYING SCALE SERIES

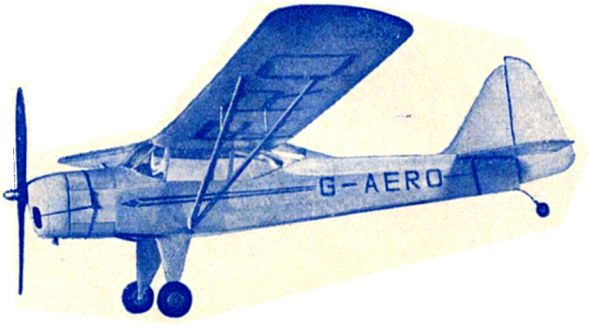
AUSTER J/2 "AUTOCRAT"—40" WING SPAN

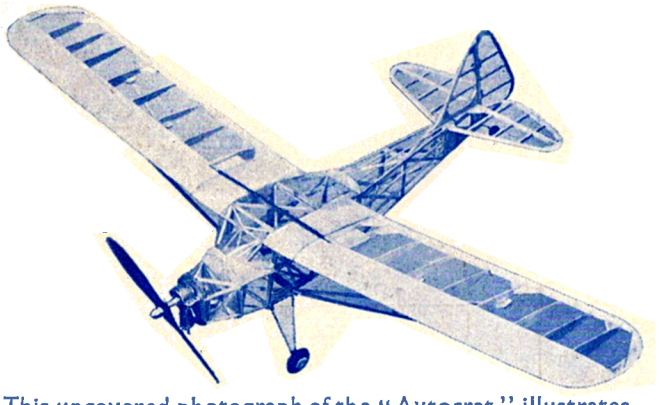
UNDOUBTEDLY THE FINEST "AEROMODELS" YET PRODUCED—WHICH MEANS THE BEST SCALE MODEL KITS ON THE MARKET

NOW that small capacity engines are freely on sale the demand is for realistic models. To keep up with this modern trend we are producing a range of flying scale kits, which we have no hesitation in saying are the finest of their class.

The designs are the results of careful development and extensive test flying.

Especially designed to take the "Amco" ·87 Diesel, but any engine from ·6 c.c. to 1 c.c. can be installed.





This uncovered photograph of the "Autocrat" illustrates the sturdy method of construction.

The fuselage and wings are covered entirely with $\frac{1}{32}$" balsa sheet, giving a really robust model.

These kits are complete to the last detail and are up to our usual high standard of

SCALE - ACCURACY - DESIGN QUALITY

Each kit includes the following :—

- **Ready formed aluminium engine mounts and engine cowling parts.**
- **100 ft. best quality balsa strip and 35 ft. selected balsa sheet.**
- **Stamped out card parts for cockpit cover.**
- **Nuts, bolts and all metal parts.**
- **Three large accurately drawn, fully detailed plans and step-by step building instructions.**

COMPLETE KIT—35/-

ALSO IN THIS RANGE

PERCIVAL "PROCTOR"—WING SPAN 43"

SEND 2d. in stamps for our fully illustrated catalogue describing the above ; also our full range of Kits.

Our products are obtainable from all Stores, good class Toy and Model Shops, or direct from :—

● AEROMODELS Ltd. ●

AIGBURTH VALE, LIVERPOOL, 17

Kindly mention AEROMODELLER when replying to advertisers