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INCORPORATING

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**MARCH 1969**

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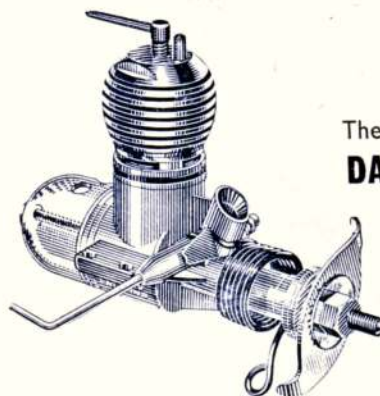
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- Glider design features
- Electric indoor flying
- French home-built plans
- Control-line news
- Starting in multi R/C



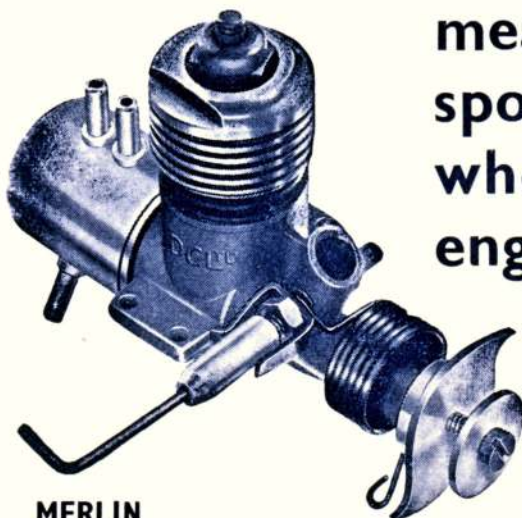


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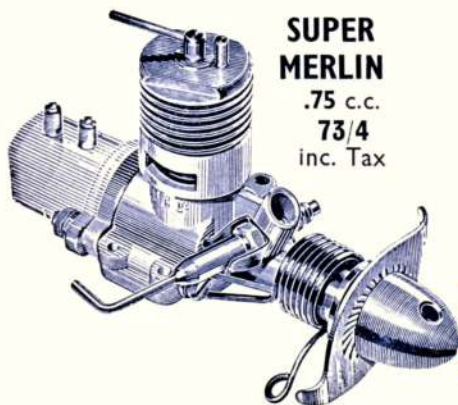


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# Aero Modeller

INCORPORATING  
MODEL AIRCRAFT

March 1969

VOLUME XXXIV No. 398

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**R. G. MOULTON**

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## COMMENT

Any visitor to the recent Trade Fairs in Harrogate, London and Brighton could not fail to have been impressed by the sheer volume and enterprise of the Toy and Hobby trade in all aspects, except one. Plastic Kits appear in profusion to standards of accuracy and detail hitherto considered impossible. Ready to operate radio controlled toys, glass fibre boat hulls and imported products swell the shelves for '69.

The exception is the case for the novice. Nothing for him. No innovations in balsawood assembly kits. No visible sign of future projects either.

We get the impression that the youngster is being forgotten. Only one manufacturer, A. A. Hales Ltd., with their excellent 'Frogflites' presented anything close to a novice's flying model kit at Britain's greatest Toy and Hobby Fair in Brighton.

Perhaps we need to take a leaf out of the Swiss or German text books which take aeromodelling into the schools in a big way. This is our personal aim. We look to the day when the model aeroplane is recognised for its educational value and hope that the event is not too far distant.

## on the cover

*Crikey - Trevor Payne means to be seen wherever he takes his 56 in. Open Power model! Vividly Yeovilton. Known as 'Perigrination' it weighed 25 oz. and its rapid rate of climb gave it an eventful career up to eventual disappearance out of sight from the Woodford Rally, never to be found again.*

## next month

The contest winning **Brat Rat Racer** by Dave Rudd starts the Control-Line season in a big way. Also an exclusive 'inside' story on the **Soviet C/L Champs** plus a test of the new **Super Tigre G15RV**. **Free Flight** data, Scale plans for the **Isaacs Fury Mk. II** and dope on **Plastic card** modelling, with scale drawings of the **Thomas-Morse** fighter, add up to a great issue, out 21st March.

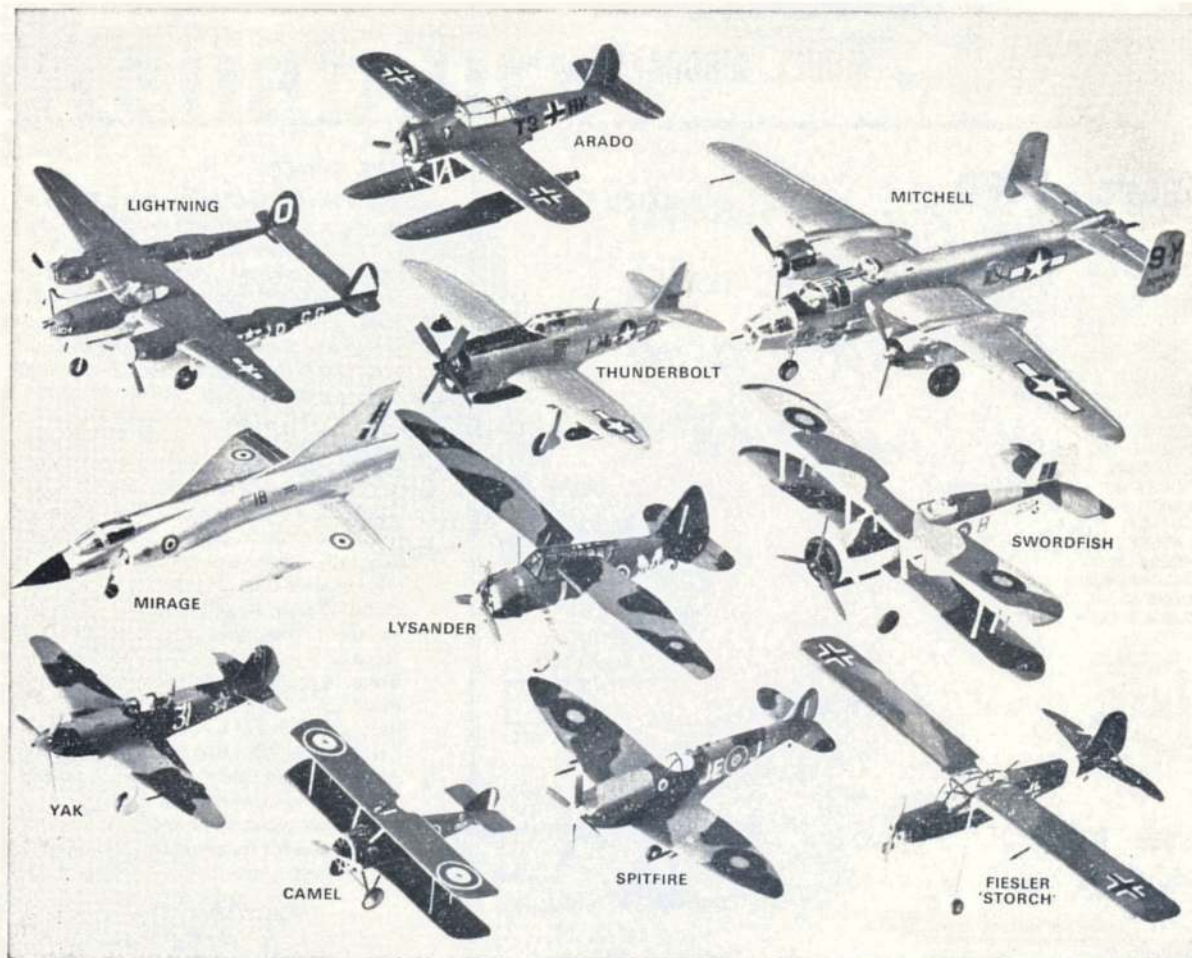


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 HB.6 Sea Grey Medium

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 HU.2 Olive Drab 41  
 HU.3 Neutral Grey 43  
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HB.7 Extra Dark Sea Grey  
 HB.8 Dark Slate Grey  
 HB.5 Sky Type S  
 HB.9 Sea Blue Gloss  
 HB.10 Night Black  
 HB.11 Underside White

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HB.2 Dark Earth  
 HB.12 Mid Stone  
 HB.13 Azure Blue  
 HB.10 Night Black  
 HB.11 Underside White  
 HB.14 Airframe Silver

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 HF.2 Vert (Green)  
 HF.3 Terre Foncée (Dark Earth)  
 HF.4 Gris Bleu Clair (Lt Blue Grey)  
 HF.5 Gris Bleu Foncé (Dk Blue Grey)  
 HF.6 Chocolat (Chocolate)

## KIT 7 ITALIAN AIR FORCE

HI.1 Mottle Green  
 HI.2 Upper Green  
 HI.3 Overall Green  
 HI.4 Sand  
 HI.5 Grey  
 HI.6 Insignia White

## KIT 8 JAPANESE AIR FORCE

HJ.1 Green N.1  
 HJ.2 Grey A/N2  
 HJ.3 Green A.3  
 HJ.4 Mauve N.9  
 HJ.5 Brown N.17  
 HJ.6 Silver A.6

## KIT 9 U.S.A.F. (VIETNAM)

HU.7 Green 34079  
 HU.8 Green 34102  
 HU.9 Tan 30219  
 HU.10 Grey 36622  
 HU.11 Airframe White  
 HU.12 Night Black

## KIT 10 MILITARY VEHICLES

HM.1 8th Army Desert Yellow  
 HM.2 Afrika Korps Desert Yellow  
 HM.3 U.S. Olive Drab  
 HM.4 German Panzer Grey  
 HB.1 Dark Green  
 HB.2 Dark Earth

## KIT 11N NAVAL VESSELS

HN.1 Light Grey  
 HN.2 Dark Grey  
 HN.3 Deck Green  
 HN.4 Deck Bleached Teak  
 HN.5 Hull Red  
 HN.6 Black

## KIT 12 WORLD WAR 1 AIRCRAFT

HB.15 R.F.C. Green  
 HB.16 Clear Doped Linen  
 HG.7 German Pale Yellow  
 HG.8 German Green  
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 HM.8 Khaki Drill  
 HM.10 Navy Blue  
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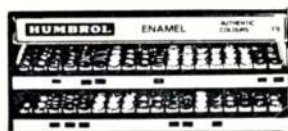
### 22 CEREMONIAL UNIFORMS

HM.9 Scarlet  
 HM.12 Dark Blue  
 HM.13 Dark Green  
 HM.14 White  
 HM.15 Flesh  
 HM.16 Crimson



### 23 MILITARY EQUIPMENT

HM.17 Gun Metal  
 HM.18 Brass  
 HM.19 Dark Wood  
 HM.20 Silver Plate  
 HM.21 Leather  
 HM.11 Black



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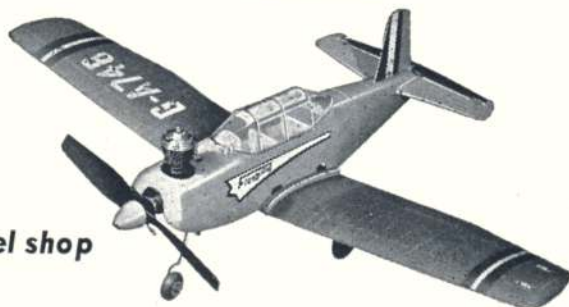
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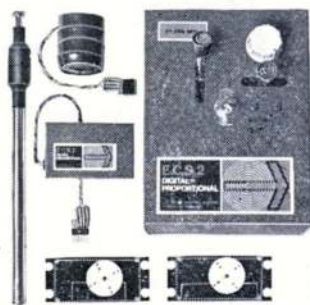
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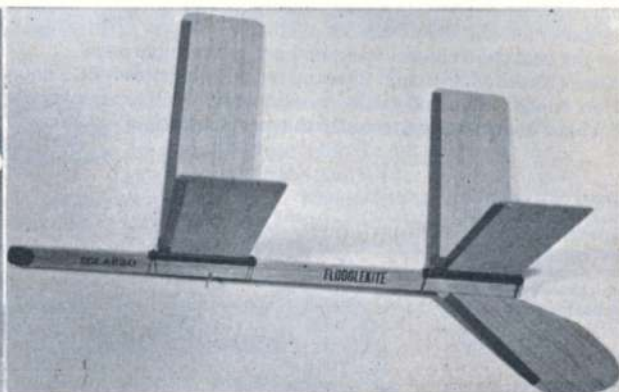
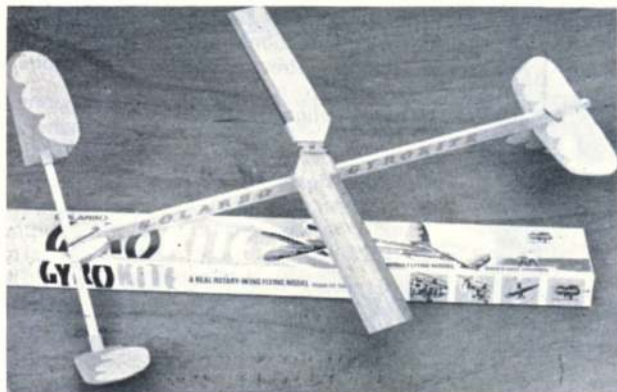
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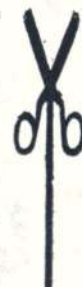
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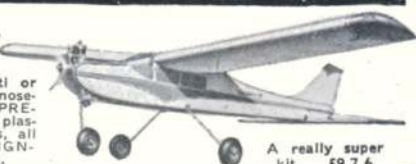
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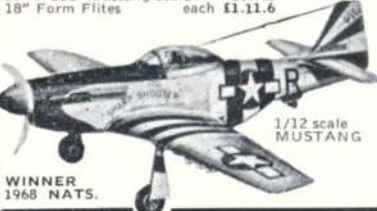
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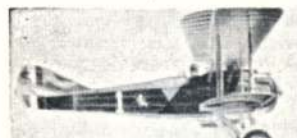
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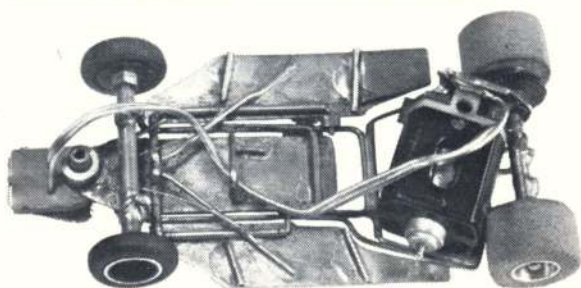
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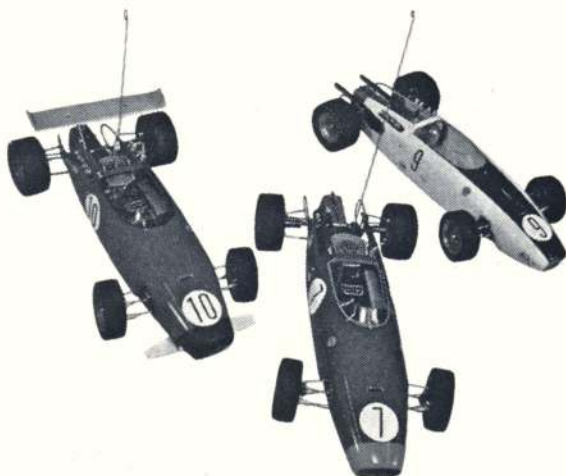
## Model Cars

Model Cars for April will carry Prototype Parade plans for the Repco Brabham BT26 by Roger Taylor with one of John Wood's usually highly informative descriptions.

For builders, John Veasey starts a step by step photo feature on chassis construction which everyone can follow - and for 1/32nd scale fans, there's an anglewinder plumber Ford Thunderbird. For plastic modellers there's a modified Monogram Rolls Royce Phantom and we have a big photo report on the recently held Swedish Slot Racing Championships together with, of course, many more exciting items, plus that elusive E.C.R.A. Handbook.

1st FRIDAY MONTHLY **2/6**

## RADIO CONTROL MODELS



March issue of R.C.M.&E. will be a tremendous bonus issue with 68 pages, plus free full-size construction plan of a 57 in. span R/C glider for slope soaring or tow-line flying. A full 5/- worth of plan value absolutely free!

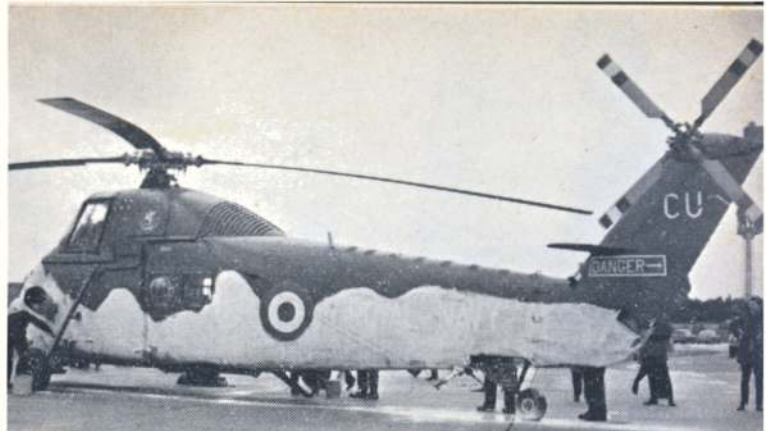
The other feature of this issue is an introduction to the new hobby of R/C race cars. The new glow motor powered, two-speed gearbox, fully independent suspension race cars form the subject of this month's colourful cover, supported with a full feature on what it is like to operate these exciting little machines.

2nd FRIDAY MONTHLY **2/6**



## Heard at the HANGAR DOORS

Instant Camouflage, applied over base colour of Dk Earth, Olive Green, Devon Red or Dk Brown in various 'official' tones of household distemper will enable Commando Helicopters to operate at best advantage in any environment. This Wessex HU Mk.5 of 846 Commando H.Q. Sqdn., R.N.A.S. Culdrose has white distemper over Olive Green base colour. Applied quickly, it is weather proof, light and can be hosed off



**MY WIFE'S BETTER PILOT!**— That's what Colonel Frank Borman, Apollo 8's command pilot, said several years ago, concerning the flying activities avidly shared by the Borman family, according to John Worth, of the Academy of Model Aeronautics. Col. Borman was referring to control-line flying. All the Bormans, including the Colonel's father, were involved in aeromodeling. Colonel Borman started in the thirties, assisted by his dad, and continued right up until one of the Gemini rocket launches when intensive training schedules precluded further enjoyment of the leisure time activity.

Borman also credited aeromodeling as a stimulant to his career, 'Not only do I think that it helped to further my career and stimulate an interest in aviation', he said, during a 1966 interview with an A.M.A. reporter, 'but in my case it provided many long hours of very fine companionship with my father . . . he helped me build and we worked together as a team and it was really a fine activity. In fact, I probably got to know my father better, building model aircraft, than any other thing we did'. Like Neil Armstrong, designated Command Pilot for Apollo 11, the first Moon landing vehicle, Frank Borman was an active member of A.M.A.



Donated by Herb Abrams of Rand Corporation, manufacturers of popular servos and R/C equipment in the U.S.A., this tall gilt trophy has been given to the SMAE for award to the winner of the annual Pylon Race at the British National Championships. This fine gesture of transatlantic goodwill was made possible by the return visit of Peter Waters, once British R/C Champion, and now an engineer with Rand in the U.S.A.

**ANOTHER** Pioneer of aeromodeling in Great Britain, has been lost to the movement, when D. A. Pavely died on December 10th, 1968. He opened one of the first model shops in 1917 at Replingham Road, Wimbeldon and continued there in business until June 1968. A member of the S.M.A.E. Council from 1922 until 1933, he had many successes in competition, among them the winning of the Gamage Cup in 1927, 28 and 29. His experiments with Pushers, Autogyros and Tailless models added greatly to their advance, but he was most famous for his development of the compressed air driven model for which he held the British Records for many years. His many friends in model aviation extend to Mrs. L. Pavely their deepest sympathy and condolences.

**WINNER** of the free trip to Bulgaria, arranged by members of the Model Power Boat Association, in conjunction with the 1969 World Championships, was Keighley Model Engineering Society. They estimated that attendance at the Model Engineering Exhibition would be 36,219, whereas actual attendance was a record 36,224 visitors. The contest was organised to raise funds for the M.P.B.A. and attracted a great deal of interest at the Society Stand in the 'M.E.' Exhibition. How the Keighley M.E.S. is going to sub-let the trip to one person is going to be an interesting sidelight!

**POSTAL** contests within the next few weeks include one on April 20th or 27th for A/2 Gliders over five flights, organised by 'Escuela Provincial De Aeronautica', Calle Huer-tas num.36., Madrid 14, Spain. Official entry forms can be obtained from that address. Event categories are for Senior and Junior classes, and for teams of three.

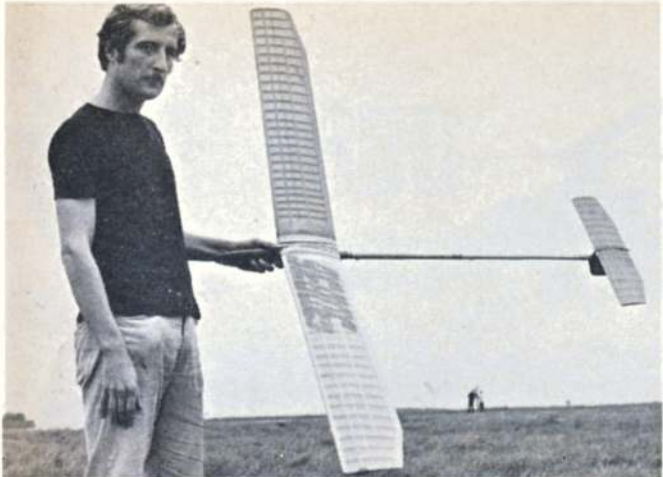
**THAT TYPHOON** we illustrated last month did *not* come from Canada and is the *only* one in preservation thanks to the generosity of the Smithsonian Institution. We confused it with the gift Bolingbroke, yet to appear refurbished as a Blenheim for the R.A.F. Museum and

which most certainly has arrived from Canada, as also has a Mustang!

