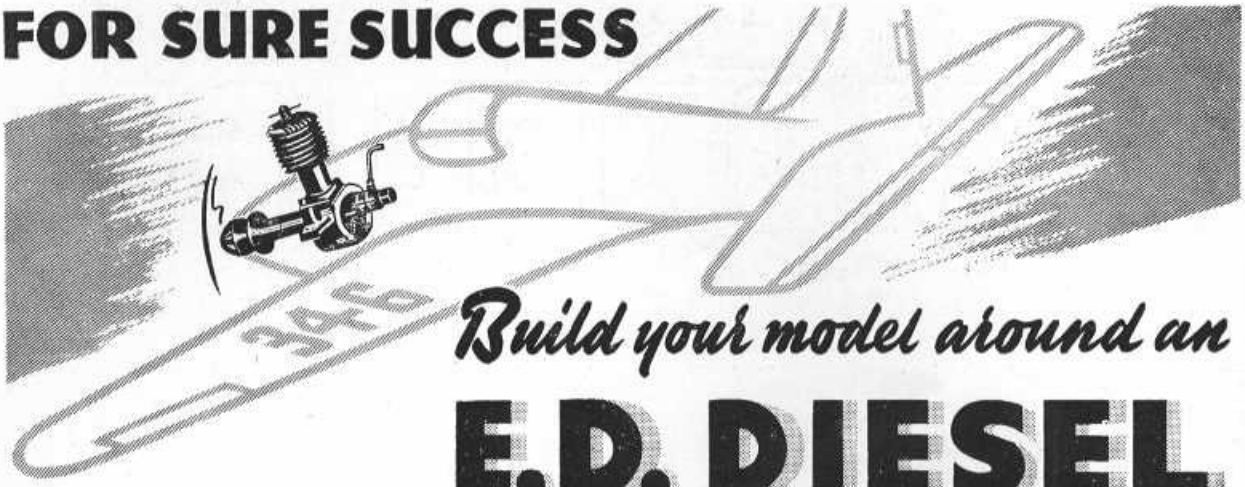
AERO MODELLER

NOVEMBER 1951

- FULL ILLUSTRATED REPORTS ON THE INTERNATIONAL A/2 CONTEST, THE "DAILY DISPATCH", "YORKSHIRE EVENING NEWS", AND ALL HERTS RALLIES AND THE R.A.F. CHAMPIONSHIPS
- JOHNNY JONES' PRIZE WINNING TEAM-RACER, "SCRAMBLE"

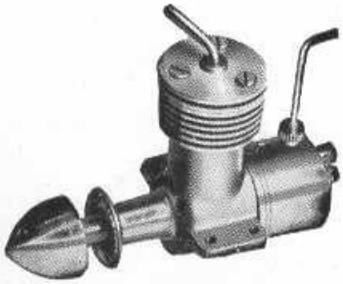
1'6

FOR SURE SUCCESS



Build your model around an

E.D. DIESEL



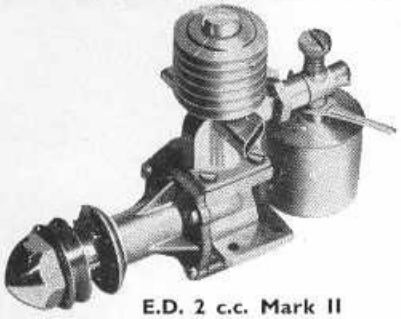
E.D. 1 c.c. Mark I (BEE)

Size : Height 2¼ in. Length 3 in.
The most popular motor of them all. Compact, reliable, weighs only 2¾ oz. yet gives 12 oz. static thrust.
Features a disc inlet valve with induction pipe going through centre of fuel tank.
Bore 0·437 in., stroke 0·400, r.p.m. 700 plus.
Price **£12 12s. 6d.**

Whether you are building a plane, car or boat—the key to success is to base your model on an E.D. Diesel Engine.

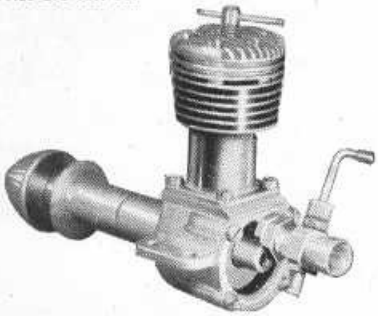
These famous Power Units are sold all over the World because they are recognised as the finest, most reliable and efficient performers ever designed.

Most Model Shops stock E.D. Diesels, Radio Control Units, Kit Sets and Accessories—ask *yours* for details.



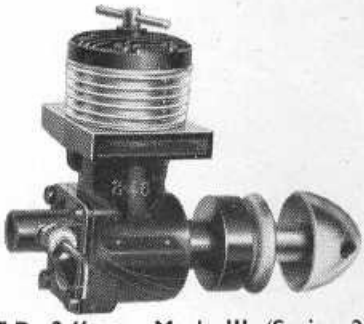
E.D. 2 c.c. Mark II

Size : Height 3 in. Width 1⅞ in. Length 4 in.
Designed to give an exceptional power/weight ratio and years of reliable service this engine develops ¼ h.p. at 6,500 r.p.m. and gives static thrust up to 18 oz. Bore ½ in., stroke ⅜ in., suitable for planes 3 ft. 6 in. to 5 ft. span. Price **£2 17s. 6d.**



E.D. 3·46 c.c. Mark IV

Size : Height 3 in. Width 1⅞ in. Length 4⅛ in.
One of the finest diesels for C/L and stunt flying. At 10,000 r.p.m. it exceeds the static thrust of most 5 c.c. engines. The ideal choice for larger models such as the "Radio Queen." Incorporates rotary disc induction. Bore 0·656 in. Stroke 0·625 in. Price **£3 15s.**



E.D. 2·46 c.c. Mark III (Series 2) RACING ENGINES

Size : Height 2¼ in. Length 3½ in. Width 1¾ in.
Specially designed for use as a diesel, Glo-plug, or spark ignition engine the two-forty-six develops ¼ h.p. at 14,000 r.p.m. plus. It has disc inlet valve induction, two ball-race crankshaft and exhausts as an integral part of the crankcase. Weight 5 oz.
Price **£3 12s. 6d.**

All prices include Purchase Tax

E.D. 2 c.c. COMPETITION SPECIAL

Size : Height 3 in. Width 1¼ in. Length 4 in.
An improved 2 c.c. engine with enhanced performance.
This diesel achieved immediate popularity after its brilliant success at the 1949 Nationals. There is no better engine for C/L and stunt flying. Gives 23 oz. static thrust. Weight 5½ oz. Price **£3.**

The majority of Kit Sets manufactured by the Big Four, namely—"Keil Kraft," "Verons," "Mercury," and "Skyleada"—are designed to suit the E.D. Power Unit.

E.D. ELECTRONIC DEVELOPMENTS (SURREY) LTD
KINGSTON-ON-THAMES
DEVELOPMENT ENGINEERS
1223. 18, VILLIERS ROAD, KINGSTON-ON-THAMES, SURREY, ENGLAND.

ESTABLISHED 1935

AERO MODELLER

INCORPORATING "THE MODEL AEROPLANE CONSTRUCTOR"

VOLUME XVI
NUMBER 190
NOVEMBER 1951

"Covers the World of Aeromodelling"

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 15th of the previous month by the Proprietors:
THE MODEL AERONAUTICAL PRESS LTD.
Allen House, Newarke Street, Leicester.
Subscription rate 21/- per annum prepaid (including Christmas Double Number).

Contents

Advertisement Office:
THE AERODROME, BILLINGTON ROAD, STANBRIDGE, NR. LEIGHTON BUZZARD BEDFORDSHIRE. Tel.: EATON BRAY 246

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

INTERNATIONALISM v. ISOLATIONISM

IT is a well known fact that the average Britisher is both conservative—in outlook, if not in politics—and an isolationist at heart, and nowhere is this more noticeable than in our aeromodelling activities. Admittedly, it is not given to many of us to obtain first hand experience of comparisons with other countries, but it is nevertheless an unfortunate British complex to too readily dismiss anything emanating from outside our "tight little island" as foreign to our requirements.

For many years, the general attitude of the aeromodelling public to the Federation Aeronautique Internationale has been rather derogatory, not, we fully admit, without some justification. However, it is pleasant to record that the Models Commission of the F.A.I. is now functioning as an energetic body fully aware of its responsibilities to the hobby in all its International aspects, and the limitations of the Commission are gradually being eased.

A report of the Brussels Conference held in July indicates a serious approach to many problems that have given trouble in the past, and we propose to publish this in full, together with our comments, in the next issue of the AEROMODELLER. At this stage however, we are pleased to note that the International regulations relative to Model Aircraft have at long last been divorced from the full Code Sportif, and a special Code Sportif de l'Aeromodelisme (together with a separate Annex) has been published. As stated in the Brussels Report, "it has been evident for some time that the General Code Sportif of the F.A.I. was not applicable to models in many instances, and that many special features concerning models were not dealt with at all".

For many years the sport in this country has ambled along under a set of national regulations subject to almost annual revision as various snags and pitfalls have been discovered in practice. That our domestic affairs proceed so well says much for the basic soundness of the national rules as laid down by the S.M.A.E., but no-one denies the fact that too many loopholes and ambiguities exist in the current regulations governing the conduct of contests, etc., and many would welcome a complete overhaul of the Society's rules relative to sporting contests.

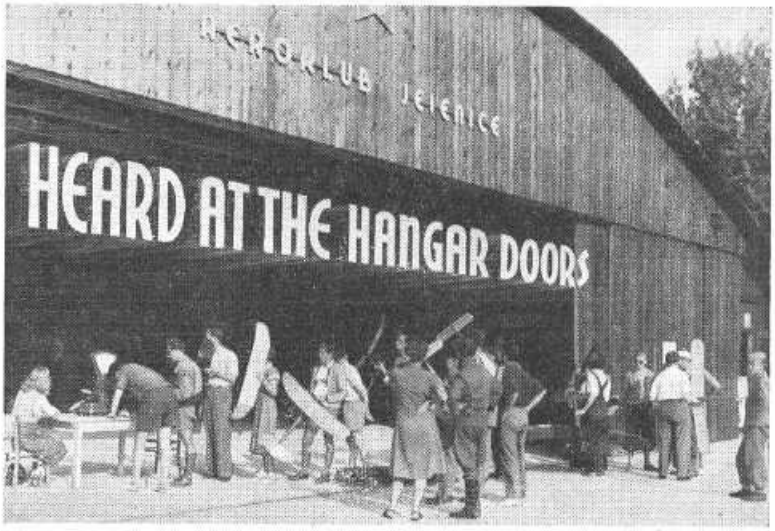
We therefore heartily commend the new F.A.I. Code Sportif as the basis for a new National system of regulation, and in this connection it is encouraging to note the S.M.A.E. Councils' almost unanimous acceptance of this principle. The advantages must be obvious, for it happens far too often that representative modellers from this country are at a loss when trying to reconcile International rulings with those to which they are accustomed in Great Britain.

The adoption of a universal code of regulations cannot help but benefit all in time, and we strongly recommend the new F.A.I. Code Sportif to the aermodellers of the country in the knowledge that practically all aspects of the hobby are efficiently dealt with. A cursory study of the new rules shows little left to the imaginative interpretation of individuals, and we welcome any means of closing loopholes that currently give so much employment to those who would try to "put one over" on their fellow competitors and the Governing Body.

Cover Picture . . . .

A distinguished visitor to this year's A/2 glider contest held at Lesce Bled, Slovenia was His Excellency the Swedish Ambassador to Yugoslavia, Birger Johansson. He is shown here watching the Swedish team in action with Rune Anderson launching the glider. On the extreme left is Dragan Hristic well-known Yugoslav modeller.

Slovenian Hangar



These hangar doors are from far off climes, none other than those of the Jesenice Aeroclub at Lesce Bled, Yugoslavia. Processing is taking place in preparation for the 1951 Swedish Glider Cup competition for A/2 gliders. This annual event, which is fast becoming as popular as the Wakefield, was this year splendidly organised by the Aeronautical Union of Yugoslavia.

Held amidst the most beautiful surroundings imaginable it provided keen support for some ten nations, and participating for the first time in post-war competition were both Germany and Austria. It was in fact Okcar Czepa of Austria who won the event with a glider of most unusual design that will undoubtedly set many a designer thinking when preparing his ideas for next season. The British team who attended flew well, indeed, and only an unkind twist of fortune kept Ray Monks from taking first place. A full illustrated report by our Assistant Editor, Harry Hundleby, will be found on pages 672 to 679.

Indeed to Goodness ! ! !

Perhaps it was due to our admiration of the hard work put into the organisation of the Nationals by S. Wales Area Officials that the editorial eye should temporarily have been blinded when captioning the photographs in our British Nationals report. For though we have correctly stated that the " mike " operator was the Area Secretary, we erroneously christened that busy bee Bob Comley with the name of equally industrious E. C. Crumplin. Our apologies to the gentlemen concerned, they each deserve a picture.

Decentralised World Speed Contest

Proposed by the South African aeromodelling magazine " Flypaper ", a world-wide decentralised speed contest may take place during October or November. The contest would be under the supervision of authorised clubs or officials and be worked out on a handicap basis. Readers are invited to mail their suggestions to " Flypaper " without delay. Overseas entries (including Great Britain) should airmail to L. Sidney, 17, Schultz Road, Nahoon, East London, S. Africa.

Competitors v. Organisation !

A letter published in our contemporary on the subject of the Wakefield–A/2 Trials raises a very important subject, and should be well considered by all who contemplate participating in contests at any time.

When one had sifted the verbosity of the writer, the facts emerge that (*a*) he thoroughly disliked having to travel further than Fairlop, (*b*) he equally detested having to sleep rough for one night in the year, and (*c*) he considered the organisation was too tough on the poor competitors !

The first complaint is one we have encountered continuously from modellers resident in or near to London, and we can only answer them by pointing out that it is exactly the same distance from London to Edinburgh as it is from the Scottish capital to London—and why should the Scot *always* do the travelling ! (We have heard the same type of moan regarding the annual venue of the British Nationals, but we maintain that the onus of long distance travel should be shared from time to time, and even though a meeting does suffer occasionally from lack of numbers, to farm the Nationals round the country is to conduct matters on a national and not a district basis.)

Regarding his second point, though we deprecate the necessity for members sleeping rough, surely the prize to be won was worth a little discomfort ? Perhaps the writer knew a better alternative to the one adopted, though it is significant that such critics rarely produce a logical solution to the practices they abhor. (We would further point out that, to the best of our knowledge, at no time has accommodation been provided for modellers travelling to contests taking place at Fairlop—but we have heard no complaints from the keen types who turn up from all parts of the country.)

As for (*c*), surely true organisation is the provision of similar conditions for each and every entrant, irrespective of his " reputation " or club. Unfortunately, until each individual appreciates that he is no more important than the next man, various methods of compulsion must continue to be used to make him " toe the line ", and the threat of disqualification seems to be the surest means of securing prompt attention to reasonable requirements. At such vital contests as the Trials, individuals just cannot be permitted to please themselves whilst the rank and file obey instructions, and to expect treatment other than general is to display poor sportsmanship.

Spit and Polish Brigade

A remarkable amount of energy had obviously been put into the models on view at the 1951 " Model Engineer " Exhibition, though we doubt the advisability of displaying every exhibit submitted. In view of the excellence of the majority of the models shown, it made any exhibit not quite up to scratch stand out like a sore thumb, and could have been neither a credit to the builders nor the exhibit as a whole.

P. H. M. Lewis won the Championship Cup with a finely detailed solid scale " Hawker Demon ", a beautiful piece of workmanship, other class awards going to C. J. Haggard (Swindon), P. Holland (Apsley), T. S. Nachtman

(Polish A.F.A.), B. Dunster (Folkestone) and Capt. A. V. Cockie. The junior award went to R. J. Coles of Southall.

We were struck by the lack of variety in the exhibits, the majority being of the scale or semi-scale class. This is a pity, for we are of the opinion that a well-built functional model can be quite as good in its class as the finest detailed scale model, and can, in an appropriate setting, give just as pleasing a display. To a practising aeromodeller, the whole exhibit was extremely interesting, but to the uninitiated the impression must be that we spend hours and hours on painting and polishing—and then stick the jobs in a glass case!

Spain 1—U.S.S.R. 2

F.A.I. Information Circular No. 55 dated the 3rd August, 1951, records three new World Records in the model aeroplane field. Two of these records were achieved with one flight when Boris Mourastchenko launched his Flying Wing Glider from Karkov on the 6th June and registered a record duration of 76 minutes 32 seconds. The model travelled 33·36 kilometres to land at Zolotchevst, and we presume was followed by the timekeepers throughout.

The third record goes to D. Jose Gogorcena Azatagui for a speed of 126·840 km./h. in the Control Line Class I category. This flight was made on the 8th April at Madrid, the motor being a "Castor" of 2·43 c.c.

We look forward to seeing the name of Great Britain figuring in the World Record list, for we presume the Belgians will submit the speeds achieved at the Knokke meeting for record purposes.

No. 2 to Number Two

We are pleased to offer our hearty congratulations to Henry Tubbs of the Leeds M.F.C., the second Britisher to gain his "C" cum International Merit Certificate. Henry will be remembered as second-place man in the 1951 Wakefield Contest, and this latest achievement confirms his reputation as a fine all-rounder.

Winning his "A" Certificate as far back as September, 1948, his "B" endorsement was gained the following month, after which he obviously took a rest! Gorham's success in achieving the first British International award apparently spurred him on to fresh activity, and the following record of his flights makes interesting reading:—

Glider	(5/11/1950)	3 : 08	3 : 58	5 : 00
Rubber	(10/6/1951)	4 : 08	3 : 49	3 : 35
Power	(2/9/1951)	3 : 33	3 : 11	4 : 39

Merit Certificates are receiving an increasing degree of attention, and a record number of new awards have been made during 1951. A further interesting feature is the large number of modellers who have achieved the higher grade "B" endorsement.

Contests Galore

The increased number of international and national contests this season are particularly reflected in the pages of this issue. We have, as is our policy, given as wide a coverage as is possible, tempered with the thought that not all of our readers are contest minded. Even so, this issue does in fact become a "Contest Number" and we beg forgiveness for the omission of one or two regular features which have been temporarily held over.

Aeromodelling on the Air

Readers lucky enough to be listening to Lionel Gamblin's "Hullo There" at lunchtime on August 30th will have been pleasantly surprised to hear a broadcast that really captured the spirit of aeromodelling, for the all too short ten minutes of the programme. A few days earlier we had had the pleasure of welcoming Ron Pantlin to Eaton Bray to make recordings of activities on the aerodrome. Ron, who will be remembered for his thrilling accounts on the air of an Algerian hiking tour, proved to our delight and gratification to be a practical aeromodeller himself, with a personal fondness for A/2 sailplanes, which made the task of sorting out a suitable programme something of a sinecure. The unrehearsed interviews went smoothly with Ron asking all the right questions to induce shy aeromodellers to open up, while his roving mike picked up a pleasant background of good aeromodelling engine noises—thanks to a most co-operative sound engineer who entered thoroughly into the fun of the day. What we really liked about it was the carefree spontaneous nature of the broadcast, while Ron Pantlin's comments on people and models introduced just the right touch of the enthusiast really enjoying himself.

We have had so many favourable comments from listeners who enjoyed this feature that we hope the B.B.C. will do this sort of thing more often—and particularly that they will give Ron Pantlin further opportunities to become aeromodelling's own broadcaster. In any event may we, on behalf of aeromodellers in general, say: "Thanks, Ron!" for an aeromodelling boost that has probably done more good than any other broadcast on the subject as yet.

B.B.C. commentator Ron Pantlin interviews Ted Suckley of the Society of Bedford Aeromodellers, who was about to test fly his twin Mills powered scale Bristol Freighter, on the occasion of the Eaton Bray Sportsdrome experimental rally.

Fledgeling

A SEMI-SCALE 33½ in. SPAN F.F. MODEL WITH ORIGINAL LINES

by

Cyril Shaw

of Zombies club . . . . aged 30 . . . . a skilled Cellulose Sprayer . . . . now living in Canada . . . . . also a Car, Chess, Jazz, Cat and Beer fan

Fledgeling takes all motors from ·3 to ·87 c.c. The photos reveal its modern lines; why not try one yourself ?

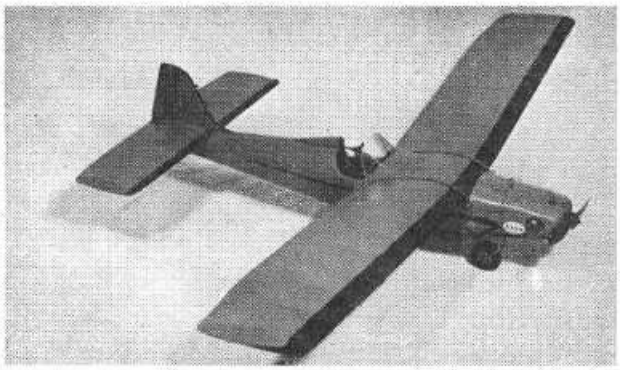
THE Fledgeling was designed to look realistic with good flight performance, and yet be original in layout. Cabin, high wing layout, inverted motor and standard undercart were considered too conventional, so I substituted a shoulder wing position, open cockpit, sidewinder motor, and trike undercart to get out of the rut and be original—if such a word is accepted in model design, where it appears that nothing is original.

The reliable little Allbon Dart diesel was a logical choice of power plant to provide just the right degree of urge for the kind of flight performance required, which was :—a smooth, sure take off and a reasonably steep climb in keeping with the appearance of the semi-scale light-plane type of model.

Fitted with a Stant 7 × 4 in. cut down to 6½ × 4 in. the Fledgeling fulfilled expectations. The steep climb, in large circles, was well mannered and the glide was slow, very flat and the eventual landing was a roller.

A word here about the trike undercart. For landing on rough ground and prop.-saving it is hard to beat. When testing I saw two-wheel models making beautiful landing approaches, only to tip as soon as they touched down, or alternatively rolling a few feet and reversing direction. A trike undercart, if accurately tracked, will give a long straight landing roll *every* time.

Built carefully, your Fledgeling should weigh between 8 and 9 ozs. The original weighed 9 oz. complete with fancy colour scheme of portland grey with maroon trimming. You will notice large wood sizes are used throughout. Strength is an important factor in sport flying, so if you can get away with fine performance and be as solid as a brick house, you have gained a model that is good for dozens of trouble free flying hours.



CONSTRUCTION

Fuselage. Construction is simple, with no tricky curves. The basic fuselage is of box section and built from firm ⅛ sq. balsa. The forward part of the fuselage is ⅛ sheet with squares cut out for lightness.

The two sides are built flat on the plan, and joined together by formers 2 and 3. The front and rear undercart wires are then bolted in position. Engine bearers are then cut to length and glued in place with the engine temporarily mounted to ensure a good fit. Formers are added to the rear structure and all 3/32 sq. stringers cemented in place. The underside of the fuselage between formers 2 and 4 is filled in with 1/32 in. sheet and the tops of formers 1 and 2 planked with 1/16 in. sheet (soft).

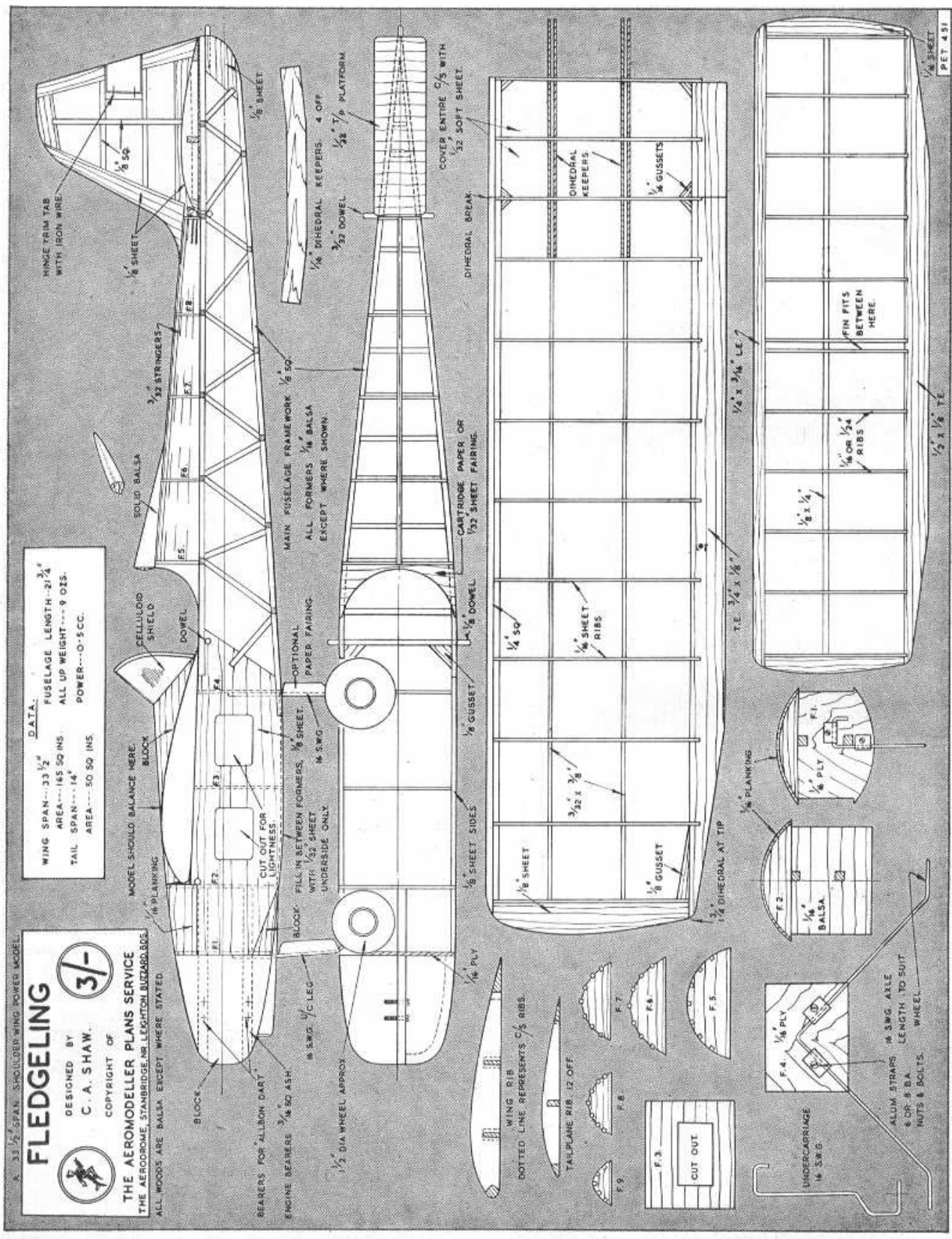
The apple cheek cowling is best made by carving a soft block of balsa to outline shape, split down the middle, hollow and fit round your particular motor and fuel tank arrangement.

Wings. These are straightforward in construction and are very simple to build. Cover the centre section with 1/32 sheet top and bottom and add the soft balsa fairing block to merge with the fuselage outline.

Tailplane and Fin are equally simple. Note that the fin has a trimming tab hinged on iron wire and slots into the tailplane.

Covering. The entire model was covered in heavy-weight Silkspan and given two coats of clear dope plus two sprayed coats of portland grey. Sellotape was used as masking for the maroon trimming lines.

Flying. The model should balance at the point shown on the drawing if fitted with the Allbon Dart. Test glide over tall grass, and when you are completely satisfied that the glide is very flat and straight, set the trim tab for a slight right turn. The motor should have 1 degree of right thrust to counteract torque. Put the prop. on back to front to cut down efficiency for test flying and let the job go on 10 secs. motor run. After that it is up to you and common sense—and the best of luck !!



THIS IS A 1/3 SCALE REPRODUCTION OF THE FULL SIZE PLANS WHICH ARE AVAILAILABLE PRICE 3/- POST FREE FROM THE AEROMODELLER PLANS SERVICE

FOKKER D.R.I TRIPLANE

SCALE ½ FULL SIZE

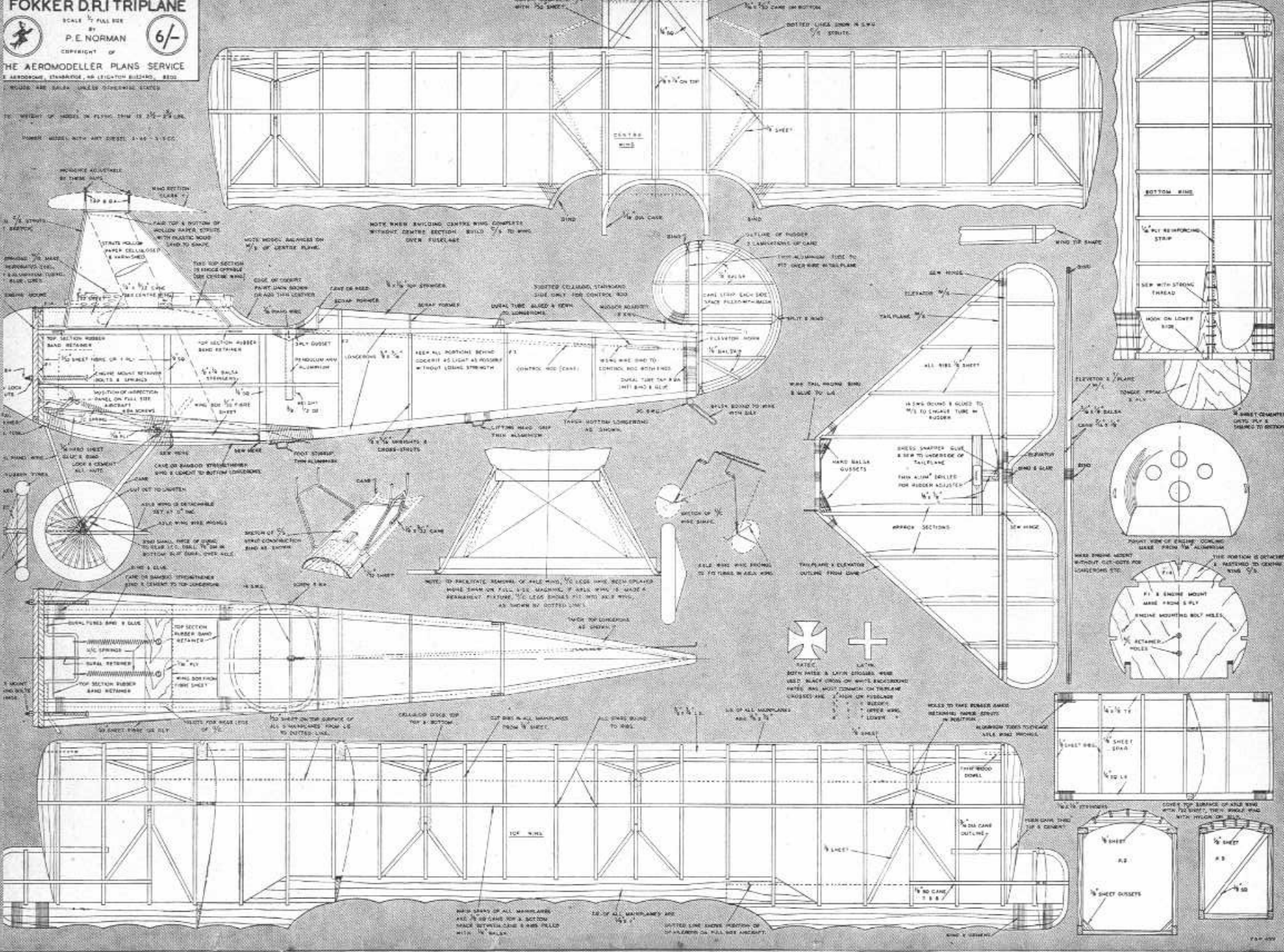
BY

P.E. NORMAN

6/-

COPYRIGHT OF

THE AEROMODELLER PLANS SERVICE



FOKKER TRIPLANE

by

P · E · NORMAN

One of the finest models in P. E. Norman's 1914-18 circus, this 40½ in. span, pendulum controlled scale free-flighter has passed many hours test flying before its acceptance for A.P.S.

OF all my models of single seater fighters of the 1914–18 period, I think perhaps one of the most fascinating and outstanding is that of the Fokker D.R.I., the Triplane.

In the air, it is a very interesting sight with its three sets of planes set at practically no dihedral angle, its short nose and aluminium cowling, and large triangular fish-like tail, and its amazing amount of stability—that is, for a somewhat heavy small scale model.

My own machine is a model of that used by Baron Manfred von Richtofen, the celebrated German War Ace, who flew an all red Triplane presented to him by Anthony Fokker, the designer. The Triplane had a top speed of almost 115 miles per hour, an astonishing climb and ability to manœuvre round anything (even the "Camel" could not turn inside the "Tripe"). It landed quite slowly (about 36 m.p.h.) and could be taken off in a very short run. It had a span (including balance of ailerons) of 23 ft. 7 ins., and was usually powered by an Oberursel rotary engine of about 110 h.p.

In its original form it appeared without, the balance to the ailerons, and also with no interplane struts, but the conservative German authorities could not conceive that a machine's wings could hold together without interplane struts, so these were added (although more from a psychological point of view than for structural strength). The machine had a welded steel tube fuselage and tail assembly, with wooden wings, the whole being fabric covered.

In spite of adverse reports the Triplane was one of the most feared and deadly of German machines, until superseded by the equally famous Fokker D.7.

Full building instructions are included with every full size A.P.S. drawing, but we feel readers will be interested in the following extract from P. E. Norman's trimming notes :—

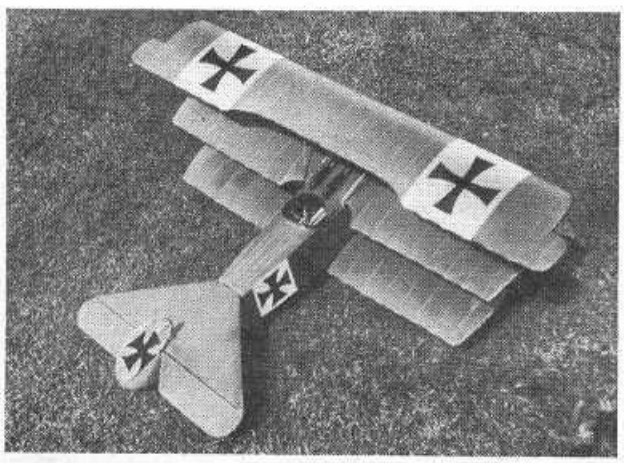
TEST FLYING : Always ensure that the model turns left when prop is running anti-clockwise.

