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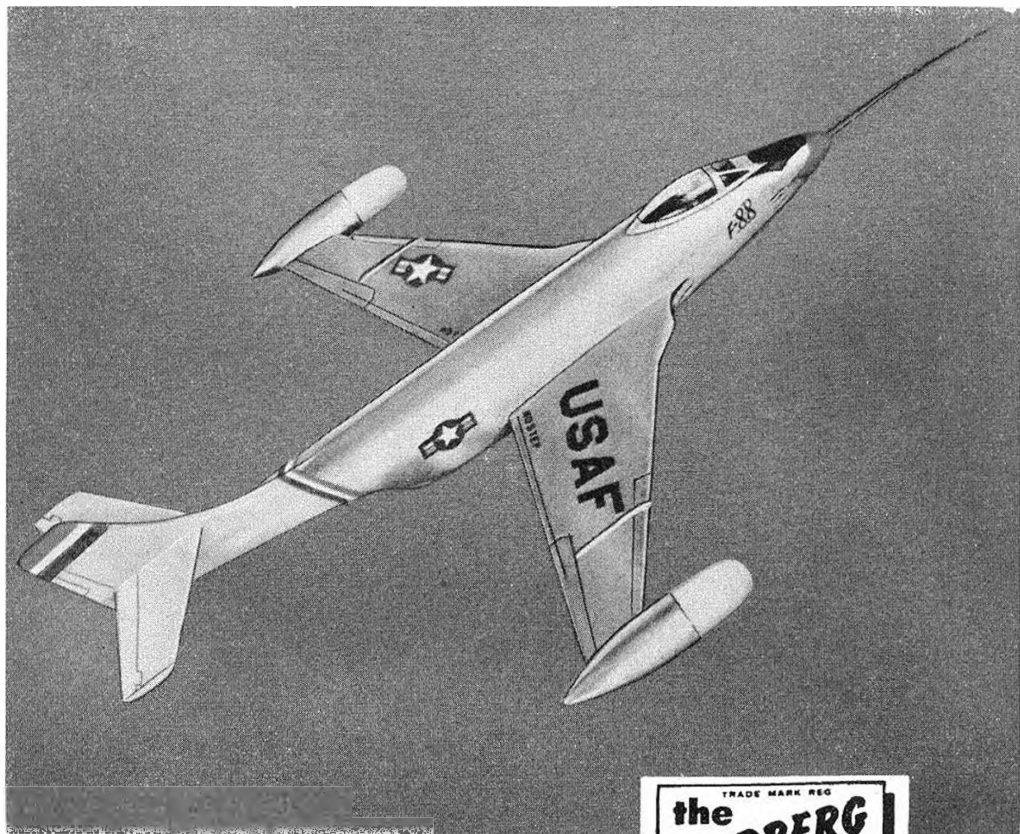
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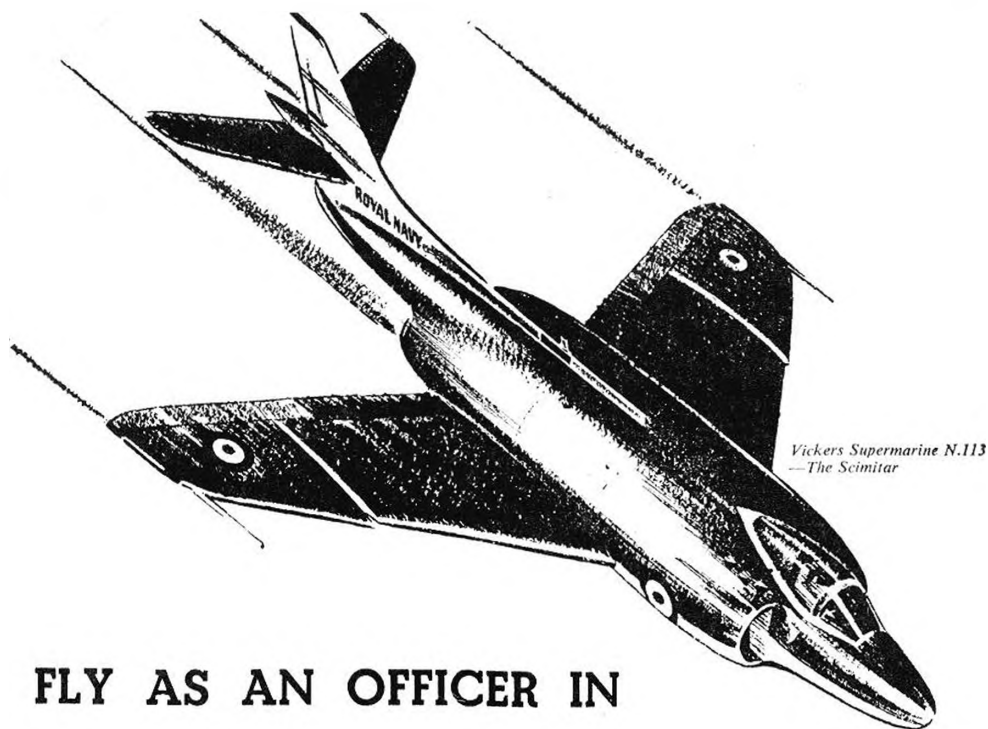
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DEFENCE WHITE PAPER, APRIL, 1957.

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Age limits: Pilots 17-23, Observers 17-26. Full details of life in the Fleet Air Arm are explained in an illustrated booklet "Aircrew Commissions in the Royal Navy".



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BALSA STORY

PART 9

FUNGUS ATTACK . . . Continued

LAST MONTH I described the haphazard technique of individual operators in logging the Balsa trees. Having moved the logs to the river they then have to be made into rafts and floated down to the saw-mills. Nobody hurries in a country like Ecuador and again it is usually a matter of weeks before they arrive at the mill. Generally speaking, they are in the river for this time and luckily there fungus ceases to work—but, again, there are other varieties of worms and insects in the river ready to attack the wood and cause damage.

At the saw-mill there are always piles of sawdust and waste pieces lying around waiting to be pushed back into the river for disposal. Again, ideal conditions for the breeding of fungus spores and you can say that immediately a log is sawn the fresh sawcuts become infected.

The two big mills at Ecuador have batteries of kilns and as the wood is cut it is kiln-dried to a moisture content well below that at which the fungi will work. This does not, however, prevent re-infestation by fungus spores, so that if the timber should get wet once more fungus growth can start all over again.

To make matters worse for the purchaser, in the smaller mills they cannot afford to build kilns and, therefore, the timber is air-dried.

In the dry season things are not so bad as the wood will air-dry to below 18 per cent. moisture content in about three weeks. This is quick enough, in general, to prevent serious damage.

For years our greatest worry was this fungus attack. Indeed, it was this which caused such heavy losses in my Trinidad venture in 1948-49 where, in the humid conditions of that island, we just could not dry the wood fast enough to prevent serious damage.

When I visited an American saw-mill in South Carolina at that period I saw them using "Santobrite", which is a fungicide, and never

This is one of a series of articles on Balsa Wood written by John Paterson, Managing Director of Solarbo Ltd.

thought to apply it to Trinidad. A year or so later, however, when a battery of kilns that our shippers used in Ecuador were destroyed by fire, I remembered this and actually flew "Santobrite" out to Ecuador to try it.

With the assistance of the Forest Products Research Laboratory at Princes Risborough we evolved correct methods of application which have now solved this problem of fungus attack. The dip works by actually killing the fungus spores on the surface of the wood when sawn and by preventing fresh infection while the wood is drying. Even in the wet season it will enable the wood to be dried to something like 30 per cent. moisture content and still protect it while it is being brought to England and dried in our own kilns. All our wood is, in fact, treated with "Santobrite".

It is very important that Balsawood should be put to dry properly, and for Balsa the proper way is to cross-rack it end up so that the sap runs out quickly—and so that you can get the maximum circulation of air round the pieces.

I have seen good Balsawood spoiled by being cross-piled in a high pile, and where any two pieces crossed blue stain went right through into the wood.

The other important defect is Mineral Stain. This is, I think, a function of the soil conditions in which the tree grows. At its worst it can be very unsightly and spoil a log completely.

Whilst we specify that we shall not receive wood with Mineral Stain the poor mill-owner has not X-ray eyes and an otherwise beautiful piece of Balsawood may have this stain right in the middle. This is not his fault, but it costs us money to get rid of it in our milling operations. At times it would be ridiculous to discard an otherwise perfect piece of wood for a small stain, or even the odd worm hole. This latter point is a subject in itself and one with which I will deal next month.

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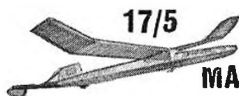


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9/4

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An open letter

From: Air Marshal Sir John Whitley, K.B.E., C.B., D.S.O., A.F.C.



AIR MINISTRY (AM3),
ADASTRAL HOUSE,
THEOBALDS ROAD,
LONDON, WCI

Dear Sir,

Suggesting a career is always a big responsibility - not least for parents with a son growing up. In the final analysis, the choice must lie with your son himself. But you can help him in his choice.

Here, therefore, are some facts about one career which is particularly attractive to an ambitious young man. I refer to a flying career in the Royal Air Force, about which there seem to be some misconceptions, at present.

First, let me assure you that flying will continue in the Royal Air Force for as far ahead as can be foreseen. The Royal Air Force has the prime responsibility for the air defence of this country. For young men therefore who are trained to tackle the problems of the air in the air, there will be more - not fewer - opportunities in the missile age. This is especially true of those who qualify now for a permanent or short service commission and come successfully through their Pilot's, Navigator's or Air Electronics Officer's training. In a service as complex and as forward-looking as the Royal Air Force, there is always a constant demand for the right kind of senior officers.

It is a well-paid job. In how many callings can a man of 25 earn £1,500 a year? It is a job of high responsibility. Quite apart from flying and its fascinating skills, there are the manifold duties of an officer; to men under him; in staff, liaison or training jobs; and perhaps, in high command.

You know yourself if your son has the character, intelligence and fitness for this magnificent (but exacting) life. If he is over 17½ and has G.C.E. or equivalent to the required standard, you may be doing him a service if you write to the Air Ministry for fuller information.

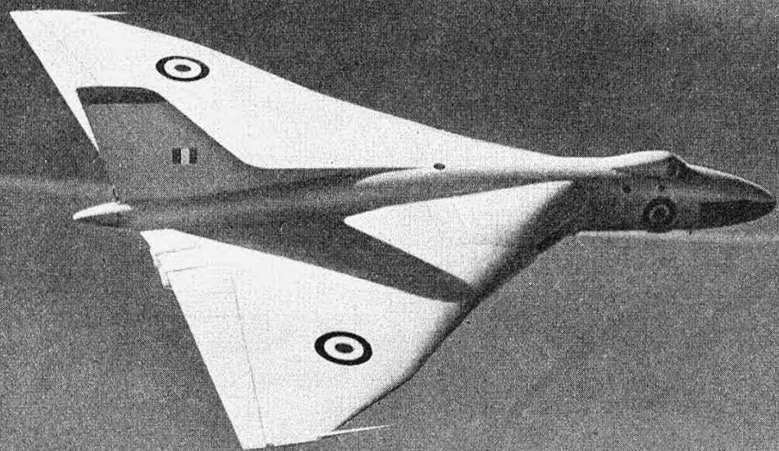
Let me add that the country needs the right kind of young men for this vitally important job, and it needs them now.

Yours faithfully,

Air Member for Personnel

To any young man who wants to fly...

TO PARENTS OF AMBITIOUS YOUNG MEN



In this letter, it is not possible to give full details about this worthwhile career. For further information write to: Air Ministry (AM3), Adastral House, London, WC1.

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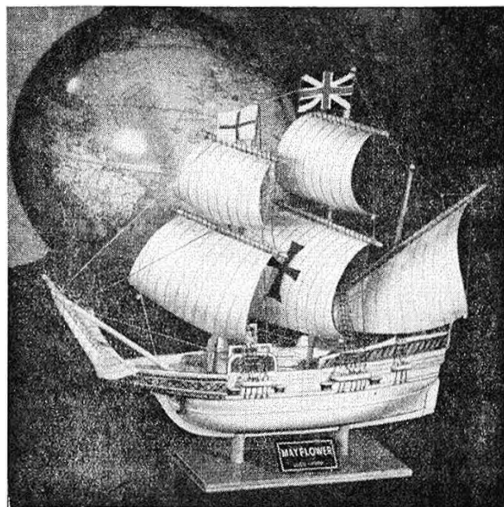
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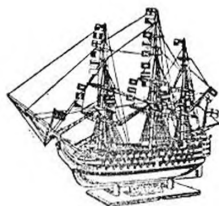
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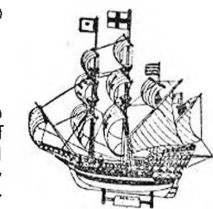
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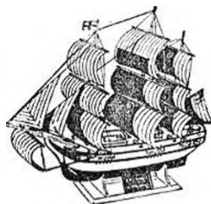
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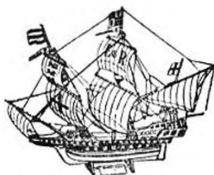
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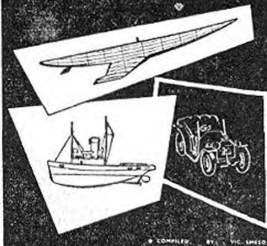


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The International Situation

AT THE LAST MEETING of the F.A.I. Models Commission, held in Paris last November, some pretty sweeping decisions were made in regard to future World Championship events. One of the most important matters debated was the proposal by Great Britain and other countries to revert to annual competition, thus countering the inevitable loss of interest in those contests not scheduled for World Championship status in any particular year. Unfortunately, on being put to the vote, the proposal was defeated by 8 votes to 6, and we continue with the bi-annual series.

Probably the most vital decision taken was grouping the three main free-flight categories of Rubber, Glider and Power into a combined Championships, commencing in 1959 with Russia as the probable venue. Thus we almost achieve the Model Olympics advocated some years ago by this magazine, and we await with interest the results of such meetings which we are confident will silence for good those Jeremiahs who loudly maintained that meetings on such lines could not be conducted successfully. The triple Championships at Weisbaden in 1955 did much to counter such criticism, though certain organisational shortcomings on that occasion prevented a clear-cut picture being presented.

It was further agreed to grant World Championship status to three other categories of model flying, i.e. Radio Control, Team Racing, and Aerobatic Control Line. For Radio, 13 delegates voted in favour, Spain being in opposition, whilst for the other categories 12 were in favour, with France and Great Britain against.

From 1960 the Radio Control and Control Line Championships will be held in the same year, but not necessarily together. It would seem logical to follow the same pattern as obtains with the free-flight events, and stage a combined meeting.

Naturally, such increases and grouping brings about further problems of expense and accommodation, and Russia has proposed that in future National teams shall consist of three and not four members. This is logical, but the official feeling in this country is that three is the absolute minimum to which teams should be reduced, and still retain any semblance of a "team".

A try-out of the control-line combination will take place during the first week in September, when Belgium will stage a special meeting in connection with the World Exhibition to be held in Brussels. We understand that the contests will take place within the exhibition grounds, and they should form an interesting guide to the future of such an embracing programme.

Great Britain will stage the Rubber and Power World Championships in 1958, probably at Cranfield during the August Bank Holiday period. Whilst certain criticisms have been levelled against holding meetings during a Bank Holiday, it must be appreciated that the S.M.A.E. is conducted on a purely voluntary basis, and can rarely find people with time on their hands able to participate in such activities during a working week. The three-day Bank Holiday break affords a period that can be used to advantage, for we doubt whether employers will be prepared to grant time off to timekeepers, processors, etc., with the same willingness they would grant to a successful team member.

On the cover

AS YOU READ THIS, the two EP.9's seen in true colours should be ready for action in Australia (with revised registration). Taken by our photographer during an acceptance test flight at Stapleford, the picture shows "Titus" Oates and "Wac" Wightman at the controls just before they left Britain on the long delivery haul in 950-mile stages.



Heard at the Hangar Doors

High Speed at Heston

Sunday, November 17th, 1957, saw a contingent of keen speed fliers at Heston Aerodrome, Middlesex, to witness an attempt by Ray (Gadget) Gibbs on his own British and World Speed Records in the Class II (5 c.c.) class. Despite fuel separation troubles owing to the low temperature, Gibbs managed to get in a fine run to cover the kilometer course in 14.7 seconds, producing a speed of 152.4 m.p.h. (former record 146.2 m.p.h.) for the British record, and equivalent to 244 k./hr. for the World Record, which formerly stood at 235 k./hr.

We understand that the Carter Glow motor used was that employed in his earlier successful attack on the record, but that an additional piston ring had been fitted. In fact, the engine is that originally reviewed in *Engine Analysis* in our May, 1956, issue.

From a foreign source we learn that Studeny of Czechoslovakia achieved an identical speed during October but that on check the engine was found to be over-size. We await confirmation of this statement, but we can confidently anticipate a first class struggle between our own fliers and those from the State laboratory in Brno, for Gibbs is certain that he can get still more k.p.h.'s from his motor given more favourable conditions.

Mechanising Model-making

A new machine to speed research work on ultrasonic planes of revolutionary design has been bought by Lockheed Aircraft Corporation. Lockheed is the first U.S. aircraft manufacturer to buy this new machine, named the Whaley "over-arm wing contour machine".

Only three others have so far been built, but these are being used at the laboratories of the National Advisory Committee for Aeronautics at Langley Air Force Base, U.S.A., where all four machines were designed and developed.

Lockheed will use the new £10,000 machine to make wind tunnel models of ultrasonic aircraft designed to conquer the problems of the heat barrier, thus surpassing the speeds achieved by the company's F-104 Starfighter, reputed to be the world's fastest combat aircraft.

With current methods, the aerodynamic models made for wind-tunnel tests cost the company as much as £50,000 each to make.

Mr. J. B. Wassall, director of engineering at Lockheed's California Division, said the Whaley

All the way from New Zealand, Ross Giddy's "Aeroactive" (AM35) displays itself in front of the New Plymouth airport hangar

machine will speed model construction by nearly 40 per cent. and appreciably cut present costs.

"It will fashion lift surfaces of wind tunnel models from all metals", he said, "including the hardest of all—heat-treated steel".

He added: "It works steel with micrometric precision with a minimum of template guidance at tolerances down to .003 of an inch as compared with the old process of preparing steel shapes which, besides being laborious, was good only to 0.15 of an inch".

Utilising a new variable speed cutter adjustable to all angles, the Whaley machine can transform a block of material into any wing shape—straight, tapered, swept, or concave. Thus it eliminates long and costly hand-carving common to previous contouring methods.

It also eliminates the need for an enlarged 3D pattern to be made for the final reduction—but professional model makers can rest assured their services will always be needed for wind tunnel work.

In the Balsa Jungle

Ever since five young American missionaries were killed by the Auca Indians in Ecuador eighteen months ago a series of "Friendship" flights over their settlements in the jungle has been maintained by the Missionary Aviation Fellowship.

The full story is now the subject of "Through Gates of Splendour" by E. Elliott, and latest report in the *Manchester Guardian* of November 16th tells how balsa is used to extend goodwill to the natives. Footprints were noticed in the mudbanks of the river Curaray, and a bright yellow Balsa model was set up to create interest. (The Missionaries use Piper Cubs). This did not attract interest, so fleets of small balsa "solids" were launched into the river. There were still no responses; but the missionaries in the Balsa Jungle will persist in their efforts to reach the Aucas who watch every move from the dense, dark background.

More on those Plastics

To the many readers who have written in appreciation of last month's plastic models feature we extend a big thank-you, even to those who taxed our research dept. by selecting some of the more rare types and asking for sources of supply. (Why

not tackle your model shop—they should know where to get *all* of the 185 types on the British market?