**DANGEROUS** flying near airfields was the point of discussion between Board of Trade Officials and representatives of the S.M.A.E. at a recent meeting. Observers have recorded models flying in the flight path and *above* jet airliners taking off from Runway 10R at London Airport (Heathrow). These models were flown from Hounslow Heath, while others at Hanworth Air Park have similarly flown too high and too close to the airways. Legislation exists to exercise severe penalties for flying of anything which endangers persons or property. It can also be easily amended to include model aircraft in the **Air Navigation Order**, Article 61 along with Balloons and Kites which cannot be flown *higher than 200 ft. or nearer than 3 miles to any airfield*. If such were to be applied, popular venues such as Chobham Common and all the airfields currently used by clubs would automatically become barred to model flying. Only remedy is for activity to cease at any field where model can drift into the flight path of full size aircraft. Unless this commonsense precaution is taken, the entire modelling movement will suffer by the action of a few miscreants. Reports of near-misses, disagreements over air rights near airfields and even of wayward free flight models landing on actual runways are not to be taken lightly. The warning light is on — it is now up to modellers with a sense of responsibility to see that their interests are not jeopardised.

**HULLAVINGTON** it is! Preliminary info that R.N.A.S. Yeovilton would once more be the site for the National Championships was changed when Naval Flying commitments were seen likely to interfere with the model meeting. A poll among S.M.A.E. Officials produced an almost unanimous vote for a return to R.A.F. Hullavington near Chippenham and by courtesy of the Station Cdr., Wing Cdr. Coombs, we go back to Hullavington on 25/26th May 1969 for the National Championships.





**Andrew Crisp's**

## **'ACCIPITER'**

**A/2 specification glider of simple lines and high performance features**

THE STORY of this model goes right back to the German glider published on page 23 of the 1952 *Aeromodeller Annual*, Karl Heinz Denzin's 2nd placer in the 1953 World Champs. was also an influence. Several A/1s made during the '50s convinced me of the good towing characteristics of the 'pod and boom' layout.

Then I became involved in power flying until 1961 when I obtained a German 'Helios' kit. This I modified by slimming the fuselage right down *a la* 'Spinne', and using an under-fin. From time to time, people claim that these are bad and cause spiral instability, but I feel this is due more to warps than fin position.

Two versions of this model were made, and lasted for ages, being very reliable both on tow and in flight. I suppose it was rather like an A/2 version of the old 'Pelican', which can't be bad!

In an effort to increase 'still air' time, a new model was built with much greater span (82 in.) and smaller tail (68 sq. in.) A Hank Cole airfoil was used, and it appeared capable of around 2:25 on a calm evening. Wing warps are used for trim; thus the 'Ship' flies on straight rudder for glide and offset for the tow. Despite having a long nose (8 in.) stall recovery was instant due to a heavily under-cambered and very light tail which weighed .2 oz.

Hoping to increase the unassisted time still further, the first Accipiter was made. This was 86½ in. span, the wing being covered in sheet. Twenty flights made on late summer evenings ranged from 2:30 to 2:45 so the object of the new model had been achieved. Unfortunately, when flying in quite a mild wind the wing folded, so this was discarded as being impracticable.

This now brings us to the present 'Accipiter' which I think would need a force eight gale of wind before the V wing breaks! It is best to make the flying surfaces first so that they can age while the rest is made.

### **Wing**

Start with the trailing edge first. Pin down flat on the

plan, and glue the joint for the tapered tip. Remember to make opposite sides!

Remove from the plan and notch to receive ribs.

Pin back down again with required packing for under camber. Then pin down the L.E. and glue in the ribs, remembering that those at the root are undercut for the sheeting. The tapered tip ribs are cut down from full length ones and sanded to an airfoil shape, when the complete job is finished.

Fit the upper spars while the wings are still on the board and the lower spar on removal.

The brass or aluminium tubes for the 12 s.w.g. dowels are fitted by cutting away the ribs at the appropriate places and gluing the tubes to the L.E. and spar with 'Araldite' or equivalent epoxy. There is no need to make the tube notches very accurate, as a slight oversize helps when lining up. The epoxy does the rest! Before this adhesive has had time to harden, slip the dowels into the tubes and pin the whole lot down so that the wing halves line up at the same incidence. A very light trace of oil on the wires will prevent them from sticking should there be any excess of epoxy around.

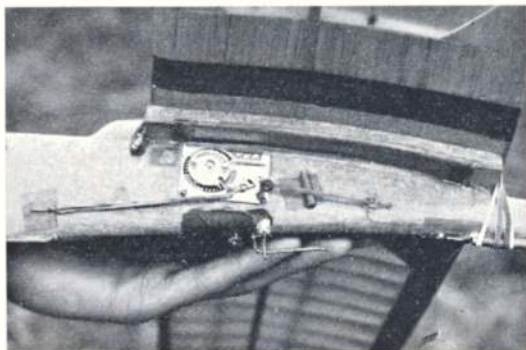
When all is dry, remove from the board, separate the halves and sheet the roots, top and bottom with hard 1/32 in. balsa.

Carve down the leading edge to the section shown, add the ply facing ribs, and give the whole wing a good sanding. The tip blocks, of course, must be of very light material.

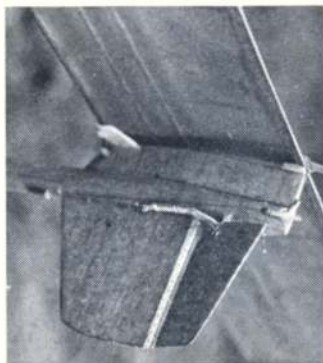
Give the wing a coat of dope prior to covering and do not sand any more. This helps the covering procedure, especially if one is using silk or heavy Modelspan, and using dope to stick it down.

On the original, the wing roots were covered in bandage before the actual covering was applied.

The tail trailing edge is done in the same way as the wing. Otherwise, assembly is pretty simple. The top spars are added when all is still pinned down, and the bottom ones on removal.



Close-up views of the 'Andy' man's timer trip and auto-rudder gear show use of elastic bands to release timer stop lever when towing pin is withdrawn. Note use of left rudder. Full details on plan for timer installation, and method of building-in wing wash-out.





Try and use light wood on the tail. Cover with Jap tissue and dope sparingly. It should weigh no more than .25 oz. - yes, one-quarter of an ounce *maximum*!

## Fuselage

The fuselage is started by cutting the  $\frac{1}{2}$  sheet pod core and making the hole for the nose weight and recesses for the longerons at the rear.

The  $\frac{1}{2}$  in. sheet sides are then cut and the  $\frac{1}{2}$  in. spruce longerons, suitably tapered and cemented to them. Now glue the top and bottom of the boom. Having cut out the  $\frac{1}{2}$  in. sheet pod facings, glue *one* on.

Now make up the fins and tack cement in position. Roughly rubber band the flying surfaces in position, and try and gauge how much lead is required in the nose to get the correct centre of gravity.

(On the plan a hole is shown for adding small amounts of ballast, so slightly underestimate and find exact position with lead shot, sealing off afterwards).

Add remaining pod side, remove fins, and carve and sand everything to the sections shown. Cover with lightweight tissue paper, then glue on the fins properly, also the wing mount. Pre-cementing here is advisable, of course.

Now all the fiddly 'details' can be added - dowels, tubes, etc. I prefer all my lines to be outside of the fuselage in case of breakage. Auto-rudder adjustment is simple. Stick 'bendable' pins in the back of the fuselage to find tow and glide positions then 'Araldite' firm.

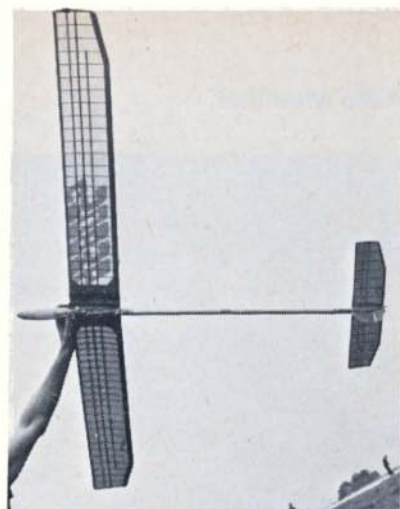
The timer on-off system is the essence of simplicity, yet I have never seen it used before. Drawings are included in a separate detail on the plan (also T.E. details). An extra pin comes off the towline ring, which goes through one strand of the elastic band (attached to the timer on-off switch - and holding it in the 'ON' position).

This is pulled backwards and the pin goes into the  $\frac{1}{8}$  in. inside diameter tube just behind the timer. This switches the arm to the 'off' position. The top of the pin protrudes from the  $\frac{1}{8}$  in. tube, and the auto-rudder line hooks on to this.

When the line falls away, the rudder line 'pings' back and the band 'pings' forward, starting the timer. All very simple! It should be added that the d/t descent is particularly safe and non-spinning, due to the fairly large fin and long moment arm.

Finally, should the model be underweight, make a hole in the wing mount at the C.G. and add lead there.

Straight dihedral, underfin, slender fuselage boom make Accipiter a distinctive shape, and one with good performance too!



## Flying

First check that the auto-rudder and dethermaliser systems are 100 per cent sound! Do not worry too much about the wing and tail incidence, but the centre of gravity must be exactly as per plan. There should be no intentional warps, other than the natural washout, induced by the construction, in the tips.

Start by test gliding with the rudder *straight* and note any natural turning tendency. Then connect the band up to the appropriate side of the auto rudder, and encourage this natural turn. I believe this makes a model more thermal prone and less likely to spiral in strong lift.

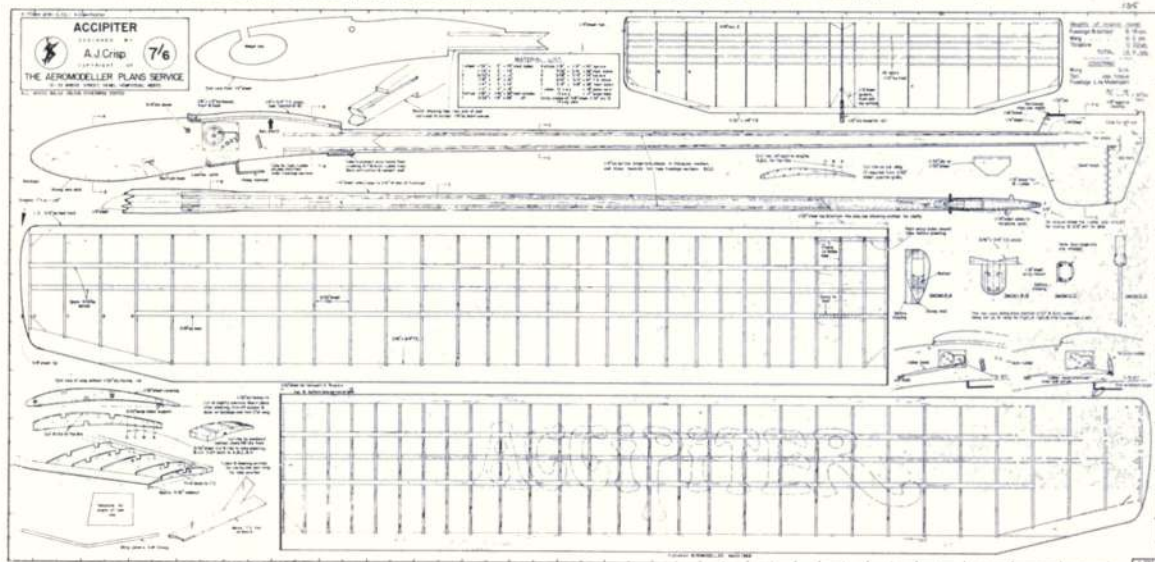
You will probably need to add some negative on the tail. When the glide is roughly sorted out, towing can be tried. The original is very docile and was 'solo-launched' from the start.

There is no adjustable device for the tow-hook. If anything is vastly wrong it is probably a misplaced C.G. Minute variations in position can be effected by U-shaped pieces of wire being pushed into the fuselage over the hook to act as a stop for the towing ring.

One nice thing about this design is its ability to hang well back on the line when hunting for lift. Contact with a thermal should shoot the model straight overhead.

If the model is sluggish in its stall recovery and has a disappointing duration in evening air, it is worthwhile adding a cord turbulator  $\frac{1}{2}$  in. back from the leading edge. The original did not need this, but it has helped some of the writer's other designs.

Full-size copies of this 1/8th reproduction are available through A.P.S. as Plan G997, price 8s. inc. post.







THERE MUST be many of us who have flown single channel models for some years and often looked yearningly at the immaculate looping and throttling back of the multi channel for smooth landings, nearly all it seems using proportional gear far out of the average single channel flyer's reach. Indeed, so much activity centres about proportional today that one almost forgets that it is still possible to fly multi *without* spending around £200 plus. Admittedly, proportional is obviously the best form of control, but personally, I could never afford it without a pools win, and this article is written with similit modellers in mind.

Having decided to progress from single channel, I began to look at the possibilities other than proportional. The choice obviously lay between Galloping Ghost or a standard 6 channel reed outfit, the price of the two systems being roughly the same. Personally, I was more favourably inclined towards the reed outfit; it is a natural progression for a 'button pusher' to proceed to selective left and right rudder by a blip switch, and some of the traits exhibited by the galloping ghost system were distinctly alarming. I have seen it flying quite docilely, but I have also seen some fantastic switchback flights abruptly terminating in violent dives. Anyway, my final choice

was an R.C.S. Inter 6 outfit, and I decided to spend the extra necessary for superhet. This is a complete ready to fly unit which plugs together without any trouble at all and enables one to get on with the flying part of the business.

In order to keep costs within reasonable bounds I decided on a medium sized type of aircraft and a .19 engine, choosing as my first model the *Goldberg Falcon 56* which has a reputation as an easy to fly trainer, with an O.S. .19 for power. Specified weight of this model was 3½ lb., but with the radio gear and DEAC coming to 17 oz. my model came out just on 4 lb.

First checks should be carried out carefully as with single channel. Run the engine and check that vibration is not affecting the reeds, and make sure of this at various throttle settings, not just at full speed. The best way to mount the receiver is upright with the reeds pointing downwards, but in the case of a model like the Falcon where the fuselage is not deep enough it can be mounted flat quite successfully; the main thing is to see that it is *protected* by foam packing but *not* packed tightly so that it picks up vibration from the fuselage sides. When checking the control surface movements, allow yourself

## ... and so to

plenty of rudder movement as you are used to handling this from single channel, but keep the elevator movement fairly small at first until you are used to this new control.

Also by having plenty of rudder movement a quick blip will produce the necessary response and you are then free to concentrate on the new elevator control which in the initial stages can be a handful when tied up with a lot of rudder handling.

Having satisfied myself that all was working correctly I then went to the flying field to try for some real action. Not having an airfield with runways available, but being fortunate in having about four acres of common land well cropped by sheep I decided still to try a take off for the first attempt. Unfortunately, 2½ in. wheels still did not ride the bumps on grass fast enough for a take off, and the net result was a long taxi and the nose leg folding back at the end of it. Reviewing the matter at home I decided to remove the noseleg, brought the main undercarriage forward and had a standard 'oldie' type model. After all, without being able to take off there was no advantage in having a nose wheel. The next attempt was a hand launch, and having very often to fly on my own I developed a technique for launching single handed. After starting the engine I throttle back, get the trans-





mitter in my left hand, pick up the model with my right hand, assume launching pose, give full throttle and launch, with left thumb in close proximity to elevator switch ready to give a blip of up if necessary. Actually, the model went away perfectly first time in a very shallow climb, and as it got well up wind all I needed was a slight touch of rudder to bring it round, holding it on just as long as you would on a single channel model and watching for the nose to drop. This was just like single channel flying, and again letting the model get to a really good height is the best thing before you start using the extra control. Having got this height you can give a touch of rudder, hold it for a bit longer until the nose drops and then stop this tendency with just a tiny blip of up elevator. This is where you can appreciate the elevator; turns can be held just that little bit longer than in single channel with a touch of elevator to keep the nose up. Also when turning into a fairly strong wind you can stop the model ballooning with a touch of down elevator.

Now I tried the throttle control and as very often happens in the early attempts the engine cut completely after some time of slow running. Still this was just like single channel landing now on the glide, but as the model

flare out for a flat touch down. Be careful not to give this bit of up about 10 feet above ground level as more than likely it will result in a ballooning up and stall on to the ground. This is a point that can only be perfected with practice, but it is probably better to be a little on the late side with the flare out than too early with it.

Now you can fly and land more or less at will, so the time comes for a little bit more ambitious flying. Probably the first most satisfying manoeuvre to attempt is the loop, and this should not be too difficult. Again height is the great safety factor; climb really high, head into the wind, blip on a little of down and as the model goes into a slight dive hold on full up elevator and she will go right round the loop. Don't forget as the model comes out flat at the bottom of the loop to unstick your thumb from up elevator where it is probably glued in sheer fascination at seeing your first loop performed. When you do release up elevator be prepared to give a touch of down as the model will probably attempt to zoom up again with the speed of coming out of the loop. Having done this one successfully, climb a bit higher and try consecutive loops; simply hold on the up elevator and keep her going around twice or three times.

With the model trimmed as it is, very much like a single channel model with a shallow climb built in, the easiest manoeuvre to do is naturally the loop. To try an outside loop with this trim will not be so easy and may not be possible, so climb *high* again and this time hold on full down. You will probably find that the model will go under to inverted and then half roll out into a side slip. This is where your height pays off again; don't panic, just watch the nose drop then put on up until she comes out level. To do outside loops it will probably be necessary then to re-trim the model, and this is where a non-fixed *Falcon* type of tailplane is useful, although some people regard fixed tailplanes as essential. Pack up the leading edge of the tailplane about 1/32 in. to start with, using ply packing which does not compress under band pressure like balsa. If you have a fixed tailplane model, of course, the elevator neutral position can be altered, but this gives a tab effect which varies quite greatly according to model speed. Now beware from the launch onwards, you will need constant taps of up to keep climbing, and the model will have to be 'flown' all the way instead of with the gentle climb trim. From here on it is a matter of practice makes perfect, and the more flying you do the more expert you will become.

These tips were not intended for any 'gen' multi men, but I think it far better for the multi beginner to start out with a docile plane which he can be sure of flying and on which he can put in hours of practice before going on to a neutrally stable, high powered model from which he might not even get one successful flight!

## MULTI WITH DONALD GEORGE

comes down if the glide is a bit steep just a few little blips of up elevator will flatten it out, but beware of holding it on more than a fraction or the model will sail upwards; I did this the first time but luckily the *Falcon* is a very forgiving model and it flattened out again on its own.

Having got past that first nerve-wracking flight one can now begin to appreciate the extra controls to the full. Get going again to a nice height, then with the engine throttle adjusted to a rather fast tick-over so that you can be certain it does not cut out, throttle back and make a dummy landing run in at about 50 feet altitude. You can get the feel of the landing with engine on by making a pass like this imagining a ground level about 50 feet up, then when satisfied that you are making a flat approach rev. up again and climb away, make a full wide circuit and try coming in again with engine throttled back so that the model makes its final approach to ground level parallel with you and a short distance away. From this angle it is easier to see if your approach is correct than if you are viewing the model from behind or in front. If the model sinks on an even keel and appears to be just right, leave well alone and it should settle on its own, but if the angle is a bit steep give just a *tiny* blip of up when it is *almost* at ground level, this will just give the correct

Heading and far left, the author's O.S.19 powered Goldberg *Falcon* 56 Trainer with its landing gear converted to a tail dragging two wheeler. Note canopy which is rarely fitted!

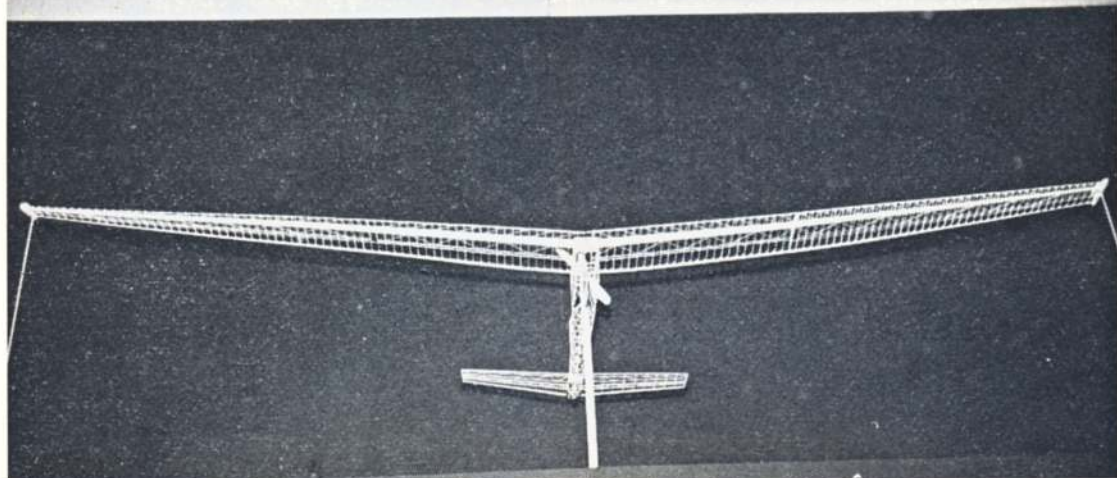
Left: At a German demonstration by the Graupner team, a glider goes up on the tow-line while in centre, two multi channel fliers with connected 'buddy-boxes' engage in training. In foreground is a Kwik-Fly Mk. III.

