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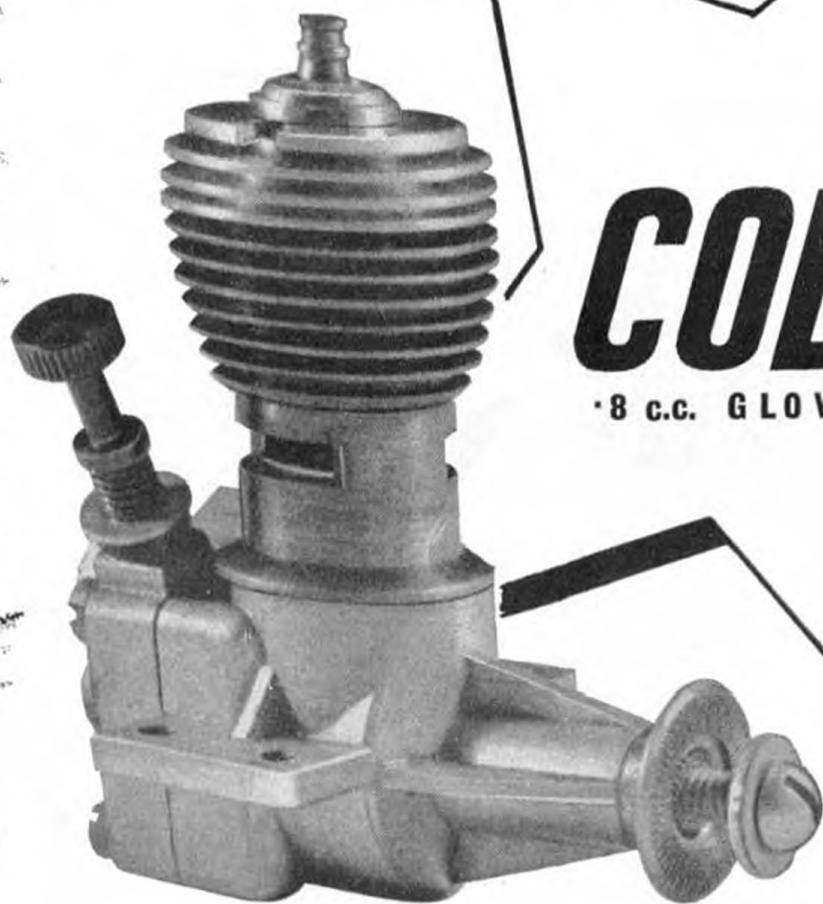
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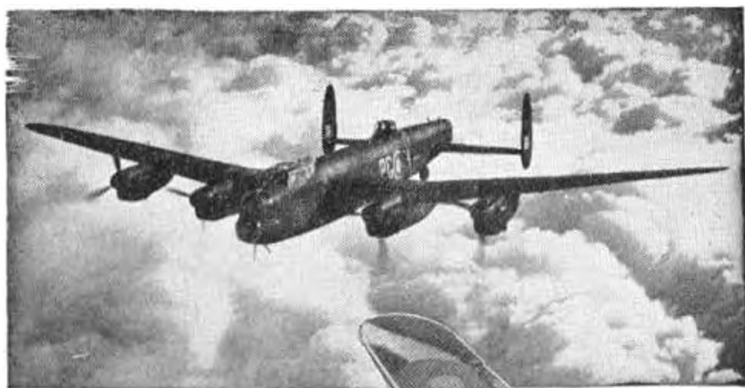


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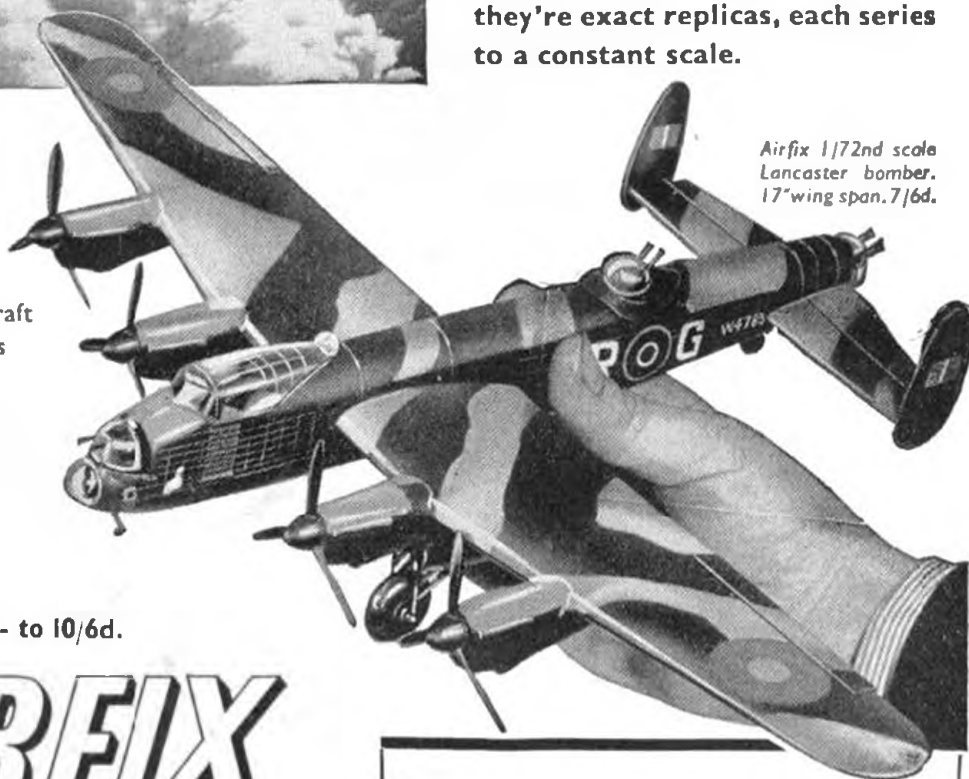
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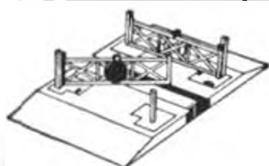
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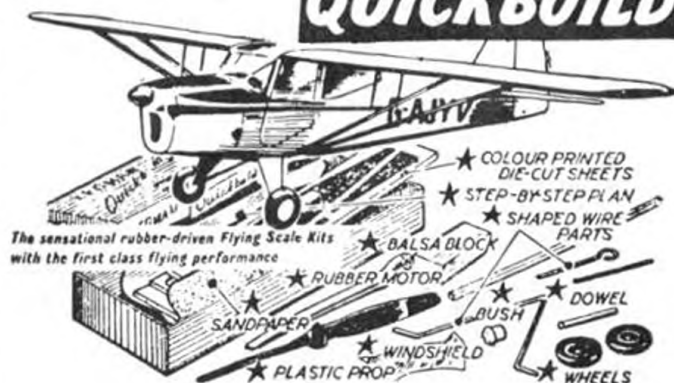
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The choice of the champions . . .

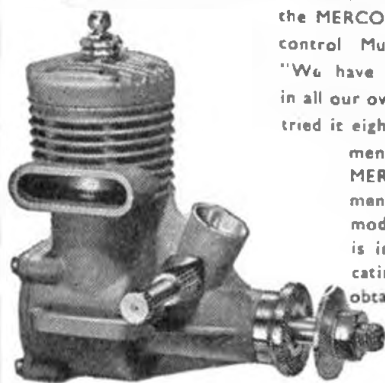
Read below the opinion of British Champion Ray Brown, winner this season of the Control-Line Stunt events at the following rallies: High Wycombe; British Team Trials; Gold Trophy (Brit. Nats.); Enfield Rally; Ashford Rally; Sidcup Rally.

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For over 50 years Castrol lubricants have been renowned for their unflinching reliability in conditions of high stress. More world's records have been established on Castrol than any other oil and what is true of the world of motoring is equally true of the world of aeromodelling. Knowledgeable competitors entering for contests demanding the utmost from their engines, generally prefer to blend their own fuels to formulae especially suited to their own "re-worked" motors. It is significant that they universally employ CASTROL "M" as their choice of lubricating oil. Amongst commercial fuels Mercury blends are the best you can buy because they, too, exclusively use Castrol and the castor-based formulae employ only Castrol M, blended with the purest obtainable other ingredients.

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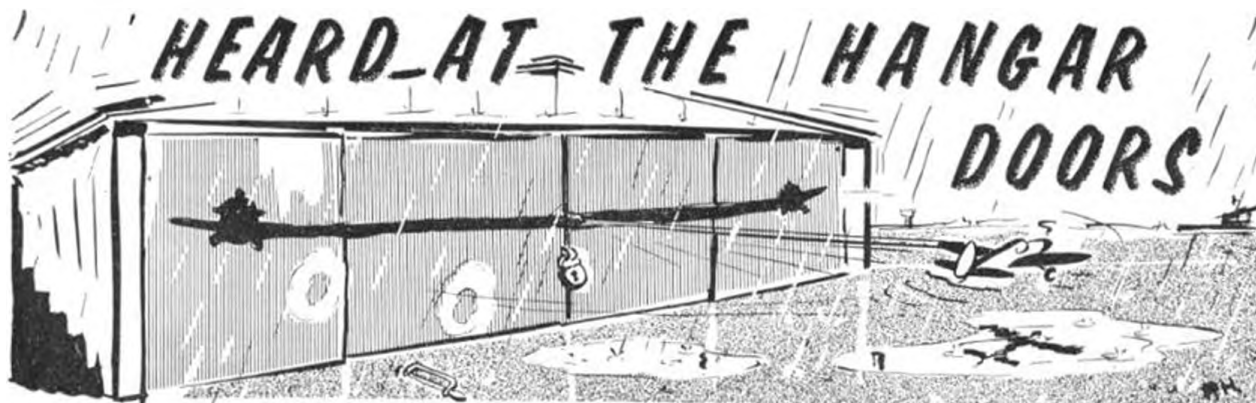


Ray Brown, Britain's top control-line stunt man with his "Coy Lady", winner of the greatest number of stunt events in one season ever, uses a Merco 35 motor, Mercury Fuel and Allen-Mercury plugs. He says:—"This combination of motor fuel, and plug gives me the instantaneous starting and smooth motor run that I need for contest flying. I have never burnt out a plug and this is, I think, due to the fact that the quick starting enables me to disconnect the battery almost immediately. It is a great relief to any contest flier to know that he can rely on his equipment to the extent that he can virtually forget it and concentrate on the business of flying his model. Certainly the combination of Merco engine, Mercury fuel and AM plug is the finest I have ever used."



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Don't panic!

WITH TWELVE SUCCESSIVE fly-offs unable to decide an individual winner for the Yugoslav Franjo Kluz Trophy in free flight power at Cranfield last month, it is only natural that the customary post-championships topic should arise.

"What *are* we to do about fly-offs?" is the big international query. No doubt there will be a flood of propositions before the October meeting of the C.I.A.M. when it assembles in Brussels and many of them will be coincidental.

Disregarding the fact that conditions at Cranfield were particularly favourable, one can read from the results and the technical summary of processing information that for the really expert modeller, power and area loadings are not critical factors. When Erno Frigyes won the event in windy 1958 with the heaviest loaded model there, it was thought that this weight contributed to success through stability in bad conditions. This year Erno flew the same model at *even heavier weight*, and qualified for the fly-off in calm weather. Giovanni Guerra carried almost the same loading of 7½ oz./sq. ft. and a power loading of over 12 oz./c.c. to place in the final top five. Whatever changes are made to specifications, progress in engine development and trimming skills keep pace to repeat the fly-off situation every time.

This new system of continued 3 minute maximum flights to decide a winner arose from last year's A/2 finals at Bourg-Leopold, Belgium. Sokolov & Ritz made flights of almost equal duration in this glider fly-off: but Ritz launched tactically to gain advantage in the range of vision. The U.S.S.R. team manager protested immediately to F.A.I. officials present, and at the '59 C.I.A.M. meeting the unlimited fly-off was replaced by the new system on the proposition of Finland and New Zealand.

Whilst this might solve the problem with A/2, it is certainly no answer for Power and, in our view, for Wakefield. But we must not let this failure throw officialdom into panic changes of specification. The uproar which followed the 1955 suggestion of a 14.12 oz./c.c. power loading still rings in our ears (March '56 issue makes very interesting reading at this stage) and though not immediately accepted, the Swiss formula to which power models now comply has proved to be successful.

No! It is the Contest which needs revision, *not* the model. Several avenues present themselves and most thoughts swing toward abbreviation of the engine run with extension of the maximum time. 3½ minutes *might* have whittled away some of the five Cranfield leaders and 3:20 as a max. makes the final score a neat and metric 1,000 seconds. Reducing the engine run to 10 secs. seems like taking the "power" out of Power yet would 12 secs. make any difference to the top men?

Whatever the C.I.A.M. deliberate, they must find a solution equitable to all three free flight classes, or we shall find the 1961 triple Championships running on for weeks!

Indoors at Cardington

The next indoor model flying meeting at R.A.F. Cardington near Bedford will be held on September 24th/25th and was *not* run on 3rd/4th as previously announced, since the airship hangar was required for other purposes on those dates.

All modellers who wish to attend this meeting must submit their names to the S.M.A.E. Secretary, Londonderry House, 19 Park Lane, London, W.1, by September 16th in order that they may be permitted entry into the R.A.F. Station. It is hoped that following the high standard of flying at the previous meeting in May (reported in July edition), even more modellers will participate in this fascinating side of the hobby.

Electric Shock

Hardly had the print dried on the pages when our last issue headlined an Australian fatality caused by shock from high tension wires, than we received a report that yet another accident of the same nature took place over August bank holiday week-end at Broxbourne, Herts. We gather that Mr. R. Hopley of Islington is now a much wiser aeromodeller having been thrown to the ground unconscious with severe burns to the hands and feet. May we repeat yet once more "Take care — fly safely — avoid power lines".

Attention WW1 Enthusiasts

Recently formed in California is a Society of World War I aero historians, producing a bi-monthly Journal entitled the "Cross and Cockade". From inspection of the first edition of this journal we can only say that it is a collectors item for all who have an interest in the fighting aircraft of World War I, since it includes unique photographs, direct personal interview reports with World War I pilots and news of the Society activity in its study of the fascinating aircraft of that period. Associate membership of the Society, including regular supply of the journal is possible at an annual fee of \$6 and prospective members should contact H. Hugh Wynne Esq., Editor, Cross & Cockade, 1106 North Wright Street, Santa Ana, California, U.S.A.

Triple World C/L Champs

Our next issue will contain yet another World Championships report, this time the three competitions for individual and team Championships in 2.5 c.c. Speed, F.A.I. Team Racing and control-line Aerobatics. These will be the first such events on a *World* basis and should provide exciting results since the U.S.A. is to be fully represented in all classes. Bob Palmer (*whose latest pair of Veco 35 Thunderbirds are seen in pics at top right*), Don Still and Steve Woody should be strong competition for the Hungarians in aerobatics as a team, and in speed, the great names of Jim Nightingale, Bill Wisniewski and Bob Lauderdale will vie for the Aero Club of Holland Cup (individual Champ) and Leonardo da Vinci Cup as leading team. With the latest Moki engines claiming great horsepower, and the *Jubilee* model Super Tigre already showing so well in free-flight, Speed promises to be a U.S.A./Hungarian/Italian tussle with unknown quantities from Czechoslovakia and the U.S.S.R.

British contingent will be strongest in team racing. Recent rally results have shown that in this and the acrobatic class Great Britain will certainly be fielding her best, and we hope to be able to report success for them in the meeting which takes place at Budapest as this October issue is being distributed. Watch out for full details and results next month!



Two Important "Do's"

Following the agreed practice of London/Provinces alternate staging of the S.M.A.E. Annual General Meeting, the 1960 event will take place at the Imperial Hotel, Birmingham on December 4th. Business commences at 11 a.m., though we quite expect that the most interesting portion of the meeting will take place after lunch when "Any Other Business" is reached. The previous A.G.M. to be held in Birmingham attracted one of the best supported meetings for many years, and we trust that this year's will have a similar lively tone.

The Society Dinner-Prizegiving finds a new venue on November 12th, being held in the Member's Restaurant of the Zoological Gardens in Regents Park. (We have no doubt that suitable reference will be made during the usual speeches, but forecast that it will be very difficult to find a new twist on the member/animals joke!)

In order that Certificates may be presented at either the A.G.M. or Dinner each year, the Society has decided to make the "record season" from November 1st to October 31st. Claims for the various categories will be collated and the top figure in each class ratified as the record for the year. It is hoped that in this way interest will be stimulated in record attempts, for under the old system some records became unbeatable except under the most extraordinary weather conditions.

On the cover

Our cover this month captures all the atmosphere of a typical German W.W.I airfield, with one aircraft being readied for flight, a second being drawn out of a canvas "hangar", and another, landing. In this cover our artist Ken McDonough has succeeded in providing an action filled scene though accuracy has not lacked because of this. Markings, camouflage, and setting of the Hannover CL 111 "Schlachstaffeln" aircraft can be vouched for as authentic. Even the shades of the "lozenge" camouflage are as on the original aircraft, and for this we must credit the care taken by our artist, process engravers and printer in the preparation of colours.



World R/C Championships

SHORT OF A BRITISH win nothing could have been a happier ending to first World R/C Championship than Ed Kazmirski's clear cut, way out ahead victory. The American boys are all that we have believed them to be, and any one of them on "their day" could have topped the field.

Grand boys all of them—Harold de Bolt with his comcomb like someone out of the "Lil Abner" strip cartoon, unassuming hatchet-faced Bob Dunham ready to give anyone a tip, and towering Ed Kazmirski with the physique of a lumberman and a deadpan style of humour, managed—but not heard—by young looking Doc Good, who protested he was only the "day manager"—nights the boys get out of their own trouble!

Standard was way above anything we have seen before—any of the top six would have won any earlier contest on their showing at Dubendorf—and our boys' team win a really magnificent achievement against such big guns as they have never met before.

Two o'clock Friday was zero hour, when entrants began to arrive for processing, with entries from Belgium, Germany, Great Britain, Sweden, Switzerland, South Africa, Austria, Czechoslovakia and U.S.A. The South African entry failed to materialise, the Austrians turned up with gliders only for some reason or another, and a non-entered Italian entry arrived, and was accepted only by the grace of the jury and other entrants! A roofed patio gave ample cover for checking, with the frightening Post Office test equipment in an adjoining antechamber, so that all could begin to gauge the opposition. British, U.S.A. and Czech teams had found a nearby airstrip for some more private testing and were all reported to be going great guns.

Prettiest models were clearly U.S.A. with de Bolt's red and white semi-scale Stits Playboy and similarly coloured Live Wire Custom Bipe with mods, including reduction of size all round and flaps (not used); Bob Dunham's latest marque Astrohogs—known now as the "Voltswagon", and Ed Kazmirski's American red white and blue colour scheme pair of Orions. Yes! Two each complete, and one or two spare spares at that! German entries followed the round fuselage "ugly but efficient" style we have come to expect from them: the Gobeaux family have departed little from their own typical machine—also of course in duplicate. Swiss models had Fredy Bickel's low wing to speak for them, and Ernest Klausner's rather stark machine which flew well later. The Czech jobs were remarkable mainly for small MVVS motors, and pressurised fuel intake, plus some vacuumatic servos. Our own British models are too well known to need further description and were in fine fettle.

Heading shows Olsen Uwins combat display with Uproars after contest finished

For once everything passed the scrutineers! Next adventure was the evening briefing at nearby "Hotel Sonnenthal" where all were the guests for the evening of Swissair. 32-page programmes were partly tri-lingual, with special language editions as well, and set out manoeuvres in full, with illustrations, which caused considerable comment and requests for interpretation until they were proved to be official F.A.I. drawings and beyond comment. An 8.0 a.m. start programmed for Saturday brought a fairly early end to proceedings.

Uninspiring met reports plus some delay with delivery of the P.A. system made the Saturday start neither so bright nor so early

flight-by-flight report, by D. J. Laidlaw-Dickson

as planned. Lots had been drawn overnight for flying order for both rounds so that everyone knew when they were due. Unlucky Gobeaux was first out of the hat and flew off around 9.0 a.m. in a momentary sunny period. Flying order must have cost him at least 500 points by pegging an early pace-making target of 4977. As ever he flew high and some figures were obviously below his best, stall and landing being poor.

Fredy Bickel, Switzerland, was next and shattered local hopes with an early engine cut at the beginning of a loop, for the low-wing model to come in fast to be caught and saved from damage by French observer Capt. Plessis.

Then followed a series of catastrophes almost without parallel! Hans Gast, Germany, took off in worsening climatic conditions, with rising wind, so that his early figures fell off rapidly, and then a power-on vertical dive onto the runway with shattering effect.

Unruffled Harold de Bolt, U.S.A. put up the Stits Playboy and seemed set to establish American ascendancy in the way we should have expected. About half way round an impressive schedule, up elevator failed to function and model number two was spattered on the grass only just behind the growing crowd that had assembled to watch. Harold was as mystified as the rest of us, and waved nonplussed hands—the Playboy's day was done!

Jovial Erminio Corghi, Italy, whose impressive model was so unlucky in Germany last year, was eager to make amends but failed to start in 5 minutes. He immediately elected to take his second attempt, took off smartly, but within a minute or two suffered the same fate to power dive into the tarmac! Pieces minute, engine fantastic, but yet he had hopes of rebuilding the encapsulated Graupner Rx with mechanic Roberto Bacchi assisting.

Haiic, Czechoslovakia, cartwheeled at t/o, for the next to be our own Frank van den Bergh!

With, by that time, some doubts as to pirate Tx., or what, Doc Good was standing by with the pretty little Howard McEntee designed Monitor, plus the audible monitoring peeps of the Post Office control, Frank must have had qualms. However, he worked like a Trojan and produced the best of the day thus far with 5082, including a most satisfactory spin, a highly elegant vertical eight in strong wind, a flight marred only by a somewhat damaging landing. The prang bogey seemed to be stilled.

De Dobbeler, Belgium, found the wind prevented adequate penetration and was hard pressed to keep up wind for his pattern (shades of the old days) so that a three figure score was all that he could gain.

Ernst Klausner, Switzerland, had improving conditions to help, plus a crowd of local boy supporters by now, though wind was still troublesome. He put in a good steady round with a grass landing that saved the model.

Karl-H Stegmaier came out with a really confident air, and from slick take-off to final landing was always the master. No-one would dispute his right to lead the field.

U.S.A. man Ed Kazmirski's bright red shirt—hottest thing in Dubendorf!—was next seen, though Ed inside was real cool. We can only say—superb! The judges thought so too and gave him a thousand more than Stegmaier at 6275 to top place which he held for the rest of the day.

Appropriately enough this marked lunch break; marred somewhat by an official demand that all photographers leave the area completely and rely on telephoto shots for action pictures! Protests were in vain, and the arm of the law brandished, so that for the rest of that day's flying contestants were in splendid isolation! Not until flying was over was a more satisfactory arrangement made by the jury limiting photographers to officially accredited professionals—When we say we counted over fifty camera wielders at one time plus small children and friends of the family on the take off area we cannot but sympathise with harassed Arnold Degen, though we wonder if the rather handsome "polizei" would really have used his truncheon on our shiny pate!

Rain threatened too during the lunch break, enlivened by C.L. flying and a splendid glider show by the unhappy Austrian gentlemen who had it with them but alas no comp to fly it in.

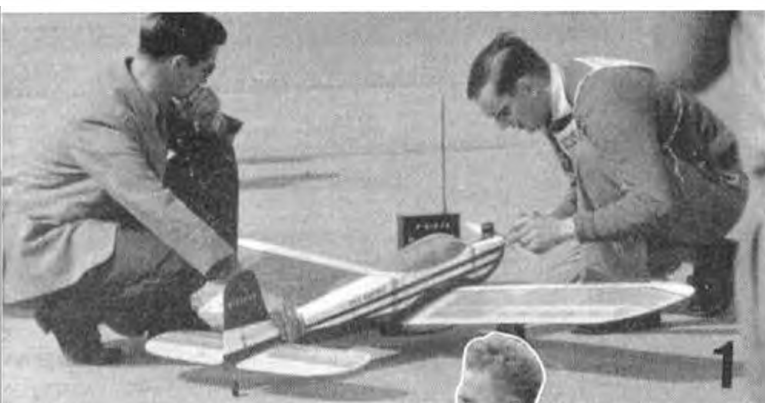
Zdenek Havlin, Czechoslovakia, re-started round one but alas without scoring. Dilot, Sweden was nearly as unfortunate. Then came Chris Olsen's turn. A sharp shower had been falling but now stopped; the sun came out, and Chris had perhaps the best weather conditions of the day to make his effort. Much of his pattern took place rather high up, but there is no doubt he was in top form with some really lovely work. His spin was delightful and thrilled the crowd. Even the British contingent, comprising many non-qualifying eliminator entrants, gave their praise, which is a high honour may we say. His 5317 gave him the edge over Frank van den Bergh, and placed him for a moment second behind Ed Kazmirski. Good show!

