

JANUARY 1961

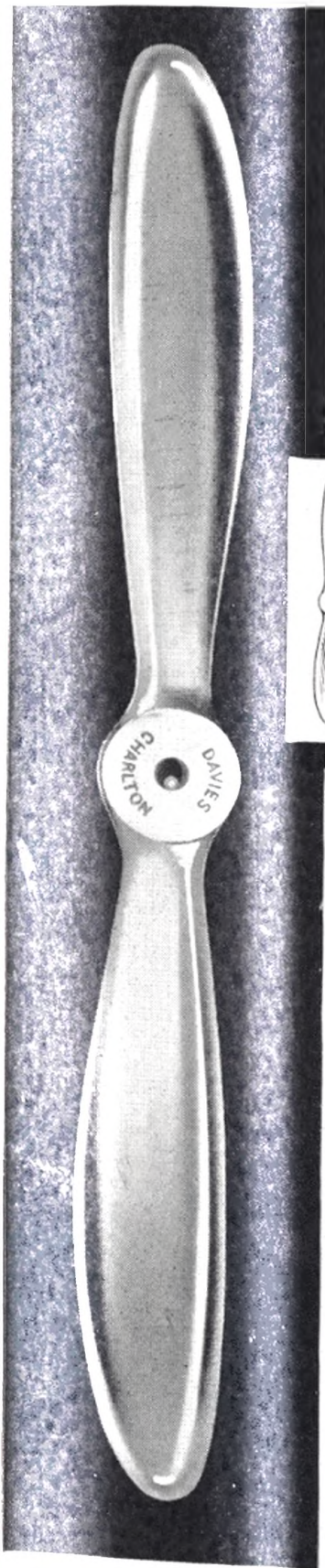
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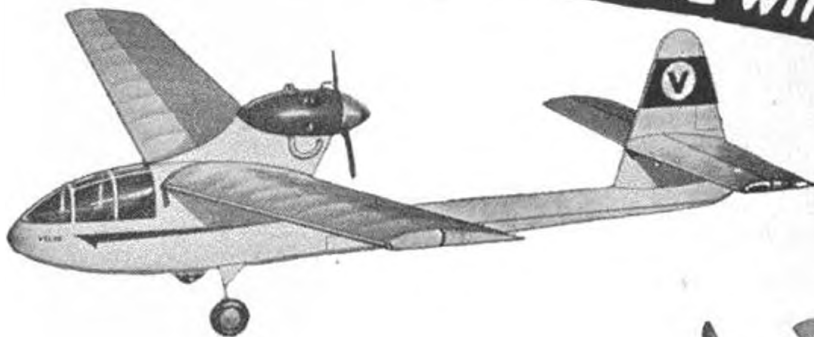
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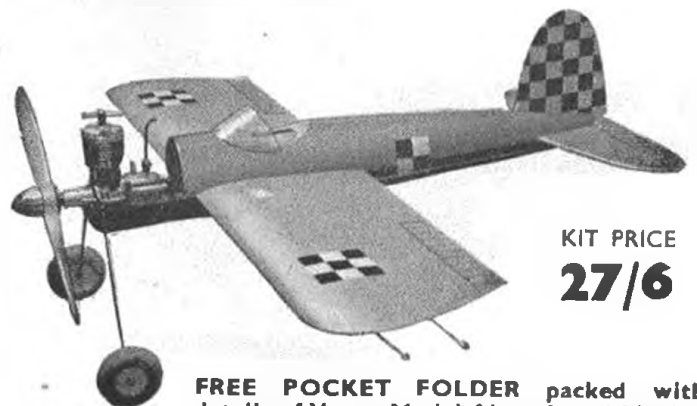
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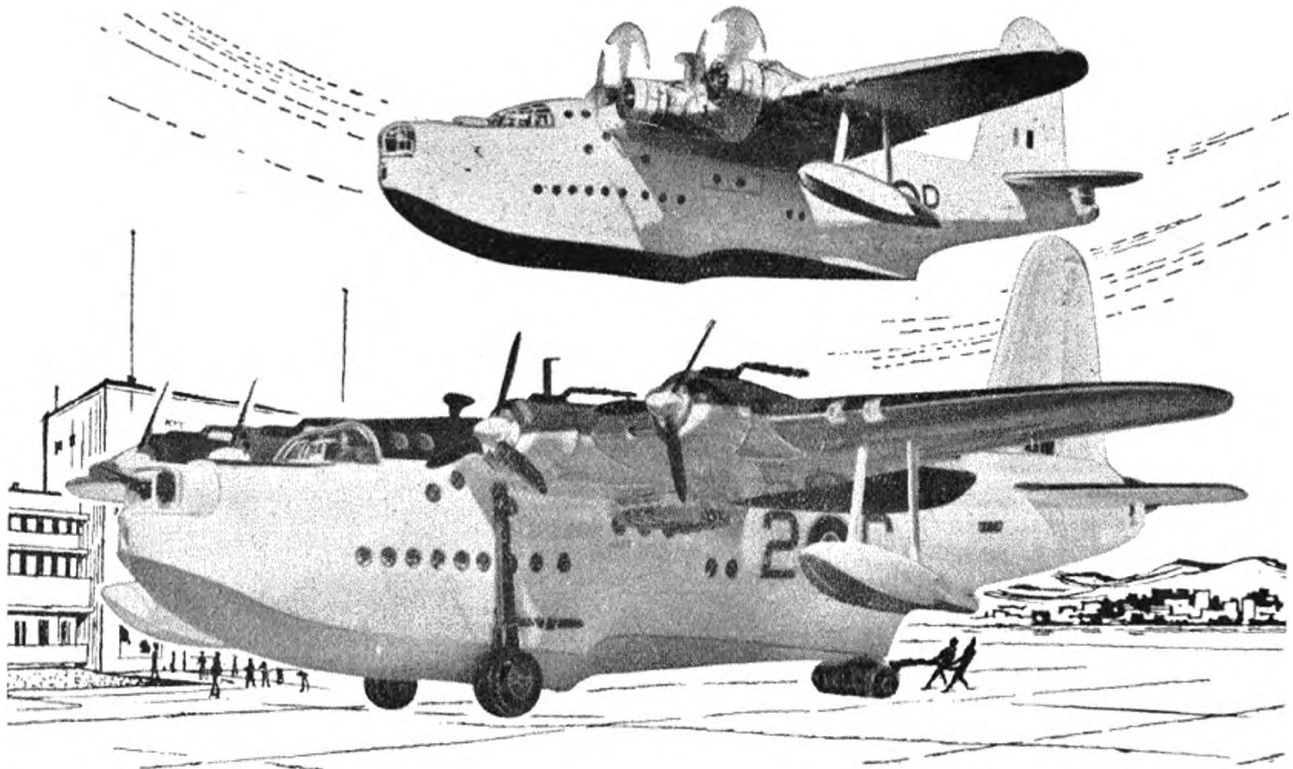
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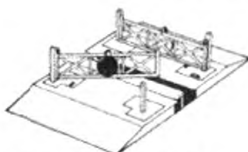
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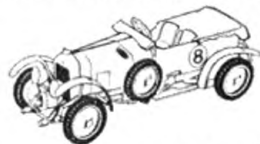
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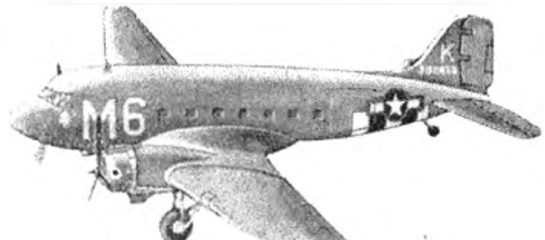
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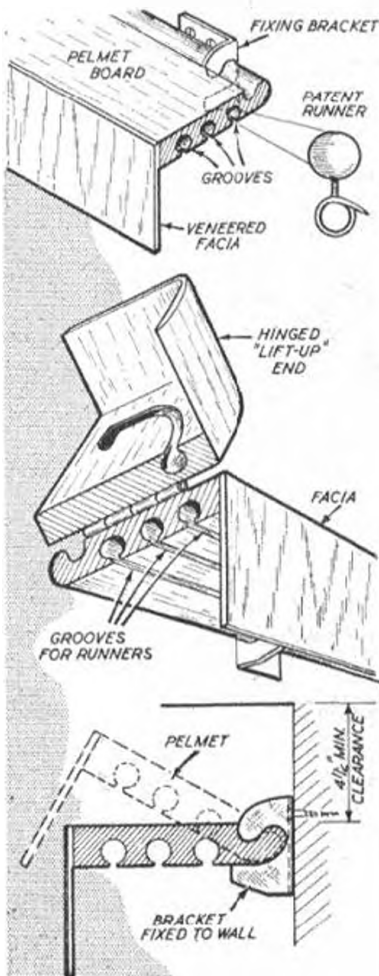
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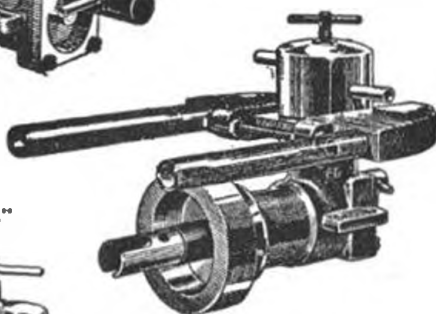
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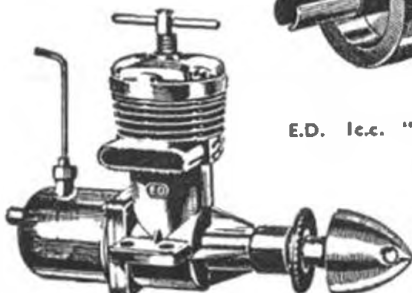
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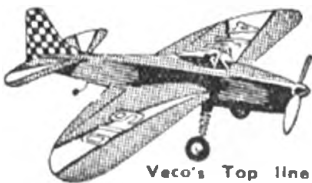
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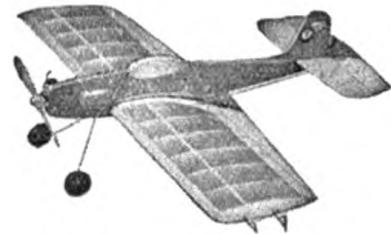


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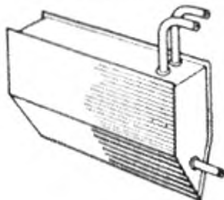
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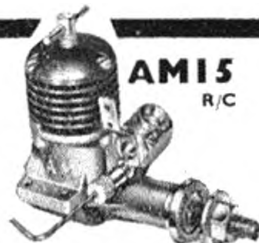


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VOLUME XXVI
No. 300 JANUARY 1960

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ON THE COVER

Not for them the laurels of victory, but certainly two of the most outstanding models of the World Championships, Don Still with his "Stuka" at left and Kjell Rosenlund with his "Miss F.A.I." at right.

AEROMODELLER incorporates the MODEL AEROPLANE CONSTRUCTOR and is published monthly on the 15th of the previous month by the MODEL AERONAUTICAL PRESS LIMITED

Publishers of the monthly

MODEL MAKER
RADIO CONTROL MODELS AND
ELECTRONICS

SUBSCRIPTION RATE: (Inland) 28/6, (Over-seas) 27/6 per annum prepaid including the special Christmas number.

Crystal Ball Department

IS IT TOO MUCH to hope, we wonder, that the coming 1961 season will be the greatest ever? We think not. The detailed report in this issue indicates how the Models Commission of the F.A.I. has been re-orientated and technical work now delegated to sub-committees. This can only mean one thing. Success and satisfaction. A workable programme provides that all technical matters will receive thorough discussion long before the annual C.I.A.M. assembly in October each year. Thus everyone will know where he stands. The system is democratic, the outcome will be clear-cut and decisive.

At home, much the same sort of change may soon take place. This is written in advance of the S.M.A.E. Annual General Meeting at Birmingham on December 4th, but the cards are on the table for all to read. The structure of our Society — (dare we say the finest of its type in the world?) — is due for a radical overhaul. With the advent of a paid secretary and increasing financial obligations with each ensuing year, it is clear that a management committee will be needed to administer the routine affairs. This will free the representative Council of what are often time-consuming matters and give more time at Council for the delegates to discuss and decide upon policies. All to the good we say, especially in view of the 1961 International programme.

Not since the great meeting of 1953 at Finthen (Wiesbaden) have aeromodellers been able to enjoy a free-flight Olympics. This year, a triple, A/2 glider, Power and Wakefield contest will be jointly sponsored by the U.S.A. and West Germany. It will most probably be located near to Munich and the dates are already set as the first three days in September. We know that such a meeting was programmed for 1959, and fell disappointingly flat when the Nation with the option (U.S.S.R.) of playing host withdrew; but this time all is certain. What a fillip for free-flighters! Now is the time for team aspirants to concentrate on hopes and latest designs.

We shall also see a new "first" in 1961 with the proposed World Championships for Indoor model flying which the S.M.A.E. may hold in early August. Negotiations thus far indicate that the Royal Air Force will be able to co-operate with use of the vast airship shed at Cardington, and it only remains for the S.M.A.E. to make further arrangements so that a firm date can be announced.

As for ourselves in the coming year, we hope that in our

small way AEROMODELLER will be able to play its part by keeping abreast of development and feeding the ever-hungry appetites of enthusiasts with news of latest design approaches from all quarters.

Certainly our personal resolution for this new year will be to offer more for everyone, more designs, more words, more pictures, more leading features, more of everything that modellers crave — and, of course, that means yet more midnight oil on our part. But that will be no great hardship for, as Rezso Beck said when he took both the jobs of Secretary to the C.I.A.M. and Chairman of the Control-line sub-committee — “We like our work, and any extra labour will make it all the more enjoyable”.

Pioneer Passes

A former Vice-President of the S.M.A.E. and first President of the A.B.A., Sir Robert Bird, Bt., K.B.E., died on November 20th, aged 84. Perhaps better known as grandson of the inventor of custard, he was a former Chairman of the World famous company which bears the family name. He was also a Member of Parliament for over 20 years, holding the seat for Wolverhampton West and had many connections with French and Empire Parliamentary associations. Yet with all his many obligations and pressing duties, Sir Robert was also a most keen follower of aeromodelling.

We will remember his flights at Eaton Bray, the chauffeur called upon to take the strain as Sir Robert applied full turns on the rubber motor. It was said that he had an RTP room at his Solihull home where he enjoyed experiments with round the pole flying.

Although not so active in recent years, his assistance in fostering the hobby in the immediate post-war years will always be remembered by those who concern themselves with the welfare of the aeromodelling movement.

Wanted—1

We are distressed to learn from a spokesman for U.S. modellers that the November issue of this magazine was distributed in the U.S.A. in a mutilated condition. Apparently pages 573/574 offended someone sufficiently to inspire their removal! U.S. readers are assured that they may obtain exchange wholesome copies free of charge from these offices if they send their spoiled issues to us with the address of the supplier. In addition, information leading to identification of the culprit will be amply rewarded.

Wanted—2

Coupled with expansion of our Model Aero Press activities is the need to increase our staff, and one

vacancy which may possibly appeal to a modelling enthusiast is that for a line and tone artist. Applications should include samples of work as well as personal details.

For the enthusiast

First meeting of the London Society of AIR BRITAIN in the new year will be on Wednesday January 4th at 7 p.m. in the smart new lecture hall of Central Library, Theobalds Road, Holborn, and the subject a film show of special interest to all aviation enthusiasts. “High Journey” covers the story of NATO Air Forces, in full Technicolour. Those who have seen it will know that it is a film not to be missed, and as a fine choice for the inaugural meeting at AIR BRITAIN's new venue in '61 it is an excellent opportunity for scale enthusiasts to join this keen Society. New members would be most welcome.

Recording History

Delivering his lecture on “My first ten years in aviation” to a galaxy of aeronautical talent including many of the pioneers of British flying, Sir Thomas Sopwith, C.B.E., launched the Historical branch of the Royal Aeronautical Society in a fascinating programme on November 21st.

Recalling those “teach yourself” days, when the expression to “Taxi” was derived from “Taximeter-motor cabriolets” which had just been introduced on London streets, and crashes were seldom damaging to the pilot, Sir Thomas explained how his Sopwith Co. was founded with prize money from aerial races and records. Designs were created in chalk on the shop floor and walls. Stressing was unknown, yet each type proved successful and none more so than the Schneider Trophy winning Tabloid which had to be officially renamed “Scout”. This was because Burroughs Wellcome had already registered Tabloid as the name for their tablets (still used today). Sir Thomas described the progress from the Scout, through the war years, and all the well-known military types, to financial instability with the loss of Government orders after the war. Then the Sopwith Co. was wound-up while still solvent, and a new company formed and named after Harry Hawker whom Sir Thomas had taught to fly in 1912 and who was test pilot throughout the war. The intention was to keep it a small company—but “look at the damn thing now” was Sir Thomas's reflection.

This was a fascinating lecture, well illustrated with slides and spattered with amusing anecdotes. Coming from the chairman of the Hawker Siddeley Group (embracing as it does, the greater part of Britain's aviation industry) made it all the more interesting.

More “First ten years” lectures are to come and all will be tape recorded for posterity.





F.A.I. news

THE FOLLOWING were present:

H. R. Gillman—
F.A.I. Director General
A. Roussel—President
M. Bienvenu—Secretary
R. Goyvaerts—Belgium
R. Cerny—Czechoslovakia
A. Blahoutova (Secretary)—
Czechoslovakia
C. Curcic—Yugoslavia
G. Barthel—Italy
H. J. Nicholls—Great Britain
A. F. Houlberg—Great Britain
S. E. Uwins—Great Britain

R. G. Moulton—Great Britain
D. S. Posner—Great Britain
J. Jaaskelainen—Finland
A. Degen—Switzerland
A. Trzcinski—Poland
Z. Szajowski—Poland
A. L. Aarts—Holland
K. Jacobson—Germany
G. Derantz—Sweden
J. Desnoes—France
R. Beck—Hungary
O. Czepa—Austria
H. J. Meier (Vice-President)—
Germany

Fifteen Member Countries were represented

Sub-Committees

The President put forward his views on the constitution for the three sub-committees originally proposed by the Frankfurt sub-committee earlier in 1960. He proposed that there should be a permanent sub-committee with its own Chairman and Secretary, their work to be done by meetings and correspondence as and when necessary. Sub-committee members were to be proposed and elected in the C.I.A.M. meeting and the C.I.A.M. would appoint each sub-committee Chairman who should be a C.I.A.M. member. The personnel of all sub-committees should be reviewed by the C.I.A.M. each year.

Yearly Schedule of Meetings

- National Aero Clubs to send in all proposals during the period November to February.
- Proposals to be sorted by the bureau and sent out to sub-committee Chairman in February and/or March.
- The sub-committee Chairman's report was to be sent to the C.I.A.M. bureau not later than June.
- The C.I.A.M. agenda together with sub-committee proposals to be sent to National Aero Clubs not later than August.
- The C.I.A.M. Annual Meeting would be held in October.

This time-table was designed to give a reasonable period to the sub-committees, the National Aero Clubs and the C.I.A.M. for the consideration of all questions. All members of the C.I.A.M. would then have full opportunity of arriving well briefed at the meeting.

Past Presidents

The President proposed that Mr. Houlberg should become a permanent member of the bureau of the C.I.A.M. due to his long experience as a President of the Commission.

The C.I.A.M. proceeded to examine in turn the various questions on the agenda.

Article 2.2.2.—Mr. Houlberg explained the difficulty that had arisen at Cranfield over the selection of proxies. Under existing rules, it is possible for a competitor to nominate anybody. This could lead to two nominations, each for the same proxy. After some discussion a vote was taken and the proposition by Great Britain was lost by 9 votes to 1, five delegates abstaining.

Article 2.3.2 confirmed that the multi-control models for Radio-Control World Championships were intended to be power models only.

IMPORTANT POINTS FROM C.I.A.M. MEETING, OCT. 21-23

Article 2.5 decided after a brief discussion that there should be no change in the method of marking team results, but the marks of all three Team members should be taken. As there was unanimous agreement in the discussion, no vote was taken.

Article 3.4.—The proposition by Great Britain regarding eligibility of a third model in the event of loss or damage, was carried. Voting was 9 in favour, 4 against, with two abstentions.

Article 3.6.b.—After discussion of the original proposition by Sweden it was decided that the words "or loss" should be added after the word "jettisoning" in paragraph b of this section to cover both purposeful and accidental advantage through disposal of a component.

Article 4.6.—Arising out of the discussion under this heading the President said that in his opinion the rules for speed models including those relating to the monoline handle must not be changed. The President gave a resume of the facts as follows:

- C.I.A.M. were firstly concerned with the matter of whipping, largely following the 1959 Criterion of Europe.
- A sub-committee was asked to design an anti-whip handle. It was as important for Team Racing as it was for Speed. Design was accepted by C.I.A.M. It was intended for application to both classes.
- His opinion was that the October meeting of the C.I.A.M. had decided that although Monoline handle was very interesting it could not be adopted by the C.I.A.M. as a standard handle.
- The system proposed (*i.e.*, the S'anzel handle as submitted by the American delegate) was commercial and an individual should be able to make the standard handle for his own use.
- At Budapest the jury had been asked to consider the legality of Monoline by the objecting competitors. They decided to permit continued flying, pending a decision at this C.I.A.M. meeting.
- The President concluded by saying that the proposed amendment to Article 4.6.4 had not properly expressed the intention of the C.I.A.M. and this had further complicated the difficulties of the F.A.I. jury at Budapest.

A long discussion followed in which the Hungarian and British delegates spoke up in favour of accepting the Monoline results at Budapest. C.I.A.M. was asked for recollections of discussion on the subject from the last meeting. Three delegates noted acceptance of the Monoline handle, others spoke in favour. Dr. W. A. Good outlined the earnest endeavour made by the U.S.A. to clarify eligibility of

All but two of the C.I.A.M. meeting are seen in the heading. Missing is Henry J. Nicholls, and everyone has a happy smile, anticipating the accident as HJN obstructs main street traffic to click the shutter. George Derantz in centre is on the lookout! Left to right: Czepa, Szajowski, Trzcinski, Uwins, Curcic, Posner, Barthel, Beck (behind Bienvenu), Aarts, Desnoes, Goyvaerts, Meier, Derantz, Jacobson, Jaaskelainen, Moulton, Houlberg, Roussel, Good, Degen, Ehling and Director-General of the F.A.I., H. R. Gillman. Other missing person is Cerny of Czechoslovakia

Monoline as early as February, 1960, before U.S. team selection. Correspondence was quoted. Mr. Houlberg proposed "That the results from Budapest be accepted and the American results obtained with Monoline should be allowed to stand". Thirteen voted in favour, none against; Belgium and Italy abstained. Carried. Monoline is therefore now accepted.

Article 4.7.—After a brief discussion, the American proposal that the engine capacity for Control Line aerobatics should be limited to 2.5 c.c. was not voted on as the opinion of the meeting was unanimously against any change.

Article 4.7.—The American proposal that appearance points should be added into the aerobatic schedule was lost 13 against, 2 in favour.

Article 4.7.8.—A new Article 4.7.8 is to be inserted after 4.7.7, the wording to be exactly similar to that of 4.6.10. This paragraph deals with disqualification of flights and will thus cover control-line aerobatics.

Article 2.7.m.—Sweden proposed that the words "at least" of this paragraph should be deleted and that the number of judges (for International meetings) should be specifically limited to three only. A vote on this was defeated, 13 against, 1 in favour and 1 abstention.

Article 4.10.2.—The U.S.A. required clarification as to who should be the builder of the model in a Team Race team, and whose number should be put on that model. After a short discussion it was decided that either the pilot or the mechanic could be the builder or the entrant of the model and the national identification number of either of them could appear on the model accordingly.

Article 4.10.14.—U.S.S.R. asked for the deletion of the new rule forbidding whipping because of the difficulty in saying whether whipping was occurring. They claimed that the use of the new handle entirely eliminates the possibility of whipping. After a short discussion it was decided to leave the present paragraph unchanged. (It is now covered by 4.3.2.)

All other matters of technical nature were referred to the sub-committees.

The following British representatives attended:

- | | | |
|------------------|-----|---------------|
| 1. Free Flight | ... | D. Posner |
| 2. Control Line | ... | R. G. Moulton |
| 3. Radio Control | ... | S. Uwins |

The work of the full committee of the C.I.A.M. on the last day of the meeting can best be summarised by saying that all propositions put forward by the sub-committees were carried, most of them by a unanimous vote.

The sub-committee meetings covered 21 hours of intense discussion. Pertinent points behind the decisions can be outlined as follows:

FREE FLIGHT

The C.I.A.M. had indicated that under the four-year rule, specifications could not be changed for 1961.

Power Models.—G.B. proposed that the maximum be increased to 200 seconds. Considerable discussion took place during which Holland, Austria and Finland spoke in favour of the proposal, but Poland, Czechoslovakia, Sweden and Italy spoke against, mainly on the basis that in any sort of wind, models were outside aerodromes in three minutes causing loss and "Farmer trouble" and that any increase would only aggravate this. France suggested that the maximum should be fixed on the day by the Jury and Team Managers, but there was no support for this suggestion. There was no suggestion that the maximum should be reduced. On a vote the proposal was lost, there being only 4 votes in favour of it.

Motor Run.—It was agreed that performance of the model be reduced and without any specification change allowed this could only be achieved by reducing the engine run. Ten seconds was acceptable to most of the members.

Fly-off.—Finland suggested increasing the maximum in the fly-off in steps of 15 seconds. Austria suggested 20 seconds. Yugoslavia suggested reducing the motor run by steps in the fly-off, but there was no support for this type of approach. Sweden suggested steps of 1 minute, but no more than three fly-offs rounds so that the contest ceased when the fly-off maximum reached 6 minutes, but they made an alternative suggestion that the fly-off should consist of three extra rounds to a 4-minute maximum and two attempts allowed. G.B. suggested steps of 30 seconds. The Swedish proposal of three rounds of 4 minutes only received the support of the proposing country. The meeting was then asked to vote on steps of 15, 20, 30 or 60 seconds increase on the maximum and the G.B. proposal of 30 seconds received most support.

Tow-Line.—Sweden pointed out that tests had shown that nylon lines could be stretched more than 20 per cent. and that rather than the performance of the model having improved, it was in fact increase in the stretch of line which had led to greater performance. It was finally agreed that the line should be 50 metres when subject to a pull test, the line be tested before each flight. During the general discussion Austria asked if it was in order for the cable to be cut at the winch to release the model. The committee agreed that this was in order.

