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Actually we admire progress like this. In fact we are even ahead on some 'production' ideas. Try combining balsa as a 'core' material in glass-fibre mouldings, for example. It adds stiffness and saves weight. And for 'everyday' aeromodelling, of course, there is no substitute for balsa. The best balsa, that is, if you want the best results. And that simply means choosing SOLARBO BALSA. Every time.

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INCORPORATING MODEL AIRCRAFT

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HOBBY MAGAZINE



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COMMENT

In the month which has passed since production of the July issue, we have witnessed some of the most remarkable flying seen in many years of model activity. Our 'all-scale' day at Old Warden, the home of the Shuttleworth Collection was so well supported, so enjoyable, that it broke all records for an already highly rated event. Never before have we seen so many scale models. When free flight is won by a Dornier Do18 flying boat, followed by a Savoia-Marchetti SM-55X 'Balbo', the variety becomes obvious. In control-line one could see subjects ranging from a Convair B-58 'Hustler' to a Messerschmitt 264 B-1 and radio control, with no less than 58 transmitters in the control tent was almost too popular! Thence to Italy, where the first 'Coppa Domenico Agusta' international R/C Helicopter event was held at Vergiate. Twenty entries took part in this spectacular meeting, won by Kurt Saupe of Switzerland with his own design 'Gazelle'. Never was progress in model achievement more positively emphasised than in this event. Before, and after these modelling highlights we have seen two most fascinating man-powered flight aircraft. Peter Wright's 71 ft. 'Flyer' weighs only 95 lb. and is airborne at 13½ m.p.h. It has plastic spars, plastic covering and is strengthened throughout with Carbon Fibre. It was demonstrated to us in flight, on a towline (without pilot!) airborne with a lighter wing loading than many models. Finally on momentous July 3rd, the Herts 'Toucan' two-man machine flew 704 yd. at 15 ft in a majestic vindication for its design concept by modeller Martin Pressnell. This achievement with what we call 'the biggest model in the world' was a fantastic sight. What a month!

on the cover

Don Reece and his unusual tail-less rubber powered design, seen at the British Nationals. Wing area is 300 sq. in., the propeller a two-blade folder and don't be deceived by that tail surface — it acts as a fin for normal flight then twists through 90° to become a dethermalising device. Air frame weight is only 4 oz.

next month

Plans, how-to-do-it- features, regular columns on Scale, Free Fight and Control Line models, report of the highly successful Old Warden Scale Rally, Engine Test of the O.S. 25 and much, much more in the September issue, on sale August 17th.

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FILOU SAILPLANE 50" span sports-type sailplane which converts to auxiliary power (pylon mount £1.05 extra). Kit contains quickbuild plan, printed and die-cut sheets of balsa and ply, canopy, wire parts, tissue covering.

Also FOUGA SYLPHE 253/4" scale Jetex/sailplane.



TOPSY 32" span

NEW! TERRY

Modern high-wing cabin design, 41½" span for .09 engines. A 'Quickie' kit with fully prefabricated parts – assemble in a single evening! Designed specifically to accommodate up to 4-channel R/C equipment, Ideal as an R/C sports/trainer!

AMIGO 2 SAILPLANE

Here is a real contest-type sail-plane, 78¾" span and total area 694 sq. in. Extensively prefabricated, the kit includes die-cut and printed balsa and ply parts, milled and slotted stripwood, ready-formed tow hook, canopy, tissue covering, decals, etc., etc. The Amigo 2 also adapts readily to pylon power and is ideal for R/C (R/C installation plan included).



DANDY

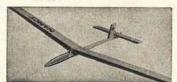
A kit designed for rapid assembly with die-cut sheet, preshaped fuslage parts, milled and slotted stripwood, canopy, cement, tissue covering, decals, etc. Span 63".
Also JUNIOR 53½" span 6.25
Modern slim design with all-sheet wing plus turbulator and dethermaliser!



NANCY A1 GLIDER

NANCT AT GLIDEN

Another design in the popular A1
class. Span 4834". Kit includes
milled fuselage nose section discut sheets, milled stripwood, preshaped wire parts, tissue, adhesives,
decals, etc., plus a two-colour exploded drawing and plan. Quality
of the prefabrication is exceptional!
The Nancy is also complete with
auto-rudder and dethermaliser.



CESSNA 177 CARDINAL £35.25 A truly SUPERB prefabricated kit with injection moulded plastic fuse-lage, foam wings and tail. Span 61" for 5-6-c., motors. This kit is an outstanding example of modern design and use of mixed materials – plastic, foam-plastic and wood – with all parts fully shaped. A most advanced production!



JOLLY A1 GLIDER

A 45" span Quickie model. This kit is extensively prefabricated and very complete. Model takes pylon mount for conversion to power. (Recommended motor Cox Pee Wee.) Kit contains quickbuild plan, printed and die-cut balsa, ply parts, strip, dowel, wire parts, tissue, cement, decals, etc. Pylon mount kit is £1.05 extra.



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KATY A2 CLASS

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CIRRUS (SCALE) £22.40
Giant 118" span. A fabulous kit
with finished fuselage mouldings
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complete hardware, moulded canopy, control horn, cement, covering
material, etc., etc.
Also CUMULUS 2800 £49.95

material, etc., etc. Also CUMULUS 2800 £49.95 110" span. Injection moulded parts. Ideal for R/C!

These power models (not illustrated) are specifically designed for R/C. CONTROL LINE KITS

R/C AIRCRAFT . . .

MUSTANG profile semi-

DORNIER Do27 (scale) £7.85 311/2" span de-luxe scale model. KLEMM KL107 28" scale. Engines up to 2 c.c. £6,55

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NEW! HI-FLY £16.20 901/2" span sailplane plus pylon or twin)1/2" span samp electric power



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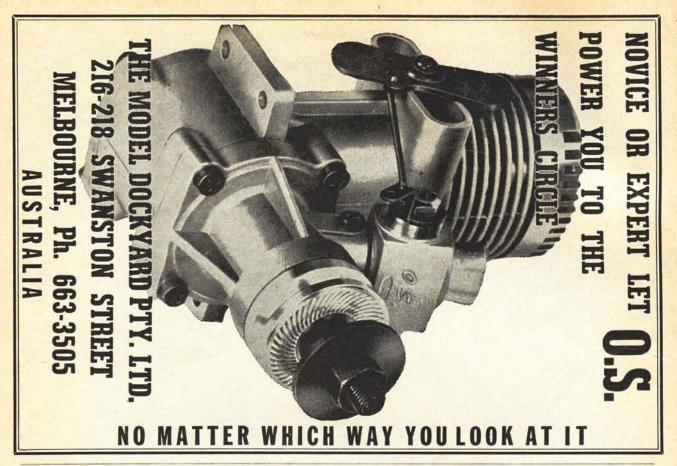
The model shown (actual size) comes from the Australian soldiers set. German and other infantries, paratroopers, British commandos, 8th Army, and the Afrika Corps are also in the range.

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Classes attracting six or more entries have 1st Prize £5, 2nd £3, 3rd £1. Over 12 entries, 1st £7, 2nd £4, 3rd £2, 4th £1. Under six entries, 1st and 2nd only, or at judges' discretion may be combined with other classes.

CLUBS

Club parties are especially welcome. Some clubs are arranging with us for a special day, when they will put their boats on the pool, arrange for their best locomotives to enjoy 'track time' and even have their varied contest entries grouped as a combined 'club show'. If yours can

do something special, please tell us soon, so that we can work it in.

MILITARY MODELLING

In addition to contest classes, we shall be staging war games sessions. If your club wants to take part, or have good experts available to steward, please tell us.

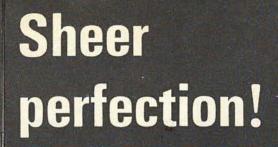
STEWARDING

We can always use a select band of stewards expert on model subjects. If you have time, strength (it's a hard day!) and knowledge, please tell us.

CLOSING DATE

Model entries should be in by mid-October. There are always latecomers – please enter early, it helps us. Still nearly six months to finish it!

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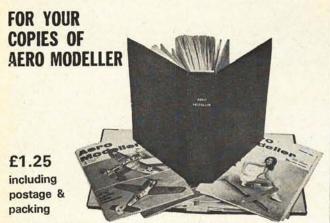
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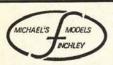
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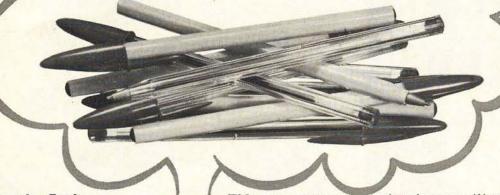
Scale Models

AUGUST ISSUE 20p

The glorious Gladiator is modelled by Frog to 1/72nd scale and SCALE MODELS review provides amplified data for the perfectionist plus scale drawings and detailed photos. Marine enthusiasts have the U.S.S.R. Naval Destroyer 'Skory' to 1/600th scale and a feature on a model of the Thurso lifeboat. Car fans get the Le Mans classic Jaguar C type and all that is new on the die-cest front for the avid collectors. Beginners' first mover series takes on the mysteries of making up a vacuum-formed model and for those who wonder, there's an explanation of the professional approach which produces those airline showroom models. The British National Championships for flying scale models; an in-depth review of the Tamiya Tyrrell-Ford F1 car and a fully up-to-date survey of all that is new in the model kit world add up to a fact-packed issue.

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This Traction Engine made with used Bic Crystal Ballpens won £250!

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MODEL

HEARD AT THE HANGAR -DOORS

TAKING A HOLIDAY to Italy this year? If so, and you're an R/C thermal soaring enthusiast, then make sure that you can be at Rieti on September 8-9th, when the Aero Club 'C. Rosatelli' will be holding their third Aviomodelli Europe Cup. This contest caters for both thermal soarers conforming to the provisional F.A.I. Class F3B rules, and for radio-controlled powered gliders to Italian rules, which restrict engine capacity to a maximum of 2 c.c., with a motor run duration not to exceed 40 seconds. The models must weigh a minimum of 1,000gm/cm², and have a wing loading of between 12 and 75g/ dm². The venue is the 'G. Ciuffelli' airport at Rieti, which is situated 70km north of Roma, and some 60km from the Autostrada del Sole, exit 'Orte'. An entry fee of Lit 11,000 for each competitor or supporter includes meals and accommodation, although 'self caterers' need only pay Lit 3,000. The entry fee and completed forms (available from ourselves) must be received by the organisers before August 20th. Prizes, incidentally, are ex-tremely good (first prize in each category being R/C equipment) and extend to 10th place, while all participants receive a souvenir gift!

THE RECENTLY formed London Area Speed Team (LAST) suffered a severe setback on Saturday, June 25th, when most of their equipment was stolen from Ron Irvine's car while they spent the night in Warrington prior to the Burtonwood Criterium. The thieves ignored the usual attraction of the radio-cas-sette player, etc., but removed the following (and readily identifiable) equipment:

1 John Dixon's Nationals win-

open speed powered by a piped Rossi 15. The model has the owner's name and address on it, is coloured dark green, and bears John's S.M.A.E. number, 3308.

2 Ron Irvine's F.A.I. model, finished in plain balsa with yellow tissue covering, with the number 50947 on the wings. The engine, a Rossi 15, has the serial number 15 engraved upon it.

3 White Fright - Martin Rad-cliffe's well-known 60 powered model which held the British record until recently. The model is painted all white, carries Martin's S.M.A.E. number of 33658 and is fitted with a Super Tigre 60 which may be identified by the filed-away

Heading picture shows David Nelson flying his impressive, 13½ lb., du cted fan equipped Meteor at the Nationals although he did not enter the C/L scale class. Power is supplied by a pair of K&B 40s.

Right: and that is nearly full size! Actually, Californian Bill Watson's butterfly has a 4½ in. wingspan, is made of balsa, banjo strings and condenser tissue, and it does fly, although the small size of the cranks makes winding tricky!

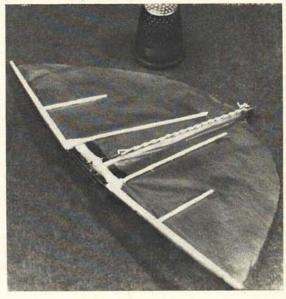
exhaust stack, angled to suit the fitting of a tuned pipe. Another of Martin's models, this time a Super Tigre 29 powered example, bearing the same registration number, and the engine's exhaust stack has been similarly altered. letters 'LAST' are to be found on the inboard wing tip.

Jackson's oft-photographed T.W.A. powered Pink Lady which has metal wings and is trimmed in red, white and blue. The engine has the

and blue. The engine has the number 27 engraved upon it.

6 Another well-known model — Mike Billington's all-metal speedster (dark blue top) powered by his home-made Klunker 60 featuring a magnesium crankcase, Mike's nesium crankcase, M S.M.A.E. number is 6051.

In addition, a pair of Stanzel mono-line handles and control-line wire was stolen. Obviously, this equipment would be useless to any aeromodeller - the items are too easily identifiable - and the speed fraternity are such a closely-knit group that an 'intruder' with such exotic equipment would be suspicious. The total value is frightening - around £300 - and this does not, of course, account for the amount of time and energy put into these models and engines. As for Mike Billington's home-made engine, this is naturally almost beyond value how can you put a price on work-manship like that? If anyone should see these items, then please notify the police or ourselves - we would be more than happy to pass on the news.





a 60 in. span semiscale control line stunter, featuring a detachable wing, for use with 0.35-0.40 cu. in. motors, designed by ROBIN WOODHEAD

HAVING BEEN an aeromodeller for many years, I have always held the belief that models should at least look something like the real thing, but when you study most stunt models, what do you see? A wing out of proportion to the fuselage and a model that bears little resemblance to an aeroplane. Possibly this is a direct result of the exclusion of design, detail and finish points from the FAI schedule, but whatever the reason, this should not be an excuse for not trying to design and build better models.

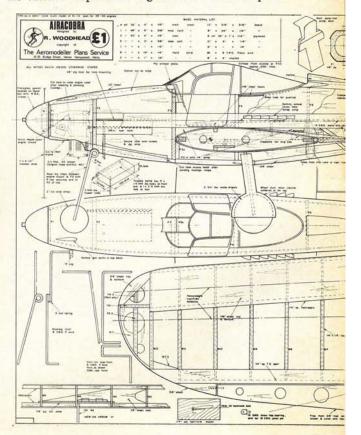
Deciding which aircraft would be most suitable as a basis for a stunter was not easy, as it had to fit several requirements i.e.: low wing, monoplane, single engine and most important of all, it had to be one that nobody else had 'done'! Eventually the choice lay between the Martin Baker MB5 and the Bell Airacobra: I chose the Airacobra because it has a slightly longer nose movement.

The removable wing was decided upon as the resulting model was just too big to fit in my car in one piece! This posed a new problem: how to make a quick, simple linkage between bellcrank and elevator? I personally don't think the method I evolved can be bettered as it is simple, cheap, positive, free moving and easy to assemble on the flying field. There are two other benefits with this set up, namely that it is simple to adjust the ratio of movement between the flaps and elevator, and secondly trim between flaps and elevator is possible by fitting an adjustable link to the flap horn. The only disadvantage seems to be a slight increase in weight.

For those of you who have not used nylon engine mounts, I can strongly recommend that you give them a try. They are quite expensive but their convenience far outweighs their cost: for example it's far easier to replace an engine mount than strip the

Full-size copies of this 1/7th scale reproduction are available as Plan No. CL 1203, price £1 (inclusive of postage and V.A.T.) from Aero Modeller Plans Service, P.O. Box 35, Hemel Hempstead, Herts HP1 1EE.





model to replace broken bearers, while it is also far handier having a common system of mounting engines which allows switching of engines between models, instead of peppering the engine bearers full of holes!

In building models, I have used a number of techniques, but have found the easiest is to use a jig. This does not have to be very complex, in fact the simpler the better (see sketches on plan). I also cut out as many pieces of the model as possible before starting to build as this saves a lot of time later.

Construction is started with the wing. Make the trailing edge assembly by bonding together two lengths of $\frac{1}{4}$ in. sq. balsa, $\frac{1}{4}$ in. beech centre section and the tip forms WT2; then place in jig. Next make the leading edge by bonding two lengths of $\frac{1}{4}$ in. sq. to the $\frac{1}{16}$ in. beech centre section, and again place in jig. (Note: both beech centre sections are drilled before assembly, and this is best done in conjunction with their mating parts). The next stage is to add the ribs. Starting at W12 work inboard to W4 then fit the undercarriage mounting plates and continue adding ribs W3, W2 and W1. Do not forget the bellcrank mount at this stage.

Glue in both top spars, and when set, remove wing from jig and add bottom spars. By this time, you should have a fairly light, rigid wing structure which can now be sheeted.

Finish off the wing by adding the tips WT1 together with the tip formers TR1, TR2 and TR3, (note the latter part is only on the inboard underside). Add \(\frac{1}{8}\) in. soft block top and bottom on L.E. of tips also \(\frac{1}{8}\) in. sheet at the T.E., then sand entire wing smooth. Produce the flat on the centre section L.E. and secure sheeting if necessary. Bond in both \(\frac{1}{4}\) in. diameter dowels, then add flap horn. Cut out flaps, carve and sand to shape, slot as required to suit controls and hinges, then fit and bond in position. Check for any binding.

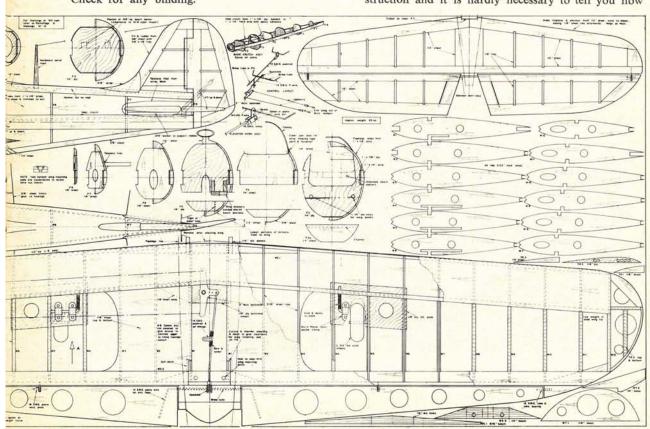
The first thing to do in making the fuselage is to steam bend the two main $\frac{1}{4}$ in. x 1 in. balsa crutch members. This is not very difficult provided you keep your fingers out of the steam (I use the electric kettle). Get the entire length of balsa nice and soggy then clamp in the jig and let set. If you haven't got a jig, carefully form the strip over the plan while soggy and either pin or hold until set.

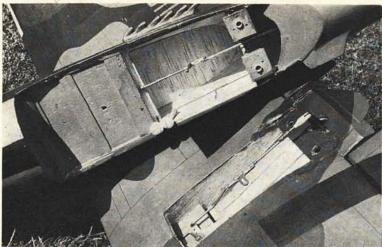
Next bond the 1/16 in. ply strips to the crutch members using epoxy and when set start adding the formers F1 to F10. Don't forget the chamfer on the crutch at the tail position F8. The structure now looks like the sketch on the plan, and at this point the model really starts to take shape.

Place the fuselage mounting pads in position on the wing, fit nylon bolts and tighten, align wing dowels in former F3 and slide fuselage into position. It may be necessary to trim the crutch slightly to clear the wing sheeting and allow F5 to fit closely onto the mounting pads. Before glueing the pads to F5 make sure the fuselage centre line is square to the wing. When set, remove fuselage from wing, then start sheeting it with \(\frac{1}{3}\) in. balsa. This is easier than it looks: just cut 1 in. wide strips of \(\frac{1}{3}\) in. balsa and steam the twist and bend into them before glueing to the fuselage. When sheeting is complete trim the areas where the \(\frac{1}{2}\) in. and \(\frac{1}{3}\) in. sheet fits, then tack glue these parts in position. Carve and sand these latter pieces to shape, remove and hollow out, reposition and glue to fuselage.

Turn the fuselage over and carefully cut the angle at the rear of the wing position. Add \(\frac{1}{4} \) in. sheet end plate and the \(\frac{1}{4} \) in. sheet fillets to complete the wing seat. Fill all cracks and imperfections with Polyfilla, then sand thoroughly until smooth all over. Cut out the cockpit position and fit the two cockpit floors from \(\frac{1}{16} \) in. balsa. Carve and fit intake.

Both the tailplane and fin follow conventional construction and it is hardly necessary to tell you how





Method of making the wing detachable is extremely easy to re-assemble – no fiddling around with screwdrivers to fit the elevator pushrod to the bellcrank here! Wing is retained by dowels at the front, nylon bolts at rear, as per R/C practice.

to make them, just follow the plan. A word of warning however: the hinge system shown is very free and should not be changed unless you can make an

alternative just as free.

The undercarriage too is a straightforward job, provided you have a wire bending machine for the noseleg. If you haven't, then use a commercial leg. The main legs only require a vice and large hammer to bend them.

