

Aero Modeller

November 1973

20p

USA & Canada \$1

INCORPORATING
MODEL AIRCRAFT



HOBBY MAGAZINE

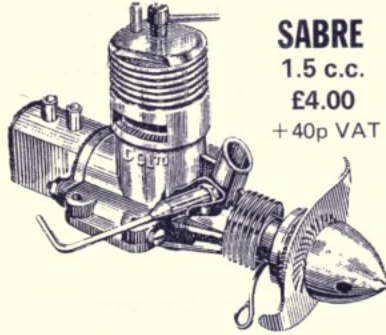
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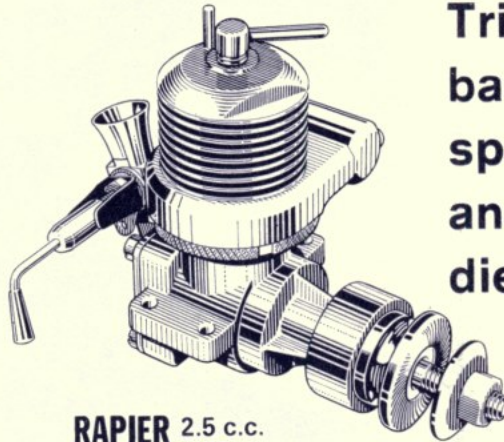
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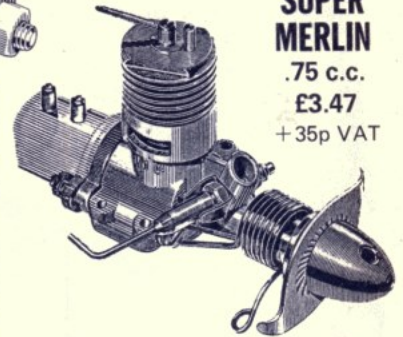
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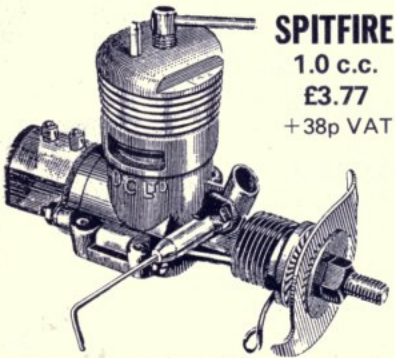
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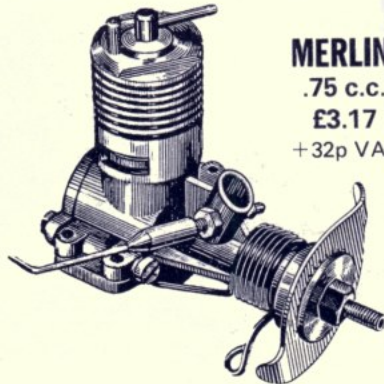
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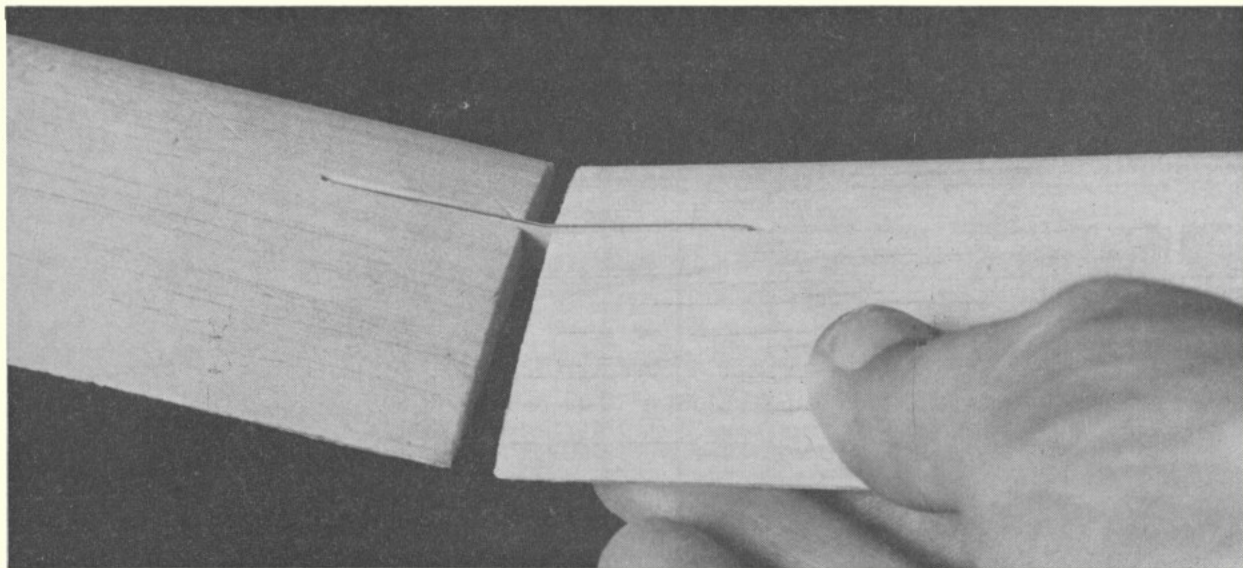
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Aero Modeller

INCORPORATING
MODEL AIRCRAFT

November 1973
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Editorial Director D. J. LAIDLAW-DICKSON

Managing Editor R. G. MOULTON

EDITOR P. S. RICHARDSON

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COMMENT

A club complains it has to pay for an insurance indemnity in order to use an airfield for a model rally. A competitor says he doesn't want to pay for the privilege of becoming a public entertainment. A group of fliers has the Town and Country Planning Act 1971 thrown at it and permission refused for continued regular use of the field they've hired for years. Hard times. The honeymoon is over. Modellers have to be realistic from now on, and realise that facilities for flying have to be paid for with cash and negotiated with due formality.

The days of running a rally on the cheap are buried in the past. A typical budget for a one-day all-event rally is now £500. That is why the gate charges have risen fast in 1973, and will go higher still as costs escalate. The alternative is for the major rallies to be dropped from the calendar, unless those who enjoy the facilities are prepared to share the burdens as they drive through the gates. 'Pay up or pack up' may sound drastic but that is the situation in one simple phrase. As to the formalities - the Insurance, the Planning Permits, etc., there is an immediate solution in membership of the National body, the Society of Model Aeronautical Engineers. Unity is the key to success in negotiation, and the S.M.A.E. provides the Umbrella under which modelling interests are best protected, especially where flying fields are concerned.

on the cover

At R.A.F. Strubby for the 'Free Flight News' International, Sara Hutchinson of Albuquerque, New Mexico, U.S.A. holds a finely decorated pair of entries from overseas, Jon Davis's 'Maxine' Wakefield, which had been flown in the World Champs and the Pierre Trebod prior to coming to England and Paul Felgines' A/2 glider from Asnieres in France. Tissue trim is not a lost art as far as these models are concerned!

next month

Two free full-size plans - both for rubber-powered free flight models. One is a simple, pleasing little biplane by Ray Malmstrom, the other a more complicated design - Eric Coate's indoor scale version of the D.H.80A Puss Moth. Plans too for Canadian Mike Thomas' highly successful Wakefield - the Predator. No unorthodox gadgets or gimmicks on this design - it just flies well! These, plus regular, and not so regular, features on control line, scale and free flight topics, all in the December issue, on sale November 16th.

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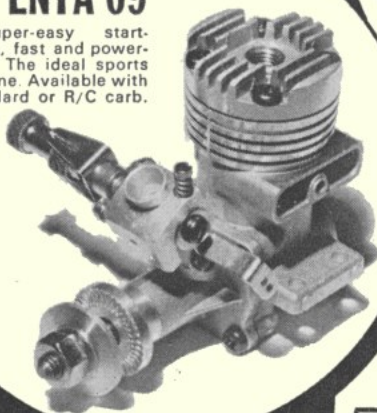


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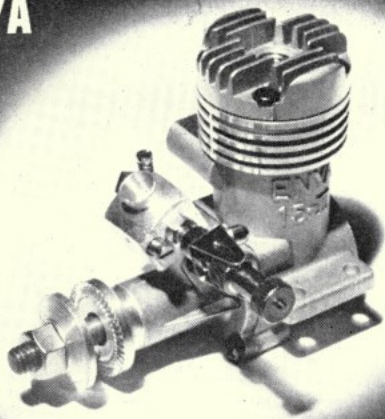
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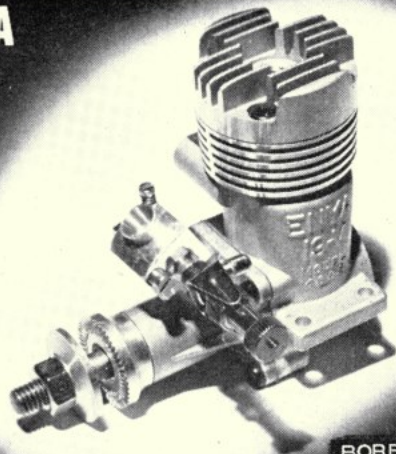
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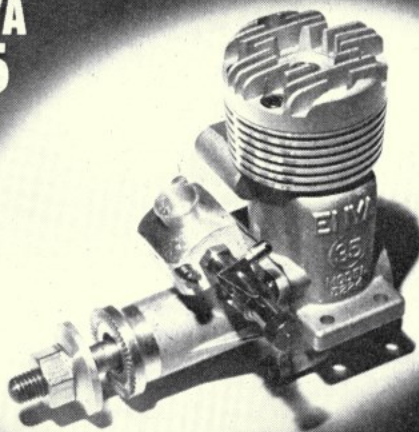
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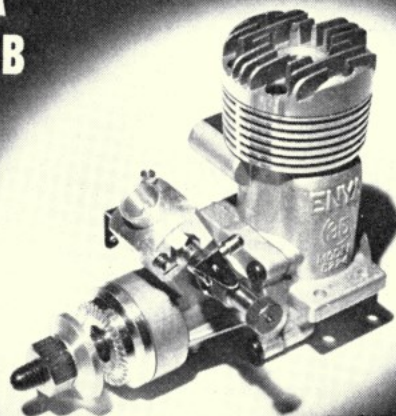
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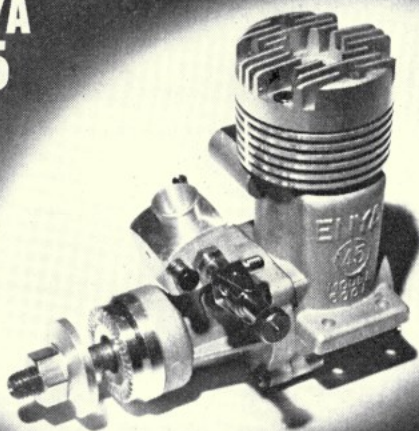
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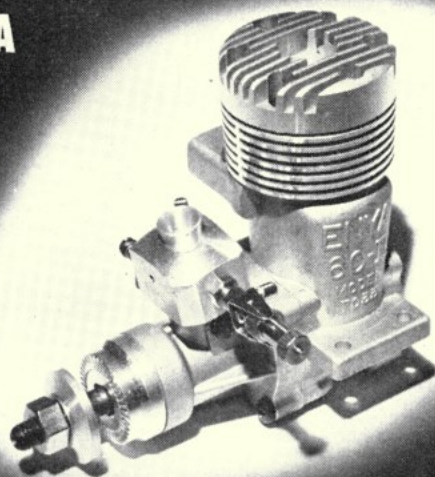
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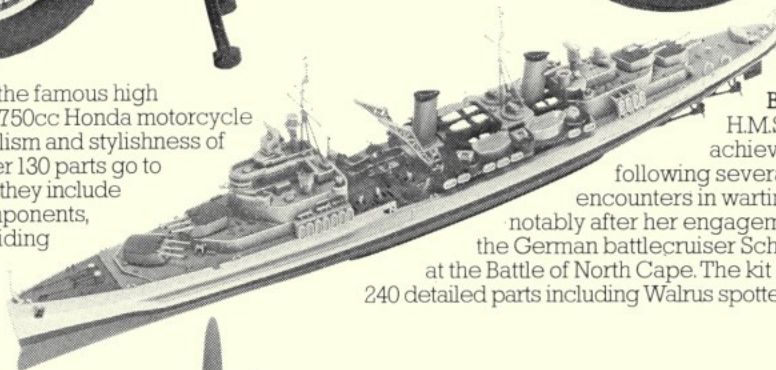
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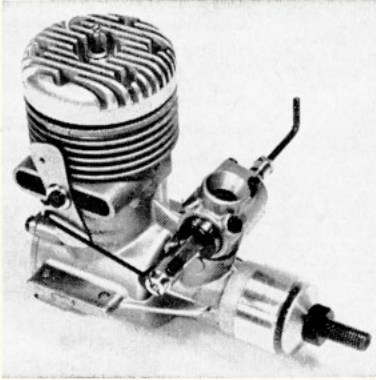
THE NAME THAT STANDS FOR SPEED & POWER

Those modellers and dealers who took time out to read our advert in the June issue will realise we had a right clanger on our hands. All the chat was about our attempt to up-date our stock information by the use of asterisks for in-stock motors. Unfortunately due to the spring bank holiday and a delay in the post the advert was printed without any asterisks at all indicating nil availability. Fortunately our trade friends, knowing our service, didn't take the omission seriously and we were able to meet most orders.

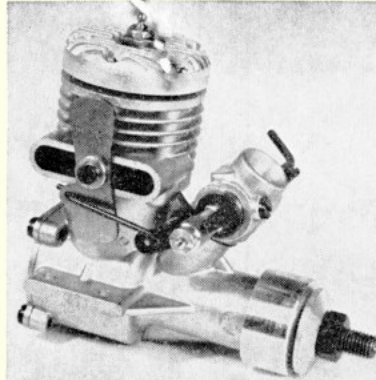
Fortunately R.C.M.&E. appears shortly after *Aeromodeller* and this corrected the error.

A phone call from Italy indicates that all the smaller sizes of motors are being made this month (July) prior to going on holiday in August.

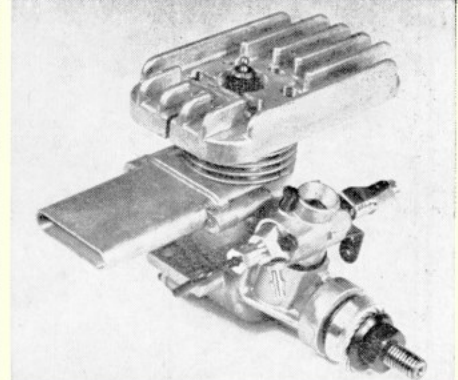
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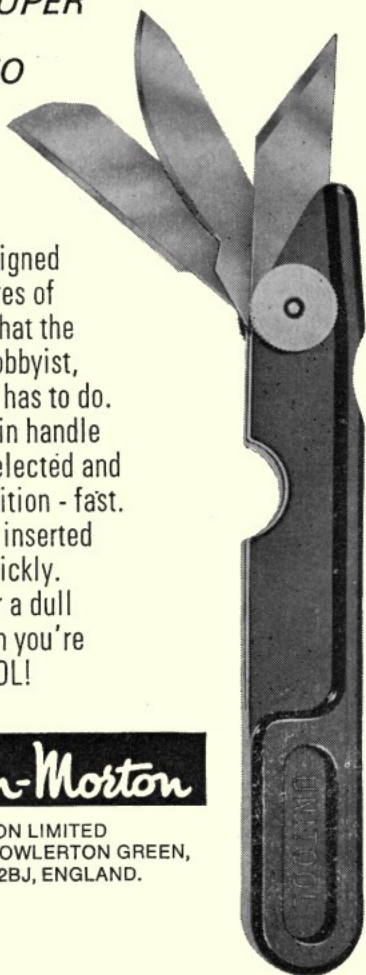
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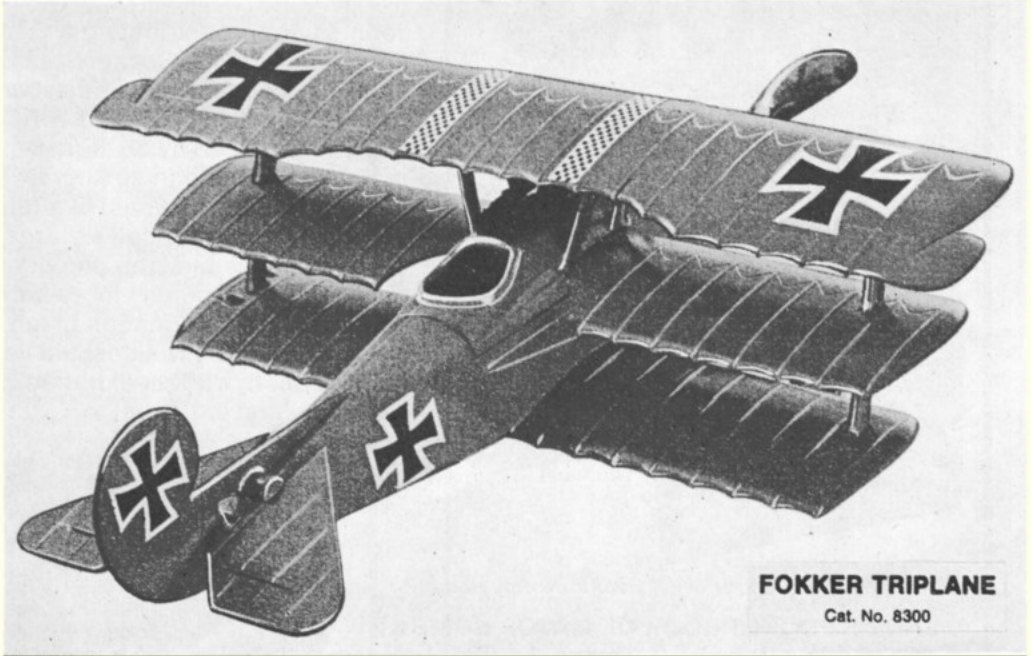
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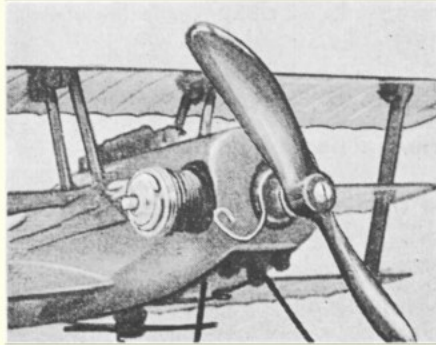


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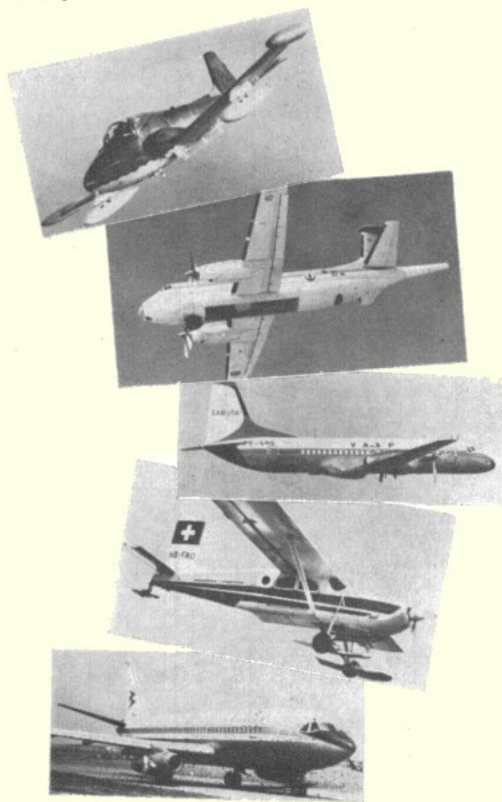
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Heard at the HANGAR DOORS

COUPE D'HIVER enthusiasts will be glad to hear that the International *Pierre Andreis Cup* event will once more be held by the *Model Air Club de Nice et du Sud Est* at Levens, near Nice, France. Generous cash prizes will be awarded at this competition, scheduled for Sunday, 2nd December. Interested parties should contact M. Guy Giudici at 15 Boulevard de Cessole 06100 Nice, France.

While mentioning Cd'H activities, it is an opportune moment to ask all those British enthusiasts interested in joining the *Aeromodeller* party to the French-organised International Meeting, which will be held near Paris on Sunday, 24th February, to send a stamped addressed envelope for details to this address.

A RECORD DAY for the South Midland Areas 'do' at Cranfield last month. First, Mike Billinton established a new record for the .40 cu. in speed class, using one of the new K&B Schnuerle-port engines. Considering that Mike had only had the engine for a very short period before hand, and thus no chance to acclimatise himself to it, the speed of 172.0 m.p.h. is really quite remarkable - and only just 8 m.p.h. short of the British .60 cu. in class record! Incidentally, he used 40 per cent Nitromethane and a synthetic oil marketed under the name of ML.70 - indeed, 75 per cent of the speed entry used this oil.

Derek Heaton and Malcolm Ross also joined the record-breakers when they recorded a 4:20.2 heat time in the FAI team race class, using their Bugl 15, camouflage-painted racer which so nearly reached the final at the Bochum meeting, reported in this issue. Both these record claims are subject to official confirmation.

WORLD RADIO CONTROL Aerobatic Championships, held over Sept. 11th-17th at Gorzia, Italy, brought forth a rather shock result - Yoshioka of Japan took top individual honours, while Japan also claimed the team prize. On reflection, was it really such a shock, or merely an indication of the changing times? Once America was 'expected' to provide the aerobatic champs, and they were rudely awakened when



After the World Free Flight Champs in Austria, many of the competitors and indeed spectators, attended the *Pierre Trebod International* at Sezanne, France on the way home. Martyn Cowley (seen above) did extremely well to place seventh fly-off for the A/2 event which had many top-class fliers competing. He reports on the meeting on page 634.

the Europeans 'took over' in 1970/72, with fliers such as Giezendanner, Matt and Prettnner seemingly invincible. Now these heroes, too, have fallen to the gentlemen from the East - where incidentally R/C is even more popular, and certainly bigger business, than in the U.S.A. The month before nearly saw an identical situation in the Free Flight Champs when the sole Japanese entrant in the Wakefield class placed third out of an 86-strong field. The Koreans, too, have been spectacularly successful in free-flight at the last two Championships - are the men from the East the ones to beat in the near future?

The top individual placings were, in fact:

1. Yoshioka (*Japan*)
2. Matt (*Leichenstein*)
3. Prettnner (*Austria*)
4. Neckar (*West Germany*)

As for our own efforts, Mike Birch placed highest at 11th followed by David Hardaker at 17th and Dennis Hammant in 26th spot. Their efforts also brought Great Britain eighth in the team results.

ANNUAL GENERAL MEETING of the Society of Model Aeronautical Engineers will be held at the Grand Hotel, Leicester, on Saturday, 1st December, at 1.30 p.m. This will be followed (at 7.30 p.m.) by the Annual Prizegiving Dinner and Dance, tickets for which (£3 each) are available from the Secretary, N. F. Couling, of 7 The Green Walk, Willingdon, Eastbourne, Sussex BN22 0RB.

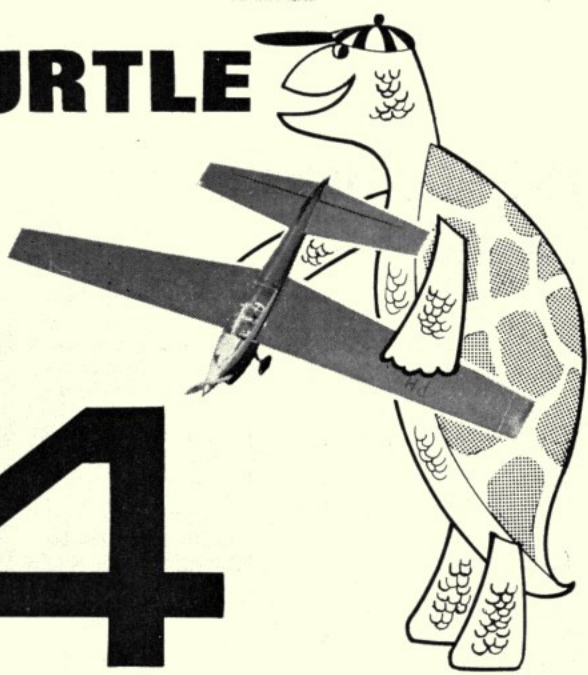


The Falcon's club glider trio of (left to right) Terry Dilks, John Boon and John Carter who competed at the Free Flight News - sponsored International at Strubby, Lincs, on September 8/9th - an event which will be reported in the next issue.