Surprisingly, no-one wrote to us complaining of a few errors in scale which crept through in the Lincoln listing, and which we amend as follows:—

Vickers Viscount 1/121 English Electric Canberra 1/98
Douglas DC-7 1/150 Vickers Valiant 1/154

and, of course, under the Hawk listing, it is the Graf Zeppelin and not the Atlas Rocket which is 1/242nd scale.

In the Frog range, we checked the Douglas DC-7C against span figures for the DC-7B, hence the scale should read 1/96 as with the Britannia and newly introduced Viscount 800 in the same airliner series. Other Frog kits not listed last month were:—

Hawker Hunter	1/72	51-in. span	5/3	19 parts
N.A. Sabre F86E	1/72	64-in. span	5/3	16 parts
Westland S55	1/72	7-in. long	5/9	27 parts
F.E. Canberra PR7	1/72	10-in. span	8/6	21 parts
Gloster Javelin	1/72	8-in. span	7/6	19 parts
De Havilland 110	1/72	8-in. span	8/6	24 parts
Gloster Meteor VIII	1/72	64-in. span	5/11	28 parts
De Havilland Venom F.B.4	1/72	71-in. span	5/3	23 parts
Supermarine Sea Hawk	1/72	65-in. span	5/3	23 parts
Vickers Viscount 800	1/96	111-in. span	14/6	58 parts

Plans this Month

This is a contest modeller's issue as far as A.P.S. plans are concerned, and we present three top-class models to start off the 1958 season. Mike Green's Nationals winning power model "Heatwave" heralds a return of the light, hand-launch, high climbing power type of model which will now replace the F.A.I. power specification in popularity for home contests, and, of course, the performance of John Hannay's "Topscor" needs no introduction to all keen glider fans. "Little Auk" with its dual land/water purpose fills the bill for a medium-size rubber job, and we know that its simple construction will make it a popular selection.

No scale models? Not this month; but instead we feature a prototype jet in "Aeroplanes in Outline" that should stir the hearts of all ducted fan devotees. Who'll be the first to make a free flight Griffon? Of all the jets in the air today this one strikes us as being the most suitable for fan propulsion. Not forgetting the E.P.9—this is another natural scale model, and one which we'd like to see radio controlled at, say, $\frac{1}{2}$ scale.

Aeromodeller Index

ONCE MORE we offer our service of providing a complete four-page index for AEROMODELLER, Volume 22, of last year. It is available only from the editorial offices for a nominal charge of 6d. per copy; but we must also request supply of a suitable stamped and addressed (2d. stamp for U.K. readers only) envelope preferably measuring $6\frac{1}{2} \times 9\frac{1}{2}$ in. so that we can despatch the index with only a single fold. Subscribers will automatically receive their index in the post with their AEROMODELLER.

This is also the ideal time of the year to consider binding your copies into a handy reference work. The price of binding in handsome red cloth covered stiff jacket with title gold blocked on the spine is only 12s. 6d. Copies should be sent well packed with the covers removed if not required to be bound in. Alternatively we offer the "Easibind" folder specially prepared for AEROMODELLER which takes the 12 copies plus index, and has the advantage of permitting individual copies to be removed if ever necessary. This is sold direct from our offices at 10s. 6d. per folder.

More Help Needed

Response to our appeal in the December, 1957, issue in which we asked experienced radio control enthusiasts to help out tyros in their own locality has been excellent. Several Good Samaritans have volunteered to whom we publicly express our thanks. Still more helping hands would be appreciated to assist home constructors.

One hands with the enthusiasm to build their own equipment are often frustrated, not only in regard to frequency checking but on other aspects of radio equipment. A little advice from an experienced operator can make all the difference between success and failure and very often ensures the admission of another enthusiast to the ranks of radio control.

We are keeping a register of "Radio Samaritans" here at the Editorial Offices, and do insist that people in need of help first write for an appointment.

The absorption wavemeter promised for this issue in "Radio Control Notes" has had to be held over to next month, meantime, any more volunteers?

K. & M.A.A. CUP

October 13th. 176 entries

1. Willis, N. (Anglia)	9: 00+3: 47
2. Wisher, A. (Surliton)	9: 00+2: 53
3. Gower, J. (South Bristol)	9: 00
4. Waldron, J. (Henley)	8: 58
5. Chadwick, J. (Ashton)	8: 45
6. Hilsley, D. (Birmingham)	8: 41

HAMLEY TROPHY

October 27th. 49 entries

1. Stemming, D. W. (C Member)	12: 00
2. Gaster, M. (Surliton)	11: 05
3. Fuller, G. (St. Albans)	11: 04
4. Remington, W. B. (Loughboro College)	10: 57
5. King, K. G. (Croydon)	10: 51
6. Farr, A. (Wakefield)	10: 46

PLUGGE CUP

(Club Championship)

Surliton M.A.C.	1411-895 points
Birmingham M.A.C.	1309-887 ..
Baldon M.F.C.	1324-887 ..

Contest Results

HALFAX TROPHY

September 15th. 72 entries

1. West, J. (Southern Cross)	12: 00 14: 00
2. Posner, D. (Surliton)	10: 47
3. Ricketts, J. (Rugby)	10: 29
4. Jones, B. D. (Epsom)	10: 19
5. Lennox, R. (Birmingham)	10: 16
6. Smith, T. W. (English Electric)	10: 14

MODEL ENGINEER CUP

September 15th. 32 clubs

1. Henley M.A.C.	24: 37
2. Surliton M.A.C.	24: 18
3. Bournemouth M.A.C.	24: 10
4. Leamington M.A.C.	23: 10
5. Croydon D.M.A.C.	22: 52
6. Southampton M.A.C.	22: 20

SID ALLEN TROPHY

(Radio Champ.)

Nixon (North Lines).

FARROW SHIELD

October 13th. 28 clubs

1. Croydon D.M.A.C.	48: 00
2. Birmingham M.A.C.	47: 32
3. Bristol & West M.A.C.	42: 40
4. Whitefield M.A.C.	42: 21
5. Halifax M.A.C.	38: 29
6. Surliton M.A.C.	36: 49

FROG JUNIOR CUP

October 27th. 14 entries

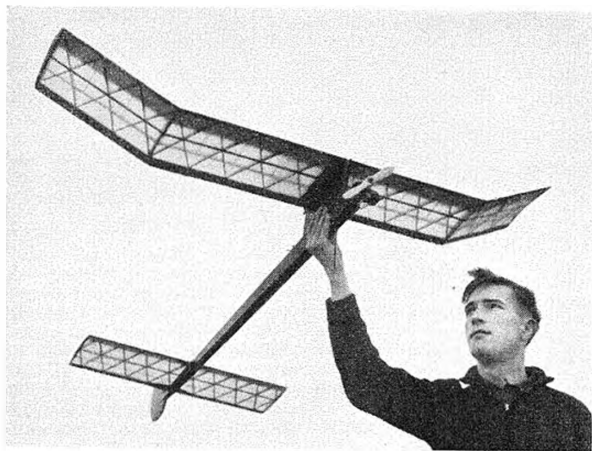
1. Chapman, B. (Hayes)	7: 18
2. Manville, P. (Bournemouth)	5: 52
3. Greaves, D. (Leamington)	5: 13
4. Hagger, J. (Apsley)	4: 35
5. Hooker, M.	3: 56
6. Barron, L. (Southampton)	3: 43

SENIOR CHAMPION

J. O'Donnell (Whitefield).

JUNIOR CHAMPION

D. Greaves (Leamington)



Mike Green's British Nationals winner—a current fashion lightweight for maximum open power contest performance

HEATWAVE

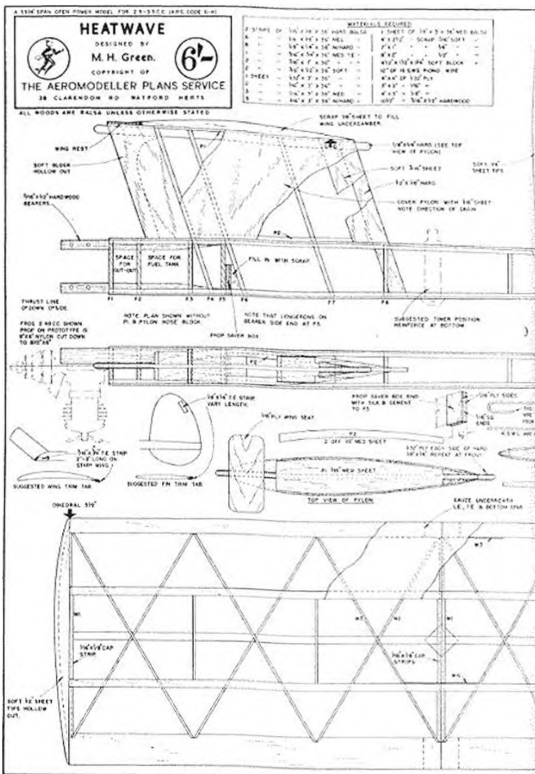
Designer and his Frog
2.19, 56-in. prototype

OPEN POWER duration models are gradually showing a set pattern of evolution with long fuselage, shallow pylon and rear fin. Mike Green's Heatwave is the latest of a series of such designs and as the 1957 Nationals winner has established a firm reputation for high climb rate. Construction is easy, so why not start yours now for the new season?

Use good quality medium/hard $\frac{1}{16}$ th sheet for the fuselage sides, cement $\frac{1}{8}$ sq. longerons and spacers in place. Cut out formers of ply and $\frac{1}{8}$ sheet. Then shape and drill engine bearers and temporarily bolt to engine. Cement formers to starboard side and glue or cement in bearers very accurately. The longerons will have to be trimmed to take the bearers. The precise position of F.1 and F.2 will depend on the individual tank and cut-out system chosen. Various holes for the fuel tubing, etc., must also be made before finally gluing. Fix tank and tubing. Then fit the port side and cement the top and bottom spacers. Make box of $\frac{3}{16}$ th ply for prop saver and cement to F.5. Add sheet to top and bottom—grain direction is optional and proceed with the pylon. The fin can be built and fitted, sheet covering preventing any possibility of warps.

The wing is built in three parts—centre section and tips. Pin down LE and TE. The latter is packed up $\frac{3}{4}$ in. at the front, and is suitably notched. Insert ribs—care will obviously have to be taken with the diagonals. Ribs at the dihedral break should be suitably angled. Now notch the ribs and add top spars. Lift from board and fit the lower spar. Shape LE and sheet with soft $\frac{1}{8}$ th. Add small upper surface riblets. Shape TE and then join outer panels at correct angle. Fit soft balsa tips. Sheet the centre section and sandpaper off to prepare for covering. Tail is of similar construction.

Jap tissue was used on the original to keep the weight down. On the wing use two or three coats of

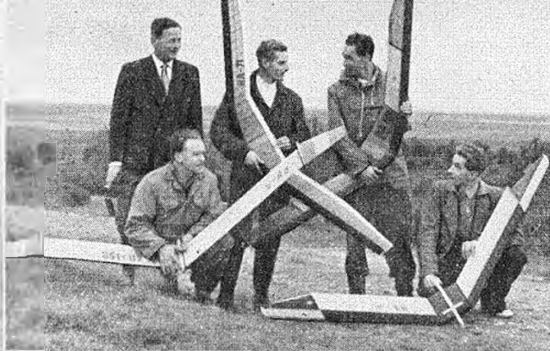


dope, according to strength (50-50 "Glider" dope and thinners, for example). Finally 50-50 Banana oil and dope really thinned out for gloss. The tail has the same treatment and the fuselage lightweight Modelspan covering.

Trimming

The slight pattern is a fairly wide right climb and right glide. No down or side thrust has been found necessary with this series. Hand launch to check glide. If anything, there should be a barely-perceptible right turn. Then proceed with short motor runs under low power (5 sec.). Some left rudder may be needed. The glide can be sorted out at this stage. The turn is achieved by tilting the rail and will work out finally to about 1-1½ in. up on the right side. Do not put the tilt in all at once because it does affect the power turn slightly. Gradually increase the power, using the rudder to adjust the turn in the climb. Keep the right wing up either by using wash-in or, which is more convenient on the flying field, use a small flap of ¼" trailing edge





international TAILLESS at TERLET

BY JUSTE VAN HATTUM

THE SIXTH IN THIS series of interesting contests took place at Terlet at the national gliding centre of the Royal Netherlands Aero Club, from September 27th to 30th.

Honours go to the German Aero Club for initiating this type of contest for a layout which, unfortunately, suffers from a general lack of attention. The reason is probably that the design and trimming of a really good flying wing is no easy task, and only the expert can expect to achieve outstanding results. Nevertheless, design appears to have progressed during the last ten years or so and much of this is to the credit of the Germans.

The Royal Netherlands Aero Club also undertook the organisation last year when the beautiful challenge shield was won by Great Britain through F. Smith of the Southern Cross A.C. Great Britain should have organised the event for this year, but various difficulties arose, so that the R.Neth.A.C. offered to take it over once more.

With the A/2 formula being applied to the flying wing glider from now on, total area was more than halved and, in the case of some very large models of 1956, even less than a third this year. Yet, performance proved to be higher.

Entries were received from four nations: Germany, Great Britain, Yugoslavia and Holland,

entries being for gliding, rubber and power, as in 1956.

Checking went on during Friday evening and Saturday morning, with only minor corrections to area and weight required on a few models. The first three flights took place on Saturday afternoon. Conditions were not too good, with a strong breeze and intermittent rain.

The wind forced the launchers to run back fast to reduce towing speed. Some models could not stand the excess speed and many cases of flutter were noticed. With the quite generous A/2 weight there is no need to build ultra-light and sacrifice essential stiffness.

Dutch team member Osborne started the ball rolling by scoring a maximum, thereby acquiring a lead which he did not relinquish right through the contest. With another 113 and a flight of 90 seconds he stood at the top with 383 secs. when the day's three flights were finished. His closest rival, Boretius of Germany, stood at 245 and third man Ten Hagen, Holland, at 236 secs. Holland had taken the lead with 791, with Germany second with 671, Yugoslavia third with 522 and Great Britain fourth with 347.

Sunday morning started with rain and looked very much like a repetition of last year, when the

Heading shows winning Dutch team wearing a pleased expression at scoring 1366 pts. Standing from left to right: Van der Gaaij, team manager and Chairman of the Model Aviation Section of the R. Neth. Aero Club; Osborne individual winner, last, who came 5th. Kneeling, Piles, and Ten Hagen who placed third. Below: left, British team member Marshall scored highest total. Helper is Helgmann and at extreme right is Mr. Manting, Manager of the Royal Netherlands Aero Club Gliding Centre at Terlet. At right, Rubber-driven flying wing from Yugoslavia shows fuselage of near Wakefield length and fin at rear, which should all lead to pretty large inertia moments



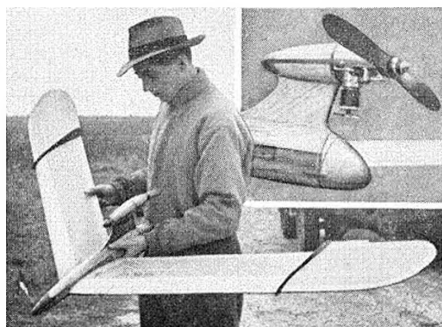
last two flights had to be flown in the afternoon. However, the rain stopped and a hurried trip made to the launching site.

In the glider class, Osborne consolidated his position with flights of 139 and 87 seconds, ending with the top score of 609 secs., an average of very nearly 122 seconds. Second place was taken by Boretius of the German team with 452, while Dutch team member 'Ten Hagen—winner of the 1955 contest in Germany—scored 411. Holland proved to be the highest scoring team with 1,366 points against the German team's 1,112 points. Yugoslavia came third with 1,030, and Great Britain fourth with 646 points.

There were many interesting and promising designs at Terlet, but there is little doubt that Osborne's was superior to all, both in design as well as in trim and towline characteristics, which were of the highest order. Next we would choose Boretius' simple layout, which only needed structural improvement to eliminate flutter. Once again it was proved that a pleasing and sound layout is not enough and a great deal of time should be spent on achieving perfect trim.

In the rubber class there were, unfortunately, only two entrants, but quality was very high. Here the British competitors made up what they lacked in the glider class, for Marshall made the highest score, 664 secs. with a perfect series of five flights all well over the 100 secs. mark: 164, 146 and 118. A really grand achievement! Second came Schubert with a total of 398; a very creditable effort in view of the fact that he was flying with only 50 grammes of rubber. On his last flight he really got his model going and booked 133 seconds. The rubber-powered flying wing strikes us as a really worthwhile class which deserves more attention.

Only two flew in the power-class and it proved an easy win for Klinger, who entered a beautiful high-thrust design which totalled 395 secs. over five



Klinger's pusher-pusher wing from Germany

flights. Old-timer Kron (Germany) smashed his model in his first flight and scored a mere 23 seconds so Klinger had no opposition.

Thus ended another of these intimate and pleasant small international contests of which we have so regrettably few now that the World's Championships set the tone for glamour and expense. It is to be hoped that in 1958 Terlet Gliding Centre will have to look anxiously at the large entry and wonder how they are all going to be accommodated!

GLIDER	Times in seconds				TOTAL
1. Osborne (Holland) ...	180	113	90	139	87 609
2. Boretius (Germany) ...	54	118	73	114	93 452
3. 'Ten Hagen (Holland) ...	60	56	120	128	47 411
4. Zupanski (Yugoslavia) ...	0	111	88	58	105 362
5. Lust (Holland) ...	46	34	92	79	95 346
6. Kron (Germany) ...	22	82	124	58	58 344
7/8. Bodlovic (Yugoslavia) ...	31	75	55	110	63 334
7/8. Janic (Yugoslavia) ...	71	0	76	91	126 334
9. Fiks (Holland) ...	25	24	64	87	130 330
10. Geiger (Germany) ...	51	73	74	46	72 316
11. Engel (Germany) ...	47	49	67	60	70 293
12. Misilo (Yugoslavia) ...	35	67	60	58	47 267
13. Marshall (Great Britain) ...	76	23	54	40	32 225
14. Tipper (Great Britain) ...	28	45	43	25	70 211
15. Crawshaw (Great Britain) ...	24	0	55	83	48 210

Below, left, another novel rubber-powered flying wing from Yugoslavia with separate elevators at wing tips, set at large negative incidence to obtain upshot. Wing was mounted on saddle which fitted over diamond-section fuselage. At right, German Schubert's National champion in rubber-powered flying wing class in his country, put up a brave effort with his 50 grammes powered original design. Best time was 133 secs. Schubert used the only rubber-pusher in the contest

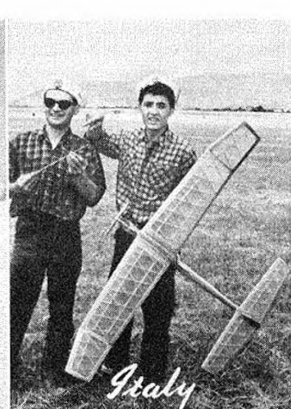




Malaya



Czechoslovakia



Italy

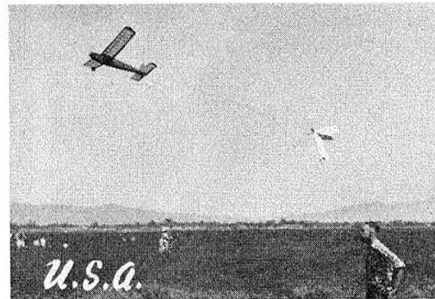
WORLD NEWS

THE CONTROL LINE BOYS are certainly giving the F.A.I. some work with their recent spate of speed records! On October 13th J. Sladky of Czechoslovakia pushed the 2.5 c.c. figure up to 236.18 k.p.h. (146.6 m.p.h.) using the MIVS 2.5.57 glow engine, and in Hungary on October 27th G. Benedek lifted the jet figure to 281.1 k.p.h. (174.6 m.p.h.) using his self-made large Aerojet 11 pulse unit, *plus opposite*. These are terrific figures, and make Gadget Gibbs' 5 c.c. improvement reported in Hangar Doors all the more important. These aren't the only records submitted for ratification. U.S.S.R. has, through Dosaaf organisation, set an altitude figure that will probably stand for all time. G. Ljubuskin's 5 c.c. specially-prepared design went to 5,103 metres (16,741 ft.), officially observed by an AN-2 biplane. Did anyone complain about prop efficiency at a mere 5,000 ft. in S. Africa or the U.S.A.? Seems like George Lj. had either a new line in props or the daddy of all thermals. Or was it Sputnik fuel?