Now for the controls: carefully bend the flap pushrod to shape and fit to bellcrank together with flexible leadouts, then install in wing. Solder commercial adjustable end to pushrod and connect to flap horn. Next, turn to the fuselage. Make a hole in F4 and bond in short length of tube as a pushrod bearing. Slot rear of fuselage to accept tailplane and slide complete tailplane pushrod unit into fuselage. It is a good idea to fit the wing to make sure that everything is square before glueing the tailplane in place.

thing is square before glueing the tailplane in place.

With the wing still in position, turn the model over, clamp the flaps and elevator in the neutral position and mark both pushrods for the connecting linkage. Remove wing and fit linkage to both pushrods, refit wing and check system is free from tight

spots and binding.

With the model assembled once more, build bottom of fuselage across centre of wing being careful not to bond the wing to the fuselage! Carefully mark and cut bolt holes and fit tubes from card or an old cigar tube. Remove wing, fit fin and fill-in slot at rear of tailplane, add fillets at root of fin and around root

of tailplane. Sand all over and cover with tissue. Carefully cut out engine cowl and tank hatch, then reinforce with a layer of glass cloth on inside. Make and fit both hatch fasteners. Cut out a nutplate from tin and solder the four 4BA engine mount nuts to it, align with bolts through F2 and bond in position on back of F2. When set, install nylon engine mount and fit engine. Now make and fit fuel tank floor, fit tank on centre line of engine spray bar, and secure with a strip of ply held in position by wood screws. During this stage it will be necessary to bend the copper pipes to suit the installation. 'Dress' interior of cockpit as required, paint and add canopy.

Fit and bolt main undercarriage legs to the wing, bind and bond securely. Remove engine mount, fit noseleg and clamp in position by re-fitting engine mount, secure free end of noseleg with small 'P' clip.

Assemble the entire model and fit wheels, check position of CG, and make any corrections at this

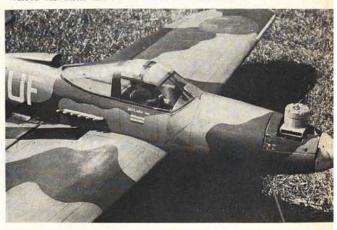
Upright mounted Fox 40 has plenty of cooling and is easy to operate - no need to invert the model when starting. The cockpit is a prominent feature of this model - it's well worth equipping it with pilot, instruments, etc. Cockpit mouldings may be obtained from the designer, address on plan.

point before covering the model. Cover the wing, tailplane and fin with nylon, but use only tissue on the flaps. When dry, sand off any rough edges then mask and prepare for painting. I chose the English markings of 601 Sqdn., which can be found in Camouflage and Markings No. 12. For the actual painting I used Humbrol Matt Enamel proofed with TRANSLAC eggshell polyurethane varnish

TRANSLAC eggshell polyurethane varnish.

The original tipped the scales at 62 oz. less fuel, and balanced as shown on the plan, rather on the heavy side! First flight was approached with a great amount of caution, not only was it a new untried model but a brand new and unrun engine (Fox 40).

Eventually, after blowing a head gasket (thinks: I will check head screws on new engines in future) we got the engine running and with trembling knees I gave the signal to release. The model accelerated rapidly and by the time I had eased cn a bit of 'up' three-quarters of a lap was completed. Take-offs are very smooth and line tension in all manoeuvres is more than sufficient, besides it can be controlled by the adjustable lead outs. Unfortunately my flying ability does not match that of the model and consequently up to now I have only attempted loops, bunts, wingovers, and inverted flight, but the response from the controls indicates that the model will do the full schedule. However, as the model was intended primarily as a sports stunter rather than a competition machine, I am more than satisfied. Landings are a dream; when the engine cuts, hold the model level on the glide and just before touchdown, apply a little 'up' in order to hold the nose-wheel off until the main wheels are down.





EUROPEAN **INDOOR** MEET

at Slanic Prahova, Romania, May 11-13th

reported by LAURIE BARR

John Blount and Reg Parham (just visible, extreme right) hard at it preparing their models. U.K. were only team to bring balloons and gas – which were much in demand. British lads showed some pretty neat steering tricks to their captive audience.

SO I SAID to these two feller's, Reg Parham and John Blount, 'What about going to one of the major European indoor competitions this year?' Both seemed pretty keen, and after comparing notes it was decided to have a shot at the one in the Salt Mine, at Slanic, Romania — we were not deterred by reports of the ordeal surfered by the American team, who had a bad overland trip in a Volkswagen minibus, and were practically suffering from exposure in the cold conditions down the mine during the 1970 World Championships! Next, we wrote to all our overseas friends who had experience of salt mine conditions, and in particular, to our Romanian friends we met at last year's Cardington World Champs. The sum of this advice was that the models should be very fast climbing (to reach the roof of the 200 ft, high Salt Mine in not more than four minutes), and in order to carry the thicker rubber required for this purpose, stiffer motor sticks would be needed. In the event, few alterations were possible to the slower climbing Cardington-type models we had, due to the short time between confirming the trip was 'go', and the date of the event.

I laid on a supply of Helium for the recovery balloons in small gas bottles, and shared John's big box which holds eight models, while Reg took his models in two boxes, in the boot of the car. We decided to go in the new Jaguar (V12), but after removing the front passenger seat, to accept the big box, and putting Reg's in the boot found little space left for such incidentals as warm crothing, suits etc! John and Reg therefore had to suffer the 3,500 mile round trip with three bags of clothing stuffed between them on the rear seat!

rear seat!

Despite driving above 100 m.p.h. as often as possible, the journey still took four days. We arrived at 8.00 p.m. on the evening before the practice day, having driven for 12 Perhaps Romanian brandy accounts for odd angle of Laurie's picture, taken of Jiri Kalina. Jiri was unlucky – he has always won in salt mines before – but he is a sporting loser! Same model as flown at Cardington. captive audience.

hours through the most torrential rain we had ever seen. We also experienced a lightning 'strike' less than 100 yards from the car while crossing some mountains, and at times visibility was down to a few yards, Interminable delays at the Hungarian border due to their London Embassy giving us the wrong visas made matters worse. Our arrival caused great excitement amongst the local population and we received a most heart-warming welcome, particularly as it seemed that neither the American, French nor Italian teams were going to make it. Soon we were plied with the most excellent Romanian brandy, and the trials of the journey were rapidly forgotten.

The following day was set aside for practice, and with some trepidation we had our first ever sight of a salt mine. The Romanians have several of two chambers, being 'L' shaped in plan. The width was 105 ft. and the length 330 ft., which is less than Cardington, but the roof is some 40 to 50 ft. higher!! In the gloom cast by the score of 100 watt lamps strung around at low level, plus a few other lamps near the roof, the models already flying seemed like 'ghosts'. It took our eyes several hours to become fully accustomed to the light.

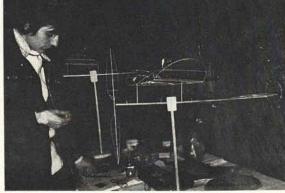
Jiri Kalina (a previous double World Champion) and Karol

took our eyes several hours to become fully accustomed to the light.

Jiri Kalina (a previous double World Champion) and Karol Rybecky (second at Cardington) were already going great guns, as were the Romanian A and B teams. We witnessed many models climbing at an initial rate estimated to be 100 ft, per minute, which in indoor terms is the equivalent of a hot power model! We made what adjustments we could, but apart from Reg, none of our climbs were of the required order. The point about the fast climb is that due to the cold (approx. 48° F), after the initial power burst has gone the models hardly climb at all, unlike Cardington, where you

Neat construction evident on unknown competitor's model, seen here on its run-down stand. Salt mines produced very different air conditions to above ground, airship-hangars, and thus vastly different techniques are needed.







reach the upper warmer air which is more buoyant, Also, as rubber gets warmer, more power is delivered, so at home climbs of around 15 minutes are the desired thing.

John unfortunately had a 'mid air' with Kalina's model, to the detriment of both. His models were actually modified down the mine by having the wing post position moved further back which pushed the C.G. forward, and changed the static margin of stability from negative to positive, enabling a safer, swifter climb to be made, albeit at the expense of the cruise part of the flight.

Round one opened and I was 'elected' to have first try, but like Reg and John, I had not yet got the measure of the prevailing conditions. Popa in the meantime had clocked 36:05, closely followed by Holtier and Hints, and it was clear that the Romanians were really on form! Round two commenced with Rybecky confirming his challenge with a 37:05, but Popa, Holtier, Moraru and Ree all did very competitive flights, so at the end of the second round, the order was—Popa first with 72:21, followed by Holtier with 71:59, and Rybecky at 65:15. I made the best British flight at 29:24, Reg was beginning to get it together and did a 27:42, but John had a prop blow up' as he launched, causing the model to disintegrate.

Round three opened with the best flight of the meeting of 39:16 by Popa which put him clearly in the lead. He flew brilliantly making all three flights above the 36 minute level! His team mate Holtier wound like mad, got the model away, but had so many turns on (reputed to be 2,600 on an 18 in, loop of .051 in, rubber) that the model did not turn so tightly due to the excess torque, and he hung on the wall for only 3:27. He said afterwards that he had enough turns on to exceed the magic 40 minute mark.

Rybecky having made the second best flight of the meeting (37:05) put up a 35:32 to secure second place, followed by Holtier with a total of 71:59 for his best two flights.

At the close of play on the first day, the pattern was clear, the Romanians were thrashing ever

Hungarian model on a very simple run-down stand - a piece of foam rubber stuck to the top of the model box! Neat - and very safe. Note braced compression ribs at dihedral breaks and centre section.

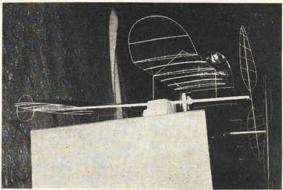
Bending ove, table is Bobocel (pronounced Bobo'chel - nicknamed 'Bob-a-Job' by the English!) presenting awards. On the left is Otto Hints, 'father' of indoor modelling in Romania.

steady hands. Otto Hints came to my rescue and did an incredible film patching repair job, covering a large area on the tailplane of my 'wall banger', threading between the bracing wires, and doing a grand job. Another bull session followed; John trotted out some whisky, and this party then went on until we all 'D/Ted' into bed in the small bours.

bracing wires, and doing a grand job. Another bull session followed; John trotted out some whisky, and this party then went on until we all 'D/Ted' into bed in the small hours.

Back down the mine the following day for round four, after a garlic sausage and mustard breakfast (!) few people were in any shape to break records, and of the leading group Holtier put in a 34-01, Hints did 32-49, and Egri 32-52. However Reg made a great flight of 34-00 which was the sixth highest individual flight. John was still warming up and du a respectable 29-47 while I had high hopes having practised 'round the corner', with a 25-00 flight on only 1,500 turns, and was looking for my first official 30-00 plus flight. However it was not to be, and the model turned in a modest 26-33. Round five opened with Rybecky overwinding and 'wall bashing' after just 15 seconds; Ree did a very nice 34-07, John a 30:38, but all eyes were on Reg, whose model obviously still had something in hand over his previous flight, He had a good wind, loads of turns, and high launch torque. The model went up like a rocket, did three loops, straightened, and to him passed the 'honour' of reaching the roof in the shortest time. In fact, he was the only man who actually hit the roof. It then kept hitting the sides of the mine, at times disappearing behind some planks jutting out like a pavement at the side of the top level. Each time it re-appeared, great cheers went up from everyone, who it seemed were anxious to see the 'Angliamen make their long journey worthwhile. However it was not to be, and it eventually hung behind the planks at 84.80 n what would otherwise certainly have exceeded 38 minutes. Both my remaining models suffered motor stick breakages due to winding to win.

At the start of the sixth and final round, the position was Popa leading with 75:32, followed by Rybecky with 72:37, Holtier at 72:28. Rybecky hung again, Popa had obviously already virtually made the winning flights, and the interest centred on Reg who by now had got his model back f



were made (each man getting a commemorative certificate), Holtier and Popa came across and 'presented' their winning trophies, turned from solid salt, to the team from 'Anglia', as a gesture of the friendship we had struck during Cardington '72 and this meeting. The wine flowed, the band played and everyone was in high spirits. At the end of the banquet, more private parties in the rooms, with Romanian brandy for lubrication, followed. As duty driver for the trip back in the morning I was glad to fall into bed at around midnight — what time anyone else got to bed can only be left to imagination! — what tim

After packing the car the following morning, and everyone turning out to wave goodbye, with much hand shaking, cheek to cheek kissing etc. (it's the custom you know!), we set off on the dreaded return trip. Apart from the delay at

the Hungarian border; blowing a tyre on the Austrian autobahn, when John was driving in difficult circumstances due to lane closures with one side sharing two-way traffic, (having to run it flat for about 1 mile until we came to the hard shoulder, the scarce replacement which cost £40.00 in Salzburg); the winding staircase up to our rooms in Antwerp (it must have been the H.Q. of the resistance during the warl); the torrential rain through Romania on the way in, meeting the same train at 3 different level(?) crossings in Hungary, the local yokel who tried to break the car window with a rock, the high speeds, followed by anxious looks at our models through the perspex sided box, going over rough roads, were soon forgotten, and although glad to be back in the land of the living, we all felt it was a great trip, and vowed to do better next time.

	Competitor	Country	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6	Total Best 2
1.	A. Popa	Romania	36:05	36:16	39:16	07:19	33:28	30:12	75:32
2.	E. Holtier	Romania	34:58	37:01	03:27	34:01	35:27	37:21	74:22
3.	K. Rybecky	Czechoslovakia	28:10	37:05	35:32	01:53	00:15	07:03	72:37
4.	A. Moraru	Romania	00:00	36:07	32:52	16:18	32:28	33:38	69:49
5.	A. Ree	Hungary	30:21	33:01	26:45	31:09	34:07	32-49	67:08
6.	O. Hints	Romania	33:31	00:04	32:18	32:49	31:33	26:58	66:20
10.	J. Blount	U.K.	15:04	00:12	33:02	29:47	30:38	24.27	63:40
11.	R. Parham	U.K.	22:24	27:42	29:02	34:00	08:48	27:20	63.02
14.	L. G. Barr	U.K.	18:13	29:24	15:05	26:33	11:12	00:13	55:57

READERS' LETTERS . . .

A Reply . . .

A Reply ...

Dear Sir,

When I wrote in my May 'Comments' comparing N.W. Indoor activity with that elsewhere, I anticipated some reaction — but hardly the sort of abuse contained in Laurie Barr's 'Letter' printed in the July issue.

In between his accusations and exaggerations, Laurie has risen very nicely to the bait! He has provided in print for the first time some explanation of the secrecy and restrictions that hedge flying at Brize Norton and Cardington, I don't dispute that the experts can, and do, help other enthusiasts. What I maintain is that precious few show up to be helped. Laurie underlines this by boasting how many booklets he has distributed, rather than by quoting how many models have resulted.

I was complimentary about the World Indoor Championships at Cardington, since praise was deserved. The problems of such an event are considerable but they are different to those of a meeting that will encourage low-level participations. Laurie has proved he can run a championship. What is now needed is someone to run a basic programme and make it expand.

On a wider field, I would stress that my column presents a personal view-point. If I don't like what I see, then I will say as much. Should you think my own name appears too often in the text or contest results, then blame the opposition (or lack thereof), If readers prefer a middle-of-the-road, wishywashy approach guaranteed to offend no one – then someone else should write it.

write it. Marple, Cheshire. J. O'Donnell

, and the last word

Dear Sir,
Thank you for forwarding a copy of
John O'Donnell's reply to my original

John O'Donnell's reply to my original letter.

I would agree wholeheartedly with his comment that an expansion of indoor activity is desirable, the problem is how to achieve it? I am sorry he feels that doing all the promotional work i.e. give-away books, magazine articles, T.V, shows, having the right

materials and the two best sites in England available virtually free, is the wrong approach. What else can we do to get the customers to come, when most of them would prefer free-flight outdoors anyway? (In our climate that is hard to rationalise!).

As I explained in my July letter, we try to fit our meetings in between the S.M.A.E. free-flight competition programme, but by the time these appear in print, most of our dates are also occupied by rallies and gala days.

Are you really saying John, run the comps and the customers will come? Our committee is one short at the moment, and I feel the opportunity is ripe for John to take this over, and perhaps put his thoughts into practice. No one would be more pleased if a successful outcome resulted, and if he were successful, I would personally eat my one gram 65cm F.A.I, indoor model in the middle of the highest catwalk at Cardington!

I would presume from the materials sold over the past few years that any number of indoor models have been built, and presumably flown, in small halls, club rooms etc, but how many are truly as good as they could be with a little expert advice is not known. Certainly I have done any number of 'travelling' demo's with models flown, techniques demonstrated, microfilm poured and lifted, to help new enthusiasts to get the hang of it, In spite of this effort, it does seem that our potential new blood will not come to either Cardington or Brize Norton. There is no secrecy involved, just a line or phone call to me, to get the necessary permission for entering the two buildings involved, from their owners.

For your further information, it may be possible that some very interesting indoor comps, in all classes including scale, may be run at Brize Norton in the late Autumn/Winter, through the good offices of the RAF Model Aircraft Association, and if this does come off, the details will be published—I hope in sufficient time, for a good turn-out to result.

So come on John,—join us, and if you feel unable to put your words into practice, at least give us the benefit of your advice as to how we should

run these comps, and/or solve the 'Cardington' dilemma.
Bray, Berkshire.

Chairman SMAR. kshire, Laurie Barr, Chairman, S.M.A.E. Indoor Technical Committee.

Chairman. S.M.A.E. Indoor Technical Committee.

Dear Sir,
As one who, with Chris Foss, was responsible for introducing the phrase Thermal Soaring' in our article in the Aero Modeller in June 1968, may I dispute with Pylonius that this title is grandiose, and refute his implication that thermal soarers do not soar, when compared with A/2s.

I do not believe that one can compare the performance of the two types of models, yet alone draw any firm conclusions as to their ability to soar, as they are designed with quite different objectives in mind. A/2s are designed to fly at one speed, normally if well-trimmed, that which gives the least rate of sink as possible, and their speed relative to the ground approximates to the wind speed over a 3 min. flight.

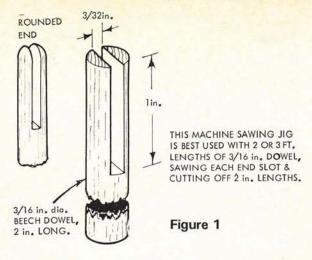
In contrast, a thermal soarer must, if it is to be successful and land back where it was launched, have the ability to maintain zero ground speed over a wide range of wind speeds. This often necessitates flying at less than the optimum speed for minimum sink.

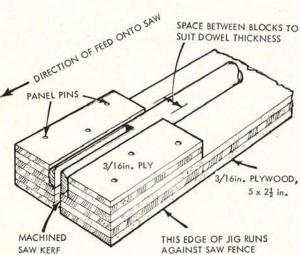
I have, in fact, an A/2 somewhat aptly renamed 'Crow', which before being converted into a thermal soarer, had featured in two Nats Open Glider flyoffs. Since being flown as a thermal soarer it has only placed once in a contest and that on a hot, calm day when it could be flown very slowly.

Another point, the flight times returned by thermal soarers in contests, often appear lower than they really are, because any excess time over the max is subtracted from the total. Hence, a time of 4 mins, might disguise an actual flight of eight.

I seriously believe that those who draft the rules for free flight would do well to consider this system for their contests. This would diminish the times models land on growing crops after long flights, particularly in fly-offs, thus doing away, at a stroke, with 5 a.m. starts; a practice I find quite uncivilised, and strictly for the birds.

Pylonius might think thermal soaring a bore. May we invite you to penetrate our ranks and join the fastest-growing branch of our hobby?





NOTE : ROTATE DOWEL THROUGH 180° TO MAKE SECOND CUT AND SLOT TO 3/32 in. WIDE

LAST MONTH, we dealt with a further method of laminating blades from sheet balsa, so now is an opportune moment to describe just how these blades we have produced can be made into useful, working items.

First step is to make the hub spigots. For Coupe d'Hiver models these can be made from $\frac{2}{16}$ in. diameter beech dowel, but larger airscrews will need $\frac{1}{4}$ in. or even $\frac{2}{16}$ in. diameter dowel. Figure 1 shows how the dowel should have a slot 3/32 in. wide sawn down its centre for a length of 1 inch, after rounding off the end.

Using either PVA glue or balsa cement, fix a blade into the sawn slot – the dowel halves will splay out slightly as they are forced over the hub end of the blade. If there is any splitting of the dowel, then the blade will have to be reduced in thickness by being sanded down a little. Coat all round the joint with balsa cement for strength.