TURTLE

The 'winningest' F.A.I. team racer of them all?
Certainly the most thoroughly developed and race-proven by the many Dutch enthusiasts, in particular Eep Buys, Henry Helmich, Rob and Bert Metkemeyer, plus Hans Visser.

4



TURTLE dates back to the early part of 1970, when Rob Metkemeyer and Eep Buys drew-up the basic design and built two examples. These were our first lightweight models with a C.G. (rearward) wheel and this combination produced much faster pit-stops than previously achieved. Apart from the designers, one of the first Dutch flyers to get really enthusiastic for the model was Henry Helmich, who produced an inked drawing and ran off some dye-line prints of the plan. He also began producing the cast aluminium pans and cockpits for it – so what could be easier for the Dutch teams, especially the beginners, to build when the 'difficult parts' could be bought so easily.

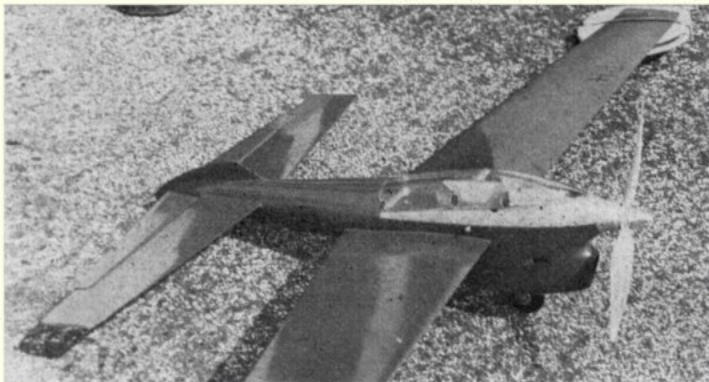
Since then, some 50 *Turtles* have been built in Holland. Many, mostly small, modifications have been made since and so we can safely say that very few models have been so extensively tested, both by experts and beginners, under such varying conditions. As a model for newcomers to FAI racing it turned out to work extremely well: possibly because of its nice slow-flying characteristics when the engine is way off tune.

About the design . . .

To provide a machine that is both stable in level flight and yet responsive, the *Turtle* has a rather short tail moment and a relatively large tailplane area. Another big advantage of a short tail moment is that with the fuselage being so short, its construction may be very light as you do not need much strength

– just stiffness. That is why the fuselage aft of the wing has a small cross-section and monocoque construction. Also by having a very light tail end, a short nose is permissible, even necessary, to get the centre of gravity in the right place. The construction of the fuselage under the wing consists basically of two 'tubes', the cowling duct and the fuselage 'skin'. This guarantees a very stiff lightweight construction in which the undercarriage is fully integrated. It might be clear by now that the low weight of the model is one of its most important properties! Our experiences are that, especially when the motor is not really on song, light models keep on going much better – the advantage is relatively bigger the slower the motor performs. Normal advantages of lightweight racers are fast acceleration and deceleration, easier overtaking, better manoeuvrability etc. – all points covered in Rob's article in the October issue.

The model is designed to weigh around 500 grammes (18 oz.). Over 550 grammes (20 oz.) and the C.G. will be too far back and noseweight will be necessary. Our own *Turtles* weigh (with Super Tigre G.15's) about 450 grammes (16 oz.) – the lightest ever was 15½ oz. Henry Helmich now produces the lower part of the fuselage in glassfibre, and this weighs about 40 grammes. Although I still believe (Rob M.) that it costs something in terms of constructional efficiency and stiffness, many *Turtles* have been built this way, and they were all as good as the original ones. For those experienced in using this material constructional time will be less.



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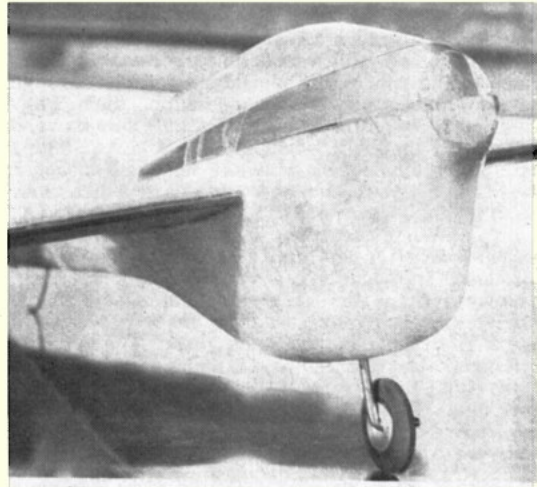
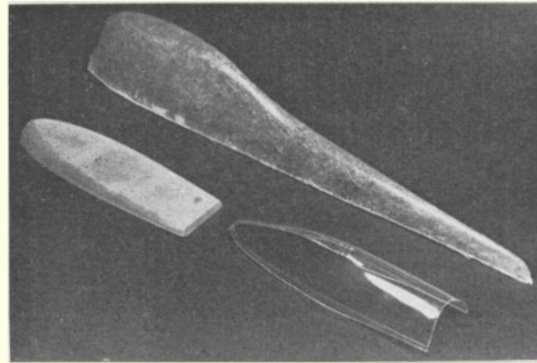
This version is powered by a Bug! 15, and is distinguishable as such by the extended nose on the motor pan. Very compact fuselage used, as what isn't there, cannot weigh anything! Light weight is essential for top performance.

If using a Bugl or other 'heavy' engine, then it is necessary to move the wing forward a little (about 5 mm.) to keep the C.G. in the right place. We do not like doing that as the nose is getting too short to house the engine etc. so we give the wing a forward sweep of about 1 cm. (the lines exit in the same place in the wingtip, so they are also going forward). However, if you cannot build the plane under 500 grammes then you'd better forget this! Wait for your *second Bugl-Turtle* for this operation!

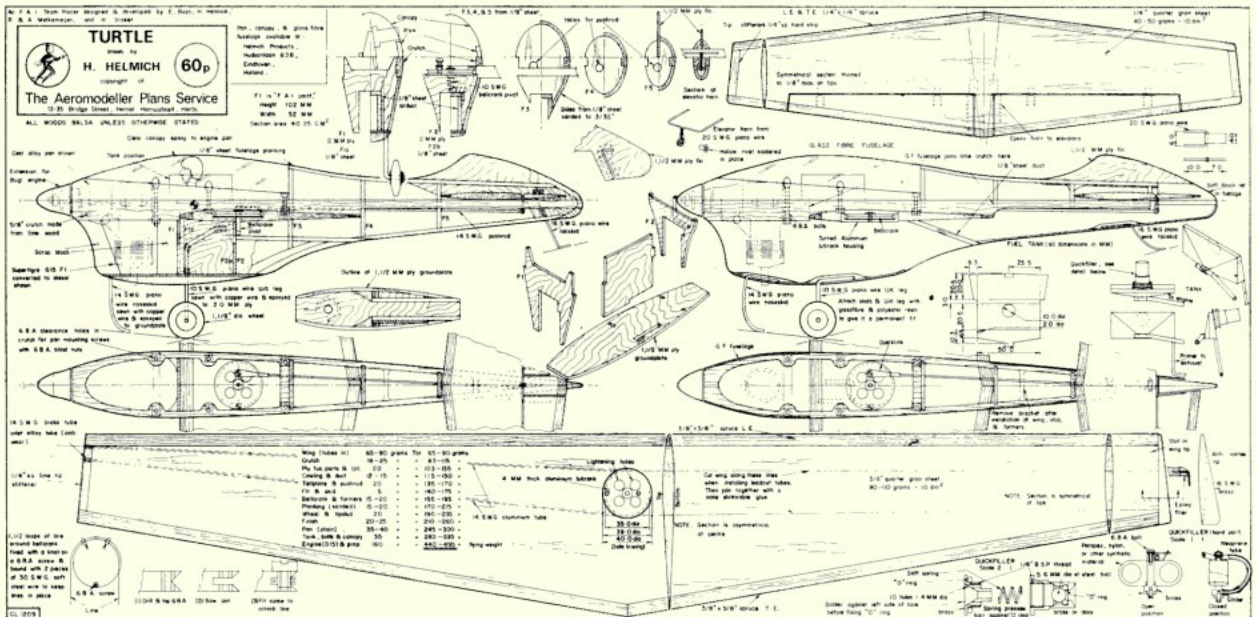
Construction

Firstly the wing: Try to find a sheet of $\frac{3}{8}$ in. quarter grain weighing about 80-110 gms./10dm.², two strips of $\frac{3}{8}$ in. spruce and a length of 14 s.w.g. aluminium tube. Cut the balsa sheet and spruce strips to size and glue together with a non-shrinking glue such as P.V.A. (not balsa cement ! !), then cut right through the wing along the leadout tube positions and the other lines shown on the plan, so that the wing is now in three pieces. Now sand a half round slot in the four left hand sides for the tubes, then glue the three pieces together again with the same non-shrinking glue. Clamp firmly and let dry for at least 24 hours. In the meantime, assemble the tail-plane from really light, quarter-grain $\frac{1}{4}$ in. sheet weighing 45-50 gms./10dm.² and a piece of $\frac{1}{4}$ in. spruce, clamping together with elastic bands, then set aside for 24 hours.

Meanwhile you can work on the cast alloy engine pan (available at Helmich Products, Hudsonlaan 638, Eindhoven, Holland). It is also possible to build-up a pan from 10 mm. dural machined out and fitted with a balsa covering 'cap'. First flatten the pan with 120 grade emery cloth laid on a piece of glass - keep on 'sanding' the pan until it is absolutely flat. Now jigsaw the three top parts out of the pan, and flatten the angled top of the pan. Fit the engine and then lighten the pan to about 40 grammes with a file, and polish it. **DO NOT CLAMP THE PAN IN A VICE!** This is nerve-racking work so take your time. The crutch is made from $\frac{3}{8}$ in. lime wood, and is jigsawed as drawn on the plan. Pay great attention to the area where the wing is glued - the wing fitting



Just some of the items made (and sold) by Henry Helmich for this design. At top the glass-fibre bottom fuselage moulding, seen with the unfinished pan and crystal-clear canopy. Pan is supplied in this state only. Above, a 'Turtle' being constructed with such products - U/C leg is glass-fibre in place.





should be very accurate and without any angle of incidence being accidentally incorporated. Fit the crutch to the pan by drilling mounting holes through the pan and crutch in one operation, then epoxy blind nuts in position. Next cut out the plywood formers F1 and F2, including the U/C mounting plate and ground plate plus the fin/tailskid. Check the fits and epoxy the nose section together after you have mounted the U/C noseskid and bellcrank pivot pin. While the epoxy is thoroughly curing, cut out the other formers and the cooling duct sheets. Formers F3, 4 and 5 can be glued to the crutch.

Now to shape the wing. First cut a hole in the wing for the bellcrank, just deep enough to clear it. Use a razorplane to give a rough section, which is asymmetrical at the centre, changing to symmetrical at the tips – see plan. Make sure that the thickest point is at 33% of the chord from the leading edge. The leading edge must have a radius of about 2 mm. (really sharp leading edges are for supersonic wings, not for teamracers) while the trailing edge should be as thin as possible, but not less than 0.3 mm. Sand the wing smooth with 120 wet or dry paper. then finish with 400 grade. Now cut a piece of 1.5 mm. brass or steel to make the landing tip skid which also acts as a catching aid and tip weight. Cut a slot in the right wing tip and epoxy this skid in place, using epoxy to fair in the skid.

The tailplane has a symmetrical section reducing to $\frac{1}{4}$ in. thick at the tips, again the thickest point being at 33% of the chord. Sand the leading edge to about 1 mm. thick, the trailing edge 0.2 mm. Separate the elevators and epoxy the hinges in place after installing the pre-bent and soldered elevator horn. At this stage, epoxy the crutch to the wing, checking that is absolutely true. When dry add the nose-section and lower former F3 – use epoxy and clamp firmly together. When dry, glue the airduct in the nose-section and also install the airflow gussets made from scrap balsa. The $\frac{1}{4}$ in. balsa thickeners (F1a, F2a) for formers F1 and F2 can now be glued.

Make a bellcrank from 4 mm. dural by jigsawing it round and filing a V slot in the side for the lines. The pushrod will be attached about 10 mm. from the centre in a 6BA tapped hole. Opposite the pushrod hole (see detail on plan) saw the V-cut a little deeper so that the lines can go around a 6BA bolt to lock them. Bend the pushrod and attach it to the

The finished pan after it has been extensively lightened and polished – contrast this picture with that shown on the previous page. The work involved is not difficult – no machinery is involved, only hand tools are needed – but it does take time and care. Patience will be rewarded.

Undoubtedly the most successful users of the 'Turtle IV' have been the Metkemeyer brothers – Bert and Rob (left) – seen here after winning the '73 British Nationals. Complete contest pedigree is far too long to list!

elevator horn by silver soldering a small rivet to it. Solder an adjustable quick link on the other end. Glue the tail to the crutch (including the fin plus tailskid), taking care that it is at zero incidence. Install the carved balsa nose block then plank the fuselage with $\frac{1}{4}$ in. (about 35 grammes per sheet) strips about $\frac{1}{4}$ in. wide (3/16 in. wide for the sharp bends). Pay attention to the rear of the air duct as this is a difficult point – study the plan at this point for at least one hour before planking! After drying, the whole fuselage can be sanded to shape making sure there is a smooth 'flow' around and behind the cockpit.

Finishing

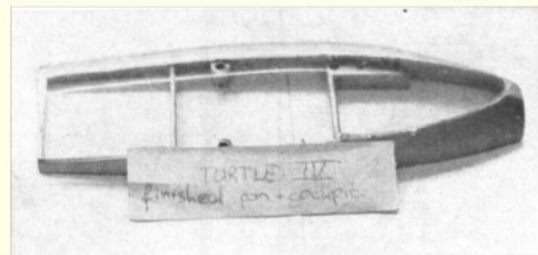
Apply a coat of clear dope, thinned 50%, over the whole model and sand with 400 wet or dry paper (used dry). Cover everything with black lightweight tissue and dope again. Now sand again so that you sand through the tissue at the high spots – the black tissue enables you to easily see high and low areas. Apply another coat of dope, and sand again. Now mix dope with French chalk and coat everything. Set aside for a week so that this coat is really hard, then sand everything smooth again. Give the model one coat of cellulose paint, preferably sprayed, then thoroughly fuelproof the motor area and air duct. After a few weeks (you can fly it in the meantime) when the paint is really hard, you can rub the surface with 600 wet or dry paper and then polish it with a car cleaner compound.

Tank and Quickfiller

Developing a tank for use with a quickfiller brought forth the following requirements, which it had to meet:

- Be filled without froth (see description of quickfiller).
- Be narrow. During flight the local gravity is a lot greater than normal, therefore the width should be as small as possible. We think that about 10 mm. is the minimum.
- To be emptied in flight completely. For this the best shape is a funnel to the engine feed pipes, so to achieve this easily we bend the right hand side in such a shape.
- To have easy mounting dimensions. The angle at which the quickfiller is mounted is chosen to fit the pan without making extra holes.
- To have a capacity of no more than 7 c.c., including all pipes and tubes. Check this as often as you can with different measuring equipment. If you know that the organisers will check tanks then check your own early in the morning with their equipment, then you will not be surprised by the 'official' measurement.

Continued on page 613





SPAARNDAM INTERNATIONAL

highlight of the combat fliers'
calender, reported by
Mick Chesterton – pictures by
Paul Tupker

Eventual winner, Vernon Hunt giving a last-minute tweak to the Oliver's needle before leaving it in the care of his pit man, Sleddon.

ENGLAND IS STILL top of the control-line Combat class and nobody who attended this excellent contest would argue otherwise. However, the Dutch are never content to be beaten, so with an eye to improving the standard of combat in Holland, the Daedalus club of Amsterdam organised a second European Combat contest at the sports ground in the picturesque village of Spaarndam, near Amsterdam. Our host's hospitality and their enthusiasm for organisation ensured the success of the event as did the weather, which was perfect with no dazzling sun, but still very warm and calm. The venue too was ideal, the chosen pitch at the sports ground being easily big enough for two circles.

The contest was a two day affair held on the Saturday and Sunday, business commencing early on Friday 17th August as contestants from Belgium, Germany, France, Denmark, England and Holland started to arrive.

Everyone was then issued with their own identification badge: black for competitor, blue for spectator, and red for organiser. In addition there was a gift envelope for each person containing, among other things, a souvenir ribbon and a map of Spaarndam.

The first engine heard on the Saturday was at 7.45 a.m. — everybody was eager to begin! Breakfast was eaten in the Sports club restaurant and the final preparations completed so that the contest began at 10.30 a.m.

Bob Morgan (G.B.) flew a well controlled heat against F. Op de Beek from Belgium, following at good distance and winning by an equally good margin of 440 to 177. Vernon Hunt (G.B.) scored over 500 points against his first round opponent Gunther Schwarz from Germany who was disqualified anyway! Schwarz, perhaps better known in the team race world, was also disqualified from the 'second life' fly-off which started after lunch.

Bert Metkemeyer won through here, so with his brother Rob who had won his morning heat, the Dutch winners of the British Nationals team race event had a place each in the second round — a versatile pair!

Victorious Glevum! They didn't quite make it an all Glevum final, but at least took the team prize with (l to r) Derek Dowdeswell, Tim Court, Frank Smart and Mick Lewis. Arch organiser and frequent C/L Jury member at World or International Champs Tony Aarts is seen far right.

During the course of the day there were 15 disqualifications, a rather high figure, and by five o'clock it was obvious that the day's flying had nearly finished. Soup, rolls and coffee were ready for everyone in the restaurant and a typed results sheet was provided. Studying these results one saw that the top scorer of the day was A. Mau from Denmark, being the only person to score over 600 points although our own Derek Dowdeswell was near with 595.

On Sunday the second round started in fine style with Richard Evans (G.B.) drawn against Captain from Holland, in circle two. Evans had a lot of engine trouble and Captain quite skilfully out-flew him with a good model — the final score of 433 to 300 might have looked very different had Evans' engine been set right.

Mittler of Belgium flew notably well with a tapered wing design and beat his Dutch opponent De Heer convincingly 524 to 246. Morgan (G.B.) flew against Nielson (Denmark) in an exciting heat where both sides were evidently skilful, but Morgan followed hard and the Dane was not quite clever enough — score was 500 to 377.

Most notable for clean flying was the heat between Rasmussen (Denmark) and Dowdeswell (G.B.). This bout was a model of team behaviour, the pilots themselves hardly coming into contact — no centre circle 'rough stuff' here and it was a great pleasure to see Derek through to the third

round by 397 to 173.

The organisation continued efficiently with the third round. Meijer of Holland followed Farrant (G.B.) very closely through manoeuvres and this paid a dividend of 540 points; highest in the third round along with Carolan from England who beat first round top scorer Mau.

The draw for the fourth round was between one German, one Danish, three Dutch and no less than 11 English competitors! First to fly in circle one were Mick Tiernan and Jim Carolan both of Great Britain. Although they were quite evenly matched, Carolan proved that he was more skilful on this occasion dismissing Tiernan by a good margin.

Meanwhile in circle two Bob Morgan showed how experience counts; it was not an easy heat and at the final whistle his Danish opponent Anderson was less than 20 points behind. Then British National Champion Derek Dowdeswell was drawn to fly the notable Van Zijp from Holland. This promised to be a good heat and it turned out to be full of action. Van Zijp taking cuts easily while Dowdeswell's engine was running badly. There was a line tangle and resulting crash in which the Dutchman broke a propeller. His pit team did a quick change and he was back in the air, but Derek was soon airborne also, this time, with a good engine setting. Dowdeswell took two cuts quickly and finally the heat.





It's that man again! Rob Metkemeyer swops pit-man duties from team-race to combat - Ted Kroon seems quite confident in his abilities too. Rob also flew in the contest - as did his brother Bert.

Meanwhile, in circle one Frank Smart took early cuts in a light hearted heat against Berry also of G.B. Vernon Hunt on the other hand had his task set against German team race pit man Konrad Kaul who used M.V.V.S. engines which were not consistent and not always faster than Hunt's Langworth-Olivers. Knowing Hunt's reputation as a formidable opponent, Kaul repeatedly ran across the centre of the circle, attempting to avoid his opponent. However, his efforts were no more than a nuisance to Hunt and the final score told the story well: Kaul 322 and Hunt 639. In fact the German's score was a fairly good one, but Hunt had almost doubled it.

Avery (G.B.) had a very 'untidy' heat against the Dutchman Streefkerk, but beat him well, 339 to 178. Finishing round four Meijer of Holland flew Sleddon (G.B.). Sleddon's models looked the better but Meijer was obviously a superior pilot and after a dispute Meijer took the lead by 392

Fred Meijer, one of the mainstays of the organisation, looks sneakily confident as he flies against Sleddon (G.B.)!

to 194 points.

For the quarter finals the field had been reduced to seven English and one Dutch contestant. The first bout was between Avery of Finchley and Dowdeswell of Glevum and proved to be both clean and entertaining; three cuts to one and no dispute. At the end of the four minute combat period both models still carried streamers.

Frank Smart was next against the one remaining non-English contestant; the bout starting quickly with Smart following through every manoeuvre and taking the first cut, a very small one. Meijer then got a larger cut and two fast passes followed in which both streamers were removed. Smart crashed and the 18 seconds spent on the ground cost him the heat. Meijer was the winner by just 18 points.

Hunt versus Carolan, was a very skilful affair with over 1,000 points being scored between them. Carolan was a little faster, but Hunt beat his opponent by one cut because of the

'Wish I was a bit taller!' Glevum junior Tim Court reaches high over a partially obscured Jooke van Asperen (Netherlands).

debatable, but none the less adopted, interpretation of the F.A.I.'s badly written 'string cut' rule.

In the last quarter final Mick Lewis of Glevum beat Bob Morgan of Finchley without too much trouble, using a very light-weight tapered wing design, similar to those used by the rest of the Glevum club.

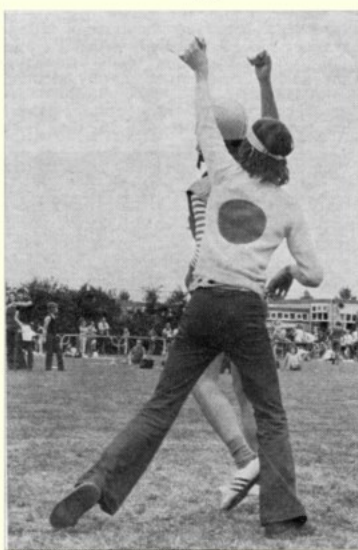
And so to the semi-finals. A re-draw took place once again and, despite the organisation's commendable sociable effort to keep apart clubs and countries in previous draws, Lewis and Dowdeswell both of Glevum were drawn demoralisingly together for one of the semis - there was thus no possibility of an 'all Glevum final'. Hunt flying for F.F.A.S.T. was drawn against Meijer of Holland, whom he beat very definitely by three cuts to nil, his model being the more lively of the two and his greater skill and piloting ability being apparent.

So Hunt was through to the final without fuss or bother and it was obvious that he would fly someone from Glevum. Who was it to be, Lewis or Dowdeswell? Well, they were not apparently very worried and after the depressing result of the draw it was put down to luck and they decided to enjoy Spaarndam's Glevum semi-finals. Three cuts each was the order of the day, two of Lewis's being little ones and the final score separated them by just two points ground time.

In the fly-off for third place Meijer had the edge on Dowdeswell - Derek hitting the ground numerous times and had a good chuckle at his profusely perspiring pit team. The score was a near one, but gave Holland the benefit and third place.

The final began smartly but Hunt was not satisfied with his engine setting and was soon down for re-adjustment. He took off again and Lewis took a cut, and still Hunt's engine misfired. After a further adjustment Vernon was happy and he soon took a cut to even the score. Lewis overshot an attack and took all of Hunt's streamer and a large piece of

Just one of the large British contingent - Avery with rather typical British wing layout. Very hot, humid conditions proved oppressive to some fliers.





Left: 'Is this contract binding?' Ron Kaptyn (N'lands, left) and Berry have their feet untangled from scrapped lines by the pit-men. At right: 'Seen any good planes lately?' Richard Evans sinks to his knees as he later tackles the same pilot.



string as well, leaving himself at Vernon's mercy, who soon took a passing cut to secure his victory. Both models were quick and evenly matched and the final score read 405 to 334.

The prize giving was a fine social evening, while brief television coverage of the event brought rousing applause from those present.

Gjevum won the Bergman Challenge Cup team prize and no less than 32 individual prizes were awarded, Hunt receiving his first prize of a Lenco stereo record player while Mick Lewis took a large R/C model aircraft kit(?) for second prize. Fred Meijer in third place had a Taipan model engine, whilst Derek Dowdeswell possibly having other interests, chose a large

bottle of Smirnoff Vodka!

