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"Covers the world of Aeromodelling"

VOLUME XX NUMBER 234 JULY. 1955			
Managing Editor	-	-	C. S. RUSHBROOKE
Editor	-	-	- H. G. HUNDLEBY
Assistant Editor	-	-	- R. G. MOULTON

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Youthful Aeromodelling

AVIATION HAS always been regarded as a young man's occupation, though with each passing year the conquest of the air becomes more closely knit with the every day life of all of us, young or old alike. Nevertheless, it cannot be denied that flight in all its aspects appeals in the main to the youth of the world, and this is particularly true of the hobby of aeromodelling.

We make no excuses therefore for the introduction—for the first time in its long history—of a special Junior Number of the AEROMODELLER, aimed chiefly at the many thousands of new youngsters who embark on an aeromodelling career each year. Accused though we may be of continually riding our pet hobby horse, it cannot be gainsaid that this hobby provides the complete answer to those who would follow the modern trend, and provides the ideal combination of a pursuit that requires thought, dexterity and sportsmanship allied to an ideal blending of indoor and outdoor activities.

The value of this activity has recently been recognised, for as our last issue went to press, we were delighted to learn that His Royal Highness, the Duke of Edinburgh, has graciously extended his Patronage to the Society of Model Aeronautical Engineers, the controlling body of model aviation in these isles. Prince Phillip's interest in aviation matters is well known, as is his equal enthusiasm for those things which materially affect the youth of the Nation, and, knowing that his support to any field of endeavour is not lightly given, we keenly anticipate the day when His Highness appears at a model flying meeting. May we hope for a day when the Clerk of the Weather is lenient enough to enable us to put on a show worthy of the occasion!

We confidentally expect that our "Golden Wings" contest will encourage young modellers all over the British Isles to try their hand at competition work, for with everyone working to a standard design the only premium is on quality of workmanship and ability on the field. Vic Smeed's design is a sure guarantee of performance, for we know from past experience that any model prepared by this popular designer is a certain flier provided that a modest degree of patience and skill is put into its construction.

We are sure our more adult readers will not begrudge this particular issue being devoted largely to their younger counterparts, for it is by their encouragement that our future experts will be discovered.



Outside the Hangar Doors

We could not let the above photo of all three prototype Vautours pass without reproduction. This remarkable, but little publicised aircraft, (in this country anyway) is deserving of close attention. For this reason the Vautour is the subject for John Enoch's "Aeroplanes in Outline" this month, and a full description together with detailed drawing appears on our centre pages.

Crossword result

Many anxious competitors have written us from time to time enquiring the result of the S.M.A.E. Crossword Contest, to which we donated considerable free space and publicity in the interests of adequate participation in International events by modellers from this country.

To say the response to this worthy object was disappointing is to put it mildly, particularly so from the contest minded section of the aeromodelling public, which stood to gain most by the provision of funds sufficient to send teams abroad as required. As a result, the total amount subscribed fell far short of the sum announced as the prize for the best solution received, only £30 2s. 10d. finding its way into the Society coffers.

We are happy to announce that the winner, Mr. R. G. Williamson of Nuthall, Nottingham, has offered to waive his right to the full sum offered, and a cheque for the amount collected has been accepted by him. We place on record our sincere appreciation of his action, which has saved the S.M.A.E. a considerable slice of its slim finances.

Thus, the S.M.A.E. has achieved no addition to its International Contest Fund (but has not lost any monies either); Mr. Williamson is the richer by $\pounds 30$ —or poorer by $\pounds 70$, whichever way you care to look at it; and the only losers are ourselves of the "AFROMODELLER" for the amount of space and staff time devoted to this abortive effort. Woe is us!!

International R/C Contest at Essen

The King of the Belgians Cup returns home again to Belgium as a result of the efforts of the formidable Gobeaux team which won in 1953 when it was first presented. Young Jean-Pierre put up a praise-worthy performance under the guidance of father Dr. Gobeaux. German participation in the hands of Karl-Heinz Stegmaier, 1954 Champion, and Hans Lichius was disappointing and never

came within striking distance of the winner. Perhaps their duties as host country proved too onerous! France's Albert Wastable again showed what a fine flier he is though still unversed in contest requirements. Ted Hemsley and George Redlich put up a good show for G.B.

Alfred Bichel of Switzerland proved an outstanding glider winner; Robert Laiy of Belgium snatched a last flight victory in the rudder-only event.

Outstanding memories of the contest will surely be Arnold Degen's magnificent towing technique---200 metres vertical every time!---and poor Lichius's monumental prang with his lovely scale Cessna in a hasty landing with 30 seconds left, and throttle control stuck at full speed!

Seven countries competed and Russian observers were present to "gen up" for promised participation in 1956!

What Happened to the Radio

Enthusiasts?

News of the International Radio Contest at Essen-Mulheim, as reported above, brings to mind the disappointing eliminator held at R.A.F. Station Debden. Admittedly notification of this venue was somewhat late in forthcoming, due to a last minute cancellation by the authorities at the original venue—Halton, even so, the support given was very poor indeed.

There were, in fact, only nine competitors of which four had multi-control and five rudder only. Conditions were appalling with wind almost at gale strength (could it have been this that kept the others at home?) and it was decided to run the two events, i.e. The Ripmax Trophy and the Aeromodeller International Trophy as one contest. Every contestant made a gallant attempt in spite of the impossible weather and most of them recorded scores-if nothing else. The final result was Ted Hemsley and George Redlich tying for first place in both contests, neither having a model in a fit state to fly off a decider! As it subsequently turned out, the Aeromodeller Trophy was postponed by the S.M.A.E. Competition Secretary, and this event will be held in conjunction with the South Midland Area Rally at Cranfield on August the 21st.

In view of the great strides being made abroad with radio-controlled model aircraft, we are disturbed at the lack of support that this important eliminator received, although our humorous appetite was whetted when we discovered that two of the competitors were named Airey and Breeze! Perhaps they should be blamed for the strong wind that ruined the event?

World Championship chaos

To say that the position regarding the various World Championship Meetings this year is unsatisfactory would be a definite understatement. Take the World Control Line Championships for a start. Our French friends stated that this event could not be combined with the other championship meetings in Germany as "arrangements to held it in France were too far advanced". What has happened to this unfortunate affair since the French gave the original venue as Paris hardly bears witness to the above statement.

Starting in Paris it was then announced that the meeting would be moved to Poitiers and held in conjunction with the French National Aviation Festival. This meant a change of travel arrangements, etc., for the organisers of the British team, which had hardly been completed when we espied in a French aviation journal a note to the effect that the Poitiers Festival had been cancelled. This information was passed to Doug. Gordon, the manager of the British Team, who wrote immediately to the French Aero Club. They eventually confirmed that this was so and that the event was being shifted back to Paris. So much for the earlier statement that the meeting could not be combined with the other World Championships because arrangements were too far advanced! It is a pity that this partisan attitude prevented what could have been a World Olympics Event with Control Line Speed, Wakefield, A/2 Glider and International Power, all taking place at the same venue. However, the situation with the three free-flight events is anything but satisfactory as there is a complete lack of information regarding venue at the time of going to press.

We sympathise with the German Aero Club who, once they knew the Americans proposed holding the event in Germany, agreed to hold the Glider event in conjunction with the Wakefield and Power. Having made this gesture, they have been waiting ever since for the Americans to finalise a venue. It is uncertain who is holding up arrangements, the A.M.A. or the U.S.A.F. Whoever it is, can we request that they show a little of their traditional hustle, otherwise this first real approach to a Model Olympics will not even sprout wings—let alone get airborne!

B-17 Gen

Solid modellers who are making the Boeing B-47 from our scale drawings first published in the May issue will be interested to know that the numbering indicated on the aircraft drawn, 12363, refers to the seventh B-47E, actual USAF contract number being 51-2363. First B-47E was 51-2357, with fin numbered 12357 and first RB-47 would be 15258. For those not wanting to model the internal ATO type, numbers 2509 to 2514 give a good range of fin numbers to select. For this information we are indebted to Harold Edwards, a keen modeller and Boeing Engineer.

We might also thank those readers who were quick to spot the error in our S.6B plan and have written to tell us that sections given for AA and BB should have the lettering reversed sorry!

New Blood

Many people, including ourselves, feel that aeromodelling could do with a shot in the arm. New aeromodellers are not corning into the hobby at the rate they should, probably through lack of encouragement.

In an effort to interest youngsters we have produced this special Junior Modellers' issue and coupled with it the Golden Wings Contest complete with handsome prize list. Full details of this contest will be found on pages 353-354, and we ask the co-operation of all senior modellers, particularly clubmen. Seniors may ask "What has a junior contest to do with me?" The answer is that they can give guidance and help to the many thousands of juniors up and down the country who will be building Golden Wings gliders, and who will gain more from ten minutes discussion with an experienced modeller than we can ever tell them in print.

We have deliberately chosen an A/I glider for this contest as we believe it is the ideal size for a youngster; is inexpensive to build and thus in keeping with junior pockets, and, furthermore, is a practical proposition for operating in the relatively small flying fields generally available.

So many would-be aeromodellers are turned from this grand hobby of ours through failure with their first model. In many cases, the model or kit is unsuitable, or they become disheartened by the difficulties of building. In most cases a kindly word of advice or a little practical demonstration would add another keen enthusiast to our ranks.

We invite Juniors to let us know their problems, the "AEROMODELLER Query Service" is at their disposal, or where the difficulty cannot be dealt with by post, we will endeavour to put them in touch with their nearest club or experienced modeller.

Radio Jottings

which should, of

We regret that the article by Ted Sills on an Electronic Pulse-Width Modulator in our last issue contained an error and an omission. The error law in the formula given as

$$\begin{pmatrix} P_1 - R_1 \\ 2 \end{pmatrix}$$
course, read
$$\begin{pmatrix} \frac{P_1}{2} + R_1 \\ \frac{2}{2} \end{pmatrix}$$

The omission was the values for Fig. 1, which are as follows:— P_1 1,000 ohms. R_1 and R_1 100K $\frac{1}{2}$ W Tol \pm 20%. R_3 and R_4 47K $\frac{1}{2}$ W Tol. \pm 20%. C 0.1 μ F for pulse-rate of 4 per second. Relay: resistance immaterial, for sensitivity see text. V_1 and V_2 see text. It should also be noted that the On/Off switch may be combined with P.



July, 1955

* JUNIORS — enter our A/1 glider

TO THOSE OF YOU who have been modelling even for a short time the name Vic Smeed will already be familiar; but to the absolute newcomers to the hobby I'd like to introduce an aeromodeller off the very top shelf with a long list of successful designs to his credit, including the famous TOMBOV beginne's power model, thousands of which have been built over the last few years, and which brought in letters of congratulations from all over the world. So you can start work with every confidence on this good-looking little sailplane, hot, so to speak, from the Smeed drawing board!

Fuselage

Cut a sheet of $\frac{1}{4}$ in. balsa into three lengths 1 in. wide and a similar 1 in. wide strip from a sheet of $\frac{1}{4}$ in. balsa. Sandwich the four strips together and sand along the edges until they are square and uniform. The top and bottom of the fuselaxe and the intervening crossmembers are going to b. cut from these 1 in. wide strips, and as they have to stand edge-on, vertically, over the plan, about a dozen and a half gussets must be cut to prop them up in this position as shown in Fig. 1. These gussets can be made from a strip of $\frac{1}{2}$ in. $x \frac{1}{2}$ in. balsa, have a look at Fig. 1a.



We start by covering the plan with grease-proof paper, and laying out the piece of $\frac{1}{4}$ in x 1 in. which is to be the top of the fuselage. The curve near the nose is rather sharp, so bend it in before starting to build, by holding the wood in the correct bent position for a few seconds in the heat of an electric fire. Another sharp bend occurs below what will be the front end of the tailplane platform. Cut and half snap it before pinning down—c.f. Fig. 2. The gussets shown here and in Fig. 1 are not, of course, cemented in place, but merely pushed up dry against the wood and held there by pins pushed through the gusset into the building board.

Cut out the moseblick from $\frac{1}{4}$ in, sheet, sand roughly to shape, and cement in place against the fusclage top, and then add all the cross-members right down the length of the fusclage, using pins to hold them vertical while the cement sets—see Fig. 3. Then cement the second length of $\frac{1}{4}$ in $\times 1$ in.—the bottom of the fusclage—up against them as shown in Fig. 4.

The first side of the fuselage should be added now while the frame work is still pinned down. Pre-cement all the top edges of the fuselage top and bottom, noseblock, and cross-members. Trace from the plan and cut out in thin cardboard a template of the area of the rear part of the fuselage sides which has to be removed, place it cardfully in the appropriate position on a piece of a in. sheet, so that the lower edge of the template is $\frac{1}{4}$ in. above the lower edge of the template, and cut out this area from the sheet. Now quickly run a line of cement once more over all the upper edges of the fuselage frame work, and firmly press the first side of the fuselage into place, using pins to hold it down while it sets. Then remove the entire unit for the plan and tim off the overlap of $\frac{1}{4}$ in. sheet all the way round.

Before adding the second side of the fuselage, remember to drill two $\frac{1}{4}$ in. holes through the first side for the wing dowels, and cement the rear dowel for the tail units firmly in place. The second side of the fuselage is then added in just the same way, and a $\frac{1}{4}$ in. hole drilled through the starboard side between the noseblock and the first upright cross-member for the later addition of weight.

Carve and sand the noseblock to shape, and sand over the entire fuselage with a fine grade of sandpaper. The details on the plan show clearly how to make and attach the 18 s.w.g. tow-hooks. The wire is first bent into a square "U" shape, and the two ends dropped into $\frac{1}{34}$ in. slots cut across a length of $\frac{1}{4}$ in. square hardwood. The ends of the wire are then bent down and back. This job is made much easier if the hardwood bearer is held in a vice while the ends of the wire are bent down; if the ipb is done neatly it will not even be necessary to bind round the unit as suggested on the plan. Mark, with eference to the plan, the exact position of the tow-



*and for over 16°s this is also a perfect mode



books on the underside of the fuselage, and then cement the $\frac{1}{4}$ in square bearer in place centrally, with an extra collar of cement round the joint to make sure.