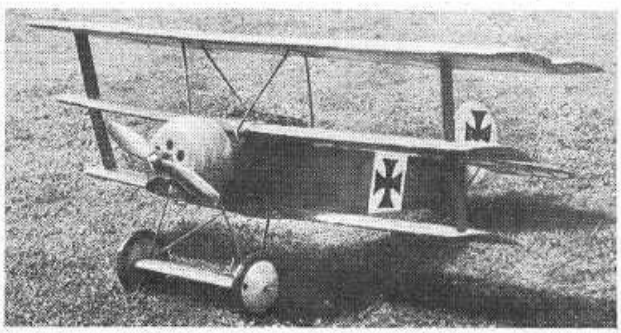
First test glide very carefully, do not stall the model intentionally but ensure that the speed is sufficient; remember this is a heavy model with lots of resistance and drag—a good forward speed is essential. It is *extremely* sensitive to the *slightest* rudder adjustment, and you should mark in some way the position of the rudder. It is also advisable to have some means of checking on the various incidence adjustments you may make.

When you are satisfied with a good straight glide, you are ready for power flight. Check that you have the off-set built in correctly ; it is advisable to put in a piece of packing to give a little down thrust to begin with. Ensure that you have the 11 × 6 in. prop. and *nothing smaller* ; small props. give too much torque. Get engine running, but not too fast, launch by running forward and launching gently, so that the pendulum is not swinging violently backwards and forward. The model will probably come to earth in power glide.

The model is one of the stronger variety, and if built and flown according to my instructions will outlive several engines !!

The plan on the opposite page is a ⅛ reproduction of the full size plans which are available price 6/– post free from the Aeromodeller Plans Service.





A 87" SPAN CLASS 'B' TEAM RACER

SCRAMBLE

DESIGNED BY
J.W. JONES

4/-

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED

THIS MODEL WAS ORIGINALLY POWERED WITH A MK II HURRICANE 2.4 & HAS BEEN OFFICIALLY TIMED AT 82 M.P.H. OVER 32 LAPS (1 LAP TIME (RACE TIME) 52 M.P.H.

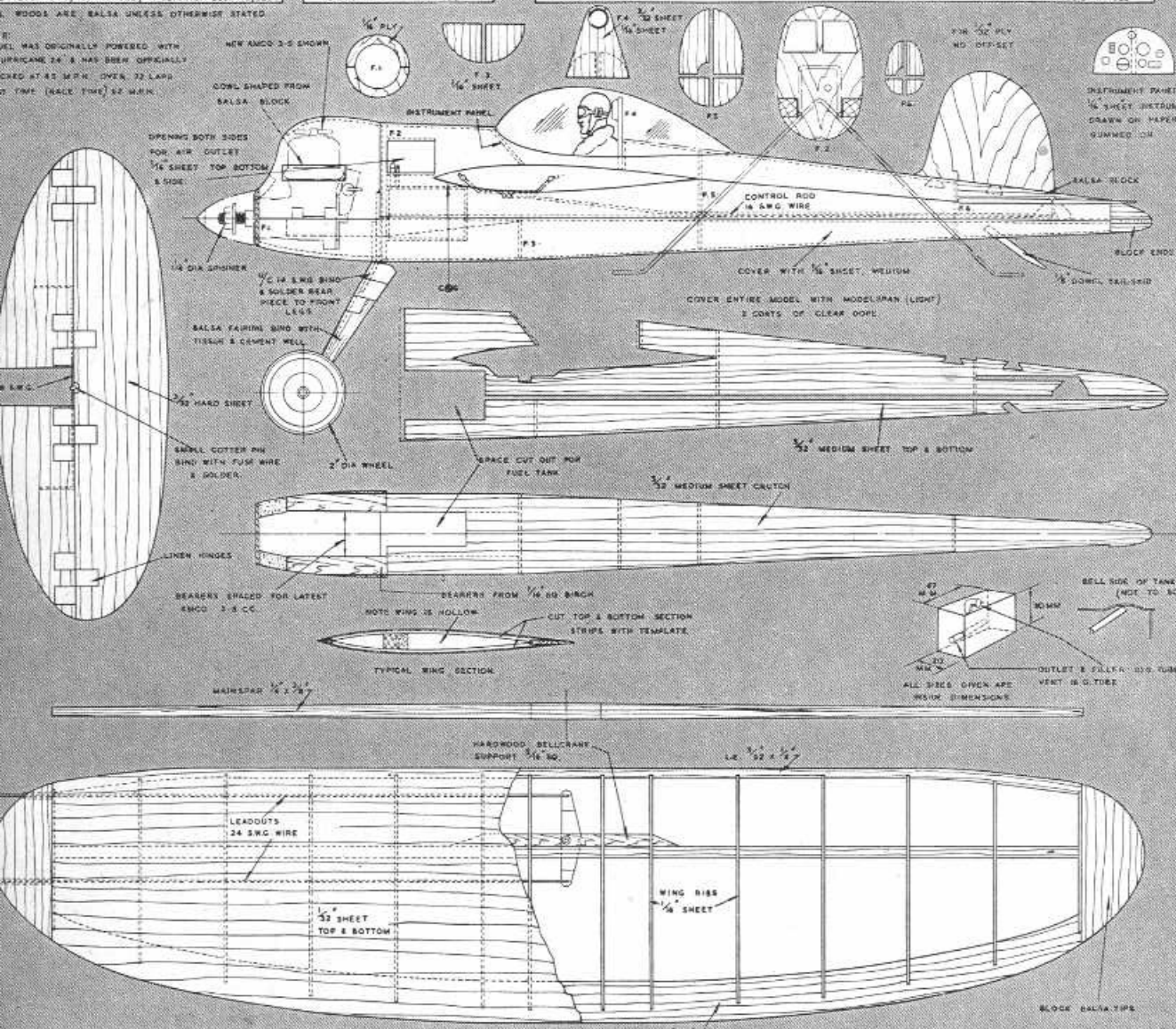
DATA

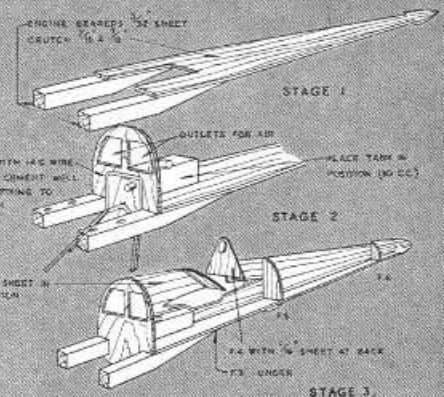
WING SPAN	27"
AREA	131 SQ INS
TAILPLANE SPAN	11"
AREA	21½ SQ INS
ELEVATOR	13½"
⅜ A LENGTH	22½"
POWER	3·5 - 5 CC
WEIGHT	16 OZS

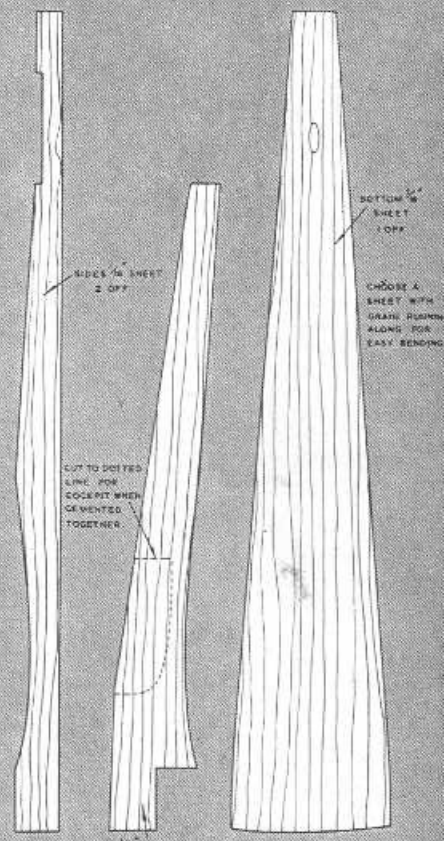
MATERIALS REQUIRED

2 SHEETS OF	1/16 x 3 x 36"	BALSA	MED	1 PIECE OF PLY	1/32 x 2 x 3¼"
5 " "	3/32 x 3 x 36"	"	HARD	1 " " "	1/16 x 1½ x 1½"
6 " "	1/32 x 3 x 36"	"	MED	1 " " "	1/32 x 4 x 3"
1 STRIP OF	1/4 x 3/8 x 36"	"	HARD	18" OF 14 S.W.G. PIANO WIRE	
1 BALSA BLOCK	3 x 2 3/16 x 2½"			24" " 16 " " "	
1 " "	3 x 2 3/16 x 2½"			36" " 24 " " "	
2 " "	4 x 1½ x ½"			2 HARDWOOD STRIPS	6 x 3/16 x 3/16"
1 DURAL BELLCRANK				2 " "	6 x 5/16 x 5/16"

2" OF ⅛" DIA DOWELLING
2 - 2" DIA WHEELS
1¼" DIA SPINNER
SMALL SHEET OF TIN PLATE
1 SMALL COTTER PIN
COPPER TUBING FOR TANK & WING TIP
CELLULOID COCKPIT CANOPY
TAPE FOR CELLULOID HINGES







● **Winner of the Stourbridge, Walsall, and Dudley races, plus the Festival Championships at Wembley Stadium, that fast class B team racer . . .**

Scramble

BY

JOHNNY JONES

A pioneer controliner . . . . member Birmingham M.A.C. . . . age 31 . . . draughtsman by trade . . . has been acromodelling for 17 years . . . principal interest is control-line.

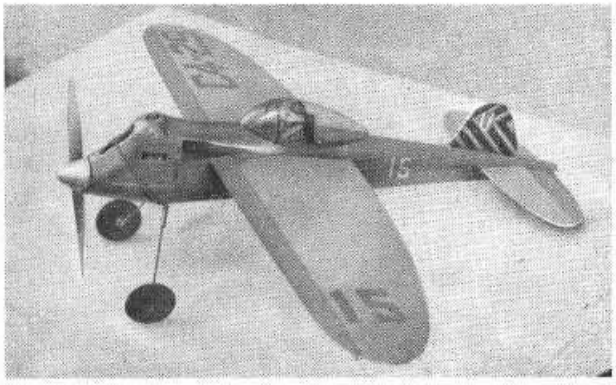
SCRAMBLE is a development from a season of team race comps and was designed to give the best possible performance under the conditions encountered in this type of flying.

It features lightweight, simple, yet rugged construction. The original was spinner landed four times during the first day, the only damage being broken props. The wing section is the fourth tried and was found to be the strongest, offering less drag than any of the others, without sacrificing the glide, which is over half a lap.

The first model won the Stourbridge C/L Rally, doing the five mile race in six minutes, also coming first in the speed at 76 m.p.h. The engine was a Hurricane 24 Canadian motor. The Wembley winner is the fastest and this model is " hot ". Since Wembley it was placed first at Dudley on August Saturday and second in the speed event at 81 m.p.h. At Walsall C/L Rally it came first again and second in the speed event at 80 m.p.h. This is using straight fuels 3 : 1 Methanol and Castor Oil. " Hot " fuels have been tried with speeds increased to 86 m.p.h. but the laps were down to 50 with the 26 c.c. tank (they have been 72 laps at 80 m.p.h.). The reasons for this performance are, the lightness of the model (16 ozs.), and the slim lines which help reduce drag. The model can easily be modified to take the new Amco BB 3·5 and should be even faster than with the Hurricane 24 now used.

Construction :

Fuselage. Cut out the crutch and cement engine bearers, as shown, using Britfix. Next, cement the vertical top and bottom sheets in place after placing the tank in position between the crutch ; cement the ply bulkhead " B " after first binding the undercart wire to it, and cement well. Now place the formers " C ", " D " and " E " in position and allow to dry. Cut out stabilizer and elevator from *hard* 3/32 in. sheet, now cement stabiliser into slot at rear end of Fuse. Cut fin from 1/32 in. ply and cement in place on top of stabiliser. Bend 16 s.w.g. wire and insert into *one half elevator* and solder control horn in place. Place through fuselage and fix other half of elevator. Cement linen hinges as shown.

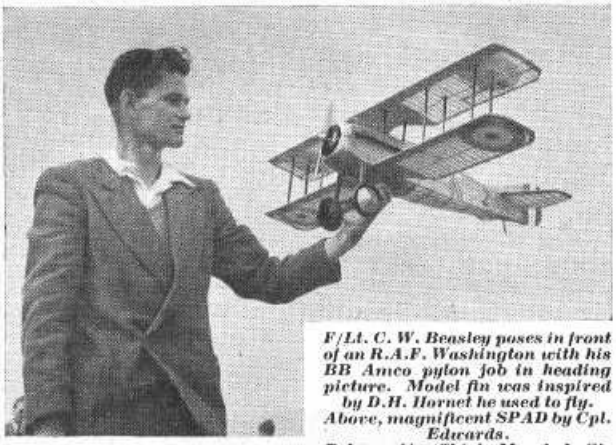


Wings. The ribs are cut from 1/16 in. sheet as a *curved plate section*, one top, and one bottom, to give symmetrical section. Cement to mainspar leading and trailing edge, top and bottom. Hardwood bellcrank support is now cemented to mainspar, insert bellcrank and lead-out wires, then cover whole wing with 1/32 in. medium sheet. Cut out at centre of sheet to allow movement of bellcrank. Add tip blocks and sand to airfoil section. Slide wing into fuselage and cement well in place ; couple up control rod to control horn from bellcrank, making sure that this works smoothly. Insert balsa block between L.E. and keel for rigid support. The fuse can now be covered in with 1/16 in. sheet as shape drawn on plan. Fit motor in, and balance model, drill bearers to take motor bolts. Cement in lower nose block and build up engine cowl, sanding to shape. Cover entire model with lightweight rag tissue. Two coats of clear dope are then put on, sanding between each one. Paint inside of cockpit and add pilot. Cement canopy in place and cover with tape until model has been coloured. One coat of primer and two of colour were used on original, sanding between each.

The final item is fitting the wheels and fairing of u/c wire. Now—Scramble ! !

The plan on the opposite page is a 1/4 scale reproduction of the full size plans which are available price 4/– post free from the Aeromodeller Plans Service.

Designer Jones and Scramble in top photo, and other view, left show the slim lines of the design, which was based on the small dimensions of the 5 c.c. Hurricane. 3·5 motors fit easily.



F/Lt. C. W. Beasley poses in front of an R.A.F. Washington with his BB Amco pylon job in heading picture. Model fin was inspired by D.H. Hornet he used to fly. Above, magnificent SPAD by Cpl. Edwards.

Below, Air Chief Marshal Sir Hugh Lloyd and Lady Lloyd, who presented prizes. S/Ldr. E. Cable and G/Capt. C. F. Pierce confer in background.

VIC SMEED & BILL DEAN REPORT ON . . .

The

R.A.F. CHAMPIONSHIPS

CONINGSBY — SEPTEMBER 1st & 2nd

ALMOST phenomenal weather favoured the R.A.F. modellers who arrived by 'plane, train, car, lorry, coach, and (in one case) boat at the R.A.F. Station Coningsby, Lincolnshire, for the finals of the R.A.F. Championships. After a fortnight of high winds and rain, the morning of September 1st dawned clear and sunny with only a slight breeze.

The personnel at Coningsby had made every effort to smooth the path for the visitors, the organization in this respect being superb. A dozen marquees (including a N.A.A.F.I.) had been erected together with an efficient Public Address system, and R/T communication with the control tower was laid on. Several Station Standing Orders had been waived for the week-end to facilitate movement on the 'drome, etc.

Attendance was an improvement over last year's, and the keenness displayed can only be suggested by mentioning that test flying was carried on from 5 a.m. till well after dark—there were a couple of team races going on at 6 a.m. and one large job was bumbling round with navigation lights on for half the night!

The programme officially started with the judging of the concours at 11.30, and some very smart models were on show. The flying scale entry was strong, and sailplanes dominated the miscellaneous class. There were few solids. A good feature of the concours was the requirement calling for a flight of 20 sec. minimum (except for solids!!)—this is where the scale boys came unstuck, both first (Auster) and second (SPAD) being unable to meet the rules. The Apprentices' rubber event had quite a few entrants but only a small number got their flights finished. The flying scale event drew a crowd of spectators and performances showed that there is more in this scale stuff than meets the eye. The take-offs in particular caused trouble despite the ideally-surfaced runway.

In C/L speed the ultimate winner of the Victor Ludorum had had things all his own way—there was little opposition and he was, in fact, the only competitor in Class IV and one of only 3 in Class III. A very smooth performance was put up by the open stunt winner L.A.C. Pete Smith (of Chingford) who well deserved his win, as did the scale stunt top man. In R/C the winner had a fly-over; despite the numerous entries only one other machine got airborne, only to have a motor bearer fracture immediately. This led to a great deal of vibration which operated the relay continually. Control was regained on the glide but since a triangular course had to be flown this was of little use.

Both A and B team racing was of a high standard, the E.D. 2·46 being the favourite in Class A. The "B" finals on Sunday morning provided a lot of broken props., and thanks to one mechanic fouling the other team's lines, even a complete change of lines in the middle of the race!

Right, A/C. C. Martin from R.A.F., Cottesmore and his Twomey designed Snark glider.
Centre, Eddie Keil and his orange and white Falcon gave many impressive radio-controlled demonstrations.
Bottom photo shows J/Tech. A. E. Burch who won the Class A team race with Bingo (E.D. 2·46).

The open power, rubber, glider, Jetex, and Wakefield events held on Sunday were blessed with almost ideal weather and quite a few morning thermals. Each contest called for only two flights and only two double-maximums were returned, both by giant sailplanes. The thermals became few and far between towards lunch and disappeared almost altogether in the afternoon. Dowsett produced two almost identical flights of 4 mins. 20 secs. to win the Thurston Trophy (Wakefields of original design) and open rubber and Jetex and power were very much as usual. Several models were lost, the longest in sight that we heard about being 11½ mins.

Showers of models were ascending all the time during both days, most people taking the opportunity of sport flying and so forth. Eddie Keil gave several R/C demonstrations, the most interesting being continual S-turns at 800 feet in a thermal strong enough to stop even his Falcon returning to earth. Noel Barker, just back from Singapore six days earlier, had built a new power job and lost it in those six days. Dowsett lost his open power job on the Saturday and stayed up half the night to build another.

This second Championship had obviously benefitted from the experience gained in the first and went off infinitely smoother. However, there are still points needing buttoning up—a more careful regard for the rules and a stricter enforcement thereof. More efficient briefing of timekeepers and other officials and the creation of a policy for points scored in poorly-supported events. Avoidance of having a competitor in any event being in charge of running that event. And an overseas posting for a certain person whose bad sportsmanship was noted and remarked upon by almost everyone!

Prizes were presented on the dot—there was no last minute rush, most contestants preferring to get their last flights in as early as possible. There was an impressive prize list of motors and kits—ably dealt with by Lady Lloyd. On the whole, a very good show—we certainly hope to be present again next year.

RESULTS

CONCOURS d' ELEGANCE

Flying Scale :	J/Tech. S. A. Fennel, Hendon (Transport)	Nieuport
Miscellaneous :	F/Lt. N. W. Verney, Llandow (Fighter)	Speed
Solid :	Cpl. McHard, Binbrook (Bomber)	German Jet

OPEN GLIDER

1. S.A.C. J. Randalls	Coningsby (Bomber)*	10 mins.
2. A.C. Woolands	Watton (90 Group)*	10 mins.

**Fly off for 1st and 2nd.*

OPEN RUBBER

1. P/O R. Twomey	Valley (Flying Training)	7 : 33·5
2. A.C. E. Smales	(Tech. Training)	7 : 27

JETEX

1. A.C. Dowsett	St. Athan (Tech. Training)	7 : 47
2. F/Lt. G. Young	Stradishall (Fighter)	5 : 6·4

OPEN POWER

1. L.A.C. D. Posner	Hendon (Transport)	8 : 50.3
2. F/O E. Bennet	Marham (Bomber)	7 : 49·8

C/L SPEED

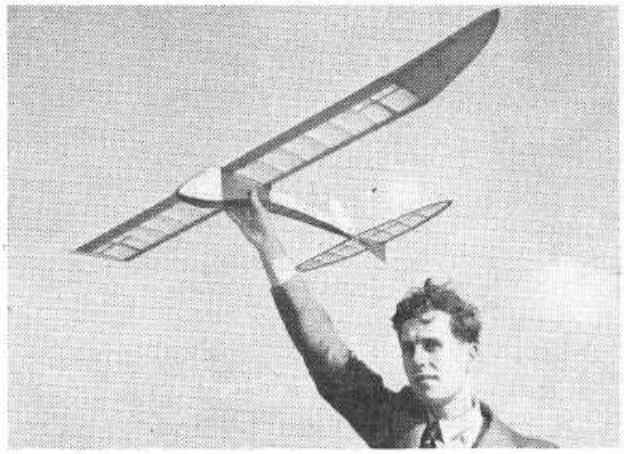
Class 1. F/Lt. Verney	Llandow (Fighter)	129·49 k.p.h.
Class 2. F/Sgt. Gladwin	Marham (Bomber)	135·49 k.p.h.
Class 3. F/Lt. Verney	Llandow (Fighter)	122·86 k.p.h.
Class 4. F/Lt. Verney	Llandow (Fighter)	158·59 k.p.h.

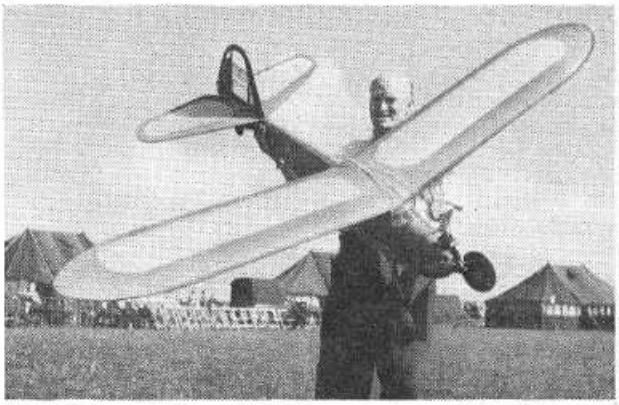
C/L AEROBATIC (S.M.A.E. Point Schedule)

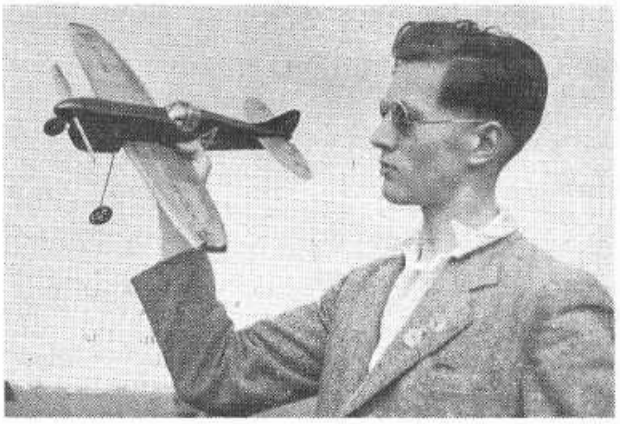
1. L.A.C. P. Smith	Chivenor (Fighter)	345 points
2. Cpl. R. S. Rutherford	Binbrook (Bomber)	315 points

THURSTON TROPHY

1. A.C. Dowsett	St. Athan (Tech. Training)	8 : 45
2. S.A.C. W. White	Thorney Is. (Flying Train.)	5 : 8







SCALE FREE FLIGHT (max. 100 points)

1. O/Cdt. M. Staples	Thorney Is. (Flying Train.	89 points
2. Cpl. D. Barnet	West Raynham (Fighter)	76 points

RADIO CONTROL

1. F/Sgt. R. Saunders	Coningsby (Bomber)	

APPRENTICES

1. L.A. A. Luesley	Halton (Tech. Train.)	2 : 31

TEAM RACING

Class A : 1. J/T. A. Burch (Fighter)	200 laps in 14 : 25
Class B : 1. F/Sgt. A. Henshaw (Bomber)	

SCALE AEROBATIC C/L

1. J/T. A. Burch	West Malling (Fighter)	219 points
2. L.A.C. C. Dyer	West Raynham (Fighter)	52 points

COMMAND POSITIONS IN RESULTS

1. FIGHTER with 139 points
2. BOMBER with 76 points
3. TECH. TRAINING with 47 points

Victor Ludorum Trophy : F/Lt. Verney (Fighter)

THE EDITOR VISITS THE

YORKSHIRE EVENING News MODEL FLYING FESTIVAL

Aerial photo on the right taken in the morning before the crowds really began to arrive gives some idea of the colossal attendance. As the largest meeting yet held in the North this rally will, we understand, become an annual event.

WHAT are the ingredients for a successful aero-modelling Rally? No doubt there are all shades of opinion on that question, but I am sure no-one will disagree that the basic requirements are (*a*) a good field, (*b*) a fine day, (*c*) a wide variety of contests, and (*d*) a good prize list.

This is, of course, a competitor viewpoint, and when we add reasonable access to a large city with its attendant transport facilities, the first meeting organised by the widely circulated "Yorkshire Evening News" was assured of at least a measure of success before it started, for the above conditions were available in full measure. When, in addition, they had the expert co-operation of the Northern Area Committee for dealing with the technical aspects of the meeting it is no surprise to find that the event proved an enormous success.

Statistics are indispensable for comparison in such affairs, and the gate figure of over 15,000 proves this meeting to have received the greatest public support of any staged during 1951. Over 1,000 vehicles were passed through to the car park, including an extraordinary large number of coaches from far and wide, and the public enclosures became a seething mass of humanity in short time. Over 5,000 people had paid for admission before 1 p.m., and the contest entry was on a comparable scale with the meeting.

Pre-entry saved the day for the organisers, as much paper work was ready in advance. Even so, a long queue extended from the Control Tent throughout the early stages of the meeting, and only disappeared when the first rounds were declared closed.

Unfortunately the old mistake of fixing the contest site before the day was made, and many of the marquees erected the day before had to be hurriedly shifted just before starting time owing to a change in wind direction, thus creating a slight delay in the commencement of activities. This did not affect the smooth running of the contests, but we would state that it is a mistake to seat contest controllers well inside a marquee! Though the clerical work involved is perhaps facilitated, it does not make for efficient conduct of a contest if those in charge are not in a position to keep a weather eye on events.

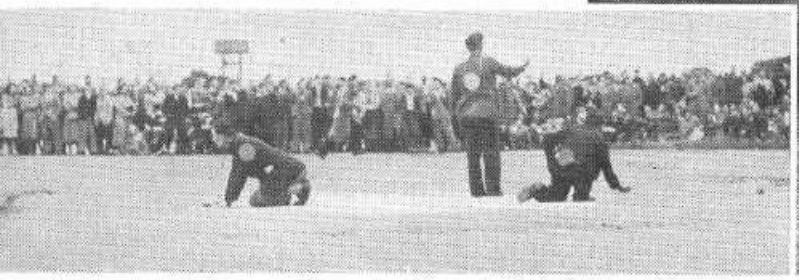
These small criticisms apart, the contests ran very smoothly, and the credit for this must go to the careful thought given to such matters well before the meeting, and the co-operation of various clubs within the Northern Area. Individual clubs had been given the task of conducting specific contests, and Barnsley in particular must be mentioned for the slick way they ran the Team Racing events under the direction of Pete Russell from Worksop. Activity in the ring was continuous throughout the day, and it was no fault of the officials that the finals were later than scheduled, for there were 23 entries in the Class A contest, and 15 in Class B. Anyone who has had any experience of running Team Race affairs will know that such an entry takes some disposing of.

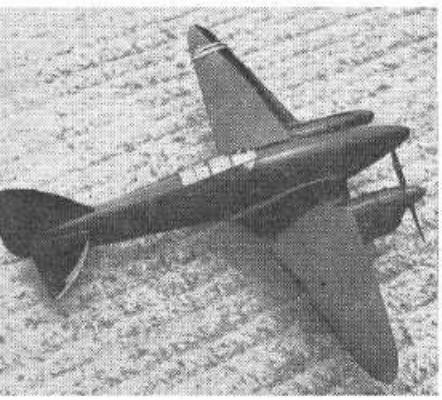
The one serious snag was lack of adequate public address equipment, the single mobile unit being totally unable to cope with all the demands made on it. As a result, some confusion was unavoidable, particularly at the finish when so many people had to be contacted on various subjects, but this will no doubt be rectified at future meetings.

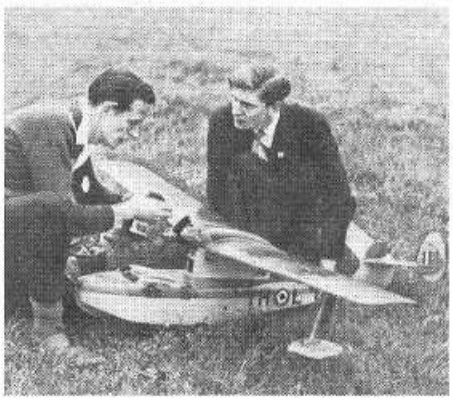
Whilst it is possible for an individual to gain only a scrappy view of affairs at such a large meeting, I was able, nevertheless, to get around all events at some time during the day, and can confirm that everyone seemed to be enjoying themselves. All types and sizes of model (and modellers!) were on view, one welcome sign being the disappearance of the "funny hat" brigade that at one time looked like becoming a major menace at such public meetings.

Long queues were seen at all contest points, though we must record the amazing fact that at one time we came across a surplus of unemployed timekeepers at the Rubber comp. area!! A most unusual sight that did

Shot taken during the team race shows competitors with their coloured discs which link up with the scoreboard in the photo on the right. Below, left, is S. Rymill's D.H. Comet, and centre, W. Farrance's Seagull Amphibian, both of which flew successfully. Right, are two of the winning Grimsby team race members with R. Goddard in the white cap. *Full results of the Rally are given on page 694.*







not last for long, for F/Lt. Beasley—one of the officials in charge of this event—took matters into his own hands, and paraded round the competitors' enclosures roping in fliers to make their official flights.

Though the entry for the Power event was below that for the Gliders, the longest hold-ups seemed to be at this point, and cries for more timekeepers came from this section almost continuously. Examination proved the bogging down to be the result of modellers unable to start their engines within a reasonable time, and the organisers had eventually to clamp down on the limit allowed each man. (Most took this restriction in good part, but we hand a brickbat to the individual who spent no less than seven minutes trying to get a spark out of his motor, and played heck when told he would have to be disqualified for that round. We kept an interested eye on this type, and over *four hours* later he was still trying to get the job to show life—and still grumbling about his elimination! Makes you think, doesn't it?)

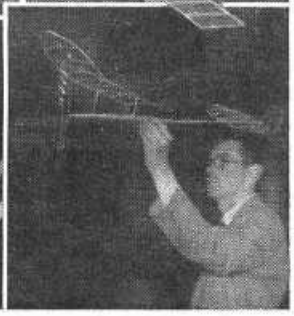
The whole of the afternoon for me was spent in judging the Concours in conjunction with F/Lt. Beasley, Bob Gosling, my scheduled collaborator, being tied up judging the Radio Control event. A fine selection of models was on view in the control tent, with scale types predominant. (When will modellers realize that a well-built contest job stands just as much chance of a win in this event as the best detailed scale model yet produced?) Our job was not made easy by virtue of all categories of model being in the one class, but a wide scoring range produced a fair result in the preliminary stages.

Trouble came when we requested the entrants to produce their models for a qualifying flight! Some had never had their jobs in the air, and refused to fly them—thus losing all score in the contest. The majority elected to put their machines into the air, and some excellent flying resulted. In the free flight category, special mention must be made of the entries of F. Lees (Ashton) and W. Farrance (West Yorks) who flew a "Luscombe Silvair" and "Seagull" Amphibian respectively in fine, realistic flights. Farrance's model, in fact, made three flights, all of which were a joy to behold, the large, heavy-looking machine stooging around in most stable fashion.

The qualifying flights of the winner, S. Rymill of Wavertree, and Charlie Jackson (Ashton) were made at the control-line centre in between heats of the Team Race events, and here again the models—a "D.H. Comet" and "Stinson Reliant" were a grand sight.

Fitzpatrick of Southport flew his famous black-and-orange sailplane, thus demonstrating that this consistent Concours winner is a fine performer as well as a good looker, and all in all this was one of the most satisfactory Concours events it has been my pleasure to judge.

Full results were soon presented at the conclusion of flying, and the well selected prize list was worked through in good order under the eyes of an enthusiastic crowd. Mr. F. Heywood, General Manager of the "Yorkshire Evening News", welcomed the competitors, and introduced Mr. Arnold G. Wilson, a well-known Leeds business man, and director of the resident flying club, who presented the prizes, thus drawing to a conclusion a very successful first venture in the Northern Area. We look forward with confidence to future Rallies in the knowledge that this initial success will spur the organisers on to even greater efforts.



INDOORS & OUTDOORS

THE EDITOR REPORTS ON THE "DAILY DISPATCH" SPONSORED AND THE "DAILY DISPATCH" RALLY ON SUNDAY,

British Indoor Nationals

AFTER many years of almost total neglect by both individuals and the governing body, Indoor Flying came into its own this year by the institution of the first British Nationals for this type of flying, and to record the meeting as an unqualified success gives the writer a great deal of pleasure, for indoor flying is a phase of the aeromodelling hobby that has always appealed to me.

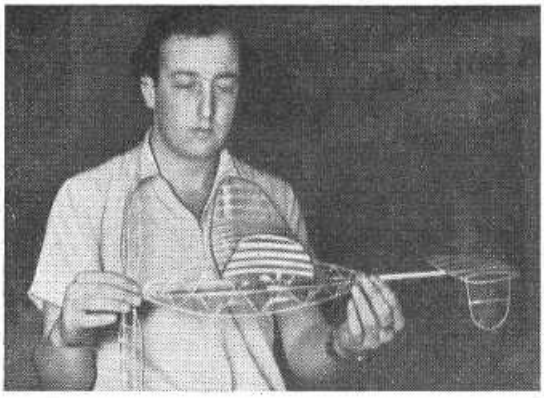
The Council of the S.M.A.E. were made aware of the fact that a number of modellers would like to see a nationally organised meeting for the stimulation of the many aspects of "limited ceiling" flying, and, following a suggestion that the North Western Area might like to convert their annual indoor meeting into a fully recognised S.M.A.E. event, this was agreed upon. It was agreed to conduct the meeting the day before the famed "Daily Dispatch" Rally, thus giving attending modellers a full week-end of aeromodelling activity, both indoor and outside.

Manchester Corn Exchange, though by no means ideal for free flight, proved good enough to enable no less than five new British Records to be set up.

Full marks must go to the North Western Area for the efficient way they organised the meeting, and it is a pity that fuller competitor support was not forthcoming.