The writer makes the dowel spigots a dozen or so at a time by sawing the slot on the circular saw referred to in *Motorised Modelling* featured in the March '72 issue of *Aeromodeller*, using the jig shown in *Figure 1*. It is necessary to move the saw fence sideways by 1/32 in. if the blade cut has a $\frac{1}{16}$ in. wide kerf. The end of the kerf forms a vee shape which can be let into the blade. Note also the dowelling cut-off jig which again is for use on a circular saw.

AIRSCREWS ENMASSE by Ron Coleman Part III – Attaching the hubs

This device is illustrated in Figure 2 and is very useful to bring a dozen or so spigots to their exact finished length, after drilling the pivot holes, as described below.

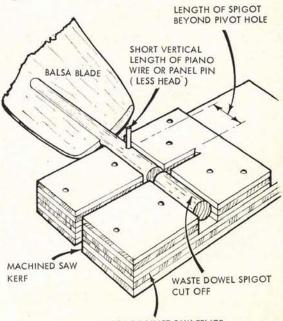
Drilling the Hubs

Cut out two or three blade shapes from material cut from plastic liquid soap containers (as shown in Figure 3) to form packing between the blade and the mould to allow for the difference caused by the hub dowelling, and bind all securely together with rubber motor strip wrapped half a dozen times or so around the whole unit. Grip the mould together with the hardwood block drilling jig in a woodworker's vice (or use a G-cramp) and use a 1/8 in. engineers' drill in a handwheel brace to drill the pivot holes. Drill carefully down through the prepared 1/8 in. holes until it can be felt passing more quickly through the hub dowel.

The drilling jig is best made from an accurately cut block of beechwood. Square round the centre lines and centre-punch for the holes before drilling. Try to have the use of a pillar drilling machine for this operation for the accuracy required, although with care, and with the risk of one or two failures, it can be done by sighting and with a hand-drill – in which case a second pair of eyes is a most useful aid!

For blades formed around a tin can, described in the first article, it will be necessary to make a holding jig for the blade something like the wood mould just dealt with, but much simpler, as detailed in Figure 4. Accuracy is not too essential here as long as the blade is held in its true position.

Figure 2



THIS FACE AGAINST SAW FENCE

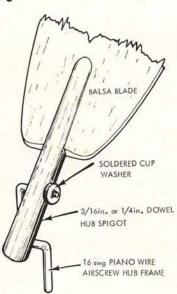
MAKE ALL FACES OF JIG BLOCK AND CENTRE LINES AT 90° TO EACH OTHER HARDWOOD JIG DRILLING BLOCK -CLAMP TO BASE OR GRIP IN VICE. Figure 3 SHEET PLASTIC PLACE 2 OR 3 PLASTIC SHIMS UNDER BLADE HARDWOOD JIG DRILLING TO MAKE UP SPACE BLOCK - CLAMP TO BASE CAUSED BY HUB SPIGOT. OR GRIP IN VICE. BIND BLADE AND SHIMS TO MOULD WITH STRIP RUBBER

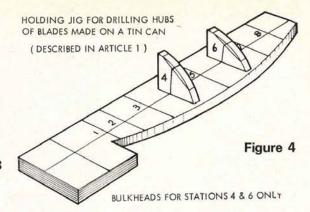
Replaceable Blades

If you have permanently fixed your folding blades into a hub assembly by means of soldered cup washers as shown in Figure 5, then sooner or later a blade will get broken. Perhaps a faulty 'rise off ground' with a Coupe d'Hiver model will be the culprit, but whatever the reason, it is annoying! In contest flying it might be necessary to have a complete spare noseblock assembly to take care of such a slice of bad luck; for you are not likely to be able to unsolder a cup washer and replace the broken blade etc. in the scant six minutes the French regulations allow for Coupe d'Hiver models.

With practice, it is possible to replace a pair of blades in the hub assembly shown in Figure 6 in less than two minutes! The hinge pins can be $\frac{5}{8}$ in. long panel pins which are a firm fit in the $\frac{1}{16}$ in. holes

Figure 5





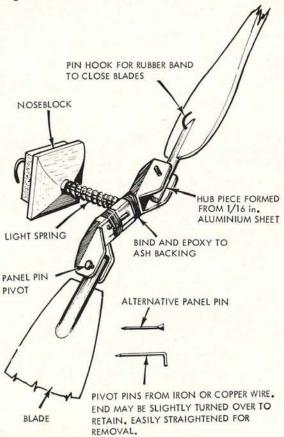
drilled in the beech spigots but a 'free' fit in the airscrew hub. If, and when, the panel pins work slightly loose and are in danger of falling out (how spectacular on a contest climb!) they can be replaced by iron or copper wire pins which can be slightly bent at the ends to prevent them from falling out.

Some modellers favour fine nuts and bolts for these hinge pins which undoubtedly are very effective and much neater. The writer however always manages to

Some modellers favour fine nuts and bolts for these hinge pins which undoubtedly are very effective and much neater. The writer however always manages to lose either the nut or even the bolt at the crucial moment! These items, being fine, are relatively expensive and not always readily obtainable. If a hinge pin is lost then no matter, a dozen or so were made the night before the contest day! As a dozen or so blades were also made in the previous week, who cares about a smashed blade or two, when they can be prefabricated, en masse?

to be continued

Figure 6



C/L Scale winner at last year's Soviet Nationals was this Russian Ilyushin IL-14 by A. Lisenkov. Finished in LOT (Polish state airline) livery, model is powered by two Czechoslovakian MVVS 5 c.c. glowplug engines.

Peter Chinn's



LATEST ENGINE NEWS

ENGINES FROM THE EAST

We are often asked (usually by collectors who, incidentally, seem to be a lot more numerous than might be supposed) where one can buy Russian and other East Euro-

pean engines.

Generally speaking, such motors are not available in the U.K. but, from time to time, there are exceptions to this. For example, some years ago Ripmax imported the Hungarian FOK diesels and sold them through their dealers. Now, The Modellers' Den Ltd. of Bath, Bristol and Cheltenham have begun importing a 2-5 c.c. diesel from the Soviet Union. We believe that this is the first time that a Russian motor has been offered commercially in the West.

Sokol 2.5 Diesel

The engine is the 'Sokol' or, in English, 'Falcon' and was first



advertised in the May issue of Aeromodeller. Selling at £4.95, the Sokol is no Oliver-Tiger, either performance or quality wise, but its design follows a well-proved and familiar pattern for 'sport' type diesels. In other words, it is a plain bearing, beam-mount motor with radial cylinder porting and shaft rotary-valve.

The Sokol's construction features a diecast aluminium crankcase, in which the hardened 10 mm. o.d. crankshaft journal runs directly. The shaft has a 5 mm. crankpin, a web of rather modest proportions (2.8 mm. thick) and is bored 7 mm. i.d. for the gas passage which is fed by a circular valve port. This latter registers with a circular bearing aperture, opening at 57 deg. ABDC and closing at 33 deg. ATDC.

The cylinder has four internal

The cylinder has four internal flute type transfer ports which are timed to open and close at 60 deg. each side of BDC. Between the transfer flutes – i.e. spaced at 90 deg. intervals – are four exhaust ports and these are timed to remain

First Russian engine to be marketed in the West, the Sokol 2.5 which is being imported by The Modellers' Den Ltd., and retailing at under £5.

Parts of the Sokol 2.5. The design is completely orthodox. This model has a painted crankcase, but versions now being imported look better in their sandblasted finish.

open for 70 deg. each side of BDC. The cylinder is of hardened steel, has a flange at the exhaust port belt with a threaded o.d. above and below, where it screws into, respectively, cooling jacket and crankcase. The lapped cast-iron piston has a conical crown and a fully floating 4 mm. solid gudgeonpin.

The Sokol is slightly undersquare, with a bore of 14.5 mm. and a stroke of 15.0 mm. Swept volume is 2.477 c.c. The checked weight of the engine shown in the photographs was 144 grammes (5.1 oz.). This example had its cylinder-jacket and spinner-nut colour-anodised gold and its crank-case, backplate and prop driver enamelled in a mottled grey colour. This paint finish, though quite attractive, was rather soft and a second engine, recently seen, has a more serviceable matt grey casting finish of the sandblasted type. This later engine was also fitted with the optional British-made annular type silencer which T.M.D. Ltd are now offering at £1.35 extra.



Pfeffer 0.6 Diesel

This is another East European engine that is now available in the U.K. Constructed in small numbers in Czechoslovakia by the former Letmo engine maker, it can be obtained to order, price £7.50, through Bob Ashby (99 Dark Lane, Batley, Yorks.) who, incidentally, can also offer certain of the MVVS and Tono motors.

One can foresee this motor becoming a collector's item and causing, at some time in the future, a few knitted brows as to its age and ancestry. It has no identifying marks, has a decidedly vintage appearance and might well be mistaken for a Continental European product of around 1946. It has, for instance, an extremely high stroke/bore ratio (1.5 to 1) and uses the traditional sideport induction system instead of the now almost universal rotary-valve The crankcase design, embodying a rear extension with a triangular radial mounting flange and a detachable front plate, is also reminiscent of an earlier period.

The Pfeffer's most obvious (though not exclusive) distinguishing feature is, quite clearly, its square finned cylinder jacket and matching square head. Inside, the engine is quite neatly made. The crankshaft, which is hardened, has a plain crankdisc and a 5 mm. o.d. journal that runs directly in the aluminium material of the front housing.

The cylinder liner has two diametrically opposed exhaust ports, a single transfer port at the front and the induction port at the back. Closely fitted to the upper part of the cylinder liner is its square cylinder jacket of machined aluminium. The head is also of machined aluminium but has a

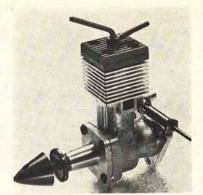
red anodised finish. A neat refinement is the provision of a steel thread insert in the head for the compression screw. An additional lever is provided for locking the compression adjustment and preventing the compression screw from vibrating loose. Four long screws tie the complete cylinder assembly to the crankcase. The piston has a flat crown and a very long skirt and is coupled to a machined duralumin connectingrod by a pressed-in gudgeon-pin.

The Pfeffer 0.6 has a bore of 8 mm. and a stroke of 12 mm., giving a swept volume of 0.6032 c.c. Checked weight of the example illustrated, which was obtained from Czechoslovakia two years ago, was 46.3 grammes or 1.63 oz.

Lopatenko Glow 2.5

A few months ago, a rather curious Russian 2.5 c.c. glowplug engine briefly came into our hands for inspection. Not a production unit, this, apparently designed and built by Lopatenko, was evidently intended for FAI F/F contest work. Bearing little or no resemblance to current International class 2.5 c.c. glow motors, it was an interestingly different approach to competition 2.5 c.c. glow engine design and construction.

As the photographs show, the Lopatenko engine is a squat looking motor with rear rotary-valve induction. Its squat appearance is largely due to its short-stroke, long-shaft layout. The engine has a nominal bore and stroke of 16.0 x 12.5 mm. giving a stroke/bore ratio of only 0.78:1. The very long crankshaft is built up from four pieces: shaft, separate internally counter-balanced crankdisc with shrunk-on steel rim and a pressed in 4 mm. o.d. crankpin.



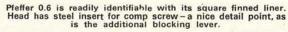
Square-finned Czech Pfeffer 0.6 c.c. diesel should be of real interest to collectors and can be ordered in U.K.

The shaft has a diameter of only 6 mm. and is supported, fore and aft, in 6 x 15 mm. ball journal bearings which are contained in a machined and hand-finished front housing. The prop driver, which also serves as the backplate of the spinner assembly, is of almost 'flywheel' proportions and is machined from steel.

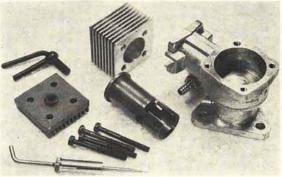
A Desaxe cylinder layout is used with the cylinder secured to the crankcase by means of a large ring-nut. It is generously ported with a divided 180-degree exhaust port on the right side and, diametrically opposite, three well-shaped internal flute type transfers. The upper o.d. of the cylinder is threaded for a screw-on aluminium finned jacket. This is topped by a detachable cylinder-head having a shallow conical shaped combustion chamber.

Considerable emphasis has been placed on achieving a low reciprocating weight. Despite its large diameter piston, the Lopatenko has, for example, a 25 per cent lower reciprocating weight than

Design of the Pfeffer 0.6 is distinctly 'vintage' – including very long stroke and cylinder – port induction. Note the full plain crank disc on the end of the crankshaft.









At left, Russian Lopatenko 2.5 c.c. rear rotary-valve, twin ball-bearing glow engine, Below left is the new Yamada YS-60 engine from Japan. Cylindrical housing beneath main bearing contains special fuel regulator that keeps carburettor supplied with correct amount of fuel, totally unaffected by tank position, aerobatics, etc.

Indian Mills 75

As already stated, the Lopatenko motor is not a production unit but, from the geographical East, rather than the political ditto, comes an interesting product that will be available in the U.K. very shortly. This is an Indian made version of the Mills 75, and Irvine Engines, who have just been appointed U.K. distributors, expect to have their first consignment in August.

This engine is actually being built with the original Mills tooling, which was purchased after Mills Bros had ceased manufacture of their famous ·75 and 1·3 c.c. diesels back in 1964. The engine is therefore almost identical with the last Mills P.75 model. We

have examined one of these little motors (one of nine samples which Ron Irvine had been checking out) and if this is typical of the average production model, it seems reasonable to suppose that those ardent Mills enthusiasts who have never quite got over the demise of the original, will find it a quite acceptable substitute.

An illustrated report on the engine will follow in *Aeromodeller* in due course.

Remarkable Japanese Fuel System

We have recently had on test a fuel system that is completely unaffected by tank position and delivery pressure. Made by the Japanese Yamada Manufacturing Company Ltd., this employs high-pressure (i.e. rotary-valve timed) crankcase pressurized fuel delivery to a special metering device which, itself, is accurately controlled, via a diaphragm, by the pressure within the crankcase. The system, which also includes a special large choke carburettor for extra power, works so well that we were able to move the tank 5 ft. vertically with no effect on engine note. First made last year for existing engines, the system is now an integral part of the powerful new YS-60 engine made by Yamada. Further details to follow.



the Rossi 15. To achieve this, the piston has been made very thin with a 15 thou. skirt and 30 thou. head and the oval-section conrod shank is actually hollow. The complete piston, rod and pin assembly weighs only 6 grammes. The piston is flat-crowned and deflectorless and the gudgeon-pin is placed high in the piston in order to reduce conrod angularity.

Another highly unusual feature and one that seems rather difficult to justify, is the extremely early opening of the rotary-valve. This occurs at BDC and the valve does not close again until 60 degrees after TDC, for an unprecedented 240 degree induction period. The valve rotor is made from a Tufnol type material and mixture is drawn from a long trumpet shaped venturi that has a 6.5 mm. i.d. throat. Multiple peripheral jets are used and, unrestricted by spraybar or needle, the effective choke area is very large for a 2.5 c.c. motor at 33 sq. mm. The engine obviously requires a pressurized fuel system and provision is made for this via a low pressure crankcase nipple.

The engine is quite light for a ball-bearing rear-induction 2.5 and complete with spinner assembly, scales 140 grammes or 4.9 oz.

Lopatenko 2.5 has shallow conicalshaped combustion chamber,
'trumpet' venturi
with multi-peripheral jet carburettor. Rotary
valve has exceptionally early
opening period.



More parts of the Lopatenko glow engine. Crankshaft is very long and slim, being composed of four parts. Conrod is hollow in effort to reduce reciprocating weights.

BRITISH NATIONAL CHAMPIONSHIPS, 1973

R.A.F. Lindholme May 26th-28th

WHAT A MEETING! If nothing else, 1973 will be remembered as the sunniest, happiest Nationals for many years – in fact, it was just how 'the Nats' should be: a great big jamboree with a holiday-like atmosphere and good flying as well. Of course, purists who say that the Nats should be solely for choosing the best performer in each category is theoretically right. It should – but as the main point of this hobby/sport is enjoyment, then perhaps the nett result is the right one after all! WHAT A MEETING! If nothing else, 1973

Re-reading our last year's report, we (fortunately) find a complete contrast: the weather was, in general, excellent, the meeting was a combined affair once more, the vast array of sports fliers were in evidence and the whole seemed a really friendly occasion. Our R.A.F. hosts managed magnificently to extend the camp site at the eleventh hour when three times the expected number of 'guests' arrived, and despite lack of publicity to other than model enthusiasts (due to security problems), the crowds poured in! Pessimists who predicted that a Northern venue would be poorly supported were largely wrong—the total pre-entry list was only some 10 per cent down on last year's figures, and the absences were only really felt in the R/C competitions which at least gave others more flying time!

gave others more flying time!

We said that the Nationals were 'all together' again but, of course, this was not strictly true — the R/C thermal soaring events were held at nearby R.A.F. Finningly, this being necessitated by frequency allocations between the Radio events. Also, while we preferred the 'all together' atmosphere, not so some of the free-flighters who found the airfield too small to share under the prevailing wind conditions — but more of this anon. It is interesting to note that while free-flight models were being blown on to farmland, the R/C gliders were completing six-minute maximums, and landing within a 25-metre circle.

The International flavour was stronger than ever, indeed some 30 entries were

received from overseas visitors (there were many more spectating) and a trip around the camp site revealed cars bearing registration plates from Aus-tralia, Belgium, Eire, France, Denmark, Germany, the Netherlands, and New Zealand. Welcome all!

Scale

Scale

The Super Scale Trophy for free-flight models was flown in two rounds, the first around midday and the second commencing at 5 p.m. on the Sunday, which turned out to be the windiest periods of the whole weekend. Despite this, around 80 per cent of the entry flew, but some of the smaller and frailer models found the conditions too much, not all managing the qualifying flight which was reduced to 20 seconds. First away, before the wind really freshened, was the most impressive model — Terry Manley's twin-engined Handley Page 0-400. Due to turbulent conditions on the take-off area, Terry wisely elected to hand launch this huge machine. The two Mills 75s pulled it away in a very creditable turning climb to the right. The huge bomb slung under the fuselage was released to fall plumb into the R/C scale landing circle (1) then both engines cut simultaneously, at about 100 ft. and all hearts were in mouths as the model wingovered and plunged earthwards, With 20 ft. to spare, normal attitude was regained and the model glided undamaged to earth, to the applause of all!

Next away from a rise-off-ground was the D.H.9a of Eric Coates. Turbulence from the boundary hedge, however, caused it to slip-in to the right, collapsing the starboard wing cell. Last year's winner, Vic Driscoll, still flying the Wapiti, put in a ragged qualifying flight, badly affected by the wind. Two rubberpowered machines were entered this year – a geared A.B.C. Robin built from Eddie Riding's vintage A.P.S. drawings by John Blagg, and the Douglas 0-38 of Ted Smales. This latter machine put up a really superb performance, in both rounds, producing flights of around a

minute r.o.g, to record the highest flight score of the day. Lack of detail resulted in only a modest static score; neverthe-

In only a modest static score; nevertneless a creditable fourth place was achieved. Following one or two hairraising ground manoeuvres, John Palmer's Sopwith Schneider rose from its trolley to suffer a premature engine failure and plunge vertically into the runway. Notwithstanding, this virtually indestructible model still lived to make a second qualifying flight.

After half an hour of dilligent rerigging, the D.H.9a was ready for a second attempt. This time Eric elected to make a hand launch and all was well: a smooth flight ensued with a cluster of two 250 lb. bombs being dropped again into the R/C circuitl

Trying to better his morning's flight. Terry Manley crashed the 0-400 in the second round. Much midnight oil burnt in the hotel that night resulted in a presentable model for the static judging next day, and second place for Terry. After many problems R. Ewart got his F.E.8 pusher airborne to produce a very realistic flight from this difficult subject, but one of the best flights of the day was to be seen from D. Preists Sopwith Snipe, reminiscent of John Simmance's winner of this event over a decade ago. Needing all the flying points he could get from the second round Eric Coates made a fine r.p.g. flight with the '9a' from the R/C take-off spot. Although still windy, the air was smoother here out of the lee of the boundary hedge. Bombs were not carried on this flight—Ficic considering that the extra weight and drag would hazard the take-off performance too much; the 'K' factor for take-off is greater than for bomb dropping. This flight put him sufficiently in the lead to prevent Terry Manley and Vic Driscoll, with their more complex subjects, from overhauling him in the static judging, and he proved to be the eventual winner.

