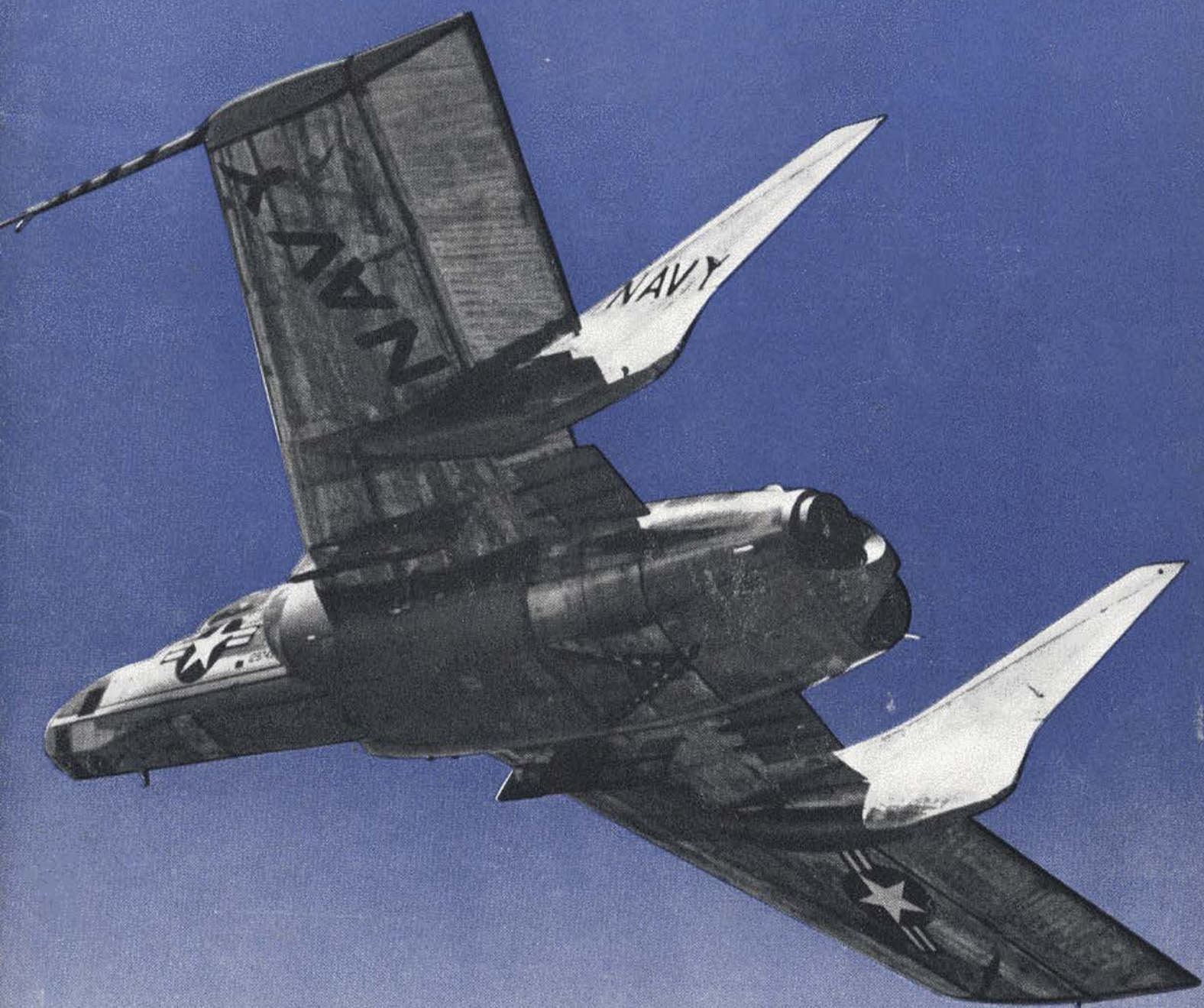


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NOVEMBER 1959

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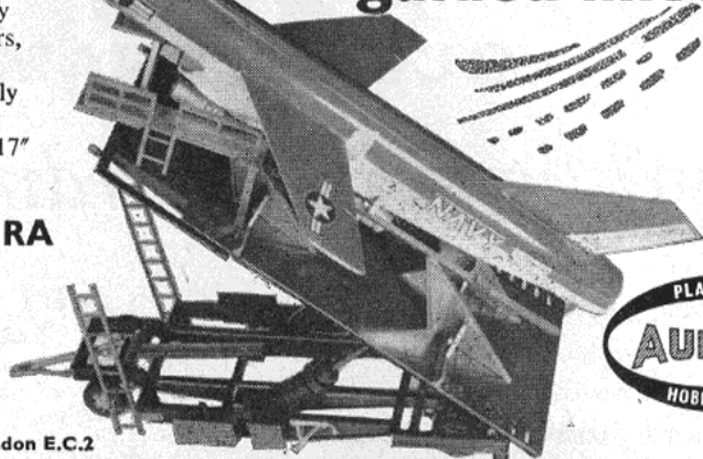
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And what about Aero Modelling this lovely summer? We seem to have kept as busy as ever, indeed at times too busy to make the most of the weather. I hope everybody has had such jolly good flying that they are tired of all their old models and will make a lot of new ones this winter.

Please note that I have been swimming. Every time I go to the Tropics I swear I will never get into a cold sea again, but as one girl in the Office put it, "It's alright once you get numb" - which is true so long as the sun is shining. If it isn't you just about freeze solid. Let's divert the Gulf Stream up the English Channel - past these Works.

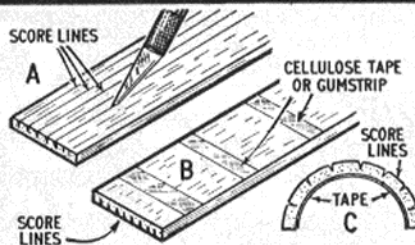
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SENIOR

- AA Rubber-driven
- AB Free-flight power-driven
- AC Control-line
- AD Sailplanes
- AE Non-flying models
- AF Scale free-flight or control-line
- AG Radio-controlled models

JUNIOR

- AH Any model by a junior under 16 on December 31st, 1959.

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There are competitions for clubs, a club entry comprising a team of three models.



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(Continued from previous page)

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ADDRESS			
TRADE OR PROFESSION			
CLUB			
IS YOUR MODEL YOUR OWN BONA FIDE WORK AND PROPERTY?		ESTIMATED VALUE OF MODEL For Insurance £ : :	
TYPE (e.g., Free-flight Scale, Control-line, Stunt, etc.)			
NAME OR TITLE OF MODEL			
WING SPAN		inches	WEIGHT ozs.
SCALE (if applicable)		POWER UNIT (if any)	
STATE WHETHER MADE FROM COMMERCIAL KIT		WORKSHOP FACILITIES	
PARTICULARS OF ANY PARTS OF THE MODEL WHICH ARE NOT THE COMPETITOR'S OWN WORK			
DETAILS OF GENERAL INTEREST FOR PUBLICITY. GIVE NAMES OF LOCAL NEWSPAPERS, &C.			

If you have a photograph of your model, please send it to us. It will give us some idea of what the model looks like and we may use it in publicity literature or in MODEL AIRCRAFT. Write your name and address very lightly on the back. Do not use a paper clip as this may damage the print. Your photograph will be returned afterwards.

I declare that the above particulars are correct.

Date..... Signature.....

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There is an entry fee of 3s. 6d. for competitors (1s. 6d. for under 16's). This includes a permanent pass to the Exhibition.

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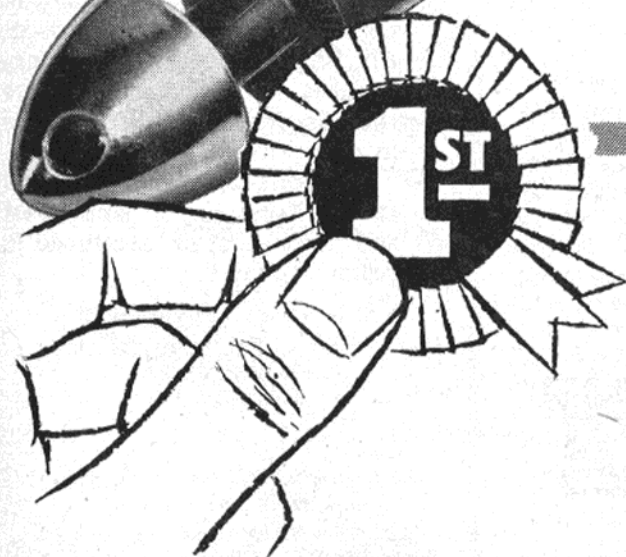
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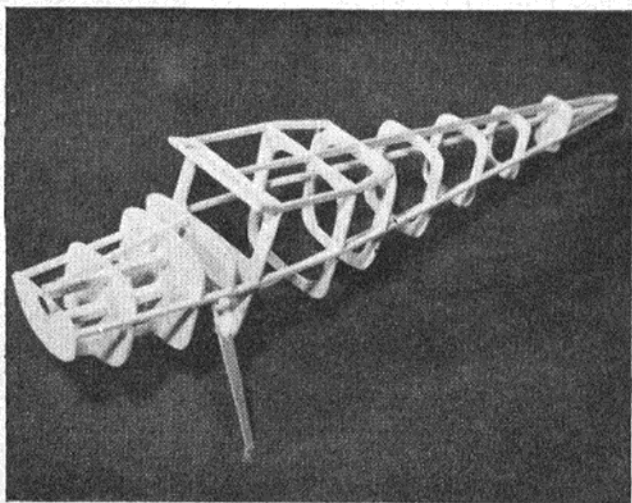
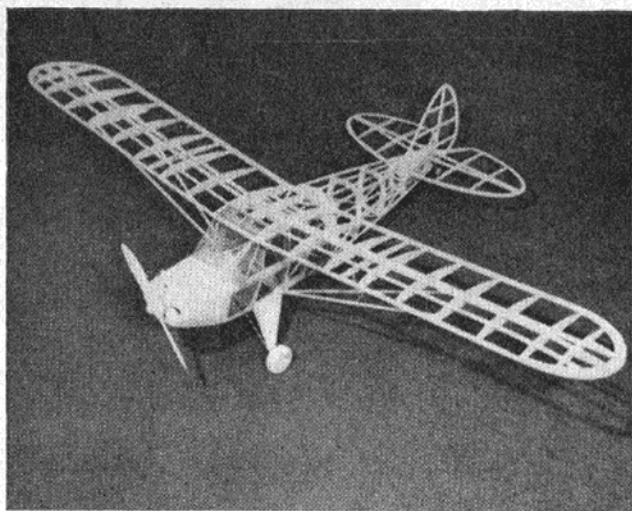
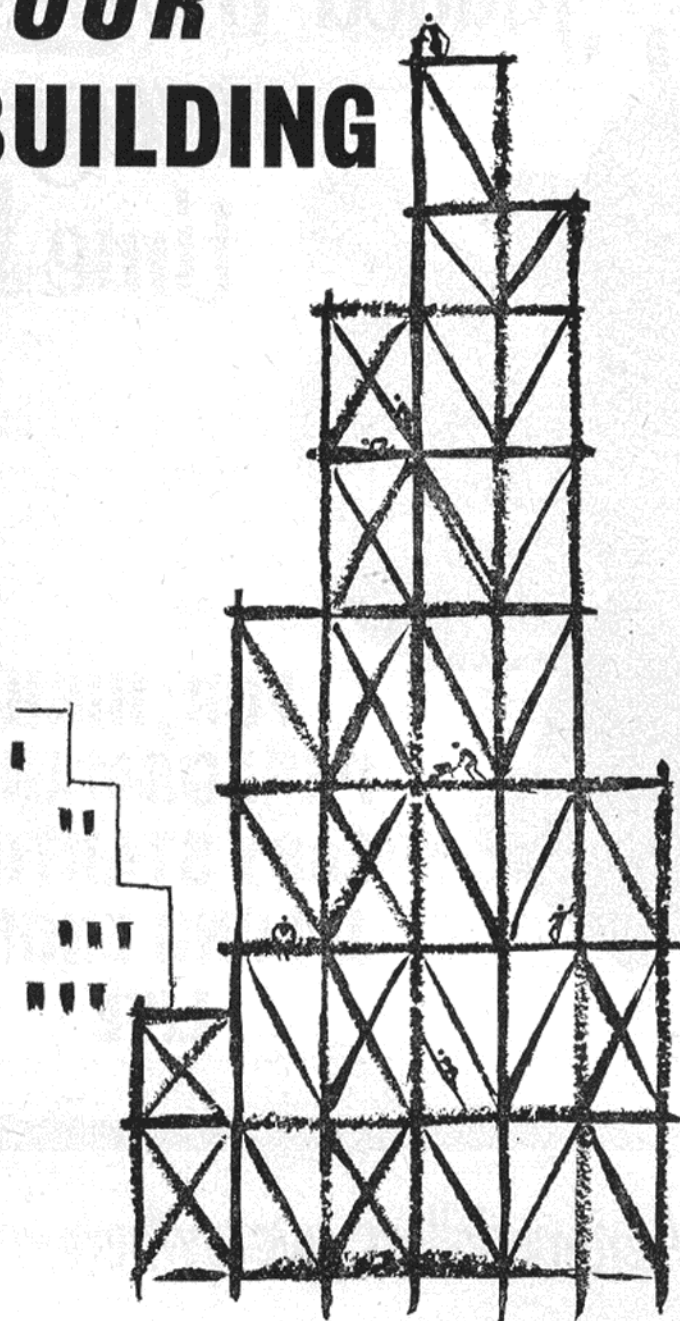


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IN THIS ISSUE

Here and There	279
International R/C Contest	281
Topical Twists	283
Over the Counter	284
Woomera	286
Criterium d'Europe	288
Latest Engine News	292
Readers' Hints and Tips	294
Plane of the Month	296
Aviation Newpage	297
Roving Report	298
Piper Comanche	300
Engine Tests	302
Readers' Letters	304
Club News	305
Recent Results	306

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Here and There

National Models Exhibition

IN the 52 years since the first Model Engineer Exhibition was held there have been many changes. Last year, to broaden its scope, it was combined with the Model Aircraft Exhibition; now to widen still further its already large appeal, it has been named the National Models Exhibition—a title that obviously embraces every class of model making.

Aircraft will obviously play a large part in this show, which is being held at the usual venue—the New Horticultural Hall, Westminster—but on different dates, namely: December 31st, 1959, to January 9th, 1960, inclusive.

These dates coincide with the Christmas school holidays and will thus make it possible for even more of the younger enthusiasts than usual to attend, while the "oldsters" can always find an excuse to take one day off to visit THE exhibition. As we said, aircraft will be a big attraction, and a focal point of interest will be the flying tank. Before we are misunderstood let us hasten to point out that this is not a military vehicle working on the S.R.N.I principle—it is the place where models will be flown. Instead of a separate flying cage and water tank as in previous years, we are combining the two, so that we will have a really large tank from which r.t.p. flying boats and seaplanes will perform.

The competition section, which embraces no fewer than eight different classes, has already attracted many entries but just in case you haven't sent yours in yet, then an entry form will be found on the advertisement page viii of this issue. You can send us this, or if you do not wish to cut your copy of M.A., then just drop us a line and we will send a separate form.

As usual the Trade will be well represented and showing all their latest products, most of which will be available for sale from one of the retail stands.

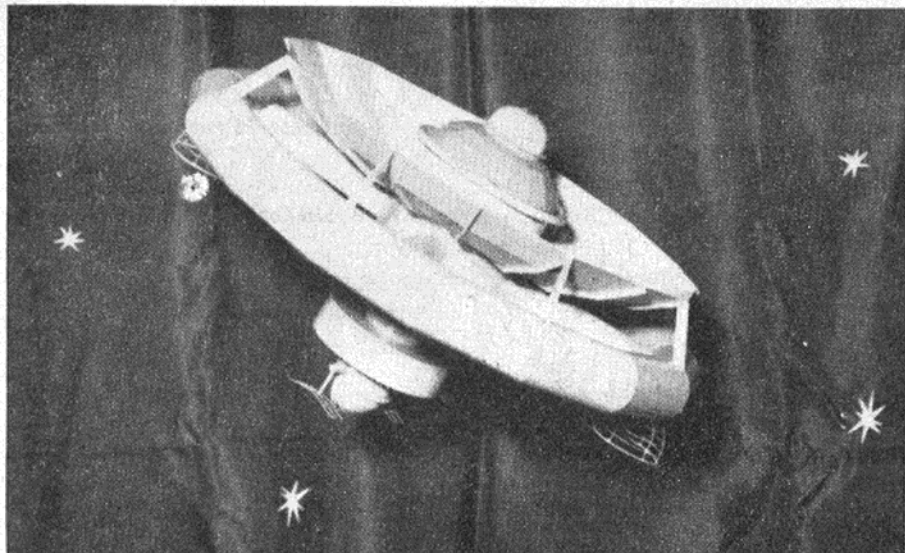
Peter Chinn's engine collection, which has, since last year, like Topsy, "just growed," will once again be a feature of our stand, while at least one member of the MODEL AIRCRAFT staff will always be on hand to answer your queries or assist in any way possible.

We look forward to seeing you there.

Cardboard Capers

CARDBOARD cut-out flying "scale" models were extremely popular with youngsters in pre-war days. The name of G. Rigby, the most prolific designer of these, will be fondly remembered by many of today's more long-in-the-tooth modellers.

The accompanying photo (overleaf) shows a more up-to-date subject than those pre-war creations. Originating from Poland and constructed from card, it represents a



space island of the future. The designer, the present day counterpart of Rigby, is Mr. Z. Gryglicki, whose elaborate designs, including a Fairey F.D.2, are sold by the thousand in his native Poland, where no plastic kits are yet available.

National Advertising

TELEVISION and the National Dailies are this year being employed in model sales promotion campaigns. During November and December, Moby Toys are taking advertising space in several news-

papers, giving details of a novel air-race game which will be available quite free of charge. Jetex have devised this game and enclosed with it will be a complete listing of all Jetex kits. Emphasis will be given to the suitability of their rubber powered models for the beginner and the availability of cheaper Jetex fuel will encourage many of the more experienced modellers to try this form of propulsion for the first time.

Airfix are employing television to boost their Christmas sales with a cleverly thought out series of 45 sec. spot commercials on ITV. Opening

with a newsreel sequence of fighter aircraft in action, the scene dissolves to show an Airfix fighter being built by a father and son.

The sequence continues with shots of other Airfix products, closing with the viewer being taken along a railway line past the OO gauge Trackside models.

Publicity campaigns such as these can bring home to the unconverted section of the general public the originality and very high standard of present day model products.

Cover Story

WE make no apologies for reverting to a full-size aircraft photograph for our cover this month—we just could not resist the terrific impact of this unusual shot.

The machine is a U.S. Navy Chance-Vought F7U-3P *Cutlass*, the photographic reconnaissance version of the well-known fighter-bomber. The prototype *Cutlass* first flew over 11 years ago, the designers making use of much captured German aerodynamic research data.

Incidentally, since we started using model photographs on the cover we have had dozens of letters—all in favour of the change. So unless a photograph such as this month's does turn up it will be models only from now on.

Hungarian control-line team make demonstration tour of China

WE have received a most interesting letter from our Budapest contributor Dr. Geza Egervary, who, together with five other Hungarian modellers, recently completed a tour of China. Most of the names of the team members will be familiar to M.A. readers.

Team manager, Rezo Beck, Dr. Egervary, George Benedek, Laszlo Azor, Laszlo Ordogh and Juire Tobb.

The selection was made on the strength of each modeller's contest successes during 1958/9 in stunt, speed, and team racing.

A TU.104 jet was placed at their disposal and the Hungarians covered more than 18,000 miles during their 30-day tour. They visited Peking, Shanghai and Canton, holding six

Photo left, shows some Chinese modellers with their C/L speed jobs:

The coy Chinese maiden in the photo below is an expert stunt/combat flyer.



demonstrations which were well received by over 100,000 spectators.

For one of their scheduled demonstrations it rained so hard that the whole programme was postponed until the following day. In view of this the local Mayor apologised to the Hungarians in advance for what would obviously be a poorly attended demonstration. Imagine their dismay(?), therefore, when no less than 2,000 prospective spectators were turned away from the already full 5,000-seat stadium!

The Chinese modellers received their visitors with considerable enthusiasm, being keen to learn and improve their own standards. According to Dr. Egervary there are about 100,000 Chinese model enthusiasts, most of whom are members of the nationally organised model clubs.

Besides their model demonstrations, the Hungarians were given the opportunity during this unique tour, to see many of the aspects of Chinese life, both historic and contemporary.



INTERNATIONAL RADIO CONTEST

THIS year's International Radio Contest for the King of the Belgians Cup was held at Hirzenhain in Southern Germany—an area noted for the beauty of its woodland.

The contest site was laid out in a field, in close proximity to heavily wooded country, about three miles from where the teams, their helpers, and the contest officials were accommodated. A tar macadam rectangle of approximately 100 x 120 m. was laid out on a conveniently flat patch on the gentle slope of the field, but having only been finished on the morning of the contest, it was covered with a layer of cement dust which had been used to cover the still wet tar. It did, however, make an excellent take-off area, although some of the models found it only just big enough, while a line of trees at the edge of the field, some 150 m. up-wind, made some of the take-offs pretty dicey.

The teams, their helpers, all the officials and some guests, were accommodated in the Young People's Building School of the German Aero Club's Youth Sport Flying Organisation. This is roughly the equivalent of the S.M.A.E., with the exception that, being an integral part of the German Aero Club, the full responsibility for the financing of the event was shouldered by the Aero Club organisation.

The accommodation proved to be just adequate for the number of people present, and one wonders what would have happened had there been entries from the 19 countries we had to deal with at Cranfield, instead of the mere seven who turned up on this occasion. (Teams competed from Belgium, Germany, Great Britain, Holland, Italy, Sweden and Switzerland, but all countries had not found it possible to field a full team of three competitors.) As it was, all had comfortable quarters in lovely surroundings, and everyone agreed that it was a wonderful spot to hold a contest, even if there were a few snags to the take-off area.

Flying started on Saturday morning, and Chris Olsen, who had drawn number one "out of the hat," was first away. There is no doubt that this first flight was a shock to the Continental competitors, who were astounded at the improvement that this hard-working flier had made since his first Continental excursion

to Darmstadt for the same contest last year. His flight was really first class and gained him the high score of 1,824 points, despite the fact that a short motor run made it impossible for him to complete his spins.

The only other multi-channel fliers to complete the pattern in round one were Stegmaier of Germany and Bickel of Switzerland. Stegmaier put up his usual smooth performance, but it was obvious throughout his flight that his manoeuvres were not as well shaped as those of Olsen and, in particular, all his figure eights suffered because his model simply could not perform an outside loop of as small a radius as his inside loop. He also slipped up badly on his first flight by not making the required return circuit over the transmitter before commencing the first manoeuvre after take-off, namely, the straight flight into wind. Many of those present, including some of the judges, were, therefore, somewhat surprised to find that his score was 1,904 points.

Bickel's first flight was steady rather than spectacular. He has obviously improved since we last saw him fly and his approach has been to get consistent results with no risks, a policy that paid off in the end. His first flight score was 1,504.

Of the remaining multi-channel competitors, Stewart Uwins was definitely not up to his usual form (when he can give Olsen a run for his money) and with his model playing him up badly was only able to attempt a small part of the pattern and score 501 points. Gustav Samann completed an adequate flight, not in the championship class, to gain 987. Erminio Corghi had a colossal prang soon after take-off, writing the model off completely and scoring only 151, while G. J. Veenhoven of Holland lost control immediately and flew away to score only 38.

The rudder-only flying was comparatively uninteresting after the multi-class flying, and it was generally agreed, amongst competitors and others, after the contest, that this type of flying hardly merits World Championship status.

