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World Championships Report Bücker Jungmeister Feature

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#### The D/C Competition

We ask your indulgence over publication of the results of our compotition anneunced in the June, 1958, issue of AEROMODELLER, but due to the large number of entries received, the final sitting of the results has taken longer than anticipated. We thank all concerned for their magnificent support, especially those who wrote such interesting letters, and hope to include the names of the winners in the nexc issue of this magazine.

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IN LAST MONTH'S number of my Balsa Story I used the words "excitingly technical use for balsawood" and I chose these words quite carefully. It is exciting because it can give a use for balsawood in such quantity that the problem will be to find enough wood. From a technical point of view it uses the special properties of balsawood to a greater extent than I have met with.

The problem is that something like 30 per cent. of the world's reserves of petroleum products is in the form of the natural gas found in every oilfield. You will all know that in America and Canada this gas is extensively piped from the oilfields, but in the big producing areas in the Middle East and Venezuela the bulk of this gas is wasted. Some of this gas is used in the refineries and some of it is used by pumping it back to lift the oil to the surface. but the great majority of it is wasted. I believe in Italy they have extensive gas fields and very little oil. This gas is not only used as a heating medium but is used in the same way as oil is used to produce a range of commercial products.

This natural gas is a complex mixture of various individual gases but the most important to consider are Butane, Propane and Methane. Of these, Butane is the easiest to handle. At ordinary temperatures it liquefies at the relatively low pressure of approximately 30 lb. per sq. in. and is the gas used in the various forms of bottled gas and in your gas lighters. Propane can be liquefied at ordinary temperatures at a pressure of about 100 lb. per sq. in. or by getting it down to a temperature of minus 40 degrees C.

Methane-or to give it its common name, "Marsh Gas"-is very widely distributed, being the basic explosive element in coal

THE

mines, does not liquefy until you get it down to a temperature of minus 173 degrees C. (minus 273 degrees F.). If you want to liquefy it under pressure you must first reduce its temperature to below minus 82.5 degrees C. and then apply some 700 lb. per sq. in. pressure, which is not a practical working process.

October, 1958

This is because a gas cannot be liquefied by pressure alone unless it is at or below its critical temperature. The critical temperature of both Butane (305.6 degrees C.) and Propane (96.8 degrees C.) are high, but for Methane the critical temperature is minus 82.5 degrees C. Methane being something like 70 per cent. of natural gas makes the problem for the whole. To hold Methane in liquid form the only practical solution is to maintain it at its "liquid" temperature (minus 273 degrees F.), otherwise the pressure required would be excessive and the weight of the container would have to be out of all proportion to the weight of gas it could hold. When the gas is liquefied it reduces in volume to about one six-hundredth of the gaseous volume and therefore in this form becomes most economic to move from place to place.

Thus, the problem is to transport a liquid at minus 273 degrees F, and keep it cold so that you do not lose a lot of the gas during transport. Liquid Oxygen and Nitrogen are transported at this temperature already, but in relatively small quantities. In this problem we have to think of tankers of liquid gas, and a tanker in a rough sea is subject to very heavy stresses. Thus any form of insulation round these large tankers must be very strong indeed, and it has been found that balsawood is the strongest insulating material at these low temperatures.

FROM

ENGLAND

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#### The World Championships

THE 1958 WORLD CHAMPIONSHIPS for F.A.I. Rubber and Power classes was not only one of the most successful events of its kind yet held, but also one of the most interesting. We make this latter point with due regard to the change in model formula that took place in 1956 and which sparked off more heated discussion and correspondence in recent years of international sporting modelling than any other subject.

But before commenting on the technical aspects of the Championships let us firstly congratulate the winners both national and individual, in particular the Hungarians for their magnificent display of organised competition flying. Team members of the calibre of Erno Frigyes, who placed top in Wakefield, were sufficiently well trained that they could surmount the difficulty of flying still-air models under blustery conditions of English wind that were completely alien to them.

Let us also pay tribute to the spirit of individualism that brings a man such as Bond Baker of Australia half way round the world to compete in a World Championship for the second time and to win an individual award.