Free flight models generally followed the accepted pattern of high mounted monoplanes, but a new feature was the almost universal adoption of built-up microfilm covered props. The Parham stable gave a good insight into the scope of indoor technique, his collection comprising stick, fuselage, helicopter, tailless, and a most interesting twin rotor autogiro. The latter model had not been flown prior to the meeting, and there are bugs to be worked out of the design, but we daily expect to learn that the old rotorplane record has also fallen to this stalwart from Worcester.

Probably the finest model on view was that produced by J. H. Maxwell, who had travelled up from Bristol for the meeting. Of orthodox indoor layout, the model was beautifully built, and was undoubtedly the lightest



AT MANCHESTER

BRITISH INDOOR NATIONALS ON SATURDAY, AUGUST 18th, AUGUST 19th, AT WOODFORD AERODROME.

Heading photos on opposite page show the "tent village" at Woodford, and a bird's eye view of the Manchester Corn Exchange taken at great personal risk by our cameraman! Note the crew winding up in the bottom right-hand corner. Top of this page we have the chuck glider queue and top right, an interesting microfilm model, held by its builder, name unknown, who hails from Stockton-on-Tee. On the right is the winner of the Indoor Free Flight event, T. Read of South Birmingham. Chuck glider enthusiasts shown opposite page are, top Barry Haisman, winner; and bottom, S. A. Ward who placed second. Tailless indoor model was red microfilm covered and is held by builder Ray Booth. Below, Ted Maxlow launches his "Mike" job, even the prop being covered with this material.

loaded job to participate, with an all-up weight of ·095 ounces. His model box was complete with a number of very interesting gadgets which enabled him to wind and generally handle his models without other assistance.

With other modellers coming from the Midlands and North Eastern Areas, plus a goodly assortment from the local clubs, proceedings got under way in the early afternoon following a morning devoted to test flying. The well-remembered "deathly 'ush" clamped down as soon as a model was put into the air, and timekeepers took it easy by sitting down to the neck-breaking task of watching models circle continuously under the dome.

The best of three flights counted for the "Daily Dispatch" Trophy event, and T. Read of South Birmingham proved to be the winner with a fine flight of 9 : 18. Without detracting from this competitor's honour, I have no doubt that both the runners up could have beaten this time, but Parham was obviously paying more attention to his record attempts, and Maxwell came up against the toughest luck yet witnessed.

His first flight of 8 : 50 was very much in the nature of a test flight, and he was confident of exceeding the 10 minute mark when launching for his second round. The model got away well, and was lazily circling at a very slow speed at about twenty feet altitude when a well-known modeller (who shall remain unnamed!) stepped into the arena with a tissue covered model. Though immediately warned that a contest flight was in progress, the model was launched and proceeded to grab altitude at a fairly rapid rate. Yes—the inevitable happened! Maxwell's model was cut clean in two by the stronger machine, and the resulting dive with both models hopelessly entangled completely wrote off the Bristol chap's number one model. Thus ended an unfortunate incident, with the culprit wishing he was anywhere but in Manchester.

In between the rounds of the free-flight event a period had been set aside for record attempts, and Parham made good use of this concession to break no less than five of the recognised records, these being the Fuselage H.L. and R.O.G., Tailless H.L. and R.O.G., and the Indoor Helicopter records. In all cases the duration was substantially increased, and we congratulate "R.T.P." on his great show.

Following the record attempts came the first of two periods devoted to—as the programme puts it—"H.L. Gliding", known to all and sundry as "Chuck Gliding". The form here was to line up on one side of the control dais, and on the word "go" have model check-weighed, give name to the recorder, go out into the arena and heft the model into the air, retrieve and get onto the back of the queue ready for another try.

Fun was fast and furious, and in the first section I timed exactly 90 flights within the space of 30 minutes! Durations ranged from three to the winning 28 seconds, and there is no doubt that this activity gave a welcome break from the more staid pursuit of the free-flight model. In view of the fact that this was an entirely new feature of the aeromodelling game, the prowess of the competitors was extremely good, and Barry Haisman demonstrated a fine technique to lead all the way.

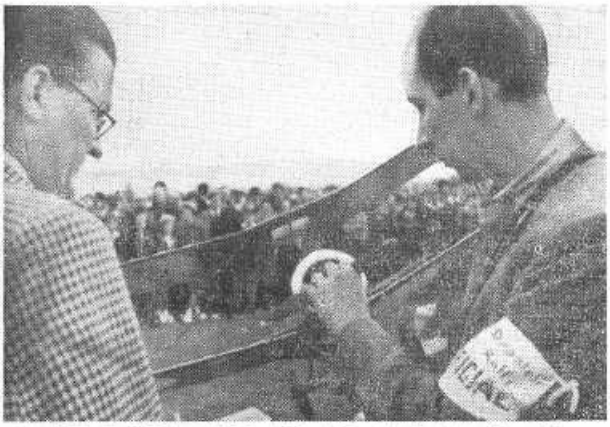
The day ended with the last rounds of the free-flight and chuck glider events, and the somewhat abortive attempts of two speed merchants to get their "flying bricks" airborne for the requisite number of laps. British record-holder Jolley apparently had the faster machine, but could not avoid continuous bumping on almost every lap, and thus left the field open for the ubiquitous J. O'Donnell who succeeded in getting the required flying laps after a number of attempts.

(*Continued overleaf.*)

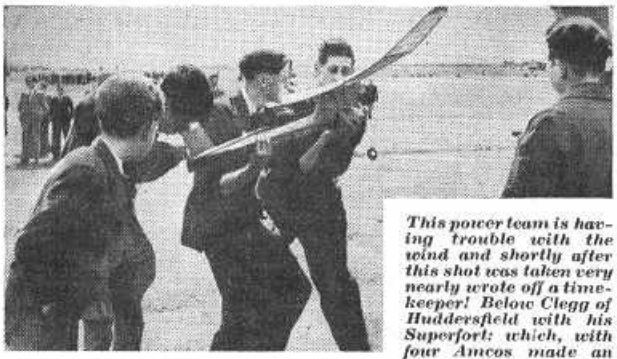
"Daily Dispatch Rally"

With the success of the previous day's Indoor Nationals fresh in mind, I made my way to Woodford Aerodrome in ample time to get an undercover view of the projected activities. In spite of my early attendance, a huge crowd was already on hand, and this swelled during the day to many thousands, the car park alone being a sight for sore eyes!

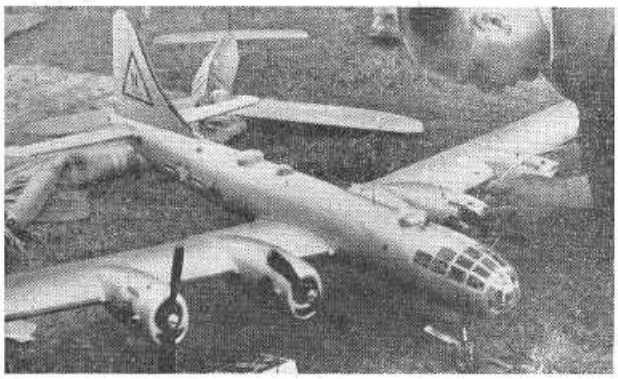
A quick natter with Comp. Sec. Jack Lowe produced the information that competitor figures were well up on previous years, the record number of 1,021 entries having been received from 672 individuals, 82 being in the junior class. Best supported event was—as is expected nowadays—the Glider contest with 364 competitors, followed by Power, 331, and Rubber, 170. Jetex attracted 47 fliers and 19 ladies competed for the Women's Competition, but the surprise of the day was to find no less than 37 entries for the "Riding Memorial Trophy", which requires free-flight Scale Models.



"Rushy" left and Hubert Parrish right, judging Sopwith Pup. Full results of the Rally are given on page 694.



This power team is having trouble with the wind and shortly after this shot was taken very nearly wrote off a timekeeper! Below Clegg of Huddersfield with his Superfort: which, with four Amcos made an impressive model.



The North Western Area, entrusted with the annual organisation of this famed Rally, have the big advantage of a 'drome well policed by the owners, Messrs. A. V. Roe Ltd., and the well-planned layout of the contest-cum-control area added to the smooth running of all events.

The weather, after a threatening night before, saw fit to be on good terms with the organisers, but a persistent high wind spoilt many a modeller's chances. This was particularly noticeable in the Radio Control event, and I am sorry to record that the flights I personally witnessed were nothing to write home about.

Team Racing provided a continuous spectacle for those stalwarts who braved a long walk up the field, though one or two favourites bit the dust. An unfortunate feature of such events is the amount of time spent preparing for each round, and there was a noticeable reluctance for some motors to start.

A general glance at the main free-flight events showed the usual collection of models and regular contestants, but with such numbers it was impossible to gain any idea of how matters were progressing until the final sorting out of flight cards at the end of proceedings. That is the main drawback to such big-scale Rallies—one can get very little idea how an individual is performing in comparison with the rest, and in many cases it comes as a surprise when the results are announced.

My afternoon was fully occupied in judging the Scale Model event in conjunction with Hubert Parrish, and a very pleasant task it was. The flying scale model has always been a favourite with me, and the examples on view were both varied and well built, the predominance of engine powered machines clearly demonstrating the stimulus given to this type of model once the small motor allowed a reasonably accurate weight displacement.

Among some really excellent examples of the scale modellers' art one or two were outstanding, notably the rubber-powered French sportplane entered by Ian Cameron of Liverpool. This machine, copy of a little known tandem wing type, was beautifully built and flew well in spite of being practically untested. Frank Lees of Ashton produced the winning model, a finely constructed model of the "Luscombe Silvair" finished in a brilliant crimson.

Bridgewood of Woodlands, last year's winner, was flying a large model of the "Bristol Bombay" but had some troubles with twin engine starting, whilst a fine flight was put up by a "Hawker Hurricane". However, for realistic flight, the "Seagull" constructed by W. Farrance of West Yorks took pride of place, and it was a grand sight to see this large amphibian stooge around for a fine duration in spite of the crippling wind.

Proceedings wound to their finish at the scheduled 5 p.m., but a slight delay was necessary as it was found that J. O'Donnell (Whitefield) and K. H. Lloyd (Solihull) had tied in the Glider event with double maximums, and a fly-off was necessary. The local boy just got ahead in this extra round, but Lloyd had the satisfaction of receiving top award of the meeting, the Rally Championship; the O'Donnell escutcheon being cleaned by young H. O'Donnell who took Junior honours.

ALL-HERTS RALLY

RADLETT AUGUST 19th

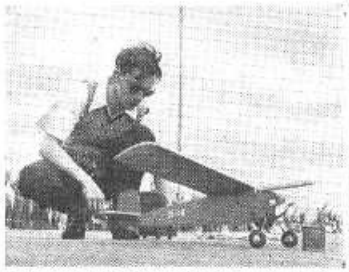
TO the unattached aeromodeller, and to the aeromodelling "family man", the annual All-Herts rally appears to have a special appeal. The 1951 event, held as usual, by courtesy of Sir Frederick Handley Page, on Radlett aerodrome, attracted a large attendance which would seem to be split equally among those who intended to contest for their part of the £46 cash prizes, and the less serious modellers who make Radlett an annual pilgrimage solely for the privilege of using the aerodrome.

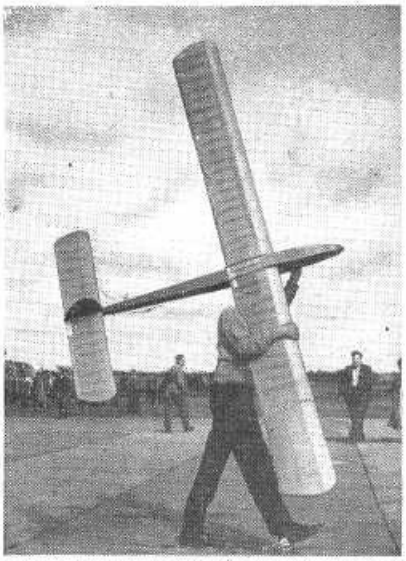
St. Albans M.A.C. is no longer the large club it used to be, though it remains prosperous, and continues with the same rabid enthusiasm which results in this annual success at Radlett. This year, the handful of clubsters entertained representatives of no less than 75 different clubs, and accepted 374 entries in the seven contests. With an extra large Team Race entry (there were 23 in "A" class and 20 in "B") the control-line area was one continual scramble, and not altogether without argument when some heat winners found themselves left out of the finals. Every racer was timed, and the fastest finishers selected for the final, a departure from the normal procedure which in theory gives everyone a fair chance but of course does not take into account stop watches that gain 5 seconds in each minute! In spite of the fuss, the first places in each class went justifiably to Skipper Rowe in "B" and R. Edmonds (H. Wycombe) in class "A". Incidentally the 2·5 c.c. winner was only ½ m.p.h. slower than 5 c.c.

Johnny Knight, of Wakefield team '50, pipped Ian Dowsett, of Wakefield team '51, by 21 seconds to take first in open rubber. Ted Evans aired his latest geared job in the evening and amazed all with the wonderful glide; but his ripsnorting climb with the "straight" motored job, followed by a spectacular dispensation of the prop and noseblock unit at 200 ft. altitude, will remain the topic of conversation for some time we feel.

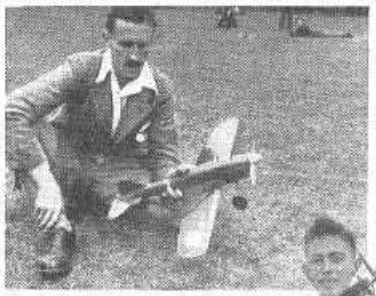
Two double maximums, with the model lost in each case, provided a tie for the Glider winners E. Mason of Sevenoaks, and Dabbs of P.M.A.L. while only ·05 separated 1st and 2nd in Power Ratio. Winning the latter event also cost Johnny Gorham his famous Lil' aud prototype, for although traced to the actual landing spot, the job was snatched by local vagabonds before the Ipswich flier could get to it. There's no mistaking the red and blue model if any reader happens to see it in unqualified hands, and immediate notification of such a find would greatly help to trace several other missing jobs which happened to alight among the local banditry. We would have the greatest pleasure in following up any news.

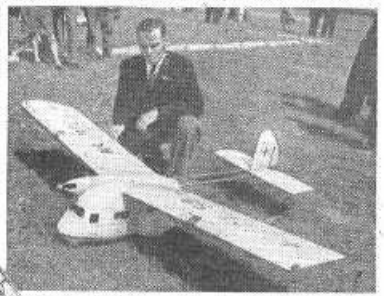
Making his first re-appearance after his mishap in France, Sid Sutherland led the Radio Control entries by a considerable margin. Radio comps must necessarily be well organised and depend a great deal on the co-operation of the entrants and other R/C enthusiasts. We, therefore, splash an extra large black mark onto the poor sport who continued to operate his equipment on the hangar apron during the contest, and was probably responsible for the destruction of Roger Clark's enlarged Gipsy. R. G. M.





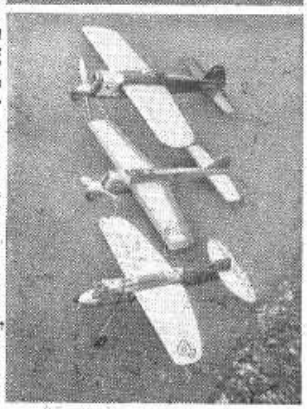
C. Hawkes (Battersea) prepares 36 oz. Button Bomb, R/C entry. Right, Surbiton's John Clark needs head room. Below, Skipper Rowe and winning Red Lightning class B racer (Amco 3·5).

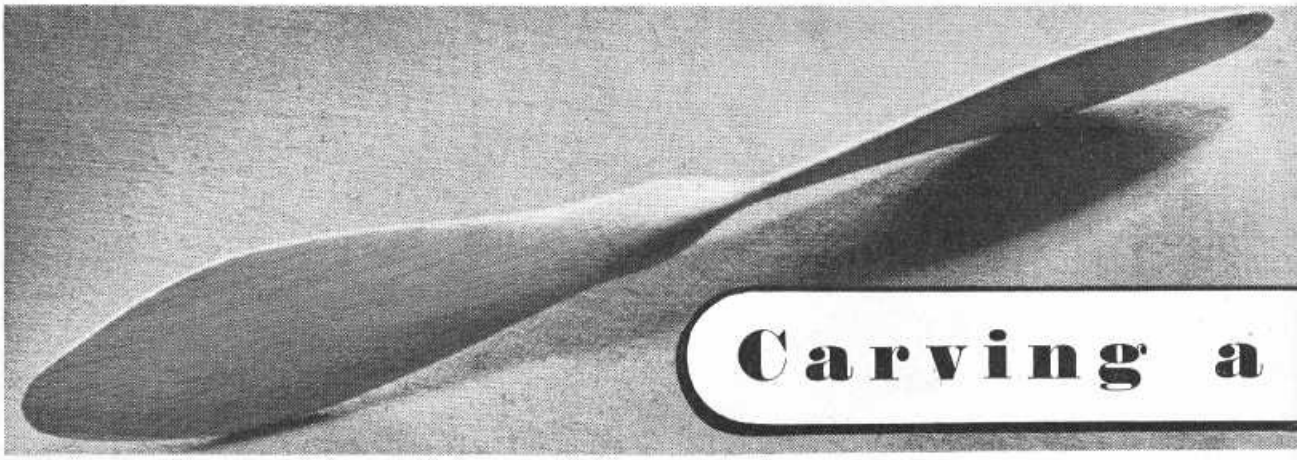




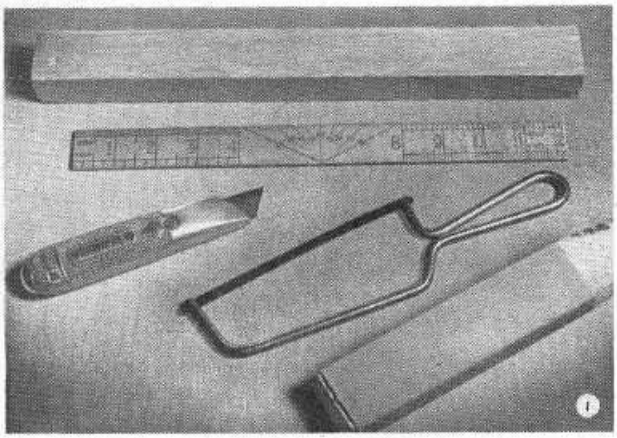
Mills ·75 F/F saucer by P. Baldwick (Bedford) is a shaker. Above, right: J. Newton (Blackheath) and O/D 8 lb. air ambulance. Extreme right: J. Keyte flips his Hornet speedster.

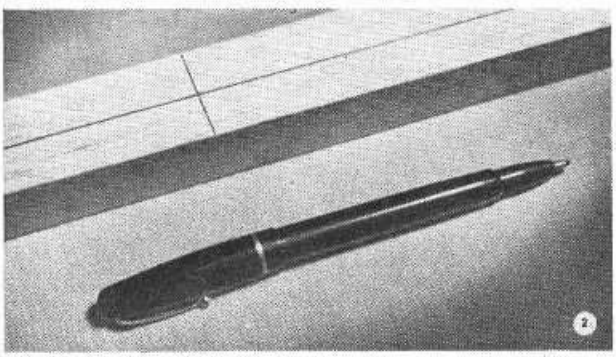
Above: W. Manuel (St. Georges Hts.) and beautiful silk and nylon covered sailplane, 9 ft. span. Right: Salisbury club's class A entries show diversity of shapes, all have metal cowls. Below: Roger Clark's enlarged Gypsy Wakefield has Frog 500 and is R/C.

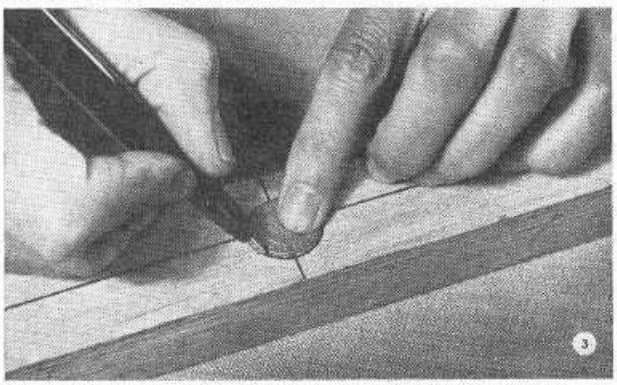




Carving a







THE quickest way of learning how to make something is to watch someone actually making it, and this certainly applies to the rather complicated job of carving a propeller for a rubber model. Since an actual demonstration is not possible in a magazine, we are going to have the next best thing—plenty of photographs taken during the various stages of the work.

There is a great deal of difficult theory behind the designing of a propeller, some people favouring one system, some another. The performance will vary considerably according to the width of the blades and

Follow these stage

Fig. 1 : Shows some of the things you will need ; a piece of medium balsa, $1\frac{1}{2} \times 1$ in. and 13 ins. long, a ruler and miniature hacksaw, balsa knife (preferably with a narrower blade than the one illustrated here), and a block of wood round which to wrap sandpaper—rough grade to start with, smooth to finish off.

Fig. 2 : The first stage in marking out the balsa block, for which a roll ball pen is very useful. Lay the block down with its wide ($1\frac{1}{2}$ in.) face uppermost, and draw two guide lines, one down the middle lengthwise and the other across.

Fig. 3 : Later on, when the block has to be sawn and sliced about, there is a danger of cutting too far or too deeply near the hub. If you lay a sixpence over the intersection of the two guide lines and scribe round it, this will provide a good safety margin, inside which you must not saw or cut until the final stages of the job. An error here will mean weakness at the point where the propeller must be strongest.

Fig. 4 : The next job is to drill a hole of $\frac{1}{8}$ in. diameter right through the centre of the block. Take great care to see that the drill is held quite vertically while this is done.

Fig. 5 : Marking out the face of the block. Measure and mark all the points carefully before drawing in the lines. The actual measurements, are, of course, exactly the same for both blades of the propeller. As long as you are careful with the saw, and leave a slight margin for error as will be described later on, there is no need to mark out both sides of the block in this way.

ESPECIALLY
for the
BEGINNER PART XXI

BY REV . F . CALLON

balsa propeller

their pitch—the angle at which they are set in relation to the propeller shaft, the varying shape and area of the blade cross section, etc. But beginners should not bother their heads too much about theory—a case of learning to fly before you can talk—and so this article is intended to show you the way to carve a propeller, not how to design one. The propeller described is just an average sort of design, and will be suitable for models of 24 in. to 36 in. wingspan, needing from 4 to 8 strands of $\frac{1}{4} \times 1/24$ rubber strip according to the size and weight of the model.

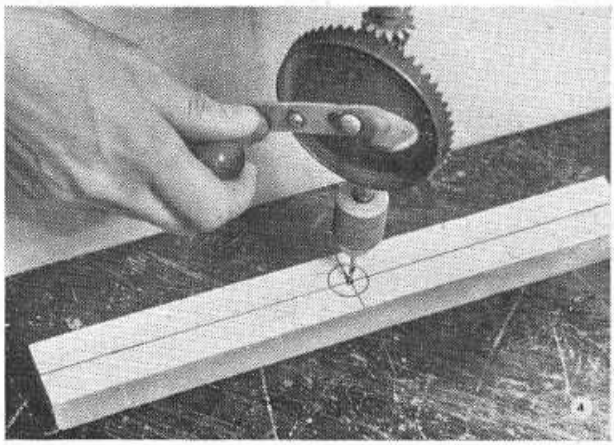
by stage instructions

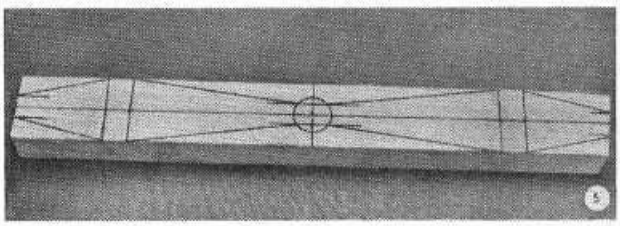
Fig. 6 : We are now ready to start " roughing out " the block, and for this a hacksaw is needed. You may find it simpler to remove the hacksaw blade from its frame and use it by itself. Cut vertically down through the block just outside the slanting side lines and up to but not into the safety circle. Then make two cuts into each side of the block at the centre, at right-angles to the length of the block, to meet the ends of the four slanting cuts just outside the circle, and thus cutting away four triangular blocks of surplus wood. The excess jutting out at each side of the centre may be trimmed off roughly in a straight line—a sort of tangent to the safety circle as can be seen in Fig. 8.

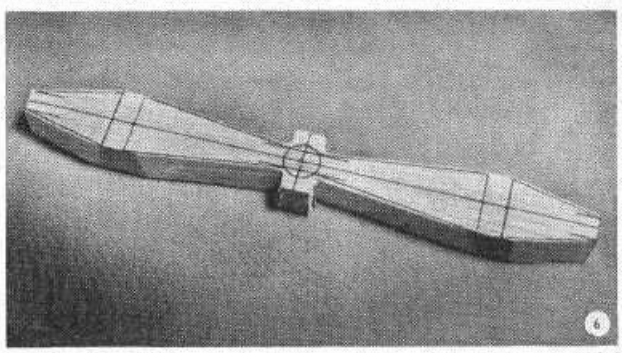
It is important to make the slanting cuts just outside the guiding lines, for then it does not matter so much if they are not quite vertical all the way along, and this can be put right with a rough grade of sandpaper on your sanding block before going any further.

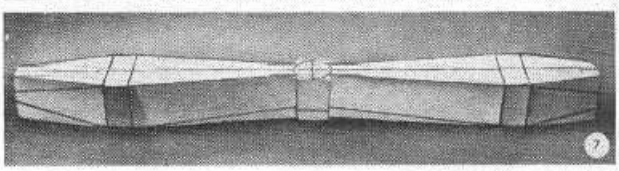
Fig. 7 : The side of the block is now marked out according to the measurements required.

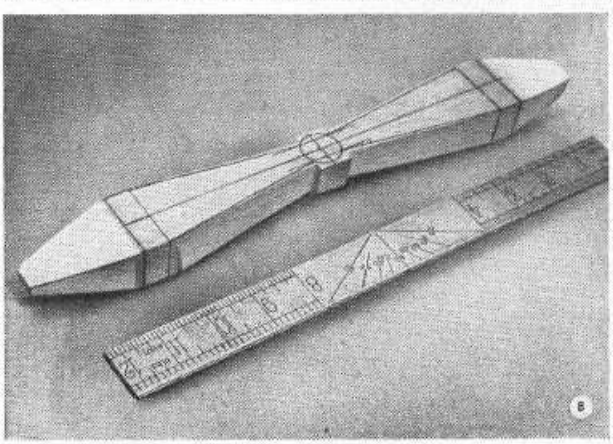
Fig. 8 : This photograph shows the block completely roughed out and ready for carving. It has been cut through from side to side along the guide lines marked out in Fig. 7, and finally " squared up " with the sanding block. Once the block has been roughed out in this way, the rest of the job is quite automatic, since the correct curve and pitch will be given to the propeller merely by carving across from the top forward corner down to the lower rear corner all the way along from the hub to the tip of the blade.

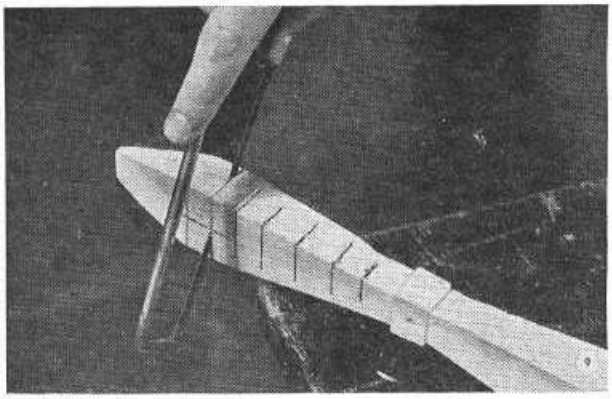


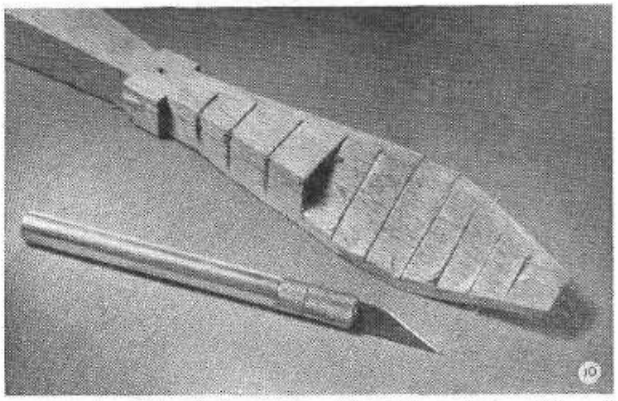


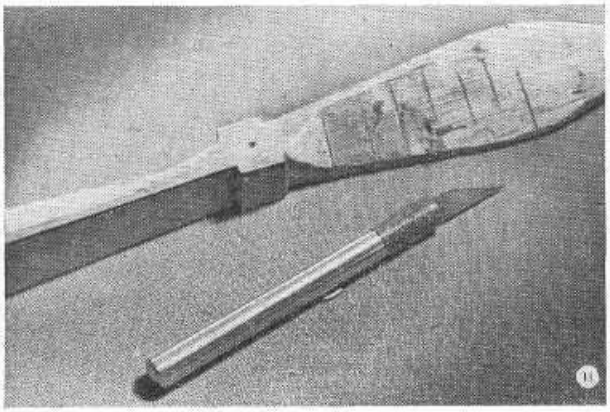


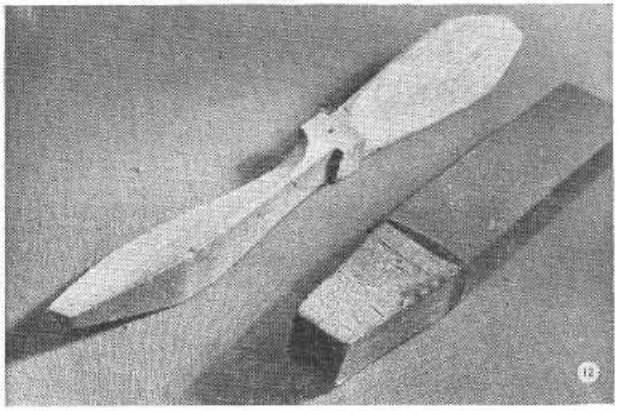


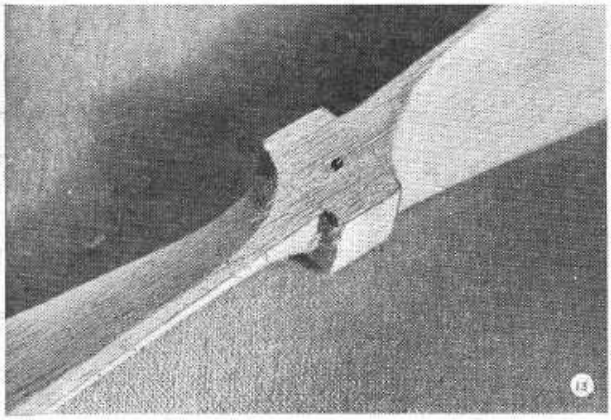


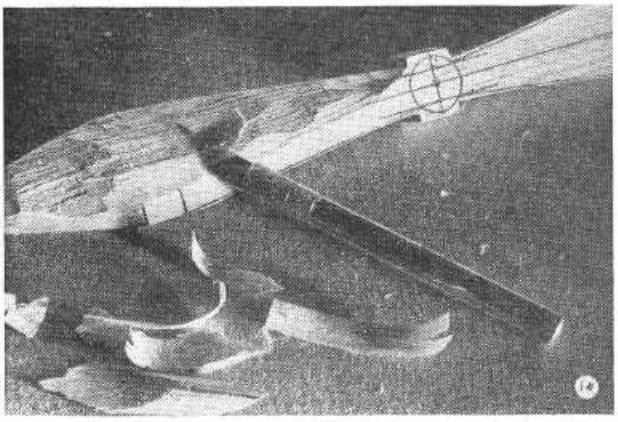


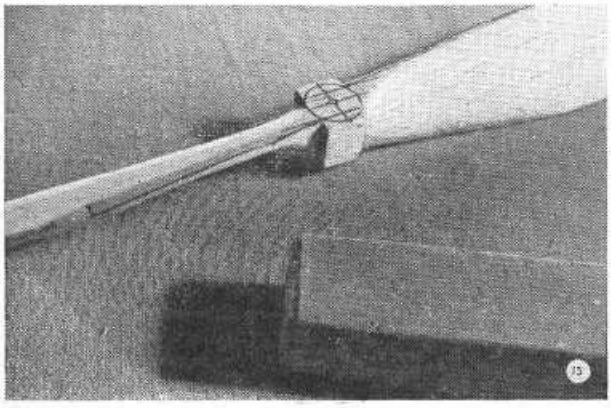


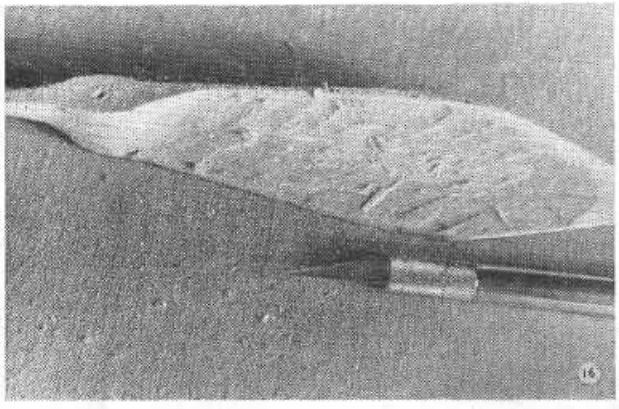


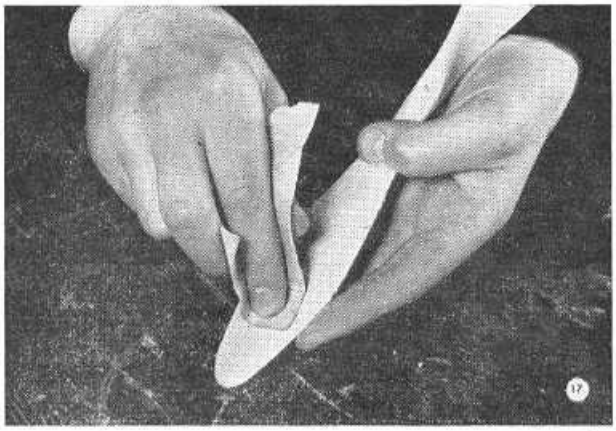












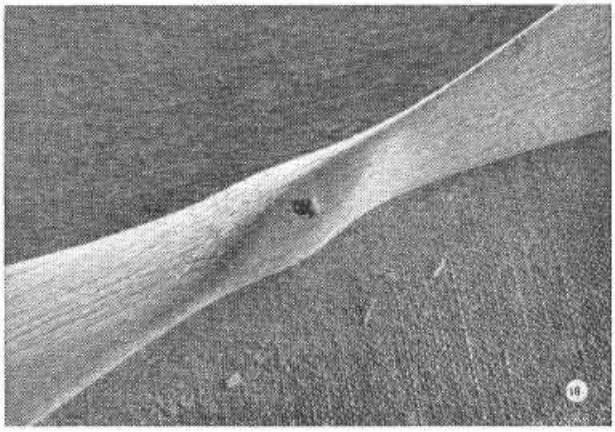


Fig. 9 : Our first job is to carve the rear face of the propeller quite flat diagonally from corner to corner all the way along, and it is just as well to give a little thought to the matter of which way the diagonal goes before you start cutting ; otherwise there is a fifty-fifty chance of ending up with a " backwards way " propeller ! It is risky to start gashing away with a balsa knife at this stage, for the blade naturally follows the grain of the wood when dug in deeply and it may easily split part of the leading or trailing edge right off. Fig. 9 shows how to prevent this possibility, by making a series of saw cuts every inch or so across the rear face of each blade, reaching to within about $\frac{1}{8}$ in. of the corners of the block.