Of the rudder-only fliers the delta wing model of Setz was outstanding in every respect and proved to be the eventual winner. Its

• Greatly improved individual standard of flying this year—but consistency wins

• British Team dogged by bad luck

perfectly controlled turns, using its proportional forward rudder control, were a joy to watch, and its smooth steady progress through the air was in pleasant contrast to the jerky flying of many of the other models. It was no surprise that he proved to be the eventual winner in this class as his first flight scored 371 points, the best of the round.

British rudder-only fliers were unlucky in this round. Howard Boys had radio trouble and used one of his two permitted attempts trying to get the receiver to work. On his second attempt his motor had a poor run being overcompressed and possibly rich into the bargain, with the result that the model landed under power before completing the pattern.

Van den Bergh had the worst luck of all. Having nearly completed a good pattern his prop came loose in the air and finally fell off. Under the F.A.I. rules this nullified the flight so he scored zero instead of about 320.

Of the remaining competitors in this section Vandermeulen and D'Ursel, both of Belgium, flew well to gain 370 and 368 points respectively. Berglund of Sweden flew his most attractive and beautifully finished semi-scale low wing model to get 349 and Schumacher of Germany scored 348.

Only two models made flights in the glider event. Hans Buhring of Germany flew well to score 414 but Fritz Gerber of Switzerland was unlucky to go just too far downwind when making his landing approach, finishing up in the tops of the trees behind the take-off area. His score was thus only 181.

At the end of the first day's flying the contest was still wide open and it was obvious that some real efforts were going to be made to improve scores on the second day.

Olsen made a fine start for his second flight, after some tuning of his controls, and looked to be all set to repeat his previous day's effort and probably to improve on it. Then tragedy. Just at the end of the third consecutive outside loop his motor cut dead. No splutter, no

Left: Stegmaier, flying his usual style, Ruppert twin-powered model, takes off. Note the cloud of dust raised by the airscrew.

Below: Chris Olsen and Stewart Uwins with their "Uproars."





Chris Olsen has a final check up before a contest flight.

warning, just a dead cut, and all he could do was to try and gain a further point or two by getting the model down in the circle for a spot landing. Result, a score of only 528 points, and the competitor that one or two people had already been saying was the obvious World Champion for 1959 no longer had a chance.

Then Stegmaier crashed on his second flight. After a perfect take-off and his usual exhibition of smooth flying, the rudder stuck on full left turn and before he had fully realised what was happening, he had delayed cutting the motor until too late, and the model crashed. But his second flight score turned out to be 862 to put him 400 ahead of Olsen.

Bickel's flight was now awaited with greatly increased interest, as if he could perform as well as he had the previous day, he would be the champion for this year. And that is just how it turned out. He took off steadily to put in a flight as nearly as possible a duplicate of his Saturday's effort, a good, sound, steady flight with no fireworks, but reliable and consistent. Result, a score of 1,477 and he was in an unassailable position.

Our second multi-man, Uwins, had worse luck on his second attempt than on his first. It was obvious soon after he was airborne that all was not well and that the model was not under full control. Desperate efforts to tune in while flying seemed at first likely to succeed as one reed after another was persuaded to "come in." But all was to no avail and he finally had to give it best and abandon his flight. Score—76.

Gustav Samann improved on his previous 987 with a good 1,308-point flight to give him a creditable fourth place with a total of 2,295,

so that the first four were Bickel, Stegmaier, Olsen and Samann.

Amongst the rudder-only fliers Setz and Schumacher were again outstanding with scores of 500 and 505, most competitors gaining scores not much different from the previous day, except for Howard Boys, who found his normal form at last and scored 333 with a trouble-free run. Frank Van den Bergh scored 326 which meant that had he not been disqualified from the previous day's results he would have finished sixth, and the British team score would thus have been that much better.

Sunday night finished up with the prize-giving, a surfeit of speech-making and a good deal of wine-drinking in the delightful village hall at the neighbouring village of Nanzenbach. Here a good time was had by all and the very generous prizes, together with the German Aero Club plaques given to all the competitors, their mechanics and all the officials, will long serve as a happy reminder of what was an altogether memorable meeting.

Footnotes from the Meeting

One thing was really apparent from this meeting—the standard of R/C contest flying is now improving at a tremendous rate. What is more, the greatest progress is definitely being made by our own fliers, Olsen especially and Uwins, too (when on form), both being in the World Championship class. Let us hope that next year they will have a little more good and a lot less bad luck and can bring the trophy back to England for the first time.

With the exception of the Rupert twin diesel used by Stegmaier, and a prototype diesel twin flown by Veenhoven, the larger models all used glowplug engines. Throughout the contest they were notably easier to start than the diesels.

Proportional rudder-only, using the pulsing system, certainly gives smoother turns than the alternative system of control by means of a normal escapement, and has advantages in flying over the present rudder only pattern.

There is no great interest in R/C gliders—as yet. This is a pity, as they are very lovely machines to watch and require a high degree of skill from their pilots, especially when landing.

With the increasing standard of flying, judges' tasks will become harder and something will have to be done to get more judges of a sufficiently high standard.

The present system where score cards are taken away from the judges, who never see them again, is not satisfactory.

All score cards should be available for all judges and competitors to see after each round.

A conference of F.A.I. judges would be an excellent opportunity for several points under dispute (as to the correct methods of scoring) to be resolved. This could probably be combined with a similar conference for judges in C/L stunt, for instance, where it is felt the standard of marking could be improved.

Several foreign competitors remarked on the excellent team spirit of the English team under their manager, George Honnest-Redlich. It was pleasant to hear this compliment and we

RESULTS

Multi-Channel

1. A. Bickel, Switzerland ..	1504	1477	2981
2. K. Stegmaier, Germany ..	1904	862	2766
3. C. Olsen, Gt. Britain ..	1824	528	2352
4. G. Samann, Germany ..	987	1308	2295
5. S. Uwins, Gt. Britain ..	501	76	577
6. E. Gorgi, Italy ..	151	—	151
7. G. J. Veenhoven, Holland ..	38	28	66

Single Channel

1. E. Setz, Switzerland ..	371	500	871
2. H. Schumacher, Germany ..	348	505	853
3. E. Berglund, Sweden ..	349	416	765
4. W. Vandermeulen, Belgium ..	370	330	700
5. R. Dilot, Sweden ..	301	394	695
6. C. W. Schoorel, Holland ..	341	284	625
7. R. D'Ursel, Belgium ..	368	230	598
8. M. Louis, Belgium ..	315	198	513
9. H. Boys, Gt. Britain ..	176	333	509
10. O. Hanziker, Switzerland ..	270	229	499
11. F. Van den Bergh, Gt. Britain ..	—	326	326
12. P. J. W. Kraaijpoel, Holland ..	84	151	235

Gliders

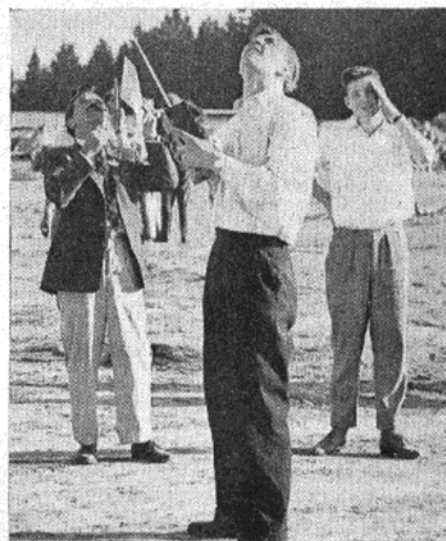
1. H. Buhning, Germany ..	414	249	663
2. F. Gerber, Switzerland ..	181	228	409

Team Results

1. Germany ..	..	..	6577
2. Switzerland ..	..	..	4760
3. Gt. Britain ..	..	..	3764

feel certain that future teams will show a similar spirit.

We now look forward eagerly to hearing whether the Swiss Aero Club can provide the necessary flying ground and facilities for next year's contest. If they can we shall be there—definitely!

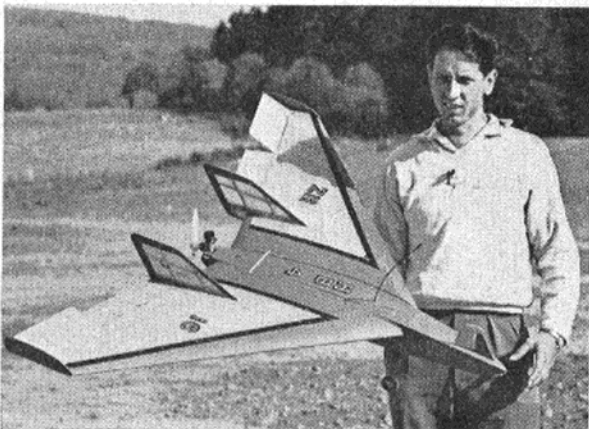


Above: Judge George Honnest-Redlich and flyer Frank Van den Bergh are intent on the model, but the spectator is more interested in what Frank is doing with his little box.

Left: Setz's beautifully built delta model which placed first in the "single" event.

Right: Dilot and Berglund of Sweden with the latter's attractive low wing model.

All photos by Roger Clark.



Topical Twists

by PYLONIUS

Still(ings) Air

When we look at the modelling trends of East and West it is puzzling to know just who is catching up on whom. On the one hand we find the Kruschev Kids junking the Fatherland reed in favour of All-American balsa, and, on the other, our own model journal featuring a public confession from a deviating theorist.

I suppose this suggests a good, healthy exchange of ideas, but it seems to me that the Russkis are getting the better end of the bargain. Carving up balsa might be labour camp slavery to the average, plastic-minded Western modeller, but to our reed tortured Eastern friends it must be sheer bliss. On our side, we have to go through the whole tedious business of a public trial and full renunciation every time some well meaning beginner's friend unwittingly deviates from the rigid code of orthodox theory.

What it means is that the future article writer must know which way the wind's blowing before wading in regardless. If, like our confessing friend, you think the wind's blowing when it isn't, then you're really up the creek. The fact is, theorist ideology doesn't recognise wind. It's all still air, and if it happens to be moving when you heave a model into it, that's just your hard luck.

There must be plenty of other pitfalls for the unwary theorist, but, for a start, I'm going to keep very quiet about that cupboard full of gale-wrecked models.

PREposterous

A certain balsa tycoon, with a predilection for writing chatty and whimsical sales letters, seems to have a balsa chip on his shoulder about a "gentleman of the press" worming out the secrets of his silk finish processes. At first I thought he was referring to me, as, in the past, I have made a few desperate cracks about silk woodworms, for which I hope one day to be forgiven, but I noticed with relief the term "gentleman." Not even my best friend, if I had one, would call me that, and the dreadful visions of being the subject of a "great big saw came nearer" act on his log cutting machine were happily dispelled.

Anyway, our balsa tycoon suggests that the poor chap, whoever he might be, read up on American advertising literature, particularly the subject of sales PRE-sentation. Now, this, in my opinion, is going a bit too far. The log cutting machine is one thing, but I'm sure the poor woodworm watcher doesn't deserve such a ghastly fate. However, if he did survive the ordeal, he would at least know that it isn't what you sell that matters but the sales PRE-sentation. He might also understand why his breakfast food tastes like balsa chippings.

Backward Boys

Glider towing is making the news just now, proving that what you need to win is a good Yank. But, Yanks are quite a recent invention, while model gliding is the oldest branch of our hobby. Possibly, the earliest reference to the sport is to be found in the last words of Julius Caesar, which, if you paid attention at school instead of making paper gliders, you will remember as "A/2 Brute?"

In fact, we can go backwards almost as far as the modern enthusiast in search of a thermal. But we don't need to go back to Roman times

in search of a Maximus Scorus, our present roaming times keep the clock watching boys on their toes. Before the timekeeper can clock on, the thermal seeker has disappeared out of the aerodrome.

On the face of it, all this airfield prancing seems superfluous. The modern glider is so sensitive to thermal lift that there's talk of limiting the cross section of the d/t fuse. Most gliders can safely do a max from a dicey 10 ft. launch, but there's always the odd downdraught to elude, and the technique is to carry on towing until your feet start to leave the ground. By then you should have travelled far enough upwind to plant a max-sized flight bang at the feet of the timekeeper. For the fly-off you should venture a little further, taking care, of course, to avoid main roads.

Another advantage of this technique is that it keeps the model clear of that inevitable dense wood at the downwind end of the aerodrome. But, even the most experienced fall foul of this trap, as was demonstrated in the A/2 finals. Draped over one of the highest trees, we are told, was a particularly fine, silver foil covered specimen, with the words New Zealand applied to the wings. What words were applied to the wood we were not told.

Aboriginal Idea

Our Australian friends get niggly enough when referred to as primitive sheep farmers and the like, but really do their tops when people doubt if they fly model planes. The fact that they do build and fly model planes must mean that they don't have television. So, they might be just primitive sheep farmers after all.

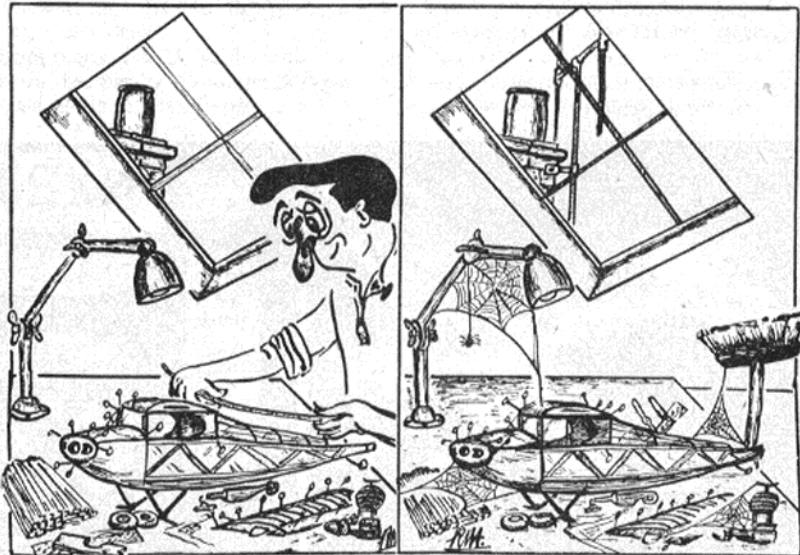
They can, however, take some comfort from the thought that I, at least, have seen proof of their model flying prowess. It was in a travel film. The modellers were a rather dark skinned lot, and all wore loin clothes, which I took to be formal model flying dress in those hot climes. The models they flew were of particularly advanced design. Tailless jobs, with wooden, swept back wings. When launched the model flew in a wide circle, and returned to the feet of the launcher, suggesting some sort of radio control.

I think they called the models boomerangs.

French with Tears

Our ebullient friends across the channel must think us a sober-sided lot of charlies. They do their cha-cha-cha best to give the lads a real frou-frou time, with bags of oo-la-la and all sorts of Frenchified high jinks, and, instead of waving the old flag in gratitude, we start grizzling about some silly toy aeroplane event which our witty and considerate hosts had all but overlooked in the general merriment.

This gay and sophisticated people who rejoice in the fact that "Little girls get bigger every day" might not now be too sure that little boys do likewise.



OVER THE COUNTER

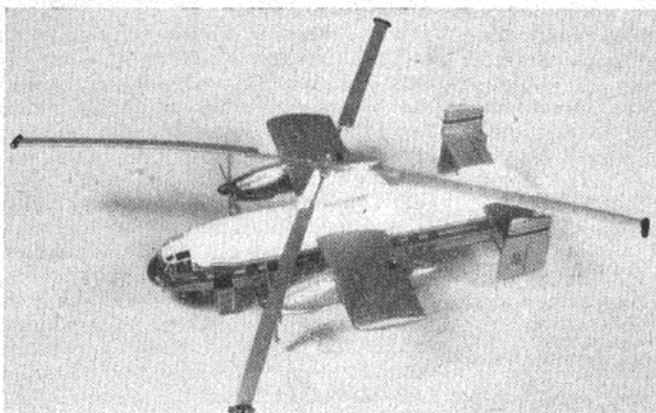
Shown in the accompanying photograph is the framework of the **Frog Fawn**, a 22 in. span rubber powered sports model. The simple construction and nicely die-cut parts make this a fine subject for the beginner to tackle. Materials in the kit that we assembled were of a commendably high standard, representing good value at 6s. 5d.

The C/L counterpart of the *Fawn* is the *Frog Chimp*—22 in. span, designed for motors of 0.8 c.c. to 1 c.c. The new *Frog* 049 glow plug engine would be particularly suitable for this model—the inherently easy starting characteristics of the small glow engine being a valuable encouragement to the embryo modeller. Good quality materials, crisp die-cutting and numerous finished components combine to make this an attractive little kit, selling at 14s. 6d.

From **Airfix** this month, we have yet another example of the unbelievable value this manufacturer is capable of producing, in the shape of the eagerly awaited *Fairey Rotodyne* (above). The finished model has a rotor diameter of 15 in. and is most impressive, with opening loading doors in the rear fuselage and a retractable undercarriage. The beautifully fine rivet detail, first seen on the *Airfix Lancaster*, is again employed to good effect. This is not a kit that should be hastily assembled, for a carefully completed model will handsomely repay all the effort expended. To 1/72nd scale, the *Rotodyne* must surely be the best 6s. worth available anywhere.

A Mitsubishi A6M2 *Zero* is another newcomer to the 2s. **Airfix** range of 1/72nd scale fighters, but we are sorry to say that this particular model does not come up to the high standard we are now accustomed to expect from this company. The detail moulding is, in places, rather coarse and the extremely deep grooves in the fuselage, which are intended to represent panel joints, completely ruin this component.

Humbrol matt colours are much in



demand by discerning plastic modellers who want a realistic finish on their wartime models, but the thing that often detracts from the otherwise convincing matt finish is the high gloss surface of the transfers. A new **CLEAR** matt finish is now available which when applied to any glossy surface effectively "matts" it, without distorting the base colour. Bravo, **Humbrol**, for supplying this long-felt want; and at only 8d. per tin!

Eddie Keil has a new profile stunt model especially designed for the new 0.8 c.c. glow plug engines, but suitable

for any engine up to 1 c.c., called the *Firefly*; the price is 15s. 9d.

The owner of an engine in the 2 c.c. to 2.5 c.c. range, looking for an attractive airframe, is well catered for by the **KeilKraft Marquis**. This semi-scale design, the prototype of which was shown at last year's **MODEL AIRCRAFT Exhibition**, costs 32s. 6d.

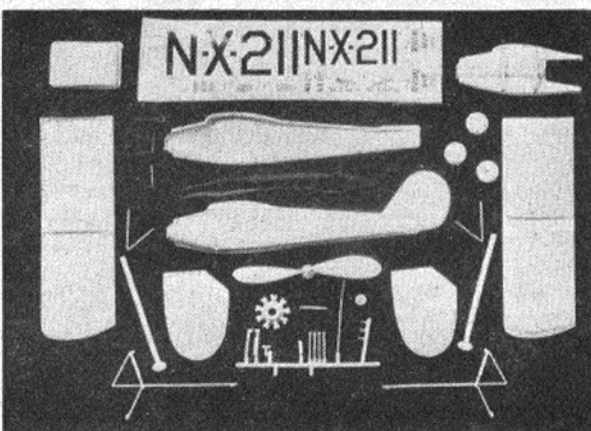
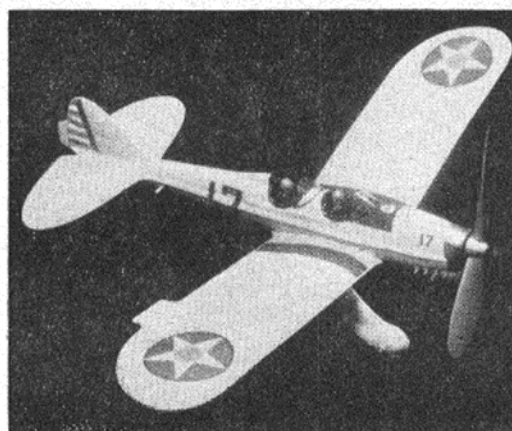
Such is the demand for the popular **KeilKraft Handbook** that all copies of the current edition have now been sold. The next handbook is due for publication in mid-December, and enthusiasts are advised to place their orders with their dealers **EARLY!!**

Discerning modellers will be delighted to learn that **X-acto** tools are once more available. The manufacturing rights have recently been taken over by **Dufay Ltd.**, and these high quality products are again in full production. A cutting edge for practically every purpose can be found in their range of 25 different cutting blades, three different weights of knife handle, saws, gauges, etc. An ingenious new addition is the **X-acto Lock-griplier**, which can be used as plier, vice, wire cutter and stripper, crimper, tweezer and wrench! This would be a valuable addition to any tool box.

A new model from **Henry J. Nicholls** is the *Viper*, a profile stunt combat trainer of very eye-catching lines for 1 to 1.5 c.c. engines. Wingspan is 28 in. and the price 17s. 6d.

Allen Mercury glow plugs, priced at 4s. 1d. each, should now be in the shops. Individually packed in the now familiar **Mercury Mini-pak** they come in three types, type "A," 1.5 volts, short reach, for engines up to 1.5 c.c., type "B," 2 volt, short reach, and type "C," 2 volt, long reach.

The name of **Strombecker** has long been associated in the U.S.A. with pre-formed products of various kinds. Only recently has the name been seen in this country where **Selcol** are producing some of their rubber powered plastic flying scale models. Four models are in the present range, the *Cessna Bird-dog*, *Piper Pacer*, *Ryan Spirit of St. Louis*, and the *Ryan P.T. 22*. Our picture shows the *P.T. 22* completed. The various parts are vacuum formed



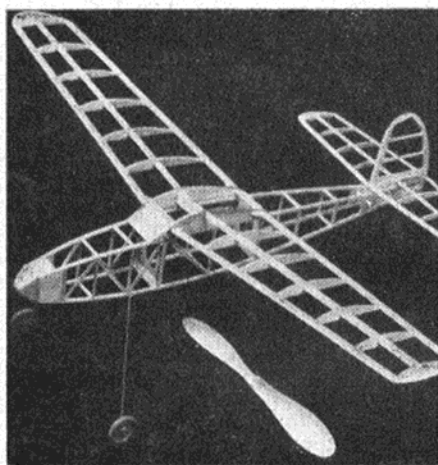
The realistic droop of the rotor blades on the *Rotodyne* (above) was obtained by steaming. Left, is the completed **Strombecker Ryan P.T. 22** and right, the *Spirit of St. Louis* kit.

from thin styrene sheet and in their dismantled state appear to be extremely flimsy. Upon assembly, however, an enormous amount of rigidity is gained and the completed model is fairly light and very strong. Ordinary plastic cement is used to join up the parts, and, as with the non-flying plastics, it should be used sparingly, as not only will the excess cement destroy the smooth surface, it will also considerably weaken the thin components.

Fifteen inches is the average wing span and at 8s. 9d. each (*Bird-dog* 7s. 3d.) the kits are very good value, bearing in mind the fact that these tough plastics will outlast several balsa and tissue jobs.

* * *

Scale modellers will be interested in the series of colour transparencies of aircraft produced by the **Dia-Dema Colour Club**. Run rather on the lines of a book club, this organisation, in return for an annual subscription, supplies, at three-monthly intervals, selected transparencies covering not only aviation but numerous other subjects including railways, birds, art, etc.



The Frog Fawn beginners' rubber model.

Attractive storage albums are supplied while slide projectors and viewers are available at competitive prices. Full details can be obtained from **Dia-Dema Colour Club**, 60, Berners Street, London, W.1.

* * *

The two types of **Tatone** clockwork timers imported by Dave Posner are proving deservedly popular with contest flyers. The fuel shut-off type includes a length of surgical rubber fuel tube which when used with diesel fuel must be well washed after a day's flying in order to prevent excessive swelling. Neoprene tube is not suitable for use with this timer, being far too rigid. The timer itself is extremely accurate and the fuel cut-off positive, the timing range being 0 to 25 sec. while the D/T timer has a range of from 0-6 min.