For the Society of Model Aeronautical Engineers, organisers of the Championships we have nothing but praise. This voluntary body without the advantages of official support, but fortunately with the co-operation of the College of Aeronautics and many other business friends, made a first class job of running the two contests, carning nothing but praise from the 136 aeromodellers who competed from 23 different nations.

The Society asks us to thank the many individuals without whose help the job could never have been carried to such a successful conclusion: the processors, the timekeepers, the recovery squad and many others, some who worked behind the scenes for many months prior to the event. We gladly do this, coupling our own thanks and those of our many thousand readers who we know are truly appreciative of this worthwhile effort that did much to enhance the prestige of British aeromodelling.

Our own boys took third place in both team events, and suffered from a series of gremlin-type incidents that prevented them taking higher bonours. Both Wakefield and Power teams included many of the finest flyers in the country, but there is no doubt that nationally we need more experience in handling the new formula machines. The decision to hold only two trials this year instead of Area Eliminators plus one Trial, as in previous years came at an unfortunate time, clashing as it did with the introduction of the new formula.

It is easy to have hind sight, but there is no doubt that flying the new type models at four separate contests would have made quite a difference. However, constructive suggestions are already being made for the future, some in "Hangar Doors" in this issue, and maybe the S.M.A.E. will re-consider the present method of team selection in the light of what has occurred.

A fully illustrated report of the two meetings will be found on pages 510 to 517 of this issue and for those readers who would like a souvenir of the Championships we would mention that copies of the official programmes for both events are available from the S.M.A.E. offices at 2s. each plus postage.

On the cover . . .

THIS SUPRER PHOTO of a Jungmeister caught in the midst of acrobatics over typical Aargau scenery in Northern Switzerland was taken by Hans Burgunder. Pamed for its rate of roll and ability to out-fly many other younger designs in precision acrobatics, the Bucker Jungmeister is this month's "Famous Biplane", detailed on pages 522/525 of this issue.



#### A good idea . . . !

The following extracts from a letter received from the Northern Heights M.F.C. give the basis for a new type of contest that is essential if Championship fliers are to obtain the necessary amount of combined competition flying that is required in these days of dead keen International rivalry. Writing on behalf of his members, Malcolm Young states:

"Three of us went to the Team Trials, having flown our models and achieving performances of around 135-150 seconds. We had only flown for trimming purposes, and, while to all intents and purposes they were O.K. they were tox competition proved. When we flew at the Trials we were definitely surprised at the high standards reached by some other fliers.

"Significantly, general performance improved at the second Trial, so it seems we were not the only ones to be surprised. Talking to other fliers, we found there was a general feeling that models were insufficiently proved. Many models had been flown quite a lot, but ... and this is the important point ... NOT IN COMPETITION.

"There are some groups who feel that competition between themselves gives sufficient incentive for development, but to our minds there is no substitute for a proper contest, with everyone going all out, together with the 'needlematch' feeling that gaes with it.

## Heard at the Hangar Doors

Cadet Ian Cooke of Birmingham A.T.C. enjoying his ride in the Kelvin Hughes SAAB Sajir—see "Flight for the Winner"

"There is, we believe, a general demand for more International class competitions, with the aim of creating a generation of competition-proven International class models, and, believing self-help to be the best, the Northern Heights M.F.C. will organise a Wakefield Competition on October 26th, 1958, followed—if the demand is still alive—by another some time next March.

"Proposed venue is Chobham Common. This is regarded as a 'tough' ground, but it does bring out any inadequacies in a model in an unforgiving way, which suits the purpose of the contest. We propose an entry fee of 2s. 6d. per head, total to be distributed among the top placers, this club taking no rake-off. Contest to be run as per International schedule."

Well, there it is, and we applaud the initiative of the Northern Heights fellows in getting down to filling a sad gap in our current flying programmes. Lack of practice was clearly demonstrated at Cranfield last August, and it was clearly apparent that many Eastern European countries had "got down to it" in a much better application than the British contestants.

May we suggest that the lead given by the London club could well be followed by other centres, notably the Birmingham district, which numbers some fine Wakefield fliers in its area; also the North-Western Area could surely take care of North country interests. Furthermore, other Championship classes could be



Shori's new Canberra U Mk. 10 sports black and white fuselage stripes to signify that it is remote controlled — could this start a new radio. - controlled model decor?