Fig. 10 : A knife is now used to split off the sections one at a time across the block.

Fig. 11 : The same is done to the rear face of the other half of the propeller, and a knife used to make a rough job of carving the two rear faces flat from corner to corner all the way along.

Fig. 12 : A rough grade of sandpaper is now used to clean up this twisting flat surface.

Fig. 13 : A close-up of the rear centre section, showing how the rear faces of the blades are roughly shouldered in to the (at present) rectangular hub.

Fig. 14 : The front of the blade is now carved to a slightly rounded or convex surface—something like the top of a wing aerofoil.

Fig. 15 : This in its turn is roughly smoothed over with the sanding block, so that the blades are about $\frac{1}{4}$ in. thick all the way along $\frac{1}{2}$ in. back from the leading edge, and taper down very slightly on either side.

Fig. 16 : The ideal cross section of the propeller blade should be rather like that of an undercambered aerofoil section—hollow underneath with a blunt, rounded leading edge and a tapered trailing edge. The first step towards this result is made by scooping out the rear faces of the blades a little. A knife which has a curved blade is ideal for this. At the same time the rectangular central boss can be carved and sanded until it becomes little more than an elliptical bulge in the middle of the propeller.

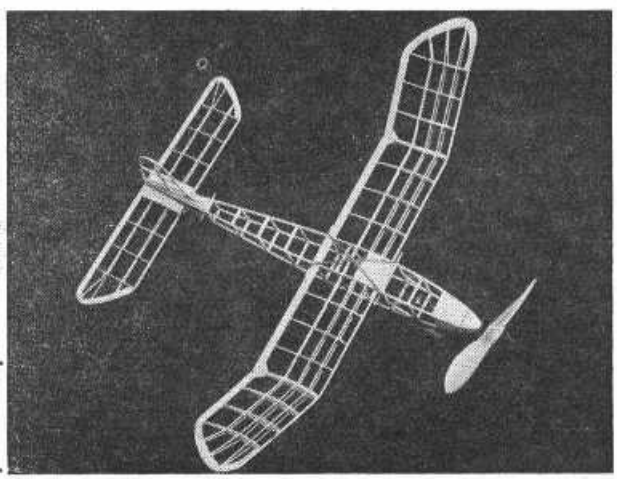
Study of the Rev. Callon's Especially for the Beginner articles enabled Janet Imrie of West London to build this excellent Keil-Kraft Senator without assistance from any male friends. A creditable effort which emphasises the value of 'Beginner' articles.

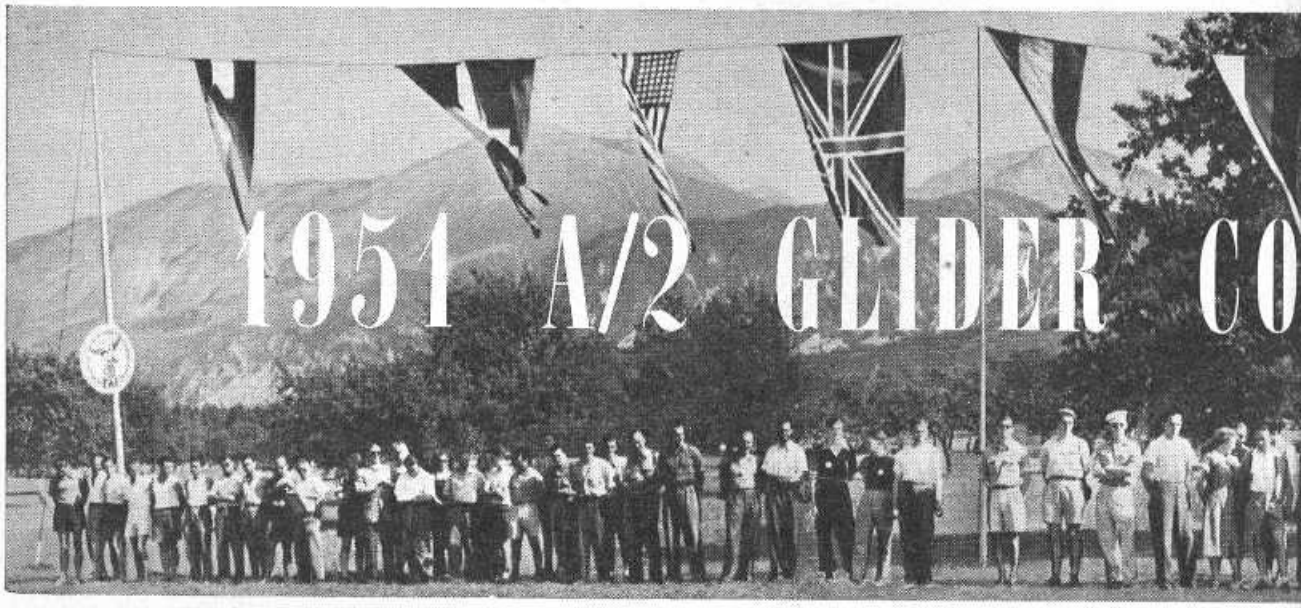
Fig. 17 : The slightly hollow surface of the rear faces of the blades is now smoothed out with the help of a piece of sandpaper wrapped round the finger. The leading and trailing edges are sanded to a smooth curve outline, the former with a rounded cross section, the latter tapering away to 1/16 in. thickness.

Fig. 18 : This shows what the hub should look like. The roots of the blades on either side of the hub should also be thinned down as shown, but not so much as to weaken them.

Now turn back to the heading photo of this article to see the final product. A 13 in. hand carved propeller, ready for the insertion of a brass bush for the propeller shaft and an extra bit of sanding to obtain the correct balance. If a free-wheel device is to be used which necessitates a small screw or brass tube being inserted into the hub at one side of the bush, this unit should be put in place on the lighter side of the propeller, and balancing should not be attempted until this has been done. All that remains then is to give the entire unit several coats of dope, and sand it with smooth paper after each successive coat has dried. A final coat of banana oil will give a high gloss waterproof finish.

Some modellers prefer to give their propellers a covering of tissue before applying the dope, and there is no doubt that this saves several coats of dope. Care is needed in the selection of a lightweight tissue for this purpose, otherwise the weight will be more than we want.

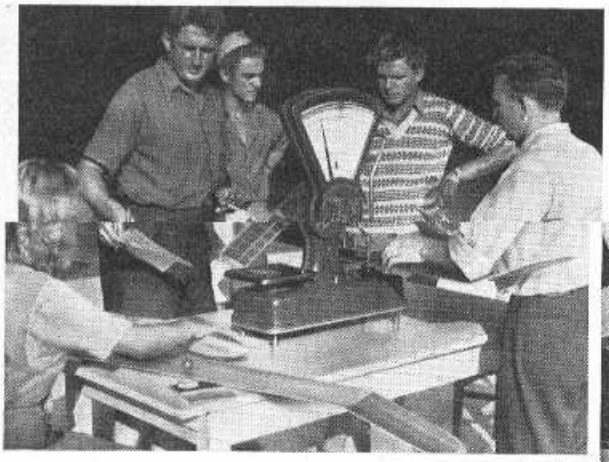




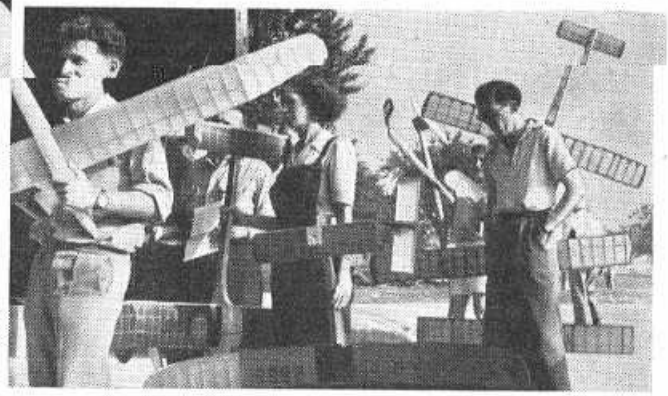
1951 A/2 GLIDER CO

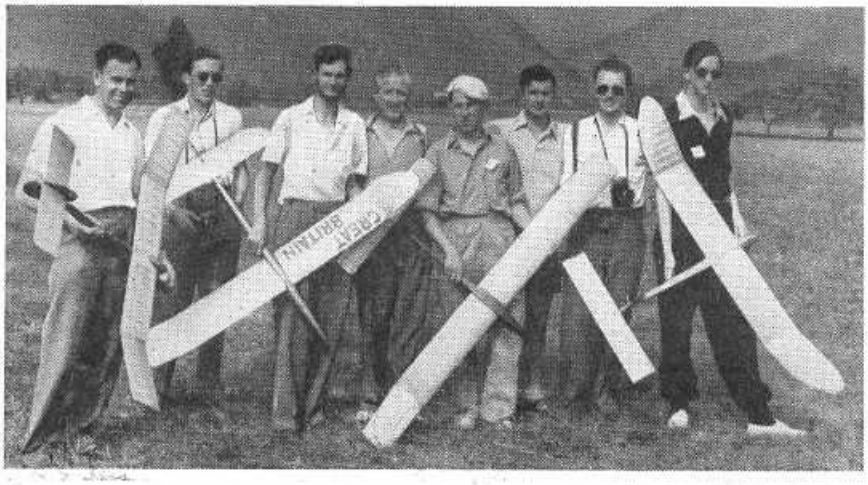
Described and photographed by H. G. Hundleby

HELD ON 24th AUGUST 1951 IN CONJUNCTION WITH THE INTERNATIONAL MODEL AIRCRAFT WEEK ORGANISED BY THE AERONAUTICAL UNION OF YUGOSLAVIA



Borge Hansen of Denmark eyes anxiously the pointer of the outsize scales used for processing. The processing officer was George Zigic (holding paper) ably assisted by Mrs. Prachic, on the left.

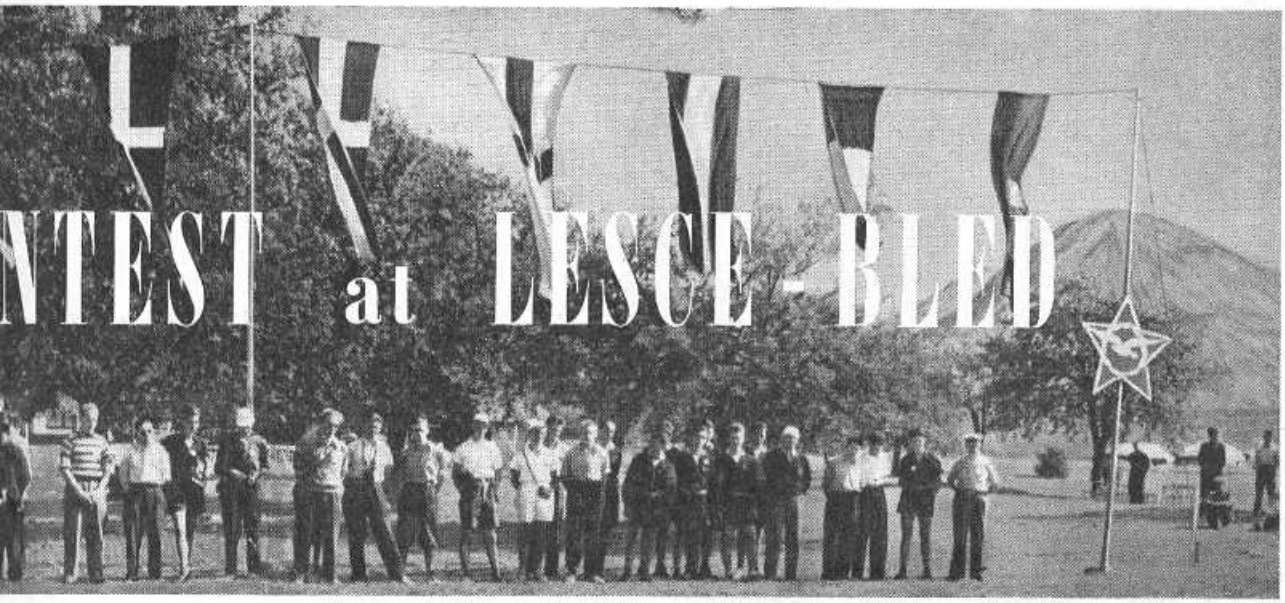




Heading photo was taken at the opening ceremony and shows a complete line-up of the ten competing teams.

Above, a section of the processing queue awaiting their turn outside the hangar. Madame Ferber, centre, holds both her A/2 glider and F.A.I. power job unaware of Ron Warring's close scrutiny of them from the rear. In the foreground is K. Bettenmann of Switzerland.

Left, we have the entire British contingent, featuring from left to right:—Bill Bailey, Ron Warring, Pete Holland, Bob Gosling, Ray Monks, Harry Hundleby, Dan Brockman and Mike Thomas.



L'NTEST at LESCE-BLED

TO say that this event was the most interesting International Contest that the writer has yet attended would be a definite understatement. For a start, it entailed a fascinating trip across Europe via the Simplon-Orient Express, passing through France, Switzerland and Italy. This journey and the magnificent scenery alone, warrant the fullest description which, as this is an aeromodelling magazine, the writer must reluctantly refrain from giving.

The aeromodelling story commenced in the foyer of the Hotel Slon in Ljubjana. We had entered same at the early hour of 7.30 following a typical continental breakfast, when who should exclaim "What ho!" but Pete Holland, followed by the rest of the British team and also the French team, including our old friend Jacques Morriset.

The world being a small place and all of them extremely *fatigue* after an all night journey, we retired *en masse* to the Hundleby bathroom where one and all proceeded to bathe, much to the horror of the Yugoslav chambermaid who was summoned to produce towels by the dozen! We then all journeyed together by train through magnificent mountain scenery to Lesce Bled where many old friends were waiting to greet us.

Old acquaintances renewed and new ones established, we were taken to the town of Bled and accommodated in first-rate hotels standing on the shores of Lake Bled. Never has an aeromodelling contest been held in more beautiful surroundings. The serenity of that lovely lake, framed in a surround of mountain peaks, brought sighs of admiration even from those with balsa chippings in their hair. Your scribe also raised a mental hat to the doughty parachutists who the week previous had plunged into its depths during the parachute jumping competitions.

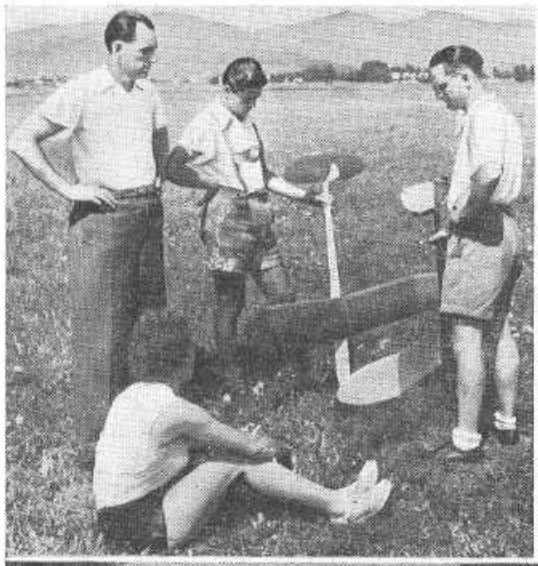
At our hotel we met up with Ron Warring and Don Brockman who had travelled via Austria, and it was not long before the entire British contingent was engaged in a miniature chuck glider competition from a hotel window some four storeys up, this being a victory for Ron, who almost reached the shores of the lake!

The following morning, Thursday, 23rd August, we were transported to the aerodrome at Lesce Bled by bus, for test flying until mid-day, followed by the official processing in the afternoon.

The aerodrome itself lies in a flat valley bounded on three sides by mountains, one of them, Triglar, being the highest in Yugoslavia, and we surmised that weather conditions would be interesting by virtue of the close proximity of those mountains. We were not far wrong!

Several things we remember of that first day on the aerodrome:—Maurice Ferber's A/2, minus its tail assembly, flying gracefully in the inverted position during a test flight; the neat tension-operated automatic rudder of Swede Anderssen's which was released by the towing hook itself; the out-of-the-rut design of the Austrian models and the unusual materials employed in their construction; the heavy gauge piano wire wing tongues in the form of hoops used on the Finnish models; music, while we flew, from loudspeakers hidden in the trees on the edge of the aerodrome; the slick organization of the processing, presided over by genial George Zigic; the dismay of the British team on finding that it was necessary for them to provide three-view drawings when presenting their models for checking; the Aeronautical Union of Yugoslavia's forethought in laying on open-air bars for thirsty English journalists; the incredible noises made by an old Russian P.O.2 used for glider towing; the smart blue track-suits worn by the Austrian team who arrived, complete with a large banner announcing the meeting across the bonnet of their Mercedes, not forgetting a lorry with an even larger banner containing their models; the excellent workrooms provided for all teams of which full use was made; and, above all, the helpfulness of our cordial Yugoslav hosts who could never do enough for us.

Test flying completed and processing behind them, the teams returned to Bled where each evening, by mutual consent, they gathered at the Casino. This establishment was not the type with roulette wheels, but housed a large dance band, the wines and spirits of Yugoslavia, and many of its prettiest girls!



Left, the German team, featuring from left to right: Hugo Leppert, Herman Seissler, and Karl Barth. Seated is Lina Schrattenberger, a lady member of their power team. Bottom left, the Swedish team with Ragnar Odenman left, Rune Andersson centre, and Kurt Sandeburg right. On the extreme right is the team manager, Kai Wenntla. Right, is L. Rausch, of Holland, launching for compatriot J. Hekking.

Above we have the Austrian team with their most unusual display of models. They are, from left to right: Wilhem Kahr, Adolf Meixmer, Oskar Czepa, Leopold Tlapak and team manager D. Hlaky. Meixmer's model used a fuselage of paper tube and it will be noted that Tlapak puts his cross-sectional area at the front as compared with Czepa's at the rear. On the extreme left is one of the peculiar "flying boot" gliders.

Round One

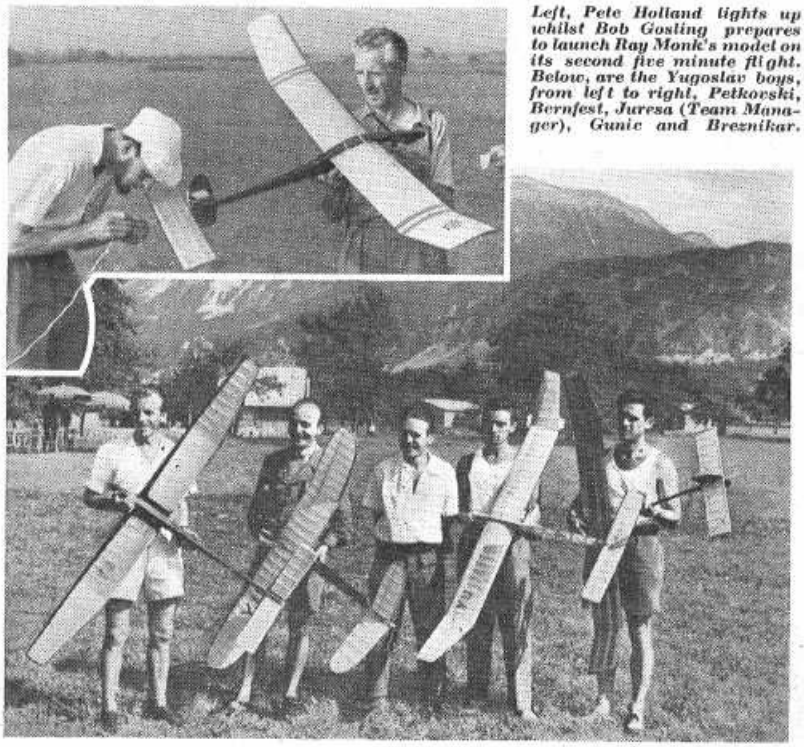
Friday morning, the day of the contest saw the sun shining brightly (very rarely does it do anything else in Yugoslavia during the summer, to the amazement of we English), and when we arrived at the aerodrome a light breeze was blowing. In fact, conditions were ideal. An opening ceremony was performed by Rade Radosavljevic, Secretary of the Model Section of the Yugoslavian Aero Club, who is an old friend, having managed the team that came to Eaton Bray in 1950. He welcomed the teams, who were lined up under an array of flags of many nations, and the whole ceremony made a most impressive sight. We did not envy the task of Vadislov Matovic, the official translater, who on this and many subsequent occasions had to cope in at least three of four languages for the benefit of the ten nations that were competing. America should have made the eleventh, with Ron Warring flying proxy for Dick Everett, but Dick's model failed to arrive in time, which was a great pity.

The breeze mentioned earlier proved playful during this round. At times it vanished altogether and when present was constantly changing direction, to the chagrin of competitors who often found their upwind launch was downwind by the time they were ready to release!

In view of the conditions the British team flew as early as possible, and Mike Thomas was the first away for what looked like a maximum. He fell, however, just 7 seconds short, which put him in second position at the end of the round, and it was left to both Bill Bailey and Ray Monks to fly maximums into first place. In this position they had plenty of company for no less than twelve competitors scored the limit in this first round and it was obvious that competition was going to be keen. Pete Holland's model unfortunately came off the line prematurely, his time being only 1 minute 42 seconds as a result. He was, however, not the only one, for during the general run of the contest we saw the Swedish Champion, Ragnar Odenman, do just this and also last year's winner, Stephan Bernfest of Yugoslavia.

Thermals there were in abundance, and the playful breeze was in fact nothing more than the effect of thermal currents which, due to the surround of mountains, appeared to be moving in a circular direction rather like the swirl of water in a bowl. This peculiarity of local weather did produce vicious downcurrents, particularly in the later stages of the contest, and it is interesting to read John Fricker's comments on the same subject in the "Aeroplane", where he describes the parachute contests held the week previous.

Towards the end of this round the breeze steadied and freshened into a wind and as we went to lunch a haze was beginning to form on the mountains.



Left, Pete Holland lights up whilst Bob Gosling prepares to launch Ray Monk's model on its second five minute flight. Below, are the Yugoslav boys, from left to right, Petkovski, Bernfest, Juresa (Team Manager), Gunic and Breznikar.

POSITION AT END OF FIRST ROUND

	Competitor	Country	1st Round
1.	Oskar Czepa	Austria	300
	Arne Hansen	Denmark	300
	Borge Hansen	Denmark	300
	W. T. Bailey	Great Britain	300
	R. C. Monks	Great Britain	300
	A. A. Teunissen	Holland	300
	Borislav Gunjic	Jugoslavia	300
	Radoslav Breznikar	Jugoslavia	300
	Ljube Petkovski	Jugoslavia	300
	L. Bausch	Holland	300
	Kurt Sandberg	Sweden	300
	Karl Barth	W. Germany	300
2.	M. R. Thomas	Great Britain	293
3.	Rolf Wallenius	Finland	291
4.	K. Bettenmann	Switzerland	268
5.	Hugo Leppert	W. Germany	285
6.	Rune Andersson	Sweden	252
7.	Teuro Santala	Finland	233
8.	Kai Hansen	Denmark	232
9.	Pierres Serres	France	227
10.	Andre Avonts	Belgium	190
11.	Leopold Tlapak	Austria	179
12.	Stjepan Bernfest	Jugoslavia	178
13.	Jan Maes	Belgium	146
14.	Gustav Samann	W. Germany	144
15.	Helge Spring	Finland	143
16.	R. Berney	Switzerland	135
17.	Henry Skelund	Denmark	125
18.	Alois Huybrechts	Belgium	112
19.	Wilhelm Kahr	Austria	108
20.	W. P. Holland	Great Britain	102
21.	Adolf Meixmer	Austria	98
22.	Jean Gallenne	France	90
23.	Hermann Seissler	W. Germany	88
24.	Jacques Morisset	France	86
25.	W. Schramme	Switzerland	83
26.	Ragnar Odenman	Sweden	61
27.	P. S. Koorn	Holland	59
28.	J. W. Hekking	Holland	54
29.	Claude Goetz	France	51
30.	A. Degen	Switzerland	48
31.	Lucienne Ferber	Belgium	47

Round Two: 15.00 hrs. to 17.00 hrs.

On returning to the aerodrome, following not only food, but a swim in the warm waters of the lake, we found the mountains almost obscured by the haze and a strong wind blowing from a pass in the south-east, which was obviously going to affect times in the second round. It certainly cut down the number of maximums, for only three people achieved times of 5 minutes, these being Gallenne of France, Leppert of West Germany, and our own Ray Monks.

There is no doubt that Ray flew magnificently. His trim, launch, and cast-off being perfect on every occasion, and there was much elation amongst we Britishers when it was known that Ray was the only competitor with maximums in both the first and second rounds.

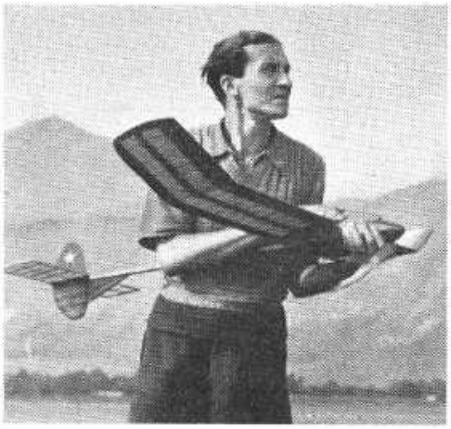
The rest of our team were not so fortunate. Bill Bailey's model spun straight into the ground after release for no visible reason, and sustained damage. He unfortunately flew at the end of the round and had not sufficient time to go and fetch his reserve model before the round ended, although a gallant try was made, with Bill arriving breathlessly at the take-off area as the bell went for closing time. Mike Thomas was unlucky in catching one of the many down-draughts which prevailed and in spite of an overhead launch sank rapidly for a meagre 1 minute 50 seconds. Pete Holland improved on his first round time with a stout effort of 3 minutes.

Up to now we had looked upon the Austrian models more as curiosities than serious A/2s, but when Czepa came very close to a maximum again on his second round flight, people were beginning to realize that these unusual stick models were blessed with more than usual performance.

The writer was out in the launching area with the Swedish team, some of whom were using steel lines as they did at Trollhattan the previous year. It was interesting to observe these experts in action. They make a point of " waiting for thermals " with the line out and model at the ready. Just how they determine with any degree of accuracy that a thermal has arrived is a moot point. Presumably by the " feel " of the wind, observation of other gliders in the vicinity, etc., etc. It is, however, interesting to note that both Kurt Sandberg and Rune Andersson, in spite of the strong wind, made flights of over 4 minutes by this method. They were watched, incidentally, by the Swedish Ambassador to Yugoslavia, who was greatly interested in his countrymen's efforts, having travelled out to the aerodrome especially to see them.

Most of the Scandinavians at this contest were old acquaintances met in previous years, both the Swedes and the Finns flying models that were familiar to us. The Finns still use their high aspect ratio wings and almost 100 per cent. hardwood construction. The Danish team of four members contained no less than three Hansens, who thoughtfully used different Christian names to the joy of those who recorded the results. The Danish models all had their fins positioned in front of the tailplane and generally used models with very short moment arms and of fairly high aspect ratio. The only exception was Arne Hansen who, subsequently placed third, with a very clean design of normal proportions, similar to his AH-24 as described in last year's "Aeromodeller Annual".

We were interested to see both the German and Austrian teams in action, as this was of course the first International contest in which they have participated since the war. The German models, unlike those of the Austrians, were all of orthodox design, and we noticed in particular the beautiful construction of Leppert's

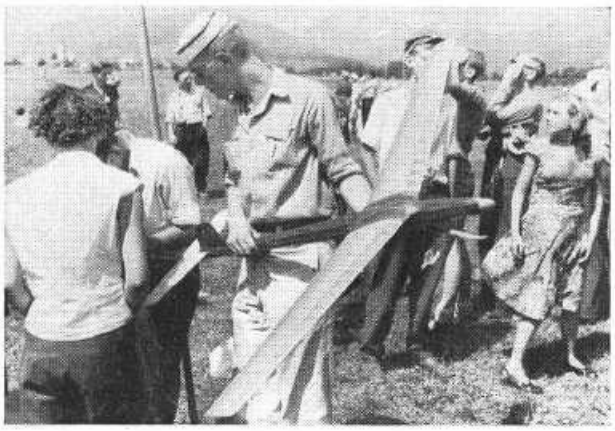


Left, Vladimir Prachic of Yugoslavia holds firmly to Radoslav Breznikar's model in the wind of the second round. Below in the traditional headgear of a Dutch student P.C.Koorne checks in with the time-keepers holding A. A. Teunissen's beautifully constructed glider. Note the transparent leading edge which is Celluloid covered to give a perfect and shrink proof contour.

model, who, to judge by his performance at this meeting, will be heard more of in the future. Besides the flying sticks flown by Czepa and Tlapak, other Austrians were flying gliders which we felt should have been christened "the flying boots" by virtue of their peculiar fuselage shape.

As we drew near to conclusion of the second round the strong wind died down, but the ground haze persisted and by the beginning of the third and vital round the aerodrome was practically becalmed.

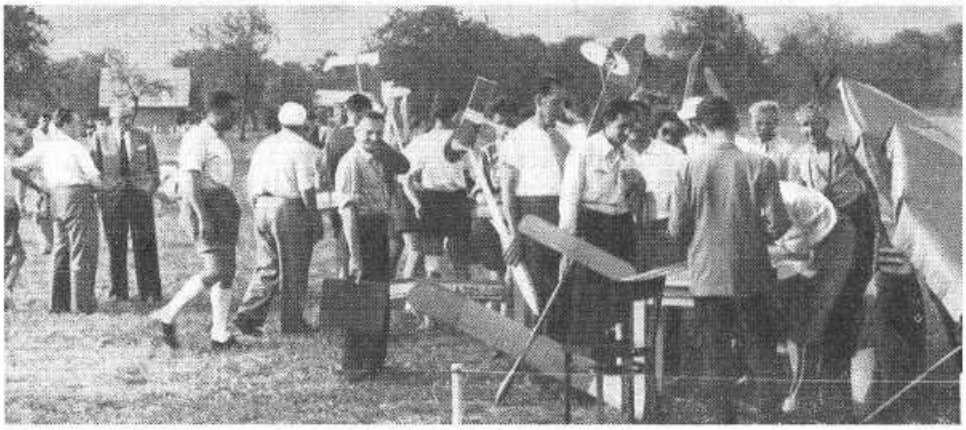
Right, the Swiss boys discuss the merits of moving adjustable towhooks forward to allow for the strong wind.



Bottom of the column, from left to right are the Danes:—Kai Hansen, Henri Ekelund, Borge Hansen and Arne Hansen. Centre left, Jaques Morisset launches for Jean Gallene of France. Centre right, Bill Bailey makes comfortable adjustments whilst Pete Holland takes life easier still.

POSITION AT END OF SECOND ROUND

	Competitor	Country	Round 1 points	Round 2 points	Total of points
1.	R. C. Monks	Great Britain	300	300	600
2.	Oskar Czepa	Austria	300	271	571
3.	Ljube Petkovski	Jugoslavia	300	279	579
4.	Hugo Leppert	W. Germany	265	300	565
5.	Kurt Sandberg	Sweden	300	256	556
6.	Arne Hansen	Denmark	300	245	545
7.	Rune Anderson	Sweden	252	253	505
8.	Andre Avonts	Belgium	190	286	476
9.	Borislav Gunjic	Jugoslavia	300	130	430
10.	Radoslav Breznikar	Jugoslavia	300	128	428
11.	Pierres Serres	France	227	198	425
12.	L. Bausch	Holland	300	115	415
13.	M. R. Thomas	Great Britain	293	110	403
14.	A. A. Teunissen	Holland	300	103	403
15.	Borge Hansen	Denmark	300	101	401
16.	Jean Galenne	France	90	300	390
17.	Jean Maes	Belgium	146	241	387
18.	K. Bettenmann	Switzerland	268	111	379
19.	Rolf Wallenius	Finland	291	70	361
20.	Stjepan Bernfest	Jugoslavia	178	180	358
21.	Helge Spring	Finland	143	201	344
22.	Kai Hansen	Denmark	232	110	342
23.	Teuro Santala	Finland	234	105	339
24.	W. Bailey	Great Britain	300	0	300
	Karl Barth	W. Germany	300	0	300
25.	Lucienne Ferber	Belgium	47	243	290
26.	J. F. W. Hekking	Holland	54	233	287
27.	Leopold Tlapak	Austria	179	108	287
28.	W. P. Holland	Great Britain	102	180	282
29.	Gustav Samann	W. Germany	144	112	257
30.	Ragnar Odenman	Sweden	61	185	246
	J. Morisset	France	86	160	246
31.	W. Schramme	Switzerland	83	161	244
32.	Wilhelm Kuhr	Austria	108	127	235
33.	P. C. Koorn	Holland	59	141	200
34.	Alois Huybrechts	Belgium	112	70	182
35.	Hermann Seissler	W. Germany	88	86	174
36.	R. Berney	Switzerland	135	38	173
37.	Adolf Meixner	Austria	98	74	172
38.	A. Degen	Switzerland	48	177	165
39.	Henri Ekelund	Denmark	125	23	148
40.	Claude Goetz	France	51	57	108



There was a rush to join this queue for model checking at the commencement of the third and final round as it was getting late and conditions were deteriorating. The German team are at the table, and grinning at our camera in the centre foreground is Maurice Ferber of Belgium.
Below, Ragnar Odenman of Sweden launching Rune Andersson's glider, makes an impressive picture against the grandeur of Yugoslav mountains in the background.