CONTROL-LINE

Speed Lines.—Hungary proposed retention of existing line diameters of .25 mm. for dual cable and .35 mm. for single cable in view of their other proposals under 4.6.15 and 4.6.4 which would reduce speed risks. Great Britain asked by what standards were lines to be equable. In terms of drag, cross-section or safety factor? Majority view supported retention of present sizes which had been based on safety factor. G.B. also indicated considerable differences in sizes of U.S.A. and British Standard Wire Gauges and specified metric sizes, at present tolerable, but to considerable disadvantage if line diameters were increased.

Pull Tests.—U.S.A. asked for increase from 20 to 32 g. Great Britain and Belgium presented theoretical cases illustrating flight loads in excess of 20 g. Hungary stated that no known accident had occurred and if new proposals 4.6.15 and 4.6.4 were accepted, the loads would reduce.

Fuels.—In the light of experience at Budapest, Hungary proposed use of standard fuels for speed models as a means of encouraging fresh enthusiasm for speed flying. It was noted that the number of specialist competitors reduces each year. Results have been a deterrent and use of plain methanol/castor mixture would give a greater chance for those unable to afford or obtain fuel constituents, some of which were known to be poisonous.

Team Race Lines.—Hungary proposed an increase of line diameter from 0.25 mm. to 0.3 mm. for team racing. It was instanced that a 100 m.p.h. racer approached marginal safety limits, and in view of the unprotected track necessary for mechanic access the increase of line diameter was deemed essential. This means increasing from .010-in. to .0124-in. s.w.g. sizes, 33 to 30 s.w.g. (.0124-in. measuring .315 mm.), giving slight advantage to metric wire.

Aerobatic Schedule.—U.S.A., U.S.S.R. and Great Britain had proposed inclusion of manoeuvres from the A.M.A. schedule for F.A.I. events. The C.I.A.M. had already decided not to include appearance points. Hungary proposed use of the A.M.A. schedule in full for two flights, and a third flight wherein the flyer had the choice of a number of manoeuvres, each with its K factor, and would endeavour to raise as high a score as possible in 7 minutes. This was supported for use in 1964. In order to allow the system to be checked thoroughly, the 1962 Championships should be run first on two flights to the existing schedule, followed by a third flight to the A.M.A. schedule for those attaining more than 1,600 points, in the first two rounds. The final results to be taken from the total of the better of the first flights plus the score of the third flight.

Whipping.—Hungary submitted sketches of an anti-whip two-line handle and pylon which had been constructed and tested to satisfactory effect, plus a Mono cable handle which had been derived following correspondence with W. Wisniewski. Study of the sketches emphasised the careful thought applied to the subject by Hungary. Italy proposed an electrical system whereby line contacts on an extension of the yoke would signal whipping. Great Britain pointed out that a similar system had been tried ten years before in the U.S.A. and dropped. Hungary showed how whipping might be possible with the Italian system. These Hungarian sketches have been prepared for issue to National Aero Clubs and will be published as soon as available.

Team Race Circuit.—Great Britain raised the question of Rosenlund and Taylor — each disqualified for opposite infringements at Budapest. If the 16-metre spacing between pilot and mechanic radii is moved towards or away from the centre, then either of the team crew must be disqualified. Hungary stated Taylor was disqualified for the collision with another model, not for leaving the circuit. Italy strongly supported this. Great Britain raised the critical point of models obliged to land and take-off on the same line. After prolonged discussion on the vagaries of the circle layout, it was resolved that Great Britain submit a proposal to the Permanent sub-committee with illustrations.

Team Racer Appearance.—U.S.A. asked for clarification of monowheel validity and peculiar fuselage cross-sections of unreal shape. Holland, Hungary and Great Britain supported the view that a Cross-section rule based on the area of a perfect ellipse contained within the required 60 x 100 mm. width height rule be adopted. This calculated to be 39 sq. cm. (6.045 sq. inches).

On the subject of undercarriages, U.S.A. raised the question of realism and demonstrated unreal arrangements possible if wheel distribution was not clarified. Great Britain outlined history of monowheel models, precedent created in 1958 by Italian entry at Brussels, history of full-size monowheel and tandem wheel aircraft with illustrations. After prolonged discussion it was agreed to have no change, and permit any wheel arrangement.

RADIO CONTROL

Proposed new classes.—Proposal by U.S.S.R. for a World Championship event for beginners was rejected because the programme is too full. Also it would not increase the skill in this Class. World Championship for Radio Controlled models proposed by Poland on reliability basis was also felt to be not suitable. The committee recommended that Poland should be asked to try the system before submitting it to the C.I.A.M.

Speed Contests.—That World Championships for Radio Controlled speed models should be organised were rejected by the Sub-committee as it was felt that this class of model was too dangerous for the spectators and should be confined only to World Speed records. The committee recommended that alterations should be made to the rules covering World Record times.

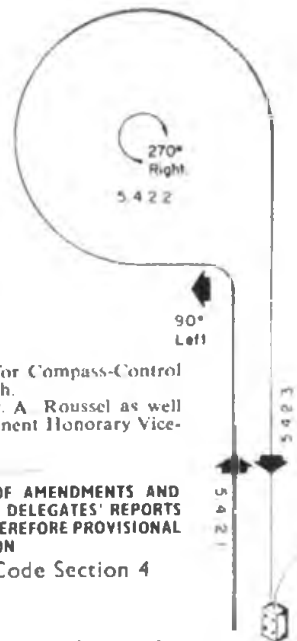
Schedule Revisions.—The schedule was re-arranged in more attractive and logical sequence. Vertical upward roll added, and K factors altered in some cases. All manoeuvres to be illustrated in future.

PERMANENT SUB-COMMITTEES

After the discussion and voting on the sub-committee recommendations the Committee passed on to the appointing of permanent sub-committees and election of officers. With regard to the appointing of sub-committees there was considerable difference of opinion as to whether these sub-committees should consist only of members of the C.I.A.M. and after a sharp division of opinion a vote was taken in which it was decided that only C.I.A.M. members could be members of the sub-committees. The voting was 8 in favour and 7 against.



Heads together in the Radio Control discussion. Left to right, Goyvaerts (Belgium), President Albert Roussel, Degen (Switzerland) seated, A. F. Houlberg, now an Honorary Vice-President, and Barthel (Italy)



Italy are holding the Stella D'Italia contest for Compass-Control Gliders at Roveretto near Trento on August 15th.
PAST PRESIDENTS.—Great Britain proposed Mr. A. Roussel as well as Mr. A. F. Houlberg should be made permanent Honorary Vice-Presidents of the C.I.A.M. Carried unanimously.

IT MUST BE EMPHASISED THAT THIS SUMMARY OF AMENDMENTS AND REPORT ON THE C.I.A.M. MEETING IS FROM S.M.A.E. DELEGATES' REPORTS AND NOT FROM THE OFFICIAL MINUTES. THEY ARE THEREFORE PROVISIONAL AND SUBJECT TO CONFIRMATION

**AMENDMENTS To the F.A.I. Sporting Code Section 4
GENERAL**

Article 2.7. to be added:—

"A protest must be lodged in writing and must be accompanied by a deposit fixed annually. This deposit will be refunded if the protest is upheld, against the return of the receipt issued by the jury. For the immediate period the fee is to be 10 Swiss Francs.

Article 2.8 to be added:—

A competitor who has been entered by his National Aero Club and is not in possession of an F.A.I. licence, may be granted a licence by the organising club on payment of a fine amounting to 10 Swiss Francs.

FREE FLIGHT

Article 3.4. to be added:—

"If after official checking, a model is lost or damaged a third model may be produced for processing up to one hour before the starting time of the contest".

Article 3.6b to be added:—

"or loss" to be entered after the word "Jettisoning".

Article 3.8 to be added:—

"For one year, beginning 1/1/61, in the case of more than one competitor achieving a perfect score, the result will be determined by additional flights each of which will increase by 30 seconds until such time as one proves superior to the others."

Article 3.10.3 to be altered:—

Replacing the first two paragraphs from "The Glider . . . to . . . 15%" "The Glider must be launched by means of a cable of a single homogeneous material not exceeding 50 metres (164 ft.) in length when subjected to a traction load of 5 Kilograms".

Article 3.12.2 to be altered:—

Last paragraph to read.
"Maximum duration of engine run: 10 seconds from release of the model."

CONTROL LINE

Article 1.1.4 to be deleted:—

Remove paragraph 3, from "In the case . . . to . . . pillar".

Article 4.3.2 to be added:—

"Any pilot applying physical effort to increase the speed of his model during the official flight shall be disqualified. (This rule applies only to Speed and Team Racing)".

Article 4.6.4 to be added:—

after line dimensions, effective 1/1/62, replacing last paragraph:—

"For flights with 2 lines a standard handle to the specification detailed in diagram on page shall be provided by the organisers and used for all flights. The pivot of the handle must be engaged with the stops on the fork of the pylon during the

However, when dealing with the appointment of a chairman and members for each sub-committee, it was found impossible to complete the complement from the members of the C.I.A.M., after which it was agreed that in these special circumstances an outside expert could be invited to become a member of a sub-committee. The following sub-committees were eventually appointed.

- A. FREE FLIGHT** *Chairman:* J. Jaaskelainen of Finland
Members: Ehling, U.S.A., Derantz, Sweden, Treziuski, Poland, Czepa, Austria
- B. CONTROL LINE.** *Chairman* R. Beck of Hungary
Members Aarts, Holland, Barthel, Italy, Moulton, Great Britain, Czerny, Czechoslovakia
- C. RADIO CONTROL.** *Chairman* Dr. W. Good of U.S.A.
Members. Degen, Switzerland, Meier, Germany, Goyvaerts, Belgium, Nicholls, Great Britain

Elections of Officers.—The officers for the ensuing year were elected as follows:—

- President.*—Proposed—A. Roussel, Belgium; and H. Meier, Germany.
Herr Meier was elected by 8 votes to 7.
- Vice-President.* Proposed A. Roussel, Belgium, M. Desnoes, France; H. Nicholls, Great Britain.
- Mr. Nicholls was elected with 10 votes, A. Roussel (4); M. Desnoes (1).
- Secretary.* Proposed—M. Biensvenu, Belgium; R. Beck, Hungary.
Mr. Beck was elected by 8 votes to 7.

1961 F.A.I. Contest Calendar.

Free Flight.—Germany offered to run a Free Flight Championship in all three categories in Germany with the co-operation of the A.M.A. who were to assist in obtaining a suitable flying field as well as with the organisation. The date of the Contest would be September 1st, 2nd and 3rd. Contestants would be expected to arrive Thursday, August 31st. Contests would be held either in the vicinity of Munich or Coblenz and the exact situation would be confirmed by the German Aero Club as soon as possible.

Indoor Championships.—R. Beck for Hungary stated that it was much regretted that they would be unable to organise these championships in 1961 as they had been committed to a very heavy expenditure in organising the 1960 C.L. Championships, and were not in a position to support further undertakings in the coming year. Mr. Houlberg then stated that in these circumstances Great Britain would be willing to consider the possibility of organising this championship in 1961 and that the S.M.A.E. would submit a programme and dates as soon as possible. The venue would be Cardington.

Criterion des As.—The President stated that the Criterion of Europe which was to be held under the new F.A.I. rules would be organised at Brussels, September 15th-17th.

Yugoslavia would organise the Vortex Cup for A/2 glider and team race at Split, July 25th to 28th. International Contest for Free Flight Hydroplanes with rubber or engine power on August 13th-14th, at Split

Holland will organise their annual contest for all categories of tailless models but they could not, at this time, submit a date.

Austrian Aero Club were organising the International Alpenpokal Contest for Team Free Flight power and Team A 2 glider at Wiener-Neustadt July 2nd-3rd, and an International contest for individual awards in A/2, Rubber and Free Flight Power at Zell-am-See on April 8th-9th.

Sweden will organise a contest for Radio-Control models to F.A.I. multi-channel specification, both Glider and Power at Stockholm on August 20th.

Finland will organise the annual over-ice V.L.K. contest for glider and Wakefield at Helsinki, February 12th.

official flight. "For single line, a handle to the specification detailed in diagram on page shall be used. The hand of the pilot which holds the grip of the handle must rest in the fork of the pylon throughout the official flight. The torsional member of the handle must be behind the fork of the pylon at all times."

Article 4.6.8 to be altered:—

"The flight is official when the competitor places his handle or hand in the pylon fork."

Article 4.6.15 to be added:—

"For World Championships the organisers shall issue a Standard fuel to either of two formulae (1) 20 per cent. oil 80 per cent. Methyl Alcohol (2) 25 per cent. oil 75 per cent. Methyl Alcohol."

Article 4.7.8 to be added:—

All paragraphs from **Article 4.6.10**

"(a) flight is disqualified if the Competitor makes use of any components which have not been checked by the organisers, or modifies his model by changing its characteristics so that it no longer conforms to the rules.

"Such cases are liable to entail the penalties outlined in the Sporting Code (Section I).

"(b) Jettisoning of Parts.

The voluntary or involuntary jettisoning of any part of the model during a flight or the take-off is forbidden. Only the undercarriage used by model aircraft in speed control-line circular flight events may be jettisoned."

Article 4.10.4 to be added:—

after definition of fuselage Height and Width:—

"and must have a minimum cross-section of 39 sq. cms. (6.045 sq. ins.) Wing fillets will not be included in the fuselage cross-section area". "The minimum wheel diameter to be 25 m.m. (1 inch)."

Article 4.10.4 to be altered to read:

"not less than 0.3 millimetres (.0118 inches) "and the final sentence from "In the case of . . . to . . . (.0138 inches)" to be deleted.

Article 4.10.6 to be added:—

after line length:—

"The distance from the point of attachment of the lines to the axis of the handle must not exceed 40 m.m."

Article 4.10.9 to be added:—

"No device shall be used to recover the model".

Article 4.10.10 to be added:—

after description of flying height in first paragraph:—
"And the handle must be held close to the centre of the chest except when passing".

Article 4.10.2 remove last paragraph:—

from "During . . . to . . . feet".

and place this under **Article 4.10.14** as a disqualification.

Article 4.10.14 add to transferred paragraph above:—

"A mechanic will be considered to have entered the circle when both feet have crossed the 19 metre radius line. The pilot is not permitted to put either foot outside the 3 metre radius line during the Race."

RADIO CONTROL

Articles 5.3.9c, 5.3.112 to be altered:—

Minimum flight time should be increased to "1 minute" from "30 seconds".

Article 5.3.13 to be added:—

"The judges will award lower marks when the manoeuvres are not easily visible because of excessive altitude, distance or positioning."

Article 5.3.16 to be added:—

"Three judges must be appointed and they must be

the same from all competitors in any particular series of flights. In the case of a World Championship contest the judges will be designated by the C.I.A.M. and they shall be five in number. For each flight the highest and the lowest score card will be discarded and only the three middle scores shall be counted."

Article 5.4.2 to be altered:—

Manoeuvres

- | | | |
|-----------------|---|--------|
| 5.4.2 1 | Flight in a straight line into the wind starting from directly over the transmitter (min. time 10 seconds) ... | K — 5 |
| 5.4.2 2 | Left turn through 90 deg., right turn through 270 deg. ... | K — 5 |
| 5.4.2 3 | Return straight flight over same flight path as 5.4.2 1 (min. time 10 seconds) ... | K — 5 |
| | (Refer to diagram for the above). | |
| 5.4.2 4 | Stall turn ... | K — 5 |
| 5.4.2 5 | Immelman turn ($\frac{1}{2}$ loop followed by $\frac{1}{2}$ roll) ... | K — 10 |
| 5.4.2 6 | Loops (superimposed) | |
| | 1st ... | K — 4 |
| | 2nd consecutive on same axis ... | K — 6 |
| | 3rd consecutive on same axis ... | K — 8 |
| 5.4.2 7 | Inverted loops | |
| | 1st ... | K — 6 |
| | 2nd consecutive on same axis ... | K — 8 |
| | 3rd consecutive on same axis ... | K — 10 |
| 5.4.2 8 | Reversal (or split S) ($\frac{1}{2}$ roll followed by $\frac{1}{2}$ loop) ... | K — 10 |
| 5.4.2 9 | Roll, to be followed immediately by:— | |
| 5.4.2 10 | Roll in opposite rotation ... | K — 12 |
| 5.4.2 11 | Stall ... | K — 15 |
| 5.4.2 12 | Horizontal eight ... | K — 12 |
| 5.4.2 13 | Cuban eight (Savoy Knot) ... | K — 12 |
| 5.4.2 14 | Vertical eight ... | K — 12 |
| 5.4.2 15 | Inverted flight in a straight line —into or against the wind—at a constant altitude for at least 10 seconds ... | K — 14 |
| 5.4.2 16 | Left circle in inverted flight above the landing circle at a constant altitude (Minimum diameter of circle 50 metres (164 feet) maximum diameter 100 metres (328 feet)) followed immediately by:— | |
| | Right circle in inverted flight (stipulations as for left circle) to make a horizontal eight ... | K — 24 |
| 5.4.2 17 | Vertical upward roll ... | K — 12 |
| 5.4.2 18 | Spin (3 turns, recovery in same direction as entry) ... | K — 12 |

Article 5.5.1 1 to be altered:—

Cable length to be increased from 200 metres maximum to "300 metres maximum (984 $\frac{1}{2}$ feet)".

RECORDS

Article 1.4.1 to be added:—

"For record attempts with Telecontrolled models, the form of launching is optional."

Article 6.7.1 to be added:—

"For Telecontrolled models the base shall be 200 metres (656 feet) and level flight to be maintained for not less than 100 metres (328 feet) before entering the speed course.



BAND

BOY

FOR THE CHAP looking for a small, handy sized, second radio model to take along as a "spare", *Bandboy* fills the bill admirably. If you want a model to do upward inverted tail-first flick half-rolls there are other designs which might make a better showing, as the combination of dihedral, wing and tail sections, moments and areas used in *Bandboy* add up to an easily trimmed (but lively) sport flying model—in fact, it makes a rugged little sportster for free flight if you are no radio fancier.

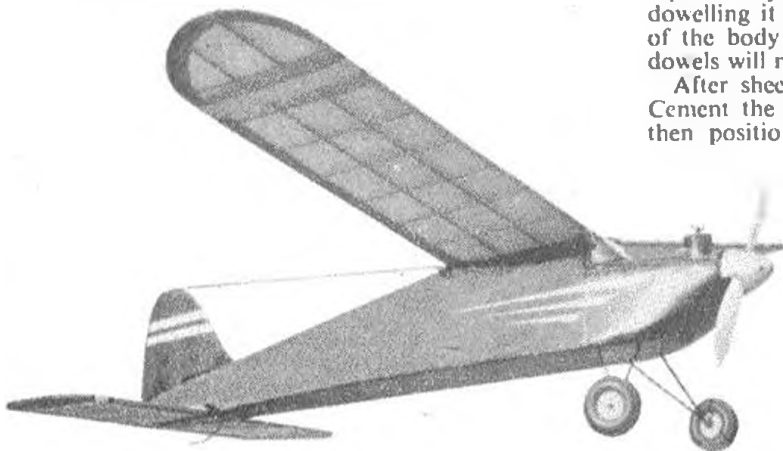
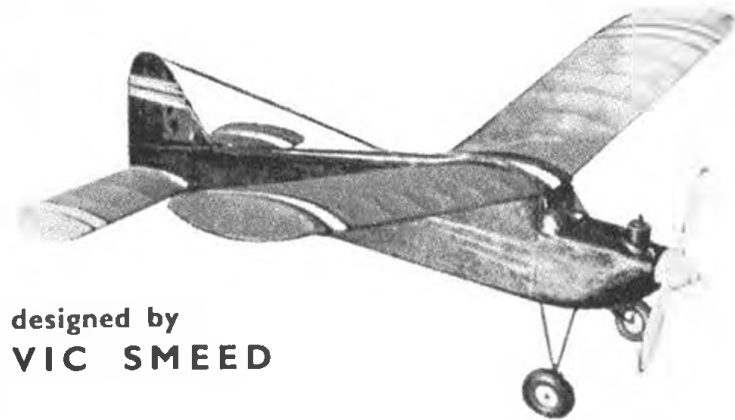
Empty weight of the completed model is nearly 16 ozs., and it is suggested that radio weight, if carried, is limited to 8 ozs., giving a wing loading of approximately 16 ozs./sq. ft. Half a pound of radio covers the Reptone unit, and this is about as small a model as will comfortably carry this one-piece outfit. Alternative installations are shown on the plan, and those with a little experience will soon find that the trapezoid fuselage cross section will obligingly accommodate quite sizeable equipment, always remembering the advisability of keeping a weight limit, while still retaining apparently slim lines.

A 36 inch simpleton for Sunday session sport flying—with or without radio-control

**designed by
VIC SMEED**

There is little unusual in construction. The fuselage sides are cut from 3/32 by 4 in. medium hardish sheet—no need to use rock-hard material, as local reinforcement by doublers etc. can be used round areas of stress. Bind the undercarriage in place on F2 and F3 before assembling the fuselage; double cement all joints—it's silly to attempt to prevent the structure breaking only to have the joints give. If you are fitting radio, plan out the installation and carry out as much work as possible inside before sheeting the bottom. If you wish to follow the Reptone style of installation, cement the ¼ in. square strips and inner skins in place, sand flush, and sheet the bottom with fairly hard 3/32 in., grain across. A scrap of silk or nylon reinforcement cemented round the corner will prevent the bottom falling out in any but the heaviest landing. An alternative means of access is to make a tapered tray fitting up into the bottom of the fuselage, dowelling it in place. In this case reinforce the insides of the body with 1/32 in. ply or celluloid so that the dowels will not tear out.

After sheeting in the bottom, make and fix the fin. Cement the spar and ribs to one sheet, add the tape, then position the other side and clamp with clothes



Vic's unmistakable lines, with the appeal of simplicity coupled with fine performance is evident in these three views of *Band Boy*. Details of three different R/C installations are given on the plan including the popular unit construction sets now available for easy fitting. Prototype has a D-C Spitfire and is finished black and yellow with white fuselage decor and wing stripes

pegs till dry. Cement securely in place and complete the rudder hook-up details, dowels, etc., before sheeing the top fuselage. For a free flight model the fin and rudder can be made in one piece with the top inch or so of the rudder hinged on soft wire for a trim tab.

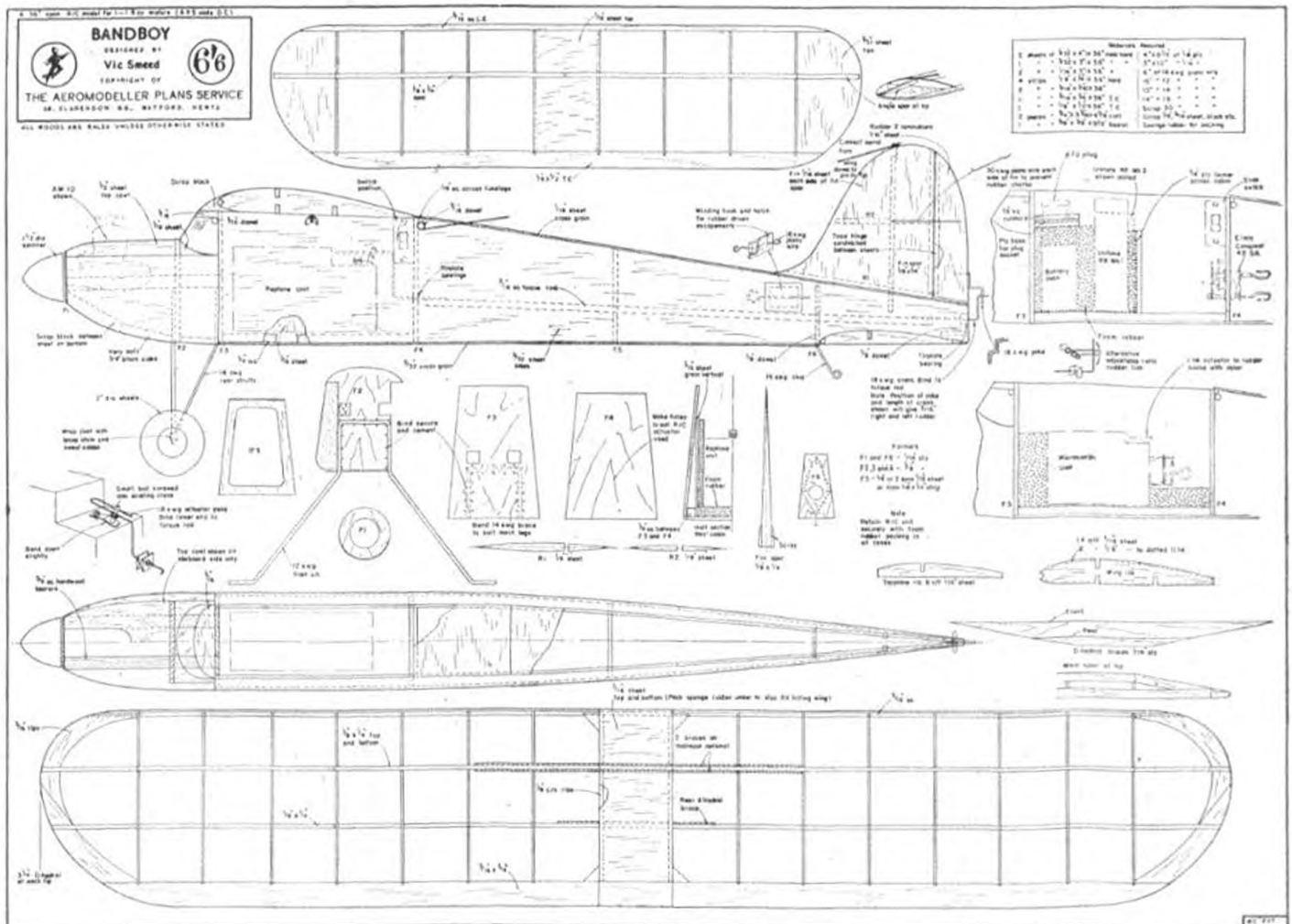
The nose of the model is almost entirely block, the sides being 3/4-in. sheet, which allows a shapely nose to be carved. Use very soft block to keep weight down. Cut the top cowl to suit the motor to be used; there is plenty of room for a large tank, but if more space is needed the tank or polythene bottle can pass through F2. Sand fuselage all over and tissue cover; finish in the normal way. Make sure the nose blocks are adequately proofed against soaking up fuel.