Same trade demonstration, this angle showing some of the Kwik-Fly team, Clou and Foka gliders and even a scale Dornier Do. 24 with three engines. Several British Manufacturers will also arrange displays of their equipment to organised clubs and are able to demonstrate with inter-linked 'Buddy-box' transmitters.





# Model Engineer Exhibition



THOUGH numerical strength of support for the aircraft section of the 1969 'Model Engineer' exhibition was low by comparison with earlier years, quality was generally high and varied. For the first time within our memory, the Challenge Cup for the best Aircraft exhibit went to a non-flying scale model. Harry Woodman's superb model of the Boulton Paul Overstrand to 1/48th scale in polystyrene card, further emphasises our need to provide more information on this new technique. An article is scheduled for next issue. But impressive though it was with fine detail, the points margin over W. A. Vandersteen's solid scale De Havilland 2, was narrow. Quite how Mr. Vandersteen managed to rig both this and his B.E.2a to 1/72nd scale with fine lines so tight was a mystery that drew many admirers. Other remarkable 'solids' came from A. M. L. Kennaugh whose batch of 'rare birds' defeated many spotters. They ranged from WW I to Hawker hybrids and Blackburn variations, each in a carefully selected rare colour scheme. Outside the contest, exhibits by I.P.M.S. members were equally impressive. Plastic card again showed its worth and models by Messrs. Hearne, Henderson and Holland brought forth many enquiries. So too did the display of flying models, being constructed by S.M.A.E. members. Aside from the Electric RTP, this was the most 'animated' section of the show. It also included a fine representation of each competition class. Members were surprised however, at the enterprise and standards of exhibits by D. J. Norman, who entered an enormous scale structure of his proposed Man-Powered project and S. African, A. M. Tyrer's, beautiful Wakefield class models. Flying scale was headed by J. C. Smith's S.E.5a, having most realistic detail, including cockpit furnishing, rivalled by A. J. P. Brigg's all-working Brigand and H. J. Townner's H.P. Jetstream with all interior open for inspection, via detachable roof!

Over thirty-six thousand visitors saw this, our second of the new series of Annual Exhibitions at Seymour Hall in West London, and already plans are being laid for improved model display in an even bigger and better show at the same Hall in January 1970!

Heading is D.J. Norman's (Nottingham) Man-Powered structure in miniature (?) with pusher prop behind high wing. Left upper is Harry Woodman's remarkable Overstrand, all from Polystyrene card and below it is A. Brigg's fine Brigand, winner of the Bristol Cup and as flown in C/L scale at the Nats. Bottom left, J. Smith's (Leigh on Sea) S.E.5a expertly finished and right, the D.H.2 by W. A. Vandersteen of Winchester, which rivalled the Overstrand on Championship pts.





### One-sided argument

Dear Sir,

Further to the dissertation regarding Arnie Nelson's 'Roadrunner' speed design. When the engine stops, the helical airflow will become straight; hence the angle of attack of the cowl will suddenly decrease (i.e. go smaller positive or larger negative). This change is independent of its initial angle; therefore, a cowl at negative incidence will not eliminate the characteristic nose down pitch at the end of the engine run.

The lift from the cowl will be an important factor in maintaining level (spanwise) flight position at all speeds, so the arguments against a slightly negative incidence cowl seem to outweigh the possible slight drag reduction.

A lower aspect ratio mainplane, although not reducing the angle of roll by aerodynamic means, would reduce the ideal wing offset above the centre of gravity. Finally, one could resort to some wing tip weight.

If the tail was brought onto the same side as the wing, it would probably result in an increase in interference drag. However, this could be minimised by mounting it high in the fuselage, and by lifting the tip, say, half-an-inch. The possible handling improvement, and safety of the tail might be worth the speed loss (if any).

Merton College, Oxford.

J. C. Dixon

### Woodford Rally

Dear Sir,

On behalf of the North Western Area, may I comment on the points raised about Woodford in 'Club News' December edition?

Firstly, our hosts give us as much space as possible. Crowds of people in the flight shed or test bed area is out of the question. Indeed, we consider ourselves very fortunate to have in the Aviation Industry such forward looking and generous people, willing to put up with our presence.

Secondly, had the free flight control point been moved to the far side of the field; then, in the prevailing windy conditions, flights of two minutes would have been terminated in the centre of Woodford village. On reflection, should we have cancelled the free flight events completely?

Thirdly, if organised aeromodelling is to survive then the income must match expenditure. If the income cannot be obtained from the modellers, then other sources of revenue have to be found. Hence the recent changes at the Nationals Woodford etc. The answer lies with all modellers.

Congleton, Cheshire

D. Allman

### Reminiscence

Dear Sir,

In December's *Aeromodeller* (Xmas number) you show a photo in 'Rally-Round-Up' (No. 3) of the vintage rally at Old Warden showing Lt. Cdr. Alwyn Greenhalgh holding a model of a rubber powered 'Kinglet'.

My first model aircraft was the 'Kinglet' which I made in the 1930's and I write to ask if you could tell me where I can get the plans for this model as I have been wishing to make it again for the last 30 years. I am now 50 and still make models. I would be very grateful if you could help me to find the plan for a 'Kinglet'.

Forest Hill, S.E.23.

C. E. Petit

Can anyone help?—Ed.

## LETTERS

### Mice for Men?

Dear Sir,

Concerning the article by Tom Jolley on mouse racing in the January issue of *Aeromodeller*. How can you allow alterations to some motors and not others? If you allow modifications they must be all the way with no holds barred as in Rat, or have no motor alterations at all.

Ray Landridge, a member of our mouse racing team at Marham, has successfully converted a Cox Golden Bee 049 to rear disc induction and during the 1968 season raced with some success at the R.A.F. Model Champs and the S.M.A.E. East Anglian area rally. Under the new rules this engine will be banned in both classes. Where is the incentive to develop a competitive spirit within mouse racing?

During the '68 season we saw a number of changes to the rules, we would like to know who is responsible for dreaming up these rules and how the decision to ban motors with modified induction came about.

We realise that originally mouse racing was intended to be a simple cheap form of competition flying, but so was rat racing once upon a time. For this reason, we suggest Class II be for standard .049 motors costing less than £4 with no modifications of any kind and Class I any .049 with any amount of alterations or tuning you may care to use. This would still give the chap who just wants to 'have a go' a chance to gain honours in Class II and the person who has the time and ability to tune motors the chance to go faster than the opposition.

We would like the mentioned recommendations to be considered and would like to hear from anyone in the 'mouse world' who may have any thoughts on the subject. R.A.F. Marham, *Jnr/Tech. Hammond* Norfolk

### Mice and Mods

Dear Sir,

I will attempt to explain the logic which has prevailed during the formulation of the present Mouse Racing rules.

The first mouse race, to my knowledge, using models specially built for the event was held at the 1967 R.A.F.M.A.A. Championships, this being the first opportunity for a live run after the original conception the night before the previous Woodford Rally. After reflecting upon the success of the event (one class only) it became rather obvious that this, whilst not being a 'Beginners' event had potential as a simple and cheap form of competitive flying. It also became obvious that because of the wide gap in performance of motors within the 'up to 0.9 c.c.' range two classes would be a necessity.

The original dividing line was stated in the 1968 Nationals rules printed in the *Model Flying* No. 36 dated March 1968, where specified motors were for class I, all others to be in class II. As with most things, you only get what you pay for and it was decided after the H.M. Government devaluation that a more simple dividing line (only rule change) would be £4 current retail price. Needless to say this can be easily adjusted when, or if further devaluation/revaluation takes place and will not be

affected should the available range of .049 motors be altered.

Modellers being what they are, grinding and/or filing and polishing of motors, to some degree, is not unknown, i.e. simple material removal. Any positive effects are usually doubtful. On this basis unrestricted turning/modifying/exchanging was to be allowed.

If a rule had been added that did not allow any modifications at all then I, for one, would not take kindly to the task of stripping, checking and reassembling of motors prior to the event; always assuming, of course, that acceptable surface finish and mensuration equipment was to hand along with a stock sample of every motor that could be used.

It has always been the intention that this event should not become a precision engineers' horsepower race, viz. speed, open rat and F/F power, thereby taking it away from the ordinary chap. The dedicated expert will usually win but if common sense prevails when making rules, the gap between the men and the boys will not be insurmountable. After all, the interchange of bits and pieces is allowed, so various combinations can be tried.

One of the main limiting factors on small motors would appear to be the induction system—certainly so when applied to the Cox series. After considering the obvious extreme modification in class II of all bits of a Babe Bee being replaced by bits from a Tee Dee with the exception of, say, the head and running as a 'modified' unit, the moral becomes very clear. A line must be drawn.

The most effective and simple restraint is to insist on the original basic induction system (only additional rule).

After all, it is more within reason for someone to save another three pounds to buy a Tee Dee for class I as an alternative to a Babe Bee for class II than it is to spend £30 upwards for a lathe and all the necessary extras. The fact that Roy Landridge has managed to come up with a working disc valve .049 is a great tribute to either his, or someone else's, skill applied to machine tools, the like of which 99.9 per cent of modellers, senior and junior, just do not have access to, let alone the ability to operate.

If you must carry out exotic reworking then why not join the big stuff brigade and satisfy your ego and personal contacts by entering and flying (and winning?) .40 size events?

Leave Mouse relatively simple and open to all.

I would venture to suggest that some of your Competitive Spirit be channelled towards helping those at a contest who are perhaps not quite as talented as yourself and for helping to organise some events during 1969. The present C/L sub-committee chairman will gratefully accept your offers of assistance.

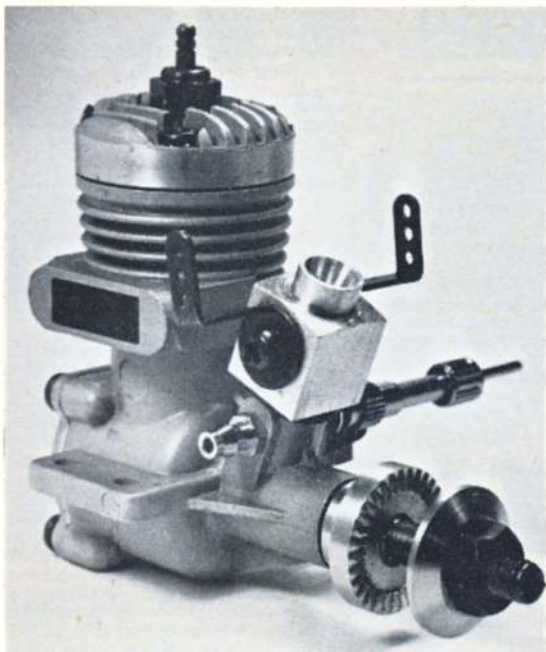
Incidentally, this is the first written comment to reach me on the mouse racing despite the fact that my address has appeared on the part of 'M.F.' for some time: are you all men or mice? (or just satisfied)?

As one of the original 'dreamers' which R.O.I.—along with Gordon Counsel, your new S.M.A.E. Technical Secretary—I would welcome sensible communication on the subject of mice and rats, particularly on the aspect of clean, considerate to piloting and safety in rat.

Bury, Lancs.

Tom Jolley





THE UEDA 09 engine, made by a firm of sub-contractors to the Japanese car industry, first appeared three years ago, in both standard and R/C versions, and aimed at the 'beginner' market. As the following report shows, our test unit – an R/C model – was no record breaker as regards power, but did have most of the attributes of a good beginner's engine. We found the Ueda very easy to handle and – of obvious importance to the average young newcomer to the hobby – it is moderately priced. Ueda engines are sold in the U.K. by the Modelradio Company, Newcastle-under-Lyme, Staffs., who are currently offering the standard 09 at only 3 gns.

The design and construction of the Ueda 09 R/C is, in general, quite orthodox. It is assembled around a single casting that embodies the crankcase, complete cylinder casing and the front bearing housing. The latter is rather thin walled, but is braced vertically and laterally by triangular webs and has a cast-in bronze bushing for the crankshaft. Large beam mounting lugs are provided, and it should also be relatively simple to adapt the engine to radial mounting should this be preferred.

The crankshaft is finely ground on its working surfaces and, on our test unit, was a good fit in the bearing. The shaft is counterbalanced by cutaways each side of the crankpin. A rectangular valve port is used in conjunction with a quite large bore (6 mm.) gas passage through the 8 mm. dia. main journal. The valve gives a 190 degrees induction period, starting at 35 degrees ABDC. The shaft has two flats on a 6 mm. dia. for the prop driver and terminates in a 5 mm. threaded length for prop attachment.

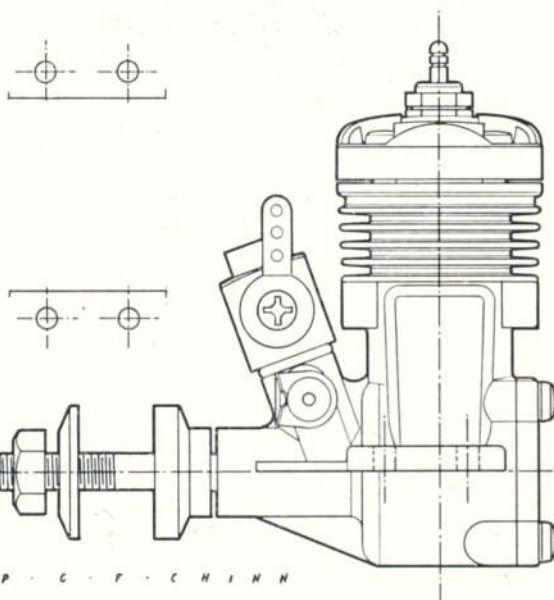
A plain, unhardened cylinder liner, with identical exhaust and transfer ports, is employed. It is flanged at the top where it drops into a recess in the cylinder casting, and is locked in position by the cylinder-head. The latter is secured to the casting with four screws and has no gasket. As on most Japanese engines, the head has a cast-in brass thread insert for the glowplug. No special efforts have been made with regard to combustion chamber shape. The head surface projecting into the cylinder bore is flat with a recess to accommodate the piston baffle.

# UEDA .09

## ENGINE TEST

by Peter Chinn

The cast-iron piston has a parallel lapped skirt, but has a .010 in. relief immediately below the crown so that the effective exhaust and transfer periods are, respectively, 130 and 100 degrees of crank angle. The piston has a flat crown, straight baffle, and continuous gudgeon-pin band. The gudgeon-pin is of unhardened steel, solid with domed ends. A simple diecast aluminium unbushed conrod is employed.



The R/C type carburettor consists simply of a machined aluminium body, containing a brass throttle barrel, with a standard spraybar beneath it. The spraybar, in fact, is used to retain the body in the intake boss. Throttle arms are fitted on both sides of the barrel, retained by screws and are, therefore, adjustable. No throttle stop is provided, however, and there is no means of adjusting idling mixture strength.

### Performance

The Ueda company does not offer a silencer for this, their smallest, model and our tests were, therefore, carried out without a silencer fitted. We understand, however, that Messrs. Modelradio can offer a suitable Ross silencer for this engine at moderate cost.

Starting qualities of our Ueda 09 were very good. In fact, the test engine was just about as easy as one could wish for. No instructions were received with this particu-



**SPECIFICATION**

**Type:** Single cylinder, air-cooled, two-stroke cycle, glow-plug ignition with throttle control. Crankshaft type rotary-valve induction.

**Bore:** 12.7 mm. (0.500 in.) **Stroke:** 12.4 mm. (0.4882 in.)

**Swept Volume:** 1.5708 c.c. (0.0958 cu. in.)

**Stroke/Bore Ratio:** 0.976:1

**Weight:** 108.6 grammes — 3.83 oz.

**General Structural Data**

Pressure diecast aluminium alloy *crankcase/cylinder/main bearing housing unit* with cast-in bronze main bearing bush. Hardened steel counter-balanced *crankshaft* having 8 mm. dia. main journal, 6 mm. bore gas passage and 4 mm. dia. hollow crankpin. Lapped cast-iron *piston* with baffle and fully-floating, 3.5 mm. dia. solid *gudgeon-pin*. Pressure diecast aluminium alloy *connecting-rod* with plain eyes. Non-hardened steel drop-in *cylinder-liner* located in cylinder casing by flange at top and locked by cylinder-head. Pressure diecast aluminium alloy *cylinder-head* with cast-

in brass insert for glowplug and secured to main casting with four screws. No head gasket. Pressure diecast aluminium alloy *crankcase backplate* secured with four screws. Machined aluminium alloy *prop driver*, keyed to two flats on crankshaft ahead of main journal. Machined aluminium alloy *carburettor body* retained in intake boss by plated brass *spraybar assembly*. Ground brass *throttle barrel* with actuating arms on both sides but no throttle-stop or provision for adjusting idling mixture. Beam mounting lugs.

**TEST CONDITIONS**

**Running time prior to test:** 30 minutes

**Fuel used:** 5 per cent pure nitromethane, 25 per cent Duckham's Racing Castor Oil, 70 per cent ICI methanol.

**Glowplug used:** Ueda bar type, medium reach (3/16 in.), platinum filament.

**Air temperature:** 50 deg.F

**Barometer:** 29.90 Hg

**Silencer:** Nil

lar unit and so we had to 'guesstimate' the needle setting. After removing the plug, to make sure that the applied voltage gave the right amount of 'glow', we sucked the fuel up with a couple of choked turns of the prop and primed the cylinder with a few drops of fuel through the exhaust. On connecting the plug lead, the engine then started on the very first flick of the prop.

This ease of starting was maintained throughout the tests. Warm restarts required no more than one preliminary choked turn, after which the engine almost invariably started first flick.

Running-in could probably have been ignored. The Ueda ran perfectly well from new with no sign of overheating or loss of power when leaned out to the optimum two-stroke setting. However, as a courtesy to new parts, we gave the engine a total of 30 minutes intermittent running at a slightly rich setting before making any attempt to take performance readings.

Fuel used was our usual R/C test blend, containing 5 per cent pure (equivalent to 7 per cent commercial blended grade) nitromethane and, on this, the Ueda ran quite steadily. Substantially larger proportions of nitromethane resulted in only a slight power increase. Using a mixture containing 25 per cent nitromethane, extra power released was only sufficient to raise r.p.m. on a Top-Flite 8 x 3½ by about 200 r.p.m. The user will probably feel that ordinary mild grade commercial glow fuels are adequate for this engine.

The maximum b.h.p. determined on test of approximately .085 is, of course, quite modest for an engine of over 1.5 c.c. However, this power is reached at a 'usable'

speed, i.e., just under 10,000 r.p.m., a figure that should be reached in flight on an 8 x 3½ Top-Flite. Static r.p.m. achieved on this size were 9,400 r.p.m., while an 8 x 4 Tornado was turned at 8,700 r.p.m. We would not recommend the use of props much larger than 8 x 4, if reasonably good performance is expected, as the b.h.p. curve is fairly 'peaky' and power drops off appreciably at lower speeds. Similarly, there is little point in using a very much smaller prop, as, on a 7 x 3, for example, in-flight r.p.m. are likely to approach 12,000 — well past the power peak and doing little except wear the engine more quickly.

When throttled down, the Ueda ran rich and since there is no airbleed or other compensating device, the minimum safe low speeds on the test unit were not much below 'half-revs' — i.e. around 4,200 on an 8 x 4 or 8 x 3½. Such speeds may not be low enough to allow engine-on landings, but the throttle control is good enough to provide a reasonable range of power for climbing and level flight cruising with a simple single-channel R/C model.

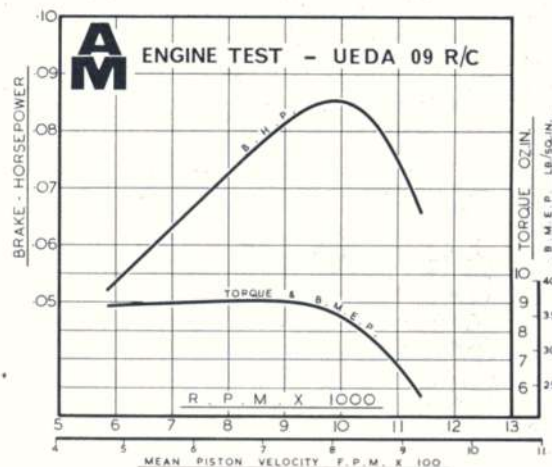
In all, we would rate the Ueda as a pleasant little motor. When compared with some more refined small R/C engines of similar size and/or weight, such as the O.S. Max-10 or Webra Sport-Glo, it lacks power and does not throttle well, but one must remember that (especially by comparison with the Webra) it is a good deal cheaper. Its strong points are its ease of starting and general docility.

**Power/Weight Ratio** (as tested):

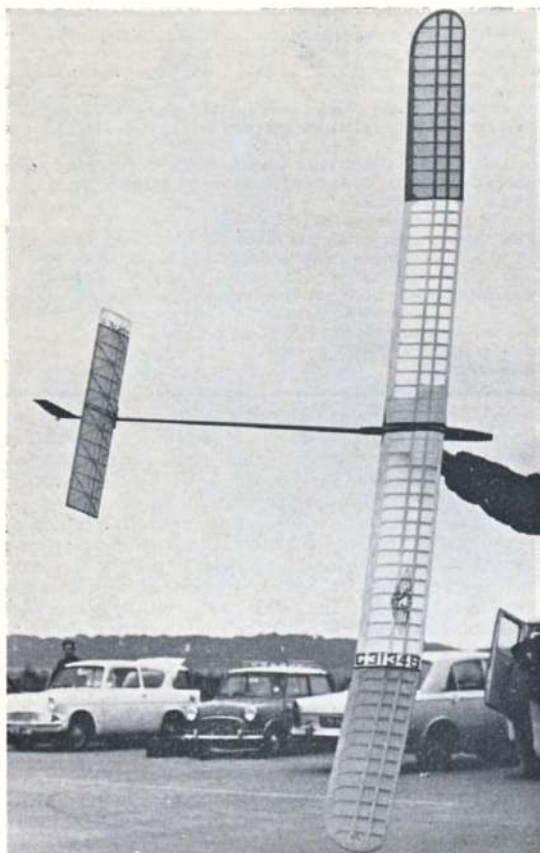
0.36 b.h.p./lb.