Both timers weigh less than ½oz., and cost 30s. post free from Dave Posner, 61b, Canfield Gardens, Finchley Road, London, N.W.6.

Aviation

Bookshelf

WE have just had the pleasure of reading the latest Harleyford publication, **Air Aces Of The 1914-1918 War**. A pleasure because this is without doubt one of the best works that has appeared in the "Harborough" series. Every student of aviation can learn something new from this very comprehensive account of the exploits and victories of the airmen of the Great War, as we are certain that no individual collector can fairly claim to possess all the wealth of facts and data presented in this book.

The photos alone are well worth recommending. The authors have succeeded in obtaining many illustrations which have not hitherto been published, some of them coming from obscure private sources, previously unknown to photo collectors.

The dust wrapper features a superb drawing by J. D. Carrick, who is fast becoming noted for the fine detail and authentic atmosphere of his paintings of vintage aircraft. A pity though that the cover is not in colour, the Pfalz D.III depicted would have looked better in the full "warpaint" typical of their type in 1917. We trust that future Harborough covers will feature attractive and colourful scenes similar to those which have identified their previous volumes.

What few mistakes this book contains are of a very minor order and negligible. The main errors are in the captions to photos. For instance, on page 170 is a photo of an *Albatros* D.II reputed to be of Jasta 2, whereas the serial, 497/17 shows it to be the machine flown by Lt. Grunzweig of Jasta 16. On page 171 the line-up of *Albatros* fighters are D.Vs of Jasta 5, not D.Vs of the Boelcke Jasta 2 as captioned. The *Albatros* depicted on page 183 is a D.III, not a D.V as stated and again, on page 193 the *Albatros* D.III of Lt. Werner Voss belongs to Jasta 5, not Jasta Boelcke.

A questionable paragraph on page 59 describes an attack by French squadron S.P.A.103 on a formation of 32 Fokkers. Actually in August, 1917, they would probably have been *Albatroses*.

Unfortunately, in some places in the index the page numbers do not give the correct page, but this is, doubtless, just a printer's error. In the Italian section Lohner is miss-spelt Löhner for some reason.

A point of interest on page 191 is photos of von Tutschek posing with two of his victories, an S.E.5a and a Spad XIII. The pilot of the S.E.5a was Lt. Wigan and the Spad was flown by Captain Doyle.

This book is otherwise very reliable and will certainly become a standard reference to the airmen of the first world war. It has been compiled by several co-authors of various nationalities, each an authority on the airmen of his own particular country. They have amassed a tremendous amount of information, and each section is a book in itself.

The whole work has been edited by Bruce Robertson, whose name on any book is a guarantee of authenticity.

(HARLEYFORD PUBLICATIONS, 45s.)

PUTNAM'S rapidly expanding aeronautical book list is now graced by the first volume of A. J. Jackson's **British Civil Aircraft 1919-59**. So absorbing is this book that we have found it very difficult to put it down in order to produce this month's issue!

There are nearly 580 pages dealing with all the aircraft on the British Civil Register from 1919 to the present day. The aircraft are dealt with under the manufacturers' name and these are arranged alphabetically, Volume 1 covering A, B, C and D to Dudley Watt. Not only are British manufactured civil aircraft dealt with but also foreign machines registered in Great Britain.

The author has not fallen into the trap of cold tabulation, which is so easy when tackling this type of subject. One hundred and ten of the more important civil types comprising the main bulk of the work are covered by a comprehensive specification, good three-view drawings and a very readable description. Their development and operational history, accompanied by photographs, all of which are good, are of outstanding interest.

These "potted histories" abound with fascinating little anecdotes relating to the aircraft, their pilots and designers, yet at no time do these stories impair the technical value of the book. Seventy-two pages are devoted to photographs, specifications and descriptions (two per page) of one-off and experimental aircraft. A further 22 pages illustrate military types which carried civil markings. The value of the photographs alone would be worth the price of this book, there being over 500, representing all but a dozen or so of the aircraft described. In an appendix there is a table giving (with but few exceptions) every single aircraft of every main type and variant. In the case of aircraft built in small numbers there are precise

Continued on page 293.

Woomera



WITH this graceful and beautifully built model, Australia's Bond Baker won last year's World Wakefield Championship at Cranfield, competing against 72 of the world's leading Wakefield modellers, from 23 countries.

The model is of classical design and features stressed skin fuselage construction of moulded sheet balsa, silk covered. It is NOT recommended as a suitable project for beginners or inexperienced modellers.

Wing and Tail-unit

Make ribs R1, by the sandwich method, from quarter-grained medium $1/32$ in. sheet. Centre and outer dihedral break ribs are from $1/16$ in., while the wing tip ribs must be traced and cut out in pairs. The centre section trailing edge is carved and sanded from $1/8$ in. medium balsa, then cut to exact length and notched to take the ribs. Tip trailing edges are traced from the plan and cut from $1/8$ in. medium balsa, except W.3, which is cut from $3/16$ in. sheet—do not carve to section until after assembly.

Lay waxed paper over the plan and pin down the inner panel leading edge (medium/hard $3/16$ sq. balsa), then pin down the trailing edge packed up to the correct angle. The method of packing up which I have found most satisfactory is to take a sheet of $1/8$ in. balsa and measure off $1 3/16$ in. at one end, then chamfer down to an accurate wedge shape. The end is then cut off at a distance of $1 1/8$ in., thus making the resulting wedge about $7/64$ in. deep. The wedge is now cut into 26 sections, one of which is placed under the trailing edge at each of the rib positions. Having got the trailing edge accurately packed, insert the R1 ribs (do not insert centre or outer dihedral ribs) and the top spar of $1/8$ in. by $1/16$ in. hard balsa.

Remove from plan when dry and insert bottom spar of $1/8$ in. by $1/16$ in. medium balsa. Take pieces W.1, W.2, and W.3, join together and pin down flat on plan. Remove when dry, sand to correspond with plan, and cut notches for the ribs. Pin down again on plan with W.3 flat, and W.1 packed up at the inner end with one of the wedges used for the inner panels. Form the leading edge by laminating three strips of medium $3/16$ in. \times $1/16$ in. balsa and cement firmly on W.3. Insert ribs and top spar of $1/8$ in. \times $1/16$ in. medium balsa.

Remove from plan when thoroughly dry, and insert bottom spar of $1/8$ in. \times $1/16$ in. medium balsa tapered to $1/16$ in. sq. at tip, then sand the trailing edge to section but do not sand tip.

Join the outer and inner sections, blocking up the tip to $1 1/8$ in. Place dihedral keepers of $1/16$ in. ply where indicated and fit the dihedral break rib. Join the inner panels, blocking up the outer dihedral break to $1 1/2$ in. and cement in the dihedral keepers and centre rib. Now sand the leading edge to the section shown in the rib profiles on plan, fit the leading edge sheeting of pre-sanded $1/32$ in. quarter-grained balsa (inner panels first) and sand the leading edge and tip to shape.

The tailplane construction is similar to that of the inner wing panels, except that there is no lower spar. Note that the two fins, of $1/16$ in. quarter-grained sheet, are offset $1/16$ in. to the right as shown on plan.

Fuselage

Make up a mould or forme of hard wood (not balsa) to the shape and section shown by the dotted line on the plan. Mark a centre line on the front and rear of the forme and at the positions shown for the cabane struts, cut two grooves around the forme using a hacksaw blade or similar fine saw. These grooves should be deep and wide enough to easily take the wire for the struts, which are formed so that they fit snugly into the grooves and conform exactly to the contour of the mould. Do not cut the struts to length at this stage and when you are satisfied with the fit remove them from the forme.

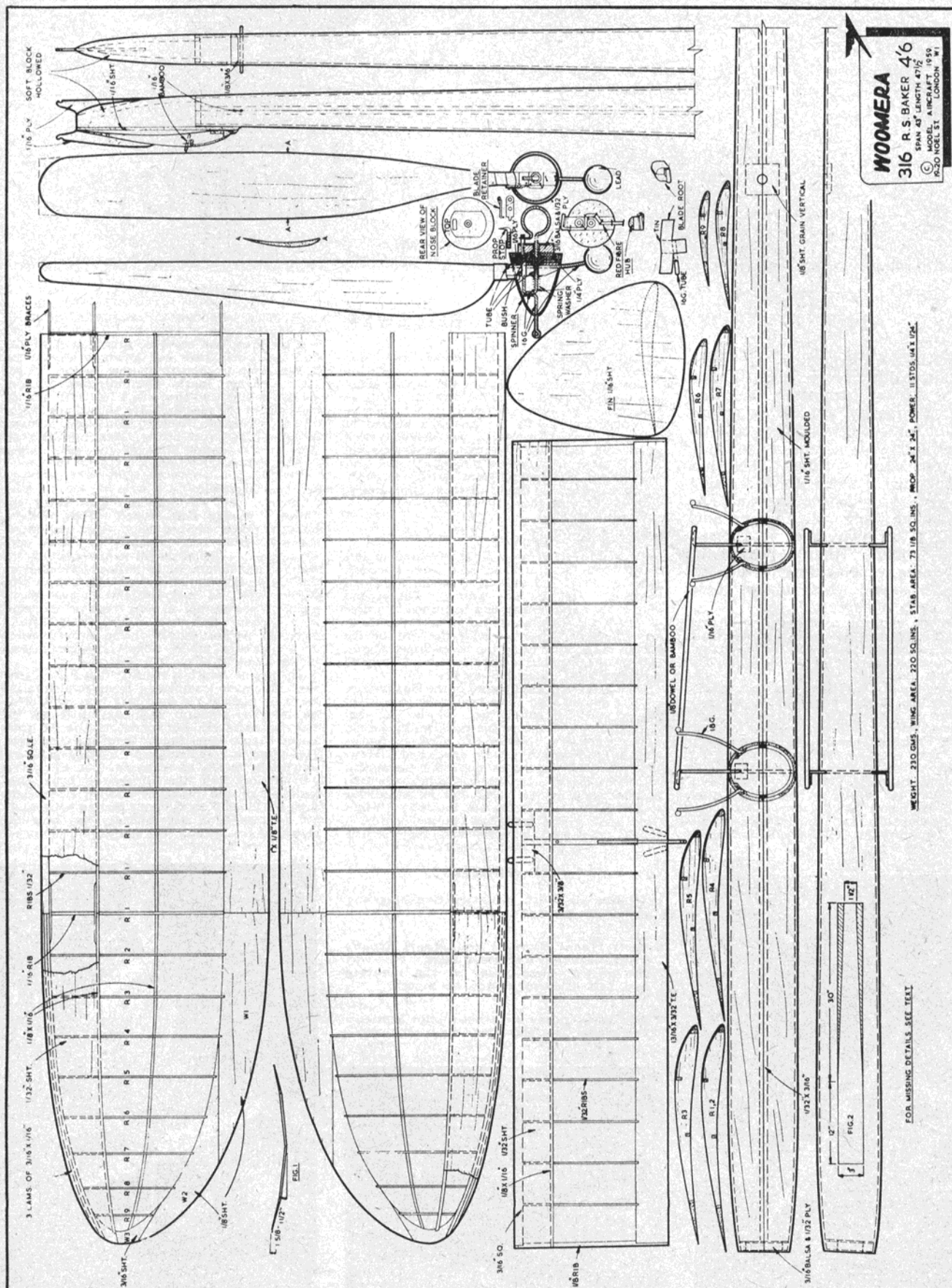
Take a sheet of straight-grained 3 in. \times 42 in. \times $1/8$ in. balsa and taper it as shown in Fig. 2 on plan. Soak the sheet in hot water and wrap it around the top half of the mould, binding in place with strip rubber. Leave until thoroughly dry, then remove the rubber and trim the ends. Pin a straight edged sheet of balsa along the centre line and cut off any excess. Do the same with other side then repeat the whole process for the bottom half. It is helpful to cut the shells about $1/64$ in. oversize, so that when they are complete, they may be again strapped to the mould and then wet with hot water. This is not absolutely essential but it helps to get a good thin glue-line. Carefully cover the inside of each shell with tissue, using banana oil or some non-shrinking dope.

Make the front bulkhead—i.e., the part into which the nose-block fits—from hard $3/16$ in. balsa sandwiched between $1/32$ in. ply. Cut to shape and then carefully cut out the centre piece with a fretsaw. This piece is covered on its cut faces with thin celluloid and is used for the rear locating piece of the nose block. Take the mould, and at the position of the motor peg reinforcements, make two parallel, $1/8$ in. deep cuts on each side. Remove the wood between these cuts and lightly glue in pieces of hard $1/8$ in. balsa. Sand these to the contour of the mould and remove.

Take the top shell and carefully glue the front bulkhead in place. Bore holes in the correct positions and fit the cabane struts using *Pliobond*. Make four small squares of $1/16$ in. ply slotted on one side and cement these inside the shell where the cabane struts emerge. Cement the rear peg reinforcements in place, leaving half protruding. Cut two strips of $3/16$ in. \times $1/32$ in. hard balsa and sand to a very slight oval section so that they conform to the inside contour of fuselage. Cement these down each edge of the upper shell, so that half of the width of the strip protrudes above it to form a cementing surface for the bottom shell. Place the bottom shell in position and press on to the cabane wires to mark position. Remove shell and run several layers of *Pliobond* around marks; also put several layers on wires. Run slow-drying cement across the front bulkhead, along the edges and on to the rear peg reinforcements. Place the bottom shell in position, press in the edges and bind with rubber strip.

Shape a soft block for the rear end and cement in place. Cut the tailplane platform from medium $1/16$ in. balsa and cement in place with grain across fuselage, putting a small D/T stop of $3/16$ in. \times $1/8$ in. hard balsa at the front. Cut the rear D/T peg from $1/16$ in. ply as shown, slot the rear block and cement in place. Small fairing strips will be necessary under the front of the tailplane platform. Sand to shape.

Continued on page 304.



FOR MISSING DETAILS SEE TEXT

WOOMERA
316 R.S. BAKER 4'6"
SPAN 43" LENGTH 47½"
© MODEL AIRCRAFT 1959
R-20 NOEL ST LONDON W1

WEIGHT: 210 GMS. WING AREA: 220 SQ. IN. STAB AREA: 73 1/8 SQ. IN. PROP: 24" X 24". POWER: 11 STOS. 1/4 X 1/2"

FULL SIZE WORKING DRAWINGS ARE OBTAINABLE FROM YOUR LOCAL DEALER, OR BY POST FROM THE "MODEL AIRCRAFT" PLANS DEPARTMENT
19-20 NOEL STREET, LONDON, W.1. 4s. 6d., POST FREE

10th Critérium d'Europe

REPORT AND PHOTOS BY NORMAN BUTCHER

ETTERBEEK, Brussels, was, after much dithering, selected as the venue for this year's meeting. It is one of three permanent C/L flying arenas in Belgium, and has two circles, covered pits and judges' box, and is strongly fenced with safety netting. The total size of the area is ample for a meeting of this type—provided no one wants to test fly—and with the contestants "confined" for two days, it allowed far more "mixing" than is possible at a F/F meeting, which contributed to the happy atmosphere which makes these contests such a success.

The contests were run concurrently over two days and the organisation coped smoothly with the entries, although there was the inevitable bickering over interpretation of the rules, but more of this later.

The British party, of team and supporters, was by far the largest present and, in fact, many were in "residence," and test flying, several days before the event. When the rest arrived on Friday it was realised that we were one stunt flyer short to field a full team. To repair this omission and to strengthen our chances of doing well in the team results Ian Russell, with some of our supporters, departed at 3 p.m. for Henri Stouff's shop in Brussels. There he purchased a *Flite Streak* kit and started building, returning to the headquarters hotel

in the evening with the model ready for processing!

Unfortunately, the object of this terrific effort was rather negative when the jury ruled that as Horrocks held an Australian F.A.I. licence he would have to fly for Australia instead of Great Britain. However, it was definitely well worthwhile as it did help our team placing and Russell far from disgraced himself in the event.

Although the contests were run concurrently it will be easier to deal with them individually, so let's start with the—

SPEED EVENT

The Hungarians were hotly favoured in this event both for individual and team honours, although Prati had told us to watch the Rossi brothers. He was not wrong. The second man to fly was U. Rossi and he turned in a time of 219 k.p.h.—a time that only he was able to better. Rossi, together with the rest of the Italian team, were using the latest Super Tigres, with metal tanks, and thinned down 6×8 Tornado propellers—did those motors rev!

Beck was the highest placed of the Hungarians, coming second with three beautifully consistent flights, and if it hadn't been for the fact that Azor returned no score the team results would have been very different—at least as far as Finland and ourselves were concerned. However, Prati also returned no score—a leadout came unsoldered when he was going very fast, and he could not get the motor in his reserve model to stay "in" for the necessary 10 laps—so if Azor and Prati had returned a time it would have been Hungary and Italy in top

team place, although in what order I would not like to guess.

After Prati had crashed, smashing motor as well as model, there was great activity in the Italian camp to prepare another engine. Super Tigre designer Jaures Garofali checked over another motor, and then ran it in. This was the highlight of the meeting. He started the motor on a 6×8 Tornado, tuned it, then placed a screw-driver in the prop blades, shearing them off and let the motor run on the hub only—estimated revs, 28-30,000!

An interesting delta

Johnny Hall was our top man flying the "British Racing Partnership" (Hall, Wright, Butcher) Carter engined delta. This was one of the best made, and certainly the most constructionally original model at the meeting. It features aluminium wings hollow formed from thin sheet and secured by screws to a stub wing section which is integrally cast in the special pans. Thus should a wing become damaged it is merely unscrewed and replaced with a new one. Against this, of course, is the question of weight—the model weighs 13½ oz. instead of the usual 10-11 oz.

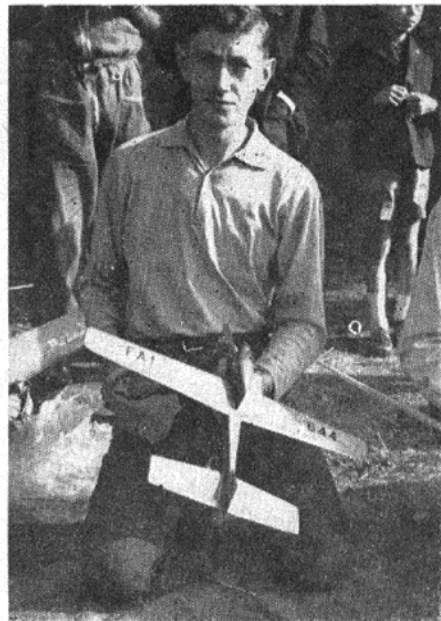
The engine, which is the first that Fred Carter has ever made completely from scratch using his own castings, is internally very similar to his Nipper—a motor that was probably the most powerful 2.5 ever made—and is fed from a metal tank "pressured" from the crankcase. The model is completed with a Bondaglass top which acts merely as a fairing. An interesting "by-product" of the almost all metal construction of this model is cooling. With the engine "blued" to the pan, this and the wings act as a radiator and difficulty has been experienced in getting the motor to run hot

THE WINNERS

Left: Grondal with his attractive blue and white stunt model.

Below: Nenni Bernard and Henri Stouffs prepare their racer for a heat. This was the best finished racer at the meeting and had a performance to match.

Right: Rossi poses with his model immediately after his 222 k.p.h. run.



enough—even on very high quantities of nitro ! For his first attempt Hall had agreed with team manager Pete Wright to treat it as a test flight and not get a timed run. This, as it turned out, was a mistake because on the second attempt the motor richened up and cut as Johnny got in the pylon. For his second flight the motor was lean due, it was later discovered, to an air leak in the pressure line, and on the second attempt he just clipped the prop on take-off but none the less got in a time of 178 k.p.h. on half a blade !

With the remaining flight not until the following day it was decided to try a hotter fuel, but a long lean run on a test flight "cooked" the motor which meant much midnight oil spent cleaning it up. The first attempt for the last contest flight was, therefore, very much "hit and miss" but a few quick test flights at lunch time sorted out a good setting and all hopes were on the last attempt. It was not to be, however, for the weather turned colder (it was very variable throughout the weekend) and the motor was again rich.

Although rather disappointing on its first outing, this model has possibly the greatest potential of any in this country, and in view of the final rush to get it ready (Peter Chinn drove down from Norfolk with some fuel the evening before the team left) did well to fly at all.

Fractured motor mount

Of the other British entries Ron Irvine was using the Carter/Super-Tigre built for the '56 Champs and, in addition to having trouble sorting his needle setting, fractured a metal motor mount during his second flight. It is a pity that his attempts earlier in the year to use a metal tank were unsuccessful as there is no doubt that the pen bladder type tank he had to use is most unreliable.

Pete Stevens was using a delta powered with a Russian motor which was going very well but halfway through his flight he lost control and bounced the model in.

Top private (as opposed to works or state sponsored) entry was, not unexpectedly, Battlo with his Super-Tigre powered delta and he was closely followed by K. Jaaskelainen using a 1958 type M.V.V.S.

The Czechs did not put in an appearance this year which is a pity as they may well have given the top men a real run for their money.

STUNT FLYING

The general standard of stunt flying was very high although not once did I see a really good triangle. Grondal flew a very smooth relaxed pattern and was outstanding, although in the event he could have been beaten by Egervary, who flew superbly except for his horizontal eights which were rough. (Amazing that this easiest of all manoeuvres should be one of the most difficult to do well.) But it was not these that cost Egervary the contest. On his first flight he overran, on the second he cut in the four leaf clover, and on the third again overran—by 15 sec. !

Day was the best of our flyers and he was most consistent, flying calmly and well; he has just the temperament for international contest flying and with more international experience could well compete with the best. Russell flew the *Flite Streak*—aptly named *Nil Desperandum*—to place 16th, far better than could have been expected in the circumstances.

Ex-British team member Brian Horrocks flew his Glo Chief 49 powered model to a comfortable eighth place and managed by his efforts to place Australia seventh in the team event !

The best finished model, of any type, was undoubtedly the black and white stunter of the Norwegian, Skaug. This was a beautiful design, superbly finished, and featured an intricate cowling and imitation jet pipe at the tail. Unfortunately, Skaug was obviously unable to handle it properly and the resulting crash caused everyone to wince.

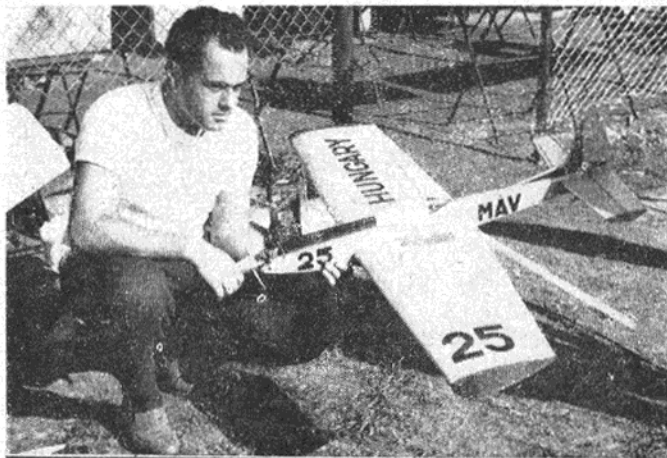
Glo-motors—mostly 35's—were in an absolute majority although few used the Palmer rich/lean type setting, most preferring to have the motor at a fast two-stroke throughout.

TEAM RACING

This was the contest in which the British team should have shone, but what a sorry story it turned out to be.

With the possible exception of the winning machine, ours were the equal in performance

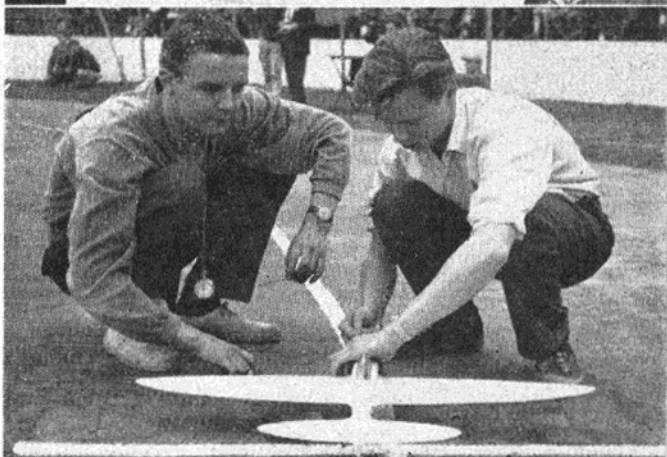
Second place in stunt was taken by Dr. Geza Egervary, whose account of the Hungarian tour of China appears in this month's *Here and There*.