The radio controlled class was split into two categories for the first time at the Nationals, when Class I models were catered for. The immediate effect was to reduce the Class I entry to 12, while the Class II entry was a worthy 22, of which 13 qualified as opposed to eight qual



RADIO CONTROL SCALE - CLASS I

(Radio Modeller Trophy)

				Pts
1.	J. Sheldon	West Drayton	Tipsy Nipper	1760
2.	P. Neate	North London	Hanriot HD1	1332
3.	T. Melleney	Hillingdon	Miles Hawk	1283
4.	H. Dagg	Dublin	Magister	1255
5.	R. Gibbs		Zero	1182
6.	M. Gilham	St. Austell	Sopwith 11 Str.	1048
7.	D. Mellish	South Glos.	Comper Swift	1007
8.	E. Herbert	Haslingden	Zlin 526a	871
	RADIO	CONTROL SCAL	LE - CLASS II	
4	D Taviles	Illiania stan	Caracia	242

	KADIO	CONTROL SCAL	E-CLASS II	
1.	B. Taylor	Illminster	Corsair	342
2.	A. Lunt	Bromley	Fokker Dr. 1	258
3	B. Rylance		S.E.5a	255
4.	E. Herbert	Haslingden	Pitts Special	247
5.	D. Gibbs	_	Hellcat	228
6.	P. Neate	North London	Lysander	212
7.	B. Cooper	Yeovil	Tempest Mk. 5	210
8.	J. Le-Bot	The same	Paktenavia P68	167
9.	W. Neild	_	Turbulent	159
10.	D. Wainwright	_	Cherokee	144
11.	N. McFarland	Rossendale	Ansaldo SVA5	139
12.	R. Fraser	_	Avro Vulcan B2	138
13	G Smith	22	Puss Moth	102

CONTROL LINE SCALE

		OCIALITOR PILE	OUNCE	
1.	J. Skinner	Con-Times Constitution	PZL Wilga	1182
2.	M. Staples	_	Magister	1065
3.	R. Ivans	Northwood	Henschel 129	811
4.	W. Cordwell	Three Kings	Heston Phoenix	700
5.	M. Tilbury	_	Dornier 17	644
6.	V. Wilson	Three Kings	DH Chipmunk	574
7.	J. Sambrook	_	Mustang P.51d	472
8.	L. Fidal		Viscount	467
(Res	sults subject to	Official Protest)		

	FRE	E FLIGHT SCAL	E	
1.	E. Coates	Lee Bees	D.H.9a	759
2.	T. Manley		H.P.0/400	720
3.	V. Driscoll	St. Albans	Wapiti	713
4.	E. Smales	57265) 2 V 20012 8 V 2	Douglas 0.38	576
5.	D. Preist	Leicester	Sop. Snipe	537
6.	J. Palmer	Havering	Sop. Schneider	402
7.	J. Watkins	Wolves	Bristol Scout	377
8.	R Ewart	Sittingbourne	F.E 8	264



Though not in the results due to short flights, W. D. Dennis's L.F.G. Roland DV1b was an impressive F/F entry, so too was Terry Manley's incredible HP 0/400 below! Placed second after 'exciting' flights!



but as it was he had to be content with third. Pete Neate put up a fine flight in the calm conditions on the second day with his venerable Hanriot, to snatch second place. The finest job of construction was, undoubtedly, Jack Sheldon's Tipsy Nipper. Now completed with beautifully detailed dummy Volkswagen engine and including wheel brakes, coupled to the lever on the control column, this model really is a work of art, and combined with a high flying score (achieved with the non-aerobatic course manoeuvres) gave Jack a clear 400-odd point lead to become undoubted winner.

The best flying in Class I was to be seen from Irish visitor Henry Dagg, his presentation was an example to all other competitors, but even so premature engine failure lost him approach points. Another outstanding flyer was R. Gibbs with his Zero. His flight was only marred by a malfunctioning u/c which refused to retract properly.

A wide variety of models were entered in the Class II event. Unfortunately both the Islander and Trislander entries were scrubbed, leaving J. Le Bot's Paktenavia P68 as the sole multi-engined flyer. This model took off beautifully, but the general presentation was poor and only a modest static score resulted in 8th place.

Tony Lunt's Fokker Tripane looked.

Tony Lunt's Fokker Tripane looked very dainty in the air; its colossal red form making a perfect picture against

the blue sky background. A reasonable flight score coupled with a good static mark just edged him into second place above B. Rylance's S.E.5a. This machine, in the colours of 24 Squadron (which allows one to reduce the dihedral from 5° to 23° and hence improve its manoeuvrability in the rolling plane) did not fly as well as the Fokker. It was a very accurate machine, however, which captured the atmosphere of the prototype perfectly, resulting in the second highest static mark.

Brian Taylor's F.W.U. Corsair was a beautiful piece of work, the simulated metal panelling surpassing all other machines, in either class, for realism. In fact, if this machine was fitted with retracting gear and a little more cockpit detail, it could be a World Championship contender. Brian, as usual, flew it as well as it looked – if the wheels had been tucked up almost maximum flying points would have been recorded! Understandably, Brian won the event by a clear 84 points.

by a clear 84 points.

Like their free-flight counterparts, the control-line scale models also suffered from strong winds which made flying difficult to say the least, and reduced the goodly entry of 13 down to eight for static judging. Dealing with the models in the order of points recorded, we first meet John Skinner's PZL Wilga, adapted from the A.P.S. free-flight plans. Superbly finished in Belco aluminium paint,

which gave an excellent bright metal effect, aided by many pieces of aluminium sheeting, this was an extremely well-detailed model. It was flown proxy by G. Sambrook – a brave task in that wind for a high wing model, but he still managed to crop-dust the judges at the same time! Right behind him was Mick Staples' little Miles Magister which took the Shuttleworth award last year. Unfortunately for Mick he shed a wheel on landing, thus losing taxipoints. In third spot, Bob Ivans thundered around with his well-known Henschel 129, but it was a strangely nonexplosive Bob with neither bombs nor cannon. During the first round his retracting undercarriage did just that – but also when he landed! Wal Cordwell with the prototype Heston Phoenix which flew well until the Merco 49 ran out of steam with the wheels only halfway down – the wing broke off on the ensuing 'landing'. Fortunately fast setting glues had it back together again for static judging.

A last-minute entry from M. Tilbury was rewarded with fifth place for his Dornier 17, built from Cesare Milani's A.P.S. plans. Very nicely finished, but unflown, it produced a sensational STOL-type landing! Sixth best point scorer was Three Kings member Vic Wilson, flying a D.H. Chipmunk, who made a good steady flight, but was another to suffer a nose-over when taxing. Next was a Mustang, again flown by Mr. Sambrook, this time his own



model — and a very lively performer.
L. Fidal's A.P.S. Viscount flown by —
yes, you've guessed it, Mr. Sambrook
— was the model that gave its pilot a
run for his money last year when it
nearly got away, but this time it really
went well, if a bit on the fast side.

Other models worthy of mention but
which didn't qualify for various reasons,
were Albert Briggs' Sea Hornet which
did get off the 'deck' but got back
again too quickly and bent a very substantial u/c stay double: Dave Morbin's
immaculate Spitfire Mk. I and Alan
Westlake's large Mewgull. Both these
Three Kings flyers had the same trouble
— nosing over on take-off. Ken Brown's
Deliant had engine trouble and didn't
make the qualifying ten laps and also
shed turret and fittings en route. Last
but not least was the Westland Whirlwind made and flown by P. Ball which
was also grounded by engine trouble.

It should be noted that all the placings referred to above are as scored on
the day, but are subject to an official
protest, and can thus only be viewed as
provisional at present.

(Reports by Eric Coates and Wal

provisional at present.
(Reports by Eric Coates and Wal Cordwell)

Control Line

Control Line

The control line events probably benefited more than any others from the foreign entries — indeed, although there was no European International organised for this year, it seemed that the new chairman of the control-line subcommittee, Doug Blake, had one on his hands anyway! A special word of thanks to Doug, who took over this post shortly before the Nationals and quickly 'found volunteers' to run the outstanding events, Without such help, there is no doubt that the C/L side of the meeting would have been a great disappointment. As it was, all the events ran smoothly enough, aided by the willingness of the competitors to help out.

F.A.I. Team Race lived up to its reputation as the premier event — out of 51 entries, there were five Dutch teams, four German, three Danish and one Austrian — including winners of the '71 Nats, Kaul/Schwarz. It was clear that there were several very strong contenders for the 'number one' spot, and that even qualifying for the semi-finals would be a really hard task.

As last year, Heaton/Ross flew early in the proceedings and recorded a very fast time of 4:35.4 with their new model. Derek, a keen believer in the semi-scale requirement, finished his

F.A.I. TEAN	RACE	(Davies 'A'	Trophy)
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		Rd.
1. Metkemeyer/Metkemeyer	(Netherlands)	4:27
2. Heaton/Ross	(Leigh)	4:35
3. Helmich/Kroon	(Netherlands)	4:55
4. Bugl/Stanjack	(Austria)	4:43
5. Visser/Buys	(Netherlands)	4:51
6. Bobjerg/Siggard	(Denmark)	Disq
7. Rudd/King	(Feltham)	4:49
8. Bryant/Haycock	(Leigh)	-
9. Mau/Nielsen	(Denmark)	4:52
A Team Race (RAFMAA	Trophy)	Aer

(Leigh) 8:46 (W'dale) 95 lps 8:46

(W'dale) 95 lps

} Langworth/Place Class 'B' Team Race (Davies 'B' Trophy)
1. Heaton/Ross (Leigh) 7:02
Place/Howarth (W'dale) 7:04

(Southend) 7:21.5 Yeldham/Taylor

Goodyear Team Race

Heaton/Ross

Langworth/Muncaster

(Germany) 9:55.2 10:28.5 Schwarz/Kaul Heaton/Ross (Feltham) Harknett/Smith Ret'd

Carrier Deck Landing

A. Sopp B. Perry (Maidenhead) 766.5 pts. (Wolverhampton) 744 pts

(Wolverhampton) S. Perry

1 Rd. 2 Semi Final Engine 4:27 5 4:29.2 9:37/9:21.4 — 4:42 9:37/9:25.5 Bugl Bual 5.6 5:05 4:50 9:45.8 Rossi 3.7 Disq. 1.8 4:48 5:08 5:01 4 Bugl Bugl T.M.A. 4:48 5 4:51 9.6 5:04.2 5:18.4 4:49.8 83 laps Kosmic STG15RV 2.5 4:53.4 5:26.4 Bugl

Aerobatics (Gold Trophy)

J. Mannall (Buckaneers) 1908.5 pts J. A. Newnham (R/Royce) P. J. Tindal (Three Kings) C. W. Draper (Notts.) 1736.5 1631 1573.5

Combat (Whitney Straight Trophy)

D. Dowdeswell D. Wiseman (Glevum) (Stockport) R. Evans (South Bristol)

Handicap Speed (Model Aircraft No 1 Cup) (Feltham) J. Dixon 103.69 (2.5cc. Open) (N. Sheffield) 154.3mph 102.9%

B. Jackson (2.5cc. Open) 153.3mph 102.3%

M. Billington (Elliot) (10cc.) (Yeovil) 180.4mph A. Woodrow 93.2%

(2.5cc. Open) 138 9mph

Bugl-powered models in a camouflage colour scheme, rather similar to the model which Krasnorutsky produced at the '72 World Champs. Their pleasure was somewhat lessened when they discovered that the outboard wing of the new model was cracked.

Soon after though, the Metkemeyer brothers turned in a 4:27 with their ultra-light version of the now familiar Turtle design. This model was too light at 16½ oz. — the wings were very flexible, and they do not give it a great life expectancy!

ible, and they do not give it a great life expectancy!

There were several more good times recorded in the first round; in fact, eight sub five-minute times were made, among them Paul Bugl himself who recorded 4:43. Actually, Paul was out of luck — he broke his '4:15' model in practice just before his heat and thus used his old 'five-minute' model without having time to establish settings.

Much the same story was repeated in

the second round, when the Metkemeyers once again recorded the fastest time, but Bugl/Stanjack tried just a little too hard to improve — and were disqualified for whipping. Heaton/Ross were safe (relatively) anyway — but had the misfortune to break the inboard wing during a pit stop. Wings too thin, Derek? Schwarz/Kaul put in a great 4:34 time with their HP 15 model, and popular Danish fliers Bobjerg/Siggard also went well with their easily-recognised, all-aluminium foil-covered wing machine. The remaining Dutch teams demonstrated their consistency, and things looked black for the British lads! However, Bryant/Haycock recorded what was probably their 'best ever' at 4:49, their Super Tigre really motoring — thanks to their Tony Harknett-prepared piston/liner, no doubt! Tony himself was out of luck — Jim Broad had loaned him a Russian motor, but it was reluctant to start without an exhaust prime.

rime.

The expected threat from Lenzen/
Rumpel's dieselised Super Tigre G15
failed to materialise — it seemed to be
suffering from dirt in either the tank or
fuel, and was giving Emil more restarting practice than he really needed!
Processing was carried out before
the semi-finals, and unfortunately eliminated two teams — Joost, and his
pilot-wife Christine, Kant of Holland
were found to have an oversize task
as were Kaul/Schwarz. This latter team
could not believe the results — nor
could anyone else — as their tank had
been processed and accepted at previous World Championships, Internationals and even our own Nationals.
However, the burette said 0.1 c.c. over-

Survivors of one of the closest F.A.I. finals ever seen were Heaton/Ross and the Metkemeyer brothers. Derek's camouflaged model has strong Russian influence including planked fuselage construction and being totally covered in glass-fibre cloth. The Dutch lads' model needs no introduction—except perhaps to say that plans of their 'Turtle IV' will shortly be appearing in Aero Modeller.







Bryant/Haycock were really unlucky to have the fuselage break on their Continencar-influenced F.A.I. racer during the semi finals. Their Super Tigre G15RV is reany 'on peak' at the moment – lets hope it holds its tune throughout the season.

size, no matter the liquid employed, nor the number of times, it was rechecked. A great shame – and most embarrassing for both the popular German pair, and for the organisers.

And so the semi-finals were flown – with just three British teams. These heats went off without any real drama, except for poor Bryant and Haycock. Their motor was sounding really sweet and consistent, when disaster struck at the third pit stop – the fuselage broke. A great shame, they really deserved to place well. However, the nett result of these heats were that almost without exception the Continentals demonstrated their consistency once more (just look at the results) but Heaton/Ross managed the second fastest time, separating the Metkemeyers and Helmich/Van der Kroon with their Rossi 15 diesel-powered Turtle IV.

And what a final – as far removed from the '72 fiasco as it could bel After a 200-lap long duel between the Metkemeyers and the British pair, the Dutch finished ahead by just one segment – the watches recording THE SAME TIME – (9.37!!) with Helmich/Van der Kroon just eight seconds slower. A re-run of the first two were ordered and again the race was fantastically close – the

Dutch Bugl seemed a fraction faster, but Malcolm's pit stops were up to their usual immaculate standards. their usual immaculate standards. Meanwhile Rob's pit stops were a little slower, as he was constantly having to open the needle as dirt was blocking the jet. With no visible lap counters, no-one knew the exact race position, but enthusiasts were signalling the race progress to each other from the pit segments while Rob, grinning as ever, was constantly checking on Malcolm's progress. And what another close finish it was, the Dutch lads finishing 1½ laps in front after this second 200-lap final. That's how finals ought to be!

in front after this second 200-lap final. That's how finals ought to be!

Twenty-one teams entered the ½A team race, which looks good on paper, but is rather less so, as only 13 actually flew. A newly-built model would have been some grounds for excitement, but even this did not materialise, all having been around for some time now. With the Oliver Tiger Cub still universal and no new challenger on the horizon, the future of ½A does not look too bright. Heaton/Ross were clearly in a class of their own, even if Malcolm's home-built engine did seem rather off-colour, and their heat time (3:56) was never seriously challenged. Howarth/Place came close to it at 4:06 and Muncaster/Langworth were next best with their six-year-old model (their first and only ½A racerl) and were most surprised when processing revealed that the tank was only 4.8 c.c.! Despite this, they were achieving 60 laps per tankful of Keil-Kraft Nitrated diesel fuel! The Dutch husband and wife team of Joost and Christine Kant were the only foreign entry, the Dutch having a similar (but slightly smaller) specification for their event, which too is dominated by the Oliver Cub.

No semi-finals were held, due to the small entry, and the final itself was a

Oliver Cub.

No semi-finals were held, due to the small entry, and the final itself was a bit of a mix-upl Heaton/Ross made an unusually slow start, and were several laps behind the other two at the first pit-stop. Don Howarth was pitting his model as Bernie Langworth landed only to have a bad line tangle. Neither party was to blame (Don's wing tip was on the ground) so the officials decided upon a re-run. In the ensuing rerun, all got away together, with Derek's run, all got away together, with Derek's model slightly faster. At the 95th lap, Dick Place landed, only to have Bernie Langworth's model come in right behind, causing a second tangle. Again, no blame could be attributed to either

Above: Danish visitor Luis Petersen with his combat model powered by O/D diesel featuring magnesium crank-case and front-facing exhaust, Below, Kroon from the Netherlands, and third finalist, refuels his Rossi-diesel version of the 'Turtle IV' racer.



'Pop' Warburton presents his trophy for the Junior Stunt this years winner, Ivan Gray Oliver powered 'Peacemaker'. event to with his





The victorious Glevum Combat team! In back row (I to r) is Mick Lewis, Mick Chesterton (contest director), Mick Taylor, George Copeman and Frank Smart, while in the foreground are Dave Cox, Derek Dowdeswell (the new National Champion) and junior Tim Court. The remainder of the 60 models are housed in the box they are sitting on!

party, but as the race had exceeded half-distance, there was no alternative but to allow the Leigh pair to 'solo their way to victory.

In direct contrast to the ‡A event was Class B team racing — where nearly all the people entered actually flew; some 30 teams recording times. Also, there is plenty of real enthusiasm for the 'big banger' racing — and there were several new models to be seen. In the past, 'Class B's' entry has been swelled with old F.A.I, models, some with 5 c.c. motors squeezed in, but often flown with overbored F.A.I, team race diesels. On this occasion, only one 'big' diesel was seen (Don Howarth's) — most competitors realising that now 'B' is firmly established once more, it is worth building new machinery.

The 'hardware' is changing too — it

that now B' is firmly established once more, it is worth building new machinery.

The 'hardware' is changing too – it is by no means an 'Eta benefit' any more – there were Enyas, Super Tigres and K&Bs as well, to add to the interest! Alan Hill is another who has caught the 'semi-scale' bug, and he produced a most attractive racer looking very 'Spitfire-ish'. Very competitive it is too, normally achieving around 108 m.p.h, for 40 laps on its 8 per cent nitro diet when turning a 7½ x 8 in, glass-fibre prop. Unfortunately, an overlean setting in the semi-finals prevented him and his pitman Alan Barker from reaching the finals.

Actually, the speeds of the racers rarely lived up to the 'sound effects' – many were doing no more than an honest 90-95 m.p.h., and were somewhat embarrassed by Don Howarth's 3.2 c.c. Eta which averaged 97 m.p.h. on its nylon prop! And, of course, for the full 70 laps as well! Heat times in general were not startling, many finding their motors rather inconsistent, and the end result was a final consisting of heacon/Ross using the same model as placed third last year, Howarth/Place with their very elderly F.A.I. racer, and, of course, Taylor/Yeldham. Last year, it may be remembered. Charlie Taylor blew the dust off his 17-year-old racer, epoxied back the outboard wing after a practice session mishap, then went on to win the Nats. This year he used the same model again! Pernaps a little past its prime, the model certainly looks its age, but doesn't that McCoy GO – fast and economic, it still achieves around 50 laps per tank.

And the final was a classic – Derek and Malcolm had the most work to do as their Eta 29 model's range was limited to 35 laps, while Dick and Don had the easiest time of it – just one pit stop – albiet at a lower airspeed speed.

The race itself was relatively uneventful, but the final was on, so close, the

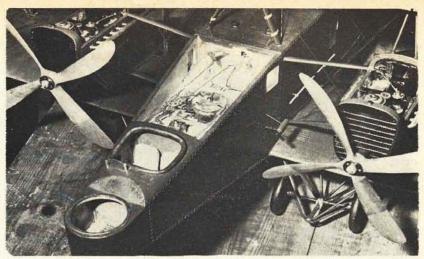
pit stop — albiet at a lower airspeed speed.

The race itself was relatively uneventful, but the final was oh, so close, the Eta glow of the Leigh lads finished just two seconds in front of the Don Howarth diesel with Charlie Taylor just 17 seconds later. Now if only Don had used a 7 x 8 instead of the 7 x 7½, and if only Taylor's motor hadn't needed that extra pit stop.

Goodyear once more proved to be the most popular racing class — even though the number of entrants had fallen to 66, and a further 16 of these declined to fly. Nonetheless, competition was keen as ever and there was an encouraging number of new and young faces to be seen — this class is obviously fulfilling its intentions of attracting beginners to racing most successfully.

Organised by the Tribe family (it's as

International co-operation! Hank Visser, perennial member of the Dutch racing team, informs Paul Bugl that he has been given a warning by race organiser Brian Turner, as pitman Stanjack performs 'the honours'. No prizes for guessing the engine used!