Wily Maritz, Swiss national champion this year, earned just over the four figures.

Gustav Saamann, Germany, helped by lovely Mrs. S failed to start in his 5 minutes and made way for Bob Dunham U.S.A. who took off fast and low over "the press in exile" just to wake us up. It was not his day, however, his motor never sounded happy, letting model fall out of its loops and in no condition to cope with strong wind now back again. Finally it cut after his spin to spoil landing, though masterfully handled to minimise the misfortune. He had worked hard to score 4923 just over fifty behind Gobeaux. Czech Jiri Michalovic had immense trouble with low power and high wind and lost control with model heading for the snow capped Alps. Per Axel Eliasson, Sweden, with a pretty biplane, spun on take off and never showed promise.

Stewart Uwins, G.B.'s third man had unnerving Rx troubles and made use of a second attempt. His take-off was hazardous, bouncing off a kitbag on the grass edge just got him over the crowd, his motor was running too lean and always in imminent danger of cutting, which it did after he had

(1) Team Manager Ed Johnson holds while Frank V. d. Bergh prepares his K & B 45 Skyhop. (2) Chris Olsen gives his ETA 29 a blow through on thin wing Uproar. (3) Jiri Michalovic with squared-up model, only flyaway of meeting. (4) Stewart Uwins, topped our team trials but suffered troubles at Zurich. (5) Jan Hajic had new line in swept fins. (6) Traditional Gobeaux model shape, father and son prepare. (7) Willi Maritz and functional Swiss entry. (8) Maestro Bob Dunham, put up fantastic display after event. (9) Pappy de Bolt puffs corn cob pipe—with Bipe. (10) Bold Swedish entry had single channel with Varicomp selector, by Eliasson.



started his bunts, but the score of 1678 left the team with a good all round aggregate.

This left the Saamanns to make their second attempt, which proved a fitting climax to a real day's excitement. Some of his patterns were clearly best of the day. We liked his lovely *slow* rolls, both left and right hand; his inverted circuit showed some falling off, his 8s were terrific and his spin brought the crowd to cheers (whether six spins are markable when only three are called for is debateable). He did not nominate his first landing approach, but came round again for a beauty. It was no real surprise to find him with 5611 and in second place.

Round 2 Sunday 24th July

Glorious weather throughout Sunday belied gloomy met reports that had sent entrants sadly to bed on Saturday—those, that is, not enlivened by Henry J. and Ed Kazmirski at Hotel Sonnerthal!

First off was local Swiss—in spite of early Sunday hour already supported by three to four deep crowd along several hundreds of yards of enclosure frontage—Fredy Bickel who did very much better than his disappointing first round performance. Some falling out in loops was noticed, otherwise polished, with a very nice Cuban eight. As time caught up with him and he failed by 5 secs. to score landing points since his 15 minutes had passed!

Ed Kazmirski, U.S.A., was happy to be put out of his misery so early in the day and fairly leapt into battle. Low long take off past the cash customers pleased the crowd, but the only thing slow about Ed was a certain reluctance to nominate until almost into manoeuvre. His stall was terrific—though with a momentary danger of motor cut; spins exactly three dead right to the rules, and a steady edge of inner circle landing. Time for the schedule 10 min. 40 secs. (Bogey for course about 10 mins. declared Hans Deiter Heck of *Modell* in admiring this effort).

Frank v. d. Bergh had a splendid master to try and match when following next. Take off over the crowd was a little hazardous but exciting. He flew low with good loops, but inverted loops not so good. Fair stall and excellent inverted flight, with smooth 8s and really good vertical 8. Spins numbered four by our count. Nice graceful landing to clock 13 min. for the course (See Ed's time above).

De Dobbeler of Belgium brought out his elderly Smog Hog again. At this age it is somewhat dated, but was a very good show for a Hog suffering from an engine too feeble for high all up weight!

Zdenek Havlin of Czechoslovakia—who in his crew cut looks like a young Kruschev—showed that the mouse power Czech models can perform well in suitable weather conditions. Curious hose-pipe lead from Tx to control box rather like a Karloff film and audible monitoring tone from Post Office oddly enough usually peeping a V-for-victory note! (Czechs claim it is Smetana anyway for musical readers). Cut out before landing on dead stick.

Ernst Klausner of Switzerland—their fancied man this year—did much in spite of pranging his No. 1 model by virtue of "unofficial" pirate who interfered at team practice a week earlier, so that he flew what was a re-hash of salvaged parts and an old model. This model was a rather unwilling inverted flyer. Alas he hit a spectator on landing which spoiled what should have been a good effort.

Harold de Bolt, U.S.A., corncob and all, brought out his Custom Biplane for flight No. 2, and gave quiet confident polished performance, though model not always so responsive as would have been expected. Amused crowd on landing with a "come to Mother" taxi back to the Tx.

Stewart Uwins whose early Rx trouble had worried him on flight 1, came more confidently to round 2 thanks to George H.R. his mechanic who had helped get things safe again. Dickey take off over crowd again, and almost down-wind! Rolls very nice, but some manoeuvres very roopy, so that flying around between them left him in time trouble by the spin, and he eventually had to race back to the landing circle with 20 secs. in hand!

K. H. Stegmaier, Germany's Champion, took off smoothly to fly his pattern high a la Gobeaux. Inverted loops very good but very slow. Rolls in both directions fine, as were inverted patterns, Cuban 8, 2} turns only to the spin, to come in with a long low approach and good landing.

Per Axel Eliasson, of Sweden, with a much modified Phil Kraft Hi-Phi spun on take off. Has been less than 2 years R/C flying, so this outing must count as experience.

Maritz, Switzerland, had fair take-off, but early motor cut out, plus loss of control ruined his figures.

Bob Dunham, U.S.A. had his motor cut out to ruin his chances too, almost at the **FOUR NICE MODELS.** Top left: Harold de Bolt's very semi-scale Stits Playboy, pranged in first round. Right: Alf Bickel's O.S. Max 35 design, winner of last year's meeting. Bottom left: Ed Kazmirski's Orion, using Orbit 10 channel and K & B 45, 12-inch prop. Flew fast and smooth. Lastly: Heaviest at almost 10 lb. weight, and smoothest in some manoeuvres was K-H Stegmaier's Ruppert 9.7 c.c. entry

start of the flight. Not to worry, he played i back onto landing circle dead stick in no time and made best of it.

Chris Olsen was next in line, with a chance to make second place if little hope of matching Ed. Kazmirski. Alas he was dogged by mixture trouble and motor seemed happy only occasionally, so that loops only fair; engine picked up for inverted flying and the rolls, and by the end of flight was working well (improved and hotter weather was playing havoc with engines anyway)—stall, spin, 8s recovery, all nice, then engine just too good on landing approach, so he had to come round again with no landing points. Time 14 minutes plus.

J. P. Gobeaux, Belgium, lucky to be there at all with the run on Sabena pilots for the Congo air-lift, gave of his best with the model that was marvellous 3 years ago, but has been passed by others now. Heavy for its motor it fought a losing battle high up in the sky. Would it be unkind to say we admired this veteran of the air—almost R C's Sugar Ray Robinson—but felt only the decent respect for an old champ? Such methods as use of motor for inverted position trim is outdated. As it was pattern finished with four minutes to go, and model was kept up in air until its motor cut, since it would not land except on dead stick. Too late—landing was 15 secs. over the 15 minutes! A superbly flown old-stager!

With Ed Kazmirski far ahead, Czech Hajic's flight was almost an anticlimax—only Saamann of Germany remained. He took off during a P.A. system interview with Ed "What's it like to be champion?" style, which tactful Ed said he'd wait till the end to answer! For some reason Gustav performed right over the judges' heads who can only have marked him on hearsay. From our viewpoint by the Coca Cola stand it looked fine, and the judges thought so too by his marking. A hawk buzzed him during this flight to the crowds delight. But not quite good enough to do better than 2nd place on aggregate.

Sunday Evening

Banquet at the so-called "Hotel Miese" proved to be a museum which handicapped the guests! However, everybody passed the initiative test in the end for a good spread and a generous array of hardware. What brilliant mind thought up the aptness of the trophies? Bells—or clangers as the boys all declared just about the fittest reward, large size elephant bells for the top people, down to smaller and smaller so that everybody had one even the press! Nice to applaud (drown?) speeches and shake up Sunday night in Zurich!





JAPANESE SAUCERS

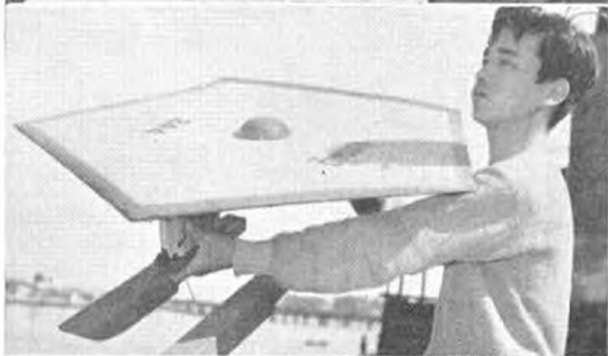
THIS NEWS ITEM from Japan is interesting in that it shows an enthusiast's continual development of one type of model, and an unusual type at that—the flying saucer or circular wing, culminating in a miniature one man air cushion craft.

Mr. Tohoru Yamanaka of Tokyo, the designer and builder of all the models shown in photos, now 25 years old, has been modelling since childhood days, and has diverted his interest from conventional types to the saucer. Twenty of these have been made to date of a variety of shapes and forms—circular wing saucers, solid saucers, and pentagonal saucers. It will be noticed that all models are float equipped, Mr. Yamanaka making good use of the Southern Tokyo waters. Some models are launched from the shore, and as can be seen from the photo they have quite a steep climb. This particular model is heading directly out to sea, so retrieving by boat must present a problem!

Whenever he is not working at an electrical instruments factory, Mr. Yamanaka is building saucers. He has aroused the interests of the local youngsters and now they too are saucer building. Through his great interest, building and development of saucers, he has gained a considerable knowledge of the flight characteristics of these unusual machines, and has applied some of this to his latest venture, a one boy hover craft.

As seen in the photo, the hover craft, or "Air-Car" as Mr. Yamanaka would wish it to be called, is carrying a small boy—this being about the largest sized passenger that we should think the machine capable of carrying on the power of an O.S. 35 engine. With a diameter of three feet, a speed of about 30 m.p.h. is claimed. We would be rather dubious of this with the relatively low power available. "Airborne" endurance can be extended to one hour by the use of an auxiliary fuel tank, but the local police will not permit such flights, probably because the "Air-Car" infringes upon private and light aircraft regulations, being a man-carrying vehicle!

Photographs illustrate Mr. Yamanaka's experiments in saucer flight, his living room appears to be decorated with them at top right! Latest news from Japan received as we go to press includes pictures of the hover craft in action over the bay; but not, alas, carrying the young lad as a "pilot". Note too, how the reflex trailing edge is formed by ribs Mr. Yamanaka is cutting in top picture. Flying barrels are another of his crazes which have gained considerable publicity in Japan





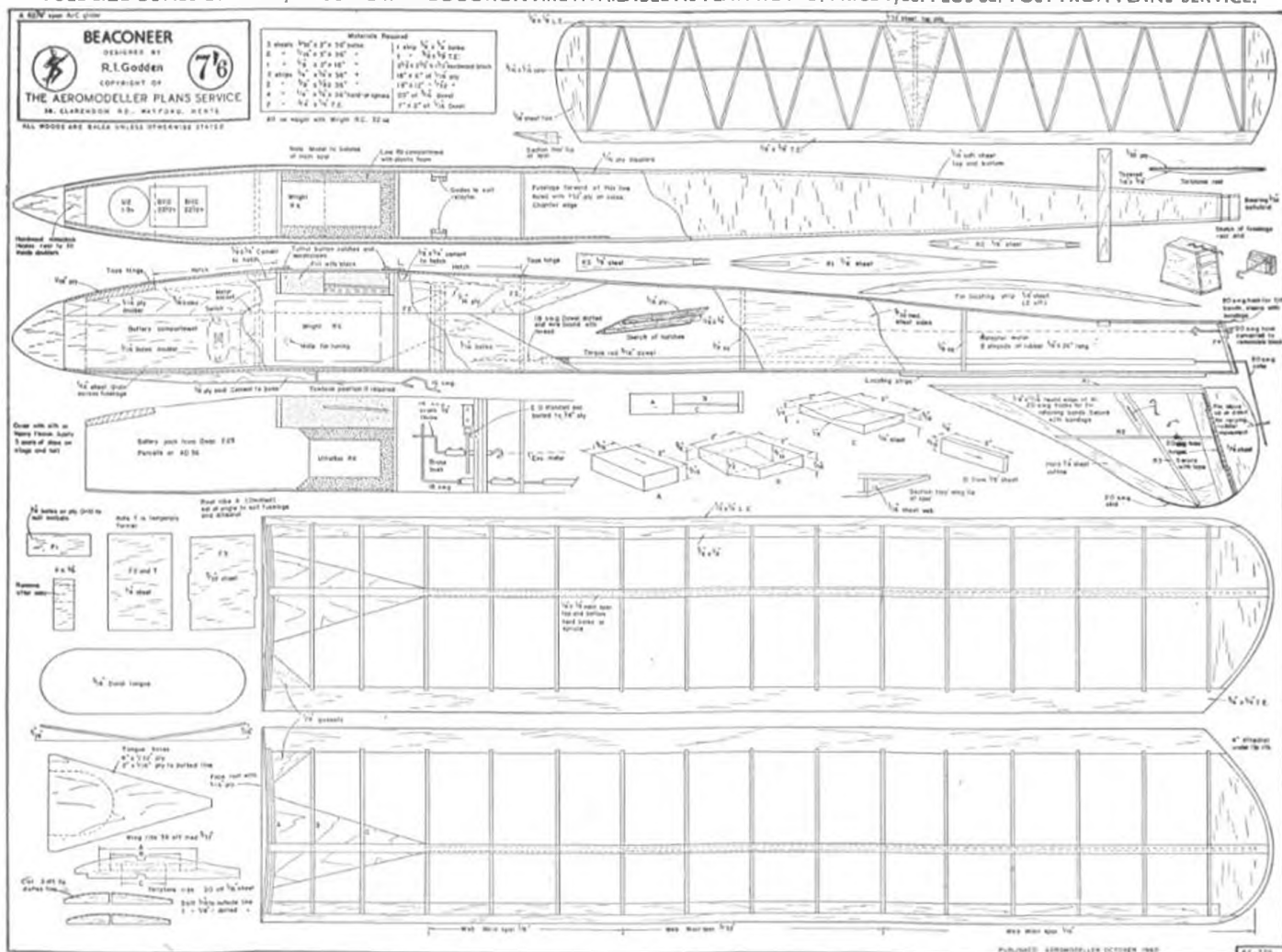
A HANDY SIZE SLOPE SOARER FOR RADIO CONTROL OPERATION

"BEACONEER" is a functional lightweight sailplane designed specifically for slope soaring and built to the minimum size that will accommodate the New Zealand "Wright" system of radio control. It will of course accept all other radio equipment, especially the latest transistorised gear.

The design began as a dual purpose R/C towline sailplane, incorporating an E.D. Baby on a removable

pylon to gain experience of single channel flying with minimum cost. This was very similar to the present design but used a Benedek wing section; the equipment consisting of an A.M. transistorised Rx., P 100 relay, with an E.D. standard escapement. After slowly improving the reliability, it was flown as a slope soarer and placed second at the Bletchley meeting on Boxing Day '58. The wings proved to be too weak and so were

FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE AS PLAN RC 770, PRICE 7/6d. PLUS 6d. POST FROM PLANS SERVICE.



replaced by a flat section high aspect ratio pair which gave improved penetration and flatter turns. This model was lost from Long Mynd and was never recovered.

Construction of the present model was begun immediately after this mishap, incorporating all the modifications considered desirable. The next step will be to substitute a fast, high lift, undercambered section to the same fuselage and then possibly a tapered higher aspect ratio plan form. Swept wings have also been tried, with some success; but the average enthusiast will find BEACONEER as presented here, ideal for Radio Control soaring.

The main features are as follows:

1. Tongue and box wing fixing which has proved better than any other and entirely satisfactory for this type of flying.
2. Straight-dihedral wings for simplicity; 1 spar for strength, no L.E. sheeting for ease of repair and cheapness; the $\frac{1}{4}$ in. x $\frac{1}{2}$ in. stopping those broken leading edges.
3. The fuselage is extremely serviceable, being really tough at the nose, which is the most vulnerable part of any slope-soarer.
4. Fuselage design also allows the Rx. to be tuned and the actuator motor to be wound with the model completely assembled.
5. All components are removable for testing.
6. An underslung fin is used to simplify torque rod and actuator motor installation.
7. The angled rudder hinge line provides a little down elevator effect should it be required (a mixed blessing).

Construction

Cut out fuselage sides from medium grade 3/32 in. sheet and add internal 1/16 in. ply doublers, balsa doublers; and verticals. When dry sand together to an accurate shape and make identical slots for tongue. Bend up dural tongue to correct dihedral, and with this through slots, join sides together with formers T, F2, and F3. Draw in at rear onto F4 and when set, top and bottom 1/16 in. sheet from F3 back may be added, with grain running across fuselage.

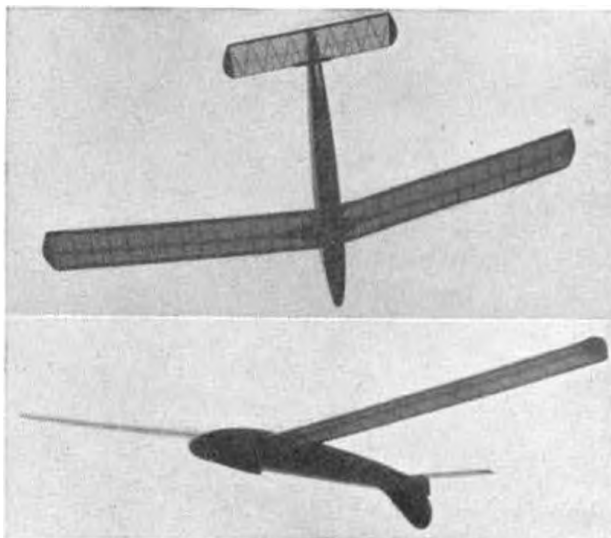
Add F1., sockets and internal wiring and shape blocks accurately to clamp tongue in place. Tongue should be roughened and then blocks cemented. Draw in fuselage front to partly shaped noseblock and cement. Line Rx. compartment with $\frac{1}{8}$ in. plastic foam and fill in bottom; fitting towhook if desired. Cement in slides for Relaytor and cover bottom from noseblock to F3. with 1/16 in. ply. Chamfer edges of external 1/32 in. ply facings, cut slots for tongue, cement to sides and when set sand to smooth outline. Complete top of battery box with 1/16 in. sheet across tongue blocks and make up hatches from 1/16 in. ply or hard balsa.

Remove T. and cut necessary holes for switches, socket and tuning. Cut away F4. to take winding hook block, insert torque rod and fit 1/32 in. celluloid bearing.

Cut the fin outline from hard $\frac{1}{8}$ in. sheet, cement together flat and when dry add R1. Insert spar and rest of ribs. Add $\frac{1}{4}$ in. x 1/16 in. strips, and shape fin locating strips to fit exactly along R1. Strips are now cemented on fuselage making sure that joints lie along centre line. Retaining hooks are added more easily after covering.

Tail construction is quite straightforward and needs no explanation. If desired a "Lucifer" tailplane makes an excellent substitute.

Cut 36 wing ribs from medium soft 3/32 in. sheet, pin out lower spars and cement in ribs, using the harder ribs at the root. Make up tongue boxes from 1 layer of 1/16 in. and 2 layers of 1/32 in. ply and cover with



From the two photos above can be seen Beaconeer's broad, deep fuselage ideally suited to radio installation, and the simple parallel chord wings. Model is of useful A/2 size, and weighs in at 31ozs. The design originally had provision for a detachable E.D. Baby on a pylon, and this is a mod. worth considering if you want a mild, safe initiation in powered R/C flying

bandage or nylon; cementing thoroughly. Cut away root ribs to allow boxes to fit $\frac{1}{4}$ in. from lower surface, and cement in place. Fill in cutaway portions of ribs and add $\frac{1}{4}$ in. wide packing up to top spar. Cement in webs (note different thicknesses), and add top spar. Sand root ribs to angle to suit fuselage and add ply end ribs. Fit sheet tips and gussets and give a final sanding.

Cover the entire model with lightweight Modelspan and dope to satisfaction, avoiding overdoping or any other finish that may make the covering at all brittle.

Weight of the complete model, using Wright equipment, should be 30-32 ozs. giving a wing loading of around 12 $\frac{1}{2}$ ozs. square foot.

R/C Installation

A Wright Rx with Relaytor was used in the original and is to be recommended. A layout is also shown for alternative Rx's (Ultraton + ED Esc.). Battery pack consists of two B.110's and one U2 taped together and wired into a 3 pin plug which plugs into a socket on F.1.

The Rx is connected via a 4 pin plug to a corresponding socket also on F1. The Relaytor is connected directly through a 2 pin plug to a socket on F.2.

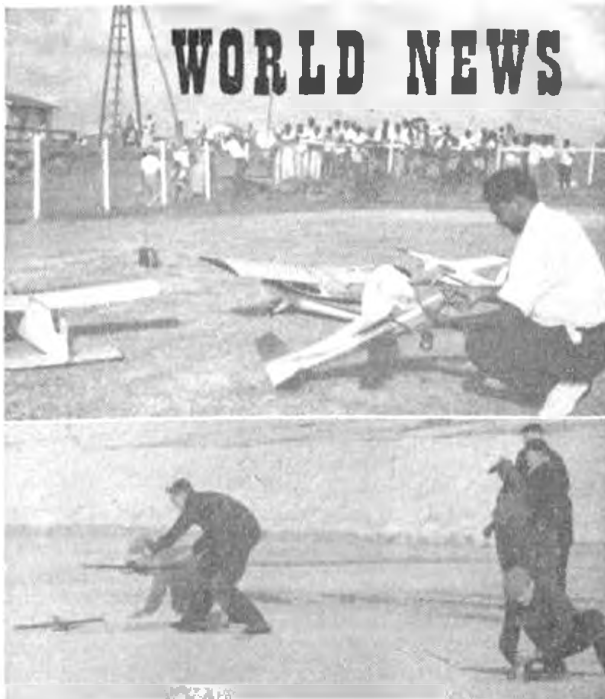
A 2 strand $\frac{1}{4}$ in. motor 26 in. long will be found adequate, providing the torque rod is kept light and tubular hinges are used on the rudder.

Flying

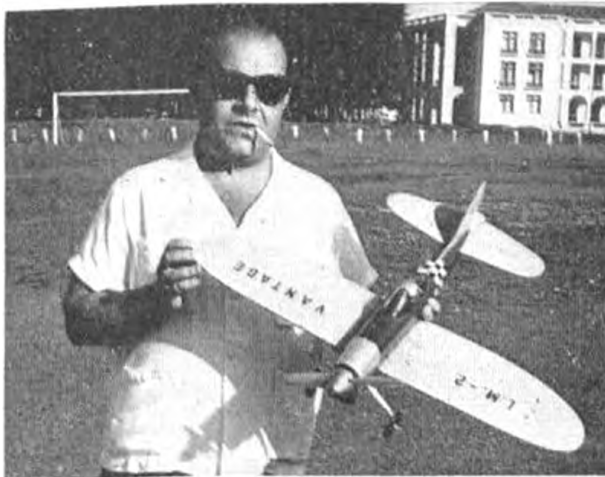
Trim by hand launching to give a fast straight glide, remembering that the flying speed is quite high. On the slope, trim to the prevailing conditions by packing the tailplane until the model just makes headway. This can only be achieved by trial and error, and will always be a compromise. On windier days ballast may be added to the battery compartment as it has the advantage that the wing loading is increased slightly.

Reasonable durations can be obtained quite easily with this size of model; best flight to date with the original being over 25 minutes from Ivinghoe Beacon.

N.B. Don't forget to wind up that actuator motor as one is always reluctant to bring the model back to the slope when things are going well.