Round Three, 17.00 to 19.00

There was no doubt that the Yugoslav Clerk of the Weather was determined to provide different conditions for each of the three rounds, and his versatility did much to make this a most interesting contest. We had no wind and an abundance of thermals in round one; strong wind, with much use of forward towhooks, and scarce thermals in round two; and now in round three almost dead air conditions with a prevalence of down-

draughts, the presence of which we cannot explain in view of the almost complete absence of thermals. If there were any thermals they were very weak and only present during the early part of the round. In addition, the direction of drift took the models over a Slovene village which, enshrouded in haze, made the latter part of the flights difficult to see.

To add zest to this third and final round it was obvious that the contest was still anybody's money, for the top six men at the end of round two were all very close as far as scoring was concerned.

British hopes of course ran high for Ray Monks with his two maximums, and the suspense was terrific as Bob Gosling, British Team Manager, released the model on its final flight. We must hand it to Ray for his cool performance. He towed the model up perfectly on its nylon line, and made a copybook overhead cast-off of such perfection that the only indication that the model was free was the falling pennant. However, a British victory was not to be, and our hopes sank almost as rapidly as the model which, perfectly trimmed, descended in a succession of downdraughts for a time of only 2 minutes 34 seconds. Ray's disappointment must have been acute, for to have almost certain victory snatched from your grasp at the last minute is very hard. It is ironical that exactly the same situation occurred in 1950 to young Bennett at Trollhattan and it only goes to prove that old maxim that a contest is never won until it is finished!

Now interest centred on the rest of the leading men, particularly Czepa of Austria who prepared to fly directly after Monks.

Looking rather like a queer insect on the line his model was soon nicely away and, with its peculiar floating flight characteristic, was in our estimation well set for three to four minutes. That it managed a comfortable maximum only proves how much we misjudged its phenomenally low rate of sink!

This magnificent flight put Czepa well in the lead with one man only capable of beating him, Petkovski of Yugoslavia, who made a gallant try but fell some 72 seconds short.

So before the final flights in the round had been run off we were congratulating the fair-haired, soft-voiced Austrian, Oskar Czepa, who on the occasion of his country's first entry into International post-war aeromodelling achieved well deserved success.

One of the Hansen " brothers " from Denmark, Arne to be exact, managed to keep out of the downdraughts with an excellent flight of 4 minutes 12 seconds, thus setting the unfortunate Monks back to fourth place, followed by Pierre Serres of France, Andre Avonts of Belgium, Hugo Leppert of West Germany and Rune Anderssen of Sweden. Thus we had eight different nations represented in the first eight places, a highly satisfactory state of affairs.

A reception was given that evening by Colonel Mihailo Velimirovic, Secretary General of the Yugoslav Aero Club, who welcomed each contestant individually and provided copious quantities of wines and other more potent brews common to Yugoslavia which appeared to have somewhat drastic effects on at least one of those people more used to innocuous English beer !

The following day, Saturday, was a period of rest before the F.A.I. Power Contest for the Aeronautical Union of Yugoslavia Cup on the Sunday. Our indefatigable hosts had therefore organized a coach trip to Postojna where we saw the amazing grottos which stretch some 12½ miles under the mountains. One travels most of the way by train and to describe this fantastic underworld would need the pen of a Dante ; in fact, his " Inferno " minus the heat is probably the most apt description one could give. One enormous cavern with a roof some 200 metres high would have made an ideal place for indoor flying had not the temperature been a constant 45°F. !

The contest for the Aeronautical Union of Yugoslavia Cup will be described in our next issue, as space does not permit this month. Sufficient to say that it was won by well-known Jaques Morisset of France, following a close tussle with Emil Fresle of Yugoslavia. It took place on the Sunday and that evening there followed a general prize-giving dinner which was held at the Hotel Jezero on the shores of Lake Bled, presided over by Major-General of Aviation L. Ambrozic, President of the Aeronautical Union of Yugoslavia, who, through interpreter Matovic, welcomed all the teams and congratulated the winners. Beside plaques for each team member and the trophies themselves, magnificent prizes were given to the top-place men.

It was left to Arnold Degen of Switzerland to thank our Yugoslavian hosts on behalf of all the visiting teams and then followed a party that continued well into the early hours.

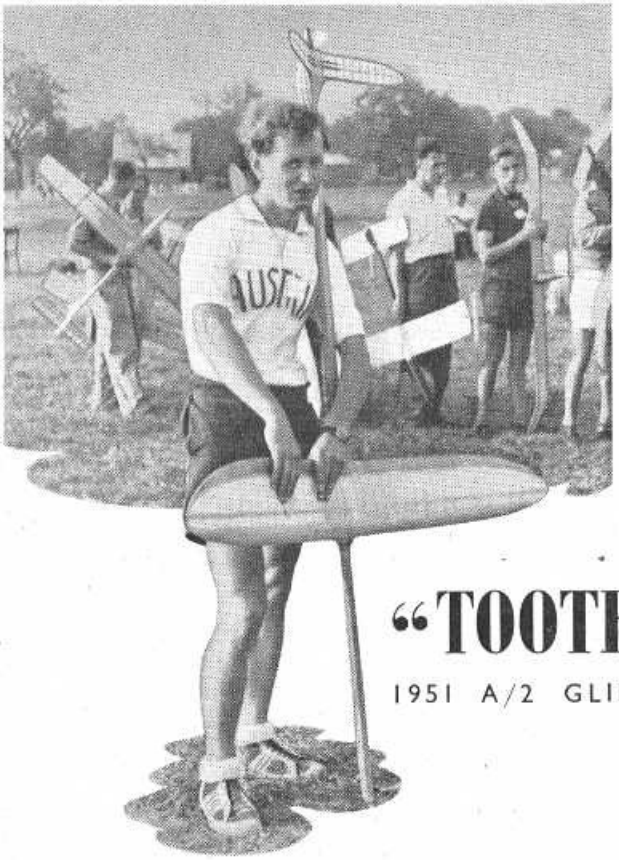
So finished an outstanding contest that will long be remembered by those of us who attended. A few fortunates who were not going home the following day spent most of it either in or on the warm waters of Lake Bled which seemed on that occasion to house most of the members of the Yugoslav Aero Club.

As we ourselves engaged in a log rolling contest with Dragan Hristic and later skimmed gracefully along in a sailing sharpie with George Zigic, we reflected that more efficient and kindlier hosts could not be found. We can but say, " Thank you, Yugoslavia ! "

FINAL RESULTS

Competitor	Country	Round 1 points	Round 2 points	Round 3 points	Total of points
1. Oskar Czepa	Austria	300	271	300	871
2. Ljube Petkovski	Jugoslavia	300	279	221	800
3. Arne Hansen	Denmark	300	245	252	797
4. R. C. Monks	Great Britain	300	300	154	754
5. Pierre Serres	France	227	198	300	725
6. Andre Avonts	Belgium	190	286	222	698
7. Hugo Leppert	W. Germany	265	300	132	697
8. Rune Andersson	Sweden	252	253	150	655
9. Kai Hansen	Denmark	232	110	300	642
10. L. Bausch	Holland	300	115	222	637
11. A. A. Teunissen	Holland	300	103	232	635
12. Borge Hansen	Denmark	300	101	232	635
13. Radoslav Breznikar	Jugoslavia	300	128	203	631
14. H. R. Thomas	Great Britain	293	110	215	618
15. Jean Maes	Belgium	146	241	228	615
16. Kurt Sandberg	Sweden	300	256	40	596
17. Borislav Gunjic	Jugoslavia	300	130	150	580
18. K. Bettenmann	Switzerland	268	111	177	556
19. Stjepan Bernfest	Jugoslavia	178	180	183	541
20. Jean Galenne	France	90	300	138	528
21. Helge Spring	Finland	143	201	183	527
22. W. Schramme	Switzerland	83	161	234	478
23. J. W. Hekking	Holland	54	233	185	472
24. Teuro Santala	Finland	234	105	118	457
25. Ragner Odenman	Sweden	61	185	188	434
26. Jacques Morisset	France	86	160	170	416
27. Wallenius Rolf	Finland	291	70	52	413
28. W. T. Bailey	Great Britain	300	—	108	408
29. W. P. Holland	Great Britain	102	180	120	402
30. Hermann Seissler	W. Germany	88	86	228	402
31. P. C. Koorn	Holland	59	141	192	392
32. Leopold Tlapak	Austria	179	108	98	385
33. Gustav Samann	W. Germany	144	112	118	374
34. Lucienne Ferber	Belgium	47	243	80	370
35. Wilhelm Kuhr	Austria	108	127	132	367
36. Kurt Barth	W. Germany	300	—	—	300
38. Alois Huybrechts	Belgium	112	70	116	296
39. A. Degen	Switzerland	48	117	109	274
40. Henry Ekelund	Denmark	125	23	125	273
41. R. Berney	Switzerland	135	38	29	202
42. Claude Goetz	France	51	57	78	186

Top: Stjepan Bernfest, last year's winner has a conflab with Schramme of Switzerland, not over an A/2 as it happens but over the latters Elfin 2·49 F.A.I. power job. Note the Swiss boy's neat tool kit which even includes stowage for his glider winch. Left, Ljube Petkovski' who placed second demonstrates the unusual contours of his successful A/2



"TOOTHPICK"

1951 A/2 GLIDER WINNER

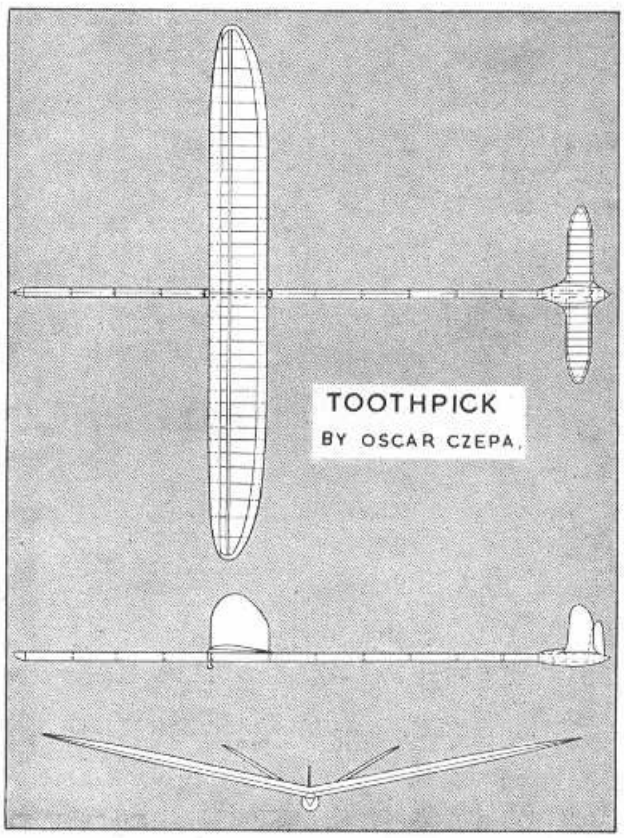
AUSTRIA'S entry into post-war contest aeromodelling brought many surprises. The arrival of the team itself was, to say the least, spectacular. With large banners emblazoned on their vehicles and special blue aeromodelling " track suits " bearing the Austrian Eagle on their breasts, they raised many eyebrows at Lesce Bled. But all of this was little when compared with the stir that their models aroused. Here indeed was a unique collection of designs, the like of which we have not seen before. And then, to cap all, the most unusual model amongst them carried off the aeromodelling world's most coveted glider trophy.

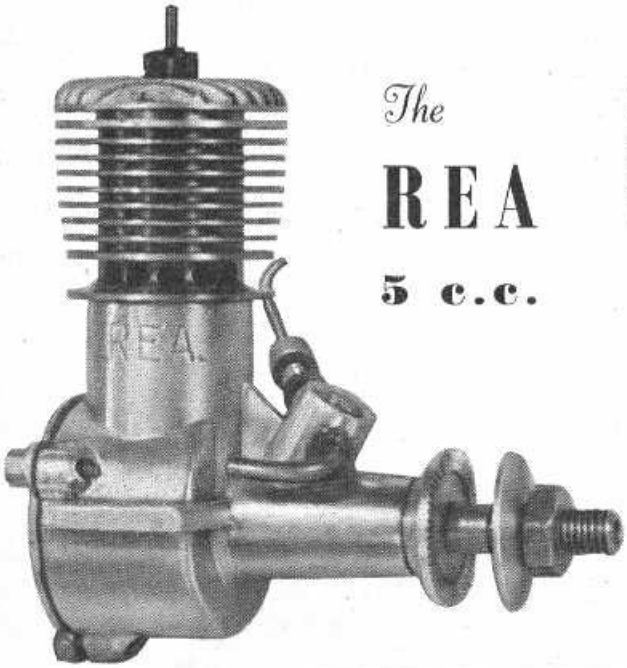
Oskar Czepa, the man behind the model, is a typical soft-spoken and unassuming Austrian who, together with a handful of enthusiasts from Vienna, forms the nucleus of their national aeromodelling club. Like many Viennese he was born in Czechoslovakia, and quite naturally is a musician as well as an aeromodeller. His instrument is the guitar, and after the war he played professionally in a band for the American forces in the Austrian zone, which probably accounts for his fondness of Bebop ! By profession he is a paper maker at the large firm of Samun Vienna, and possibly as a result of being in the print trade, coupled with his enthusiasm for aeromodelling, was tempted to start a post-war aeromodelling magazine. This flopped through lack of purchasing enthusiasts, and the unfortunate Oskar is still paying for the first issue !

" Toothpick " was not so christened until the night following the contest, when Mike Thomas, filled with creative enthusiasm and also Slivovka (Yugoslav plum brandy) made a miniature replica from a toothpick. The presentation of this to Czepa promptly gave inspiration for the very apt name.

The fuselage, some 2 metres long, is triangular in section and made up of ·06 mm. ply over ¼ in. balsa formers spaced at 15 cm. intervals. The tow-hook is merely a dural strap clamped by a bolt at the apex of the triangulated fuselage and is positioned directly under the leading edge of the wing. The cross sectional area lies in the removable balsa tail pod, which is circular in section, and actually plugs over the rear of the fuselage. Owing to the extremely long moment arm and the dihedral tailplane, a very small fin is used. Wing span is 1·8 metres and the construction quite unique. Ribs are from ·08 mm. ply with ·06 mm. × 10 mm. ply spars inset top and bottom in a horizontal position to form an " I " section. The leading edge is sheet balsa covered and the trailing edge is a " sandwich " of ½ in. balsa (between ribs) and ·08 mm. ply. The latter forms the top surface of the trailing edge, being glued over the balsa.

The tailplane is set at 0 degrees and the wing at 3½ degrees, with the tips washed-out, flying at 0 degrees. Wash-out starts at the point where the ellipse commences and the air-foil section changes progressively from the same point so that the final tip section is symmetrical. The designer uses an undercambered air-foil section of his own, but the tailplane section is 9 per cent. Clark Y. The C.G. position lies 40 per cent. back from the leading edge of the wing and the total all-up weight of the model is 14½ ounces.





The REA 5 c.c.

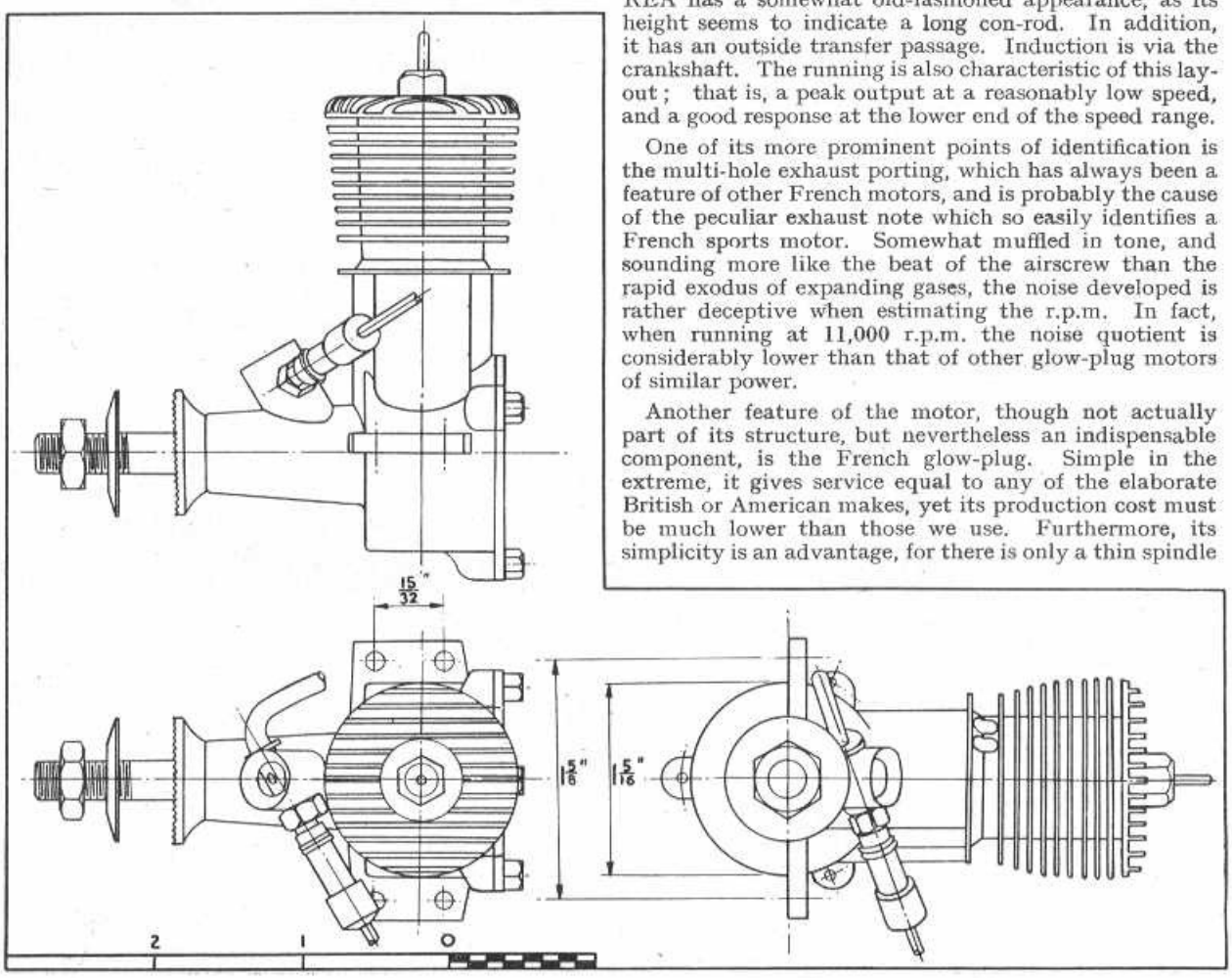
WE have recently been able to give tests of engines other than those of British manufacture, and readers will remember those of American, Italian and Australian make. I trust that our Australian friends will forgive me for classing them as non-British, but I expect they will understand what I mean! This month, a French engine has come to hand, which gives us an opportunity of seeing the kind of power plant that French aeromodellers may be using.

The engine has quite a neat and pleasing appearance, with a crankcase cleanly diecast, machined steel cylinder, and a nicely machined aluminium head.

In view of the modern tendency towards squat, short stroke engines with internal transfer passages, the REA has a somewhat old-fashioned appearance, as its height seems to indicate a long con-rod. In addition, it has an outside transfer passage. Induction is via the crankshaft. The running is also characteristic of this lay-out; that is, a peak output at a reasonably low speed, and a good response at the lower end of the speed range.

One of its more prominent points of identification is the multi-hole exhaust porting, which has always been a feature of other French motors, and is probably the cause of the peculiar exhaust note which so easily identifies a French sports motor. Somewhat muffled in tone, and sounding more like the beat of the airscrew than the rapid exodus of expanding gases, the noise developed is rather deceptive when estimating the r.p.m. In fact, when running at 11,000 r.p.m. the noise quotient is considerably lower than that of other glow-plug motors of similar power.

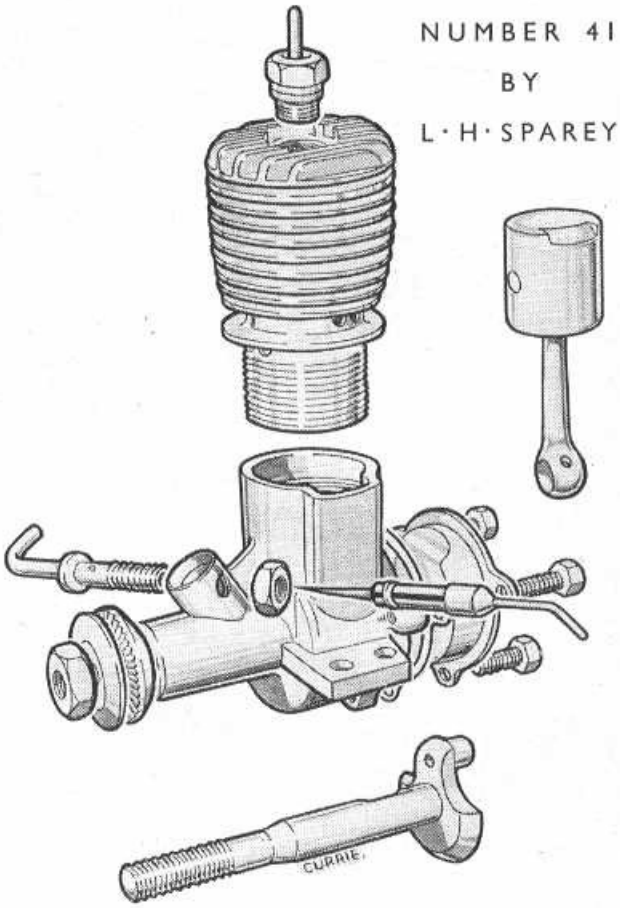
Another feature of the motor, though not actually part of its structure, but nevertheless an indispensable component, is the French glow-plug. Simple in the extreme, it gives service equal to any of the elaborate British or American makes, yet its production cost must be much lower than those we use. Furthermore, its simplicity is an advantage, for there is only a thin spindle



NUMBER 41

BY

L·H·SPAREY



to project through the model cowling to make the boosting connection.

The carburation of this engine did not seem to be too happy, as a considerable amount of fuel was ejected from the air-intake while running. It was found after the tests that a considerable amount of wear had taken place in the main bearing, and it was possible to rock the crankshaft a considerable amount. This would cause loss of crankcase compression, and allow blowback into the carburetter.

TEST

Engine : REA, 5 c.c. Glowplug. **Fuel :** Mercury No. 5.

Starting : Fairly good, but seemed to become more difficult as the test proceeded, due, probably, to the increasing crankcase leakage.

Running : This engine ran well and steadily over the whole tested range, even at speeds as low as 3,000 r.p.m. Needle adjustment was not unduly critical at any speed.

B.H.P. : Starting at about 3,000 r.p.m. the readings showed a b.h.p. of ·110, which increased steadily to a maximum of ·360 b.h.p. at 10,900 r.p.m. Beyond this speed the output dropped quickly, and at 12,300 was down to ·150 b.h.p.

Checked Weight : 5·8 ozs. (less tank).

Power/Weight Ratio : 1·01 b.h.p./lb.

Remarks : Owing to its remarkably low weight, the power/weight ratio of this engine is particularly good, in spite of the fact that its peak output is lower than that of many modern engines of this capacity. There is little doubt that the figures obtained were lower than might be expected had the crankcase leakage not been in evidence.

GENERAL CONSTRUCTION DATA

Name : REA 5 c.c.

Manufacturers : REA Motors, France.

Available from : La Source des Inventions, 56, Boulevard de Strasbourg, Paris (X^{e}).

Retail Price : 4, 395 French Francs (£4. 8s. 0d. approx.).

Delivery : Immediate.

Spares : Ex-stock.

Type : Glowplug.

Specified Fuel : 75% Methanol. 25% Castor Oil.

Capacity : ·479 c.c., ·292 cu. ins.

Bore : 19 m/m. : ·748 ins.

Stroke : 17 m/m. : ·667 ins.

Advertised Weight : 170 grammes : 6 ounces.

Compression Ratio : 8·5 : 1.

Mounting : Beam or radial.

Recommended Airscrews : 23 cm. ×25 cm. pitch (9 in. ×9¾ in. pitch).

Cylinder Head : Aluminium, shrunk on.

Cylinder : Steel ; screwed into crankcase.

Crankcase : Die-cast alloy.

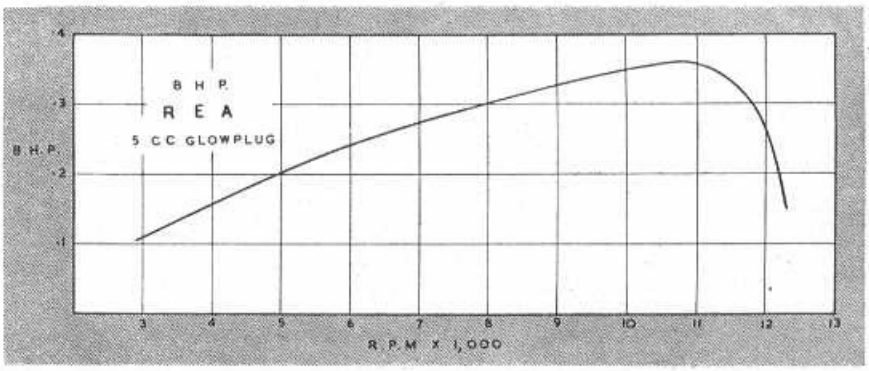
Piston : Cast iron, lapped and individually fitted.

Connecting Rod : Machined duralumin.

Crankshaft : Steel.

Induction : Rotary crankshaft valve.

Special Features : Inclined needle valve mounting. Light weight. Easy starting.



Readers' Letters

British Diesels Abroad

DEAR SIR,

Of possible interest to your readers is the rather difficult time British diesels are having in America. I hope that reasonable travel in my home province of Ontario, my recent moving to Montreal, and my several trips to the U.S.A. (I just returned from seeing part of the A.M.A. Nationals) will qualify me to speak upon the subject.

Diesels burst upon us in the form of the 5 c.c., long stroke, fixed compression "Drone," and the 1·5 c.c., fixed compression "Mite". Frankly, they soon killed off all desire by most modellers to buy anything other than glow-plug, which appeared shortly after the diesels. Admittedly, the expert, with the proper fuel and complete knowledge of his motor and diesel operation, could achieve most excellent results. However, it was all too common to see the former user of ignition, or perhaps of glow-plug, sitting with a popping diesel for hour after hour. I was one of them, although I had the advantages of variable compression with my "Arden" conversion, and followed instructions quite faithfully. The trouble lay, of course, in our complete lack of knowledge regarding diesel fuels and diesel operation, although a large factor was the undeveloped state of the engines themselves.

Glow-plug, with its easy starting, extremely high revs, light and typically "square" engine, swept into power, despite the problem of fuel proofing. Fuel became very inexpensive in the U.S., although we in Canada pay up to twice the U.S. price.

Now, modern British diesels and glow engines have made entry into Eastern Canada. These are principally the "Elfin" 1·5, 2·5, a cut-down version of the "Amco" 3·5, and the "Frog" 500. They sell at competitive prices with the Yankee motors, and the "Frog", in particular, has made a good number of sales, at least around Toronto. The diesels, unfortunately, have not met with the same response. This is in main the result of past memories, poor fuels (usually ether and oil, there being no commercial brands), realization that they would require the acquisition of a new technique, and, most important of all, the fact that most modellers have NEVER seen a truly modern diesel run at near peak performance. Instead, they have seen the poor bod sitting and flipping and cursing. Indeed, it required the discovery that, for the above-mentioned engines, a fuel of ether, oil, and truck diesel fuel oil provided easy starting and high power to convince my close friends and myself that these motors really had something. Few have been as fortunate as we were.

It is to be hoped that these English products will eventually meet widespread acceptance here and in the States, but this will not occur unless those who *can* run a diesel consistently show them off to the best advantage; those who have them and cannot, will bench test until they are proficient; and knowledge regarding fuel is made more widespread. It might be well for the manufacturer to study the effect of a different climate upon their motor. Even so the hopes of my friends and of myself are that we shall see the eventual rise of these fine power plants to their rightful place in the American modelling world.

Montreal, Canada. C. D. WILSON.

We feel that reader Wilson is perhaps a little pessimistic of American reaction to the modern British diesel as our own findings have been if anything the reverse. It is our pleasure to correspond with many American modellers, who are all unstinting in their praise of these engines.

The average modern diesel of 3·5 c.cs. and under at least equals, and in most cases exceeds in performance its gloplug counterpart, providing it is operated correctly. We have yet to find a manufacturer who does not specify the correct fuels for his particular product, and it is hard to believe that the American modeller throws away instruction leaflets supplied with an engine.

It is significant that nearly all the leading continental power fliers we met at this season's International events were using British high performance diesels. We imagine for the following reasons:—high power output; easy starting; cleanliness, i.e., no special fuel proofing and no "gummy" models; and, above all, the robust yet high standard of engineering which, coupled with correct selection of materials, gives them a long running life. [*Ed.*]

"I use 1/32" says Ron Warring!

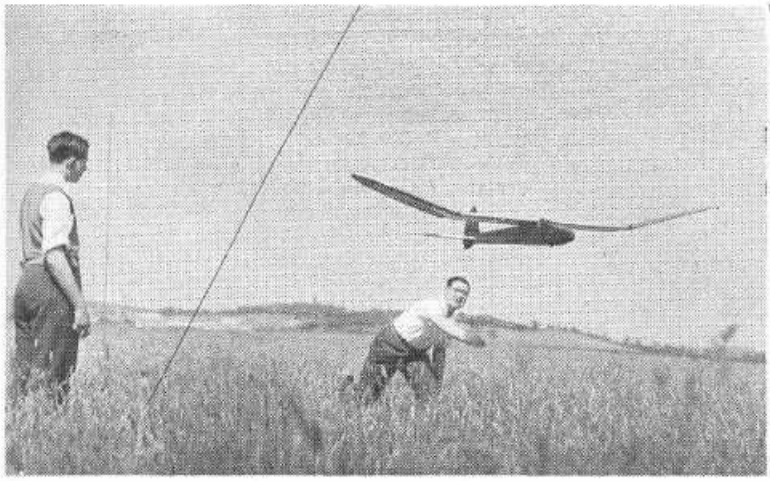
I must plead ignorance of "my latest classic", discovered by Mr. Lonergan. A piece of *paper* packing under the tailplane can definitely make a marked difference to the dead air performance of a Wakefield. If I said (or wrote) *tissue* paper, I cannot recall it—but I *can* recall two very prominent British Wakefield fliers who *have* said that they can upset trim with tissue packing.

Myself I never claim that accuracy of workmanship. I prefer to enjoy trimming with "thick or thin 1/32" — or paper strips torn off a cigarette packet. Some of the best fliers use tram or bus tickets. Better model builders than I *have* used micrometer-type adjustment for tailplane setting.

I doubt, incidentally, that "tissue tension" under different weather conditions unduly affects incidence with normal tailplane construction. After ageing, most structures take up a permanent set and seem to hold about the same *incidence*, irrespective of whether the tissue is taut or slack. What I do now consider to be the most probable cause of change of trim is C.G. shift of an unwinding motor—which is the cue for Mr. Lonergan to step in again . . . ?

I am *almost* of the opinion that it is impossible "grossly to exaggerate the difficulties involved in trimming Wakefields". They are just about that pernickity if you are after absolute top performance. I never have the time—or find the weather—to get my own Wakefields trimmed as well as I would like them—down to the "thick and thin 1/64" stage!

Forgive me, Mr. Lonergan, if I have given a "false impression of the difficulties associated with Wakefield flying". I imagine we both enjoy our separate ways of trimming these easy/difficult (Australian/British) models. If we agree to differ, that only adds more spice to the game. RON WARRING.



RADIO CONTROL NOTES

BY HOWARD BOYS

Left: Cyril Mayes test glides his 100 in. R/C glider past the Tx. With 960 sq. in. wing area, weight is 4 lbs. and best flight so far, 8 mins. 30 secs.

LAST May, two receivers designed by Mr. Bolton of Nottingham were described in these Notes and they seem to have aroused more interest than any others. Mr. Bolton now sends a further interesting contribution.

He writes :—

" I've been trying to devise a system for use with the simple magnetic or single position rudevator type actuators, so as to give proportional engine control worked by the frequency of the pulse.

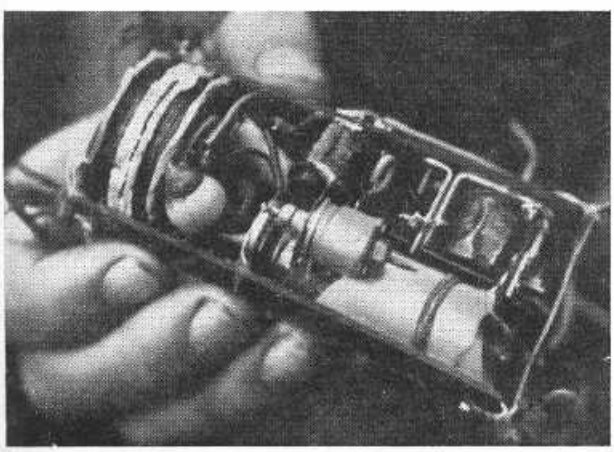
A fellow club member, Geoff Pike, has already installed in a model a system to perform this, but the model has not yet flown ; ground tests however have been very satisfactory. The rudder is connected directly to a choke, so that the engine is choked at full rudder either way. The mechanism employed to turn the rudder is of his own invention, and the rudder does not respond instantaneously to the pulse, but moves over slowly, so that at medium pulse rates the rudder is never fully over, at slow pulse rates the rudder moves right over and intermittently chokes the engine.

This system has the great advantage of being virtually foolproof ; if the radio fails, the engine slows down and eventually stops and the model glides down in tight circles.

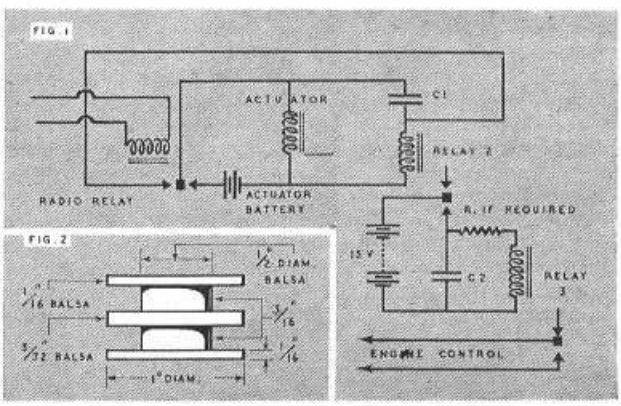
The chief disadvantage would seem to be that a rather complex arrangement is required to work the rudder. A very high pulse rate would be required if a magnetic actuator was used and this would quite probably play havoc with the relay contacts.