Close up of the nose section of Terry Manley's superb Handley Page 0/400 - certainly the most spectacular free flight model flown at the weekend. The clockwork timer seen through the perspex hatch shuts off both the Mills 75s simultaneously to prevent un-even power at the end of their fuel supply. The Mills engines are so reliable that no inter-coupling of thioties is necessary just, tune them in and launch! Note the specially carved props, the realistically reproduced stitching on the fuselage sides and the neatly formed radiators.

reproduced stitching on the fuselage well there's a lot of them!) the heats were held in two circles at one stage, in order to work through the large entry. One drawback of a 'beginners' race', of course, is that the races take longer to complete, competitors are not used to race procedure, etc., and this plays havoc with a properly drawn-up schedule of heat times. Eventually, heats were run on a 'first come, first served' basis, and this worked well enough. Again, heat times were not spectacular, anything under 5½ minutes proving good enough for the semi-finals.

Many people claimed to have 95-100 m.p.h. glow-powered racers — but they seemed to be slowed by the action of a stop watch . . few were, in fact, doing above 85 m.p.h.! Diesels still seem most popular due to their reliability and indeed, some of the better ones are no slower than their faster-sounding glow rivals. A couple of the new K&B Schneurle-ported 15s were seen. Pete Halman's being the best, and indeed for some time he held ft.d. at 5:07.8 using low nitro fuel and Bartels 7 x 6 to drag his Ginny around In the main. Eta 15s were the most favoured diesels, Super Tigre G15s the most popular glows. Of the models, the 'Ginny' was still dominant, although many low aspect ratio jobs were seen. Probably the fastest diesel present was Don Howarth's much-modified PAW

19, which, running on crankcase pressure, turns in 90 m.p.h, on a 7 x 8

Rev-up.

sure, turns in 90 m.p.h, on a 7 x 8 Rev-up.

The semi-finals saw Germans Schwarz/Kaul make no mistake – they were obviously anxious to make up for their disappointment in the F.A.l. event. Their HP 15D-powered Owl racer was the first Goodyear racer they had built, and in fact, it had not flown before the weekendl A semi time of 4:55 however, proved to be the best, just 0.2 of a second better than Harknett/Smith's G15-powered machine. Five seconds slower were the Leigh pair once more! Six of the semi-finalists used diesels. The final itself was good – Konrad Kaul giving an excellent demonstration of first-class pitwork, never failing to start his HP with a single flick. On the one occasion when Gunter Schwarz landed short (he was obviously not used to the slow landing speeds of Goodyear), Konnie swiftly picked up the model, ran back a segment as he refuelled and restarted with scarcely a second lost! Meanwhile, Heaton/Ross were working efficiently as ever, but dirt in the fuel line caused extra pitstops which slowed them up, while Harknett/Smith were forced to retire when their glow plug burnt out. So the German pair won another of our 'National' titles, and Heaton/Ross completed a successful weekend by making it





Konrad Kaul and Gunther Schwarz (right) with their F.A.I. racer which won this event in '71, but was eliminated from the semi-finals when a tank check found an extra 0.1 c.c. fuel capacity – although the tank has been processed many times before. They had better luck in their first-ever Goodyear race: they won!



Lift-off! Another APS 'Seamew' takes off from H.M.S. Fly-catcher during the Carrier Deck Landing event. The Seamews were the most popular models – half the entries used them, and a Class 1 version won.

times before. They had better luck in tyear race: they won!

two first places and two seconds!

The Nottingham club undertook the organisation of the Gold Trophy Event — and a very good job they made of it, too. An information board told the public of the stunt schedule as well as giving details of flight times, scores, person flying, etc.

Two rounds were flown by each competitor, the 10 best single flights deciding which individuals then flew in a third round. The final placings of the top 10 were then based on the aggregate of the best two flights. Now that the F.A.I. rules were in force, there was some concern at the 15g line pull — with a 44 lb. max. Each model was tested prior to flight, and this revealed one weak bellcrank mount and one poor line connection.

With Steve Blake spectating rather than flying, Jim Mannall was under rather less pressure than usual, and in fact, his consistent and well-placed manoeuvres, with none really spoilt, placed him some way ahead of the field. John Newnham flying his oft-repaired Shindig design tried hard to catch Jim, improving his score in each round, but to no avail. Three Kings member Pete Tindal provided a bit of an upset to the 'regulars' by placing Ken Bedford (of Eta engine fame, seen in background) still manages a smile as Paul Bugl overtakes his model flown by Derek Allen! But for an extra pit stop, times would have been very close.

third with his *Chipmunk* — a slightly 'stretched' version of Jim Van Loo's design. Powered by a Fox 40, it weighs a very reasonable 44 oz., although motor trouble forced him to use his identical but heavier reserve for the third and last flight.

Few used semi-scale models, in fact, Bill Draper's fast-flying *Kittyhawk* in desert colours and Glen Sibley's Yak 9D (from A.P.S. plans) were the only others to finish.

Paul Tupker was once more the only

(from A.P.S. plans) were the only others to finish.

Paul Tupker was once more the only overseas competitor, but had to be content with fifth place from his freshly repainted model – which is still his faithful old Grondal-Nobler! His manoeuvres were nice and regular throughout each of his three flights, but he only just beat John Heanen who had the slowest flying model seen, with the motor keeping to a solid four-stroke. Unfortunately, he suffered from over-runs on each flight, which cost him at least one place, possibly two. Dave Day finished surprisingly low down the list, but no doubt he is being somewhat handicapped by his model which now weighs a portly 60 oz. – and he was unlucky to make his third-round flight in the only rain of the day!

No crashes were seen during the contest, although M. D. Taylor touched the prop blades at one point, shearing both blades and giving a spectacular shaft run, although neither motor nor model was harmed. Another Taylor – Terry this

time - had a wing collapse during prac-tice, but as the model in question was six years old, he had no real com-plaints!

time – had a wing collapse during practice, but as the model in question was six years old, he had no real complaints!

Carrier Deck Landing was run by the Three Kings Aeromodellers and was fortunate in having a calm start to the event. Out of 10 pre-entries, six actually flew, although one entrant arrived just as the carrier was about to be put away. Nevertheless, an enjoyable event was held, even if more in a 'fly for fun' attitude rather than as a serious event. It was decided to have the deck lie flat on the tarmac in order to allow more hook-ups than crack-ups! The accent seemed to be in favour of 'Mick Reeves' type Seamews, except for Stan Perry's Brewster Buffalo, Wal Cordwell's Corsair and Clark's Firefly. The Cooke/ Everitt duo who arrived late but hot-foot from the team-race circle, flew a semi-scale Sea Vixen. After much deck-pounding the event was won by the two youngest competitors with also the smallest model — a Class I Seamew with an Enya 19 doing the pulling. A Class II Seamew under the control of Brian Perry came second, while father Stan was relegated to third spot with his Buffalo — all the others ended up in the 'drink'!

Having felt he wind of change last season in favour of an increased interest in Combat, the Glevum combat team estimated that the '73 Nationals would have an even larger entry, and prepared for the organisation well in advance, which paid off. The entry was almost alarmingly high at 130 — including five Dutchmen, five Belgians, four Danes, three Germans, four Frenchmen and six from Eire.

Combat began promptly at 10 a.m. on the Sunday, circle marshals Frank Smart and Mick Lewis keeping things running smoothly, thus enabling the whole of the first round and half of the second round to be completed that day. Last year's second placing M. Loughlin was easily beaten by Mick Tiernan after a string cut left him at Mick's leisure. Meanwhile, 12-year-old Tim Court. Last year's second placing M. Loughlin was easily beaten by Mick Tiernan after a string cut left him at Mick's leisur



Previous double champion Vernon Hunt made heavy weather of his first round encounter with John Hammersley of Outlaws. A careless cut of the string followed by several seconds on the ground was Vernon's downfall, giving the bout to John. The value of a good circle marshal was again shown when Frank Smart had to separate Underwood and Kruyff of Holland to prevent an 'unfortunate' incident. Rasmussen of Denmark flying a swept-wing design model gave Stu Holland a few problems, but veteran Stu put on a great display of following and in and out attacking, to settle the bout in his favour. A bout certainly worth a mention was the one between Wood of Sharston and Luckins of Stevenage. Luckins spent most of the first three minutes on the ground due to poor engine settings, falling one cut behind during this time. With the most of the final minute, taking four very nice cuts to win. Meanwhile, something shocking was happening in circle one! Static electricity conducted down the lines gave Evans and Avery a 'boost'. In the reflight Richard put on an electrifying (1) display and won through easily. Two fliers who had been going well were brought together in the first quarter-final. Mick Tiernan, who was, by the way, originator of the modern swept-wing design, was using his latest banana-shaped flying elevator model. This time, however, Mr. Tiernan was against an adaptation of his own earlier swept-wing design flown by Glevum's Derek Dowdeswell. Mick was first in but due to over-enthusiasm, took an enormous cut and continued to take the string; this left Derek the comparatively easy task of getting two cuts which he did efficiently. It is interesting to note that for the past three years, Mick has been ousted by the eventual winner. eventual winner.

eventual winner.

Probably the biggest upset of the championships occurred in the semifinal. Wiseman from Stockport and Evans both flew Ironmongers and hence a close bout resulted. At the conclusion, cuts were three each, but Richard had logged some ground time and hence lost the bout. It must be said, however, that Richard's gentlemanly conduct in talking his opponent out of line tangles probably cost him the bout. In the other semi, Glevum's Dowdeswell had little difficulty in defeating Bob Morgan of Finchley. The third-fourth place bout was flown off to a commentary given by Dave Rudd and much applause by the crowd, Richard repeating his last year's third place. One day, Richard.

The final between Wiseman and Dowdeswell was not the expected, and often experienced, anti-climax. From the beginning it was obvious that Derek's Pink Panther design with swept-wing and unusual tail configuration had rather a large edge over his opponent's Ironmonger, and after a good clean bout, Derek emerged a clear winner by three cuts to two. cuts to two

Sincere thanks must go to Mick Chesterton who proved a capable and unbiased contest director, and, of course, to the Glevum club who both organised, competed, and won the event!

This year's Handicap Speed contest had 37 entries, the highest ever, and over 50 official flights were made by some 25 people. The German fliers (who included such well-known names as Joseph Frohlich, Jurgen Lenzen and Emil Rumpel) seemed to be having some trouble with their fuel switches, and having to fly their F.A.I. models on the new heavier lines they were more handicapped than most, as the record



for their class was now unrealistically high, Joseph Frohlich's eventual 13th place was very creditable under these circumstances, as really no one stood a chance of success with an F.A.I. model under the handicap rules this year. The contest was organised by Sharston M.A.C., the timing, line pull and general safety aspects of the contest being arranged on a rota basis to give everyone a chance to fly. The Speed Circles were eventually roped off this year in an effort to prevent the public getting too close to the models and lines, and considerable efforts were made to ensure the safety of the spectators and competitors as speeds were expected to be high.

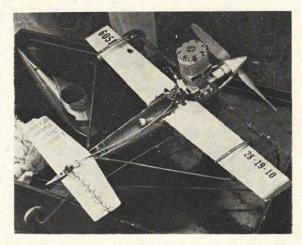
Sunday was fine and sunny but with a fresh wind and although there were two circles in use throughout the day, in general speeds were not high. An exception to this was Brian Jackson who raised the 2.5 c.c. open record to 153.3 m.p.h. with his TWA-powered Pink Lady, flying on monoline and 50 per cent nitro. This was 102.9 per cent of the old record and he led the first day with this flight, Twelve-year-old Nicholas Meager, the youngest competitor, flew at 96.8 m.p.h. in the 1.5 c.c. class and this earned him a final placing of 11th – and a round of applause by all who saw his flight On the Monday, despite a slightly cooler day, there was far more activity. The German entrants still appeared to be having difficulties, whereas Ralph Gould using the engine Gus Johnson

had prepared (nice to see Gus back in action again, even if he didn't have a model to fly) flew his black model with an ABC Super Tigre 60 at a useful 160.9 m.p.h. to tie with Ken Morrissey for 6th place. On the previous flight the rotor valve seized on to the crankpin, and this broke when they tried to free it. Martin Radcliffe then came to their rescue by lending them a complete new backplate assembly. However, in the 10 c.c. class all was overshadowed by Mike Billington's much-modified ABC Super Tigre 60 which broke the class record with a superb flight of 180.4 m.p.h. Considering that this was achieved with an unpiped engine and that the latter half of the flight was timed at 186 m.p.h., this was an extremely good performance, and everyone was full of congratulations for this popular flyer. The actual winner, however, was not decided until the end of the day. John Dixon who had been flying his open 2.5 c.c. Rossi-powered monoline model in practice all afternoon, broke the class record for the second time that weekend and raised it to 154.3 m.p.h., to take top honours. After the competition several record attempts were made by Mike Billington, Brian Jackson and John Dixon and during the attempts, Brian Jackson again raised the open 2.5 c.c. record to 155.3 m.p.h.!

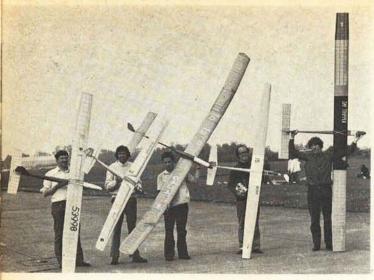
The speed circle was one of the busiest events this year and with these received being at a record level for re-

Above: the Class B final brought together well-known faces – and some very well-known models! Hold that model carefully, Charlie (extreme right), you might need it for next year's for next year's Nats - its 19th - its

Right: Mike Bil-lington's Super Tigre 60 speed model which es-tablished a new British record of 180.4 m.p.h. – and that's without a tuned pipel







Thermal soaring winners were (I to r) Neville Mat-tingly, Bill Neville Mat-tingly, Bill Grundy, Neil Webb, Chris Beedham and Ricky Shaw. Not a sport for those with only a small build-ing board.

cent years, most competitors hoped that the time is near when they will be able to return to the individual classes that used to exist before the handicap system was introduced.

(With thanks to Wal Cordwell, Bill Draper, Gordon Isles, Mick Lewis, Ken Morrisey and Frank Smart for their reports on contests – in which they also found time to fly and/or organise.) most competitors hoped years,

Junior Contests

The Junior Kits Contest was both a success and a failure — a success in respect of weather conditions and flying performances, but a failure in regards to the number of entires. Just seven recorded flights in the Rubber class, nine in Glider.

nine in Glider.

As each class was restricted to a particular kit, it was easy to compare performances. In Rubber, it was amazing to see what could be wrung out of the KeilKraft Senator – three of the entrants were able to achieve around 150 ft. altitude and a true, free-running prop shaft was perhaps the most important point on these models. Young Mark Miller (aged 8 years) won the Rubber section comparatively easily after

	15 15 V/6	25 BW 1/ - 20 5	A 3 8
Ju	nior Stunt (F. Warburton, Snr. 7	(rophy)
1.	I. Gray	(Tipton)	350 pts
2.	D. Romney	(Grantham)	344
3.	G. Worfolk	(Alberton Grange)	329
4.	B. Holmes	(Wigan)	319
5.	P. Scatcliffe	(Grantham)	258

Junior Kit Contact

GI	ider:	
1.	A. Cameron	202 seconds
2.	W. Brewer	148
3.	I. Gentry	130
4.	J. Halford	116
5.	C. Fretwell	109
Ru	bber:	
1.	M. Miller	332 seconds
2.	A. Godden	206
3.	P. Gaze	190
4.	A. Cameron	183
5.	M. Moore	156

F.A.I. Thermal Soaring

(Radio Modeller Cup) T. Beedham

N. Webb (FACCT)

R. Shaw

Fixed Task Thermal Soaring

(PAA Trophy)

1. W. Grundy

N. Mattingley (North Berkshire) N. Wabb (FACCT)

achieving a three-minute max in a good thermal on his first flight.
Glider fliers found a wind that was slightly too strong (but not really rough) which prevented good high launches. A. Cameron (13) won fairly comfortably by consistent scoring of just over a minute on each flight – finishing with a 202 seconds total.

Unluckiest man on the field was Piers Coleman who fell victim of 'the organisation'. He was flying in the Open contests as well, and when their flying was postponed during the afternoon he assumed that the Junior contests were similarly affected – he arrived at prize-giving time! However, he asked to be timed for three flights, just for the record, and duly scored 216 seconds in the Rubber category – which would have been good enough for second.

Eight youngsters entered the Junior Stunt event, competing for the superb Frank Warburton Snr Trophy, but of these, three did not record a flight, one of these being D. Rothwell of the Allerton Grange School club, who crashed when he 'received' the Lindholme radar beam down his lines (or was it just static electricity?). Several of the models were very nicely built and well finished, which made the organisers think that perhaps points should be awarded for this in the future. In previous years the 'unlimited' engine size permitted brought forth several 'full size' stunters which appeared to have a large advantage over the smaller designs. Not so this year – the biggest model there was probably Barry Holmes' Merco 29-powered Thunderbott, while eventual winner, 14-year-old Ivan Grey used an Oliver-powered Peacemaker. He flew very calmly to obtain a score that 15-year-old David Romney could not overcome on age handicap with his Enya 19-powered modified Spectre.

One point not appreciated by some competitors was that it is quite in order to have a helper in the centre of the circle to ensure that the correct schedule is flown and to give advice in general. With the youngest entrant winning such a magnificent trophy (donated by 'Pop' Warburton immediately afte

Thermal Soaring

Due to security arrangements, it was unfortunately not possible to allow the public to attend at R.A.F. Finningly for what were, in fact, the best supported of all R/C contests. The events ran reasonably smoothly under Contest Di-

rector Dave Dyer's control with R.A.F. liaison being provided by Flt.-Lt. Phil Toyne, and some 623 soaring flights were made during the two events!

Multiple task soaring was held on Sunday, with competitors flying four rounds during the day. Round one required competitors to complete a six-minute max. flight; round two was speed measured over a 400-metre course, whilst round three required the maximum distance to be flown in six minutes, distance being the number of laps flown between the 100-metre marker pylons. Finally, round four tested landing precision with a two-minute 'target time' followed by landing on a graduated scale runway.

Five maximums were recorded in round one in fairly breezy conditions, while speed-task leader was Bill Grundy who completed the course in 32 seconds (or rather his model did!), Induration, Stan Catchpole demoralised the opposition with a staggering 59 quarter laps after having contacted strong lift – few achieved half this totall However, Bill Grundy came back to top the precision-task with a perfect score, thus giving him a well-deserved first place overall. Neville Mattingley placed second, whilst Neil Webb was third.

On the Monday, 47 competitors lined up for the F.A.I, thermal soaring with again a six-minute max. being set from a 150-metre towline, F.A.I, rules require a landing at exactly six minutes, overtime being deducted from the flight time, but with a 50-point bonus added for landing within a 25-metre circle.

The sound of a fog horn followed by the whistle of towlines heralded the start of round one, and therefafter, every 12 minutes, competitors were called for their 'slot'. Six models alunched simultaneously made for some interesting comparisons as competitors variously kept together in the same lift (or sink!) or dispersed to seek lift from the perimeter track, the gravel pits, etc.

When flying temporarily ceased for a full-size formation take-off, it was John Shaw of F.A.C.C.T. Cubb who held the lead, having made a max., despite the rain which fell heavily th

Free-Flight

by John and June O'Donnell
CONTESTS CAN be memorable for a variety of reasons. The F/F side of the 1973 Nationals was sensational – in the very literal meaning of producing much excitement and many surprises. Opinions of the 'events' vary from one extreme to the other. What happened was unprecendented – and decisions made liable to have far-reaching effects.

In essence, the story is simple. Right from the start, models were landing outside the 'drome – giving rise to complaints of trespass and crop-damage. The situation snowballed on the Sunday until the contests were stoned. Flying was suspended throughout the afternoon, but resumed in the early evening to finish the events in a somewhat curtailed form. To avoid similar troubles on the Monday, the 'Open'



Winners of the glider section of the Junior Kit Contest were (left to right) A. Cameron who placed first (as well as fourth in the rubber-powered section). W. Brewer who came second just in front of J. Gentry in third spot.



Performances in the Rubber category of the Junior Kit event were even better than in the glider section – here we see the top three, being (left to right) M. Miller – the youngest entrant and winner, A. Godden who placed second, and third placeman P. Graze.

events were brought forward and flown between five and nine o'clock in the morning – with fly-offs shortly after-wards. Then, since the weather was

morning — with fly-offs shortly afterwards. Then, since the weather was favourable, additional contests were run as a 'fill-in'.

No one envies the organisers (effectively lan Bracken, S.M.A.E. Competition Secretary, plus the F/F Sub-Committee) in the very difficult circumstances that prevailed, although the situation did not necessarily justify their actions. Expediency appeared to over-ride all other considerations — especially that of being fair to everyone. Perhaps the scene was already set, as the Spring Bank Holiday date for the Nationals means that crops are sufficiently advanced to be a hazard, Combining all categories (F/F, C/L and R/C) and holding the resultant jamboree at Lindholme was thus something of a calculated risk.

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and holding the resultant jamboree at Lindholme was thus something of a calculated risk.