Top: Fine model flying display was made at Lusignan, E. Demerara in British Guiana using R/C scale models. Much colder spot is Sweden where team racing sometimes takes place on ice! Below: E. R. e Silva, one of several Lourenco Marques (Portuguese E. Africa) enthusiasts, and at bottom, J. Ramachandran of Penang, Malaya, entrusts his sisters with C/liners



THE FIRST plastic model kit made in Brazil is by Atma Paulista S.A. for the Fokker S-11 "Instructor", as made in Brazil and used by the FAB (Brazilian Air Force). Some 150 units of this plane were manufactured by a Brazilian subsidiary of Holland's Fokker Company. The S-11 miniature has an aluminium-coloured fuselage, orange-coloured wings (which represent an instruction plane), propeller and wheels come in black, transfers, cement and a display base are included. It sells for Cr. \$175,000 (about 6s. 8d.). Scale is 1/50th, and other models will follow soon. The Clube de Aeromodelismo da Bahia was founded in the State of Bahia, in February, to unite and develop aeromodelling activities in that State on the east coast of Brazil. Offices are located in the Capital, Salvador, and improvements are under way. The club is about to have a cement-surfaced "runway" for control-line, which will be made at local government expense. So far, six demonstrations were made by the CAB in order to "sell" aeromodelling to local and neighbouring cities. The CAB prints a monthly bulletin, *Marimbonda* ("Paper Wasp") and has been officially accepted as an affiliate to the Brazilian Aeromodelling Association. Address of the Club is: Caixa Postal 99, Salvador, Bahia, Brazil. Correspondence with model enthusiasts will be welcome, both in Portuguese and English.

The three-day German Nats for R/C and free flight were held this year at the former Henschel airfield at Waldau, near Kassel. Apart from a wild thunder and lightning storm just after contest flying had closed on the second day, the weather was ideal; warm, sunny, plenty of thermals, and wind varying between flat calm and moderate breeze with constant direction. There was, however, one downdraught area halfway down the field that caused irregular flying even among the top F/F experts.

As usual, this was an elimination Nats, but some areas did not fill their quota in F/F. (The German Nats is not open to all, but only to representatives sent by each area.)

Standards in design, construction and finish were even higher this year, but there were few unusual models. Notable exceptions were in Wakefield: an all-sheet Matvejev type with Polish-style machined propshaft and neat prop-operated autorudder by Karlheinz Rieke (Berlin), better known for his F.A.I. Power and indoor models; A/2 expert Reiner Hofsaess' (Baden-Wuerttemberg) Matvejev type with Cole 3-D turbulators in wood on wing and prop, and a glide that made the towline flyers green with envy (see photo); Hubert Waldhauser's (Saar) all-sheet original with slotted tail for extra lift which showed promise. While none of these placed high, they provided much discussion and comment on design. Sheet-covered surfaces were again prominent this year, sharing the spotlight with Jedelsky-type solid wings. The winners of the three international classes had the three best times of the meet: A/2 Willi Filter (Schleswig-Holstein), 890 (4 max.), 72 in class; Class I (F.A.I. Power 1 - 2.5 c.c.) Czeranowsky, 878 (4 max.), 33 entries. Wakefield, Roland Eisen (Nordrhein-Westfalen), 876 (4 max.), 34 entries. Class L (F.A.I. up to 1 c.c.) was won by Oskar Rabenseifner (Hessen) with 733 (3 max.), there were 19 entries.

A Radio fly-off was to decide between Hans Schumacher (Bavaria) with 3,660 points and Karl Heinz Stegmaier (Hessen) with 3,714 points, due to the closeness of the result. Stegmaier won this with his usual precise aerobatics and excellent landing. However, all credit is due to Schumacher who has not been flying multi very long. Each, of course, used his own radio system, while another famous commercial R/C manufacturer, Bob Dunham, gave a stirring display along with Harold de Bolt and Ed Kazmirski of the U.S.A. team "on leave" after Zurich.

Bob and Ed flew manoeuvres in formation, with Bob inverted most of the time!

The Hungarian C/L Nats were held at Budaors on June 19th, with Laszlo Ordogh leading stunt by a slim margin over Gabor Masznyik and Geza Egervary. It is said that this stunt group is well in the running for best team placing at the World Champs, held early this month at the same site. Budapest champions in free flight are Istvan Antal who was the only competitor to return 900 secs., in Wakefield and in both power and A/2 glider, Erno Frigyes led the field with Gyula Simon tying for first in power.

There are signs that in Russia the decline in R/C interest should be taken seriously by senior Aeronautical Colleges. Comment in *Wings of the Fatherland* shows that in the Winter Students Competitions, not one R/C model was entered. This contest, held over snow and in extreme cold, provokes several very interesting observations in the Soviet magazine. Castor oil was freezing and spoiled Wakefield performance so Muscovites V. Zuyer and B. Lukin, who won the team event, used cod liver oil. A/2 glider designs emphasised need for turbulators, winner M. Inoyatov using a section with a sharp rise at the nose. Gliders were said to be much slower in the dense, cold air. In Wakefield, the magazine goes so far as to say that the wide-spaced blades with long wire hub extensions "do not justify the hopes which their designers placed in them" and criticises the "mistaken opinion" which led to this type of prop.

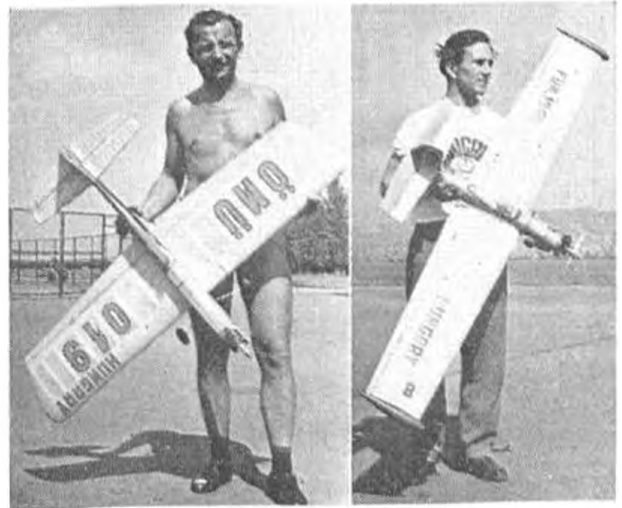
A. Abramov from Leningrad was first with a perfect 900 secs. score in free flight power and fellow modellers from Leningrad, G. Sirotin won team race in 7 : 26 and N. Turkin topped speed with 185 k.p.h. Apparently the glow-plug engines were disappointing in the cold, all power events being won by diesels.

Weather varied tremendously for the fourth round of the Finnish Champs from near perfect for Wakefield to a gale for A/2. Markku Tahkapaa proved once more how he understands the weather by placing top at 637 secs. in spite of one flight down to 40 secs. Sandy Pimenoff was the only one to make 900 secs. in any event and, of course, he followed this success with the 17 max marathon at Cranfield. In Wake, Seppo Pohjola led the Finns; he won this Champs with 709 secs. and the Chrysler-Plymouth meeting with 900.

Tam Thompson of Montreal drove the 800 miles from home in Canada to attend the Yankee Championships at S. Weymouth, Mass.; and he came away with first place in the "Olympic" event which allows F.A.I. Power, A/2 and Wakefield to combine. Naturally Tam chose A/2 and scored 820 seconds, 8 secs. ahead of John Clapp from Athens, Pa.; who was, like the third man Al Lashway, also flying A/2 glider! Not often that A/2 beats power or rubber! Outstanding times from this meeting were 37 minutes for indoor microfilm and 75 secs. for chuck glider.

Other Canadian news comes from the far west in Vancouver, where the club runs a contest that might appeal to all sport fliers. This is the 33½ event. Points are awarded for construction, finish and flying with a max. of 33½ per cent. for each category. Item from the Montreal M.C.F. Bulletin warns Tam Thompson *Sunray* (July issue) builders NOT to use that surface turbulator. Seems that it produces a distinct no-recovery effect if thrown in a dive by rough weather. "Stick to plain Gottingen 359", Says Tam.

From the same Bulletin we learn of more night flying in California, U.S.A. Free flight Champ., Bob Hunter, tells of meetings which start after a barbecue at 8 p.m., go on till midnight. Temperature is 70 F., wind about one m.p.h. and the contest is for 3 x 5 minutes with a fly-off. Jim Matous won the April meet with 22 minutes.



Above: Hungarian C/L stunt champ is Laszlo Ordogh, standing like Hercules (with trunks — we hope!) and K. Fischer placed fourth with novel long span, short fuselage design. Below is Seppo Pohjola, leading Wakefielder in Finland, about to launch for a winning flight



Russian influence evident on R. Holsaess' Wakefield at German Nats. Has full span turbulators taper sheet on L.E. and tubular fuselage, though not the outrigger prop blades used by Matvejev

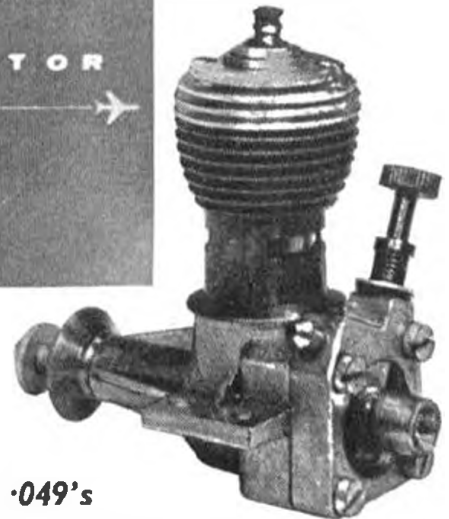


All models carry a bulb and pencils, all modellers carry powerful torches. Famous last words are "My gosh—I forgot the light" and "How the heck can I check trim in the dark!"



**Engine
Analysis
No. 75**

by R. H. Warring



THE CUSTOMER, especially in the small engine field, has never "had it so good" for the introduction of the "Cobra" represents yet another excellently-engineered power unit selling at a remarkably low price and representing amazingly good value for money. Produced by John Rodwell Ltd. and marketed by E. Keil and Co. Ltd., the "Cobra" has been three or four years in the development stage — and what trials and tribulations a firm with no previous experience in model engine production experienced during that period can readily be guessed. The resulting product, however, is every bit as good as that which would be expected from a long-established manufacturer — and better than many.

The "Cobra" design obviously started off life based directly on the Cox glow motor and still retains a number of "Cox" features, notably in the layout of the reed valve and the crankshaft and cylinder. General constructional features, however, have been highly developed and redesigned, resulting in an individual engine with its own characteristics — and very pleasing they are too. Not the least noteworthy feature is the packaging which although it does not make any better an engine only serves to emphasise the care and thought which has gone into developing the "Cobra" throughout as a sound production design (*heading shows actual packaging*).

As supplied new the "Cobra" needs little or no running in. Both the piston and cylinder are hardened and initially finished with a satisfactory running clearance. The main bearing fit is very slack. Hence neither will benefit from, nor need, running in. The makers do, however, recommend a brief preliminary run of one or two minutes on a rich mixture before attempting "flat out" performance on small propellers.

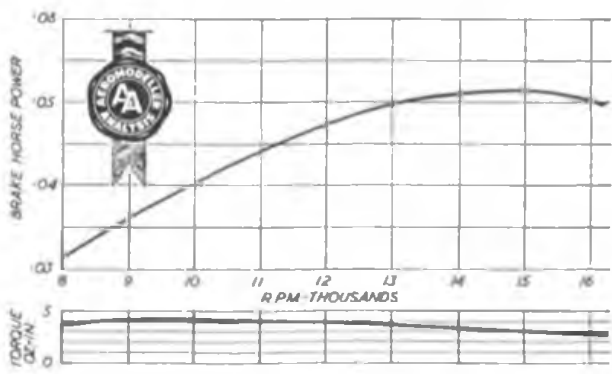
**Latest
of the glow '049's**

The glow element is integral with the head and designed for 1.5 volt (dry battery) use. It can be used with an accumulator (2 volts) with at least five feet of flex connection to provide a suitable voltage drop. The element itself appears particularly robust and stood up to all the use we gave it on test, equivalent to several hours of running time, most of which was at the upper end of the speed range.

Starting characteristics were found to be excellent. A prime through the exhaust is virtually essential for foolproof response, when starting should be first flick, hot or cold, on any normal propeller size. We found starting got easier with smaller propellers, although

Technical data

SPECIFICATION	PROPELLER—R.P.M. FIGURES
Displacement: .798 c.c. (.0487 cu. in.)	Propeller
Bore: .406 in.	dia. x pitch
Stroke: .376 in.	6 x 4 pitch
Bare weight: 1½ ounces	6 x 4 Davies-Charlton nylon
Max. power: .052 B.H.P. at 15,000 r.p.m.	5½ x 3½ Davies-Charlton nylon
Max. torque: 4.3 oz. in. at 9,000 r.p.m.	6 x 4 Top Flite
Power rating: .065 B.H.P. per c.c.	6 x 3 Top Flite
Power/weight ratio: .047 B.H.P. per ounce	5½ x 4 Top Flite
Material specification	5½ x 3 Top Flite
Crankcase: L.M.2 light alloy die casting	7 x 4 Top Flite
Cylinder and Piston: High tensile heat treated steel	6 x 4 K-K nylon
Cylinder head: Dur. aluminium (incorporating glow element)	6 x 3 K-K nylon
Crankshaft: High tensile heat treated steel	5½ x 4 K-K nylon
Connecting rod: machined from dural, ball and socket little end	5 x 4 K-K nylon
Crankcase backplate: L.M.2 light alloy die casting	5 x 3 K-K nylon
Induction: reed valve (hard beryllium copper alloy)	*7 x 4 K-K nylon
Propeller shaft: ¼ in. nominal diameter screw	*7 x 6 K-K nylon
Manufacturers: John Rodwell Ltd., Hornchurch, Essex	6 x 3 Trucut
Sole distributors: E. Keil & Co. Ltd., Wickford, Essex.	6 x 4 Trucut
retail price 39s. 6d.	6 x 4 Stant
	Fuel: 60-25-15 methanol, castor, nitro-methane.



*Note: In the first production run of the new Keilcraft nylon propellers some of the 7 x 4 size were wrongly marked 7 x 6 and vice versa. This marking has been corrected, but check by comparison if performance seems inconsistent, with size quoted in case an early moulding is involved.

there was a definite tendency to "bite" with a 5½-in. and smaller diameters, calling for the propeller to be flicked over smartly. Larger diameter propellers — 7-in. sizes — usually called for two or three flicks to start.

The "Cobra" was happiest running at high speeds — e.g., 13,000 r.p.m. and above — but low speed performance was also surprisingly good for a small glow motor. It would run consistently down to 7,000 r.p.m. load-speed. Peak power output on test was realised at 15,000 r.p.m. but with the B.H.P. curve substantially flat so that a suitable flight performance should be achieved over a range of propeller sizes. The "Cobra" also ran smoothest on nylon propellers and with the variety of sizes now available these would be a logical choice. The makers recommend a 6 x 4 or 6 x 3 K-K nylon for free flight; and the same or 5½ x 4 for control line. These, or equivalents, would appear to suit most requirements.

Not critical on fuel

Fuel was not critical and there was little difference in performance, over a sample range of fuels tried. Compression ratio is fairly high, so that a heavily nitrated fuel is not necessary, but for best performance 15 per cent. nitromethane appears to fit the bill. All test figures were extracted on a 60-25-15 methanol, castor, nitromethane mixture. Suitable commercial fuels are K-K Nitrex "15", K-K Super Nitrex or D-C "Quick-start" glow fuel, all of which gave instant starting and consistent running up to speeds exceeding 17,000 r.p.m.

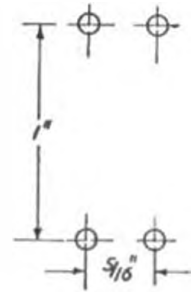
Adjustment for optimum running was a little "fussy" Although the needle valve is non-critical in the sense that the motor continues to run over a wide range of settings, optimum setting for any particular propeller load needed a little practice to establish. The "Cobra" tended to dwell momentarily at this setting before finally cutting in and the correct point could be missed if adjustment was made too rapidly, or too carelessly. This cannot be classed as a fault—merely a characteristic.

Structurally, the "Cobra" features a hardened steel cylinder turned complete with cooling fins screwing into a light alloy die-cast crankcase casting; a separate light alloy head (embodying the glow element) screwing into the top of the cylinder; a reed valve unit incorporated in the crankcase backplate; and plain bearing crankshaft. Exhaust ports are cut in the cylinder walls, diametrically opposed, whilst one transfer passage is machined up the inside almost completely overlapping the exhaust. The bottom of the cylinder is flanged to seat on a machined face on the crankcase. The screwed-in head seats on a copper gasket to seal.

The piston, also hardened, is of composite construction embodying a ball and socket little end. The piston itself is of conventional flat topped form, with thin walls. A groove is machined on the inside near the top. The

actual size mounting pattern at right

ball end of the connecting rod is inserted into the piston followed by a hardened steel cup (slotted to assemble over the con rod), which is then retained by a stout spring clip engaging in the piston groove. The cup thus locates the ball and securely and although a rather elaborate (and costly) method of construction appears most satisfactory.



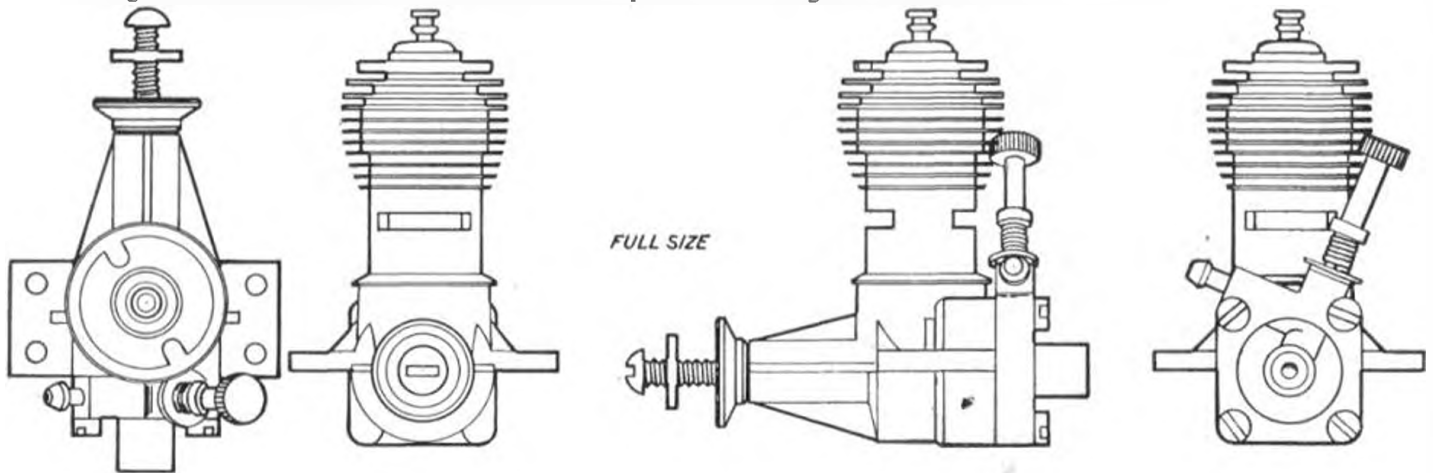
The short hardened steel crankshaft is .2168 in. diameter over the two journal lengths, with intermediate diameter relieved several thou. to reduce the rubbing surface area. The crank web is chamfered and also counter-balanced. Crankpin diameter is .1075 in. and big end bearing reamed .110 in. Crankpin and shaft appear to be finished by polishing rather than grinding. The propeller shaft end consists of a ½-in. diameter steel screw screwing into the crankshaft. The dural propeller driver locates on a milled length of the front part of the shaft.

The main bearing is plain and finished by reaming only to a standard .218 in. diameter hole — thus giving a very generous clearance on the bearing. In effect, the shaft is a very sloppy fit, but this does not appear in any way to detract from performance (and probably even contributes to lower friction at high speeds).

Rear feed induction

The crankcase back cover is a die casting embodying the intake tube and reed housing. The "four-arm" reed spring of phosphor bronze is retained by a spring clip and follows later "Cox" practice. Fuel inlet and needle valve are housed at right angles in brass inserts, the needle being very finely tapered. Locking is provided by a non-metallic friction washer at the bottom of the spring and is quite positive in action. The intake tube is venturi-shaped with an actual port opening (covered by the reed) of ⅛ in. The complete backplate unit attaches to the crankcase with four screws.

Whilst running clearances are generous — e.g., several thou. on the main bearing and some 2½ thou. in. on the big end, quite extensive machining is carried out on the crankcase — facing the back and cylinder seat, chamfering, drilling and tapping for the cylinder thread — and the whole engine appears to have been made with care and precision. It is certainly well worth the price as an engineering production — and its performance should attract plenty of attention in the "049" class. A thoroughly attractive little glow engine, in other words, with excellent starting as an added virtue.

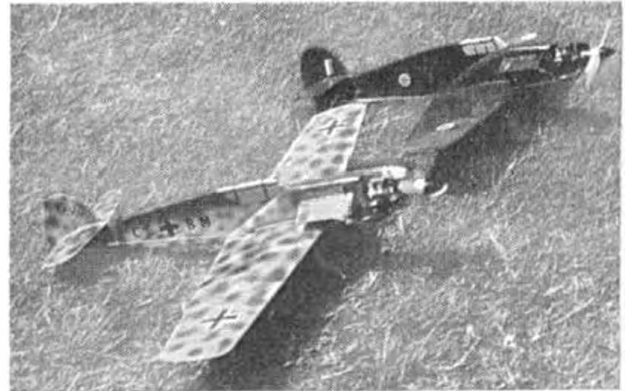
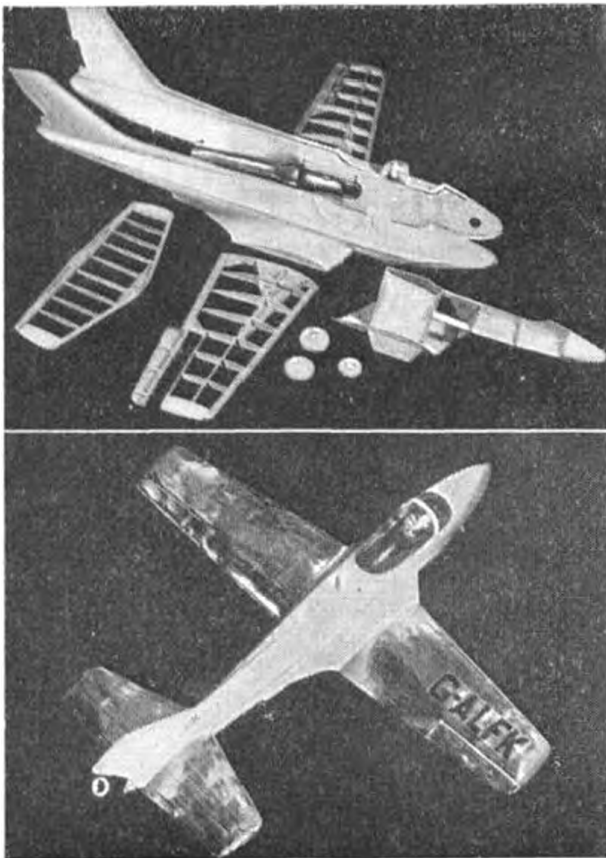


Trade Notes



Left: Trial launch for the Sebel Lynx, a new application of mixed balsa/plastic structure with aluminium coloured acetate moulding for wings and tail. Structure and complete test model below, left. Right: Frog's new combat scale kits include Hurricane and Me.109 — fly as well as they look, too

THE LATEST PRODUCT from the Jetex factory, as we announced last month, is the 25s. *Lynx* kit, by far the most radical departure from convention by this company since the introduction of balsa fuselage shells and "Tailored" kits some years ago. The new kit has fuselage shells supplied as vacuum formed parts, and built up wings covered with thin pre-formed silver acetate sheet panels to cover the built up wing structure. These two features, because of their connections with the words "plastic", "pre-formed" etc., might create the impression that the kit is suitable for the youngster, beginner, and modeller with little time for construction; but this is not so for the Lynx, is *not* a kit for the raw beginner. We would say that this kit is most suited to the modeller with a little experience of kit assembly, and perhaps, to the bed-ridden modeller, in hospital, who has many



hours to occupy, but does not want the mess, or inconvenience of cutting out and tissue covering. Tissue covered wings are an alternative on this model (material for such is included in the kit) and will give better flying performance. All parts are supplied die-cut, including the essential heat insulating aluminium sheet to be used in conjunction with the Payloader 150 motor. Other noteworthy inclusions are motor clip, augments tube, asbestos, nose weights, and special adhesive for plastics parts. The kit goes together easily but we should explain that the plastic wing covering did not give as smooth a finish as we would hope for, however much pulling and smoothing down is done at the LE and TE. Nevertheless the model still has a unique and attractive appearance with its silver wings looking so much like aluminium. Making the upper and lower covering meet at the LE/TE is not easy, and the gap showing bare balsa has to be painted. With the fuselage halves care should be taken that only sufficient adhesive to hold halves together be used, to avoid collapse and softening of plastic. Flying the Lynx will give enjoyment from the semi-scale appearance, and the life of the model is intended to be lengthened by the plastic covering and knock-off wings. We preferred to fix the wings and save breaking the tongue boxes in heavy landings. All-up weight of 6 oz. ready to fly, with loaded motor naturally calls for a hefty launch. We recommend using the tissue covering for the flying enthusiast.