Now for the wing dowels. You have already drilled two $\frac{1}{2}$ in .black through the port side of the fuselage, and by passing a^{+}_{\pm} in. drill (held between the finzers) square on to the fuselage, two corresponding holes may be drilled out through the starboard side. Push the dowels, coated with cement, through these holes, and add a collar of cement round the joint from the outside. Now cut out the wing platform from $\frac{1}{2}$ in. ply with the grain running across, and cement it on to the top of the fuselage between the wing dowels. Finally mark the two slots which occur at the rear of the fuselage top for the dethermaliser action and the tailplanc key, drill through the extremities of each slot ($\frac{1}{2}$ in. drill) and open up the slots with a blade between the drilled holes.

The Wing

Both wing and tailplane of GOLDEN WINGS are of what is called an even chord: *i.e.*, the leading and trailing odges are parallel. Consequently all the rbs are of the same size, which makes things much simpler. We will take the construction of the wing step by step.

1. Trace two wing ribs on to $\frac{1}{2}$ in. plywood, cut out and sand carefully to shape. Now cut out 20 rectangles of $\frac{1}{2}$ in. sheet and two of $\frac{1}{4}$ in. sheet slightly larger than the outlines of the ribs. Sandwich them with pins between the two ply templates (in two batches of eleven, unless you have some extraordinarily long pins!) and carve, sand and file them to shape. The result should be a near bundle of accurately made ribs, something like that shown at the top of Fig. 5.

2. Fig. 5 shows the next stage in the building of the wing. Notch the centre-section of the trailing edge (a hacksaw cut widened with a nail file) where the end of each rib meets it, and pin it down on to the plan. Lay out the lower mainspar of the centre-section, and fit the middle six ribs (dry) into place. Then cement them one at a time to the trailing edge and lower spar. Fig. 6 shows the end of the centre-section in detail at this stage. Note the pins used to keep the forward ends of the ribs down flat on the plan while the cement driss. Fig. 6 also shows the dihedral keepers traced and cut out of $\frac{1}{4}$ in plywood, and the end ribs of the cither-section cut into three pieces and trimmed to fit against the keepers.

 Cement the two top spars and leading edge in place across the centre-section of the wing, then add the ply dihedral keepers, and finally the dihedral joint ribs and the corner gussets—see Fig. 7.

4. Now for the two tip panels of the wing. First cement the remaining length of the lower mainspar (starboard side) against the leading edge side of the forward dihedral keeper. Check for the correct dihedral at the tip, and prop the spar up to this height with a book or small box—see Fig. 8. When the joint has set, remove the centre panel from the plan, and lower the starboard



for sport flying or club contest work



wing panel (as represented only by a single sparso far) into position flat on the plan. The centre-section will now have to be propped up. The whole process of building the centre-section is

The whole process of building the centre-section is now repeated for the starboard panel, and then the port Fig. 9 shows the final stages in the construction of the port panel, with a shot of the fuselage waiting for the addition of its second (or starboard) side thrown in for good measure. The corner anti-warp braces (if you decide to bother with braces) should be trimmed away so as to fit over the corner gussets between the trailing edge and the end $\frac{1}{2}$ in. ribs.

5. Remove the wing from the plan and round off the leading edge by holding it one section at a time flat along the edge of the work table and using a sanding block (rough grade first, then smooth) as shown in Fig. 10. Actually Fig. 10 is a shot of a taliplane similar to the one used on GOLDEN WINGS: but the method is just the same for a wing leading edge.

Tail Units

The tailplane of GOLDEN WINCS is a very simple job and follows the method of construction used in the wing. Briefly then:

1. Notch the T.E. and pin down.

2. Lay out the ribs (dry) and pin down the L.E.

3. Cement the ribs across in order.

(NOTE.—When putting the two centre ribs in place, have a small piece of scrap $\frac{1}{2}$ in. balsa sheet—dry between them to ensure clearance for the lower part of the fin which later has to be cemented there.)

Fin

Once again, a very simple job. Trace the top and bottom members from the plan on to $\frac{1}{4}$ in. sheet and pin down over the places marked for them. Then add the appropriate pieces of spar to these two. Do not cement that part of the T.E. of the fin which has to be cut away for the trin-tab.

Covering

Rub a wax candle-end on the edges of the crossmembers showing where the fuselage sides have been cut away, so as to prevent the tissue adhering to them when doped. Then cut out a piece of lightweight Modelspan slightly larger than the side, clear dope or paste round the latter's edges, and smooth the tissue down over it on both sides. Lightweight Modelspan should be used for both wing and taiplane.

Fig. 11 shows the first step in covering the wing. The underside of the centre-section has been pasted along the L.E., mainspar, and T.E., tissue applied, and the overlap trimmed off. The ends of the piece of tissue should also be pasted to the underside of the dihedral ribs (at the ends of the centre-section), but not to any of the other ribs, for when the tissue is doped a good contact will be made. Do the same with the underside of the other two panels, then cover the top, also in three sections, and trim to leave an overlap of about $\frac{1}{4}$ in. past the L.E. and T.E. which is pasted round underneath the wing. When covering the top, first paste the tissue along the forward top spar, then along the L.E. (and end ribs of the section), and finally along the T.E. Try to get the tissue smooth rather than tight, with no wrinkles. Tailplane and fin follow the same pattern. When the paste has dried, hold the wing and tailplane in the steam of a boiling kettle until the tissue goes limp; it will then dry out quite smooth.

Doping

'The original was given one coat all over of thinned

dope—clear dope to which 50 per cent, thinners had been added. The fuselage was given two coats of thinned white dope with coloured trimmings at the nose. (If necessary for tightness, the tissue covered panels on the fuselage sides can be given a second coat of clear dope before colouring.) The wing and tailplane were given a second coat of thicker clear dope to which a few drops of castor oil had been added to give plasticity. They were, of course, pinned down over grease-proof paper on the workboard while drying, although if anti-warp braces are used it is sufficient to pin down the wing centre-section. The entire wing is doped at once, *i.e.*, not one section at a time. Give the fin one coat of thinned clear dope and one of coloured.

The Fin

This unit is attached to the tailplane after the last coat of dope has dried, but first cut out the trim-tab and and replace with hinges of soft wire or thin cooper foil pushed into the balsa sheet. Carefully slice away the issue between the tops of the two centre ribs of the T.P. and below it where the tail centring key has to project. Then cement the fin into the T.P. and add a fillet of cement along the top joint.

Trimming for Glide

Now at least has arrived the great moment for assembling the model and seeing what it will do in the air. Place the wing squarely on its platform, and secure it with half a dozen or so thin rubber bands passed over the ends of the wing dowels and cross-wise over the top of the wing. Check that the tailplane key fits snugly into its slot at the rear of the fuselage, and that when the tail unit is rocked up at the rear the front part of the fin slips easily into the other slot without catching. If either slot is too tight a fit, a little work with a nail file will soon cure the trouble. Secure the tail unit by passing a small but fairly stout rubber band over one end of the fin dowel, under the fuselage, and up over the other end of the dowel. The trailing edge of the tailplane should immediately cock up at an angle of 35° or so, and it is held down by wrapping a thin, small rubber band round the hook in the T.E. of the fin and the tear dowel. See Fig. 12. Check that the tailplane is quite parallel to the wing by sighting down the fuselage from the nose; if the T.P. is resting at an angle across the fuselage a narrow strip of thin card should be comented along the lower edge of the T.P. platform in order to level it up.

The centre of gravity of the model should be below the rear spar of the wing or slightly forward of this point, so add lead shot through the sperture near the nose until there is enough weight in the weight box for the model to balance on two finger tips held against the underside of the wing near the rear spar. It is then ready for test gliding.

Test Gliding

Choose a very calm day for this, preferably with no wind at all. If there is any light breeze, the model must be directed straight into it. Holding the model by the fuselage somewhere near the towhools, push it gently forward and slightly downwards, *i.e.*, aiming the nose at a spot about thirty leet away on the ground. Too slow a launch will mean that the model will stall at once hesitate in the air, and then drop its nose. Too fast a glide means that the model will swoop upwards and stall once more. A launch at the correct flying speed should give a leng, flat, straight glide of about 50 feet. If the model insists on stalling, add a little more nose weight progressively; if it sinks too rapidly to the ground





a kite up on a line. Try to keep the nose pointing well up all the time, and don't run unless the line starts to sag. If the model continually dives over to one side, counteract this by giving the opposite turn to the trim-tab. It should be possible in a steady, light breeze to coax GOLDEN WINGS UD almost over your head. Free the model by slackening the line when enough height has been gained, and try to ensure that it is quite steady and just starting to turn in the direction indicated by the trim-tab before doing so. If you launch when the model is swooping to one side you will lose a lot of height.

The Dethermaliser

GOLDEN WINGS employs a very simple but effective type

remove some weight. When the correct amount of weight has been found, put a small piece of cellotape across the weight aperture.

The model should now be trimmed to fly in a wide circle, and a bend of 30° or so on the trim tab should be sufficient for this. If it swoops badly to the side (with or without the trimming) check the wing for warps, and if there are any, remove them by twisting the wing in the opposite direction for a couple of seconds in the heat of an electric fire.

Towing up the Model

A good tow-line can be made from about 55 yards (contest length is 164 feet) of white cotton thread wound on to a fishing reel, with a small wire ring or paper-clip tied to the end and a tuft of tissue or silk tied on the line about six inches away from the ring. Best results will be achieved with the ring slipped over the rear hook in anything but the strongest of winds—when flying is inadvisable anyway. Towing up a model is just like taking of dethermaliser—a methou of bringing the model down swiftly and safely after a predetermined length of flight. This means that there is very little chance of losing it on an "O.O.S."—or out of sight flight. Obtain some round lamp-wick of the type that has regular red marks every half-inch or so; it can be bought from any ironmonger. You will have to test how fast it burns away, but an average is just over half-inch per minute, and so the length of the flight can be governed by the length of the flight. I have that in the length of the flight control.

Fig. 13 shows a short length of fuse threaded through the strands of the rearmost rubber band and burning merrily away. When it reaches the rubber it burns through the strands, and up pops the tailplane (as in Fig. 14). This spoils the flight of the model, which sinks gently down to the ground. If it swoops badly up and down on its descent, increase the tip-up angle by cutting away a little of the lower forward projection of the fin.



Tailpiece

So there we are, all ready to win that competition! I can't very well say that I hope you all win, but I really do hope you will all have lots of fun building and flying this grand little model. So here's to many Golden Hours with GOLDEN WINGS.

One of the prototype models displays its simple stencture as it awaits cozering. Why not make "Colden Winge" your very first model glider and enjoy the thrill of flying a really successful under.



GOLDEN WINGS CONTEST

HERE IS AN opportunity for Junior Modellers to enjoy all the thrills of flying their Golden Wings glider in a national contest, and at the same time stand a chance of winning one of the many handsome prizes offered. The first prize, which includes a B.S.A. "Golden Crest" bicycle, is worth over £30, and each of the 12 finalists will, in fact, receive worthwhile prizes.

Having read the Reverend Callon's description of the "Golden Wings" glider, you should have no trouble building this simplified design which has been specially prepared by Vic Smeed, and is capable of first rate performance, even in the hands of a complete novice.

The contest is being run in two parts. The first round you fly at your local field, where you but the other submitted must be consecutive, must be made on the same day, and must be certified by a responsible adult on the official Flight Certificate. We suggest that if you are not aiready a member of the local model flying club, you go along and see the Secretary, who can not only certify your Flight Certificate, but can also give you valuable advice on the flying flyour glider.

Junior modellers who are not sure of the address of their nearest model club, need only drop us a postcard at the AEROMODELLER offices and we shall be pleased to put them in touch.

The completed Flight Certificate must be posted to arrive not later than August 19, 1955.

From the results of this first eliminating round, twelve finalists will be selected. For the purpose of the competition the country has been divided into ten regions of equal population, the highest scoring entrant from each region going forward to the final. This means that to qualify you only need to beat these entrants in your particular area, instead of people from all over the country. In addition, there will be a finalist selected from R.A.F. Boy Entrants and Aircraft Apprentices, and one from any of the Service Cadet Force and Naval Sea Cadets. All entrants will be notified as to the names of the finalists by August 26th.

The Finals will be held on September 10th, 1955, at Halton R.A.F. Camp, by kind permission of Air Commodore G. N. E. Tindal-Carill-Worsley, C.B., C.B.E. All travel and accommodation expenses for the finalists will be met by the Organisers and, in addition to the contest, there will be demonstrations by leading acromodelling experts. Finalists can thus be sure of a very interesting and informative weekend, where they can see the R.A.F. at first hand and watch aeromodelling experts in action with radio-control models, scale models, etc.

Continued overleaf



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NUMBER

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Over £100 in Prizes

every finalist receives a prize

Every junior modeller qualifying for the finals of the "Golden Wings Contest will receive a Model Aeroplanes Kit and Engine also a copy of the Rev. Callon's book, "ABC of Model Aeroplane Construction". In addition his fares to and from R.A.F. Aerodrome, Halton and accommodation will be paid.

Ist B.S.A. "Golden Crest" Sports Bicycle worth £20. Model Shop Voucher value £10. Mills "75" Model Diesel Engine worth £2 18s.

2nd Kodak "Junior II" Camera and leather case worth £10. Model Shop voucher value £7. E.D. "Bee" Model Diesel Engine worth £2 15s.

3rd Newmark "Waterguard" Watch worth £5 5s. Model Shop voucher value £5. Allbon "Merlin" Model Diesel Engine worth £2 7s. 6d.

4th Multicraft "Major" Tool Chest worth £2 5s.—£1 Kit Voucher—Allbon "Merlin" Engine.

5th £1 Kit Voucher-Mills "75" Engine.

6th £1 Kit Voucher-E.D. "Bee" Engine.

7th to 12th 10/- Kit Voucher-Model Engine worth at least £2 5s.

GOLDEN WINGS ENTRY FORM

I wisk to enter the Golden Wings Contest and agree to abide by the rules as published. Piesse send me a copy of the "Golden Wings" Plan, camplete with transfers, badge and Flight Certificate, for which I enclose Postal Order value 2/6d.