Outstanding at the Model Aircraft Exhibition held in London from August 20th to 30th were (left) Michael Shepherd's bounifully finkhed 25-inch spon jelliner for Mach 2 speeds, has canard layout, underwing inches and sincher single jet pipe, finished just knower half, belie upper, and weight 25 th. Centre, Capt. C. Mikawi's perfectly demited 8.h.30 eachpile, and right, the enormous interior of Noel Barker's devanes Sedar which scales 11 pounds, is 1276, span and passered by an O.K. Twin 20 ex. His A.P.S. "Mercury H" wan the Championship Cap

catered for, and we trust that a number of interested groups will get together and stage keen contests for the improvement of the World Champ classes of model.

All enquiries regarding the October meeting at Chobham should be addressed to Roy Chesterton, 11 Canopus Way, Stanwell, Middlesex, and we anticipate a goodly entry that will give the lead to many more meetings of a similar nature.

#### A.P.S. success in U.S. Nats

AEROMODELLER Plan Service designs always meet with success in the many events incorporated in the American National Championship Contests and we were particularly gratified to receive the following news from Norman Burgdorf of Aflton, Missouri, after this year's meeting.

"Please accept my congratulations for publishing the finest model plane magazine in the world. I have been a subscriber for only two years, but have been able to increase my knowledge of models a great deal.

"I built an Aiglet, plans of which came with the December, 1956, issue. The model has been a most successful glider. I was able to win the National A-1 Glider event on July 22nd at Glenwiere Naval Air Station. I also set a new National record of 13 min. 54 sec., despite a very poor first flight. It is interesting to note that the old record was held by an Aiglet. I will build several more of these and will do my very best to improve on my 31:55 mark.

"I have built several other planes from your plans and



Frank Zoie illus, trates our British summer scindforce at Cranfield! Armed with latest lecies and envishle accessories, Frank week of the seeing up the good verk meeting. keeping up the good verk on International relationships and doubtless collecting data for his next yearbook they have all been very successful. I am very pleased to see you put out plans of models that have been tried and proved. Thanks to Martin Bridge for the fine Aiglet design. "Keeb up this wood work."

More information on the U.S. Nats will be found on pages 538/9.

#### Flight for the winner

Kelvin and Hughes Ltd., scientific instrument makers to the aircraft industry, donate a trophy annually to the winner of the A.T.C. National Acromodelling competiions, and with the trophy goes the admirable hospitality of a day out with the Company. For 1958, the outright winner of all classes was Cadet Ian Cooke of Birmingham, who was picked up by Kelvin Hughes' SAAB Safir on August 13th at Birmingham's Elmdon Airport, and flown south to Luton. There he was shown the latest Hunting Jet Provost III and visited the control tower to see the ground control equipment. Airborne again he was shown the new London-Yorkshire motorway tracing its ribbon form across Herts and Bedfordshire, and by chance he also enjoyed an aii-to-air view of the de Havilland Comet IV off on a test flight from Hatfield. Lucky Ian is 154 years old, and doubtless the envy of his fellow A.T.C. aeromodellers in Birmingham.

#### Sassenachs beaten!

In an attempt to combine ease of travel with a maintenance of interest in the United Kingdom Challenge Tropby (presented by Scottish donors back in 1951) this year's contest was held on the day preceding the Scottish Gala at R.N.A.S. Abbotsinch.

Whilst the Scots took the meeting quite seriously, very few English aeromodellers, apart from the Teeside Group, seemed interested in travelling to Scotland, and the Sassenach team was not decided until the actual day of the contest, and even so could not field a full team in rubher. Hright weather was unfortunately marred by a high wind, and flying was hertic on the short ran of the aerodrome, some models being lost in the river that bounds the down-wind side.

Glider flying was dominated by the Scottish contestants, Meechan and Sleigh being outstanding, whilst the rubber section also went

North of the Border. Power DEAR EDITOR:, went to the English team The flought occurs despite various difficulties, but again it was a Scot, Bob Parsons, who made best individual time. Versi hope

The results giving Scotland two firsts against the single win of the English contestants, the Trophy goes to its homeland for the first time ever. After years of trying the Scots are justifiably very pleased with their efforts.