Above: Young Faridah Meridun holds dad's Mercury triplane in Singapore. From Czechoslovakia, Rad. Cizek shows how to retrieve A2's when on this. In sunny Italy, Roberta Zappata of international contest fame and one of his latest models. Below: Novelties, first from Barcelona, where Des. Prats is making regular 5 mile excursions with car-control nose able to fly around corners and play tag with hedgehogs. In Los Angeles, Bob Linn's amity indulge in glider towing with a British D.C. Ballerina and tailless glider



Spain



U.S.A.

Sends New Year Greetings to all aeromodellers everywhere

Back to earth, and Hungary again, more 50 gramme new rule Wake results (this time with Benedek on top, and Azor 2nd) show that 750-800 secs. is the kind of total we can expect from a topline model in relatively still air, seems like the old fly-off bogey will at last be broken in Wakefield contests. The new Alag Y-2 glow racer engine is up to 120 m.p.h. in contests, promising well for potential users in the U.K. if it is ever exported.

Venterspost in West Transvaal, South Africa, is another of those places city types have to dream about. Modellers there have a 200-ft. square control-line field, with concreted areas for take-off at varying radii and a central pylon base. What's more, one modeller lives right next door to this haven where noise is no nuisance. We clip this item from WIPMAC, the W. Province newsletter which also reports arrival of valveless radio outfits on the market, meaning complete installation of single-channel including batteries and escapement of a mere 4 ounces. Kit for this imported American outfit is only £25, they say.

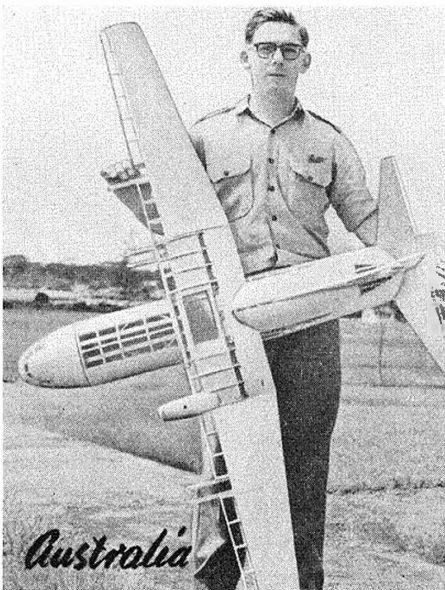
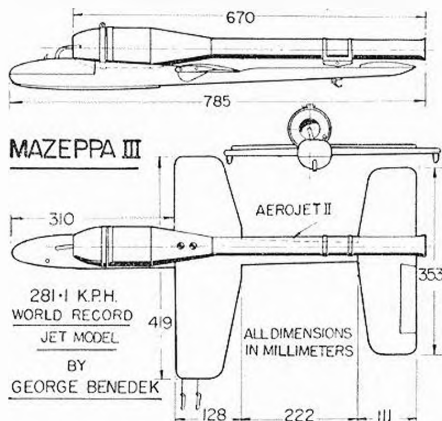


Top: A functional radio-controlled glider from Bonn. From Czech power modeller Vlad: Hajek's approach to Wakefield has ultra short geared motor and tail carved from balsa sheet

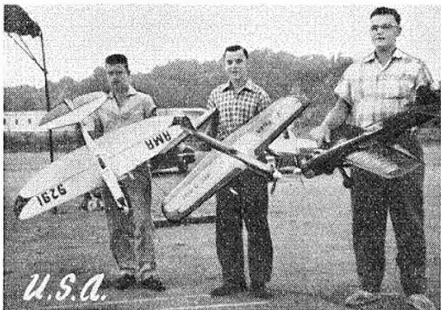
Speaking of radio, the view top right comes from Sgt. Morley, R.A.A.F., based in Singapore, an ambitious modeller, who unlike most of the 4-engine r/c fans is prepared to go ahead with his design. It's a C-130 Hercules for four Frog 149 glow engines, throttle control on the inners and three channels serving elevators, rudder and retractable u/c. "Even if it does not fly", says Sgt. Morley, "I shall be quite happy building it, and it must fly at least once to convince the sceptics".

Nice juicy note in *West Coast Model News*, U.S.A. announces the annual W.A.M. dinner—price £1 exact, including tip and tax with the interesting choice of a 10-ounce steak or a chicken for the main dish!

Below: George Benedek's outstanding jet record holder



Above: Sgt. Morley's ambitious r/c scale Hercules, see text. Below: U.S. cf faces, Jr. Bob Winks (T'bird), Sr. Art Pawlowski (O.B.) Owen and Grand Champ, Gen. Adrick (Nabber). Below are two super "heavies", a Connie and Viscount, seen at the Granite Belt meet, Stanthorpe, Queensland





LITTLE AUK

OVER LAND OR WATER
JOHN TRINDER'S 30-in.
RUBBER-POWERED
DESIGN IS A PRIM
PERFORMER

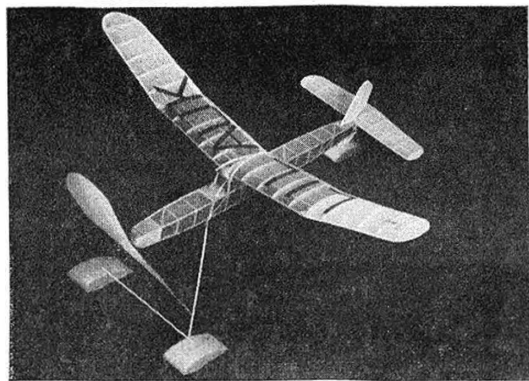
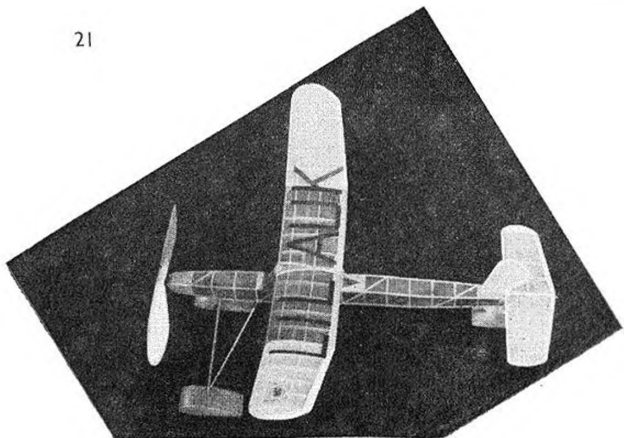
THE LITTLE AUK is the name for an almost extinct seabird and regretably rubber-powered floatplanes also fall within the almost extinct category. It is hard to explain why this is so, for models like this one are particularly easy to build and trim, and are a great pleasure to fly. Being convertible to a landplane by removing floats and plugging in a normal wheeled u/c, it is a double purpose design and for contest work a one-bladed folding prop assembly is suggested. One further note before building—do pre-cement joints wherever possible as this at least doubles the life of any model.

Build both fuselage sides at the same time—one on top of the other. While these are setting, make up cabin frames P1 and P4. Separate sides and complete construction of box fuselage over the plan view, adding spacers. Fit $\frac{1}{8} \times \frac{1}{8}$ diagonals—these add great rigidity for little weight. Bind the nose with cotton and rub cement over strands, and secure the undercarriage tubing to appropriate spacers.

Build floats by fitting $\frac{1}{8}$ th sides on the main former, after u/c has been bound in place then add L.E., T.E. and sheet covering.

Slot the wing and tail trailing edges $\frac{3}{32}$ in. deep to key the ribs. Pin down wing T.E. with $\frac{3}{32}$ packing under front. Cement ribs to T.E. and add leading edge and top spars. When set, remove from board and add underspar. Raise tapered panels 2 in. under outer rib and join to inner panels. Same system applies to the tailplane.

The upper and lower fins are built over plan and cemented to fuselage using appropriate holes in $\frac{3}{32}$ in. sheet for positioning.



Original is covered with lightweight Modelspan throughout. Watershrink and give coat of 50/50 dope and thinners to wing and tailplane and two coats to fuselage. The floats need extra coats of Banana oil for waterproofing. Pin down wing and tailsurfaces with supports to ensure that they remain true and leave them for two or three days for the dope to harden completely.

Trimming

Little can be discovered by hand gliding, so put on 100 turns and hand launch over long grass. Two degrees of downthrust have been built into the model, so power stalling should not occur and right rudder should give the best flight pattern for this model, i.e., right turn under power and on the glide. Increase number of turns on motor by 35 per flight until roughly 500 are reached. Now, and not until now, is the time to try taking off water. The rear float will leave the water immediately on release and the model should unstuck within a few feet. If this does not occur, increase the angle of attack on the front floats. If at any time any portion of the model should be ducked, a pin prick in one corner of the waterlogged panel will drain water out.

AEROPLANES IN OUTLINE

Number 53

described by C. W. Cain
drawn by E. Tage Larsen


Nord-Aviation 1500 Griffon

LIKE CERTAIN wide-screen goddesses of the pneumatic wiggle, some aeroplanes demand more than a casual scrutiny. A shape most definitely in the whistle-worthy class is the contemporary French Griffon II research interceptor fighter. Forget for a second the delta wing and suchlike excrescences, and the voluptuous Griffon is revealed as an impressive blowtorch—with a small, cone-shaped nacelle mounted on top to house the pilot.

The Nord-Aviation 1500 Griffon II is currently undergoing a new series of evaluation trials at Istres, near Marseilles, with Nord's Armand Jacquet at the controls and test engineer Bernard Curis in charge of the whole operation. The main purpose of this second series of tests—which commenced in October last year—is to try out the unspecified-power S.N.E.C.M.A. ramjet which augments the basic 7,710-lb. st. S.N.E.C.M.A. Atar 101F axial-flow turbojet. Although the French are keeping very quiet about the bomber interceptor performance of the Griffon II, an eye-witness has stated: "She climbs like a bat out of hell . . . and keeps on going up and up, nearly vertically. The roar of the ramjet engulfs the 'drome leaving one deafened and speechless!" A pretty turn of phrase perhaps, but the Griffon II is a thoroughbred with a ten year old family tree.

The man behind the Griffon mixed-power interceptor is M. Jean Galtier, aged 56 and one of France's brightest engineering brains. In the 1920's Galtier worked for the now defunct Bernard company and had a hand in the design of the single-seat Bernard 12C-1 fighter, and the types 18T, 19T, 191GR (the *Oiseau Canari*—"Yellow Canary" of 1929), the 60T, 80GR, 90BR and 170B. Then in 1937 Galtier joined General M. Vernisse at the Arsenal company and their initials were given to the series of VG-fighters and fighter-bombers: the VG-30 (later the VB-10 of 1946), VG-33, VG-36 and VG-39 of the late 1930's. After the war Galtier produced the Arsenal VG-70 research jet and the experimental swept-wing naval fighter, the Nene-powered VG-90 which was destroyed in a flying accident in May, 1950. At this time Galtier began work on a series of research gliders, the Ars.1301 and Ars.2301 which were intended to give flight data in preparation for a rocket-powered supersonic fighter which was abandoned in favour of "conventional" gas turbine-power. These gliders were towed behind a two-motor N.C.702 (licence-built Siebel Si 204A) with a variety of configurations: tailless, tailplane, tailplane and noseplane, and noseplane only—the last-mentioned being incorporated in the Griffon design to eliminate the transonic twins: nose-down pitch and resultant loss of lift at Mach 1.0.

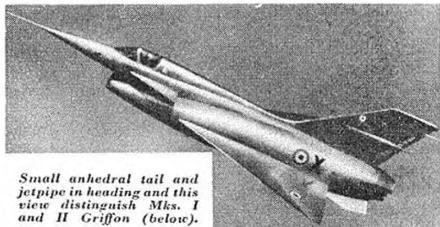
At the beginning of 1953 Arsenal was absorbed by S.N.C.A. du Nord (now Nord-Aviation) and Galtier headed the interceptor research off-shoot S.F.E.C.M.A.S. until it, too, was brought under the direct management of Nord. From the Ars.1301/2301 gliders were evolved two distinct Galtier projects, the squat-fuselage S.F.E.C.M.A.S. 1400 delta fighter (successively the 1402A and 1402B Gerfauc IA and IB of 1954 and 1955); and the *canard*—1500 Guepard, later renamed Griffon.

The latest Gerfauc, the 1405 Gerfauc II, has an afterburning S.N.E.C.M.A. Atar 101G and is currently undergoing missile firing trials at supersonic speed—the Gerfauc II is capable of Mach 1.4—and is the first European aircraft to be engaged in Mach 1.0-plus guided missile firing trials.

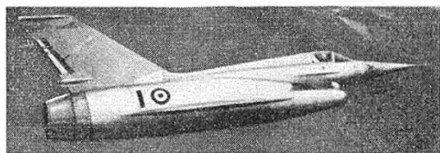
Since the Nord 1500 Griffon was flown for the first time at Melun-Villaroche on September 20th, 1955, this hard-worked sole prototype has been progressively modified. The original 6,500-lb. st. S.N.E.C.M.A. Atar 101F-2—which with S.N.E.C.M.A. two-door "eye-lid" afterburner gave a max. power of 8,370-lb. st.—has been replaced by a more powerful Atar 101F backed up by the "Sunday Punch" S.N.E.C.M.A. ramjet to give a level-flight speed in excess of Mach 1.7; and an interception altitude above 55,000 ft. In its present form the Nord 1500 Griffon II was first flown on January 23rd, 1957.

To accommodate the additional flow of air required to feed the hungry "straight-through" S.N.E.C.M.A. ramjet, the original nose intake has been widened and deepened. Likewise, the aft end of the fuselage has been deepened and lengthened to accommodate the new ramjet tailpipe. The former characteristic anhedral tail surfaces have been discarded. Originally it was part of the dorsal back of the rear fuselage whereas now it is positioned just below the small area rudder. The peculiar geometry of the fore part of the fuselage has necessitated the use of boundary layer fences which appear above the intake and are joined to the bottom of the cockpit nacelle. Formerly these two fences were straight but the increase intake diameter has brought about the introduction of curved fences.

N.B.—As the Griffon I, the Nord 1500 carried the experimental identification letter X (in black) behind the fuselage roundel; but on the revised Griffon II this letter is replaced by 1.



Small anhedral tail and tailpipe in heading and this view distinguish Mk. I and II Griffon (below).



Reed Relay Circuit Description

The reed unit, which, if self-made should have a coil resistance of between 4,000 and 7,000 ohms (British Commercial reed units have a 4,000 ohm coil) is energised directly from the output of the second transistor. The reed bank, and the chassis of the reed unit itself, is connected to the common H.T. negative line through a 47 ohm. resistor which limits the relay condenser discharge current which would otherwise cause arcing or burning of the reed contacts. The relays are series fed through their condensers. Relay current flows as the condensers charge up. The vibrating reed discharges the condensers at each vibration contact, it recharges through the relay as the vibrating reed opens the contact.

Therefore the normally expected pulses of current are accepted by the relay as a relatively steady current. The matching condenser "C" is usually supplied fitted to the reed unit.

Assembly and Wiring of Receiver

Points "C" to "M" are intended as soldering tag points. With the exception of "D" rivet tags should be used if available. If not then 8 B.A. 1-in. screws and bolts should be used to hold the tags in position. The valve lies above "C" and "D", here countersunk screws should be used. "D" is also one of the transformer should be used.

Between points "C" and "D" the -005 mfd. condenser. From "Blue" to "Red" on the transformer a 4-7 K. resistor.

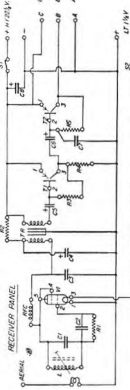
All wiring point to point should be done with 22 S.W.G. wire covered with 1 mm. sleeving.

Now all wiring connections shown on the panel should be made. Note that on the transformer only solder to the outside pins of the two banks of four. Wires to tags "E" to "M" should not yet be soldered.

The components between tags "E" to "M" should be placed in position and inserted into their indicated tags. Observe well the polarity of the electrolytic condensers. Tags "E" to "M" should then be soldered. For the sake of clarity of the drawing one 2 mfd. the "005" and the 47 pf. and 3-3 meg. are shown away from their actual positions. Finally, the flex connection wires should be soldered to their respective points.

The aerial "coil" is soldered to tag "D" makes two turns around the coil former near the panel, and then goes through the valve holder hole and is soldered to a tag under the coil-holding screw on top of the panel.

The valve should be inserted into its holder so that the 'red-spot' is next to the point "B" screw.



L=Coil assembly. See text.

RFC=RF choke. See text.

T1, T2=Transistor, OC71 or equivalents.

S1, S2=Double on/off switch.

TR=Transformer. Portophone N22.

RL=Relay. To reed/relay section A.B.C.

C1=50pF ceramic.

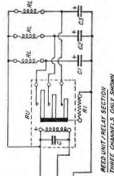
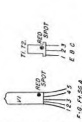
C2=47pF ceramic.

C3=005 MFD ceramic.

fixing holes. A 1/8-in. wide strip of aluminium 1 1/2-in. long should be bent over the transformers as a mounting clip. The valve holder is fixed with a 1-in. 8 B.A. screw and nut at B, a soldering tag is also fitted on the wiring side of the panel under the nut at B. One of the coil former fixing screws at A is 1/2-in. long, this is used as a wiring point. The two transistor holders which have two pins removed, leaving only the centre and two outside ones are fitted in the position shown, again by 1/4-in. 8 B.A. screws and nuts.

Start with the coil 20 turns of 26 S.W.G. enamelled wire beginning from tag "B" are wound around the former clockwise. As the turns are wound on, push them to the bottom carefully. The end is soldered to the top of the 1/2-in. 8 B.A. screws at "A". Before soldering, ensure that the turns are close and tight on the former.

The R.F.C. consisting of approx. 70 to 80 turns of No. 40 enamelled and silk covered wire on a 1/2-in. ebonite or polystyrene tube or rod is connected "A" to "C" a 5 pf ceramic condenser between "A" and "B". From "B" to the "grid" pin of the valve holder, the parallel 3-3 meg. resistor and 47 pf. ceramic condenser.



REED UNIT/RELAY SECTION
THREE CHANNELS ONLY SHOWN

RU=Reed unit.

RL=47 OHM

RL=Relay coil

C1=005 MFD

C2=33 MFD

C3=Condenser on reed unit.

A.B.C. to receiver A.B.C.

The "red spot" of the two transistors go to the sockets at "C".

Mark these corresponding ends of valve and transistor holders with a spot of red dope.

Reed Relay Section

Layout of components is not important here. According to the type of reed unit or relays used, a convenient spacing should be made to enable the connections and leads to be soldered on. The specimen shown is a three-channel stage employing an E.D. three-reed unit and three E.D. Standard relays. The three condensers are under the panel.

I usually advise using a six-reed unit to begin with, if only three channels are required, then only three of the reed contacts need be connected.

If at a later date more channels are desired, then only further relays and condensers are required. The circuit remains the same, and the further relays and condensers are connected along the line.