The Northern Area has run large, successful rallies at this venue, perhaps this led to a false sense of security. Lindholme is a rather irregular shape, with plenty of crops and dense wood along one edge of the 'drome. At the Nationals, the siting of the radio events curtailed the length of airfield available in certain wind direction.

Contest times had been published in Model Flying, being based on \(\frac{3}{4}\)-hour rounds for the F.A.I. classes. However, it transpired that changes had been made to allow more time for fly-offs and a hotchpotch of 40-minute rounds for Wakefield and Power, compared with 45 minutes for A/2 was used.

Furthermore, the Sunday starting time for F.A.I. was advanced to suit the new system while it was also decided to run the F.A.I. events to the F.A.I. Sporting Code rather than to the S.M.A.E. rulebook. I have dealt with this question before, so merely quote here the S.M.A.E. rulebook: 'this rulebook deals exclusively with National regulations for domestic events within the United Kingdom'. To further confuse the issue, it was decided to follow the S.M.A.E. idea of employing a single timekeeper and that the use of binoculars be optional, not mandatory!

The same lax attitude extended to chuck glider where the people who ran the event used their own rules (best 5 from 9 launches, with 1½-minute max.) rather than the S.M.A.E. version (total of 5 flights with 1-minute max.) and 20-second attempt). This might seem trivial, but I regard the implications as significant.

Contest flying commenced at 1 p.m. on the Saturday with ½A Power, Chuck Glider, plus the first round of Wakefield. The weather was hot, sunny and with little wind, and while the breeze freshenced, it never became strong, and no one should have been troubled by the conditions. Lift was plentiful, if patchy, and maxes were commonplace.

Naturally, there was a lot of flying in these pleasant conditions – but models

were drifting over farmland and landing in crops. A lady farmer soon complained, when she found it 'raining gliders, so the F/F control point was shortly moved right across the airfield to a new location which gave little more space but better recovery conditions. The third Wakefield and A/2 rounds were completed after this delay and there were plenty of perfect scores in all the F.A.l. categories at this stage. Sunday morning was bright, sunny and a little breezy. Flying was conducted from the 'new' area — but the wind had now swung so that the 'dropping zone' was now back in the 'sensitive area'. The retrievers soon aroused the attention of the same farmer — the lady in question going straight to the contest officials, demanding that they stop the trespassers.

All attempts at appeasement failed — an offer to station people downwind to 'spot' descending models was rejected as the owners would still do damage recovering their planes. Equally, there was no reaction to an offer of financial compensation apart from a rather staggering estimate. There were threats to call the police, instigate legal action and worse. In these circumstances lan Bracken decided to suspend flying (at least on a temporary basis) as from the end of the fourth Power round, i.e. at 11.45 a.m. Apparently, a circular letter had been sent to all neighbouring farmers prior to the contest, but this failed to secure the requested co-operation — perhaps a personal visit should be considered for the future? It is also clear that we modellers have no real knowledge of how much damage is actually caused by walking through a field of crops.

There were consultations between lan Bracken, Dave Tipper, other members of the F/F Sub-Committee and presumably the actual event controllers. Around noon lan called a meeting to inform the fliers of the situation, saying that the contests would remain suspended until at least three o'clock, when the situation would be reviewed. As it continued breezy, the 3 p.m. meeting was followed by another at five, and a f

should entitle my report Minutes of the Nationals'!

At 6.00 p.m., it was announced that Sunday's contests would be concluded that evening – the Coupe d'Hiver and A/1 events to be recommenced first, since they only used two-minute maxes, and would run from 6.30 to 8.30 p.m. The F.A.I. events would be cut from seven to five flights – leaving only nie more to be made. There would not the separate rounds for the different classes as several fliers were participating in more than one event. For the last power flight the engine run was reduced from 10 to six seconds. Any fly-offs necessary would be held as soon as possible after 8.30 p.m., using a four-minute fly-

off period (as per the F.A.I.), and with a four-second run for power.

Moreover, it was stated that Monday's events would be flown in the early hours of the morning – a decision based on a weather forecast predicting more wind in the same direction as was giving trouble. A very early start and finish were planned to avoid the obvious difficulties. All classes would be held between 5 and 9 a.m., except Power, which would start at six to avoid noise complaints. Fly-offs would be held after 9 a.m. – these decisions being justified as the only way to hold any Open contests. tests.

ga.m. – these decisions being justified as the only way to hold any Open contests.

Reactions to these announcements varied, Many accepted the reasoning just quoted, while others quickly pointed out that Monday's events were scheduled for 10 a.m., so modellers attending that day only would arrive to find it all over – bar the shouting! Ian Bracken said these people had not been forgotten, but were being sacrificed to give a contest for those already on the drome. Prospective competitors staying in hotels (as distinct from camping) or going home for the night also objected. After several hours of sunbathing or wandering round the C/L and R/C events, most F/F contestants were glad to be 'back in business'. Test flying was quick to start, with F.A.I. power contenders anxious to try their models on six-second runs, re-calibrate timers and to establish if the transition (from power to glide) was satisfactory.

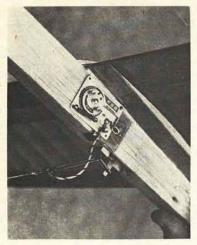
Once flying restarted, there was plenty of activity. Cloud cover had increased, giving an overcast evening, so thermal activity was unlikely to be marked. Consequently, most flew quickly, the events effectively finishing long before 8.30 p.m. The evening's flying was uneventful, helped both by less wind drift and a slight swing in its direction whch meant that models now drifted the full width of the airfield, thus recovery was no problem.

The delay and curtailments meant that competitors with initial good scores were in a strong position, this being reflected in the final results. In essence those on top tended to stay on top. The short power run reduced the F.A.I. Power fly-off to just two qualifiers, A/2 glider had three perfect scores, whilst Wakefield. Coupe and A/1 were all decided without need for fly-offs.

To save repetition, I will describe the Power and A/2 fly-offs when I recount 'who won what' a little later.

The following morning proved quite an 'eye-opener' to many – some admitted they had never been flying at such an hour – and now realised why early morning trimming was favoured in some quar





Close-up of David Barnes' Open Glider winner, showing the circle-tow device with which he has been practising so much recently. Successfully, too, it would seem!

were 36 trebles recorded out of 46 fliers!

Surprisingly, there were a lot of glider flights made very early – and from what looked like conventional A/2s. There was obviously little chance of lift, so a better approach would seem to have been to leave flying as late as possible, and then use two models if necessary. In fact, as the weather held remarkably constant until late in the morning, the latter proviso was hardly applicable. Only a few entrants had models for the conditions (and thus stood to gain from the early start), these being a handful of large lightweights, and some A/2 with 'circlingtow' devices. Out of almost 100 fliers, there were just two trebles – and not a lot of near-misses.

The 'late' start for Power was little andican Most people had planty of

there were just two trebles – and not a lot of near-misses.

The 'late' start for Power was little handicap, Most people had plenty of performance, though not the reliability exhibited by the Rubber fliers, as shown by under half of the Power fliers (23 out of 51) qualifying for the fly-offl Even so, it made for the largest Power fly-off yet seen at a Nationals.

Eventually, all the timekeepers were recruited, and the fly-offs got under way. Large fly-offs are often criticised as being little more than a lottery (usually on timekeeping grounds) but fortunately, this charge did not altogether apply on this occasion. The top two in Rubber and three in Power had scores well above the opposition – and flights to match – a fitting end to what was a very good contest in itself – neglecting considerations of how it was arranged.

By this time, it was clear that the weather was not following the forecast.

arranged.

By this time, it was clear that the weather was not following the forecast, so the officials decided to run additional contests – partly to 'fill' the rest of the day, and partly to pacify those modellers who arrived at fly-off time'. As an aside, I was amazed how philosophically these unfortunates regarded the whole situation, and how few complained.

Open events for Rubbar, Clides and

plained.

Open events for Rubber, Glider and Power were arranged on an ad hoc basis and christened the Lindholme Gala, entry fee being charged to provide prize money. These extra contests were rather an anti-climax following the 'Nationals proper', and many normally keen competitors ignored them, retiring to a late (or second) breakfast.

Ironically, the Gala went off with scarcely a hitch, extending from 11 o' clock until 4.30 p.m. By mid-day conditions were bright, sunny and with plenty of lift, the wind remaining light and in a direction that gave no retrieving problems!

Glider was naturally the best supported with 40-50 participants, of whom 14 reached the fly-off. Rubber and Power had far less entrants and much smaller fly-offs. The deciding fly-offs diffed across the radio events and downwind hangars, and were resolved partly on heat-haze visibility and partly on conservative D/T settings!

Before going on to detail the Nationals winners and their models, it might be appropriate to comment briefly upon the whole meeting. Doubtless my feelings 'show through' my report – but perhaps I should spell out my viewpoint to avoid any misunderstandings. I have every sympathy for the officials in the midst of a very difficult situation. Nevertheless, I consider disregarding the long-established rulebook is asking for trouble, Stopping a contest tion. Nevertheless, I consider disregarding the long-established rulebook is asking for trouble. Stopping a contest due to prevailing circumstances might well be jutifiable – the bringing forward of one in a way that excludes prospective participants is a very different matter as it flouts any concept of justice.

justice.

In the prevailing circumstances, I feel that a better 'solution' would have been to complete Sunday's programme early the next morning. The scheduled Monday events should not have been advanced (in fairness to those still to arrive) but flown as arranged if conditions permitted — and cancelled outright if not. What was done might well have been 'expedient', but I believe it to be wrong. The 1973 Nationals may have highlighted a need to review our contest procedures — but they should not be allowed to establish precedence for 'ad-lib' attitudes in the future.

By now the reader must be wondering about the actual winners! In presenting this information it is convenient to cover the events in the order held—rather than any order of importance!

This year, Chuck Glider was elevated to the status of being a fully-fledged official event and attracted about 70 entries, of whom 40 flew. This year's 'man on form', Ewan Jones of Sunderland, proved the overall winner with an excellent total of 7:15, representing four maxes plus a 1:15, and was achieved from only six launches out of the permitted nine, Loss of both models prevented further attempts. Ewan said lift was 'easy' and casually mentioned that he lost two other models testing! Success in the contest came via a stally glide that brought the model down out of thermals! Runner-up was Tony Slater, closely followed by Martin Cowley.

½A Power was uninspiring both in numbers and standard. This is not a criticism of the winners, but of the general level, Pete Harris topped this event with a little under three maxes, but at the price of losing his T.D.049 'oldie' model on its second max, Unusual in having built-up 'sparless' wings, this model was second in 1969! In second place was Julian Hopper with a smallish model (40 in. x 5 in. wing, with 1/16 in. undercamber and 6 per cent thickness), powered by a 'worn' T.D.049.

Of the three F.A.I. events, only Wakefield merited a trophy— the Fred.

T.D.049.

Of the three F.A.I. events, only Wakefield merited a trophy – the Fred Boxall Memorial. This was won by Jim Punter who lost his best model on its fourth max., but backed this up with a respectable and sufficient 2:09 on Sunday evening. His models follow modern practice and have aluminium front fuse-

lages. Second place was taken by Ron Pollard with his 'Trials' model which spent the night out through landing unharmed in the midst of farm buildings. Mike Woodhouse has returned to Wakefields and placed third – whilst I was fourth, due to using my new model for one flight and having it stall down on alide!

glidel

A/2 Glider had a three-way fly-off with only four minutes allowed in which to get away. Encouraged by rising bubbles, John Carter towed up without delay, released at under full height, and got almost 2½ minutes. The other two contenders towed up together, but Dave Truluck kept his model on the line half-a-minute longer than Peter Scrivens. This proved decisive, as Peter had the better air and scored 2:52 to win. He was flying a Lively Lady with the fin repositioned in front of the tailplane. Dave's model was unusual structurally, employing a 3/32 in. sq. spruce trailing edge, well gusseted to the ribs, This arrangement is claimed to be warp-resistant.

The F.A.I. Power fly-off proved to be

be warp-resistant.

The F.A.I. Power fly-off proved to be a flyover for George Fuller, as Dave Pymm failed to return in time. George was probably glad, since his modified frad Lad (less dihedral and lower pylon) had a very poor transition and barely cleared the minute. Hardware used was a G15 (with Cox Head), Bartels 7 x 3½ in. prop and Tatone timer. Dave's elliptical-tipped Rossi model had landed in a greenhouse 'complex' just outside the 'drome and was not located in time and he did not have a reservel Third was Pete Buskell – nearly a minute ahead of Ray Monks at fourth.

A/1 Glider has suffered from the re-

at fourth.

A/1 Glider has suffered from the recent weight increase – and non-thermal scores are apt to be discouraging. Eventual winner proved to be Phil Ireland with three quick maxes on Sunday morning, followed by one normal and one 'assisted' flight in the evening. He flew a quickly-built simple design, with a lot of C.G. ballast (melted lead as revealed by blisters on the fuselage covering). Second place saw a tie at 8:55 between K, Roberts and Tony Cordes, resolved in that order by a fly-off – a situation not covered by the rules!

rules!

The Coupe d'Hiver event degenerated into a battle between Mike Fantham and myself – with no one else within a couple of minutes of our scores. I won with the delayed-prop-release V.I.T. model that has served me so well over the past year – it is proving quite a 'psychological weapon'! Mike used his Pawnee design, while John Cooper edged out young Piers Coleman from third position.

Farly Monday morning saw Tailless

Cooper edged out young Piers Coleman from third position.

Early Monday morning saw Tailless and Vintage decided without fly-offs. Alan Brocklehurst maintained the Halifax traditions in the tailless event by carrying off the Lady Shelley Trophy with his Rubber model, This was built for the 1970 'Halifax Postal', and is unusual in having a rotating fin for D/T purposes. Even with the fin at rightangles to the airflow, descent is slow! The model uses 3½ oz. of rubber in 12 strands to drive a 22½ in. x 30 in. (nominal) non-helical propeller. Second and third places went to David Bloom and George Simpson.

Vintage duration saw top places distributed round the three categories Protagonist John Mayes filled the top spot with 8:47 total from his Elfin 2.49 powered Mercury Mallard. This combination is allowed 20 seconds motor run, so maxes are quite easy. Second was John Turner with an A.P.S. Satu — an early A/2 design with diamond fuselage and parasol wing mounting, which for Vintage, is flown on a 250 ft. towline.

came third with a Scram rubber-pow-ered lightweight which has a tremen-dous climb, but no glide. Noteworthy, and correct, was the request for 'proof of eligibility' as per the event require-

and correct, was the request for proof of eligibility' as per the event requirements.

The two-way fly-off to decide possession of the Thurston glider trophy was won by Dave Barnes with a five 3½ minute flight from his circle-tow design – the culmination of much practice in recent months. The model has silk-covered wings with long tapered tips and a section said to be similar to the Burrows one that I use, Fuselage is a balsa box to suit the tow-hook system. Second was Arthur Wharrie with a rather disappointing fly-off. He uses Sans Egal surfaces on a g/f rod fuselage. Third, and top of those who failed to max out, was Mike Coomes (now of Grantham) with an A/2. He was followed by Dave Greaves (A/2), Dave Truluck (110 in. lightweight) and John Boon. The last-named used an ultra light 1½ Caprice and finished flying by 5.20 a.m.!

Russell Peers managed the hat trick by winning the Sir John Shelley Open Power trophy for the third successive year. He used his K&B 40 R/R Series 71-powered model throughout, and just had the edge on visibility over Ray Monks on the fly-off. Russell's model is roughly a scaled-up Woodpecker and has one serious drawback to regular use. The combination of a 40, Kavan 10 x 4 nylon, and 45 per cent nitro fuel shakes engine timers to pieces; he dared not test run his engine between the official flight and the fly-off! As al-

ready stated, Ray Monks was runner-up — flying one of his F.A.I. designs. The one used had a Rossi, g/f rod fuselage and two extra sheet balsa fins on the tailplane tips. These were added to improve the power pattern, and certainly succeeded if the fly-off climb was any indication. Third place went to Keith Harrison of Penrith, just one second behind, First to fly off, Keith must have had the best air of anyone, and was well ahead of fourth man Trevor Payne.

Open Rubber provided the biggest fly-off of all — with top positions going to those waiting till near the end of the period before launching. Julian Hopper admits that he had 'all the breaks' in several senses! He had just completed winding his best model when the rear anchorage tore out, His helper kept hold of the peg and saved the fuselage! The delay in unwinding this model, and flying the reserve proved fortuitous — as he had both lift and visibility, finally winning the Model Aircraft trophy with an 8:21 score. The model had a slabside fuselage, 46 in. x 5.45 in, wing, 22 in. x 26 in, prop, 14 strands 40 in. long of Pirelli and was hardly light at 3½ to 4 oz. airframe Just to complete the story, his pet dog jumped on the fuselage immediately after the fly-off!
Dave Hipperson took second place with over eight minutes in sight, using the same 310 sq. in. wing model flown in 1970. His luck was in having someone phone him on Sunday to advise of the 5 a.m., start! Dave hadn't even time to go to bed at all! Results might have been different if Tim Grey of St. Albans

had fitted more D/T fuse as his model D/T'd at just under seven minutes – with the potential of another 1½ minutes. Even so he was third, just ahead of Dave Truluck (very consistent, this Nationals) and John Cooper.
This only leaves the Lindholme Gala. The Open Glider fly-off (and about £8 in cash) was won by Brian Picken whose A/2 was seen for nearly six minutes – thanks to being towed well upwind. Mike Fantham intended to do the same, found lift too early, and went O.O.S. before D/T-ing down from a great height. George Simpson cleared four minutes for third, whilst five or six others were in the three-minute-plus region.

six others were in the three-minute-plus region,
John Turner won Open Rubber with his three wheel, prop model, just in front of Frank Elton who D/T'd early. Third for the second time that day was Tim Grey. Open Power was topped by Pete Harris with a 35-powered design of F.A.I. weight but much larger area. John West was second with his piped G15 model – very fast but a little small to see.

to see. Finally, mention should be made of Finally, mention should be made of two trophies contested across a range of the Nationals evens. The Ladies Trophy was won by Miss Trilby Taylor (otherwise Mrs. Paul Masterman) who reached the Model Aircraft fly-off only to stall down through trapping the D/T line under the tailplane.

The Frog Junior trophy, for the best performance by a competitor under the age of 18, was awarded to David Barnes for his success in winning the Open Glider event.

Glider event.