## WORLD **CHAMPIONSHIPS**

Cranfield 1958

ONCE MORE the S.M.A.E. reputation for first class organisation of World Champion-ship events at Cranfield has been upheld with flying colours-but what a pity that so skilled an entry should be subjected to the full strength of a typical British Sou wester! One hundred and thirty-six competitors (whose journeys totalled many thousands of miles) returned to their countries much the wiser for their experience, both technically, in observing their contemporaries in action, and in their appreciation of our contest conditions.

Perhaps the most enlightened of all are the cight who wore the track suits for Great Britain. Whatever one might have expected completely failed to materialise. Both Wakefield and Power contests were full of contradiction and constant change-as befits so important an occasion, but when the

to introduction and containe change—as being simportain an occasion, but when the semiconduction of the semiconductive of the semi-tribution were thoroughly heaten at their own game by a strictly disciplined, super-efficient team of experts from Hungary. Obliged to adapt still-air, long-sail-moment models to a wind force gusting from 15-35 m.p.h., they did so by spending from 15-35 m.p.h., they did so by spending more time ou the field in practice than anyone else. We shall not easily forget their many reasons, of which we give but one observation. Following their practice of taking both first and reserve models out for each round, we witnessed one occasion when, after a brief wait for the moment to fy (apparently decided by staring into when, after a brief wait for the moment to fly (apparently decided by staring into wind, and sensing gusts), a model had a fractional over-run. The timekeepens had just 15 seconds in which to enter the fact by the time the reserve was airborne —and for a maximum at that! No panic classe after the first model—the decision to send off the reserve, light the d't, start the motor and handh was all accomplished as wifth. and launch was all accomplished as swiftly as you read these words.

To Hungary goes the fruits of a double team victory but to Rond Baker, paying his own way once more to enjoy a World Champs, and bringing with him a pair of models that rated among the best-finished on the field, go the highest individual honours. Whilst it may be said that many others were also robbed of individual victory by cruel strokes of lack, it is never-theless quite true that had Bond's model not honded on the highest upper de honours not landed on the highest part of a hangar in his second flight he certainly would have led the field in F.A.I. power as well as Wakefield. Anyone who can come so close to a double individual victory deserves the highest praise—though he was seen to flinch at "Fair dinkum Cobber"!

Events leading up to the vital days of August 3rd and 4th were loaded with anticipation. The Canadians arrived early in the week and were anxious to get on an airfield for test flying, but wound up on Hampstead Heath, having to be satisfied with short hops. The Danes sent models with short hops. The Danes sent models ahead by ship, only to arrive in London and eventually locate their box in Harwich at a late stage; and, of course, we could not have a Champs without that frustrating have a Champs without that frustrating experience of winkling models out of H.M. Customs, only this time it involved and New Zealand entries! Processing day, the eve of the big events,

was blustery, chilly, though occasionally quite sunny. Certainly it was no day for casual test flying: but the serious Hungarians

were out there-and the Swiss, the Finns and the Italians. It was tough going for those used to Central European calm, but almost miraculously (as though the hundreds of visitors wishes were to be answered), the last hour-and-a-half of daylight was quite reasonable. In this period the air was loaded with models. All shapes and sizes were performing moderately or brillianty— there remed to be no intermediate and there seemed to be no intermediate grading —and the division between the obvious experts and supporting team members was most noticeable. At this stage it would have been difficult to forceast a result, but in Power, Conover, Piask and Ordogh were the greatest threats to any chance of British success, and Benedek with his protege Krizma were the centre of Wakefield interest, along with Zurad from Poland. Their rate of elmb was faster and at a steeper angle than any other. Obviously they had this 50-gramme rubber business developed to a high degree. Processing had run a smooth course. After there seemed to be no intermediate grading

Processing had run a smooth course. After the International wall at the introduction of these new rules it was surprising to lind how free models approached the specification closely—the majority of Power models were an ounce or so over-weight, the heaviest load the line warms for the majority of the second line of loaded of all being Erno Frigyes of Hungary. carrying 4-4 ounces excess structure, making his toing loading 10 oz./sq. ft.! Honours for