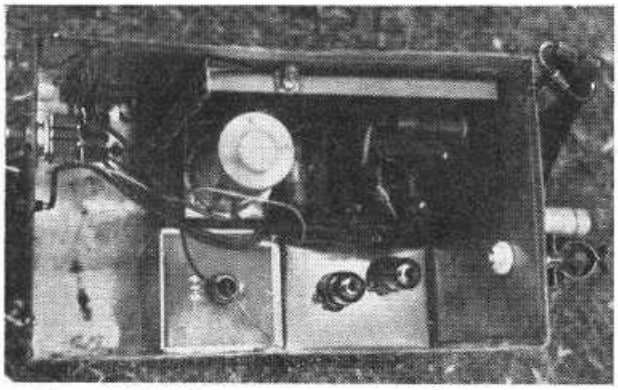
I have worked out a circuit whereby the engine can be slowed down or stopped at slow pulse rates, quite independently of the actuator, any type which gives rudder one way with signal on and opposite rudder with signal off, can be used. The circuit is given in Fig. 1. When a pulse comes in, the radio relay opens, thus working the rudder and also charging condenser C1. The charging current closes relay 2 for perhaps ¼ second. This is sufficient to allow C2 to become charged, and this condenser then discharges slowly through relay 3, closing it for, say, 2 seconds. At the termination of the pulse, the radio relay closes, thus discharging C1 for the next pulse. If the pulses occur at a greater rate than one every 2 seconds, relay 3 remains closed, only opening intermittently when the pulse rate drops below this or ceases. The opening of the third relay can be used to choke the engine, break the ignition circuit, etc.

I have not tested this system in a model, but it works quite well on the bench. The chief difficulty is that special relays are required. Relay 2 must be capable of closing fairly strongly on the actuator battery, and should therefore be of fairly low resistance. Relay 3 should be fairly sensitive and capable of pulling in at as low a current as possible. It should in any case have a high



Left: Mr. Bolton's No. 1 receiver, built into a paxolin tube of the same diameter as the quench coils.





Left: Transmitter made by Mr. Bolton and J. Weston, using two 3A4 valves cross connected and type 21 vibrator pack.

resistance otherwise a series resistance will be required to give a reasonably long delay period. The capacities of the condensers depend upon the time delay required, but 50 mfd for C1 and 100 mfd for C2 could be tried to start with.

Now to turn to receivers. I've been experimenting with smaller squegging coils on my No. 1 receiver with considerable success. The former is as shown in Fig. 2. Each side of the coil consists of 720 turns of 38 swg wire, and the quench tuning condenser should be increased from ·002 mfd to ·003 mfd. For optimum results the by-pass condenser also requires to be increased from ·005 mfd to ·01 mfd. The smaller coils give similar or, if anything, slightly better results than the larger coils. I hope shortly to experiment with even smaller coils using 40 swg wire, although some coils I wound a few months ago using 42 swg wire were not successful.

We had a most unusual experience at the club field the other day with an R/C model. It went out of range at about 200 yards and flew away. We were not sure of the exact location of the model, but came to the conclusion that it was either in a field of tall corn, or a miniature " jungle " adjoining it. In any case it seemed that it would be very difficult to find. Somebody had a brainwave, however, and the transmitter was rushed to the edge of the cornfield. On keying, a faint click was heard from the middle of the corn and the model was quickly found.

By the way, there is an error in the September ' Notes '. My friend's name is Jimmy Weston, not Walton. At present we are building a new job incorporating engine control and using an E.D. 2·46. (It was worth a damaged model at Walsall !) "

Regarding the scheme being used by Geoff Pike, the writer carried out a few tests two years ago using a magnetic actuator and a Cossor receiver. A high pulse rate was used so that the rudder could be moved over and held in position with very little noticeable vibration. For some of the tests the pulse, or control switch, was operated by an ordinary buzzer. If buzzer contacts will stand up to the job, why not relay contacts ? What was really surprising though was the way the Cossor relay, with its heavy armature, did the job. Not only did the contacts make and break about 50 times a second, but the ratio of make to break could be varied, so that satisfactory proportional control was obtained. Such operation is almost unbelievable. The lower pulse rate eventually used was dictated by the gear wheels available and the speed of the motor generator, to which they were fitted in the transmitter.

Another scheme the writer and a friend were discussing some time ago was the use of a transformer in the actuator circuit, or in a circuit operated from another relay contact. Pulses through the transformer primary would produce an A.C. flow in the secondary. At low pulse rates the A.C. would be practically non-existent, and would increase with increasing pulse rate. The idea was that one proportional control could be worked from the mark/space ratio, and another on the pulse rate. There are, of course, snags, but they might be overcome sufficiently to make the scheme workable. However, a scheme like Mr. Bolton's would appear to offer more chance of success.

The idea of operating more than one control from the simple single channel radio equipment is very attractive, but it leads to complications. There is the danger that these complications will become greater than a two or three channel system. The simplest on these lines appears to be the tuned reed system, described by G. Honnest-Redlich in his " Radio Control for Models ".

Readers will, no doubt, remember a letter in the August " Notes " from Mr. Stephenson who found a radio control receiver worked best as a personal type broadcast receiver. He has been getting very good results with Mr. Bolton's No. 2 circuit (Fig. 3) and here are extracts from his letters :—

" I liked the look of the two circuits published in the May AEROMODELLER and decided to have a ' basin full ', but as I wanted to make a fairly small receiver and I had two Hivac deaf aid valves, I plumped for circuit No. 2. I used the ordinary component values for the first valve and a 170 k pot. for V2, but although I could cut off the V2 I could get no signal response. I therefore disconnected V2 and endeavoured to concentrate on V1. After many inconclusive experiments I replaced the XFY23 with an XFG1 and it worked absolutely perfectly with slugged coil tuning, but was just slightly unstable with condenser tuning. The valves tried were XFY10 with 45 volts H.T. and XFY23 with 22½ volts H.T., XFG1 with 40 volts H.T. As both XFY10 and 23 are beam tetrodes similar to 3S4 it seems strange that they will not work.

One point I noticed was that it was very sensitive to hand capacity ; if the H.T. or L.T. battery was touched the current rose from ·5 ma. to 1·5 ma. and varying both aerial length and coupling seemed to have no effect whatever ; aerials tried varied from 30 inches to 6 feet."

" I continued experimenting and have at last got some very gratifying results. The first point is that so far I cannot uncouple the amplifying circuit or the receiver stops oscillating. I have been at work on two receivers, one employing XFY23 and XFY10 and the other a 3A5. Both are now working satisfactorily so perhaps my experiences may be of interest. I will generalize on the 3A5 version first as I think it more likely to be popular.

The first point I discovered is that the voltage on the detector has to exceed the voltage on the amplifier, or cut-off cannot be accomplished, at least not with a 1 megohm pot. Secondly, the optimum grid leak appears to be 3 megohms, any increase causing a decrease in sensitivity. I have tried all values up to 10 megohms. When the pot. is adjusted it will give just 3 ma. from ·4 ma. on 45 volts with a current change at the plate of the receiver of ·01 ma.

Now for the XFY10 and 23 job. It soon became obvious that the aerial coupling was very sensitive, but once this was found the results were much as for the 3A5. In detail, using XFY23 detector, XFY10 amp. current on det. on 30 v.h.t., ·4 ma. current at amp. on 22½ v.h.t., ·2 ma. rising to 1·3 and on 45 v. ·2 ma. rising to 1·7 ma. This would trigger when one could not measure the current change on the first valve, at least not on a 2 ma. meter. I imagine it to have been about ·005 to ·01 ma. Reversing the valves the results are even more astonishing. XFY10 detector 30 volts ·5 ma. XFY23 amplifier 22½ volts. ·2 ma. rising to 4 ma. You will notice current rose remarkably with this combination, only with my limited knowledge of valve characteristics I am rather dubious how much of this it will stand. The pot. in this instance is 170 k. miniature, the grid leak 3 megohms and relay Sigma 4F. The initial tuning system is a little ' corny ' but it got results. First, inductively couple Tx and Rx aerials by winding Rx two or three times round Tx. With 30 to 36 inches aerial, adjust the A/e trimmer to give about ·5 ma. standing current receiver, and amplifier to just cut off. This needs two meters, a 0 to 1 ma. and 0 to 5 ma. (altering the amplifier will alter the standing current), then tune in for maximum drop on V1 which should trigger V2. If not, re-adjust pot. by decreasing resistance.

Now separate Tx and Rx by about 6 feet and remove Tx aerial, return A/e trimmer until some sort of movement occurs on V1 meter, and then carefully adjust tuning condenser a fraction. Careful adjustment of pot. should now mean that you get a 3 ma. rise when the signal is almost unreadable on V1."

Mr. Stephenson sent along his receivers for photographing and included notes on tuning. He says :—

" First I will deal with the deaf aid valve version. I had a lot of difficulty with this at first but have now evolved a fairly foolproof system of initial tuning.

Connect approximately 4 feet of aerial wire to the receiver, and use receiver less D.C. amplifier ; in other words, connect up as a single valve receiver. Use XFY10 and 45 volts H.T. and allow aerial to hang about 3 or 4 inches from transmitter aerial or loosely couple both together. Now tune for current drop. It will probably be only about ·05 ma. at this stage, so go carefully and use a ma. meter with a large deflection, say, 0 to 1 or 0 to 2 ma.

The next step is to connect up the full circuit using XFY23 1st valve and XFY10 as amplifier, 22½ or 30 v. and 45 volts respectively. Uncouple the aerials and tune aerial trimmer, having first set the pot. at as low a reading as possible on second ma. meter, about ·2 to ·4 ma. If this is overdone and too much cut-off used, no amplification will result. With correct aerial tuning and pot. settings readings should be approx. :—

V1 sig. off ·4—·5 ma. V1 sig. on ·3—·35 ma.
V2 sig. off ·2—·4 ma. V2 sig. on 1·5 ma.

It is not wise to exceed 1·5 ma. as this would decrease the valve life and render any guarantee invalid.

3A5 receiver tuning is similar but much easier as the drop is quite considerable. About 18 inches of aerial is sufficient except at long range when increased aerial will improve reception. Readings as follows :—

V1 sig. off ·8 ma., sig. on ·3 ma.
V2 sig. off ·4 ma., sig. on 3·5 ma.

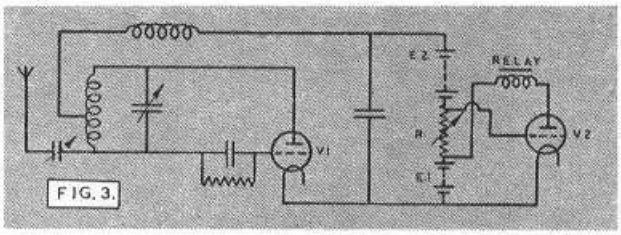
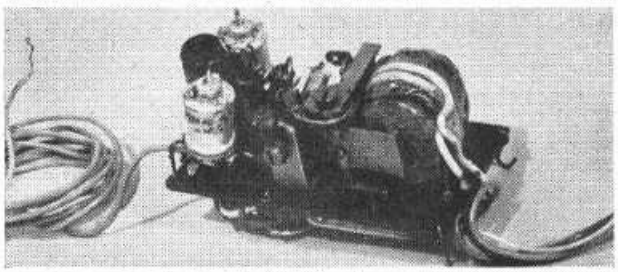
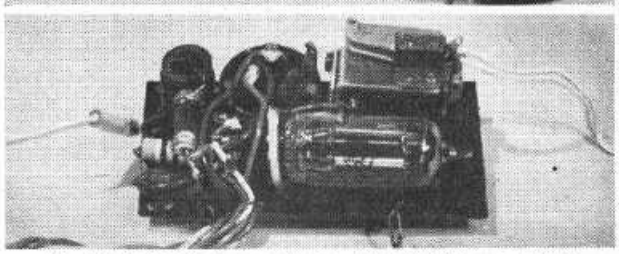


FIG. 3.





Mr. Stephenson's two receivers, the XFY23 and XFY10 version is above, and the 3A5 unit below.

In both receivers slight variation of the pot. compensated by aerial trimmer will eventually find the best setting for all round results.

The miniature receiver has a very low current drain and two or three hours spent setting it up correctly on the bench will be amply repaid, as mine has required no adjustment whatever other than slightly altering the pot. to compensate for voltage drop over two or three months use. Battery drain is really negligible.

	ma.		ma.		ma.
XFY10 Fil.	25	H.T. on sig.	1·5	H.T. off sig.	·2
XFY23 Fil.	20	H.T. on sig.	·3	H.T. off sig.	·4
Total ..	45		1·8	Idling ..	·6

One final item : have you seen Woolworth's bakelite soap cases—they make very good receiver cases, and only 9d. each, too."

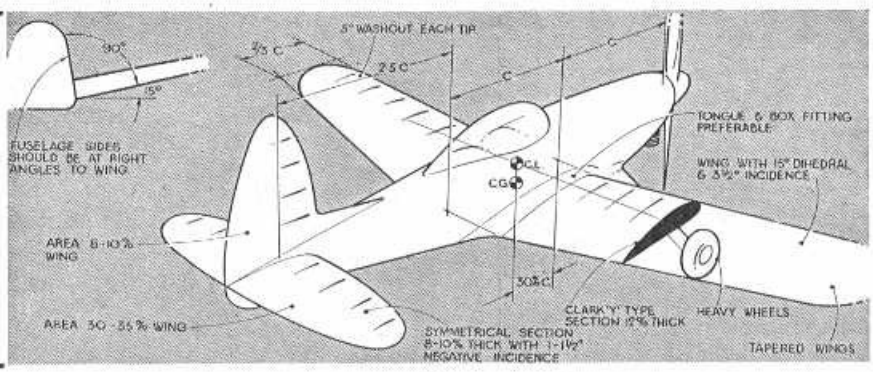
About the time these notes appear the competition season will have just about come to an end. The Editor has suggested that R/C enthusiasts should write in, giving details of the sort of competition they would like. Remember that there are two main types, the centralised, where every flight is judged by the same person, and perfection of manœuvres can be graded, and de-centralised, where the judges are all different. Don't ignore the fact that we do sometimes get suitable weather for an R/C competition. The writer made the mistake of submitting his own suggestions direct to the S.M.A.E. over a year ago and nothing has been heard of them since. They were also written up in these notes last winter, but lack of space prevented their publication. Anyway, let us see what other people have to say.

It's Designed for YOU!

NUMBER FIFTEEN

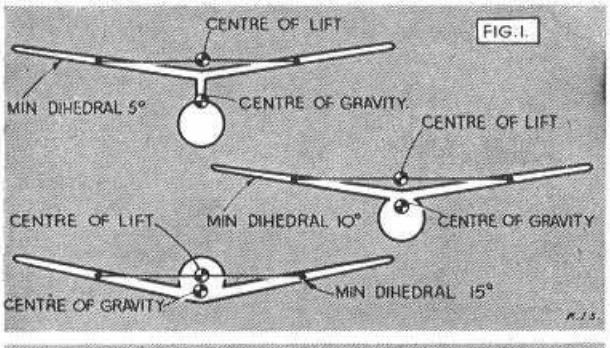
LOW-WING

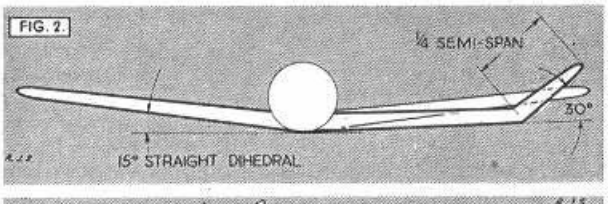
POWER MODELS

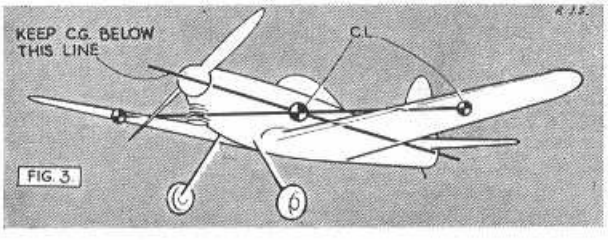


THE majority of full size aircraft are low wing monoplanes and yet this is the one layout which modellers generally avoid. The number of really successful low wing models developed over the past decade could be counted on the fingers of one hand. Go back twenty years to the early 1930's and then one of the most successful " sports " models of the time *was* a low wing machine—the rubber powered " Kinglet ", designed by M. R. Knight. Of birch and spruce construction, with oiled-silk covered wings, the " Kinglet " was, and still is, an eminently flyable model.

About the only low wing model ever to achieve contest success was the American J. Sadler's " Pacemaker ", a 78 in. span machine with 757 sq. ins. wing area and total weight 60 ounces, powered by a 10 c.c. Dennymite motor. The designer himself spoke very enthusiasically of the performance of low wing machines and won several contests with it. Nowadays, Sadler is a control line expert, known for his " Little Rocket " designs.







Broadly speaking, the difference between a successful low wing design and a similar high wing model is that the former requires more attention as regards the degree of inherent stability incorporated. The proportions and arrangement of the various components for satisfactory stability with high wing layouts has reached a degree of finality, largely as the result of accumulated experience with these types over the years. Many of the " simple " stability rules applicable to high wing design, however, do not give satisfactory results with a low wing layout.

One of the main reasons why full size designers favour the low wing layout is that it is, for their purposes, a logical design. A low wing position simplifies many of the structural problems, such as reducing the length of undercarriage leg necessary, and enabling the wing mainspar to be carried through the fuselage without seriously interfering with cabin space. The low wing layout is not chosen for aerodynamic superiority.

Aerodynamically, in fact, the low wing machine may be somewhat inferior to other layouts, as regards overall efficiency. This is even more marked in the case of low wing *models*, where stability requirements may emphasise some of the least desirable aerodynamic features of the layout. Structurally the model designer has little to appreciate in the low wing layout, for such a wing position is more difficult to arrange than the simple one-piece tie-on high or parasol wing.

On these grounds, then, there is little justification for building a low wing contest model. To whatever specification a low wing contest model is built it seems fairly certain that a similar high-wing machine should have a superior performance, although this difference may not be so marked as many people may imagine.

However, for " sport " flying there is no reason at all why a low wing project should not give excellent results—no reason, that is, except for the fact that there has been little or no published data on low wing proportions.

Logically the proportions of wing and tailplane area and tail moment arm suitable for satisfactory longitudinal stability on a high wing model should also apply to the low wing layout. This, in fact, does hold true, with the proviso that a short coupled low wing model is to be avoided, if possible. A moderate moment arm, with a tailplane area of between 30 and 35 per cent of the wing area should be quite satisfactory. A *minimum* moment arm would appear to be 2·5 times the root chord of the wing (or three times the average wing chord, whichever is the smaller).

Satisfactory stability about the other two axes is, however, more difficult to achieve. It is a well-

established fact, for example, that the greater the height of the wing above the centre of gravity the smaller is the dihedral needed on that wing for the same *degree* of lateral stability (Fig. 1). This height should be measured relative to the mean or average chord of the wing.

Depending on the type or model, certain figures have been established for satisfactory stability in terms of minimum dihedral angles on high wing layouts. For a conventional high wing this is about 10 degrees, and may be more if high power is being used. For example, a parasol wing, which normally needs a minimum of about 5 degrees dihedral may require twice that figure to handle high power satisfactorily.

On this basis we are faced with the conclusion that we shall need a *minimum* of about 15 degrees dihedral on a low wing layout in any case, and more if the model is to be high-powered. We can partially negotiate this problem of excessive dihedral requirement by using polyhedral with a sharply upswept tip, but since the chief appeal of the low wing layout is for a semi-scale sports design we want, as far as possible, to retain a fair " full size " appearance. Full size aircraft frequently do employ tip dihedral, but often barely recognisable. The type of tip dihedral required on a model, to be effective, is only too apparent (Fig. 2).

If we examine Fig. 1 again we can see that we can improve the arrangement somewhat by lowering the centre of gravity. If the centre of gravity is *above* the mean wing chord, in fact, the model may turn out extremely tricky to handle and so it would seem worthwhile to plot out a head-on view of the projected design to find the limiting height of the final centre of gravity, as a check (Fig. 3). A fair proportion of the total weight of the model will, in any case, be concentrated in the wings and so there should be no especial difficulty in arranging that the final C.G. does come out low enough. Designers with low wing model experience sometimes advise the use of heavy wheels to lower the final C.G.

We can now consider the flight forces acting in side elevation (Fig. 4), with particular reference to the location of the thrust line. In all other model layouts the thrust line is invariably below the mean chord of the wing (or the centre of lift), requiring either a small downthrust angle to compensate, or tail " lift ", accomplished by locating the C.G. behind the centre of lift of the wings and balancing the stalling moment so induced by lift from the tailplane.

With the low wing layout of Fig. 4 we can see that we can quite easily get the thrust line above both the centre of lift of the wings and the centre of gravity of the whole model. In other words, exactly the reverse conditions to those normally achieved with a high wing model. The high thrust line would have a stabilising effect under power, in that it would be tending to nose the machine down, rather than up and, on the face of it, we might even have to use up-thrust to get the machine to climb at all.

However, this would depend to a large extent on the fore and aft location of the C.G., relative to the centre of lift of the wings. Broadly speaking, on the low wing layout it would seem best to use the tailplane purely as a stabiliser, and not as a means of lift, so that at normal flight attitudes the tailplane has zero lift and only develops " lift " (" up " or " down ") when the model is displaced to correct that displacement. Under such conditions, theoretically the ideal would be to pass the

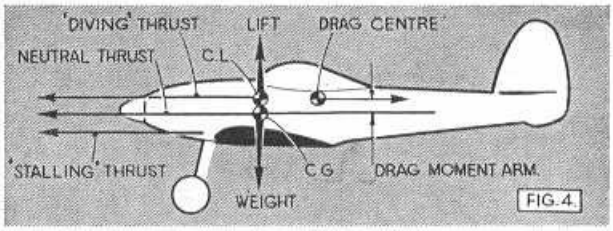


FIG. 4.

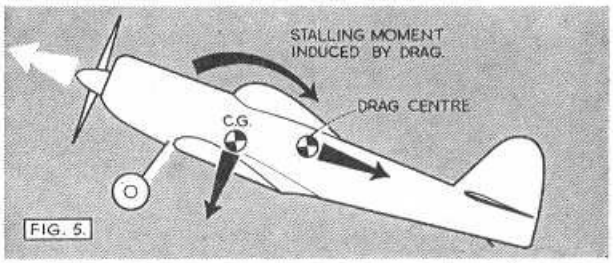


FIG. 5.

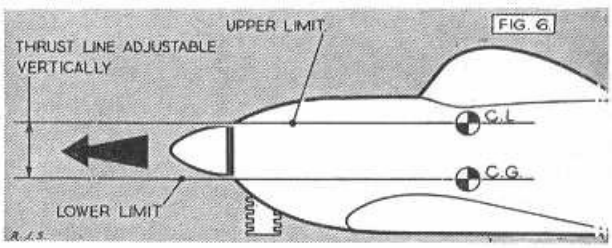
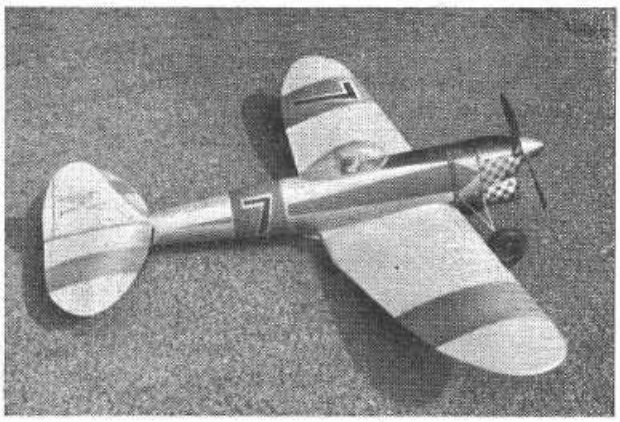


FIG. 6.

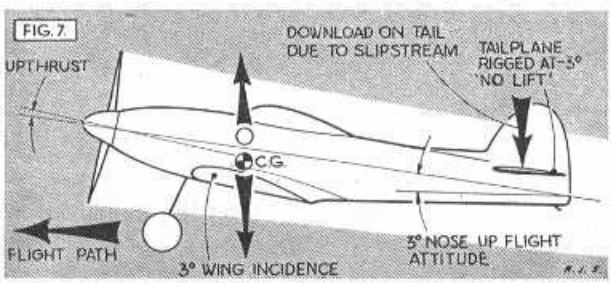
thrust line *through* the centre of gravity and balance out the centre of gravity almost exactly under the centre of lift of the wings (at the desired trimming attitude).

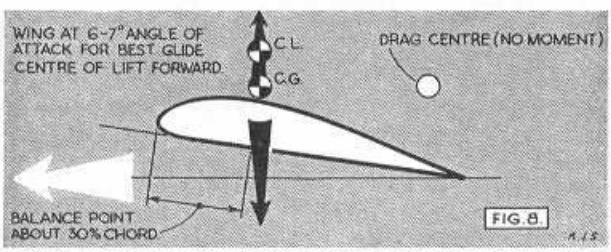
It is important to note that the C.G. would not necessarily come exactly under the centre of lift, for the centre of resistance of the whole model may be located distant from the C.G. and thus have its own upsetting moment (Fig. 5). As drawn, this is a small stalling moment, which would be balanced out by locating the C.G. very slightly in front of the centre of lift. As far as we can estimate, this drag moment would, in any case, be a small one, since the various components contributing drag are fairly evenly distributed about a normal C.G. position. A possible stalling couple due to drag is, however, quite likely if the C.G. is deliberately lowered in accordance with our earlier reasoning.

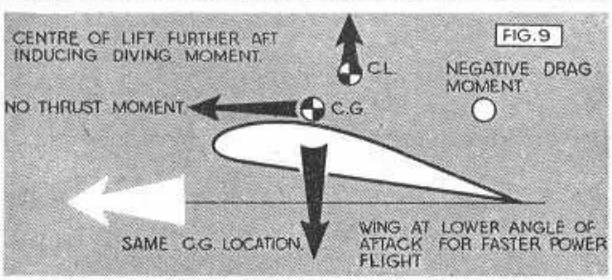
The simple solution reached, *i.e.*, to pass the thrust line through the C.G., is, however, rather more difficult to put into practice. For one thing, the vertical position of the C.G. is very much a guesstimated item and cannot finally be resolved until the model is completed. It could be calculated, provided component weights were estimated correctly, but this is tedious. A simpler solution would, it appears, be to complete the model with an adjustable thrust line position (in the vertical direction) and find, by test flying, which is the best position for it (Fig. 6). The same effect could be achieved by using down thrust or upthrust to " direct " the thrust line as required relative to the C.G., but this has the disadvantage that the slipstream is now inclined at an angle to the datum line of the model. The tailplane being rigged " non-lifting " in normal trim may now experience an up or down load due to slipstream effect and cause a considerable difference in trim between power on and glide (Fig. 7). This, in fact, is a characteristic of many low wing models trimmed by adjusting the

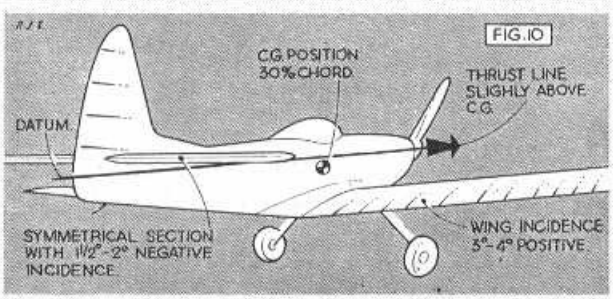


Built as a club project the 'Loughton Skyranger' is a successful low-wing conversion of the famous American Comet 'Sailplane'. Powered by 10 c.c. Super-Cyclone, the model has a high flying speed and is most realistic in flight. Span 82", weight 56 ozs.









thrust line in this manner—a good power flight may be followed by a stalling or (more usually) diving glide, it being very difficult or even impossible to achieve the right compromise between the two.

Normally, any power model flies faster under power than on the glide. Expressed in terms of the *flight attitude* of the model this means that under power the wings are operating at a lower angle of attack than on the glide. Correspondingly, there are two " centre of lift " positions, for the centre of pressure of the wings will vary with the angle of attack.

Trimming first for glide, then, for relatively slow flight, corresponding to a fairly high angle of attack on the wings, the centre of lift will be in its forward position and the C.G. located to trim out the model at this attitude (Fig. 8). For simplicity this diagram assumes that there is no component drag force to be balanced out, so the C.G. is located under the (forward) centre of lift position.

The trimming attitude required under power is with the wings operating at a lower angle of attack. Consequently, the centre of pressure has moved back (Fig. 9), and the model is actually under-elevated under this condition. Adding a thrust component *above* the centre of gravity will only aggravate the under-elevation, which is somewhat disturbing. Either we have got to get the thrust line to pass below the centre of gravity, or use the tail in some way to trim out this difference. Either way it seems that a high thrust line is out for low wing design, unless there is a considerable drag component present, which will add a stalling moment with increased speed.

There appear to be two distinct methods of solving this problem. Either the model is trimmed with the difference between power-on flight and glide flight attitude kept as small as possible (and a low thrust line position used with tailplane rigged " non-lifting ") ; or the model is deliberately balanced out slightly nose-heavy and balanced with a small down-load on the tailplane, *i.e.*, the tailplane at a negative angle of attack.

The former case should be quite satisfactory for low to moderate power flying. The power flight will be slower that it could be and the glide faster than the best glide. Sinking speed will, as a consequence, be higher, but the glide can still be flat.

The other type of rigging can be somewhat more tricky, but would appear to be better, especially using higher thrust values. Slipstream effect and increased speed would make the (downward) tailplane lift more effective at increased speeds to preserve a balance. The glide could be trimmed out to be slow, with minimum sinking speed.

To avoid complicating the issue by getting the tailplane directly in the downwash of the wings it would seem advisable on all low wing designs to mount the tailplane on the top deck line of the fuselage. *i.e.*, well above the wing root. Rigged at a small negative angle of attack, and coupled with a wing balanced out with the C.G. at some 30 per cent. chord, would appear to be the skeleton outline of the successful low wing model (Fig. 10).

Most of the remaining aerodynamic problems are then associated with directional and spiral stability. For adequate directional stability it would appear advisable to use a rather larger fin, although strictly speaking this should not be necessary. The aforementioned " Pacemaker ", for example, employed a fin of only 5 per cent.

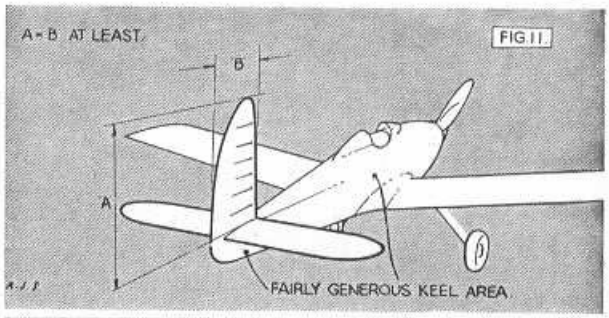
of the wing area, or somewhat lower than average high wing power model practice. A figure of 8–10 per cent. would appear to be indicated for power model work, and 50 per cent. greater for rubber designs, the main thing being to have a fin, and fuselage keel surface, sufficient in area to damp out any Dutch rolling tendency induced by the large dihedral angles necessary.

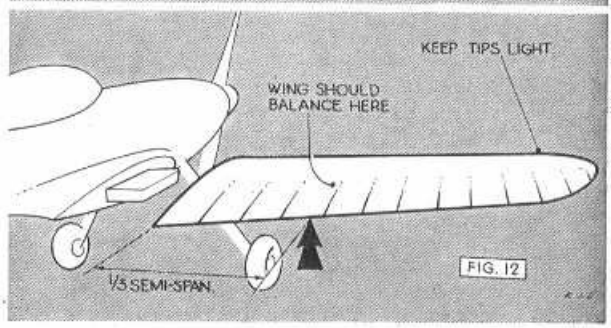
Spiral stability problems are more acute since this particular aspect of model design is still something of a mystery and a satisfactory solution is usually arrived at only by trial and error. There is no reason why a low wing model should be any more unstable in turning than any other properly proportioned design and satisfactory results appear to have been achieved with a fin mounted on top of the fuselage with a height not less than its base width (Fig. 11). There appears to be little or no point in using an underfin on a low wing layout since such a fin would be operating in disturbed air and probably be totally ineffective.

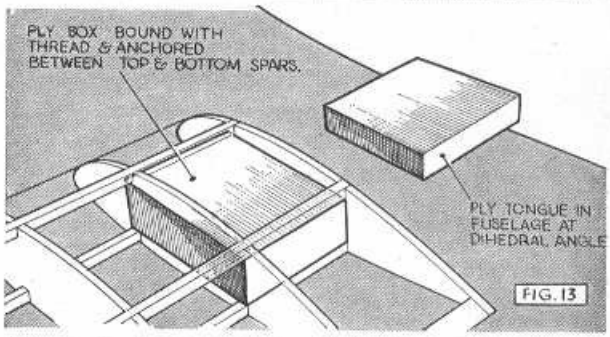
A frequent cause of instability with low wing models is tip stalling, due either to a badly proportioned wing plan-form, or excessive wing weights, or both. Assuming that the wing halves are separate, each half wing should balance roughly one third from the root (Fig. 12) to reduce tip weight and possible inertia forces building up in turns. This does not imply making the inboard part of the wing *heavy* to achieve such a balance, but making the outboard portions *light*! To achieve such a balance a tapered wing would appear to be best.

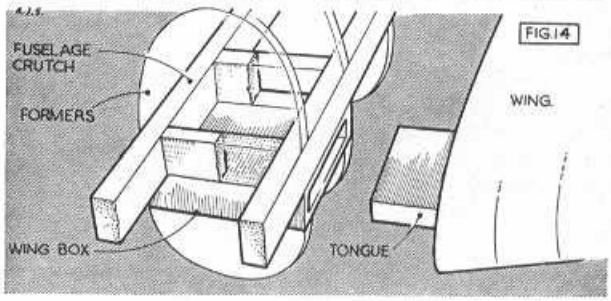
Tapered wings are, unfortunately, prone to stall first at the tips and to reduce this characteristic to a minimum only a moderate degree of taper should be used. The tip chord should never be less than 66% root chord. Another valuable feature would be to incorporate some three degrees or so of washout in each wing, as a further safeguard against tip stalling. Some designers have used wing tip slots to the same end, but these do not appear necessary, using washout.