(Print Name and Address in BLOCK CAPITALS)

Name

Address

Cast out Entry Form above and post to address below n 14d. unsealed envelope

"AEROMODELLER" GOLDEN WINGS CONTEST

38 CLARENDON ROAD, WATFORD, HERTS.

Continued from previous page

This is what you have to do

- Camplete the official entry form overleaf and send with 2/6d. for your Golden Wings Plan. Besides the plan you will receive a free badge, two Golden Wings Transfers to stick on your model, and the official Flight Certificate.
- Build the Golden Wings Glider from the Reverend Callon's stage-by-stage instructions and Vic Smeed's excellent plan. If you take along the list of materials given on the plan to your local model shop, they will know exactly what you require.
- Make your contest flights according to the rules, and fill in the flight times, getting a responsible adult to sign the Flight Certificate.
- Post the Flight Certificate to arrive at the "AERO-MODELLER" Offices not later than August 19th, 1955.

Bahanaanaanaana RULES

- The contest, which will be conducted in two rounds, is open to any young person who is under sixteen (16) years of age at September the 10th, 1955 and resident in the United Kingdom.
- Entries must be made on the official entry form published in the July, 1955 "AEROMODELLER". The Flight Certificate must be certified as correct by a responsible adult.
- 3. Models must be built by the entrant from the "Golden Wings" plan.
- The minimum flying weight of the model must be 5.1 ozs.
- 5. The model must be launched by the entrant by means of a tow-line no longer than 164 feet. A pennant for timing observation of not less than 24 square inches must be attached not more than 18 inches from the towing ring.
- Duration of the flight shall be timed from the moment of release from the tow-line until the model comes into contact with the ground or disappears from view.
- 7. Any number of flights may be made, but only three may be recorded on the Entry Form, these to be consecutive flights and made on the same day.
- Entries must be received at the "AERO-MODELLER" Offices, 38 Clarendon Road, Watford, Herts. by first post Friday, August the 19th, 1955.
- Selected competitors from Round One will be invited to attend a final contest, where the prizewinners will be decided.

10. The decision of the judges is final.

A TRANSPORTED AND TRANSPORTED A

MARK OFF CENTRE-LINE AND PLAN VIEW ON BLOCK

& CUIT OUT

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Making a SOLID SCALE MODEL

FOR THE MODEL WAKER whose interest is more closely connected with full-size aircraft than those designs specifically created for flying, the "solid" scale market offers a remarkable range of kits. There are more than 130 different kits of varied quality, and over 600 accurate scale plans (in the "AEROMODELLER" Plans Service) from which the solid scale modeller can make his choice, so that whatever type of aircraft we wish to reproduce, be it 1916 Biplane fighter or modern "V" Bomber, the material is available for such a model to be made.

The model shop proprietor is the man to consult when choosing the kit or plan. Some kits are lacking in accuracy with poor plans and badly cut parts. Others give all the detail one could wish for, and provide accessories such as plastic pilots, airscrews and correct transfers for the insignia. When making your selection, ask the man behind the counter for his advice and he will put you on the right track. It really depends on what kind of a solid you wish to make-whether it will be a symbolic replica of the full-size with minimum of fussy detail, or one with retractable undercarriage, cockpit interior, rivet lines and control surfaces, like Sgt. McHard's trophy winning Dornier 335 in the heading photo.

MARK OFF SIDE VIEW & DATUM LINE - CUT OFF SURPLUS

For the first attempt one should choose a simple streamlined subject, a modern jet fighter like the Hunter, Sabre or Swift, and if you are building from a plan and want to use balsa as a medium, choose hard close grained material that will give a good surface. Obechi is a better material, sanga wood another, and these two timbers are used in some of the kits. Lime, bass and American whitewood are used by the professional model makers as they are more suitable to work

Asromodeller. RAFMAA and Jease Woollard CHPS Were awarded Sgt. McHard's Do.335 in head ing. Right: A Pogo built from U.S.A. Aurora plastic kit, ard onttom, Albertros and S.E.5 to 1/18th scale by Avian each side of Veron Wyvera

USE TEMPLATES AT STATIONS (FROM PLAN) WHEN SANDING

TO SHAPE





WOOD



The Gloster Javelia at left is from a Veron 1/12nd scale kit and makes an easy subject for the solid model beginner. N. A. Mitchell bomber at right is an American plastic creation by Revolt kits and has interior detail including thef crew

with when razor sharp trailing edges are required for museum models which have to stand up to many years of public exhibition without cracking or warping. For home decoration, the softer woods, balsa and obechi are sufficient for the purpose and require no more than a good modelling knife, preferably of the type which can be fitted with chisels or gouges as accessories, and sandpaper of the finest grades.

Having decided upon the subject, make a full study of the plan. If it is a kit, then building instructions will tell you,how to approach construction of the model according to the degree of pre-fabrication in the various parts. Some kits have fusclages profiled to just a shade oversize of the final shape, others give a "blank" for the fusclage which has been shaped to side and plan view. If working from a plan, then one must transfer centre lines onto a suitable block of wood, and carbon trace the outlines ready for preparing a "blank". The next stage is to make templates for the wing and fusclage sections. These can be cut from postcard, and arranged so that you are working to the right contours. Use as many of these templates as you can, especially on a type where there are changing sections, like the Folland Gnat for example.

Treat each component individually, taking edges down to a fine taper on the wings and leaving only just enough material oversize to allow for the last rub down with finest garnet paper before applying a grain filler. The first coating of filler, whether Sanding Sealer, which we thoroughly recommend, or cellulose stopper or simply a mixture of talcum powder and clear dope, will serve to raise the grain. Rub this down after it is thorough ly dry, and then go ahead with successive coats. Up to four or five applications of Sanding Sealer will guarantee a fine surface: but at the same time if the coats are too liberal, will result in heavy edges and oversize components. Thin coats are the answer, and plenty of them.

The nature of the model will dictate whether assembly of the wing to fuselage, etc., is necessary immediately after the first rub down of raised grain, or just before the final coat of filler is applied. The principal distinction is in the assembly of the wing to the fuselage and whether or not a large root fairing is needed, like that on the Spittner for example. In this case, the wing has to be fitted to the fuselage at an early stage, whereas with a Sabre, the wing can be fitted later.

Assembled with plastic wood for fillets, cockpit and air intakes hollowed, etc., give the last coats of grain filler and when dry, rub down with Durex "Wet or Dry" paper. Bought at garages, this non-clog sander is the medium by which "elbow grease" is applied to all subjects of good finish—from our solids to full-size aircraft and motor-cars. Use soapy water as a lubricant

At left, one of Veron's latest, the Gannet has spinner and props provided, and with three cockpits offers apportunity or further detail. F-91 Starfire is another American plastic, shown here to demonstrate how rivet lines can make silver model look all the more realistic







Keil Kraft Canberra kit with profiled fuselage and nacelles has novel foolproof assembly spar and template (?

when rubbing down, until at last the surface is glass smooth.

The last and final stage of our solid model making is perhaps the most enjoyable-it is of course the colouring. Three points must be remembered. Be patient, be accurate and be sparing. Nothing spoils a good model more than over-application of dope-it makes the finished article look as if it is made of paint and ruins all that care you have taken to get accurate section. Three coats thinly applied are better than one thick hasty plastering of dope straight out of the jar. Use thinners to reduce the consistancy of the dope, and make sure you have the same brand for each to be on the safe side, for some thinners can do weird and wonderful things to a jar of dope if the wrong mixture is made! In fact it is better to keep to one make of dope throughout. Apply light colours first, then the darker shades cover any overlapping.

Soon you will find yourself building up a collection of solids and the workshop becomes a resting place for a multitude of oddments that in due course find their way into future models. Old combs are broken up for wireless masts, fine wire from earphone bobbins is kept for rigging old timer biplanes and a sharpened nail becomes a favourite tool for engraving control surface lines. Solid modelling is fast becoming a large part of the aeromodelling movement, though we wish that some manufacturers would treat it less like a "poor relation" and apply a little more thought to detail refinements.

Helicopter makes a change, this Westland Sikorsky Dragonfly is a Veran kit, again providing scope for the modeller who likes to pile in the cockpit detail

of plastic parts in American kits, shown here as an kits, shown here as an example of items that go ta make an impressive madel. D.H.118 is a professionally made model by F. E. Phelps, which accounts for the finish, and Me.262 is another of Sgt. McHard's superb south







WORLD NEWS

FROM Jerael, Nafnali Kadmon brings up an interesting point he noticed on our May cover, and one which we must confess, escaped our attention. There was in fact, quite an amount of balsa in this photo of the Plycatcher over H.M.S. Eagle, for those three oval liferafts strapped to the aircraft carrier's side are actually made of balsa, as well the Israeli modellers know. For they have to rely on salvaged liferafts as a source of supply for their wood, and, incidentally the balsa seems good as ever in spite of years at, or in the sea. Nafatil also tells us that though actual participation in the World Championships is doubtful, an A/2 team has been selected from three eliminators. Older "aces" are away on National Service, so the team is probably the youngest ever in the International field—three 17-yearolds, Hermelin, Klein and Weiner, and team leader Nafatil Kadmon.

May 6th saw an early Nationals for the Danes in high wind on the runway at Odense. The Copenhagen club are still top of the country, with Svend Pederson winner of A/2 with 10:24, followed by Borge and Arne Hansen, with Hans Hansen 7th. Team from Denmark for the Championships will most probably be same as last year. A rough estimate of mileage covered retrieving leading models in the Danish contests worked out at 12 miles for the five flights in each event. Bet that makes the boys in warmer climes think a bit!

Over in Australia the Queensland Industries Fair saw some flying to the very death of models in Combat. Arthur Gorrie embedded his Demon (already less the outboard wing) into the top of Ces Lea's Flapiack and the pair made a Siamese twin landing on the Flapjack's engine and the Demon's wheels. With so much enthusiasm for Combat in other countries, its about time we had such an event in the British Nationals. Other control-line events of note have been the speed eliminators in Sweden, where they flew in a Catalina hangar on 11.37 metre lines, and in France where the new long 15,91 metre lines were employed at the Cachan circuit, south of Paris.

Olle Ericson raised a terrific effort to beat Pete Wright's winning speed of last year by 3 m.p.h. with 114.8 m.p.h. Ilis best light was actually a shade faster; but on those short lines he couldn't hold the pylon long enough. Like the other Swedish qualifiers, Olle was using a Webra Mach 1 diesel, speeds ranging down to 84 m.p.h. at fourth place.

The French boys were using glowplug ignition, Jarry-Desloges with his own design engine placing top at 95 m.p.h. and Poitevin-Bouillot second at 85 m.p.h.figures which are comparable with our own British Eliminators. The Czechs are now up to 109 m.p.h. with their State Research Centre 2.5 special engine, Sladky creating a new record at this figure, and on the long 10 thou. lines too!

Leaving control-line and down to the Southern Hemisphere where we have further news of those S. African Nationals and the fine performance of A.P.S. designs in the contests there. Seems like 26 (yes-twenty six!) American Kiwi kit designs, all with Torp 15's and two loncsome A.P.S. Swiss Misses, also

Top: Samuel Davida who looks a bit of a devil, won open rubber in the Mexican Nationala. Note the Mexican Faderation shirt. Next, Danish Aff Champ for '55 is Seend Perterson, nooled compores with Japanese Husegawa and Yanagimachi designs with Aich fuelages. Bottem, an admining pair of German youngsters are brathers of builder Heinz Graus A P S. Invader. Model has a 23 c.e. Jaguar and I c.e. Tajiun Hobby Stunt Champion of Mexico is proud Elias Chaoin with his "Smeathy" and anothe colour scheme in blue and office for the scheme in blue and office for the scheme in blue and from Arzenine Maria Dach I model from Arzenine Maria Dach I model are find ap for the Bragars Opera at right, the Uragungan delegation. Left, bottom, is the Club Acromotelliste Missiones, with four action lady memkernes, Triarte and Manetti scith nice looking models

with K & B 15's were there to fight it out in windy weather. The results show Jeff Bindon's Swiss, Miss 1st, Monty Natherbe's Kiwi 2nd and the other Swiss Miss flown by Pete Visser at 3rd. What finer advertisement could a Swiss Miss have?—two places in the first three out of 28. In glider a Nebula and Seraph were 1st and

2nd while first three places in Jetex were taken by Arrow 100's to make it an A.P.S. walkover-apart from Wakefield that is, where Visser, Rowe, Du Toit and Lewis make up the '55 team with their own designs.

Huge turn out of control-liners at the Mexican Nats impressed Phil Guilmant, as did the terrific downdraughts. Latest news is that the Mexican Government will send a team of four Power fliers to the World Champs, including Carlos de Cosio, President of the Mexican Federation and power modeller of note.

Farther south, in the Argentine, bright sun and a cloudless sky heralded the "Nacionales Argentinos" as it opened with control-line on April 2nd. A new National



record of 123 m.p.h. with a Torp 19 by Niguel Lloveras and some fine stunting by Horacio Funes with a new Argentine engine, the Columbi 35, were highlights. Power team is Stajcer, Lucas, Honda, with Torp 15's and Zito with a Super Tigre. Then on the 8th they had the Wakefield Elims, and Eliseo Scotto just beat Faby Mursep, Pons and Dgebedjian, the latter being a Uruguayan competitor. And so through two more days of this mammoth 8-day meeting and presentation of some 65 prizes evenly distributed among the large entry. It is not unreasonable to suppose that the teams we mention will be coming to the World Championships



A 62 inch Radio Control

design for 2.5 to 3.5 cc

WAVEGUIDE by Fit. Lt. F. BURTON S. A. C. WOODS

WE HAVE HAD many requests for Radio Control designs specifically created for contest purposes and penetration into wind. The enormous success of our plan for R.6.B indicates the appeal such specialized designs have among the Radio Control fraternity and in Waveguide we have another quite different approach. The prototype was built by Flt. Lt. Burton and S.A.C. Woods of the R.A.F. Station at Mafraq in Jordan, Middle East. They have closely followed the layout developed in the U.S.A. by Harold De Bolt for aerobatic work, and the result is a burly, tough design for all-weather flying and with relatively simple structure. Over to Flt. Lt. Burton and S.A.C. Woods for their description:—

"After a series of semi-scale cabin type of sports models had been built and tried under radio-control we decided to branch out and design a model that was both pleasing on the eye and capable of good wind penetration. Reading the article on Radio Control design in the 1954 "AERONORDLLER ANNUAL" we decided to base our design on "Livewire" set up. We drew up the plans in one evening, and inside a week, were already to test glide.