Notable Power entries. Heading shows a sunset trimming launch by Andras Meczner of Hungary (14th), a picture which displays free-flight power most effectively, Picture (1) (opposite) characterises Power Champion Erno Frigyes with his eigarette Picture (1) (opposite) characterises Parcer Champion Erna Frigyes with bis eignette holder and fast running launch. (2) Is Polis th Champ. Wieslaw Schier with unique "banted" design, Lothar Pieck of Germany, was Bith. (1) Ireland's boyha Thompson filled 13th spot and lost the model! (5) 60 per cent, taiplane and high pyloan made Czech Billy's model bike a caricature, is East Europe Champ, teas bith. (6) Italian simunetta tied with Ken Glynn for ith place. (1) Ralf Hagel, top Swede, at 12th. (8) Lowe French filter, Fontaine, had two identical hearins, 35th. (9) Bitl Dean's model proxied by Carl Wheeley might well have won, came 11th. (10) The Wakejeld winner. Bond Baker, placed 3rd in Power. (11) In 1th place, Germany's Stabler usat 1.5 c.c. (12) Perkins with elegant highthraster. (13) Canadian Tuck gets anay, uas 10th. (14) Ordogh was 5th for Hungary. (15) Oldest model (2) hy Austria's Hormann was 7th. (16) Second placer Injek sets his auto tail trim. (17) Supreme confidence is displayed by Asam from from Japan, weas 36th. (16) Ringert there, by Canada's Parry. (19) Finland's Niemi, could have won, placed 15th





the smallest Wakefields went to Heidmuller of Germany, followed by Kennedy (N.Z.), Italy's Scardischio (note how high these placed), and Guilloteau of France, each just a fraction over the minimum area require-ment. Heaviest of the Wakes was Ossic Ment, Heaviest of the wakes was Ossie Czepa's novel bike-pump type fuselage with its motor tube inserted from front, scaling 10 ounces. Speaking of size, the largest power model was Canadian George Party's 34 ounce 750 sq. in, whopper, more than twice the size and weight of R. Stabler's

hittle 353 sq, in. models with delicate wing structure for the Webra 1.5 Record. Pine weather before sunset gave promise of a break in our tempestuous "summer" and an early triniming session was planned by most teams, particularly those proxy flying, and the Americans who still had by most teams, particularly those ploxy flying, and the Americans who still had some bugs to iron out. As the cosmopolitan parties left their comfortable rooms for 4.30 a.m. practice they witnessed the arrival of a very tired Czech contingent. Bogged down by visa troubles, the lads had been waiting for days in the Aero Club at Prague and were only able to leave as the last models were being processed in Cranfield. Exhausted though they were, the Czechs

were soon out on the field after a brief rest. and joined the last minute trimmers in the light breeze of a bright and clear morning, which gave every hope of developing into a perfect day. By 8 o'clock all the Power men were happy with their models— including the immaculate T. Asano from Japan who must have been the calmest and most confident competitor on the field.

One team was still missing. A message from Moscow apologised for the U.S.S.R. team's non-attendance due to sickness three of their team members, and thus the slim hope we had of seeing them in action was eliminated. To a man, the entry expressed sympathy for the Soviet modellers.

#### Power contest starts

Promptly at 9.30 a.m. the Power contest Promptly at 9.30 a.m. the Power context was signalled to start by the firing of a green Very light. There was no great flurry of activity, mage of the excellent shelters were still fully occupied and no single individual appeared anxious to open this World Championships. However, the field pro-cessors, stewards, timekeepers and the scorehoard were all "at the ready" for customers. Though slight at first, the breeze become may up to 15 m ch b in the first. became gusty (up to 15 m.p.h.) in the first half-hour and cloud formations appeared in the wide vista seen from the Cranfield plateau. Obviously it was not going to be a bright day, and the timekcepers were soon to be kept busy as team managers sent out their best men to take advantage of the early conditions.