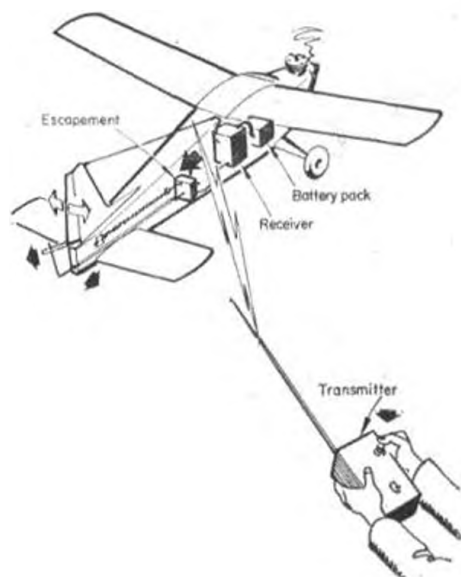
Wing and tail are conventional; for hard usage spruce may be used for the wing mainspars. Similarly, for free flight only one main dihedral brace need be used. Sand thoroughly and tissue cover; nylon chiffon



could be used if you're installing a fairly perky motor. Pack the radio in with foam rubber, not forgetting a wad over the set to prevent it biffling the wing in a nose-over. Provided the balance point is as shown initial radio flights can be made under low power. Free flyers should try test glides first; increase wing incidence by packing the leading edge if the glide tends to be too steep, add a little weight to the nose if a tendency to stall appears. Use a little right tab for first power flights while you feel your way.

FULL SIZE COPIES OF THIS 1/6 SCALE REPRODUCTION ARE AVAILABLE PRICE 7/- INCLUDING POST FROM AEROMODELLER PLANS SERVICE: QUOTE PLAN RC 777 WHEN ORDERING.





**WANT TO
GET
STARTED
IN RADIO
CONTROL?
THIS
SHOULD
HELP**

OVER THE WAVES

THERE WAS A TIME when it was an embarrassment to recommend a *reliable* set of R/C equipment for the beginner, because there was no such thing. Radio was not only ultra-sensitive to tune, it rendered the operator super-sensitive. Nowadays, however, there are many reliable sets on the market and unerring radio is the rule rather than the exception. The time is ripe for anyone to become a radio control modeller, all one needs is the necessary deep pocket for the initial investment.

Anyone who watches the multi experts perform at the major rallies cannot fail to be inspired by the antics of *Astros*, *Uproars*, *Oriens* and *Skylarks*, but the novice must forget these and get down to basics.

Any expert will tell you that he started with single channel — this is the only way, so let us list the things required for that first R/C flight.

Firstly, one needs an easy-to-tune radio set. Transmitter should never need tuning once it has been tested at the factory and the average commercial receiver should be very simple to tune, with a wide band. That is to say, there should be a wide (1-2 turns) tolerance on the ferrite tuning coil slug; through which the Rx should have the necessary current rise to operate the relay or, if no relay, the escapement. But we will deal with this later.

Secondly, one needs a robust, smoothly functioning, rubber-driven escapement. This should operate on 3-4½ volts.

Thirdly, one needs a model. This should be a docile, stable flyer with robust construction. Pay particular attention to the choice of motor for the model, this should be flexible, with no tendency to excessive vibration. Ideally, a first model should be about 48 in. - 54 in. span, with a 1.5 or 2.5 c.c. motor. This is large enough for R/C installation and not excessively expensive to construct.

When choosing radio gear, remember these points. A "tone" or "modulated" Rx needs only one tuning control, which is the tuning slug, and nowadays does not call for a meter to register current rise when tuning. On the other hand, the less expensive, but usually heavier "Carrier wave" sets have in addition a second sensitivity control. There are exceptions, but here we must generalise. The point is that "you pay your money and take your choice". By investing more money one has the advantage of less tuning bother and lighter gear.

Having bought your radio, wire up everything *on the bench*, with batteries and escapement hooked up to the receiver.

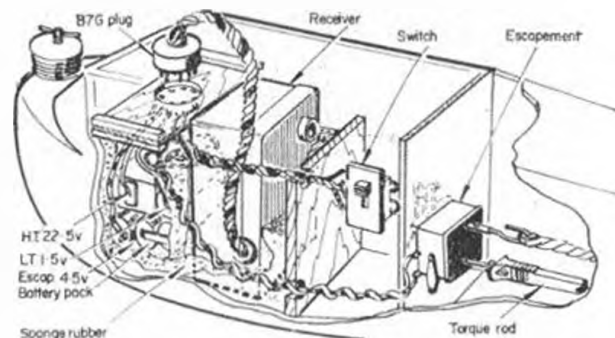
Switch on. When you press the button on the transmitter, the Tx will emit a signal which is picked up by the receiver at what is known technically as the "first stage". This signal is converted, and amplified by succeeding stages into an *electrical* current strong enough to "pull in" the relay armature (or escapement if a relay is not utilised). The relay is in fact a switch and its contacts are used to activate the escapement circuit. Nowadays the most common Receiver circuits use a miniature valve for the "first stage", followed by two, or in some cases three, transistor amplifying stages, ending with a relay. To tune the Rx to the Tx, switch on and hold the signal on. Dial the tuning slug using the correct non-metallic tool, first one way and then the

other, until you hear the escapement "pull-in". You are now in rough tune. Again dial in both directions to determine where exactly the escapement "falls-out", and set the slug midway between these two points. You are now on tune. It is just the same as operating the tuning on a sound wave domestic receiver — all one has to do is to find the optimum for best reception. Repeat the process at a distance of 100 ft. to make sure of the range.

When you have built your model, transfer the radio from the bench and decide on the layout. A study of the typical layout illustrated for "Band Boy" will give an idea of what is required. The escapement can be mounted to a bulkhead. The Rx and batteries should be shock-mounted in foam rubber, with the heavier batteries in front of the Rx. Do not use foam *plastic* for mounting, it telescopes to nothing and has little in the way of protective qualities. Support all wiring well, remembering just *one* broken wire in flight can cause the complete destruction of your equipment and model — shocking, isn't it? Take care and see that the wiring is 100 per cent. safe and sure.

Having completed the model and radio installation, you are ready for flying. Carefully trim the model to fly straight and level. Tune the Rx. If everything is working (and it should be!) you can start the motor and launch the model into wind with about two-thirds of full power.

Sketches show the basic needs of single channel radio control in particular for Vic Smeed's *Band Boy* design, on previous pages. Actual wiring schematics are issued by manufacturers for the circuit from batteries through to escapement via the receiver





Left. Maxey Hester of Des Moines with his Orion C.G. Superhet equipment and K. & B. 45. Centre. Claude McCullough's Martin Mauler, McCoy 60 powered. Right. 9 feet span Piper Cub by Eddie Morgan. Has Orbit B channel radio, two inlined McCoy 60's, weighs 14½ lbs.

Do not touch the Tx button until the model has gained sufficient altitude to manoeuvre without danger of hitting the ground — a lot of height can be lost in that first nervous turn. That's about all there is to it. The model is up there, the rest is up to you. You are all set to become an expert, all you have to do is PRACTISE ! PRACTISE ! PRACTISE !

A few definitions which should help the beginner to understand more of Radio Control :

R/C	Radio Control	TR	Transistor
Tx	Transmitter	AE	Aerial or Antenna
Rx	Receiver	TTPW	Two tone pulse width
H.T.	High tension	G.G.	Galloping Ghost
L.T.	Low tension	S.S.	Simple Simul.
S.N.	Self neutralising	ESC	Escapement actuator
4 P.S.N.	Four positions, self neutralising	N.cad.	Nickel cadmium cells
2P2N	Two positions, two neutral escapement	M.O.P.A.	Masteroscillator power amplifier
3PN	Three positions, one neutral	F.S.	Field strength
CAR	Coupled aileron rudder	Xtal	Crystal
REMA	Rudder (R) Elevator (E) Motor (M) Aileron (A)	C.p.s.	Cycles per second
QB	Quick blip (e.g., engine control)	M.S.	Mark-space
		Stack	You'll find out!

News from the U.S.A.

FROM LARK, NEWS sheet of the Los Angeles Radio Kontrollers, we have news of their 5th Annual contest which attracted 94 entries for this two day event. Visitors came from as far away as Salt Lake City, Utah. Many fine prizes are always a feature of these meetings and among the "goodies" this year, was a 64 dollar box of selected balsa wood. All the competitors were given a nylon prop as a memento of the contest. The LARKS are now deleting the more simple manoeuvres from their single channel flight pattern.

During the Pylon event, Art Browning's model went into a vertical bank at the up-wind pylon and never recovered. The machine hit the ground and spread itself over about 50 ft. of runway. It hit the ground so hard that the motor catapulted over 100 ft. further and rolled to a stop at the feet of Johnny Brodbeck. YES, it was a K & B 45 R/C! Johnny said it looked just like one of those engines he gets with the explanation attached, "and I was just gliding it over tall grass"!!!?

Also from LARK we hear of the fast club's new 1/2 A pylon event for 250 sq. in. models. Should be fun.

Relayless receivers and transistorised servos are making their mark in the United States, following the Orbit 10 relayless receiver on the market is the Bramco 10 channel relayless receiver. This weighs 3 ozs. and measures only 1 in. by 2 in. by 3 in. So far the only transistorised servo available is the Bonner "Transmite" but we can be sure that others will be advertised in the near future.

Not to be surpassed, relays are shrinking in size and weight. The Jaico *Tini-Mite* measures 0.7 in. by 0.33 in. by 0.65 in. and weighs less than 1/4 ozs. Phew! We shall soon need eye glasses to examine our receivers!

Coo! What a beautiful model! 2½ years old Erica, a neighbour of Bob Parker, admires his 53 ins. span modified Veron Deacon for single channel radio (Reptone). Modifications include sheeted wing leading edge and cap strips to ribs, extra stringers and fuselage diagonal braces. Motor is a D.C. Spitfire, to be replaced ultimately, by an A.M.15 R/C. Bob tells us that this is his first model after a modelling lapse of 8 years, and surely warrants the saying "Once a modeller, always a modeller"



ENGINE ANALYSIS No 78

A double test on two interesting power units

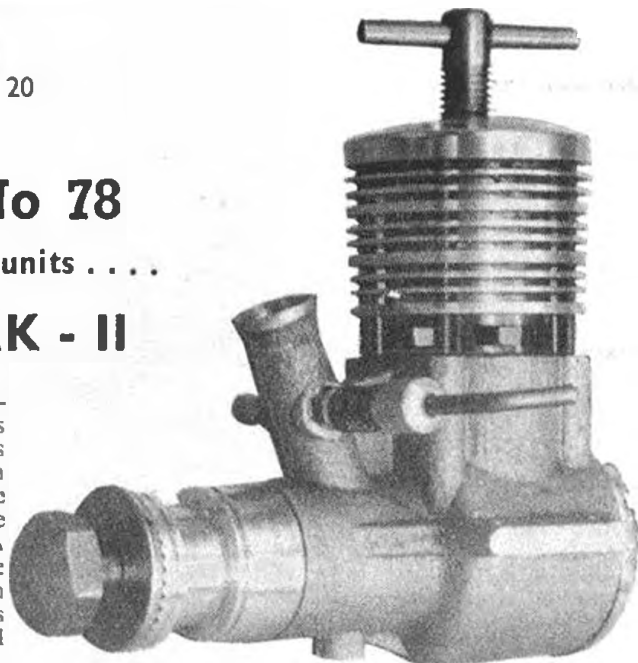
RIVERS SILVER STREAK - II

THE ORIGINAL 2.5 c.c. Rivers "Silver Streak" introduced in March, 1959, was obviously aimed at the Class A "racing" market and achieved a good run of success through the '59 season. Since then the layout has been reworked to some considerable extent in producing the current Mark II version, resulting in a definite increase in performance at the top end of the speed range. A further, and quite substantial, increase in performance is achieved with the tuned version which although basically the same motor is essentially a "special". Thus whilst the original Silver Streak and the Mark II lend themselves to works tuning, with a fair improvement in performance, the current "tuned version", as such, starts life as an individual engine with a special crankshaft and cannot be adapted from an existing model.

The Mark II "Silver Streak" differs mainly from the original model in having a larger, re-designed crankshaft which incorporates a steel bolt screwing into the shaft end for the propeller fix. The unusual, and highly effective, roller-race bearing assembly introduced by Rivers is retained although there are now eight rollers and spacers, the diameter of the journals being increased slightly. Main structural differences in the crankshaft are an increase in overall diameter to .524 in. and a much bigger induction hole up the centre (.256 in. diameter, as compared with .203 in. dia.).

Its crankcase is also an entirely new unit incorporating a longer induction tube and larger crankcase diameter. Resulting increase in crankcase volume appears to have had a beneficial effect on fuel consumption. Other differences, less apparent, are an increase in length of both the connecting rod and piston and corresponding modification of port timing.

Performance on test showed very little gain at the lower end of the speed range but a fairly substantial increase of some 500 r.p.m. at load-speeds around 14,000 r.p.m. Static r.p.m. with an 8 in. by 4 in. Trucut propeller



was found to be 14,000 r.p.m. on Mercury No. 8 and slightly higher on the mixture recommended by Rivers. Below 10,000 r.p.m. propeller r.p.m. figures remained substantially the same.

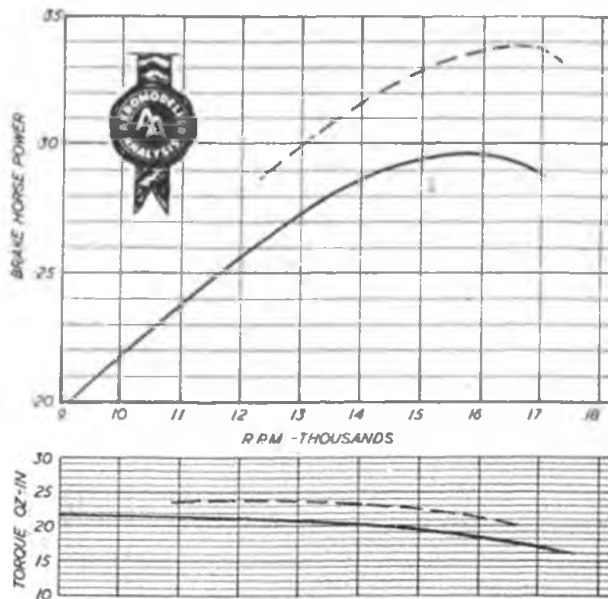
Peak B.H.P. was plotted as .296 at 16,000 r.p.m., or an increase of some 7½ per cent. over the original model. Fuel consumption, too, appears to be much more favourable, giving about 34 to 36 laps on 10 c.c. as opposed to the 28 lap average with the original "Silver Streak". Typical Class A T/R speeds achieved border on the 95 m.p.h. mark or slightly above with a well tuned motor and a good model.

Works tuned version

The works tuned version—available as a specific order for an extra cost of £2 10s.—uses the same basic components with the exception of the crankshaft. This is of special design with a .280 in. diameter induction hole. Each tuned motor is prepared as an individual custom-made item and subject to a considerable amount of reworking. Crankshaft port entry is radiused off and highly polished, together with the bottom of the induction tube. The counter-balance on the crankshaft web is radiused off to promote smoother gas flow with less friction and even the backplate is radiused in two positions to form a shallow "V" directing the gas flow into the rear transfer passage. All ports and passages are polished and the connecting rod reduced to an oval section to minimise "blanking" effect. Metal is removed from the little end, this mainly to lighten.

The result of all this work—and a lot of it is hand-work—is a remarkably consistent improvement in performance. Tuned motors usually come out within 200 or 300 r.p.m. of each other on particular check loads and should retain a similar closeness when fully run-in and developing maximum performance. An initial figure of 10,300 is typical of a "tight" engine driving a Frog 9 in. by 6 in. nylon propeller, which load-speed figure can be expected to increase to 11,000 r.p.m. when the motor is fully run-in. On a 8 in. by 4 in. Trucut the tuned version develops 14,800 to 15,100 r.p.m. depending on fuel and the way it has been treated during running in.

Basked on spot checks, the dotted line on the graph shows the equivalent torque and B.H.P. curves for the tuned version. Peak power shows the exceptionally high figure of .34 B.H.P. at 15,500 r.p.m., or an output of .136 B.H.P. per c.c. This represents an increase of more than 20 per cent. over the original "Silver Streak"; and just over 13 per cent. compared with the standard Mark II version.

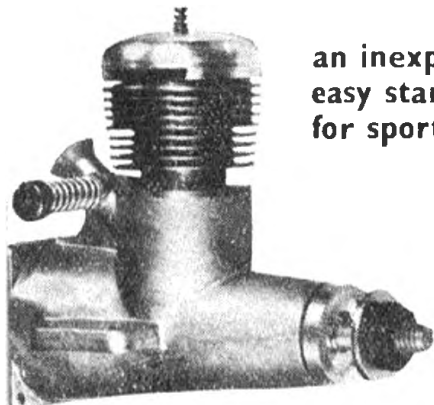


SPECIFICATION

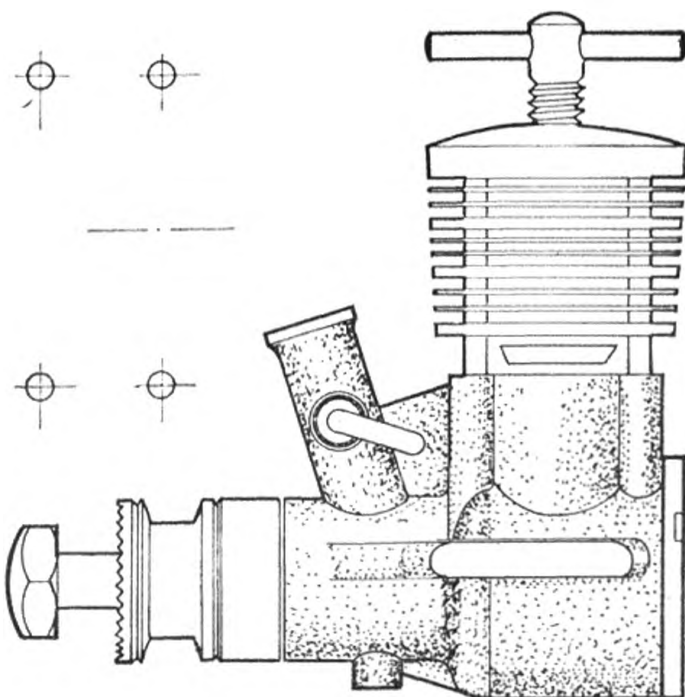
Displacement: 2.49 c.c. (.152 cu. in.).	Material specification (see March 1959 Test Report)
Bore: .5782 in.	
Stroke: .5782 in.	Manufacturers: A. E. Rivers (Sales) Ltd.
Bare weight:	
Max. B.H.P. Mark II: .296 B.H.P. at 16,000 r.p.m.	North Feltham Trading Estate, Faggs Road, Feltham, Middlesex.
Max. B.H.P. tuned version: .34 B.H.P. at 16,500 r.p.m.	Retail price: Mark II standard—£6 5s. 8d. Tuned version—£8 15s. 7d.

... and the FOX '09

an inexpensive easy starter for sport work



actual size drawing of the Silver Streak at right



Designed as a low-priced sports engine with the emphasis on being suitable for beginners, the Fox "09" is particularly interesting in employing sideport induction. As far as this country is concerned, sideport induction, characteristic of the original spark-ignition motors, has survived only in the Mills diesel (and that design dates back some fifteen years). In America, sideport induction has been almost unheard of as a production design since the famous Ohlsson series. The limitation, as far as high speed engines are concerned, is that with sideporting the intake port cannot be opened as early as desirable without also having excessive opening after top dead centre, causing blowback down the intake tube. Hence it has always been considered that a sideport arrangement cannot induct enough fuel for high speed running.

The Fox "09" certainly shows that as far as sheer running speed is concerned, the generalisation does not necessarily apply. It ran quite happily on load speeds beyond 16,000 r.p.m. and achieved its peak power output between 13,000 and 14,000 r.p.m. However, it must be borne in mind that the power output achieved was only moderate, due principally to the limitations imposed by the method of induction. But Duke Fox makes no claims for this to be a "performance" engine and in producing an engine which will start easily and run consistently and well he has achieved a technical success.

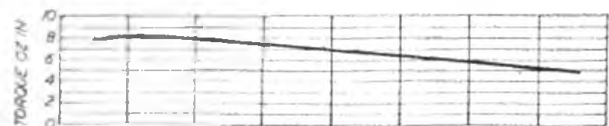
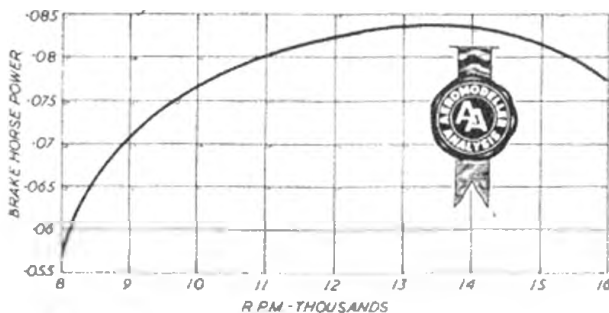
A particular advantage resulting from the sideporting is a terrific amount of suction lift, so that priming by finger choking is no problem at all. Also the engine likes to be quite wet for starting and will run steadily over a whole range of needle settings, whilst four-stroking, with a positive transition to two-stroking when the mixture is finally leaned right out. The slightest movement of the needle past "minimum lean" setting cuts the Fox at once, so a logical running setting would be slightly on the rich side.

A marked disadvantage, is that the timing being perfectly symmetrical, the engine will start and run with equal readiness in either direction. In fact, at one stage on test it was more often running backwards from a normal flick start than forwards. Whilst granting the

point that this makes the Fox "09" an excellent "pusher" motor using standard propellers (looks well as a pusher too), it is equally aggravating—and possibly confusing—not to be sure which way round the motor is running without "feeling the draught". But we will completely endorse that this motor does start very easily and the plug is reasonably long lasting, provided no more than 1.5 volts are applied to it for heating.

The Fox "09" was initially run through a series of tests on a 25 per cent. nitrated fuel, after finding a reluctance to two-stroke on standard Mercury No. 5. Later, however, a number of test runs were repeated with perfectly satisfactory two-stroke running on non-doped (methanol-castor) fuel, and with no very marked fall off in performance. The fuel particularly specified for the American market is "Missile Mist" which has a nitromethane content. On our assessment, the compression ratio of the engine was suitable for firing undoped fuels, and the use of highly doped fuel for the majority of runs possibly aggravated the tendency to "fire back" and start in the reverse direction.

Continued Overleaf



Engine Analysis (cont.)

Photos show salient Fox '09 features

Constructionally, the Fox "09" features a "solid" tapered crankcase casting which is virtually unrelieved except for the beam mounting lugs and the lower cylinder housing. The rear of the crankcase forms an integral tank by the fitting of a suitable cover plate and gasket, the normal back cover being screwed well inside the casting and approximately level with the back of the cylinder. The intake tube is cast in with the crankcase, opening into the cylinder housing. Resulting position of the needle valve is most unfortunate—right in the line of the exhaust and making any prolonged adjustment a most painful process.

Its cylinder is relatively massive for an American glow engine and is machined from mild steel and left soft. The bore is finished by honing, the twin exhausts and twin transfer ports, both diametrically opposed are cut in the cylinder walls underneath each other and immediately above and below a thin flange. When the cylinder is screwed into the crankcase this flange seats against the crankcase casting, no gasket being employed.

Cylinder threading is on the bottom portion of the cylinder. The remaining length of cylinder up to the flange thus forms an annular space with the crankcase casting, into which the intake opens, transfer being controlled by movement of the piston. The design relies on the lower cylinder threads themselves to seal this annular intake volume off from the crankcase. To this end a relatively deep thread is used and the threads are well formed. Certainly this is a simple solution to what could have been a difficult production problem and it appears to work quite satisfactorily.

An extremely thin walled piston is mounted on the connecting rod with a ball and socket joint. It is hardened and ground to bore size and to achieve this and still leave the material inside ductile enough topeen over to trap the ball-end connecting rod, all surfaces of the piston other than the outside walls are copper plated. Thus these surfaces do not harden during the hardening treatment. The connecting rod itself is machined and is extremely thin—only .118 in. diameter at the bottom end and tapering off towards the top ball end.

The crankshaft is also quite tiny, $\frac{1}{8}$ in. overall diameter stepping down at the front to a $\frac{3}{16}$ in. diameter threaded length. It is quite substantially counterbalanced on the web and the whole shaft is hardened with journal surfaces and $\frac{1}{8}$ in. diameter crankpin ground to finish. The shaft runs simply in a hole drilled and reamed in the solid front section of the crankcase casting in terms of what can best be described as a "rattling good fit". Certainly there is enough play at the front of the bearing actually to see the clearance space, whilst examination of the shaft itself shows it to be running on two high spots, one at each end of the bearing.

The cylinder head is a light alloy machining which screws into a recessed portion in the top of the cylinder, incorporating an integral glow plug which is essentially a separate unit pressed into the head and then lightly peened to lock in place. A burnt out element calls for a replacement head, although it would appear readily possible to adapt the head to take a standard glow plug, should this become necessary (e.g., for engines purchased in this country and failing a supply of replacement heads). It is rather surprising, in fact, that an integral element has been used in an engine of this size.

Summarising, a very clever design and a nicely made engine which, for its price, must be something quite exceptional in value in the States. We endorse its easy starting and good running characteristics, but it is rather a "lot of engine" for the power it delivers.