"Take-offs are a pleasure to watch, a run of 30-40 yards until speed is built up, then the model fairly leaps into the air going into a fast climb. Response to rudder is very snappy and we are convinced that it will fulfil all the requirements of a stunt model."

Fuselage. Build two basic frames over the plan from $1 \le q$, and $\frac{3}{16}$ sheet. When dry, remove from the board and join at tail end. Add all cross pieces, top stringer and gussets. Make false top halfformers from scrap $\frac{1}{6}$ sheet and cement either side of top stringer.

Make up nose-wheel assembly and sew to F1. Cement to fusclage. Add engine bearers. Assemble main undercart and cement in place. Add tail-skid. Cut cabin sides from 1 mm. ply and fix celluloid windows to the inside. Fix in place. Cover fuselage sides with $\frac{1}{16}$ sheet. Add all dowels, receiver hooks, etc. Complete all wiring, fix switches, etc. Sheet top of nose with $\frac{1}{16}$ sheet and add windscreen.

Full-size copies of the 1/5th scale reproduction opposite can be absained price 6/- post free from Aeromodeller Plans Service Wings. Pin lower T.E. lower spar, and lower L.E. strip over plan. Add all ribs, top spar, top T.E. and $\frac{1}{4} \times \frac{1}{2}$ L.E. strip. Cement dihedral keepers in place, wing tips, and top $\frac{1}{16}$ in. sheeting.

Tailplane. Mark rib positions on main spar, then cement all ribs in place. Place over plan and pack up front and rear to allow for the symetrical section. Add L.E. and T.E. ensuring correct alignment. Cement tip blocks in place. Sand to shape.

Fin/Rudder. Build outline over plan, remove and $\frac{1}{4} \times \frac{1}{16}$ strips for ribs. Attach rudder, dorsal fin, and cement to fuselage.

Cover fuselage and fin with heavyweight Modelspan and give 4 coats of clear dope. The wings, tailplane have light-weight Modelspan and 3 coats of clear dope.

Radio Installation of the original, was an E.C.C. 951.A receiver and E.D. Compact Escapement as shown on the plan.

Flying. The original, apart from a little positive packing on the taiplane, flew straight off the board and no side thrust or downthrust was found necessary using the Oliver Tiger 2.5 c.c. diesel which incidentally, provides ample power.

Power on/power off characteristics are very good, flying speed both under power and on the glide being quite fast. This produces a snappy response to rudder which is best limited to small movement until fully conversant with the response obtained.





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ARMCHAIR AERONAUTICS REVIEWS OF NEW BOOKS

For the Bookshelf

"The Jet Aircraft of the World", published by Macdonald & Co. at 30s., will probably go down in the annuls of aviation as one of the most outstanding books of the age. Authors William Green and Roy Cross set themselves the task of summarising fifteen years of jet aircraft progress from Heinkel He 176 through to McDonnell F-101A Voodoo and come through with flying honours. In 176 pages of photos, data, three-and four-view drawings, they trace the pattern of jet development and appear to have left no turbine blade unturned. New to our eyes are the Lockheed L-133, project of 1940 vintage, the experimental Grumman XTB3F-1, and a Sud-Ouest S.O. 4000 light bomber of novel design that flew once only. The evolution of the jet is traced in chronological order with every aircraft type drawn in line to a reasonable standard of accuracy. D.H. 110 shown is the prototype prior to latest modifications, indicating that draughtsmen N. Blackburn and 1. Huntley have presented the aircraft as introduced, and have thus wisely abstained from joining the race to keep up with changing types. We note they also include the Fairey F.D. 2-one type that has been, and still is, on the restricted list.

Main feature of this work is the collection of some 30 superb tone four-views of principal types, e.g. Vampire series, Canberra's, NATO fighters, "V" Bombers, etc. In these, presumably by Roy Cross, every effort has been made to include information of interest to the scale modeller. Camouthage and colour patterns, insignia, di-electric panels, varying contours and control surfaces are presented in tone. The pity is that although a scale is included, no two drawings are to the same scale, the common denominator being that all illustrations fill the 10-inch deep page area.

Two items are missing from this work: A list of manufacturer's addresses, and colour data for the tone drawings: but then all ardent air enthusiasts will not be lacking for this information, and so we can thoroughly recommend "Jet Aircraft" for your bookshelf. R.G.M.

Lowdown on the Luftwaffe

"The First and the Last", by Adolf Galland (Methuen 18s.), 368 pages, illustrated.

Here, at last, is the inside story of the Luftwaffe, its triumphs and disasters, as related by one of Germany's most renowned fighter pilots, the legendary Galland who was a General at 29. It tells of the early days of the "secret Luftwaffe" when Galland flew Heinkel He 51 biplanes, the Conder Legion in Spain and the Battle of Britain as seen from the cockpit of a Messerschmitt Me 109. Later chapters cover the great air battles over Germany, Galland's 105 victories brought him rapid promotion to a key command post, in intimate contact with Goering and Hitler, and it is clear from his book that he was gifted with a much greater insight into the true nature of air power than either of these men. "The First and the Last" gives final confirmation to the oft-repeated rumours that Hitler personally prevented the Messerschmitt Me 262 twin-jet fighter from being used in defence of the Reich because of his obsession with the idea of a "Blitz-bomber" which could smash Allied invasion. In the event, not a single Me 262 was over the beaches when the invasion came and Germany threw away an opportunity to utilise the technical ascendancy within her grasp.

For opposing his superiors on these matters General Galland was sacked but later given command of a jet

fighter unit, when, too late, the High Command had seen the error of their ways. Just as he predicted the Me 262 and its rocket plus cannon armoment wis an instant success operationally, but by then the war was virtually over.

Gailland'a account of the political intrigues and folites which wrecked the Luftwatte makes fasonating reading, likewise the glimpses of such famous aces as Marseille and Molders. Comments on aircraft types are liberally scattered throughout the book. Gailand appears to have had a poor opinion of the much-vaunted Ale 110 which he credits with a top speed of only 288 m.p.h.

As the first authoritative account of the war in the air from the German side, "The First and the Last" will take its place among the most important documents of aviation history. O.T.

A Tribute to Gallantry

"Cheshire V.C." by Russell Braddon (Evans Bros. 12/6d.), 217 pages, illustrated.

This immensely readable biography of one of Britain's most famous bomber pilots falls naturally into three parts. There is the story of Cheshire, the gay young undergraduate devoted to fast cars and the thrills of Hart Trainers with the University Air Squadron. Then there is the purposeful, ellicient war-time operational pilot, the man who perfected the master bomber technique in raids over Germany, who was a Group Captain at 25, and highly decorted for valour. Finally, there is the very different Cheshire of the post-war years, the well-known religious crusuler of today, the man who has created a series of homes for old and sick people in various parts of the country.

For the air enthusias, the chapters on Cheshire's war-time carteer with Bomber Command will inevitably have the strongest appeal. Orgunally with No. 102 Squadron on Whitleys, Cheshire later moved to No. 35 Squadron (the first Halfax unit), then to No. 76, another Halfax squadron, which he commanded. These early Halfakes were particularly troublesome and losses were heavy-until Cheshire arrived. He saw at once the bombers were encumbered with too much equipment. With typical unorthodoxy he removed the kidney exhausts, part of the front turret, the mid-upper turret and most of the armourplate. Despite the wrath of authority losses promptly fell—and the Halfax was set on the path to its later success.

Grounded in 1943 due to ill-health, Cheshire was promoted Group Captain and sent to command R.A.F. Marston Moor, a bomber training station. Bating this desk job, he voluntarily dropped a rank to take up operational dying once more and was given No. 617 Squadron (Lancesters) the famous "Dam-Busters". It was with this squadron that Cheshire did such brilliant work as a target-marker, flying first a Lancaster, then a Mosquito and lastly a single-seat Mustang fighter.

"So it was that, with hundreds of raids behind him, this most experienced and resourceful of all bomber pilots was chosen to act as British observer in the American Superfortress which dropped an atomic bombon Nagesski, No doubt this shattering experience had a great influence in determining the course of Cheshire's post-war activities.

Russell firaddon has written a great book about a great man. It is a book which, though rich on aviation interest, can also be commended for the insight it gives into one of the most unusual personalities of our turne. O.T. July, 1955

AEROPLANES IN OUTLINE

NUMBER 35

By J. R. ENOCH



The S.N.A.S.O. Vautour

THE S.O. 4050 VAUTOUR, was designed to a French Air Staff requirement for a twin engined combat aircraft which could be quickly, easily and economically produced, being capable of fulfilling a variety of roles at high speed, with good manoeuvrability at all altitudes.

Under the direction of M. Parot, design work was started in July 1951, the basic aircraft being evolved so that by using 90% of the same parts, four different versions could be made. That the exacting demands of the specification were admirably met is readily apparent.

Construction of the prototypes was begun, and only fourteen months after design work had started, the first of these, the 4050-01, was complete. This machine, the "N" version, was the two-seat all-weather fighter powered by two S.N.E.C.M.A. Atar 1018/4,850 lb. thrust turbo-jets. First flown on 16th October, 1952, the aircraft had tandem seats for the pilot and radar-operator, with extensive powerful radar equipment in the nose. Fixed forward firing 30 mm. or 37 mm. cannon could be fitted, with the main armament of rockets or guided missiles contained in a retractable fuselage bay.

The second prototype, 4050-02, appeared as a single seat close support fighter-homber, and first flew on 16th December, 1933, powered by Atar 101C turbo-jets of 6,160 lb. static thrust each. Third of the prototypes the 4050-03, homber variant with 6,800 lb. thrust Armstrong Siddeley Sapphire Sa.6 engines, made its first flight on 15th October, 1954. The -03 has a glazed nose of slightly increased length to accommodate the bombardier in place of the fixed forward guns. On the 17th March, 1955, a fourth Vautour, 4050-04, first of the pre-production batch, was flown. This aircraft, a bomber version, with Rolls Royce Avon RA.14 9,500 lb. thrust power units, was delivered to the French Air Force on the 25th March, 1955 for acceptance trials. Of all-metal construction, the Vautour embodies many novel and new constructional features. The fuselage is built up on four main longerons with formers but has no intermediate stringers. Crew compartments are fully pressurised with provision for anti-G suits, and ejector seats of S.N.C.A.S.O. design are fitted. Comprehensive radio and navigation equipment is installed, and depending on the version, the nose is fitted with a guided missile control device, or an automatic, search and lock-on interceptor fire-control system. All radar and radio aerials are buried in the structure. Very large fuel tanks occupy the upper half of the fuselage centre section, supplemented by single wing tanks inboard of the engines. The cockpit, fuel tanks, and engine nacelles are armour protected.

The wings and tail-unit consist of panels with a thick stressed skin bonded to the stringers, resulting in a light, rigid extremely high strength structure with an excellent surface finish. Control surfaces are fitted with irreversable servo controls with built in "feel". Large area double-slotted flaps and an "all-flying" tailplane are employed. The adoption of under-wing engine nacelles facilitates interchange of power plants, and permits an unbroken wing structure. The engine nacelles which have high efficiency air intakes, house the outrigger undercarriage units, and have strengthened lower panels to safeguard the airframe in the event of crashlandings—a factor that has in fact been already proved in practise!

Provision has been made for the fitting of afterburning and jet deviation equipment, and the structure is so engineered that the most powerful jet engines now under development can be installed.

The performance of the Vautour is remarkable. Attaining Mach 1-0 in a shallow dive, it has a very high rate of climb and affords exceptional manoeuvrability at all altitudes.

One of the fastest bombers in the World, the Fastour is a striking aeroplane of very clean appearance. 002 is the single seat fighter-bomber prototype, with French Atar turbojets and is left with natural alloy jinish highly polished and lattering in black. Photo's and data are acknowledged to SNCASO





1/2ND SCALE "L" TYPE REPRINTS AND 1/48TH SCALE "B" TYPE DIE-LINE PRINTS OF THIS D





FLYING A GLIDER is comparatively easy, providing you can "get it up there" I but how is it that many people, who make quite a reasonable job of trimming the hand-launched glide, can come completely unstuck when it comes to towing up. Is good towing just a knack which few people have or is it a question of model design and layout?

Two types of trouble appear when towing, either the model oscillates and weaves from side to side, or else it inclines away from the direction of launch, ultimately heading for the ground unless released.

With either of these troubles, we must first make quite sure that the auto-rudder, whichever system is being used, is functioning correctly, with the rudder hard on the stop; also if it is of the "lever held by the towline wing" variety, check that the rudder tensioning bends are not too tight and causing it to move under fluctuating towline pull. The wings and tailplane must also be firmly strapped and keyed in position. (a summary of auto-rudders appeared in October, '54 issue -Ed.)

If all is apparently well we must then check the towhook position relative to the centre of gravity and this is the most important factor of all. There is only one position for straight tow, on any model, in all conditions, the best position always lying in the region 60° to 85° about the C.G. and from the fore and aft axis of the model.

If the hook is too far forward, weaving will always occur, and if it is too far aft, towing will be impossible the model turning away sharply, off the line. The answer is either to re-position the hook, or move the C.G. Distance of hook from C.G. has no effect on stability whatsoever, it is the angular location that matters.

Maybe we have our hook in a reasonable position, and the model inclines to one side, perhaps straightening up if the line pull is slackened off, only to repeat its inclination when the pull is increased again. Then we must most certainly look for warps and check the balance of the wings, neither of these however will cause the violent weaving associated with incorrect hook positioning.

If we are in the habit of trimming in calm weather, a warp can easily pass unnoticed, and be corrected for a straight tow by rudder adjustment. Increasing the speed, or towing in a wind, will then magnify the effect of this warp out of all proportion to the rudder correction.