May modellers ask us for a source of supply of Dayglow paints and we refer them to artists supply shops, but now the situation is more than simplified by A. H. Hales introduction of *Yeoman-Glow* transfer sheets measuring 9½ in. by 14 in. of the vivid orange tone seen on American military aircraft. Thus the "Yeo-Glow" serves a double purpose satisfying both free flight and scale modellers. We particularly recommend it for the contest fraternity as the degree of visibility is quite extraordinary and the transfer sheet is well worth the price of 1s. 3d.

Impressive catalogues from the Continent of Europe always seem to give us a sense of envy although in fact we know that British modellers are equally well served. There are however many exclusive and fascinating lines to be found in the catalogue issued by Movo, Via Santo Spirito, Milan, Italy, who have been in the business since 1932. One of their latest introductions is covered opposite in our Patents feature this month and is typical of their clever design work. The *Girostarter* is 2,500 lira which by our reckoning is approximately 28s. The Movo catalogue, which is a 60 page book measuring 9 in. by 12 in. includes model car and boat kits and accessories as well as aircraft and sells for 150 lira.

A new series of kits from **International Model Aircraft** will satisfy the junior combaters for they will provide



Above: The range of inexpensive modelling tools from B. J. Ward Ltd. Right: Airfix's NA-39 has many working parts, is very good scale and makes an impressive model



realistic combat battling with semi-scale profile models with fully die cut parts, but no complete tank, although the usual Frog tank kit parts are included. These 24 in. span, 18s. 9d. models of the ME 109, Hurricane and, Spitfire have been well and truly tried. In fact we had the pleasure of flying one of them at a recent display and found them lively enough to perform loops in spite of the simplicity of the design which is destined for the Frog 100 Mk II and 150 R.

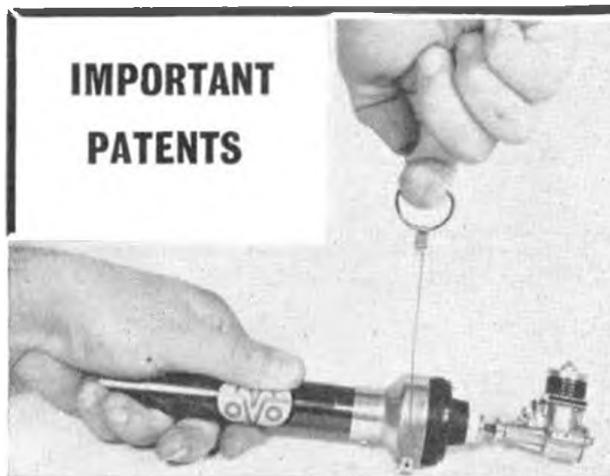
Retailers will be interested to learn of the new line available from B. J. Ward Ltd. of imported, inexpensive model-making tools, as seen in our photograph. Typical prices are 2s. 6d. for the set of 3 small screwdrivers with spinning finger grips at the head for fine work, complete in a plastic case, 1s. 11d. for an archimedean drill, 2s. 11d. for a coping saw with extra blades and 5s. 11d. for a set of six very useful files in a plastic wallet. Modellers will recognise the good value of these items which have already proved themselves most useful in our workshop (see photo above).

There are more working parts in Airfix's latest plastic kit to reach the model market for the Blackburn N.A.39 than in any other of their previous kits including the big Lancaster. Selling for 4s. 6d. the N.A.39 is fitted with folding wings, hinging nose, air brakes which can be set open or closed, a revolving bomb bay complete with

bomb, retracting hook and nose wheel. Among the next kits destined to come from Airfix are the Boulton Paul Defiant and Douglas D.C.3 Dakota.

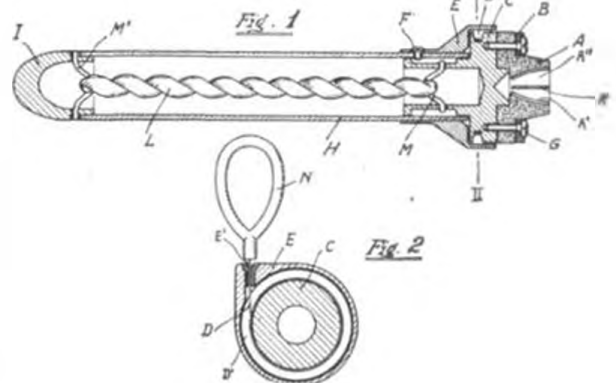
Humbrol announce introduction of a 3 oz. tin of enamel thinners selling at 1s. 3d. which will be appreciated as a more economic and useful size for plastic modellers, than the previous 1 oz. bottle.

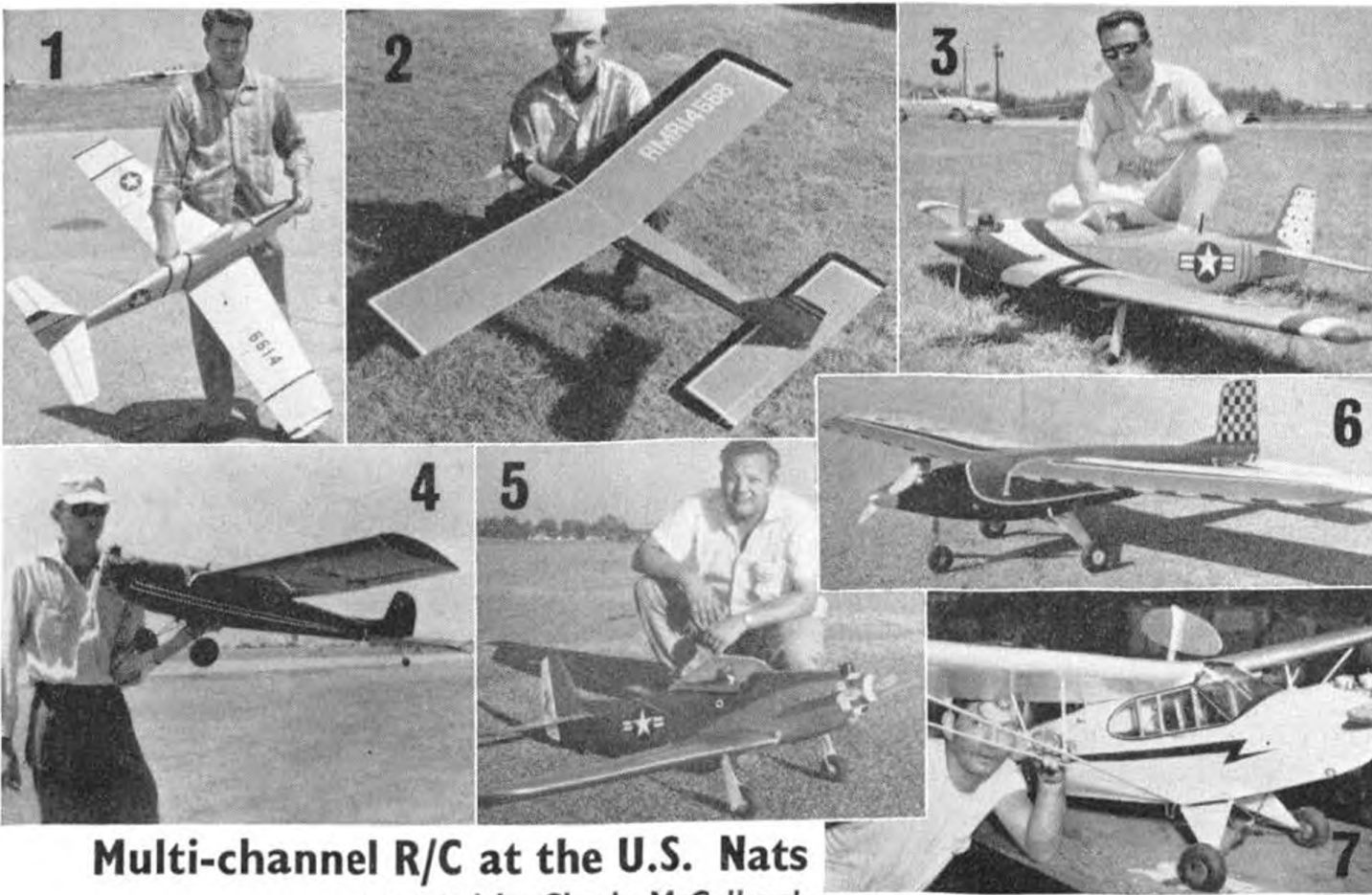
Evidence of the world wide use of Radio and Electronic Products' radio control gear was never more clear than during August, when in answer to an urgent appeal, John Dumble of the R.E.P. staff went on a 3 day air trip to Damascus and back to instruct R.E.P. equipment operators. In this case, the radio was not used for modelling but for the remote controlled Fordson tractor which has been widely displayed throughout Britain at agricultural shows.



Italian Patent No. 75571, granted December, 4th 1959. THIS INGENIOUS MODEL engine starter invented by Gustavo Clerici of Milan utilises a very simple return spring employing a twisted rubber motor anchored to components "M" in Figure 1. A moulded rubber cup "A" seats over the spinner of the model engine or will

engage on propeller nuts by virtue of integral moulded flanges. This is screw fitted to a pulley "C", connected in turn to the rubber return spring. When the eyelet "N" is pulled to its extreme position, the drive is rotated six times. This also winds the rubber motor spring and on release of tension, this spring re-houses the cable on its drum automatically for repeated operation. The device is known as the "Girostarter" and is manufactured and distributed by Movo of Milan.





Multi-channel R/C at the U.S. Nats

reported by Claude McCullough

HEAT WAS CERTAINLY a notable feature of the 1960 U.S. Nationals, with temperatures of 100°F. in the shade and 115°-120°F. on the concrete every day. No better place could be found to field test transistorized equipment for temperature stability and quite a bit of this was being done to new lines soon to appear. Some indicated a need for being taken "back to the drawing board."

Standard of flying in the pattern events was high, the most surprising thing being the return of the high wing to prominence. Doug Spreng of Los Angeles won with his beautiful "Stormer", and among other top placers Youngblood, Mathes and Nelson all had high wing designs. Spreng scored high marks with his beautiful landings and takeoffs using a tricycle gear featuring a steerable nose wheel. This was made from stainless steel aircraft hydraulic line tubing with shock strut and torsion bar mounting.

Several fliers were field testing the new lines of equipment using the new Bonner servo with internally mounted relay eliminator. Bonner will produce a transistor strip to mount in present servos for conversion. The 10 channel receivers were about the size of present single channel sets. Orbit uses a new reed bank made by Fred Dunn, known as "Medco". Getting rid of the bulk of all the relays certainly seems like the next major R/C development.

Fliers using the Lee .45, including Spreng and Mathes, were enthusiastic boosters of the engine. Veco will produce this engine soon at about \$35. Old timer Ben Sheresshaw was at the meet (he designed the Bantam .19) and is thinking about working up an R/C engine, possibly a twin cylinder.

Provisional Results

<i>Multi</i>		<i>Rubber only</i>	
1. D. Spreng ...	796	1. O. Strickland ...	202
2. Youngblood ...	725	2. Brown ...	200
3. D. Mathes ...	688	<i>Pylon</i>	
<i>Scale</i>		1. D. Mathes	
1. W. Murphy ...	P.51	2. D. Spreng	

- (1) Zel Ritchie of Gardena, Calif. was flying this 5 1/2 lb. swept wing design with the new Solidtronics multi-proportional outfit. Made one beautiful flight, but on the next something went wrong, possibly dis-orientation, while flying inverted at low altitude and it went into an inverted dive and was badly wrecked. Equipment still worked after the crash.
- (2) Don Mathes, Burbank, Calif. and his 1st place winning Pylon racer. Time 1:21.3. Veco .19 and Orig. equipment. Mathes also placed third in Multi with his high wing Gambler design.
- (3) Wm. "Joe" Murphy, Hawthorne, Calif. used first place in R/C scale with this large size Breitling design Mustang. Uses Fox .59, Orbit 10 and weighed 10 1/2 lbs. Second place in scale taken by Shultz, also with a .59 Mustang with which he won first place last year.
- (4) Rising young flier and 2nd placer in multi, Youngblood. He used full trimmable elevator.
- (5) Hit of the meet for realistic appearance were the Mustang F-51 fleet designed by Phil Breitling. Flying in two sizes in both multi and scale, showed great manoeuvrability. Phil will kit this .45 size. Pilot is the Aurora jet pilot figure.
- (6) Doug Spreng, North Hollywood, Calif. and his 1st place Multi, "Stormer". Lee .45 and shock strut, torsion bar nose wheel (steerable). Model also had brakes and made beautiful proto takeoffs and landings. Original own construction 10 channel equipment.
- (7) Ed Morgan of Las Vegas, Nevada placed third in R/C scale with this 9 foot, 14 lb. Cub. Super detailed interior and crop dusting hopper which dropped flour for bonus points. Motor is two McCoy 60's made into a twin a la Taplin. Very smooth running and powerful.





AEROPLANE IN OUTLINE

Number 59

Drawn by E. Tage Larsen

JUST OVER five years ago, when the prototypes of many of today's operational fighter aircraft were in the early stages of test flying, it was foreseen by many nations in the Western world, that with the next generation of fighter aircraft would come a not altogether desirable increase of size and weight with performance.

Cost also is dictated by aircraft size, and this concerned some aircraft designers in the United States, particularly those at Northrop. In Europe, the W. E. W. Petter philosophy resulted in the Folland Gnat and Fiat produced the contract winning G.91. Prices of future fighters, it was calculated would put American aircraft way beyond the reach of lesser countries looking for suitable Mach 2 fighter replacements. Northrop, foreseeing such a situation, decided that the obvious answer in fighter design was to turn to a small, moderate power turbojet which would if installed in a small, light enough airframe, give a performance comparable to larger fighters current at that time.

In 1955 Northrop found that General Electric were developing turbojets of the size/weight/thrust required, for missile use. These were the J-85 series. A design was quickly drawn up around two of such engines, and appeared promising and so the N-156 F was born.

Before any thoughts had been given to the N-156 F general operational requirements for a supersonic basic trainer were issued by the U.S. Air Force to manufacturers. Once the N-156 F design was under way it was decided to incorporate a trainer version in the development programme. The trainer, known as T-38, Talon, actually flew before the fighter, in April, 1959, and apart from tandem seats and additional equipment is virtually identical to the N-156 F.

During development of the N-156 F the U.S. Department of Defence recognised the aircraft's potential use with the "free world nations" these comprising many of the NATO, SEATO and smaller European countries, and also some in Asia such as India. As a result fifty million dollars were supplied to Northrop for development costs. Evidence of sponsorship other than that of the Air Force was displayed with the first flight of the N-156F on July 30th, 1959, when a serial, but no USAF markings, was carried.

Today the fighter is undergoing trials, and testing the features that make it superior in many ways to other, larger fighters. Not only is the N156F a comparative lightweight (12,190 lb. at take-off — less than half the weight of most current U.S. Navy and Air Force fighters), low-priced aircraft, but it has the advantages of simplicity, ease and cheapness, of maintenance, short field and zero length launch capability, versatility and all-weather performance. One example of the ease of maintenance can be seen in the cockpit windshield: this hinges forward

completely to expose the area behind the instrument panel. Short field capability enables the N-156F to use airfields of extremely limited size. Landing runs can be cut down to 1,000 ft. by the use of a special arrestor gear and zero length launching is possible from a portable ramp with booster equipment used (see the cover of April, 1959, issue). Advantage here is that in wartime, aircraft can be put into the air from unprepared advanced bases at immediate notice. Launchers may be permanent, or mobile, enabling the fighter base to keep pace with an advancing front. Versatility gives the air force operating the machine firstly an interceptor capable of climbing to meet and destroy enemy bombers at high altitudes in all weather, secondly a long range (2,000 miles with external tanks) fighter which if necessary may be refuelled in flight, thirdly a fighter bomber carrying a war load of 2,000 lb.: this may comprise bombs, rockets, a gun pack, or air-to-surface missile. Advanced photographic and electronic equipment can also be "hung under" the N-156F to provide a reconnaissance version.

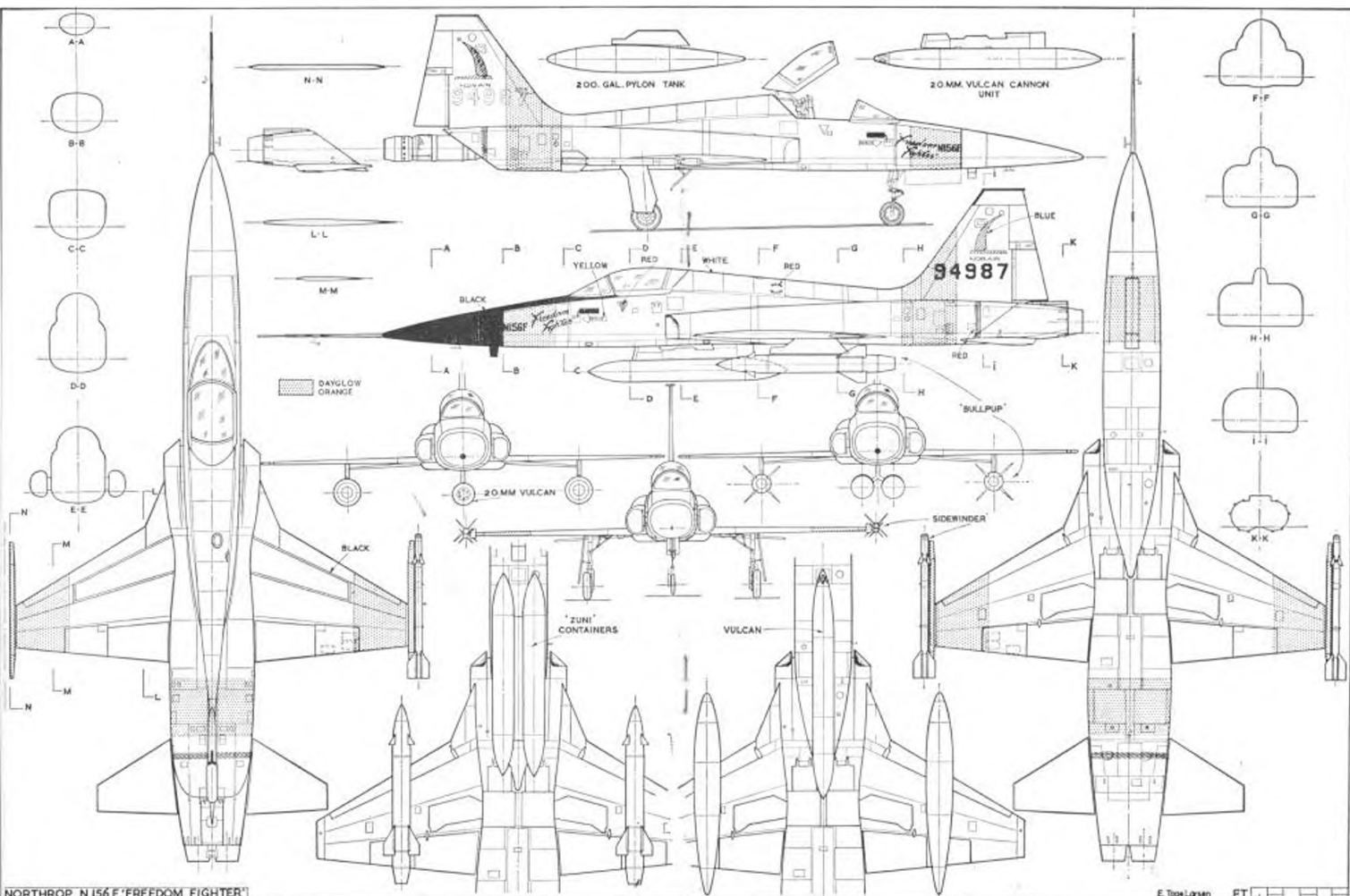
The N-156F despite being one of the most versatile and outstanding (performance-wise) aircraft, for its size and weight, flying today has not succeeded in securing an order to date. Its performance growth with after power plus pre-compressor water injection will provide an ultimate speed capability of Mach 2.2.

Technical data

Powerplants: Two General Electric J85's of 3,850 lb. thrust each with afterburner. Span: 25 ft. 3 in. Length: 45 ft. 1 in. Height: 13 ft. 1 in. Gross weight: 12,190 lb. Max. speed about 1,000 m.p.h. at 36,000 ft. increasing with later engine improvement. Range: up to 2,000 miles. Service ceiling: 52,000 ft. Take-off distance: 2,000 to 4,000 ft. depending on load. Landing distance: approx. 3,000 ft. Interceptor armament: two of any of the following missiles — Sidewinder, Falcon, Bullpup.



Heading photo shows the prototype N-156F on its first flight in July last year, high above Edwards Air Force Base, California. Note absence of U.S.A.F. markings despite the usual serial. Right are seen two of the early T-38 Talon trainer versions of the "Freedom Fighter", with their unusual temporarily faired-over rear seats



1/72nd SCALE REPRINTS OF THIS "L" TYPE PLAN AND 1/48th SCALE "B" TYPE DYE-LINE PRINTS ARE AVAILABLE PRICE 1.00 AND 1.50 RESPECTIVELY FROM THE AERODRAWER PLANS SERVICE PLEASE QUOTE PLAN NUMBER 328 WHEN ORDERING



WORLD CHAMPIONSHIP TECHNICALITIES

BEFORE WE GET involved in this first part of our summary of interesting model detail seen at the World Power Championships, it is worthwhile reflecting on the model specifications for the class. They were instituted to take effect at the 1958 contest, and this was the second time of use at such a Championships although of course they are used by many countries for National events.

Maximum cylinder capacity : 2.5 c.c.
 Load per c.c. of cylinder capacity : 300 grammes (10.6 oz.).
 Load per unit of area : Maximum 50 gr./dm² (16.4 oz./sq. ft.).
 Minimum 20 gr./dm² (6.56 oz./sq. ft.).
 Engine run : 15 seconds.

Whereas the 1958 contest (also held at Cranfield) was in blustery conditions, the 1960 event enjoyed perfect weather during the main five rounds. Subsequent fly-off rounds were punctuated by rain showers, yet at no time was there a strong wind and only a long dethermaliser time took a model outside of the aerodrome (for efficient recovery by the South Midland Area modelers, some 40 strong, under the direction of Dick Edmonds). Only one model was lost during the contest, that of Ed. Miller (U.S.A.) due to a 4½ minute d/t fuse and an 8:40 flight into corn.

During the 4th and 5th rounds there was evidence of thermal activity. Some good models were genuinely downdraughted in the fifth round, and this eliminated

Canadian John Scott's chances. The other modeller who deserved a final place was Tom Smith with Japanese Suzuki's model. He made 7 max's but the first two were marginal overruns through no fault of Tom's. Scott and Smith would then have made the 15 strong fly-off we forecast during processing—even so, our prediction that at least 25 per cent. of the entry would place equal first was realised to the nearest whole man, and that one out of every four provided a few surprises. Congratulations are due to Norway and New Zealand for their high placings with 2 men each in the fly-off; to the proxies who worked so hard and flew so well; to the Hungarians for the finest finished team of models that really deserved to repeat team victory, and to the most efficient and slickest scoreboard yet, devised and operated by our own "Rushy" with Mrs. R. and Eddie Cosh toiling over figures to produce results so quickly.