**Specific Output** (as tested):

54 b.h.p./litre.







**FLYING TECHNIQUE** is very important, obviously, the ability to locate a thermal and place the model into it is the overriding criterion and much has been written on this subject. Discounting tactical flying, two distinct techniques appear to have emerged. One system is to rely on sensing a thermal on the ground, towing straight up rapidly into it and off. The second method involves waiting for favourable conditions towing up and holding on the line until lift is contacted. The latter method is often employed when the first method has failed! Depending on conditions the second method is generally I feel, the most reliable. However, it does demand a model with good towing characteristics. The first method is obviously the one for a model which won't tow well and can be very successful but a model which enables you to be flexible in approach appears the best bet. Conditions really govern the tactics used.

A point of technique arises at times when high winds and airfield limitations lead to recovery problems. It is often preferable in some circumstances to aim for less than a max. to preserve a model for a further flight. For example, if a model is lost on the first of three flights it might well pay to settle for a shorter recoverable flight next rather than another lost model and no third flight. Another possibility might be to decide to try to over fly a bad recovery area if a clear region lies beyond, but this is obviously fraught with dangers. Such considerations should pay an even more prominent part in future in seven round events even with the use of three models. The flyer with the most maxes was not *always* the winner with the multiple-flight system.

# F.A.I. Glider development

by Elton Drew

## PART THREE Flying technique and contest tactics

The author has no very strong views one way or the other on so-called 'tactical' flying. In common with some other flyers he has found that it is no sure way to get a max. and has come unstuck trying it on many occasions. He still does it in some circumstances; but in general prefers to disregard tactical flying as much as possible and go his own way.

A lot of people (and a lot of these are not serious glider flyers, even non-glider flyers) are unnecessarily concerned about the tactical flying problem - if indeed, it is a problem. Some of the most blatant 'lift pinching' I have seen has been done by people who are amongst the most competent at finding their own lift, and are employing tactical flying as the best approach for that particular day. In other conditions they are only too happy to find their own lift - and in the process mark it for others.

With regard to fly-offs, deliberate tactical flying is, in most cases, not to one's advantage since the marker model should have an initial time, height and upwind distance advantage over the 'piggybackers'.

How many so-called 'tactical' fly-offs or other flights are in fact the result of several people deciding virtually, simultaneously and independently that conditions are right to go? The fact that one model is up and away first need not necessarily mean that the rest of the pack are deliberately pinching the thermal.

Most glider flyers seem reasonably content with the situation anyway and there appears to be a tendency of late away from out and out tactical flying so why worry about it?

One charge that might be justifiably made against tactical flyers is that it wastes a lot of the timekeepers time. This might also be said of the person who is waiting for his own lift. However, this waiting game is part and parcel of the thermal catching game and to some extent is unavoidable and within reason is acceptable. Nevertheless there do seem to be a few cases when it is completely unnecessary, but there appears to be little that can be done about it without introducing time limits or other measures which would prove unpopular to the majority of glider flyers.

To sum up, it is considered that contest glider flying involves three factors of roughly equal importance. (1) The model. (2) The towline and associated equipment and systems. (3) Flying Technique. One cannot be regularly successful if any one of these three facets is inadequate. By successful, one does not necessarily mean winning, though naturally it is pleasant to do so occasionally; but to be well satisfied with your own performance,

Heading picture is of 'Number 8', scale drawings with full dimensions of which were in last month's feature.



not kicking yourself for some silly mistake or failure and above all to have enjoyed your day of flying.

This is not intended to imply that one shouldn't bother about winning. Try as hard as possible to win. That's what contest flying is all about!

### The Trials

FOLLOWING my remarks written earlier on tactical flying the Team Trials came as something of an eye-opener. The weather throughout the first trials and for much of the second was conducive to tactical flying, and tactical flying in earnest was what we had. A type of 'thermal hysteria' developed. It appeared that many flyers regarded the stakes as being too high to risk doing anything other than going up into a well-marked thermal.

However, whilst joining in the mass launches proved successful for many, it was by no means infallible. Many of these mass launches had several models sinking rapidly whilst the more fortunate (or skilful?) 'Tacticians' climbed away overhead.

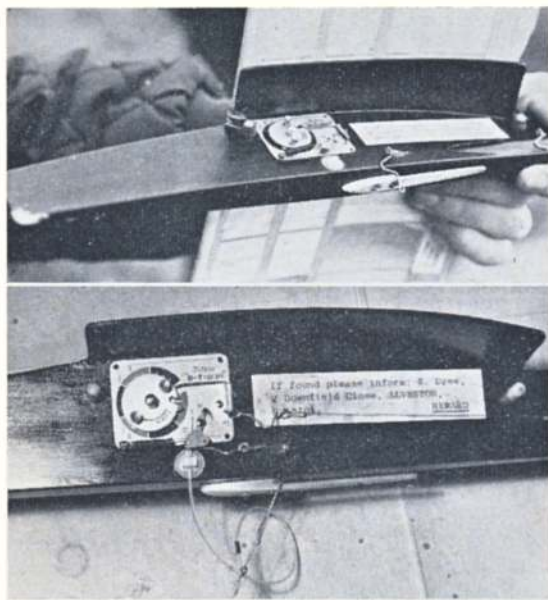
On one occasion I also witnessed, from a distance, a rather strange form of tactical flying. After a long wait and after most of the field had gone off in earlier mass launches somebody started to tow. Immediately about half-a-dozen others started to tow, all at high speed, and all released apparently without bothering to assess the prospects of the first model. All sank rapidly, obviously in 'down'. The reasons for this are not readily apparent - nerves perhaps; panic at the approaching end of the round? Or perhaps that the first model up was flown by an acknowledged thermal catcher?

The long trek to the middle of the airfield at the commencement of each round prompted some observers to comment that an airfield such as Hullavington, if fully used, would be perfectly adequate. This overlooks the fact that in calm weather not only the out and out tactical flyer needs to go a long way downwind. The flyer who wants to find his own lift must leave himself adequate space, hence he also tends to start from the same point. He also would wish to stand *behind* the tactical flyers so that any lift sensed on the ground can be utilised without being pinched by all and sundry. However, this was next to impossible at the Trials. Such was the extent of the 'jockeying' for favourable positions that at times one half expected some of the entrants to disappear off the airfield before launching!

Personally I am still firmly convinced that employment of tactical flying exclusively is not the best way to success and I suspect that many people who flew in the Trials would now have reason to agree. It is far easier to make a disastrous mistake and a non-maximum flight is likely to be very poor. There is also the added risk of collisions, both of models and at times the flyers, crossed lines, and entanglements to contend with in the launching scramble. Unfortunately the marker model is also at times subject to the risk of collision.

Having dropped 49 seconds in the last round of the 1st Trials I approached the 2nd hoping for rougher weather. The prospects of perfect weather and a fly-off, whilst no doubt very interesting to watch, did not appeal at all. However, the round which really opened up the field was the 3rd held on Saturday evening in very dead conditions. This made life very difficult for the out and out tactical flyer as lift was very sparse and weak. People watching models had no positive indication of lift.

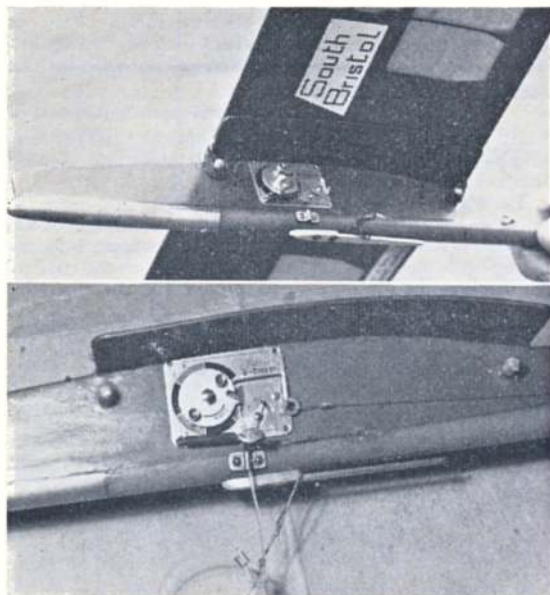
I was fortunate to find just enough lift for a max., dethermalising at no more than 20 ft. A few people were tempted up after the model had been up for some time, but by then the slight assistance appeared to be dying out and none maxed.



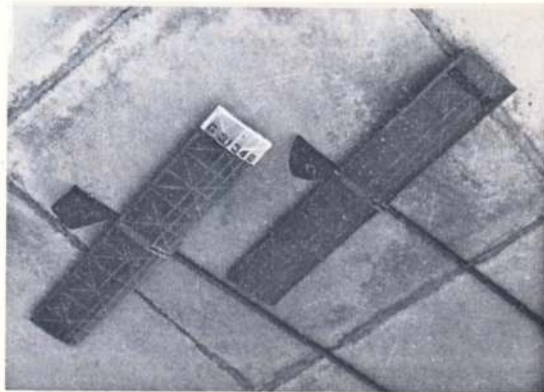
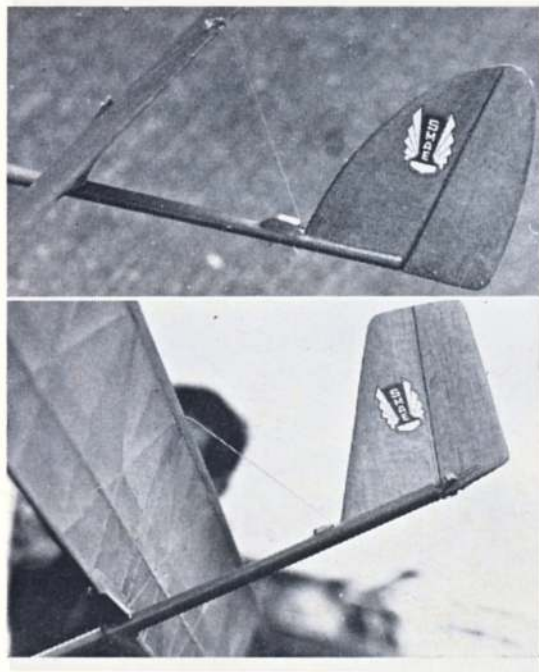
Coupled views of 'Number 8' above, and 'Number 7' below show the author's method of arranging auto-rudder release. Above, the modified Plastic Dress Button forms a guide for a thick nylon line which holds timer switch and auto-rudder line until released as top photo. Below, a similar method but using a brass tube bracket as a guide for the release line.

This round in my opinion also certainly emphasised the value of a model possessing a reasonable glide.

I regard this round as the critical one of the trials. Certainly no perfect scores remained at the end of it and people who had dropped time at the first trials were back in business. The succeeding rounds on the Sunday with the wind steadily increasing also further helped to shuffle the positioning rapidly, but it was from the 3rd







Tail comparisons, 'Number 7' with curved fin and rudder, 'Number 8' with straight, swept lines. Author also has distinguishing lighter tissue tip on surfaces of 'Number 8' to avoid confusion. At left, the tails are released by the timers to dethermaliser angles with restraining nylon line to secure angle. Each has glass fibre fishing rod rear fuselage boom.

round that the real battle developed with the top positions in at state of constant flux right to the last round.

For my own part I deliberately avoided tactical flying as much as possible. I used No. 7 'Redaytoo' throughout both trials, although the reserve No. 8 did prove useful for photographic purposes following the loss of the tailplane mount of No. 7 suffered on the last round flight. ('Redaytoo' springs to mind as an appropriate name!)

This was possibly the reason for a rather nerve wracking final flight. Needing 2:37 to secure a team place it seemed advisable to consider 'going tactical' for this vital last flight. This I did, but not without some misgivings. However, the model climbed rapidly away in the close company of several others in really strong lift,

obviously well set for a maximum. Then, after about 30 seconds to my horror its turn suddenly began to tighten and then developed into a spiral downwards. With disaster looming, it gradually recovered to climb again. All now appeared well until at about the two-minute mark the model started to spiral down again. This did my nerves no good at all. Happily it recovered yet again, to D/T at a reasonable altitude, to my great relief and joy. My luck, an item which is always so very necessary, had held.

On retrieving the model the tailplane rest was found to be completely detached and it is surmised that a rocking tailplane was responsible for the erratic pattern.

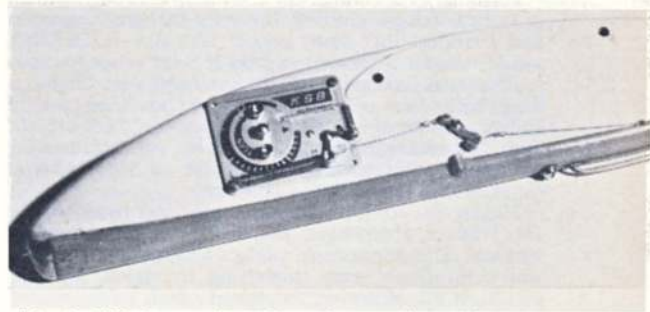
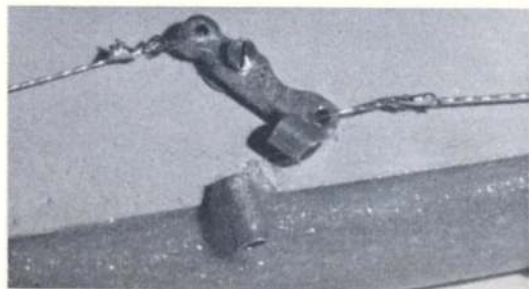
I count myself very fortunate at the Trials to have the assistance and encouragement of my Bristol colleagues. We had been flying in varying order through early rounds but when it became apparent that I was in with a chance they unselfishly gave me first opportunity to fly in each round. This was obviously a great asset to me but it virtually ruled out any remaining chances for them and I am greatly indebted.

## Auto Rudder Release

Another approach by Ron Pollard

FOR YEARS I have looked for a simple and 100 per cent reliable method of releasing the auto-rudder and starting the dethermaliser timer on a glider.

The biggest problem is that if one uses a method which does not have a varying tension, *i.e.* the pin method, one is virtually faced with a pin that has two opposite forces acting on it, pulling from the timer, and from the rudder. This makes the pin difficult to remove and therefore the



glider is difficult to release from the tow-line. This must be a problem common to many glider fliers.

The system I have developed is very simple and works every time and only has *one* force acting on the pin for both actions. It is very simple and should be within the scope of most modellers. The photographs are self-explanatory and show the bellcrank action. The tube for the pin is Araldited to the fuselage so that it lines up with the bellcrank when the timer is 'off' and the rudder neutral. See also 'Accipiter' for Andy Crisp's method.





Are you between 10 and 16 years of age? Then don't delay, join today

Dear John,

I am currently building a *Keil Kraft Snipe* and have found that on fitting my *D.C. Merlin* engine to the completed fuselage the centre line of the engine is displaced to starboard from the centre line of the fuselage by approximately 3/16 in. I have assembled the engine bearers exactly as per plan, which also indicates that the *D.C. Merlin* is a suitable engine for this model.

Will this offset have any adverse effect on the performance of the completed model and if so what steps can I take to correct this?

Bridge of Weir

M. P. Whitehouse

Displacement of the thrust line is never critical unless raised or lowered by large increments in which case a looping tendency appears. It is the inclination of the thrust line which is more important. Up thrust or down thrust or even side thrust in either direction should be carefully established. It is usual for a model like the *Sports Flying Snipe* to use a few degrees of down thrust to counteract any tendency to stalling and right thrust to compensate torque reaction from the propeller.

Dear John,

I have just built a *Frog Ventura* and it has a 42 in. span. I would like to know how an Auto Rudder works before I fly it. I have also built a *Keil Kraft Mini Super* which is radio controlled but every time I wind the elastic up, the rudder just goes berserk, could you tell me why this happens please?

Harold Hill, Romford

Steven Rogers

See page 71 of our 128-page fully illustrated *Plans Handbook No. 1* (2s. 6d. post free) for data on many variations of Auto Rudder operation. The purpose of the Auto Rudder is to permit a straight tow, then for the rudder to flick to a turn setting when released. Your escapement is obviously not 'pulling in' properly. This is due to a too tight a spring, b) insufficient battery voltage c) incorrect armature alignment, d) too powerful a rubber motor. See our publication 'Single Channel Radio Control' 6s. plus 1s. post and packing for more info and many hints and tips on this subject.

Dear John

When I run my A.M. 15 I put lubricating oil in the exhaust ports after running as it tells you in the instructions. After I put it in and flick the prop over a few times, it becomes stiff and very hard to turn. Then, after a few hours it returns to normal again. I do this on my A.M.25 and it has no effect; could please tell me if there is anything wrong. Do Marown Engines have a servicing scheme and how much does it cost?

Could you please tell me if the A.M. Silencer reduces power a lot?

Slough, Bucks.

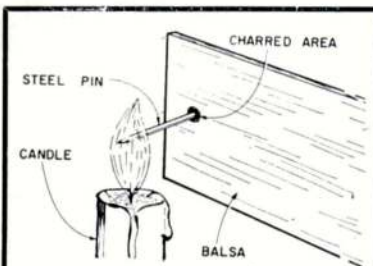
Brian Knott

Injection of machine oil helps to keep your engine in good condition, but only a

small amount is needed. You have most probably filled the combustion chamber and, fluids being incompressible, a hydraulic 'lock' has occurred. If you unscrew the compression, or allow excess oil to drain out, the symptom ought to disappear.

Marown most certainly service their products. The address is simply Marown Engineering Ltd., Glen Vine, Isle of Man.

The A.M. silencer has been specially designed to avoid great loss of power and is to be recommended.



Tip from a Wingman

Dear John,

As it is difficult to make small holes in balsa wood without it cracking or on a framework without it breaking up I am sending you this tip to make neat small holes without any breakage.

First of all push a pin through the balsa where the hole is wanted. Then heat the area of the pin near the head, after a while the wood round the pin will begin to smoulder and a charred circle will appear which gradually increases in size, this denotes the size of the hole. Take the pin out when the hole is big enough and scrape away the burnt wood.

Bramhope, Nr. Leeds.

John Sinister

Dear John,

I am interested in the 'Navy Carrier' event and I would like a copy of the Rules. Also could you tell me how to enter in the Nationals and other rallies that appear in the 'Contest Calendar' of *Aeromodeller*.

Scorton, Richmond, Yorks. J. M. Brooke

We are sending you a copy of the *Carrier Deck Event* rules based on those used in the U.S.A. To join the S.M.A.E. send for details and application form to the Secretary, S. Lawton, 3 Blakelow Road, Blakelow, Macclesfield, Cheshire. The Society organises National contests and issues entry forms to members with its newsletter. Entry to other Rallies is either on the field or by pre-entry where required to the address quoted against the event in our Contest Calendar.

Dear John,

I have been flying control-line for about one year with a *Keil Kraft Phantom Mite* with reasonable success but I was disappointed by its lack of 'stuntability'. Recently I built a *K K Radian* but after the first flight it was destroyed by fire while starting. Could you tell me how this happens and how to prevent it?

I am going to build from the A.P.S. *Quartet* plans for small models up to .5 c.c. Also, could you tell me of any method of launching a C/L model solo?

Portsmouth.

M. Foulkes

You'll need a built-up wing of symmetrical section for stunt work after the 'Phantom Mite' and we suggest you make 'Darter' from the *Quartet* plan. Glowplug engine backfire can set light to exhaust and waste fuel on the model - always have a heavy rag ready! Self-release gear for C/L is simple. Use 3 skewers, two driven into the ground a few inches apart and the third at the end of a release line to pass through the tops. Make a loop in the tailskid to engage the third skewer.

Dear John Bridge,

I am between 10 & 16 years of age and would like to become a member of the "Golden Wings Club". With this application I enclose postal order (International Money Order) for 2/6d. to cover cost of the enamel club badge, two coloured transfers and membership card.

NAME IN FULL .....

ADDRESS .....

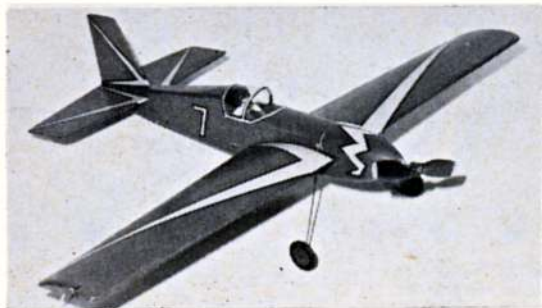
YEAR OF BIRTH ..... SCHOOL .....

NAME OF ANY OTHER CLUB OR CLUBS TO WHICH I BELONG (if any) .....

SEND TO:-GOLDEN WINGS CLUB, AEROMODELLER, 13-35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS

3/69 2d in the 1/- Rebate plan purchase coupon for Golden Wing Members G.W. No. ....





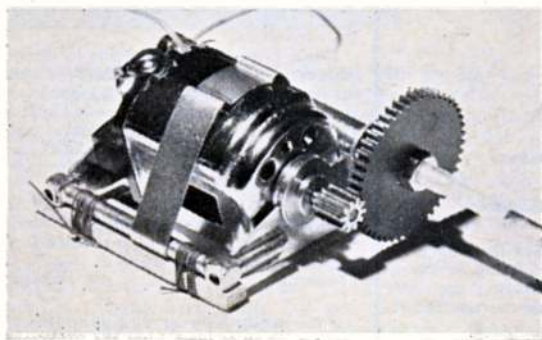
Right, direct drive unit could not be more simple. The RikoWhip has ball-race supported shaft, well worth its 31s., is as useful as small glowplug engine. Left top, Vic Smeed's red racer, fastest of our stable, 15 in. span, 2½ oz. Next is Dave Rothwell's Frogflite Ryan PT 20, utterly reliable, quickest to make and usefully slender for the small prop.