Practical advice for all model glider fliers from a maestro of the vertical towlineJ. G. WALDRON

For instance, if the left wing-tip has wash-in (increased incidence) this wing will tend to drag and turn the model left at low speed, but with increasing speed will give excess lift and turn the model to the right. Wash-out (reduced incidence) on the right wing tip will give the same effect.

A wing, one side of which is heavier than the other, will also drag, but under all conditions. Counteracting this with rudder, for a given towing speed, means that should this speed increase, the rudder will take over; if it decreases, the heavy side of the wing takes over.

It is good practice, when trimming in calm conditions, to give a few really fast tows, in order to stimulate windy conditions, warps will then inevitably show themselves up. Also, wings, which are normally accurate, but which flex unevenly during tow, can provide an elusive source of warping trouble, the answer is to have stiff wings.

1. Correct hook position. 2. No warps. 3. Balanced wing-halves.



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Side Areas

Generally speaking, attention to the aforementioned points will ensure good towline stability under all conditions. However, some models are much more critical than others on hook positioning, and this can be rather baffling until one observes that it is the short-nosed models, with little side area forward of the wing, which are the most critical, and the long-nosed models with plenty of forward side area, which are the least critical.

For instance, Scandinavian pod and boom type models with large nose keels will tow quite well over a wide range of hook positions, $(60^\circ \text{ to } 80^\circ)$ but a short nosed design such as the "Scraph" will tow well with the hook at 75° but be very tricky with it at 60°, especially on a windy day.

It is not generally realised that a glider under tow is very similar to a kite, and it is interesting to note that if the top (that is front) side panels of a box-kite are removed, the kite will become extremely erratic, and almost impossible to tow, weaving from side to side. Similarly, increasing the tail fin area of a model which weaves on the line, will certainly not provide a cure, and can make matters worse.

Let us look at two types of model. Model A, has its side areas fairly well distributed fore and aft of the C.G. having just sufficient balance (area × moment arm) to the rear, in order to ensure directional stability. Model B, has a small nose, and a rather large fin at the rear, that is, a high proportion of its side area is aft of the C.G.

Now if both these models are struck by a side wind (such as can easily happen on a gusty day) each will pivot about its C.G. and due to "weather cock stability" turn towards the wind. A, will however, turn far more slowly than B, due to its having extra forward side area, which tends to resist the turn. While model B will always be



relatively sensitive and easily upset, turning rapidly into any side wind or turbulence. A, will tend to drift bodily with the side wind, and take up a new position in line with it and the launcherthe ideal condition; but model B has already turned into the sidewind—out of line with it and the launcher, a far from ideal set of conditions! It only needs the wind to resume its original direction for the model to be swung back very sharply, and oscillate violently before resuming its original course, this assuming no further gusts occur. Model A will however merely drift round to its original course.

In order to "de-sensitise" B, it will be necessary to either add side-area forward, or reduce the side area aft of the C.G. The fin area cannot be reduced beyond a certain point, because it is complementary to the wing dihedral, and if too small will cause "dutch rolling" on the glide. However, we can reduce the rear fuselage side area, or even fit a keel on the nose. When drawing out a new model, it is obviously going to be to our advantage to keep the tail fin on the small side, and concentrate side area well forward—witness John O'Donnell's successful glider with a complete forward fin mounted on the nose.

Model Size

It is a well-known fact that large gliders are less critical when towing than smaller models. The same general rules must still apply, but it is all a question of scale effect. For instance, a small model in a light wind is the equivalent of a large model in a much stronger wind.

Also, line thickness must be right for the model, but only to ensure getting full heights. If too heavy, it will sag, but this is not a source of towline instability.

Heading Opposite: shores Mrs. George Gosling of Leamington launching hubby's Al2 at the Milland Area Elivinators. Note the 'follow through' of the launch, and the nose keel area on the model, Rights: Autoria has a forward keel, likevise that of Mike Thomas at far right, where keel is applied to a stich fuelage



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THE MILES SPECIAL in its normal diesel version was fully described in the March ExoINE ANALYSIS. The glow plug version is essentially the same engine with a new head. In this form it is particularly favoured by power-boat enthusiasts. The engine tested was not the same as that used for the original (diese)) test but was new and therefore required an initial running-in period. Weight of both the diesel and glow versions is identical at 10 ounces.

Probably the most outstanding feature of the Miles Special "Glow" is its remarkably easy starting characteristics. In these days, a 5 c.c. racing engine is often regarded as something of a dangerous brute, compared with the baby disesles. The Miles quite failed to live up to any such notoriety and was one of the easiest starting of any size of engine we have encountered. For instance, it was hand-started on 8×4 and 7×4 propellers very readily with the minimum of bother, immediately screaming up to r.p.m. figures in excess of 15,000.

It is important to locate the fuel tank with the top roughly level with the needle valve, and preferably with the tank quite close to the engine. One partially choked turn then induces sufficient prime for starting which should fire immediately when the propeller is sharply flicked over. The engine will then be running a little rich, but very quickly settles down. If it speeds up and then dies out, opening the needle valve half a turn for starting is a cure, picking up the necessary lean mixture setting when running is consistent.

It is very easy to get the engine too "wet" as a considerable amount of liquid fuel is drawn in with a complete choked turn. If the plug is completely swamped, then the engine will not start. All that is necessary then is to leave the plug to 'cook" and as soon as it can be heard "sizzling" strongly (exhaust uncovered by the piston), then is should be in a condition to start flicking.

A nitro-methane fuel is definitely necessary for consistent operation. Using a plain methanolcastor fuel the engine just will not run with the glow plug disconnected, nor is it as easy to start. From rough checks, a proportion of at least 10 per cent. nitro-methane seems necessary for con-





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sistent running with the plug disconnected. The majority of the running was done with Mercury No. 7 fuel (20 per cent. nitromethane), which gave complete satisfaction in this respect. The plug could be disconnected immediately the engine had started to run without fear of dying out-provided the needle valve was in approximately the correct position.

The Miles 5 c.c. "Glow" gobbles up fuel at a tremendous rate and is certainly no economic motor in this respect. Hence it is somewhat more expensive to operate than its diesel counterpart which is quite happy running on undoped fuels. But its operating characteristics are somewhat more flexible and its performance pleasingly consistent throughout a wide speed range.

Our initial impression, in fact, was that the



What would YOU do in a case like this? Think a moment, then twist the page for one solution to the problem which is printed below:

75 m.p.h?-it felt like 175 !



che euvelook power to dave frem any taket that operation of the carly a bary of control-three common in the carly alwy of control-three pyring—unstreamilined aturns jobs proving as fast in timed circuits as "speed" models. were shown to the graphytical matrix and the properties of the pr THE ANSWFR, ... Is was matter of "design", or "design of realistic or "design", normal design, but design design, but design of realister-mot overall design, but design design, but design design but a keen built on the light state, particularly as the desc built on the light state, particularly as the desc built in the motor. The region of the vecto also tuning slightly unbianced props, or were also tuning slightly unbianced props, or

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ata confirmed just neopposite. Torque	10 × 8 (1 9 × 8 (1 9 × 9 (1 9 × 6 (5 8 × 6 (5
wer particularly	

Propeller dia. × pitch	r.p.m
10 × 8 (Truflex) 9 × 8 (Truflex)	8,000 9,700
9 X 9 (Trunex) 9 X 6 (Stant)	11,500

at the lower speeds, confirmed by comparing propeller-r.p.m. figures for similar sizes.

It is possible, however, that this performance could be improved upon with further experimentation with fuels.

Although initial torque was appreciably lower, the gradient of the torque curve was less marked. In other words the Miles "Glow" gives of its best when operating at high speeds. The B.H.P. curve, as plotted, peaked at 13,000 r.p.m., but over a range of 11,000 to 15,000 r.p.m. there was not a great deal of difference in the power output, the peak being much flatter than in the case of the Miles diesel, with less falling off past the actual peak.

The "Glow" version would appear particularly suited to flywheel operation, as in power boats, etc., for relatively high speed operation and where its easy starting characteristics would particularly be appreciated. Design and construction follow identical lines to those of the Miles 5 c.c. Special previously described.

What's the answer?

Johnny Ball's club are mostly control-line fans. Starting with the usual small kir models they went on to develop their own designs for sturt and combat. Johnny was all for large models and although he broke up quite a few models getting there, is undoubtedly the top sturt man with his Frog "500" Without design.

powered design. What upset the his plant is done highly any share highly and the start of the highly and the highly and the highly and Nobel yin the club has been able to find the answer as to why a heavy sturt model, with bios fextra drag, should be able to put one over on the speed hoys. Even Johnny was timed Johnny's the result, Buy to prove it was no fluke they have timed Johnny's sunt model "straight and level" several times since as fast as the speed jobs. Makes you wonder if design is all that important. What's the answer?



MODELLE

your FIRST MODEL DIESEL ENGINE







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Photo's show how to study the instructions, mount rigidly, fill up with the right fuel and set the propeller for starting. Below right, how to choke and left, altering the needle setting for best performance





IT MUST be every young acromodeller's aim and ambition to have a model engine to call his own—and these days it is inevitable that his first power unit will be a diesel of 1 cc. or less. With this in mind, we intend to run through the process of purchasing and learning how to operate a small diesel. Really, we should be calling our engine "compression ignition" but the name of diesel is so widely used for these miniature two-strokes that it will now continue to be used forever.

Mention of "two-stroke" recalls the method by which our engine will work. It will fire, or explode a combustible mixture every second stroke. (Unlike a four stroke, where the firing is every 4th stroke and mechanical valves are employed to control intake and exhaust). The fuel is drawn from the tank, through the carburettor where it mixes with air and into the crankcase via a rear disc, crankshaft or piston controlled valve. The descending piston compresses the mixture in the c/case, drives it up the transfer passages and through the transfer ports into the upper cylinder. As the rising piston compresses this mixture to the order of 20 : 1 it is self ignited and combustion gives a power stroke. The piston descends rapidly, and a further charge of mixture comes up from the c/case to help scavenge the burning gasses out through the exhaust.

Now all this effort is transmitted through the crankshaft to the propellor, and according to the mixture we give the engine, and the compression ratio we can adjust, so can we vary the power and r.p.m. (revolutions per minute) of our engine. All we have ta do is to learn the right way to go about the job.

With money in hand go to the model shop and ask the owner's advice on engine selection. You have a good choice, and for your part, you ought to have some idea of the kind of model you want this engine for, not only in the immediate future: but also for next years' building programme too. The engine you buy will last for years—again providing you use the right appreach to it. Bon't listen to the first medeller you hear in the shep, he is bound to say "Oh I wouldn't buy a so-and-ao.

DORMAN July, 1955 MIXTURE FROM PREVIOUS CYCLE BURNT EXHAUST GASSES. BEING COMPRESSED MIXTURE IGNITES. PISTON RISING PISTON DESCENDING EXHAUST PORTS ON POWER STROKE NEW MIXTURE FROM ALL PORTS CLOSED CRANKCASE VIA THE TRANSFER PASSAGE. TRANSFER PASSAGE MIXTURE IN CRANK-CASE BEING COMPRESSED NEW MIXTURE AND SO BACK FROM TO 1. CARBURETTOR

OPERATION OF A TWO-STROKE DIESEL

the gudgeon pins are too weak"-for he will be a classic example of one who has used the wrong approach. Let's call him Compression Charlie-or "CC

Having made the big decision, take the engine home and read every single printed word in the instruction leaflet. Then fit yourself up with a suitable propellerperhaps an 8 x 6-for low r.p.m. running-in and purchase some ready mixed fuel. We shall not dabble with homemade mixtures here, for the beginner can do no better than to use a branded fuel with all its easy starting additives. Most engines have their own special brews, and the model shop will see that you are well equiped.

A test mount is a fine accessory you will be able to use over and over again, and if the pocket money will stretch that far, we suggest you get one and mount it on the bench with long woodscrews or bolts. A facing of tinplate, available from most ironmongers for a shilling or two, will help keep the wooden bench tidy and allow you to wipe it clean of exhaust. Now we are ready to start.

Mount the engine firmly and fit the propellor on the shaft by slipping it in position, turning the engine until the piston can be moved no further against compression, and tightening the prop nut with the propellor pointing at "twenty to two" as on a clock. Left handed people should treat this as "ten to four". Now swing the prop over in an anti-clockwise direction. The engine is dry, stiff and there is little "feel" about it. Fill the tank, open the needle valve by unscrewing it the required number of turns from fully closed, and choke the engine. This means placing the spare forefinger over the carburettor, and rotating the prop one turn. Engines with the carb: in front will indicate that fuel is entering the engine as

you observe the flow through the tubing. Should there be a conglomeration of bubbles in the pipeline, then we must choke again to get the line full of fuel. Now try another swing at the prop. Don't be afraid of it, it certainly will not fire, as all you are doing is filling the crankcase with a mixture, and creating a fine mist of fuel throughout the moving parts. This little amount of lubrication will change the engine from a lifeless object to something with the urge to "go", and as you continue to swing the prop, you'll find there is an active "plop" as compression drives the prop over.

Choke again, and repeat the swing at the prop, only this time putting a real effort into it. Start by putting your forefinger against the topmost blade, about halfway along and push the prop over compression with a smart swing of both wrist and arm. At the same time take a firm grip on the compression screw at the cylinder head, and hold this set at the position indicated in the instructions. After a few sharp flicks of the prop, there should be some reaction in the form of a mild firing stroke-or if you are extraordinarily lucky, the engine may burst into full song straightaway.

If the engine refuses to show any inclination to work. look through the exhaust ports and see if the top of the piston is at all wet with fuel. If it is, then use the compression screw as though you have your hand on the pulse of the engine, treat it as you would a human, and raise the compression by screwing in the "vernier as one maker calls the tommy bar or comp. screw. But do not be a "CC" for over-compression is dangerous, and is signified by a hydraulic lock when it is impossible to rotate the propellor. This also indicates that our choking has been too generous, the cure being to set the piston

With the front rotary ralar Allbon engines, ckech that the needle value can be altered with the engine mounted, prime with a small amount of fuel on the piston top in case of difficulty in starting and relax compression to avoid a hydraulic lock when ready to flick



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at the bottom of its stroke, and to blow hard through the exhausts to clear the excess mixture, and to release compression.