The individual trophies were simple, and quite beautiful, rectangular coloured glass on a small wooden base. In fact, superb prizes following a first class contest.

In conclusion the standard of flying was probably higher than ever before. Great Britain is still well on top but we know that we have strong competition from European countries now and this will push our standards higher.

But combat as an Internationally recognised class is only just beginning - parts of the F.A.I. provisional rules can only be described as ridiculous. Indeed, the S.M.A.E. rules as they were ten years ago make current F.A.I. equivalents look a little unnecessary. A number of clauses in the rules are badly written, the prime example of this being Section ten, clause 'd' which states: 'No points shall be awarded for cuts of the thread line'. This presumably refers to the means of attaching the streamer paper to the model itself, which in the past has been cotton thread or similar. At Spaarndam there was so much dispute between the circle marshalls and the flying teams over tiny paper cuts (simply because they were worth the fantastic figure of 100 points each!) that, had there been disputes about pieces of cotton thread or line, the first round would have taken far more than four hours to fly. It should be

taken as read that a piece of thread or line cut would not be counted. Indeed it has been in England for a very long time.

How much better to write positively, rather than negatively, 'a cut shall be the opponent's streamer paper falling from one attack'. A shower of bits and pieces shall then be 'one cut' unless the judge concerned considers that more than one attack was made. However, this subject might well be a good one for a winter debate in order to establish a good set of rules before next season, certainly, please, before Spaarndam '74.

Bravo Deedalus and congratulations. Our support and attendance can almost be guaranteed next year, maybe in even greater numbers.

TURTLE IV

Continued from page 610

As reliability was number one in the design of the quickfiller, we chose O-rings for all seals so the fitting of the metal parts are therefore not important, and a loose fitting of the moving parts prevents sticking after refuelling.

The tank portion consists of two parts - the first is soldered to the left hand side of the tank and the second part is screwed to it. In this second part there is room for an O-ring to make sure that the ball is not leaking. During filling, the ball is pushed backwards and as the part behind the ball has many holes, the fuel will not froth when filling and the tank will fill in a second. In flight, these same holes make sure that the filler is emptied completely (all these aspects were tested scientifically in the Visser laboratories). The filler contains about 1 c.c. of fuel so the rest of the tank has a capacity of 6 c.c.

The hand-part also consists of two parts, one solid and one moving part. The solid one has two holes to fit the middle and third finger (the first finger is needed for adjusting the needle) and a third one for the moving part. At the rear of this part, a piece of piano wire squeezes the fuel tube. When the hand and tank parts are pushed together, the ball is pushed backwards and the fuel tube is opened - the O-ring on the moving hand-part seals the link.

A list of advised weights for the various parts of the model are given on the plan - a very light version of the *Turtle* will only result from selecting top quality balsa and removing all material that has no important constructive function. If you lighten the construction in this way, a 430 gramme *Turtle* will be as stiff and strong as one weighing 500 grammes. With this list, it is possible to check which parts are too heavy while building the plane, and so you can choose a lighter piece of material in time. It should perhaps be said here that a *Turtle* weighing over 550 grammes is one of the worst flying objects that exist!

Conclusion

The *Turtle* described here, is the plane in its original form. Features like a glassfibre finish, pre-fabricated bellcrank housing and glassfibre fuselages (as also detailed on the plan) have also been used successfully in various other *Turtles*. If you want to know more about this, then write to Helmich Products, Hudsonlaan 638 Eindhoven where you can order pans, canopies, glassfibre fuselages, bellcrank housing and circular bellcranks for this model (see advertisement in this issue).

As a last word, it should be said that in teamrace the model alone is not the secret to good performance. A good model is necessary but not enough to win contests. The pitman and pilot have to do the main part of the job, and of course the engine has something to do with it! To get the most from any model a lot of practising will be required, so if you're going to try this design don't expect top results immediately, only after you are thoroughly familiar with it.

Back to . . . SQUARE ONE!

continuing our Beginners' Series by detailing the construction of the St. Leonards Model Supplies 'Asteroid' glider

HAVING previously detailed the groundwork for building the wings of the Asteroid glider, we now turn to their actual construction, starting first with the centre panels.

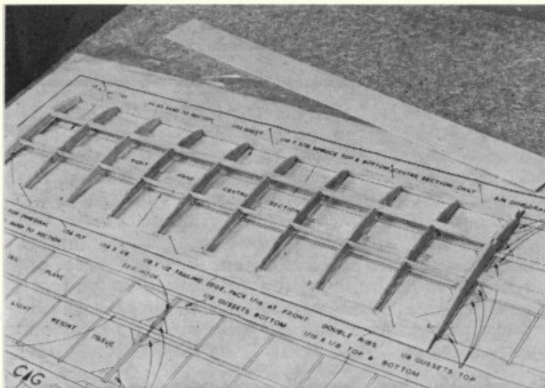
Firstly glue all the ribs in place, but do not use too much adhesive as it will only be 'squeezed out' at the trailing edge. Any excess should be wiped off while the glue is still wet. Note too that the double ribs should be angled slightly so that when the various panels are joined with their dihedral angles the ribs 'lean' to match. This amount is not critical, but we suggest tilting the centre section rib inwards $1/32$ in., the rib at the tip joint $3/8-3/32$ in.

You will note that only one half of the finished

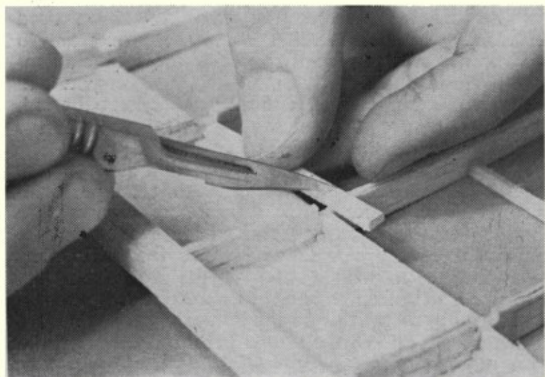
wing has been drawn on the plan – this is because both left- and right-hand centre-panels and tip panels are identical. Two centre-panels will have to be built – the only difference being the fact that the ribs at each end of this first panel will be angled by differing amounts. Assuming that the first panel we are building is the right-hand centre section panel, then the right-hand end rib will be angled the most.

Before adding the spars, it is necessary to provide some support for the ribs to prevent them from being broken, so slide a piece of scrap $1/8$ in. thick strip beneath the ribs underneath the main spar slot. We used one of the $1/8 \times 1/8$ in. strips supplied for the fuselage. Cut the top spruce spar to length and

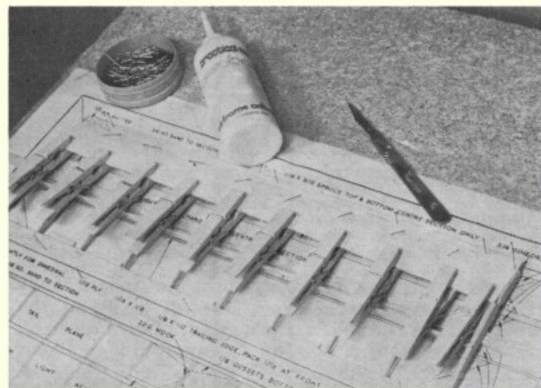
First stage after having pinned the leading and trailing edges in position is to add the ribs. A square may be used to check that the ribs are vertical, but should not be necessary if the T.E. slots were cut accurately. Add spars when glue has set.



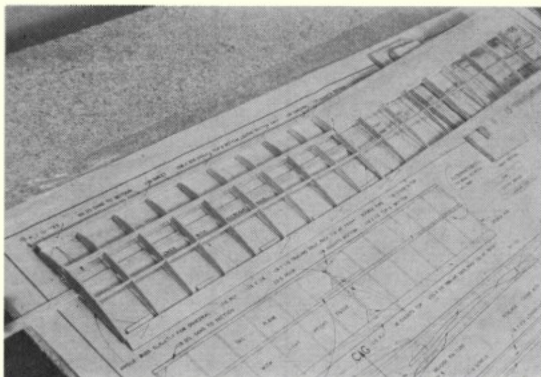
Adding the spar webbing – note that the grain is vertical. Cut strips from the sheet provided to the correct width, then lay in place and nick with knife blade at correct length.



Adding the leading edge sheeting – a slow-drying glue such as P.V.A. is essential here. Pin along the L.E. first, ensuring that sheet is in contact with the ribs, before using clothes pegs to clamp sheet to rear spars. Use plenty of pegs as shown.



With one panel completed, remove from board, pack up to suit dihedral angle, and build-on the left-hand panel, using exactly the same building sequence. Note strip of $1/8$ in. thick material supporting ribs while spars are added.



glue in place – this is when you will be thankful that you checked the sizes of the rib slots beforehand! Likewise, add the $\frac{1}{16}$ x $\frac{1}{8}$ in. rear balsa spar.

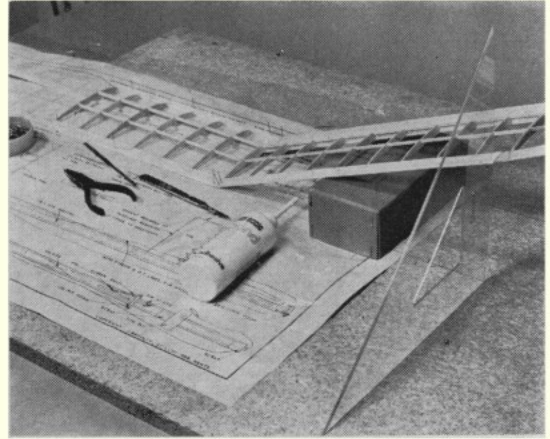
Next, cut the leading edge sheeting to size, allowing a little extra in the width to compensate for the curvature of the ribs. Test by placing the sheeting in position, marking the correct width at each end, and then trim-off using a steel rule as a straight edge. The sheeting supplied in our kit had a slightly 'rough' finish, so we *lightly* sanded it down with the aid of our sanding block. Now run a bead of glue along the ribs and spar plus one edge of the sheeting, and carefully lay in place along the leading edge, pinning it above each rib position. This done, press the sheeting down in place, and use clothes pegs to clamp it to the spars. Again, do not use too much glue – it will only be squeezed out and look unsightly! Also, do not use balsa cement for this operation – it will set much too quickly, long before the sheeting is finally in place.

When quite dry, remove from the plan and add the webbing between the spars. These webs are often employed on gliders (and indeed other models) and are a very good way of providing a strong, stiff, yet light structure, as they produce a form of I-beam which engineers favour so greatly wherever maximum strength is required from a metal girder. Cut the webs from the $\frac{1}{8}$ in. sheet provided, noting that the grain must be vertical. You will find it easiest to cut this sheet into strips across its width, the depth of the webs being measured from the bottom of the spar to the top of the spar slot of the lower spar. Do this as accurately as possible. Hold the strip in position, and trim off with the balsa knife – very easy as the grain direction assists the cut! Glue in place along the centre line of the spars (see *figure 2* in the October issue). This done, add the lower spruce spar and that completed the first panel, and though perhaps it sounds a little complicated, you will find that really it is all quite straightforward, *provided* you make haste slowly.

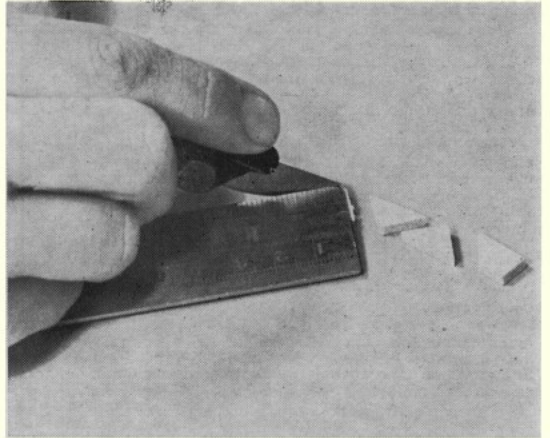
So, one panel down, three to go! As their construction is virtually identical, you will be quite good at it by the time you have finished! The left-hand centre section is next to be tackled, but firstly pin the just completed panel back down over the plan so that it lines up exactly with the right-hand end of the centre-section view. Pin down at the centre-line position, but raise the other end $1\frac{1}{2}$ in. (measured from the underside of the rib at the spar position) above the board to allow for the dihedral angle of $\frac{3}{4}$ in. under each panel. Now repeat the construction techniques exactly (except that the leading and trailing edges must be chamfered to fit the first panel exactly at the centre line, and remember to angle the double-rib inwards $\frac{1}{8}$ - $\frac{3}{32}$ in. as before.

When this panel has been completed, the tips are then built-on in exactly the same way, except that the centre section is raised 4 in., at a point 10 in. from the tip to allow for the dihedral. (A distance of 10 in. is specified as this is the length of the tip. Try it, you'll see what is meant!) Note that balsa is the material used for the main spars at the tips, and that both tips are made in absolutely the same way.

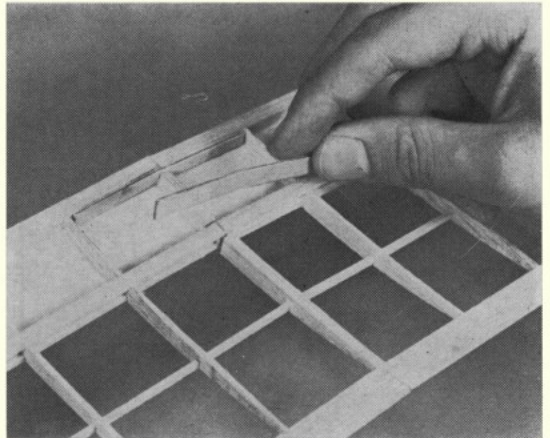
With the wing's basic construction completed, the ply dihedral braces may be added. To do this, use carbon paper to transfer the shape of the braces (given on the plan) onto the $\frac{1}{8}$ in. ply provided. However, just one word of warning – there is a small



Adding the wing tips. Note how the centre section is raised to suit the dihedral, and how reference lines have been drawn on the building board so that straightness of the wing may be checked with the set square.



Above, cutting out right-angled triangular gussets from a piece of strip while ensuring that the grain direction is correct (i.e. parallel to the hypotenuse of the 'triangle'). Below, adding the ply dihedral braces – note how a slice $\frac{1}{16}$ in. wide has been cut through the rib. Clamp in position with clothes pegs while glue dries.



continued on page 617



WOODFORD RALLY '73

reported by John O'Donnell

Kathryn Davenport poses with Roy Lever's massive 126 in. span Halifax Mk. I bomber which is powered by four H.P.40s and weighs some 24 lb. It entertained the Woodford crowd with its complement of eight bombs and six parachutes!

WOODFORD is something of a tradition in the North West, especially as it is now one of the few surviving public rallies. This year's meeting was favoured with a warm sunny day, suiting both fliers and spectators, and almost ensuring overall success.

Record gate takings must also have been helped by the well-timed appearance on I.T.V. of Roy Lever's mammoth R/C Halifax bomber, described as 'star' of the forthcoming rally. On the day, this model made half-a-dozen demonstration flights, dropping bombs and parachutes, and generally delighting the public. It also made many modellers a little apprehensive with its low flying!

Control-line saw many events run virtually single-handed – a system that depends on competitor co-operation. Several events had Southern or Western fliers in the prize list, whilst Combat was contested by a group of Frenchmen from Marseilles, led by Jean Claude. This event suffered by losing its P.A. system to radio, but still finished remarkably early. Best bout was said to be the semi-final between Richard Evans and Mike Chilton – with three cuts apiece. This made the final look a little tame – with lots of time 'on the ground'. Winner was Evans with the popular Oliver Ironmonger combination.

Stunt was run by Neil Billington – now retired from active modelling – and won by P. Tindal, with Brian Turner (flying his *Starmaker*) runner-up. Handicap speed was run by Sharston on the usual percentage basis, and generally, speeds were low considering the weather. Ken Morrissey went well to win at 164.5 m.p.h. with an unpiped ST.60 ABC, using 65 per cent nitro to turn an 8½ x 13 in. Topflite prop. Second place man, Ian Roffey, used a similar motor, whilst Gordon Isles took third with an F.A.I. Class Rossi 15 model.

The Goodyear event was remarkable for six of the semi-finalists being 'novices' (according to John Horton's league table) and for winners Dave Rudd and Richard King setting new British records for both heat and final times. The other finalists were Place/Howarth and Everitt/Cooke. A novice

A pair with every reason to look happy – Dave Rudd and Richard King won both the F.A.I. and Goodyear team-racing classes using Kosmic and Super Tigre engines respectively.



final was also held and was topped by Mike Daly and Graham Howard.

Heaton and Ross ran 'B' and 'F.A.I.' team final respectively – the former providing the day's best final with very close scores, just one second separating winners Giles/Horwood from Place/Howarth. The South Bristol pair used a ST.G21/29 with a Bartels 8 x 8 in. prop. F.A.I. provided a second win for Rudd/King, this time with their Kosmic 15D *Scorpion*. Second were Langworth/Muncaster with a ST.G20 pod-and-boom model.

C/L Scale saw Perry the elder give a magnificent flying display with his A. W. *Whitley* twin-engine bomber, and hence beat D. Housecroft.

Free-Flight attracted reasonable, rather than good, support. The wind was in a poor direction but was light enough (except for a spell in early afternoon) to give little trouble with retrieving. There were some representatives from afar, but very little from the neighbouring Northern and Midland Areas. Nevertheless, all events (bar Chuck Glider) went to a fly-off – and the prizes were spread out equitably enough.

Open Power had a three-way fly-off. Tom Smith won easily enough with his K&B 40 *Nig Nog* following indifferent climbs from Russell Peers and Pete Harris. There were six in the glider fly-off – but only two found helpful air. John Carter flew last with a veering tow that positioned his A/2 very well for a 3:24 score and first place. Phil Owen had already managed a comfortable 2½-minute flight, well ahead of club mate Tony Evans whose 1:33 was enough for third.

Almost half the Rubber entry reached the fly-off. Winner proved to be a glider specialist Gerry Ferrer, with 5:40 from his 280 sq. in. model. Second (for at least the fourth time this year) was Dave Hipperson, whilst John Bailey was third. No one else cleared five minutes. Mini was a fly-over for Russell Peers' ¼A model as both Roy Roberts (¼A) and Brian Worthington (A/1) had lost their only model. Incidentally, Brian's *Humperdink* was home before he was! Mention must Liverpool Club members Tony Evans (left, 3rd placed) and Phil Owen (who placed second) seen after the Open Glider fly-off.



be made of the ridiculous rules used for this event – three-threes with $\frac{1}{4}$ A models allowed 10 seconds run. Not surprisingly, there were four power models in the top six.

Chuck Glider had high scores with winner Julian Hopper having four maxs in his 7:05 total. He only needed one model – *Sweepette* 20 surfaces on a Ronitube fuselage, thanks to using a vane D/T. Barry Kershaw and Ewan Jones had to be content with second and third places respectively.

The gala championship was decided on total score from all the F/F duration events and was hotly contested by Andy Crisp and myself. Andy looked unbeatable at first, but some late and hectic flying in the last hour of the contest (including entering Chuck Glider with 10 minutes to go) finally proved otherwise. There was only 20 seconds between us in scores of over 33 minutes. Dave Barnes took both the Junior Glider and Junior Championship awards.

Free-Flight Scale will be detailed elsewhere – but saw Eric Coates oust Terry Manley for the 'E. J. Riding Trophy'. One other event was programmed but not contested – Tailless – now a rapidly dying class.

The success of this rally needs to be 'qualified' a little. Publicity was inconsistent (although the lower admission rate published was honoured), the printed programmes suffered from copy being lost in the post, and various amenities were 'forgotten' by the outside contractors. As there was serious undermanning of events (and particularly of crowd control) the Area is particularly anxious to thank those who did help, and to acknowledge the contributions of Hawker Siddeley Aviation in allowing use of the airfield.

Results:

FREE-FLIGHT
Open Rubber (24 entries, 20 scores): 1. G. Ferrer (Leicester) M+5:40; 2. D. Hipperson (Croydon) M+5:19; 3. J. Bailey (Bristol & West) M+5:05. **Open Glider** (46 entries, 40 scores): 1. J. Carter (Falcons) M+3:24; 2. P. Owens (Liverpool) M+2:42; 3. A. Evans (Liverpool) M+1:33. **Top Junior**: D. Barnes (Liverpool) M+5:37; 2. R. Peers (Falcons) M+3:09; 3. P. Harris (Evesham) 7:57. **Open Power** (14 entries, 12 scores): 1. T. Smith (B.A.C.) M+3:00. **Mini** (19 entries, 16 scores): 1. R. Peers (Falcons) 9:00; 2. R. Roberts (Wigan) 9:00; 3. B. Worthington (Whitefield) 9:00. **Chuck Glider** (23 entries, 21 scores): 1. J. Hopper (Stanstead) 7:05; 2. B. Kershaw (Wigan) 6:54; 3. E. B. Jones (Sunderland) 6:32.

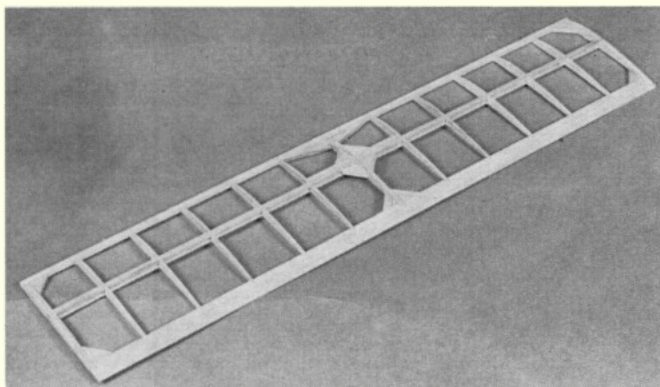
CONTROL LINE
Stunt: 1. P. Tindal; 2. B. Turner; 3. R. Parsons. **Combat**: 1. R. Evans ((S. Bristol); 2. D. Cox (Gleveum); 3. M. Chiltern (Highgate). **Handicap Speed** (11 entries, 7 scores): 1. K. Morrissey (Sharston) 93.2 per cent; 2. I. Roffey (Elliot) 91.9 per cent; 3. G. Isles (Sharston) 87.8 per cent. **F.A.I. Team Race**: 1. Rudd/King (Feltham); 2. Langworth/Muncaster (Wharfedale); 3. Sunderland/Woodside (Leigh). **'B' Team Race**: 1. Giles/Horwood (S. Bristol) 7:13; 2. Place/Howarth (Wharfedale) 7:14; 3. Hill/Barber (Wharfedale) 7:40. **Goodyear** (30 entries, 27 scores): 1. Rudd/King (Feltham) 9:28; 2. Place/Howarth (Wharfedale) 9:52; 3. Everitt/Cooke (Leigh) 11:54.

SCALE
Control Line: 1. S. Perry (Wolves); 2. D. Housecroft (Dewsbury); 3. J. Sambrook (Heswall). **R/C Class 2**: 1. S. King; 2. P. Russell; 3. J. Worden. **Free-Flight**: 1. E. Coates; 2. T. Manley; 3. V. Priest. **F/F Gala Champion**: 1. J. O'Donnell (Whitefield) 33:40; 2. A. Crisp (Oxford) 33:21. **F/F O'Ala Champion** (Junior): 1. D. Barnes (Liverpool) 15:40; 2. K. Lord (Sykes) 12:54.

Back to Square One

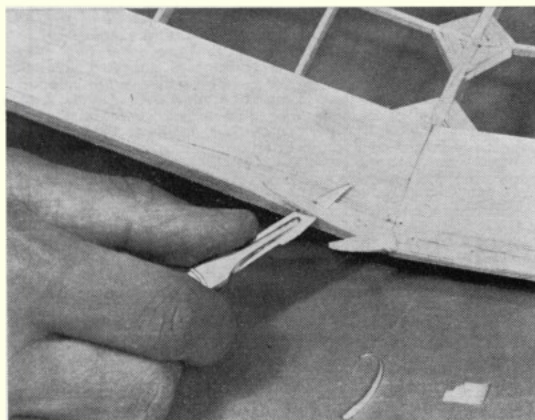
Continued from page 615

At right, the completed tailplane with all its gussets in place reveals the straightforward construction employed – actually, just like the wing, and after you have built all four panels of that, the tail should be no problem! Below right, shaping the leading edge. Use a balsa knife carefully to remove the excess, then follow up with varying grades of glass paper until the correct shape is achieved. This is easier than it sounds as the finished shape blends into the leading edge sheeting perfectly.