Arthur Collinson flew first for Great Britain, setting a standard for climb to height that remained unmatched through the day. It seemed significant that John Bickerstaffe and Vic Jays should also give the impression of climbing higher than most, giving rise to early hopes of another

(20) Dramatic last flight attempt by (20) Dramatic tast fright attempt by Britain's Lefever appears to be too much for manager Bob Copland! Wings folded a second later. (21) Arty launch by Dane, Niemstaedl, who came 11th, just aboad of Yugoslat. Popovic. at 12th secan in pic task. Sec. 2015 is Generite Krissma fram. (22). No. (23) is favourite Krissma from (22). No. (23) is provide Krissma from Hangary putting his all into the launch, was 16th. Hungarian transverk is erident in (21) where Asor, with sheeted wing, is being readied for eventual 9th place. (25) Initian expressions as Scardicchio piles on last turns, was 4th. (26) Beauchick the matering of 50 grammes (26) Benndick the marster of 50 grammics in typical hunching stance. (27) Top praxy through good flying weas Eric Hannaele flying for New Zeulander Kannedy at 6th place. (29) Third placer Jahansson with his magnificently-finished model. (29) Champs in Action? Alan King, 34 Wake holder and Rond Haker, 530 winner, prepare for last vital flight. (30) Zurad the Pole came 2nd at last moment, has folding fuseledge. (31) Gizek had poor last flight bringing him dues to undescreed 16th. (32) Top from U.S.A. was Herb Kothe at 15th

Ken was not alone in making his single mistake in the first round—Larry Conover was also "hot"-fuelling and each time he released, the K&B went rich and slowed the timer for two over-runs and lost his the timer for two over-runs and lost his first llight. Carl Perkins, with his elegant high-thrust-line design, went off on an over-run and looped in on the second attempt, diving with a sixteenth of an inch of Ron Draper's posterior! So hang went the U.S.A. team chances, and "old regular" Emil Frest spiralled down mysterously on

Ermi Frest spiralled down mysteriously on the glide after only 1:40. Rivalling the British team for height gain, and certainly flying faster than anyone else on the field, Bond Baker's beautifullyinished design rocketted up, only to perform indescribable manoeuvres as the auto-tailset and rudder snapped into action. Away at great height on the glide, it caught and was sent into a spiral to spoil guist this otherwise certain max. Another hard luck tale could be told of Pelczarski (Poland) who had a fractional over-tun for an easy max, but, working under the East European impression that the reserve should be flown immediately for a second attempt, dashed off his second model too hurriedly for 1:48. Over-runs were profuse—we noted seven in the first round—yet the universal use of clockwork units was otherwise producing some very tight 14-8 and 15 sec, engine runs.

Now that the contest was in full swing. the varied approaches to using fast diesels (as against the very few glow engines) were most interesting. Jim Patterson (U.S.A.) let his Oliver rev on an  $8 \times 4$ , but launched cross-wind and wasted a lot of height as the model careered round in a tight bank for 1:56. Takeo Asano was using wide blades on a  $9 \times 4$  to load his Enya 15D (with blades on a 9 x 4 to load his Enya 15D (with intake filed at 45 degreer) and not a few Frog 9 x 6 nylons were on view in various re-worked conditions on the Continental models. By the end of the first round there were 28 mass, on the board, and Great Britan, Italy and the still-tired Czechs, had perfect team totals of 540 sec, apiece.

#### Round 2

Gusting faster with each hour, the wind Gusting faster with each hour, the world was now seriously affecting the calm-air trim models. Without wing warps to give roll on the climb, or auto-rudder devices to handle torque, the precision-built warp-free models were having a rough time after haunch. Assno had his model whipped round, and with the wind on its topside it just could not gain more height than for a 1:08. Yugoslav Marko Vujic actually went right in, hut repaired the ravages to score a max. on his second attempt, and then, to the horror of all British onlookers, Collinson did



exactly the same, only he switched to exercise a prop. This was in many ways the deciding round. Vladimir Hajek, the popular young Czech filer, dropped 16 seconds on what was expected to be a max.; Bond Baker landed on the hangar roof with more altitude beneath the model than needed to obtain a vital 30 seconds; Hugh Tuck of Canada dropped 18 seconds; and Bily (the Czech winner at the East European Internationals earlier this year) made only 2:25. British team hopes faded as Bickerstaffe's

model spiralled down on the glide for 1:58; but the Czechs and Italians had also lost but the Czeens and Italians had also tost their perfect totals and there were still three rounds to gol Amileare Sinonetta of Italy and Meczner of Hungary were two more to lose valuable seconds in this round, but in a World Champs even one mistake or downdraught can wreck one's chance.