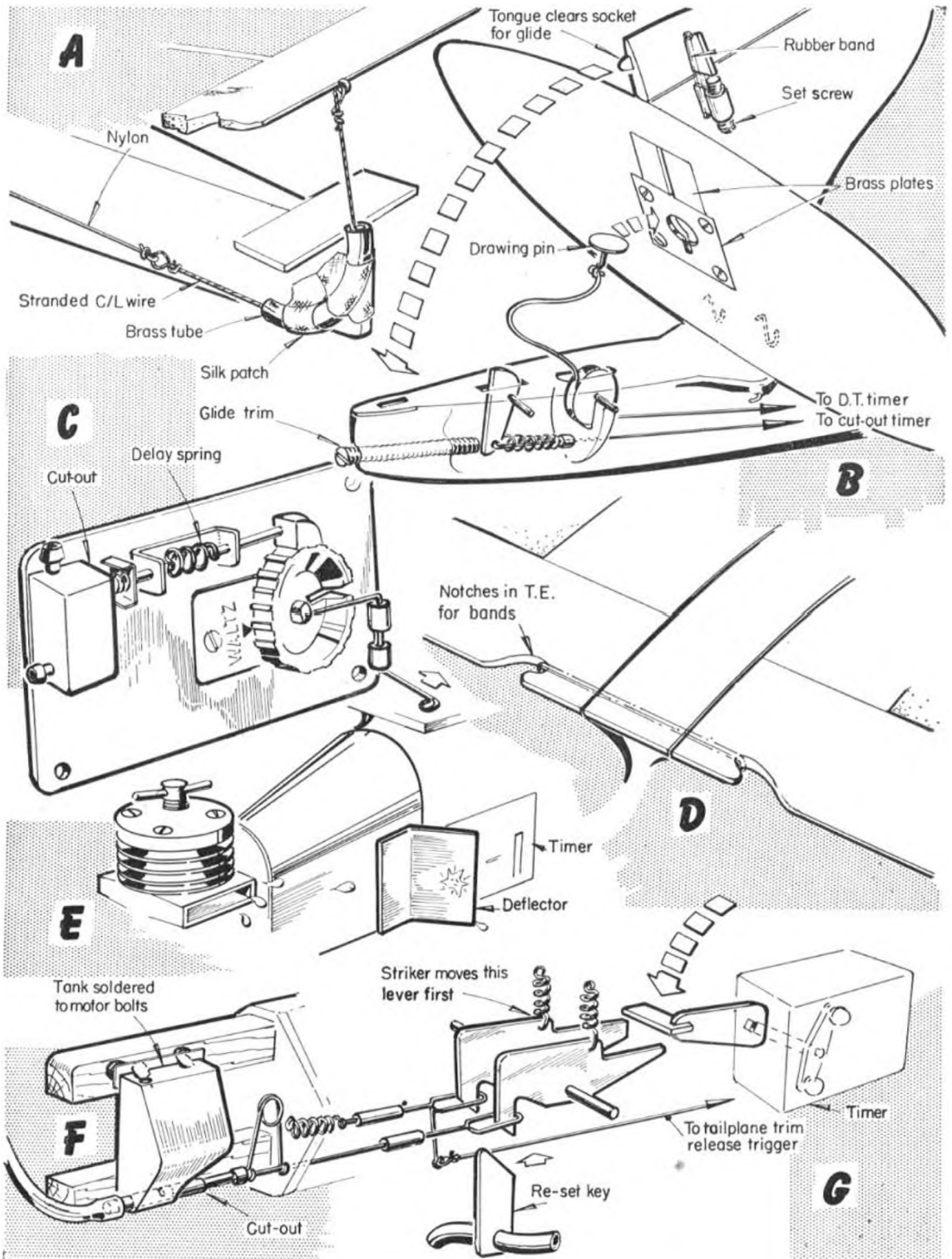
So much for generalities—what was there to see among the World's best Power models (so good that to score

SKETCH DETAILS opposite give valuable tips to be gained from inspection of the International talent at Cranfield. A is Sandy Pimenoff's (Finland) method of connecting a clockwork d.t timer to the tail. On his other model he used a coil of C/L wire as a guide. B is the tail of Bond Baker's (Australia) 1.5 c.c. model with screw settings, two tail positions plus d/t and neat use of drawing pin head to engage d.t line. C on Pimenoff's converted Walz timer (a popular choice) was a delay spring to allow time for the d.t lever to come up through the slot in winding knob and so not lock-up. D Cuts in wing trailing edge of Hans Beck's (Germany) model hold bands for separate wing halves. E Sludge stopper on Gerald Hornmann's (Austria) E.D. Hornet model keeps timer clean. F is Vladimir Hajek's (Czech) tank on engine bolts with integral cutout valve, tripped by G, a double lever device for re-setting tail incidence on the glide just before stopping MVVS diesel. Re-set key pushes up under fuselage. Model will be detailed in this year's AEROMODELLER Annual.

Heading shows the five top men after their 7th-round regularity test at Cranfield. Left to right: John Sheppard (New Zealand), Sandy Pimenoff (Finland), Larry Conover (U.S.A.), Giovanni Guerra (Italy) and Rolf Hagel (Sweden) — you'd look tired too after all that effort !!

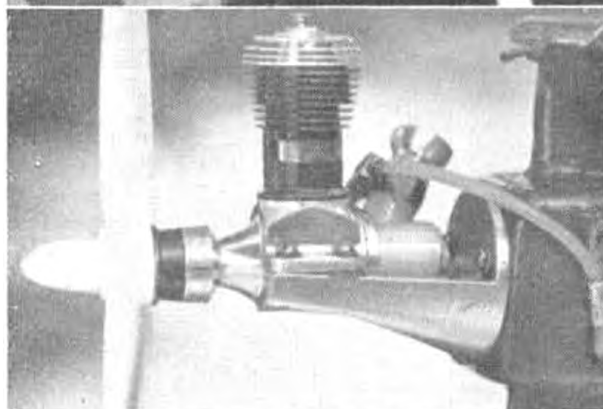
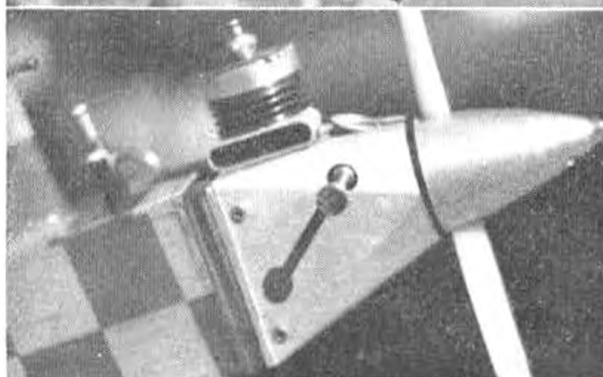
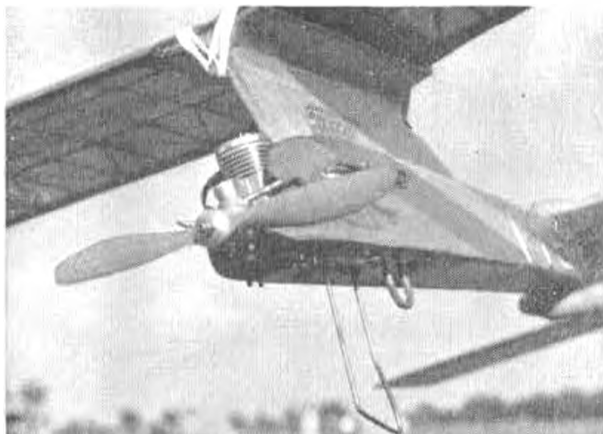


Top team, and justifiably so for their models were the epitome of quality construction and their performance of such high average in an event where every second counted. Hungarians Gyula Simon, Erno Frigyes, Manager Reszo Beck behind, and Andras Meczner. All decoration beautifully applied in coloured tissue strips



WORLD CHAMPS TECHNICALITIES

(continued from page 534)



MORE DETAILS seen at Cranfield, H is Birger Bulukin's (Norway) triangular turbulator system on wing leading edge, made of acetate. He was a finalist. J Also from Norway was Torbjorn Johannessen's tail unit, with an aluminium rod as d/t guide and limit, triple hooks at rear for spacing the rubber band and fuse and a guide peg arrangement to stop the tail from slewing. K was seen on Rene Grappi's (Swiss) 1.5 c.c. models, simple yet so effective warp stopping doubled gussets at every rib. L by German Hans Schilling is a tongue-less wing fix. We noted increase of dihedral at times: but it was a shock absorber in d/t landings! Depends on tight bands and good wing seat. M From Austria, Ferdinand Niedermayr had an adjustable thrust alloy engine plate in what was otherwise an A, 2 type model with very small tailplane. N is Larry Conover's (U.S.A.) safety first arrangement on the Tatone tick-off timer. He has spring to permanently tension timer to start position, locked off by pin with flag, other safety device by him is O, where fuse is also used if timer fails to release lever and band. Fuse snuffs out in tube. Larry says this is most important feature of Lucky Lindy—to get it down!

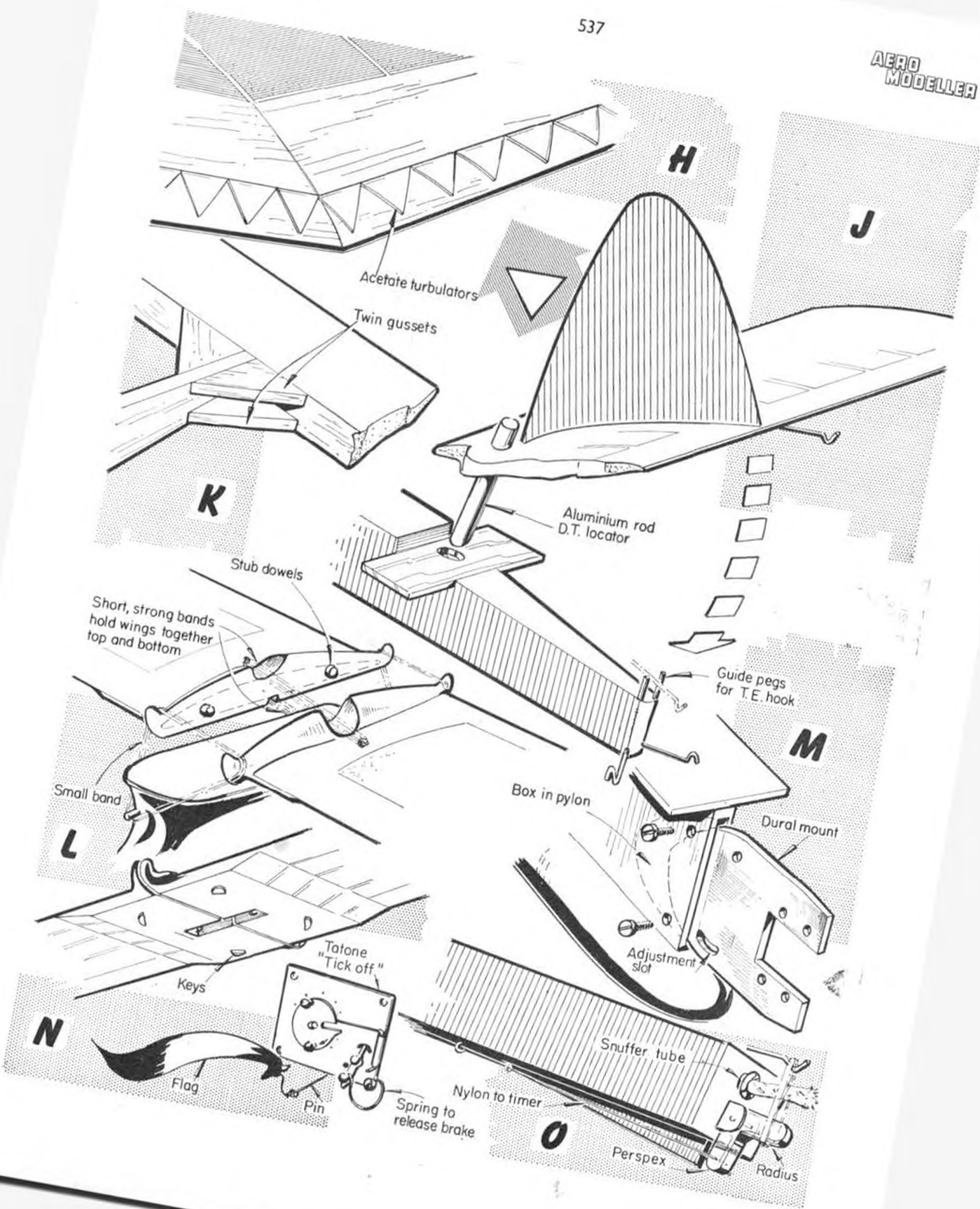
14 minutes was only enough for 36th place!)? The answer to that one is "plenty", and since it was a Power event, we should first deal with engines. Numerically, the Oliver Tiger retains the popular vote for this class of model: but if one is to take the numbers used by finalists as a percentage of those entered, it does not show so well as in previous years. Four, out of the 13 finalists used Tigers and the great majority were re-worked examples. Rolf Hagel was the lone Tiger operator among the top five, though Sandy Pimenoff also used his Tiger powered *Ascender* during some of the rounds.

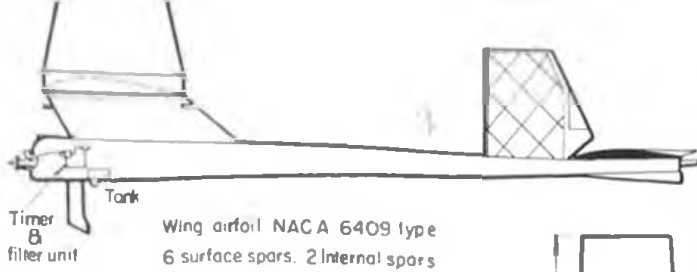
The other diesel which reached the end of the contest was the ETA 15, and we know for a fact that neither John Sheppard's nor Pimenoff's were modified in any way. The high proportion of ETA finalists among those entered is a credit to the manufacturers. Johannesen of Norway had a novel ETA 15 on his third model which crashed in practice, featuring a drum valve and crankcase bleed cut-out valve.

With three of the top men using diesel out of an entry of 44 electing to use this type of ignition, and the other two finalists using glowplug out of 10 such entries, it could be said that percentage-wise, glow held sway and showed general superiority. This should be qualified by stating that the majority of the glow engines used, especially those placed highest, could not be bought in the shops.

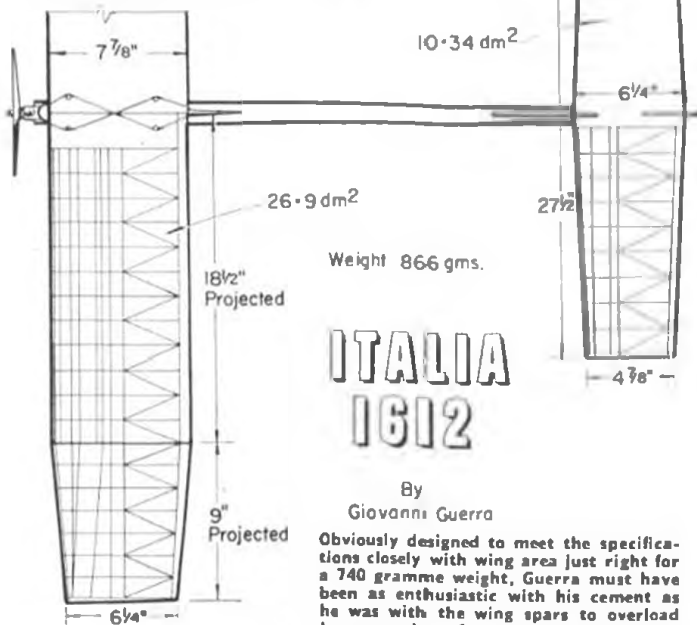
For sheer r.p.m., the latest model Super Tigre G 20 V *Giubilee* as employed by Giovanni Guerra was the engine of the meeting. Wisely propped with a 7 1/4 x 3 1/4 wooden screw to take full advantage of the high b.h.p. peak, the Tigre was running to over 20,000 r.p.m. in the air. Using a pressure tapping off the crankshaft port (now considerably enlarged in a bigger shaft) the engine increased its speed with the duration of its run. The fact that it was in one of the heaviest loaded models in the field, with a variable climb pattern indicating need for more trimming attention leads one to wonder what such an engine might have done without the overload of no less than 4 ounces unnecessary weight! This Jubilee model Tigre has the shaft housing in unit with the main crankcase and features, among other enlightening design changes, a flat topped baffle-less piston, generous transfer (two passage) timing to almost fully overlap exhaust, and a smooth but thick cylinder head. Guerra stops his by a powerful metal plunger valve in the feed line. (Continued on page 538).

Left, top to bottom: Guerra's fantastic power unit. Prop hides some of the involved plumbing for pressurised fuel system. Note heavy gauge leg for d/t landings and coupled tank vents behind. Next is Larry Conover's metal cowed and modified O.S. Max 15-11 with blanked-off tank vents aft of cylinder; note only slight downthrust used, and use of spinner for streamlining. Latest Cox Olympic in Woody Blanchard's model had a drum valve, running in a steel sleeve encased in nylon. Engine takes on the aspect of a musical instrument, and certainly now has good suction. Bottom is a standard Cox Olympic as used by Austrian Ossie Czepa with tank as close as possible to the engine, timer in between does not make the fuel line any longer. Bottom timer is another Tatone, for derthermalising, and round spot is cover for the weight box in the "chin". Note also the curved and dihedralled wing tongue for the thin all-sheet sparless wing airfoil, and the metal engine mounts. All-in this was most ingenious model of the World Champs





Super-Tigre G-20 V Jubilee
7/4" x 3 1/2" prop - over 18,000 RPM (static)



Weight 866 gms.

ITALIA 1612

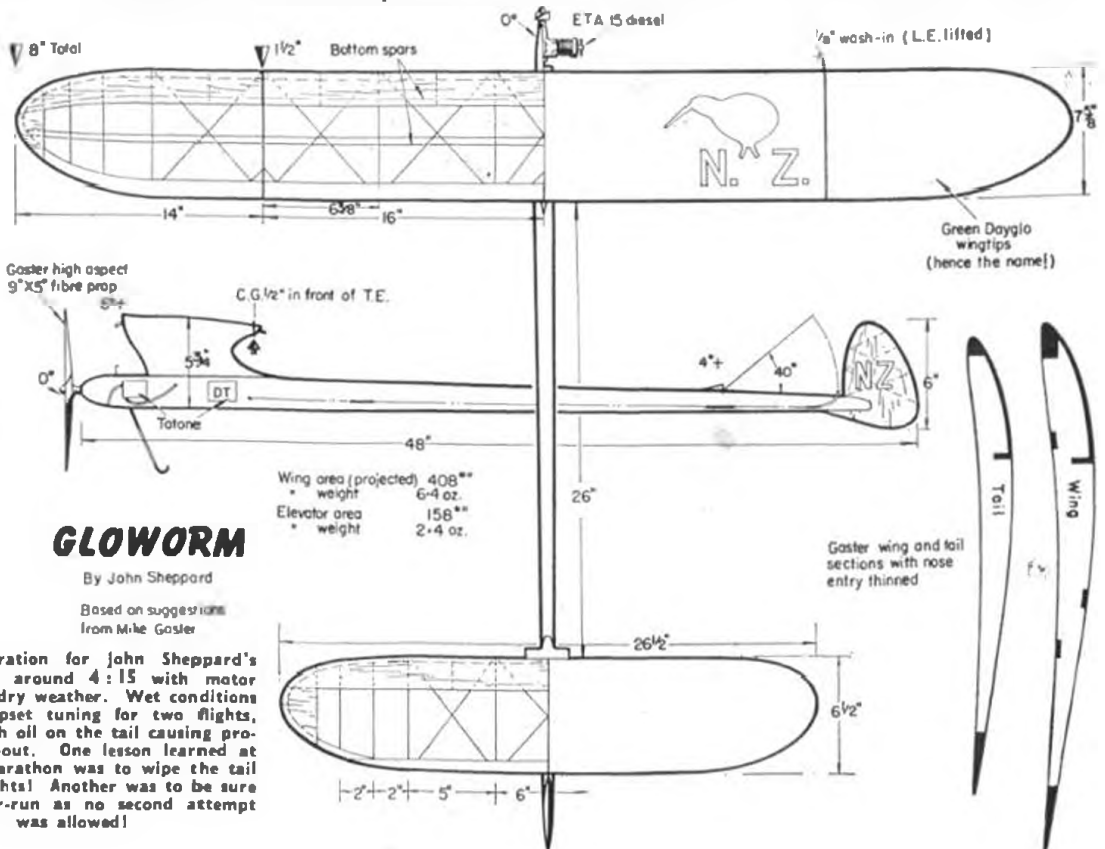
By
Giovanni Guerra

Obviously designed to meet the specifications closely with wing area just right for a 740 gramme weight, Guerra must have been as enthusiastic with his cement as he was with the wing spars to overload by as much as four ounces; but it made no difference with that motor up front

When one realises that thousands of miles space the three U.S.A. team members in their normal modelling activity, and that at each of their zone finals the standard of flying was high enough to qualify any of many flyers, the expert status of the Americans is better appreciated. We know that the full range of internationally accepted engines, the Olivers, K. & B.'s, Webra's, Enya's, etc., were used in these finals, yet all three of the U.S. team arrived equipped with *personally* modified O.S. Max 15 series 11's, a coincidence which illustrates widespread U.S. appreciation of the engine. All were working on a pressure system with tappings off the rear covers. Conover and Blanchard stopping by plunger in the fuel line, and Miller using a squirt of neat fuel into the intake from a separate timer actuated fuel line to stop the Max by flooding. His better (and oldest) engine may well have been the most powerful on the field. Few would recognise it as an O.S. since the transfer passage had adopted Monrovia proportions (or Mansfieldesque if preferred) rather like a miniature Dooling. Ed Miller makes these mods with *Plastic Steel*, a two part cold setting plastic which is universally available (7s. 6d. in G.B. hardware stores) being made by Dev Con of Nassau B.W.I. Unfortunately, this engine which had been checked at 16,400 r.p.m. on a Topflite 8 x 4, broke either a rod or wrist pin during early a.m. practice.

Larry Conover's O.S. Max with the internals cleaned up was not so far behind, holding 16,200 r.p.m. on the same prop, and Woody Blanchard's sounded just as healthy though model misbehaviour in the first round made him (and Conover) change to the 2nd model. In Woody's case, this meant a change of engine type, and one of extreme interest at present for it was a drum valve prototype of the Cox Olympic. Fitted with a nylon rear cover for the steel intake timing drum bearing it

Two of the top models

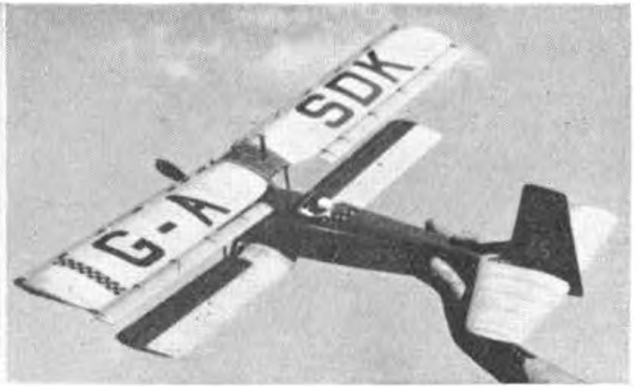


GLOWORM

By John Sheppard

Based on suggestions from Mike Gaster

Normal duration for John Sheppard's Gloworm is around 4:15 with motor running in dry weather. Wet conditions in fly-off upset tuning for two flights, coupled with oil on the tail causing prolonged pull-out. One lesson learned at Cranfield marathon was to wipe the tail between flights! Another was to be sure not to over-run as no second attempt was allowed!



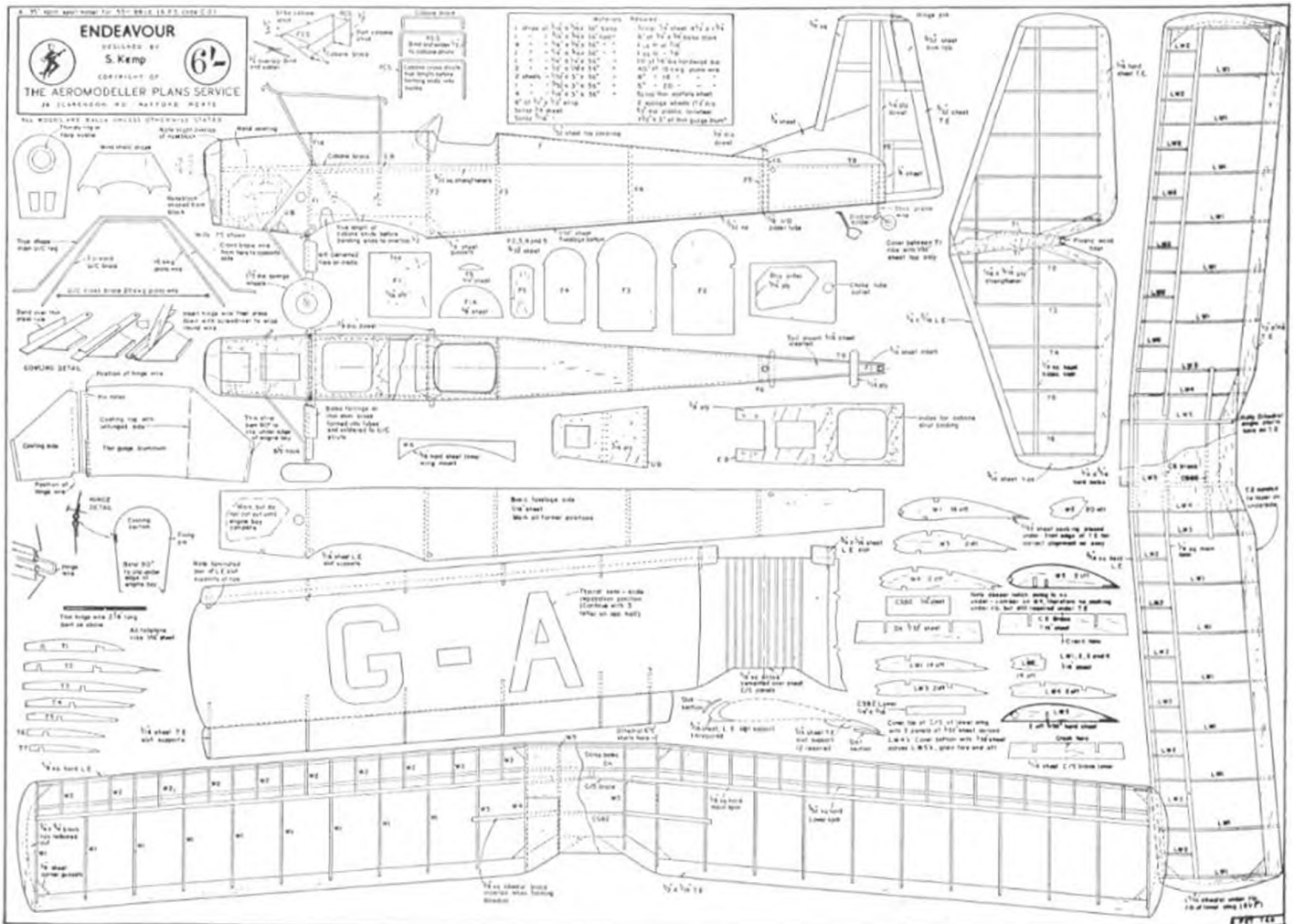
ENDEAVOUR

A Semi-scale biplane for .5-.9c.c. engines by S. KEMP

PREFERRING TO HEAR appreciative murmurs, rather than the usual "Huh! look at this horrible thing Dad", an attempt has been made to contrive a practical model of scale appearance, with Endeavour. But only after numerous pages of "Design for Aeromodellers" were worn out and many moons had come and gone, did the first reverberations of the power plant burst upon the neighbourhood, heralding a subsequent daily disturbance.