Should the piston he completely dry an inspection through the ports, then the cho-ing has not been sufficient, or the needle valve setting is not open enough. It is better to err on the rich or "open" side for first startsproviding you release the comp. screw when compression seems too great.

After a while, you get into the swing of things, and soon you are revearded with a start. Once the engine has begun to run, leave it as set for a few seconds and take stock by watching the exhaust and listening to the note. Smoky, rich exhaust is cured by screwing in the needle valve, and a staccato misfire indicates the need for more compression. Most engines start for the first time in this condition, and will not harm themselves if allowed to run rich. Should the note sound laboured, gradually dying off in r.p.m., then the engine is over-compressed to some degree, and the comp. screw must be slackened off.





Above: 3 bloden are not in easy in this case of a Freg So with their plantic aircreves, fick, from the boson and of the blade. When finished for the day, clean throughly and injust a spat of Cycle oil in pers. Left: When in the made, the field line must be invosinoi try to and. Even then, one should not try to and, the line full example. Bottom photos show enfinements of Percenced and the granning tank described in text

July, 1955

The photo's on these pages illustrate the points we mention and now we come to two refinements of interest to those already experienced in running model diesels as well as the beginners.

First is the Rev-reader, a vibrating reed device that indicates at a glance the approximate speed of the engine. Lengths of 20 s.w.g. piano wire are rivetted firm into an alloy mount by drilling No. 64 size holes and centre punching either side of each wire. We used an old Aluminium bolt head and drilled for nine reeds. By calibration with a known r.p.m. reader, the wires are clipped to length so that as the engine reaches each stage in r.p.m., so a different reed will vibrate. Final lengths in our case were—82 mm, 78 mm, 73 mm, 68 mm, 65 mm, 61 mm, 58 mm, for the scale of 6,000 to 12,000 as shown in the photo, and though not accurate to 200 r.p.m., can be used to at least tell how many thousands-per-minute our engine is revving. Second item is a long running tank made of a standard 30 e.e. t/r tank with a funnel soldered to one vent, and the other arranged to bend over and save the overflow. As shown in the photo, this is one clean way of refuelling during a half-hour continuous running-in period which the Super Merlin is receiving.



July, 1955

MODELLER

A Saucy saucer on control-lines for hours of flying fun ... and no breakages !



Ray Malmstrom's

Mercurian

THE MENTION of saucers, especially dirty ones, usually results in the keen aeromodeller taking evasive action, as a spot of washing up looms on the domestic horizon. Mentioning this little saucer, however, need give no cause for alarm for it does not need washing, need never get within even zooming distance of the sink, and is as good an excuse as any for creeping out to the nearest patch of grass and enjoying a half hour of zippy circulating. Building time?—brother relax. Two hours if your razor blades are sharp and the cement you use knows its job. Of course if you like a bit of decoration on your crockery (and who doesn't)? then the time taken before you start to part the ozone will be somewhat longer.

Construction is so simple as to make written instructions superfluous, but appended herewith



regardless of expense, are a few flying tips, and a word on the tank. By the way the original Mercurian Mite has not been flown with a Dart '5 but if any acromod mounts one of these delicious little bundles of power up front, they may find they've got a very lively customer on the end of the lines! The fuel tank is cut from the end of a TEK toothbrush container, with a piece of the container cemented over the open end, and holes drilled for the feed pipe and filler opening. Roughen all surfaces to be cemented with sandpaper. The thin aluminium tank-retaining band was cut from a flattened out old type Jetex fuse container and finally please see your model balances correctly.

MITE

Flying

Make up 15 ft. thread lines, and before launching see that your engine (whichever "point-five", you are using) is revving really well. Get a friend to hand-launch the saucer. Give it a firm push-off, but please don't hurl it. The glied cannot be described as a floating one (!) so keep your saucer fairly low when you sense the engine is going to cut. There are no prizes for any bright lad who manages to land the Mercurian Mite the right way up! Seriously, over soft grass, this little job is almost (yes I said almost!) unbreakable, and for a few hours pleasant toil you can get lots of flying fun. Happy circulations!!

This little balsa disc of fun will bowl itself along in a rough landing! Make one and teach Mum and Dad how to fly control-line

FULL-SIZE PLANS OVERLEAF







ONE OF THE most appealing full-size aircraft suitable for a flying scale model, the French experimental Air Observation Post, Max Holste MH 152 is already a popular subject with free lance model designers. George Woolls presented his diminutive rubber-driven version in our April '54 issue, and from far and wide we received photo's of power conversions-mostly with the smallest of dicsel or glowplug engines.

Colin Read based his model on that same issue, enlarging the model to 50 inches spain, and using more or less the same constructional method as with the rubber model, but appropriately strengthened to take the power of a 1-5 c.c. Allbon Javelin. The result is an attractive near-scale model (there are slight deviations) for easy transport and hours of trouble free sport Aving.

Those who have already made the A.P.S. Chrislea Super Ace will find something akin to this popular model in the MH 152 with its twin fins and large glasshouse cabin which, incidentally, is the only part of the structure likely to cause difficulty for the beginner. As the fuselage has an outward taper from bottom upwards, and the wing is supported by a parasol strut arrangement, any prospective builder of the MH 152 should really have at least the experience of one power model before tackling this design.

Start construction by cutting out two basic sides from 3/32 in, sheet and making up the lower half of F.3 with undercarriage fitted. Join the sides with F.3 and F.4, adding F.6 and pulling together at the nose with F.2, the sides curving around F.2a. A slight crack in the sides will help curvature at this point. Make up the upper halves of F.3, F.4, and whilst setting, fit F.5 and F.7. Now add the cabin frames, checking for accuracy, and also the cabin rise, and remainder of cabin roof structure. Add gussets, reinforcing strips, paper tubes and make up the engine bearers with their ply gussets.

For '75ce-l'5ec Diesels

A 50 inch MAX HOLSTE MH. 152

by Colin Read

Face F.2 with F.1, add bearers, nose block and after fitting the engine and tank, complete the nose cowl planking. Plank top and bottom of fuselage, add tailwheel, scrap rear fuselage block and celluloid cabin covering. After sanding and covering with lightweight Modelspan, coat with sanding scaler and remove the detachable engine access hatch in the nose.

Sheet tail assembly and simple wing construction need little comment other than that care be taken to align the dowel tubes in the wings with those in the fuselage. Dihedral is automatically arranged by the angle of the tubes in the wings, and assembly onto the fuselage is by means of $\frac{1}{24}$ in. dowels passing through the centre section tubes and into the wings. Flying and landing loads are taken by the struts which are inter-connected by a tight elastic band passing through the fuselage paper tube.

Dope the entire model silver, after shrinking the wing covering with clear dope, and apply registration lettering in either red or black.





FULL SIZE COPIES OF THIS 1/5th SCALE REPRODUCTION ARE AVAILABLE PRICE 68. POST FREE FROM THF AEROMODELLER PLANS SERVICE.

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Making your own
PULSE JET

by E. Brauner

INNEWMERABLE requests for further information on model jet engines have prompted us to obtain these details of a home-built unit designed by Emil Brauner of Kladno in Czechosłovakia. Readers will remember that we described Mr. Brauner's most successful model, MiG I5, in April issue, and that we reported its airspeed as 85 m.p.h. We have, therefore, a powerful jet unit and one which can be made by anyone with access to lathe and welding facilities.

First, how it works: Petrol or White Spirit (cigarette lighter fuel is induced to spray through a metering jet by a fast atfolow into the nose cone. The fuel/air mixture passes through flap valves and into the combustion chamber, where it is ignited. Immediately after combustion the burning gases pass through the only exit, the tail pipe, and the resultant reaction provides thrust. As this column of burnt air escapes, a depression occurs in the combustion chamber, and the flap valves which were closed under compression are now opened and a further supply of fuel/air drawn in. So the cycle repeats itself in a series of pulses, each one igniting itself with the heat of the tail pipe which rapidly achieves the state of red heat, as the frequency of explosions is in the region of 200-300 cycles per second.

Because of the fre risk, and the possibility of personal danger, pulse jets are neither to be advised for freeflying nor are they tolerated for such a purpose in Great Britain. They are, however, insurable under a special scheme by the S.M.A.E. for control-line flying and a class exists for Jet Speed, usually flown at the National contexts. Current record is 133.3 m.p.h.

Making the Jet

All dimensions on the drawing are in millimetres, and for the convenience of British constructors we provide a table of required equivalents. Start with part 1, a brass turning which serves as an adaptor for the compressed air or car tyre pump air supply during starting. It is brazed at 37° to part 3, the carburettor, which is another brass turning tapped to receive the pilot jet and threaded at the rear end to fit part 6. The pilot jet, part 2, has a 1 mm. orifice. It is advisable to make a set with 9 mm. and 95mm. alternative jet sizes to determine best diameter for performance. Fuel flows directly from the tank to the pilot jet, thence into the carburettor; and out at 70° - 80° through the two .8 mm. oblique holes.

The head-or cone, part 4, is a light metal turning threaded at the rear to fit the collar in the combustion chamber. Care to adhere to the aerodynamic curve, and external relieving to give a wall thickness of 2 mm., will improve performance and save weight. Note that a 3 mm. recess is needed to take part 6 at a later stage. Part 5 is a simple light alloy fairing to blend the carburettor to the valve plate, part 6, and this latter item is turned from the solid in mild steel. There are ten valve holes, each 9 mm. diameter and tapering down to the centre for maximum opening. The valve itself, part 7, is the heart of the jet, and as such is a most critical com-.15 mm. spring steel sheet was used in the ponent. original jet, while an alternative, cold drawn sheet, is easier to stamp out and will last for up to 30 starts. Mass production by means of a steel die and hard rubber



blanking plate would be one answer to the valve replacement problem. To limit the opening of the valve, part 8 is a backing plate from dural, and here again it is advisable to make alternatives with different curvature to test for optimum performance. Part 9 is merely a standard metric thread bolt to hold the valve assembly together.

Part 6 is peened in place in the head, see detail at 12, and a light alloy nose fairing, 10, riveted as a cone before being "clicked" in place between shoulders. All that remains is the tail pipe, of welded heat-resisting or stainless steel, made up in three stages to the dimensions in 11. Weld a steel collar in the combustion chamber, and thread to suit the head. Now mount the unit by means of metal collars to a storu board and prepare for first tests.

With fael in the tank, and a car pump connected to the adaptor, part 1, start pumping with alternate long and short strokes, checking that fuel is drawn through to the carburettor. This done, use the Continental method of ignition by playing a blowlamp across the jet orifice (not on the tailpipe) and providing a fuel/air mixture is passing through into the combustion chamber, a start is soon effected. There is no such thing as a 'misfire" in a pulse jet, either it is going, or it is stopped. If the jet appears to show no inclination to keep going, then one should try variations with (a) the pilot jet and (b) valve backing plate. A low tone indicates a rich mixture and a high note, or short, barking tone, a weak mixture. Hot weather calls for a larger pilot jet, extreme cold a small jet. Having made your own unit, you will soon appreciate these symptoms and their cures.

Metric dimensions and Decimal equivalents

TTHEN.	in.	mm.	in.	mm.	in.
.1	.004	8	.31496	40	1.5748
15	.006	0	.35433	43	1.69291
5	.020	10	.3937	44	1.73228
8	.0314	13	.51181	54	2,12598
	.036	14	.55118	55	2,16535
1.0	03937	15	.59055	56	2.20472
1.1	.04337	16	.62992	60	2.3622
2.0	.07874	17	.66929	64	2.51968
2.5	.0984	18	.70866	65	2.55905
3.0	11811	19	.74803	86	3.38582
3.7	12611	22	.86614	129	5.07873
40	.15748	24	.94488	134	5.27558
5.0	19685	30	1.1811	370	14 5669
6.0	.23622	32	1.25984	490	19 2913
7.0	22550	18	1 49606	11-	



โกรบเรก



WITH THE CONTEST season now in full swing, and the appearance of new season's designs, Model News this month is divided between the individual models of interest, at left, and the contest performers on the opposite page. Most of you who attended the Whitsun Nationals meeting at Waterbeach would have seen all of these models in action and have been impressed by

Pete Russell's huge B-24J Liberator control-line model which is our Model of the Month. Four E. D. 3'46

Hunter diesels consume 195 c.c.'s of fuel per flight and with seven pounds to lift, the take-off run is most realistic, being almost one whole lap of the circle Airspeed with all fowr engines going is 68 m.p.h., and with two only, 45 m.p.h. We bet this 80 inch beauty will inspire more multi-engined control-liners, for there is no doubt about it, they are a memorable sight in the air.

A complete contrast comes in the second picture, showing David Miller of Cambridge with his free-flight stunt model. Powered by an E.D. 146, it has an E.D. Clockwork timer operating a cam control on rudder and elevator. A variety of cams give different flight patterns, and for added action, small bombs with warheads in the form of percussion came can be released by fuse.

All readers will want to wish S/Ldr. Laurie Ellis all success on his return to Canada after leaving the R.A.F. Laurie is famous for his Delta's and for the occasion of the radio-control contests at R.A.F. Debden, he produced his latest and largest, a delta for radio-control with a Webra 1.5 c.c. diesel. Early flight tests show it to have the usual "all-weather" performance now to be expected of Laurie's designs, and our only regret is that we shall no longer be able to see these outstanding models in action. Our loss is certainly Canada's gain.

Last month we created no small stir by featuring P. L. Whittaker's "single-engined" power arrangement for a model Mosquito. Mr. Whittaker has for some time been a devotee of the P. E. Norman type of free-flight scale model, and as the bottom picture shows, he can make a really smart job of P. E.'s Hawker Typhoon 1B built from A.P.S. plan FSP/372. The model has been fitted with an Allbon Javelin and a radially mounted Elfin 1-8—one at a time of course—and with pendulum elevators, tears the air in shreds as it cavorts around at high speed.