WHILST there is nothing particularly new in arranging a model aircraft to fly around a central pylon using wires to conduct electrical power, one could never claim that the task was simple and the results always successful. Articles on the subject seem to have recurred at almost regular three-year intervals in this magazine, dating back to those with the specially made motors as flown at the Dorland Hall exhibitions twenty years ago.

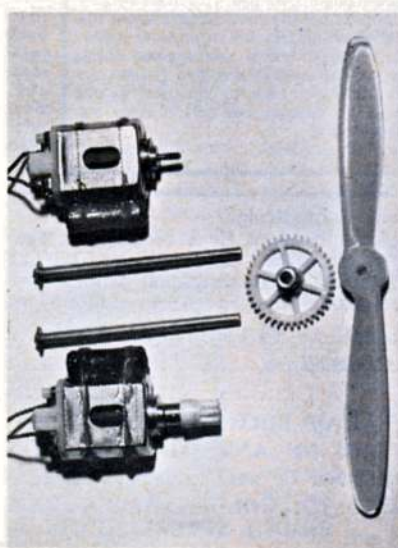
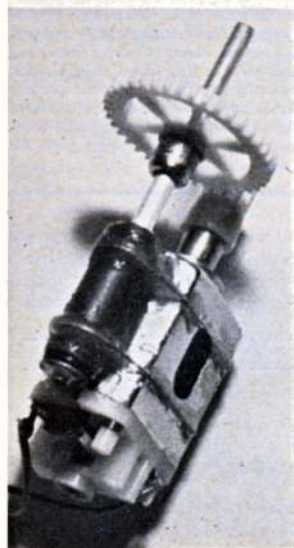
What was to be seen in action at the 1968 'Model Engineer' exhibition at Seymour Hall, was proof that one could take a

## 'round the p

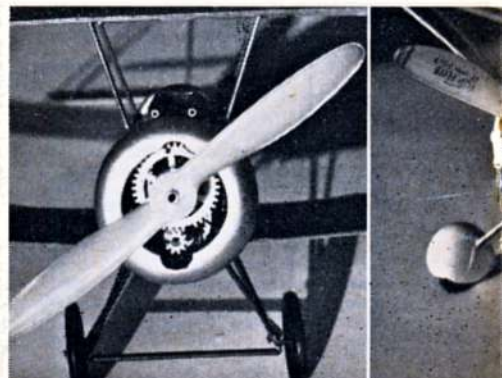


perfectly standard Frogflite Fury, Chipmunk, Pup, or P.T.20, fit a Riko Whip 16D model racing car motor, attach a Cox .010 engine propeller and fly indefinitely on two .030 in. shellaced copper wires up to fifteen feet long. Taking the art one stage further produced a couple of geared 'specials' with 4:1 reduction gearing to a shaft carrying a 5½ in. x 3 in. or even larger prop which proved so efficient that we are convinced they would fly on longer lines.

Power source is household mains, converted by transformer down to 16 volts as for model car tracks. A car controller can be used for the speed variation, but for our long stints at the exhibition, we obtained two 'Scalespeed' controllers from Scalespeed at 7 Pier Street, Lee on Solent, and they have worked magnificently.



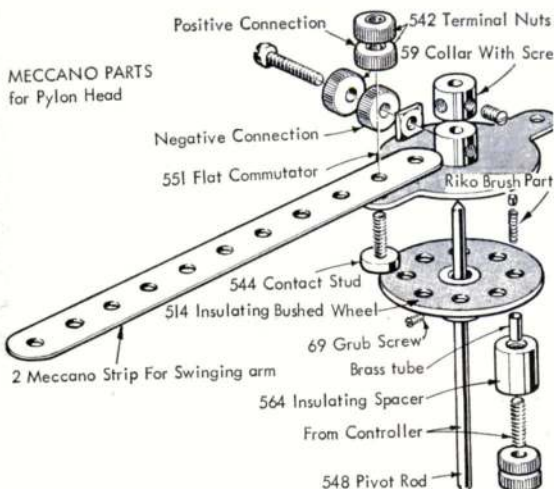
Gears. Upper left, first experiment, a car chassis with RikoStreak and 4:1 gears for a Sterling Corsair, unsuccessful. In corner is the RikoWhip with two ball-races in a tube, epoxy glued to top. This carries lay-shaft with Ripmax 4:1 gears - very successful, parts in next photo with 5½ in. x 4 in. prop for comparison. Below left, installation in Doug Michard's KK Camel and right, in Ron Moulton's Monogram Mr. Mulligan, which flew over 20 hours at 'M. E.' Exhibition.





**FULL STORY OF ELECTRIC R.T.P. DEVELOPMENT WITH 'HOW-TO-DO' INSTRUCTIONS IS NOW AVAILABLE IN A 16-PAGE BOOKLET. PRICE 3/6d. INCLUDING POST FROM AERO-MODELLER PLANS SERVICE, 13/35 BRIDGE STREET, HEMEL HEMPSTEAD, HERTS.**

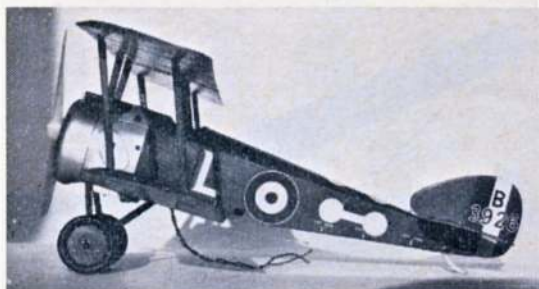
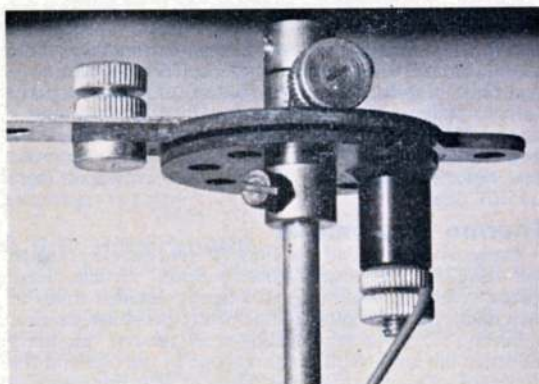
Meccano Strip is used for attachment of a thread 'safety line' and securing the two wires. Part 551 has printed circuit underneath.



# ole' aircraft

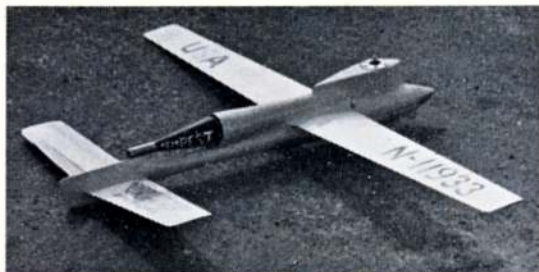
Two controllers were used, as the pylon head was arranged for two-at-a-time flying. All parts for the pick-up are standard from Meccano, and the only extraordinary part in the whole operation is the pylon base which we had made by a local engineer from mild steel, and the shaft for the twin head, which had to be milled to accept one insulated wire up to the top unit.

Nothing to it really is there? Of course, such 'discoveries' do not come lightly. Our first venture with a Sterling Corsair and geared RikoStreak was almost disastrous. So too were the early attempts with props that were too big, or conversely, cowlings too large for small props. We were diverted by weight worries, tried all manner of kit models, had practically our entire male staff (seven magazines!) so enthused, that the operation moved into a local school, where the hall was placed at our disposal for tests. *Model Boats*, *Model Cars* and *Meccano* mags. should share the billing for the final development, and thanks go to R. Kohnstam (Riko) A. A. Hales (Frogflite), E. Keil, Model Aircraft (Veron), Meccano and Ripmax who must have wondered what the heck we were doing with all their bits and pieces, we can now throw open the way to simple and successful electric R.T.P. flying in the home or club-room.



Pylon parts at head are easy to obtain from Meccano numbered components, only variation being the carbon brush and pressure spring for wiper contact which are standard racing car accessories. Photo top right shows our twin head for racing or formation flying and close-up emphasises the simplicity. Next is the Frogflite Hawker Fury, two of which were flown in the B.B.C. 'Blue Peter' programme by Peter Purves and John Noakes and bottom, Doug McHard's KeilKraft Sopwith Camel with geared motor driving 6 in. prop - the only way to fly with a large cowling. 3 in. prop on direct drive demands a slender nose to avoid reaction drag.





# Control-line News

by John Franklin

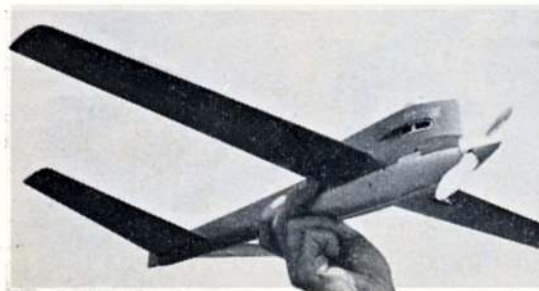


AT THE 5th 'Coppa D'oro' F.A.I. team race contest held in Italy, September 15th, 13 competitors from three nations battled it out. Austrians Kropf/Nitsche won with heat times of 4:40, 4:51 and a final of 9:21. Second place went to Italians Bernabe/Ferrari with 4:43, 4:46 and a final of 10:03. Fischer/Hohenberg of Austria placed third with the fastest heat time of 4:34 but did not record a final time. The Italians were using the new Super Tigre G15RV diesel.

## Thermo-Hygrometer

Those who have read the 1969/70 *Aeromodeller Annual* will have seen George Aldrich's Speed Article. Here special reference was made to keeping detailed notes of each flight, i.e. glow plug, temperature, propeller, relative humidity, etc. The temperature and relative humidity influence the amount of nitromethane in the fuel and the choice of glow plug, i.e. thin element is a hot plug for cold weather and a thick element is a cold plug for hot weather. Fireball plugs from H. J. Nicholls come with three element thickness for cold, medium and hot heat ranges and they vary from 1.2 - 3 volts. To sort all this out and tabulate the results, one needs a reliable instrument for measuring the temperature and relative humidity. Turbojet Humidity and Temperature Control and Instrumentation Ltd. of 42 Russell Hill, Purley, Croydon, Surrey, have just announced the ideal instrument.

Turbojet in conjunction with the Haenni Group of Switzerland famous for their world-renowned precision instruments have developed a revolutionary compact precision instrument for the measure of both the relative humidity and the temperature of the ambient air. This Thermo-Hygrometer instrument combines numerous exclusive features, is of modern, clear-cut design with a



Roger Theobald's T.W.A. .15 'Pink Lady' as flown at the 1968 World C/L Championships. Note the glass fibre cone covering the diverging part of the tuned length exhaust pipe. For some reason unknown to us this model seems to be called 'Tempest'. Note also, the slight tailplane dihedral.

chromium-plated sheet brass case with rear flange for projection mounting. The dial is in polished aluminium with printed black numerals. The instrument is supplied with the following scales: 5 per cent to 100 per cent relative Humidity and either -20°F to +120°F or 10°C to +50°C. The high accuracy of  $\pm 1$  per cent r.H. and  $\pm 1^\circ\text{F}$  as been achieved by scientifically balancing the nickel movement with a doubled hair-strand combined with a certain number of ventilation orifices in the casing. The thermometer is constructed on the bi-metal principle for utmost accuracy and reliability. The size of the instrument is 4 in. diameter for the actual dial and 5 in. diameter for the complete instrument. A special key together with the instructions is provided with each enabling the user to recalibrate the instrument at home. The hair element is specially treated and scientifically calibrated to give even expansion combined with long life and the exclusive possibility of easy and simple recalibration.

We now have one of these instruments and will be using it extensively in the future for all forms of engine/fuel combinations. Now that there are so many variables with tuned length exhaust pipes around, any instrument that helps to sort some of them out—is very valuable indeed.

## New Team Race Propeller

Jurgen Bartels has another new glass fibre team race propeller on the market. This is the 7 in. dia. x  $7\frac{1}{2}$  in. pitch 'Drazek Special' and we found it very *special* indeed. Based on the well-known M.V.V.S. shape our test sample was tried out on one of the old type Super Tigre 15D R.V. engines. The model span was 36 in., its weight 21 ounces and of fairly clean lines and finish. With a 7 x  $7\frac{1}{2}$  Rev Up Series 200 propeller the best performance was 92 m.p.h. for 35 laps. The 'Drazek Special' was then flown and the performance went up to 98 m.p.h. for 35 laps. It was also found that the extra weight gave a slight flywheel effect and helped the starting. To compare this against another Bartels propeller; the Tornado type in glass fibre was timed; this gave 94 m.p.h. for only 32 laps. A comparison was then tried with a wooden M.V.V.S. propeller but the S.T. threw the blades off! All in all, we would rate this as the best team race propeller yet in terms of all-round performance, tough and much better finished than previous Bartels propellers.

## Tuned Length Exhaust Pipe

Electronic Developments (E.D.) have now released their 'Power Pipe Size 3'. This tuned length exhaust pipe is intended for use with the .40 cu. in. (6.5 cc.) to .60 cu. in. (10 cc.) size range of engines. The comprehensive instructions and operating guide sheets supplied with each unit say that most people will use them for Rat Race, Combat and Radio Control. Here is where we have a loud groan. The manifold is made for R/C only as we can think of very few Rat Race or Speed men who could use a manifold that puts the pipes centre line some  $2\frac{1}{2}$  in. off the engine exhaust port edge. This *has* to be this way, as it is impossible to make a truly universal manifold. One has to decide the optimum length (tables of r.p.m. to length are given), and it's necessary to cut both the front of the pipe and rear of the manifold away. For those who want a custom manifold E.D. can supply manifolds machined to fit a particular motor make and type. Write to E.D. at 64 Brighton Road, Surbiton,

This model is the Japanese F.A.I. speed record holder built by K. Mihara of Osaka, it has a specially converted O.S. engine. Did 193 k.p.h. on 75/25 fuel.



How about this for complete test bench – portable too! Built by L. Cernold of Sweden it has a starting battery, tuned pipe support, fuel tank, etc., seen here at the World Champs.

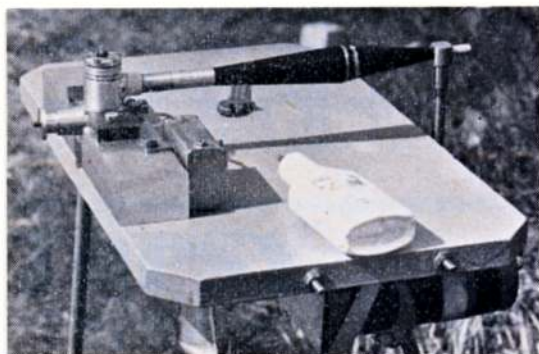
Surrey for a quotation giving full details of engine make, type and designation. The exhaust pipe weighs 2.5 ounces and the manifold just over an ounce. This pipe has not been tested by ourselves yet, but as the instructions point out, a PP3 (Power Pipe 3) on a Merco .61 R/C read 11,700 r.p.m. on the ground and 13,700 r.p.m. in the air; this compares with 10,400 on the ground and 11,300 in the air with the same engine but on a different make of commercial *silencer* as opposed to tuned length exhaust pipe. Also pointed out is the fact that great liberties can be taken with .15 size engines with regard to fuels, timing etc., but .60 sizes have a tendency to blow up, melt pistons, etc., so be careful! E.D. claim 40 per cent extra power under ideal conditions with their pipes. Power Pipe No. 3 costs £3 15s. 0d. + 16/10 P.T. and Manifold for No. 3, £1 3s. 6d. + 5s. 3d. P.T. (intended for R/C use).

### Nitromethane/Methanol Mix

Another source of Nitromethane mixed with Methanol has been brought to our attention in South East London. Jack Emmott Ltd., of 5 Dupree Road, Charlton, London S.E.7 can supply the Nitro/Methanol mix in half-pint or pint tins, but the minimum order for carriage purposes is 24 tins of either size. Five gallon drums for general club use show a considerable saving over the smaller tins for the same quantity. Price per gallon is as follows – 55 per cent Nitro to 45 per cent Methanol, 54s. 6d. with the Nitro content going down in 5 per cent steps so that 5 per cent Nitro with 95 per cent Methanol costs 13s 6d. Note. These are not complete fuels for model engines, Castor Oil, Castrol 'M', or Ucon LB 625 should be added for lubrication purposes. Carriage and/or delivery can be effected by British Road Services or Emmott's own express vehicles (Mainland only) applicable only in five gallon drum lots. Charges vary. London postal region 10s. 6d. Scotland 22s. 6d. Other district prices on application. In order to allow time to prepare mixes other than 5 per cent – 10 per cent Nitro and straight Methanol, which are ex-stock, phone 01-858-7906 to arrange time/date.

### Custom Carrier Bellcranks

Carrier model fans will be relieved to hear that 'Custom Heavy Duty J. Roberts Bellcranks' are now available. As some carrier models now regularly exceed 100 m.p.h. top speed, it is a bit disconcerting with the old light alloy J. Roberts Bellcranks, we saw several buckle on pull tests during last season! Bill M. Johnson – Throttle Specialist of 6328, Jackson, Berkely, Missouri 63134, U.S.A. sells a whole range of goodies, with carrier parts as his speciality. Three types of unit are available, with unchanged basic design, but the materials used and construction are improved in many essential ways. They have heavy gauge steel parts assembled with countersunk rivets that should never come apart. As a result of Bill's work the basic units from Sturdi-Built are better than the old ones and they are available in both inverted and upright configurations with either the long (3½ in.) or short (2½ in.) main bellcrank at no additional cost.

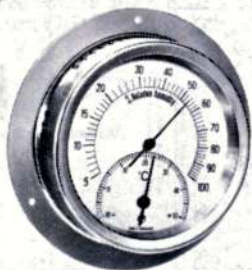


The three bellcranks available have the following specifications. No. 1 Custom Assembled New Heavy Duty J. Roberts Bellcrank (all parts by Sturdi-Built). Certain parts reworked for better fit and smooth operation, price 4 dollars. No. 2 Custom Assembled New Heavy Duty J. Roberts Bellcrank, same unit as No. 1, but with same main bellcrank as the No. 3, unit price 5.5 dollars. No. 3 Custom Delux (Super Bellcrank) Extra Heavy J. Roberts Bellcrank. This unit has withstood 200 lbs. pull test and is recommended for the larger .60 contest models. Price 8 dollars. Bill Johnson also does Navy Carrier Throttles and Fuel Controls that can be tailored to individual engines. He also deals with Centrak retractable undercarriages – operated by centrifugal force in flight. Write for information sheets to the address given above.

### A.B.C. Experiment

Now that the Super Tigre range of A.B.C. engines are available, everyone is waiting to see the manifolds and tuned length exhaust pipes. We have heard that they will be out soon – at the same time as a modified A.B.C. piston/liner set. The standard A.B.C. has conventional timing, so this special 'piped' piston/liner has an earlier opening exhaust timed for pipe operation. We have also heard from the U.S.A. that the brass liners seem to expand a little more than the alloy piston – this being more marked in the .15 size engine. This dictates a tighter than normal fit up and it seems a pretty good idea – should prevent lots of seizure problems. Harry Roe of Detroit puts 4-6 pints of 50 per cent Nitro fuel through a new engine and then goes on to 72 per cent Nitro – and if it will hold a leaned-out setting, he flies it!

At left: Two home-built engines, seen in Gordon Farnworth's hands are the Russian 'Start' by Eugene Natalenko and the British design by Flt./Lt. Ralph Gould (at left). Each should have excellent contest potential. Right: The Turbojet Thermo-Hygrometer, a very useful instrument for all glow engine operators. Below: The latest from Jurgen Bartels, his 7 x 7½ in. 'Drazek Special' team race propeller, the best in glass fibre yet.





TOPSY 375 cc. DIESEL

DESIGNED BY

G. Hugh

CONTESTANT OF

7/6

THE AEROMODELLER PLANS SERVICE

13-15, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS.

6 HOLES 1/4" DIA. EQUALLY SPACED  
TO BREAK INTO SERRATED SURFACE.

VIEW OF CYLINDER BASE  
WITH TIE A & B  
COMPLETED THROUGHT

VIEW OF CYLINDER BASE  
AFTER COMPLETING

SECTION 1-1

SECTION 2-2

SECTION 3-3

SECTION 4-4

SECTION 5-5

SECTION 6-6

SECTION 7-7

SECTION 8-8

SECTION 9-9

SECTION 10-10

SECTION 11-11

SECTION 12-12

SECTION 13-13

SECTION 14-14

SECTION 15-15

SECTION 16-16

SECTION 17-17

SECTION 18-18

SECTION 19-19

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SECTION 26-26

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SECTION 29-29

SECTION 30-30

SECTION 31-31

SECTION 32-32

SECTION 33-33

SECTION 34-34

SECTION 35-35

SECTION 36-36

SECTION 37-37

SECTION 38-38

Generous prizes will be awarded to the winners in Classes for Power and Workmanship in our 'Topsy' contest. Why not start your project now?

Full size copies of the Machine Drawing are available from Aeromodel Plans Service, 13/35 Bridge Street, Hemel Hempstead, Herts. Price 8s. including post, quote Plan E992.