Swiss entrant Hans Hedinger, with his striking red and white Thunderbird, undergoes the rigours of processing.

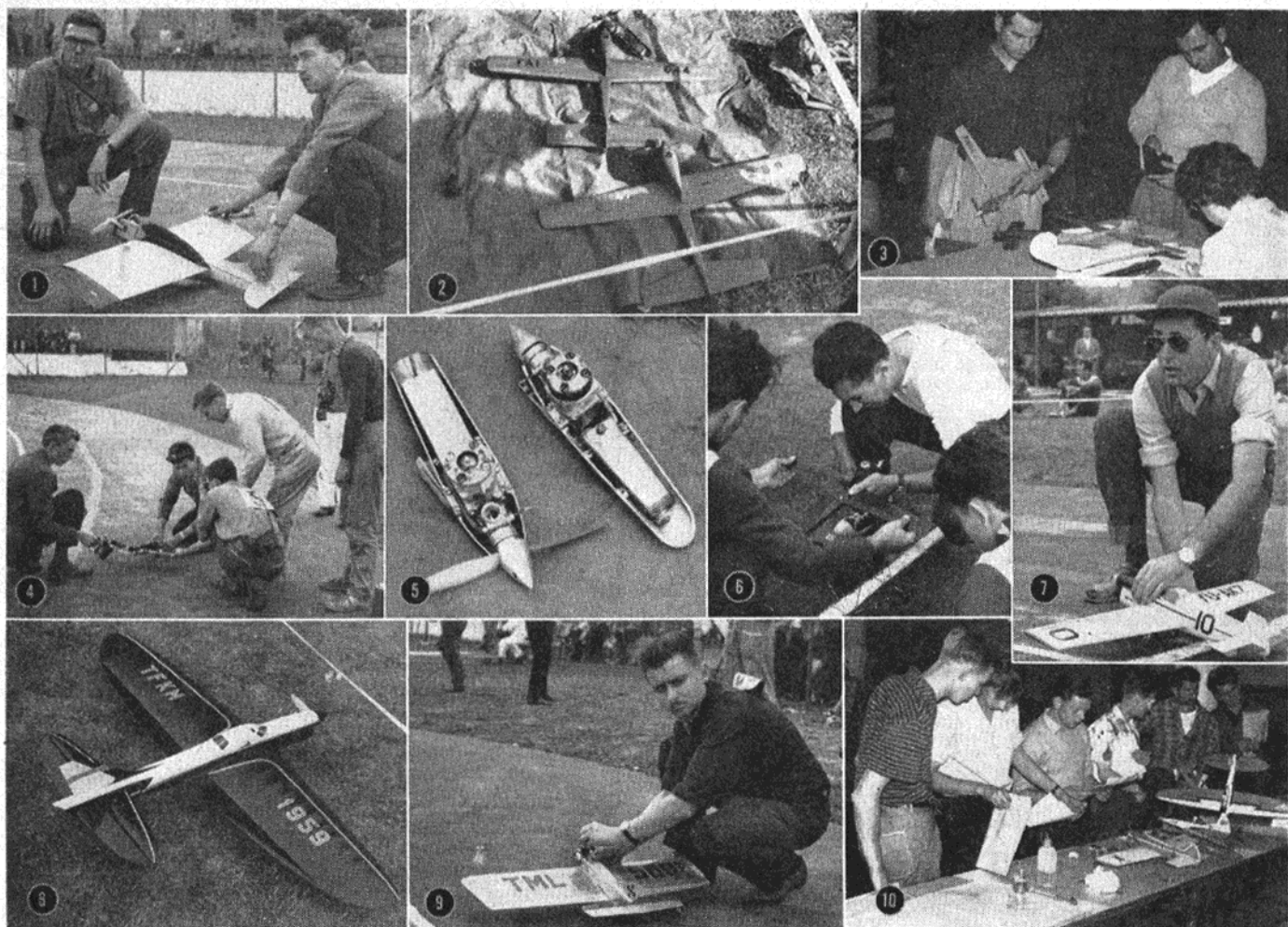


The Jaaskelainen brothers of Finland with their team racer. Jarmo (left) is no newcomer to international events, either as a C/L flyer, or team manager at the last two Cranfield meetings.



Johnny Hall and team manager Pete Wright prepare for a test run with the Carter engined delta. After the Czechs' success with this type of model last year we were surprised that only Hall, Stevens and Battlo flew such machines.





of any there; it was in the handling that things went wrong. Not once did I hear a motor run that was really "clean" throughout, while it was obvious that the stringently enforced rules gave our boys a bad dose of contest nerves. Suffice it to say that Stephens was disqualified in his first heat for flying under his opponent, causing both models to crash, while Tyler and Baxter were both disqualified from their second heats for high flying.

In all no fewer than 10 teams were disqualified for high flying, against which there could have been no appeal. Three boards were placed on one side of the circle at the requisite height and an observer was on the other at the same height. It was rather a precarious perch he occupied, being on a chair, on top of a table, on top of the judges' stand—but there could be no doubt about the accuracy of his observations.

In general the standard of flying was not very high, few competitors having their motors well tuned—most of them seemed to rely on a strong right arm. With the exception of the finalists there was one notable exception to this—Simon's model flown by Egervary. The engine—an Oliver copy—was right on tune, the model was wonderfully pitted, while Egervary is one of the best team race pilots we have seen. Every time he landed the model right in Simon's hand. Sometimes he whipped it half a lap, at others he made full use of the elevator to slow it down, but the result was the same—it was rolling to a halt at exactly the right place.

Tanks were oversize

The final between Bernard, Azor and Rosenlund promised to be the race of the day, but in the end, although very fast, rather fizzled out. At the end of the "count down" the three motors burst into life and the race was on, but after only two or three laps Azor's pilot, Beck, bounced the model removing one undercarriage leg. This automatically disqualified him, leaving only Bernard and Rosenlund, who fought it out very closely until the last pit stop

1. Ian Russell and Kevin Lindsey with "Nil Desperandum"—see text for details.
2. Rossi's No. 1 and 2 models. They have a half pan and metal tank, which is pressurised by the engine.
3. Jock Irvine has his models processed.
4. The circuit was cleared for a flight with Kevin Lindsey's jet. Unfortunately, it refused to start—in marked contrast to the Italian jet stunt model (described in this month's Roving Report), which made several excellent demonstration flights.
5. Close-up of Rossi's Super-Tigres. The lead for the tank pressurisation is taken from underneath the main bearing.
6. Rudi Beck prepares for his first flight. In common with most other competitors the tank was filled in the pits so that all he had to do on the circuit was prime, flick and fly.
7. Emil Fresl warms up one of the Yugoslav team racers.
8. The most beautifully proportioned and finished model at the meeting, Norwegian B. Skaug's stunt entry.
9. Cappuyns of Belgium with his E.D.2.46 powered combat entry.
10. From left to right, King, Tyler, Baxter and Long see the British team racers through processing.

when the Swede broke a prop stopping the model.

The race was now all over bar the shouting but the exciting part was yet to come—when the tanks were checked both were oversize! They were checked again and again until eventually it was agreed that Bernard's was in but Rosenlund's was out.

So in this unsatisfactory manner the results were announced although no one will argue that Bernard deserved to win, as he had a beautifully designed and built model, which was superbly flown, while Henri Stouff's pit work was out of this world.

One thing and one thing only spoilt the team racing—whipping. This made the whole event a complete farce, for as much as 10-15 m.p.h. can be added to a model's speed by this

method, this being readily apparent when a tricky situation develops and all the models slow down. Even this is not so bad, but when a model completes a race by being whipped the last few—on one occasion by as many as nine—laps (as a point of note Bernard completed the last two laps in the final whipping) then I wonder why have engines at all?

Perhaps, however, the biggest argument against whipping lies in the danger to other flyers. With one exception every "incident" that occurred could be attributed to this cause.

COMBAT

This class of contest is not recognised by the F.A.I. as a championship class but it does add

TURN TO PAGE 306 FOR FULL TABLE OF RESULTS

some excitement to a meeting. The flying, as might be expected, was to a very high standard, although some teams were rather unprepared. I was rather shattered at having to lend the Swedish team a knife with which to make a hole to take the streamer in both No. 1 and No. 2 models. This, just as the starting whistle was about to blow!

The final followed immediately after the team race and, after an 8 min. (tank) delay due to a false start, was most exciting, both flyers being very well matched.

There were no British entries in this event.

CANDID COMMENTS

When will the F.A.I. make up its mind about rules? Some two hours after the start of the contest it was announced that speed flyers must not start their own engines—a decision completely contrary to accepted practice. Following a spirited protest, competitors were informed that they could start their own motors provided they were their own mechanic, but if they did start them they must not adjust them—this being a job for their helper. Just how stupid can you get?

The rule that the point of attachment of lines in speed handles must be at the centre line of handle caused a slight panic when Hall went out to fly as his did not conform. Fortunately, Henri Stouffs was present and borrowed a handle from Battlo; later I saw flyers using handles similar to Hall's original one!

Whipping in speed is still universal, in some cases the flyer leading the model by as much as 180 deg. Whether or not this is effective in the pylon is a moot point as most models after having been whipped up to fantastic speeds decelerated throughout the run in the pylon.

We particularly liked the team racing scoreboards which can be seen in the background of our heading photo. There was one lap board, colour coded, for each team and a clock showing the time elapsed. This enabled spectators to follow the race very accurately.

Although three hotels were used for accommodation everyone took their meals, which were first class, together. This is a good arrangement and certainly helped the social side of the meeting. The smooth running of the contest was also helped by serving packed lunches, also excellent, on the field.

This year's meeting was the 10th and last consecutive one of the series. As there are the first World Championships—to be held in Hungary—next year, there will not be another Criterium until 1961. This is a pity, but understandable in view of the travel costs, and we look forward to meeting our Belgian hosts again in '61. They should be proud of their efforts in running the first 10 International C/L events (other than pure speed) and providing a World Class contest until the F.A.I. have at last taken over.

1. Rosenlund has his tank checked after placing second in the team race final—it was oversized and he was disqualified. He has, however, filed a protest with the F.A.I. concerning the method of checking employed—we await the outcome with interest.

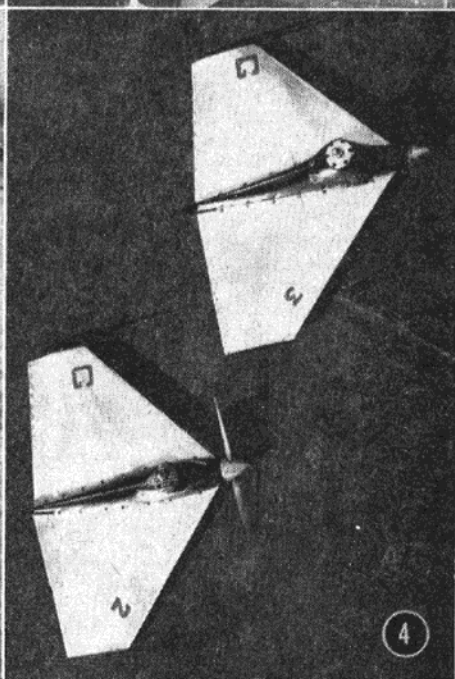
2. Ken Long and Pete Wright do a little hasty repair work in the pits after the motor in the Wharfedale racer had tightened up.

3. Gordan Yeldham prepares for his first heat. This normally very fast model was definitely not on form.

4. Hall's two deltas. The lower one, which was the first prototype, is powered with a Vlatvan and the other is the model he flew in the contest.

5. Rudi Beck receives the Victor Boin Trophy from Colonel Borgniet of the Belgian Aero Club, on behalf of the winning Hungarian Team.

6. Rossi is justifiably pleased with himself as he receives the Speed Trophy.





The new D-C Bantam 0.75 c.c. beginners' glow engine, described in last month's issue, which is the cheapest engine on the British market. Note the coil spring and pawl starting device.

has been achieved by cutting a slot, 2 mm. deep, in the upper rim of the contra piston which engages a peg formed in the underside of the pressure-cast alloy cylinder head.

UNTIL the advent of the Enya 15-D, three years ago, all the world's leading 2.5 c.c. diesels were reverse-flow scavenged designs. The loop-scavenged Enya, by proving itself to be in the Oliver performance class, obviously set many designers thinking and, within 18 months, the noted Czech model research centre at Brno, had produced the MVVS 2.5/1958 and 25-D engines, closely resembling the Enya layout and, once again, rivalling the power output of the Oliver Tiger. Now a third F.A.I. competition class loop-scavenged diesel has appeared, in the shape of the O.S. Max-D 15.

In many respects the Max-D is the most elaborate development seen so far. Both the Enya and MVVS (like the more recent Frog 349) use pistons having a normal symmetrical head shape (conical). The O.S., however, has taken things a stage or two further and employs a deflector type piston, having a baffle on the transfer side in the manner of glow engines of the loop-scavenged type. The difficulty of using a baffle piston in a diesel is that the contra piston must, like a fixed cylinder head, be recessed to accept the baffle, in order to maintain a sufficiently small combustion space. Also, having done this, the contra piston must be so fitted that it can only move up and down and cannot rotate. In the Max-D, this latter

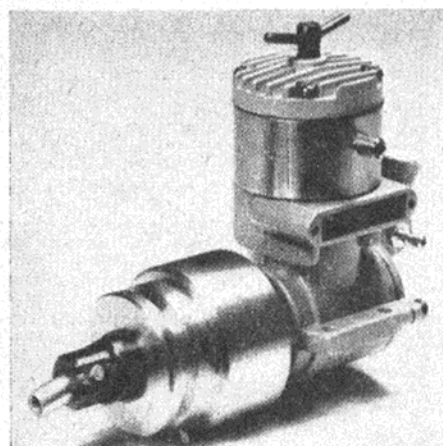
From a design standpoint, the Max-D is certainly one of the most interesting and unusual diesels to appear in the last decade. Apart from its baffle type piston, it is unique among diesels in that it also uses a Desaxe cylinder—i.e., the cylinder is offset to the exhaust side, relative to the crankshaft axis. It is clear that, instead of copying existing diesel features, the manufacturer has made a commendable effort to break fresh ground in diesel design. Not surprising, perhaps, is that the basic layout and appearance is quite similar to the O.S. Max glow engines. Integral cooling fins on the cylinder replace the separate alloy barrel usually found on diesels, and even the Max skirt transfer ports in the piston and liner are retained.

One of the best features of the Max-D is the crankshaft and bearing assembly. This has an oversized journal, made possible by the use of a special 10.5 mm. i.d. inner ball-bearing, and results in an extremely robust shaft which would be proof against breakage across the induction port, a frequent source of trouble with high performance shaft valve b.b. 2.5 diesels. Actual porting is quite conservative and gives a shaft wall thickness of 2.5 mm.—approximately 1/10 in.—and only about 17 per cent. of the shaft circumference is taken up by the elongated valve port. There is certainly ample material to allow

extensive tuning modifications. The shaft, which has the web flanks milled away each side of the crank-pin to provide counterbalancing, is of heat-treated nickel-chromium steel and is highly finished. The quality of materials and workmanship, throughout, are, in fact, to a very high standard.

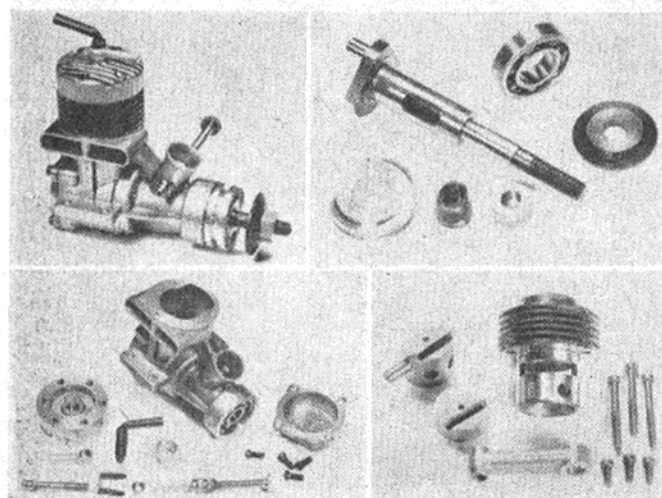
Newest 35 from America is the Fox Rocket 35. The latest of the new Fox line of low-price motors, this engine is 40 per cent. cheaper than the Combat 35 model on which it is based.

Comparing the two engines, the main differences are to be found in the crankshaft, cylinder head and valve timing. The same main casting is used, but the Rocket has a smaller bore



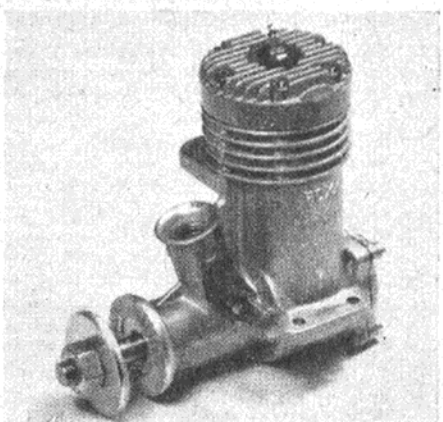
The Frog 349 marine diesel. The water jacket and flywheel assembly are also available separately to enable the standard aircraft engine to be converted.

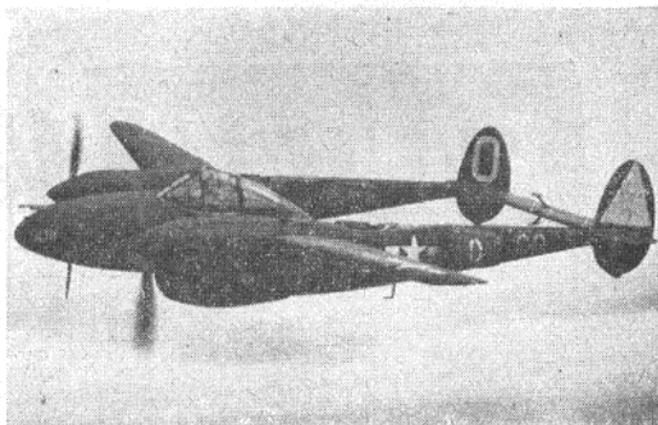
carburettor and no choke insert. The induction aperture through the main bearing is correspondingly smaller, reducing the intake period by about 10 deg. of crank rotation. The crankshaft, unlike the Combat 35, is not hardened, and is of the full disc crescent-counterweight type. The gas passage through the shaft is reduced from 25/32 in. to 1/8 in. The shaft journal, however, remains at 1/2 in. dia. (the largest of any American 35) and runs in a bronze-bushed main bearing, as in the Combat 35. The cylinder head has modified internal contours, giving a



Left: The O.S. Max-D and its component parts. This 2.5 c.c. diesel abounds with interesting features, including a Desaxe cylinder, deflector piston and the largest diameter crankshaft journal of any ball-bearing 2.5.

Right: The production type Merco 35 engine described in last month's issue. The engine has a finish superior to most American imports selling at higher prices.





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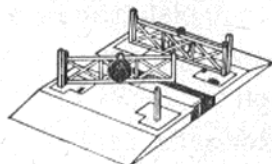
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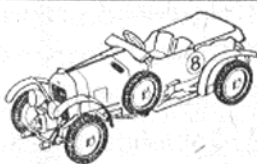
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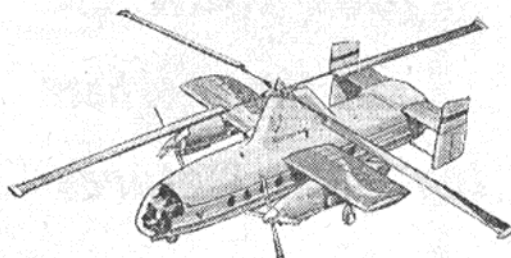
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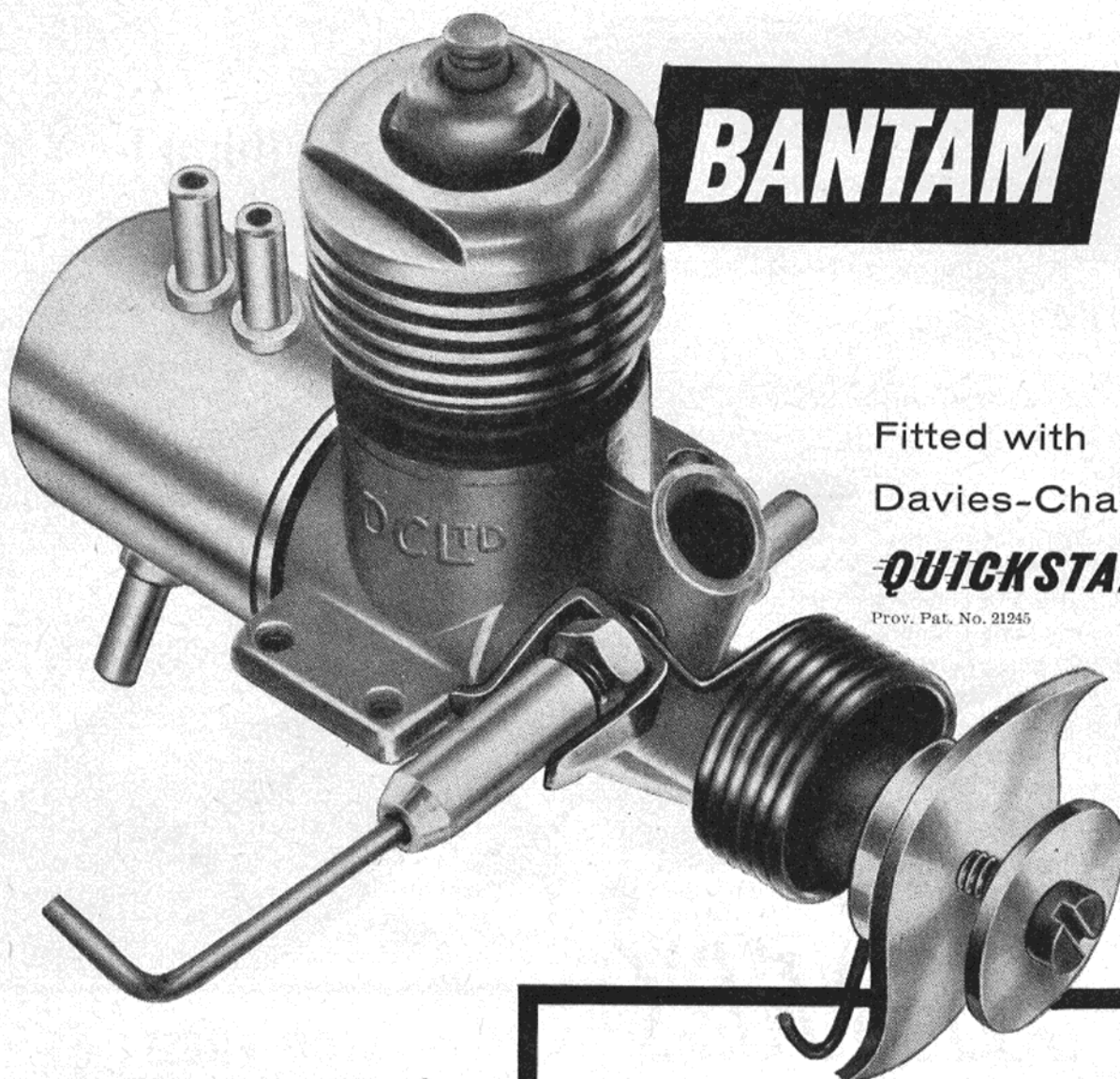