Endeavour has suffered many mods. during development, but the prototype is performing well in its present form with an inverted Mills .75 and repairs have not been called for frequently, despite its age of 8 years (almost senile).

Construction is quite normal; but first, do commence hostilities with a really sharp blade; plywood incision wears down the keenest of scalpels, so cut and carve all



FULL-SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE THROUGH A.P.S. AS PET 769 PRICE 6/6 INCLUDING POSTAGE.

balsa parts first then ruin the blade on the ply.

Bend main u/c leg over plan then bind in position on UB. Repeat for forward brace. Now invert UB on table and push main u/c legs rearwards out of vertical ($\frac{1}{4}$ in. at the axles). Now move over the forward u/c brace to contact the main legs but bend the last $\frac{3}{8}$ in. of the forward legs so that on contact, it lays parallel with main u/c leg. Bind and solder. Make cross brace wires, but leave one looped end slightly open, thread other end on axle, now clip open end at root of opposite leg just above fairing position, now close loop. Repeat for second cross brace wire; fit wheels, cup washers, fairings, and the u/c is complete.

Two cabane struts are now bent over plan (true length shown dotted). For starboard struts, the dotted $1\frac{1}{2}$ in. ends are bent up perpendicular to the plan, the port strut ends are bent in toward the plan. Now overlap port and starboard $\frac{1}{2}$ in. bind and solder, and then make and fit cabane brace; now invert on table. Bend to shape FCS and RCS but do not form hooks yet (this is best left until the wing centre section is made and can be used as a guide). Locate in position $\frac{1}{2}$ in. from corners of cabane struts, bind and solder. Now file off binding on top of cabane struts to make smooth rest for wing centre section. Finally position assembly on EB and firmly bind in place.

The fuselage is started at the rear, cementing in rear fin tube while spacing sides at the correct taper by cementing in place F1 and 2 at the same time (holding while setting, with rubber bands or clips). Next F3, 4, 5 and 6 followed by $3/32$ in. sq. strengtheners between F1 and F3 through F2. Lower wing runners WR are now fitted in place on inside of fuselage sides (coat edges well also; saves wear). Now firmly cement EB in place between sides but flush with top edge. Next the ply engine bay sides on inside of fuselage sides, but while setting, temporarily space sides at correct angle with unstuck UB (Lashings of bands at this stage again). Now cement UB very securely as it is the victim of shocks and great strain when coming in to land on the usual available tarmac. Resume the lashings. Time to try the noseblock for size, but don't glue, you haven't got the motor in yet. Previously marked fuselage sides at engine bay can now be removed. Fit the engine, and

decide upon the tank type and fitting position. If, as with the prototype a Mills is used, a piece of fuel tubing can be fitted over choke tube to extend same and throttle assembly reset to starboard. Now cement F1A sheet balsa; top and bottom dowels, forward fin tube and metal cowling are fitted.

Tailplane is built directly over the mainspar that is pinned to the plan then trailing edge, ply strengtheners, ribs, L.E., tips, and finally centre section sheet are added.

On the fin, make sure the dowels are central on the mainspar, and fin strake, not forgetting to pack under T.E., for the same reason. See that lower part of FE clears rear fin tube on insertion into position. Sand dowels if at all tight, else damage may result on dismantling, but if already sloppy, thicken dowels with a film of cement and set aside to dry.

The wings will present no difficulty if the centre sections are built first. Upper wing TE is pinned to plan packing up with appropriate thickness. Pin down lower spar, now ribs, (don't cement W4 to centre section brace CS or DK yet). Next mainspar, then half-ribs, followed by LE up to W4 then tips. Now form dihedral of $6\frac{1}{2}$ degrees by packing up tip $1\frac{1}{2}$ in. under lower spar, and cement W4 to centre section, mainspar to CS brace, then leading edge of centre section; finally the $\frac{1}{4}$ sq. dihedral braces across W3 and W4 to W5. It only remains to cover centre section with sheet top and bottom.

Lower wing LE is pinned diagonally through to the plan and ribs are cemented to it, while supporting on each side with a pin near the TE end; next the main spar then TE up to LW5. Now add the half ribs. Form dihedral (from LW4). Finish off with dihedral brace, LE of centre section, and sheet covering across LW4s. The LE slats and TE flaps are attached after covering and doping the wings.

It only remains to sand, cover with heavyweight Modelspan, dope twice, and colour to taste.

Flying

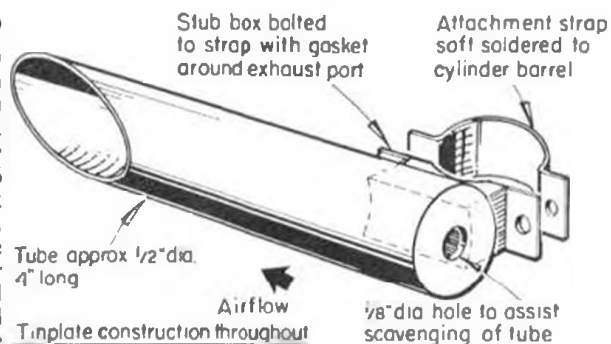
You're ready to go, but wait—easy on the revs., to start with, there may be some resident gremlins about, that will require anti-warp tactics, to effect eviction.

With sufficient revs., Endeavour executes a perfect loop, but remember that the first one comes out perilously close to the ground!

Simple Silencer for E.D. 3.46

SOME five years ago when the Cheltenham Club were investigating the model aircraft carrier which they built (now sadly defunct due to lack of interest) Stan Perry had been using an E.D. 3.46 with a pierced blanking plate over the air intake in order to slow the engine. He still uses this system on the E.D. 3.46 as the motor will tick over extremely well without such refinements as barrel valves or exhaust shutters. However, as this system runs very dirtily because the slow speed running is created by running the motor very rich, he was concerned at the amount of oil getting into the airframe. The solution to this appeared to be some form of cooling of exhaust gases to the point where the hot oil vapour condensed out. Accordingly he constructed a simple tube some 4 in. long and of equal cross-sectional area to the exhaust ports, this then being soldered to a stub box built to fit the engine. The whole thing took about 2 hours to make and was very simple as seen in the sketch.

When checked for functioning, the first outstanding point was that when standing with the handle ready



for the helper to release the model, the noise level was so low that it was thought that the engine was not running flat out. However, the subsequent flight disproved this as it was obvious that the power was there. The tube furthermore was very effective as a cooler for the exhaust gases as the oil apparently all condensed out inside the tube and was discharged by drip at the end of the tube.



CANADIAN CLUBROOM

OF THE MANY club reports, and news of achievements that we receive at these offices, perhaps the most interesting, and indicative of club members enthusiasm, in recent months is that from the Dundas Model Aircraft Club, Ontario, Canada. This club, now four years old, like many others, has had a varied history of good and bad times; but their story illustrates what can be done if a group of people set their hearts on something and go through with it despite many setbacks.

The originator of the club, Wilfred Weisensee, arrived in Canada autumn 1956, and became a member of that country's largest modelling association, The H.A.M.A., but he found very little interest among fellow clubmembers to help, guide and train younger members. However, in spring '57, a number of models were built and flown around Dundas to attract the local youngsters. This they did and soon building classes were initiated, with the A.P.S. *Golden Wings* design as training model. By October, virtually all local boys were attending classes. Vincent Redfern an H.A.M.A. founder member, suggested formation of DUNDAS M.A.C., which was enthusiastically received, and they used a garage as their first headquarters.

The Club progressed happily until December, when use of the garage was lost, and the inevitable aspirations of a clubhouse came to mind. With club funds very low a public display was organised to introduce and impress the town council with the hobby. Sixty-eight dollars and permission to use certain town property resulted from the display; but this still did not provide a clubhouse. In February, '58, an old barn was presented to them, but required transporting to another site, entailing complete dismantling and rebuilding; quite a feat, taking about four months and in conditions of snow, rain and with the lads on the roof trying to save the boarding in 75 m.p.h. gales.

"Before" and "after" state of the Dundas Clubroom: seen at top, while the lads prepare lockers and finish cleaning out for a spate of modelling in views at right

Summer of 1958 saw another club display and attendance at many H.A.M.A. contests. In September a Dundas social club offered to improve the club house and make it suitable for use during the Canadian winter. About 800 dollars were spent on insulation and installations, 90 per cent. of the work being performed by the D.M.A.C. boys, and the most professional looking finished building can be seen in the accompanying photos. The bill for this and many further debts were met wholly by Dundas social club.

Came the spring of 1959 and the clubhouse was equipped with lockers for every member—another feat, requiring 1,000 sq. ft. of ply. Summer contests were visited, and a display and interior decoration of the clubhouse were undertaken during the remainder of the year.

The club was now in the most happy of positions and its future existence appeared similarly bright, but during February of this year, the clubhouse was broken into and models, motors, fuel worth 100 dollars were stolen; but far worse than this—damage to the clubhouse and furniture amounted to 350 dollars loss. After thousands of hours spent building the clubhouse, and creating and developing the club itself, all the achievements of the Dundas M.A.C. members were partly ruined overnight and for no apparent reason (some of the stolen models were found recently in the form of burnt remains).

However, one thing not affected by such a setback was their keen spirit—and we do not suppose it will be long before Wilf and Vincent's youngsters are operating at full steam again in their fine H.Q.



MOTOR MART

THERE WAS A time when performance of any new 2.5 c.c. engine was measured against the comparative power of an Oliver Tiger. We hesitate to count the many claims we have heard in recent years for an engine with superior output, yet still the Ferndown product remained invincible, particularly so in team racing. However, there must be considerable satisfaction for Bert Rivers in producing his tuned Silver Streak Mk. II and Ken Bedford with his ETA 15D each of which have soared to the lofty heights of high placings in National and International events since their introduction only a few months ago.

The Silver Streak which won class A (F.A.I.) team racing at the Nationals and has since won the Enfield and Sidcup Rallies is by no means a one-off engine; in fact the Balch/Smith team who are going to Budapest will be equipped with these motors which can be supplied direct from the factory at a full charge of £2 10s. over the standard figure. It should be pointed out that these are supplied *direct only* since a standard model cannot be taken back for optimum tuning because the technique calls for a special shaft with enlarged intake port. Standard models can be accepted and tuned to the best possible performance within the limitations of the standard shaft. Transfer timing is altered and the cylinder re-worked for smoothing the gas flow, involving several hours of specialist time which is in fact cheaply obtained for £2 10s.

The ETA 15 is supplied in standard form only, and as such, it shows a remarkable degree of consistency due to the method of producing the cast cylinder. The only change which has taken place in ETA 15 design since its introduction is the use of standard gudgeon pin assembly in place of the previous sealed piston/conrod unit. This is introduced to simplify the spares situation since before, conrods were not replaceable without a complete change of piston and cylinder.

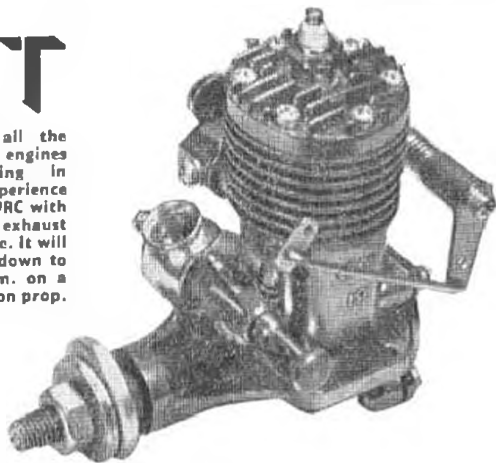
One remarkable feature of the ETA 15 is its fuel economy. A number of modellers have already discovered that it will exceed 50 laps in a team racer on 10 c.c. fuel at handsome speeds.

Speaking of fuels, news from U.S.A. is that the A.M.A. is taking steps to ban Tetra Nitromethane for modelling. Apparently one or two Americans have found out that it really gives a zip to C/L speed fuel but exposure to it can cause fatal results. One of their speed fliers ended up in hospital for six weeks and was told that he is lucky to be alive. Specifically, the stuff causes extreme nervousness, weakness, prevents sleep and causes the lungs to bleed. It appears that it doesn't take much exposure to bring on the symptoms and for this reason the A.M.A. is going to ban the stuff for modelling before anyone ends up in the graveyard.*

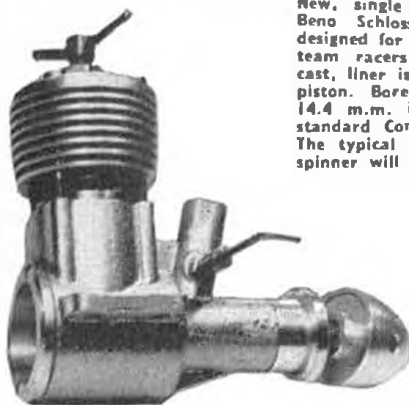
Herkimer who made the change from front rotary shaft induction when they introduced their O.K. Cub .024 engine have now introduced three more rear reed valve motors known as the new O.K. Cubs. The .049 A sells at \$3.95 complete with nylon tank and is suitable for radial mounting only. The .049 R and .06R (1 c.c.) new Cubs will sell at \$6.95 without tank but with the original O.K. crankcase styling which offers radial or beam mounting. These motors increase Herkimer range to something like 15 different motors, and it is interesting to see the adoption of the 1 c.c. capacity in the American market.

* Official report published in 1954, written by Henry J. Horn states "Chronic exposures produced bronchial constriction, mucosal degeneration, purulent bronchitis, interstitial haemorrhage of the lungs, severe congestion of the lungs, and degenerative changes in the liver and kidneys."

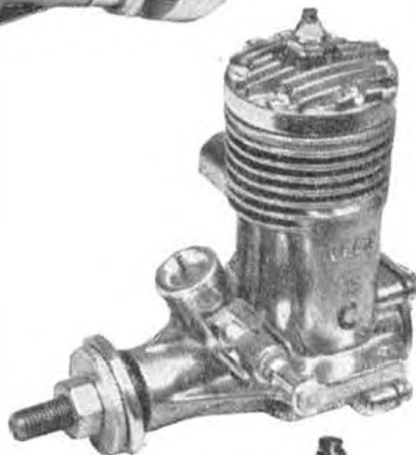
Nicest of all the small R/C engines for handling in our experience is Veco's 19RC with coupled exhaust and throttle. It will idle safely down to 2,400 r.p.m. on a 10 x 6 nylon prop.



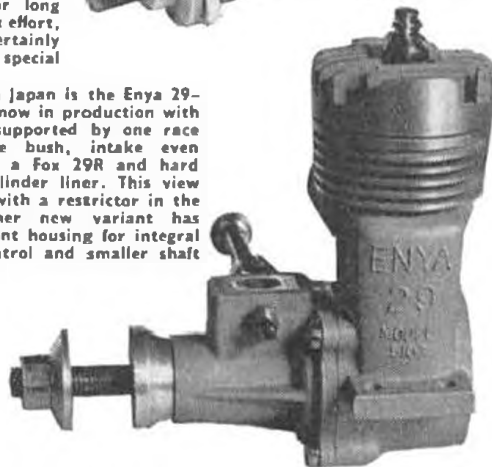
New, single ball-race engine by Beno Schlosser in Germany is designed for economic running in team racers. Crankcase is sand cast, liner is steel with cast iron piston. Bore 14.8 m.m., stroke 14.4 m.m. is a departure from standard Continental proportions. The typical complicated Schlosser spinner will not please team race pit men!



Plenty of running-in manufacturer's advice to VECO 35C owners who want top performance. This is the engine that takes American combat models around at almost 100 m.p.h. with a 9 by 7 Tornado nylon prop. Intake hole through the shaft is now 11/32 in. for strength and bronze bushed conrod is virtually un-wearable. Designed for long life and peak effort, the 35C is certainly a combat special



Newest from Japan is the Enya 29-111 special now in production with new shaft supported by one race plus bronze bush, intake even larger than a Fox 29R and hard chromed cylinder liner. This view shows one with a restrictor in the intake. Other new variant has different front housing for integral throttle control and smaller shaft



AIRCRAFT DESCRIBED

Number 104

by Peter L. Gray



Prototype Hannover CL II. Note angular upper tailplane and uniform dihedral which distinguish from production aircraft. Lettering on rudder is a "hands off" note

HANNOVER CL IIIa

HANNOVERSCHE WAGGONFABRIK A.G. were a noted firm of railway rolling stock constructors and during 1915 they were required by the German Government to undertake the construction of aeroplanes. When the aircraft branch was eventually established at Hannover-Linden, manufacture under licence of Aviatik C I, Rumpler C Ia and Halberstadt D II machines was begun. As the production of aircraft got into its stride during 1916 so the drawing office, under the guidance of Hans Dörner (who was one of the pioneers of German aviation and had been variously employed by Albatros, D.F.W. and L.V.G. in the past), gave thought to a machine of their own. During 1917 the Flugmeisterei had issued a specification calling for a lighter type of C class two-seater, to be powered by a 160/180 h.p. engine and classified in the new CL category. Instead of the reconnaissance, photographic, artillery-observation etc. duties performed by the standard C types, the CL machines were to act more as two-seat fighters and deploy as offensively as possible, also to act as escorts (Schutzstaffeln—Protection Flights).

To fulfill this specification Dörner produced the Hannover CL II. (There was no CL I; having already built Av C I) the next numeral was simply allotted to the CL category) powered with an Argus As III engine of 180 h.p., and developed it, with little modification into CL III and IIIa. The main difference in the types was in the engine installed and the wing-tips. The prototype CL II had uniform dihedral of 2 degrees in both wings and the upper tailplane was of angular outline—in the production aircraft the dihedral was differential (as in data for CL IIIa) and the upper tailplane of familiar, approximate semi-circular shape was standardised. The wing-tips had a plainly raked tip and the ailerons fell within this profile and were not overhung at all.

Modification of the wing-tips, together with ailerons incorporating overhung balances, and substitution of 160 h.p. Mercedes D III motor, produced the CL III variant, but as these Mercedes motors were required for the single-seat fighters, reversion was made to the 180 h.p. Argus As III. In this guise the machine was known as the CL IIIa and saw the greatest quantity production.

The machine was unique in having a biplane tail—such a feature in the past having only been the prerogative

of multi-engined aircraft—and the intention behind this was to reduce the tailplane/elevator span, thereby affording a wider field of fire for the observer, an object which was achieved in no small measure. For a two-seater the CL IIIa was a smallish (under 40 ft. span) and compact single-bay aircraft and was often attacked by Allied scouts in mistake for a single-seater, whereupon they were speedily disabused of their notions by the hail of fire from the observer's Parabellum machine-gun. Due to the siting of the upper wing so close to the fuselage the pilot had an excellent upward field of vision, and the much narrower chord of the lower wing, together with the nature of the stagger, afforded good downward and forward visibility. The compactness of the aeroplane gave excellent manoeuvrability and it had particularly good lateral control due to the large, balanced, ailerons.

The fuselage was built on a basic structure of four main longerons with ply formers; forward the section was rectangular, except for the rounded decking; aft of the cockpits the section was developed into a more oval shape. Covering of the fuselage was 1/16th inch ply sheet which was in turn covered with doped fabric. Removable panels adjacent to the motor were metal, as was the extreme nose cowling. The somewhat deep, roomy, fuselage tapered to a vertical knife-edge aft where the vertical fin was built integral with the structure and was likewise ply and fabric skinned; the lower, deeply cambered, tailplane was also similarly covered. The flat-plate section upper tailplane and both sets of elevators were of steel tube framing and fabric covered; the elevators were connected by a link strut inside the fin and actuated by a crank attached to the lower set. Some of the earlier aeroplanes had the two tailplanes connected with a vertical bracing strut, but later the structure was internally strengthened and these struts dispensed with.

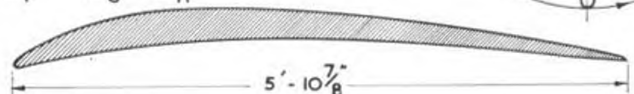
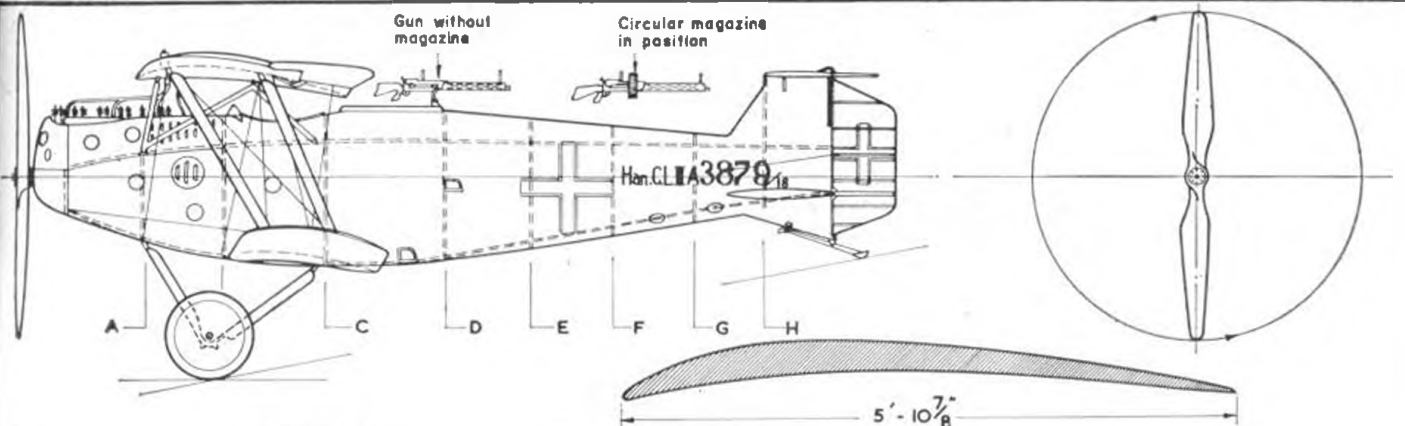
Of conventional wooden construction, based on two box-spars, the wings had a small degree of sweep—some 1.5 degrees—which is hardly ever apparent in photographs.

Hannoveranas—as they were dubbed by the R.F.C.—came into operational usage towards the end of 1917 and were, without doubt, formidable opponents, and, as was the case with most ply covered fuselages, were immensely strong and able to take considerable punishment. In his biography Major J. B. McCudden V.C., D.S.O., M.C., M.M., wrote:—"I went down to engage him and found that he was a Hannover, a machine which has a biplane tail, and although I fired a lot at him at close range, it had no other effect than to make him dive away, which made me think that perhaps they were armoured. These machines are very deceptive, and pilots are apt to mistake them for Albatros scouts until they get to close range, when up pops the Hun gunner from inside his office." This was on 1st January 1918.