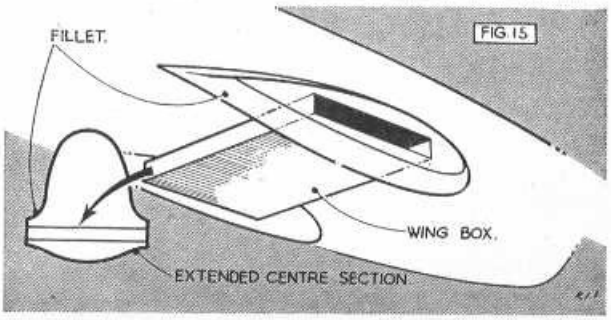
Structurally, of course, there are additional problems. Either the wings have to be built in halves plugged into the fuselage sides, or in one piece strapped into a cut-out in the fuselage underside. The latter is simpler, but untidy. For small and medium size models, at least, plug-in wings with tongue and box fitting would appear to be the best solution (Fig. 13). Wood sizes, etc., would follow normal "free flight sports" practice, the overall size of the model being similarly proportioned. A satisfactory fairing may be difficult to achieve with tongue-and-box fitting without resorting to a fixed stub centre section, as in Fig. 14, the wing box itself being built into the lower part of the crutch, in the case illustrated. Orthodox "box" construction would, of course, do as well, only a tapering fuselage cross section is recommended as shown in the heading drawing to eliminate an acute angled junction between wing and fuselage sides. Such a junction could lead to a break-up of the airflow, resulting in increased drag and loss of lift. In this respect the low wing layout must remain inferior to shoulder, high or parasol wing positioning, which is one of the main reasons why full size designers use large fillets at the wing roots of low wing machines to preserve a smooth airflow in this region. An alternative solution is to extend the stub centre section outwards slightly, and then add the dihedralled outer panels (Fig. 15). The centre section "stub" still needs a fillet of some sort, however, for maximum efficiency. Fortunately, we can afford to ignore this, unless the fillet is added for the sake of appearance.





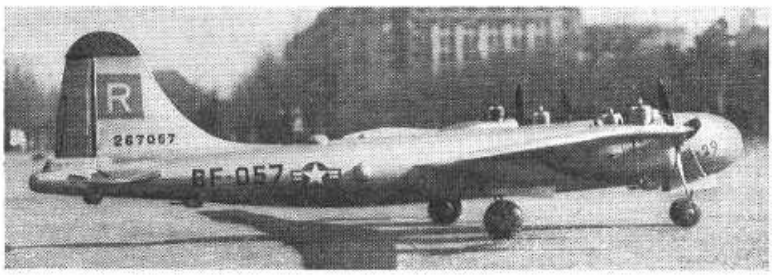






WORLD NEWS

by ARIEL



Control Line "Superfort" on the tarmac in the forecourt of the Imperial Palace, Tokyo. A regular performer, this 'multi' is similar to that built by Japan's Mamiya and featured in an earlier "World News". Photo from Hideya Ando.

Germany The first post-war Nationals of the Western Zones (Deutsche Modellflug-Meisterschaften, 1951) were held at Borkenberge from August 17th to 19th, and we have received detailed results from our correspondent, Hans Pfeil.

The most outstanding performances put up were as follows :

German Aeromodelling Champion, 1951, Helmut Walter of Wetzlar in the U.S. Zone, won the Tailless Glider Contest with 673 secs. and the Class II Power event (2·5 c.c. to 5 c.c.) with 349 secs.

Harald Wentzel of Hanover, British Zone, was top Glider man with an aggregate of 849·6 secs. (5 flights) and the A2 Glider Class was won by another Hanoverian, Janos Zoran, with a 779 secs. aggregate.

Power Duration Champion, Hans Heinenberg, of Munich, in the U.S. Zone, totalled 506 secs. with his model ; motor run was restricted to 20 secs. Top man in Rubber was Gustav Saemann, of Hanover, whose five flight aggregate was 684 secs. in the Wakefield Class.

In the Junior Classes, Manfred Rudle of Stuttgart, U.S. Zone, won both the A2 and FAI Rubber events, the former with 339 secs., the latter with 301 secs.

Our correspondent was not at the Nationals, but we hope to receive photographs from Herr Hans-Justus Meier of Bremen, for presentation in the near future, with particulars as to the number of entries and so on, and a description of the Contests themselves.

Japan We were pleased to receive a letter from I.T. Townend, who is at Kobe and who is another of the hundreds of " Sporty " enthusiasts.

Prompted to write by a previous letter from New Zealand published in these columns praising the little biplane, he tells us that his model flies as a floatplane due to the lack of flying fields, compensated for, however, by large quantities of water within easy reach. He has flown from the sea and from the " glass-like surface of Lake Biwa, near the ancient city of Kyoto ".

Several " duckings " in both fresh and salt water have not affected either the model of the " Bee " which powers it, although it has been necessary to drain off the water on more than one occasion. Owing to choppy conditions good landings on the sea are a doubtful quantity, but on Lake Biwa " Sporty " made perfect " touch-downs ", throwing up flecks of white water as it skimmed along the surface. Reader Townend is concentrating on water-planes as they are, obviously, the type for his area, with plenty of sea and fifty miles by five of lake. He describes " Tomboy " as indestructible for, after some very rough flying it has been re-covered with silk, re-doped, and a new set of floats, and is all set for many more flights.

We heartily agree with our correspondent that there is no prettier sight in aeromodelling than that of a water-plane coming in to a smooth landing, and in the surroundings in which he flies the result must be near perfect.

Australia The following news item comes from Arthur Gorrie, South Brisbane, Queensland :

" The Newtown Model Aeronautical Association of Brisbane, Queensland, Australia, is conducting a series of elimination contests for Free Flight Power and C/L Stunt events for the purpose of selecting the Club's best to go to Sydney for the Australian Championships at the end of the year. At the completion of this elimination contest a ' Festival of Flying ' will be held, featuring ten events to cover all phases of aeromodelling. Valuable prizes will be distributed and certificates issued to each place-getter. These events will be open to club members only and, with over 150 members, the N.M.A.A. should make this ' Festival ' an interesting flying exhibition for fliers and spectators alike. The N.M.A.A. is indeed fortunate in having suitable flying fields adjacent to the city with transport directly to them."

From Queensland also, though from Forest Hill this time, we heard from Peter Weaver, a modeller with an eye for a good-looking Stunt model. After letting off steam about functional horrors and pointing out that Contests have been and are won with Stunters of scale appearance, he gives us a little news of doings in his locality. A.P.S. designs, he tells us, are everywhere. One of the most successful has been " Flamingo ", one of which won for its owner the Queensland Open Power Championship, the N.M.A.A. ditto and the Darling Downs ditto. " Jugglers " are also in evidence, used mainly as trainers, and probably one of the most popular designs ever is " Sporty ". This is seen about in numbers to rival the " Black Magics " and " Ethereal Ladies " of a few years ago.

British motors are mainly used, especially the Mills series and Frog 500's. Some U.S. Motors are about, in fact, quite a representative selection. Queensland has not done much in the Nationals so far, but this year they will be " next door, in Sydney, only 500 miles away (only ! Ed.), so we should be there in force ".

We hope to publish something further of Peter Weaver's Stunt models, as he does make them good-looking—we have seen pictures.

New Zealand Our old friend, Frank Bethwaite, contributor of New Zealand News to so many issues of the AEROMODELLER, has just sent in the following items :

" This is an appalling winter. It seems to be our turn to get gales and rain. So outdoor flying is very sporadic, and indoor, which was forgotten last year, is again gathering adherents, particularly Juniors. Tethered

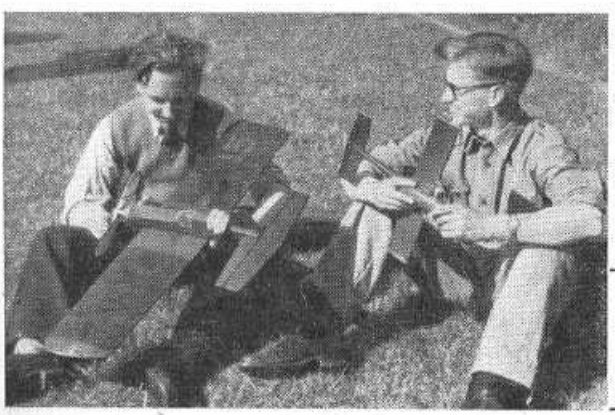
flight, ' Round the Pole ' as we call it, has the advantage of fitting into any small hall, and times of well over five minutes are being recorded—and that is good going R.T.P. !

" Preparations for our 1951/52 Nationals, over the Christmas period, are well advanced. This year it will be a camping meeting, with all meals and facilities provided for the contestants during the five days of contest. The flying programme seems a little cut-off each year, and this time it has been simplified to a desirable one event per half day for Free Flight events, and the usual one day given to Control Line, wherein Team Racing, such Aerobatics as are still required, Prototype and all classes of speed are open to competition. Total number of classes this year is twelve, out of which four only count for National Champion. These are Nordic A2, Wakefield, Payload (not PAA style with a dummy, but an event where the load is 5 ounces per c.c., total of three flights, motor run not to exceed 30 secs.) and Prototype. All these classes are R.O.G., except Nordic, of course, and severely restricted in order to give the ' not so expert ' a fair chance and a little fun. The supporting F/F classes are all unrestricted, as are Spar (Rubber), Chuck Glider, Power Ratio and Aggregate. In all events, total of three flights is required.

"In the past, our Overseas teams have been by selection, but, as the number of potential entrants grew this method became undesirable. A recent decision by the N.Z.M.A.A. is that, henceforth, teams will win their right to participate and they will do so at the Nationals.

" A word of interest to Radio Control enthusiasts. The writer recently had the pleasure of enjoying an afternoon's flying with Les Wright, one of our oldest hands at this game. His ship used two controls, elevator and rudder, both proportional, from a single channel transmitter, and very useful was the extra speed with ' down ' elevator for penetrating into the breeze. It is altogether typical of Les that, on this afternoon, no less than four people all played at ' spot ' landings and the like with his model. Another Radio type, Doug Foster, was flying a model with two controls also, but hooked to rudder and engine. Here again, transmitter was single channel, but Doug, a radio wizard, was using no relays. He had contrived such a voltage change that the receiver was working the actuators ! "

Contributions from these N.Z. radio types would be very welcome and Ariel would be delighted to see some good photos of models, modellers and radio installations —how about that ?



Malaya Just in from Squadron Leader R. B. Lord, A.F.C., is a report of the third All Malayan Nationals, held on the 18th and 19th August at Kuala Lumpur.

The Contests were preceded by an Exhibition at the Selangor Turf Club where 140 models were in competition for a splendid array of silver cups, thirty in number, dominated by the Wakefield permanent Challenge Trophy. This was presented by H.H. the Sultan of Selangor, other important trophies being the M.P.W. Permanent Inter-State Challenge Trophy, presented by the Malayan Pewter Works and a Permanent Challenge Trophy for the Jetex event, by Messrs. Robinsons, Limited.

The morning of Saturday 18th was spent in trimming flights, the weather being ideal, and the first event of the day was the Concours d'elegance. This produced two outstanding models : Mr. D. K. K. Lee's E.D. 3·46 powered R.C. Luscombe Sedan and a magnificent solid scale D.H. 108 by Mr. F. Peterson of Singapore. Other entries were generally of good standard and evidence of the ability of Malayan modellers.

Power duration was the next event, won by 17 year old Kitson Leong of Perak with his E.D. 3·46 powered Powerhouse. His first flight was 8 minutes o.o.s. and it says much for this young modeller's determination that he retrieved the model from the top of a tree some two miles away, returning sweat-soaked but triumphant, in time to fly again and win.

Sunday morning, and again perfect weather for the Wakefield, Open Rubber and Open Glider events. Many model fatalities were caused by motor breakages, but some maximums were recorded and six models were lost o.o.s., climbing steadily in thermals over the jungle which surrounds the infamous Ampang bandit area. Temperature at 11 a.m. was 92 degrees Centigrade.

In the Open Glider event the Norseman which was presented to the Selangor Club last year by Squadron Leader Lord led the first round with a flight of 1 min. 14 4/5 secs.

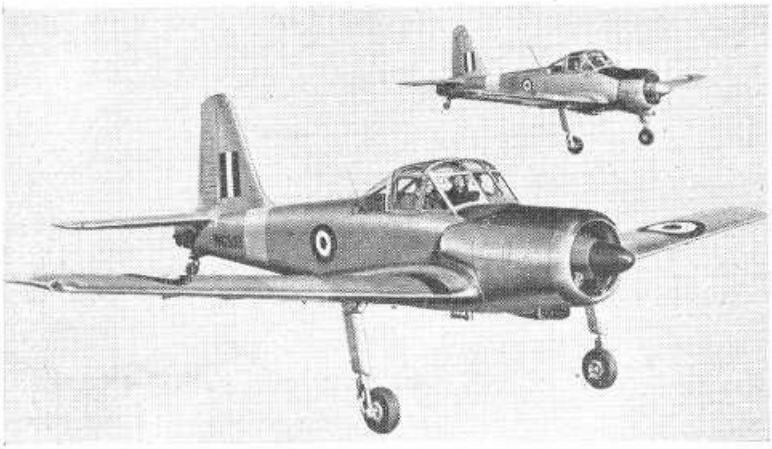
Best event of the day was the first Malayan Team Race, which pleased the spectators, including H.H. the Sultan of Selangor, who later presented the prizes.

The meeting was voted a great improvement on last year and altogether successful. Singapore, Selangor, Perak, Pahang, and Kelantan had representative competitors, totalling 50 in number.

Mrs. Symes, wife of a Sungei Besi tin-miner, recorded the meeting very efficiently, in a temperature of 95 degrees Centigrade and 93 per cent. humidity. Our correspondent, we quote, " time-kept ", judged, and refereed for the two days, in the open—NOT so efficiently, and was the proverbial grease spot—burnt, blistered and bewildered—by the end of the competitions !

The weather had to be seen to be believed (English weather please copy !) while there is no doubt that Malayan modellers are keen, able and enthusiastic, and it is anticipated that next year's Nationals will be bigger and better.

1951 Danish Control Line Champions, left, Jan Hackhe, Stunt Winner two years running, right, Christian Andersen, whose Elfin 2·49 powered model gained him top place in the Speed Classes. Hackhe's stunt job was powered with a Danish " Viking " 2·5 motor. Photo and particulars from Ing. Per Weishaupt.



AIRCRAFT DESCRIBED No. 45

THE

PERCIVAL P.56. PROVOST

BY G · A · CULL

Left: Provosts, Marks 1 and 2 fly in formation. Cowling differences easily identify the production version with Alvis Leonides which is in the foreground. Below: The third prototype P.56. displays its neat cowling and faired, fixed undercarriage legs. The type should have some appeal with flying scale fans as a novel low-wing subject.

THE fourth post-war Percival design is the P.56 which first flew at Luton on February 23rd, 1950, and is also notable as being the first design produced since L. G. Frise, of long Bristol association, joined the Company. Conforming with specification T.16/48 for a basic trainer, the P.56 competed with the similar Handley Page H.P.R.2 in service trials and, after extensive testing in all aspects of R.A.F. operating conditions, was chosen to be built in numbers to eventually replace the Prentices now in service.

The first prototype, WE 522, was powered by a 420 h.p. Armstrong Siddeley "Cheetah 18" engine and sported such anti-spinning features as an extended fin and tail parachute housing between the elevators. WE 530, the second prototype (illustrated in February 1951 issue) also had the Cheetah engine, as it was expected that the existing large stocks of these engines would provide the production power unit, but the third P.56 was fitted with the 550 h.p. Alvis "Leonides 25" nine-cylinder radial engine and so became the P.56, Mark II. This third prototype bore the experimental registration G-23-1 and the thrust line was raised by nearly four inches. This "Leonides" P.56 proved to have a greatly increased performance over the lower powered and slightly lighter "Cheetah" prototypes, and so the Provosts to be built for Training Command will be powered by the neatly cowled Alvis engine.

Although of conventional light alloy construction, the P.56 design is notable for the attention given to the needs of easy maintenance when in service. All main attachment fittings are simple and easily accessible and large doors facilitate servicing of batteries, radio, pneumatic system, etc. It is considered that the bare minimum of ground equipment and tools in the hands of semi-skilled tradesmen is all that is necessary to ensure a high rate of serviceability.

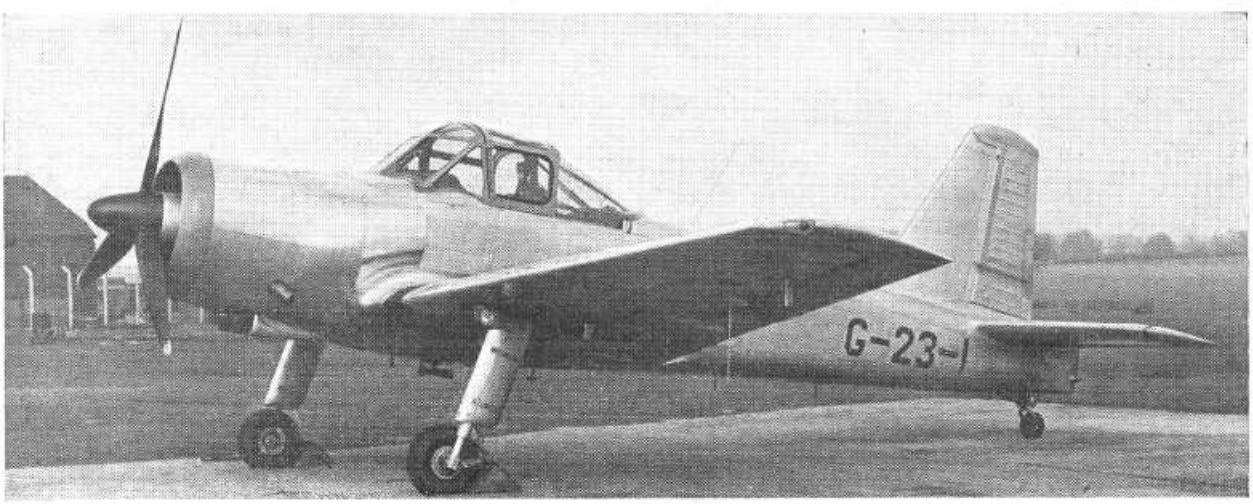
Pupil and instructor are side-by-side with duplicated controls and instruments, and amber screens may be fitted for simulated night and blind flying. The robust wide-track undercarriage is fitted with brakes which, like the slotted flaps, are pneumatically operated.

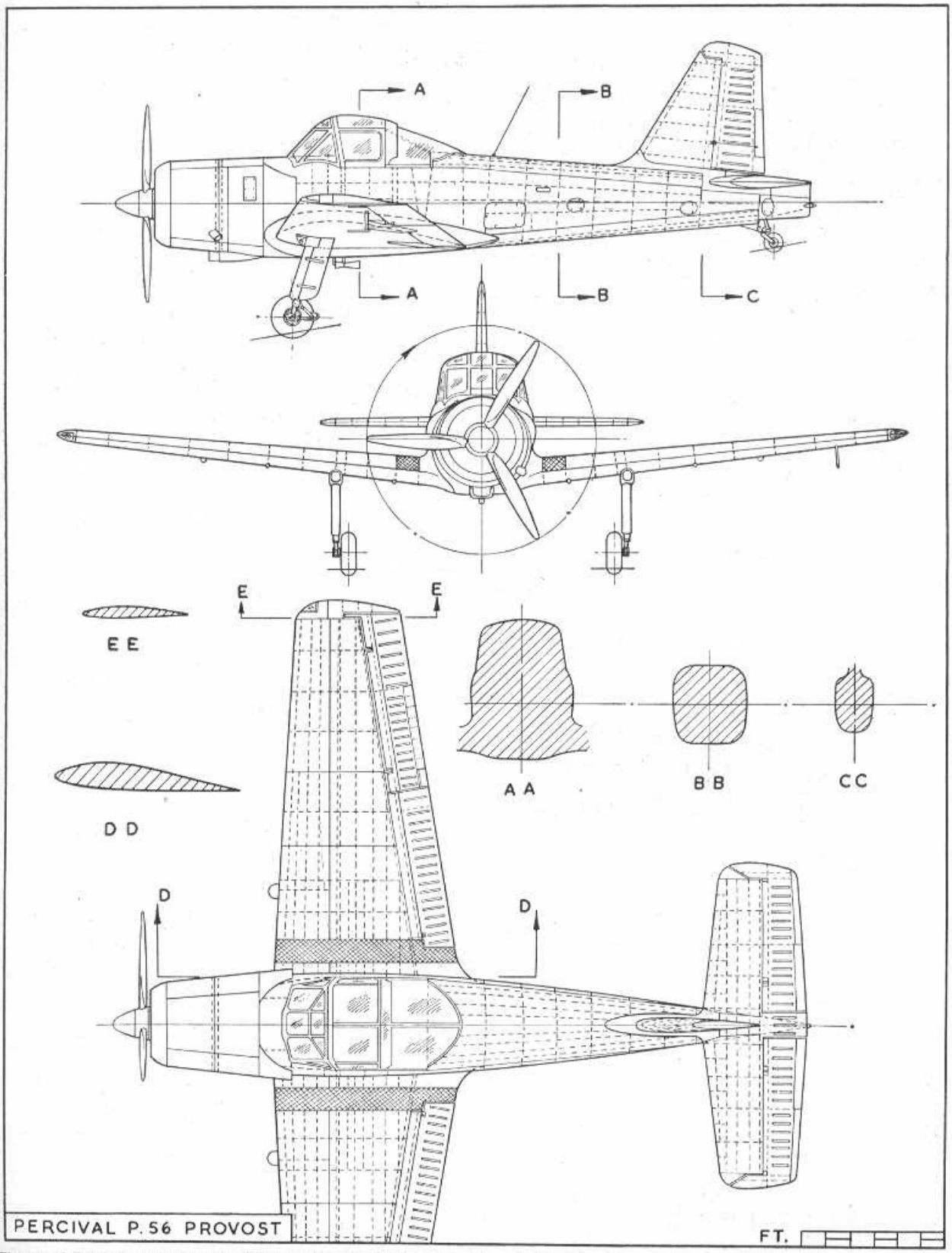
From trials at Boscombe Downs, it is evident that the Provost will be a basic trainer at the top of its class and of all the performance figures, the 90 degrees per second rate of roll is particularly impressive.

Colour. Matt silver dope on all surfaces with normal R.A.F. markings. Bands of trainer yellow around fuselage and wings and matt black anti-dazzle patch on top of cowling.

Construction. All-metal stressed skin construction. Fuselage has four longerons with usual stringers and frames. Wing panels bolt directly to fuselage fittings and have a main and secondary spar and spanwise stringers. Flaps and ailerons hinged to auxiliary spar. Tailplane and fin of two spar construction. All controls are covered with Alclad stiffened with flutes.

Specification. Span: 35 ft. 2 ins.; Length: 29 ft.; Empty Weight: 3,320 lbs.; Loaded Weight: 4,250 lbs.; Maximum Speed: 200 m.p.h. at 2,500 ft.; Maximum Cruising Speed: 186 m.p.h. at 7,000 ft.; Climb: 3·3 mins. to 5,000 ft.; Service Ceiling: 25,000 ft.





This is a 1/72 scale reproduction of the 1/48 scale drawing which is available price 1/– post free from Aeromodeller Plans Service.

RALLY RESULTS

ALL-HERTS RALLY, RADLETT AERODROME. AUGUST 19th.

RUBBER.

1.	J. Knight	Kentish Nomads	505 secs.
2.	I. Dowsett	Pharos	485·9 ,,
3.	R. Atkinson	Ipswich	480·0 ,,

GLIDER.

1.	E. Mason	Sevenoaks	600·0 ,,
2.	—. Dabbs	Park M.A.L.	600·0 secs.
3.	W. Rowe	Icarians	554·4 ,,

POWER.

1.	J. Gorham	Ipswich	39·32 agg. ratio
2.	M. Glynn	St. Albans	39·27 ,, ,,
3.	J. Lewis	N. Heights	29·90 ,, ,,

TEAM RACING.

Class A.	1.	R. Edmonds	High Wycombe	
	2.	C. Taylor	West Essex	
	3.	K. Marsh	West Essex	
Class B.	1.	D. W. Rowe	Country Member	52·3 m.p.h.
	2.	R. Cockerill	Tottenham	51·8 ,,
	3.	R. Berkhead	St. Georges Hts.	50·8 ,,

CONTROL-LINE SPEED.

Class 1.	M. Billinton	Brixton	96·82 m.p.h.
Class 2.	P. Wright	St. Albans	124·9 ,,
Class 3.	M. Billinton	Brixton	124·3 ,,

RADIO CONTROL.

1.	S. Sutherland	West Essex	313 pts.
2.	J. Ascot	Battersea	226 ,,
3.	S. Allen	Battersea	211 ,,

CONCOURS D'ELEGANCE.

Rubber or Glider :	W. Henderson (Glider)	N. Kent
F/F Models :	J. Newton (Ambulance Plane)	N. Kent
C/L Models :	J. Briggs (Fortress)	P.M.A.L.

CUP FOR OUTSTANDING MODEL.

J. Newton (Ambulance Plane) N. Kent

"DAILY DISPATCH" RALLY, WOODFORD AERODROME. AUGUST 19th.

POWER.

	J. Hepworth	West Yorks	6 : 58
	J. Jones	Wallasey	6 : 39
	E. C. Muxlow	Sheffield	6 : 26
Junior—	Miss P. Platt	Nth. Wirrall	4 : 30

RUBBER.

	H. Tubbs	Leeds	8 : 26
	E. R. Taylor	Cheadle	7 : 27
	T. Rhead	Wigan	6 : 46
Junior—	C. Johnson	Wigan	4 : 46

GLIDER.

	J. O'Donnell	Whitefield	10 : 00
	K. H. Lloyd	Solihull	10 : 00
	M. Regan	Halifax	7 : 37
Junior—	T. Brier	Huddersfield	5 : 53

JETEX.

	P. Dauncey	Woodlands	11·4 ratio
	J. S. Richmond	Wolves	11·2 ,,
	H. O'Donnell	Whitefield	9·1 ,,

TEAM RACE.

J. Reay	Sale	
E. Pumford	Wallasey	

WOMEN'S.

Miss W. Bennett	Whitefield	5 : 34
Mrs. B. Wells	Solihull	4 : 27
Mrs. D. Averill	Solihull	3 : 11

RADIO CONTROL.

D. Marsh	Crosby	100 points
W. E. Crusham	Southport	75 ,,
P. C. Doughty	Birmingham	75 ,,

SCALE.

F. Lees	Ashton	85 points
W. Farrance	West Yorks	83 ,,
I. S. Cameron	Merseyside	80 ,,

SENIOR CHAMPION : K. H. Lloyd Solihull

JUNIOR CHAMPION : H. O'Donnell Whitefield

BRITISH INDOOR NATIONALS, MANCHESTER. AUGUST 18th.

FREE FLIGHT

1.	T. Read	Sth Birmingham	9 : 18
2.	J. H. Maxwell	Bristol	8 : 50
3.	R. T. Parham	Worcester	8 : 47

CHUCK GLIDER

1.	B. V. Haisman	Liverpool	28 secs.
2.	S. A. Ward	Whitefield	20 ,,
3.	M. E. Fleeson	Cheadle	20 ,,

R.T.P. SPEED

J. O'Donnell Whitefield

NEW BRITISH RECORDS (subject to ratification)

Fuselage H.L.	R. T. Parham	Worcester	7 : 15
,, R.O.G.	,,	,,	7 : 30
Tailless H.L.	,,	,,	2 : 59
,, R.O.G.	,,	,,	2 : 28
Helicopter	,,	,,	2 : 09

"YORKSHIRE EVENING NEWS" RALLY, SHERBURN. SEPTEMBER 9th.

GLIDER.

B. T. Faulkner	Cheadle	7 : 55
J. Cartwright	Bridlington	7 : 48
R. Hodgson	York	7 : 46
F. Gudgeon	Leeds	7 : 38
—. Greenwood	Bridlington	7 : 31
K. Emmett	Sheffield	7 : 21

RUBBER.

T. Dobson	Salford	10 : 41
W. Rockell	Gainsborough	10 : 40
K. F. P. Rutter	Leeds	7 : 47
R. Woodhouse	Whitefield	7 : 36
J. O'Donnell	Whitefield	6 : 44
E. C. Muxlow	Sheffield	6 : 29

TEAM RACE "A"

R. Goddard	Grimsby
K. Metcalfe	Cheadle
D. Childs	Horsforth

TEAM RACE "B".

Miss B. McCann	Worksop
J. Wilkinson	Sheffield
P. Robinson	Sheffield

POWER.

E. Lord	Accrington	7 : 50
T. W. Smith	Blackpool	7 : 33
S. Lanfranchi	Bradford	7 : 10
T. Lanfranchi	Bradford	6 : 45
A. R. Collinson	Bradford	6 : 12
D. Bennett	Whitfield	6 : 00

CHUCK GLIDER.

C. Briggs	Southport	58 secs.
C. J. Davey	Blackpool	49 ,,
R. Brown	Grimsby	48.5 ,,
S. A. Ward	Whitefield	40 ,,
T. W. Smith	Blackpool	39 ,,
J. Turner	Sheffield	37 ,,

RADIO CONTROL.

—. Crusham	Southport	143 points
—. Ingham	Blackburn	100 ,,
K. F. Dean	Bradford	50 ,,

CONCOURS.

S. Rymill	Wavertree	"D. H. Comet"
F. Lees	Ashton	"Luscombe Silvair"
C. D. Fitzpatrick	Southport	Sailplane
D. Marsh	Crosley	"Hawker Hind"
C. B. Jackson	Ashton	"Stinson Reliant"
W. Farrance	West Yorks	"Seagull"

CLUB NEWS

Group of Bolton modellers at Bolton M.A.S. fourth annual rally at Affetside. In the picture is Mrs. May Hardman, holder of the North Western Challenge Cup. The events were held in wet, squally weather, but this did not dampen the spirit of these 5 entries.

I SUPPOSE that, with the close of a somewhat hectic flying season, many clubs will now be more or less hibernating for the winter season, and we shall in consequence get fewer reports for this monthly column. However, may I make a plea for the less exacting months to be devoted to the encouragement of the junior member who, after all, is the senior of tomorrow, and the attention he gets now will determine whether or not he will be a good modeller later on, or be lost to the movement altogether.

Far too many clubs—and individuals—seem to regard the junior member as a nuisance to be barely tolerated, and in some shortsighted cases barred from the club altogether. This policy is stupid in the extreme, and it is our experience that the club which finally secures long standing and prestige is one that consistently looks after the younger end of the membership. It is not too much to ask of the seniors that they devote a certain amount of their time to teaching the youngsters the finer points of construction and flying, and to organise special contests in which the beginner is not up against the accepted expert. There is nothing more discouraging to the beginner to feel that he doesn't stand a chance in the game, and a little help at such times goes a long, long way.

And to those who dismiss the junior member as just another confounded nuisance, try remembering just what a little pest you yourself proved to be in those far off days !

Bristol seems to be the only district active in the **WESTERN AREA** at the moment, and the C/L antics of Coles (Bristol & West) and Hopkins (Phoenix) paid dividends at both the Wembley meeting and at Swansea. Complaints are still made at the apathy of most clubs outside the Bristol, Gloucester, Trowbridge groups, and we look forward to seeing a revival of interest in this Area in the very near future.

A. Longstaffe of Belfairs gained a treble maximum to place top man in the **EAST ANGLIAN AREA** attempt on the "Model Engineer" Cup, followed closely by R. Gould (Southend Senior) with 12 : 10 and junior C. Pizzey (Ipswich) with 11 : 06. Ipswich came top in the Area returns for this event with a total of 39 : 35, Belfairs being some 6 minutes behind. Johnny Gorham won the local event for 1·5 c.c. powered jobs with a near maximum of 14 : 50, clubmate Wyatt scoring 12 : 05, and Willmott of Belfairs 11 : 53. These times proved to be tops in the national results, so yet another trophy goes to Ipswich.

As a result of the "Daily Dispatch" Rally, the **NORTH WESTERN AREA** lists Sheffield leading in the Rootes Trophy, with Cheadle as runner-up. Final placings will be decided at the Northern Rally held in Yorkshire, at which no doubt the Sheffielders will be under a handicap with organisation commitments. The Area A.G.M. is scheduled for the 24th November. The N.W. Area Championships were held at Stanley Park, Blackpool, when E. Lord of Accrington proved best of the power fliers with a best of three flights of 3 : 04, his other times being 3 : 07 and 5 : 00. B. Picken won the rubber class with flights of 2 : 32, 5 : 00 and 2 : 29, whilst F. Faulkner of Whitefield proved top glider bod with 5 : 00, 2 : 59 and 3 : 33. Molyneux of Wallasey was dead unlucky in the latter event, getting two maximums in the first rounds, but losing the model, thus being unable to make a third flight. This type of contest has a lot to be said for it, the lowest of three times counting. This places a premium of retrieving and controlled flights, for a loss means no score, and we note quite a number of good members who just do not figure in the list by virtue of not completing three flights.

The **MIDLAND AREA** are planning a free-for-all Rally at Loughborough College Aerodrome on the 21st October. Satisfaction with Ray Monk's effort in Yugoslavia is naturally expressed, and the lads are currently getting down even harder to better A/2's for 1952. D. James of the Flying Saddlers club attended the Dutch Aeromodelling Camp in July, placing 4th in the power contest and a special " B " certificate.

Vic Dubery, for some time P.R.O. of the **NORTHERN AREA,** has had to relinquish his post on medical advice, E. Shillito now being the publicity bod to chase. (I always knew this P.R.O. business was a heart-breaker but . . .).

LONDON AREA reports a strong wind prevailing throughout the 26th August, when the Area free-flight championship took place. Some creditable times were however recorded, and the total gained by G. Glynn (St. Albans) was sufficient to win the team award for his club. Individual results were :

Rubber	**P. Allaker**	**(Surbiton)**	**6 : 33**
Glider	**R. Mead**	**(Northern Hts.)**	**9 : 36**
Power	**G. Glynn**	**(St. Albans)**	**31·6 ratio**

Better weather was experienced on September 2nd for the area semi-centralised events, there being little wind and long sunny periods. Sid Allen and Tommy Ives tied with 400 points in the Ripmax R/C contest, and Kentish Nomads scored 48 : 07 against Croydon's 41 : 06 in the Farrow Shield event. W. Henderson (North Kent) was top man in the Jetex affair with a ratio of 32·6.