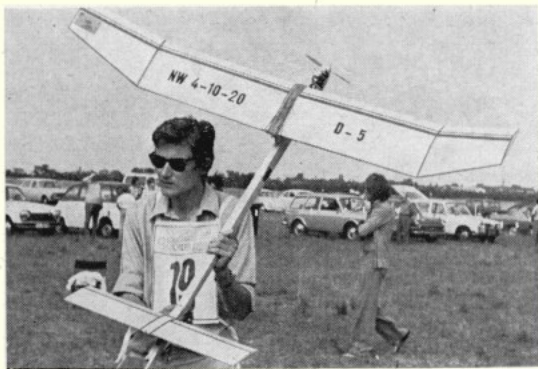
mistake on the plans here – we suggest you make one of the braces for the spar 1/32 in. thinner (to allow for the sheeting), and the leading-edge brace $\frac{1}{16}$ in. thinner. Now taking your balsa knife with a really sharp blade, cut away a piece $\frac{1}{16}$ in. wide right through the double-centre rib (but not through the sheeting) so that braces can lie flush either side of the spars and next to the leading edge. Glue securely. You will see that the braces seem a little short, but this is quite deliberate – the designer was just allowing for the fact that beginners tend to use too much glue at rib/spar joints which would prevent the braces from laying flush.

All the dihedral and tip joints are reinforced with $\frac{1}{8}$ in. sheet gussets – note the photographs showing an easy way to cut these from the $\frac{1}{8}$ x $\frac{1}{4}$ in. strip, and make sure that the grain direction is as shown – most important. Glue the tip blocks in place, and then they and the leading edge are ready for shaping to the section shown on the plan. This may seem a difficult task, but if you take your time it is much easier than you think – basically the shape follows the contours of the leading edge section with a rounded nose. Use a balsa knife to take off the excess 'corners', then sand down, firstly with medium and finally with extra fine glass paper used with a sanding block. Do not allow the balsa knife to 'dig-in' causing hollows – when in doubt use the sanding block and once again, *make haste slowly*.



As for the tailplane – well after the wing it should be simplicity itself! The only difference is that the front of the trailing edge is only raised 1/32 in, to suit the airfoil section, the rib supporting material is just $\frac{1}{16}$ in. thick and the spar is webbed with $\frac{1}{16}$ in. square balsa, with the grain running lengthwise. Otherwise, just build 'as before' then when quite dry, lightly sand the leading edge to shape.

Next month – the fuselage.



ALTHOUGH I commented last month on the dearth of contests in mid-summer, space limitations precluded my reporting the few that were held!

The fourth *S.M.A.E. Area Centralised Meeting*, held on 8th July, was favoured by marvellous weather throughout the country. Unfortunately, I can only report happenings second-hand, as I missed these contests through spending a few days in hospital. Perhaps I should reassure the 'opposition' that I got back to 'normal' quickly enough!

Descriptions received of the flying at some venues (Beaulieu, Topcliffe and Watton), plus perusal of the National results, leaves little doubt that the warm, sunny and calm weather was ideal for thermal flying.

The Team Glider event (for the *Model Engineer Cup*) was well supported with almost 160 entries. From this, 52 fliers recorded trebles; surely an all-time record! However, only two clubs, Southampton and Norwich, had a complete team of four all max out. Another two clubs, Grantham and St. Albans, had four members with trebles – but had not combined them together in the same pre-nominated team.

Final success of both Team and individual depended on the lift available at fly-off time. East Anglia had almost dead air, with only young Edward Bramley's *Caprice* finding any lift (and recording over four minutes). Conditions at Topcliffe were similar. In comparison at Beaulieu, there was enough lift, and visibility, for potential 10-minute fly-offs – conservative D/Ts restricted Garry Madelin and Ted Rose to around six minutes. Even so, they were only beaten by Birmingham's Mike Dixon who recorded 6:24 at Barkston Heath (in the company of good scores from three Grantham members).

In the final analysis Southampton took the team trophy with a team fly-off total of 13:49 compared with Norwich's 7:16. Grantham, South Bristol and St. Albans filled the next positions with team aggregates of 34 minutes-odd.

With this heavy emphasis on glider, the other two events were indifferently supported. Surprisingly, Coupe d'Hiver had more entries than F.A.I. Power – but neither event needed a fly-off. 'Coupe' was topped by Richmond's D. Taylor with a five-flight total of 9½ minutes – just a few seconds ahead of Sheffield's Roy Hoff. Third provided a tie at 9:03 between Dave Lansberry and Martyn Cowley.

The *Astral Trophy* for F.A.I. Power was taken by Paul Bond who managed a full house at Watton, but damaged his model on the last max. This affected trim for the subsequent fly-off: when the model gained little height on the allowed four-second run, and stalled down for only 33 seconds. Although disappointing, this extra flight was in fact unnecessary. Runner-up was Russell Peers, flying at Topcliffe, and dropping just five seconds due to a mislaunch. His score did not come easily as he broke two models (one on a premature engine cut, another when the VIT line broke in mid-air) and had to 'piggy-back' under the gliders with his No. 3. Roy Collins was third, whilst Pete Harris and Trevor Payne provided the only other 20-minute scores. Subsequent totals fell away rapidly, presumably due to people not completing their flights.

The six-week lull that lasted from mid-July until the end of the following month was broken only by the *Northern Area's Experimental Contest* held at Topcliffe on 5th August. The idea was to prove sets of rules for non-tactical glider and to produce meaningful Open Rubber events.

Unfortunately, the meeting also featured what might be described as experimental 'organisation' – and I cannot pretend to be impressed. From the normally expected starting time of 10 o'clock until about noon, Gerry Abbott (who drafted the glider rules in conjunction with Pete Whitehead)

John O'Donnell's

FREE-FLIGHT COMMENT

Tassilo Schwend of West Germany failed to max-out on only one occasion at the recent World Champs with this attractively trimmed power model, which features a basic box fuselage of relatively large proportions, presumably to prevent distortion on the climb.

was the only person present with any connection with either the contest or with the Northern Area Committee. The first of the fliers had arrived about 8.30 a.m.!

A combination of windy weather, downwind crops, and an uncertain reception from the farmers made Gerry unwilling to accept sole responsibility for commencing the glider event. When eventually some Area Officers arrived, it was decided to fly Glider using four flights and a 1½-minute max, hopefully to keep models in the airfield. The first two flights were required to be made before 3 o'clock. The non-tactical aspects already comprised towing from a line, having only seven minutes from getting a timekeeper to releasing (with an unspecified penalty) and having a two-minute gap between one flier releasing and the next starting to tow. The use of two starting lines, giving two flights 'in parallel' hardly seemed consistent with the intent of the rules.

Conditions were far from unflyable, although lift was tricky at times. The standard was poor with only two fliers, Terry Dilks and Dave Allman (of Nantwich), recording four maxs. Dave was flying a *Graduate* and suffered through breaking the fuselage twice. He completed his flights 'sans' auto-rudder, but with the advantage of improving weather.

Meanwhile the rubber event had been 'delayed' in the hopes of the wind dropping. The rules called for short rounds of 15 minutes, with intervals to allow for retrieving, etc. A variable max, decided just before each round, allowed for variations in the weather.

Eventually, a start had to be made, and the first round was announced as commencing at 4 o'clock and using a two-minute max. Two of the six entrants failed to 'achieve' this remarkably low target. The next round, an hour later, had a 2½-minute max recorded by three out of five fliers. Finally, the wind did drop, and the third round was called



John Carter (no prizes for guessing which club!) won the Open Glider event at the Woodford Rally – reported separately – with this straightforward design which is somewhat roughly made! Nevertheless, he flew last and found the best air which eluded his fellow fly-off competitors.



At left, East Germany Matthias Hirschel reached the massive fly-off at the Wiener Neustadt champs with this straightforward design with well-gusseted ribs, but placed no higher than an eventual 33rd. At right, Antonin Simerda of Czechoslovakia follows current trends with his high aspect ratio Wakefield with machined aluminium motor tube and forward fin.



In addition to the competitors it was pleasing to see that a considerable number of local sports fliers were attracted.

with a 4½-minute max. This proved decisive, as John Carter's 300 sq. in. model landed at 4:36, whilst my 'little' model (Cd'H area but 40 grams of rubber) stalled towards the end of its glide for only 4:20. The only other person still in contention was Paul Lester who did 3:26 on his last flight.

The calm period made for an interesting glider fly-off. Terry Dilks changed to a 1½ Caprice lightweight and scored 2:21 compared to Dave Allman's two minutes dead. I placed third, thanks to a flight that 'fell out' of what seemed obvious lift!

Prizes were in keeping with the general attitude – being merely a redistribution of the entry fees. The ideas behind these contests were good and deserved far better treatment than tardy, casual organisation.

This meeting has emphasised the fact that free-flight and crops make a poor combination, and hence that the mid-summer use of airfields can be risky. If such is the case, then I reckon it is better not to schedule meetings than to curtail contests 'on the day' to the extent just described. For years the N.W. have had to live without airfields from May till September, as Chetwynd, although available from the R.A.F., is too small to 'risk' in the crop season. Other Areas have been more fortunate – but it looks as if this may not continue indefinitely.

Readers may have noticed that in the past I have had regular reports on the various rallies held at Woodbury Common, near Exmouth. Chris Chapman has now taken over the task of providing these reports. The latest meeting was the *Torbay Rally* held on 26th August – the same day as the N.W.'s Woodford Jamboree that is covered separately.

For the first time in some years, the weather was good for the Torbay Rally – hot and sunny with a steady, but acceptable, breeze blowing in from the sea. There were plenty of thermals, but patches of poor air and some turbulence. By mid-afternoon conditions became rather hazy but the drift decreased and the air appeared to be consistently good.

Flying was of a high standard throughout the day and maximum flights were plentiful. However, almost without exception each of the entrants in rubber and power managed two maxs, but not a third. In particular, Fred Chilton was very unlucky with only 1:40 on one flight – despite his O.S. 35 model climbing very high, it found a patch of rapid sink and almost 'fell out of the sky'. The power winner, Stuart Godwin, won this event for the third Woodbury Rally in succession, again using his fast-climbing Super Tigre-powered *Dixilander*.

The day proved testing conditions for the tactical fliers and both the open glider and all-in F.A.I. competitions were very hotly contested. Flights were often doubled so as to count for both events. The fly-offs for these two events was combined, and Elton Drew easily made the best time of 3:56. He flew first in what proved to be very good air. The remaining competitors flew roughly in a bunch some few minutes later. Dick Cummins made 2:25 for second place in Open Glider. Although Jon Clements' score of 1:54 was only third in Open, it was sufficient for first place in F.A.I., beating Dave Bailey for the *Torbay Trophy*.

The Northern Area held their *5th Model Flying Rally* on 2nd September, just a week after Woodford. Whilst it would be invidious to draw too many comparisons between these two major meetings, there can be little doubt as to which had the better public attendance this year. To be fair, the Northern Area event suffered from a change in venue from Lindholme to Elvington, plus weather that was unappealing to the 'Sunday driver'.

Advertising claimed 30+ events, of which 28 materialised on the actual programme. Free-flight accounted for a round dozen if one includes scale! Entry fee for the contests was 25p for any or all events (with a similar fee for *each* re-entry) on top of another 25p admission fee to the 'drome'. Whilst hardly excessive, there are many modellers who object to paying for the privilege of entertaining the public! The charges were also different from those given on the Northern Area's P.R.O.'s handouts, which when presented to officials, were dismissed in cavalier fashion as 'incorrect'.

The wind drift was more or less along Elvington's two-mile runway. As the airfield is comparatively narrow,



Julian Hopper won the Woodford chuck glider event with this dethermaliser equipped model, featuring Sweepette 20 surfaces on a Roni-tube fuselage.



Andy Crisp worked very hard in his attempt to win the title Gala champ at Woodford. He reached the rubber fly-off with this small model with one round and one square tip - shades of Andy Anderton.

prudence dictated that F/F be located only about two-thirds of the way along its length. This gave more latitude for possible wind changes, but meant that the C/L events could be reached on a max flight. R/C was well downwind near the airfield entrance - handy for the public and virtually out of reach of free-flight.

The wind felt worse than it was, perhaps because the day was overcast and far from hot. Glider was supposed to be flown from a starting line, but enquiries as to its location merely confirmed that it was not marked out as such - and that all the officials wanted was to prevent fliers waiting even further downwind.

For reasons that were not readily apparent, both entries and standard were far from high, and the fly-offs were smaller than might have been expected. Open Rubber was quite remarkable in having only five trebles, and all the prizes going elsewhere than to the 'regulars'. Phil Ball was a clear winner with almost a seven-minute fly-off, whilst Mike McAskie and Jeff Anderson were second and third at around 5½ minutes.

Glider had only two fliers max out, John Boon and Tony Cordes, both on re-entries. In the fly-off they waited until the last moment, and flew together in what proved to be weak lift. Boon's model landed first, well before Tony's D/T'd from roof-top height. The timekeepers, however, gave John the contest by half-a-minute, presumably through mixing up the two A/2s. Third place went to Arthur Wharrie, top of those who failed to max all the way.

The power fly-off saw Doug Scott's modified *Dixielander* and Brian Martin's *ETA 29* g/f rod model both go up in very roly climbs, followed by Russell Peers' *K&B 40* model with a definite left bias to its normally straight climb. Although this spoilt the transition it didn't prevent Russell's model from riding lift well for a 7:49 decider that only cleared the 'drome' by a field or two. Meanwhile the opposition had landed at a little short of three minutes apiece.

Combined F.A.I. saw the three categories all represented in the top four positions. Winner was Terry Dilks flying A/2, closely followed by John Godden using a G.15 Power model. Both had four maxs and a 2½-minute 'mistake'. Two minutes behind came Tony Cordes doubling some flights with Open Glider, while Mike Thomas was fourth with a set of Wakefield flights made very early before leaving for London on his way back to Canada.

Chuck Glider was closely fought between Ewan Jones and Barry Kershaw, who placed in that order, well ahead of Whitefield's Dave Yates at third. I was 'Mini' flying Coupe d'Hiver and not needing the K factor to beat Tony Cordes' brand new A/1. The factor did give me a nice tidy 10-minute score! Third was a tie between Ann Godden's A/1 pictured last month, and C. Rushby's JA power model.

Tailless had but two fliers, and was taken by Henry Tubbs with two good flights out of three. Jetex 150 (Paaloader) did a little better than in previous years by having four fliers, best being P. Lee of Liverpool, thanks to good lift on his first flight. My ancient 1950 relic was second. The Jetex 50 event for Juniors was unsupported.

The two Junior Kit events had but a handful of entrants. Scores with the *Senator* were quite close with Messrs. Moore, Denton and Godden placing in that order. The *Swans* varied more, with N. Walton being a decisive winner. It is becoming noticeable that much of the support for these events is being provided by the offspring of active F/F modellers, rather than by 'new blood'. Omitting scale, which

is hardly my province, there is left only vintage. This event caused considerable controversy following event director Jim Moseley's objections to my use of turbulators on my *Scram*. The argument revolved round whether they were 'structural modifications' or trimming devices, the former being prohibited under the S.M.A.E. rules used. I had built the model very closely to plan; only to find it 'glided' at about 45 degrees, and that it failed to respond to all 'normal' trimming techniques. Surface turbulator performances of other builder's variants would indicate that the manner of shaping the L.E. is important.

Finally, my model was ruled ineligible and my first flight disqualified. The repercussions then extended to eliminating Ewan Jones (8½ minutes with a *Mercury Mallard*) for having a sheet fin, and John Reavley for using a *Super Phoenix* rebuilt out of a pile of wreckage given him by Jim McCann. The last-mentioned model had recorded an easy treble, and it is interesting to consider if it would now be legal for Jim to fly it himself! These happenings promoted Ted Smales to official winner (with a *Scram*), followed by Ray Moore (*Raff V*) and George Jennings (*Korda Wakefield*). Long-term effects could ruin Vintage. There seems a choice between demanding accurate production or accepting anything recognisable!

The prize list at this rally had been augmented by generous gifts of tools provided by Messrs. Stanley Tools Ltd. Certainly I consider that my award for winning Mini was easily the best prize that I have received at any of this season's contests. Due acknowledgment is only courtesy.

Rules are essential for satisfactory competition and I discuss aspects of them often enough. Very few people seem conversant with the regulations under which they operate. One very topical and frightening example should suffice to convince anyone! The A/2 team results at the just-concluded World Championships are *incorrect* as officially printed and widely publicised!

The F.A.I. Sporting Code covers the resolving of a team tie in rule 2.5.11 with the direction 'the Team with the lower sum of place numbers wins'.

Applying this to the results, gives the placings at Wiener Neustadt as: 1. Austria 39; 2. Holland 51; 3. U.S.S.R. 53; 4. East Germany 86; 5. Canada 91. Although not affecting the winner, it reverses the published second and third countries! I wonder what will be done about this matter?

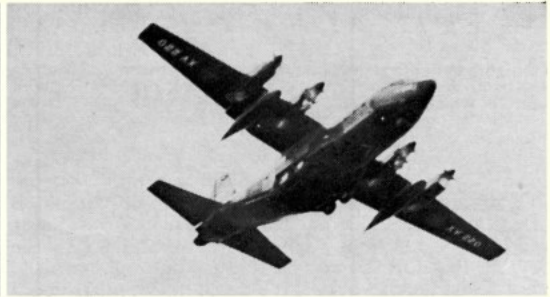
Results:

4th S.M.A.E. AREA CENTRALISED EVENTS - 8th July 1973
Team Glider (Model Engineer Cup), 40 teams. 1. Southampton 'A', M+13:49; 2. Norwich 'A', M+7:16; 3. Grantham 'A', 34:36; 4. South Bristol, 34:30; **Team Glider (M.E. Cup), individual results.** 1. M. Dixon (Birmingham) M+6:24; 2. G. Madelin (Crookham) M+6:08; 3. E. Rose (Southampton) M+5:48; 4. B. Nicholson (Liverpool) M+5:32; **Coupe d'Hiver, 29 entries, 27 scores.** 1. D. Taylor (Richmond) 9:33; 2. R. Hoff (Sheffield) 9:26; 3. D. Lansberry (York) and M. Cowley (Northampton) 9:03; **F.A.I. Power (Astral Trophy), 22 entries, 20 scores.** 1. P. Bond (Anglia) M+0:33; 2. R. Peers (Falcons) 20:55; 3. R. Collins (Anglia) 20:40; 4. P. Harris (Evesham) 20:25; **Pluggie Cup (after 4 events).** 1. Norwich 972 points; 2. Southampton 849 points; 3. Crookham 821 points.

N. AREA EXPERIMENTAL CONTESTS, Tooclipe - 5th August 1973
Open Rubber, 6 entries, all flew. 1. J. Carter (Falcons) 9:00; 2. J. O'Donnell (Whitefield) 8:51; 3. P. Lester (York) 7:56; **Open Glider, 13 entries.** 1. T. Dilks (Falcons) 7:00+2:21; 2. D. Allman (Nantwich) 7:00+2:00; 3. J. O'Donnell (Whitefield) 6:27.

TORBAY RALLY, WOODFORD COMMON, 26th AUGUST 1973
Open Rubber (4 entries): 1. C. J. Chapman (Torbay) 9:00; 2. M. McAskie (C/M) 8:44; 3. J. H. Gunn (Bristol & West) 7:54; **Open Glider (11 entries):** 1. E. Drew (Bristol & West) M+3:56; 2. R. Cummins (Bristol & West) M+2:25; 3. J. Clements (Bristol & West) M+1:54; **Open Power (7 entries):** 1. S. Goodwin (Southampton) 8:05; 2. C. J. Chapman (Torbay) 8:02; 3. F. Chilton (Crookham) 7:40; **Combined F.A.I. 'Torbay Trophy' (13 entries):** 1. J. Clements (Bristol & West) M+1:54; 2. D. S. Bailey (Swindon) M+1:17; 3. P. Scrivens (Cheltenham) 14:48; **Chuck Glider (5 flights, 4 entries):** 1. M. McAskie (C/M) 4:12; 2. D. Plews (Cheltenham) 4:00; 3. R. Cummins (Bristol & West) 3:15.

NORTHERN AREA RALLY, ELVINGTON, 2nd SEPTEMBER 1973
Open Rubber (16 entries, 13 scores): 1. P. Ball (Derby) M+6:52; 2. M. McAskie (C/M) M+5:44; 3. J. Anderson (Tynemouth) M+5:28; **Open Glider (31 entries, 24 scores):** 1. J. Boon (Falcons) M+5:23; 2. A. Cordes (Leeds) M+4:50; 3. A. Wharrie (York) 4:43; **Open Power (23 entries, 20 scores):** 1. E. Peers (Falcons) M+7:49; 2. D. Scott (Leeds) M+2:57; 3. B. Martin (Tynemouth) M+2:42; **Combined F.A.I. (15 entries, 12 scores):** 1. T. Dilks (Falcons) 14:39; 2. J. Godden (Leeds) 14:32; 3. A. Cordes (Leeds) 12:33; **Mini (16 entries, 12 scores):** 1. J. O'Donnell (Whitefield) 10:00; 2. A. Cordes (Leeds) 8:40; 3. Mrs. A. Godden; 3. C. Rushby (Grimsby) 8:27; **Vintage (11 entries, 6 scores, 3 disqualified):** 1. E. Smales 6:53; 2. R. Moore 6:13; 3. G. Jennings (Leeds) 5:21; **Jetex 150 (5 entries, 4 scores):** 1. P. Lee (Liverpool) 4:54; 2. J. O'Donnell (Whitefield) 4:11; 3. W. Newton (Leigh) 3:18; **Tailless (2 entries, 2 scores):** 1. H. Tubbs (Leeds) 6:42; 2. M. McAskie (C/M) 3:56; **Chuck Glider (13 entries, 10 scores):** 1. E. B. Jones (Sunderland) 6:35; 2. B. Kershaw (Wigan) 6:20; 3. D. Yates (Whitefield) 4:34; **Junior Kit - Rubber (6 entries, 5 scores):** 1. N. Moore 6:12; 2. N. Denton 5:26; 3. A. Godden 5:20; **Junior Kit - Glider (4 entries, 3 scores):** 1. N. Walton 8:42; 2. N. Denton 2:44; 3. C. Moore 0:35; **F/F Scale (4 entries):** 1. E. Coates 1003 points; 2. T. Manly 915 points.



FLYING SCALE COLUMN by Eric Coates

THE LATE summer and early autumn nowadays sees quite a proliferation of events for the scale modeller to compete in. This is partially due to most of the main rallies being organised in the post-harvest period, to avoid crop damage by the far ranging F/F duration boys and also to coincide with traditionally the calmest period of the year.

On August 26th I once again travelled to **Woodford** to compete in the *Eddie Riding Memorial Trophy* event. Alas I must report that this event, once the premier competition in the scale enthusiast's calendar, is a pale shadow of its former self both as regards support from competitors and organisation. In fact the organisation, by the N.W. Area of the S.M.A.E., was virtually non-existent and if it was not for Messrs Cordwell and Wilson of the **Three Kings Club**, who kindly consented to judge, the event would not have taken place at all. Flying took place in the late afternoon, in virtually flat calm conditions, to the enjoyment of spectators and competitors alike.

Results:

- | | | |
|-----------------|----------------------|---------------|
| 1. E. A. Coates | <i>Lee Bees</i> | D.H. 9a |
| 2. T. Manley | <i>Blackburn A/C</i> | D.H. 4 |
| 3. D. Priest | <i>Leicester</i> | Sopwith Snipe |

Incidentally it is 21 years since I first competed in the *Eddie Riding* and this is the first time I have won. How's that for perseverance! I also flew a D.H. 9a (not the same model I might add!) in 1952.

Whilst waiting to fly in the competition I took advantage of the calm weather and trimmed out my first powered machine - a *Ryan P.T.20* built from an American **Tern** kit. This was given to me by a

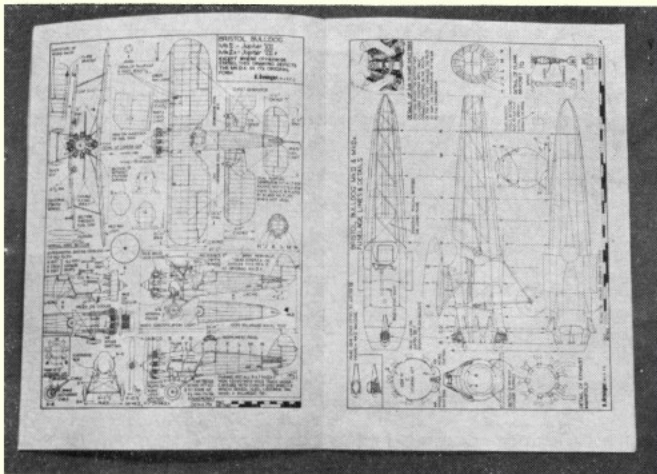
reader of this column Mr. Alan Passingham - many years ago a member of the old Gosport club and now an airline pilot with T.C.A. in Canada. Still a keen scale modeller though.