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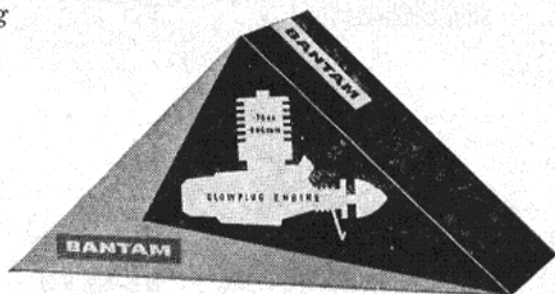
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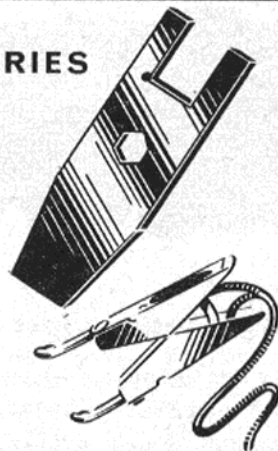
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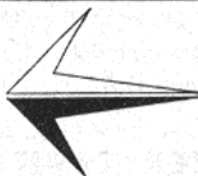
Bantam multi-purpose spanner which fits cylinder head, glowplug, rear crankcase cover, and acts as a screwdriver for propeller bolt. 1/6

Davies-Charlton Quickclip, a quick-release positive glowplug connector that cannot short the battery. 5/5



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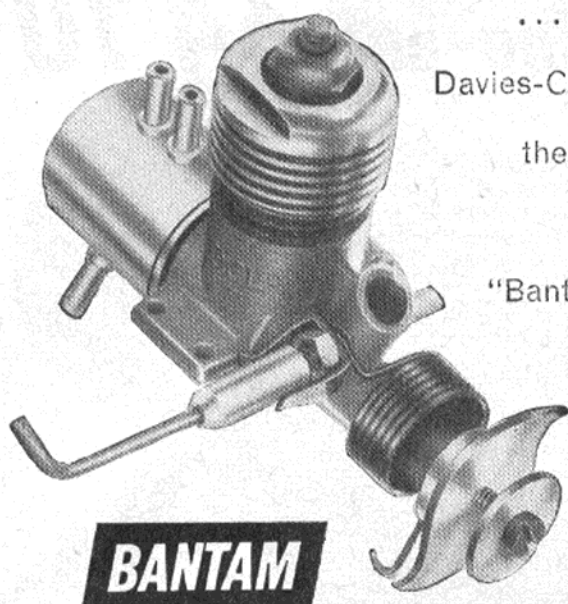
HILLS MEADOW DOUGLAS ISLE OF MAN



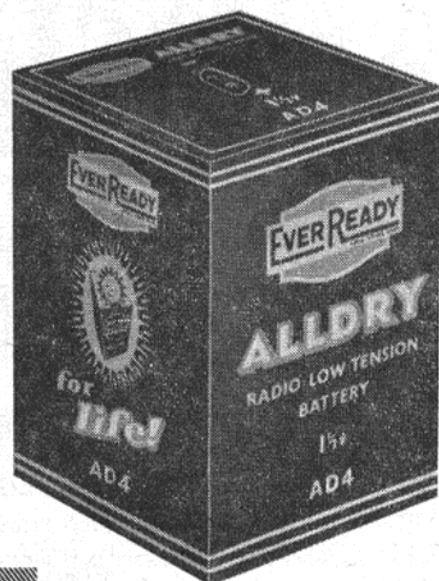
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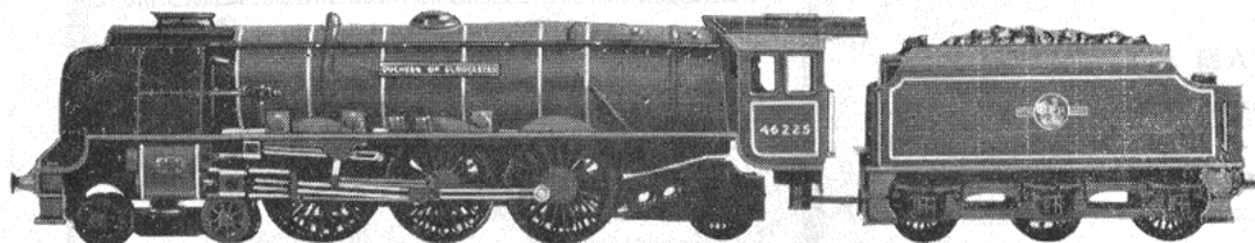
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lower compression ratio than that of the Combat 35, and, instead of the black finish, is painted red.

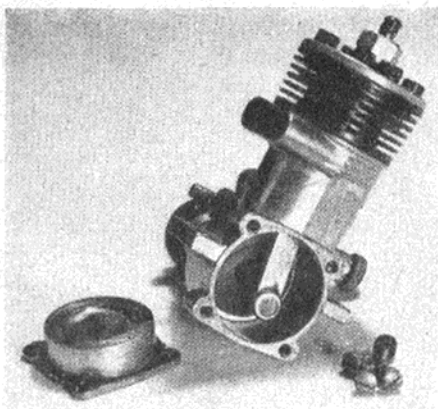
The Rocket 35 has the same bore and stroke (0.800 x 0.700 in.) that has characterised all Fox 35s since the first model was introduced 10 years ago. Capacity is 0.352 cu. in., or 5.77 c.c., and weight 7½ oz. These engines will shortly be available in the United Kingdom through Mercury stockists.

Although we do not normally deal with marine motors in these articles, the new Frog 349 Marine does, we think, justify a mention, if only to complete our earlier report (June issue) on the 349 aircraft engine. The Marine model is, in fact, a conversion of the standard aircraft, ball-bearing 349. It may be purchased as a complete engine or, alternatively, the marine components are obtainable to enable the aircraft version to be converted for boat use.

The marine parts consist of a water jacket, gasket, brass flywheel and a two-piece universal coupling. When converting the aero engine, the latter's prop driver, stud, washer and finned cooling barrel are discarded. The water jacket is unusual in that it is turned from solid brass with a very small space which, however, is accessible for cleaning purposes. No soldered joints are used and no water can come in contact with the cylinder holding down bolts, or with any other part of the engine. The 7 oz. flywheel has a diameter of 1 15/32 in. and extends well back over the main bearing housing to reduce undesirable overhang. It is retained by a special steel stud which also forms the socket end of the ball type universal coupling.

With its nylon exhaust seal and provision for installing an exhaust pipe, so eliminating the "dirty bilges" problem of which marine diesel users frequently complain, the Frog 349 should prove popular among boat modellers.

The unusual-looking K & B Torpedo engine featured in one of our photographs is an interesting hybrid. It is basically a Torpedo 15, but with the



Above: Martin Zugel's special short-stroke 2 c.c. K & B Torpedo based on Torpedo 09 and 15 parts.

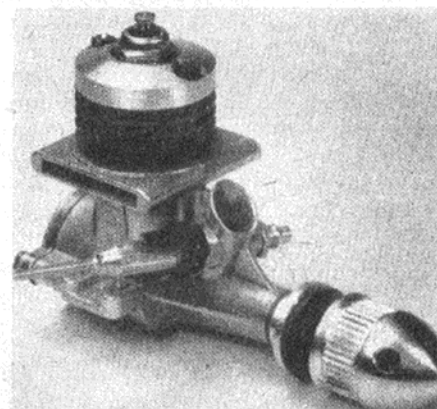
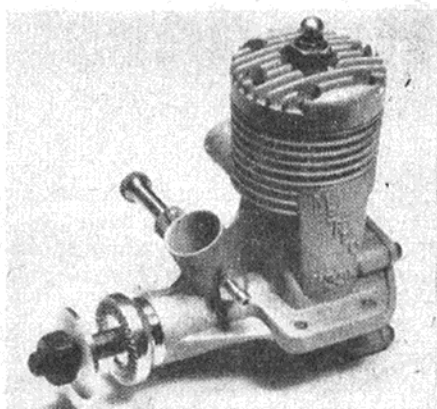
Above: right: The new "economy model" Fox 35. Based on Fox Combat 35 parts, this model is distinguished by a red enamelled cylinder head and is known as the Rocket 35.

Right: The new Frog 0.49 glow engine which uses many Frog 80 diesel components. Note the knurled spinner, for those who prefer cord starting.

cylinder head modified and has been "de-stoked" by fitting a Torpedo 09 crankshaft. Bore and stroke are 0.580 in. x 0.465 in., giving the low stroke/bore ratio of 0.8 : 1 and a swept volume of 0.1228 cu. in. or 2.01 c.c. The engine is to be fitted with a reduction gear and was modified by Martin Zugel of Cleveland, Ohio, whose geared K & B 09 engine was dealt with earlier in this series. The object was to raise the specific output by increasing the peaking speed of the motor. Mr. Zugel remarks that the output available appears to be almost as good as a stock K & B 15 despite the latter's 22 per cent. larger displacement.

In Germany, a new twin-cylinder diesel has appeared, built by Hermann Fricke. Smaller than the Webra Boxer, this has a total swept volume of 3.5 c.c. and develops about 0.30 b.h.p. Fricke is also working on a 5 c.c. twin.

In Italy, Signor Garofali's Micro-meccanica Saturno, the Super-Tigre



firm, has also been experimenting with twins, including an in-line 6.5 c.c. diesel. Super-Tigre have also made a small number of special G.24/50 (8 c.c.) glow engines. These were based on the over 10 c.c. G.24 racing engine crankcase, but with the shaft valve and no ball-bearings. Also on the stocks is a 2.5 c.c. loop-scavenged diesel.

In Norway, Jan David-Andersen has revised the design of his high quality Drabant 25 engine which we described and illustrated in M.A. last March. A larger diameter crankshaft journal is now used and the reverse-flow scavenged cylinder has been modified, from the earlier four-port circumferential pattern, to a twin-opposed pattern.

AVIATION BOOKSHELF

Continued from page 285

details of individual constructor's number, registration, C of A date, and eventual fate of the machine.

Everyone interested in aviation will find this book well worth its cost, and we eagerly look forward to the appearance of the second volume.

It is interesting to note that the dedication of this book is to that well-known scale modeller and authority on civil aviation, the late Eddie Riding.

(PUTNAM, 63s.)

THE more leisurely days preceding the second world war seem to be epitomised by the very mention of an

airship. This impression is to some extent dispelled by the book, **Famous Airships of the World**, in which Captain J. A. Sinclair recounts the fantastic experiences of the "lighter than air" pioneers.

Following a brief account of the early struggles to perfect a navigable balloon, the reader is given an exciting picture of wartime Zeppelin developments. It is fascinating to realise that even in 1917 a German airship carrying a crew of 22 men, 21 tons of fuel, nine tons of water ballast, and sufficient guns, ammunition and food for the relief of a small army, travelled 4,230 miles

non-stop; remained in the air for 95 hours and still had enough fuel for a further 3,750 miles!

The commercial successes and failures of airships between the wars make exciting reading. Of the 595,594 passengers carried in commercial airships since 1909 only 13 have been killed! Viewed in this light the airship seems almost safe!

A little known fact is that in the U.S.A. a non-rigid airship of 1,500,000 cu. ft. capacity (almost the size of the R.34) is today still giving yeoman service with the U.S. Coast Guard as a radar early-warning ship, and other similar ships are on order.

Altogether this book makes fascinating reading and is well worth its modest cost. (FREDERICK MULLER, 9s. 6d.)

Readers' Hints and Tips . . .

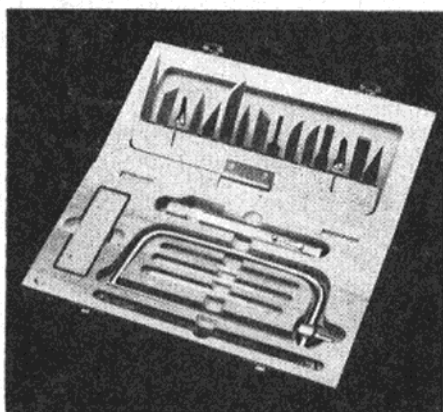
J. W. Nichols suggests that liquid detergent can be employed as a substitute for the more usual rubber lubricants.—(What a nice clean rubber motor you've got!—Ed.)

For those modellers who want to use the new polythene detergent containers as squeeze fuel bottles, and who cannot wait until the contents are legitimately used, this would seem to be the answer!

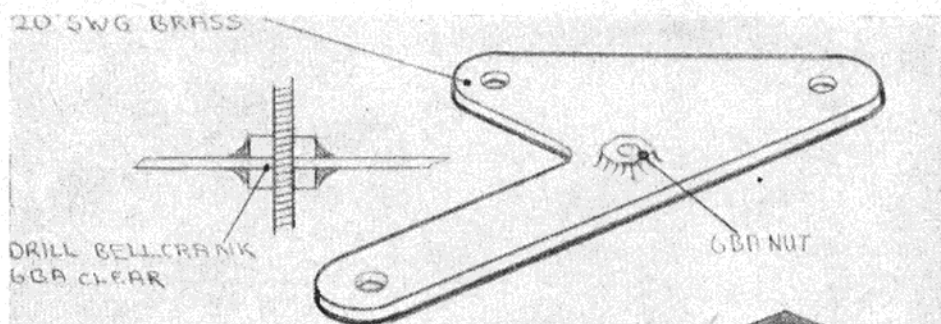
Whilst on the subject of fuel, Peter Heeley tells us that he eliminates the tendency towards "over-compression" during lengthy engine runs by simply adding to the fuel 3 per cent. "Bardahl," which is sold at most garages and is an anti-friction additive intended for use with motor cycle and scooter two-stroke engines.

It is often difficult to "centre" a propeller which has an oversize shaft hole, on a small diameter engine shaft. Fred Burnam of Salisbury, Southern Rhodesia, finds that a length of suitable diameter, ribbed neoprene fuel tubing cut slightly longer than the thickness of the prop hub and slipped over the prop shaft, effectively solves the problem.

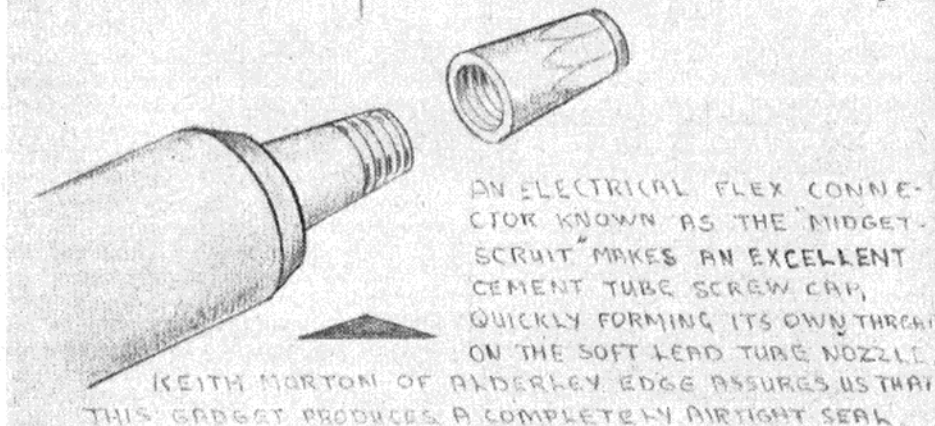
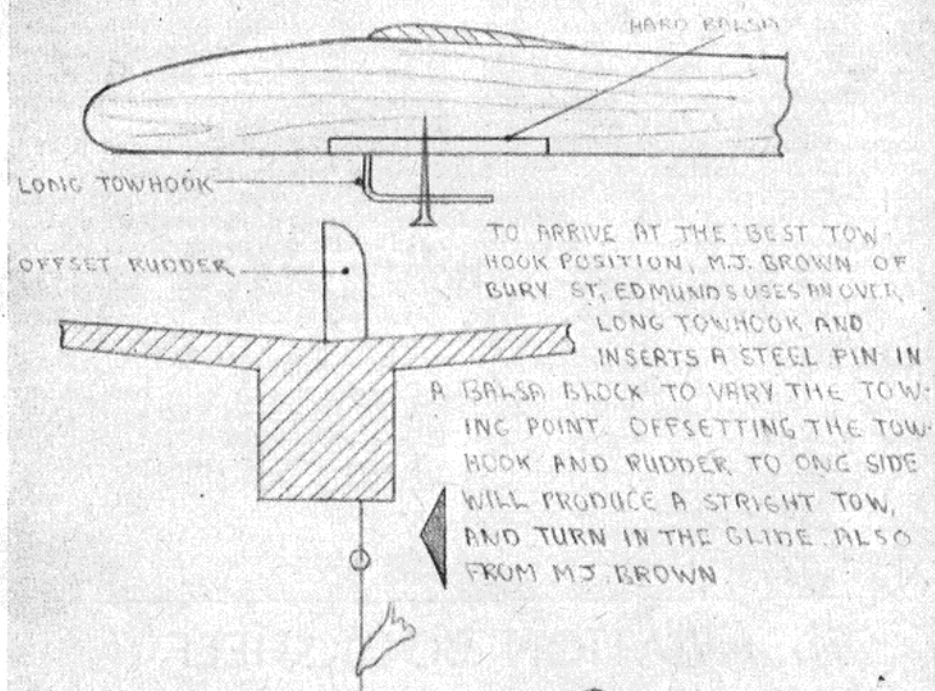
To enable neoprene fuel tubing to be taken around sharp corners without kinking, heat the tube in the region of the bend with a match, being careful not to burn it. Hold the heated tube in the required shape until cool. This idea comes from J. Williams of Wimbledon.

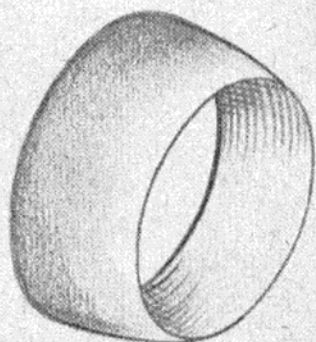
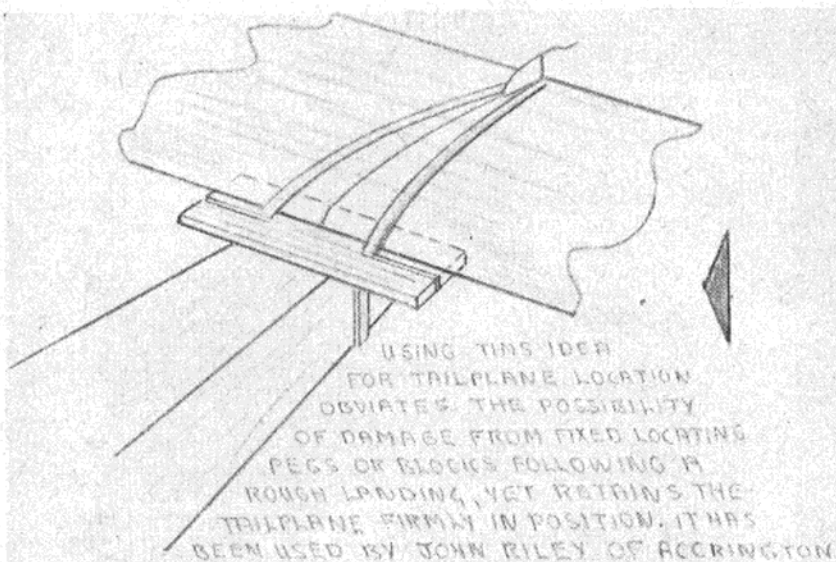


John Riley wins one of these magnificent tool chests for his tailplane locating hint.

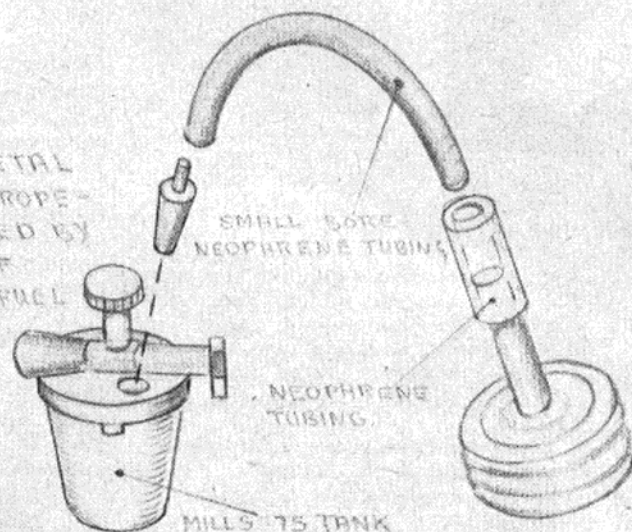


K. S. BURTON OF BRANT GREEN SENT THIS NOVEL IDEA FOR USING A SCREWED ROD AS A BELLCRANK PIVOT. TWO NUTS SOLDERED TO THE BELLCRANK ELIMINATE THE NEED FOR BUSHES AND RETAINING WASHERS.

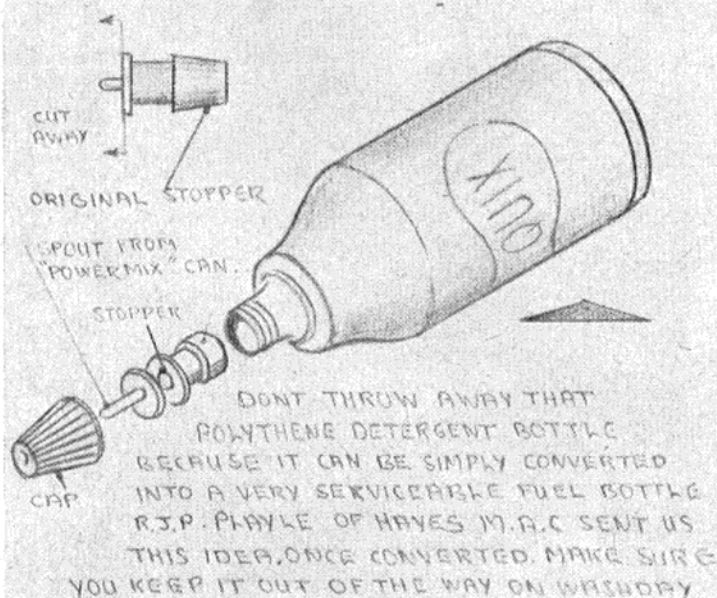




THE TAPERED METAL TIP OF A BROKEN PROPPELLING PENCIL IS USED BY J. ROYAL-WALTON OF LOWESTOFT AS A FUEL NOZZLE AS SHOWN.

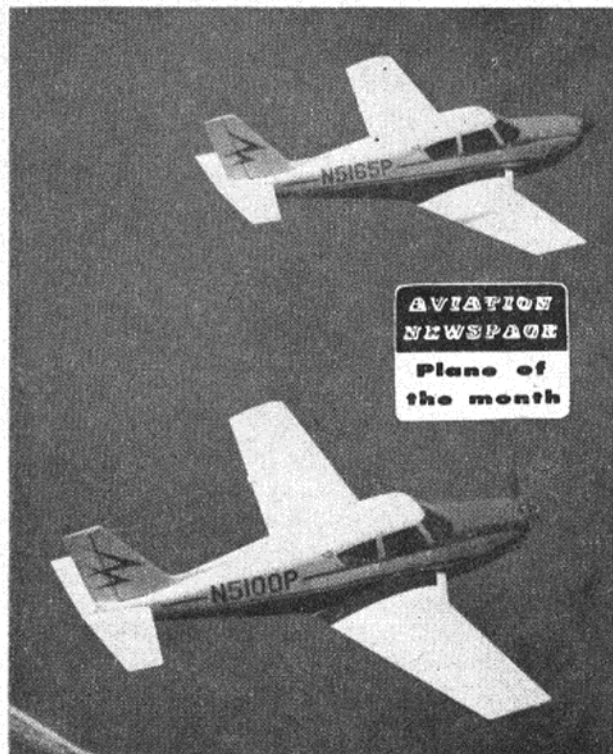


READY MADE RADIAL COLLINGS OF VARIOUS SHAPES CAN BE HAD AT THE LOCAL HARDWARE STORE IN THE GUISE OF POLYTHENE PLASTIC STRAINERS. THEY ARE EASY TO CUT YET RESISTANT TO CRASHES SAYS SCALE MODEL EXPERT PMH LEWIS.