If it is decided to make the equipment up on two panels, then the connections can be made by flex and a three-pin plug and socket.



Fly your Greetings card

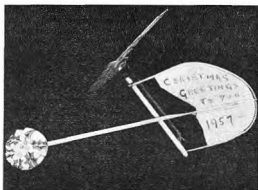
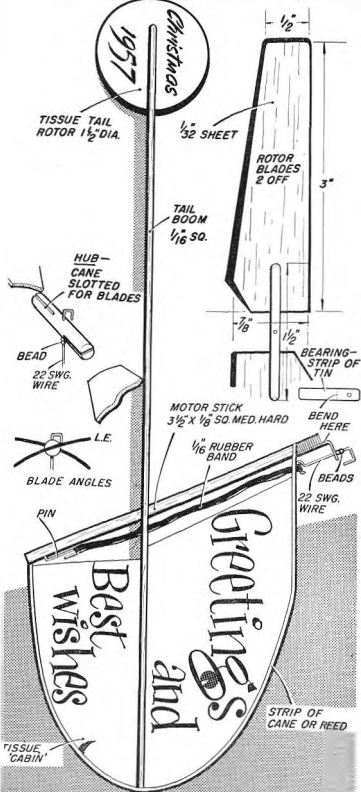
Says F. G. Boreham

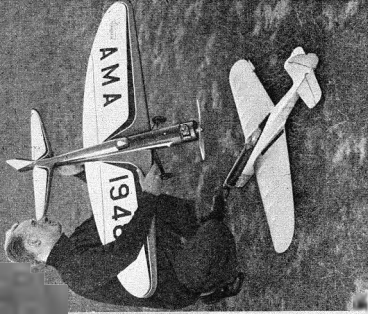
HERE'S A LITTLE flying model helicopter (drawings are exactly full size) which can be quickly and easily made and used as a Christmas or New Year greeting card. It never fails to amuse and delight youngsters of all ages and will flit about indoors, even over the Christmas dinner table, without so much as spilling a glassful of good cheer.

Construction is very simple and materials are to be found in any modeller's scrap box, so why not build a fleet now? The rotor blades are cemented into either a cane or cork hub and given a slight twist as on the drawing. Tissue on the original is from a cigarette packet, but decorations may be "contemporary" using Christmas wrapping paper for the tail disc, as long as it is of light weight.

For best results, lubricate the rubber band, not forgetting the rotor axle bearing. When using two bands, the climb is terrific though of very short duration, but with a single band, the little 'copter will tour the dining room for many exciting seconds.

The Editor looks amazed at the performance of this nifty flier in top photo





During demonstrations, which he made in South Africa and Britain over April/May, 1957, Bob showed a skill in positioning consecutive square eights, "quare outside loops (bunts) and reverse wing-overs that" were really appreciated by the experts. The very squareness of the corners and pull outs, the smallness of the loops and the overall smoothness of the flight pattern were of a standard few can emulate. Some can manage one or two of the manoeuvres with equal finesse, but none of our men can match the Palmer schedule in its entirety.

Our experience of models in the 54-in. span, "35" power class, is not exactly limited and we have long advocated this size of model for best contest performance in all conditions—especially in wind. The Palmer *Thunderbird* has a 100 series Veco 35 (now in full scale production). It is an impressive engine, and, coupled with the Palmer baffie tank, it gives as much as 60-f.t. lines. The tank is designed to pick up well in the accelerating and decelerating stages, and as Bob flies level with a rich motor, just on the edge of two stroking, the result is that a jerk in the line causes a surge of lean mixture and this sudden and most effective power-pull takes the *Thunderbird* around a 90 degrees change of direction,

Stunt Develop

LAST MONTH WE summarised various line systems yet to be adopted in Great Britain and our thoughts for this issue, opening the 1958 season are towards the better use of the standard 2-line control for aerobatics.

Personal flying experience of the three finest stunt models yet flown in Europe can give one many a new slant on the art of aerobatics and we trust that our findings will be found fruitful by the many C/L stunt devotees.

Palmer's Thunderbird

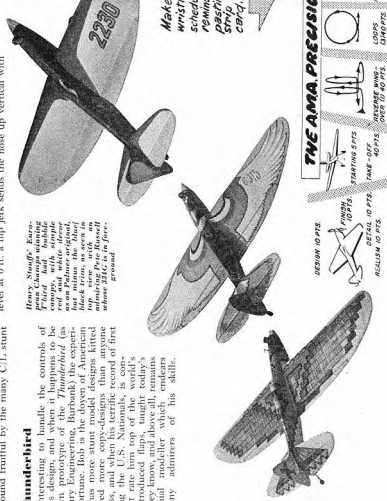
It is always interesting to handle the controls of another modeller's design, and when it happens to be Bob Palmer's own prototype of the *Thunderbird* (as kitted by the Henry Engineering, Burbank) the experience is worth a fortune. Bob is the doyen of American stunt fliers. He has more stunt model designs kitted and has influenced more copy-designs than anyone else in the business, and when his terrific record of first placings, including the U.S. Nationals, is considered, one must rate him top of the world's C/L fliers. He introduced flaps, taught today's Champions all they know and above all, remains the retiring genial modeller which endears him to so many admirers of his skills.

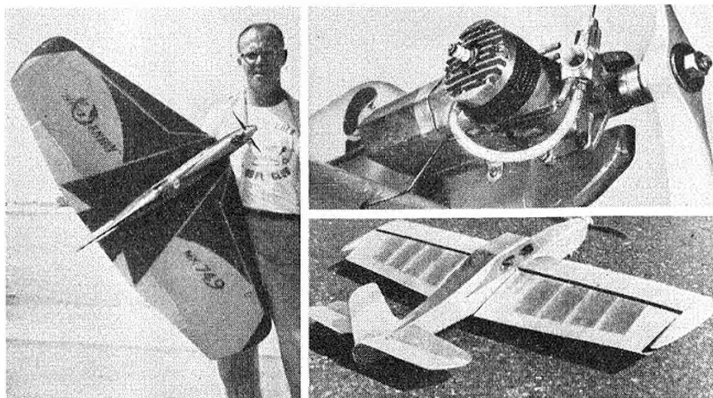
Thunderbirds came in a all forms of decorative schemes. The editorial files contain dozens of international designs, which we have selected two traditional American aerobatics schemes seen at the '57 U.S. Nats.

almost pivoting on the bellcrank point. The power is, in fact, used to make the corner square, and with "Flight Control" 3-line system as described last month, it should be possible to deliberately control power for such purpose.

One discovers this action in the first wingover. From level at 6 ft. a flip jerk sends the nose up vertical with

Henry Stang's European Champions winning flight. The copy, canopy, with decal red and white decor as on Palmer original, black antenna line (blue) black view with an admiring Pete Russell whose 3312 is in force.





Three approaches to perfect stunt performance. At left, "Wild" Bill Nezaoband with the "Fierce Arrow", the vast area of which is readily apparent, engine is a Fox 35. Top right is author's application of a Brance throttle to an O.S. MAX 35 fitted to a J. Roberts Co. "Cobra". This American profile kit design is expressly designed for "Flight Control" detailed last month and opposite, third line operating the throttle for power control in manoeuvres. Bottom is Larry Scurinzi's "Jolly Flapper" for .8 cc., weighing only 3 1/2 ozs. and using very large flaps to vary wing section.

2.5 c.c. diesels. He remains convinced that the smaller model can be made to win contests continually, and hopes one day to carry off the Gold Trophy with a scale type. (We've supplied him with drawings for an ideal subject!) His distinction is a massive handle with heavy gauge soft wire line connectors for adjustment, and de-sensitising control.

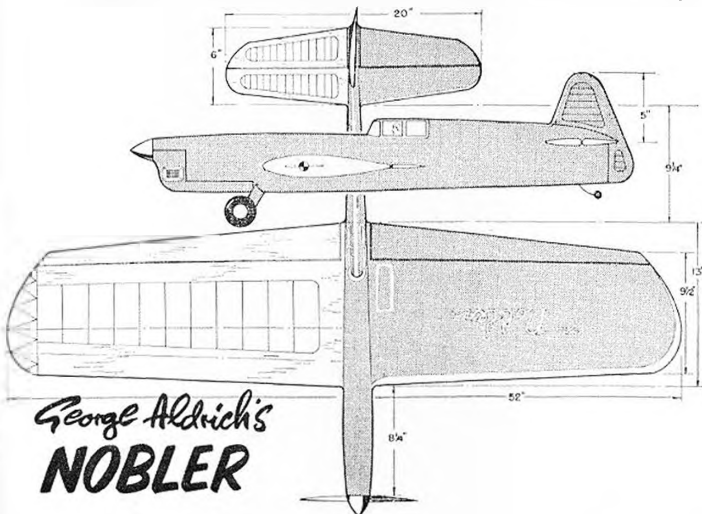
Flying Pete's 334G ourselves after the *Thunderbird*, was a revelation as it was seemingly faster than the far larger 6 c.c. American model. It pulled hard too, and though rock steady when straight and level, would drop its nose squarely at the flick of the wrist and go quite "square" despite the lack of flaps. Loops are large with 334G and a vertical eight takes all the space from bottom to top and back again if it is to be a perfect figure. This is a real stunt man's model, beautifully smooth, yet as snappy as a terrier when roused and ideal for old simple S.M.A.E. Schedule. Of all the 2-5 designs, we have flown it alone impressed us for its ability to be positioned anywhere on the circuit at any level, any time. A wandering stunt could soon be corrected and camouflaged before the judge could have time to detect any flaw. We should also add that Pete has a remarkable 2.46.

But we still rate the man-size "35" elliptical winged stunts easier to handle, and for the U.S. "Hour-glass", and square eight stunts which have now come into our S.M.A.E. Schedule for this season, they have special advantages, mainly in giving the pilot more time to consider his standard as he flies.

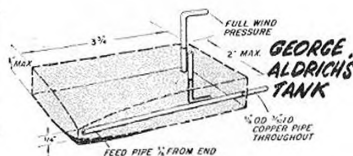
Two designs cannot be used as a basis for any firm opinion on the standard of present and future flying, even though the *Thunderbird* in particular, has won Championships in practically every country where the kit is available. One must give credit to others, and if the U.S.A. contest results are analysed, one name alone comes up for continued Championship success for design and flying. This is George Aldrich. No less than four times the Nats. winner, and this year, supreme winner of the Jim Walker Trophy in the fly-off betwixt, Junior, Senior and Open victors.

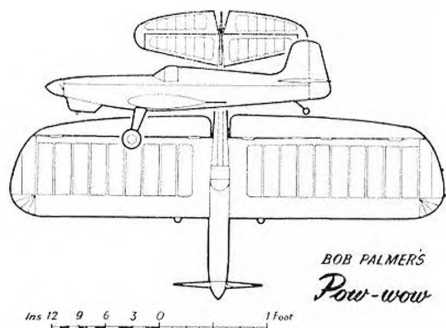
Aldrich's Nobler

His design is the *Nobler*, also kitted in the U.S.A. and like the *Thunderbird*, dating back beyond five years in development. Distinctive for its Caudron



The *Nobler* in latest U.S. Nationals winning form with Fox 35 and special tank as detailed below. George states that this tank gives a perfect run, leaning the motor out from a rich setting during "squares". 1/12th scale dreg. shows details, including built up tail. Note it is arranged for clockwise flight and unlike Palmer, uses a pivot point G.C. position.





Pow-wow is actually contemporary with the first Nobler, before Palmer turned to elliptical wing shapes. It started a whole series of copy designs and was among the first to employ inverted engine and balanced elevators

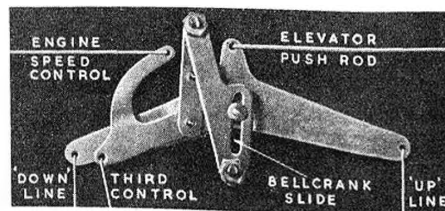
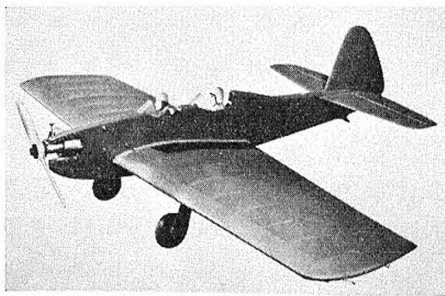
Racer lines and the fact that George flies clockwise (like many of the earlier U.S. experts, e.g., Harold de Bolt) the *Nobler* has a high tail, high T/L and can weigh up to 3 lbs., delivering an all-weather performance to bring in an impressive number of first placings dating back to the 1951 Plymouth Internats. The drawing of *Nobler* shows it in latest all-time Championship version. Only the tail surfaces have been modified in six years of service, apart from appearance variations in cabin position and decor. The drawing shows the latest.

Summarising these world leaders, Palmer, Aldrich, Stouffs, and Russell, one can identify points in common among their designs and techniques. They fly for the judges, positioning each stunt exactly where it will impress most, they exhibit a smoothness of pattern that makes the most difficult manoeuvre seem so effortless and in their models, use taper wings, high tails, generous fin area and build their wings so that the section is fully maintained from leading to trailing edges.

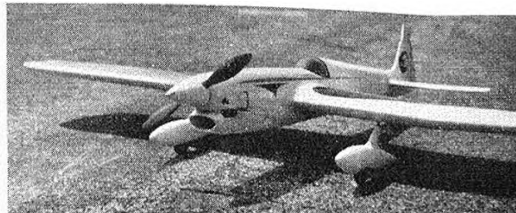
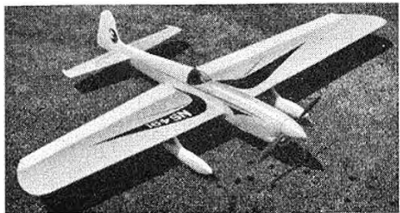
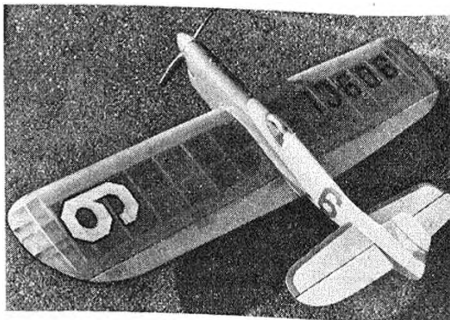
We have not had the pleasure of flying George Aldrich's *Nobler*, but as the leading contest flier in the U.S.A., we have specially commissioned him to design a combat/stunt model for 2.5-3.5 c.e. The result will be seen next month, when we feature the "Peace-maker"—introducing new structure, a new look in stunt design, above all quick to build, extremely tough, and fully tested by George Aldrich with both the Oliver Tiger and AM. 35 through SQUARE four leaf clovers, SQUARE and TRIANGULAR vertical eights.

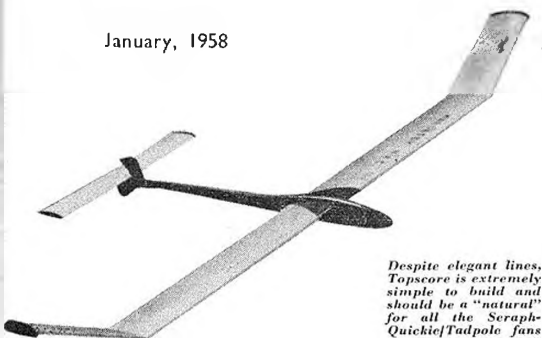
Can you wait?

Who said there could be nothing new on lines? This white beauty should be an inspiration for stick-in-the-muds, and bears an elegance we'd like to see in the '58 Gold Trophy. Entered in the U.S. Nats. by an obviously inspired modeller named Pegasus, it has some features in common with that of Sr. Stunt winner Palouski's entry. (See World News)



Top, the J. Roberts Co. Swift profile stunter for "35" engines is designed for Flight Control 3-line system as shown in latest version in lower view. Simplified bellcrank now has no range of movement limitation and is more simple to install (see last month's feature). Below, the A.P.S. Thunderbolt, Bill Morley's 49-in. design (Plan CL1587, 6s.), which by coincidence has many Palmer features





Despite elegant lines, Topscore is extremely simple to build and should be a "natural" for all the Scrap-Quickie/Tadpole fans

slot home properly into the cutouts provided in the fuselage sides. Firmly glue box into position, then complete top and bottom sheeting; add nose block and sand to shape prior to covering.

Wings: Cut out all ribs, allowing for sheeting at top and bottom of root ribs. Lay down T.E. and L.E. and insert all ribs. Remove flat centre sections from board and glue in bottom flanges of main spars. Glue in subsidiary spars, then completely sheet the underside of both centre sections with $\frac{1}{16}$ -in. sheet.

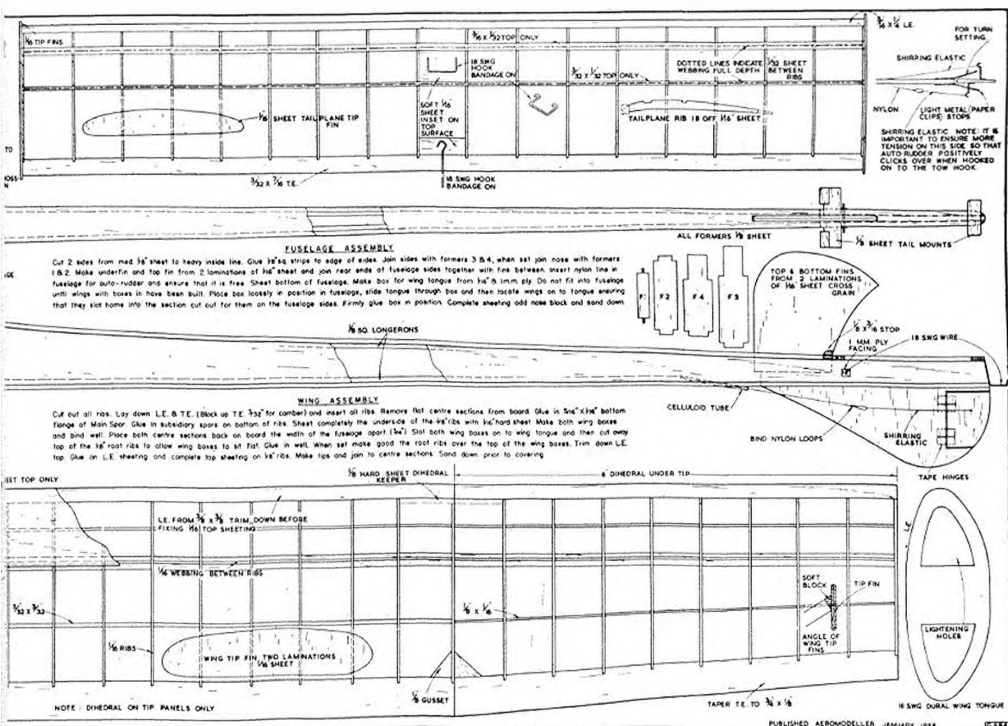
Make up both wing boxes, then, with both centre sections flat on the board at fuselage width apart, slot boxes onto wing tongue and cut away top of the root ribs to allow the wing boxes to sit flat. Well glue into position, and when set make good the root ribs over top of boxes. Trim down L.E. to approximate nose section, and complete sheeting of centre sections. Make tip sections and join to centre panels.

Choice of dural for wing tongue is of prime importance, and must flex without bending.

The Tailplane is simple and self-explanatory from the drawing.

Trimming: With auto rudder set for right turn, hand launch into wind. If glide is reasonably flat try on line with auto rudder adjusted for straight tow. Correct any tendency to weave by moving hook back. Once satisfied with tow, trim glide for fairly tight circle. Pack up T.E. of tailplane until model stalls, then file off a little at a time until stall just disappears. Tow up and deliberately stall off the line overhead. If recovery is not immediate, remove a fraction more from the T.E. packing.