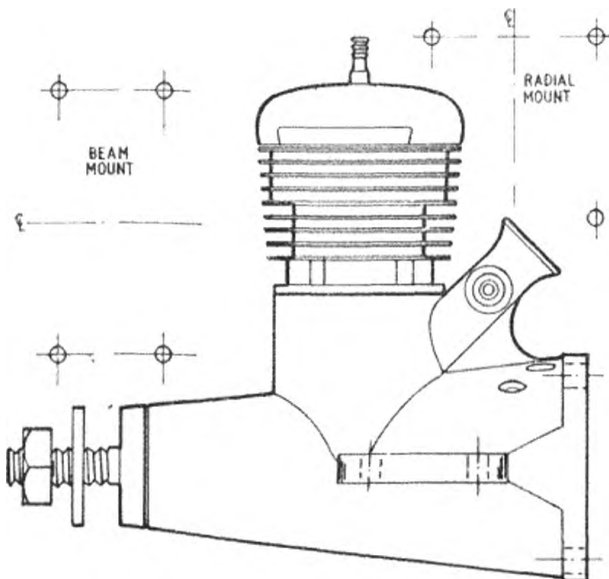
PROPELLER — R.P.M. FIGURES

diameter x pitch	r.p.m.
7 x 4 Frog nylon	10,000
6 x 4 Frog nylon	15,200 (14,500)r
8 x 4 Trucut	8,800
8 x 3 Trucut	9,400 (9,200)r
7 x 4 Trucut	10,800
7 x 3 Trucut	12,600 (12,000)r
6 x 4 Trucut	12,700
6 x 3 Trucut	13,400 (13,000)r

25 per cent. nitromethane content in standard methanol castor fuel
r straight methanol castor fuel

SPECIFICATION

Displacement: 1.639 c.c. (.099 cu. in.)
Bore: .530 in. Stroke: .453 in.
Bore/Stroke ratio: 1.17 Bore Weight: 3 ounces.
Max. B.H.P.: .084 B.H.P. at 14,000 r.p.m.
Max. Torque: 8 ounce-inches at 9,000 r.p.m.
Power rating: .051 B.H.P. per c.c.
Power/Weight ratio: .028 B.H.P. per ounce
Material specification:
Crankcase: Light alloy pressure die-casting
Cylinder: Mild steel. Piston: Hardened steel.
Crankshaft: Hardened steel. Bearing: Plain.
Con. rod: Machined from steel (ball and socket little end)
Head: Light alloy (incorporating glow plug as integral unit).
Manufacturers: Fox Manufacturing Co. Inc.,
5305 Towson Avenue, Fort Smith, Arkansas, U.S.A.



Glass-fibre

DEAR SIR,

The article on *Glass Fibre Fuselages* by Hector Ray is most interesting but I feel that it casts so many doubts in the readers' minds that they may well turn to Mr. Dennis Nixon for the commercial article—fair enough.

With the cold setting resin available on the market today anyone who can use his hands can make glass fibre fabrications easily and there is now a wide tolerance in mixing the resin and catalyst. The main point is that if you use too much catalyst the setting time is so short that you have not time to work. The suppliers of *Bondaglass* give precise instructions however.

The period of "three weeks" mentioned by your writer is the complete time of polymerisation—but a job is generally well usable in one week.

Your writer however has missed out one vital point and that is: Before you commence to use a mould for glass fibre you must give it a coating of Release Agent (silicones or Wax) otherwise you will bond your fuselage permanently to the Mould. Imagine the surprise of modellers if they do not know this—they will be most embarrassed to find the consequences, especially if they use a female mould.

A male mould can be used successfully but as the surface is external you have to work on it with sandpaper, etc. to get it smooth and highly polished—but that is not so difficult.

Maidstone.

A. W. BENNETT.

On Quotations

DEAR SIR,

I was much intrigued by your ingenious adaptations of Shakespeare in your December issue. As a student in my third year at Oxford University, reading English Language and Literature, I have always taken an interest in these passages of the Great Master of English Prose and Verse which seemed to me particularly to foreshadow my other interest in life: model aircraft.

Whilst appreciating that the quotations you produced could be adapted by the recondite thought processes of the Aeromad to apply to that king of hobbies, there are other passages which seem to me of more undeniably prophetic a nature.

Of course the most famous of these, as any student of the subject of Aeromodelling in its relation to Literature would tell you, is the following description of what I can only assume was a vision on

READERS' LETTERS

Tennyson's part of a combined model boat, train, and aircraft meeting, with particular emphasis on Radio Control. I quote from the Prologue to "The Princess":

*"... perch'd about the knolls
A dozen angry models jetted steam
A petty railway ran, a fire balloon
Rose gem-like up before the dusky groves
And dropt a fairy parachute and past:
And there thro' twenty posts of telegraph
They flush'd a saucy message to and fro
Between the mimic stations: so that sport
Went hand in hand with Science"*

There are numerous other passages which apply—as for instance this description of the eager Radio Control modeller making his way to Epsom Downs on a Saturday afternoon:

*"He saw from far, or seemed fur to see
Some troublous Uprore . . ."*

The excerpt is from Spenser's *Faerie Queene*, Book 2, Canto 4, the third stanza.

Again, whilst feeling that this is an unfair description of my good friend Christopher Olsen, I could not help noticing the following phrase from the same source, Book 1, Canto 1, stanza five.

"That infernall fiend with soule Uprore . . ."

Finally, what passage of Immortal Poetry could strike nearer to the heart of the A/2 expert than this splendid description of Dante's from *Purgatorio* Canto IX—

*"In sogno mi parva veder sospesa
Un' aguglia nel ciel con penna d'oro
Con l'all' aperte ed a calare intesa"*

I am afraid that my translation cannot do justice to the intensity of the original:

*"Dreaming, it seemed to me that I saw
hovering
An eagle in the sky with plumes of gold
And wings wide-spread, intent to swoop."*

A. S. W. WINKWORTH

Balliol College,
Oxford.**Pee Wee P A A**

DEAR SIR,

Since I specialize in PAA-load events I was quite interested in the PAA-Load article by Joe Barnes in the November issue.

I would like to make a slight correction. You show a Clipper Cargo ship in the heading photograph and mention that it is mine. I'm sorry to say it isn't and I don't know who is the owner. You are correct in saying I lifted 17½ ounces. Three such flights gave me 2nd place at the Nationals. I also use single blade props similar to the ones by Don Monson.

I'm enclosing a photograph of my Clipper Cargo, a two year old

veteran which has never failed to bring home the loot at contests. This ship held the National Clipper Cargo record for a few months in 1959. The record was set while flying in the rain. See pic above.

I met Don Monson at a contest in Cedar Rapids, Iowa last summer and we compared notes on single blade props. By coincidence, we were both using the same diameter/pitch prop. He arrived at his choice by scientific methods, using formulas, etc. I found mine by the good old "cut and try" method. I built a thrust meter to test various props and was amazed at the results. Two apparently identical props can vary over an ounce in thrust output. Engines can too! Incidentally, I agree with Barnes on the Cox three blader. It sounds real impressive but the thrust output is not so good.

I recently received a letter from Pan American and they say we can use geared props for 1961. I'm sure I can beat a geared job with my single bladers but I'm going to build a setup with gears and check the thrust output on my little meter. Up to now I have been using stock engines but this winter I plan to do some experimenting. I'm working now on a pressurized fuel system.

Congratulations on your coverage of the FAI events. No other magazine comes close to the good job you do.

BUD WOLFE

Chicago Aeronuts,
U.S.A.**Bronco buster**

DEAR SIR,

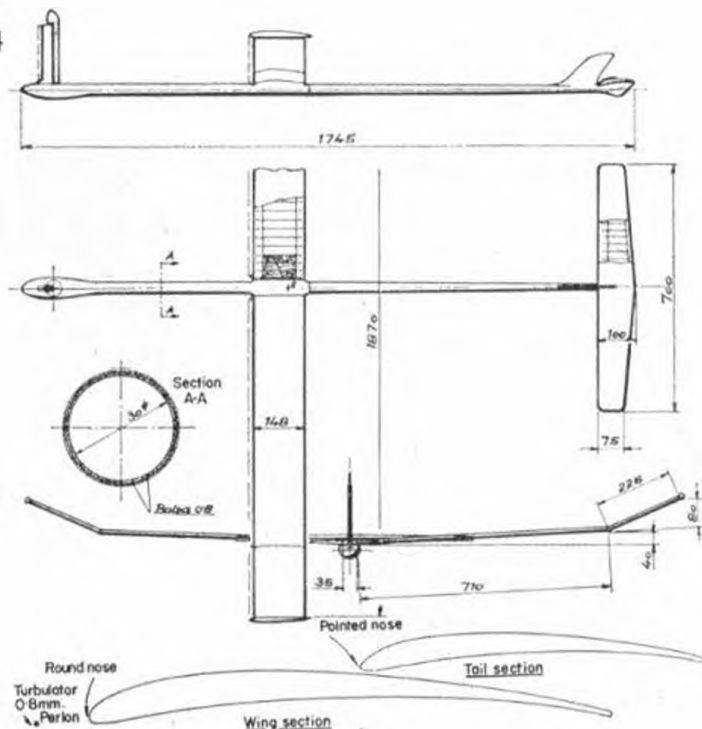
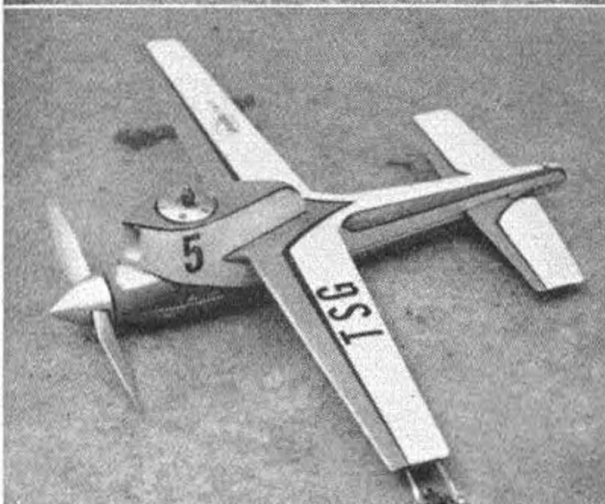
Having just read in "Heard at the Hangar Doors" that you have doubts about the acceptance of a certain household tissue for aeromodelling purposes, I feel I must write and assure you that its uses are not limited to the little room.

While out flying my *Black Magic* in September it landed in a thorn bush which ripped a large hole through the top and bottom of the wing, although it was silk covered. My wife immediately produced some *Bronco* brand carried in the car for other emergencies, and we patched the wing with it, using standard balsa cement for adhesive. Flying continued perfectly, and it seemed a pity when we got home to remove it and do the job properly with silk.

Liskeard.

D. S. GEORGE





WORLD NEWS

WHEN KEN BROOKES, the S.M.A.E. Public Relations Officer, was in Montreal last summer, he discussed the possibility of an F.A.I. team challenge between the M.M.F.C. and St. Albans clubs. The contest was flown over the weekend of October 16th/17th, the Canadians at Hawkesbury, St. Albans at Chobham Common. Strangely enough, weather conditions were very similar in both places. M.M.F.C. fielded 2 teams, St. Albans 1.

Montreal "A"	Power	Jerry McGlashan	828	
	Wakefield	Mike Segrave	900	
	Nordic	Dick Foster	807	Total: 2535 secs.
Montreal "B"	Power	Don Mackenzie	842	
	Wakefield	Don Mackenzie	892	
	Nordic	Tam Thompson	693	Total 2427 secs.
St. Albans	Power	George Fuller	900	
	Wakefield	Tony Young	776	
	Nordic	Dave Tipper	636	Total: 2312 secs.

Don Hannam proxy-flew power for Don Mackenzie. Power normally being the M.M.F.C. weak point, they did a little better than usual, but chief satisfaction for the Canadians comes from the fact that St. Albans are 1960 British Club Champions. It was agreed the loser send some memento to the winner. How about the Plugge Cup say M.M.F.C.!

Three major control-line events have been held in Poland. They were held at Gdansk, September 22nd/25th and results in the speed event were first S. Skotniczy from Ketowice (187.5 km/h), second A. Rachwal (178.2 km/h), third Zygfryd Sulisz, better known from Cranfield, with 160.7 km/h. All three used the Czech MVVS glow engine. After the competition S. Skotniczy broke the Polish record in speed with 190.1 km/h.

In the stunt class, Sylvester Kujawa from Poznan was the top man, he was also their representative in the World Championships.

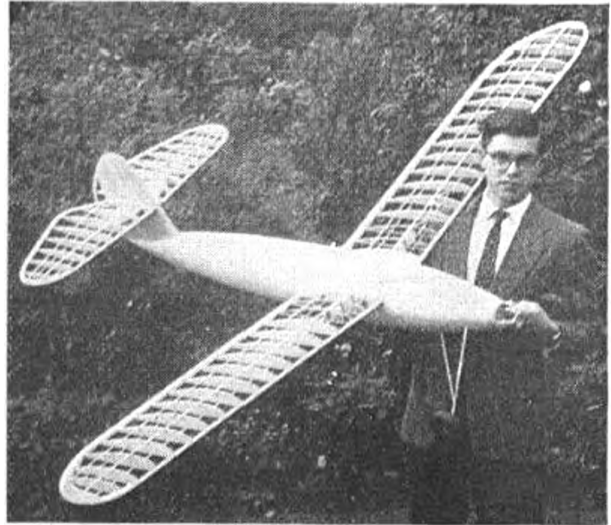
Perhaps the most fascinating of the three events was

Photograph left, and 3-view drawing, winning model in the "Coppa Bavaria 1960" by Adolf Zichl of Austria: A high performance magnet-glider of A/2 size, influenced by Gremmer's "Standvogel". Uses a 50 x 11 mm. magnet. Note small aspect ratio high forward fin rubber. Turbulator is used for better low-wind speed flying. Flying boat is from Viterbo club, Italy, and is 10 ft. span, weighs 6 1/2 lb. for O.S. Max 35 and is radio controlled, rudder only. From India, a twin diesel design for free flight by the modelling club at Lawrence School, Lovedale, and at bottom, a Doaling 29 speed model by T. Shigeno of Japan

Volkmar Trobs, one of three keen modelling brothers from Dusseldorf, Germany, with his 110 in. 6 lb. single channel model for Webra Bully 3.5 c.c. Fuselage is 8 in. dia. at centre, model flies at 45 m.p.h.

that for flying scale. Rules require minimum of 10 laps with all engines operating and every model must make two flights. Readers will remember the photograph in last month's World News of J. Kuszilek's Bristol Britannia and one might well have expected this to be the winner in view of its fantastic amount of detail and working parts. It is in fact worthy of further description. Span is 85 in. It has complete interior detail with 32 fixed seats and 10 which operate to the reclining position for sleepers, a rest lounge complete with books, full lighting equipment, including working landing lights and cabin lights, working flaps and undercarriage and is covered with metalised wallpaper. The all up weight is 18 lbs. and the power, four 5 c.c. Sokol diesels.

However, during the first contest flight one motor cut on the ninth lap and on the second attempt the same happened, only on the third lap. For this reason the Britannia could not qualify although on the second flight it gained a full maximum of 250 points. After the contest it performed a brilliant flying display for 48 laps making spot landings with throttled engines and for all of its 18 lbs. is still agile enough to perform a wingover. There



is three years work in the model and it is no real surprise that the builder is a dentist for so often we find models

THE AEROMODELLERS MARCH

Words by Gregory Khodosov
Music by Rudmily Ryudovoy

The aircraft are flying past
In the clear blue sky
Why do their pilots
Run across the grass
What is this, what indeed
Now there, let us see
They are aeromodels
One, two, three.

REFRAIN

Do not try to count up all the
wings of our speed aircraft
Which praise the Soviet country
Today we are calling modellers together
And tomorrow we shall to the moon.

Now the contests are taking place
See and admire, do not dully
Prepare yourself, pay attention
Harmoniously let us start.
The keenness of youth
Leads us to a solid victory
Let us achieve world records!

REFRAIN

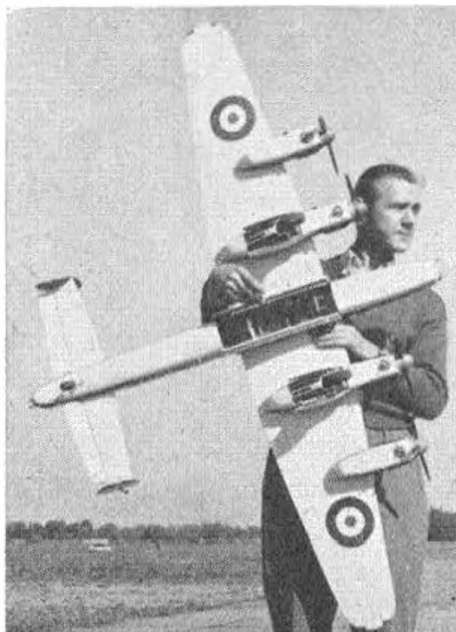
We are moving towards cherished aims
To conquer the skies
Now let us become familiar with all models,
Beginning with the glider
Now from the glider, the road
Is direct to the aeroplane
There are many pathways in the air for us
Let all go forward.

REFRAIN

-from "Wings of the Fatherland"
U.S.S.R.



Superb Polish scale models. Above, PZL-37B Los by J. Koczkojaj with two Zeiss Activist IV's has working flaps, U/C, lights and speed control. Below is B. Grodziski's Lancaster with four Jaskolka diesels. Is fully mechanised, even her four explosive bombs. Right, Britannia U/C close-up and operating demonstration for Sokol engine-maker Garski



of this standard are produced by doctors and dentists.

Among the many other interesting entries including, of course, the winner, J. Koczkodaj's PZL-37B "Los" pre-war bomber which also had engine throttles and fully operating undercarriage, were several unique selections for flying scale. J. Pudelko placed third with a fine model of the early Polish fighter the Bartel BM-6. J. Tomaszewski flew a 1906 "Kaspar" to place fourth and R. Gruzka entered a 1911 Morane. There were also a Piper Cub in second place, PZL "P-11c" fighter, Handley Page Halifax and a CSS-13, which we learn is the Polish version of the veteran Po2 Russian biplane.

The Britannia has since made demonstration flights before military authorities who were suitably impressed.

An international contest for Radio Control, known as the Dolomite Cup, was held on October 2nd in Lienz, Eastern Tyrol, Austria. This was the first such meeting to be held in Austria and the organising club from Lienz worked hard to arrange the event. Food and accommodation was free and with 12,000 Austrian Shillings up for prize money there was something for everyone of the 28 competitors from Austria and Germany. Three classes were flown for single channel, glider and power models and also for motorised gliders. Winner of the single channel power class was Hans Prettnner of Klagenfurt flying an all Graupner outfit of *Satelitt* model with Bellaphon/Polyton 3 plus Bellamatic. Using the same radio, but with a Schumacher model design and K & B 19 was Blauhorn of Munich in second place whilst Martin of the organising club flew another

Photos show winning Montreal M.F.C. Canada flyers after postal contest with St. Albans. Left to right, Mike Segrave, Dick Foster (holding Scion 1), Don Mackenzie and Mack Jr. in front, Don Hannan. See text for details. Bottom, Japanese experts include B. Yanagimachi in front with conventional JA for Thermal Hopper and Y. Kimura at right with experimental forward fin design. Sketches at right are a series published in "Koku-Fan", showing reasons for short span tail and design variations of particular interest to budding JA designers



Satelitt into third place using Metz gear. In the glider class Walter Dettelbacher used Metz radio and a Bellamatic servo in his scale MU 118 to win by a 20 points margin over his clubmate from Klagenfurt, Heinrich Kainz who split the run of commercial radio sets by at least using his own transmitter to operate an Ultratou receiver. The motorised glider class required models to fly for five minutes with the motor then glide for five minutes and make a spot landing with appropriate points dropped for exceeding the time limits and missing the spot. Karl Egarter won with another scale MU 118 assisted by a Taifun Hurricane with Metz radio.

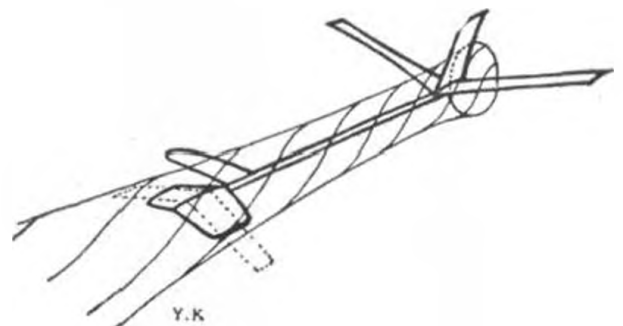
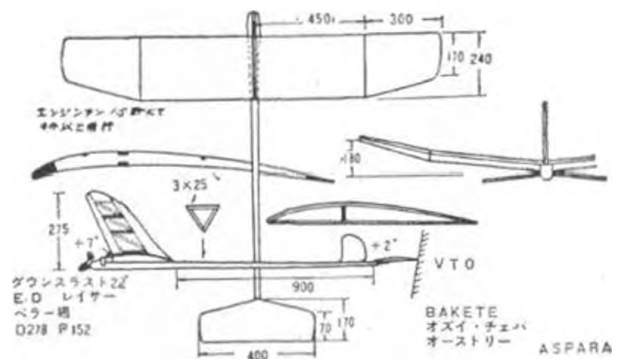
The Austrian hosts want to have more competitors from abroad in 1961 and will keep the rules strictly for rudder only models. They hope in this way to offer something in the way of an international competition for those with not too fat a purse.

Last year the S.M.A.E. had a spot of bother when someone running for office in the annual election decided to issue literature canvassing support. The idea was frowned upon and established the system used in 1960 whereby the particulars of candidates were issued by the Society with the voting forms giving everyone a fair chance.

Now we learn that in Canada and the U.S.A., prospective candidates have such people to support them as "campaign managers". In one particular case thousands of leaflets have been issued to canvass votes and support for a nominee.

All of which is, we suppose, encouraging in some way for the duties are purely voluntary and it seems so unusual in this day and age for people to make such an effort to fight their way into office.

We hope that the effort put into electioneering is only a warm-up for even greater effort on the part of the candidate when he achieves success and gains office.



ELECTRICKERY

Ideas from F. G. Boreham

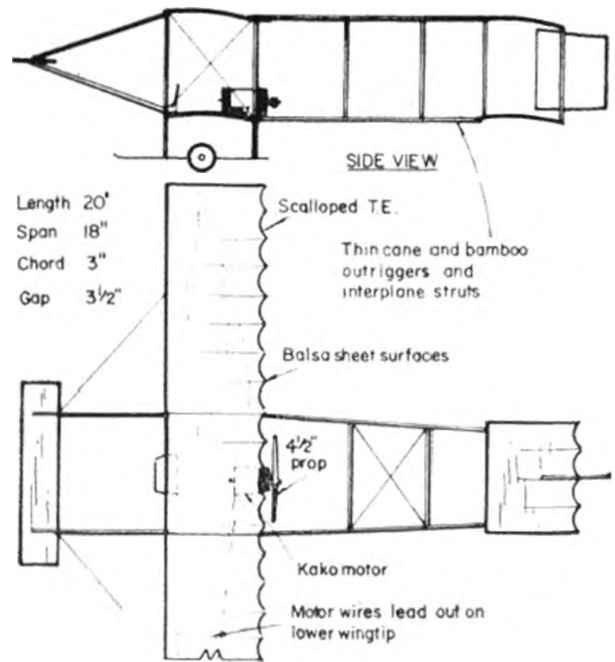
THE ARTICLE on electric power in the March, 1960, ALBROMODELLER, dealing with the remarkable *Micromax*, inspired a few experiments and the following will probably encourage others to investigate this interesting side of modelling.

Small lightweight motors are readily available, and in the following experiments, *EverReady* TG18 and the Japanese *Kako* units were used.

It will be realised that with the fractional power developed, it is not possible to fly a self-contained model carrying a battery, on account of the weight penalty. Therefore it is necessary to make a current distributor to link up the model with wires from a battery on the ground.

This is a rotary contact slip-ring device, so arranged to be held in the hand with two 4½ volt flash lamp batteries as shown in *Fig. 1* or connected to batteries in the pocket by a suitable length of flex. The main essential of the distributor is a slip-ring from an old magneto which happened to be handy, but alternatively

* A phrase coined by the famous pioneer flyer, Col. S. F. Cody, who, when asked the reason for a forced landing, replied that the "Electricker" went wrong, hence the title.



it is not difficult to fabricate a rotary contact as in *Fig. 2* — similar to a round-the-pole device.

Two connecting wires of 26 g. double cotton covered wire lead out from the slip-ring, and convey the current to the motor in the model. The first machine was very simple, as shown in the sketch, consisting of a 16 in. x ½ in. balsa motor stick, the *Kako* motor attached simply by rubber bands, allowing adjustment of thrustline to be made and easing the shocks in test glides.

Flying surfaces were produced from an old rubber model providing approximately 110 sq. in. for a weight of 2 oz. Joining up some 7-ft. of connecting wires finished the job, and as the weather was kind, flights were soon in progress on the lawn.

On the initial flight test the model was encouraged into the air by whipping and simultaneously paying out the wires. After some adjustments the machine gave a very encouraging performance.

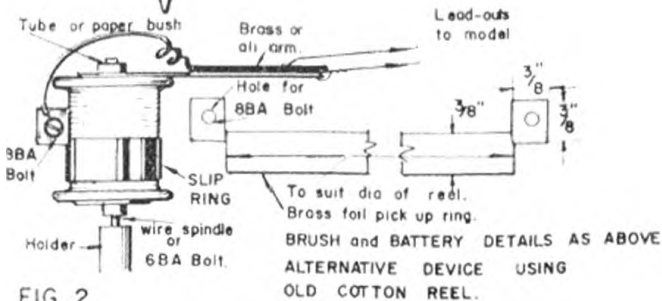
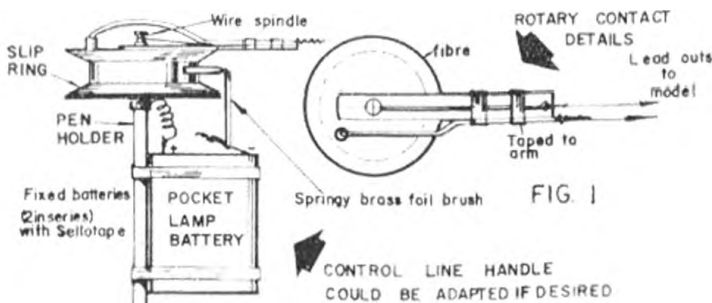
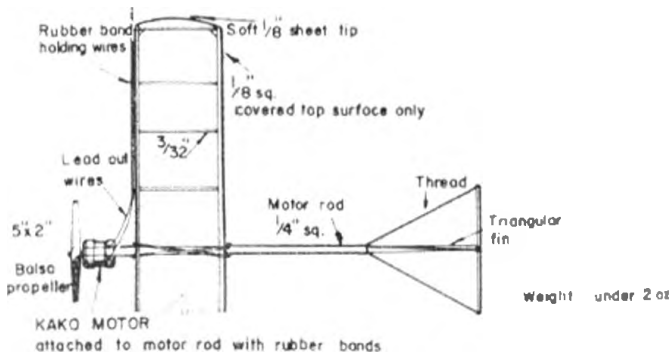
Due to the contact and line resistance, it is necessary to step up the voltage to 9 volts at the distributor end and to 6 volts at the motor end for take-off. Two 4.5 v. flash lamp batteries, connected in series and carried in the pocket, worked well, and with the aid of a rheostat or variable resistance, an effective control of the line voltage could be made to regulate power for flying and take-off speeds.