Now for the contest types on the opposite page. A few days after this issue first appears on the bookstalls, Britain's top fliers will be massing at R.A.F. Odiham for the team selection trials. We wonder if we've managed to picture any of our '55 team members in some of these views of recent events. Martin Pressnell, H. J. Knight and R. Lennox topped the 2nd round Wakefield elims in their E. Anglian, London and Midland areas, whilst Dave Painter at buttom centre is a hot favourite for power from S. Midland Area. For the actual results we shall have to wait until next issue.



& CONTEST NEWS





 Gadgeteer would be an apt name for Martin Pressnell's (Belfairs) Wakefield which follows Gorham and Evens innes. Two blade free-wheeling prop also folds for streamlining. Martin was top of the E. Anglin Area Elims. 3. Head-on action about of H. J. Knight's leading model in the London Area as it rocket loops of the board and Pop and Son look aghast—maybe they were worried about the photographer!

3. Mrs. Sayer of the neety formed Anglia club in Easex displays New Willis's large area FAI poteer model at their Area Elims. A MSgt. Crone, USAFE, heaves off M. Rhodes' entry in the radio contest at Debden. Symetrical airfoil and multi controls with a reed circuit make this a mathitoms project but there at May by the be ironomy project and there at May with performed rolls at the Nationals

Is an R.6B entry by Mr. Parkingson, also at Debden which certainly showed the remarkable penetration qualities of this design but could not match the masstro's in 6, Ted Hemsley and George Honnest Redlich here, struggling in the very strong wind. As reported in Hanger Doors, they are allified to go to Essen

qualified to go to Essen 7. Are brothers John and Michael Templeman (Sidcup) with potent long range team racers, making their mark this senson. B. R. Lennos, top of the Nidlands in Templet with that of potential and the sensor of the Sid Constraints in Templet with that of the sensor to be a Super Tigre models belonging to K. Smith of Croydon. 10. Dave Painter's TO soon develops into 60° climb with all of his 5° doarnhrouts on the Oliver Tigre. In Le Bennet of Croydon gives the Wake-field an uppercut, or so it seems! Maybe those were his sentiments as he did not quality.

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ONE OF THE FEW items we need for Aeromodelling that cannot be bought readily over the counter at the model shop is a coil spring. Used for tensioning rubber motors, between the propeller and nose block or as a simple return spring for a cowling or hatch, a coil of piano wire can be a very handy item. The difficulty is that none of us really knew, until now, exactly how a coil spring can be wound. Alan Brown of Jacksdale in Notts is employed in the Wire industry, and is able to tell us to do the jeb on the workbench. First we make a "U" shaped frame from metal plate as shown in A. Size is not critical, but the dimensions given will be average. Now drill corresponding holes of various diameters at each end-these are to be bearings for wire handles of which six or so will be

needed. Screw the frame solidly to the bench, and drill holes into the handle you are to use, to take

Gadget

the gauge of wire wanted for the spring—say, 22, 24 and 26 s.w.g. It is then fairly simple to turn coiled compression or extension springs of all sizes and gauges, for the dia. of the coil can be regulated by changing the size of winding handle. Insert the end of the wire into the appropriate hole in the handle and hole the "running", or free end of the wire with a pair of pliers. As the handle is turned, so you will form a coiled spring, and Mr. Brown assures us you can do this with up to 14 s.w.g.

A balsa stripper is always a handy gadget, and this article has in the past described a number of variations made up of hardwood with a razor blade wedged in place. The one in II is all-metal and more of an engineer's job. Submitted by D. Measures of Manchester, it consists of three parts, a block, a clamp plate and an angle guide, all from mild steel for accuracy. Following the dimensions on the sketch, one will see that two 6 BA bolts are used to locate the clamp on the main block. Between these items we sandwich the segment of razor blade, and on the upper block surface, another pair of bolts, 2 BA, hold the guide. In the end of this we have two holes to get at the clamp bolts and there is of course an overlap of the guide over the block depth to run along the edge of the balsa sheet.

Nice and simple, after those two rather involved items, is \mathbb{C} a sivel connection for joining controllines onto the model lead-out wires submitted by E. Higgins of Sheffield. Where to get them? In the local multiple stores as a necklace attachment at only 4d. each!

Who hasn't got a dirty diesel? If you own one particular 1 c.c. engine, like G. D. Watson of Edinburgh, you'll be interested in \mathbb{D} which shows how he fitted his own exhaust stacks. Incidentally the engine in the sketch is not like the engine he owns-we'll leave you to guess which it is. Anyway, the method is as follows:—take two lengths of copper tube, $\frac{1}{2}$ in. internal diameter and shape to fit the exhaust ports where they come through the alloy crankcase. Fit them in place and apply "LOY" plastic metal all round. When set, olean up

with a file and you can have exhausts for as little as 3/3d. outlay.

Having trouble getting a nut onto a bolt in a difficult place? A match or length of $\frac{1}{2}$ nd sq. balsa will wedge into the nut and give a start to the thread with no difficulty says K. Brown of Acourt, Yorks, as shown in \mathbb{E} . Others recommend a length of neoprene slipped over the nut like a box spanner.

Stamping out metal parts is usually thought to be a difficult job; but a recent demonstration by "ARROMODELLER" tracer, Peter Holland showed just how easy it can be. Pete makes his tanks loak just like the professional ones by simply cutting out the shape of the tank end from a piece of compressed hardboard as in **F**. The saw cut gives clearance, and corners are rounded off on the die



part. Place a piece of slightly oversize shim tinplate or brass over the hole, position the die

above, give a hearty whack with a hammer—and you have a flanged tank end. Pete also suggested G, his means of kceping slackness out of the works in a control-line model by using two springs against the push rod on bellcrank and elevator horn. It's surprising how much more positive the control becomes when these clips are fitted.

Supposing we have made our model for an Allbon Javelin and we want to try and fly the same design with an Elfin 1.49 at a later stage. The holes for engine mounting just don't match, nor would they if we swapped an E.D. Racer for a BB Amco 3-5. The answer to this is as in figure H, by Murray Venters of Kirkcaldy MAC. Use one bolt hole as a standard for your engines, make a clamp plate to go over the engine lug and use more widely spaced holes in the bearers.

P. Reeve of Weymouth sends J, one of the simplest cowl clips yet to appear in Gadget Review. A pair of split pins, four washers and the coil spring you have made with A go to make up a clip that will hold any cowl in place, and could be made to look just like the true scale clips on Tiger Moths.

Next a piece of structure, hailing from James Horton in Baltimore, Maryland, U.S.A. and seen in **K**. Jim is an anti-warp Wakefield enthusiast who believes in keeping his wings exactly as made on the building board, and considers that most warp trouble comes from weak and flexible trailing edge. We agree, in fact many of the staff contest models have spruce for this component. For a Wakefield, especially where conventional ribbing is used, and not the geodetic type, Jim suggests the $\frac{1}{16}$ in. $\times \frac{1}{8}$ in. diagonal bracing as in the sketch. Not too much weight is added, and the rigidity is supprising, particularly when coupled with multi-spars.

Lastly, one for which we need no picture—Vic Dubery suggests a dab of cement on the end of your d/t wick will soon get the fuse alight on a blustery day, and from elsewhere we have seen, used and had suggested a wrapping of Jetze fuse around the d/t fuse end for just the same purpose. Try it—it saves many matches!



ARE

MUDELLER

TRADE NOTES

HARDLY HAD THE INK dried on our June issue when we received a smart note from Contest Kits including a foolscap leaflet on the nose weight and a two-piece wing modification for their excellent Inch Worm kit. Mr. and Mrs. King are out to please, and this is the kind of quick reaction we like to see. With those two points amply settled, the Inch Worm should satisfy even the hypercritical, and that includes ourselves. Mick King also tells us that the Dab is an A/I—and so it is.

Radio-control enthusiasts who like to make their own equipment will be brought right up to date on what can be obtained on the Govt. Surplus market by sending 1/6d. for Arthur Sallis's 64-page, fully illustrated catalogue which lists everything from a Head Set at 7/6d. to a Transmitter case at 27/6d. Address is 93 North Road, Brighton—and please say you "saw it in AEROMODELLER" when you send for your copy.

It is not very often that we have overseas trade news in this feature: but one item of interest this month is that **Henry Stouffs**, designer of Blue **Pants**, and winner of the aerobatic section of last year's World Control-line Championships, has opened a model shop in his native Brussells. Known as Henry's Hobby Centre at 6 Rue De La Fourche, we wish Henry all success with the new venture.

A cut-out with a mounting flange is a welcome addition to the Keil Kraft range at 4/8d. and will keep the power boys happy. We have also built up the K.K. solid Canberra (7/- inc. tax) from the pre-shaped parts as shown in our Making a Solid feature, page 357. With parts profiled like this, all the drudge of carving is left out of solid modelling, and yet the skill of sanding those fine last profiles is still left to the builder. We like them this way it eliminates the chance of chipping too much off in the early stages. Incidentally we must have caused a few raised eyebrows last month with two names for the Keil Kraft shoulder wing sports design for Allbon Merlin diesel. The name is now most definitely "Bantam", and is no longer to be known as the Anzac. Reason for this change is that un-



Left: the Kell Keaft ent-out valve for power models have mounting flance. Right: Control handle with winder for cord lines by BCN/Solo Release

beknown to K.K., the word Anzae is protected by Statute in New Zealand in sacred memory of those who fell at Gallipoli, and use of the word for advertising is completely banned. First attention was drawn to the Keil Kraft advertisements appearing in "AEROMONFLER", and for a time the supplies of the magazine in New Zealand were in jeopardy. Reaction was immediate and a swift round table conference at the Wickford works decided upon Bantam, a cocky name for a nice sports design.

Kit packaging is often a sore point with the model trade, and when we receive a beautifully boxed American or German kit, we tend to draw an unfavourable comparison with the British item. Taking matters in consideration, however, we do feel the British product is well presented, packed with a view to rough postal handling and boxed at a minimum cost to the eventual purchaser. Where the American kit really draws ahead is in the latest boom in plastic "solid" model kits. Boxes are brilliantly coloured with an artist's impression of the full-size aircraft in action, and the nice shiny presentation is enough to make any American draw a dollar bill off the roll and start making one of these remarkable kits.

Moulding accuracy in both the Aurora and Revell kits verges on the incredible, the photo's in our solid feature this month giving some idea of what we mean, with pilots and their ejection seats reproduced to the finest detail. While this may be doubtfully referred to as "model making", there is at least a great deal of enjoyment to be gained from assembling and painting such a kit, for one can proceed with complete confidence that the final job will look as good as a professionally made model.

For anyone lucky enough to get one of these plastic kits (they are not available in Britain) we recommend a Polystyrene cement for adhesive, the O-MY and Kleeware products being distributed by A. A. Hales Ltd., and sold through most model shops.

At left, the new style Yeoman test mount distributed by A. A. Hales provides for inverted running and radial mounting. Tank is an extra, also a Yeoman product CLUB

STRANGE HOW THINGS VARY. This year the local club rallies, etc., seem to be attract-ing bigger crowds than many S.M.A.E. events. When one compares the attendance at HIGH WYCOMBE and DARIFORD at HIGH WYCOMEE and DARTFORD with the handful who attended the S.M.A.E. meeting at Debden, it's quite a shaker. Of course, the Debden meeting was radio-control only, but after all it war an inter-national eliminator and would, one might have expected, have attracted more than

Western

Western The Area AGM, held at Swindon en May 7th resulted in a complexity new Area committee and the decision 10 run wor allies, the first at Bristol and the second later in the year at Swindon. The Swindow of the reason for this may be a number of forthcorning displays. R.T.P. has been discontinued, but is credited with almost doubling elibh membership, and resumming it in September Woughton and PT urt all topped the power with the second pace on imprompu-glithe way in second place. An imprompu-glith we way in second place, course laws all the way in second place. Course laws

sport fliers were out in force. Courses lave started to teach certain members how to write address labels and how to fix a D.T. Hmmmm

North Eastern

The latest THORNABY PATHFINDERS Inestate in almost lyrical, if you can be lyrical about bad weather. Written in the best journalese, we gather from it that the club ladies glider competition and A team race were washed out due to inclement

race were washed out due to mounteeuw weather. A new club room has been obtained by WEST HARTLEPOOL D.M.A.C., who now meet in St. James Hall, Whitby Street. Despite the alleged better weather being here, R. T. and Jeffingereikare Boundhing Sunday at Greathan Ainopen, with team racing well to the fore. A building and "any strengthing has been by L. Pleason by L. Standard St. Stand covering competition was won by E. Peasor with, of all things, an 11-year-old in second place, beating ten other entries handsomely.

Midland

The first LEICESTER M.A.C. contest The first LEICESTER M.A.C. contest day as spoiled by the weather, but a week later the final stage of the building:covering fying saw better conditions. Well out in front was F. Caham with 283 points against runner-up J. Walching \$224. A new club is SPETCHLEY SIX BLAZERS C/J. C., which, as the name "Did he light the DJT?" seems an appropriate title for this picture of some of the De Havilland (Hatfield) M.A.C. flying at Hatfield Aerodrome on Gamage Day

South Midland

August 21st at Cranfield will see this Area's rally, now growing to be an extremely popular annual event. This year refresh-ments, etc., will be available, and visitors are requested to avoid leaving litter and are requested to avoid leaving litter and refrain from souvenir collecting. A big entry is expected in R/C which will again be to A.M.A. rules; A and B racing and combat, open glider, rubber and power, class A Payload (1955 S.M.A.E. rules), and successful outlings, and it has become the practice to take along a bicycle for retrieving, which has paid off quite well. F/F interest works are hours obtained. which excellent insults are hours obtained. Which excellent Artention is being paid to the junior question in WOLVES MA.C. and building competitions, okibilitions, etc., have been painting field splitfeterory remets we being

NEWS

class A Paylead [1955 S.M.A.E. rules], and a Chuck glider event will take place. Entry in radio or C/L is 2/6d. in F/F-1/6d. entries unlimited, and each prizes plus Three is no doubt that a group like **READING** A.A.C. is excellent for scale fams, since the msociation's tours of aero dromes and so forth offer excellent opportunities for obtaining authentic information. Future fixtures include many such visits and numerous model contests, etc.