There were 11 double mass, by the lunch period at 12 30 as intermittent sun brushed across the lush green Cranfield grass, and a pleasant quietness settled on the crowded contest area for 30 minutes,

#### Round 3

No sooner had the green light indicated resumption of the contest than a queue for field processing formed as managers pushed their best chances forward to get what was going in the bright weather.

But this was a bad round with the fewest maximums, a larger number of near-pranes. and some going o.o.s. under three minutes. Don Mackenzie of Canada wrote off both his own and Lothar Piesk's beautiful little his own and Lothar Piesk's benutiful little 1-5 c.c. entry in an amazing crash which actually whipped the German model out of its owners' hands. For Piesk this was a bitter blow. We rated bim one of those most likely to win. Arthur Collinson's reserve and Vic Jay's enlarged "Gastore" were unlucky to lose more and seven seconds respectively, but in such wind and without the those representations were avoid anomit to keen lift their times were good enough to keep

lift their times were good enough to keep them in the top five, just ahead of Frigges. Sole representative of France, Jean Fontaine, had a short engine run on his elegant 33-ounce model after perfect maxs. of Ireland followed suit with his loaded of Ireland followed suit with his loaded "Creep" and made exactly a minute! Only three managed to repeat their mass, Volveno Pecorari of Italy, Finland's Ossi Niemi, and Dean's practical U.S.A. design in the capable hands of Carl Wheeley, the 1954 Power Champ. Now the nattern was beginning to settle down and, with the consideration of national speculation. and observation of performance was leaning towards a Collinson or Dean victory, but, oh how wrong we were!

#### Round 4

If the 13.00 to 14.30 period was devoid of lift, the next stage until 16.00 was the

Processing anxieties as in (33), Edgar and Odette Balasse of Belgium verify the weight of their Wakefields; and in (34) Americans Cannizzo and Kothe trim the former's rubber down to 50 grammes









Auful moments caught by one cameras. (35) Rub Gordon's (Ganada) motor has just broken, splitting the fusetage, but not heyand repair. (35) End of British kapes as both blades depart the boss on John O'Donnell's formas Maxie. The reserve piled in on following attempt