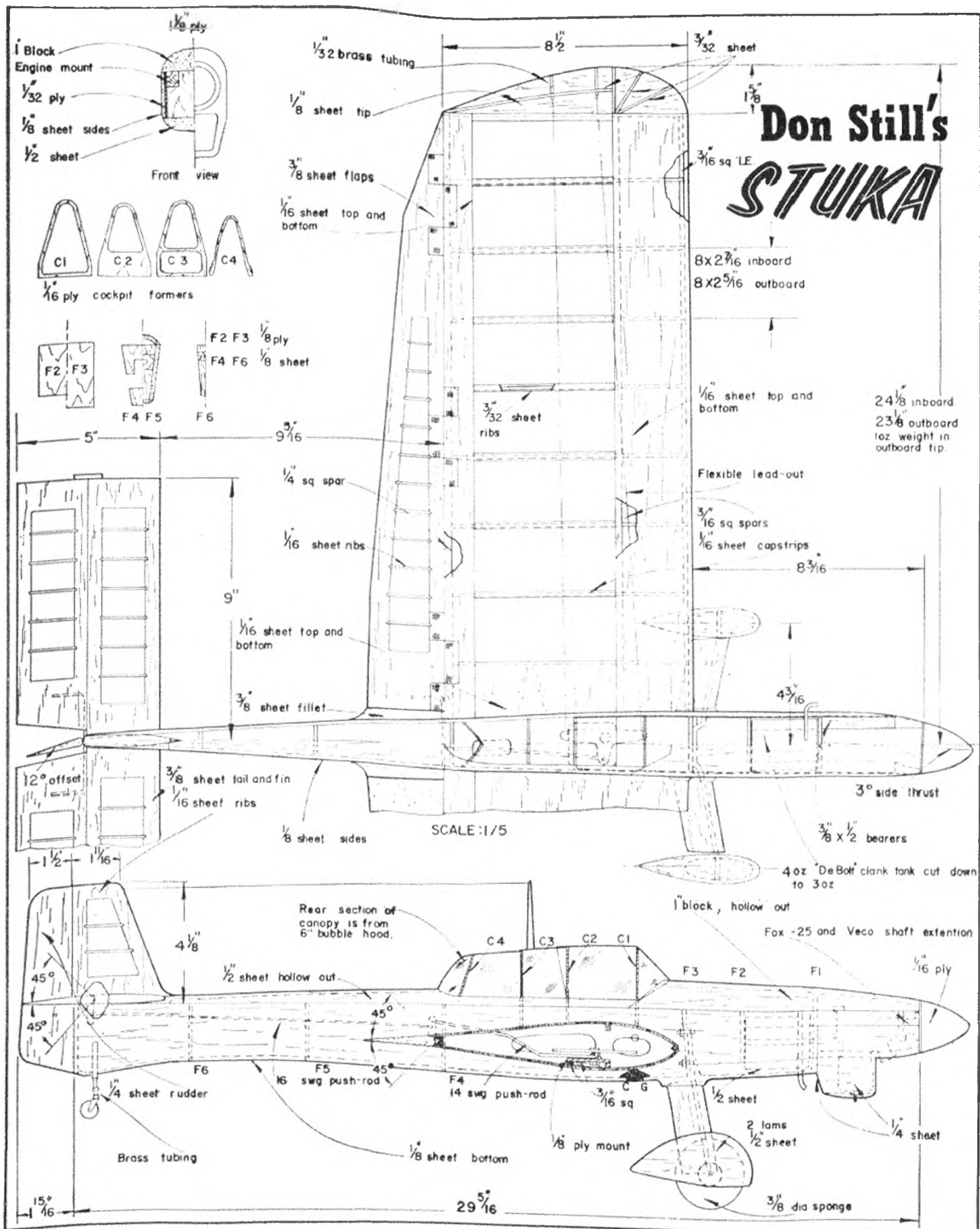
The next model was a lightweight balsa biplane, having all-sheet surfaces and fuselage, and using an *EverReady* TG18 motor. Again the surface area was approx. 110 sq. ins. for a weight of 2.5 oz. and the model was fitted with 5½ in. fine pitch propeller. It had an undercarriage with light plastic wheels, and, when helped, would take off from a smooth surface.

In an effort to bring back some of the magic of early pioneer flying, an all-sheet balsa semi-scale Farman biplane was built and fitted with a *Kako* motor instead of a *Gnome* rotary (see sketch above).

It is important to use a fine pitch propeller to get the most out of the small motors, and various diameters were tried ranging from 4½ in. to 6 in. They were made to have a simple push-on fit, using a small piece of fuel tubing on the motor shaft to suit the propeller hub.

Restrict the weight, with simple sheet construction then no undue problem should arise through overloading. There is no doubt that many of the excellent small kits could be easily modified to take a small electric motor, though, of course, the individual modeller could produce a very effective model on original lines. Why not try it for the clubroom?





MODEL ON THE COVER

most impressive 'new' control-line stunt design at the World Championships



DON STILL is the proprietor of the *Happy Hobby Haven* at Beaumont in Texas. He is tall and quiet for a Texan, if he'll forgive us saying so and his calm approach at the World Championships at Budapest last September, together with the best flight of the contest, raising 1062 points, earned him many European admirers. Don placed second in the overall points for the World Champs.

To many his name is not new, for he has been flying stunt for a very long time, was once the U.S. National Champion and although not always in the top three in the States his flying keeps everyone on their toes. After the contest in Hungary he and Bob Palmer put on a fantastic duet of formation flying and in solo performance, Don surprised everyone by pulling out of wingovers with his wheels on the ground, keeping them there for half the circuit and then repeating the performance over and over.

He used his two-year-old black model with German

military insignia obliterated by colour transfer triangles, hence the unusual wing decoration. Don says it is "loose as a goose" while the white model with different cowl and rudder was brand new and stiff.

Don favours the Fox 25 as he feels it gives the right amount of power for a 30-oz. model (equal to the earlier 29s) and this, coupled with the fact that he uses a 464 sq. in. wing, gives the light loading both on the wing and on the engine for best aerobatic performance. His theory is "the lighter we can make it, the better job it can do".

Don flies on 57½-ft. lines and uses a 9 x 5 or 9 x 6 prop, the motor just off peak revolutions to give that reserve of power needed in the square figures. By most standards, his flight pattern is medium to fast and with generous offset on the rudder and the engine plus an asymmetrical wing, the Stuka keeps the lines nice and tight, especially in overhead flight.*

That brings us to the name. This is by no means intended to be a scale model of the Junkers Ju87 Dive Bomber, but is merely based on that type in the side profile to be different. Don equips his cockpit with dummy instruments etc. and like all American models we see in representative teams in international contests, the external finish (by comparative standards with those seen on this side of the Atlantic) is nothing short of superb.

Covering is silk and the final finish, which in the case of the model on the cover is part brush and part spray effect, is polished after fuel proofing. A clever feature of the model is the way in which the springy undercarriage and the balsa legs attached to it are free to pivot inside pattern leather fillets cemented to the fuselage. This enables Don to put it on the ground and hold it there with the powerful elevator and flap combination, each of which travel through 45 degrees either side of neutral.

At the moment the design is in the engineering stage for kitting by the American *Ambroid* Company and we have no doubt that it will become a very popular line for its manufacturers and the designer, since many enthusiasts are seeking something "different" and Stuka is certainly that and also very simple to construct.

* In fact, the design originated in 1950 and has been changed only in detail and length of nose.





1. Waiting to soar at Ivinghoe, J. Dumble uses his fuselage as a base for pocket chess. 2. At Kenley Speed meeting, Jim Watson won Class 2 at 134 m.p.h. 3. D. J. Bailey with enormous soarer. 4. P. Babb, Northwood prefers something smaller. 5. Mike Billington's 10cc. Monoline winner at 156 m.p.h.

Round the Rallies

SLOPE SOARING ALTHOUGH still very much an orphan child of aeromodelling can nevertheless claim its small but growing band of devotees.

The slope soaring meeting organised by Cambridge M.A.C. at Ivinghoe Beacon on Sunday October 23rd proved to be a most enjoyable day. Competitions were held for both Single and Multi channel R/C and F.F.

The F.F. contest was spasmodic, and it is obvious that this branch is not given the attention that it receives in some European Countries. However, those who did take the competition seriously recorded some fine flights. Second place winner in this section, Miss S. Ailsopp used a perfectly standard Contest Kits *Empress*, which proves that one does not necessarily have to go to the drawing board and design a machine specially for the job.

Radio showed more activity, and it is obvious that this is the more practical side of slope soaring. The object was to record a flight time as near as possible to 5 minutes, the error in seconds being recorded and the winner being the competitor with the smallest error. Some could have stayed up nearly all day if necessary.

The size of multi R/C models ranged from the A.P.S. Aries to the 3rd place mammoth size creation by D. J. Bailey of Burton-on-Trent which he ruefully admits is due for repair, though possibly on a five year plan basis. He used Orbit 10 radio (with six channels sealed off) and Bonner servos. This was the most sophisticated gear at the meeting. Eventual winner of this class was Frank Knowles of Reigate with only 2½ seconds error.

Single channel was no less popular, and it seems that the disadvantage of single control is far less marked than is the case in powered radio flying. Here again the better pilots could have kept their charges aloft far longer than the stipulated 5 minutes. Models for this class in general were smaller than those in multi but some of these smaller types were remarkably smooth, notably

that of P. Babb of Northwick Park. Sid Miller's high aspect ratio, short moment arm type is quite a departure from normal thought on design in this class. The most surprising thing about this model is the very large rudder on the underlung fin, about three times normal size. Sid has been flying this machine for over a year and there is not a mark on its beautiful Concours d'Elegance finish.

Notable in this class are the number of fliers who still prefer the large ground based Tx with long quarter-wave aerial. Obviously they prefer to rely on a tried and trusted friend. Winner of single channel was D. J. Wilsden who performed the remarkable feat of touching down exactly on the 5 minute mark, and J. Fellows who came second was only 1¼ seconds in error.

A most enjoyable time, and not an engine run all day!

Official results of CAMBRIDGE M.A.C. Slope Soaring meeting at Ivinghoe Beacon on October 23rd were published last month.

Rufforth 1,000

THE FIRST 1,000 LAP team race for S.M.A.E. Class B racers held in Britain was flown off at R.A.F. Rufforth on November 6th, organised by the Wharfedale Club. Run on similar lines to the race held in Brazil earlier this year (reported in August issue), the meeting was graced with kind weather, which certainly helped to make a most enjoyable day. A marquee provided by the Wharfedale club was fortunately not required as a shelter from the elements.

Circles were marked out to A.M.A. specification, found to have advantages over that used by the S.M.A.E., with two centre circles and separated landing / take-off area. Due to the restricted entry, only two 200 lap heats were run. The first was won by the Horton/Howarth team and a Frog 500 "*Dalesman*", which at times was covering 90 laps per tank. In spite of an 83 m.p.h. speed, it managed fastest time of the day at 11:46.6.

The second heat saw great commotion due to a line



First, second and third teams in the 1,000 lap team race at Rufforth organised by Wharfedale: see results and description below.

tangle, but skilful team work soon mastered the situation. During this heat the Long Davy team burnt out the plug of their ETA 29, but they went on to win with a time of 12:8, followed by D. Nixon (Frog 500) at 16:5.

The 1,000 lap final was flagged off at 3 p.m., all four teams making a fine start, but at lap 239, D. Nixon's model "ran-in" at its sixth pit stop, and in view of the risk to others, the team sportingly retired from the race. At lap 346 the Long Davy racer came in for a pit stop—another plug had burnt out, and delayed the stop for 40 seconds — these 1,000 lap races are hard on the motors!

Meanwhile, the Horton/Howarth team was forging ahead in great 60-90 lap strides. Lap 879 saw the Long Davy racer disappear in a 30,000 r.p.m. cloud of grey smoke, after a very low (2 inch altitude) pass. The Horton/Howarth team had romped home in 1 hr. 7:46.

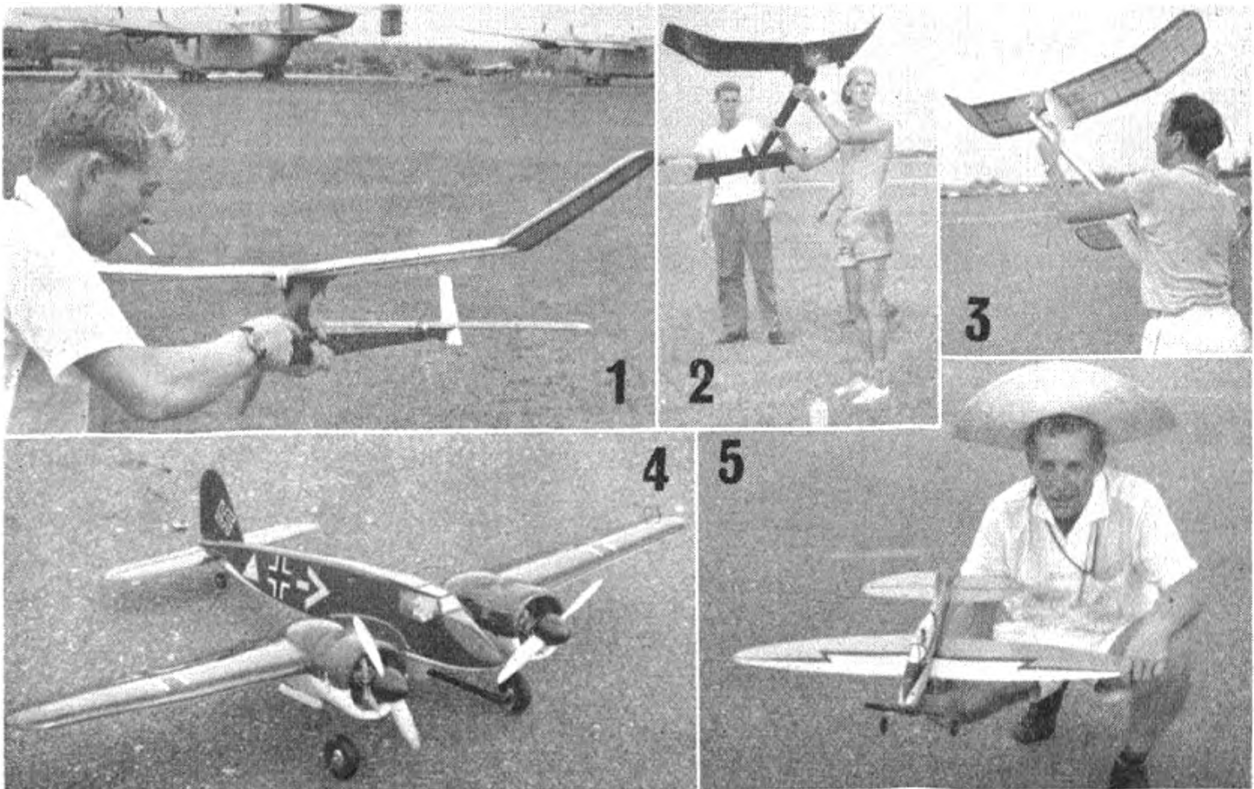
The Wharfedale Club would like to thank all competitors for their co-operation in making the meeting a success, and naturally look forward to the next time.

Engine	Place	Name	Club	Time	
				hrs.	min. sec.
Frog 500	1	Horton Howarth	Wharfedale	1	7 46.2
ETA 29	2	Dugsmore Bell	Novocastria	1	17 32.6
ETA 29	3	Long Davy	Wharfedale (879 laps)	1	8 0
Frog 500	4	D. Nixon	Hinkley (239 laps)		

F.E.A.F.

Third of the Far East Air Force Champs was held at R.A.F. Seletar, on October 16th, with teams from five stations. Unfortunately, the Johore straits collected most of the better models and not all of them were saved in spite of a canoe recovery service! Some of the winners are pictured below, and it's good to see how some of the "names" from last year's U.K. contests are settling down out there.

F.E.A.F. Meeting, 1. J/T Pallister & Rivers/Dixielander; 2. SAC Wood placed 2nd with Swiss Miss. 3. Sgt. Emery won power with his Eureka. 4. He 129 Concours winner by J/T Bailey. 5. SAC White operates his Tigress in Wharfedale colours.

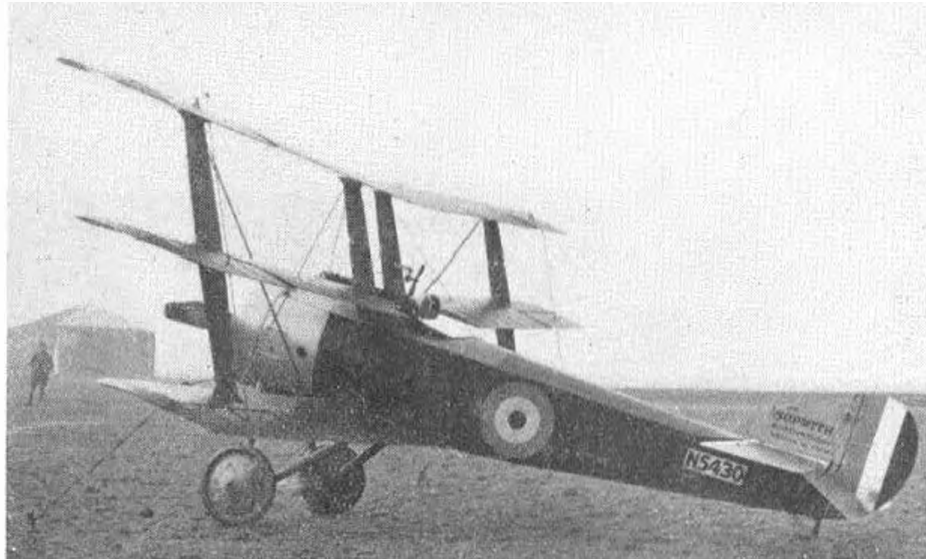


AIRCRAFT DESCRIBED

Number 106

Described & drawn by
P. L. GRAY

N 5430 seen at right and below left, was one of a batch of 75, numbered from N 5420 to N 5494, built by the Sopwith Aviation Co. Ltd. This machine was transferred to the R.F.C. presumably for evaluation or comparative tests. Below right, a Number 1 R.N.A.S. Squadron line-up. Note absence of fuselage roundels. The aircraft with white fin is that of the Flight Commander, H. V. Rowley. I.W.M. photograph Q.66794



THE SOPWITH TRIPLANE was evolved in the Sopwith design office during the early months of 1916 in an endeavour to combine the maximum of lift and visibility with optimum manoeuvrability. Although of unconventional configuration, it followed orthodox constructional methods and differed little, basically, from the Pup which preceded it. The fuselage was a box-girder of spruce longerons and spacers, braced in all bays with piano wire. An acute curve of the longerons into the sternpost (in plan view), was obtained by slitting the longerons vertically with a saw cut for a distance of about three feet, gluing in a strip of three-ply, and then binding with tape to the required curve. At the forward end of the fuselage a circular sheet steel engine plate was fitted and the contours were faired into the slab sides as far aft as the cockpit over a framework of light stringers, hence the patchwork quilt effect seen in some photographs. Upper decking was curved, and the single Vickers machine-gun mounted centrally in front of the cockpit; the curved decking was continued with increased radius as far aft as the tailplane. Its 110 h.p. Clerget (and later the 130 h.p.) rotary engine was completely housed in a circular aluminium cowling with additional cooling slots fretted in the lower segment.

Initially, tail units were near identical to those of the Pup, the tailplane being of wood and the elevators, rudder and fin of light gauge steel tube. Later the tailplane and elevators were revised and reduced in area to improve diving characteristics and general sensitivity.

The novel wing configuration had advantages, especially in the narrow chord that was employed, this bestowing an excellent field of view and at the same time limiting the movement of the centre of pressure with changes of incidence, thereby enabling a relatively short fuselage to be used. Of parallel chord, the wings themselves were of identical and based on two closely spaced spruce main spars, ribs were interspaced with two false ribs.

In action the triplane was flown solely by the R.N.A.S.

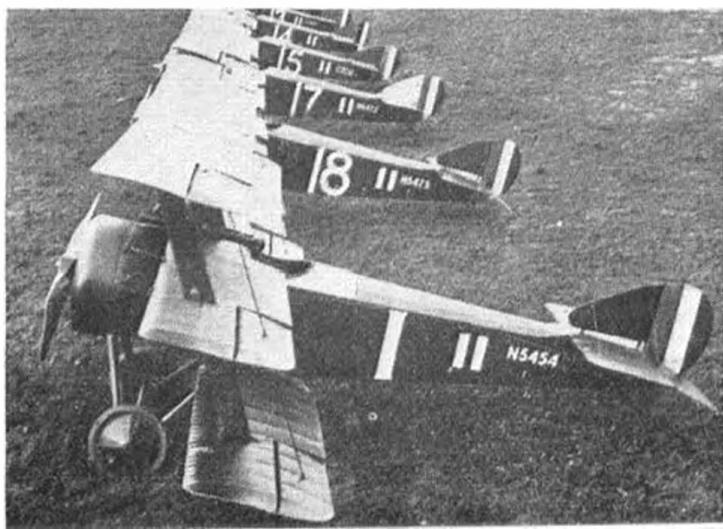
Squadrons and did not equip R.F.C. units. First Squadron to receive the type was No. 1 (Naval) Sqdn. which, having spent several weeks working up on the type, began their first operational sorties during the opening days of April 1917 at the Battle of Arras. No. 8, 9 and 10 (Naval) Sqdns. were likewise equipped and also began offensive patrols during April 1917.

It was this month of April 1917 that came to be known as "Bloody April" by the flying services due to the disastrous casualties they suffered—mainly by the B.E. equipped Corps Squadrons—at the hands (or guns) of the sleek German Albatros DIII scouts. However, the Triplane squadrons soon dis-abused the Albatros Staffeln of any sense of invincibility and were clearly able to outclimb and outmanoeuvre their stationary engined opponents.

Evidence of the Sopwith machine's superiority in all but fire power is exemplified by two Triplanes of No. 1 (Naval) Sqdn. which, flown by Flt. Cdr. Roderick Dallas and Flt. Sub. Lt. T. G. Culling on April 21st, 1917, attacked a composite formation of fourteen German single and two seaters bound for the Allied lines at 16,000 feet. The two Triplanes harassed them for three-quarters of an hour to such effect that they aborted their mission, broke formation and dived ignominiously, eastwards, three of their Comrades having fallen.

"B" Flight of No. 10 (Naval) Sqdn. was originally an all Canadian flight, to become one of the most formidable fighting units of World War One. In three months, during 1917, they destroyed between them no less than 87 enemy aircraft. Triplanes of "B" Flight variously bore the names "Black Death", "Black Maria", "Black Roger", "Black Sheep" and "Black Prince" and in the past were thought to have been painted black or indigo, however opinion now seems inclined to the fact that they were "Standard finish" aircraft with nothing more black about them than their name.

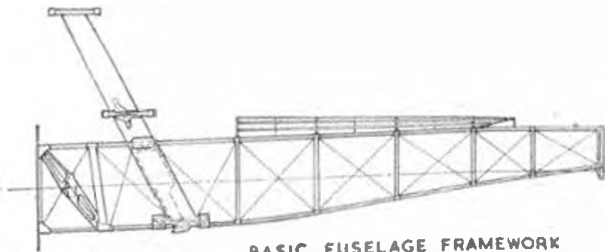
By the end of 1917 the Triplanes had been replaced by the more powerfully armed Camel with its twin



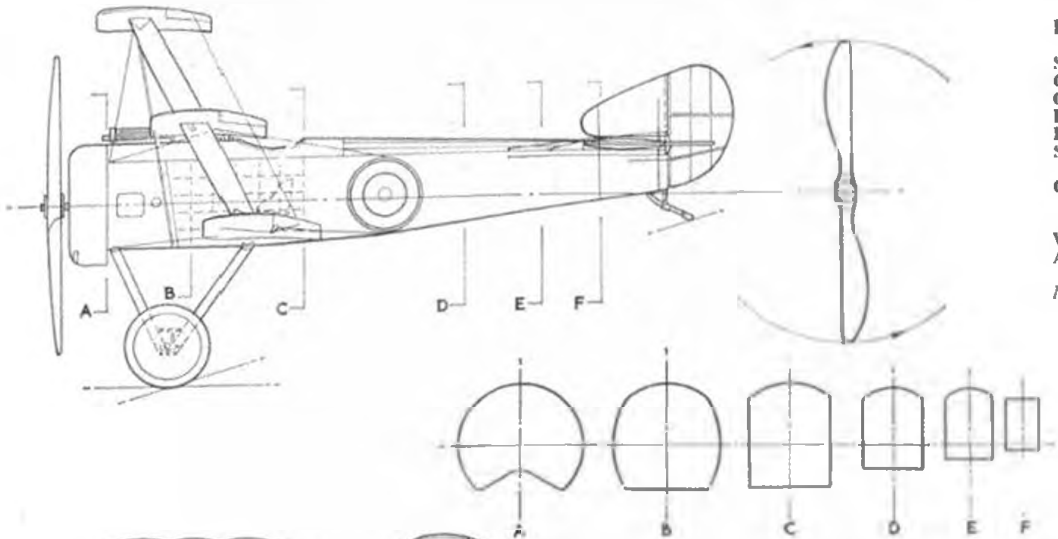
Colour detail:

With the exception of the prototype which was covered all over with plain unbleached fabric, Sopwith Triplanes were doped the regulation khaki-green on the upper surfaces and on the vertical surfaces of the fuselage. Underneath they were left the natural fabric which when doped and varnished obtained a creamy shade which darkened with age. Cowling and metal panels were often left bright by factories but were invariably painted over dark grey or khaki-green on operations. Wheel discs were left natural fabric by makers, but again were often doped khaki-green in usage as was also the case with fins of Sopwith built machines. Serial numbers were painted on rear fuselage just ahead of tailplane, either in white or in black superimposed on a small white rectangle. Roundels appeared above and below the wings (full chord) and on fuselage sides, those upon the khaki-green surfaces being narrowly outlined in white although this was not invariably the case with fuselage roundels. The equal width, blue white and red rudder stripes had the blue foremost.

Triplanes of No. 1 (Naval) Sqdn. dispensed with fuselage roundels and bore a rectangular white red flash ahead of the serial. Between this marking and the cockpit large white numerals, the full width between the longerons, were carried — 1 to 18. (See photograph.)