### OP 1 Crankcase

Turn to dimensions in stage op. drawing Fig. 1. Extension at front is for holding purposes and is later removed. On Fix No. 1 mounted in tool post, hold at right angle to c/lathe bed. (Refer to stage op. drawing Fig. 2). Hold clock in chuck and rotate it around component to check for centre and square up. With end mill in chuck, produce top face of crankcase and carburettor, leaving .005 in. for removal later. Loosen retaining screw and rotate crankcase thro' 90 degrees to bring first face to the top. With clock in chuck, check parallel. Mill one side of crankcase to finish drawing. Rotate job thro' 180 degrees, check and repeat other side. Now at this same setting, take a succession of cuts across C/case bottom, by rotating job two or three degrees at a time and relocking holding screw between each cut. Continue this until job has travelled through 180 degrees with cylinder location face having rotated progressively towards the tailstock and onto the vertical position again. Lathe saddle should be locked in position throughout. The facets thus formed, will be easily smoothed out into a round profile, with the aid of file and emery cloth, to produce underside of crankcase. Without disturbing fixture, rotate job until cylinder location face is vertical and facing chuck. Rotate clock held in chuck and check that it is square and upright. Now rotate clock around each side of square top of crankcase (as viewed from chuck) until all sides are equal, about C/Line of lathe. This is to obtain C/Line of cylinder location. Centre drill and drill small hole, say  $\frac{1}{4}$  in. dia. approximately  $\frac{1}{4}$  in. deep. With small boring tool held in chuck, remove from this hole a few thou'. This will correct any 'run' of the drilling of this hole,

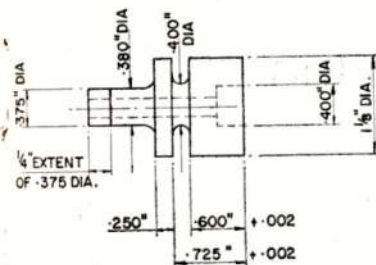


Fig. 1

FIXTURE No.1

**Part Two of our series on a make-it-yourself diesel.**

### Starting Machining Operations

# TOPSY

## .375 c.c.

**Specially designed by G. Hugh  
for construction on a centre lathe**

which forms the location hole for the cylinder after it is machined to size later. From this position use lathe index to move component to C/Line of carburettor. Check that job is still on C/Line and centre drill, and drill thro' to .170 in. dia. ensuring that sufficient depth to clear main crank bore is obtained. Chamfer orifice slightly with centre drill.

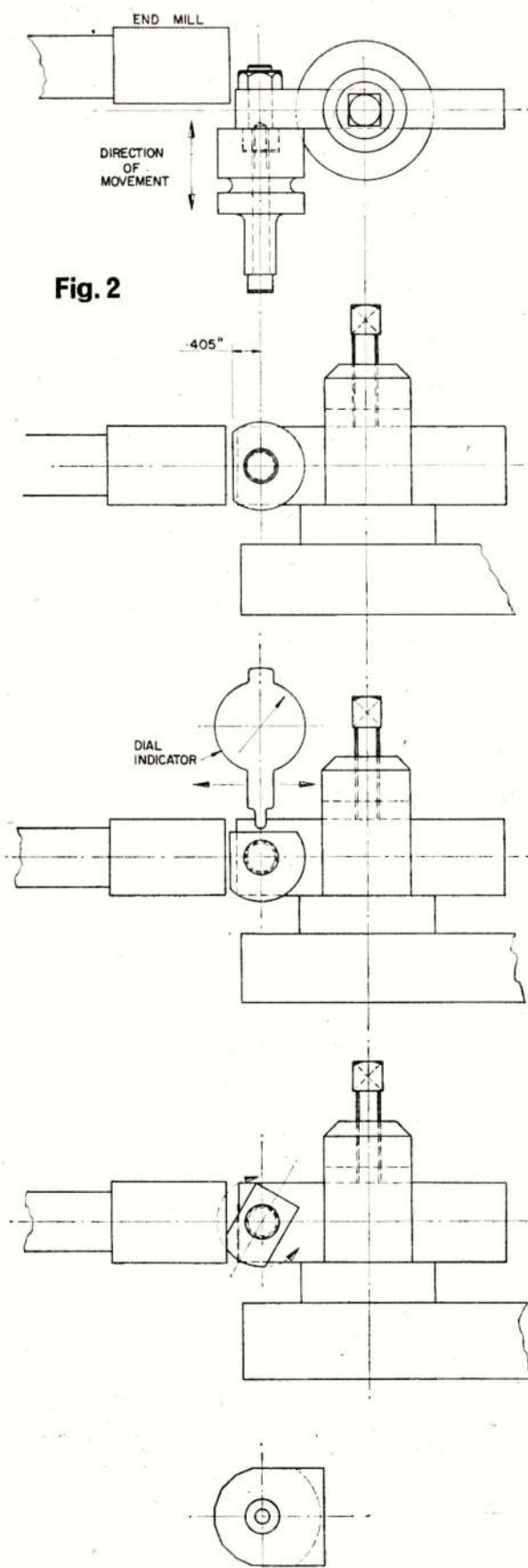
### OP 2 Crankcase

First check that location hole is true at C/Line of cylinder locating face. An easy way is to use a knife-edged vernier caliper, from the four flats to edge of location hole. Note any errors and allow for them when centralising on machine. On angle plate, mounted on face plate, hold crankcase with bolt thro' main bearing housing with cylinder location towards tailstock. True up location hole approximately with clock and then rotate faceplate, and with clock, true up cylinder location face, using packing if necessary behind angle plate until within .001 in. of square. Re-check location hole for true, allowing for errors, as previously mentioned. Drill bore screw and turn external boss etc. to finish drawing, allowing  $\pm .005$  in. on all depths. Face off .005 in. to produce smooth, square finish for cylinder locating face. Deburr carefully, avoiding any damage to face, as this provides a gas seal. 32 T.P.I. was chosen purely for convenience. Any thread near to this can be used, provided that a core size of approximately 480 is maintained. Move angle plate and pick up carburettor C/L and turn O/D to .250 in. dia. x .115 in. long.

Fully machined crankcase below.







**Fig. 2**

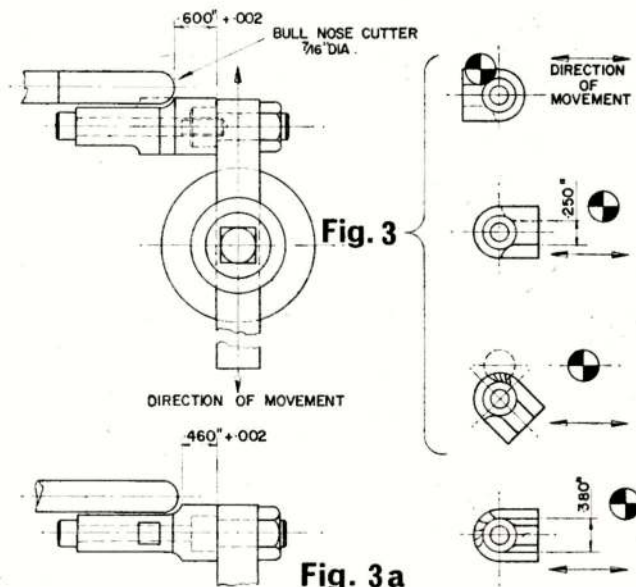
### OP 3 Crankcase

Refer to stage op. drawing Fig. 3. Hold crankcase on Fix No. 1, with C/Line of bearing housing in line with lathe centreline. Rotate job until one side of crankcase is uppermost with crankcase bottom profile towards operator. Depending which is the easier, either raise or lower fixture  $1/8$  in. + half the dia. of round-nosed end mill. Check with clock for square and parallel and adjust height until end mill just clears O/D of carburettor. Now feed job to cutter until barely touching .380 in. dia. extension at front. Repeat for other side of carburettor. Now rotate in a similar fashion as for underside of crankcase a few degrees at a time and plough into cutter until nearly touching .380 in. dia. This will now have produced a rough profile .600 in. + .002 from crankcase rear. Next, raise or lower crankcase a further  $1/16$  in. until end mill will just pass over .380 in. dia. without actually cutting, Fig. 3A. Clock one side parallel to lathe bed, and pass job right across cutter to produce .460 in. + .002 from crankcase rear. Rotate job thro' 180 degrees. Clock parallel and repeat. Rotating a degree or two at a time and locking up, pass job right across cutter until the two sides are joined up to produce a continuous profile around base of crankcase. The facets so formed to be blended out with file and emery cloth, glued to a dowel of suitable size. Still holding on Fix No. 1 and positioned at right angles to lathe bed, adjust to correct height and drill spray bar hole to finish drawing, counterboring both sides to .250 in. dia., and barely touching carburettor outside dia.

### OP 4 Crankcase - crank bore etc.

Hold in collet or bored soft jaws on  $3/8$  in. extension at front end of crank housing. Clock true and drill bore and screw complete to finish drawing. Face tank locating face, removing as little as possible to just clean up to a smooth square finish for gas seal. The bore which has later to accommodate main crank bearing, must be round, parallel and true at right angles to cylinder location. The first portion of this bore as viewed from rear end through tank location, will first have to be counter-bored, because of the interrupted cut caused by the intersection of the two larger bores, i.e., cylinder bore and tank location bores. With a small boring tool, plunge cut this uneven face to a diameter + .002 in. above dia. of finished bore,  $\times$  .560 in. deep from rear face. This will not only facilitate easier boring, but will also make it easier to insert main bearing bush. Carefully deburr, avoiding damage to fuel tank locating face.

*continued next month*



**Fig. 3**

**Fig. 3a**



# TOPICAL TWISTS

by "Pylonius", illustrated by "Sherry"

## Under Notice

I often wonder why people go to all the trouble of fitting undercars to their radio models since, mostly, the models seem to land on their backs, anyway. Oddly enough, the models wouldn't necessarily land in the belly-tickling position, like playful dummies, if it weren't for the vaulting characteristics of those very spindly undercarriage legs. Were they without these Appendages, they probably wouldn't suffer the ignominy of those inelegant back flips, and what a boost to airfield morale that would be!

It would be some vindication on the part of the undercart if it, at least, performed its design function at the beginning of the flight, but the rise off effort is usually reserved for high days and gala days when there is a few hundred yards of smooth tarmac under the tailskid, instead of the usual hay crop. Even then, most radio models carry too much avoirdupois, or are too lacking in directional sense, to make a realistic take-off within radio range distance. They are much happier using the human launching ramp. A device, incidentally, that would function more efficiently if it weren't for the obstructive fact of those undercart legs.

Altogether, it would appear that the undercarriage is more of a convention than a necessity; a wire skid would do the job much more efficiently. But prejudice dies hard, and the modeller of today is just as loth as his 1910 counterpart to fly a model that looks more like a model than a full-size craft. Even so, there is a positive move afoot to shake a leg, as it were. And, just like the model flyer negotiating for a flying field, the model of the future will be getting down on its belly.

## Package Deal

It might be that, in these latter years, I have been living in a fool's paradise. Being somewhat miserly by nature, I buy all my modelling bits on a stick by stick basis. This makes it much less painful on the pocket than a large, lump sum layout, which I never have anyway, but gives me absolutely no idea of the cost per model. Recently, though, I have been jolted into reality by a modern kit price that caught my eye.

The kit was a radio model. And, at the price quoted, I felt sure it must include engine and radio gear, but, on closer inspection, I found all that was offered was the bare bits and pieces, with not even a bottle of dope as consolation. Now, I know that buying the model bit by bit can distort the budget outlay, but even so I fear that the affluent society is seeking to take over for its status symbol purposes, what used to be a hobby for poor, but nice people. It may not be too far in the distant future, when a raw bit of balsa wood will just not be obtainable. 'The cheapest we have, sir, is the nineteen guinea economy kit. Contains ten per cent real balsa.'

## Fellow-Ship

Most sporting activities, that is, if the term 'sporting' can be applied to the competitive world of today, have a lot of noble sentiments written in to their resolutions, such as the fostering of good fellowship and the furtherance of international relations. No doubt, the model movement, too, has a few aspiring words of its own tucked away in some discreet corner, very remote from such battle areas as the A.G.M.

But all this brotherly moral uplift now relates to some remote age of chivalry when the sporting thing to do was to lose in graceful and self-effacing style. In fact, even to make a good model flight was considered to be in rather bad taste. No decent chap worth a bravo at the club dinner would do anything so ostentatious. This is why many of the earlier models were built for the sportsman-like gesture rather than out and out performance. Good chap, old Smithers. Always carves his wings from solid; doesn't believe in any of that airy fairy open framework nonsense. He left a tough legacy for the gaga vintage builder.

The tactical flyer of today has not the least idea what this good fellowship business is all about. One upmanship is his motto - his ship the only one up. When he arrives on the flying field, it is not to join a sporting band of brethren, but to assess the strength of the enemy. Having satisfied himself that the enemy camp is generally disorganised and ill equipped for the grim purpose of comp winning, he retires with his retinue of timekeepers and cheerleader, to a remote thermal sighting vantage point. He moves up field only for the final fly-off assault, and it is here, in the provision of his own specially trained timekeeper, that the far sightedness of his strategy begins to tell. 'What do you feed your timekeeper on, carrots?' shouts a chagrined competitor, through the gathering dusk.

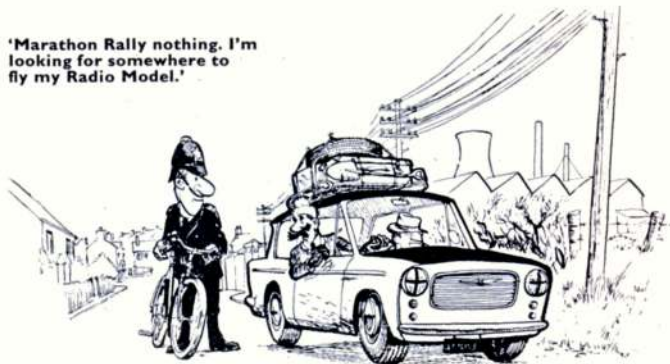
And just by way of a tail piece, I enjoyed that story of the way a modern radio flyer sportingly reacted to the docking of his model's tail by another radio model, as it came in for a rather off the spot landing. He upped and jumped on the tail of the offending model, thus demonstrating, in the field of one upmanship, how to keep one jump ahead of your rival.

## III-Devized

A new club to the scene, the Devizes Model Eng. Society, inspires the following Limerick:

*There was a young man of Devizes  
Whose models were full of surprises.  
When asked, 'What the . . . ?'  
He'd say, 'I can't tell,  
It depends whether it floats or it rises.'*

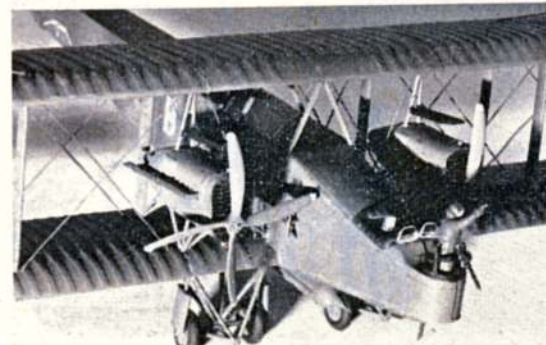
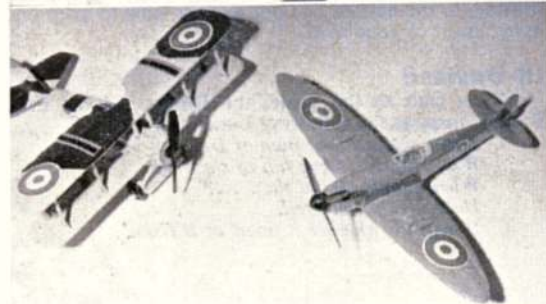
'Marathon Rally nothing. I'm looking for somewhere to fly my Radio Model.'







Above, Revell's 1/32nd Wildcat uses pre-war U.S. Navy markings. Below is Airfix's TBD-1 of same period, plus SPAD and Spitfire in Gragston range of die-cast models and at foot is the remarkable Handley Page 0/400, unfortunately spoiled with its 4 in. thick ribs. Right, the IMAI Kit for the YS-11 to be made with all interior seating.



## TRADE FAIR NEWS

THE TOY & HOBBY trade fair at Brighton at the end of January yielded little new for the flying models. In the whole show we only found two kits for radio controlled models, and those were trade samples from Germany quite likely not to be imported due to the Import Levy! Other Balsa type models on the **Warneford** stand were the well established Guillow rubber powered range from the U.S.A., and at **A. A. Hales** there was a display of the successful Frogflite Quickbuild series. Aside from this, the flying side gained most impact from the extremely well arranged show by the new company, **Mainstream** of Stockport. Manufacturers of Simprop radio control gear under licence, and single channel E.C.S. equipment, a full range of R/C accessories and a new ready-to-run R/C boat (complete at £22 10s.) are supported by distribution of the revived Profile Publications and Viking press books on aircraft. Clearly this firm means to go places and to judge by the vivacity and drive of their executives, we shall be seeing a lot of their gear in use this year. **Simprop** is the top selling R/C name in Europe with many credits to its name including the world speed record. Manufacture in this country has been subject to a most stringent examination of facilities and standards. It will be backed by full service agreements through a selected group of model shops and sold at a price which is extremely competitive.

Otherwise Brighton, and for that matter the London Shows by **Lines Bros.** and **R. Kohnstam**, were very much inclined to Plastics. And what a boom there is in this field! Every manufacturer has a new range to offer.

Revell continue with their bigger scale of 1/32nd by introducing a P51C or Mustang III, a P47D Thunderbolt and an F4F Wildcat of which one example was shown. This size of model at 15s. 6d. adds up to quite a package of value, in fact due to its extra parts and size the P47 will be 17s. 11d. when available. **Imai** plastics, among the biggest in the world, are less well known for aircraft but now enter in a big way with the YS-11 airliner to 1/72nd scale. An extra fuselage side in clear plastic permits one to make it showroom fashion with full interior furnishing. Attractively boxed, it will be distributed by **A. A. Hales**.

One always looks to **Airfix** for a new item and this time their surprise release was not in plastic but in die cast toys. A range of W.W.1 and W.W.2 fighters plus jets, from the colourful Fokker DVII to the Lockheed





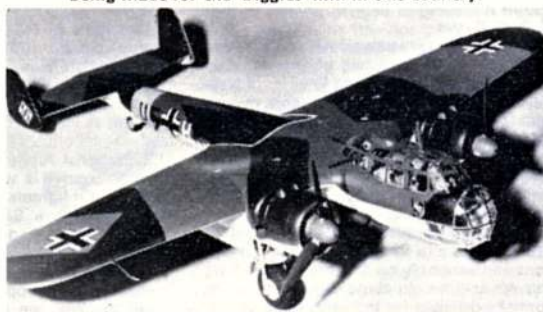
F/104, will become collector's items and very popular with the younger set. Undercarriages retract where applicable, but there is no attempt at constant scale in the range which is known as 'Wild Wings' and will extend over twenty types costing 8s. 9d. each. Latest of the 1/72nd plastics, the 'Devastator', was on show, albeit with a razor-edged canopy which did not look quite right, though the colourful multi-fluted wings with outer panels folding make an impressive sight. Illustrated in handouts; but not ready, were Airfix's trio of twin boomers, the FW189, N.A. Bronco and Cessna 02 plus Harrier, Hercules, Chipmunk and Sikorsky Sea King. The HP 0/400, surely the top plastic of '68 at only 10s. 6d. was on show made up to a far better standard than the rest of the Airfix exhibits. This contrast of construction was never more evident than when compared with the new Frog range at the London showrooms, a range so large and well made that we shall devote special space to it next month. It includes the Blenheim I (already on sale in some shops), N.A. Vigilante, and the Hasegawa Emily, N.A. Bronco, Grumman Mohawk, Hawkeye, F-100, F-105, B-47, Vigen.

Tamiya cannot yet be persuaded to enter the 1/72nd race but his 1/100th series is most highly respected for its fine detail and accuracy. The Draken and F-104, Vigen, G.91 etc., are distributed by Kohnstam. Perhaps the most eagerly awaited of the plastics are the new ones from Monogram leaked some time ago and to be seen made up at A. A. Hales stand in the shape of a 1/48th Typhoon 1B and Dornier 17z to 1/72nd scale. Each lives up to the Monogram reputation for fine interiors and diligence in detail. Colour scheme of the Typhoon is taken from the remarkable 'Profile' drawing with its unheard of mixture of Red, White and Yellow codes, which brings us to the colour specialists Messrs. Humbrol of Hull who extend their range with new adhesives, enamel packs and new brushes of very fine quality to put them in the world-wide forefront for finishing service. Humbrol 70 Liquid Cement is just perfect for plastics, just apply to the joint, let capillary attraction draw it in and you have an invisible joint! New tissue paste pack is coded Humbrol 44 and not many seem to be aware that the famous Authentic Colours are now sold separately as well as is the range of 15 kits which include W.W.I colours, and military uniforms.

Clearly it's *all-plastic* as far as trade enterprise goes this year in Britain - we hope next month to give the picture from the Nurnburg Fair, largest of its kind in the world.



Above, Humbrol's Brush display, only one of many new items. Below is Dornier Do 17z from Monogram and the 1/48th Scale Hawker Typhoon, each distributed by A. A. Hales. At bottom is the 1/100th scale Draken by Tamiya, a pleasing little model and at left is the Warneford distributed Rumpier C IV (they call it a Mk. V) from Guillow, rather topical as real examples are being made for the 'Biggles' film in this country.





# LATEST ENGINE NEWS

*By Peter Chinn*



Parts of the O.P.S. 60 Engine's unique 'external' disc valve is shown lower left in photo, just above carburettor. Valve chamber cover is shown top right, below front bearing housing.

## K & B News

USERS of the very powerful K & B Torpedo 40 'Series 67' engine will be interested to know that Ron Irvine (Irvine Engines of New Barnet, the U.K. distributors and service agents for K & B and Veco engines) is now able to modify existing engines to the latest factory specification. This service, which involves milling out the transfer passage and includes a complete check and test of the motor, costs £2 10s.