The kit for the 17 in. span *Ryan* and the Brown Junior CO₂ engine arrived the same week, and seemed a perfect match for one another, the engine fitting very neatly into the confines of the cowl. The kit manufacturer, Tern of Chicago, is new to me and I do not believe that their products are imported into G.B., which is a pity as if this kit is anything to go by, their quality both in materials contained and standard of design, is of a very high order indeed. The wood is the finest I have ever seen in a kit - indeed one would be very hard pushed to select such quality from the best of model shops. Of course, the standard model is for rubber power and the plastic propeller provided for this form of propulsion, is a beautiful 6½ in. diameter paddle bladed job that looks really efficient. Construction is quite conventional except that there are rather more ribs and formers than one usually associates with this class of kit. As the nose and all the spats are built up from ¼ in. sheet laminations, there is a terrific amount of cutting-out work to be done. The quality of the printed sheet, and the clarity of the fine line printing though is such that although tedious in its way, the work is a pleasure.

Modification to CO₂ power was simplicity itself, the engine being mounted radially using three 12 BA bolts onto a 0.8 mm. ply-faced former. By placing washers behind the engine backplate it is therefore possible to alter the thrust line, within limits, very easily. I built in the customary two degrees right sidethrust, usually required for a model of this nature, but did not incorporate any down-thrust as I thought the high thrust line would preclude the need for this. In practice though it was found that a couple of washers were required under the upper lug to provide about one degree of down-thrust to eliminate a slight stalling tendency. The CO₂ tank was fitted into the front cockpit, right over the C.G., to prevent any trim change during the power run. I also carried out the detachable supply pipe/cylinder head modification as detailed Doug Mchard in the 1972 *Aeromodeller Annual*, to make for easier engine removal and speed variation.

The model was finished off in pre-war U.S. primary trainer colours i.e. silver fuselage with yellow wings and tailplane; using dope thinly sprayed on white tissue. The all-up flying weight was just over

Heading picture shows the C/L version of the Hercules built by Arthur Dickenson dropping its 'cargo' in fine style! At left, No. 2 is the Data Plans series details the Bristol Bulldog - see text for favourable comment.



Cardington lightweights! At right, Vic Driscoll's winning Westland Wapiti, and below that, a nicely detailed Sopwith Tabloid which did not perform quite as well as it looks. Unfortunately, the owner's name escapes our memory!

1 oz. - probably no heavier than a rubber version.

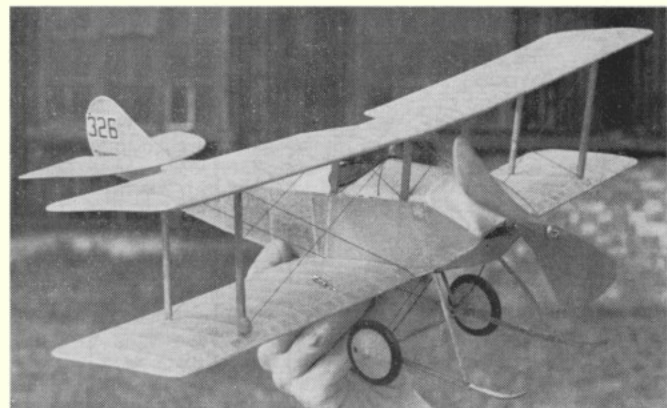
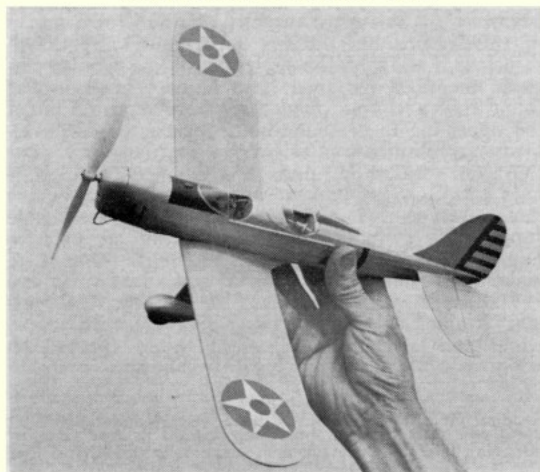
Trimming proved to be a very simple operation and it was soon apparent that nothing like full power was required. Initial flights were made without the cowl so that thrust line and power adjustments (made by revolving the cylinder by small amounts) could be made. Soon flights of well over one minute were being recorded and heights of 100 ft. or more being attained. Stability of the little low wing machine is quite remarkable - I have flown it in winds of up to 12 knots without detriment. Take offs are simplicity itself on a very smooth surface, but $\frac{1}{2}$ in. diameter unsprung plastic wheels do not like rough asphalt!

The reaction from the Woodford spectators to this diminutive, silent, machine with the big performance I found most amusing. One overheard remarks such as 'It's electric' or 'He must use jolly good rubber'. I thought what a pity such motors must remain a novelty in this country because of their almost non-availability and high price. Surely some manufacturer, with a little bit of commercial enterprise, could produce a similar unit. If my experience is anything to go by, trimming these models is very much simpler than small rubber-powered machines and the performance is vastly superior.

Whilst I was amusing myself with the *Ryan*, Terry Manley was flying the little peanut scale *Miles M18* built from the **Peck Polymer** kit reviewed last month. This I can report flies very well outdoors - very lightly built it was turning in flights of 20-25 seconds regularly from a hand launch.

The following week I visited the **Northern Area Rally**, on the 'White Rose' side of the Pennines, this year held at Elvington, to fly in the *Selby Trophy* competition. In contrast to the previous week I am pleased to report first class organisation of the Rally by the Yorkshire lads ably directed by Ron Firth.

Delightful CO₂ powered *Ryan PT 20* built by our columnist from the Tern Kit. This 17 in. span model weighs just 1 oz. with its Brown Junior power plant.



Dave Clarkson of the Blackburn Aircraft Club ran the 'Selby' which itself was not too well supported. It was the usual story of a number of quite respectable looking models being sport flown but not entered in the competition; this despite the fact that the 25p fee covered entry into every event on the field! In contrast to the previous week the weather was grey with a fresh wind so the models were statically judged in the morning in the hope of better conditions later in the day. The wind began to moderate in the afternoon, with the onset of a front coming in from the West, and at 4.00 p.m. it dropped flat calm, for about 15 minutes, then it commenced to rain. That period, however, was long enough for the competition to be flown off, in again perfect conditions. First and second places were a repeat of the previous week - my D.H. 9a gaining an extra 85 marks on the flight score, chiefly due to its bomb dropping ability, a facility Terry has not fitted to his D.H. 4. Ted Smales was third with his now well known rubber powered *Douglas 0-38*.

Results:

		Static	Flight	Total	
1.	E. A. Coates <i>Lee Bees</i>	D.H. 9a	428	575	1003
2.	T. Manley <i>Blackburn A/C</i>	D.H. 4	425	490	915
3.	E. Smales <i>Blackburn A/C</i>	Douglas 0-38	318	325	643

Probably the calmest day of the year occurred on September 9th the day chosen this year for the **S.M.A.E. Indoor Meeting** in the Cardington Airship

Shed. The superb weather plus the rival attraction of the Air Display at nearby Cranfield kept the attendance below that experienced at the first such meeting held on a similar date last year. The weather was so calm that the competition could have been held equally well outside – the only advantage inside was that it was cooler!

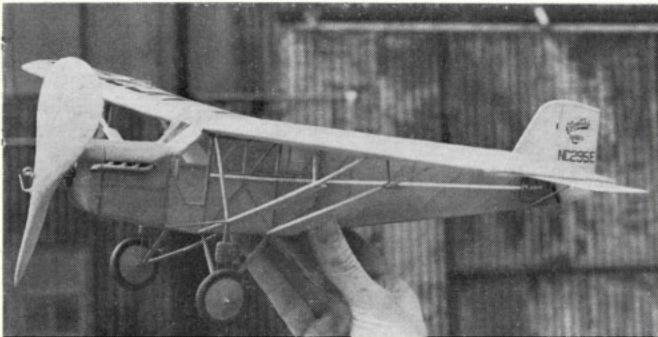
What was lacking in numbers was more than made up for in quality – the seven entries were of a much higher standard than last year and much greater concentration seems to have gone into producing beautiful looking machines rather than good flyers. Most of the entry was hard put to produce the required 15 second flight from a hand launch let alone a R.O.G. In fact only Mr Aldridge, with his McHard-designed *Gladiator*, in Shuttleworth colours, and myself with my lightweight unpainted tissue *Puss Moth* achieved this feat. Both these models, together with Andrew Moorhouse's yellow tissue covered 'Cleveland' *Curtiss Jenny*, were outclassed by the superlative paint jobs of the leading three.

Vic Driscoll's beautiful 1/24th scale *Westland Wapiti*, which we first saw at the Brize Norton Meeting in March, took the honours, Alan Callaghan's 1/20th scale *Curtiss Robin* placing second. It looked very colourful in its brilliant blue and yellow scheme and this fairly large, around 22 in. wing span, machine could carry the extra weight of paint very well although it had a tendency to stalling and dropping a wing which reduced its flight score. Third place went to John Blagg's all silver 1/20th scale *Bristol Brownie* built to Bill Hannan's drawings. John also had a delightful *Demoiselle*, again built from Hannan's drawings but the flight performance was relatively poor. Apart from his *Jenny*, Andrew Moorhouse had, as usual, a large collection of machines performing. Most impressive was his own-design 1/32nd scale *Chilton D.W.1*. Only spanning 9 in. this little beauty flew remarkably well.

Judges for the day were Denis Thumpston and making a welcome return to the aeromodelling scene – Vic Duberry. Vic threatens to be on the competing side of the line for the final S.M.A.E. indoor meeting for 1973, to be held under the auspices of the R.A.F. Brize Norton club in the gymnasium at the Station on November 4th.

Results:

	Static	Flight	Total
1. V. Driscoll <i>St. Albans, Westland Wapiti</i>	164	84	248
2. A. Callaghan <i>C.M., Curtiss Robin</i>	148	78	226
3. J. Blagg <i>St. Albans, Bristol Brownie</i>	132	82	214



This Chilton DW1 by Andrew Moorhouse flew really well at Cardington, despite its diminutive scale (1/32nd) which results in a 9 in. wing span!

And finally, there just remains the opportunity to include a brief review of what I consider to be an excellent publication: No. 2 in the **Data Plans** series, the *Bristol Bulldog*. If possible, this second presentation, from **Taurus Press**, surpasses their first (the *Hawker Woodcock*). Every mark of this famous fighter of the late '20s and '30s is beautifully drawn in superb detail by Alfred Grainger. The Mk. II and IIa have been reasonably well documented before, but nothing like in the detail provided here. The *Bulldog* formed the equipment of ten fighter squadrons in the early '30s and each Squadron's aircraft are drawn in full, with all details of individual markings. In addition, the markings of the R.A.A.F., Danish, Swedish, Siamese, Latvian and Estonian air forces are fully detailed.

The *Bulldog* has all the attributes required for a stable F/F design – oodles of dihedral and reasonable tail areas. It has never been a popular subject though – possibly due to the exposed cylinder heads of the Jupiter VII engine, but modellers may be interested in the Mk. IVa version supplied to Finland. This machine, drawn in the same details as the Mk. II, was powered by a fully-cowled Mercury VI S engine and featured modified tip shapes. The majority of the machine was painted dark green, which also wears better than silver on a model! A machine of this mark (photograph included) is the only example of a *Bulldog* preserved today – in Finland. Another poorly documented version, until now that is, was the T.M. two-seat training version. With 3½° of sweepback on the wings, to compensate for the C.G., this should be even more stable than the single seater. Whether you intend to build one or not, I recommend the purchase of this booklet for the sheer joy of looking at the drawings. Excellent value at 50p.

A positive giant when compared to the Chilton, Alan Callaghan's *Curtiss Robin* spans 22 in. and used its extra wing area to carry a ((relatively) heavy paint job. Placed second at Cardington indoor scale meet.

Ron Coleman looks in at the

1973 WORLD FREE-FLIGHT CHAMPIONSHIPS

and comments on the techniques and equipment employed

IF YOU WOULD win at the World Free-Flight Championships you need not only a first-rate machine and an infallible (oriental?) 'nose' for thermals - you need a philosophy which allows of that little something extra: lady luck.

It was a privilege to be at Wiener Neustadt for the most wonderful meet ever of aeromodellers. The weather was so kind... but did I hear just one adverse comment - incredible! Thermals and max flights abounded throughout three calm sunny days, but there was one brief, strong, gust of wind which sent mid-day Wakefield wings and tailplanes fluttering away. There were the British party hard at it under the calm eye of Dave Tipper - and two men always down wind looking for the white flag which meant an English machine was up: we did not have the doubtful advantage of walkie-talkie communication. The Glider men retrieved for Power, Power for Wakefield and so on, thus at no time was the competitor involved in retrieving worries - and what retrieving! Motor-cycle squads were on hand to cut away over to the very far edge of this vast grass airfield where the majority of models found a resting place. These were delights of maximum height, flight and distance with models ever-turning in thermals hardly to be imagined by the club beginner in free-flight - and going on all day for three solid days!

To me, the most significant thing was that here all the world conversed and met in friendship - no need for politicians. East and West talked and laughed together: I was surprised to find myself jumping in excitement and shaking the Russian Sharin's hand as his power model was miraculously rescued from crashing into a car by a spectator who caught it neatly in the nick of time! My brief was to note interesting bits and pieces. It soon dawned on me that it was impossible to be everywhere at once, and if this or that was taken, then probably t'other would

be missed... I hope the experts will bear with me if whatever here is 'old hat', and remember the new reader to whom, like me 'tis new, true, and exciting!

Power

Generally, the Rossi engine held sway: the Koreans were using Super Tigres, and there were a few others here and there. The business of tuning an engine seems to be a 'must' at this level of contest, and many were tuned by a known expert or a friend with the 'know-how'. A good number of engines were set at an angle to allow the exhaust gases to miss the fuselage gear, but some made use of deflector plates while the units themselves were generally well streamlined or cowled to the fuselages. Another 'must' is an electric or inertia engine starter. The time consumed and frustration caused by hand starting - more than one competitor ended the day with bandaged fingers - must adversely affect the outcome, sooner or later. The Americans had a good assortment of hand-held starters complete with car battery, but some teams were using a self-contained case unit comprising tool kit, battery, electric starter and ammeter. Richard Schley, who incidentally tuned most of the Danish team's Rossi engines, demonstrated a very neat outfit built into his box. As soon as the airscrew spinner touches the rubber cup, the electric motor revs up and turns the engine over. "One meter tells if the glowplug is functioning, another indicates battery voltage: if too much, it will be automatically adjusted.

I only saw one competitor using ear muffs. With so much high decibel engine noise a piece of cotton wool in the ears would have afforded at least some protection - a point worth noticing for power meetings where there is serious risk of permanent damage to one's ability to hear high-frequency notes.

Perhaps the most significant power model was

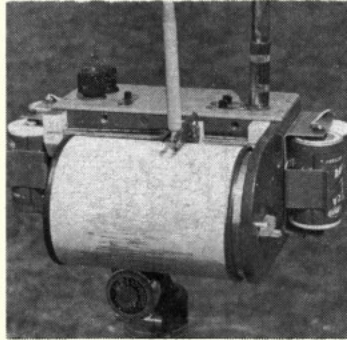


Left, Franco Barthel of Italy displays nicely cowled Rossi 15 and stout (not so streamlined!) piano wire landing skid. Use of drag reducing cowls is widespread but by no means universally adopted. At right, Verbitsky of the U.S.S.R. with his flapped power model - although he did not use it in the contest, staying with the rather more conventional 'fixed' layout. Obviously flappers are still being considered in Russia as a practical possibility.

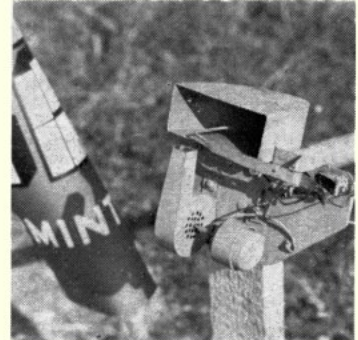




Still the chief protagonist of flapped wings is Denmark's Thomas Koster, seen launching his 'Grootna' design. Judging by repaired areas evident on the leading edge, not all of its problems have been ironed out yet!



American team made use of this transistorised ink-trace thermal detector unit, as designed by George Xanakis, and published by 'Model Airplane News' in 1968. Neatly made, functional unit.

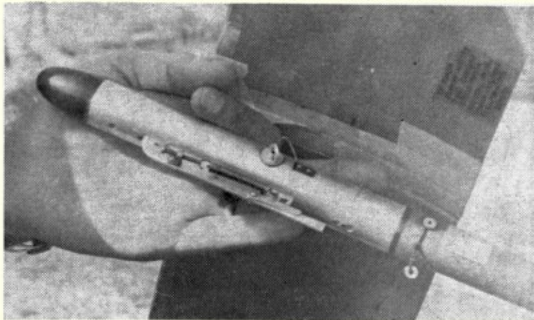


The North Koreans relied upon a soap bubble-blowing machine to detect their thermals. This neatly made unit is constructed entirely from sheet metal, and measures just 12 cm. across the 'mouthpiece'.

Thomas Koster's polyhedral *Grootna*, the flapped wing Danish model which was the centre of so much interest. No doubt Thomas was demonstrating 'things to come' and the high-climbing ability, the very flat glide and low rate of sink of his model were quite apparent. However Thomas was dogged by a tricky timer as he came up to the fly-off and his *Grootna* did not always transfer without some loss of height. It was the luck of the draw which caused him to be last away on the second fly-off, perhaps when the air was not quite so good. Thomas was placed high in previous World Championships and while Verbitsky of USSR had a flapped design on the ground, Thomas was flying his with great elan, despite snags with transition which still needs ironing out.

The Austrian win of Vaclav Horcicka with his attractive and unusual design 'Big Boy IV' was extremely popular with the local visitors. There seemed little doubt that Vaclav with his fantastic low-from-the-ground-all-the-way-upstairs heave at take off, not only knew the Wiener Neustadt field and conditions, but he had the combination of luck in the second fly-off along with Landeau who launched close with him, and Agner, to find the lift which Koster missed.

There was expressed much sympathy for Tom Below, machined nose-piece on American Paul Crowley's glider houses the adjustable hook with spring-loaded anti-fall off device. Nicely engineered. At right top is Swiss modeller Urs. Schaller's very 'smooth' power job, the motor cowling being very smartly blended into the wing pylon. Speed-pan type of engine mount is a firm favourite. Below right, the 'ultimate' in model boxes? This superbly made box not only includes nest of drawers for odds and ends, but also incorporates a built-in electric starter and battery. To operate, engine's spinner is engaged in rubber cup on end of box which switches on the electric motor automatically. Glow plug condition is metered at the same time!

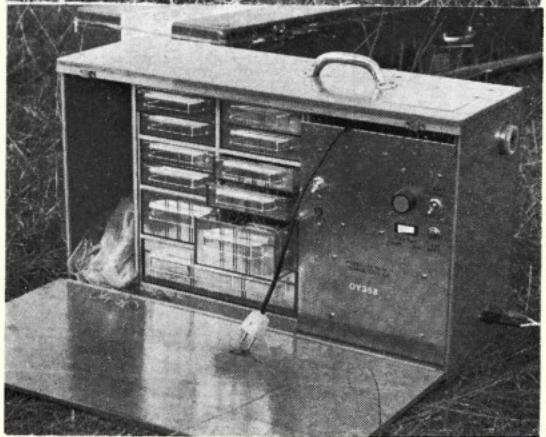
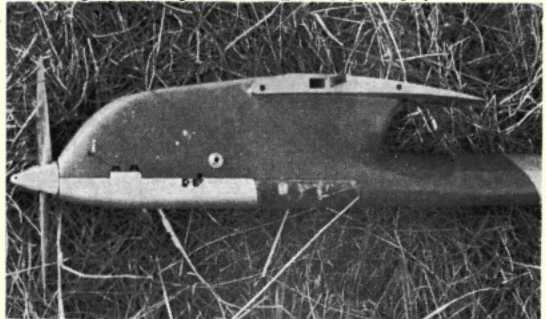


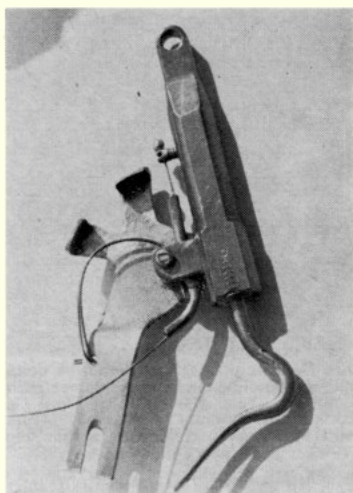
McLaughlin, who put up a fine and consistent performance all day. This 'grand old man' of American aeromodelling missed the fly-off by just one second in the seventh round. He bore a philosophical smile at the news.

Glider

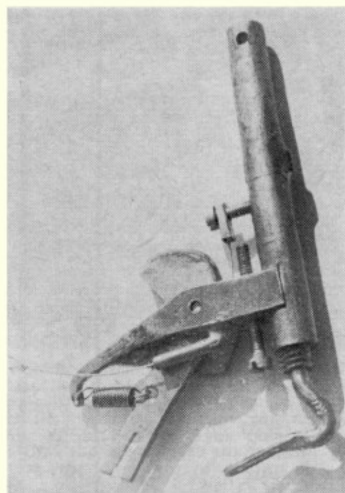
If ever the rules for A/2 should be amended to allow the use of spring tow lines, the Danes already have a good one in hand. They were disappointed not to be allowed to use it as it was ruled a 'non-homogenous' line. They knew the Russians and Germans had some apparatus of a similar nature. 'We shall object', they said, 'if they use theirs'. Quick release is obtained by a sudden slackening of the line, causing the hook to spring off the ring.

If a glider strips its wings, they may flutter down





A trio of tow-hook ideas! At left, a 4-way steel tow mechanism by Ekhtenkov, although not used on his winning model. Above, Branco Leskosek's folding offset hook used for circular towing. At right, Lepps 4-way tow-hook is made from brass. Both Russian hooks obviously easily detachable.



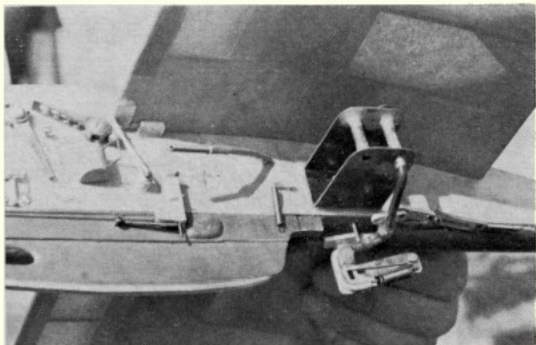
unharmd, but the fuselage usually plummets down and breaks on contact. Paul Crowley (U.S.A.) showed me his glider which has a self-aligning anti-crash joint, which takes care of broken fuselages. There are two aluminium machined mating sleeve portions securely epoxied into the fuselage halves. The coil spring connects them by machine screws – the whole system reminding me of campers' spring-loaded tent frame joints.

As might be expected, the organising of the massive (41 man) fly-off took much time and work on the part of the officials with delay in deployment of the eight-four timekeepers to their seats. At last, with the evening sun shining atop the Western mountains and a very light breeze, the fly-off began.

Thirty-nine competitors towed away into wind. Three Russians quickly ran out their lines and, in a surprise and masterly tactical stroke, took off down wind. They had the immediate advantage of a clear field in which to run with no danger of lines crossing, and they went into circular towing at once.

Everyone had 'backed his fancy'. Mine was Lepp, whose model I had been watching throughout the day. He was using a special four-way towing gear which I was able to photograph through the good offices of Bob Hatcheck, who has developed a similar gear after the style used by Lepp and Ekhtenkov.

Willard R. Thomson of Canada also favours the offset-tow-hook – and protects it with a strong nose-skid. Timer mechanism seems home-made, too.



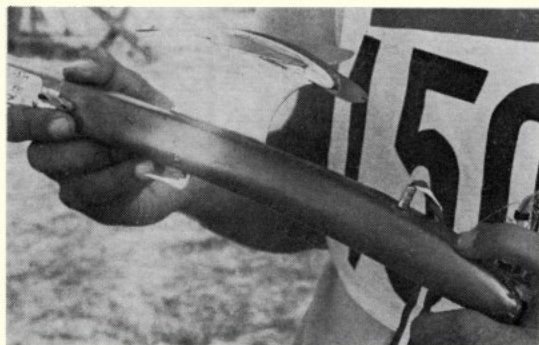
Forward tow for straight, slacken tow for right turn (operating minimum aileron on port wing), pull back for left turn (operating rudder), and snatch release or catapult release sets off timer and sets rudder for glide turn. I hope I interpreted this correctly!