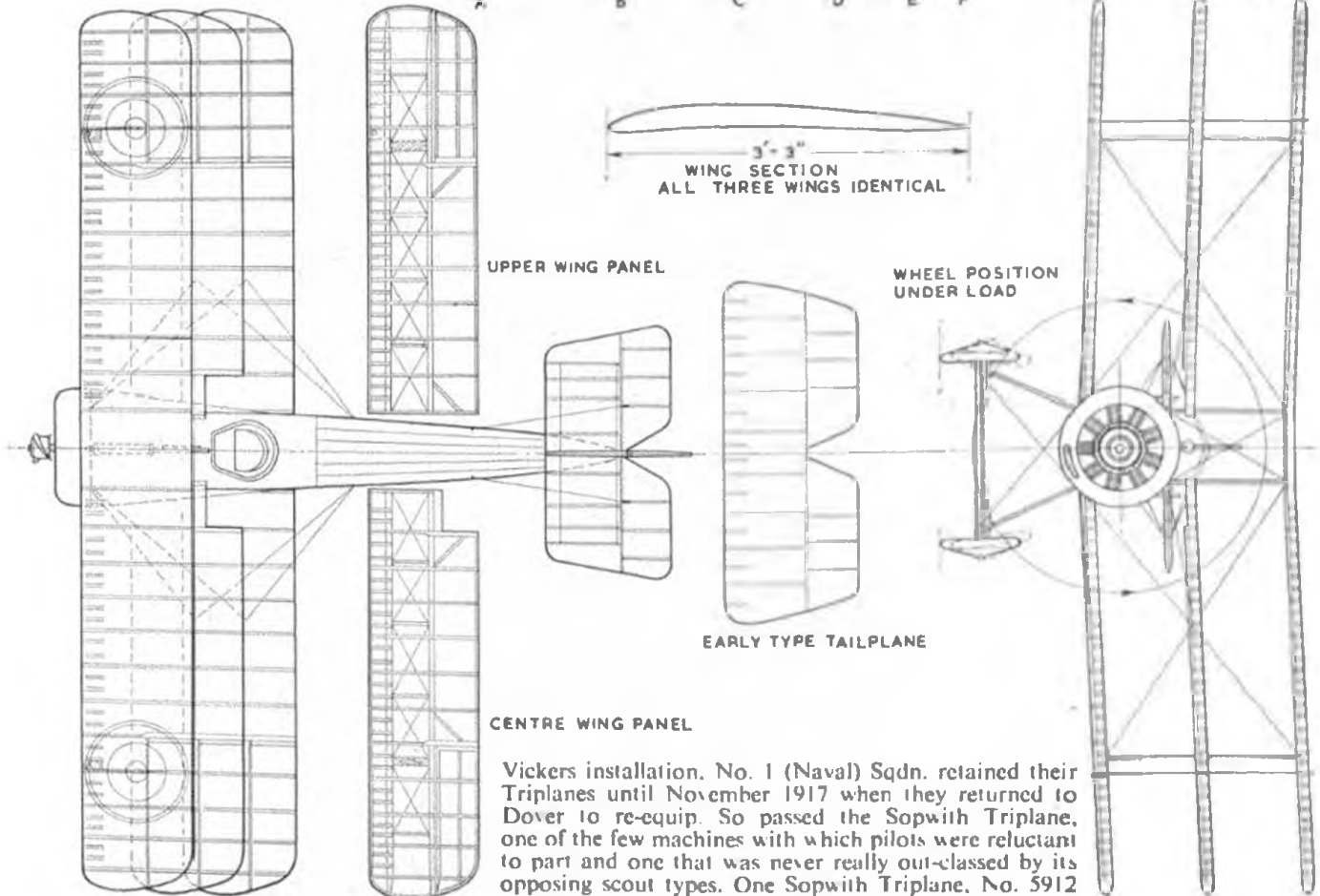


BASIC FUSELAGE FRAMEWORK AND CENTRE-SECTION STRUTS

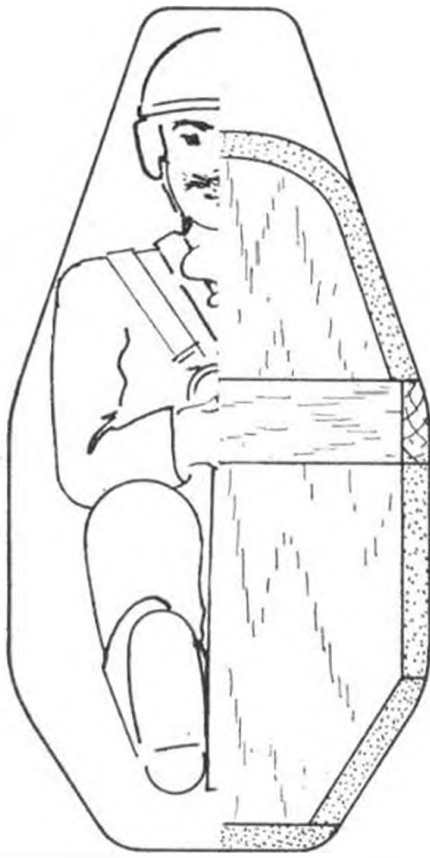


SPECIFICATION
 Power Plant: 110 h.p. Clerget rotary—
 later 130 h.p. Clerget.
 Span: 26 ft. 6 in. all wings.
 Chord: 3 ft. 3 in. all wings.
 Gap: 3 ft. 0 in. both.
 Length: 18 ft. 10 in.
 Dihedral: 2½ degrees.
 Speed: 116 m.p.h. at 6,500 ft.
 105 m.p.h. at 15,000 ft.
 Climb: 6,500 ft. in 6 min. 20 sec.
 10,000 ft. in 10 min. 30 sec.
 15,000 ft. in 19 min.
 Weights: Empty 993 lb. Loaded 1,415 lb.
 Armament: One fixed synchronised
 Vickers machine gun.
 N.B.—Weights and performance apply to
 130 h.p. Clerget type.

Serials:
 NS500 Prototype. N.504-N.524
 Sopwith
 N.541-543 } Clayton and
 N.5350-5389 } Shuttleworth.
 N.535-538 Clayton and Shuttleworth. This batch fitted twin machine-guns.
 N.5420-5494 Sopwith.
 N.5910-5912 Oakley.
 N.6290-6309 Sopwith.



Vickers installation. No. 1 (Naval) Sqdn. retained their Triplanes until November 1917 when they returned to Dover to re-equip. So passed the Sopwith Triplane, one of the few machines with which pilots were reluctant to part and one that was never really out-classed by its opposing scout types. One Sopwith Triplane, No. 5912 remains intact, kept by the Air Ministry and recently renovated by Hawkers at Dunsfold.



39sq.cm. Racer X-sections

(actual size)

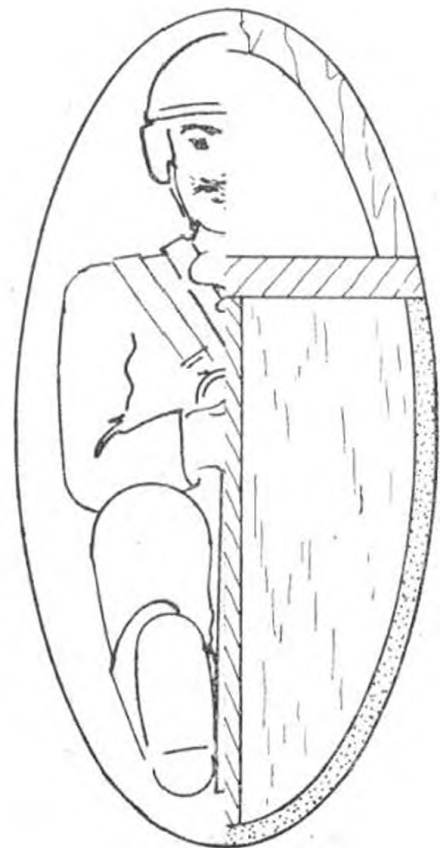
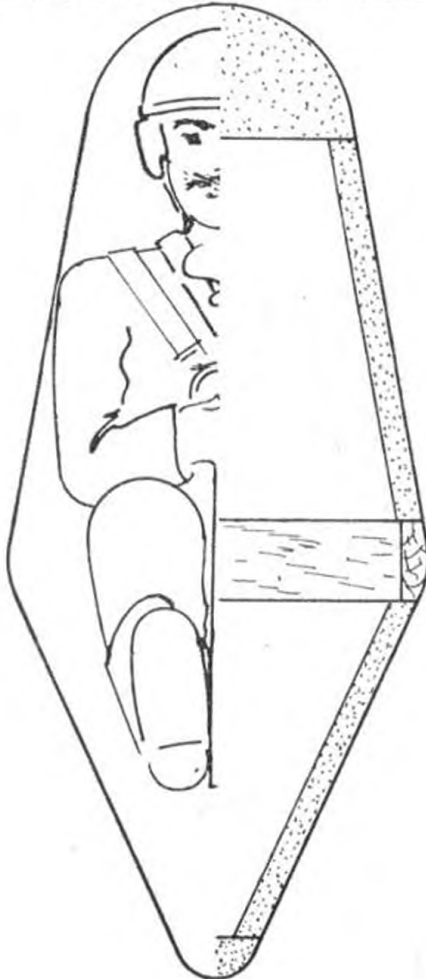
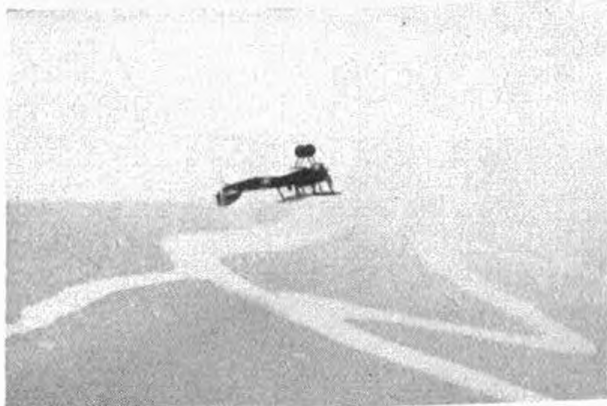


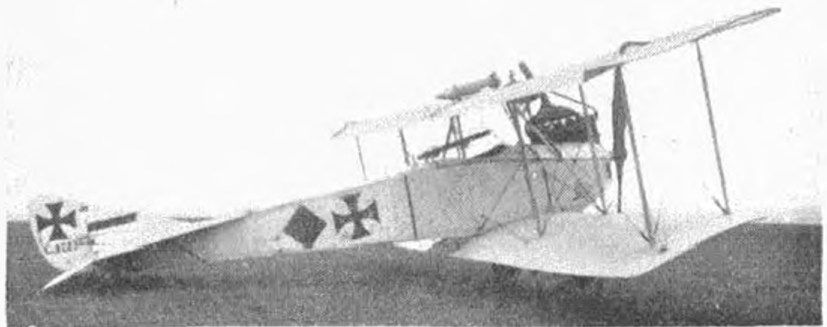
PHOTO ALBUM

More WWI types of unusual interest



Above, the Sopwith Pup endeared itself to all its pilots with its pleasant handling characteristics and these photographs of one in a jubilant mood is particularly happy as the Pup is caught at the top of a loop

Right, the photograph of the L.V.G. C II clearly shows the odd "step" in the trailing edges of the ailerons. This gave in a pronounced way the wash-out of aileron incidence that was so much favoured by German designers. On this captured machine, the gun on the observer's gun mounting is a Lewis. Note the natural finish on the fabric covering



Above, an interesting formation photograph showing three B.E.2c's led by a B.E.2c, or 2d. Study of the leading aircraft reveals the Flight Commander's streamers behind the rudder and wing Struts. These aircraft are being flown solo from the rear seat on a training exercise



The Sopwith Pup B'1755 was one of 150 numbered B 1701-B 1850 built by the Standard Motor Co. under Contract No. 87 A 461 This particular Pup was fitted with the 100 h.p. Gnome Monosoupape engine, and the photograph shows the cut-away portion of the engine cowling that characterised Pups with the Monosoupape. A really good photograph of a lesser known variant

Another view of the same Sopwith Pup provides added detail for aeromodellers making the 1/12th scale free flight model, originally published in AEROMODELLER for February 1960 and issued as Plan No. FSP 750 price 7s., including post. Note the full chord roundels at the wings with white outlining on the upper surfaces and fuselage sides but not for the underwing roundels. The cowling in this case is painted over and not polished as was customary and the serial number on the fin, black outlined with white is unusual for the type. Other points to note in these photographs are the window in the centre section

and the Chauvier shape airscrew



MODEL ON THE COVER



MISS F.A.I.



by Kjell Rosenlund

A genuine 100 m.p.h. plus, F.A.I. specification Team Racer for 2.5 c.c. engines, by the world famous flyer from Sweden

TOWARDS THE END OF 1958 I decided to design a fast, efficient, yet attractive team racer. The design was to represent a culmination of the experience gained in five years of team racing, since 1953.

The following spring saw the first flight of "Miss F.A.I.-I". Speeds of 95-99 m.p.h. were attained, but the machine was difficult to fly through sticky controls and the undercarriage was insufficiently rigid. A second prototype was built with appropriate modification to the controls and U/C, enhancing the handling qualities. At the same time wing thickness was reduced from 10 per cent. to 8 per cent., raising the airspeed to 103 m.p.h., though overheating on the motor on the last five laps of every tankful always reduced this to 93 m.p.h.

Magnesium engine pan

To eliminate the overheating a metal motor pan was introduced, when Miss F.A.I.-III was fully fledged. Large cooling area was considered to be a pre-requisite, and by the use of Magnesium-Electron alloy the weight was kept sufficiently low as to in no way impair the flying qualities. In this refined form, speeds of 102-104 m.p.h. were attained, the machine being extremely pleasant to fly, even in very windy weather.

During 1959 and 1960 "Miss F.A.I." was flown in 12 contests, reaching the final in 10, and achieved seven first places. Though the model was originally designed for the Oliver Tiger, it will not be difficult to modify it to take other engines. Details are given on the drawing for ETA 15 installation as an example of rear induction, and in this case the D. Nixon short plan is shown, but modellers should be careful to maintain the design C.G.

position with the change of equipment. D. Nixon is importing the lighter, longer Swedish pan, specially designed for Miss F.A.I.-III. Start the wing by cutting top and bottom sheets from 3/32 in. balsa, sanded to 5/64 in., and taper the hardwood spar as shown in front view. Add centre reinforcements from same material and cut away for bellcrank movement. Mark the rib positions on the inside of the bottom wing sheet, chamfer the edges all round (study plan) and lay it on the building board with bellcrank bolt in place, packing up the L.E. and T.E. to meet the camber of the ribs, raising the tips and ensuring the 1 mm. washout in each wing is correctly applied. This is to decrease drag. Use a slow cement or PVA glue and spar, ribs and leading edge in position. Add lead-out tubes. Make up the bellcrank assembly with flexible lead-outs wrapped back on themselves and securely soldered and fit on to pivot bolt. Insert the push rod which will be held in place by the top skin then prepare the end loops for control-line connection. Ensure that the control system here works freely and smoothly. Add top surface, then sand smooth to section ready for covering. The push-rod is protruding ready for connection to the elevator.

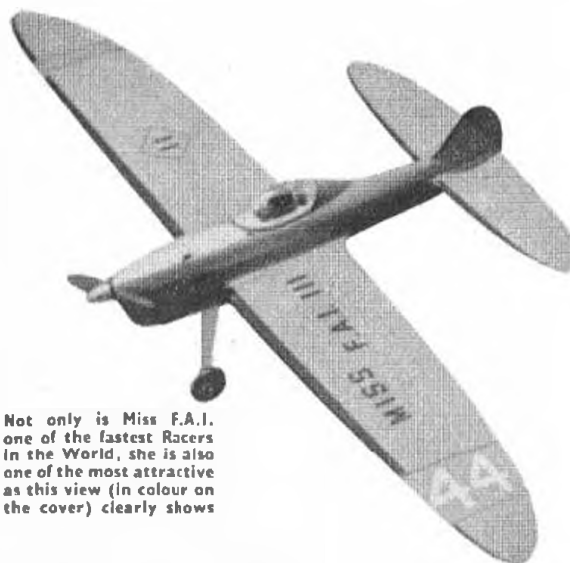
The motor pan must be hand finished and reworked to take the chosen engine with its 10 c.c. tank and counter-sunk to receive the retaining bolts, the original pan weighing only 1.8 oz. when finished and polished.

Cut out the 1/4 in. and laminated 1/16 in. balsa crutches (to make 5/16 in. depth), plywood and balsa layers, a little larger than plan size, glue together and shape to suit the pan. Shape the U/C from spring steel, harden

after bending. Make and drill the hardwood U/C anchor and bolt in position to F1. Bolt the U/C to the U/C anchor and secure the whole to the fuselage crutch, cementing F1 and bolting the U/C legs to the crutch by the top faces. Drill and centre tap the three retaining bolts and position on the crutch. All nuts to bolts are retained by solder locking.

Cement and bolt the wing to the crutch, cutting through wing for F1. F2 to F6 are now firmly glued to the crutch, and top and bottom stringers are positioned together with the tailskid assembly.

Cut out the tailplane and fin from 1/8 in. hard balsa. Fit the elevator making sure of a free hinge. Cement the tailplane to the crutch, link up the push rod to the elevator horn and secure by soldering a cup washer. Now cement the fin in position. Place pan in position and cut a 3/32 in. former, 5/64 in. less all round than rear face of finished pan. This makes the angled former at rear of cabin. Shape the balsa block for the internal U/C fairing and cement in position, butting on to F1. Shape the bottom cowl block and butt into F1, held in position by the U/C legs keyed into it. Position the lower fuselage sides also the front cowl. Plank the fuselage, sand to remove the irregularities from the fuselage contours. Shape and fit the soft cockpit block. Sand the whole model to give a fine smooth surface, then cover the whole model with Lightweight Modelspan, or silk. A fine, smooth, highly polished finish enhances the performance as well as appearance, but it should be



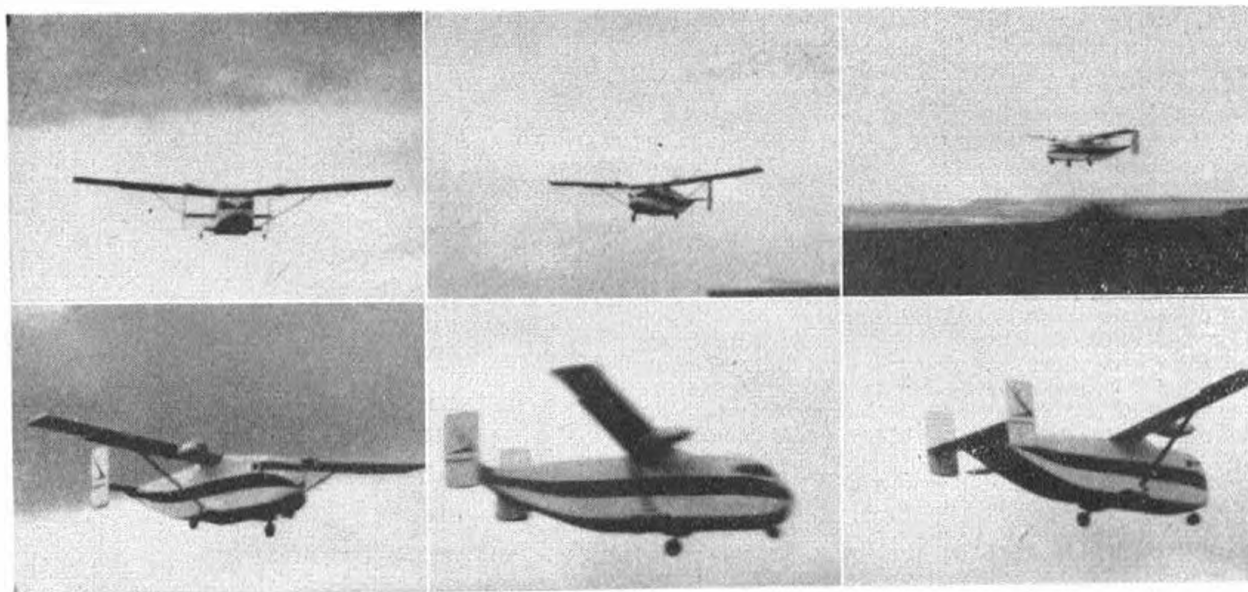
Not only is Miss F.A.I. one of the fastest Racers in the World, she is also one of the most attractive as this view (in colour on the cover) clearly shows

remembered that the weight of the machine should not be much more than 18 1/2 oz. Remember that although a good model is important to make a successful team, practice and routine are just as essential to success! Happy flying!!

FULL-SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE THROUGH A.P.S. AS CL 776 PRICE 5/6 INCLUDING POSTAGE

A complete list of building materials, and additional information is included on each full-size plan

For each set of plans for this kit is 5/6 including postage and packing.



Short SC.7 model

tested before fullsize aircraft flies

THE SC.7 "SKYVAN", a prototype of which is now under construction at Short's Light Aircraft Division, is expected to fly early next year. It is, in the designer's own words, "... the flying equivalent of the thirty cwt. van" and can carry three thousand pounds of almost anything. Designed primarily as a utility freighter, the SC.7 is, however, also capable of carrying up to sixteen passengers.

The one-tenth scale flying control line model shown in the accompanying photographs, was built by two draughtsmen in the design office of Short's Light Aircraft Division. Building was conducted in a somewhat leisurely fashion during lunch-hours, over a period of about nine months.

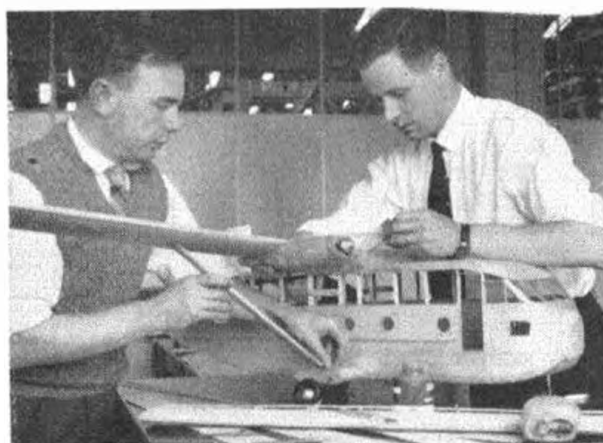
With a wing span of approximately 6 ft. 4 in. and weighing in the region of seven and a half pounds, including almost *two pounds of ballast*, the model is powered by two Fox 15 glow-plug engines. Some difficulty has been experienced in getting both engines to run at full r.p.m. because of severe vibration of the wings and nacelles due possibly to the pin jointing of wing and strut attachments, and which has been greatly eased by using rubber dampers at these joints.

In flight it was discovered that the model bears a remarkable dynamic similarity to the full scale aircraft as is illustrated by the table below:—

	1/10th Model	Simulating Full Scale	SC.7
Gross Weight (lb)	7.56	7560	7560
Wing loading (lb./ft)	2.02	20.3	20.3
Airspeed (kts) (1)	23	73	73
(2)	36	115	115
Power loading	15.12	4.8	9.7

Flights have been made both with and without the rear-loading door and no adverse effect has been observed. Initial tests were made using 8 in. by 4 in. nylon props but due to the relatively low speed at which the model flies it was decided to try 9 in. by 3 in. in order to make better use of available engine power.

It is hoped eventually to install radio control, which should widen the scope of flight testing considerably. This, however, depends largely upon a method of synchronisation being found for the twin engines.



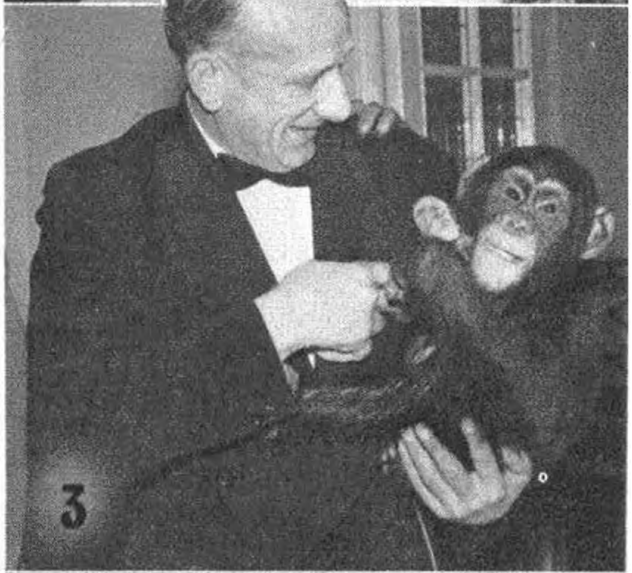


SMAE ANNUAL DINNER & PRIZEGIVING

NEW VENUE of the S.M.A.E. Annual Dinner and Prize-giving in the Members' Restaurant of the Zoological Society on December 12th was voted by all a great success. Record attendance of about 170 diners by no means taxed space or catering, while the reception was enlivened by the presence of some well-mannered residents, including a fine young chimpanzee and a handsome orang outan, in the care of attendants.