Irvine Engines also have factory tooling to enable them to service the crankshaft and front end assembly on the more recent 29R and 40 engines. In these motors, it is not normally possible for the user to attempt to fit, for example, a new crankshaft because the prop driver is now permanently keyed to the shaft with a special pin and this requires that the two parts are drilled through in a special jig after assembly.

John Brodbeck, one of the founders of K & B nearly 25 years ago and now vice-president of the K & B Manufacturing Division of the Aurora Plastics Corporation in Downey, California, tells us that the front rotary-valve 5 c.c. long-stroke 'Series 64' K & B Torpedo 29F, an excellent free-flight engine by virtue of its high output at reasonable (14,000-16,000 r.p.m.) speeds, may be withdrawn. Stocks of 29F parts are now getting low and since the demand for this fairly specialised engine is not very great, it is doubtful whether a further production run of components (in such quantities as are economically feasible) is really justified.

Like most of the world's leading model engine people, John Brodbeck was a modeller before going into engine manufacturing and still has a keen interest in the hobby. Recently he has become a keen follower as well of (full size) air-racing and, last year, he officiated as Chief Starter at the U.S. National Air Races at Reno, Nevada. This, of course, is where one can still see World War II fighters—Mustangs, Grumman Bearcats, even a Sea Fury and the like—battling it out, thundering around an 8-mile pylon course at nearly 400 m.p.h.

Before we leave the subject of K & B Torpedos and apropos our earlier remarks about the 29F, we ought to mention that Irvine Engines are currently offering a number of these motors in R/C form, specially fitted with throttle type carburettors. Because of the 29F's outstanding medium-high speed performance, a pair of these should make an admirable choice for twin-engined R/C models (where total engine capacity is limited to 10 c.c. maximum) and should give a total power exceeding that of a typical 60 R/C.

## Aldrich on 'ABC'

George Aldrich, who seems to be making as big an impact, these days, in the C/L speed world as he was wont to do back in the early '50's in stunt, tells us that the Super-Tigre ABC system has replaced his interest in Dykes rings. (See 'ABC v. Dykes', Latest Engine News, September 1968 issue, also S.T. G.60R, L.E.N., January 1969 issue.)

George writes: 'It is so forgiving and produces so well that I feel it is the biggest advancement since the glow-plug. We placed 3rd at the Nats at 180+. Then, a bit of loosening and a .012 shim under the liner and 186 to 190+ every time. Haven't flown much lately but feel certain that, on an average day, I can break 190 consistently.'

The next step is to set these engines up for special Rolf Miebach pipes. Both Aldrich and Miebach have, incidentally, converted G.15's to the ABC system and George reports a clear 500 r.p.m. gain by comparison with the standard piston/liner set-up. He tells us that he is increasing the exhaust period to around 170 degrees on the G.15 with pipe, by raising the top edge of the exhaust port .037 in. and shimming the whole liner as well. Effective 'in flight' revs are considered to be in the region of 26,500 to 27,000 r.p.m.

## O.P.S. 60

Despite the high potential of the ABC Super-Tigre G.60/65 as demonstrated by George Aldrich, the engine has been less successful in its native Italy where, as reported in last month's L.E.N., it was completely overshadowed during the 1968 season by the performance of the new O.P.S. 60.

Before we go any further we must qualify those remarks by mentioning two factors that should not be overlooked when comparing O.P.S. and S.T. performances. Firstly, the O.P.S. is fitted with a tuned pipe as standard equipment and the engine and pipe were, in fact, designed as a whole. The Super-Tigre and Rossi powered opposition, on the other hand, were, almost entirely 'unpipied'. Modified G.60R's with pipes are expected in the near future.



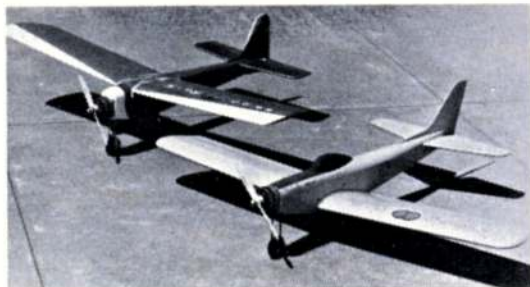
Two views, left and right, of the highly interesting O.P.S.60 racing engine of which production is now under way at Monza, Italy. Prototype and pre-production models achieved some impressive performances last year. The O.P.S. was designed for use with a tuned pipe exhaust system for increased power. The engine is shown below with the special O.P.S. pipe that the makers supply for it.







On O.P.S. piston at left, the single ring is pegged against rotation so as not to foul exhaust or transfer ports. Powered by O.S. prototype Wankel engines, these two R/C models at right were the first rotary-piston model aircraft to fly in Japan as described last month.



Secondly, Italian speed rules require the use of straight methanol/castor fuel. This may favour the O.P.S. in comparison with the Super-Tigre. As George Aldrich has demonstrated, the Super-Tigre, even without a pipe, can go immensely fast on nitro, whereas the O.P.S., as normally set-up, does not seem to gain so much on nitro. The fastest Italian speed reported to date with the O.P.S. on nitro is 168 m.p.h. — only about 6 m.p.h. faster than the same model achieved on straight fuel and, in fact, most of this increase might well have been due to the smaller diameter lines used. Actually, simply putting nitro in the fuel of a piped engine that has been tuned for methanol/castor does not usually have any very marked effect, since it is necessary to retune the pipe for different fuels.

There can be no doubt, of course, that the O.P.S. is a very powerful engine. Actual output claimed by the manufacturer is 2.40 b.h.p. at 22,000 r.p.m. 'on pipe', and we can see no reason to doubt such an output. The b.m.e.p. necessary to achieve such a figure is still well below the levels reached in full scale practice, where, for example, 50 c.c. two-stroke racing motor cycles like the Japanese Suzuki achieve similar specific power but at much lower revolutions.

The design of the O.P.S. does, in fact, suggest that certain of its features were inspired by racing motor cycle practice. This is particularly apparent in the type of rotary disc induction valve used, which is quite

180 degrees of crank angle, during which time it remains fully open for about 55 deg. An outer cover, resembling the usual crankcase backplate, encloses the valve disc in a chamber about .023 in. deep. The cover incorporates a boss for the carburettor and has an induction tract exactly matched to the shape and inclination of the crankcase inlet port, giving a straight unrestricted gas flow. The carburettor comprises a simple machined

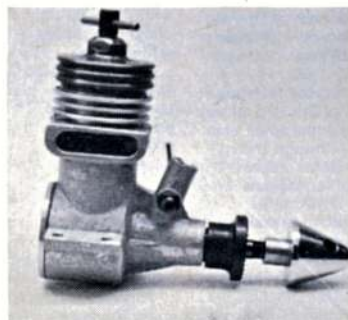


O.P.S. main casting, cylinder-liner and exhaust stub. Note induction port in rear wall of crankcase and below it, bearing for rotary-valve driveshaft.

aluminium intake with open jet type needle-valve and a quite moderate choke area which enables the engine to operate on suction feed.

Also following currently favoured full size practice, a form of Schnuerle scavenged cylinder is used — i.e. a single exhaust port (at the rear in this instance) with transfer ports in each side of the liner, angled to direct gas flow to the front of the cylinder. These are fed by quite narrow, but deep, triangular section passages formed in the wall of the casting. There is also a third transfer port (not, strictly speaking, a 'boost'

Below, U.S.S.R. product, a 1.5 c.c. diesel known as the 'Wind', has red anodised head and propeller driver, this one from John Krickel, Atlanta, Georgia, who has about 350 different engines in his collection.



port) diametrically opposite the exhaust, fed from an additional channel in the casting and opening about 2 degrees later than the main transfers.

The exhaust port opens at 78 degrees before BDC, leading the main transfers by 22 degrees — timing which, of course, has been chosen to make effective use of the tuned pipe characteristic, although timing is not as extreme as in some piped engines.

Only the exhaust port is bridged and then by only one central bar. The single piston ring is, therefore, pegged to prevent it from rotating and having its ends trapped in the ports. The piston itself is of gravity cast aluminium with a perfectly flat crown and weighs 14.5 grammes, complete with 6 mm. dia. gudgeon-pin retained by circlips in the piston bosses. The conrod is an aluminium forging bronze bushed at the big end only. The cylinder head is of machined aluminium with a true hemispherical combustion chamber surrounded by a 4.5 mm. wide squish band.

The crankshaft is uncommonly small, even for a rear induction 10 c.c. engine and actually runs in two English size (3/8 in. x 7/8 in.) ball journal bearings. An internally counterbalanced full disc crank is used.

At just over 16½ oz., the O.P.S. is not excessively heavy by current racing 60 standards and the pipe adds only 2½ oz.



Marinated Burford 19 with everything going backwards to aircraft users' eyes! The silencer cum exhaust collector points aft. Only the head is water-cooled on the Australian glowplug engine.

to this for a total installed weight of approximately 19½ oz.

In addition to the standard aircraft engine, a marine version of the O.P.S. is being offered. This has an entirely different main casting that, quite apart from being water-cooled, has the transfer and exhaust tracts re-positioned to allow the drive take-off to be at the rear while the exhaust still points aft. A further development, at present only in the prototype stage, is an R/C aircraft model for use *without* a tuned pipe and having the exhaust at the side.



The new 2.5 c.c. Super-Tigre G.15-RV Diesel. A full report on this latest model in the G.15 series will appear in next month's *Aeromodeller*.

unlike that seen on any current production model engine, the valve disc being enclosed in a separate chamber *outside* the crankcase. Drive take-off is from the crankpin in the usual manner, but this is then conveyed, by means of a short shaft, through the back of the crankcase, to a very thin steel valve disc, only 8 thou. thick. The shaft runs in a bronze bushing (not a ball-bearing as in prototype engines) and, above it, there is an inclined induction port.

The valve disc uncovers the induction port at 50 deg. ABDC and for a period of





# Free Flight Comment

by John O'Donnell

Fred Boxall, with Jack Allen at left, seen at the '65 Nationals with almost identical model to that used to deservedly win the Bill White Memorial Trophy this year after twenty years – yes, twenty! – of trying.

## The Case for Tactical Flying

OVER THE past few years the particular approach to thermal catching that is now euphemistically termed 'tactical flying' has become commonplace. Simultaneously it has received an increasing amount of published comment, practically all of it unfavourable and some scathing! The tone of *Aeromodeller* editorial comment and that contained in many of the newsletters that I receive has been similar in expressing the view that the tactical craze must be stopped and has been accompanied by a variety of suggestions as to how this should be achieved.

Before commenting, perhaps a brief and rather simplified resume of the origins of the present situation would be in order. The first 'model flying machines' were lucky to fly at all. Later, consistency was the problem. When this was solved, performance could be evaluated, and the occasional 'lucky flight' came to be attributed more to the weather than to the model.

Realisations of the importance of thermals became reflected in the appearance of the 'max' (a limit to the scoring part of the flight) in the contest rules. There has since been a steady procession of restrictive rules (typified by F.A.I. Championship specifications) intended to keep model performance compatible with a very modest max. Inevitably 'Progress' has played its part in upsetting the 'Scheme of things' – but certain classes have currently less genuine performance than the usual 3:00 max.

The fact that contests were seldom flown in conditions even approximating to the mythical 'still air' concept was eventually accepted, and forced the logical conclusion that the world's best model would win nothing if flown in a downdraught. Conversely a very mediocre model in a thermal was more than good enough. This put the accent onto the evaluation of the 'right' moment to fly.

This seemed generally acceptable when it merely comprised a subjective appraisal of local air conditions on a basis of the relative phases of sun/cloud/wind, etc. Perhaps this was because the system was very far from reliable. The thermometer, or 'electronic' (magic word!), thermal detector caused an outcry when it first appeared, but this soon died down when it became apparent that local air temperature (at ground level) was only part of the picture.

What was needed was a measure of the air's vertical motion where one intended to fly. This, of course, was provided very simply by another model. A few fliers started launching into other people's lift; especially in glider, where it compared more than favourably with towing for one's own thermal.

Disparagingly dismissed as 'an easy way to win', the technique nevertheless snowballed rapidly. This was helped by the 100 metre box idea that concentrated all glider fliers into the same small area where everyone could see what was happening. Although the rule was quickly dropped, the damage was done. Contestants' attitude to glider (and later Wakefield and Coupe d'Hiver) soon crystallised into the present day waiting game.

This has reached the stage where few fliers are willing to make the first move, taking a risk in finding their own lift, only to help, inevitably, many of the 'opposition'. This, plus the inevitable monopolising of timekeepers (even if self-supplied), forms the usual complaint from contest organisers. Others have bemoaned the lack of emphasis on model performance. Certainly, there are many regular contestants

who fly models of very modest performance and who rely almost entirely on obtaining a row of thermal flights. It would be invidious to quote names but success has certainly justified this approach in some quarters.

Whilst glider is usually the tactical event, Wakefield is heading the same way. Coupe d'Hiver must follow. Even power contestants (both open and F.A.I.) have been known to launch into the lift marked out by the glider fliers. Only open rubber remains untouched by virtue of its more-than-adequate performance.

The phenomenon is not unique to this country. The Americans are showing concern, and their attitude is reflected in their rather contemptuous term 'piggy-backing'. There is, however, an interesting inconsistency in the British attitude to all this. Whatever might be considered wrong with tactics at home, it all seems acceptable and even very clever, when practised at an International event.

Many alternatives to tactics have been put forward – but usually have built-in drawbacks. Restrictive specifications on model sizes and weights are anything but a real solution. In fact, they merely make the problem worse, as they emphasise the need to catch lift in order to produce high scores. As an example at the last World Championships that I attended (at Kauhava in 1965) most of those who produced perfect Wakefield scores would still have done so, regardless of the rubber allowance. Even the F.A.I. Free Flight sub-committee seems to have realised something of this, as the recent large Championship fly-offs have not yet been followed by a specification change. Increasing the number of flights to seven is hardly likely to alter the general situation substantially.

Regulations as to the mode of flying have been suggested, and even tried by some people. These ideas usually involved some limit to the length of time a contestant can wait with his timekeeper before launching. Various 'refinements' such as not permitting launching, when other models are flying upwind, have been proposed.

However, *knowledge* cannot be destroyed by legislation. Inadequate regulations would merely alter (but not stop) the tactics. 'Waiting' at control would occur, and the ability to supply one's own timekeepers just when required, would become *even* more important. Certain systems suggested could be jammed, e.g. by a flier able to tow a glider for long periods, and hence stop other entrants from flying. Really tight rules such as flying by rota, and when called, could and probably would reduce the contest to little more than a raffle for the person 'drawing' the best weather conditions.

Flying contests in early morning or late evening, when lift is weaker and less plentiful, has often been suggested, and has certainly been tried. The idea has obvious merit – but equally obvious drawbacks for both organisers and contestants. However, it would still seem worth remembering for certain centralised meetings intended purely as contests and not as spectacles.

## Match Play Tournament

A very promising alternative to all the above has been advanced. In principle it is to fly free-flight events on a KNOCK-OUT basis, with two (or three) models being flown against each other, and with the winner proceeding to a further round.

This idea originated, as far as I am concerned, in a forgotten news-sheet quoted by one of the American magazines. Since then, there



has been much discussion with Whitefield clubmate, Mike Reeves, who has worked out and formalised a suitable set of draft rules. Two slightly different versions of these have been published in 'Northern Area News' and 'The Message'.

These rules attempt to solve the practical problems with flying two or three F/F models in close proximity and at nearly the same moment. Basically, a short launch period will be allowed, with penalties for launching early or late. Deduction of time from the flight duration (before the application of the max) covers minor delays in launching. Rubber motor breakages, engines that fail to start, even crashes, will constitute an attempt. Those so afflicted will be allowed a second chance, but this is so constituted that it will not become a 'soft option'.

For practical reasons the usual concept of a max is being retained – but is intended to be adjustable on the day (even from round to round) and high enough to mean something for open rubber and power.

There are certain implications to all this. The most fundamental is the *organisational effort* required. A contest on these knock-out lines will involve the same sort of administration and organisation as is needed for C/L Combat or Team Racing. Provision of 'full-time' officials is a far cry from the usual F/F 'system' of one person issuing flight cards and leaving competitors to find their own timekeepers.

So far, everything is theoretical. As my club consider the knock-out approach has considerable merit and is by far the best scheme yet suggested they have decided to organise an open F/F rally to try out the Mike Reeves' rules. The contest is scheduled for March 30th at Chetwynd aerodrome, near Newport, Shropshire. Support by the 'anti-tactical brigade' is naturally anticipated!

With practical experience and suitable revisions the knock-out rules could evolve into a real test of model performance. This has some interesting implications that are probably not appreciated by many who decry the present situation. I have reservations as to whether the cure will be better than the disease!

Should such a set of rules succeed in their aim, then the best model will win. A lot of modellers will find that their present fleet is simply outclassed. What will then happen? True performance events in other branches of aeromodelling attract few entries, even if of high standard. C/L speed is an obvious example. It may well be argued that 'they' are different, but I'm not so sure. Indoor F/F is a good enough illustration of what happens when the average or club flier finds he cannot compete with the hard-working and able 'expert'. In this country the category is so dead that *volunteers* cannot be found who are willing to travel to the World Championships. Ironically the magnificent facilities at Cardington are precisely what killed indoor F/F.

At a more parochial level, indoor R.T.P. flying was a thriving club night activity in Whitefield 20 years ago. Models were tissue covered and flights were around 1½ minutes, and there was usually a queue to get 'on the pole'. I produced a model with 1/32 in. sq. ribs, etc., covered in microfilm, and demonstrated it was in the 3-minute class. Practically overnight interest and participation declined to zero, as club members found themselves outclassed and unwilling to go to sufficient trouble to remain competitive.

The same situations could apply to outdoor F/F as I feel that many people are unwilling or unable to go to extreme lengths to have a chance of winning. They like to feel that they could win something occasionally with an 'ordinary' model.

**Front end of Trevor Payne's 25 oz. open power model featured on the cover this month shows a little more of the lightweight structure and the Super Tigre G.40 Rear Rotary engine which takes the model up so fast.**



I feel that many critics of tactics have overlooked that many people like competing and also welcome a certain 'luck element'. To such, an event for 'picking the moment' is just as acceptable as one for producing the lowest rate of sink from a glider. There are certainly many practitioners of tactical flying who have said remarkably little in defence of their art.

Anyone who has watched my glider flying will hardly need to be reminded, I have no hesitation in adopting the tactical approach when I consider it is the best technique in the prevailing conditions. It is not a universal answer, but when it fits I will, and do, use it. Furthermore, I do not think it is unsportsmanlike. It is simply a good answer to the present requirements – and at least it is available to everyone.

Perhaps by now I have justified my opinion that tactical flying has not only its *merits* but also its place. It does give a sporting chance to the inexperienced flier with a relatively modest model, and this is an aspect too important to overlook. After all, the thermal is a great equaliser. While there is a need for such a tactical event, there is hardly a need for several. There seems little need to differentiate between say, Wakefield and A/2, when both are flown tactically.

My summing up would be to admit the situation, and to run both styles of contest, performance and tactical. The former could be on knock-out lines and the latter *should* be with no holds barred. This might not be a perfect solution but I cannot see a better one and it should be a vast improvement on the present-day position.

Whilst rethinking the concept of F/F contests, the opportunity to reappraise the present multiplicity of classes should not be missed. I cannot see any organisation (and it will have to be just that) coping with our present range of specification events on a knock-out basis.

## Blackheath Gala

The only contest that I have attended in recent weeks was the Blackheath Gala at Chobham Common on January 5th. This featured the **Bill White Memorial Trophy** for open rubber – once the winter event, and now, once again, held as the year's first competition.

Conditions *looked* calm, if somewhat misty – but drift clear of the ground was a good 15 m.p.h., and models were going dangerously close to woods and the 'tank factory'. Maxs in fact were usually on the bounds of the common. There was little in the way of strong lift and glider scores were low in consequence – and remarkably close. Surprisingly the best glider total came in the *all-in F.A.I.* event where Jim Baguley came third with just over 8 minutes. Although doubling up was allowed he elected to fly twice (and did rather less in the glider event). Likewise, John West failed to double up his F.A.I. power flights and so did not appear in the power flyoff. In between came Dick Johnson who dropped a few seconds on one flight with his G.15 model.

*Glider* was won by K. Taylor, with the 'Sans Egal' with which he did well on Boxing Day. Bert Turner and D. Wain were very close behind. *Rubber* and *Power* both needed large flyoffs. In fact the rubber score sheet made it appear rather superfluous to bother having the preliminary three flights. The flyoffs were unfortunately affected by the poor visibility even though drift had dropped noticeably.

Fred Boxall won the *Bill White* with a rather incredible over 5 minutes score. His timers said that much of the later part of the flight was against a solitary light strip of sky. It was rather ironical as his model had anything but a good visibility colour scheme – predominant colour being pale blue. Design was the usual Boxall layout, complete with free-wheel propeller. I managed second, half a minute behind with a flight that power-stalled very badly, but at least didn't drift much in the process. Third was John Mabey with a model very typical of current trends. Several other models went much further than the prize-winners, especially Dave Hippersons' and John Blount's.

*Power* saw Pete Stewart win with a G.15 powered 'Dixielander', followed by Russell Peers' ETA 29 powered lightweight. Both were timed 00S and both D/T'd at low altitude at about 5 minutes or so. Martin Dilly was third after very hasty repairs (involving much thread bracing) through cracking a wing downwards on a hard D/T landing.

No less than 26 clubs were represented, from as far apart as Bristol, Brighton and Southampton, as well as the N.W. 'regulars'.