PRICE 5/- PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE. PLEASE QUOTE PLAN No. G.684 WHEN ORDERING.



READERS WRITE...

NO BUTS ABOUT IT!

DEAR SIR,

The letter from Mr. Honnest-Redlich regarding the attitude of this Society to radio control, published in your December issue, is calculated to be so misleading that it demands a reply in order that your readers may not remain in ignorance of the facts.

May I deal with the various points in Mr. Redlich's letter one by one:—

1. During the past eight years the S.M.A.E. has run contests for radio control to the rules obtaining in the S.M.A.E. rule book. As at this date there are no official F.A.I. R/C rules promulgated, such international contests as have been held among countries under draft rules in order to accumulate practical information prior to the formation of acceptable regulations.

In the case of the King of the Belgians Cup contest, the R/C rules were issued for the event by the organisers, and the General F.A.I. Regulations pertaining to wing-loading, maximum size and weight, etc., of models applied.

2. The S.M.A.E. has given every possible encouragement to radio control flying in this country. The original S.M.A.E. Radio Control Trophy was put up for competition eight years ago, and the Society now runs four annual contests for radio controlled models, a higher number of national contests than for any other specialised type of model.

3. Multi-control and single-control models were entered for joint for the simple reason that, up until this year, it was considered that there were not sufficient entries forthcoming to justify the splitting of the contest into two types. The Radio Control Sub-Committee has been well aware of the fact that it would be better to separate single and multi-control models, and this is being done in 1958 in the light of the number of entries received in National contests during the 1957 season.

4. The S.M.A.E. Radio Control Sub-committee has met regularly during the past few years, and its opinions have been passed on to the Council and the Rules Sub-committee. Its members are in constant touch with active radio control fliers, and they regularly act as Judges at meetings both in this country and abroad.

5. If the rank and file of radio control modellers have any demands to make, they have ample opportunity of doing so through their Clubs and Areas to the Society, but, to the best of our knowledge, no such demands have ever been made. In cases where suggestions have been made by individual modellers to members of the Sub-committee, they have certainly been considered and in several cases adopted.

6. Mr. Redlich's statement that the lead in radio control flying in Great Britain has been "left to a few individualists" and his remarks about the "man-with-a-red-flag" attitude of the Society are indeed difficult to understand, and are so facetious as to call for no reply.

7. As and when the F.A.I. produce rules for an F.A.I. International Contest for which this Society will be expected to produce a team, then radio control fliers may rest assured that eliminating contests based on those rules will be

conducted by the Society for the selection of the team. As that situation has not yet arisen, the Society has quite rightly run its domestic contests under existing S.M.A.E. rules.

May I add some final remarks in general terms:—

It has long been the opinion of the members of the Radio Control Sub-committee that the general standard of radio flying in this country is little short of appalling. This includes the performance put up by professional radio control fliers as well as amateurs. It is a fact that the original S.M.A.E. radio control rules for their first trophy were laid down eight years ago and that up to this time no competitor in a National Contest has achieved more than 65% of the total possible marks.

It is incredible, but true, that competitors in radio control events still turn up at National Contests, and, their model having taken off, turn to the Judges and ask, "what do I do next?"

The responsibility for raising the standard of radio control flying is primarily that of the competitors. The Society cannot force them to improve their standards. Were radio control fliers to apply themselves to the practice of contest flying to the same degree that other sections of the modelling fraternity have done, then the standard of flying would be very much higher than it is, and contest schedules of greater difficulty calling for a higher degree of skill would have been introduced to meet the demand that would have arisen.

May I close by saying that the Society is most anxious that the standard of radio flying should improve, and it feels sure that this improvement will eventually take place. It will certainly receive every encouragement and help from the Society and its Sub-committee.

Yours faithfully,

S. D. TAYLOR,

Hon. Secretary, S.M.A.E.

(We welcome this prompt reply from official quarters, which should quiet the vociferous few who supported Mr. Redlich, albeit in every case with no knowledge of the true situation! To those who criticised our action in affording space to the original letter we would say that, to refuse a hearing only aggravates a complaint and adds fuel to the fire of discontent. Fight in the open as our policy, not both sides given a fair crack of the whip.—Ed.)

THE FOKKER
REPUTATION

DEAR SIR,

My friend Peter L. Gray draws my attention to Mr. J. van Hatnum's letter concerning the late A. H. G. Fokker as the designer of his aeroplanes and weapons.

It appears that Mr. J. van Hatnum is not too well informed and has swallowed the Fokker myth hook, stock and barrel.

I am trying to write an unbiased and fair account of the Fokker achievement for a forthcoming book. For this, I have done much research under exploitation of all available and willing sources, and with documentary material at hand.

A. H. G. Fokker has undoubtedly been one of the greatest personalities in aviation, and his contributions should not be underestimated. His qualities in certain respects have been outstanding, but in respect to his abilities as a designer and his engineering

knowledge, the facts at my disposal allow me to state:

1. In his autobiography, A. H. G. Fokker claims that he and he alone designed his aeroplanes and weapons: "... I had to do everything, from designing the smallest part to negotiating for the largest contracts", etc., etc. He has repeated this self-glorification in many lectures and statements. He also made the German Authorities believe that he and he alone was the designer. Engineering experts, therefore, were puzzled why he was unable to answer the simplest technical questions intelligently, why they were always fobbed off with flippant, insinuating replies. The poor fellow simply did not know the answers!

2. To prove how little Fokker actually contributed to design from an engineering point of view, one only needs to look at easily verifiable facts: some of the most important and famous types, as, for instance, F.II, F.III, and the first three-engined F.VIIb, were actually designed, constructed and test-flown while Fokker was absent from the firm.

3. Mr. J. van Hatnum tries to compare Fokker's attitude to design with that of Count Zeppelin, Sir Henry Royce, and Sir Geoffrey de Havilland. But none of them have ever dreamed to make statements like Fokker did: to express as much ingratitude to their technical collaborators; to withhold technical information from them needed for the work; or to exclude them from technical contacts which had direct bearing upon their designs! Besides, all three had or have engineering training whilst Fokker had none.

A.F.R.A.S., A.F.I.A.S., F.B.I.S.
Dunstable, Beds.

OIL, CRUMBS!!

DEAR SIR,

I was most interested in "CRUMBS" in your December issue, and I am pleased to see that work planes are now catching on. However as a work plain designer with several years inexperience of these foolish things I can now state that my "SOAPSUDS" (Christmas 1950) is now in a position to take on your latest creation—and out-lie it.

I hereby challenge "CRUMBS" to any type of contest, take your pick (and shovels). My "SOAPSUDS" is constantly knocking .00002 secs. (and numerous speakers) on every flite. I do nevertheless see some good points about "CRUMBS", particularly the high lift section. Definitely outstanding and abreast of the times.

I now fly on Hi Fi Radio. To increase speed I pile on all the coxys, and their mod makes a kerit to earth just as tho it woz on wyers.

Now, condishums of camp; if mister Holland wins we settle it wiv pistls at fore inches at the crack of dawn. If I win, mister Holland to be flite tested in manner described on plan—shot gun to be loaded with Incendiary Packs. I feel shore he will see the point. After all, it's only fare. I cannot allow the fair name of "SOAPSUDS" to be desicated; she as always floan keen, has never been scrubbed, and I shal expect "CRUMBS" to be likewise well bred.

Yours truly,
R. (LARRY BOY) HEMBRICK.
(1964 Champ. of Stancliffe Sprint Hrs.)

by J. D. McHard

Edgar-Percival

EP-9

THE EDGAR PERCIVAL E.P.9 is not a pretty aeroplane, by virtue of its cargo carrying functions, yet its simplified structure, and careful design has produced an airframe which is decidedly more attractive than many of its agricultural contemporaries.

The P.9 (later designated E.P.9 to avoid confusion with products from Edgar Percival's former works at Luton) originated from a detailed personal study of potential operator's requirements in many parts of the world including U.S.A., Australia, and New Zealand, where aircraft are extensively employed for agricultural work at which they are more efficient than conventional spreaders for seeding and dusting.

Design commenced May, 1954, and the first prototype flew on December 21st, 1955, from Stapleford Aerodrome near Abridge, Essex, with Edgar Percival at the controls.

Subsequent flights confirmed that the design requirements had been met and in some cases exceeded. Abounding confidence in the aeroplane resulted in a production line being laid down, even before any definite orders had been placed!

This optimism has since been fully justified by the rapid deliveries which Edgar Percivals were able to quote to the enquiries that flowed into the little factory. Despite cramped quarters, the tremendous enthusiasm of all concerned with E.P.9 production, ensures a building time of only nine weeks per aircraft.

A design feature of the aeroplane, which makes itself very evident upon becoming airborne, is the very high pilot position in relation to the engine. At first this gives the illusion of being in a perpetual shallow dive! One quickly becomes accustomed to the view and many advantages of the arrangement are appreciated. Visibility all round is superb and equal to that of a low-wing type, the pilot having a clear view over the mainplane in the direction of any turn. This is an essential requirement for an agricultural aircraft where abrupt low altitude manoeuvres are continuously carried out as normal routine during crop dusting operations.

In the unhappy event of an accident the pilot is well isolated above the engine and cargo with considerably greater immunity from possible injury.

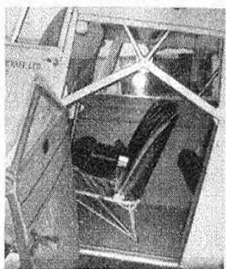
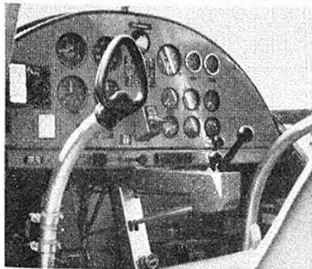
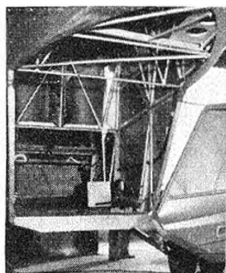
Initial climb is almost helicopter-like after a seemingly non-existent take-off run—another very desirable



attribute when remote areas with unprepared landing strips are likely to be encountered.

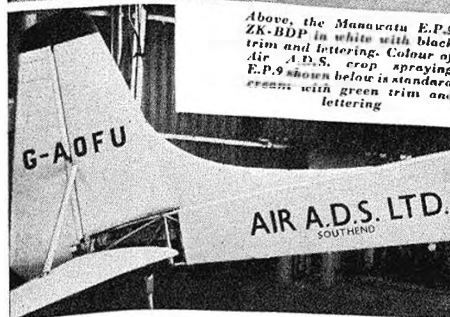
Apart from its crop dusting work it can be exploited as an ambulance aircraft, carrying 2 stretchers, an attendant and a walking case. It has an enormous advantage over the smaller ambulance helicopters in that a seriously injured patient is able to receive emergency treatment, including blood transfusions, during flight.

Heading shows G-AOZO demonstration aircraft fitted for passenger carrying. The standard colour scheme is cream with green trim. Note the wide track undercarriage and step between the lower struts



Wing root and cabin detail of G-AOZO is shown at top left. Top right, interior of the freight bay looking forward with rear fairing door open. Instrument panel and curved control columns, lower left. Lower right, rear cabin door of G-AOZO is held open to show the seating. Two forward seats are "bucket" type and the rear one is full width bench seat. At right, the brightly coloured livery of E.P.9 shown on cover in true colours. Hopper can be seen in the rear cabin

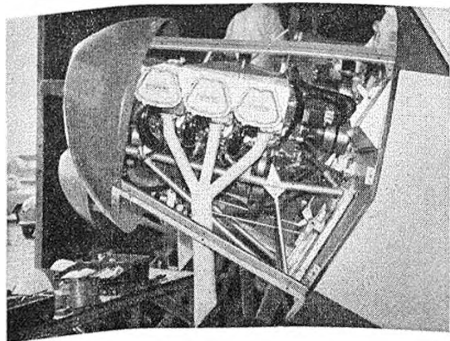




Ernst Lüdt Kg.
Hartenholm
Krs. Segeberg / Holst

Baumschulen Lüdt

German E.P.9, once registered G-APBF, now D-EDUV of Ernst Lüdt Tree Nurseries has Boar insignia in black on the engine cooling sides (shown 1/12 scale). Lettering on right is black on tail boom. Remainder of aircraft cream and green. Below, eye-view engine installation with cowlings removed. The fan driven pump is seen, lower right, on a pre-production Air A.D.S. E.P.9. Production pump installations have since been much cleaned up



Light freighting can be undertaken, the rear part of the fuselage "pod" having a volume of 185 cu. ft. and a floor area of 45 sq. ft., the recently increased payload now stands at 1,690 lb. The low rear platform makes the handling of goods a very simple matter.

As a light passenger-carrying aircraft the E.P.9 accommodates 5 persons with luggage in addition to the pilot! Perhaps because of its smooth contours, the aeroplane gives the false impression from a photograph of being about the size of an Auster. Its true size is only fully appreciated after one has climbed the undercarriage and made the ascent to the cockpit. Another size-revealing shock comes when it is realised that one can stand upright in the rear fuselage.

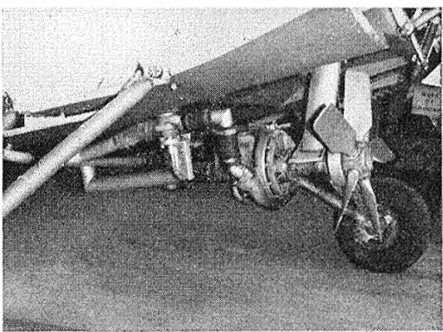
Aerial photography is yet another task for which this maid of all work is adaptable. The virtual absence of obstructing structural members in the freight bay floor makes the fitting of vertical cameras very simple whilst the comparatively large transparent areas and removable rear clam door give the oblique cameras a wide field of view.

One of the very latest overseas deliveries is ZS-CHZ in red and cream now on its way to South Africa. Some 44 airframes have been made and are under construction at the time of writing, and those in service are to be found in widely separated countries throughout the world—quite an achievement for such a small private enterprise company so youthful in age if not in experience. Type designations are: EP.9 Freighter; EP.9A Fertiliser; EP.9B Sprayer; EP.9C Duster; EP.9D Universal Hopper; EP.9E Passenger; EP.9F Ambulance. All models may be fitted with floats, ski or wheel undercarriage.

Thanks are due to Messrs. Edgar Percival for their unstinted co-operation in allowing us complete freedom to examine and photograph the E.P.9 both on the ground and in the air, and for their valuable assistance in the preparation of the accompanying plans.

Specifications and performance

Weights and Dimensions	Normal Category		Agricultural Category	
	EP.9	EP.9A	EP.9B	EP.9C
Power ...	270	270	270	270
Gross weight ...	3,700 lb.	3,700 lb.	3,700 lb.	3,700 lb.
Empty weight ...	2,000 lb.	2,000 lb.	2,000 lb.	2,000 lb.
Useful load ...	1,690 lb.	1,690 lb.	1,690 lb.	1,690 lb.
Span ...	43 ft. 6 in.	43 ft. 6 in.	43 ft. 6 in.	43 ft. 6 in.
Length ...	29 ft. 6 in.	29 ft. 6 in.	29 ft. 6 in.	29 ft. 6 in.
Height ...	8 ft. 9 in.	8 ft. 9 in.	8 ft. 9 in.	8 ft. 9 in.
Performance (full load)				
Top speed ...	146 m.p.h.	146 m.p.h.	146 m.p.h.	146 m.p.h.
Cruising speed (sea level) ...	128 m.p.h.	128 m.p.h.	128 m.p.h.	128 m.p.h.
Landing speed light ...	37 m.p.h.	37 m.p.h.	37 m.p.h.	37 m.p.h.
Rate of climb—sea level ...	1,120 ft./min.	1,120 ft./min.	1,120 ft./min.	1,120 ft./min.
Take-off run—5 m.p.h. wind ...	105 yds.	105 yds.	105 yds.	105 yds.



Entire aircraft cream with bright green trim at wing, rudder and elevator tips. Also engine cowling, fuselage decking ahead of windshield and forward fuselage belly including freight door underside and spinner. Green registration lettering. Aircrew—silver front, black rear.

G-AZOZO Demonstrator fitted for passenger carrying, cream with green trim.

G-AOFU "Air A.D.S. Ltd." pre production model fitted with spraying equipment. Colour

ZK-BDP "Manawatu Aerial Topdressing Co. Ltd." hopper fitted for top dressing, no spray bars or pump. Colour: white with black trim.



Part III of WORLD WAR I GERMAN AIRCRAFT FINISH

by P. L. Gray

In our new series

DECOR DETAIL

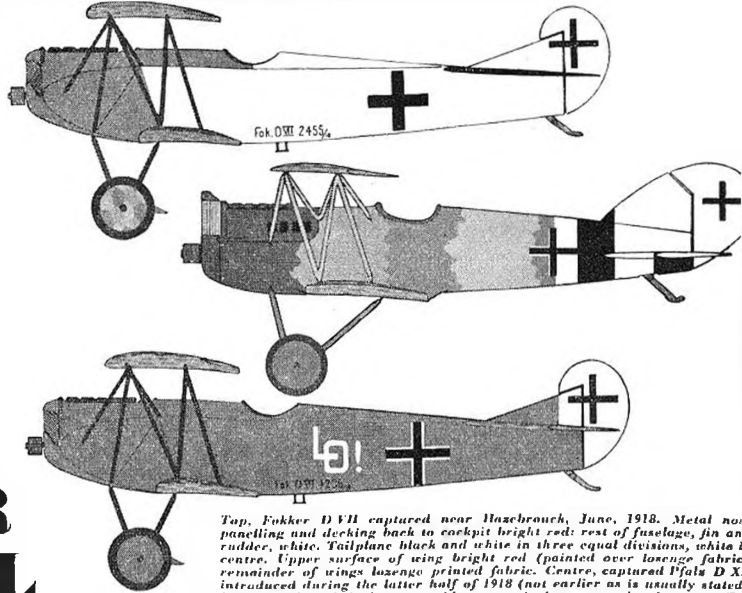
TOWARDS THE END of the war Home Defence fighter units were formed in Germany and were known as "Kestas" (Kampf Einsitzer Staffeln) in comparison with the Front Line fighter units known as "Jastas" (Jagd Staffeln). These "Kestas" were largely equipped with Siemens-Schuckert D types which were covered all over with the dark lozenge fabric except for the white tail fin and rudder, and bore white crosses on the dark surfaces.

The really gaudy machines beloved of the fiction writers were the exception rather than the rule, but some toned illustrations of some single seaters of which details were obtainable are included, it being thought that a few specific examples would be preferable to a lot of generalisations. When bright colours were used they were applied over the camouflage finish.

It has not been possible to obtain a record of Staffel markings as these were not official but were solely the choice of the Staffel Commander and the pilots themselves, and probably varied frequently. For those who wish to finish a model in a more colourful scheme, yet have it based on fact, a table is appended as a rough guide to the way some of these aircraft were painted, which has been culled from various autobiographical writings. Such information is unfortunately vague, but in the heat of a dog-fight doubtless the pilot did not have time (or inclination) to study the exact manner in which his adversary was painted.