ANOTHER INGENIOUS PUSH ROD IDEA IS THAT OF G. PURCELL WHO SUGGESTS USING A CYCLE SPOKE ONE END OF WHICH IS ALREADY BENT AND PEENED OVER AND THE OTHER (THREADED) END ONLY NEEDING A RIGHT ANGLED BEND TO ENGAGE THE ELEVATOR HORN. VARIOUS LENGTHS ARE AVAILABLE.





ONE of the greatest flights in history took place in June of this year, when a 56-year-old American grandfather named Max Conrad flew 7,668.48 miles from Casablanca to Los Angeles, all by himself in a single-engine lightplane. It took him 58 hr. 38 min., during which time he had no food and very little to drink, and had to ride out a night of violent storms over the Gulf of Mexico.

That such a flight can be made without filling the headlines of the world's newspapers is the finest possible tribute to the modern lightplane, which is expected to take ocean crossings in its stride. But even if we take into account that Conrad was able to share the piloting with an automatic flight system and solve some of his navigation problems by radio, there is little doubt that this was the finest solo transatlantic effort since the 3,600-mile 33½-hr. flight by 24-year-old Charles Lindbergh in May, 1927.

The aircraft used by Max Conrad

world record for civil-type aeroplanes from a single manufacturer. The *Comanche* marked a radical departure from the company's familiar high-wing *Cub* layout when it first flew, with 180 h.p. Lycoming o-360 engine, on May 24th, 1956. But it was a winner from the start and 1,500 have been sold since deliveries began in the spring of 1958.

Design-wise the *Comanche* incorporates several bright ideas. Basically, it is an all-metal low-wing cabin monoplane, with an electrically-retractable tricycle undercarriage and four seats. But the

was a Piper *Comanche*, straight off the assembly line at Lock Haven and modified only by the installation of six fuel tanks in the cabin (one of them forming the pilot's seat), to bring the total fuel capacity up to 433 gal., and a minor weight and drag reducing programme which involved removal of such items as the starter and door handles.

The aircraft's standard 250 h.p. Lycoming o-540 flat-six engine gave just 30 h.p. more than the Wright Whirlwind fitted in Lindbergh's Ryan monoplane. Total weight at take-off was 5,000 lb., equivalent to 3½ times the *Comanche's* empty weight!

Some aeroplane!—but the quality is hardly surprising, for Piper's total of well over 50,000 lightplanes built is a

wing has a laminar-flow section, giving high lift, gentle stall and unusually good performance from a small engine, and the horizontal tail surfaces comprise a fighter-type one-piece all-moving "stabilator," with anti-servo tab.

The airframe is exactly the same on the 180 h.p. and 250 h.p. versions, each of which is available in Standard, Custom, Super Custom and AutoFlite models, differing in equipment. The Standard model includes basic instruments and lights, but no radio. At the other extreme, the AutoFlite model has 27-channel radio, an automatic direction finder and an automatic flight system which weighs only 4 lb. but can hold the aircraft on any desired heading within 1 deg. This flight system takes its intelligence from a specially-modified directional gyro and artificial horizon and makes blind flying and long-distance cruising so safe, simple and effortless that 90 per cent. of Piper's business aircraft customers now specify AutoFlite models.

Colour Schemes

All *Comanches* have Daytona white or Yukon yellow wings, tail surfaces and cabin top. The rest of the fuselage can be Bahama blue, Santa Fe red, Montego green or Hershey brown, according to the customer's preference. The 1960 *Comanche* 250, soon to appear, will have "additional pin-striping and 'five-star' rudder."

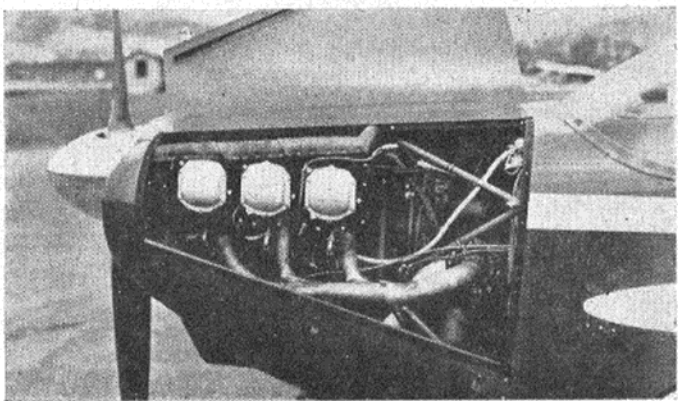
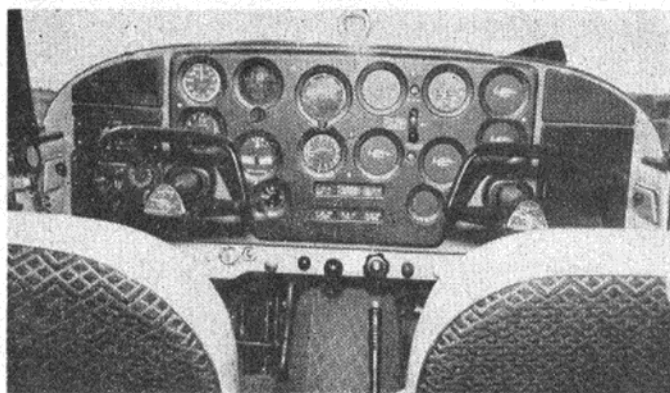
Specification

Data (*Comanche* 250): Span 36 ft.; length 24 ft. 11 in.; height 7 ft. 3½ in.; wing area 178 sq. ft.; weight empty 1,600 lb.; loaded 2,800 lb.; max. speed 190 m.p.h.; cruising speed 181 m.p.h.; stalling speed 64 m.p.h.; take-off run 750 ft.; landing run 650 ft.; normal range 780 miles.

Right: Sleek lines of the *Comanche* are well brought out in this photo.

Below, left: The neat yet capacious instrument panel.

Below, right: The six-cylinder Lycoming engine.





J. W. R. Taylor's

Aviation NEWSPAGE

"SOMETHING OLD, SOMETHING NEW, nothing borrowed, but bags of blue" is as good a way as any of describing this month's heading picture. It shows Lockheed *Electra* PH-LLA *Mercurius* sporting the new insignia of K.L.M. who, having celebrated their 40th birthday on October 7th this year, can claim to be the oldest airline still flying under their original name.

Most eye-catching feature of the new décor is the introduction of diagonal light and dark blue stripes on the vertical tail surfaces, with a central white disc bearing the letters K.L.M. and a crown in red. Another innovation is the substitution of "KLM—Royal Dutch Airlines" for the familiar bi-lingual "Flying Dutchman—Vliegende Hollander" on each side of the white cabin top, above the light and dark blue side flashes.

TALKING OF HOLLAND reminds me of the little boy who stuck his finger in a hole in the dyke and saved his village from flooding—which reminds me of a somewhat similar incident which happened recently in a high-flying pressurised airliner.

It seems that a small circular window suddenly blew out and the flight

the civil market is the Consolidated-Vultee L-13, now hardly recognisable under its dazzle-painting and name of Longren *Centaur* (right).

Altogether 300 L-13s were delivered in 1947-50 as liaison, observation, photographic and ambulance aircraft, powered by a 245 h.p. Franklin O-425 flat-six engine. This is replaced in the *Centaur* by a 300 h.p. Lycoming R-680 radial. Other mods include refurbishing the cabin to seat four to six people and the addition of a large dorsal fin.

Ideal for flying from short strips in outback areas, the *Centaur* has large double loading doors on the starboard side and can be used for freighting with the passenger seats removed. It cruises for 850 miles at 100 m.p.h. and will take off and land in just over 100 yd. with full load.

SOVIET STOL aircraft (below) is the Antonov An-14 *Pchelka* (*Little Bee*), a six-passenger light transport powered by two 260 h.p. AI-14R radials. The original specification called for a machine so easy to fly that a lorry driver could handle it, complete with passengers, after a brief course of instruction. Whether or not it meets this demand, it should find plenty

An-14 flew for the first time on March 15th, 1958, and the aircraft is reported to be in big-scale production to supersede the An-2 biplane. A slightly scaled-down version, with 160 h.p. M-11FR radials, is being built in China as the Capital No. 1.



WHO SAYS private flying is dead? Certainly not Robert Nesmith of Houston, Texas, who designed the little side-by-side two-seat *Cougar* monoplane (below) and has since been busy supplying thousands (yes, thousands!) of sets of plans to potential amateur builders throughout the world.

Several *Cougars* are already flying in the States, mostly with 115 h.p. Lycoming O-235 flat-fours, but a few have 90 h.p. Continentals or anything else the home-builders happened to be able to lay their hands on. The result is a sturdy little machine, with fabric-covered steel-tube fuselage, wooden wings and cantilever spring steel main undercarriage legs. Span is only 20 ft. 6 in., length 18 ft. 11 in. and loaded weight 1,216 lb. With the 115 h.p. engine, the *Cougar* will hit 182 m.p.h. flat out and cruise 760 miles at 153 m.p.h.



engineer was swept stern-first at high speed into the hole. Thus plugged, pressure was retained until the captain could wrap a blanket round a book and insert it in place of the engineer's posterior. Who says people prefer big windows?

Latest U.S. SURPLUS SERVICE type to get a face-lift and appear on

of applications in the more remote regions of the U.S.S.R., because it takes off and lands in 55-65 yards and stalls at only 31 m.p.h. Max. speed is 145 m.p.h.

The prototype



Roving Report

Brings you up to date
with the latest
world model news

U.S.A.

A liberal sprinkling of well-known names figure in the 1959 U.S. Nationals winners' list. Bob (Orbit) Dunham once again won the multi-channel radio event, world duration record holder, Ken Willard, won the intermediate R/C class and Bill Deans won the R/C pylon race at an excellent average speed of 41.36 m.p.h.—10 m.p.h. faster than last year's time.

In the C/L events, Bob Palmer made a comeback by winning the open stunt event, flying his ever-popular *Thunderbird* design. Warren Kurth topped the Half-A speed at 91.35 m.p.h. and Bill Wisniewski once again headed Class A at 134.07 m.p.h. Speeds, this year, however, were all lower than last year, the sole exception being Larry Grogan's 122.07 m.p.h. with a Fox 29X in Proto Speed (semi-scale, 0.30 cu. in. limit). Riley Wooten won the combat.

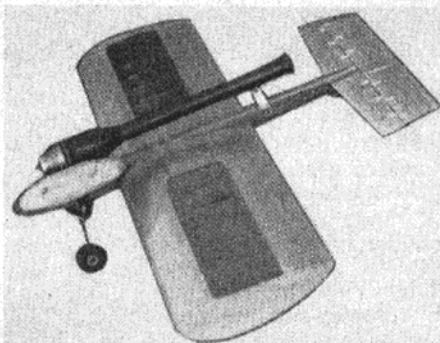
In the F/F events, Henry Cole won the Wakefield (open) and whirlbird expert Parnall Schoenky won the helicopter event. Charles Sotich won the A2, plus the indoor cabin class. Walt Mooney topped the flying scale classes and Harry Gould had the highest time in the Class B power category. National Champion was Bob Hunter of *Satellite* fame.

Incidentally, we hear that Woody Blanchard, oft-times U.S. National Champion, has a really hot F.A.I. job in the high-thrustline, O.S. Max-15 powered model he used in the Eastern eliminators for the U.S. power team. He out-climbed all the opposition, turning in 10 straight max's to top the results.

Double Mono-Line is the latest U.S. C/L development. The system involves the use of two Stanzel Mono-Line handle

units, as described in our June issue, from which the plastic grips are discarded to enable them to be mounted, side by side, on a special fitting. This is attached to a waist belt, leaving both hands free to work the two control knobs, one for elevator control and one for the engine throttle.

Aimed, primarily, at carrier-deck and



ITALY. One of the few really successful aerobatic jet models is this frequently demonstrated model by Paulo Berselli of Bologna. The model is powered by one of Elio Zanin's pulse-jet motors. Of similar design to the Dyna-jet, the Zanin jet is widely used for jet models in Italy.

similar type models, where engine control is desirable, Double Mono-Line has been devised by Dale Kim, noted exponent of Mono-Line speed and stunt. Advantages of the system are that it provides fully variable speed control, which is also completely independent of elevator control and unaffected by line tension.

This year, our American contemporary *Model Airplane News* is celebrating its 30th anniversary. Launched as a Bernarr MacFadden publication in July, 1929, and acquired a couple of years

later by the present publisher, Mr. Jay P. Cleveland, M.A.N. has the distinction of being the world's oldest model aircraft magazine. To look through M.A.N. from its earliest issues is to trace the history of the model aircraft movement from its first beginnings as a popular hobby: the first kits, the first engines, the first tentative steps in R/C. All the famous names are there: names like Atwood, Brown, Bassett, Goldberg, Korda, Lanzo, Marquardt, Sheresaw, Weiss, Zaic; some still active in model matters; others to achieve distinction in other spheres of engineering and aviation. Things have changed but M.A.N. remains what it has always been, truly and solely a model aircraft enthusiasts' magazine.

Still king of the F.A.I. team-race circles, the British Oliver Tiger Mk. III continues to dominate overseas, as well as British, contests. In Czechoslovakia, despite many fine performances by MVVS 25-D and MVVS 2.5/1958 powered models, the very few Olivers there are more than holding their own. Winner of the recent Grand Prix at Jihlava was Milan Drazek's Tiger-powered model with a time of 5 min. 49 sec. The model has a medium-high aspect-ratio wing of 32.7 in. span and is 25.6 in. long. Weight is 19½ oz. and flying-speed around 90 m.p.h., on Frog nylon 8/8 and MVVS 190/235 mm. (7.9 × 9.2 in.) props.

Following the arrival in Britain of first Cox Olympics, F/F enthusiasts have been waiting to see how these motors would perform in contests. A couple of weeks after our "Engine Test" report on this motor appeared in



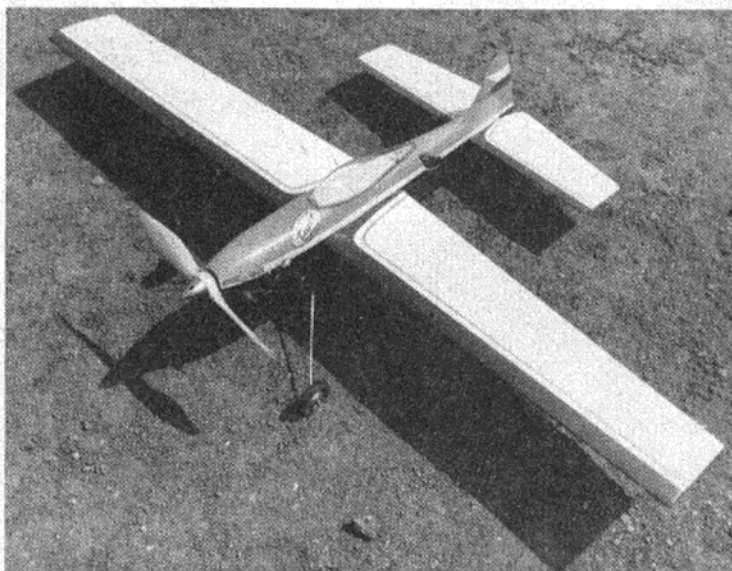
German Free-Flight Nationals, 1959.

Left is Hans Beck with his power winner. Model has wound balsa fuselage with fibreglass reinforcement and a folding prop.

Centre: Guenther Rupp totalled 1,762 for 10 flights, out of a possible 1,800, to win the Wakefield event. He used the same model that he flew in the World Championship at Brieenne-le-Chateau.

Right: Dieter Kade demonstrates his commercially produced plastic flying saucer. Suitable for 0.5 to 1 c.c. and very stable.

Right: An unusual view of the team-race circle at the Jihlava Grand Prix, Czechoslovakia, showing Milan Drazek's Oliver powered winner. Far right: A close-up of the model.



M.A. (July issue), we had an enquiry from Dave Posner who had then acquired an Olympic. Dave, whose reputation with Oliver-powered models needs no boosting here, said that, if the motor was really as good as we said, he would use his in the F.A.I. Power Trials. We, anxious not to stick our necks out, replied: "Stick to your Mod-Ollies, Dave, until you have a chance to prove the Olympic for yourself." Whereupon, Posner, showing that timidity does not pay, switched to the Olympic after two flights at the Trials, and did eight max's in a row.

Afterwards, we asked Dave for his own impressions of the Olympic as an F.A.I. F/F engine. Summarised, they were: better than a stock Tiger, as good as some Mod-Ollies, but not better than a good Mod-Olly. In an open class (lightweight) model, the Cox might show up better still, due to its ability to "wind up" more on a finer pitch prop. Nevertheless, at the Trials, the temperature was up around the 80 mark, which probably suited the Cox better than it

did the Olivers, so opinions may yet have to be adjusted. One thing that did show up in the Cox's favour, is its ability to make maximum use of the allotted engine run. It runs wonderfully crisp and clean during the climb and cuts dead. A heavy nitromethane content (around 30 per cent.) in the fuel is essential, however, for top performance. Dave Posner uses Record Super-Nitrex . . . (free plug here for KeilKraft).

Bad news for speed fiends. Tornado wood props have been withdrawn from production. Manufacturer and former speed record holder, Tony Grish, states that supplies of wood of the required quality have dried up. It is hoped that an alternative material—now under investigation—may prove suitable, in which case, new Tornado speed props should be ready in time for next season. Tornado nylon props, of course, continue in production, but are not made in "speed" sizes. Grish Brothers report that nylon has been tried for speed but without success.

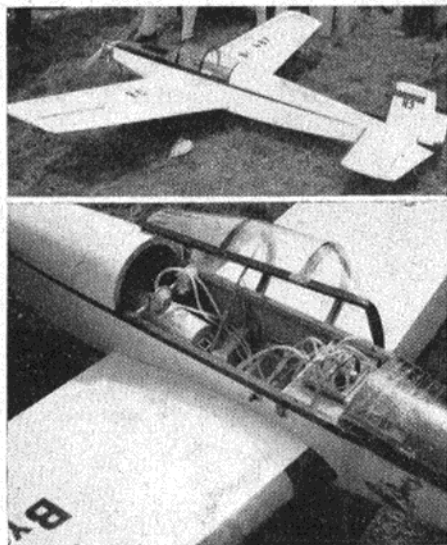
Supplementing their extensive range of R/C transmitters and receivers (which

Left, top: Original low-wing 8-channel entry from Bavaria at W. German 59 Nats at Manching (Bavaria). Tricycle u/c, Boxer two-cylinder diesel, two-piece plug-in wing. White and black trim. Radio original with Stegmaier reeds and valves. Controls: rudder, elev., ailerons, motor (throttle). Photo: Bill Park.

Bottom: Close-up of above, showing radio. Forward, receiver and valve unit in foam plastic filling; rear, tank for storing pumped air; above rear, rudder actuators. Accessibility and manoeuvrability make low-wing popular for multi in Germany, although Stegmaier still wins with shoulder-wing layout. Photo: Bill Park.

Right: Photos by Karl-Heinz Denzin from the German C/L Nationals. Top: German stunt champion, 1959, Hermann Oswald. Bottom: F.A.I. Speed winner Helmut Gorziza, who clocked 110.6 m.p.h. using Barbi B.40 motor.

now includes 8- and 10-channel simultaneous equipment) the Ogawa company of Japan are offering the O.S. Multi-Servo, a high quality motorised actuator on the lines of the Bonner Servo. Weighing 2½ oz. and using nylon gears, it is capable of exerting a pull of 1½ lb. on 3-volts. The ultra-lightweight O.S. Mini-relay (¾ oz.) and reed units (1 oz. for 5- and 8-channel, 1.6 oz. for 10-channel) are, incidentally, also being used in the new American Controlaire multi-channel equipment.



Piper

COMANCHE



by PETER LEWIS

A 1 in. to 1 ft. scale free-flight model of a popular light plane. Designed for 0.75 to 1 c.c. motors

A DREAM-COME-TRUE is how Piper describes this elegant new combination of their many years of experience in the light 'plane field, and the same description holds good for this stimulating F/F *Comanche* replica. Scaled to the popular 1 in. to 1 ft. size, this sleek low-wing design accommodates a 0.75 to 1 c.c. engine for optimum performance.

Fuselage

Medium weight $\frac{1}{8}$ in. sheet is used for the crutch and it is shaped to the outline shown in the plan view. The engine bearers are now cut from $\frac{1}{4} \times \frac{1}{4}$ in. hardwood and cemented firmly in place, adjustment to their spacing being made, if necessary, to suit your engine. Former F2 is made from $\frac{1}{8}$ in. plywood and is pinned and glued to the front of the bearers. It is then faced with the $\frac{1}{8}$ in. sheet F1, after which the remaining full formers, F3 to F10, are cut from $\frac{3}{32}$ in. sheet and cemented in their positions on the crutch. Add the pair of $\frac{3}{32}$ in. sheet tailplane supports and the 20G wire tail bumper on its $\frac{3}{32}$ in. mounting.

Make incisions across the crutch at the rear face of F4 and the front face of F6 to facilitate the cutting away of this part at a later stage. F3 carries the 18G wire fork for the nosewheel. Cut the cabin roof to shape from $\frac{3}{32}$ in. sheet and cement it in position, supported by the cabin side frames below.

Before covering the fuselage, add the tailplane and fin. Both are cut from $\frac{1}{8}$ in. sheet and sanded to section. The tailplane is mounted on its supports,

followed by the fin above it. At the same time, add the rear fairing of $\frac{1}{8}$ in. sheet which is securely cemented just below the rudder.

The fuselage is now ready to receive its covering of $\frac{1}{8}$ in. sheet aft of F3. As the sides, top and bottom possess gentle curvature, as much area as possible can be covered in one piece at a time, leaving just the four corners to be filled with narrower strips curved by heating or steaming. Use soft block for the tail fillets and $\frac{1}{4}$ in. sheet on the cabin roof. After fitting the engine mounting bolts, build up the cowl area above and below the crutch with $\frac{1}{4}$ in. sheet, making the underside removable.

On completion of the fuselage skinning, sandpaper the structure until it is smooth. Cut away the section of the crutch in the cabin, leaving about $\frac{1}{8}$ in. at the sides, and line the curvature of the wing section across the fuselage from wall to

wall with $\frac{1}{8}$ in. sheet. The rudder is now joined to the fin with a hinge insert of thin aluminium.

Wings

These are made in one piece on the plan by pinning down the $\frac{3}{16} \times \frac{3}{16}$ in. leading and $\frac{3}{4} \times \frac{1}{16}$ in. trailing edges. Add the $\frac{1}{8} \times \frac{1}{8}$ in. lower spars followed by the ribs of $\frac{1}{16}$ in. sheet. Note that $\frac{3}{32}$ in. stock is used for the root and centre-section ribs. Add the upper spar and then the soft block wing tips, and then set the dihedral of 2 in.

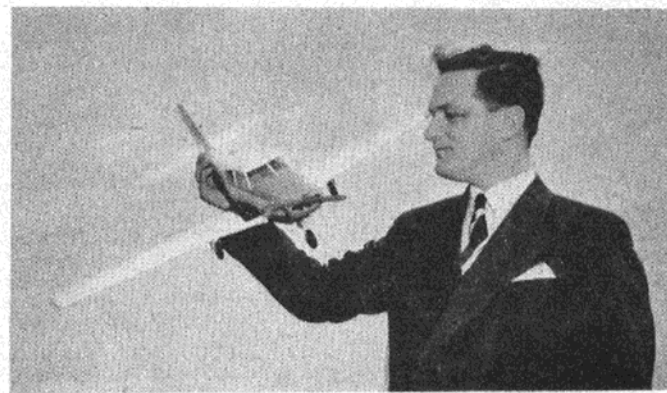
When the wings are set, remove them from the plan and install the undercarriage frame. This is shaped from 18G wire and is fitted with the $1\frac{1}{2}$ in. dia. celluloid wheels before binding to its pair of spars and cementing to the centre-section. The $\frac{1}{32}$ in. sheet covering of the upper surface of the latter is next carried out, followed by the addition of the small formers, F11 to F13, on the underside. These are then sheeted over with $\frac{1}{16}$ in. stock to fair in the lower portion of the fuselage.