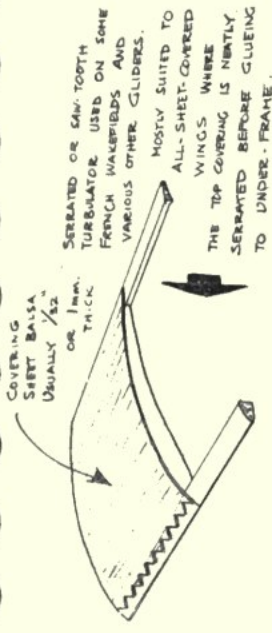
However it was Ekhtenkov and Vladimir Krejcirik of Czechoslovakia who tied for the final fly-off, and excitement began to mount. Some 500 spectators and competitors were gathered to see the final flights. 'Please sit down, everyone' came over the public address loudspeakers in three languages, and 500 people sat down. Now the timekeepers could see when the models were coming in. Whilst waiting for the organisers Ekhtenkov got away to a test flight, using a straight tow to record 3:07. It was five minutes past seven, with the sun fast sinking... there could not have been much lift about.

At last, with everyone sitting on the ground again, at 7.13 p.m. they were away. The Russian was off immediately the Very pistol flare fired. He went straight into the right-hand tow they had used all day and in a cliff-hanger finish Ekhtenkov had the better flight by about some 14 seconds, his model coming in right among the spectators with heads ducking, feet running and cameras flashing, to land only feet from the launching point.

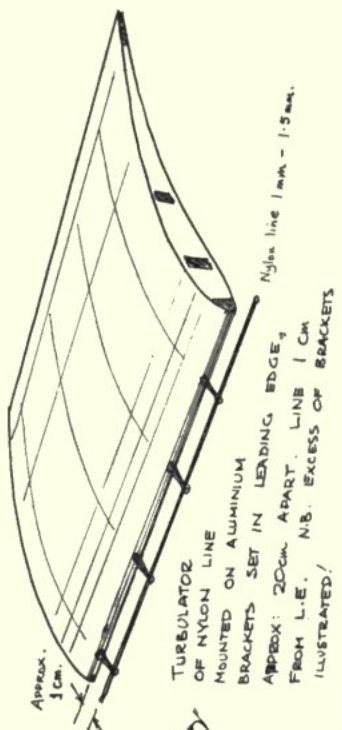
Next month. Wakefield developments.

Anton Van Eldik uses two-piece fuselage on his A/2. Slim pylon carries metal tonque which locates wing halves.

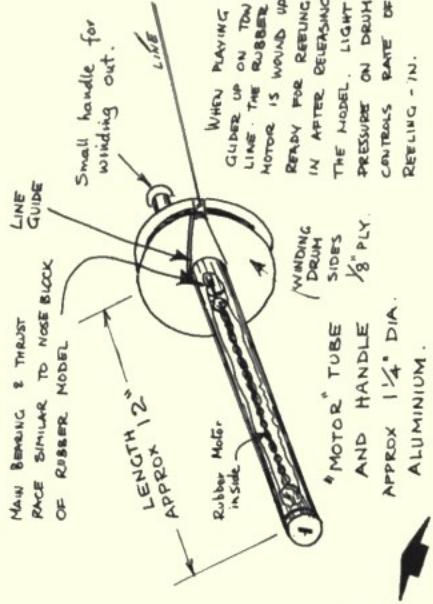
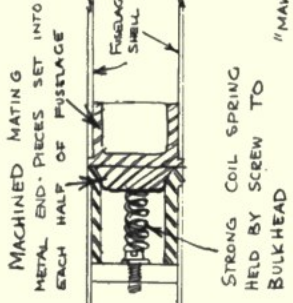
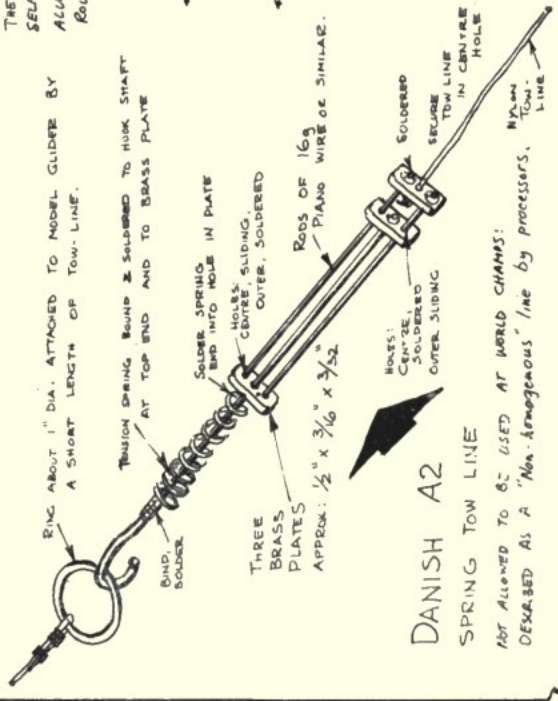
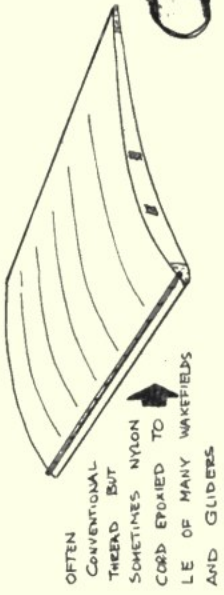
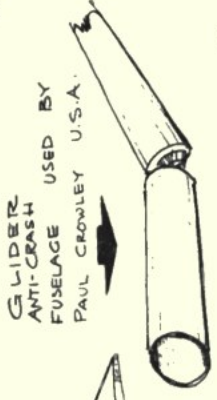




NYLON TURBULATOR seen in use by Swiss Anton Bucher (Glider) and others. MATERIALS VARIED BETWEEN THREADS & NYLON LINES; ALUMINIUM & PLY, PIANO WIRE BRACKETS.

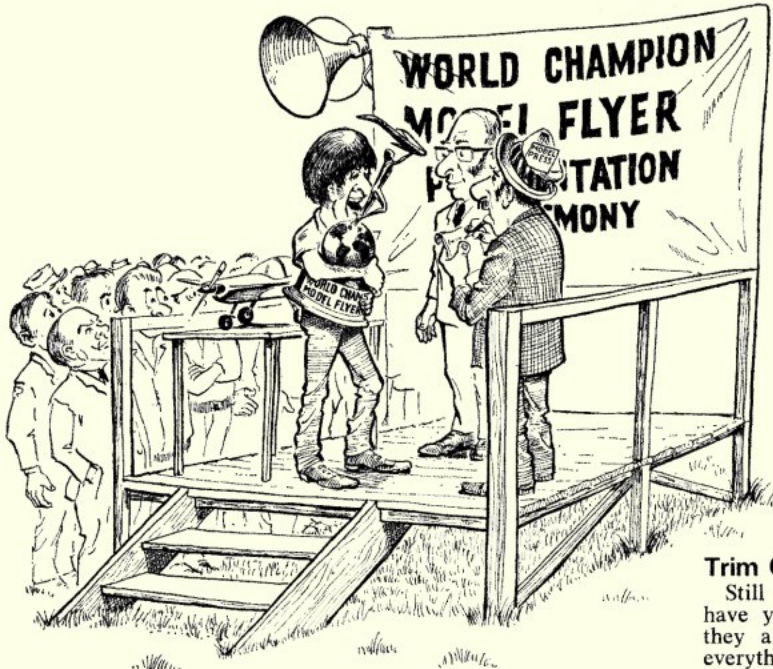


GLIDER ANTI-CRASH FUSELAGE USED BY PAUL CROWLEY U.S.A.



GLIDER WINCH used by Paolo Soave, Italy.

Rm Coleman.



'Aerodynamic characteristics? I don't know anything about that sort of thing - I just bought the kit.'

From the Grass Roots

You know that strip cartoon advert where the weakling gets sand kicked in his face by the beefy, beach bully? Well, do you get psychological sand kicked in your face on the flying field by the chap with the beefy model and the muscular knowhow? I often wonder the Model Trade advertisers don't take up the idea, because a similar sort of thing happened to me the other week. There was I struggling with a patched up, ten year old rubber model, which after much desperate trimming, would only stagger up with a bit of grass stalk as counter side thrust, when there appeared on the field one of those multi radio geniuses who are too dispiritingly in evidence these days. He smartly started up his engine with the latest portable starter, taxied into position on the runway, and swooped off to execute a whole series of complicated manoeuvres with the greatest aplomb. Now, I thought, if only poor old weakling me could send away for some super kit . . .

Being myself a modelling anachronism, I envy the elitist model man of the 70's his control over the weather; the power and stability of the modern machine combating anything short of a tempest. He can fly at any time, but for those of us who fly the old fashioned stuff there are few Sundays in the year when the same bit of air remains over the airfield for more than a split second, and when the tissue-sagging droplets are not in evidence. When such a spell of phenomenal calm does occur there is first the domestic leave to obtain (the elitist flyers appear to have a season ticket), then a budgetry run down to see if you can afford the petrol to the distant flying field. And even at that the weather can change diabolically by the time you fish the model out of the boot - and fish can be the operative word.

Still, life can be dull without a measure of unpredictability, and knowing that your model will do the book, de luxe edition, every time could get a wee bit tedious - all you can hope is that someone tries a hijack. Perhaps there is something to be said for the old grass root modelling, especially when a bit of same comes in handy for side thrust.

topical twists

by 'Pylonius'

illustrated by 'Sherry'

Trim Craft

Still on the subject of the successful model flyers, have you noticed how scrupulously neat and tidy they are? Everything in its place and a place in everything, if not a first. No dirty big duffle bag full of miscellaneous rubbish but a sort of travelling chest of drawers wherein even the rubber bands are graded into sizes. And the models themselves? Immaculate. Not a snag, tear or patch in the tissue, fabric or film anywhere.

You do occasionally get the odd scruff in the top flight, though, but they are becoming increasingly rare. Gone are the days when the tidy model flyer was a rarity amid the grimy, oil soaked ranks with their grimy, oil soaked models. Gone, too, are the days when any old lash up could win you a tin badge or a can of solidifying dope; the modern plaque lifter is as faultless as its creator, flying not so much off the board as out of the display case.

Each time I see one of these immaculate model flyers with his equally immaculate model I firmly resolve to dispose of my 'Steptoe and Son' heap of model gear and make a fresh and tidier start. It makes such good sense, for it often takes me half an hour or so to find my tube of cement, and I can never put my hand on a pin - at least not without going ouch! But the effort required is always too much, and any spare time I do get is desperately used in patching up old models.

Soaring Costs

One disadvantage of living in an affluent society is that everything has its price, even things that were always free - like the air over airfields. When we were a more charitable, less money conscious society the airfield authorities were only too willing to let us use their fields gratis, provided we cleared up any mess we made. Now they seldom open the gates, and when they do they charge you the sky. Of course, they claim that most of the levy goes to cover the officialdom and red tape operative on the day, most of which is quite unnecessary.

High charging on airfields has now reached the point where the poor old modellers just cannot raise the ante, and the airfields, instead of being put to good, recreational purpose, just lie empty, unused.

You would never imagine that all these flying establishments, useless as many of them are for anything other than model flying, are financed out of taxpayers' money. Reasonably you would expect a few taxpayers, i.e. model flyers, to get some benefit out of them.

LATEST ENGINE

NEWS



by
Peter Chinn

K & B 40-S

This engine is the production version of the K & B 40R Schnuerle scavenged motor built in small numbers last year by the American K & B factory for R/C pylon racing. Only 100 of the pre-production models were built, of which one was sent to the writer for testing and emerged as by far the most powerful 40 to date. All the remainder stayed in the U.S. and began cleaning up practically every Formula I race in which they were entered. This continued until this summer when the production 40-S came along and set even faster times.

Although this new K & B 40 was designed primarily for the .40 cu. in. pylon racing classes, it was obvious that it would also be highly competitive in the .40 cu. in. control-line rat-racing class and, in the U.S. in particular, for large free-flight contest models. Accordingly, the 40-S is being offered in two versions: one for R/C pylon-racing (Part No. 8065) fitted with a fuel cut-off device and one for C/L and F/F (Part No. 8066) with the standard multiple jet venturi and needle-valve assembly as used on previous rear rotary-valve K & B Torpedo 40 models. Both versions are rated at 1.60 b.h.p. at 20,000 r.p.m. on 50 per cent nitromethane (these are the figures we obtained for the pre-production model) and are identical except for their carburettor assemblies.

The first consignments reaching Britain (imported by Irvine Engines, K & B's U.K. distributor) have been of the pylon version only, priced at £32.50. The C/L-F/F version may be slightly cheaper although there is

no reason why the pylon-racing model should not be used for other purposes, since it does not have a throttle, but merely a lever to squeeze the fuel tube to stop the engine. This lever can be detached if not wanted.

Basically, the 40-S is the same as last year's 40-R pre-production engine but has a new casting and a number of internal modifications, including an aluminium alloy valve disc and small porting changes. The bore and stroke — unaltered since the very first K & B 40 back in 1966 — remains at 0.840 x 0.720 in., giving a capacity of 0.3990 cu. in. or 6.539 c.c. and the engine continues to use the Dykes pattern piston ring that has been so successful in K & B 40's for more than seven years. Checked weight of our example is 283 gms. or 9.98 oz.

Cox 'Black Widow'

It is several years since a new Cox engine appeared but, shortly to be announced in the United

Heading picture shows the Russian MK-16 diesel which is supplied complete with 8 in. nylon prop, double-ended spanner, tommy bar and mounting screws.

Right, K&B's new 40-S is the production version of last year's highly-successful Schnuerle scavenged racing 40. Engine will be available in straight C/L-F/F version as well as pylon-racing model.

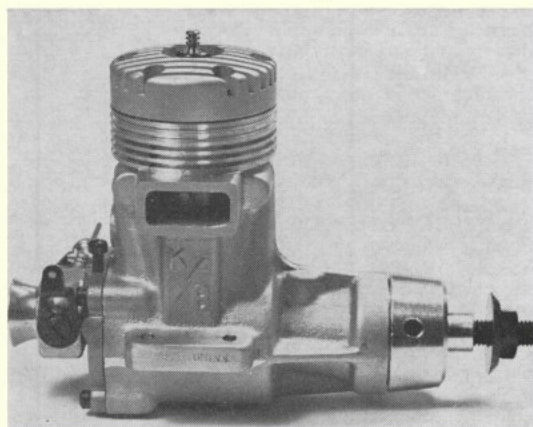
States is the Cox 'Black Widow', a 0.8 c.c. glowplug motor based on the Cox 049 reed-valve engines used to power Cox's well-known ready-to-operate models.

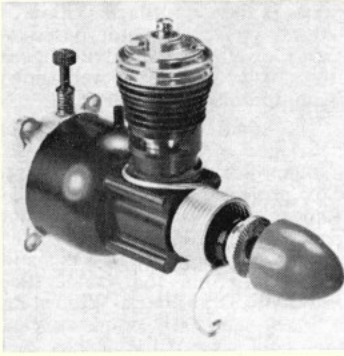
The Black Widow is, in effect, a 'souped up version of the Cox 'Golden-Bee' 049 and, according to Cox projector engineer, Larry H. Renger, the Black Widow outpaces the Golden-Bee by 2,000 r.p.m. on normal props. To distinguish it from the Golden-Bee, externally, the Black Widow has a black anodised crankcase and fuel tank. Internally, it has twin transfer channels like the Tee-Dee contest engine.

For the benefit of newer readers who may be unfamiliar with Cox engine design, we are including photographs of the various parts of the Black Widow in three groups.

The crankcase group includes a machined crankcase made from extruded aluminium bar. The hardened steel crankshaft runs directly in the crankcase material and has a splined front end onto which the aluminium prop driver is pressed. A separate prop stud with a special nut and a soft rubber spinner complete the assembly. Also shown in this group are the starter spring and the long screws which tie the induction assembly to the crankcase.

The cylinder group features a one-piece soft steel cylinder with twin opposed exhaust ports and twin opposed internal transfer flutes. The screw-in cylinder head has a hemispherical combustion chamber and integral glow filament. The steel piston is hardened on its skirt surface only and a ball and socket joint is used to attach





it to the hardened steel con-rod.

The induction group includes a machined fuel tank unit which also forms the crankcase rear cover and reed-valve housing. The central induction pipe is an integral part of the tank and its entry into the crankcase is covered by a copper-beryllium valve reed retained by a wire circlip. The backplate is of diecast zinc alloy and has four external lugs by which the engine is mounted. It also houses the needle-valve.

The Black Widow has a bore and stroke of 0.406 x 0.386 in. giving a capacity of 0.04997 cu. in. or 0.8189 c.c. Complete with starter spring and spinner the engine weighs 64 grammes or 2.26 oz. We shall be reporting on the performance of this new model in due course.

Another Russian Engine

Many years ago we were presented with a Russian MK-16K diesel for our engine collection and, at that time, this motor, designed by V. Petukov in 1954, was quite the best Soviet made model engine of its type that we had seen. For a 1½ c.c. diesel, it was unusual in featuring a ball-bearing shaft and rear rotary disc valve induction and it was also very much better made than the average motors available to modellers in the U.S.S.R.

Recently, The Modellers' Den Ltd. of Bath, Bristol and Cheltenham (who, a few months ago, became the first model firm in this country to handle Russian-made engines when they took up the Sokol 2.5 diesel) began importing the current version of the MK-16K (now known simply as the MK-16) and sent one along for us to inspect.

Comparing this with the earlier example, one is aware of certain changes but basically the design

remains the same and, aided by further improvements, the MK-16 still stands out as being one of the better finished Russian model motors. The crankcase unit, for example, is much more cleanly and accurately cast than that of most Russian motors and compares well with western equivalents.

The earlier MK-16K had a detachable front housing secured to the crankcase with four screws, but the present MK-16 has its front end cast as an integral part of the crankcase. Two ball journal bearings support the crankshaft which has a long thin (5 mm. dia.) journal, a full circle crankdisc and a 4 mm. dia. crankpin. The end of the crankpin drives an aluminium valve rotor which is mounted on a steel pin pressed

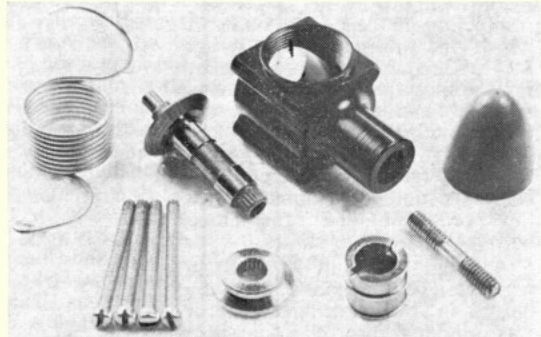
into the backplate. The intake is an integral part of the backplate casting and has the needle-valve assembly screwed into it. The MK-16 cylinder has reverse-flow type scavenging via radial slit transfer and exhaust ports, the latter being through a flange which seats in the top of the crankcase. Above the flange the cylinder is encased in a machined finned jacket and the complete assembly is tied to the crankcase with three screws. The cast-iron piston is unusual in having three deep annular grooves around its skirt, two above the gudgeon-pin and one below it. The gudgeon-pin is solid, 3 mm. dia. and fully-floating.

The MK-16 has a bore and stroke of 12.8 x 11.4 mm., displaces 1.467 c.c. and has a claimed output of 0.14 b.h.p. at 14,000 r.p.m. The weight of the example submitted for examination was 113 grammes or 3.99 oz.

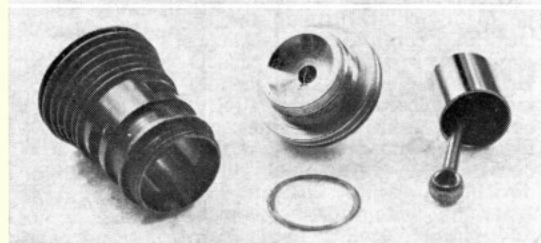
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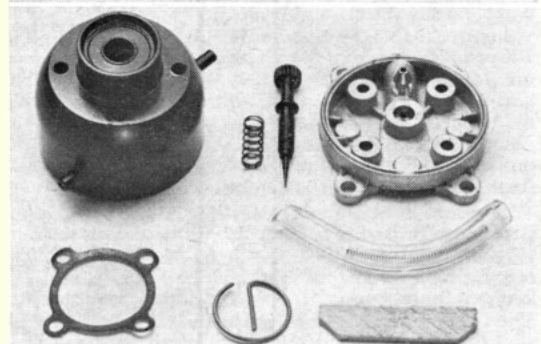
Parts of the Black Widow show typically distinctive Cox design. At right is the black-anodised machined crankcase and rubber spinner which distinguish this model.

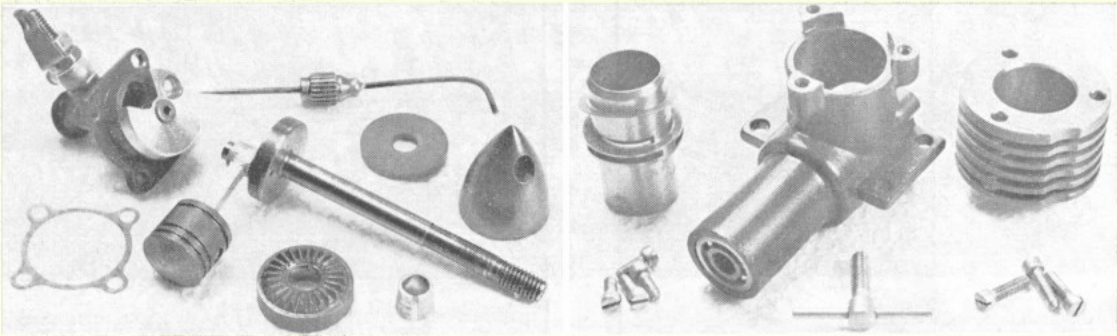


Twin transfer channel ports have been 'borrowed' from the Tee Dee range to help make the Black Widow outperform its fore-runner.



Induction is via reed valve, a feature used by Cox for many years on their sports engines.





Parts of the MK-16. The grooved piston is an unusual feature. Shaft is supported in two ball bearings.

Both crankcase and cooling fins are anodised on the MK-16 making for an attractively finished product.

Oliver Tigers still available

Because one cannot, these days, buy an Oliver Tiger engine from a model shop and since John Oliver does not advertise in the model magazines, a lot of people have assumed that this fine British engine is no longer made. This is not the case. You can still purchase a Tiger direct from the Oliver factory in Dorset.

The great days of the Oliver Tiger, so far as model aircraft are concerned, were between 1954 and 1960 when it was internationally recognised as the best all-round 2.5 c.c. diesel made anywhere and was in great demand among FAI free-flight power enthusiasts and team-racing people alike. Prior to this, the Oliver had built up an enviable reputation in the model car racing world. Later it became popular for C/L combat and it is for this type of contest that it is still in considerable demand. In fact, the demand. In fact, the demand for Oliver Tiger engines has always outstripped the supply

and there is invariably a waiting list for them. At the present time, the delivery on a new Tiger is approximately 12 weeks from date of order.

Oliver engines currently obtainable comprise five versions of the Tiger Mk IV 2.5 c.c. unit and two versions of the 1.5 c.c. Tiger Cub. These consist of the Standard Mk IV, priced at £11.58; the Mk IV with hard-chromed cylinder and cutaway exhaust collector at £13.68; the Modified Mk IV (tuned for extra power) at £14.88; the Standard Mk IV with throttle type carburettor and exhaust collector at £13.76; the water-cooled Marine version of this latter at £17.55, the standard Tiger Cub 1.5 at £10.61 and the Modified Cub at £12.54. These prices are net: there are no trade discounts and there is a 30p U.K. postage and packing charge per unit, excepting the Marine engine, for which the charge is 50p.

The last *Aero Modeller* Engine Test report on an Oliver Tiger was on a Mk IV with chromed

cylinder and appeared in the April 1968 issue. This engine developed nearly 0.36 b.h.p. at between 15,500 and 16,000 r.p.m., running less exhaust collector and with the usual impeccable Oliver handling characteristics.