NATIONALS RESULT	S	Open Rubber (Model Aircraft Trophy) 2. D. A. Bloom (Shrewsbury)	6:38
F.A.I. Rubber (5 x 3 mins.)		1. J. Hopper (Stanstead) M+8:21 3. G. T. Simpson (Grantham)	6:24
1. J. Punter (Hayes)	14:09	2. D. Hipperson (Croydon) M+8:05 4. C. Peters (Mkt. Harboro')	6:07
2. R. Pollard (Tynemouth)	13:45	3. T. Grey (St. Albans) M+6:56	0.000
3. M. Woodhouse (Norwich)	13:43	4. C/T Truluck (RAFMAA) M+6:51 Vintage	
4. J. O'Donnell (W'field)	13:22	5. J. Cooper (Southampton) M+6:28 1. J. B. Mayes (South Bristol)	8:47
5. M. Cowley (N'thampton)	13:13	6. R. C. Pollard (Tynemouth) M+6:25 2. J. Turner (Darlington)	8.09
6. C. Williams (Richmond)	12:48	(36 in fly-off) 3. J. O'Donnell (Whitefield)	8:01
7. D. Greaves (Birmingham)	12:44		7:20
			1:20
	12:33	Open Power (Sir John Shelley Cup)	
9. J. Barnes (Liverpool)	12:09	1. B. R. Peers (Falcons) M+6:13 Hand Launch Glider	
10. J Baguley (Hayes)	11:57	2. R. Monks (Birmingham) M+6:07 1. E. B. Jones (C.M.)	7:11
		3. K. Harrison (Penrith) M+6:06 2. A. T. Slater (Leatherhead)	6:49
F.A.I. Power (5 x 3 mins.)		4. T. Payne (Northampton) M+4:44 3. M. B. Cowley (N'thampton)	6:3
1. G. Fuller (St. Albans)	M+1:01	5 D. Miller (Royston) M+4:43 4. P. J. Bayram (C.M.)	5:59
2. D. Pymm (Walsall)	M+0	6. F. Chilton (Crookham) M+4:18 5. J. Turner (Darlington)	5:40
3. P. Buskell (Surbiton)	14:45	(23 in fly-off) 6. J. Cooper (Southampton)	5:3
4 R Monks (Birmingham)	13:55	(Louisi, Silv)	
5. N. Clark (Richmond)	13:39	A/1 Glider "LINDHOLME GALA" RESULT	
6. A. Chilton (Crookham)	13:35	EINDHOLME GALA MESOL	15
7. R. Johnson (St. Albans)	13:17	2 W B L	
8. J. West (Brighton)	12:33		M+5:5
9. J. Allen (Crookham)	12:30	3. A. Cordes (Leeds) 8:55+1:55 2. M. Fantham (Richmond)	M+5:1
10 J. Bailey (Bristol & West)	12:14	4. J. Cooper (Southampton) 8:47 3. G. T. Simpson (Grantham)	M+4:23
10 J. Balley (Bristol & West)	12:14	5. J. Turner (Darlington) 7:57 4. B. Mackay (Sheffield)	M+3:5
AND CONTROL OF THE PARTY.		6. P. Scrivens (Cheltenham) 7:42 5. J Punter (Hayes)	M+3:4
F.A.I. Glider (5 x 3 mins.)	eteropia appear	6. B. Baines (RAFMAA)	M+3:4
1. P. Scrivens (Cheltenham)	M+2:52	¹ / ₂ A Power 14 in fly-off	
2. J. Carter (Falcons)	M+2:27	1. P. R. Harris (C.M.) 8:46	
3. C/T Truluck (RAFMAA)	M+2:05	2. J. Hopper (Stanstead) 8:04 Rubber	
4. J. McNeil (Crookham)	14:59	3. D. S. Bailey (Swindon) 7:26 1. J. Turner (Darlington)	M+6:4
5. P. Stewart (Crookham)	14:50	4. P. H. Dodd (Falcons) 7:05 2. F. Elton (Leeds)	M+6:3
6. B. Picken (West Lancs.)	14:39	5. R. Seal (East Grinstead) 6:35 3. T. Grey (St. Albans)	M+5:20
7. T. Fairgreive (Grantham)	13:59	6. C. A. Rushby (Grimsby) 5:36 4. M. Fuller (Northwood)	M+5:00
8. W. Parker (Norwich)	13:56	5. A. Wharrie (York)	M+2:5
9. C/T Baines (RAFMAA)	13:53	Coupe D'Hiver 6. M. Fantham (Richmond)	8:4
10. J. Baguley (Hayes)	13:21		8:4
io. o. bagaicy (ilayes)	10.21	1, J. O'Donnell (Whitefield) 9:26 N S. C. Cox (Stanstead) 2, M. Fantham (Richmond) 9:05	0:4
O Clides (Thurston Cur)			
Open Glider (Thurston Cup)	14 : 2:20	3. J. Cooper (Southampton) 6:59 Power	
1. D. Barnes (J) (Liverpool)	M+3:39	4. P. Coleman (J) (Chel'ham) 6:45 1. P. Harris (Evesham)	M+6:28
2. A. Wharrie (York)	M+1:05	5. I. C. Sutton (South Bristol) 6:22 2 J. West (Brighton)	M+6:1
3. M. Coomes (Grantham)	8:53	6. R. Coleman (Cheltenham) 5:57 3. A. Price (Cheltenham)	M+4:29
4. D. Greaves (Birmingham)	8:51	4. F B. Jones (C.M.)	M+2:43
5. C/T Truluck (RAFMAA)	8:47	Tailless (Lady Shelley Cup) 5. T. W. Smith (B.A.C.)	8:54
6. J. Boon (Falcons)	8:46	1. A. Brocklehurst (Halifax) 7:19 6. C. A. Rusby (Grimsby)	8:35





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





Junior Kit contestants at the Nationals. At left, a young competitor readies a pair of neatly construced Mercury Swan gliders, while above a whole family helps wind the motor of a KeilKraft Senator!

Postal Kit Contest - August 4-5th 1973

This is your last reminder of the Golden Wings Postal Contest — the event will be over by the time you receive your next issue of Aero Modeller, so take note of the following rules, which were also printed in the June issue. Remember, entry to the contest is FREE and you can fly at your usual flying site. KeilKraft have generously donated one of their Aquarius A/2 glider kits as the first prize — which should be quite an attraction! In addition, the winner will receive a year's subscription to Aero Modeller, while the second-place flier will also receive a year's free subscription. Third prize will consist of a £1.50 credit voucher for any M.A.P. publication or plan. The rules are as follows:

1. The model must be the Mercury Swan

- The model must be the Mercury Swan glider, built by the entrant, from a kit. No other models will be permitted.
- 2. The entrant must be under 17 years old on 5th August 1973.
- 3. Flying. The entrant can make as many contest flights as he wishes but only on one of the days given above. These flights must be timed (to nearest second) by someone other than the entrant and the best three

flights used as the official entry. The entrant must handle the tow-line himself (maximum length 164 ft.), using a helper to hold the model. Timing starts from release of the towline from the glider. You may use more than one model if you wish, as long as they are all built by the entrant from the Mercury Swan kit (i.e. you must not build a second model with your own wood, etc., using the original plan). The flights must be made from a substantially flat flying field (i.e. no hill top launches!). There is no 'maximum' – just record the actual flight-time or 'out-of-sight' flight time, whichever is the lesser.

Intries to be made on post-cards only. Write your name and address in BLOCK LETTERS plus your age in years and months, and put the time in seconds of each of your best three flights and their total.

Send your post-card, correctly stamped, to:

Golden Wings Postal Contest, P.O. Box 35, Bridge Street, Hemel Hempstead, Herts HP1 1EE.

To reach there by Thursday, 9th August at the latest.



Two competitors in the Nationals Junior Stunt event – above, Ashley Josephs with his ¹A combat model, and below second placed David Romney.



Dear John Bridge,

I am between 10 & 16 years of age and would like to become a member of the 'Golden Wings Club'. With this application I enclose postal order (International Money Order) for 25p to cover cost of the enamel club badge, two coloured transfers and membership card.

ADDRESS

YEAR OF BIRTH.....SCHOOL..... NAME OF ANY OTHER CLUB OR CLUBS TO WHICH I

BELONG (if any)..... Send to: GOLDEN WINGS CLUB, AEROMODELLER, P.O. BOX 35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS HP1 1EE.



DISPLAYS ARE a very important part of an active club's programme, as they not only give the public an insight into our hobby, but they are also first-class 'recruiting' devices! A successful display team needs specially-developed models to suit their purpose – ideally, models should resemble aircraft with which the public can identify, although true scale models are not recommended as they are unlikely to be hardy enough to withstand the rough and tumble of this type of work. Frequently the flying space at a display is rather restricted and the surface somewhat variable is rather restricted and the surface somewhat variable, so what is needed are robust, semi-scale aerobatic models with engines that are reliable and readily accessible. Combat is always a crowd-pleaser, but the typical 'wings' are not really very attractive – a better alternative is 'dog fights' with appropriate semi-scale aircraft which are slower-flying and which the crowds can follow more easily.

aircraft which are slower-flying and which the crowds can follow more easily.

These semi-scale biplanes were thus designed to meet such requirements and they have proved most successful as they are aerobatic (not as manoeuvrable as a fully-flapped stunter or combat model, but none-theless good performers), strong, readily identified as either British or German '14-18' fighters, and with the upright engines, most reliable to operate. Four such models have been built, and all fly well, two having been in regular use for the past 18 months.

such models have been built, and all hy well, two having been in regular use for the past 18 months. While aerobatic, they also 'groove' well enough to fly three in a circle with relative safety!

Commence construction by binding and epoxying the 12 s.w.g. undercarriage to former F1. When dry, epoxy formers F1-F4 to the engine bearers. Cut two pieces of $\frac{1}{8}$ in. ply, one to bridge the engine bearers and the other to fit between, then glue to bearers and fit a 6BA bolt for the bellcrank pivot. Cut out the 3/32 in. sheet sides and glue to the engine bearers/formers unit. Assemble push rod and lead-outs to bellcrank before fitting to bellcrank support.

Glue remainder of formers plus tail block to fuse-lage sides and fit wire tail skid. Pin two pieces of $\frac{1}{8}$ in. ply together and cut out the cabane struts; these must

ply together and cut out the cabane struts; these must be accurately cut as they line-up the top wing. Glue struts into fuselage between F1 and F3 - make certain that the struts sit squarely on to the engine bearers.

At this stage decide whether to build the 'S.E.5' or 'Pfalz', before cutting out, and sanding to the tailplane section and glueing it to the fuselage. Fit a stunt tank between the cabane struts and drill holes for engine mounting in bearers. Fit engine bolts and solder wire across heads to lock them. Glue the nose block in place, then sand to shape. Sheet bottom of fuselage and plank top decking with 1/16 in. sheet, fit elevator and elevator horn, then link up push rod and solder. Lastly, add the fin and rudder.

The wings are identical except that the upper wing has four centre section ribs and the lower only two, but make sure that you make the right wings to match the tailplane – no 'S.E.5' wings with a 'Pfalz' tail,

please!

Pin bottom main spar to building board, then cut out and fit the ribs. Block up L.E. and T.E. to suit section, then glue into position. Next, add the top spar. Repeat for the other wing, then add the wing

When dry, sand the L.E. to shape and sheet centre sections. Extend sheeting on lower wing to $\frac{1}{4}$ in. beyond the centre section ribs to aid covering. Cut out outer wing struts and line guide from \{ in. ply.

At this stage, fit the lower wing temporarily to the fuselage. Assemble, but do not glue, the outer struts to bottom wing between ribs marked 'S'. Locate top wing on all struts, but again, do not glue. Now check that the stage of the structure that the whole assembly is true – if satisfactory, glue lower wing into position. Do not fit top wing and

struts at this stage.

Cover fuselage and tail with lightweight tissue doped on, followed by two coats of sanding sealer. Cover both wings with nylon and apply four coats of clear dope. Paint to required colour scheme and fuel-proof. Next, cut slots in the wing covering between 'S' ribs on top of lower wing and bottom of upper wing to take cabane and outer wing struts.

Glue upper wing and struts into position, epoxying the line guide into place. Varnish struts with fuel-

Finally fit the pilot and the 2 in. diameter wheels streamlined-section wheels look better, but balloon wheels are superior when operating from grass.

topical twists

by 'Pylonius' illustrated by 'Sherry'

Vane-Glory

WHEN IS AN ultimate not an ultimate? Answer: when it's superseded by something even more ultimate. Naive we may be, but I remember a distant, far off day when we saw a C/L stunt model carving up the ether into small segments and really thought the ultimate had been reached. But there have been quite a few ultimates since that time, most notable being that which was without a doubt, or so we thought, the very last word: the fully aerobatic radio model. However, we had reckoned without that device which does funny things to the hairs on your nape: the pylon racer. Surely, we reasoned – along with most local authorities – this is certainly the end of the line. But no. In fiendish workshops throughout what used to be the civilised world there was culminating yet another ultimate: the helicopter.

Now this came as something of a surprise, for if there is one form of locomotion in which the model world had behaved with ludicrous ineptitude it was the helicopter. I remember seeing the pathetic attempts at levitation at the big rallies, where the helicopter never quite rose to the occasion. Mostly the contraptions were of the rotating engine type, with the fuselage, contrary to the dictates of realism, joining in the circulatory fun. Usually the winning model whirred its way creakily to shoulder height, which wasn't all that far to travel considering the models were launched in the kneeling position.

models were launched in the kneeling position.

Let me say, though, that all these dim memories were forgotten when the radio helicopter made its glamorous debut. No contraption this, but just like the chopper we see on telly chasing the crooks over the High Sierra. It was the ultimate of ultimates, and a fine technical breakthrough; but into what we are not too sure.

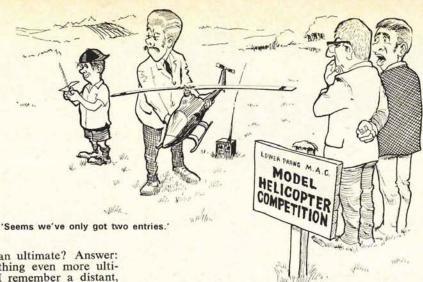
One obvious attribute of the radio helicopter is that it can be very economic on space. You can fly it quite easily on that cabbage patch to which we may well be confined in the not too distant future. You can do your Sunday flying in no more space than ten yards up and ten across, which should make everybody happy except those who cannot afford it.

Big Brother

Realism is all the thing these days, and has been, I suppose, ever since the advent of the model i.c. engine, although, it might be said that the model engine, with its large, single pot, is not all that realistic in itself. Now realism is all very well, resulting in some very toothsome miniaturisation, but it does seem to place the hobby in an inferior posture vis-a-vis the full size stuff:

By way of relaxation Air Commodore I. Scalem will a visit to the state of the favourity resulting and the favourity represents in

'By way of relaxation Air Commodore I. Scalem builds miniature replicas of his favourite aircraft in his spare time. Some of his engine powered models



are even controlled by radio. A long way, the Air Commodore says, from the days when we used to power them with rubber bands . . .'

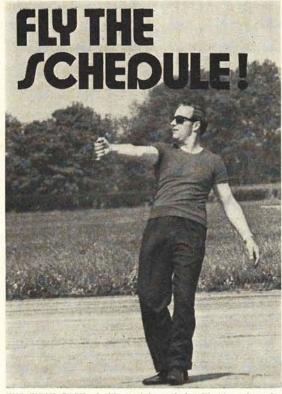
Now I may be a bit hidebound, and out of touch with modern shop counter to flying field procedures, but I still think of a model plane as something that looks — well, like a model plane. And the more aggressively 'model plane' looking it is, the better I like it. The idea that a model plane is a small flying machine in its own right is something that has always appealed to me. Which is why the sight of a Wake-field climbing gracefully away expresses more poetically what model flying is all about than the dummy pilot sitting gingerly upon his electronic ego.

Gloomwatch

If you want to initiate a gloom and doom discussion, start talking about the role of model flying in the 1980's. What you will surely invite is some extravagant extrapolations of the nastier current trends, like the shrinking of the flying fields to the moment of truth that faced the oozlem bird, or the absolute control of model flying by local authorities operating on a 'Come in number nine!' basis. Others, equally full of foreboding, will hint of rampant commercialism easing the model builder out of his workroom: 'Oh, no, sir, we do not sell balsa wood any more; only the complete components . . . Ah, wings. Now, let me see. We have the 12 in. and 200 in. sizes available. I'm afraid we are still awaiting delivery of the sizes in between . . . '

No doubt general opinion will also favour the view that all model engines will be electric by the 1980's; the system, like Bingo, taking over the flicks. Needless to say the electric motors will be ruinously expensive to run so that only the wealthy and profligate will enjoy the dubious delights of power flying. It is equally probable that models will be limited to a ceiling of 20 feet in order to reduce noise pollution and to avoid possible collision with low flying jets. This will undoubtedly mean some sort of tether, with which, I see, the helicopter boys are already experimenting. And this suggests that the only model flyers who can hope for some continuity of normal activity will be the control liners.

Happily, though, by the 1980's we shall have SPOOFS (Spatial Projection Optional Operation Flying Simulator). This will project a 3D image of any type of model you wish to fly, allowing normal trimming and adjusting procedures to be followed. 50p a go, and no extra for crashes.

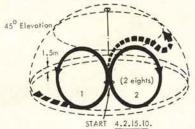


THE FIRST PART of this article ended with the triangular loops. The manoeuvres that make up the rest of the stunt schedule continue to make use of the basic round, square and triangular shapes but they become more complicated, making it increasingly difficult to maintain your concentration. Particularly beware of the temptation to rush through the final manoeuvres in the fear that the motor may cut early — remember this as the schedule continues with the horizontal eights.

the final manoeuvres in the fear that the motor may cut early — remember this as the schedule continues with the horizontal eights.

These should be positioned with the intersection between inside and outside loops directly downwind, thus the first inside loop must be started with the model still travelling downwind. There is a temptation to start this first loop too late so that the intersection is not downwind and in turn the outside loops are displaced round the circle away from the downwind point, At best the result is a badly distorted shape due to the wind blowing across the figure, or at worst line tension may be lost completely at the top of the outside loops. Even with the intersection correctly placed the wind has the effect of 'pushing in' each side of the manoeuvre so that the inside and outside loops overlap in the centre. This is very easily seen by the judges and every effort should therefore be made to avoid it! As the model climbs away from the point of intersection, the loops (both inside and outside) should be opened out slightly to gain sufficient distance round the circle during the top half of the loop to enable the bottom half to be completed without being blown past the starting point. Remember that the model slows as it travels upwind during the top half of each

TWO HORIZONTAL EIGHTS



JIM MANNALL concludes his twopart article on how to fly a better aerobatic schedule with your control line stunters

Doug Blake, Chairman of the S.M.A.E.'s control line technical committee, feels the pull of his stunter as he practices his pattern-flying.

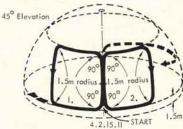
DODD DODD DODD DODD

Doug Blake, Chairman of the S.M.A.E.'s control line technical committee, feels the pull of his stunter as he practices his pattern-flying.

loop, so be prepared for rapid acceleration during the bottom, downwind half. In windy weather this latter half of each loop must be very tight to avoid overshooting the centre of the eights.

It is equally important in the square horizontal eights that the centre vertical climb should always be in the same place, as any deviation is easily spotted, Let us first consider the shapes of the inside and outside square loops which make up the eights. The base angles of a normal square loop (discussed in Part I) were 100 deg. and the top angles 75 deg. For the square eight the angles at the top and bottom of the centre vertical climb must be changed to 90 deg. (as stated in the rule book) to allow the inside and outside loops to coincide along the line. The other angles are unchanged and the top horizontal side of each loop is therefore slightly shorter than the other three sides. The 'eights' start at the first corner of the inside loop. Make particular note of the position of the vertical climb using some fixed object (a distant tree, building etc.) as a reference. The model travels this same vertical line four more times during the two eights, hence the importance of marking its positon. Ease off at the second corner keeping the included angle more than the rule book's 90 deg. The model is travelling upwind during the whole of the inverted top leg and must reach the third corner with sufficient line tension to produce a very tight turn. The line tension available at this point depends largely on the flying speed, so again remember to keep that second corner loose'. The third corner needs to be tight, but not so acute as in the square loops since the model is further round the circle from the downwind position and will be blown towards the centre of the 'eight' during the vertical dive followed by a tight fourth corner exoed up the model loses height along the top of the square

TWO SQUARE HORIZONTAL EIGHTS

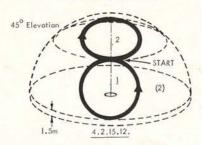




No, that's not a new model Paul Tupker has built – just a recovering and re-paint job on his old and trusty version of the Louis Grondal modified Nobler – certainly rather more attractive than the original classic machine!

easiest) to do a half loop, than to continue round the same loop to start the 'eight'. Try to start the half loop slightly before the downwind point as the model will then be travelling upwind at the mid-point of the 'eight' and this helps during the start of the top outside loop. The size of the loops must be judged accurately so that the top of the figure passes through the point directly over the flier's head. In windy conditions a definite effort must be made to

TWO VERTICAL EIGHTS



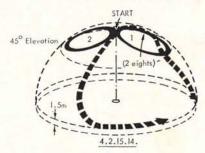
tighten up the descending half of the outside loop to prevent the model being blown down below the 45 deg. elevation. If this happens the first half of the next inside loop must be very tight, but the imminent presence of solid ground is usually sufficient reminder! The second 'eight' finishes with the model inverted at 45 deg. elevation and a further half inside loop completes the recovery to level flight. The hourglass requires both good reactions on the part of the flier and a good model. The first corner should be identical to the first corner of a triangular loop, not too tight — remember the included angle should be 67 deg. This is followed by a long inverted climb. It is important to plan the position of the four corners in advance in order to achieve a symmetrical figure. The base of the hourglass subtends an angle of 50 deg, at the centre. The top of the figure is part of a wingover running parallel to the base and this top leg should be identical in length to the base so at each top corner the lines should make an angle of 20 deg, to the vertical. The second and third corners are part of the only outside triangular loop in the schedule and also occur in a most difficult position when line tension is very low. There is no easing up here at the second corner — by all means keep the radius large but make sure that the change in direction is sufficient to bring the model through the point vertically overhead. Did you do the second corner too soon? Now wait, remember how long the top leg should be. The third corner can be as tight as possible and

ONE HOURGLASS 45° Elevation 4.2.15.13.

should bring the model round until it seems to be almost in horizontal inverted flight. The straight inverted descent should cut the vertical climb at 45 deg, elevation. Can you remember where the climb was? The last corner requires a steady nerve and much practice before a smooth recovery at the correct height can be achieved. Concentrate particularly on the symmetry of the figure. It is difficult to make the long straight climb and descent equal (which really means making all the angles equal) and no stunt competitor in Britain can achieve this consistently. Get it right every time and you will beat us all.