Twin-Engined Machines

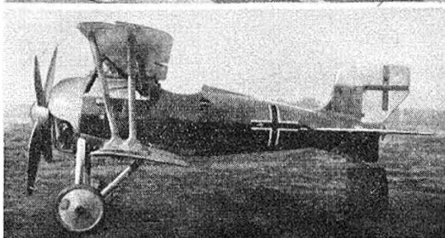
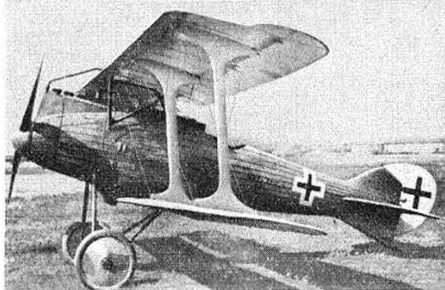
Twin engine machines generally conformed to the same camouflage schemes as the already described single and two-seater aircraft. Clear doped aeroplanes were widely used at first and later on were camouflaged; although many machines appeared in "half-and-half" finish, i.e., camouflaged wings and clear doped fuselage, or vice versa. The printed lozenge fabric was not applied to the majority of bombers but an irregular lozenge pattern was painted on in shades of dark blue, indigo, black, dark purple and dark grey. Reference again to the "Table of Fabrics" (November issue) will show that colours were by no means uniform. AEG GIV machines do appear to have been covered with a printed fabric—at least one captured example was—with a large regular



Top, Fokker D VII captured near Hazebrouck, June, 1918. Metal nose panelling and decking back to cockpit bright red; rest of fuselage, fin and rudder, white. Tailplane black and white in three equal divisions, white in center. Upper surface of wing bright red (painted over lozenge fabric remainder of wings lozenge printed fabric). Centre, captured Pfalz D X introduced during the latter half of 1918 (not earlier as is usually stated). Fuselage shaded dark mauve, blue grey, dark green and pale green. Tail portion black and white. Serial number painted over, but that of an identical finished aeroplane (except tail painting) was 2690/18. Bottom: Fokker D V flown by Germany's second highest scoring pilot—Ernst Udet. All search fuselage and fin. Rudder white, also LO! motif on fuselage sides. Wing lozenge printed fabric.

hexagon pattern which had been additionally stippled over with coloured dope to make the effect even more vague and hazy.

This experimental version of L.F.G. Roland D IIb (Serial 2217/18) displays plain varnished "clinker" built fuselage and Greek crosses conforming to the first official formula. The wings have natural linen fabric and the wheel discs are fabric of the "lozenge" printed material. Siemens-Schuckert D IV helme displays ultimate style of Greek cross: struts wrapped with lozenge fabric (Nourra photo).



Naval Aircraft

German naval aeroplanes were, except for a few Dornier experimental flying boats, twin-float seaplanes; flying boats somehow being frowned upon by the authorities.

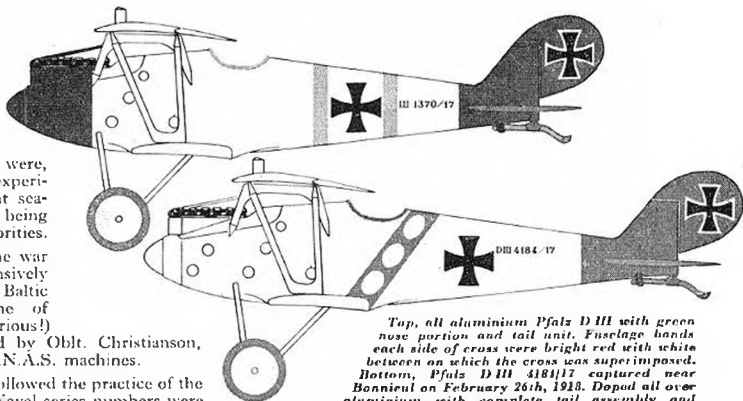
During the latter half of the war these seaplanes were extensively operated from bases on the Baltic and North Sea coasts, one of the most notable (or notorious!) being Zeebrugge commanded by Oblt. Christianson, who downed many British R.N.A.S. machines.

The Naval aircraft largely followed the practice of the Air Force, except that large Naval series numbers were painted on the fuselage sides, usually in black but sometimes additionally outlined narrowly in white. Sometimes fuselage crosses were omitted. With the adoption of lozenge fabric the fuselage sides were often painted a plain dark green, simply leaving the decking in the patchwork colours. The fabric differed from that of the Air Force in having lozenges in a pattern of quite regular hexagons. Although it has not been possible to examine a piece of this fabric, it is logically concluded that the pinks and yellows of the land scheme fabric were dropped and light green and alternative shades of blue and/or grey substituted.

At all events this camouflage proved most effective as the seaplanes waited on the surface of the North Sea (weather permitting!) for Allied patrol flying boats to appear, whereupon they started up and gave battle.

Size of the hexagons on the single-engined machines

Top left, L.F.G. Roland C.III lived up to its German name "Haifisch" (Shark) in appearance if nothing else. This is an instance where ply covered fuselages were painted over and not just clear varnished as with Albatross single-seaters. Patches of mauve and green can be distinguished, also blue under surfaces (I.W.M. photo). Top right, Junkers D.I of 1918 well illustrates the manner in which the metal-covered Junkers aircraft were painted. (Real photograph.) Below left, Daimler L.6 single-seat fighter was produced in 1918. It shows obvious Albatross influence in the fuselage and empennage construction and displays an early type of Greek cross with wide white surround. (I.W.M. photo.) Below right, Hansa Brandenburg W.33 clearly shows the ultimate style of Greek cross applied to Naval seaplanes and marine serial number. This aeroplane was captured, note roundel painted over the cross underneath the wing. (I.W.M. photo.)

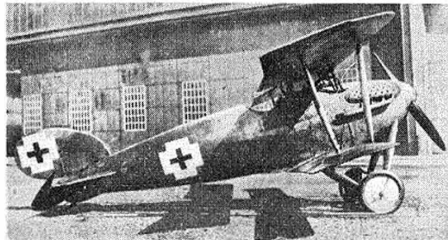
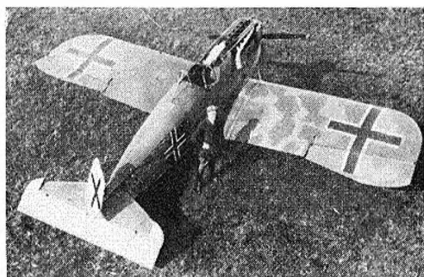
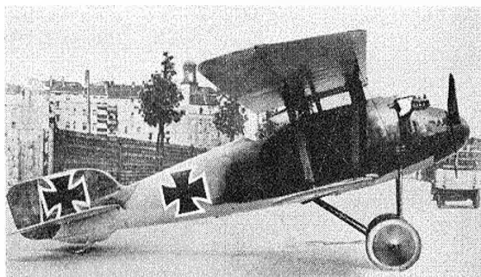


Top, all aluminium Pfalz D.III with green nose portion and tail unit. Fuselage bands each side of cross were bright red with white between on which the cross was superimposed. Bottom, Pfalz D.III 4184/17 captured near Bonniel on February 26th, 1918. Dapud all over aluminium with complete tail assembly and fuselage motif in chocolate brown

is estimated as being about 12 to 15 inches in diameter; those used on the larger Friedrichshafen and Gotha twin-engined seaplanes were proportionately larger.

Austro-Hungarian Aircraft

To COMPLETE THE record mention must be made of the Austro-Hungarian aircraft which generally followed the same systems adopted by the German Air Force, except that more sandy tones were used for operations over sub-tropical theatres. On machines using the system of large irregular patches of camouflage, the dope finish was rubbed well into the fabric by hand with a circular motion, which left a scribed circular (spiral spring effect) pattern on the surface. When the printed fabric was introduced the material was very similar to that used on German Naval machines, in having a





Left, an Albatros D.Va of Havelle-Staffel. Study of colour values of original print points to black and white fuselage stripes, black struts and nose panneling, white tail. Wings "shadow shaded" on top, pale blue underneath. Note absence of cross on fuselage. Right, an intact D.VII shot down by Maj. Wm. Barker, V.C. (second from right with arm in sling). Size and proportions of cross well shown also pattern of lozenge fabric. (Both from Airphotos, N.Y.)

pattern of regular hexagons. In some instances the pattern was additionally washed over in places, following the outlines of the hexagons, to form bands of darker tone, as shown.

National insignia of the Army machines was the same as the German, except that no crosses were carried on the fuselage sides, although they were occasionally painted on the wheels discs. The Naval flying-boats and Marine Corps scout aircraft carried red-white-red chordwise flashes, both above and below the upper wing tips (the portion covering the ailerons span being split equally into three divisions), the tailplane was likewise equally divided, also the rudder. Crosses were additionally carried on the wings, inboard of the flashes. The straight sided Greek crosses were not adopted by the Austro-Hungarian Forces until about August/September, 1918.

All aircraft carried a serial number, painted in black on the fuselage sides by which, once the key was known, any aircraft could be identified, even its sub-contractor. To give complete detail is beyond the scope of this article, but it can be briefly stated that the tens digit preceding the stop indicated the manufacturing firm, as follows:—

01—09 Licence built German types	10—19 Lohner Aircraft
20—29 Phoenix Aircraft	30—39 O-Aviarik (Austrian Aviak)
40—49 Lloyd Aircraft	50—59 Oeffag (Austrian Govt. Factory)
60—69 Ufag (Hungarian Govt. Factory)	70—79 Fischamend (mainly sub-contract only)
80—89 W.K.F. (Vienna Carriage Works)	90—99 M.A.G. (Hungarian Arsenal)

e.g., O-Av. "Berit" serial 38:58 (illus.) : the two figures after the stop, that it was the 58th machine of that series built.

Two well-known Austro-Hungarian fighter pilots were Frank Linke-Crawford, who scored 27 victories and Godwin Brumowsky, 35 victories. Both, at one time, flew Austrian built Albatros D. III's—with Austro



Daimler engines instead of the German Mercedes—Brumowsky used a skull device (no crossbones) painted on the fuselage, and Linke-Crawford an eagle with outstretched wings.

PREFIX CODING OF MILITARY AIRCRAFT

Although the following list explaining the prefix coding of all Germany military aircraft is not strictly concerned with the camouflage or insignia, it is presented in the interests of completeness likewise the information on the numbers of squadrons.

Prefix Aircraft category	
A	Unarmed two-seat aircraft, mostly early "Taubes".
B	Unarmed two-seat biplanes up to 150 h.p., mostly training aircraft.
C	Armed two-seat biplanes, usually over 150 h.p.
D	Armed single-seat biplanes. In 1918 monoplane were also put into this category, e.g., Fokker D.VIII.
E	Armed single-seat monoplanes.
F	Used only for Fokker F. I—first three aircraft of triplane series.
G	Twin engined biplane bomber.
GL	Twin engined biplane bomber with light airframe.
J	Armoured, armed two-seat biplane for close support of ground forces.
N	C type two-seat biplane used for night duties.
R	Multi-engined, multi-seat biplane—the so-called "Giant" aircraft.
S	Armoured attack aircraft—only one allocated, AGO S. I.
CL	C type biplane with light airframe.
CLS	Light armoured attack aircraft—only one allocated, HALBERSTADT CLS I.
DJ	Armoured D type aircraft, mainly for trench strafing.
Dr	Triplane aircraft.

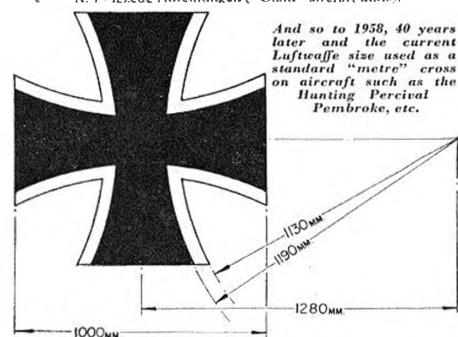
Units in Service at Armistice:

81	Jagdstaffeln (Fighter—or scout Squadrons).
145	Fliegerabteilungen (Aufklarungs—und Artillerie—Flieger) (Recon and Artillery Observations).
38	Schlachtstaffeln (Ground attack Squadrons).
7	Reinheitsabteilungen (Long range Recon units).
9	Bombengeschwader mit insgesamt 30 Bombenstaffeln (nine bombing wings—30 Squadrons).
2	R. Fliegerabteilungen ("Giant" aircraft units).

And so to 1958, 40 years later, and the current Luftwaffe size used as a standard "metre" cross on aircraft such as the Hunting Percival Pembroke, etc.



Greek crosses. Type A is the first style used, this was illustrated in an order dated 20.3.1918. Type B shows how crosses did not always conform to regulations, as an Fokker D.VII (O.A.W.) 2009/18 and Albatros C.III C931/17. Type C shows ultimate proportions. Cross width 1/2th cross length, border width 1/3 of cross width, as an order of 25th June, 1918



OUT OF THE RUT

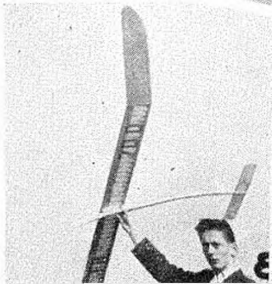
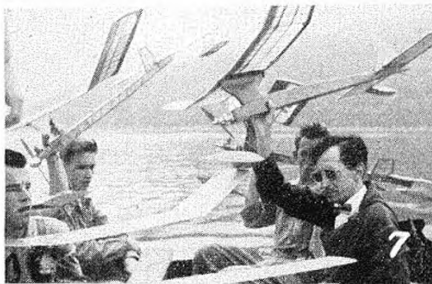
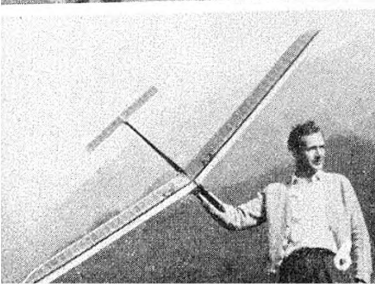
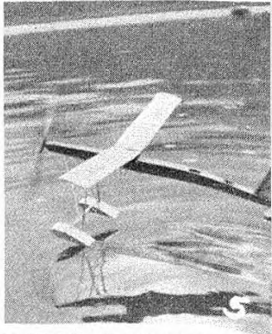
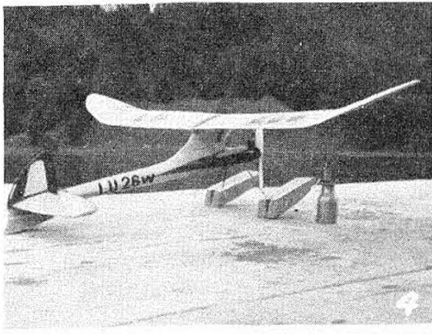
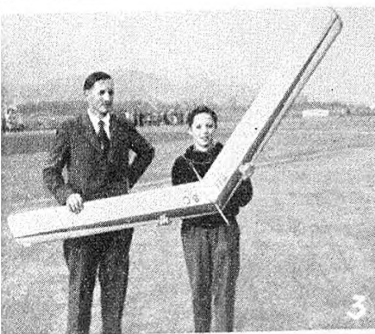
PHOTOGRAPHS FROM ST. ALBANS
SLOPE SOARING MEETING AND
EVENTS IN SWITZERLAND



(1) Brian Tarmar of Tring MAC was probably more surprised than most of the spectators at the fine slope performance of his KK Chief. Slopes of Tringhoo were receiving gusts up to 35 m.p.h. at the time. (2) All aboard on the calm lake of Lucerne for the Swiss Hydro contest. (3) Paul Schmitter and son with winning wireless model in glider Nats. (4) Hans Dianna's 3rd place twin float. (5) Freddy Trub's rubber entry at the moment of unsteering. (6) John Francis of Veerdon, top Swiss A12 man. (7) More hydro's note Felix Bachli's twin profile pylons bottom left. (8) Gregor Scheu of Frauenfeld placed 6th in A12

A FILM CAMERAMAN friend of ours, who has the enjoyable occupation of producing short movies on all sorts of subjects ranging from shows to dinghy sailing, recently witnessed his first experience of radio controlled slope soaring. He rated it the most satisfying form of aeromodelling he has yet seen—and we tend to agree with him. While most of the country was being subjected to pelting rain from dull overcast on November 3rd, Ivinghoe Beacon in the Chilterns was bathed in sunlight, and though winds were cold and strong, the radio flights were enough to spire a flood of activity by all who were there. We understand that the organising St. Albans Club is now seeing a hitherto unapproached intensity of modelling, most of it on slope soarers. Picture a glider weaving under full control, soaring with the birds, swooping and gracefully gaining height with every turn into wind, and you begin to get the spirit of radio slope soaring. Times were not great at this first St. Albans meeting; but we venture to predict a heavy entry and high performances next time.

(Continued overleaf)





(9) Josh Marshall of Hayes lost his tailless, just back from the Terlet meeting, soon after this pic was taken at Irvinghoe



(10) Reaves of Oxford Meteors made a hasty weathercock rudder for his converted power model at Irvinghoe and it paid off by placing 4th

Radio

- | | | |
|----------------------------------|-----|--------|
| 1. R. Kesby (Bletchley) ... | ... | 4 : 27 |
| 2. G. Upson (Northwick Park) ... | ... | 3 : 20 |
- (Fifteen entries)

Un-Controlled

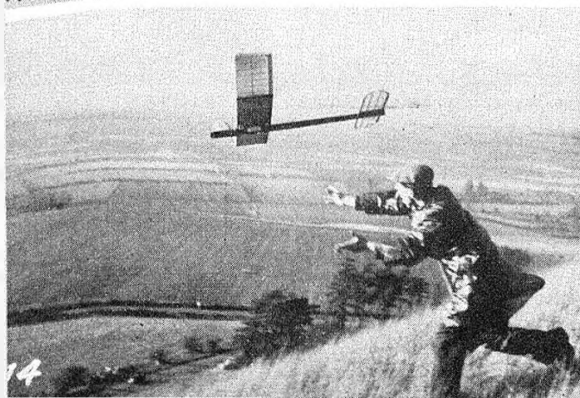
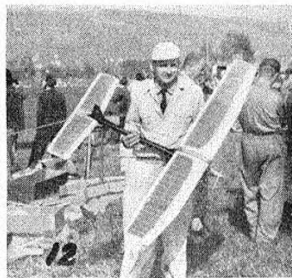
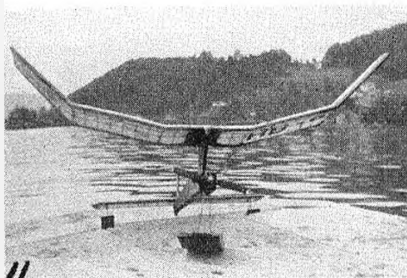
- | | | |
|-----------------------------------|-----|--------|
| 1. D. Edwards (St. Albans) ... | ... | 1 : 47 |
| 2. D. Tipper (St. Albans) ... | ... | 1 : 20 |
| D. Edwards (2nd attempt) ... | ... | 1 : 20 |
| 4. C. Reaves (Oxford Meteors) ... | ... | 1 : 15 |
- (Thirty-five entries)

Interesting point is that the winning un-controlled model was a large solid "chuck" type

glider with fore and aft fins and stick fuselage, and Dave Tipper's second placer was a tailless model which had been flown in the British team at Terlet (see page 16).

Also out of the ordinary run of events are the Swiss Hydromodel Championships, held at Lucerne, which appear to have produced a new line in offset main floats this season, and the A/2 Championships held at Interlaken which always introduce something new. The pictures by Maurice Dufey speak for themselves, and will, we hope, inspire British modellers to try more over-water work in '58.