Above, captured CL IIIa displays late 1917 type serial number also tailplane bracing struts which were later removed. J.W.M. Photograph Q 57638. Right: Uncamouflaged machine built by L.F.G. (Roland). It was designated CL IIIa by this firm but was in fact a standard CL IIIa

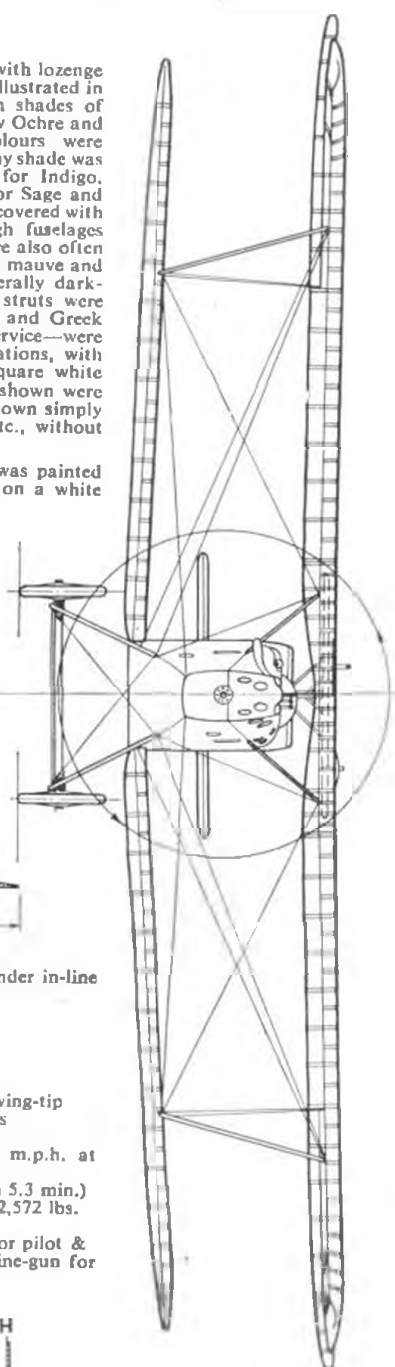
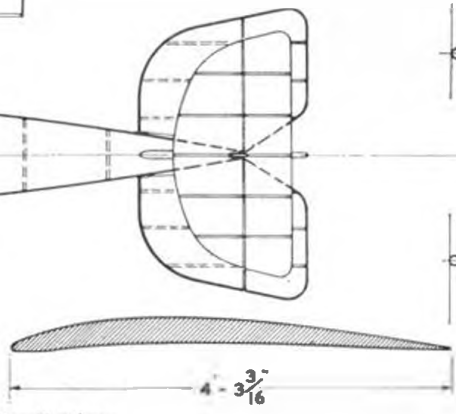
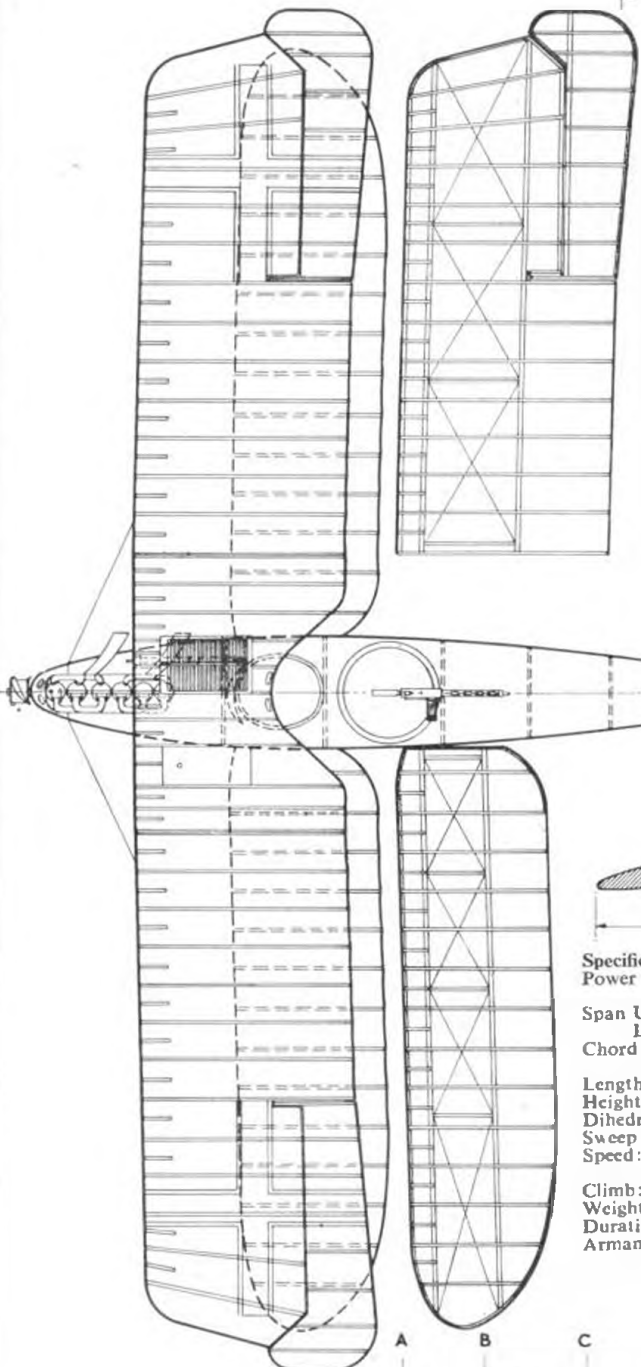




COLOUR DETAIL

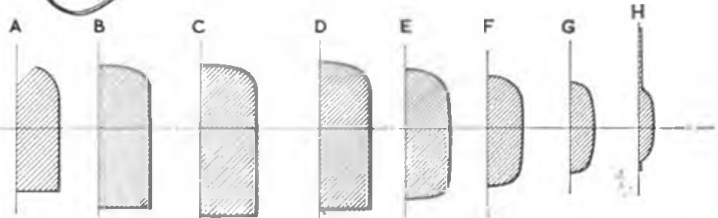
Fabric covered surfaces were covered with lozenge printed linen, usually of B type pattern (illustrated in "A.M." April 1959 "Decor Detail") in shades of Indigo, Dark Cobalt, Sage Green, Yellow Ochre and Maroon, the under-surface fabric colours were similar but several shades lighter: a Creamy shade was substituted for the Ochre, pale Violet for Indigo, Cerulean blue for Cobalt, Leaf Green for Sage and Pink for Maroon. The rudder was usually covered with plain unbleached linen fabric. Although fuselages were additionally fabric covered they were also often daubed with small patches of dark green, mauve and brown colours which resulted in a generally dark-greenish impression. Metal panels and struts were usually dark green or grey. Both Patee and Greek crosses—according to the period of service—were painted on Hannovers in the usual locations, with white outlines, but NOT painted on square white backgrounds. Serial numbers located as shown were in black. 1917 Serial allocations were shown simply as C13103/17, C13369/17, C13199/17, etc., without the firm's prefix.

Usually an individual identity device was painted on the fuselage, often a black numeral on a white band or sometimes fancifully outlined.



Specification:

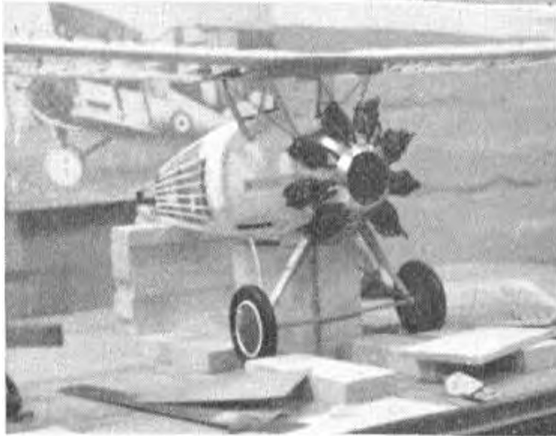
Power Plant:	180 h.p. Argus As III six cylinder in-line water cooled
Span Upper:	11.7 m. (38 ft. 4 13/16 in.)
Lower:	11.02 m. (36 ft. 1 7/8 in.)
Chord Upper:	1.8m. (5 ft. 0 7/8 in.)
Lower:	1.3m. (4 ft. 3 3/16 in.)
Length:	7.58m. (24 ft. 10 7/16 in.)
Height:	2.8m. (9 ft. 2 1/2 in.) Ground to wing-tip
Dihedral Upper:	1.5 degrees
Lower:	3.0 degrees
Sweep:	1.5 degrees
Speed:	165 km. hr. at 5,000m. (103 m.p.h. at 16,400 feet)
Climb:	1,000m. in 5.3 min. (3,280 ft. in 5.3 min.)
Weight Empty:	1,732 lbs.
Duration:	22 2/3 hours
Armament:	1 fixed Spandau machine-gun for pilot & 1 free firing Parabellum machine-gun for



HANNOVER CL. III A.

FT.

MODEL ★ NEWS



THERE IS A wealth of personal interest as well as modelling enthusiasm in the Gloster Gamecock model seen above, for it was made by Engr. Lt. F. A. N. Shimmings R.N., who has been connected with aviation engineering for a very long time and once served with 25 Squadron R.A.F. when they flew Hawker Furies at the famous Hendon Air Pageants. Engr. Lt. Shimmings is now based at R.N.A.S. Lee-on-Solent and made this Gamecock from the A.P.S. design by P. E. Norman with a number of amendments, including use of an A.M. 25 in place of the original 1.5 c.c. engine. Every effort has been made to reproduce components with light metal turnings, thin duralumin sheet etc., and the result as can be seen in the photographs, is something worthy of exhibition. Originally the model was fitted with a detailed reproduction of the radial engine in metal but this has now been replaced with a P.E. Norman type shock absorbing dummy.

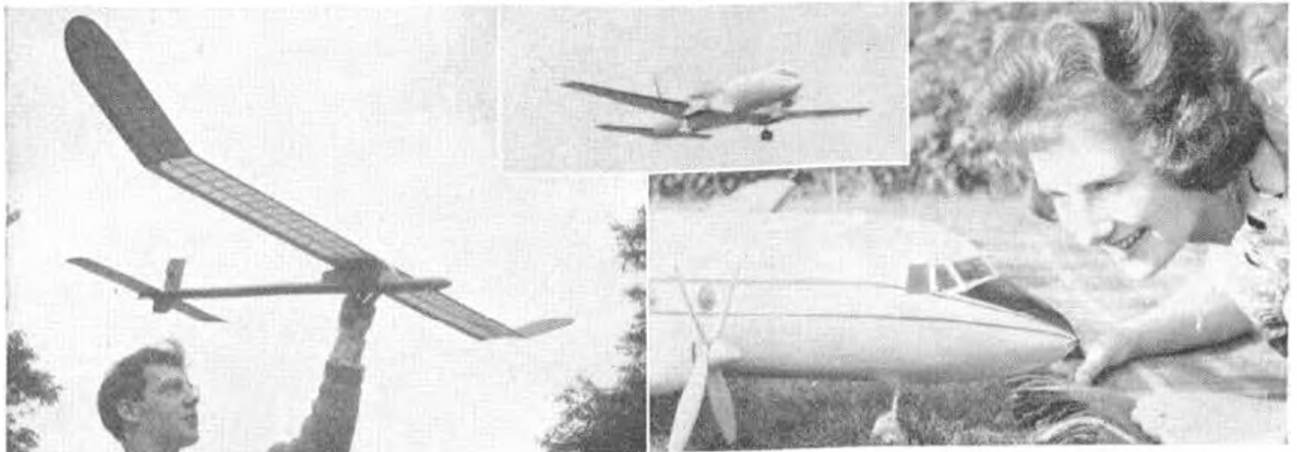
In *Club News* we read yet once more of the exploits of that regular contest winner J. O'Donnell from Whitefield M.A.C., and by winning the triple crown at the Novocastria meeting he will surely have set a record. Many readers will no doubt like to know if John has produced any new models and so, below left, we show his A/2 held

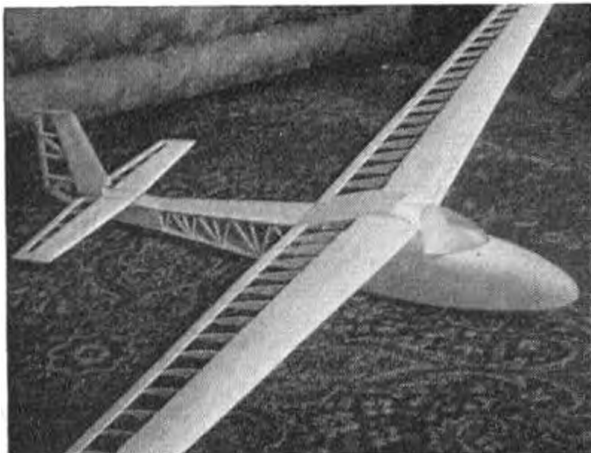


by brother Hugh. This model is the one which made a triple maximum winning time in the P.A.A. Rally during June.

An aircraft due to make its first public debut at Farnborough this September is the as yet un-named Avro 748 medium range airliner which has been produced as yet one more attempt to replace the venerable Douglas Dakota. As he works in the wind tunnel department at Avro, M. A. Hundleby of Stockport had several advantages to be able to turn out the fine scale model seen bottom right both in close-up with Helen Morgan (who also works for Avro) and in action in the smaller picture. All up weight of the model is 5 lb. and the two A.M. 25 diesels take it around at 40 to 45 m.p.h., the model also having good single engine performance. Actually the first flight was made on June 22nd so beating the full size aircraft by two days! The only mishap so far has been the shedding of sponge tyres but a spot of Bostik on the rims has cured this. Construction follows the system used by Maurice Bodey for his well known series of multi engine models which have appeared in *AEROMODELLER Plans Service*.

John Wilson of Falkirk, Scotland, is a gliding enthusiast and made the scale model of the Slingsby Swallow with a span of 64 in. seen above right. This is a replica of an aircraft owned by the Scottish Gliding Union and was made for sport flying with extensive use of sheet and block balsa to withstand hard knocks. Colour scheme is red on the wings and tail with white fuselage. As can be seen in the constructional photograph, Mr.





Wilson has produced a most practical model and it seems a pity to us that scale gliders of this type do not always emulate performance of their full size counterparts. The type of glider which *is* successful is seen at top of the right hand column although such large models are not always attempted by such young enthusiasts. M. Rope, who finished this *Sunspot* after being given a partly completed airframe was only 13 years old at the time! He attends Wellington College Berkshire where there is a keen model flying club, with main interest in 1/4A control-line models, both stunt and combat.

If readers recognise something familiar about the design in our last photograph it is because it was based upon a model by Keith Laumer and published in "Flying Models" in America. Keith was the designer of *Cyrano* which we published in July and bears his fuselage "trademark" in side profile. This model pictured is known as "Pops" and was built by Colin Read of Newport Pagnell for a Cox Pee Wee engine. The model weighs 5 oz. and spans 33 in., having a rather small butterfly tail.

Below Master Rope and his large glider is P. E. Norman showing his latest efforts which have become a focal point of Epsom Downs flying activity in recent months. The completed Delta design is Cox Olympic 2.5 c.c. powered and this engine delivers an appreciable amount more thrust than others P.E. has tried, with a result that the model is fully aerobatic even with only rudder control. A 9 volt transistorised receiver is mounted in the nose and Deac accumulators are in the cockpit spine with a Rising escapement in the fin blister.



The success of this glow powered model has directed P.E.'s enthusiasm toward an even larger and perhaps faster effort. This is the Fox 19 powered version, the moulded ply fuselage of which is held with the Delta. At bottom is P.E.'s scale *Long Midget* for an Elfin 2.49, again radio controlled and very much a hot number for its 44 in. wing span and high flying speed. From the experience gained with this model we hope that P.E. will be able to develop a more docile but none the less equally attractive scale racer to satisfy the constant demand for this type of R/C model.



1 2 3 4 5 6 7 8
9 10 11

28 35 20 5 14

SIMPLE NOSE BLOCK

Dural
Balsa or Lime
Bearing plate cemented
and pinned ⑦

Free Wheel ②

Free Wheel ③

Wire
1 m/m Dia.
2 m/m Dia.

Propeller
bushed and
freely
rotating
on shaft

Hard balsa stop Mild steel Piano Wire 2 m/m Dia.
Wire Dural Plastic tubing

Thrust bearing
Dural
Wire 1.8m/m
spring

Bind and solder

Journal bearing
Dural bush

Brass tube
soldered on
Shaft end riveted
and soldered

A. KOSSOWSKI
At world champs. 1958 and 1959

Feathering ④

Stop pin.

Dural Tubing

Dural Boss
Piano Wire
1.5- 2 m/m Dia

Bind and
Solder.

Dural Stop pin Lime wood Spring Dural

Bearing Wire 1.8 m/m Dia

Mild Steel

Wire 2 m/m Dia.

Limitor pin

J. KOSINSKI ⑨
At world champs. 1959

Single blade with counter weight ⑤

two blade folding propeller ⑥

Dural Tubing 8m/m Dia.

One piece wire shaft 1.4 m/m Dia.

1 m/m Spring, Glass Bead

Rubber Band

DURAL TUBE 8 m/m DIA.

Wire Peg limiting Folding

Pin securing blade in tube

Nut Mild Steel

Spring Bearing Housing

Limitor spring Steel

Dural spinner Wire 2 m/m Dia

Spring Dural

Stop pin Brass bush End of shaft tapered

RUBBER TUBING

Polish champs. 1959

A. TRZCINSKI ⑩

F. GLUZA ⑪
POLISH CHAMPS. 1959

Polish Props

A feature of the Polish models is the attention to fine detail and this is particularly evident in the Wakefield class of model, where folding or feathering type airscrews are now most popular.

The sketches opposite by Stanislaw Zurad offer particularly good examples and also include a course of instruction for those yet to be initiated into this World Championship class. Reference to the lefthand column, **1** shows at the top 11 various methods of engaging the rubber and propeller on the shaft. Common in Britain are items 7 and 8 using the "S" hook or bobbin to prevent motor bunching. In **2** we have a demonstration of the elementary type of free wheeling device whereby the propeller is engaged to the shaft while the rubber motor is driving; but disengages automatically when the propeller free wheels and windmills. Sketch **3** illustrates another system whereby the tension of the rubber motor pulls the shaft rearwards to engage the propeller and this tension is released by a wire coil spring as the rubber motor runs down.

Item **4** shows the basic principle of the feathering airscrew with blades swivelling through two positions

in a tubular boss. **5** is a single blade type folding airscrew with a spring to pull the shaft forward as the rubber motor runs down, so engaging a peg on the nose block with an extension of the "S" hook in order to obtain a streamline folded position of the blade.

6 illustrates a two blade variation.

A typical simple nose block as used by Polish aeromodellers is shown in **7**. Note the two bearing plates that are employed rather than bushes. Next we come to four examples from the expert class, each employing special refinements. In **8** we have Kossowski's two blade folder with a spring tension shaft running in a ball race supported bearing, and also featuring a self aligning "S" hook.

A similar self aligning arrangement is used by Kosinski in **9** but he employs an unusual method of shaft extension to obtain the blade stop position. A tubular shaft slips over the main prop shaft and is spring tensioned.

Another different type of shaft is employed by Trzcinski, in this case a solid steel shaft extension screws on to the main prop shaft, with a spring tensioner in front of the nose block, as seen in sketch **10**.

Finally, Gluza streamlines his tensioning rather simply in **11** when compared with the other complex efforts, by covering his mechanism with a spinner and using the bent wire shaft without extensions or additions.

A SPECIALLY HAPPY side of the club movement in Great Britain is the increasing amount of support given to encouraging the hobby by individual clubs organising their own rallies. In the main, these events do not attempt to rival the established big Gala days, but cater for local interest, although long distance supporters are always among the entrants. We begin our news this month with accounts of recent rallies of note.

1960 Devon Rally

Held on Woodbury Common nr. Exmouth on August 14th, events started with ideal conditions but deteriorated as they went on, two downpours of rain halted all flying in the afternoon. Among those who made the most of the early good conditions was A. Wisner of Croydon, who put in three max's in rubber before lunch.

The power event was a close fight between British team member Tony Young of St. Albans and Peter Manville of Bournemouth. Three fine max's gave first place to Young flying an *Amuzoom*. Peter Manville dipped on his second flight so had to be satisfied with second place. Honours in the glider event must certainly go to young R. Flaherty of Cardiff, he took first place in this his first rally and the model he used was a Keil Kraft *Caprice*.

Rally Championship was awarded to hard working R. Leppard of Croydon who flew in all three F.F. events.

Radio Control Multi—proved to be virtually an exhibition by Ed Johnson and J. Singleton, but this in no way deterred the others competing from putting in some creditable performances. Among these was P. Waters of Port Talbot flying a K.B.45 powered *Orion*.

Combat was poorly supported and the standard on the whole was also poor. More time being spent on the ground than in combat. The draw for a raffled A.M. 25 was won by Mr. Russell of Bristol.

Results

Power	
1. A Young (St. Albans)	9.00
2. P. Manville (Bournemouth)	8.22
3. J. Manville (Bournemouth)	4.37
Rubber	
1. A. Wisner (Croydon)	9.00
2. R. Leppard (Croydon)	7.39
3. S. Morgan (Cardiff)	6.21

Club News

Glider

1. R. Flaherty (Cardiff)	8.26
2. R. Leppard (Croydon)	7.53
3. P. Manville (Bournemouth)	7.14

Radio Control Multi

1. E. Johnson (A.R.C.C.)	1,208 pts.
2. J. Singleton (A.R.C.C.)	1,195 pts.
3. P. Waters (Port Talbot)	638 pts.

Radio Control Single

1. B. Wear (S.W.R.C. FS.)	26 pts.
2. C. Simmonds (Bournemouth)	22 pts.
3. G. Peacock	4 pts.

Combat

1. J. Hitchcock (West Hants)
2. A. Witts (West Hants)

Sidcup C/L Rally

Sidcup A.S. held their first independent Gala at R.A.F. Kenley on Sunday August 14th, 1960. Contrary to expectations the weather was quite good, there being practically no wind even though it was somewhat overcast.

At Kenley there is an area of very good tarmac large enough to run three classes of T.R. stunt and a speed event, although the latter was not included in this year's programme. As this is the first permanent place available for C.L. in the London area for some considerable time, Sidcup would like other clubs to organise competitions there through the London Area Competition Secretary. Perhaps there will be a revival of some of the galas held at Fairlop.

Following the comments by the Enfield Club in respect of their rally regarding observation of the rules, these were posted up at main control and competitors were warned that they would be enforced. In the first two F.A.I. heats two out of three entrants were disqualified. From this point warnings were issued before each heat and still some were disqualified. The net results of all this was, however that by the time the semi-finals and finals were reached the rules were being observed and flying was on a par with the final F.A.I. Trial after the Nationals.

All this goes to prove that if the rules are enforced the standard of flying will improve and Sidcup Club urges all organisers to do this. The J.A. T.R. ended in a win for Dave Balch in 5:05 using a very ancient Elfin

1.49 doing about 70 m.p.h. for 55/60 laps. Gordon Cornell being a good second in 5:20.

F.A.I. T.R. was won once again by the very consistent M. Smith in 5 min. 7 secs. from Dave Dew. G. Yeldham managed over 50 laps at 88 m.p.h. but was plagued with trouble. Although there were only 9 entries in the Class B event the final was a good as any "Nationals". Winner was C. Taylor with the first monowheel B5 Model, in the very good time of 7 min. 11 secs.

The stunt was won by the ever consistent R. Brown of Lee Bees from D. Day of Birmingham. The flying was of a high standard and this event is definitely becoming popular again. Thanks are due to Bill Morley for judging.

Combat with over 30 entries continued for most of the day with Tribe of Northwood emerging the victor from March of Dagenham.

J.A. T.R.

1st D. Balch (Hayes) 5 miles 5:5.
2nd G. Cornell (Croydon) 5:20.

F.A.I. T.R.

1st M. Smith (High Wycombe) 10 km 5:7.
2nd D. Dew (Ecurie Endeavour) 5:21.4

B.T.R.

1st C. Taylor (West Essex) 10 miles 7:13.
2nd Tuthill Walker (Enfield) 7:16.

COMBAT

1st Tribe (Northwood)
2nd March (Dagenham)

STUNT

1st R. Brown (Lee Bees)
2nd D. Day (Birmingham)

South Midland

KIDDERMINSTER AND D.F.C. have acquired a new flying field situated just on the outskirts of the town. Club members thank the personnel officer, Mrs. James of Woodward and Grosvenor for obtaining permission. A recent club combat competition produced some really hectic flying, backed by a load of enthusiasm from everyone concerned. The results were a first place for P. Tanner, second M. Banfield and third J. Hunter. All three put up excellent flights in both heats and finals. J. Mountain and B. Fellows placed third in the slope soaring competition at Clwyd. With the completion of one year's existence the Club have found their likes and dislikes; the trend now is toward radio, single and multi, although a great interest is shown in

team race and stunt C/L. The club has acquired a much needed club room; this heralds the formation of a junior club, older members of the club starting a model construction class for the young 'uns. Other club activities this year include a demonstration at the local carnival during September.

APSLEY M.F.C. ask "Will the council repent?" Things are humming in Hemel Hempstead. Apsley M.F.C. without flying field in the crops period—asked for an official C/L area. This was turned down by the council. At the town Carnival A.M.F.C. put on a C/L show, static with model films and two Carnival floats! Result is that the Council is now to re-consider the flying situation!