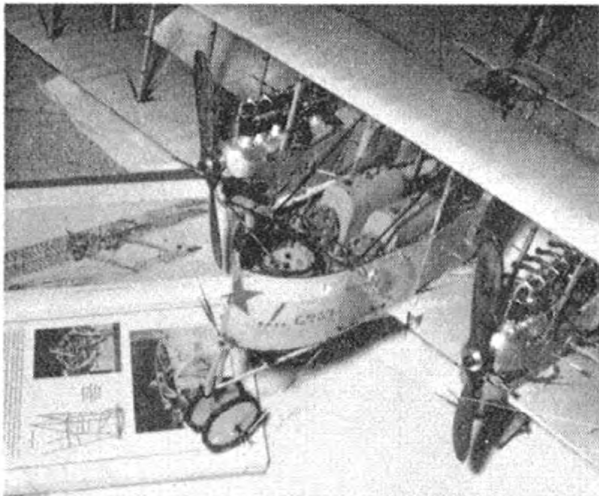
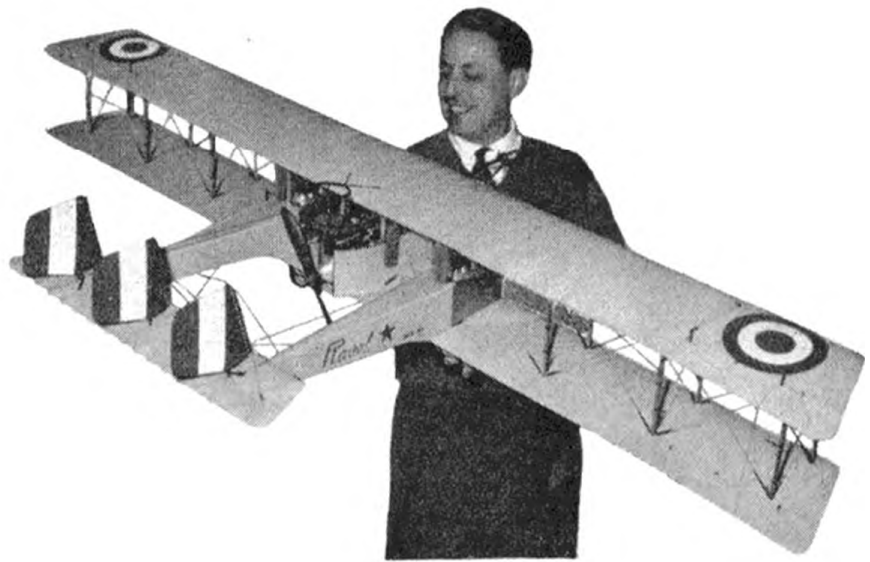
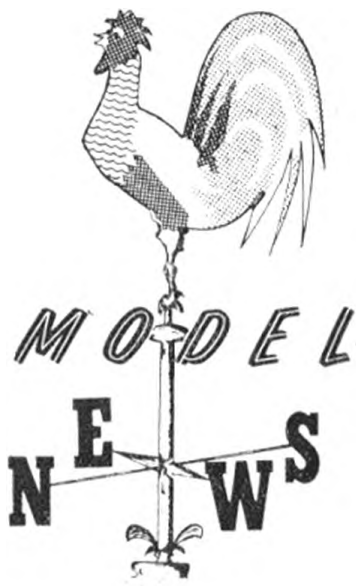
Guest of honour was Mr. Beverley S. Shenstone, M.A.Sc., F.R.Ae.S., F.C.A.I., A.F.I.A.S., Chief Engineer of British European Airways. Mr. Shenstone was a particularly happy choice of guest for his interests include an exhaustive knowledge of model aeronautical research, and he is currently engaged upon development of man-powered flight, where our particular methods are being so largely adopted. Mrs. Shenstone presented the now enormous selection of silverware and seemed to enter thoroughly into the lighthearted atmosphere of an aeromodelling function. Other distinguished guests included Sqdn.-Ldr. W. Drinkell, A.F.C., D.F.C., Secretary of the R.A.F. M.A.A., and representatives of the Air Ministry, Royal Aero Club and other bodies.

A most enjoyable evening was concluded by dancing to the music of the resident band. Next year's date is already set for November 25th, when merry-making is expected to go on for at least another hour—so make it a date!



1. B. S. Shenstone and Mrs. Shenstone with S.M.A.E. Chairman A. F. Houlberg at dinner. World Championships team trophy for Team Racing is the taller of 3 International "pots". 2. S.M.A.E. Secretary, Major Taylor takes lucky ticket 5919 from Mrs. Houlberg while Lottery promoter D. Posner enjoys the moment. This meant £100 for Mr. Sargent of Briar Grove, Leigh! 3. Up for election as Comp. Secy., Sid Smeed enjoys fascinating company at the reception. This magazine had the pleasure of arranging for some Zoological friends to be present. 4. B. Dowling and G. Dallimer collected the Pitcher & Thurston Cups, while Mr. & Mrs. J. Foxal congratulate with a glassware mug! 5. So that's the Farrow Shield says Mrs. Shenstone,—now take it away Leamington! 6. St. Albans reps with no less than 5 pots. Surely it was their season

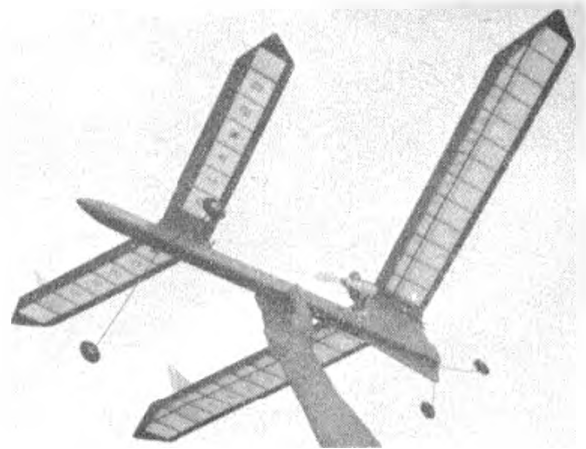




ABOUT THIS TIME of the year we get first news of Cesare Milani's project for the coming Season, and for 1961 he is certainly not going to disappoint his fans. Through the use of a remarkable publication, quite the best we have ever seen of its type, dealing with the history of the first 25 years of Caproni aircraft, Cesare has been able to construct a 1/12th Caproni type 36, three-engine bomber to a standard of detail which surpasses all of his previous models. The aircraft itself is a remarkable subject with its triple rudders, no fins, twin boom fuselage without a top and a hazardous rear gunner's position mounted over the pusher engine. In the case of the model, this engine is a dummy with a free-wheeling propeller. Two Merco 35 throttled engines are hidden within the other replicas of the other full size engines. The 73 in. span model is wire braced with four dozen miniature turnbuckles in true scale manner and elevator control operated by external cables just as on the full size. As can be seen in the close-up at left with the Caproni book in the background, the wealth of detail is immense.

During October, the R.A.F. held an Art and Handicrafts Exhibition in London. Among the entries was a very interesting control-line Northrop Raider from Flying Officer Dodds of Technical Training Command, as seen in the next picture. It only uses one engine, an E.D. 1.46 mounted in the nose with the other propellers free wheeling. Raiders are still in service in North and South America but are relatively little known here.

Also made by F/O Dodds was the prize winning Percival Mew Gull seen at bottom left. Fitted with an



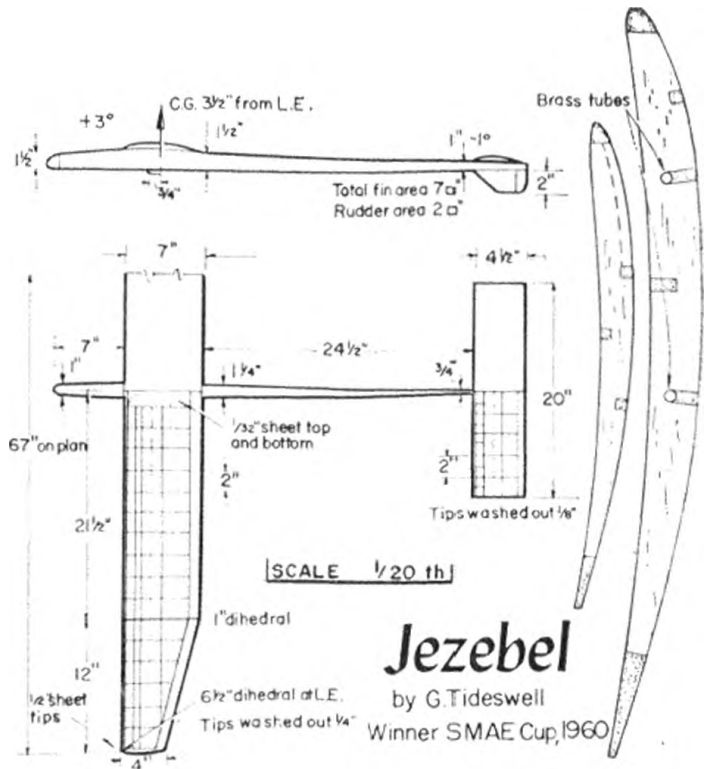
Elfin engine, this model is a little different to the usual Mew Gull in that it uses the pre-war cockpit canopy.

Oswald is the name for the Canard in the next picture and is the Mark III of this unusual design layout by R. Ray of Creswell, Notts. Powered by an A.M.15 with an 8 by 5 prop., the 55 in. model has an unusual four wheel undercarriage which allows good take off runs and added protection in hard landings. It also has four-fins, barely visible in the photo but mounted near each of the tips.

It is not very often that we reproduce a drawing in this feature but G. Tideswell's *Jezebel* A/2 glider, which was winner of the S.M.A.E. Cup last year is "lifted" from the Northern Area News sheet, as we feel it is about time we reproduced a British model in small 3-view form. *Jezebel* was an all weather model, in fact the wings were five years old and had survived two fuselages and four tail planes before final retirement.

The Spitfire XII below the drawing has an inverted 1 c.c. Heron diesel, is 28 inches span, covered with 1/32nd sheet balsa and fitted with a Pendulum controlled rudder. Made by R. H. Jones of Chorlton-cum-Hardy, it has proved to be a little difficult to trim and is dependent on the amount of power. In Mr. Jones' view it served to prove that a fast flying Spitfire in so small a size is not always a practical proposition with a scale tailplane. We should explain that the A.P.S. Spitfire XIV, although slightly smaller, is *not* nearly so sensitive, due to minor adjustment to the tail areas.

Shirley Jolly of Macclesfield is seen with her husband's Merco 35 powered stunter, an own design which obviously owes something to Tom's experience with the *Nobler*, and lastly we have the 1960 Scottish PAA Rally combat winner L. Blair with his E.D. 2.46 powered flying wing. Like the photographer, we too wonder how he managed to get his entry accepted without PAA on the wing, after all, one might expect a little recognition for the sponsors for this Annual meeting which helps to maintain the spirit of aeromodeling north of the border each year.





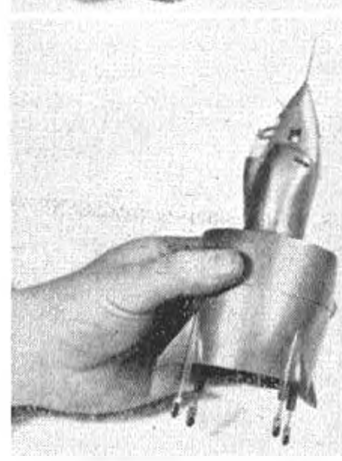
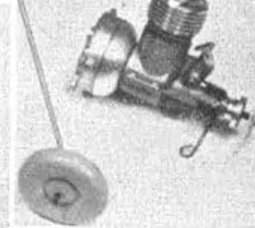
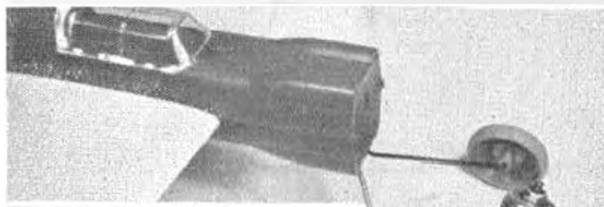
and is a fine model, provided with Silver City or U.S.A.A.F. markings. We chose to make it into one of the hardest-worked Dakotas in Britain and one which started life with Railway Air Services on May 21st, 1946, operating from Croydon to Renfrew and finished life rather unfortunately at the end of Elmdon runway, Birmingham, late last year on the very last B.E.A. Dakota flight. Colour scheme on our model is olive drab top surfaces, light blue undersides with the red centred Railway Air Services lettering over the windows, red and white emblems on rudder and nose and white registration letters. If readers want to ring the changes, G-AGZA had an identical colour scheme but perhaps not so fascinating a history.

A little advertisement in our December issue announced the introduction of Dennis Nixon's speed pans at 15/- each. Two versions are made, one to suit the Oliver and Rivers engines with a scoop near the front and the other for rear disc engines, such as the ETA 15 with twin scoops as can be seen in the photographs. These pans need very little re-working to bring them up to an almost chromium plate shine and are ideal for team racers. We understand that pans are also available without scoops for speed model application and as mentioned in connection with the Rosenlund team race design in this issue, D. Nixon is also importing the lightweight and larger Swedish pan in Magnesium.

We have the first example of a Japanese dethermalizer timer, shown one and a half times larger than life.

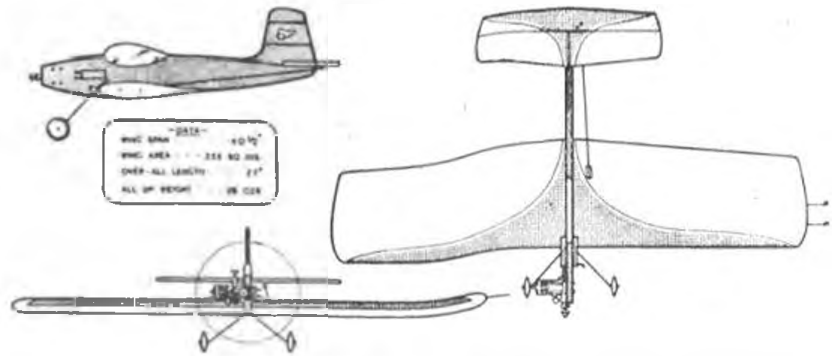


At left display in Preston through the co-operation of Harry Welch Ltd. Below for 79s. 6d. complete with new type D.C. Super Bantam, the Dux all plastic test pilot is remarkable value for money, flies well and can be looped



Engine test stand in new type package from Davies Charlton is a useful little present to suggest for Christmas time or why not the nearly packed control line handle above. O.K. Glow-trol insulated plug with ceramic liner is sold for 7s. 6d. by A. Mullett. Left the Heller Coleoptere and extreme left, Airfix Defiant

The latest kit in the Mercury range is the Cobra for 5 c.c. engines, extensively pre-fabricated and with a profile fuselage, it makes a good stunt trainer for it is easy to build and to fly



The well-balanced movement of our example runs for a regular six minutes every time. The general pattern of the timer will be recognisable to most contest modellers, no details of price or distribution are available as yet.

An enterprising dealer in Preston, Harry Welch Ltd. of George Street, had a neat tie-up with the local branch of the Provincial Building Society, which probably brought him a few more casual sales, whilst the window display was on in the Society window (see photographs). This type of co-operation between local traders is always beneficial and we would like to see more of it, especially when air films are being shown in the local cinema and a large number of interested people are made to realise that a local model club and an active and enterprising model shop exists.

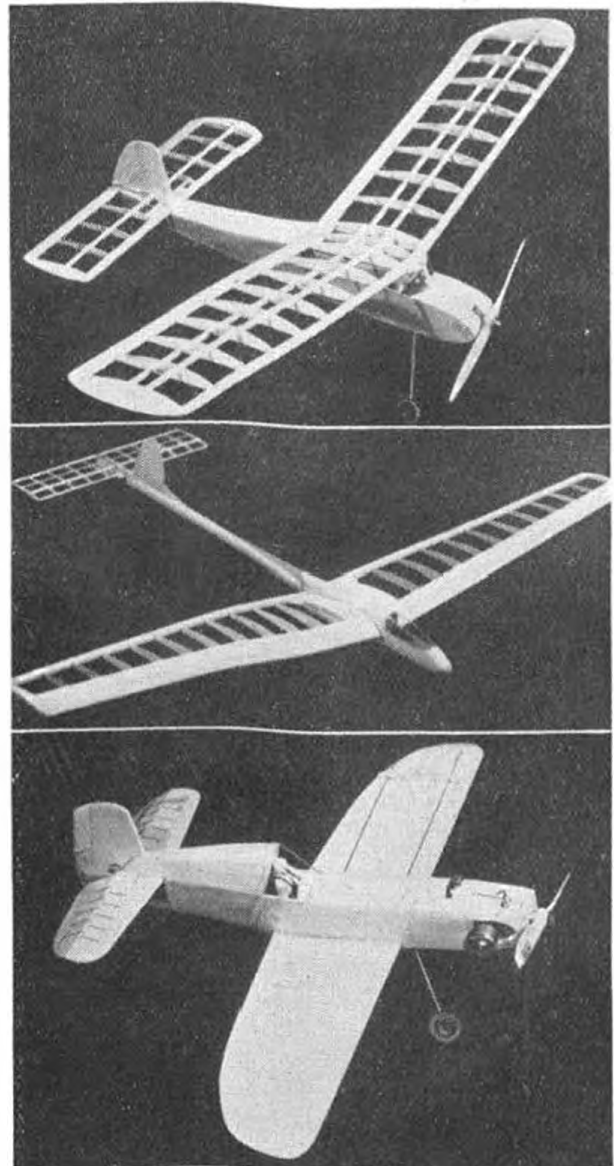
Electrolube Ltd. have something to offer to all modellers using miniature electric motors, in the form of a pair of dispensers, one green and one red, for cleaning and lubricating contacts and mechanisms. One can easily say that this lubricant is as advantageous to miniature electric motors as the introduction of Molybdenum disulphide additions had for ordinary oil lubricants in reciprocating engines, a couple of years ago. We have had ample opportunity of testing Electrolube and our friends on *Radio Control Models and Electronics* have many kind words to say for it in connection with radio control servos. For further details regarding local suppliers, contact Electrolube at 16 Berkeley Street, London, W.1.

It is not very often that we have the pleasure of announcing a price reduction, but that is the case with the *Jetex Atom 35* series kits from D. Sebel and Co. which have been reduced from 7/6 to 5/11.

Joy plastic enamel is now being introduced in a new 1/- economy size with 18 colours all intermixable, reasonably quick-drying and with good colour density. Colours are all the popular shades, all glossy and do not unfortunately include matt camouflage tones. They will, however, be found to be especially useful for painting plastic models of modern aircraft, cars, trains, etc.

Speaking of plastics. The fine range of French Heller kits are distributed by B. J. Ward Ltd. and include *Caravelle*, *Vautour*, *Fouga Magister*, *Parka*, *Etendard IV*, *Trident*, *Veronique* and *Coleoptere*, at two prices, 12/- and 14/3. We have had considerable pleasure in making up the unique *Coleoptere* which has a fully sprung mounted chassis with internal rubber band suspension! Electronic Developments announce a new fuel which has been added to their range, known as Universal Glow, it contains approximately 4 per cent. nitro paraffin and issued with a blue label at 3/6 per 10-oz. tin, it is to a new formula and should not be confused with the old glow mixture. Incidentally, the latest *Super Furies* are being fitted with fibre (Tufnol) discs replacing the moulded ones used hitherto.

Below, frameworks. Top, Frog Nimrod, a fine little model for .5 c.c., needs care when fitting engine bearers, otherwise very good. Centre, the Veron Phoenix, a classic kit. Bottom, Little Sioux a New Zealand sheet winged trainer, 18 in. span, completely pre-fabricated with an easy to read stage by stage plan. News of other New Zealand kits would be welcomed



CLUB NEWS

WHO, I WONDER lost a red and cream 40 in. Piper Super Cruiser from R.A.F. Rufforth during the Northern Gala? If he can identify the engine and give the registration number on the wing, I'll be pleased to put him in touch with the person looking after it.

What keeps a club together? Regular meetings on the field and during winter evenings at a clubroom, are essentials. In addition, the club that shows its wares always gains strength, and here I must congratulate Northwood for a fine display on their "Open Night". If anyone has the idea that this is an all *Razor Blade* combat group, he is sadly mistaken, for all types were on show for visitors to see on November 18th.

Yet it seems that some people are not satisfied. R/C enthusiasts in the same district are seeking new members for an all radio club. Why they don't become part of the already successful local club beats me. They would gain by association with other modellers, not only through the benefit of greater strength in numbers but also through local facilities and club entertainments. Breakaway moves by unhappy specialists are an unwelcome sign. I prefer not to see them.

East Midland

Mick Harmer of PETERBOROUGH M.F.C. flew a P.A.W. 149 *Dixielander* in the "Frog Senior" scoring 8:35 and Jim Wright flew in the C.M.A. Cup, (which he won last year), but returned only 7:30 this year. Club glider Cup has gone to Jim Wright, and Combat Cup to Mike Fountain.

GRANTHAM & D.M.A.S. Power Team placed 10th in the Keil Trophy. They congratulate Lincoln on beating them in the Area Knockout final. Mr. A. N. Percival returned 11:55 in the Frog Senior Cup and G. J. Percival placed third in the Frog Junior.

London

Chobham was waterlogged for the CROYDON & D.M.A.C. power gala on October 23rd and entries were rather low in number; those who did turn up had mud to contend with, but flying conditions were reasonable, with visibility 1-1½ miles. Messrs. Fuller, Young and West (all flying *Dixielanders*) reached the fly-off with Castell of Letchworth with an elliptical-surfaced ETA 15 original. Tony Young won the ¼A event with three 3:20 maximums flying a Thermal Hopper powered PAA-loader minus cargo and crew, in second place was Don Butler with another Thermal Hopper original with an underfin and 250 sq. ins. wing.

OPEN EVENT

- | | |
|--------------------------------|--------------|
| 1. J. West ... Brighton .. | 10:00 + 3:35 |
| 2. G. Fuller ... St. Albans .. | 10:00 + 3:04 |
| 3. Castell ... Letchworth .. | 10:00 + 2:06 |

¼A EVENT

- | | |
|-------------------------------|-------|
| 1. A. Young ... St. Albans .. | 10:00 |
| 2. D. Butler ... Surbiton .. | 9:15 |

COSMO A.C. recently held their fourth combat event this Season, Stan Nutchey winning a hard fought contest with a .19 Glow motor. On November 4th, the club enjoyed a clubroom showing of a fine collection of coloured slides presented by Jeff Selvidge and Ron James, and are looking forward to the next show with interest. Considerable interest is being shown in 1.5 c.c. speed, with some half dozen models already flying and more under construction. This Club wishes to remind non-members



who fly in Danson Park, that flying is not allowed there after 1 o'clock. This is a strict rule.

On Sunday October 30th, NORTHERN HEIGHTS M.F.C. flew the final round of the L.D.I.C.C. against St. Albans. Flying was spasmodic, most of the competitors making flights during breaks in the weather, with a win for N.H. by Ken Tansley (Power) 9:00, R. Chesterton (Rubber), 9:00, T. Challen (Glider), 4:02 giving a total of 22:02.

1960 has seen ST. ALBANS M.A.C. one of its greatest ambitions, the winning of the Plugge Cup. For years now they have been striving to win, and at long last perseverance (and some luck) has paid off. S.A. offer heartiest congratulations to the Northern Heights club on narrowly beating them in the L.D.I.C.C. final as just mentioned. Carl Simons is at present, building the biggest "*Dixielander*" yet, power being provided by an Anderson Spitfire (10 c.c.) converted for glow. New members are always welcome at the clubroom on Thursday evenings at 7.30 p.m., at 96a Victoria Street, St. Albans, Herts.

On November 6th and 13th the KENTON M.A.C. club held its annual end of season combat competition. After a very fast fought three-in-a-circle final G. Copeman emerged winner. A. Clipstone second and S. Bannister (junior member) third. At meetings lately the seniors have been giving talks on their particular interest in flying. M. Morris on "Microfilms", G. Copeman on tuning Oliver's, and A. Clipstone on combat tactics, etc. These have gone down very well and have been a help to the less experienced. More than half the Oliver's in the Club have now been reworked by G. Copeman and speeds are still on the up and up.

CRYSTAL PALACE M.A.C.'s problem of club rooms has been resolved and the club now meets at Cypress Road School, South Norwood, on Monday evenings. Any aeromodeller in the area interested in joining a progressive club will be welcome.

Mike Smith has brought off the "S.M.A.E. Double", in HAYES & D.M.A.C. by winning the area-centralised F.A.I. Team Race event. (He won the other at the Nats.) in 4:47. He was very closely followed by Graham Rivers with 4:47.3, whose model was consistently lapping at 104 m.p.h. The speed boys enjoyed themselves at Kenley on the occasion of the S.M.A.E. "Feeler" Speed Contest and would like to thank Dick Taylor, for organising same. The R. McGladdery J. Taylor entry took 2nd place in F.A.I. Class. Jim Baguley continued his

Northwood clubsters display a variety of interests from electric power to radio control

seasons run of successes at the Blackheath Gala by placing 2nd. in the Open Glider, with one of his larger breed. He has extended his collection with a new A/2 which is acclaimed by all as the best one ever. Laurie Harr put in 2 max's in the Bill White rubber, then set off on a 40 mile date with a roast dinner, arriving back at Chobham half an hour before the fly-off but was just 5 mins. too late to enter his last max. It took Josh Marshall just 1 hour to put in his 3 max's in the power class, with his River's 2.5 powered Vic Jays F.A.I. design, to take a part in the big fly-off.

The recently formed M.A.R.S. (Model Aircraft, Radio and Scale) CLUB was formed to enable Scale or radio modellers to specialise in either, or both. They have nine active members, all seniors and 7 (scale models under construction, plus about 5 actually flying, as well as 3 or 4 radio models, 2 of which are scales.

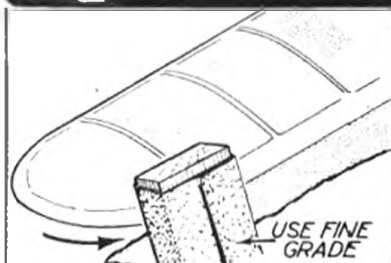
ESHER D.M.F.C. are endeavouring to start scale Team Racing. Aircraft must be true scale, the only deviation is an increase of 5 per cent. tail area if desired. The Engine must be fully cowled except for needle valve, compression screw and glowplug. A cooling slot and exhaust outlet are allowed. Engine size of up to 5 c.c. so that there will be 2.5 and 5 c.c. fighting it out together in the same circle. Tank size for 2.5 c.c. is 15 c.c. Tank size for 5 c.c. is 30 c.c. If spats are fitted they may be shortened (made shallower) to the centre line of the wheel. Wheels must be nearest to scale commercial size. The rake of the under-carriage may be changed but not the position. Wing rib depth may be decreased by 20 per cent. Pilot must be of scale size and period. Line length as in Class (B) Team Racing. First contest for scale "Team Racing" will be on April 9th, 1961, at Esher D.M.F.C.'s flying Ground, West End, Esher, Surrey. Pre-entry is a must.

NORTHWOOD R.C.C. has just commenced activities and will meet fortnightly on Fridays. A programme has been planned for the construction of both models and equipment with instruction for beginners. The first task will be to construct a Club Transmitter. Interested modellers in the Northwood-Pinner-Ruislip area are requested to contact the Secretary:— Telephone No. Pinner 9694.

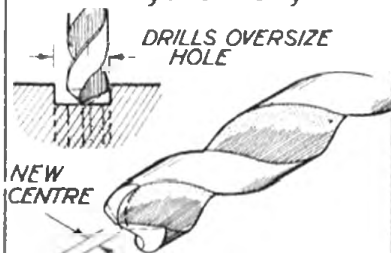
Northern

Recently, the Rat-Racing bug has claimed many victims amongst HALIFAX M.A.C. and there have been four ¼A Races and one

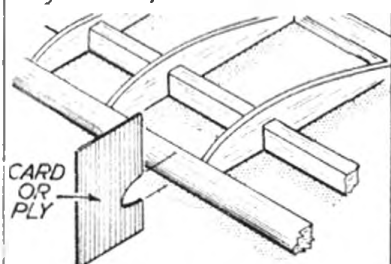
quickies



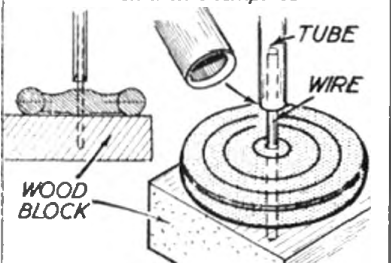
Sandpapering is a clean method of trimming tissue covering



Tip for drilling oversize hole is grind drill point off centre



Only true method of shaping L.E. is to check with a template



Use sharpened tube locating on wire to enlarge plastic wheel hub



Standard aircraft numerals shown width $\frac{5}{8}$ height thickness $\frac{1}{8}$ ht.