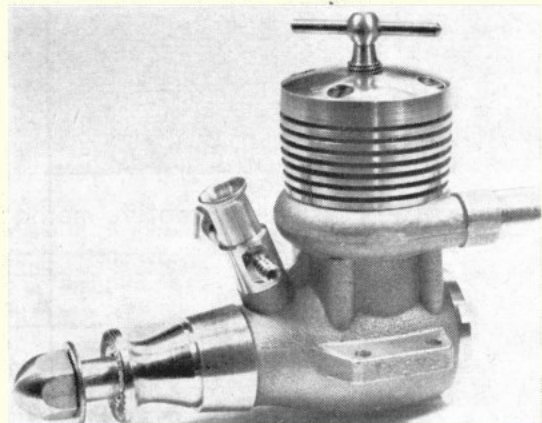
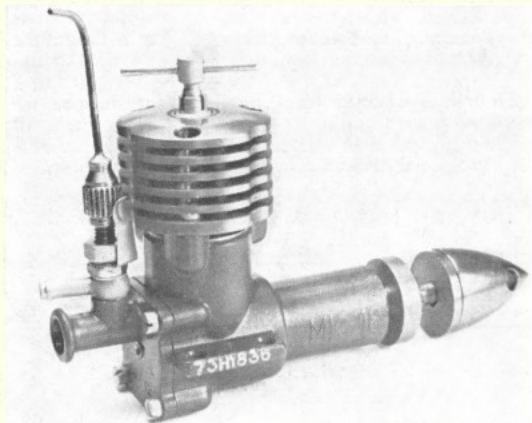
For the benefit of readers unfamiliar with the Oliver Tiger, this is, very briefly, a twin ball-bearing motor with shaft rotary-valve induction and radial cylinder porting. It has a bore and stroke of 0.552 x 0.625 in., giving a swept volume of 0.1496 cu. in. or 2.451 c.c. The Mk IV weighs 6 oz. less exhaust collector.

Incidentally, John Oliver still offers tuning and reboring as well as normal repair and spare parts service. The standard Mk IV, for example, can be brought up to Modified Mk IV standard for just over £4. A standard rebore and reassembly costs £2.50. Postage and packing is extra on all orders.

The address to which to write is John Oliver (Engineering), 248 Ringwood Road, Ferndown, Dorset.

Latest from The Modellers' Den is 1½ c.c. Russian MK-16 diesel, one of the better made motors from the U.S.S.R.

Not advertised but still available to order from manufacturer: the 2.5 c.c. Oliver Tiger in its Mk. IV guise.



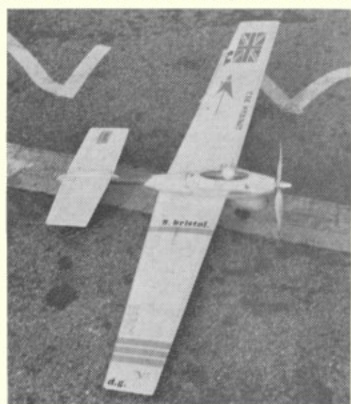
BETWEEN THE LINES

with Dave Clarkson

Woodford Comments

Most notable 'happening' at the Woodford 'do' was the exceptional performance of Dave Rudd and Richard King in winning Goodyear in record-smashing times.

The model they are currently using is a slightly lightened APS Argander Special powered by a Super Tigre G15 'Goodyear' motor fuelled with 15% nitro and driving a Bartels 7 x 6 in. GFRP prop. The model weighs 18½ oz. –



Left, latest F.A.I. racer from Giles/Horwood features a glass-fibre rod fuselage as the 'boom' part of the pod and boom layout – named 'The Parrot'.

Below, record-breaking Goodyear racer from Rudd/King – a slightly lightened version of the Aero Modeller plan, the 'Mike Argander Special'. Powered by a 'good' Super Tigre G15FI 'Goodyear' glow engine.



a little heavier than was intended by Dave, and attributed to extensive glass-clothing around the side cheek and wing joint area. In traffic I timed the model at 23.0 seconds for 10 laps (i.e. just under 100 m.p.h.), but when piloted solo, times of 21-22 seconds for the 10 laps were normal. This is an exceptional speed for a Goodyear, and when combined with first flick re-starts and fast landings the times recorded (4:22.8 heat and 9:28 final) are understandable (but not necessarily believable!). Contrast this with the previous best heat time of 4:47 by Place/Howarth and Final of 9:51 by Schwarz/Kaul. Now for the really unbelievable part, the motor involved is quite standard – Snr. Garofali, you have let loose a good one!

Dave and Richard also won FAI team race and what with Dick Giles and Bob Horwood who won 'B' Team Race and Richard Evans who won Combat, it was definitely a 'South and West is best' day in the North West (boo, boo!).

All winners in C/L events at Woodford using glow motors, employed Taylor plugs – significant?

Northern Area Meeting, Elvington

Sadly two major competitions clashed, the Northern Area meeting at Elvington and the Midland Area's contest at Wymeswold. This was very unfortunate, really, since both July and August have been very empty of contests this year. I went to the Northern Area's 'do' at Elvington, which I have always attended on this weekend in previous years, and sadly found entries considerably down compared with previous occasions.

Conditions at Elvington were sunny, cool and breezy. Notable features were a 4:26 heat and 9:22 final by Heaton/Ross in FAI Team Race, a really tight finish between Barker/Hill and Heaton/Ross in the 'B' T/R final with times of 6:49 and 6:52 (quick) respectively, and a fairly fast Goodyear final in which John Daly and I beat the Place/Howarth PAW 19 special 'thing' and, it's those people again, Heaton/Ross with their ETA-powered *Gimmy*. Because we had forgotten to bring a Goodyear prop. we had to use our team race prop. (a 176 x 170 mm GFRP prop. moulded by Graham Howard from a Czech. 'Nova' wood original), and surprise, surprise, we picked up fully 5 m.p.h. to give us a 25 seconds for 10 laps 'in traffic' air time – thanks Graham! Don Howarth's PAW 19 Special distinctly slowed down during the final.

Figure 1 – Popular alternative methods of burying leadouts in solid wings.



Cut groove & back-fill with plastic wood.



Cut groove & cap with balsa inset



Cut out strip, remove centre, then glue back top & bottom.

Figure II - Preferred, neater method of concealing leadouts

In Combat, second place at the Nationals Dave Wiseman came second again - are you ever going to win, Dave?

Results: FAI Team Race. 1. Heaton/Ross (Leigh) 9:21.9, 2. Place/Howarth (Wharfedale) 10:10, 3. Clarkson/Daly (Stockport) retired. **Class 'B' Team Race.** 1. Barker/Hill (Wharfedale) 6:49, 2. Heaton/Ross (Leigh) 6:52, 3. Place/Howarth (Wharfedale) 7:52. **1/4A Team Race.** 1. Place/Howarth (Wharfedale) 8:28, 2. Campbell/Perkins (Hinkley) 8:49, 3. Robinson/Goddard (Wakefield) 12:46. **Goodyear - Open.** 1. Clarkson/Daly (Stockport) 10:04, 2. Place/Howarth (Wharfedale) 10:20, 3. Heaton/Ross (Leigh) 10:33. **Goodyear - Novice.** 1. Berry/Pritchard (Stockport) 10:20, 2. Morton/Morton (Urms-ton) 13:02, 3. Goddard/Temporal (Wakefield) retired. **Speed (Handicap).** 1. K. Morrisey (Sharston) 10 cc. - 169.4 m.p.h., 2. B. Jackson (N. Sheffield) FAI - 124.9 m.p.h., 3. W. Fairbank (N. Sheffield) FAI - 124.3 m.p.h., 4. N. Meager (N. Sheffield) 1.5 cc. - 92.0 m.p.h. **Combat.** 1. E. Davies (Wharfedale), 2. D. Wiseman (Stockport), 3. R. Ambler (Preston), 4. B. Favell (Preston).

Burying Leadouts

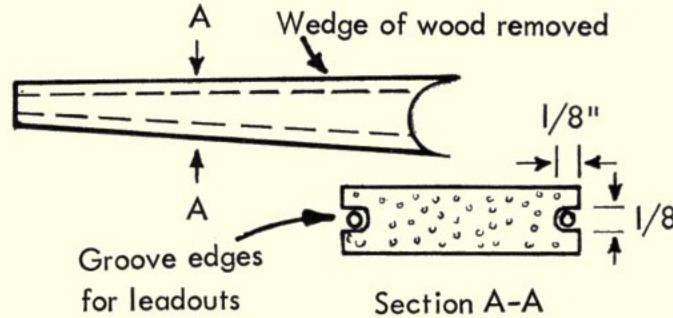
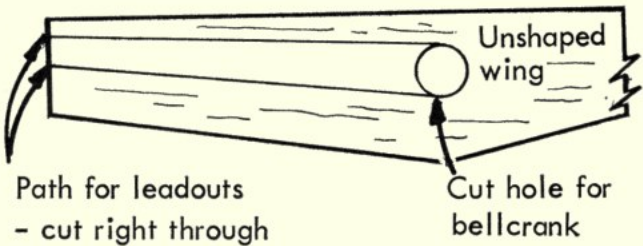
Burying leadouts in solid balsa wings is essential for FAI team racers and highly desirable for Goodyears, and yet it is one of those jobs that can be difficult and frequently the results look bad. Many methods have been used. Figure 1 shows typical examples, but all are difficult to perform neatly, especially with the currently fashionable thin wings. The method described below is quick and easy and the resultant job looks great.

Firstly, cut a hole in the unfinished wing for the bellcrank, then cut through the wing from bellcrank hole to tip, 1/16 in. outside the intended leadout track (see figure 2). Remove this 'wedge' of wood. Now carefully groove the edges of the removed wedge along their centre lines, using a ball point pen. Enlarge and deepen these grooves using a piece of sand paper wrapped around a piece of 1/16 in. ply.

Epoxy 1/2 in. lengths of 14g brass tube into the ends of the grooves and when set glue the wedge back into position in the wing. Now the wing can be shaped and finish-sanded, all one can see of the finished job are two very faint joint lines - easy, wasn't it!

Why no Combat World Championships?

Combat is an event flown keenly and competitively all over the world. Simply from reading the magazines one can see that combat is flown in the following countries (in



alphabetical order - no chauvanism, yet): Australia, Austria, Belgium, Canada, Czechoslovakia, Denmark, E. Germany, Eire, France, Great Britain, Holland, Italy, New Zealand, Poland, Spain, Sweden, U.S.A., U.S.S.R., W. Germany.

Of recent times numerous International competitions have been held all over Europe and the signs are that this trend will increase. So, why no World Championships?

Our respected FAI Legislators tell us that, until a workable and universally acceptable set of rules is adopted, there will be no World Championships. Come on legislators, agree and adopt, there must be a wealth of operating experience all over the world by now.

For almost as long as Combat has existed, we British have won nearly everything when we bothered to turn up, usually by a virtual white-wash. Could it be, my nasty mind suggests, that our foreign brothers are afraid of us and, therefore, dragging their heels about agreeing a full set of rules?

All shout aloud, lads, maybe they will hear us in Paris - WE WANT A COMBAT WORLD CHAMPIONSHIP, O.K.? all together - WE. . .



MEET THE PEOPLE

Included on this occasion as they have by far the fastest Goodyear in the U.K. are Dave Rudd (left) and Richard King (right) from the Feltham club. Dave (the pilot) is 'big and noisy' whilst Richard is the quiet half of this long-time successful team who compete in most control-line racing events. Obviously, a pair who really enjoy their flying, talking to Dave and Richard is a real pleasure - and a laugh!



Martyn Cowley reports on the 9th PIERRE TREBOD FREE FLIGHT INTERNATIONAL

25th-26th August, 1973

THIS YEAR'S Pierre Trebod International free flight week attracted record numbers of entries. Coming the week after the World Championships in Wiener Neustadt it attracted not only the W.C. team members but also gave the reserves and supporters a chance to compete. Two days before the contest the camp site was already overflowing with the 15 Nations, including Japan, Australia, New Zealand, U.S.A., Canada and Argentina, that went to make the 114 entries in A/2, 54 in Wakefield and 37 in Power.

The calm continuously sunny weather still prevailing over Europe was distinctly non British. The flat calm of the early mornings giving way to light breezes and later thermal gusts from about 7 a.m. onwards calming again from 4 p.m. to give very dead evening air. Maxable air was available from 6 a.m. onwards but was still undetectable on the line or with bubbles till at least 8 a.m.

Test flying became an impressive demonstration of continental still air, high aspect ratio models and circling tow techniques. Canadian fanatic Willard 'Tam' Thompson, claimed builder of over 150 A/2's! had a circler with variable incidence inboard wing panels for trim whilst circle towing. Some Dutch models featured radio retrieval beepers with aerials sticking up above fuselage pods. Light entertainment was provided at the end of one practice day by De Boer, wandering to and fro with buzzing receiver held overhead unable to locate his flight of some 100 yards. Other practice days ended with multinational swimming sessions in Sezanne, with evenings spent in the flying club bar or complete takeovers of local village restaurants.

Flying was organised in groups of seven flyers to one set of time keepers and with 1½ hour rounds, this left an average of only seven minutes waiting between flights, which was rather unsatisfactory in rounds when lift was scarce. On Sunday Power and Wake rounds were further reduced to one hour!

F1A Glider started at 7.45 a.m. on the Saturday and fortunately for the British a steady breeze grounded many of the circlers seen in practice. An interesting situation arises when flying from a line, as it takes only two or three circlers upwind to pin down the entire line, unless you are prepared to tow into a certain line tangle. The scarcity of lift in the first round left under half the entry with a max. Gerry Pink spun down for 2:38 and British Team member John Cooper also dropped this round. Jim McNeill reflew a line cross just seconds before the round end to drop a further ½ minute of his first attempt, his only contest error having spent the night sleeping out in a thunderstorm. From the second to sixth rounds, lift was relatively plentiful, although Geoff Lefever dropped off the line for 1:02 and Bob Wells' auto rudder failed for 1:14 both in the third round. Martyn Cowley needed both attempts of a re-fly with his No. 1 downwind to max before the fifth round ended. The start of the seventh round saw five British flyers each with six maxes, but this last round was to provide almost no lift and four of them dropped. Garry Madelin, Steve Marriott, Don Thompson and Jim Baguley together with Dutchmen de Boer and Verbree, in fact only 16 maxes were recorded. Conditions were going dead and Martyn Cowley was the only Britain left in the seven man fly-off. After the fly-off signal there was four minutes to launch, Remi Lepage went after a minute and immediately contacted lift, everyone followed and those nearest on the line just caught the edge of his lift. Ton Van Eldik had a mid air collision but quickly flew his reserve within the four minutes. No one maxed but Lepage's 3:29 was easily enough for top place.

Conditions on the Sunday proved even harder for the F1B Wakefield flyers, the first two rounds claiming all but seven flyers. Bob Wells started with a 2:58 and Mike Duce D/T'ed early for 2:56. Ian Kaynes was our only first round max and he was one of only five with three maxes before his trouble started. Even Alan Jack lost his form after having reached the W.C. fly-off the week before. Jack McGillvary, Canada dropped his only flight in the second round as did Jon Davis, U.S.A. Jon's models were by

far the best in terms of graphics with elaborate tissue trim and bronze anodised parts complete with inlaid veneer marquetry model box, he also visited F.F.N.'s International in September at Strubby. John Buskell, son of Pete, flew erratically and, Pete Stewart entered his first ever Wake completed in Austria just the week before. Biggest disappointment for everyone was to see Mitsuo Kobori of Japan drop some flights after maxing in all the hard rounds. One of the most popular flyers, he unfortunately lost one of his superb models during the contest.

By the sixth round all eyes were on the only two remaining full houses, Bob White, U.S.A., and Louis Dupuis, France, both maxed out. In the fly-off both wound together and as Dupuis launched disaster struck, a propeller blade flew off and the model spun in for nine seconds. Bob White was away for an amazingly long fast near vertical climb, and flapping air gave him a convincing four minute max and victory.

Meanwhile, conditions had been ideal for F1C Power, the scoreboard was ablaze with red 180's. The hardest rounds had come during mid-day with the risk of down draughts. Ray Monks had a nerve racking 3:00 exactly on the watch in the fourth round. Koster's gadgets pulled him out of a full bore dive at 50 feet also in the fourth, only to go away again in lift although an attempt was given with an overrun. Ken Faux was out with a 2:58 and Roy Collins with a 2:57 and Tony McCombie, now living in France started dropping in the fourth.

Only Ray Monks and Phil Ireland reached the 14 man fly off that incidentally included nine of the 1973 W.C. team members(!) With the formality of the seven rounds over the contest proper started, launching in turn down the line with two minutes to start after the preceding launch. Eight second runs proved no difficulty except for one overrun and the line was redrawn for six seconds. Ray launched first and maxed followed by Koster who maxed, Phil Ireland flying sixth was disappointed by his launch and bad air left him 11 seconds short.

This still left nine flyers going for a fourth round max. Unfortunately there was some confusion as to whether the time keepers were timing exhaust note or propeller stop as in the *Code Sportif*. First away was Hans Seeing with a 2½ seconds run, then Alain Landeau with three into lift. Next Tom McLaughlin had the heart-break of not being able to start within two minutes, having also missed the W.C. fly off with 2:59 in the seventh round: By now Landeau's air had gone, Schlacta launched then Ray with only 2½ second run, insufficient height and hitting a downwind building ended Ray's hopes of a hat trick in this event. Then Thomas Koster launched brilliantly on pattern, four seconds giving him almost double anyone else's height he made an effortless max. Thomas used a sheeted Cream despite having trimmed his flapped *Grootna* during the afternoon, with his latest flapper *Hot Tuna*, reputedly his No. 1 still in its box. Although consecutive champion Ray, had much support from the crowd, Thomas had a most popular victory following his endless developments in this class and his disappointment at Weiner Neustadt.

Results

F1A Glider: 1. R. Lepage (France) M+3:29, 2. M. Motsch (Germany) M+3:00, 3. A. Bailly (France) M+2:37, 4. G. Brinks (Netherlands) M+2:34, 5. T. Van Eldik (Netherlands) M+2:26, 6. R. Allais (France) M+2:14, 7. **M. Cowley** (G.B.) M+2:13, 8. **G. Madelin** (G.B.) 20:53, 9. **S. Marriott** (G.B.) 20:44, 10. P. Quarnstrom (Sweden) 20:37. *Other British placings:* 11. D. Thompson 20:27, 11. J. Baguley 20:27, 15. P. Whiston 20:15, 16. J. McNeill 20:10, 30. J. Cooper 19:35, 34. G. Pink 19:15, 47. G. Lefever 17:55, 49. A. Wells 17:52, 50. A. Jack 17:47, 53. D. Tipper 17:37, 63. P. Stewart 16:52, 65. J. Woodhouse 16:48, 93. D. Stadleton 10:09.

F1B Wakefield: 1. R. White (U.S.A.) 21:00+4:00, 2. L. Dupuis (France) 21:00+0:09, 3. A. LePniec (France) 20:58, 4. J. Vantomme (Belgium) 20:32, 5. H. Merthe (France) 20:26, 6. J. McGillivray (Canada) 20:18, 7. J. Wantzenriether (France) 20:12, 8. M. Blitzman (Argentina) 20:11, 9. J. Davis (U.S.A.) 20:05, 10. J. Boiziau (France) 20:02. *British placings:* 11. R. Pavely 19:45, 16. I. Kaynes 19:13, 16. A. Wells 19:13, 21. J. Baguley 19:00, 24. G. Walker 18:41, 28. G. Lefever 18:13, 29. A. Jack 18:04, 31. M. Duce 17:41, 42. P. Stewart 10:28, 45. J. Buskell 9:53.

F1C Power: 1. T. Koster (Denmark) 1800, 2. A. Landeau (France) 1772, 3. C. Zimmer (France) 1767, 4. L. Zetterlund (Sweden) 1760, 5. F. Schlacta (Canada) 1750, 6. **R. Monks** (G.B.) 1742, 7. H. Seelig (Germany) 1725, 8. T. McLaughlin (U.S.A.) 1620, 8. J. Barbaro (France) 1620, 9. R. Stabler (Germany) 1613, 10. **P. Ireland** (G.B.) 1609. *Other British placings:* 14. R. Collins 20:57, 18. K. Faux 20:30, 21. J. Allen 19:10, 32. P. Buskell 9:00, 35. R. Johnson 5:23, 36. D. Pym 3:00.



BOCHUM C/L INTERNATIONAL

Dave Clarkson reports
from the successful
German meeting, held on
September 8-9th.

Biggest British support for the meeting came from the team-race enthusiasts, pictured at left. Heaton/Ross nearly made the final, while Clarkson/Daly were equally close to making the semis.

IN THE ABSENCE of an official European Championship this year, it was to be expected that Bochum would be treated as such by most competitors, and this is how it turned out. Entries were received from no less than 11 countries including Czechoslovakia and Hungary. But for the absence of the Russians and Americans and the lack of any Italians in speed, all of the world's best competitors in the events staged would have been present. It is pleasing to report that, considering the high-class entry, the British entries (two in speed, one in stunt and no less than six in team race) by no means disgraced themselves.

The contest was once more sited on the car park of the Ruhrpark shopping centre located in Harpen, a suburb of Bochum in the industrial Ruhr area between Essen and Dortmund. This site is the Bochum club's regular flying site and includes a grass combat circle as well as excellent facilities that allow both radio and control-line flying. During the early part of the Friday evening, Bochum club members marked out the team race/speed circle, the stunt circle, two practise circles and erected a safety fence around the team race/speed circle with commendable speed and efficiency.

Most of the British contingents arrived by car on the Friday evening, with Jim Mannall coming from Switzerland and Jim Bond, Tony Harknett and the three Tribe brothers coming from Denmark all via other contests!

Anyway, to the competition itself. The weather was almost perfect being hot, calm and with moderate humidity. I didn't see much of the speed and stunt events being a team race competitor, but fortunately Jim Mannall has contributed his own report on Stunt and I thank Brian Jackson, Gordon Isles and Jurgen Lenzen for their help in Speed.

Team Racing

Thirty-seven teams flew compared with 25 last year, and included amongst those who flew were such notables as two-times previous winners, Bert and Rob Metkemeyer of Holland, European Champs Nore and Ekholm from Finland, Gunter Schwarz and Konrad Kaul from Germany (well known to British modellers), Milan Drazek and Jiri Trnka from Czechoslovakia, and many others including our own Derek Heaton and Malcolm Ross anxious to perform as well abroad as they do so frequently back home.

The first round was held on the Saturday afternoon and gave generally slow times in seemingly perfect conditions.

in heat four Heaton/Ross did a faultless 4:37 and led the field until Austrian's Fischer/Nitsche, using the latest version of the Bugl 15 in a typical 'Bugl' model, turned in a very fast 4:19. Other than Heaton/Ross, the other British teams did not do well - Giles/Horwood retiring with a defective propeller, Clarkson/Daly (to my shame!) disqualified for foot-out, plus Tribe/Tribe and Rudd/Harknett doing rather slow times of 5:07 and 5:12 respectively. The Rumpel G.15 FI diesel of Hammond/Russell in a very neat model was too new and could not be set well all weekend. It became apparent during this first round that although the International Jury was fair, consistent, and by no means slow in giving warnings, their rule interpretations were quite different from those common in the U.K. They were very hot on safety rules but allowed flying styles that have been virtually outlawed in England. This is apparently a common interpretation in Germany, Austria and Czechoslovakia but presented problems for most of the other competitors. Bert Metkemeyer said that it had taken him two years to learn the 'approved' flying style; once done he and his brother had won at Bochum twice!

The second round on Sunday was entirely different, and fast times came in droves. Except for Heaton/Ross and Fischer/Nitsche, all of those who qualified for the semi-finals did so on the basis of their second round times - and a glance at the results show that 4:37 was the slowest qualifying time!

Bobjerg/Siggard's Super Tigre G15 FI powered model was unfortunately damaged in a line tangle during the second round, so they used their Russian TMA powered windy-weather model. This is similar to their unconventional model seen at our Nationals, but is fitted with a lower aspect ratio wing.

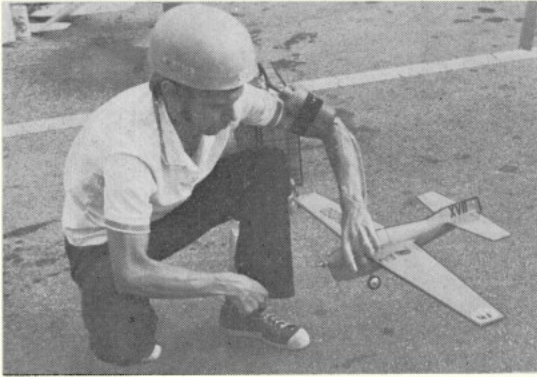
Of the British teams, John Daly and myself were unlucky to miss the semis with a time of 4:37 because of our disqualification in the first round. This time was achieved using a diesel converted K & B 15 Schneurle - port engine (the only one present) and despite a slow start and having to glide the last two laps owing to a short (30 laps) first tank. We could so easily have done a 4:30 time as many noted and this aroused considerable comment and interest in the K & B 15. Dick Giles and Bob Horwood excelled themselves with a 4:47, fully 27 seconds faster than they had even gone before in competition, using a Kosmic K-15 D assembled only a few days before by Dick in a just-finished pod and boom model. Their model featured



Left, unluckiest stunt competitor, Hungary's Egervary. Would probably have won, had the engine not quit early on the last, crucial flight.