ABRO

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Southern

Southern Domestic contests in SOUTHAMPTON M.A.C. were held recently, rubber and clider being won by N. Worley and power precision by B. Fields. Members are looking forward to their visit to the N.H. Gala, which is the next big date on their calendar. V:T.O. scense to have taken a firm grip on BOURNEMOUTH M.A.S., and its ultimate development is augusted; in the national contest models V.T.O. from the front door step to be tracked, lottetd and front door step to be tracked, plotted and from door step to be tracked, plotted and computed by radar, results being conveyed direct to the S.M.A.E. by tape recorder for ratification. Model recovery service being of course by Carter Paterson one week later! A big exhibition is scheduled for the end of July by WEST HANTS A.A.

North Western

The contest record of WALLASEY M.A.C. continues good with J. Done second in Area in the power eliminators, flying one of his now numerous 1.49 models L. Hutton was not far behind, and these members are respectively 3rd and 4th in Area on their eliminators

A plea for notification of any open comos A plea for notification of any open comps. within 50 miles of Manchester comes from ASTON A.C. (114 Mottram Read, Staly-bridge). A stated time comp. was recently run, calling for five flights with a minimum of 60 seconds each; perfect weather made this really tough, since the last thing one

CONTEST CALENDAR

International Team Trials, R.A.F. Odiham. June 26th

Sorthern Heights Gala Day, R.A.F. Halton

Northern Heights Gala Day, K.A.F. Halton. July 3rd Keil Trophy Power Frog Junior Trophy Rubber/Glider DC Daily Despatch Rally, Woodford. July 10th

All-Kent Rally, Dartford Heath. Clwyd Slope-Soaring Meeting, Clwyd. Munster Championships, Cork.

Fuls 17th Enfield C/L Rally, Enfield

July 31st

Northern Gala, Croft, nr. Darlington.



An exhibition at the local town hall was an outstanding success for WEST BROM-WIGH M.A.C., and bookings have been made for several flying displays. So far this season the club has had very pleasant and successful outings, and it has become the

petition field satisfactory results are being

ecorded, best performance to date being X. Trumper's 5th place in the S.M.A.E. Jetex Contest. An unfortunate mix-up about three 4's or five 3's prejudiced entries' chances in the eliminators, although when this was straightened out for power, quite good times were returned **East Anglian**

A new style news sheet in newspaper format has appeared in CAMBRIDGE M.A.C. This is a refreshing change for the usual club sheet, and we look forward to

NORWICH M.A.C. have started Satur-NORWICH M.A.C. have started Satur-day evening beginners' classes, which are progressing extremely well. Winner of the last monthly cup was L. Brock with a very well built Bird-Dog. An A team race had competitors competing with blustery weather

as well as each other, and not a single model survived unscratched. G. Davey Snr. flew an Oliver job to first place.

It seems time that a reminder was given to fliers using R.A.F. aerodromes. The N.A. are having trouble with litter, etc. at Rufforth-incidentally, Waterbeach is also

Rufforth—incidentally, Waterbeach is also suffering from this, and no doubt several other aerodromes are similarly affected. With the nation-wide shortage of flying grounds it is both stupid and selfish to leave your lunch bags blowing around airfields;

it doesn't take much to take them back home

it deam't take much to take them bask home with you for burning. That Lanfranchi man of LEEDS and BRADFORD A.M.F.C. showed Area members the way to climb in the power eliminators; it was estimated that he con-sistently reached twice the height of all other models. Most interesting is the flutter vance E.D. 2.46 of G.M. Can Dy, which only in the first mound of the N & A.C. Hallier

In the first round of the N.A.K.O. Halifax knocked out the strong L. and B. team in

weather conditions. In C/L, 6 ft terrible weather conditions. In C/L, bit, 60-powered flying wings are appearing, and team racing and stunt work are keeping many members busy. A forthcoming display is for the Police Accident Prevention Committee—isn't it nice to be well in with

future issues

Northern

terrible

the local forcell



So YOU'RE having a club open contrai-line rally ?

wants in such a contest is lift. Eventual winner was C. Girling. SHARSTON D.M.S. have adopted the Inchworm as a club glider design, and several are in the course of construction. Latest club comp, was a sealed time effort won by junior R. Gammons with a 13 second error.

Second error. First place in combat at Congleton and 3rd at Huddersfield made a successful start for LEIGH M.A.C. Most popular model in the club is the Ambassador, with

model in the club is the Ambassador, with several flying and more on the way. Membership of BLACKBURN M.A.C. has been increased by amalgamation of the Darwen M.A.C.; further members are always welcome. A club competition on New Set welcome. May 8th was cancelled, since apparently there weren't enough boats to get the entrants to the field!

Date of the CHESTER M.F.C. C/L rally is again August 1st at the Roodee; the programme includes A and B racing. stunt and combat

The first BLACKPOOL and FYLDE M.A.S. member to place in a national contest this year is Miss Eileen Franklin, contest this year is Aliss Elleen Frankin, second in the Women's Cup, to the chaprin of the male members. A rubber/dide/ power contest with English Electric M.A.S. is being viewed with keen anticipation.

London

Trials and tribulations of MILL HILL Trials and tribulations of MILL HILL D.M.A.C. at Chobham included one gentleman falling into a bog and heating a hastv retreat wrapped in a bright green blanket (his "friends" in the club hengel he would have to change a wheel in Staines, but he was lucky), and another member got stuck in the mud with his motorbike; stuck in the mud with his motorbike; Il men and a rope wouldn't budge it, and it hud to be left for the army to remove been considerable, and the F/F power cup has been won by J. E. Lane. Contest enthusiast would be welcomed by the club—call in one Wednesday evening at $Che = \frac{1}{2} \frac$

The All Kent Kally to be run by NORTH KENT NOMADS M.C. on July 10th will include events for Wakefield, open power ratio and open glider, with the minimum of rules. The contests are for some splendid

rules. The contests arc for some splendid trophics and arc open to all modellers in Kens and S.E. London possible districts and the second splendid second second in NORTHWICK PARK M.A.C., and successes have included D. Leech and B. Hutton first and 3rd in Area A/2, and G. Uppon second in the Astral Trophy. Reipts prefiling three minutes), was won A club precision duration event (three flights totalling three minutes), was won with a two second error by D. Leech with juniors Syme and Babb second and third. Scale, sport and C.L enthusiasts are still

going strong, and models were dis-played at a fair in Wembley town hall on May 21st.

Appealing for members is HAYES Menders is HATES M.A.C., who fly on Wednesday even-ings in Cranford Park, Contest types in the club were disappointed at the news of the Nationals being cut to two days, since this two days, since this is the high point of the year for them, and they could hardly be too long. SIDCUP A.S. ve attended every C(L contest within

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The 1	255	control-	

line rally of EN-

FIELD D.M.A.C. is now confirmed; entries must be in by 12 noon, and precess-ing stops at 12.30. Brief rules are combat up to 3.5, S0 fc. lines, 10 fc. streamers, 2 fc. string, Six speed classes will be run on official line lengths (434 fc. for 1.5) team race as usual. All models must be insured.

Determination saw the HIGH WYCOMBE team race rally, May Ist, through in spite of torrential rain. More than 60 stalwart enfruere through in spice of forrential rain, source than 60 railwart entrants were almost drowned as they flew through the heats and the Cluss A final became a melec of tangled lines from which Ward of Forestera emerged winner. Class B provided a much better final with Denver of Sideup placing first, a victory he repeated again at the Dartford meeting. Combat was regrettably washed out-the soaked streamers just would not stay in one piece!

In contrast, the DARTFORD team race In Contrast, the DARTPORD team race raily, May Sth, took place in bright but blustery weather. The Wycombe boyy went to town with two of them in the "X³ final, Edmonds winning (9 : 43 over the 5 miles) with the tusual 32 m ph. high aspect ratio model. Templeman's range of 50 laps at 75 with ar E.D. Racer almost won a tortoise 75 with an E.D. Racer almost won a tortouse and hare style semi-final; but where are these 95 m.p.h. racers we hear about? "B" was a Denver win over Bourne of Godalming and Chas. Taylor flew under Godalming and Chas. Taylor flew under over and through all to win a smashing series of combat heats; in this the Moulton-Muscutt head-on blow up was worth

South Wales

Much pstching up of models is going on CAEDFF MAAC for for horizoning displays, which should give the probability to the club. CL activities have temporarily ceased due to the loss of the ground, but $F_{\rm F}$ at EU reac course is in full swing, small sport models being popular. Radio is perfixing up with two members in action with a Radio Queen and a Matador.

East Midland

The story of FORESTERS M.F.C. at High Wycombe is almost incredible. In Class A finals three of the four models pranged including both Foresters, but the crew pulled one out the mud and carried on until a second prang, when the model was abandoned as having done enough to was abandoned as having done enough to qualify for second. However, the leading Belfairs entry ran into trouble, so Foresters re-entered the fray needing 90 laps. A wrecked undercarriage entailed a prop-change at every landing, but the model

S.M.A.E. CONTEST RESULTS ACTRAL TROPHY

24th .April, 1955		217 Entries
1. C. Petty	Walsall	15:00+2:58
2. R. Bedale	Walsail	14:42
3. P. S. Kent	C.M.	14:15
4. S. Lanfranchi	Bradford	14:10
5. J. Blackmore	Grange	13:45
6. I. Harrison	Cheadle	13:38
M. Gaster	C.M.	13:38
	CTON CT	123
WE	310.N CU) <u>r</u>
241/1 April, 1955	510.4 00	122 Entries
241/1 April, 1935 1. J. O'Donnell	Whitefield	122 Entries 115:00+9:32
24 <i>th April</i> , 1935 1. J. O'Donnell 2. W. Cooper	Whitefield Whitefield	122 Entries 115:00+9:32 115:00+3:36
WE 24th April, 1935 1. J. O'Donnell 2. W. Cooper 3. A. Anderton	Whitefield Whitefield Cheadle	122 Entries 115:00+9:32 115:00+3:36 15:00+2:45
WE 24th April, 1935 1. J. O'Donnell 2. W. Cooper 3. A. Anderton H. I. Knizht	Whitefield Whitefield Cheadle N. Kent	122 Entries 115:00+9:32 115:00+3:36 15:00+2:45
WE 24th April, 1935 1. J. O'Donnell 2. W. Cooper 3. A. Anderton H. J. Knight	Whitefield Whitefield Cheadle N. Kent Nomads	122 Entries 115:00+9:32 115:00+3:36 15:00+2:45 15:00+2:45
WE 24Di April, 1935 1. J. O'Donnell 2. W. Cooper 3. A. Anderton H. J. Knight 5. I. Palmer	Whitefield Whitefield Cheadle N. Kent Nomads Croydon	122 Entries 115:00+9:32 115:00+3:36 15:00+2:45 15:00+2:45 15:00+2:45
WE 24 <i>th</i> : April, 1935 1. J. O'Donnell 2. W. Cooper 3. A. Anderton H. J. Knight 5. J. Palmer 6. R. Lennos	Whitefield Whitefield Cheadle N. Kent Nomads Croydon B'm'ham	122 Entries 125 $:00+9:32$ 115 $:00+3:36$ 15 $:00+2:45$ 15 $:00+2:45$ 15 $:00+2:42$ 15 $:00+2:42$ 14 $:52$

scraped home after the Belfairs job had hit scraped nome after the Bellar's job had hit a spectator-held umbrella. In Class B the lappage of the club's finalist dropped 85% for reasons which will never he known, since a fire wrote off this and other models on the following day.

South Western

New models are appearing rapidly in ILMINSTER D.M.A.C. who recently staged their fourth annual contest day. Rubher went to L. Jackson, power to R. Sattin and glider to R. Peppitt. Models are now being trimmed up for the club's visit to the N.H. Gala.

South Eastern

HASTINGS and EXHILL A. suffered from rain for their stunt competition on May 1st, but C. Gibbard led the half dozen entries in the results. A series of interclub comps, are to be held with EASTBOURNE M.F.C.; the club have unfortunately had to yield their flying field to a fullsize Auster. Brighton U.M.A.C. staged the Mullett

Brighton U.M.A.C. staged the Mullett open Glider Uup Contest in hadeonalitions with the result that a time of 0:36 was the state of the state of the state of the The Boxall brothers resurned top Area times in the Wakefield eliminator and A. Mussel and I. Lucza headed power results. In A.2, club members placed 2, 3, 4 and 5 in Area.

Scotland

Contest successes have again initiated the season for PRESTWICK M.A.C. with B. Harris second in the S.M.A.E. Cup, R. Sleight winning the S.A.A. Montgomery R. Sleight winning the S.A.A. Montgemery Cup, and the club team collecting the Caledonia Shield. Much feverish building is going on with Slick Slicks and Swiss Misses and "secret" metal/balaa glidera

well in evidence. The ANGUS D.A.L. had tolerable ine ANGLE U.A.L. had tolerable weather for their first fixture; the annual A/2 and power events winning times were A/2, W. D. Guild, Dundee 6:01, power, same again 5:37. Montrose occupied second and third places in each event. With no penpals and no lost models.

With no penpals and no lost models, that's all for us this month. The CLU'BMAN

NEW CLUBS

- NEW CLUBS SPETCILLEY SKY BLAZERS C.L.C. A. W. Brow-, 134 Canterbury Road, Rankswood, Worcester. SECRETARIAL CHANGES WESTERN AREA H. E. Wickham, 80 Regent Street, Swindon, Wills, A.C. B.W. Natin, 30 Union Street, Darwen, Lance.

- CAMBRIDGE M.A.C. J.N. King, 12 Whitehill Road, Cambridge EAST ANGLIAN AREA N. C. Willis, 42 Mildon, Gt. Baddow, Chelmsford, Essex.

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D. 246 pr 346 Jec	Javelin Kit for 35 or 50 3/6	Allen Pier Cury 2.5 C.C. 31 7/6	Many others Sand for fu
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rlington Hobby Chest 84/-	Hunter for Josmaster 21,-	Allen Manaury 2.5 59/6 (10/	Baint Files 30"
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