(11) Shades of the old Banshee dihedral on Rudolf Schenker's Hydro winner, his ordinary f1f is seen in (12), designed for new rules. (13) Ernest Eng of Olten placed 8th, also favours main float offset. (14) P. Hedgeman of Hayes heaves ho at Irvinghoe with forward fin to try and counter the strong wind. (15) George Upson and his radio glider which put up the most impressive if not longest performance



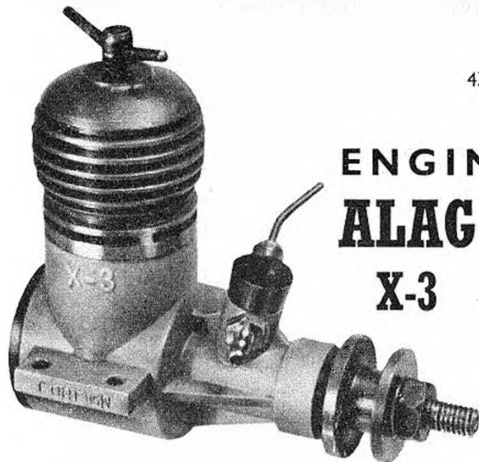
ENGINE ANALYSIS

NUMBER
43

ALAG X-3

TWO CONTINENTAL ENGINES

Reviewed by R. H. WARRING



THE ALAG is a Hungarian engine of extremely neat appearance and clean design, now available in limited quantities in Great Britain. The layout is quite conventional for a modern, plain bearing diesel (the apparent "housing" cast in the front of the crankcase unit is there only for appearance) and performance, whilst perhaps on the moderate side, is consistent. The Alag is extremely well made and finished and starting and general handling characteristics excellent.

We found, on test, a fairly rapid fall off in torque and power past the peak, which occurred at 12,700 r.p.m., but the engine still continued to run well and steadily at much higher speeds on propeller loads. It has something of a vicious "bite" for hand starting on 7- and 6-inch diameter propellers, but if the compression is slackened right off and the engine well choked, starting remained virtually instantaneous. Above about 11,000 r.p.m. smoothest running was obtained on a fairly heavily nitrated fuel (e.g., Mercury No. 8). On a straight diesel fuel, or a fuel with less than 3 per cent. nitrate, control settings were a little critical at the higher speeds, with a tendency to "miss" when running.

On bench tests, too, there was an appreciable falling off in power as the Alag warmed up—and it does get quite hot with only static slipstream cooling. A "hot"

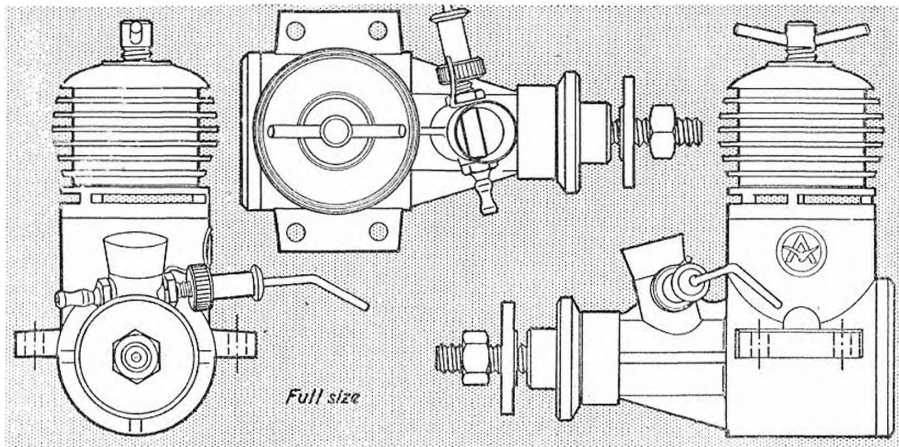
re-start sometimes produces the "continental squeak" common to Webra, Schlosser, and Taifun engines. It can be remarked, however, that although the cylinder tended to get extremely hot the main bearing remained quite cool, showing it to be a nice, free-running fit. There is, in fact, appreciable side play on the bearing, consistent with a present-day trend.

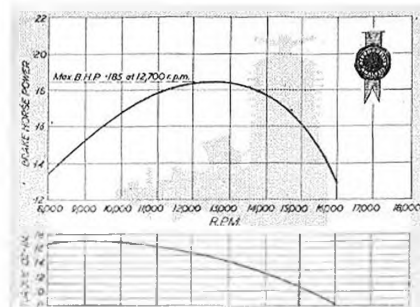
Constructionally the Alag features a clean, light crankcase casting bushed with a press-fitted brass or bronze alloy sleeve for the main bearing. This bearing is reamed to size. The casting is threaded to take the cylinder and the screw-on backplate, the latter being a thermostat plastic moulding of the Bakelite type. The back cover screws in to a considerable depth, leaving a minimum of crankcase volume.

Three exhaust ports are milled circumferentially through the top of the flange, with six transfer passages cut on the inside of the cylinder terminating square roughly 3/64 in. below the bottom of the exhaust ports. The bore is very generously tapered to relieve the bottom end, this in fact being more or less obligatory with this type of porting as otherwise the hone is likely to bounce in finishing the bore. The result is a very free fitting piston at the bottom of the stroke and one which tends to be relatively tight at the top.

The cast iron piston is relatively heavy, ground to finish with a slightly conical top. Its gudgeon pin is .157 in. diam. (4 mm.), press fitted and appreciably shorter than the bore size. Connecting rod is machined from dural with ball-shaped ends.

The hardened steel crankshaft is .334 in. diameter (8.5 mm.), tapered down at the front to a .194 in. (5 mm.) metric thread. Length of thread is relatively short (1/2 inch), but the propeller sets back a further 3/16 in. over the boss of the drive washer, so quite high pitches can readily be accommodated. The only inconvenient point is that the diameter of this boss is rather large, calling for a hole through the propeller hub of 7/16 in. diameter.





An interesting feature of the crankshaft is the small hole for the intake port. This is only 5 mm. diameter, which is appreciably below that on other shaft-valve 2.5's. It appears adequate for the job and because of the smaller amount of metal removed from the section the shaft is that much stronger as a consequence. The crank web is circular with no pretence at balancing. Crank pin diameter is .1965 in. (5 mm.). Toe shift (and pin) are finished by grinding. The web is untreated, i.e., no attempt has been made to remove scale.

The intake tube cast in with the crankcase unit is quite short and fitted with a moulded plastic venturi trapped in position by the spraybar. Two alternative venturis are provided, one giving improved high speed performance at the expense of some deterioration in starting characteristics. All test running was done with the general purpose venturi. The spraybar itself, turned from brass, is angled backwards and slightly upwards to the left.

Summarising: A pleasant engine to handle, easy to start and not at all fussy about control settings. Light for its size, and compact, without sacrificing mechanical strength or running into distortion troubles. It should, in fact, make a very good free-flight motor swinging, say, an 8 x 4, 9 x 3 propeller. For control line work an 8 x 5 or 8 x 6 would probably be better for stunt.

PROPELLER—R.P.M. TESTS

Propeller	r.p.m.
8 x 3 (Tiger)	10,600
8 x 4 (Tiger)	12,000
8 x 34 (Tiger)	13,200
6 x 9 (Tiger)	13,500
7 x 4 (Stunt)	13,600
8 x 4 (Stunt)	12,200
8 x 5 (Stunt)	11,700
9 x 5 (Stunt)	9,000
8 x 6 (Trotter)	9,200
8 x 4 (Trotter)	12,200
7 x 9 (Trotter)	9,100
7 x 4 (Trotter)	13,800
7 x 3 (Trotter)	13,400

Fuel used, Mercury No. 8

Agents:

Rupmax Ltd.,
39 Parkway, Camden Town,
N.W.1.

Price:

£3 15s. 0d. plus 12s. 1d. p.t.

ALAG X-3 SPECIFICATION

Displacement: 2.450 c.c. (-1498 cu. in.)
Bore: .5905 ins.
Stroke: .5470 ins.
Bore/stroke ratio: 1:1
Bare weight: 4½ ounces
Max. power: 185 B.H.P. at 12,700 r.p.m.
Max. torque: 17 ounce-inches at 9,000 r.p.m.
Power rating: .075 B.H.P. per c.c.
Power/weight ratio: .045 B.H.P. per ounce

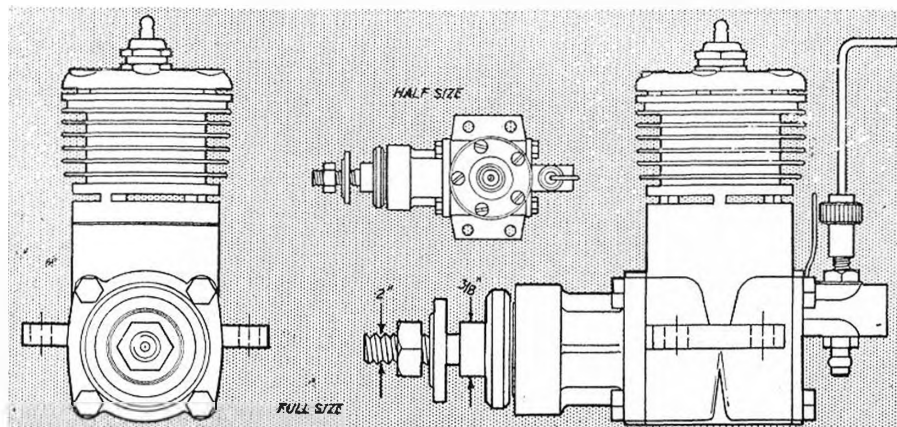
Material specification:

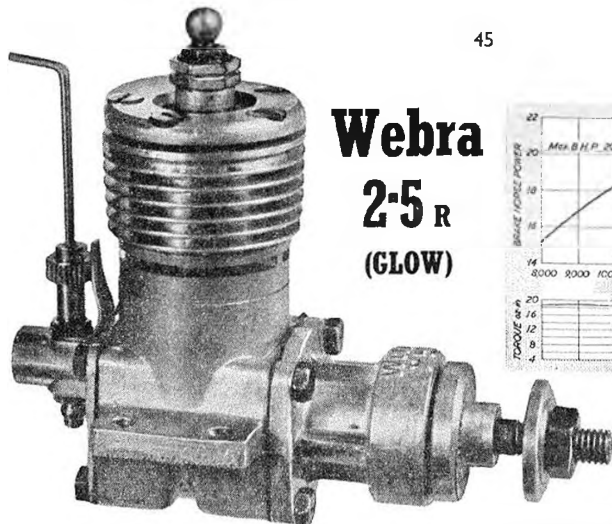
Crankcase unit: light alloy pressure die casting
Cylinder: hardened steel
Cylinder jacket: dural, anodised red
Crankshaft: hardened steel
Connecting rods: dural (turned)
Piston: cast iron (ground)
Contra piston: cast iron or mild steel (unhardened)
Main bearings: brass or aluminium bronze bush
Crankcase back cover: thermoset plastic moulding
Spraybar assembly: brass
Intake venturi: thermoset plastic moulding

... and from Germany

THE WEBRA 2.5 R is a glow version of the well-known Mach I diesel and as such retains a layout different from that normally associated with racing glow motors. Although a very compact engine, the 2.5 R is actually taller than it need have been. The basic conversion consists of a new cylinder jacket and separate head, utilising the same liner length as on the diesel. Hence there is a fair amount of depth "going to waste" at the top (occupied by the contra piston on the diesel) which has to be filled by the head.

The 2.5 R proved to be a beautiful engine to handle. Starting was no problem on any size of propeller. One or two finger chokes was adequate to prime, followed by a sharp flick. Running was consistent and smooth up to speeds well in excess of 18,000 r.p.m., with an easily-adjusted and non-critical needle valve.





Webra 2.5 R (GLOW)

Workmanship is of the highest standard, with good attention given to detail and fits. The internal components are of the more "massive" construction associated with diesel design, yet the total weight of the motor is kept down to a matter of 4½ ounces. Externally the finish is adequate, without being outstanding.

The extremely solid cylinder liner screws into the light crankcase casting, sealing by means of a copper gasket. Semi-circular transfer ports are cut on the inside of the cylinder, terminating just below the level of the exhausts. The piston is effectively supported at the bottom of its stroke by eight narrow pillars of metal between the transfer passages. The transfer opening is quite shallow at the bottom of the stroke.

The cylinder jacket screws on to the outside of the liner to just below the level of the top of the liner. The head then plugs into the top of the cylinder, sealing with a fairly thick non-metallic gasket and is held in place with six short screws threading into the cylinder jacket. The glow plug mounts centrally in the head and is of Webra design, featuring a relatively large air chamber around the plug element. This has the effect of maintaining a higher element temperature, although on test the original plug quickly burnt out and was replaced by a K.L.G. type. Running and handling characteristics remained unaffected by the change.

WEBRA 2.5R SPECIFICATION

Displacement: 2.47 c.c. (15 cu. in.)
Bore: .612 in. (15.5 mm.)
Stroke: .513 in. (13 mm.)
Bore/stroke ratio: 1:2
Base weight 4½ ounces
Max. B.H.P.: 202 at 13,200 r.p.m.
Max. Torque: 19 ounce-inches at 9,000 r.p.m.

Power output: .082 B.H.P. per c.c.
Power/weight ratio: .0436 B.H.P. per ounce

Material Specification:

Crankcase: light alloy die casting
Cylinder: hardened steel
Cylinder jacket: Machined light alloy
Cylinder head: machined light alloy
Piston: cast iron
Con. rod: dural

Crankshaft: hardened steel
Main bearings: two ball races

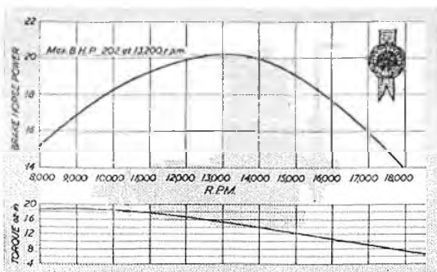
Manufacturers:

Fein und Modelltechnik,
5 Genestrass Berlin-Schönberg.

Price: (Germany) DM.49.50 (£4 5s. 0d.).

PROPELLER TEST DATA	
Propeller	r.p.m.
din. x pitch	
10 x 9 (Stant)	9,600
9 x 9 (Stant)	10,300
8 x 9 (Stant)	12,500
7 x 9 (Stant)	14,000
6 x 9 (Stant)	16,200
7 x 6 (Stant)	12,800
6 x 6 (Stant)	14,400
9 x 3 (Tiger)	11,900
8 x 3 (Tiger)	14,200
8 x 4 (Tiger)	15,000

Fuel used: Methanol 40%;
Nitromethane 25%;
Castrol M 35%

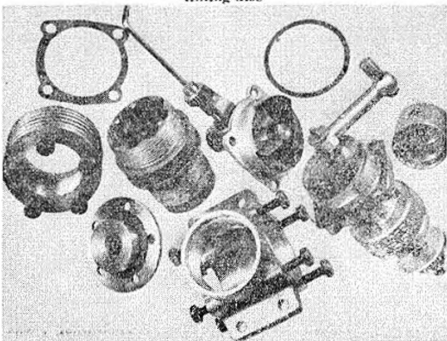


The back cover casting is relatively light and thin, carrying a rotor disc of moulded Bakelite or similar thermo-setting plastic. This appears to be a perfectly satisfactory material, showing not the slightest signs of wear at the conclusion of the tests. The venturi intake opens out sideways past the spray bar into a relatively wide port opening in the back cover, the shape of this passage being carried on by the leading edge of the rotor disc after the manner of most "re-worked" engines. A conventional paper gasket seals the back cover to the crankcase, fixing being by four Allen head screws.

The crankshaft bearing assembly is cast integral with the crankcase front cover as a detachable unit, again held by four similar screws and sealed with a thin gasket. The shaft is mounted on two ball races and the whole is assembled as a permanent unit, comprising shaft, bearings and connecting rod locked in place on the crank pin. Connecting rod itself is of dural, machined to finish and of generous section. The cast iron piston is relatively heavy, with the gudgeon pin press-fitted in place. The whole assembly, including the piston, can be withdrawn from the front of the engine on removing the front cover screws. It is necessary to check that all holding screws are tight after initial running, especially as these engage only to a depth of about ½ inch.

Summarising, the 2.5 R appears to be a particularly viceless engine, sturdy, compact and very easy to handle. It is capable of extremely consistent high speed running, when it has a particularly avid thirst for fuel. After long periods of fast running the cylinder and piston remained perfectly clean, indicating exceptionally efficient scavenging. It is probably the noisiest of all 2.5's.

Webra 2.5R Components show Rotor Cylinder ports and plastic timing disc





"GOT IT!"—the great cackling bellow of "Stinky" Waxweed, hurled across the clubhouse, shaking centuries of balsa dust from the rafters causing the pet moggy to hightail it down the street, its feet barely touching every 10 yards. "Slats" McQuine poured Brown's Gilder dope down his best pipe stems, whilst "Mugs" (he always won 'em) McInnis made a hash of covering the vital part of the fuselage. The other members glared gleefully at Stinky.

"Got what, you great slubbering ass," growled the Club Secretary, picking himself up from the floor. "My latest invention, it will work, my Yes Machine." "Stinky", so named because of the persistent manner his model always seemed to have in landing on the nearby, duckweed marshes, smiled secretively. "Lads," he beamed, the cement cracking round his lips. (Why does he bite the end of the tube when it clogs?) "This machine, when turned on will cause anyone



"Use my fields, but mind the bull."

within 200 yards to grant all our wishes. Whatever we ask for is not refused."

The members looked at each other, after all Stinky very rarely failed with his ideas. "Do you mean," asked the Club Secretary hopefully, "were we to ask Farmer Brown for the use of those glorious Buttercup meadows, he would grant it?" "Yes," said Stinky proudly. "Slats" McQuine came forward. "Stinky lad, if it does work and we get the meadows, I'll pay your club arrears next payday, but first we will try it out on 'Misery'."

"Misery," being the club's scrounger, he never built a model, but paid his fee with clockwork regularity. He referred to get unsound advice on the merits of the other's models.

Just then who should walk in but

"A glorious morning's flying."



The "YES" machine

A SMALL STRETCH OF IMAGINATION BY R. P. WILSON

ILLUSTRATED BY "RUSS"

Misery. Dolefully glancing about him, he murmured "Hiya, bods". We glared at him.

Grinning wickedly, Stinky depressed a switch on the black box. Then, to our astonishment, a gentle smile lit up the features of Misery. "Lend us a quid, Misery," asked Stinky. Our jaws reached lower, as Misery reached into his duffle coat and pulled out a fat wallet. He handed Stinky a crisp pound note.

Gasps of amazement caused the returning moggy to again beat it for the regions high-tailing moggies beat it to.

Handing the £1 back, Stinky said "Oh, I forgot, Misery. I will get my spends tonight. I won't need it after all".

"Any time, Stinky, any time," smiled Misery, putting the note back with its many companions. Stinky switched off.

"Here, what's this," glared Misery. "I come over all queer." He gazed and stared out. For a moment silence reigned. "Stinky, old lad, you've got it," smiled the modellers, crowding around him.

"The Club Secretary called for silence. 'Lads, tomorrow instead of going to Duckweed hollow we will call on Farmer Brown and seek his permission to use the meadows, and you, Stinky, bring your black box'."

All in agreement and full of excitement we repaired home to prepare our many models. The moggy settling comfortably on the piles of old modelling magazines, having crept in during the excitement.

Next day dawned bright, clear, warm, with a very gentle breeze. I decided to go along with my K/C job, so I met the chaps at the clubhouse. Nic, I'm just the silent member.

Arriving near Farmer Brown's fields and farm, the Club Secretary, followed by Stinky carrying the black box, approached the farmhouse door. "O K, Stinky," said the Sec. "switch on." He did so, halting the rush of a great wolfhound, or so it looked as it wagged its tail, a sign Stinky was on the beam. The Secretary knocked. Farmer Brown appeared, a great beaming smile lighting up his crazy unshaven features. "Yes, lads, what does that want?" The Secretary gulped. "Er, would you be good enough to allow myself and fellow members of the Ryde Model Flying Club to use the meadows? We will leave no litter."