Covering

The main structure of the *Comanche* is now complete. Using sanding sealer and sandpaper, ensure that the model is as smooth as possible. Cover the fuselage, wings and tail with light-weight tissue. Water spray the wings and, when dry, give two coats of clear dope to the whole model, following with the same number of applications of coloured dope. Note that under the new regulations the registration of U.S. private civil aircraft now appears in large letters and figures on each side of the fuselage alone. Standard *Comanche* colour schemes are in Daytona white overall with the alternatives of trim in Bahama blue, Hershey brown or Santa-Fe red. N5165P is in the white and blue finish, while N5100P is yellow overall with blue trim.

Details

The dashboard is drawn on card and glued to F4, and the cabin windows are added from sheet celluloid; $\frac{1}{16}$ in. plywood is used for the wheel covers which are pressed and glued into the cowl and the wing blocks. Nylon thread and 22G wire arials are added to complete the model.



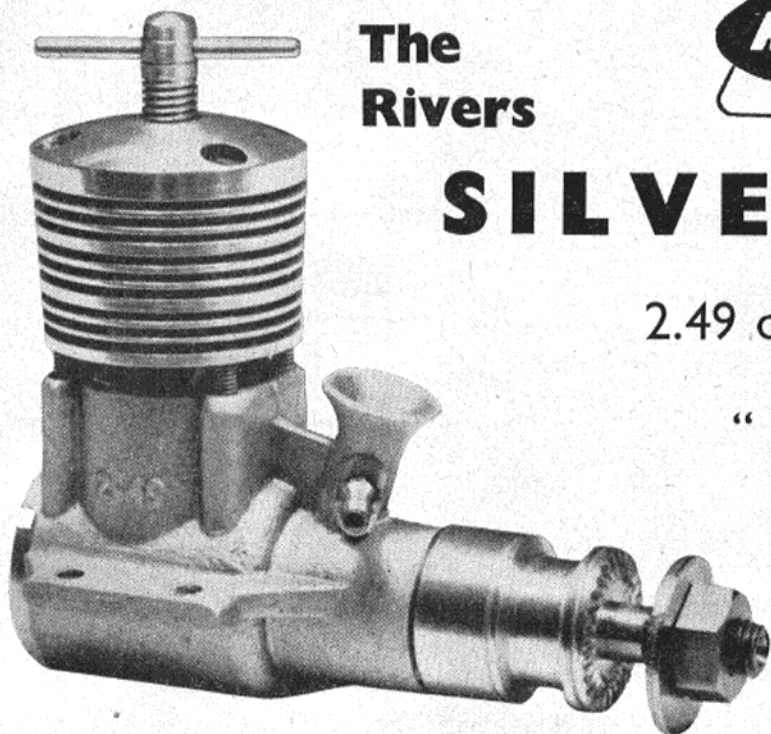
Designer Peter Lewis with his original *Comanche*—a photo we took when he brought the model to the M.A. Offices for our approval.

**ENGINE TESTS****The
Rivers**

SILVER-STREAK

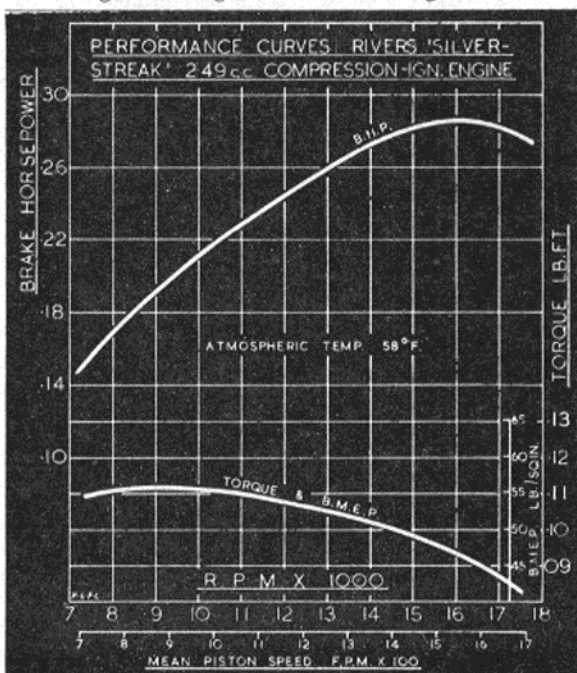
2.49 c.c. Diesel Motor

"... immediately apparent that the handling qualities are of a very high order."



IN "Latest Engine News" in the June, 1959, issue of MODEL AIRCRAFT, the problem of crankshaft weakness, with modern 2.5 c.c. ball-bearing shaft-valve diesels, was discussed. This formed a preamble to a brief description of the then newly introduced Rivers Silver-Streak roller-bearing engine. As stated at that time, it was not known whether the decision to adopt a roller-bearing shaft was initiated by similar thinking on the part of the Silver-Streak designer: consequently it was interesting to receive from him, a few days later, confirmation that this was, in fact, precisely the case.

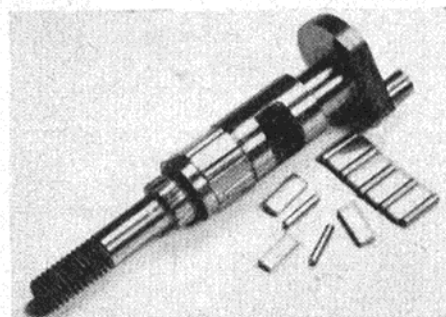
It is not proposed, therefore, to repeat in detail our earlier remarks regarding the difficulties attending the design of this class of engine when equipped with standard ball-races. It will suffice to mention that the Silver-Streak appears to overcome these difficulties. While the frictional losses in a normal type of caged roller, or needle roller, bearing, are greater than those of a ball-bearing, the Rivers design, employing rollers separated by floating spacers, is claimed to closely compare with a ball-race shaft under actual running conditions. Actual tests on a Silver-Streak fitted with ball-bearings have supported this claim, despite the fact that the roller type, designed solely as a journal bearing, lacks the ball-bearing's additional advantage of acting as a thrust bearing.



The usual crankshaft journal diameter, for modern ball-bearing equipped 2.5 c.c. shaft-valve diesels, is $\frac{3}{8}$ in. (0.375 in.) in the case of British engines, or 9 mm. (0.354 in.) in the case of Continental engines. The largest shaft diameters of any b.b. 2.5 in current production are, in fact, 10 mm. (0.394 in.) and 10.5 mm. (0.413 in.)*. In every case, the strength of the shaft is drastically reduced by the induction port. Compared with these figures, the Silver-Streak has a shaft diameter of 0.350 at the journals, which is increased to 0.468 in. (or nearly 12 mm.) where the induction port is located.

The design of the Rivers shaft opens up a number of possibilities in regard to modification of the conventional shaft-valve induction system. Firstly, the ample journal

diameter allows a larger bore gas passage through the shaft. (In the standard Silver-Streak the actual bore is conservative at 0.20 in., but this is increased to 0.240 in. in the specially tuned contest version.) Secondly, the extra large diameter of the shaft, at the valve port location, means that the port assumes a new shape. Instead of being circular, or elongated parallel to the length of the shaft, it is elongated circumferentially, the effect of which is a longer valve dwell period for a given induction timing.



The unique roller bearings.

In general, the rest of the engine is orthodox in so far as it is a reverse-flow scavenged unit, with radially ported cylinder liner and separate finned alloy cooling barrel retained by four long screws into a one-piece crankcase/main-bearing casting. There are, however, a number of details which are worth noting.

Transfer porting consists of four inclined drilled ports spaced at 90 deg. around the bore and each fed via a flat, triangular section, machined in the outside of the liner, to form wide tapering transfer passages. [Incidentally, should the engine be dismantled, it will be noted that the bottom of the liner skirt is machined away at one point. This is to clear the crankcase cover (not the

* Enya 15-D and O.S. Max 15 respectively.

crank web) and should, therefore, be placed at the rear and not to the front, as shown, in error, in the instruction leaflet.]

The liner has a generous wall thickness (0.084 in.) and the contra-piston has three small grooves machined in its outer wall to retain the molybdenum-disulphide lubricant with which the two components are assembled. The piston is short skirted, with a fairly tall conical crown, and an amply proportioned gudgeon-pin (0.182 in. dia. or nearly $\frac{3}{16}$ in.) is used. This is not fully-floating, but is lightly pressed in and easily removed. Its unsupported length is reduced to a minimum by the use of a generously sized small-end on the conrod.

An interesting refinement concerns the prop driver. This extends back $\frac{1}{4}$ in. over the crankcase nose, which is machined down to 0.625 in. dia. at this point. There is a choice of normal hexagon nut and washer, or conical spinner nut, for prop retention. Workmanship, throughout, is first class.

Specification

Type: Single-cylinder, air-cooled, reverse-flow scavenged two-stroke cycle, compression ignition. Crankshaft rotary valve induction. Conical crown piston with matching contra-piston.

Bore: 0.5782 in. Stroke: 0.5782 in.
Swept Volume: 0.152 cu. in. = 2.4905 c.c.

Stroke/Bore Ratio: 1:1.

Weight: 5.7 oz.

General Structural Data

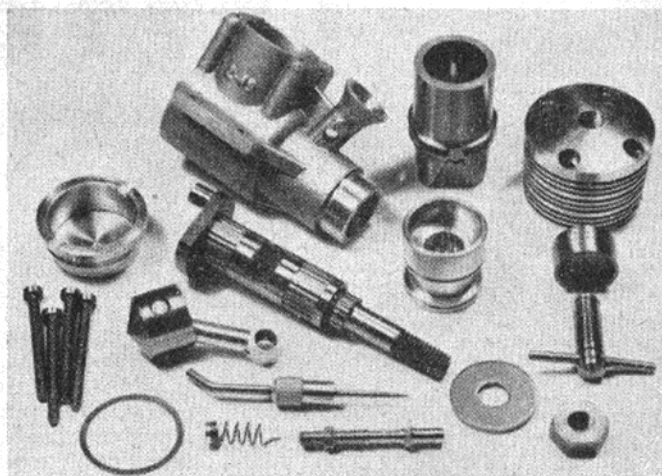
Gravity die-cast aluminium alloy crankcase and main bearing housing

The Silver-Streak in pieces—laid out for inspection.

with anodised finish. Hardened steel cylinder liner, stress relieved, ground all over, with honed bore. Ground and honed mechanite piston with hardened steel gudgeon-pin. Ground mechanite contra-piston. High-tensile steel counter-balanced crankshaft, splined for prop driver, hardened on journal to 60 Rockwell; tempered propshaft and crankpin. Two roller-type main bearings, each consisting of seven 1.5 mm. dia. rollers, separated by seven steel spacers, the whole being inserted in hardened steel bearing sleeve. Bearing sleeve is ground all over and stress relieved and is then honed out after fitting to the crankcase. Fully machined DTD.363 alloy connecting-rod with oil hole at big-end. Machined duralumin cylinder barrel and head unit encasing upper part of liner. Entire cylinder assembly secured with four long head-screws into crankcase lugs. Prop driver, crankcase rear cover and spinner nut of machined duralumin. Brass spraybar assembly with raked left-handed needle control. Beam mounting lugs.

Test Engine Data

Running time prior to test: 3 hours.



Fuel used: Record Powerplus Diesel (Castor base, 4 per cent. nitrate).

Performance

Our test engine was selected from the manufacturer's first batch of production engines. It was given approximately 2½ hours' running by the makers prior to its being submitted for test, including a 20 min. run at 15,000 r.p.m. We gave the engine a further 30 min. before beginning the performance tests.

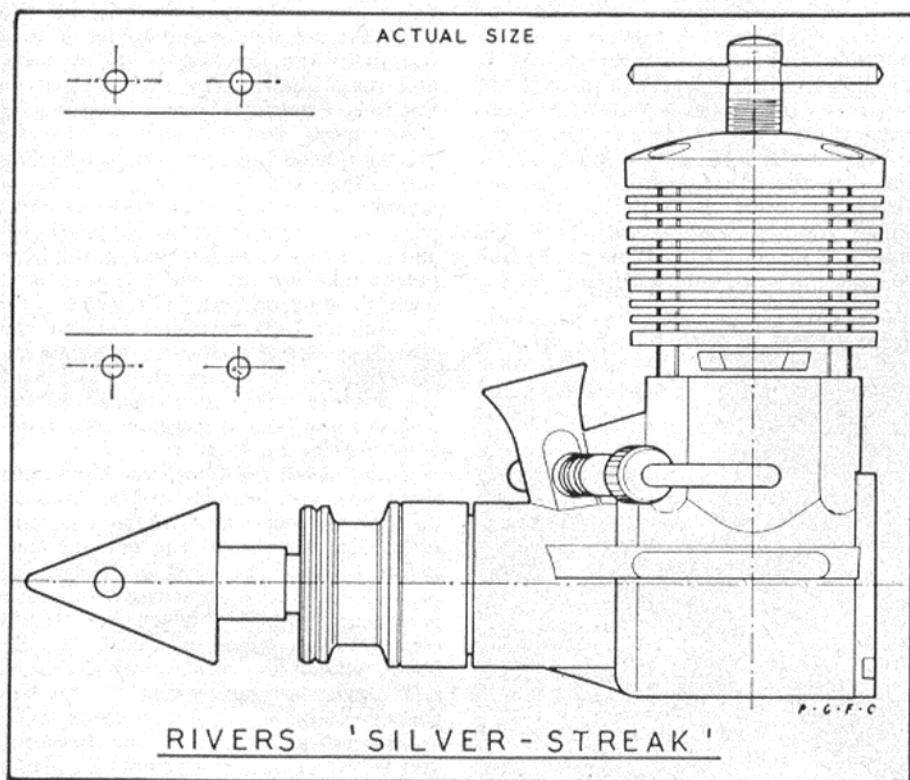
From the commencement of testing, it was immediately apparent that the handling characteristics of the Silver-Streak were of a very high order. An initial start from cold was obtained by merely choking the intake for two or three turns of the prop. Quick starting was continued over a wide range of loads, there being very little deterioration in ease of starting when using small props. The controls were easy to adjust, non-critical and positive. The contra-piston remained freely adjustable at all temperatures.

Torque tests were begun at 6,000 r.p.m. and maximum torque was determined at approximately 9,000 r.p.m., with a figure of 0.112 lb. ft. or 21.5 oz. in. This, equivalent to a b.m.e.p. of slightly under 56 lb./sq. in., was a little lower than the best values that have been recorded for a very select few of top class diesels and, in consequence, speeds obtainable on, for example, 9/4, 8/6 or larger size props were good without being exceptional. On the other hand, the decline of the torque curve as load was reduced was very gradual, there being a drop of only about 12 per cent. at 15,000 r.p.m. and, as a result, the Silver-Streak begins to come into its own at these higher speeds. Actual maximum output, determined from our tests, was a very good 0.283 b.h.p. at 16,000 r.p.m.

Running qualities were excellent in all respects, there being no power loss on warming up, a low vibration level, and consistent running at all speeds.

Power/Weight Ratio (as tested): 79 b.h.p./lb.

Specific Output (as tested): 114 b.h.p./litre.





LETTERS

to the Editor

Gas/Transistor Receiver

DEAR SIR,—With reference to my article on a Gas Transistor Receiver, which was published in last month's issue of *MODEL AIRCRAFT*, I have since found that the following slight modification might be necessary.

During the last 12 months three prototype sets have operated satisfactorily and have been dead reliable. A week or so ago, however, two of them began to show a wavering of standing current. When the set was switched on, the standing current would waver between 0.4 and 2 M/a (without transmitted signal). In other words, due to the altering characteristics of the soft

valve, a slight instability was creeping in. I looked into this and found that the cure is the removal of one turn from the aerial coil.

At the moment the set has an aerial coil of three-and-a-half turns, as reference to the original article will show. One turn should be removed, leaving two-and-a-half turns only, which brings the set into a stable condition again. In actual fact, some builders may find that if they wind on two-and-a-half turns only in the first place, this will be sufficient and it will mean that the set will remain stable for a long period of time.

Yours faithfully,
W. G. ROWELL

Dundee, Angus.

F.A.I. for all

DEAR SIR,—I should like to appeal to all organisers of rallies to seriously consider running an F.A.I. power comp in their programmes as a regular feature.

I realise that the numbers of those who

will fly the "heavyweights" will be restricted—they are not everybody's cup of tea—but surely it should not be too difficult to include them in the open class but with separate prizes. A pair of scales and a good tape measure will soon sift the F.A.I. jobs from the "lightweights" and anyone who enters the F.A.I. class can have his card marked accordingly.

I make this appeal for two very good reasons: 1. Heavyweights are funny beasts, difficult to get up high enough and difficult to keep up when they are up. They need a lot of time to trim out and competition is a wonderful bug finder in a "perfect" trim. 2. By attracting "heavyweight" contenders to regular competition you are giving members out of touch with development in the bigger clubs a chance to meet and discuss their problems with more fortunate fliers.

I believe that the standard any future British team puts up may well be improved by the stimulus of regular competition.

Yours faithfully,
CLIFF WEBB
(Sec. Brierley Hill Aeronauts)

The Editor does not hold himself responsible for the views expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters.

Woomera

Continued from page 287

Make the tailplane band peg of $\frac{1}{16}$ in. round bamboo and cement in place. Sand the whole of the outside of the fuselage smooth and give it two coats of dope mixed with cement and thinners, then cover with silk and give two coats of talc and dope, sanding between each. Bend the cabane struts to the correct length and cut off any excess. Cut two $\frac{1}{8}$ in. dowels for wing mounts and bind and cement these to the cabane struts. Finally, give the fuselage two coats of white *Dulux*.

Propeller Assembly

Mark out a suitably sized block of medium/soft balsa and carve to section as shown. Cut the root hinge from tinplate, make up as shown, cement firmly to the blade and cover with silk. Give one coat of talc and dope, then three coats of thin *Dulux*, rubbing down between each coat. Turn a hard wood forme to the shape shown for the inside of the spinner and make the spinner over the forme using three layers of nylon (as you would fibreglass) fixed in place with a mixture of *Pliobond*, balsa cement and thinners. Leave on forme for as long as possible before removing.

Make up the nose-block, using $\frac{1}{4}$ in.

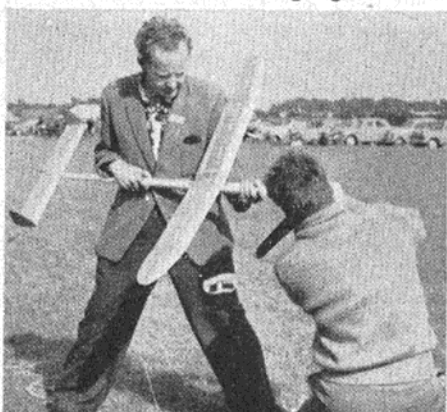
ply, and the cutout from the front bulkhead and drill to take a threaded brass bush. Bend the winding loop and shaft from 16 S.W.G. piano wire, then bind the winding shaft to the main shaft with single strand C/L wire and solder. Slide a small washer up to the junction and solder in position. Make the hub from fibre and drill through the centre to take a 16 S.W.G. I/D brass tube. Solder a thin brass washer to the tubing at the back of the hub and file flat—let the other end of the tubing stand proud of the hub by $\frac{3}{32}$ in. Press another washer over this and solder in place. Drill a hole in the hub to take the brass tubing for the driving

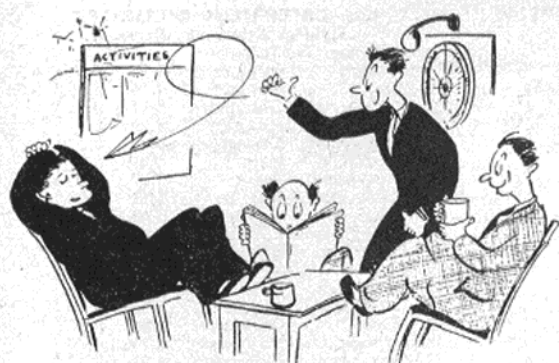
dog of the shaft—remember that this tubing must be large enough to be a loose fit for the driving dog. Bell the tubing at the rear of the hub and file flat, cut a square washer of thin brass and solder to the front and also file this flat. Fit the spring and solder it to a washer at the junction of the winding and main shaft. The spring must be just long enough to give a clearance of about 0.004 in. to 0.006 in. to the driving dog as this gives a free-wheeling action for winding.

Bend the hinge and counterweight wire from 16 S.W.G. to shape shown and cut a groove in the back of the fibre hub to take this wire which is glued and sewn in position with C/L wire. Fit the spinner backplate and cut out the centre to take one of the ball-race washers. The brass bush in the nose-block will also have to be recessed slightly, otherwise the gap between spinner and nose-block will be excessive.

Assemble all the hub, nose-block and shaft parts and bend the rubber hook at the rear of the shaft—this hook should be at right angles to the driving dog. Before bending the pawl to engage the propeller stop, slip on a length of heavy polythene tubing. Make the blade retainer from brass or dural, fit the blade, screw the retainer to the hub, and make the counterweight. Fit the propeller stop so that the blade folds on the left-hand side of the fuselage, and finally cement the spinner in place.

The tensest moment of the '58 Wakefield, Baker assisted by Allan King fits the nose block for his winning flight.





Club News

GEE DEE M.A.C.

The annual general meeting was held recently, with quite a good attendance, and many new points were discussed, one of which was the arranging of talks by well-known personalities for the winter nights.

We officiated during the combat event at the North Midlands Association of Model Aero Clubs' meeting at Wigsley, although our own club didn't get past the first round (probably due to the expert judging).

A display at the British Legion Fete at Radcliffe-on-Trent—Stunt, Combat and Scale C/L—went down very well, as also did a few models!

The Gee Dee Model Club (Railway and Aircraft) are giving an exhibition at the Elite Ballroom, Nottingham, in the first week of November, for which an inter-club competition for juniors is being run for the best model aircraft exhibited. (Prize not yet decided.)

LEICESTER M.A.C.

At our C/L Rally held at Stapleford Park there were entries from the Midlands, Portsmouth and Bolton, comprising 66 entries for Combat and nine entries for Stunt. The Stunt event was judged by Roy Lockley and Danny Barker, and the club is very grateful to them for the able way in which they did the job.

RESULTS

Stunt			
B. Horrocks	.. Wolves	.. 554 pts.	
R. Brown	.. Lee Bees	.. 542 pts.	
F. L. Warburton	.. Bolton	.. 523½ pts.	
Combat			
Devonshire	.. Mansfield.		
Deville	.. Derby.		
Gibbard	.. Derby.		Two third
Wilkes	.. West Brom.		places.

WHARFEDALE & D.A.

During the early hours of Sunday morning a coach load of members began their fateful journey to Cranfield. Soon after leaving Stamford, heading south on the A1, our coach was in collision with a small car. As a result of the accident, eight of our members were unable to continue their journey, six of these were taken to Peterborough Memorial Hospital, where one member was detained. But overshadowing our own tragedy is the fact that one person in the car was killed instantly and three others have since died in hospital, as a result of injuries sustained at the time of collision.

CHELTENHAM HOBBIES EXHIBITION

One of the stands which drew large crowds at the three-day Hobbies Exhibition held at the Town Hall, Cheltenham, Glos, recently was that staged by the Cheltenham Model Aero Club. Aircraft, gliders and airships of every kind were shown and demonstrated from an ingenious circular platform. Many of the models were suspended from the ceiling.