On Sunday July 17th a club Glider and Combat contest was held, the purpose being to select four members to represent **ABINGDON & D.M.A.C.** in the Model Engineer Cup. Under rainy conditions N. Mattingley proved winner, flying a *Topscore*. Second was A. Crisp with his 48 in. span low aspect ratio A.2 and third was S. Dixon with another *Topscore*. Combat was remarkable with two O.O.S. flights by flying wings after their owners had inadvertently released the handles. The winner was a new member from the Bristol Bloodhounds club flying a Rivers 2.5 *Peacemaker*. Members attended Northern Heights where luck deserted radio stars Lovegrove & Balmforth, however, Crisp managed fourth place in open power. Popular model amongst the "whirling boys" is Neil Webb's "Rat Bag" design, featuring swept forward wings and lightweight tailless structure.

South Eastern

On June 26th four **BRIGHTON D.M.A.C.** members attended the Northern Heights Gala and Secretary, John West, placed fourth in the Queen Elizabeth Cup with 6 : 50. On July 16th/17th in the practice finals at Wigsley, Fred Boxall, John West and Tony Clarke topped the Area times with a total 18 : 10. In the Power Championships at Cranfield John West flew proxy for Ken Green of Australia and after dropping 20 seconds on his first flight, scored four maxes to place twenty-fourth with a total of 14 : 40. Then August 7th saw a strong contingent at the St. Albans Gala Chobham, John West winning the Open Power fly-off with a time of 5 : 6, flying an A.M.35 Dixielander — not a bad record, eh!

Considering the lack of really good flying weather, **NORTH KENT NOMADS M.C.** has been flying quite well and consistently on its flying ground at Dartford Heath. Membership has grown steadily throughout the season, the majority of members being attracted at the flying ground and becoming interested in this way. Whilst R/C flying is still well to the fore, free flight flying boats are not being neglected, however. In particular, Secretary Bill Hubbard has produced a very elegant-looking flying boat with which he is hopeful of raising the British record very shortly.

North Western

Recent activities of **CHEADLE & D.A.S.** has proved to be quite successful including a display of control-line flying at local fete where they managed a three-in-a-circle combat session (including T. Jolly from Whitefield M.A.C. flying a very fast job with a Fox 35 up front). At the North-Western open day on July 24th, held at Stretton, the club glider team carried off first place with Wally Nield nipping over from the radio session to turn in a four-minute first flight. Radio seems to be getting quite a firm hold in the club. Derek Brunt had some success with a 50-inch "Gasser" using Hill gear. Arthur Bailey has come out of hiding at last to fly his "Smog Hog" using a very hot Arden 199 with Microton receiver and put up some hair-raising flights due to lack of weight in the nose. New radio

jobs are a "Hoverking" and an "Aries", both with elevator control. On the club field these two flyers, D. Brunt and A. Whittaker, have given numerous displays of "two-at-a-time" flying, both using "Guidatos" with Hill receivers.

This month's best performance at **WIGAN M.A.C.** was by Dave Yates who took first place in Clipper Cargo, and third in PAA GAS at the PAA Rally at Abbotsinch. Dave is one of the most meticulous builders and deserves every credit for his on the field modification which allowed him to enter and win in Cargo. Ted Wilding plans a three channel *Waveguide* using the new "Metz" equipment with E.D. servo and compound escapement to operate the surfaces. Eric Tomlinson also has a *Waveguide*, but with E.D. six channel gear and servos, and Enya 19 for power.

Midland

At the Midland Area Comp on the 24th the only time **WOLVES M.A.C.**'s unlucky team race group could raise a smile was when the P.R.O. got soaked in beer twice in the same day. (He was unsteady after seeing the club run combat.) However, stunt maestros Brian Horrocks and Dave Day kept Wolves on the map as usual by getting a first and second place each.

Alan Cooper from **OUTLAWS (CAN-NOCK) M.A.C.** placed second in F.A.I. team race and Eric Burke third in stunt. Two weeks later at the Cheadle C/L Rally, Burke placed second in stunt and R. Lockley was fourth. Class B team racing is replacing F.A.I. in popularity with Outlaws and first effort in this sphere realised 42 laps at 85 m.p.h. with a Max 29.

Contest Calendar

- September 11th
Croydon Gala*, Chobham Common, Open Glider.
- September 11th
C. H. Roberts Cup, *Danson Park, Welling, Kent (organised by North Kent Nomads).
- September 18th
Battle of Britain Combat Stunt Rally,* Stapleford Park, Melton Mowbray (organised by Leicester M.A.C.).
- September 18th
Caledonia Shield, Lanark.
*Keil Trophy (Team Power) } Area
Frog Junior Trophy } Central-
(U/R Rubber Glider) } ised
E. C. Muxlow Trophy* (N. Area)—R.A.F. }
Rufforth
- September 25th
South Coast Gala,*/R.A.F. Tangmere, Nr. Chichester, Sussex, Rubber Power Glider, A Power (up to .85 c.c.), Tailless Glider R.C./Combat/Class A T.R./Chuck Glider.
- October 3rd
Croydon Gala,* Chobham Common, Open Power (including separate 049 class).
- October 9th
London Area C/L Champs (including S.M.A.E. Area Centralised T/R Classes (A, A and B), R.A.F. Kenley, Entry 2/6, Stunt, S.M.A.E. 0A, A, B Classes. Pre-entry to M. Bassett, 209 Hexley Road, London, S.E.9, by October 1st. Open to all, but Champions decided from London Area only. *Farrow Shield (Team Rubber)—Area Centralised.
- October 16th
Frog Senior Cup (U/R Power) } Decen-
C.M.A. Cup (U/R Glider) } tralised
- October 23rd
Cambridge M.A.C. Meeting, Ivinghoe Beacon, all slope soaring classes. R/C pre-entry to R. I. Godden, "Maredin" High Street, Balsham, Cambs., two shillings not later than October 18th.
- November 20th
Croydon Gala,* Chobham Common, Open Rubber.

* Signifies S.M.A.E. Sanction.

London

Members of the **HORNCHURCH M.A.C.** descended upon the South Midland Gala in force on August 28th. The Brixton member, Mike Billington, who is also a member of Hornchurch club, is now flying regularly at the 'drome with all classes in speed, using "Monoline". His speed with a McCoy 60 is way over the 160 m.p.h. bracket. Interest is increasing in speed flying and several F.A.I. class models are on the stocks.

On Friday, July 15th, **ST. CLEMENT DANES M.F.C.** held its annual Open Evening, and gave a fine display. Plastics had to be limited to five per member at a maximum so that none of the flying models had to be left out due to lack of space. The flying display did not go so well as in previous years but did manage to show spectators that C/L flying is a little more than swinging fuel-soaked lumps of balsa, on a piece of string, around one's head — although in some cases this would have met with better success.

Two "greybeards" of the **NORTHERN HEIGHTS M.A.C.** have been digging in the past which has resulted in the re-introduction of the catapult method of launching gliders. Using about 12 yards of 3/16-in. rubber and 40-yards line, gliders up to A2 size have been successfully launched. This method of launching puts the accent on the model not on tow-line technique, so that the absolute tyro can launch a model successfully with it. A club contest could be inaugurated with catapult as the only method of launching.

On August 7th, **ST. ALBANS M.A.C.** held their first Chobham Gala and were blessed with very good weather until the late afternoon when flying was held up briefly due to thunderstorms. Total entry was around 200, which included some International competitors who had flown at Cranfield the week-end before. Rolf Hagel of Sweden, one of the five joint World Champions, flew in the Open Glider where he attained third place as well as in the F.A.I. Power. A fly-off was held for Open Rubber, Open Power and F.A.I. Power. As expected, Hagel was in the F.A.I. Power fly-off but his model (the same one he flew at Cranfield) rolled in to the left under power (*wing flutter 1* error) but was not damaged badly; the pouring rain possibly not helping any of the models at the time.

There were "perfect" results in each of the following: Glider: 1. R. Leppard (Croydon) 9:00 Open Power: 1. J. West (Brighton) 12:00 + 5.04, 2. G. Castell (Letchworth) 12:00 + 4.23, 3. J. Manville (Bournemouth) 12:00 + 4.22, Rubber: 1. Lennox (Birmingham) 12:00 + 6:49, 2. Elliot (C.M.) 12:00 + 6:17, 3. L. Barr (Hayes) 12:00 + 5:02. F.A.I. Power: 1. V. Jays (Surbiton) 9:00 - 4:02, 2. D. Posner (Surbiton) 9:00 + 3:56, G. French (Essex) 9:00 + 3:51 and A Power: 1. G. French (Essex) 10:14.

Dick Pratt, Pete Perry and Pete Tribe of **NORTHWOOD M.A.C.** entered the combat event at Ashford and managed first, second and third respectively. Although they admit to more than their fair share of luck in the early rounds, anyone who witnessed the final will agree that it must have been the most fiercely-fought and exciting joust ever. A pit crew each from Dagenham, Hayes and Kenton helped initially, but this gradually dissolved to a series of spectators lining the circuit, the first one to reach a crashed model starting it up and launching it.

HAYES & DISTRICT M.A.C.'s best news this month is that after a three-month ban the local Councils have allowed the club back on their old flying ground at Cranford Park, with everything much as before excepting free-flight power. Dave Balch, is preparing hard to the World C/L Champs and is down to 4 : 45s for the 10 km. with his new Rivers-powered team racer. Interest is growing in once-neglected speed. The J. Taylor-R. McGladdery partnership have tuned their G 20V up to raise the club 2-5 c.c. record to 110 m.p.h. Laurie Barr came out of the rubber fly-off with a third place at the St. Albans Rally on Chobham, he was using a new model made in three days.

Between showers there has been a fair amount of activity on the ENFIELD & D.M.A.C. flying field, mainly in combat circles. During the rainy periods interest has risen in the R.T.P. flying in the form of small pieces of wood and metal powered by large Jetex motors. An interesting model of the Airco 121 Trident jet airliner for compressed air R.T.P. was brought along by Bob Moore, which will be used at exhibitions.

COSMO A.C. recently gave two very successful demonstrations of C.L. flying, the first was for the Empire Cancer Relief Fund at Hurst Community Centre and the second for the Erith Council at their August Bank Holiday Gala. The most popular demonstration item seems to be T.R. for which the club have developed a lap counting system, keeping both the crowd and crews up to date. These demonstrations, together with the assistance of a local model shop, have increased membership to nearly 70, and a larger flying field with a dozen circles all going at once will soon be needed.

Southern

HORLEY M.A.C. members are still busily doing displays at local fests and shows. They had a Mammoth Chuck Glider Contest one evening, which attracted no less than three entries (!), the winner scoring a three-flight aggregate of 31 sec. and the other two tying with 8 sec. total in each case! Martin Cundey claims a club record by flying 30 laps inverted non-stop with a "Junior Monitor", and Ron Dwight claims recognition for doing eighteen consecutive horizontal eights with a "Peacemaker".

Some hot F/F power models have been seen at EAST GRINSTEAD M.F.C. meetings lately, and Les Fuzzard has already been on several excursions cross-country in pursuit of his "Eureka". The club held a small but highly successful display of C/L flying at the Tiger Club's air show at Fair Oaks on August Bank Holiday, in front of a crowd of 5,000 or more. Further publicity was given by a report about the display on the B.B.C. news that evening. However, it must be pointed out that almost all the flying was by Horley M.A.C. members as the C/L side of E.G.M.F.C. is rather weak at present.

BOURNEMOUTH M.A.S. celebrate their 30th birthday on October 11th of this year. Vintage, perhaps, but still undaunted!! Jack and Peter Manville continue to give a good account of themselves in National events. Exhibitions and Displays have not escaped their attention as they recently put on a good static show for the local A.T.C. "At Home" and both a static and control line display at the Oratory Preparatory School Garden Fete. At both static shows the much-appreciated support and co-operation of "Verons" and in particular their designer Phil Smith, who is Vice-President of B.M.A.S., was received by the club. For the future a number of outstanding Club events have still to be flown off, including two R.C. events, Seaplane, U.R. Power and Rubber. Local persons interested in any form of aeromodelling, including scale, non-flying models, are invited to get in touch with Hon. Secretary, B.M.A.S., Mr. H. F. Weller, 17 Stillmore Road, West Howe, Bournemouth.

North Eastern

Although weather forecasts were to the contrary, good flying conditions prevailed throughout the day — for the fourth year running — at NOVACASTRIA M.A.S.'s annual Rush Trophy Gala. Although many maxes were recorded there were only three triple maxes in the three free-flight events, two of them by John O'Donnell of Whitefield in Glider and Power. The other triple max was by D. Reid of Edinburgh, also in Power. By winning power, rubber and glider O'Donnell also won the Rush Trophy for the second time, the first being in 1958. A B.B.C. cameraman was present and the Gala was covered on "News from the North"

on the Monday evening. Since the first Gala in 1957 attendances have been increasing steadily each year and it is hoped they will continue to increase in future years.

RESULTS

- Open Power 1. J. O'Donnell *Whitefield*
2. D. Reid *Edinburgh*
- Open Rubber 1. J. O'Donnell *Whitefield*
2. Ron Pollard *Tynemouth*
3. H. Tubbs *Baildon*
- Open Glider 1. J. O'Donnell *Whitefield*
2. E. Black *Glasgow*
3. J. Rowley *CountryMembar*
- Combat 1. Wallace *Stanley*
2. N. Kirton *Stanley*

East Midland

PETERBOROUGH M.F.C. recently gave a demonstration at the "Hotpoint" sports day. It was very successful and the club have since been engaged by the A.T.C. to put on a show at their anniversary. Outcome of the club combat comp was a win for Ian Duffy flying an A.P.S. *Duellist* with a Mk. II Rivers Arrow up front. Second and third respectively were Ted Fairchild and "Pen" Fountain. The club also held a 1-hour scramble. Eventual winner after a close flight was Phil Frances with an A.P.S. *Quickie* putting up 35 mins. 10 secs., 5 m. 13 s. in front of Jim Wright.

Northern

R.T.P. flying with Dart and Pee-Wee powered scale models in the BLACKBURN AIRCRAFT (WELFARE) M.F.C. has stopped before it really started due to a fatal flying accident involving a full-size Chipmunk crashing and demolishing the R.T.P. arena. Eric Coates won a Nomination and an Open Duration comp with John Chaney runner-up both times. These two fill the top two places in the clubs Championship League. In this League the top three places gain 5, 4 and 3 points and 1 point is awarded if an entry is not placed. The League covers four F.F. and two C/L events. A C.L. display was staged for the local Sports Day with balloon bursting. Unorthodox models included Saucers, Deltas, etc.; models flying through a barrier, a stunt model towing a 150 ft. long streamer, three in a circle combat, and the finale which was an attack on a dockyard by a Spitfire, Invader and a Beaufighter. Electrically-ignited fireworks simulated smoke, bombs and ack-ack fire. The club flew against Teeside "A" in the second round of the N.A. Knock-Out on their secondary flying field at Arras and won by 1 1/2 minutes. They also entered a team in the M.E. Cup, flying at Rufforth and totalled 19-10.

July 17th was a day the weather man described as "changeable", but this did not discourage those who attended the Northern Area meeting at R.A.F. Rufforth.

WHARFEDALE was responsible for organising an F.A.I. T.R. event (entry of 6!). Winner was Oxley of Halifax (7:03) with the Denison Tempest team (Wharfedale) second; Horton Baxter third. Club members also entered the 1/4 A T.R. contest organised by HALIFAX where the final was run over 200 laps. The result was very encouraging. First place was taken by junior member Nothage of Wharfedale in a time of 11 : 33. Altogether an inspiring performance. On August 14th six members made the journey to R.N.A.S. Abbotsinch for the Scottish Gala. The Long/Davy team taking first places in both classes with their new "Tigress" and "Dalesman" models. Towards the end of October the Wharfedale club hope to organise a 1,000 lap team race using standard Class B equipment. From calculations they believe it to be possible to complete this distance in under one hour (Brazilian time was 75 minutes). Wharfedale invite anyone interested in joining the race to write to I. Davy, "Sunnyside", Burnley-in-Wharfedale, Nr. Ilkley, Yorks.

Ireland

LARNE M.F.C. inform us of the results of the Ulster Nationals (control line only) which were held at Maghaverry, a disused airfield near Lisburn N.I. on August 13th. The day started with combat, entry was around 20 mark. Winner was M. Linnett of Belfast M.F.C. with M. Doyle (Belfast) and D. Read of Larne 2nd and 3rd. 1/4 A T.R. was run simultaneously with combat. Speeds were rather low at around 65 m.p.h. but competition was keen and the winner proved to be G. Dixon (Belfast M.F.C.) in a time of 7.15. Second place was taken by L. Blair/L. Strain (Larne M.F.C.). A few seconds later flying a faster model but with one slow pit stop, M. Linnett (Belfast) was third. After a five minute shower the F.A.I. class T/R was held, the team of J. McGallard, W. Blair of Larne M.F.C. won easily with a time of 5 mins. 27 secs. using an Oliver III. Second was P. Ogle (Belfast) whose time was 7 mins. plus. M. Doyle Belfast was 3rd. Stunt produced some fine models but few seemed able to make their glow motors perform. Winner was L. Blair of Larne flying a Rivers 3.5 Powered "Calamity Jane." Second place was taken by M. Linnett of Belfast and 3rd place by M. Doyle also Belfast. In general the contest suffered a lack of support, but it is hoped to make it an annual event.

Wales

Due to bad weather on recent competition days CARDIFF free flight men have had a lean time recently. Two members who for the first time ventured to fly outside their native land did not return empty-handed. Roger Flaherty, a junior, flying his Caprice, with the coolness of a veteran, won the open glider beating a varied field, including several outside sailplanes from the South. His senior club mate flew without distinction however.

Pen Pals

Pen pals are required by the following: Eric Goshen, 20 Beery Street, Tel Aviv, Israel, interested in Stunt, T.R. Ducted fan scale. Aged sixteen, he offers an English modeller accommodation and a holiday at his Tel Aviv address in return for similar hospitality when he visits England next Summer. Bengt. Norman, Batsmangatan 9, Kalman, Sweden, interested in R/C and C/L (Stunt). Aged fifteen, he would like a pal in England.

Brian Pickett, 17 Newcastle Street, Swindon, Wilts, interested in C.L. scale, 1/4 A T.R. and plastics. Aged fifteen, he would like a pal of similar age in the U.S.A.

Rusi B. Mobed, 9 Frere Terrace, Karachi 3, Pakistan, interested in 1/4 F scale, duration, and R.C. Would like pal in U.K., U.S.A., Australia or Germany.

THE CLUBMAN.

S.M.A.E. Contest Results

Flight Cup (unrestricted Rubber)

- 1. M. Turner (Cheadle) 12.00 + 5.02
- 2. D. Poole (Birmingham) 12.00 + 4.53
- 3. A. Wisler (Croydon) 12.00 + 4.09
- 4. D. Greaves (Leamington) 12.00 + 3.12
- 5. G. Fuller (St. Albans) 11.55
- 6. J. O'Donnell (Whitefield) 11.20

Model Engineer Cup (Team Glider)

- 1. Cheadle 28.57
- 2. Baildon 25.21
- 3. Birmingham 24.47
- 4. Bournemouth 24.15
- 5. Eng. Electric 24.12
- 6. Timperley 23.42

58 competing teams.

Plugge Cup.—Positions to date

- 1. St. Albans 856.685 pts.
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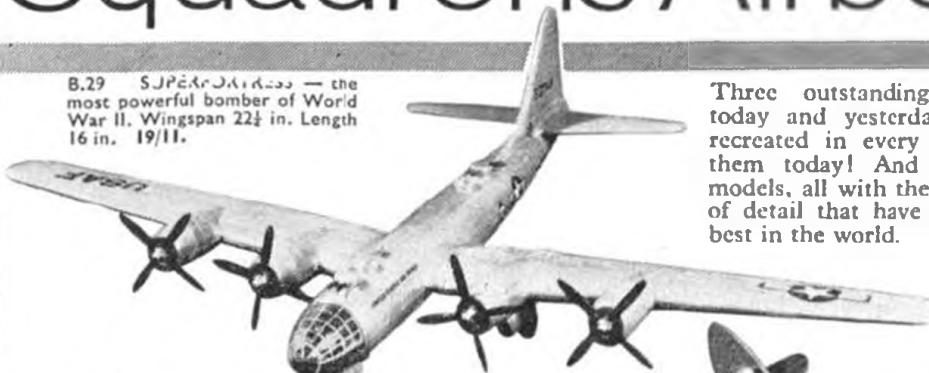


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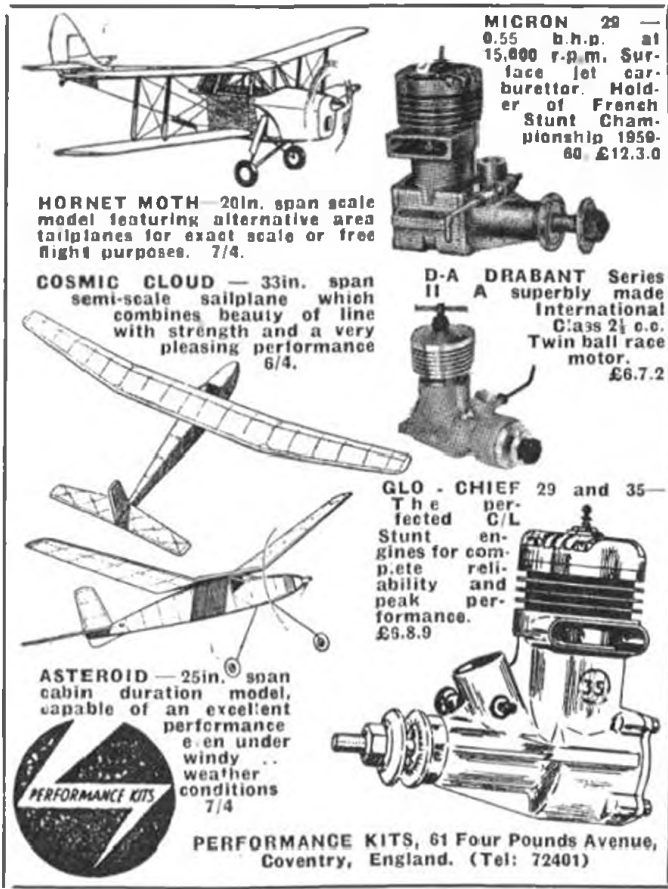
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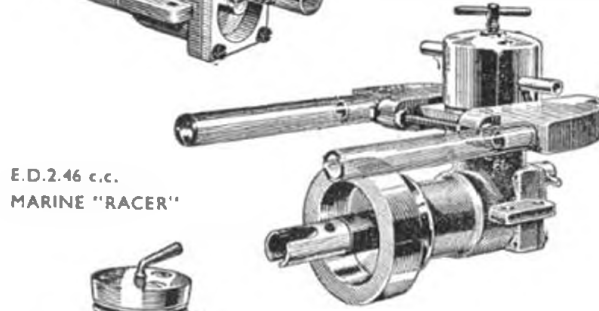
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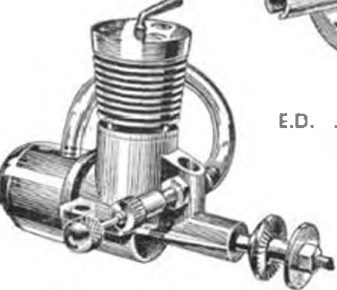
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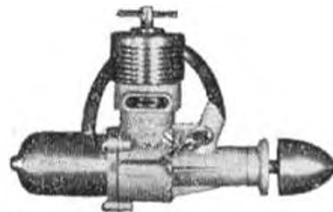
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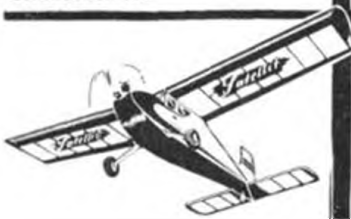
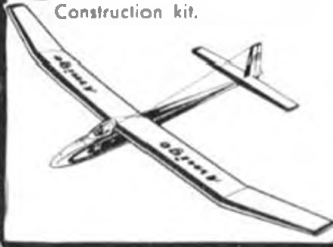
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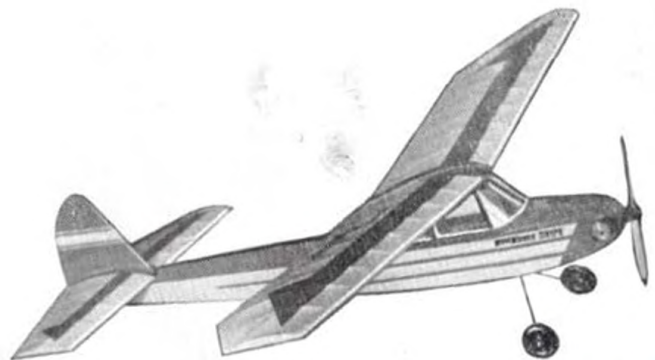
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