**Bill White Trophy. Open Rubber**—1, F. Boxall (Brighton) 9:00+5:04; 2, J. O'Donnell (Whitefield) 9:00+4:39; 3, J. Mabey (Croydon) 9:00+4:06. **Open Glider**—1, K. Taylor (E. Grinstead) 7:26; 2, A. Turner (Southampton) 7:25; 3, D. J. Wain (S. Bristol) 7:19. **Open Power**—1, P. Stewart (Crookham) 9:00+4:25; 2, R. Peers (Congleton) 9:00+4:06; 3, M. Dilly (Croydon) 9:00+3:25. **All-in F.A.I.** (three flights)—1, J. West (Brighton) Power, 9:00; 2, R. Johnson (St. Albans) Power, 8:43; 3, J. Baguley (Hayes) A/2, 8:07.



# Tempête

# and Sirocco

## Marcel Jurca's attractive home-built designs from France

AIRCRAFT DESCRIBED No. 180

drawn by A. A. P. Lloyd

THE M.J.5 'Sirocco' is a tandem two-seater monoplane, which has been developed from the M.J.2 'Tempête' as a potential club training and touring aircraft. It is fully aerobatic when flown as a two-seater.

The wings of the 'Sirocco' are basically similar in planform to those of the M.J.3 and M.J.4 'Shadow', although of increased span. The fuselage and tail unit are also similar to those of the M.J.4 except for a slight increase in overall length.

The prototype M.J.5 flew for the first time on August 3rd, 1962, powered by a 105 h.p. Potez 4 E-20 engine and fitted with a non-retractable landing gear. Its fuel capacity is 25 gallons.

Changes made on this prototype included deletion of the inclined wing tip end plates formerly fitted and the installation of a new one-piece bubble canopy.

The version of the 'Sirocco' for amateur construction is generally similar to the prototype, but has optional retractable landing gear. By mid-February, 1965, three 'Siroccos' were flying in France, one of them built by industrial methods at Nancy, with the object of obtaining a full Certificate of Airworthiness for the type. In addition, 18 were then under construction by amateurs in France, and 10 in Canada and the United States, with various engines. (See classified advts. for British plan source).

To date, several hundred sets of plans have been issued for both 'Tempête' and 'Sirocco'. Several of each are under construction in this country and some are already on Civil Register and flying, for example, at Coventry. Sandy Baggaley is modifying his 'Tempête' to have a fuselage mounted under-carriage for easier wing detachment and fuselage transport. His is being made for a Continental C.90 at Welwyn Garden City.

The type of engine fitted to a particular aircraft is indicated by a suffix letter in its designation. Suffix letters are A for the 90 h.p. Continental C-90-8 or 14F; B for the 100 h.p. Continental O-200-A; C for the 105 h.p. Potez, 4 E-20; D for the Potez, 4 E-30; E for the 105 h.p. Hirth; F for the 125 h.p. Lycoming, and G for the 135 h.p. Regnier. Addition of the numeral 1 indicates a non-retractable landing gear. Thus, the designation of the original prototype is M.J.5 C1. The example, built at Nancy for certification, has a 100 h.p. Continental engine, and is therefore designated M.J.5 B1.

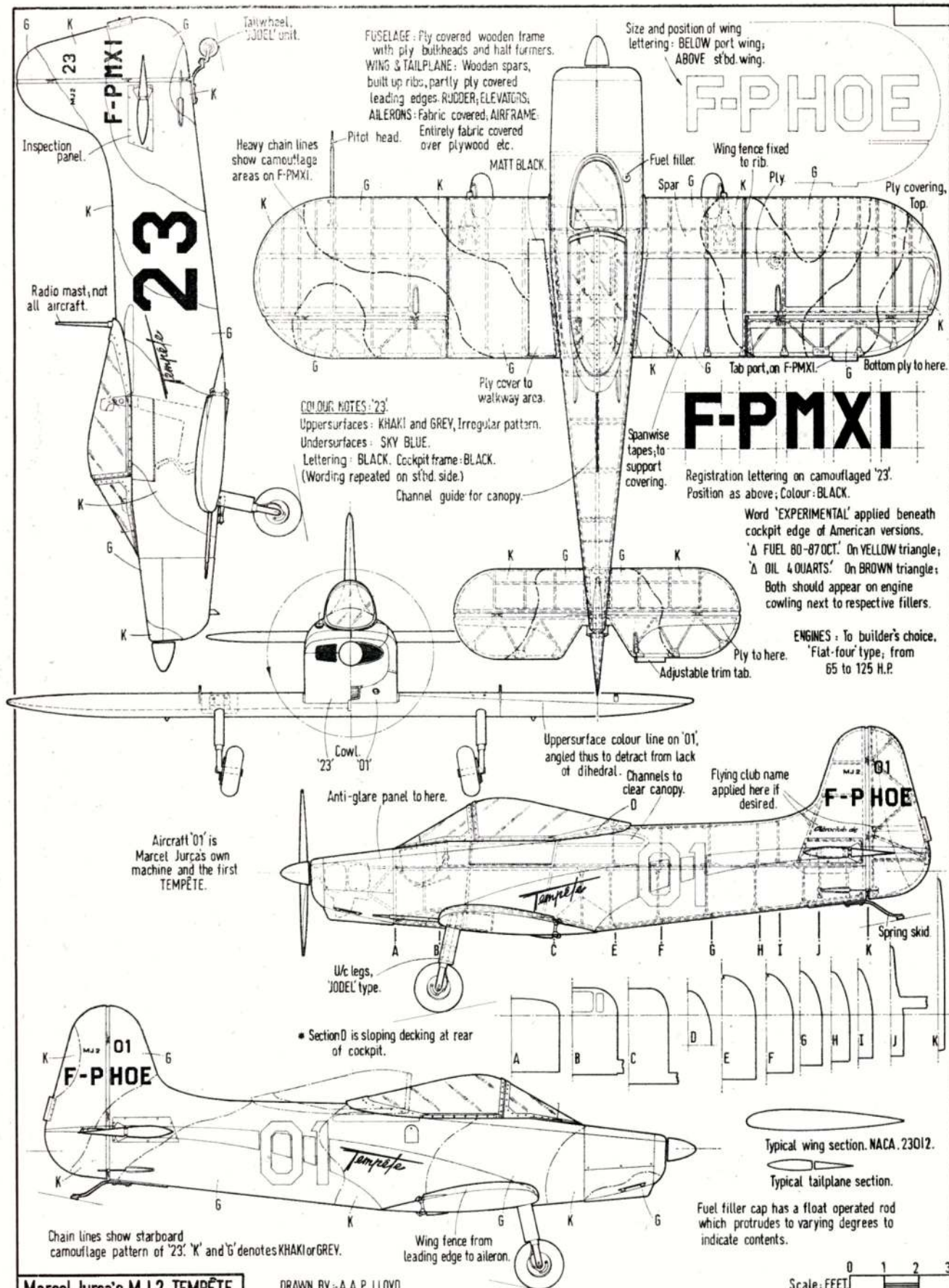
Retractable landing gear on Marcel Jurca's prototype Sirocco F-PJSX in top photo is on its way up to offer a speed improvement over the original fixed gear. Next photo is of Tempête number three which has the colour arrangement as on our drawing for the prototype F-PHOE but dark green and orange and registered F-PLUB. Camouflaged Tempête number twenty-three F-PMXI is Khaki and Grey with Blue undersides, black numerals. At bottom is Sirocco prototype showing the bulged end of the sliding canopy on this aircraft. Profile of canopy varies. That shown on the drawing is the designer's stipulated shape.













Original M.J.5 H1 with fixed gear at right, is Red and White, distinguished from all other home-built types with its tail swept fin and rudder and flat wing. Reprints of this feature with 1/48th scale drawings together with dyeline prints of the original 1/24th scale drawing are available as separate plan packs from Aeromodeler Plans Service. Quote 2885 for the M.J.2 Tempete, price 2s. 6d. Quote 2886 for the M.J.5 Sirocco price 2s. 6d., add 6d. post in each case.



The 'Sirocco' was developed by Marcel Jurca of 2 Rue des Champs, Philippe La Garenne-Colombes, Seine, France.

Marcel is a prolific designer, with other semi-scale types to his credit, based on the Mustang Fw 190 and Spitfire. He was awarded the 'Governors' Award' for work in light aircraft design at the 1968 E.A.A. Convention in the U.S.A.

#### Data:

	<i>Tempete</i>	<i>Sirocco</i>
Span	19 ft. 8 in.	23 ft. 0 in.
Length	19 ft. 3 in.	19 ft. 8 in.
Wing Area	85.9 sq.ft.	114 sq.ft.
Max Speed (65 h.p.)	120 m.p.h.	146 m.p.h. (100 h.p.)



#### SPECIAL OFFER

Dyeline prints from drawings prepared to one-fifth scale of these two aircraft are available on special order for a limited period. They are each of ideal size for a multi-channel radio control model and cost 8s. each from Aeromodeler Plans Service. Order by name of aircraft desired and specify 'one-fifth scale structural drawings', stating which type is required, 'Tempete' or 'Sirocco'.



Above, an assembly of Tempetes and a Sirocco in France. Note how each carries its construction number on the fuselage, racing style, as well as on the vertical tail. Below, Marcel Jurca and his first Tempete, finished orange and white with all of the top surfaces of the wing in Orange. The cockpit is remarkably well equipped, true fighter style. Marcel flew from his native Rumania in Fw 190's in the war, and this has no doubt influenced his cockpit canopy line. Other Jurca designs are the 'Gnatsum' (Miniature Mustang) 'I-Nine-0' (Mini Fw 190) and 'Spit' (Mini Spitfire).





# CLUB NEWS CLUB NEWS CLUB NEWS CLUB NEWS CLUB NEWS



AS MOST OF YOU KNOW, clubroom politics can get pretty highly charged, particularly where the question of money is concerned. Few of us take kindly to any increases other than to our wages and salaries, but in these inflationary days you can't escape those odd few shillings going here and there, however annoying it may be. Understandably, then, feelings ran high at the S.M.A.E., A.G.M., according to the **London Area Newsletter**. The Council's plan was to increase the fees for Full and Intermediate members only, and to leave the Associates at their present level, thus to levy the extra revenue from those contest flyers on whom the main administrative and Organisational work of the Society is expended. This plan, however, was not accepted by the bulk of the delegates, and the Newsletter suggests that the alternative suggestion of an all-round 25 per cent increase for all classes was not a carefully considered plan but a 'beat-the-Council-at-all-costs' attack on authority. Even so, it is hoped that the adopted plan will provide the necessary increase in the Society's receipts, and find favour in all quarters. Although I suspect that many Associates will not find the new rates one bit to their liking.

One of the regular newsheets to be quoted in these columns is the **Crawley Club's Turbulator**; so, naturally, we were sorry to learn that the December 1968 issue is to be the final one. One reason given for the demise of this very competent newsletter is the lack of support given by members. This, of course, is nothing to be wondered at since a surprisingly high number of newsheets are one-man-band efforts. Even so, it is a pity that club members do not make some attempt to support such enterprises, but just sit back and trust. The issue contains a report of the S.E. Area A.G.M., held at Lingfield. Seems the Area finances are in a pretty healthy state, with a tidy little bank account to fall back on. Biggest money spinner of 1968 was the South Coast R/C Rally, which padded out the kitty to the tune of £97. Biggest expense was that overgrown, over-inflated patch known as Ashdown Forest. Look out for the **East Grinstead Winter Rally**, Chobham, March 2nd, and the R/C Thermal Soaring Meet at Golden Cross on June 1st. The editorial has a shrewd word or two to say about the modern contest scene. It suggests that the days when the clubby type entered a contest just for the heck of it are long since fled; the competition world is now strictly an experts only affair. The cheerful chappie with the souped-up sports model simply wilts at the sight of the those mean, moody, magnificent men and their super flying machines. But is this quite true? By way of refutation, I recently attended a meeting where the order of the day was friendly participation rather than win-at-any-cost. One chap even flew his little boy's kit job, just so that he might register his flights.

A club that tries to span the ever-widening spectrum of our hobby is the **Halifax M.A.C.** Apart from the usual C/L, F/F and R/C classes, members also try their versatile hands at R/C Scale and Slope Soaring. Help and encouragement for all this activity comes from the local model shop, where the club member proprietor dispenses sage advice along with the  $\frac{1}{4}$  in. square strip. Did you know that the name Halifax was one to be reckoned with in the vintage modelling

**Market Harborough M.A.C.** believe in using all the daylight hours, and a few at night too! General view of rally at Shangton at left, and prizegiving by moonlight to H. Pateman of Northampton for first prize in raffle (right) which he sportingly gave back to be auctioned for Club Funds.

years? Anyway, the lads are geared to winning some of the old glory back in the coming season. If the only success last year was a third Glider place at the Nationals by A. Brocklehurst, a higher tally is hoped for this year. New members welcome at meetings held on the first Wednesday of each month at Spring Hall Meeting Rooms. Call in or drop a line to the new Club Sec., M. Fitzgerald, 88 Sandhall Green, Pellon, Halifax.

Usually a first for **Whitefield M.A.C.**, means another J. O'Donnell triumph, but this time the first applies to the originating of an A/2 Glider Knock Out competition. Models to fly off in pairs to a three-minute max. Model with the highest score goes on into next round, but if both max., both go into the next round. Venue for the event is Chetwynd, on March 30th, thanks to R.A.F. permission.

Not all sweet harmony and fellow feeling in the **Debdenairs M.F.C.** (Loughton, Essex). We are told that the species of Homo Sap who lurks in the environs of Epping Forest is living up to the Sap part of his identity tag, particularly the chap who, on proclaiming his intention of leaving the club, discovers that he's already paid a year's sub. But all good friends again, with a polarisation of conviviality around the electric r.t.p. pylon which has been supplied by the Hon. Sec., Brian Dawson. Plenty of scope here for the Scale enthusiast, with already two *K.K. Camels* and a *Spitfire* in circulation. For the technically minded there is much discussion on prop/motor combinations, gauge of wire etc. Mr. R. G. Harris, the Chairman asks: Why not a r.t.p. symposium? Put it to the poll.

In spite of the decidedly damp name of *Seadog*, the Newsletter of the **South East Area**, expresses the hope that the coming season will be drier than the year of the dunking, 1968. The newsletter also has some congratulatory words to say on the Area's ability to get people to attend its meetings. This is no small achievement since many Areas find such responsible types in extremely short supply. Mention is made of a **Midland Area** proposal to link S.M.A.E. Areas with the Central Council for Physical Recreation. This was rejected. Perhaps it was considered that the Council would find model flying too strenuous. First man in the Area with a 'tuned pipe' and climb to match is John West. This, apparently, is the new secret weapon of the power flyers, but quite an expensive one from all accounts. Incidentally, were visitors to the Eastbourne Club Brass Monkey Slope Soaring Meet reminded of the rule that requires that no part of the model shall be dropped during flight?

Bishopbriggs, the centre of the **Glasgow Hornets M.A.C.'s** flying activities, lies on the road betwixt Glasgow and Kirkintilloch, according to the sketch map in the club bulletin. It would seem a reasonable size if the railway line is readily traversable. But it's a question of going down to the levy if you wish to fly, but at 20s. for 20 weeks, the fee is hardly likely to discourage even the scottiest



of Scots. The levy is very necessary as the field rent is £2 per month. Obviously, only a viable proposition if given adequate use by paying members. They hope the new facility will have the desired effect of boosting interest and encouraging membership.

Reading through the **Delhi Hobby Club Newsletter**, I savoured the deliciously obscure asiatic sentiments, and an item that refers to what must be the swap of the year. A certain Mr. F. Zaic sent a quantity of model magazines to the club, and got in exchange some game skins. Not, we think, intended for covering models. There is also a reference to some of those nasty surprises which often lie in wait under the colourful lid of the kit carton. The type of disaster to be found in the asiatic kit was reminiscent of the early kits of the western world, where you might have sufficient wood to build a 15 in. span model, but since the plan is for a 40 in. model – or so I thought, until the next kit to come under criticism in the same terms was a modern British one – oak tough balsa and a missing wing spar.

A sign of healthy expansion in the **Anglia M.F.C.**, is the production of a Newsletter. Number One edition is to hand, but is devoted to affairs too administrative for comment. I do know, however, that a few members ventured into the snowbound heart of Norfolk for the Area Rally on January 6th at R.A.F. Watton. A fine field and a fine flying day; no nasty thermals and an energetic nip in the air.

How old is your model club? Even if young in heart it may have a way back history like, for instance, the **Glevum M.A.C.**, Gloucester. Mr. J. J. Scott, the P.R.O., claims it to be one of the oldest in the country; its origins harking back to the days when balsa was used for rafting rather than crafting. In recent years the club has been somewhat in the doldrums, though, but has now moved into balmier waters. Membership is in the region of 40. Numbers, not age, let me hasten to add, as there is a particularly strong Junior content. No doubt it is this youthful element which gives the club its particular C/L flavour, although at Moreton Valence, the club field, most interests get an airing. Free flight has its following, so, too, Radio, both Single and Multi, in increasing numbers. A few F/F comps were held last season, but real club contest success was achieved in Rat Racing, where the 1.5 to 2.5 cc. class finds preference.

To fresh fields and pastures new is not quite the cry of the **Buckaneers Model Club**, as it's merely a question of waiting for the crop clearing on the old agricultural patch before resuming club R/C activity. But now that all is clear of carrot and mangelwurzel under foot there is an outcrop of new models and new gear on display. The field, known as Finmere, was the scene of an Area 'Fly-In' for Spot Landing and Nominated Time, but weather had a numbing effect on entries. Nevertheless activity at Finmere continues to build up, with control liners giving the Radio flyers plenty of supporting interest. Or is it the other way round?

A few issues of the redoubtable **Northern Area News** is to hand. Good as ever, each issue contains page after page of contributions from world wide sources; all presented to the usual competent standard. One item, which caused in me a mixture of amusement and alarm, was a report culled from a French mag. which really must present the ultimate in tactical flying. Seems there is a continental character who winds up his Wake, hands it to a helper, then takes out an enormous glider which he tows around until he gets lift. When lift is eventually contacted he dashes back to pick up his wound up Wake, chases after the glider and launches the Wake in its bubbling wake. All strictly legit, although it calls for a patient and co-operative

## CONTEST CALENDAR

- March 16th** *St. Albans R/C Thermal Soaring Rally*, Nomansland, Wheathampstead, Herts (strictly gliders only).
- March 23rd** *London Area C/L Champs*. Round 1, F.A.I. TR. 1/2 A TR, Combat, Charville Lane, Hayes.
- March 30th** *Whitfield Knock-out free flight A/2 contest*, Chetwynd.
- April 6/7th** *Sheffield S.A. Slope Soaring 2 Day Competition*. R/C Multi, Single Channel & Scale Glider, plus Magnet and Free Flight. Details – P. Scaife, 44 Todwick Road, Sheffield 8. Send 9 in. x 6 in. S.A.E.
- April 13th** *Northampton Combat Rally* at Midsummer Meadow. 3s 6d. Pre-entry, 5s. Field entry (Silencers if possible). Entries to C. P. Champion, 12 Bedford Road Little Houghton, Northampton NN7 1AB.
- April 20th** *Luton & D.M.A.S. Slope Soaring Rally*, Ivinghoe Beacon. Multi, Single R/C Pre-entry 5s. Free Flight, Magnet Chuck Glider (no Power models) 2s .6d. on field. Pre-entries to L. Rudd, 38 Windsor Road, Barton, Beds.
- April 27th** *F.A.C.C.T. Combat Rally*. 'A' combat only. Entries 4s. to G. H. W. Johnson, 37 Oxford Road, Kirtlington, Oxon. (Venue) New Born Farm, Weston on the Green, off A43 Nr. Bicester.
- June 15th** *Elliott M.E.C. Control-Line Gala*.
- July 6th** *Chichester and D.M.A.C. and R.A.F. Thorney Island M.A.C. R/C Rally*. Pylon Racing, Open and Goodyear R/C Scale. Annual Shield for best scale model of R.A.F. Aircraft. Venue R.A.F. Thorney Island, Hants.
- July 20th** *South Bristol M.A.C. Summer Gala*. Free Flight, Open RGP and an all-in' Vintage event. Control-Line 'B' Rat Race, F.A.I. Combat, R.A.F. Hullavington, Wiltshire.

– if not pet – timekeeper. I know that if I were asked to time such a performer I'd be tempted to throw him a set of coloured juggling balls to round off the act. However, with thermals what they are, you must tolerate a measure of tactical flying, but, as John Pool points out, the more involved procedures require a fair amount of organised help. This means that the chap from the highly-gear'd club has a distinct advantage over the lone hand. But here, surely, is where the rules should be so devised that all flyers are limited to the same resources; eliminating, for example, the preposterous business of using your own private timekeeper. But why the necessity for tactical flying, since all the top models can do much in excess of three minutes? Discussion, too, from well known contest flyer, Bob Bailey, on contest systems, particularly a progressive max system for Open Rubber contests. Mention of this gets me vaulting right away on to my own pet hobby horse which plugs for a 3, 4 and 5 minute max progression, but each max carrying a 30 second bonus. Anyway, Bob's suggestion is that progressive clubs and Areas should try out some such variant system at their Rallies. Another report comes from a far-flung outpost, but perhaps not so far flung, as it moodily hints of a marked free flight decline in the Cape Town area. This is due, it alleges, to the declining habits (high earthward angle) of the R/C model, via which medium the modern, with-it initiate is now introduced to the hobby. One expensive prang and another model career bites the dust.



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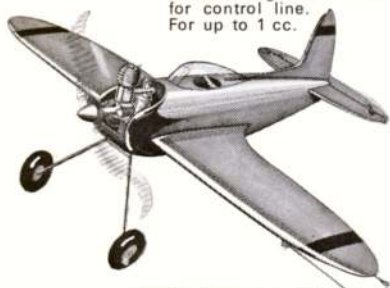
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