2.5 c.c. upwards race during the past month. Michael Fitzgerald won $\frac{1}{4}$ A with a Super Fury powered "Razorblade", which completed 200 laps in 12:12. During one of the $\frac{1}{4}$ A Rat Races, one of the team racers competing, spun out of control into the centre of the circle after a pit stop. With gay abandon, the pilot dropped the handle, chased after the model, and was immediately semi-garrotted as another competitor's lines wrapped around his neck!

CLAYTON M.A.C. at Newcastle under Lyme is a new club with twelve members and will welcome more.

Recent flying meetings in HUDDERSFIELD M.A.C. have produced some strange looking aircraft and with the postage stamp Dalton field filled with the usual odd assortment of bicycles, cars, dogs and children, it has been quite a feat to have upwards of three aircraft aloft together. The diminutive size of some models is indicated by a recent occurrence when a sparrow hawk made an attack on one of their number, without success. A new and, we hope, regular club feature is the Tuesday evening get together at the local model shop. This free and easy atmosphere gives the younger modeller a chance to do some communal modelling and the older bods have made a few experiments with petrol engines converted to glow. Being in a shopping area there are no complaints when engine testing takes place between 7.30 and 9.30 p.m.

HEANOR & D.M.A.C. was reformed last Christmas and now there are about 20 members. Flying takes place on Sunday mornings at Cadnor Welfare centre and anyone interested in the area is welcome to attend. Flying is predominantly C.L., although secretary Jim Bates and local model shop proprietor Weyland Tonoley fly radio-control.

On October 22nd, WHARFEDALE M.A.C. entertained the young patients of the Wharfedale Children's Hospital, with demonstrations of combat and C.L. aerobatics. The following day four members pedal cycled the 30 miles to R.A.F. Rufforth to test $\frac{1}{4}$ A racers. During the day junior Mick Hughes ably assisted by J. Horton, returned a time of 5:05 for the 100 laps on a solo run using Frog 150R powered model. On November 6th Wharfedale club members organised the 1,000 lap team race held at R.A.F. Rufforth and which is reported in "Round the Rallies". Wharfedale was strongly represented at the annual S.M.A.E. dinner in London on November 12th, and were surprised to see so few Northern clubs in attendance. An interesting statistic from the 1960 result sheets is that Wharfedale teamsters were placed in one or more events in 11 out of 13 meetings attended this year. These include 9—1st places, 7—2nds, 9—3rds and 3—4ths. Incidentally, top marks again to the NORTHERN AREA for the best newsheet issued by any area. Those who don't see it are missing something.

North Western

POULTON AND D.M.A.C. has been reformed and continues to meet on alternate Fridays at 8 p.m. It has just acquired the use of new flying ground—lucky them.

Rejuvenation of SHARSTON D.M.S. has won back some of the old members, and attracted new ones as well. E. Hellwell and P. Massey went to the last Stretton meeting, where P. Massey achieved a 30-minute flight with his Frog "Tutor". They both reported a good day's flying. I should think so too, with a flight like that! Among models under construction is J. Collins' S.E. 5A, which is 1/6th full size.

The past month has seen a great increase in R.C. activity in WIGAN M.A.C. Ted Wilding's MERCO powered, Metz equipped Explorer is not yet fully trimmed. Ted uses a rising compound, one one-channel for rudder and motor control with the remaining two operating an E.D. Servo for elevator control. Works well too. The scare of the month came when Harold Lea out flying his "Livewire" trainer, took it high over Ted Wilding's house, close by the flying field.

When his engine cut, the model spiralled down to within a few feet of the ground, flew across the lawn and straight through a half-inch matchboard panel in the conservatory door, the impact shattering the glass panel!

CHESTERFIELD SKYLINERS M.A.C. went to R.A.F. Wigsley on October 16th, but unfortunately no one was able to enter competitions. The club has found the ideal means of transport to these meetings, a 12-seat self-drive mini-bus. A one design contest using the K.K. conquest will be held in the new year, held first for Concours d'Elegance and then flying.

OLDHAM AND D.M.A.C. has been granted permission to fly on Bell Field's again, which is now a school sports ground. Although the area is a little small for F.F. it will be perfect for control-line models, especially team racers. The club can boast good attendances at the flying field on Sundays, when ever bad weather cannot dampen the spirit of the lads. Stunt and combat models are by far the most popular.

LIVERPOOL AND D.M.A.C. recently held their A.G.M. which went off very smoothly (they must be strong silent men up there in Liverpool). They even have a Foreign Minister in the person of Sergio Savini—who is also Treasurer. Five club members took part in the 1960 North Western Area Rootes Trophy event, doing well in Power and Rubber, but not so well in glider. A full programme is planned for the coming winter months, including a film show and several talks by members. Meetings are held every Friday in the Common Hall, Hackins Hey, off Dale Street and flying sessions at Burscough aerodrome on Sundays. New members are welcome.

Yeoman Dixielanders are well to the fore in WALLASEY M.A.C. and in the Rootes Trophy junior H. Worthington gave the club its top power time, dropping only 57 seconds in 12 minutes. Second power man, S. Hutton, flying his old PAW faithful, totalled 8:10 on three flights only. Lack of rubber fliers spoil what could have been a high placing. Two weeks previously S. Hutton won the club glider cup from J. Hannay, who was flying his latest calm weather A.2.

Southern

LEATHERHEAD AND D.M.A.C. are considering experimenting with Monoline for C.L. speed, and interest in engine speed control for C.L. is also making itself felt. The Club has successfully developed a silencer for the Frog 500. (At least someone has a conscience over the noise problem!)

Several SOUTHAMPTON M.A.C. members went to Beaulieu on October 16th for the Frog Senior and C.M.A. events. N. Wooley making 7:45 in the C.M.A. Cup. The following Sunday, the club held an A and $\frac{1}{4}$ A combat event. Entries surprised even the most optimistic, unfortunately, the pessimists were right about the standard of flying which was poor; showing a need for plenty of practice in handling motors. The old story!

BRIGHTON AND D.M.A.C. used the Frog Senior Trophy to decide the winner of their own Charles Cup on October 16th. This was won by John West. On October 23rd they visited the Croydon Gala, where John West won Open Power and Fred Boxall took third place in the Bill White Cup at Blackheath on October 30th with 5:5. John West and Fred Boxall also tied for the Arthur Mullett Rose Bowl on November 6th.

CHICHESTER AND D.M.A.C. held a barbecue on Saturday, October 29th, which was attended by 50 members and friends of the Horsham, E. Grinstead, Horley, Crawley, Worthing, Lancing and Chichester clubs. Even more enjoyable was the day's flying which followed the day after, some of the members of the visiting clubs camping out overnight on the flying field. Winner of the contests were: Team Power (1) R. Monester (Dixielander); (2) J. Potter (Calypso); (3) R. Hackett (Calypso), all of Chichester.

Team Glider: (1) A. Puzey (A.P.S. *Sans Egal*); (2) R. Boscall (A.P.S. *Topscore*), again of Chichester. R/C spot landing: R. Briggs, Chichester.

The barbecue was held in two marquees on the Saturday night, and after a mammoth feed—half a chicken, six hot-dogs, shepherds pie, baked potatoes and beer, all for 5s. each—the gluttons fell into an uneasy sleep! As is usual with U.S.A.C. Comps., the Free Flight events were held in the morning and Combat and R/C in the afternoon. This ensures a plentiful supply of Timekeepers—the C/L types timing F/F and vice versa. All events ran very smoothly, so much so that all competitions were finalised by 4 p.m.—including Combat! One might call it a *meeting*!! Clubs not members of the U.S.A.C., who would like to join this flourishing and active group, should contact Mr. D. Burgess, "The New Cottage", Selsfield Place, Nr. East Grinstead, Sussex. At the same meeting L. Fuzzard of E. GRINSTEAD lost his Eureka in a classic example of how to tree a model. Into the top of the highest and most unclimbable tree downwind. The only mistake made was in the choice of tree, it was *inside* the circuit and not, like the rest in the group, in people's gardens.

Contest mindedness is growing in HORLEY M.A.C., and they too enjoyed the U.S.A.C. competition on October 30th at Goodwood. Also at Goodwood from HORLEY M.A.C. Mike Heavens, stating that he would make a short line test flight, towed his *Caprice* up to an 8 mins. + flight and only just got it back in time for the comp. Combat seems to be quite an epidemic at the moment and *Razor Blades* are the most common armament. Members with these dangerous weapons include Pete Dartons, Silver Arrow version, Ron Dwights, P.A.W. 2.49. Peter Greens, Oliver Tiger and last and most probably least, D. P. Berkeley's *Racer* version.

A hasty repair session paid dividends for the REIGATE AND D.M.A.C., when Mike Endacott and Frank Knowles journeyed to Ivinghoe for the Cambridge Clubs' slope soaring meeting. Flights were made to a nominated 5-minutes duration with bonus for spot landing. Frank Knowles exceeded the time limit by only 2½ seconds and was nearest to the spot. No one in fact hit it.

East Anglia

ANGLIA M.F.C. took part in their area inter-club contest and decentralised Frog Senior and C.M.A. cups on October 16th. The weather was remarkably good and M. Willmore topped the glider entry to place 9th in the final results. In the Frog Senior, D. Roche scored three maxs. only to over-run in fly-off.

For the last contest of the season a number of the lads made the trip to Chobham for the Blackheath Gala, where up and coming junior R. Humphries, won the glider event flying his O/D A/2. D. Roche was one of the many to score three maxs. in F/F power, but was only able to return 3:38 for the fly-off.

South Midland

NORTHAMPTON AND WELLINGBOROUGH held their Annual Comp. on Sunday, October 30th, with a win for Wellingborough by 14 points to 10 points. Prof. Payne won the Power for Northampton with an E.D. 246 power *Dixielander*, with Longstaff second, and Mayes third for Wellingborough. Rubber was won by Mike

Winners at Northwood Club Concours D'Elegance were:—R. Brice (Glider) M. Penniston (Kombat Kapers), M. O. Maddock (Sabre Stunt). Best Junior was B. East (Combat Wing) I. Thomas (Free flight cabin) and P. Bracken (Scale Fokker Dr. 1).



Evatt using his own design, a model that should do well next year. Wellingborough took first in Glider and first, second and third in Combat.

Midland

MARKET HARBOROUGH M.A.C. was reformed during the late summer, total membership now being near forty. Flying activities are held at the Dingley Road field by kind permission of a farmer. A small ex-W.D. hut is in the course of being erected on the field for repairs, shelter, snacks, etc. (Now that is club activity!) Recently they held a novel "stipulated time" contest, open to all classes in which competitors were asked to declare intended duration and then fly as near to that time as possible.

November 20th saw a return bout of a combat competition with Macclesfield Club at LEICESTER M.A.C.'s ground. Final results being a win for Macclesfield—out-right winner Snape with J. Braisby of Leicester second, and third Gig Eifflaender of Macclesfield, nearly all of the competitors being bogged down and freely spattered with mud. The competition narrowly escaped cancellation, due to rumours of Foot and Mouth disease near one flying ground and flooding at two other possible grounds, but thanks to the eleventh hour decision of two committee members, Jack Marsh and Ron Pepper, another ground was made available to us.

South Eastern

RAMSGATE AND D.M.A.C. intend to hold a film show on February 18th, 1961, at the Ambassadeurs Restaurant, Turner Street, Ramsgate, for the benefit of members, friends and any members of the public who are interested. All will be most welcome.

TUNBRIDGE WELLS M.A.C. has won the R.A.F.A. Shield for the third year running. Results: Tun. Wells 250, East Grinstead 65, Sevenoaks 50, Leatherhead 20. The loss of our local C/L field has made things difficult for the T/R enthusiasts. P. Trussler won the club's first combat competition and J. Whittaker the Hill and Champion cups. Long deserved success came to A. Paige, who reached the fly-off at the South Coast Gala with his O/D rubber lightweight.

NORTH KENT NOMADS M.C. are now working on the preparations for their Annual Dinner and Prize Giving, while the social secretary, Alan Smith, is busy organising indoor entertainment. Once again, there is much activity on the radio control side and the Club, feel fortunate in having Eric Hook in their midst, whose knowledge of electronics is found to be extremely useful.

At one of the ISLE OF THANET M.A.C. Sunday flying sessions, the club Barnard/Allan T/R team finished the F.A.I. 10 km. distance in 4:27. Engine was an ETA 15 which did 58 laps per tank! Barnard/Allan reached the semi-final at the South Coast Gala and look forward to more success next season.

Wales

Good flying weather has coincided with all recent CARDIFF M.A.C. competition days and some fine flying has resulted. At Pengam on October 23rd, A. Hill defeated A. Jones in team race, but these two tied in speed, both with 67 m.p.h. (Coo—that's not speed). The week before, glider men went to Llangynidr for the C.M.A. cup. No spectacular times were recorded, but four men made over seven minutes. On Sunday, October 30th, PORT TALBOT M.A.C. were visitors to the Cardiff home ground at Tre Lai Park, Cardiff. After an enjoyable competition in team glider (four men teams and 4 x 2 mins.) Cardiff had scored 1.670 seconds of their possible 1,980 and beat their rivals by 146 secs. Top men for Port Talbot: J. H. Bailey 436 secs. and V. Lethaby 431 secs. For Cardiff R. Flaherty 477 secs. and J. H. Phillips 465 secs.

Scotland

On September 25th KIRKCALDY M.A.C. ran a combat and rat-racing meeting, the latter event producing some weird flying (?) machines. Due to lack of time, the combat prize (75 per cent. of the entry money) had to be shared among R. Craig and I. Carson of Glasgow Hornets, G. Bell of Dundee, P. Leadburgh and A. Smith of Perth and D. McQuillen and D. McRavie of Kirkcaldy. The rat-race was won by R. Petterson of Perth. Members who went to Lanark to compete in the Caledonia Shield contest (team rubber, Power and Glider) returned triumphant. The fact that they also ran the contest (in the absence of whoever was supposed to) had, they insist, nothing to do with it. Club champion for 1960 is Sandy Morrisons, an easy winner.

Ireland

A recent IA combat event run by the BELFAST M.A.C. evoked strong competition. The event was won by Graham Dickson, who defeated Paul Wilson in the final. E.D. Furies were much in evidence in this contest, fastest models doing about 70 m.p.h. on



November 5th, the club enjoyed 4A TR and 3.5 combat events. Best heat times in 4A TR were 6.06 and 6.09 by P. Ogle of Downpatrick, but he failed to repeat this performance in the final. E.D. Super Furries powered all the finalists. Some mono-wheel models were in evidence. 3.5 Combat standards were high, but lack of moonlight held up the final, which has yet to be flown between Graham Dickson and Maurice Dovy. Peter Valentine has built the Club's first R.C. model, a scaled-down R6B for Taifun Hurricane, which should be quite lively. Radio is Unitone Rx and Tx.

R.A.F.

Results of the R.A.F. M.A.A. Open Glider Postal contest, flown off on Sunday, October 30th, 1960:—
 1. Plt.-Off. Byrd Melksham 8:38
 2. Flt.-Lt. Coles Oakington 7:08
 3. S.T. Anderton Swanton Morley 6:38
 First prize was a Cox Olympic.
 The A.G.M. will be held on Friday, December 16th, 1960, at Air Ministry. Club ties are now available price 12s. 6d. It was not possible to hold the M.E.A.F. contest this year, but the prospects for 1961 are most favourable. Date for this will probably be the first week in September at R.A.F. Akrotiri, with a U.K. Team in attendance. A contest for both F.F. and C.L. was held at Cranwell on Sunday, December 4th, open also to local clubs—good show!

THE CLUBMAN.

For Your Diary

January 15th
 East Lanes. Winter Rally, open F.F. R/C, Chuck Glider, Walton Spire, Nelson.
January 22nd
 Northern Area Winter Rally. Open Rubber, Open Power, Open Glider, Team Race 4A, F.A.I. and B. R.C.

single-channel, Chuck Glider, 1/2-hour Scramble. Pre-entry 1s. 6d. to P. Hollis, 15 Sitwell Grove, Cranbrook Avenue, York.

Secretarial Changes

Chesterfield Skyliners M.A.C.—D. Mellors, 72 Newbold Buck Lane, Chesterfield, Derbyshire.
East Grinstead.—J. P. Berkeley, "Meadows End", 10 Kingsley Road, Horley, Surrey.
Halifax M.A.C.—G. Spencer Esq., 36 Haigh Street, Pellon Lane, Halifax.

New Clubs

Clayton M.A.C., N. W. Jinks, 52 Maple Avenue, Talke, Stoke-on-Trent, Staffs.
Heanor & D.M.A.C., Mr. Roe, 32 Lenison Avenue, Losear, Derbyshire.
Northwood Radio Control Club, J. Webb, 84 Tolearne Drive, Pinner, Middlesex.
Aylesford Papermills M.F.C., V. J. Warner, 42 Fernleigh Rise, Ditton, Nr. Maidstone.
Peterlee D.M.A.C., F. Barlett, 8 Elm Terrace, Horden.
Wellington Grammar School A.C., J. H. Speller, c/o Wellington Grammar School, Golf Links Lane, Wellington, Salop.

S.M.A.F. Results

Farrow Shield
Team Rubber (16 clubs entered) Area Centralised October 9th, 1960.
 1. Leamington 34:41 4. St. Albans 25:24
 2. Norwich 30:08 5. Stevenage 24:46
 3. Essex ... 29:19 6. Baildon 16:42
Individual scores
 1. Pressnell M. Essex ... 10:09
 2. Wiggins E. Leamington ... 9:55
 3. Anderton A. Norwich ... 9:42
 4. Hains M. J. Stevenage ... 9:21
 5. Barnacle E. Leamington ... 9:15
 6. Willis N. Essex ... 8:56

Plugge Cup—Final Placings

1. St. Albans 1336.88 pts.
 2. Baildon 1222.927 pts.
 3. Essex 1201.018 pts.
Team Racing—Area Centralised October 9th, 1960

4A 22 entries
 1. Cornell G. Croydon 10:06.2
 2. Basset D. M. Ecurie End 11:27.5
 3. Feilder G. Croydon 12:23.3
F.A.I. 28 entries
 1. Smith N. Hayes 4:47.2
 2. Rivers G. Hayes 4:47.8
 3. Long K. Wharfedale 4:55
B. 13 entries
 1. Steward J. West Essex 7:08.6
 Taylor
 2. Drewell P. West Essex 8:26.6
 3. Harris B. Prestwick 8:49

Frog Senior Cup

U.R. Power (130 entries, 20 in fly-off) De-centralised, October 16th, 1960
 1. Smith T. W. Eng. Elec. 12:00 + 8:10
 2. Carter A. Liverpool 12:00 + 7:45
 3. Knight D. St. Albans 12:00 + 7:29
 4. Buskell P. Surbiton 12:00 + 7:00
 5. Ambrose N. Ipswich 12:00 + 6:11
 6. Castell G. Letchworth 12:00 + 5:50
Senior Champion
 J. O'Donnell, Whitefield. Total time 206 mins 2 secs.
Junior Champion
 J. Birks, Chorlton. Total time 62 mins. 18 secs.

C.M.A. Cup

U.R. Glider (166 entries de-centralised October 16th, 1960)
 1. Allsop C. M. C.M. 9:00 + 6:35
 2. Crisp A. J. Abingdon 9:00 + 6:06
 3. Barr L. Hayes 9:00 + 3:00
 4. Rabjohns Southern 9:00 + 2:20
 G. W. Cross
 5. Wyatt C. Ashton 8:58
 6. Trevell B. C.M. 8:54

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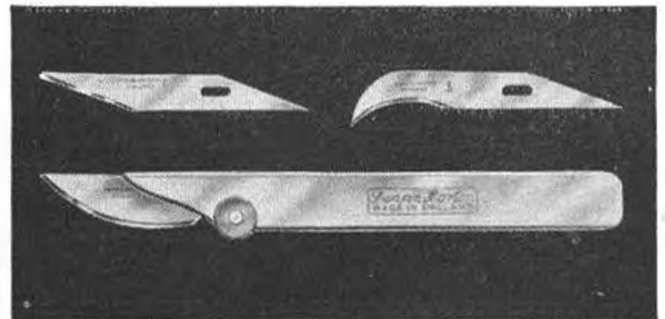
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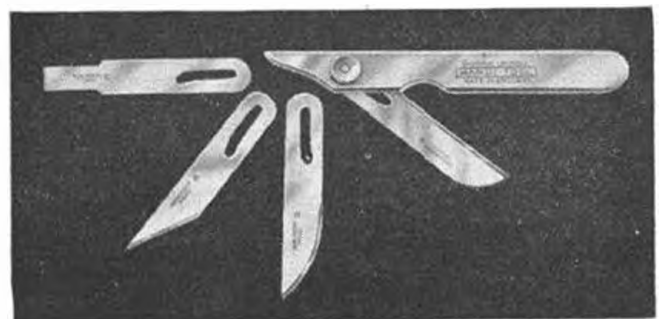
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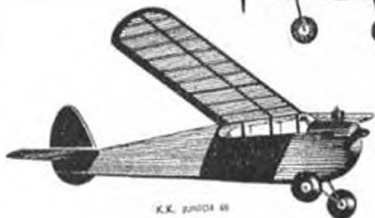
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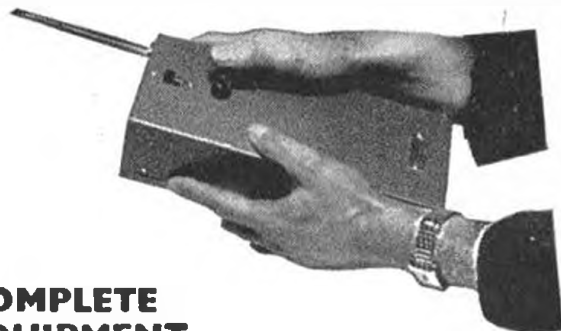


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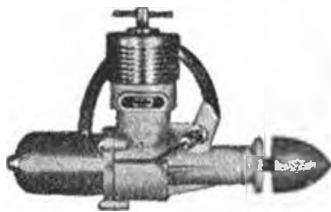


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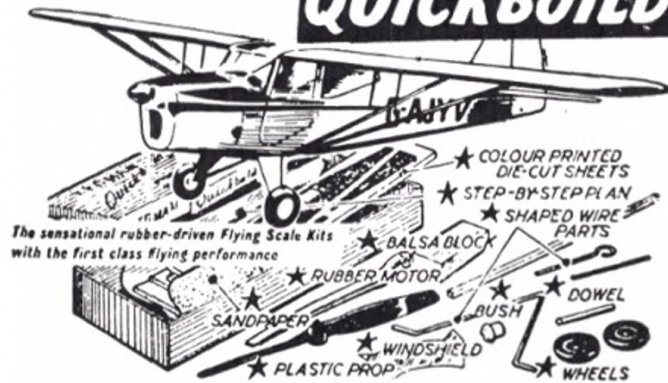
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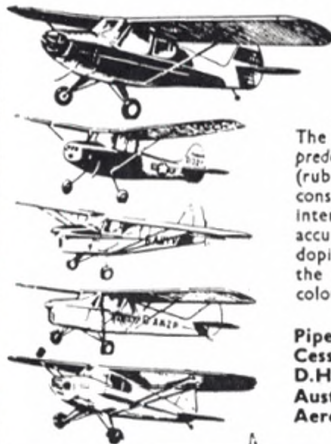


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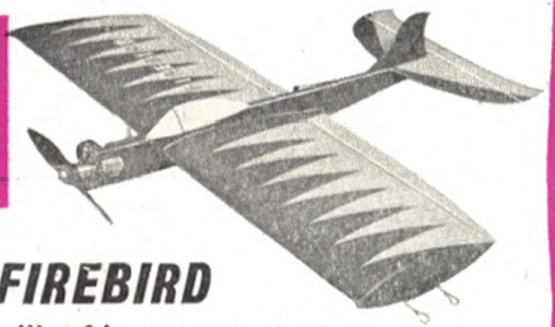
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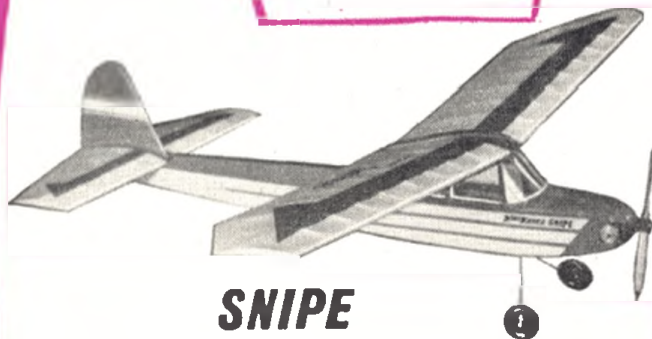
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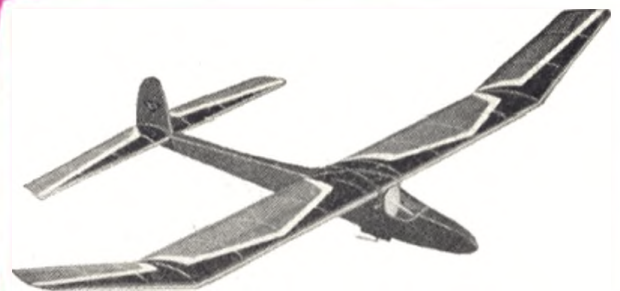
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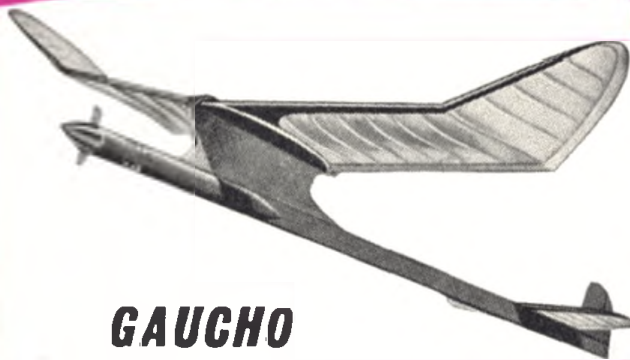
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