The **BLACKHEATH M.F.C.** announce that the " Bill White Memorial Trophy " will be flown for on Sunday, January 5th, 1952, commencing at 11 a.m. In conjunction with this event will be a glider contest held under the same general rules. Pre-entry is requested, fees at 1/– per contest, or 1/6 the two, and full programme details will be announced later. Blackheath are fortunate in having access to a hall where r.t.p. or indoor free-flight can be enjoyed comfortably, and all clubs interested are asked to contact the club secretary.

In conjunction with the **NORTH EASTERN AREA,** a " North East Coast Gala " was held on the Town Moor, Newcastle-on-Tyne, on August 19th, and fine weather blessed the meeting, full results being :—

Rubber	**R. Pollard**	**(North Shields)**	**7 : 06**
	G. Nicholson	**(North Shields)**	**5 : 00**
	T. Stoker	**(Newcastle)**	**4 : 50**
Glider	**T. L. Dunn**	**(Blaydon)**	**7 : 19**
	D. Cochrane	**(Newcastle)**	**6 : 40**
	N. A. Clark	**(Bishop Auckland)**	**3 : 47**
Power	**P. Kelly**	**(Blaydon)**	**21·2 ratio**
	T. Bainbridge	**(Bishop Auckland)**	**16·6**
	K. Mole	**(North Shields)**	**15·8**
C/L Stunt	**G. Oswell**	**(North Shields)**	**170 points**
	P. Kelly	**(Blaydon)**	**105**
	G. Routledge	**(Whitley Bay)**	**55**
Concours	**K. Mole**	**(North Shields)**	

GODALMING & D.M.F.C. organised what they hope to be the first of a series of annual team-racing events on the 29th July. The weather was kind, and fifteen entries were received for the class B section, and six for class A. There were a number of instances where competitors had sailed very close to the wind in model specifications, one entry being sent back to add fillets to the wing roots to boost the wing area to the minimum 125 sq. ins. Wheel diameter rules had to be a little relaxed when a well known manufacturer's clearly stamped 2-in. wheels were found to be quite a bit under size! Heats were flown off under an experimental but quite successful system of control. Greenwood of Worthing was fouled at the start of his heat, and in crashing dislodged the dummy pilot, who promptly jammed the controls in the subsequent re-run. The class A final dragged on for over 25 minutes, but the B class provided an exciting climax. Mason (Bushy Park) stepped out of the circle to glide his model into Ron Moulton's ground crew, while Ron himself at long last wrote off his grimy Mercury Mk. I. "Skipper" Rowe finally won the trophy, which was presented to him by the Mayor of Godalming. Proceeds from the gate went to a local charity.

GLEVUM M.C. have been demonstrating to good purpose for the local council, and finds it pays dividends! The Festival display went off well with stunt, sport and two-in-a-circle as the main theme, the only wreck being a "Nordec" powered "Taurus" which free-flighted over the heads of the onlookers to prang safely outside the crowd. Long distance flight record goes to J. Walling, whose Frog 250 powered model was found 20 miles away after being missing for a fortnight. It must have got well upstairs for the local hills are approximately 1,000 feet high. A 36-in. span glider has pushed the club lightweight record up to 6 : 01, this being an own designed model by R. P. Roles, and has since been adopted as the club glider. Even the spin-dizzies are having a bash with hook and line, and trusting they don't get any sinkers.

By a margin of 69 seconds over Spen Valley, **YORK M.A.S.** have fought their way to "Cup Final" calibre in the Area knock-out comps., their final score against the Valley being 27 : 46. Both teams flew well, and the issue was never certain until the last touchdown. Sedgwick was probably lucky when he scored a maximum, his model stalling upwards! Woodhead also got a max. and Hodgson of York also d.t'd at 5 : 00 and scored 52 secs. on the way down. Mark Minton amused the crowd by towing a chuck glider to 500 ft. with his power job, complete with auto-release. Good way of getting 3 minutes out of a chuck job!!

Courtesy, "AVIA"

Members of the **REGENTS PARK M.F.C.** have purposely refrained from entering contests this year so as to be able to devote more time to helping the juniors improve their flying, etc. (My opening remarks obviously do not apply to *this* club.) The results of this policy can be seen when we learn that 14-year-old W. Keilly averaged a consistent 3 minutes with his Thermalist off a 100 ft. line. Billy's heart was in his mouth on two occasions, once when the job collided in mid air with a power model, and again when the model landed on the railway lines just as a train was coming. However, the driver stopped the train, descended, picked up the model and deposited it on the bank before proceeding on his way. Most considerate, and an action which the club sincerely appreciates, and to which we add our own thanks.

HASTINGS & D.A.M.C. are at long last on the upgrade, a recent influx of juniors having boosted the membership considerably. M. Kenwood, who was one of the original members and has just rejoined, won the club Glider Cup, a new junior, J. Tucknatt, being a very close second only 4½ seconds behind. T. Skinner found it necessary to commandeer a rowing boat to retrieve his 6 ft. span sailplane from the Channel!

With all four team members flying A/2 gliders, the **SOLIHULL M.F.C.** won the "Model Engineer" Cup, and find such models a match for any glider under contest conditions. Many successes have been gained in other local and away contests (see Daily Dispatch report) and their lady members are flying extremely well these days. Solihull are very fortunate in having an understanding District Council, and a Police Chief who is most interested in the hobby. Valuable assistance has been received from the police from time to time, large crowds being attracted by the sight of officers directing model recovery operations from trees and telephone wires, while a gleaming patrol car stands by! The education authorities have also provided the club with an excellent clubroom to continue their expansion policy. (Other Councils please copy!)

BRISTOL ACES M.A.C. held their annual contest for the "Barttlet Trophy" on the 12th August, Cardiff being the successful contenders. Weather was poor, but the competing clubs put up a good show in spite of the discouraging conditions. Results :—

Power	**P. North**	**(Cardiff)**	**7 : 56**
	A. Taig	**(Bristol & West)**	**7 : 08**
	P. White	**(Bristol & West)**	**5 : 00**
Rubber	**L. E. Clack**	**(Bristol Aces)**	**5 : 31**
	G. Woolls	**(Bristol & West)**	**5 : 25**
	—. Blackmore	**(Cardiff)**	**4 : 28**
Glider	**—. Flaherty**	**(Cardiff)**	**4 : 59**
	A. Taig	**(Bristol & West)**	**4 : 20**
	J. Phillips	**(Cardiff)**	**4 : 19**

Bill Gravett of the **SOUTHERN CROSS A.C.** leads the club championship by a comfortable margin, but it is a disappointment that he must be deprived of a National win. Owing to an error he was given as the winner of the Lady Shelley Cup for tailless models, but this honour now goes to Ron Lucas of Port Talbot with a higher time. First round of the Brighton *v* S. Cross event resulted in a draw, each side scoring 15 points, Brighton topping the rubber and glider lists with P. Giggle (2 : 45) and F. H. Boxall (2 : 59), and the power class going to Gravett with 3 : 32.

The first year of active competition flying has resulted in no major successes for the **TIMPERLEY & D.M.F.C.**, but the experience gained should make a big difference in 1952. Their President's Cup, flown on September 9th, was won by junior B. Heathershaw flying a "Norseman", his last flight being the only maximum of the day.

THAMES VALLEY M.A.C. report a big success this month, having won the London Area Glider Championship. A very encouraging sign is the enthusiasm of their junior members, who are currently thinking in terms of 10 ft. gliders, and hush-hush Wakefields. Best laugh of the season was

when T. Berriman joined two broken fuselages of different sizes together—and managed to get a 5 minute flight! The bods at Fairlop swore there was Black Magic around.

A new club to come into being is the **MERCURY M.A.C.** (now then, Henry J., what about adopting them?). This group operates in the East Lothian district, and flying takes place at Macmerry Aerodrome, home of the Edinburgh Flying Club, who offer every encouragement to the hobby. Facilities include a first-class canteen, club room and a concrete hangar floor for C/L flying. To make members competition minded, a series of "winner takes all" comps have been instituted, with handicaps worked from previous events, thus giving the tyro a chance.

Preceded by an exhibition, the **PORT TALBOT M.F.C.** staged a very successful Control Line Rally at the Port Talbot Athletic Ground on the 18th August. Dozens of models were parked around the perimeter of the ground, unorthodox types including a couple of flying wings, and at least three "saucers", plus triplanes for good measure. Most clubs in South Wales were represented, and flying was fast and furious. Highlight of the afternoon was the performance of a tiny orange-coloured monoplane of orthodox streamline for which a new British Record was claimed in Class II. This model, belonging to Allan Coles of Penarth, clocked 99·143 m.p.h. The Mayor of Port Talbot presented the prizes at the end of a very enjoyable meeting. Results :—

Stunt	**C. Smith**	**Bridgend**
Team A	**F. Wood**	**Swansea**
Team B	**B. Connelly**	**Bridgend**
Speed II	**A. V. Coles**	**Penarth**
Unorthodox	**A. R. Lucas**	**Port Talbot**

The **FORESTERS (Nottm.) M.F.C.** hope to have a Nissen hut on Tollerton Aerodrome in the near future for use as a building and repair shop. However, the installation of a billiards table in the clubhouse will probably have a bad effect on such hopes. Despite indifferent weather, flying has not been neglected. Allen Harrison's "Ladybird" biplane has been flying nicely with an E.D.B22 aboard, but when he changed to an Elfin 1·5 things began to happen! Not satisfied with this, Harrison removed the lower wing, and after several narrow escapes, the job gave up the ghost and vented its spite on the runway!! Tom Woodward recently purchased an E.D. 2·46 for team-racing, and was definitely shaken when it did precisely 8 laps to the tankfull. He was last seen eyeing up a 5-gallon oil-drum. Best tale is of junior Colin Green who had a "Southerner Mite" given him. He completed it, and being only his second model apparently did not have a lot of faith in it. He filled the tank and released it . . . was last seen heading due West.

With the election of an entirely new Committee, the **BRISTOL & WEST M.A.C.** plan regular sport flying meetings each Sunday morning on Durdham Downs. This centrally situated site, although unsuitable for high powered duration models, is nevertheless ideal for average durations, and it is hoped that publicity caused by these meetings will result in the enrolment of more juniors. The large Lulsgate Aerodrome, with its clubroom, is always available for the power and duration enthusiasts.

Ulf Torle, of Strovelstorp, Sweden, is seventeen years old, flies mainly control-line, and would like to correspond with an English lad of similar age and interests. Any takers?

Which closes this month's collection of news and say-so from the clubs. Time we heard from some of the many hundreds of groups who appear to hide their bushels under many lights, but perhaps they think no benefit comes of others learning of their exploits. How wrong they are, as witness the steady membership of most of the regular clubs who report their activities. Till next month, good flying and building.

The CLUBMAN.

NEW CLUBS

MERCURY M.A.C.
J. Baxter, 16, Eastfield Street, Tranent, E. Lothian.
HUDDERSFIELD M.A.C. (formerly "Air League")
A. Coates, 33, Holly Road, Thornton Lodge, Huddersfield, Yorks.

SECRETARIAL CHANGES

BELFAST M.F.C.
N. Osbourne, 41, Albion Street, Belfast.
DEVIZES & D.M.A.C.
P. Lonnon, 15, Parliament Street, Chippenham, Wilts.
STOCKTON & D.M.F.C.
C. Chamberlain, 23, Kiethlands Avenue, Norton-on-Tees.
OLDHAM & D.M.A.C.
J. Green, 24, Green Lane, Garden Suburbs, Oldham.
NORTH WEST MIDDLESEX M.F.C.
B. R. Bowles, 48, Eton Grove, Kingsbury, London, N.W.9.
PETERBOROUGH M.A.C.
H. J. Wilson, 15, Holmes Road, Glinton, nr. Peterborough.
PHOENIX (Mansfield) M.F.C.
A. W. Berresford, 7, Toothill Lane, Mansfield, Notts.

S.M.A.E. CONTEST RESULTS

BRITISH CHAMPIONSHIPS. September 16

CHAMPION AREA :	**LONDON AREA**
Rubber Champions :	**London Area**
Glider Champions :	**East Midland Area**
Power Champions :	**East Anglia Area**

INDIVIDUAL CHAMPIONS. September 16.

P. Jacobs	**Ipswich**	**Power**
P. Jacobs	**Ipswich**	**Glider**
J. Gorham	**Ipswich**	**Rubber**

TAPLIN TROPHY. 9 Entries. September 16.

1.	S. Sutherland	West Essex	227 pts.
2.	J. Weston	Forresters	210 pts.
3.	S. Allen	West Essex	200 pts.
4.	Howard Boys	Northampton	170 pts.
5.	W. Tickner	West Essex	155 pts.
6.	O. Hemsley	Bushy Park	20 pts.

RIPMAX TROPHY. 22 Entries. September 2.

1.	S. Allen	West Essex	400 pts.
	T. Ives	Country Member	400 pts.
3.	W. Tickner	West Essex	375 pts.
4.	S. Sutherland	West Essex	350 pts.
5.	C. Dance	Kentish Nomads	275 pts.
	J. Fox	Hatfield	275 pts.

FARROW SHIELD. 53 Clubs, 244 Competitors. September 2.

1.	Kentish Nomads	48 : 07	7.	Whitefield	32 : 38
2.	Northampton	42 : 46	8.	Birmingham	31 : 42
3.	Croydon	41 : 34	9.	Solihull	30 : 50
4.	Leeds	35 : 47	10.	Luton	30 : 42
5.	Icarians	33 : 48	11.	Surbiton	28 : 49
6.	Ipswich	33 : 38	12.	Littleover	26 : 42

FARROW SHIELD. Winning Team Members.

1.	Miss D. Knight	14 : 38	3. H. J. Knight	11 : 37
2.	J. B. Knight	14 : 23	4. A. Parker	7 : 29

SCALE POWER. 15 Competitors. September 2.

1.	P. Wyatt	Ipswich	1 : 50
2.	N. Heppenshall	Leeds	1 : 25
3.	R. Minney	Luton	1 : 22
4.	J. Gorham	Ipswich	1 : 19
5.	R. Webb	Ashford	1 : 18
6.	D. Neale	Leamington	1 : 08

JETEX. 53 Competitors. September 2.

1.	W. Henderson	North Kent	32·6
2.	H. Hardwick	Wolves	22·6
3.	R. Amos	Ilford	21·8
4.	F. Hawkins	Birmingham	20·7
5.	L. Ranson	West Essex	20·5
6.	J. Magson	Halifax	20·4

DAVIES CUP. Team Race League Final. September 30

Class A. S. Birmingham.	**Class B. West Essex.**

PLUGGE CUP. (Club Championship Trophy).

1.	Birmingham	1,333	2. Croydon	1,325

INDIVIDUAL CHAMPIONSHIP.

1.	P. Wyatt	Ipswich	167 pts.
2.	J. Gorham	Ipswich	166 pts.

CONTROL LINE CHAMPIONSHIP.

1.	M. Billinton	Brixton	64 pts.
2.	R. Taylor	Brixton	58 pts.
3.	A. V. Coles	Bristol & West	44 pts.

"NOT TOO BIG—NOT TOO SMALL"

These Sailplanes include Nordic A2

All are between 4 feet & 6 feet wingspan

G/105	ATLANTA by R. H. Warring. Winner of many contests; graceful lines. 52 ins. span.	**3/6**	
G/330	DREAM BOGEY by D. Posner. Low aspect ratio winner. 60 ins. span.	**5/6**	
G/320	B.D.-12 by R. Dykman and J. v. d. Caay. Dutch record tandem with hexagonal fuselage and tapered wings. 58 ins. span.	**4/-**	
G/224	EVANDER by D. R. Murrin. Robust construction and a fine flier. 66 ins. span.	**3/6**	
G/359	K.R. 56 by Kurt Rechnagel. Danish streamlined design with delightful gliding qualities. 65 ins. span.	**3/6**	
G/148	IVORY GULL by R. F. L. Gosling. Many hundreds of this popular design have been built and flown. 50 ins. span.	**2/3**	
G/270	INVICTA by G. R. Woollett. Contest streamliner with high tailplane and elliptical surfaces. 50 ins. span.	**3/-**	
G/258	FUGITIVE Mk. I by D. C. Butler. Winner of Pilcher Cup. Semi-pylon wing and sheet fuselage. 50 ins. span.	**3/6**	
G/222	IGO by G. W. W. Harris. Prototype made a flight of over eighty miles. 60 ins. span.	**3/6**	
G/156	LEANDER by R. H. Warring. Expert's design for the beginner. 49 ins. span.	**3/6**	
G/302	SAINT by M. Richards. Easy construction and high performance combine in this Contest sailplane. 51 ins. span.	**3/6**	
G/188	STOTHERS GLIDER by K. L. Stothers. Mid-wing holder of many Club Records. 50 ins. span.	**2/6**	
G/192	SUNCLIPPER by A. J. Smith. Simple high-performance design by the author of "Simple Aerodynamics". 60 ins. span.	**3/6**	
G/277	SILVER PATROL Mk. Ia by Ian H. V. Hayes. Shoulder wing high performance streamliner with V-tail. 60 ins. span.	**3/6**	
G/409	NORD II by J. G. Joyce. Nordic A2 winner in hand-launch class. Good performer on the line, also. 50 ins. span.	**5/6**	
G/374	NORDIC TERN by R. F. L. Gosling. A2 by model sailplane expert. Auto-ailerons and other practical features. 66 ins. span.	**5/6**	
G/415	REVENGE by Roy Yeabsley. Big winner in 1950 A2 classes. Tailplane d/t and underslung rudder. 61½ ins. span.	**5/6**	
G/400	SATU by J. M. C. Bennett. Another 1950 A2 winner. Parasol wing with polyhedral, 393 sq. ins. 60 ins. span.	**6/-**	
G/405	LAVENGRO by Vic Dubery. Shoulder wing Contest sailplane. Blunt, thick wing sections. 70 ins. span.	**7/-**	
G/426	WALTHEW A2 by Roland Scott. Another member of this famous stable, of straightforward construction. 50 ins. span.	**3/6**	
G/442	WINDRUSH II by Henry Jones. A2 of semi-scale appearance and satisfying performance. 70 ins. span.	**6/-**	
G/450	URSA by D. C. Smith. Designed by an aeronautical student, this A2 features swept-back wing and fin-top tail. 60 ins. span.	**6/-**	

AEROMODELLER PLANS SERVICE

The Aerodrome, Billington Road, Stanbridge, Nr. Leighton Buzzard.

R.S. for RELIABLE SERVICE

SEND S.A.E. FOR COMPLETE LISTS AND SIMPLIFIED AGREEMENT FORM

COMET MK. I. R/C UNIT

Months of testing under actual flight conditions are at the back of this new R/C unit and I am confident that every owner will have superior performance and ease of operation with a "COMET" unit.
RECEIVER: XFG-1 Valve, Siemens 73 Relay Unit construction, crash proof **75/-**
TRANSMITTER: 3A5 Valve, 4 watt input, portable, highly efficient ... **87/6**
ACTUATOR: 2 pawl, self neutralising **21/-**
COMPLETE UNIT **179/6**
DESCRIPTIVE LEAFLET ON REQUEST

AGENCIES

I am agent for all the leading manufacturers and carry a comprehensive stock of their products: KEILKRAFT, VERON, MERCURY, ELFIN, DAVIES-CHARLTON, ELECTRONIC DEVELOPMENTS, AMCO, REEVES, FROG, MILLS, JETEX, HALFAX, TRUCUT, BARON, ROADWAY.

ENGINE EXCHANGE SCHEME

My offers for second-hand engines are always enthusiastically accepted and I now have hundreds of customers who wouldn't dream of sending their engines "elsewhere." Exchange only.

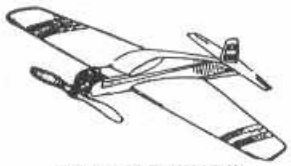
JAP SILK

Supplies of this superior covering material are once again available in limited quantity.
Complete Parachutes **£3**
Panels containing 1¼ square yards **4/-**
Order now while stocks last.

HIRE PURCHASE TERMS AVAILABLE ON ALL GOODS VALUE £2 OR OVER. ANY KIT CAN BE INCLUDED WITH AN ENGINE.

	Cash or C.O.D.	Deposit	20 wkly. pymts.
ENGINES			
Mills P.75 c.c. Diesel ...	60/9	12/6	2/8
E.D. Bee I c.c. Diesel ...	52/6	9/-	2/4
Mills Mk. II, 1·3 c.c. Diesel ...	91/8	16/8	4/-
Elfin 149, 1·49 c.c. Diesel ...	59/6	12/-	2/7
E.D. Comp. Special 2 c.c. Diesel	60/-	11/-	2/8
Reeves 1·8 c.c. Diesel ...	62/6	12/6	2/9
Elfin 249, 2·49 c.c. Diesel ...	70/-	14/6	3/-
Frog 250, 2·5 c.c. Diesel ...	72/6	15/-	3/3
E.D. Mk. III Series II, 2·46 ...	72/6	15/-	3/2
E.D. Mk. IV, 3·46 c.c. Diesel	75/-	15/-	3/3
D.C. 350, 3·5 c.c. Diesel ...	87/6	15/6	3/10
Amco 3·5 c.c. Diesel B.B. ...	115/-	20/-	5/-
Yulon "Eagle" 5 c.c. Glow Plug	108/7	18/7	4/9
Yulon "49" 8·2 c.c. Glow Plug	124/5	24/5	5/3
Eta "19" 3·2 c.c. Glow Plug	124/5	24/5	5/3
Eta "29" Series III, 5 c.c. G.P.	149/5	29/5	6/3
RADIO CONTROL			
E.D. Mk. III Complete R/C Unit...	197/6	40/-	8/3
E.D. Mk. I R/C Unit ...	359/9	90/-	14/-
Comet Mk. I Complete R/C Unit...	179/6	39/6	7/3
Comet Mk. I Receiver only ...	75/-	12/6	3/4
E.D. Mk. III Receiver only ...	75/-	12/6	3/4
"Ivy" Receiver	87/6	15/6	3/10
E.C. 950A Receiver	87/6	15/6	3/10
KIT			
Radio Queen 84" span ...	95/6	15/6	4/3
Junior 60 60" span	48/3	10/-	2/1
Monocoupe L7A 64" span ...	66/-	13/3	2/11
Southerner 60 60" span ...	48/11	10/6	2/1

ROLAND SCOTT
185, CAMBRIDGE RD., ST. HELENS, LANCS.



THE "ELF KING"

A modern type stunt control line kit for engines 1 c.c. to 2 c.c. but designed especially for a complete stunt performance with all 1·5 c.c. engines. Flying speed 65 m.p.h. Building time 8-10 hours. Kit includes:—**ALL** parts cut to shape—ready made tank, etc. etc.
PRICE 12/6

SELECTED SECOND-HAND ENGINES

Frog 100 Mk. II, 1 c.c. Diesel ...	27/6
Frog 160, 1·66 c.c. Glow Plug ...	25/-
E.D. Mk. II, 2 c.c. Diesel	25/-
E.D. Comp. Special, 2 c.c. Diesel	35/-
E.D. Mk. III 2·49 c.c. Diesel or Glow	35/-
Amco 3·5 c.c. Diesel	57/6
Amco 3·5 c.c. Glow Plug	55/-
Frog 250 2·5 c.c. Diesel	50/-
Yulon 29 or 30 Glow Plug ...	47/6
Yulon 49 Glow Plug	57/6
Arden 099 Petrol or Glow ...	50/-
Vulture 5 c.c. Diesel	35/-
Vulture 5 c.c. Glow Plug	35/-
E.D. Mk. IV 3·46 c.c. Diesel ...	52/6
Forster 99 Petrol, new	240/-
Mills 2·4 c.c. Diesel...	47/6
Ohlsson 60 10 c.c. Petrol	85/-

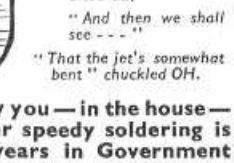
FULL LIST ON REQUEST
All engines guaranteed to be in good condition. Money refunded if not satisfactory.

THE FLUXITE QUINS AT WORK.

"This fountain will make a grand show,
Pipes fixed with FLUXITE y'know".
"Turn the tap on" cried EE,
"And then we shall see - - -"
"That the jet's somewhat bent" chuckled OH.

See that FLUXITE is always by you — in the house — garage — workshop — wherever speedy soldering is needed. Used for over 40 years in Government works and by leading Engineers and manufacturers. OF ALL IRONMONGERS IN TINS 1/- upwards.

TO CYCLISTS! Your wheels will not keep round and true unless the spokes are tied with fine wire at the crossing AND SOLDERED. This makes a much stronger wheel. It's simple—with FLUXITE — but IMPORTANT!



THE "FLUXITE GUN" puts FLUXITE where you want it by a simple pressure.
Price 2/6 or filled 3/6.

ALL MECHANICS *WILL* HAVE

FLUXITE

IT SIMPLIFIES *ALL* SOLDERING

Write for book on the art of "SOFT" SOLDERING and for leaflet on CASE HARDENING STEEL and TEMPERING TOOLS with FLUXITE ... ... Price 1½d. each.

FLUXITE LTD. (Dept. M.A.), Bermondsey St., S.E.1

BARON

THE BARON RANGE

BLUE LABEL	1/9
ETHER 579	3/-
RED LABEL	1/9
SUPERGLO	2/-
NITRO-SUPERGLO ...	3/6

	½ oz.	2 oz.
Balsa Cement ...	7d.	1/2
Perspex Cement	10d.	

	Small	4 oz.	½ pt.
Clear Shrinking Dope	1/-	2/-	4/-
Banana Oil...	1/3	2/-	4/-
Coloured Dopes ...	1/3	2/6	4/6
Grain Filler	1/3	2/6	4/-
Cellulose Thinners	—	1/6	—
Fuel Proof Dopes			
Clear ...	1/3	2/6	5/-
Colours ...	1/6	3/-	6/-
Fuel Proof Thinners	—	1/3	—

There is a 'BARON' Aeromodelling Speciality for every prizewinning and record breaking occasion.

Baron Quality Products, each a finely balanced formulation, are rigorously tried and tested before being introduced for the approval of the discerning modeller and to be acclaimed as the finest and most comprehensive range of its class available.

★

One Quality— The Finest

★

Sole Makers for E.D. of the renowned E.D. Diesel Fuels.

No Mail Order— Buy through your Model Shop.

Manufactured and guaranteed by :—

BARRON INDUSTRIES
(CHESTERFIELD) :: LIMITED
WHEATBRIDGE ROAD, CHESTERFIELD

Kindly mention AEROMODELLER when replying to advertisers

CLASSIFIED ADVERTISEMENTS

PRESS DATE for December issue October 20th, 1951.
ADVERTISEMENT RATES :

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

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

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

COPY and Box No. replies should be sent to the Classified Advertisement Department, The "Aeromodeller," The Aerodrome, Billington Road, Stanbridge, Beds.

TRADE.

Money in Models. Earn cash making Bennett Model Bungalows at home. We show you how and buy your work at guaranteed prices. Send stamped addressed envelope for free details. Bennett Models, Duncan Road, Richmond, Surrey.

Modellers write now for our Xmas Catalogue including special offers and bargains. 2½d. stamp from, The Model Shop, 71, East Street, Bridport, Dorset.

New machinery from stock. Half-inch Motorised Drilling Machines, £19 ; Wood Planing Machines from £9 ; Sanding Machines from £7 ; Forge Blowers, Paint Spray Plants, Electric Motors, Grinders, etc. Deferred terms available. Catalogue from manufacturers, John A. Steel, Dept. 74, Bingley, Yorks.

American Magazines, one year's supply, post free. "Model Airplane News", 25/- ; "Popular Mechanics", 32/- ; "Flying", 28/9. For full list send stamp to Willen Ltd. (Dept. 1), 101, Fleet Street, London, E.C.4.

North Engine Depot, 6, Victoria Street, Goole, Yorks. Still the best for engine part exchange. Engines under 1 c.c. wanted.

WANTED.

Wanted : Dynajet valves, good price paid. Please write : N. Long, 1, Queenborough Gardens, Ilford, Essex.

BUSINESS.

Opportunity occurs for a working Director in an established model shop, South Hampshire. Good business, ready for expansion over wide area. £1,000. Apply : Shave, 14, Hanover Buildings, Southampton.

FOR SALE.

Dooling "29", new and un-used, complete with all instructions. 10 guineas. Box. No. 344.

Mills ·75 in excellent condition for any 2 c.c. engine, in same condition. D. Johnson, 19, Willoughby Road, Bourne, Lincs.

Bargains ! Motors, Accessories Models, Books, Kits, Materials. S.A.E. List. Young, 34, Colebrooke Row, London, N.1.

Elfin 2·49, 50/- ; E.D. Bee 30/- ; Mills 1·3 30/- ; D.C. 350 £3 ; Frog 500 50/- ; Yulon 29 £3. D. Taylor, 117, Prestwick Road, Oxney Herts.

Mills 1·3 Mk. 11, Wildcat 5 c.c., 2 in. and 4½ in. Airwheels, kit, £4 lot. "Aircraft Fighting Powers" Vols. 1, 2, 3, 4, 5, 6, 7 ; "Miles Aircraft", "Westland Aircraft", "Japanese Aircraft", £5 lot. Stainsby, 164, Alexandra Road, Peterborough.

Almost new E.D. Bee Engine and Challenger Control Line Plane to suit. Will sell separately or £3 for lot. Newton, 3, Napier Road, Edinburgh 10.

Selling up. Frog 160 and E.D. Bee in good condition. Ethercal Lady, Frog Powervan and Frog Vandiver all fitted for Frog 160. Two Phantom Mites and Southerner Mite fitted for E.D. Bee. Best offer over £10, or sell separate. F. J. Sharratt, 52, George Street, Walsall, Staffs.

Halfax Spartan, Crackerjack control line model, E.D. Mk. III propellers, little used, £4. 10s. Robertson, 934, London Road, Thornton Heath, Surrey.

Amco 3·5 (as new) and ·87, 40/- and 25/- E.D. Comp. and Outlaw, 40/-. Props., spares. Phone Pal. 5667.

Dooling 29's £8. 10s. each. Champion Glow Plugs 7/- each. New and untouched Box No. 345.

Elfin 1·8, perfect condition, excellent runner and starter, £2, including prop. Stowell, 155, Harestone Valley, Caterham, Surrey.

Complete 7 ft. Radio Queen all R.C. equipment and E.D. 3·5 c.c. diesel, unused. Offers. 114, Church Lane, Stoke, Coventry.

Made and printed in Great Britain by Alabaster, Passmore & Sons, Ltd., London and Maidstone, for the Proprietors, The Model Aeronautical Press Ltd., Allen House, Newarke Street, Leicester. Published by the Argus Press Ltd., 42-44 Hopton Street, London, S.E.1, to whom all trade enquiries should be addressed. Registered at the G.P.O. for transmission by Canadian Magazine Post.

MAKE KEILKRAFT YOUR BUY-WORD

FOR SUCCESSFUL MODELLING!

PIXIE

One of the many interesting kits in the K.K. range. 23" span rubber powered semi-scale. **4/11** INC. TAX

Free Flight SUPER-SCALE KITS

For engines ·3—·87 c.c

The three finest scale kits that money can buy! Ask your dealer.

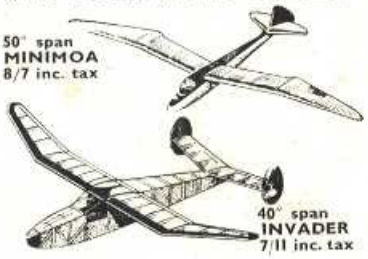
Special design features include—

- Crashproof one piece wings.
- Completely cowled, side mounted engines.
- Detachable flying surfaces.
- Detailed instructions for rubber power.

ALL ONE PRICE 22/8 inc. tax

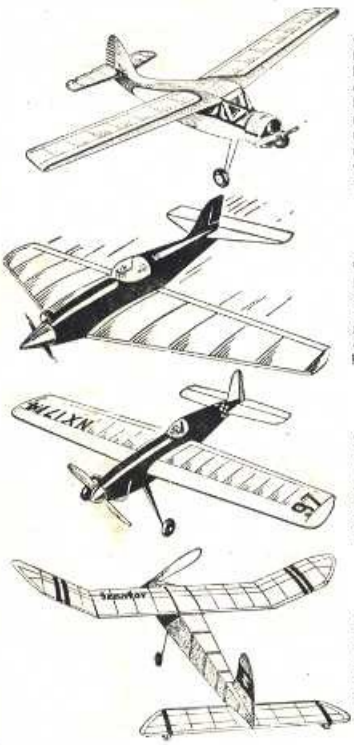
CESSNA 36" SPAN PIPER 40" SPAN
LUSCOMBE 40" SPAN

TWO INTERESTING GLIDERS



50" span **MINIMOA** 8/7 inc. tax

40" span **INVADER** 7/11 inc. tax



LADYBIRD

42" span semi-scale free flight model for the E.D. Bee or similar capacity diesels.

For those who prefer realism in their models, the Ladybird is a natural choice. A plane you will be proud to own. **22/8** INC. TAX

SKYSTREAK 26

Capable of every stunt possible on lines. This supersonic controliner is ideal for the E.D. Bee and similar capacity engines. A K.K. winner. **11/7** INC. TAX

STUNT QUEEN

Winner of the 1950 Nationals Gold Trophy. Top stunt model of the year, and a really good looking plane. For Yulon 29 or 49, Frog 500, Amco 3·5 **25/8** INC. TAX

SENATOR 32"

A true rubber powered contest model, the Senator is straightforward to build and fly. Multi-spar flying surfaces give strength with lightness. **6/9** INC. TAX

JET PROPELLED FLYING SCALE MODELS

Powered by Jetex 50

By far the least expensive Jetex powered flying scale kits on the market today. EACH **3/8** INC. TAX

Kits contain—Full Size Plan, Building and Flying Instructions, ample Building and Covering Materials and Bubble Canopies.

The Best—the Cheapest!

ACCESSORIES BY KEILKRAFT

KEILKRAFT
KRACKER COIL
with matched condenser

Gives a really hot spark with less battery drain. Your ignition motor will run sweeter with one of these. **27/6**

KEILKRAFT
FUEL CUT-OUT

A very efficient method of cutting out your motor. A strongly made precision job. **4/3**

KEILKRAFT FREE FLIGHT
FUEL TANK

Neat design in transparent plastic. Easy to fix. **3/1**

COCKPIT COVERS

Moulded in Celluloid. Ideal shape for modern low wings or mid wings.

Large .. .. 11d.
Small .. .. 7d.

ALL PRICES INCLUDE TAX

- *Always use Keilkraft dopes for a perfect finish.*

KEILKRAFT

KITS AND ACCESSORIES

Manufactured by E. KEIL & CO. LTD., LONDON, E.2, (Wholesale only).