Team race winners yet again - Bert and Rob Metkemeyer. No prizes for guessing the model either!





a 'Ronytube' glass fibre fuselage boom and is named The Parrot - a name more to do with the builder than the model! Notable were the new Rossi diesels of Nore/Ekholm and Kuhnis/Saccavino which were very fast although a little short on range.

The semi-finals were drawn initially with both Czech teams in the second semi, so Heaton/Ross were moved forward at the last moment from the third to the second semi to separate them. The final draw and times achieved were:-

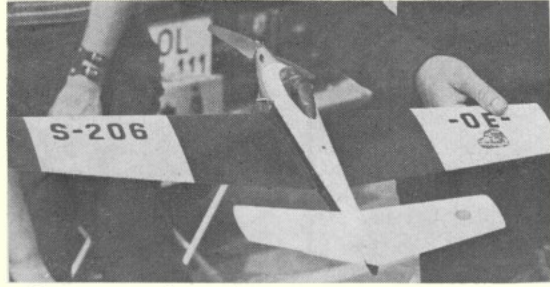
1st Semi - Fischer/Nitsche (4:36), Bobjerg/Siggard (4:31) Nore/Ekholm (4:24).

2nd Semi - Trnka/Drazek (4:37), Heaton/Ross (4:32), Metkemeyer/Metkemeyer (4:32).

3rd Semi - Schwarz/Kaul (4:49), Votypka/Komurka (5:04), Kuhnis/Saccavino (Rtd).

In the first semi it was obvious that the Austrian's Bugli had lost its edge, however the Danes and Finns had excellent flights. In the second semi the battle of the British Nationals was rejoined and again a tie resulted between the Metkemeyers and Derek and Malcolm. The third semi was somewhat of a disappointment with Konrad Kaul having a bad start, the Czech Komurka forgetting to reset his fuel shut-off at a pit stop and the Swiss model running-in on take-off. We now had the Metkemeyers and our British pair tied for the third final place, so out came the *Sporting Code*, and out went Derek and Malcolm because of their slower qualifying time. Again the British had bad luck since Heaton/Ross dropped to ninth place as a result of this ruling (Semi-final times do not count for placings).

The Danes had more bad luck in the final when their model, coming in for a pit stop, was caught by Metkemeyer's model as it took off from the segment in front. Jorgen Bobjerg immediately threw his handle to avoid a line tangle as the Dutch model took off underneath their model - gentlemanly conduct which deserved a prize in itself. The Metkemeyers flew on to their third consecutive victory by virtue of the greater range of their Bugli compared with the flying Finn's Rossi despite some desperate pitting by Penti Nore. The times were fast indeed with the winners clocking 8:47 and the runners-up 9:02 - a wonderful victory by one of the happiest and friendliest teams in racing. This contest that started with a poor first round finished with some of the fastest times ever recorded, and with good performances from the top Britons.



Left, Nore warms up the Rossi 15 diesel in his familiar 'Karbunkle' design, which is normally better known as the housing for a Super Tigre G15. Above, Austrians Fischer/Nitsche recorded the fastest heat times with this Bugli-powered model, but failed to reach the finals.

Speed

A moderate entry of 24 was to some extent marred by the absence of the Italian team. Nevertheless really top class speeds were recorded notably by the Swiss and Germans with Louis Bilat and Willi Kuhnis of Switzerland recording equal fastest times of 232 km./hr. while Emil Rumpel of Germany had to be content with third place at 229 km./hr. By no means disgraced were Gordon Isles and Brian Jackson seventh at 214 km./hr. and ninth at 210 km./hr. respectively.

The Rossi 15 motor was supreme; virtually every competitor using one including the Czechs Mensik and Gurtler. A predictable exception was Krizma and the other Hungarians who used Moki's - Gyula Krizma put in a series of beautiful and effortless flights, but alas the Moki remains outclassed.

Louis Bilat (always seen with a hydrometer hanging from his belt) flew his familiar *Challenger* design as illustrated in the October '72 *Aeromodeller*, and most flew equally conventional models. However, several of the German's flew asymmetric designs. Emil Rumpel was successful with his *Kingfisher* design which he flew at Helsinki last year, but his team mate Jurgen Lenzen has a very unusual asymmetric model with delta tailplane. Unfortunately, starting troubles prevented him from making an 'official'. Emil Rumpel claims to have found a new 0.05 mm thick Titanium wing covering foil that will so stiffen his wing that he will be able to increase its span to 1.5 metres (just under five feet!).

Emil's models look odd already but if we ever see this new wing installed, we will see the oddest of all time!

It seems natural to say that our British speed fliers worked very hard for their results. I am always impressed by our speed fliers, not only for their hard work but by their very co-operative nature, they always seem to help each other out (not quite how we team race addicts behave).

Aerobatics

The Stunt event was not really as well supported as expected, there being some notable absentees, however of the 21 entries some 14 had previously been national team members.

The first round on Saturday afternoon was an opportunity to assess the conditions and the judging. The flying circle was on a slope; good flat concrete but with one side about 6 ft. higher than the other! Does one fly parallel to the ground or 'level', 5 ft. above the highest point and 12 ft. high on the other side? I chose the former for the first round. Downwind was on the downhill side which meant completing manoeuvres below shoulder height, and this I did not do very well as the scores show. Most impressive was Dr. Egervary who clearly deserved his first round lead.

The second round on Sunday morning was uneventful. Eskildsen of Denmark put in his usual precise performance, his squares being remarkable, and in my opinion was marked low. Paul Tupker was having more success with the German judges than he had the previous week at the Swiss Breitenbach meeting. In the calm conditions though his model showed its age and weight, being rather sluggish round the bottom corners of the squares.

As the expected start of the third round approached the organisers suddenly announced that only the top ten (based on the better single flight) would fly in a two-round final.

Brendel is a pilot who has performed well at International levels with his Super Tigre G15-powered models, but failed to record a time on this occasion. Perhaps a testimony to the contest director's alertness - he has something of a reputation for the strength of his right arm!

Both of these two flights would count, the scores for rounds one and two being discarded. This is in accord with the new F.A.I. rules and must have been the intended programme from the outset, but the organiser's intentions should have been declared before the event started. As it was, those not in the top ten suddenly discovered that their participation in the event was over.

The third round was flown in the order of the results so far, and for the fourth round this was reversed. So short was the warning of this that Louis Van den Hout in second place at that time was still away having lunch! Fortunately Paul Tupker was able to change places with him, avoiding any arguments. The only change in placings after the third was Maes of Belgium who dropped from equal seventh with me to tenth, Eskildsen's flight again seemed low-marked.

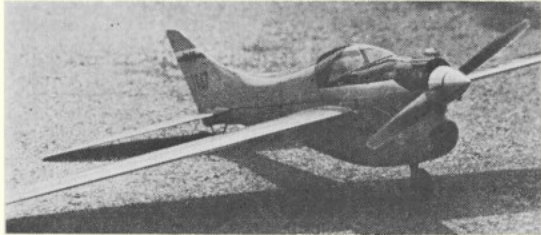
The fourth round produced nine more very consistent flights, as the scores indicate. So we came to the last flight of the competition from Dr. Egervary – the leader in the qualifying rounds he was also top in the first round of the final. His lead was not great but with a very impressive and consistent style, he started the flight favourite to win. That was, until the first loop of the cloverleaf – when the engine faltered badly, then picked up again. The model hesitated but continued round the manoeuvre until at the critical point in the vertical climb through the completed figure, the engine cut. There was absolute silence as all eyes watched the model fall in. With no wind to help, Egervary had no chance and there was that awful crunch as the model hit the concrete. This almost certainly cost him the competition, but that is not to detract from Louis Van den Hout's victory, he being the only one of the leaders to improve his score in the final rounds.

Conclusion

Bochum '73 was an excellent contest run by the Bochum Club with an ease and efficiency that we should be able to emulate at our Nationals (but sadly seemingly cannot). Those of us for whom this Bochum event was our first International have learnt a great deal about temperament and about recognising and adapting to 'foreign' conditions and interpretations. The most important trend to emerge was the growing confidence and improvement in performance of our race teams holding out some prospect of reversing recent poor showings in European and World Championships.



Above, Czech flier Jurecka, well known on the 'International' circuit placed 6th in aerobatics with his familiar design. Below, Trnka/Drazek still fly attractive racers! Plenty of crankcase cooling evident around spinner area.



RESULTS

(Provisional)

Speed winner Louis Bilat achieved quite remarkable speeds with the newly-instituted 0.4 mm. control lines – shows how much extra power he has available since last season.



SPEED

1.	L. Bilat	Switzerland
2.	W. Kuhn	Switzerland
3.	E. Rumpel	Germany
4.	D. Enfrog	France
8.	G. Isles	Great Britain
9.	B. Jackson	Great Britain
21.	P. Halman	Great Britain

(24 entries, 9 countries)

AEROBATICS

		R.11	R.12	R.13	R.14
1.	L. Van den Hout	1094	1055	1049	1064
2.	G. Billon	942	1083	1039	1038
3.	G. Egervary	1129	1057	1068	1006
4.	C. Cappi	1042	1071	1041	1028
7.	J. Mannall	851	982	958	984

(21 entries, 10 countries)

TEAM RACE

		Round 1	Round 2	Final
1.	Metkemeyer – Metkemeyer	5:10	4:22	8:47
2.	Nore – Ekholm	4:35	4:19	9:02
3.	Siggard – Bobjerg	5:04	4:37	66 laps
4.	Fischer – Nitsche	4:19	4:21	
5.	Saccavino – Kuhn	–	4:30	
6.	Komurka – Votypka	4:57	4:32	
7.	Trnka – Drazek	4:47	4:35	
8.	Schwarz – Kaul	4:44	4:36	
9.	Heaton – Ross	4:37	4:44	
10.	Clarkson – Daly	–	4:37	
14.	Giles – Horwood	–	4:47	
22.	Tribe – Tribe	5:07	–	
24.	Harknett – Rudd	5:12	5:21	
30.	Penton – Carr	5:40	–	
32.	Hammond – Russell	–	5:54	

(39 entries, 11 countries)

CLUB NEWS

LIFE THESE days is fraught with bureaucratic difficulties. Gone are those carefree days when you could organise a rally on Wimbledon Common or elsewhere with nothing much to worry about but the state of the weather. Today the organising of a meeting can be a pretty grim business, as the **Flying Druids** found to their cost. They had 'booked up' the Middle Wallop Airfield for a Rally in the usual way, but failed to get permission from a gentleman called the Land Agent, of whom they were not even aware. He informed the club their third party insurance was inadequate; Crown property must be covered against damage. This cost another ten quid. When all seemed settled the insurance company reversed their decision to accept the risk, with the result that the airfield was lost for the date required and a quick change of venue to Beaulieu had to be effected. The club got some compensation for its inconvenience, but what a performance! Any club using, or contemplating using, Crown Lands, and many obsolescent and semi-obsolescent R.A.F. fields (or rather ex R.A.F.) come under this heading, should look to its insurance policy. They need one which covers damage to plant and installations of the Crown. Of course, if the club is affiliated to the SMAE then the 'Airfield Indemnity' is secure - no problem at all! Just one point to the story. The Land Agent involved was, apparently, no rigid bureaucrat, but was at all times helpful, and acted in the club's own interests. Consolation for the Flying Druids at the Beaulieu Rally was a second place in the aerobatic event by Angi Piacentini.

Keith Bullock, P.R.O. of the **Worcester M.A.C.**, sends us the club's latest newsletter, plus a reminder that new members are welcome at 35 Perdiswell, on Wednesdays at 8 p.m. Plenty of elbow room it seems in the Perdiswell club house, and coffee on tap. Now we heard tell of many of the fine models in the Worcester Club, and of the ability of their operators, from last month's report of the help given at the Worcester Grammar School Open Day. A letter of thanks from the school is published in the newsletter. Arousing the public's interest is one thing, though,

but rousing them from their beds quite another. Some lively character has been flying on Perdiswell before the crackle of cornflakes - seven of the hour. Members are reminded that flying is from 9 a.m. to 9 p.m., and a well silenced engine obligatory. All three departments of model flying, R/C, C/L and F/F, are taken care of by the club, with the Annual Shield awarded to the flyer who collects most points in any of the three categories.

The Editor of the **St. Albans M.A.C.**'s *The Thermal* claims to be the proud part owner of a sit-in-type-not-chuck-up flying machine. These Af-flew-up model flyers! But he still does a bit of looking up as well as a bit of looking down. But is he wise to advertise his new aircraft owning status? Every time someone loses a model they will expect him to carry out an aerial search. 'You say you couldn't find it? I know. I got it back. I meant to phone you again . . .' Anyway, for a contest minded club like St. Albans, there seems a distinct lack of free flight meetings these days, mainly because Chobham ain't what it used to be, although the club did hold its Summer Gala there. But model flyers still complained, even in the bountiful fifties. The news-sheet editor has been thumbing through some of the old *Thermals* of that era. Incredibly, people were even then complaining about the cost of balsa, though by present day prices they almost gave it away. One thing, though, remains consistent, the club's obdurate hold on its small but precious flying field, 'Nomansland'. Some benighted genius got the idea of turning the whole place into a glorious car park. The idea was firmly and sensibly scotched by the local council. Good for them! Er, let's see now - didn't I know the present Mayor of St. Albans when he was chief organiser of the fondly remembered All-Britain rallies at Radlett - that figures!

John Weeks has sent along the two latest issues of the **Sittingbourne & D.M.A.C.** newsletter *The Bourne Flyer*. He has just taken over the editorship from Tony Andrews, who has given up the chair for business reasons. Complaint in the editorial is of the dearth of juniors actually flying models. This takes me back, for it has been model man's dream through the ages to get the juniors on the flying field, and it seems the situation remains unchanged. But those who have passed the first flush of youth somehow manage to keep the club flag flying; there are, for instance, 17 returned scores in the Best All Rounder event. They also totter out to give displays, one of the most ebullient of which was enacted close to the beer tent, which possibly accounted for the aerobatic impossibilities.

Contest Calendar

October 21st	WHARFEDALE 14th RUFFORTH 1000. One thousand lap C/L event for Class B racers. Details: J. C. Horton, 10 Lawn Avenue, Burley in Wharfedale, Ilkley, Yorks LS29 7ET. S.M.A.E. only. No spectators.	November 4th	RICHMOND GALA. F.A.I. R/G/P (3 'Stag' Trophies), also A/L, $\frac{1}{2}$ A, Cd'H and Chuck at Basingstoun (on A.14, N. of Royston, Herts).
October 21st	LONDON AREA C/L CHAMPS. F.A.I. Good-year T/R. Combat at Charville Lane, Hayes.	November 4th	S.M.A.E. INDOOR SCALE at U.S.A.F. Brize Norton, Oxon (soft shoes must be worn).
October 21st	S.M.A.E. TWO-DAY F.A.I. MEET for F.A.I. R/G/P at R.A.F. Strubby, Lincs.	November 11th	CROOKHAM GALA. Open R/G/P, A/1, C.d'H, HLG. Prizes: 3 'Open' cups and replicas vs Trade Support. Venue Beaulieu, Hants.
October 28th	GUISBOROUGH COMBAT RALLY. Cash prizes and trophies, 40p pre-entry (essential) plus details from S. Smith, 69 Sandmoor Road, New Marske, Redcar, Tees-side.	November 11th	ST. ALBANS THERMAL SOARING. Entry fee 30p to A. C. Booth, 4B Fore Street, Hatfield, Herts AL9 5AH. Entries on day only if time available, 10.30 a.m. start at Nomansland, Wheathampstead.
October 28th	NORTHERN AREA F.A.I. RALLY. Wakefield, Power Glider and Team Race. S.M.A.E. members only at R.A.F. Topcliffe, Yorks.	November 25th	ST. ALBANS M.A.C. WINTER GALA. Open R/G/P, Cd'H, A/1 and HLG (John Simeons Trophy for Power). Venue to be announced.
October 28th	SOUTHERN GALA. Open R/G/P, $\frac{1}{2}$ A Power, Chuck Glider, CL aerobatics, R/C Class 2 scale, F/F Scale, Novices R/C Aerobatics.	December 2nd	FALCONS GALA. Open RG/P at Chetwynd.

Contributions to the latest **East Anglian Area** newsletter are wholly and absolutely free flight; mainly concerning the series of Area F/F meetings held throughout the summer. The principal venue has been R.A.F. Watton, a field in very open country but a bit way out for area members living near to London, although they can always pop up to London Area's Bassingbourne. This is a field I prefer, being nice and squashy underfoot, and so kind to lands. Entries at the meetings have been good by area standards, and the quality highly competitive. The Norwich club outshone itself in the *Model Engineer* Team Glider event by fielding no less than three teams. The 'A' team returned a full 12 flight score of 36 minutes. The single Anglia team replied with a valiant 29:32, Norwich lost, however, to Southampton on the fly-off total. Area success, though, in the *Astral* Trophy, Paul Bond of Anglia taking it over from clubmate Roy Collins, who this year was placed third.

Not too many modellers, I think, are acquainted with a rather elaborate C/L event known as 'Carrier', but one of these esoteric contests was run off by the **Three Kings Aeromodellers** during the summer, according to the latest *Court Circular*. The idea is to simulate landings on an aircraft carrier. Well, setting up and transporting the mock up deck, complete with its arresting gadgetry, can be quite a job, and it seems the Three K's got over this by using the basic terrain as a 'deck', pegging down the arrester wires. The American scoring system was used, which when written down, looks like one of the questions you have to answer to qualify for Mensa, but we are assured the SMAE system is even more complicated. Just to give an idea of the club contest strength the club's annual stunt contest attracted a field of six, and this was less than hoped. It was won by Dave Morbin.

On the subject of fields, the **Anglia M.F.C.** have a caravan on the club field which, according to *High Flying* they are thinking of changing for one just a little more sumptuous. Perhaps they have indoor (flying) in mind. Go down to the field any Sunday and you will see on display an eye-catching array of beautifully finished radio models, not least of which are the sleek Pylon Racers. Dicing these hairily around the festive-looking poles is fast becoming the club's leading interest, and certainly adds excitement to an afternoon's sport. Leading in the Pylon points table is Brian Austin with Bill Ashdown second, although in points for the club Aerobatic Trophy the positions are reversed. On the free flight side, such veterans of the art as Bob Wells, Ray Paveley, Roy Collins and this year's *Astral* Power Trophy winner, Paul Bond, make for a strong contingent on home and foreign soil. The first three named attended the 14-nation F/F event at Marigny in August. In a very large field, composed of some of the world's top flyers, they acquitted themselves very ably indeed, getting well placed in Wakefield and Power.

Much activity, too, to be seen on the **Wolves M.A.C.**, flying grounds. Their July newsletter is a bit late in reaching us, but it would seem they had a fulsome summer programme, particularly in C/L. One major mishap, though: someone, unnamed, burnt out his new Britten-Norman *Islander* when an engine caught fire. Only the tail, motors and fibreglass cowlings survived. A burn-up of a different kind was Joe Myzaska's new club record stint. He put up a C/L speed of 121 m.p.h., but had a bit of trouble in lapping the pylon at this rate of knots. So far the club has been placing well in outside contests,

and a number of successful displays have been organised.

Extract from an article in **San Diego Orbiters'** *El Torbellino*: . . . My *Orbiter* fat-maxed Sunday morning and then went bananas on the next attempt. Sending the *Orbiter* to the showers I went to the bull pen and brought out my ace relief, the $\frac{1}{2}$ *Galaxie* . . . 'Comprez? That is an example of the colourful *patois* to be found in the American newsletters, although we, in this country, have quite a lively line in newsletter patter, too. The extract referred to the *Orbiters'* exploits at the United States F/F Champs. at Taft, California. They lifted three trophies, but club participation was much poorer in the act than in the anticipation. *Promises, promises.*

The place to fly in California is the dried-up lake bed at Elsinore. It is covered not with hamlets but with billions of fox-tails, and is all fine, abrasive dust — ugh! It is where the **South Carolina Antique M.P.S.**, do modern-type maxies with old-tyme models, though some of the times recorded in Commercial Rubber, under two minutes, seem to be a little on the low side. Plenty of maxies in Power, though, and there is a move to reduce the engine run from 20 to 15 seconds.

Another place to fly in California is the 'Basin'. The **San Valeers** held their July club contest there, and part of the fun was searching for the models in the corn, which explains why our cornflakes are so flat. Quite a big turn-out, though: 40 entries. The club has recently lost its Vice-President, George J. Sugiuchi, who succumbed to a heart attack at the early age of 50. He was a stalwart club man.

More conventionally the **Vancouver Gas Model Club** flies at an airport, Boundary Ball, where the Fall F/F meeting is to be held in October, but even here the flying is interrupted by haymaking, which suggests tall screening grass, so there might be something to be said for those desert sites.

The **New Zealand M.A.A.'s** newsletter contains a list of N.Z. records, the bulk of which — quite rightly if you think about it — are for indoor prowess. The F/F-L/T didn't work — times now have little significance, although there is still a place for C/L speed.

The **Christchurch M.A.C.'s** *Torque* has the distinction of carrying a cooking recipe. It features in the special women's page, 'Powder Puff'. Possibly just a device to get husbands overweight so that they can't chase models.

Would appreciate more reports.

Clubman.

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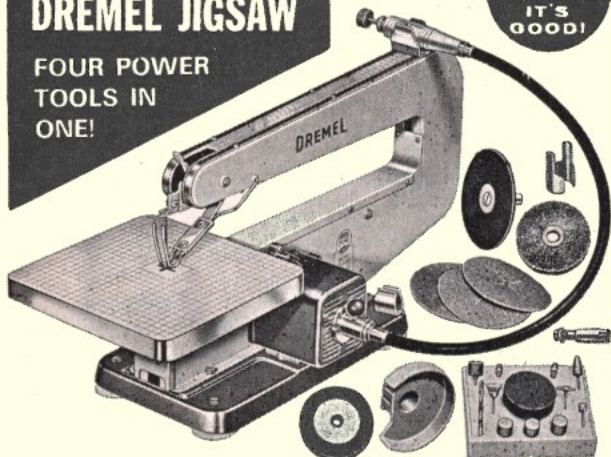
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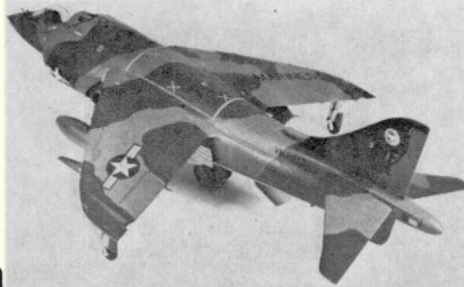
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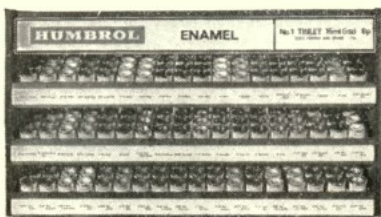
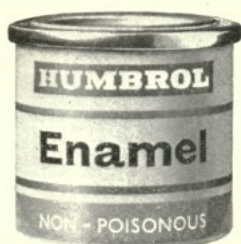
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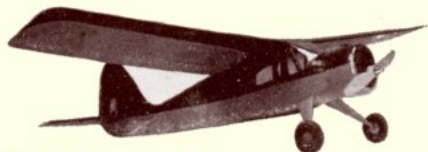
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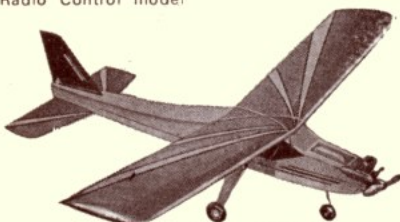


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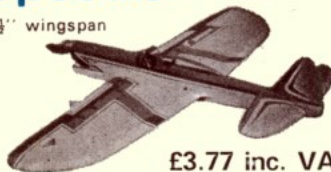


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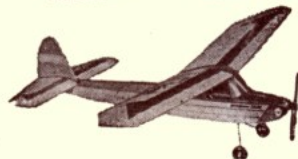
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