"Ay, lad, sure, thee and all thy pals can use 'em any time, but mind. Yon field next 'n' big barn, my prize bull's in there," he smiled, looking over his shoulders at the hopeful faces of 160 modellers waiting outside the gates. "I suppose this means you'll all be thirsty. Ada," he bawled into the farmhouse. "Give o' these lads a glass o' milk each".

Feeling faint, the Secretary joined the modellers in a celebration of milk drinking. We duly and with much happiness arrived down at the meadows. No walls, trees or buildings. Just the barn in the distance with the field next to it, in which the prize bull chewed contentedly.

Stinky gently put down the Black Box, making sure the switch was on, and we all gloriously had a thoroughly enjoyable morning's flying, no prangs and many 5 minutes flights.

Came lunch time, we all sat down to our sandwiches, giving Stinky pride of choice and place among us.

Having had our sandwiches, we were just about to prepare for the afternoon's flying when suddenly "BANG", "BANG", "WHHEE!"

Someone was firing at us, pellets of salt whizzing amongst us.

"The 160 modellers whipped round as one man and looked in the direction of the farm. Tearing down the field was Farmer Brown and his 8 sons all brandishing 12 bores. The 160 modellers turned, gathered up their belongings and highballed it over the fields, hotly pursued on one side by the farmer and his sons, and coming from the other side, the great black bull, snorting and bellowing fire and slaughter.

Holding his black box, Stinky galloped at my side. Together we leapt for the 12-ft. high blackthorn. As we sailed over, I glared at Stinky. "Stinky, you mutton-headed crot, what in the name of sand and cement went wrong?"

As we hit the roadway, still galloping, Stinky panted "Dunno!" He feverishly worked the switch up and down, but still the pellets, still the bull.

We reached the Clubhouse all in one piece with salted backsides and frayed



"Farmer Brown, eight sons and nine 12-bores in action."

tempers. Stinky was nailed, and the Secretary spoke: "Stinky, before we tear you to pieces, tell us what went wrong."

Stinky took the lid off the black box and peered into the maze of wires and batteries. He took out a small battery and replaced it, then switched on.

"Stinky, lad," smiled the Secretary, in great pleasure, "we all enjoyed our outing and readily forgive you, old son."

We still use the meadows. The farmers are all very friendly, so is the bull. The moggy sleeps peacefully, and old Stinky keeps in a goodly fresh stock of 13 L.F.I. batteries. As for me, it does not affect me. I know the secret. I can counter it—but then, I mustn't tell, or our President Stinky would not like it.



SOLVED—THE MYSTERY of the missing Club! Having credited the shoal of models depicted in our November issue heading to the Llanelli boys, word now reaches us from an indignant Irishman stating that the bright bunch of lads are the constituents of the LARNE M.F.C., and that the models shown are but a few of those owned by the enthusiastic members. If anyone has his doubts about this he is welcome to go and have a look, but even fares must be paid! Trouble is that our Irish friend had no idea that he had to identify the photo, probably taking us for English editions of the "Little People" with clairvoyant powers. Probably not so wrong at all when you see what powers of deduction we have to apply to some club reports—one has to be a hand-writing expert, and certainly an unraveller of knots to make head or tail of some F.R.O.'s annotations. What would you make of such items as "Bill won the comp. flying his well-known three year old model", and "Next meeting is on Saturday next, and all members are asked to be sure to attend".

Firstly, who knows (outside his club) who "Bill" is, what comp. did he win and with what score, and just what is his "well-known three year old"? Yet such reports usually end with a plea for the Editor to "make up a useful report from the enclosed as you are more used to this sort of thing!"

As for the second type of "report", it is completely lost sight of that by the time the magazine reaches the members their meeting is some three to four weeks past, and in any case the pages of a national mag. cannot be used for local club notices. Have a sense of proportion you club wallahs, and confine your reports to factual gen that you feel will interest modellers outside your own clubs.

R.A.F. Models Association

A very successful contest was organised by F.O. Crawford at R.A.F. AHLHORN between the service clubs at Althorn, Wunstorf and Gutersloh, and two German clubs from the lower towns of Odenburg and Cloppenburg. The local clubs took the place by storm, and spectators had to be turned away. It was the first time the German lads had flown against the R.A.F., or had flown in an R.A.F. airfield, and their enthusiasm was terrific. Despite the small R.A.F. entry due to the "state of turbulence" out there, they managed to maintain a lead in the five contests, resulting as follows:

Open Glider

S.A.C. Mills (R.A.F. Gutersloh).
Herr Back (Odenburg).

Herr Heber (Odenburg).

F.F. Power

S.A.C. Robinson (R.A.F. Gutersloh).

F.O. Masterman (R.A.F. Gutersloh).

Team Race A

F.O. Crawford (R.A.F. Althorn).

L.A.C. Redfern (R.A.F. Wunstorf).

Stunt

L.A.C. Redfern (R.A.F. Wunstorf).

Herr Borgmann (Cloppenburg).

Herr Tubeling (Cloppenburg).

Combat

L.A.C. Redfern (R.A.F. Wunstorf).

Herr Becker (Cloppenburg).

Herr Kraluge (Cloppenburg).

Northern

Bad weather put paid again to hopes of the BALDOLN M.F.C. winning the Farrow Shield. Halifax day produced a high wind, too, and Collinson's 6: 54, Egglestone's 6: 45, and Pannett's 4: 37 were their best efforts. However, the three-cornered final of the Area knock-out flown the closing minutes of the meeting. A club I.L. Glider contest resulted in a surprise win for Stan Eckersley's A/2, and a general comp., flown

Club News

in fog and rain, saw Brian Egglestone place top with 8: 05 flying a 2.5 c.c. Creep. Conditions for the Hamley were worst of all; only a lucky last flight by Silvio lifted his score to a respectable total of over 6 mins., a mere 3: 13 by Tony Pannett being the next best.

London

October 13th saw perfect weather at Chesham, when ST. ALBANS won the Area 1.1.1.C.C.C. event with a score of 22: 53 against SURBITON'S 22: 22. They were lucky, however, as they only dropped one flight in the rubber section, whereas Surbiton lost two. The K. & M.A.A. for gliders did not produce a crop of maximums as might have been expected, but the Farrow was a different story. CROYDON really came back into the picture with a bang to show there's still plenty of life in that great club, for they set up what must be a record by being the first team to total the maximum score of 48 minutes. Not content with that, their next three members notched 33: 30. A truly great performance, and Croydon retain the Shield which they have now won for the sixth year in succession.

An extraordinary meeting of the EPSOM AND D.M.F.C. brought about the dissolving of the Leatherhead Branch, and a streamlining of the committee and members in an effort to remove some "dead wood". Seven members turned up at Chesham for the Hamley Trophy, but the club's quota of five was evidently used up, for Brian Jones's Merlin (yes, it really is the 31st!) which climbs as high as anything in the London Area, made only two flights. A kind householder took it in after the second flight, and kept it in his garage for the rest of the week, so that was that! Two other members lost their models, and a tour of the local police stations brought to light a number of models that have been resting awaiting collection. These are: a yellow Frog 1-49, powered Mallard; E.D. 46 powered silver A.P.S. Bird-dog; a Skylead Point Five in red and white with Alldon Dart up front; a Bee powered green and red Cardinal; and a white silk covered Hoverling glider. Claimants should contact Woking police station with a full description. Provisional club champs for 1957 are M. J. Dumble for power, R. Willis in rubber, and Willis and B. Jones tying in glider. As reported, ST. ALBANS M.A.C. worsted Surbiton for the Area Cup, but their only notable score in the Farrow was put up by George Fuller to make one man's and then did early for 3: 49, placing him 8th in the collated results. The slope soaring event at Ivyhoe was quite successful, and another will be staged next spring. Latest club crime is in the night, lights attached to the wings 3 min. max.

On November 5th, Carl Simons placed first with 2: 35 for three flights. Don Edwards coming second with 2: 27. He would have scored more, but his light failed.

FARNBOROUGH M.A.C. members turned out for the November club contest, Allan Leeson starting well by cutting his fingers on the prop blades of his re-worked E.D. 2-46. Makeshift repairs with bandage and elastic bands soon stopped the bleeding, and flying commenced to give D. Sibber a win with his Oliver Tiger powered "Helicraft II". Bone of contention in the club at present is where to put the fin on power duration models, both underslung and rear-mounted fins being popular.

East Anglia

The NORWICH M.A.C. team did well in the Area team race championships at Chesham, when ST. ALBANS won the Area 1.1.1.C.C.C. event with a score of 22: 53 against SURBITON'S 22: 22. They were lucky, however, as they only dropped one flight in the rubber section, whereas Surbiton lost two. The K. & M.A.A. for gliders did not produce a crop of maximums as might have been expected, but the Farrow was a different story. CROYDON really came back into the picture with a bang to show there's still plenty of life in that great club, for they set up what must be a record by being the first team to total the maximum score of 48 minutes. Not content with that, their next three members notched 33: 30. A truly great performance, and Croydon retain the Shield which they have now won for the sixth year in succession.

Deblun, taking first place after a very hectic final. Recent club combat event was exciting in the early stages, but the final was something of a fizzle with one pilot grounded for most of the time. Three U.S.A.F. chaps have recently joined the club, giving interesting comparisons in methods and flying.

ANGLIA M.F.C. are naturally pleased with Ron Greengrove's glider win at the All Britain meet, and New. Wally's national win in the K. & M.A.A. Their usual tussle with 'Thameside for the Area Championship resulted in the latter group triumphing by a few points, Anglia honour being satisfied by Wally winning the individual ribbon. Many new models to the latest formulae are on the stocks.

A.G.M. of the DEBENHAIS M.F.C. terminated with a surprise prize-giving, John Tuley receiving a Mercury Monarch kit for being the outstanding junior of the year. A new trophy for future competition is the 'Festina Lente' Sailplane Trophy, which gives a "must" date for next season.

Western

THE BRISTOL AND WEST M.A.C. have had a very successful season, their open rubber design being very consistent, winning all the events held in the Area, plus a 1st at the Stockport Express Rally, and a 4th at Radlett. A club team secured 3rd place in the Farrow Shield, scoring 42: 40 including one triple max. This team must be unique among rubber modellers, three of them being ardent power men, none of whom had flown a contest rubber job until a few months ago! Superb weather was laid on for the West of England Championships, when J. Down of South Bristol had a convincing win with a combined total of 668 sec. out of a possible score of 720.

South Eastern

John West of the SOUTHERN CROSS A.C. is congratulated on his win in the Halifax Trophy, his first national success. By he has been in the footsteps of his clubmates Smith and Gates, neither of whom were satisfied with just one national win! Discussion is taking place regarding a possible amalgamation with the Brighton club, where news of west team news. West scored 6: 46 when winning the club glider comp. in a moderate wind, though the murk caused many models to go c.o.s. very quickly.

Southern

The Area programme for 1957 finished with a meeting at Heathcote Aerodrome for the Farrow and K. & M.A.A. Most successful flier of the year was Pete Grieve of Southampton, who won the Gutteridge Trophy, Thurston Cup, and the tailless event at Radlett. Juniors did exceptionally well in rally events, whilst Clive Wareham (Bournemouth) kept the Area on the map by just not doing a very weak team. West scored 6: 46 when winning the club glider comp. in a moderate wind, though the murk caused many models to go c.o.s. very quickly.

A further Open Rally will be held at Heathcote on February 23rd, when the same schedule of contests is planned.

PORTSMOUTH M.A.C. lost the annual contest with the Southampton club for the Hobart Trophy, mainly due to a weak team in rubber. Conditions were poor with a strong wind plus heavy showers, and two rubber jobs were wiped out within minutes of arriving at Stoney Cross, thus putting paid to Portsmouth's hopes. Opinion is divided in the club whether to run a winter indoor session, or to take a breather and gather stocks for the next season. There is wild talk of papier-mache fuselages for

rubber jobs, and utilisation of the thin Benedek sections. A Gallipoli Ghost has been observed, though as yet only at a trial! We hear rumours of a proposed waterplane contest in the 1958 season, venue probably Poole Harbour.

South Midland

COWLEY (Middx.) M.F.C. won the inter-club event at the Area Rally with a total of 31/20, and took top two places in rubber. A. J. Benson recently pushed the club glider record up to 21 minutes—by accident, of course! This club would like to contact other clubs or individuals interested in indoor flying to explore the possibility of reviving this ancient but noble sport in their part of the world. Enquiries to: P. W. Quarterman, 1 Iver Lane, Cowley, Middx.

North Western

Area champions for the 1957 season are John O'Donnell in novices (rubber), and overall champ: G. Hutton (Wallasey) in glider, and T. Jolly (Whitefield) in Control Line. Whitefield topped the Area results in the Farrow, the O'Donnell brothers and Jack Trimmer taking the next three places. Chadwick of Ashton topped Area times for the K. & M.A.A. with two maxes and a 2:45.

Ten-year-old L. England of the COLNE M.A.C. put it across the sensors in the rubber event in a recent inter-club rally, but unfortunately lost the model in the process. Altogether five models were lost, the wind being very strong and retrieving difficult. The club is proposing to hold another invitation Winter Rally on December 15th.

ENGLISH ELECTRIC M.A.C.'s Tom Smith, whose AM.15 Nig Nog was lost after the Hallow, recovered the job two weeks later from a farmer's boy, who found the model with its wingtips in a stream. Warps have been removed, and it is now

back in flying condition. J. Headley, now resident in the U.S.A., reports that the Yanks are really hot on lift power, and model shops just about the last word!

November 3rd saw members of the **SOUTHPORT M.A.C.** on the beach flying for the Harber Glider Challenge Trophy, four flights being required with a maximum of two minutes set in view of the high wind. Crashers were plentiful, and G. McCabe finally totalled 5:46 to win the event, J. Peet (5:40) placing second, and D. Barber (5:47) third.

North Eastern

Having completed a 1A team race in the remarkable time of 23 minutes, members of the **THORNABY PATHFINDERS M.F.C.** requested a stopwatch—though a calendar may have been more appropriate! They seem to have ousted all other forms of modelling in that club, which, after a season of demonstrations at local shows, welcomes the winter break to get a rest.

Midland

Due mainly to restricted flying space, the newly-formed **ASHBOURNE M.F.C.** is solely C/Line, though a couple of daredevils are teetering on the edge of R/C. Club wishes to contact other clubs with a view to staging friendly meetings, and would also welcome local unattached enthusiasts.

A.P.S. designs seem to find favour in the **NORTHAMPTON M.A.C.** (as they should!) and a high degree of success is reported on such plans as have been introduced. Flat calm and no thermals greeted the members at Earls Barton on October 6th, and the sight of so many Northampton fliers seemed to demoralise the opposition, particularly when Ted Evans made a long and eagerly awaited return to the flying field. Bert Kevel proved that his "Swedish" Wakefield job could do its stuff by racking up three maxes to win

the rubber event. J. Harris scored 7:12 to carry off power honours, and D. James of Wellington scored a glider win with 6:05.

There was a disappointing turnout for the Area Club Championship, only Birmingham and the **LEAMINGTON AND D.M.A.C.** competing. Leamington won mainly by virtue of their glider flying, which was subject to a 33.13% bonus, a three minute max being used in view of the light wind. D. Greaves had high hopes of retaining the Frog Junior cup for another year following a first flight max, with his a.d. lightweight rubber model, but after going out of trim on his second flight, he had to use a reserve model and finished with a total of 5:13 to place third in the national result. Half a dozen members worked hard for the Farrow Shield, and totalled 43:23. Eric Barnacle had hard luck on his first flight, for, after disappearing into a cloud at 3:18, his model was picked up by a lad who tucked the model under his arm and cycled with it to the address on the label, six miles away! This good intention meant much lost time and repairs for Barnacle, but he finished his remaining flights with maxes.

Step Press

In closing, I wish all clubmen a prosperous and comp-winning season in 1958 and mention that news has just come through of the 1958 Indoor Nationals. Preliminary details to be confirmed are: Corn Exchange, Manchester—February 22nd to 23rd, 1958.

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Secretarial Changes

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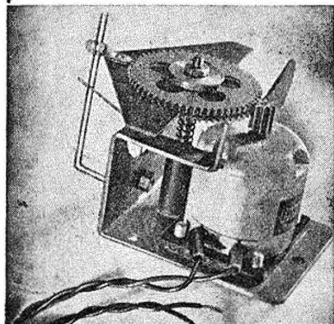
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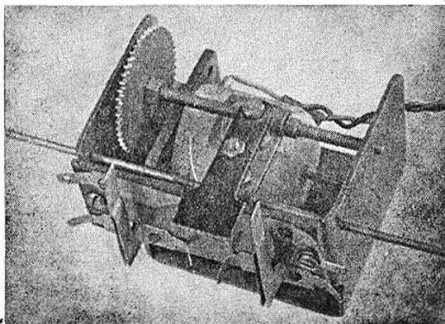
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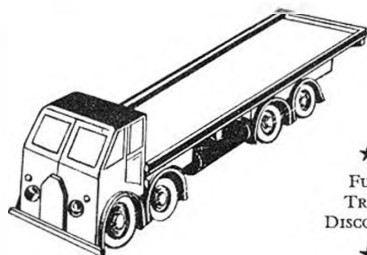
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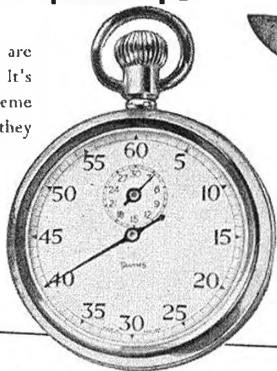
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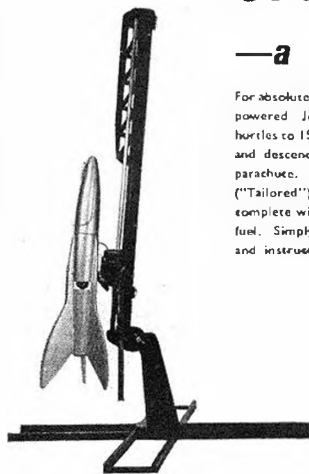
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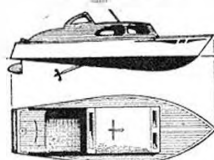


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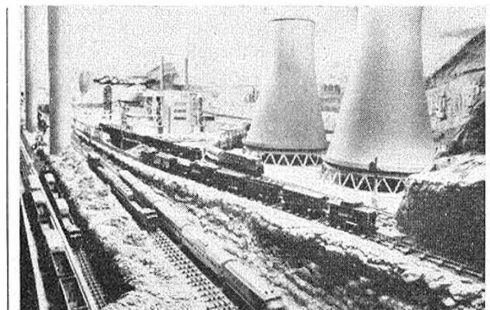
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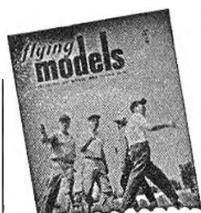
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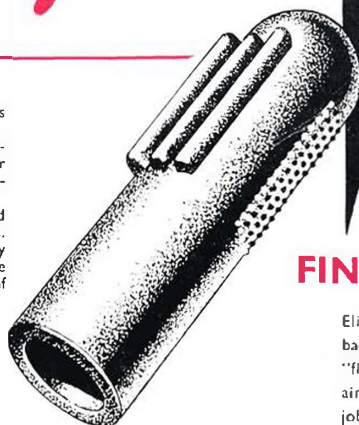
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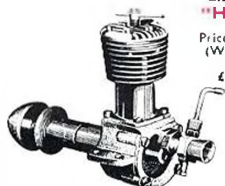
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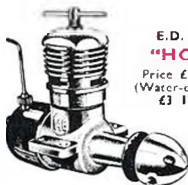
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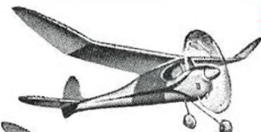
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