As with the horizontal and vertical eights the overhead eights start as the model first passes through the mid-point of the figure, vertically above the flier's head. The model should be pointing downwind at this point. Complete the usual two level laps after the hourglass then do a further half lap. At the upwind side of the circle turn the model into a vertical climb as in the reverse wingover but with a larger radius turn to ensure that you have line tension when the model is overhead. As in the wingover the flier has a choice of position, right handed person will naturally be facing upwind as the model enters the manoeuvre and will remain standing in that position, Some left handed fliers also face upwind, However my own (left handed) method is to stop turning about a quarter of a lap before the upwind point is reached, then as the model climbs up to the centre of the eights turn back to face downwind. Note the similarity here with the first half of the reverse wingover. The eights' must always start with an inside loop. To keep the shape correct open out the loop as the model flies the lowest point. Allow sufficient distance to be gained upwind to come round to the centre of the 'eight' in the same direction as the original entry before starting the outside loop. It is not too difficult to keep the intersection in the shape correct open out the loop as the model flies the lowest point. Allow sufficie

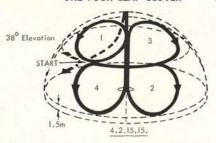
TWO OVERHEAD EIGHTS



The last manoeuvre in the schedule is the four leaf clover. This is entered in level flight at an elevation of 38 deg. It is possible to make the recovery from the overhead eights at a 38 deg. elevation ready to start the clover, but to my mind this is not good practice. It is best to be consistent throughout the flight, with at least some level flight at five

feet altitude between manoeuvres, even though it is not the two full laps required by the rule book. The reason for the entry at 38 deg. elevation is that the whole figure is contained within half the circle, the model never passing behind the pilot's head. The two top loops are tangential not only to each other, but also to the vertical plane through the centre of the circle perpendicular to the central plane of the manoeuvre. The four loops are therefore smaller than other loops in the schedule, and the two top loops do not pass through the point vertically above the flier as in the vertical eight. Try to position the manoeuvre so that its centre is directly downwind. The first loop is the most difficult of the four, starting as it does high up in the circle with the wind behind the model. It is essential to

ONE FOUR LEAF CLOVER



reach the entry point with as much flying speed as possible in order to maintain adequate line tension over the top of the loop — this is difficult in wind as the model is blown downwards as it approaches the start of the figure. I get over the problem by climbing far too high upwind, almost doing a wingover in very windy conditions, and using the wind to blow the model into the correct position. Not a very tidy approach, but effective in 'desperate' conditions! It is inevitable in wind that the first loop will be started too late, so that the centre of the clover is no longer downwind. Note that the remaining three loops in the figure are in fact only three-quarters of a loop each. The level flight at 38 deg, elevation which follows the first loop is equal to the diameter of the loop — many people make it too short so that the left and right hand halves of the figure overlap. Next comes an outside loop at the bottom left of the figure touching the five foot level and finishing with the model in a vertical climb to the third leaf of the clover. If your positioning is good the model will be directly downwind but if you were late starting the first loop, the model will be slightly crosswind and care will be needed to ensure a truly vertical climb. The top left outside loop is not difficult, but be careful to keep it tight so that the model enters the inverted flight across the figure at 38 deg, elevation. Make sure the inverted flight is long enough before making the final inside loop at the bottom right. The model must then fly vertically through the centre of the four leaf clover and continue in a wingover into wind recovering into normal level flight.

The schedule takes approximately five minutes to com-

must then fly vertically through the centre of the four leaf clover and continue in a wingover into wind recovering into normal level flight.

The schedule takes approximately five minutes to complete. Allowing around half a minute from the starting signal to takeoff, the four leaf clover should be completed after about five and a half minutes, leaving one and a half minutes for the motor to cut and the model to land. The interval is very short — life was much easier when a total of eight minutes was allowed rather than the current seven! Most people have to resort to some manoeuvring to stop the motor as once the tank is almost empty most models will stop sooner if flown high. Tight loops (but not eights) above the 45 deg, elevation also starve the motor of fuel. My own technique is to use a stopwatch and having completed the schedule, to fly at normal level flight which keeps the motor as rich as possible using fuel more quickly. Then as late as possible, usually just before six and a half minutes, tight circles overhead after a rapid climb are generally effective in getting the motor to cut.

During the landing remember that the approach (that is the descent from five foot altitude) is marked as well as the actual touchdown — there should be an interval of one lap from the model passing through the five foot level to the point of touchdown. This means you must know one lap in advance where the model will land and pass over that point at a height of five feet. The landing itself depends very much upon the type of undercarriage used — with the more springy fuselage mounted system, three-point landings are essential. Rigid wing-mounted two wheel and tricycle systems offer a choice of three point or main wheel landings as the model will not bounce (or should not!) when flown

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onto the ground at high speed. Always try to land downwind. Some whipping may be needed to achieve this, but stop whipping before the model touches down. In the quarter lap immediately after the upwind point the airspeed drops very rapidly so aim to land in this quadrant, passing the upwind point of the circle at about one foot altitude with just enough speed to retain line tension, in the case of a three point landing, or somewhat faster for a main wheel landing. Do not leave the touchdown too late since the airspeed starts to increase again before the extreme downwind point is reached and the model will float round into wind where a smooth touchdown is much more difficult. With two-wheel wing-mounted undercarriages the model tends to nose over if it stops facing downwind. It is wise to land with sufficient speed for the ground roll to take the model past the downwind point to come to a laufacing into wind. All this assumes that you are flying over concrete as in a competition, but if you prefer to practise over grass, both take off and landing are best made into wind to save wear and tear on the undercarriages.

Let us now consider some general points about the flight. Remember that although marks are only given for the specified manoeuvres, your score is also affected by the overall impression that you make on the judges. I mentioned in Part I the need for a well organised starting procedure — the rest of your performance should be equally well organised. Be consistent with your hand signals and keep the level laps between manoeuvres at five feet. It looks untidy if the model flies too high and has to be brought down again to five feet to start the next item. Concentrate on each manoeuvre as you do it, forgetting about what has gone before. Do not let an early mistake have an effect on the rest of the schedule. It is of course important to remember what comes next, contest nerves can play tricks on your memory so if you are at all doubtful have someone in the centre with you to act as prompter. At internatio

After a competition flight leave the circle quickly ready for the next competitor, then clean the model straight away before too much dust and grit settles on the oily surfaces. Make sure the lines are safe from other people's feet — it is always safer to put them away until just before the next

flight. In this 'guided tour' of the stunt scheoule I have tried to reveal some of the hidden detail behind the manoeuvre descriptions in the rulebook. An article of this nature can anticipate and deal with the problems likely to arise in each manoeuvre but it is still up to the individual to acquire the necessary skill. Thus my answer to the original question 'How do you learn to fly stunt' is still the same. 'Go out and practise — Hopefully, this article will make that task a little easier.

John Heanen refuels his stunter, aided by John Newnham. This pilot has progressed remarkably since his first Nationals entry in 1971 (when he also won the Junior Stunt), and is now a force to be reckoned with at any comp. Shows what practice and determination can do!





Corporal Alan Smyth poses with a pair of Shackletons – the rear one is the original, the one in the foreground being the model which he built from the Aero Modeller plan. He has modified the plan version to make it into a Mark II – the type on which he worked for five years. In addition Alan has incorporated exterior signs of the Phase 3 mods. Power is provided by three throttled Enya 09-111's and a non-throttle equipped Frog 150.

IN OUR CAPRICIOUS climate conditions can change almost hourly which makes for some uncertainty if you are contemplating a visit to your now distant flying field. Having started off in a patch of enticing weather, horrible mutations may have occurred en route, and on arrival the wind has whipped up to gale force and the threatening skies already beginning to ooze. It is this sort of thing that makes us nostalgic for the old days when the flying field was but a few minutes up the road; at least you could get in a couple of flights before things began to get nasty, and with no waste of time and

petrol.

Our first report, from Bob Ashley the Hon. Sec. of the Morley & D.M.A.C., reminds me that I have a chuck glider to trim out but the summer winds constantly frustrate my attempts. But no such frustration in the Morley club, apparently, for the club chuck comp. attracted a whacking 15 entries. Winner was D. Scott, with Bob Ashley second and J. Godden third. The other club event mentioned has got me completely baffled, so I can only quote direct from the report: 'This week (second in May) saw the start of our Club Balloon Bursting Comp held to F/F rules, 3 balloon 3 min. max. and a two balloon timed fly off . . .' Winner, incidentally, was Bob Ashley who burst two balloons. The fly off for the placings was deferred due to members looking anxiously at their watches and muttering about closing time. Chairman, B. Judge, gets the club's congratulations for a commendable 12:45 score in A/2 at the 1st Area Meeting. Bob tells us that membership has soared since Christmas. He puts it down to availability of cheap balsa, dope, fuel and secondhand engines. New members, if industrious, can more than recover their joining and insurance fees in savings on such purchases.

But no mistaking what manner of aerial ballistic would be doing the balloon bursting, if any, in the Nuneaton M.A. Soc., for the report from Hon. Sec. M. E. Bates, leaves us in no doubt the club is strongly control line. To some extent this closely tethered interest is topographical, for the small number of R/C enthusiasts in the club are handicapped by lack of a suitable flying site. Attempts, however, are being made to remedy this situation by approaches to the local council for the use of a flying site suitable for all branches of the hobby. Providing a perhaps welcome diversion from the safari parks and traction engines the club has been putting on displays at the local stately home, Arbury Hall, and

will be doing so throughout the year. The displays, which recently got a two page cover in the local press, include five-up combat and mock dog fights between profile Spits and M.E. 109's. Contest wise combat and F.A.I. team racing have a small following, but there is a looming interest in stunt from which it is hoped will come a contest spin off. New members are welcome at club meetings which are held on alternate Wednesday evenings at the King

William IV, Coton Road, Nuneaton.

I just cannot make out the surname of the gentleman who has sent us the next report. He is the P.R.O., of the newly formed Penrith & District Model Club. Although only in existence for a bare four months membership is already up to the forty mark. An obvious incentive to joining the club is the two available flying fields, one at Lakeland Falls and the other at Brougham. The former is spacious enough to take free flight, and both are near Penrith. At Brougham a mowed and rolled landing strip is being prepared for the R/C enthusiasts and likewise a circle for C/L fans. New members welcome at either fold on Sunday of terrogers at either of the either field on Sunday afternoons at either of the two flying sites as, too, are any visitors passing through the district. The club is proud of its 'sale and swap' sheet, through which you can obtain or dispose of almost anything in the model line.

A club with a flying site problem is the Finchley & D.M.A.C. Alan Symons, the Comp. Sec., of this control line group, bemoans the fact that the local flying field lacks a tarmac circle for speed and team race activities. Members, consequently, have to travel a long way in order to indulge these sports. The local council, apparently, refuses to help in the matter. Mr. Symons encloses a copy of the club programme. Something every week. It would seem that special events, such as the club Gala, are held at Glebelands but Sunday meetings are at Scratchwood, starting at 2.30 p.m. Club Meetings are held each Tuesday at Summerside School, School Way, N12 et 7.30 p.m.

N12, at 7.30 p.m. Flying a radio model can be quite a complicated business, beset with systems, processes, insurance cover and site problems, and a lot of personal organising is needed to get the model safely air-borne. In the Buckaneers Model Club's newsletter, Scimitar, Pete Smoothy gives some dire forebodings of yet another complication: the eroding of the model frequency band by various interests eager to muscle in on the crowded air waves. Already the

model flyers share their allotted space with weather balloons and paging systems, and with the electronics industry constantly expanding its personal communications market we could find ourselves in the position of the United States modellers who need must fly only in the remotest sites. My only regret is that I am getting too old for chuck gliders. Now, if radio models are not going up so readily the same cannot be said of model materials. After all that talk of V.A.T., price reductions the cynics seem to have been proved correct, for the new stocks which have just come into the Buckaneer's store are up in price.

In its May newsletter the Scottish A.A., sets out a varied and attractive programme for the season - something for everyone. Someone writing humorously in the news seems unable to find out what a Montreal Stop is. All I know about it is that it is a gadget that goes clunk in the flight and guarantees a liberal quota of grey hairs in the adjustment. Another humorist looks prophetically at model flying ten years hence. No R/C, he predicts, but computerised programming instead; the model operating like a front loader washing machine, and just about as interestingly. Again my only regret is that I shall definitely be too old for chuck gliders.

After Ken Collins went to all the trouble of obtaining R.A.F. Watton for the 2nd Fast Anglian Area.

ing R.A.F. Watton for the 2nd East Anglian Area Meeting the weather on the day turned out to be traditional 'Gamage Cup' with a very strong wind blasting across the 'drome. Flying was very limited – discretion being the better part of the old oil stove – but the Norwick lade hungar for Places mixtured. but the Norwich lads, hungry for Plugge points, put up a battling trio of power models for the *Halifax* event, the best of whom proved to be N. Willis who did a worthy seven flight aggregate of 14:26. Open

Glider enticed not one model from boot or box, but Messrs. P. Arnould and R. Pavely both wound up for the Gamage and came out quite well in the national placings. And on the subject of Nationals, it seems that the Area flyers acquitted themselves honourably at Lindholme: J. Hopper won Open Rubber, Trilby Taylor the Ladies Cup and Mike Woodhouse placed 3rd in Wakefield.

A report from Geoff Smith, the P.R.O., of the Crookham Contest Modellers suggests the club has been actively living up to its name. At the 1st Area Meeting they got away to a flying start with a Frog Senior win for Fred Chilton, a second place in the Plugge Event, and George Welch and Gary Madelin placing 1st and 3rd in Open Rubber. Not quite so successful, though, at the Easter Two Day meet where Gary Madelin and Pete Stewart missed out on the top places. Just what went wrong was discussed in a wet, but pleasant, five hour Bank Holiday drive home. And if not wet at least appalling conditions at the 2nd Area Meeting where Fred Chilton and Jack Allen did sterling work in F.A.I. Power to record two very respectable totals. Pete Stewart put in a text-book max on his third flight, but should have read the small print as he did a 12 second motor run. A full scale search of the down wind fields failed to produce the model. An inquest on its fate pointed to the exceptional ingesting quali-ties of the local bovines. Chewed up in another sense was Andy Chilton's F.A.I., model which ploughed in on its second flight, leaving only the pylon intact.

Should a club meeting be just a chat show or something more constructive? That is the issue which has caused an unfortunate division in the **South**

August 19th

August 26th

August 26th

September 2nd

September 2nd

September 2nd

September 2nd

September 7-9th

September 16th

September 16th

September 23rd

September 29th

September 30th

Contest Calendar ...

STOCKPORT COMBAT RALLY. 40p preentry from D. Wood, 16 Norview Drive, East Didsbury, Manchester M20 QQF (send s.a.e.), 60p on day. £10 first prize plus Mainstream Trophy. 10.30 a.m. start Venue Worth Meadow (off M2 road on A560 Sheffield Road, ½ mile from Stockport's centre).

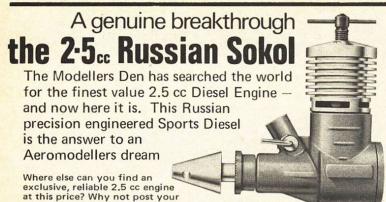
ELLIOT CHAMPAGNE GALLOP for Class B team racers. Diesel fuels not permitted. Venue Elliot Bros., Airport Works, Rochester, Kent.

NORTHAMPTON M.A.C.'s 9th ANNUAL COMBAT RALLY. Trophies plus cash prizes. Pre-entry (20p) to F. J. Pateman, 71 Stanlope Road, Northampton. Field entry 30p. Venue Midsummer Meadow (on A428 Northampton-Bedford road).

BUCKANHEERS STUNT COMP. C/L Stunt at Finmere Airfield, near Tingewick, Bucks. Entry on day or s.a.e. to J. Mannall at 3 Totnes Close, Bedford, for details. July 22nd July 22nd July 29th August 5th details.
LONDON AREA C/L CHAMPS. F.A.I.
and Goodyear team race plus combat
at Charville Lane, Hayes.
NORTHERN AREA EXPERIMENTAL F/F
EVENT, Non-tactical Open Glider, nominated max. Open Rubber in rounds.
S.M.A.E. members only at R.A.F. Topcliffe. August 5th August 5th cliffe.
S.M.A.E. F.A.I. PYLON RACE at North
Luffenham, Rutland.
S.M.A.E. SCALE MEET. R/C Class II,
F/F and C/L at Little Rissington, Glos.
S.M.A.E. INDOOR MEET. Second Team
Trials for F.A.I. class models at Cardinsten August 5th August 12th August 19th ington.
FACCT THERMAL SOARING MEET.
Venue R.A.F. Weston-on-the-Green, on 443 Oxford-Northampton road. Pre-entry (35p) essential, to N. Webb, The Bungalow, East Street, Fritwell, Oxon, Pre-August 19th

entries must be received by August 5th – entry limited to 60.

S.M.A.E. R/C AEROBATICS at Bruntingthorpe, Leics. WOODFORD RALLY. Details to be an-TORBAY RALLY. Open R/G/P. All-in F.A.I. (Torbay Trophy) five flights, no rounds. Chuck glider, re-entry allowed. Venue Woodbury Common, near Ex-THREE KINGS C/L RALLY. Stunt and scale at old Croydon Airport, Silencer essential. NORTHERN AREA RALLY, 30+ classes!! for C/L, R/C and F/F at R.A.F. Elvington. ASHFORD RADIO MODELLERS RALLY. ASHFORD RADIO MODELLERS RALLY. Class II Scale, fun and novelty events, R/C licence and proof of insurance essential. Details: M. Tate, 60 Towers View, Kennington, Ashford, Kent. Tel. Wye 812 443.
MIDLAND AREA RALLY. C/L: Stunt, F.A.I., Goodyear. Combat. R/C: Eyeball scale, spins, spotlanding, fly-for-fun, Venue Wymswold Airfield, near Loughborough, Leics.
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Bristol Club, according to South Bristol News. It has also resulted in the resignation of the Chairman, Mr. Manning, after ten years of sterling service. Splits and arguments are, of course, endemic in club life, but are often pursued by some partisans with a vehemence out of all proportion to their real importance. I am all against too much clubroom debate. Members should vote in a good well balanced committee and let them get on with the job of running the club. The new Chairman is Mr. Brian Perkins, a founder member of the club. He is to head a committee that intends to be far more active in the forming of club policy.

Someone ruminating in the Leicester Model Aeroclub bulletin on the hazards of model flying then and now holds to the view that the reduction in crashery rate these days is due to better designs. Maybe so, but I should have thought the r.o.g. rule had something to do with it and also the sporting, have-a-go attitude of the old time flyers. The Damage Cup could not be misnamed thus these days as barely a handful will fly if the March winds are on form. Not that the Leicester members are all that cov about opening their model boxes. There were, for instance, ten entries in an Open Glider event, and the club even staged its own Vintage event. All three models were Keil Kraft: a Bantam, a Competitor and an Outlaw. A lively report on the Nationals too.

Mr. C. A. Jones, P.R.O., of the North Devon M.F.C., writes to tell us that the club held its A.G.M., in May. Tea and biscuits on hand and a look in by the local press. To get the models in as well as the modellers a Concours was held. Scale Cup was won by Mr. T. Spry's Stampe Bipe. Best finish

went to Mr. A. Knight's Osprey glider and best C/L model, Mr. K. Turner's Fokker DIII. The club is mainly R/C and C/L with a bias towards stunt in both categories. Separate site available for each activity, and there is hope of a control line site proper in a new council sports complex at Barnstaple. New members welcome, including juniors. Mr. Jones, address is 63 Gorwell Road, Barnstaple, Devon.

From what I could glean from the Enfield M.F.C., newsletter the flying field situation in that part of the world is not altogether sunny. The councils and conservators seem to be trying to put the screws on in various unpleasant ways. But the model flyers are fighting back, led by the redoubtable Mr. George Bushell. If sufficient model flyers enter their objections against the proposed restrictive bye law there seems a good chance that their voice may be heeded. Too often the authorities have it all their own way.

The Three Kings Aeromodellers put the wire

back in wireless by staging a show at the Esher Symposium. The club also put up a stand just to demonstrate that there were quite interesting ways of flying models other than through the end of a radio aerial. Seems, though, that the actual turn out of models was a bit on the disappointing side, although the smallness of the flying area may have played an inhibiting part. Member Bob Ivans advertises himself as Sir Robert Ivans and the Trent Valley Stompers, but this is not a model flying circus as you might believe but a jazz group. He is currently building a 6 ft. twin engined Fokker, complete with cannon. No doubt he will write of his experiences, 'Model flying and all that Jazz'.

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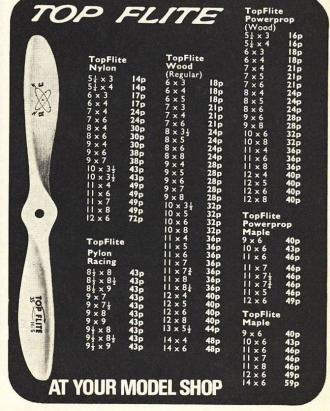
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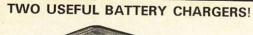
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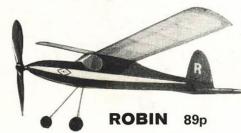
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