One of the most outstanding models was of a Supermarine S6B Schneider Trophy winner, built by Stanley Percy of Longlevens, Gloucester, a stressman at a local aircraft factory and a member of the club since its inception in 1950. The model, which took Mr. Percy over six months to build, is 1 in. to 1 ft. scale, operated by C/L with the take-off by "dolly." The model has an E.D.246 diesel engine.

Another fine model, and one remarkable for its excellent finish, was built by a 21-year-old aircraft apprentice, M. G. Chaplin, of 15, Arle Avenue, Cheltenham. This was a Miles "Hawk Speed-Six" aircraft, 1 in. to 1 ft. scale, line-controlled and with an Elfin 1.5 c.c. diesel engine.

In spite of this, 10 of our members arrived at Cranfield and they were very well treated by the organisers when they explained the position. As no team was complete it is surprising that, after the ordeal of that morning, Richard Place was able to qualify for third place in Class "A" after a heat time of 5 min. 21 sec.

A recent static display held at a Gala in Otley, resulted in raising our membership to 61.

All our members attended the Northern Gala on our local ground at R.A.F. Rufforth. The club attempted to run the three T/R Events and we hope that everyone who sampled our effort at organisation enjoyed the result.

WALLASEY M.A.C.

At the last club meeting a new topic was featured—that of discussing articles in the two major magazines, particularly with the hope of getting some of the juniors' views.

At the rallies G. M. (Len) Hutton finished second in power at the Northern Gala, but club results in the Rootes trophy at Stretton were poor due to the lack of rubber flyers. This position, we hope, will have changed by next year.

NORTH KENT NOMADS

Our competitions, which have been flown on Dartford Heath this year, have yielded fewer entries than normal. However, we saw our chairman, Ray Parker, keeping well ahead of the rest of the field.

The Roberts Cup was held in Danson Park, and Ray Parker's first flight, which, incidentally, was a combined trimming and competition flight, raised the British record for flying boats to 76 sec. subject to confirmation.

WEST BROMWICH M.A.C.

Recent club successes have mostly been in the sphere of combat. Mike Kendrick won the competition at Cranfield, and Dave Wilkes took third place at the Leicester C/L rally, having a rough motor run which prevented him from reaching the final. In both cases the models were Oliver-powered *Black Ghosts*.

We held a stunt competition recently, which was won by Mac Grimmer with his Fox 35-powered *Smoothie*, by a comfortable margin. Power and glider competitions recently organised attracted few entrants, although the flying was of a high standard. Howard James won the glider, and Dave Wilkes the power, with an O.S. 15-powered *Ojinn*.

WIGAN M.A.C.

F/F is in the news again with successes at the Scottish Gala being well worth noting. Brian Talbot had a first in Glider, and second in Power at this rally, and was well supported by the efforts of Brian Picken, who came fourth in Rubber, and Mike Hosker, who, unable to compete earlier this season, because of educational commitments and exams, made a spectacular return to the competition field, and took first place in the rubber event. This, in his first year as a senior, having been junior champ last season, augers well for the future. In fact, Mike followed this with a very good third place in the power event at the Northern Gala, after a full house of max's, and a fly-off. Also at this rally, Cyril Rider, who has for some time now been flying just that little bit short of top honours, managed a very popular second, after a six-man fly-off in the glider event.

The valiant efforts of the free fliers in the club have really paid off this season, the club having won two team trophies as a direct result of their efforts. The English Electric Trophy was the first one, and more recently the Rootes Trophy which was held at Stretton. During the course of this rally no fewer than 10 Wigan gliders were all at the ready, with pilots just waiting to be called. This was the result of a very concerted effort, by many of our seniors, who, unstintingly, gave help to all competitors, we are proud of them!

OUTLAWS (CANNOCK) M.A.C.

At the Leicester M.A.C.'s C/L Rally, Eric Burke came a creditable fourth in the star-spangled stunt event with a Fox 35, 450 sq. in. O/D job. Brother John Burke maintained family prestige by reaching the quarter finals in combat, to make our umpteenth "place" in this event, but that elusive first keeps evading us!

The least said about Cranfield the better. The only rally this year where we failed to come in the top five in anything!

BRIERLEY HILL AERONAUTS

Thanks to the generosity of a local manufacturer (quite unconnected with the modelling trade) the club is receiving a plaque and three guineas every year to put up for competition.

To encourage the younger element, this year the plaque went to the winner of the Junior Stunt competition, 12-year-old Stephen Wilkes. At this tender age, young Steve is one of the best prospects the Midlands has had for many years and if all goes well should create a sensation in next year's Gold Trophy. He is a prolific builder, but as yet cannot spare the time from the flying field to give his models the necessary finishing touches to make them reliable enough for first class competition.

The F/F seniors and their willing assistants ran themselves into the ground competing in power and glider at the South Midlands Rally at Cranfield. With minutes to go before the last flight in glider half the club was losing itself in the "Cranfield Maze" down wind, searching for lost gliders. A plea to organisers—please start a lot earlier, and please don't set up your table halfway to the windward boundary. You'll finish a lot earlier.

Club members noted with envy the retrieving skill of the wife of prominent Leamington member Wiggins, well done Beryl!





Recent Results

NORTHERN GALA

Caton Trophy

Open Rubber

1. J. O'Donnell ..	Whitefield ..	12 : 00+5.28
2. N. Elliott ..	..	12 : 00+4.30
3. E. Black ..	Glasgow ..	12 : 00+4.10
4. N. Cliff ..	Prestwick ..	12 : 00+3.34
5. A. Kimber ..	Eng. Elec. ..	12 : 00+3.27
6. J. Pool ..	Halifax ..	12 : 00+3.15

153 competitors, nine triple maximums.

Open Glider

1. C. Jackson ..	Chorlton ..	9 : 00+2.13 J
2. J. Rider ..	Wigan ..	9 : 00+2.12
3. J. M. Shepperd ..	New Zealand ..	9 : 00+1.58
4. R. Shirt ..	Nth. Sheffield ..	9 : 00+1.55
5. A. Garnett ..	E. Lancs. ..	9 : 00+1.25
6. E. Broadbent ..	Ashton ..	9 : 00+1.23

99 competitors, six triple maximums.

Hamley Trophy

Open Power

1. A. R. Collinson ..	Baildon ..	12 : 00+7.58
2. G. Hutton ..	Wallasey ..	12 : 00+4.51
3. M. Hosker ..	Wigan ..	12 : 00+4.03 J
4. J. H. Hopkins ..	Chorlton ..	11 : 52
5. T. Smith ..	Cheadle ..	11 : 33
6. J. O'Donnell ..	Whitefield ..	11 : 20

70 competitors.

P.A.A. Load

1. A. Collinson ..	Baildon ..	9 : 08
2. A. Farrar ..	Wakefield ..	6 : 41
3. P. Muller ..	Surbiton ..	5 : 18
4. E. Lord ..	E. Lancs. ..	5 : 15
5. R. Firth ..	Sheffield ..	3 : 15
6. A. Robson ..	Teeside ..	2 : 29

Seven competitors.

Aeromodeler Trophy

Radio Control

1. C. H. Olsen ..	C.M. ..	208.5 pts.
2. J. E. Johnson ..	A.R.C.C. ..	165.5 "
3. J. Singleton ..	A.R.C.C. ..	65.5 "

Team Racing—Class A

1. M. Bassett ..	Sidcup.
2. D. R. Dew ..	Sidcup.
3. J. Templeman ..	..

Team Racing—Class A

1. F. Stevens ..	Enfield.
2. N. Kirton ..	Stanley.
3. J. Riley ..	Enfield.

Team Racing—Class B

1. P. Drewell ..	Lomac.
2. T. Rowley ..	Heath.
3. L. Steward ..	West Essex.

SCOTTISH GALA

Open Glider

1. B. Talbot ..	Wigan ..	9 : 00
2. G. Tideswell ..	Baildon ..	7 : 53
3. A. W. Spurr ..	Teeside ..	7 : 17
4. W. Meehan ..	Glasgow ..	7 : 15
5. R. Foster ..	Sheffield ..	7 : 06
6. B. Picken ..	Wigan ..	6 : 58

Open Rubber

1. M. Hosker ..	Wigan ..	12 : 00
2. J. O'Donnell ..	Whitefield ..	11 : 51
3. U. A. Wannop ..	..	11 : 28
4. B. Picken ..	Wigan ..	11 : 11
5. J. B. Pool ..	Halifax ..	9 : 43
6. H. Tubs ..	Baildon ..	9 : 35

Open Power

1. A. Farrar ..	Wakefield ..	10 : 30
2. B. Talbot ..	Wigan ..	9 : 55
3. D. Reid ..	Edinburgh ..	9 : 24
4. A. J. Smith ..	Stranraer ..	9 : 03
5. T. Lawrie ..	Paisley ..	8 : 48
6. J. Campbell ..	Paisley ..	8 : 36

Radio Control

1. G. W. Parkinson ..	Kendal ..	28 pts.
2. J. Craig ..	C.M. ..	21 "
3. P. Dowker ..	Kendal ..	17 "

Team Race—Class A

1. J. Stoddart
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Team Race—Class B

1. R. Forrest
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1. J/T. Miller ..	Coastal
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3. J/T. Crump ..	Flying Training

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Cpl. Johnson ..	Flying Training
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"A2" Glider Contest

1. Sgt. Rees ..	Fighter
2. Fg. Off. Gotts ..	Fighter
3. S.A.C. Andrews ..	Flying Training

"Open" Glider Contest

1. Fg. Off. Gotts ..	Fighter
2. A.C. Woolnaugh ..	Tech. Training
3. Cpl. Johnson ..	Flying Training

"Open" Rubber Contest

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3. Flt. Lt. Andrew ..	Flying Training

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1. Flt. Lt. Andrew ..	Flying Training
2. Cpl. Lawson ..	Tech. Training
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"F.A.I." Power Duration Contest

1. Sgt. Emery ..	Bomber
2. Flt. Lt. Gunn ..	Fighter
3. Sgt. Farthing ..	Fighter

C/L Aerobatic Contest

1. Flt. Lt. Hawkins ..	Fighter
2. J/T. Dibb ..	Maintenance
3. S.A.C. Campbell ..	Bomber

C/L Speed Contest (Class I)

1. S.A.C. Lambert ..	Fighter
2. S.A.C. Robinson ..	Fighter
3. F/Sgt. Paxton ..	Tech. Training

Wilmot Mansour Trophy

Open "Jetex" Contest

1. Cpl. Johnson ..	Flying Training
2. Fg. Off. Parker ..	Bomber
3. Flt. Lt. Gray ..	Bomber

C/L Team Race Class "A"

1. J/T. Prosser ..	Bomber
2. A.C. Woolnaugh ..	Tech. Training
3. L.A.C. Finney ..	Tech. Training

C/L Team Race Class "A"

1. J/T. Bell ..	Bomber
2. A/A Phinn ..	Tech. Training
3. J/T. Draycott ..	Flying Training

The "Malta Cup"

R/C Contest

1. Flt. Lt. Andrew ..	Flying Training
2. Flt. Lt. Lawrence ..	Fighter
3. Sqdn. Ldr. Cable ..	Tech. Training

C/L Combat Event

1. A/A Phinn ..	Tech. Training
2. A/A Robertson ..	Tech. Training
3. S.A.C. Reeves ..	Bomber

Inter-Command Challenge Shield

Fighter Command

Victor Ludorum

Flt. Lt. D. Andrew ..	Flying Training
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A/A and Boy Entrants

A/A Phinn ..	R.A.F. Locking
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Wooden Spoon

Signals Command

CONTEST CALENDAR

Oct. 25th	Blackheath Gala, Chobham Com-
	mon. R/G/P.
Nov. 15th	Loughborough College Winter
	Rally, Wymeswold Aerodrome,
	R/G/P and Combat.

10th CRITERIUM D'EUROPE

Held at Etterbeek, Brussels

Team Racing (Individual)

1. Bernard ..	Belgium ..	4.59	4.27	4.37
2. Azor ..	Hungary ..	4.56	6.06	0.00
3. Lenzen ..	Germany ..	5.11	5.03	
4. Simon ..	Hungary ..	5.22	5.51	
5. Vargacic ..	Yugoslavia ..	5.44	5.27	
6. Contini, F. ..	Italy ..	6.09	5.27	
7. Gorgocena ..	Spain ..	5.27	0.00	
8. Rossi, U. ..	Italy ..	5.31	0.00	
9. Tyler ..	Gt. Britain ..	5.44	0.00	
10. Kaatokainen ..	Finland ..	5.45	5.49	
11. Lietemann ..	Belgium ..	5.45	0.00	
12. Gafner ..	Switzerland ..	0.00	5.46	
13. Berselli ..	Italy ..	0.00	5.55	
14. Fernandez ..	Spain ..	5.56	0.00	
15. Malic ..	Germany ..	6.05	0.00	
16. Ordogh ..	Hungary ..	6.19	0.00	
17. Savolainen ..	Finland ..	6.21	8.55	
18. Baxter ..	Gt. Britain ..	6.22	0.00	
19. Knezvic ..	Yugoslavia ..	6.40	7.50	
20. Papegnies ..	Belgium ..	6.40	0.00	

Team Racing (Team)

1. Italy ..	16.13	4. Germany ..	21.08
2. Belgium ..	16.52	5. Gt. Britain ..	22.06
3. Hungary ..	16.57	6. Finland ..	22.06

Speed (Individual)

1. Rossi, U. ..	Italy ..	222	219	216
2. Beck ..	Hungary ..	214	213	213
3. Rossi, G. ..	Italy ..	210	0	0
4. Toth ..	Hungary ..	202	201	0
5. Battlo, J. ..	Spain ..	200	198	196
6. Jaaskelainen, K. ..	Finland ..	194	189	179
7. Jarry-Desloges ..	France ..	191	185	184
8. Hasberg ..	Sweden ..	187	185	181
9. Deligne ..	Belgium ..	187	183	0
10. Gorziza ..	Germany ..	183	180	180
11. Martinelle ..	Sweden ..	180	175	0
12. Frohlich ..	Germany ..	179	175	0
13. Hall ..	Gt. Britain ..	178	173	0
14. Savolainen ..	Finland ..	173	164	0
15. Lenzen ..	Germany ..	172	0	0
16. Jaaskelainen, J. ..	Finland ..	167	164	159
17. Magne ..	France ..	167	160	156
18. Irvine ..	Gt. Britain ..	164	138	0
19. Stephens ..	Gt. Britain ..	156	0	0
20. Jenatton ..	Switzerland ..	148	144	0
21. Godsiaobis ..	Belgium ..	137	133	0
22. Cappuyns ..	Belgium ..	0	0	0
23. Azor ..	Hungary ..	0	0	0
24. Prati, C. ..	Italy ..	0	0	0
25. Bjork ..	Sweden ..	0	0	0

Speed (Team)

1. Finland ..	534	6. Germany ..	355
2. Gt. Britain ..	498	7. Belgium ..	324
3. Italy ..	432	8. Spain ..	200
4. Hungary ..	416	9. Sweden ..	187
5. France ..	358	10. Switzerland ..	148

Stunt (Individual)

1. Grondal ..	Belgium ..	1011	999	989	2010
2. Egervary ..	Hungary ..	851	984	959	1943
3. Edinger ..	Switzerland ..	833	928	928	1856
4. Doring ..	Germany ..	855	888	954	1842
5. Ordogh ..	Hungary ..	913	822	901	1814
6. Seeger ..	Germany ..	873	812	897	1770
7. Macon ..	Belgium ..	818	866	829	1695
8. Horrocks ..	Australia ..	736	817	871	1688
9. Compostella ..	Italy ..	829	787	801	1630

10. Contini, M. ..	Italy ..	778	822	563	1600
11. Day ..	Gt. Britain ..	799	695	762	1561
12. Deville ..	Belgium ..	730	782	724	1512

13. Contini, F. ..	Italy ..	630	738	729	1467
14. Soderberg ..	Sweden ..	616	619	796	1415
15. Raulio ..	Finland ..	540	56	693	1233
16. Russel ..	Gt. Britain ..	321	528	499	1027
17. Battlo ..	Spain ..	481	461	481	962
18. Skauge ..	Norway ..	0	338	87	425
19. Sindjebelic ..	Yugoslavia ..	0	242	100	342
20. Oswald ..	Germany ..	0	58	0	58

Stunt (Team)

1. Belgium ..	5217 pts.	7. Australia ..	1688 pts.
2. Italy ..	4699 "	8. Sweden ..	1415 "
3. Hungary ..	3757 "	9. Finland ..	1233 "
4. Germany ..	3670 "	10. Spain ..	962 "
5. Gt. Britain ..	2588 "	11. Norway ..	425 "
6. Switzerland ..	1856 "	12. Yugoslavia ..	342 "

Combat

Seeger ..	Germany
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Overall Team Results

1. Hungary ..	6 pts.	5. Spain ..	16 pts.
2. Belgium ..	8 "	6. Finland ..	19 "
3. Italy ..	10 "	7. Gt. Britain ..	20 "
4. Germany ..	14 "	8. Switzerland ..	20 "
9. Sweden ..	21 pts.		

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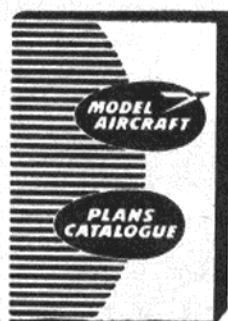
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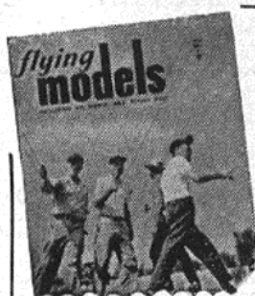
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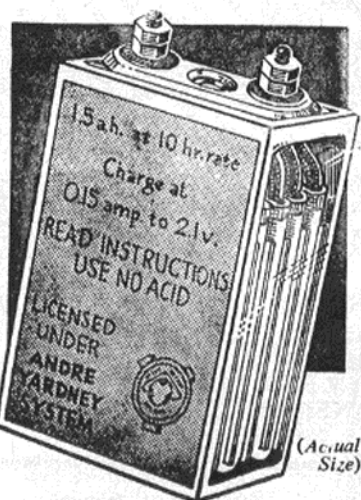
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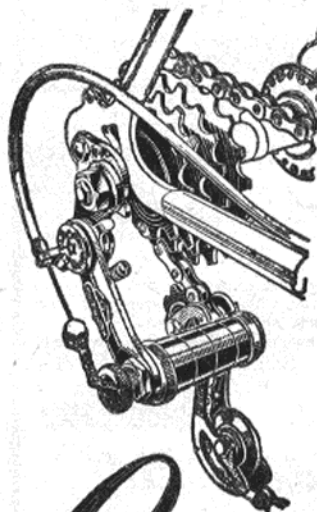
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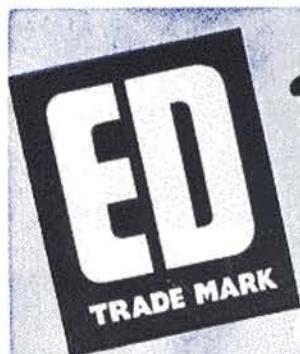
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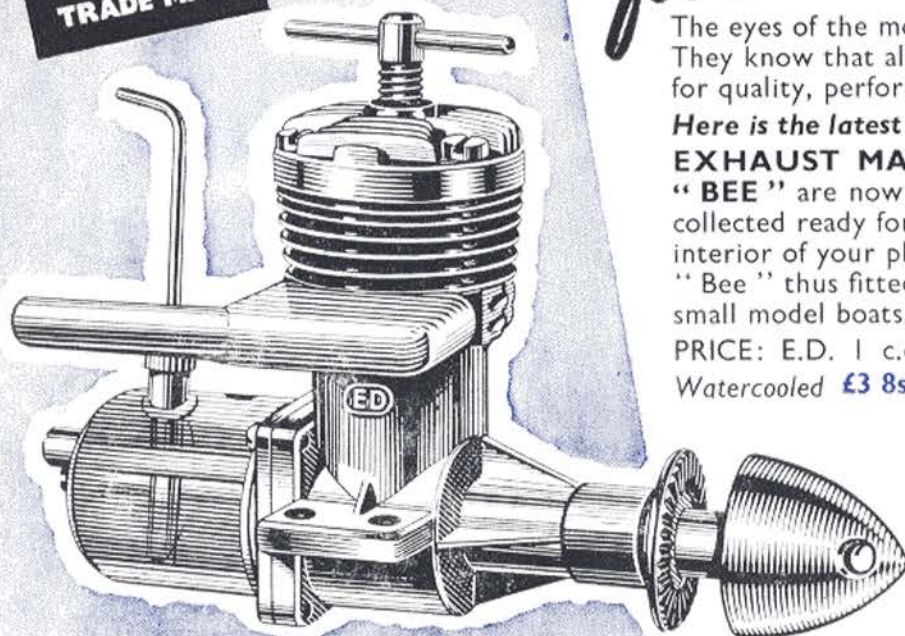
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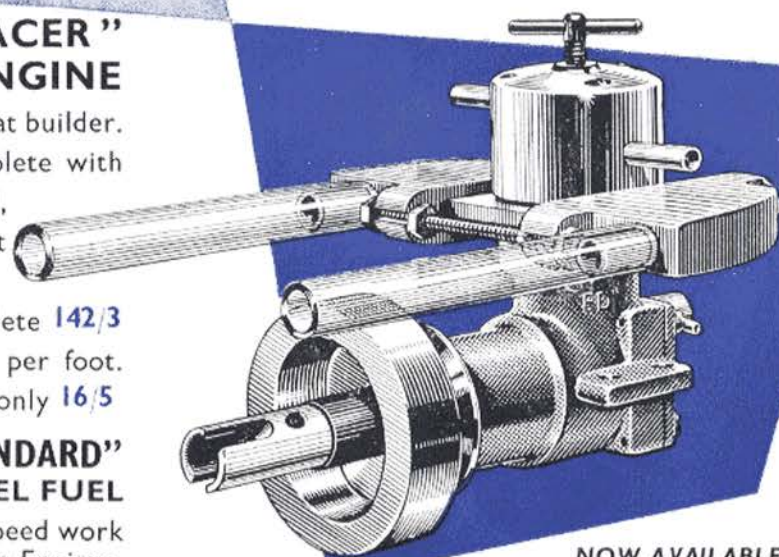
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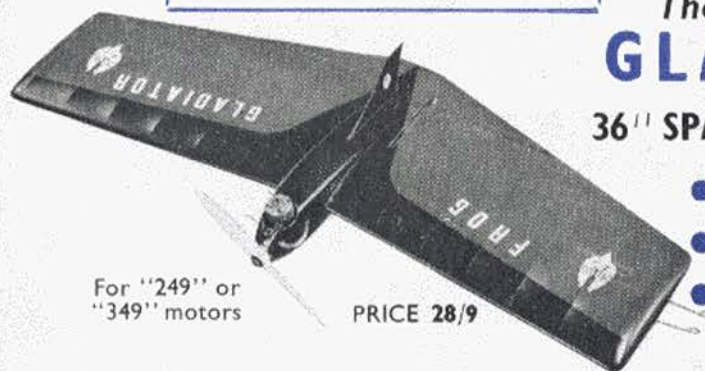
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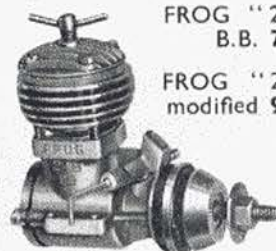


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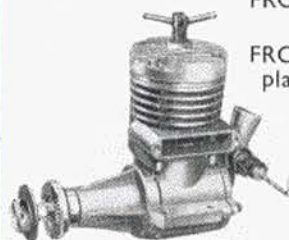
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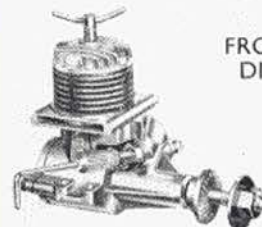


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