#### VICTOR TATIN CUP -- INDIVIDUAL RESULTS

1. 2. 3. 4. 5. 6. 7. 8. 10.	Frigyes, E, Hajek, V. Baker, R. S. B. Stabler, R. Ordogh, L. Bily, J. Hormann, G. <b>Glynn, K.</b> Simonetta, A. Tuck, H.		Hungary Czechoslovak Australia Germany Hungary Czechoslovak Austria Great Brita Italy Canada UIS A	18 12 18 17 13 12 13 12 13 14 14 14 14 18 18 18 18	0 180 0 164 4 150 3 180 6 180 0 145 7 157 5 180 0 117 0 180	170 180 180 180 180 157 177 172 180 154 180	180 180 180 180 180 180 180 180 180 180	180 180 180 180 180 180 180 180 180	890 884 853 846 842 841 837 837 836 833	Schlasser 2.4 M.V.V.S. 56D Oliver Tiger Webra Mach I M.Y.V.S. 58D K & B 15 Oliver Tiger Webra Mach I Oliver Tiger - Oliver Tiger
12.	(proxy C. R. ) Hagel, R. E.	Whe	eley) Sweden	18	0 141	174	157	180	832	Oliver Tiger
13.	Meczoer A	•	Huggary	10	0 118	172	132	180	830	Webra Mach I
15.	Niemi, O.		Finland	18	0 180	180	180	105	825	Webra Mach 1
16	Pelczarski T		Poland	iñ	8 180	170	180	180	818	Schlasser 2.4
17.	Pecorari, V.	<u> </u>	Italy	IB	0 180	180	97	180	817	Webra Mach 1
18.	Piesk, L.		Germany	18	0 180	35	180	141	816	Taifun Hurrikan
19,	Suzuki, H.		lapan	16	4 180	121	169	180	814	Enva 150
	(proxy J. H. M	Jany	ille)							
20.	Collinson, A.		Great Brita	in 18	0 180	171	91	180	802	K & B 15
21.	Jays, V		Great Brita	in 18	0 180	173	100	162	795	Oliver Tiger
22.	Schier, W.	And .	Poland	. 17	5 127	131	180	180	793	Schlosser 2.4
23.	Friis, H. O.	1110	Sweden	16	0 139	6	180	132	792	Webra Mach
24.	Vajic, M		Yugoslavia	. 18	0 180	132	180	107	779	Aero 2.50
25.	Patterson, J. A.		U.S.A.	. 11	6 180	144	180	135	1/5	Oliver liger
27	Platina, Z.	111	Czechoslovak	a IB	0 131	180	103	140	744	M.V.Y.S. 30D
20	Companyon C	111.	Switzerland	10	0 100	140	135	139	764	Subac Tinca G30
29	Reis F		Auereia	18	0 121	94	180	iãó	755	Webra Mach
30.	Relander, J.		Finland	12	1 168	104	180	180	753	Webra Mach I
31.	Akesson, J. O.		Sweden	. 9	0 180	180	113	180	743	Oliver Tiger
32.	Woods, D.		reland	18	0 180	60	151	171	742	Oliver Tiger
33.	Cerny, R.		Czechoslovak	ia (B	0 30	180	180	167	737	M.V.V.S. 58D
34.	Raulio, H.		Finland	II	3 74	180	180	180	727	Oliver Tiger
35.	Fontaine, J.	1.1.1	France .	18	0 180	89	103	171	723	Oliver Tiger
16.	Asano, T.	114	Japán 🛼	18	0 68	171	119	180	718	Enya 150
37.	Frest, E	144	Yugoslavia	10	0 138	160	180	139	(1)	0.0 2.5
30.	Conover, L. M.	144	U.S.A.		- 180	138	100	130	673	A & D 13
37.	Scepanovic, A.		Yugoslavia		2 180	144	150	130	682	Aero 250
41	Moralli A	144	Switzerland	10	0 112	112	149	120	645	Oliver Tiger
42	Gasko M		Hundary	15	1 23	150	119	120	663	Webra Mach I
43.	Novta, V.		Yugoslavia	12	2 147	68	106	180	643	Acro 250
44,	Ginalski, K.		Poland	18	0 68	92	180	21	641	Zeiss Activist IV
45.	Beck, H		Germany	14	1 117	115	180	82	635	Taifun Blizzard
46.	Bulukin, B. W.		Norway	15	2 180	62	110	120	624	Zeiss Activist V
47.	Elder, S.	in.	Ireland	. 16	8 133	111	137	72	621	Oliver Tiger
48.	Czinczel, W.	Per la	Germany .	18	0 96	64	BO	84	604	Taifun Blizzord
49.	Christonsen, N.	C.	Denmark	. 16	4 67	93	94	180	598	Oliver Figer
51	Grappi, K.	1.1.1	Switzerland	10	0 74	180	100	160	592	Vycorg 1.3 Zuice Activity IV
55	Piazzali C	111	Poland .	10	7 73	151	180	27	568	Subar Ligra G 30
53	Fahnrich W		Austria	5	3 178	60	180	94	565	Taifun Tarnada
54.	Czena, K.	12.	Austria	R	2 74	167	80	139	542	Epya 15D
55.	Parry, G. E.		Canada	14	0 32	BO	180		532	Oliver Tiger
56.	Bickerstaffe, J.		Great Brita	in 18	0 118	180	_		478	Oliver Tiger
57.	Perkins, C. C. J.	nr.	U.S.A.	-	- 115	66	83	109	473	Oliver Tiger
58.	Schiltknecht, J	Ρ.	Switzerland	8	3 180	32	108		403	Webro Mach 1
59.	Kristensen, F. D	).	Denmark	6	6 75	47	135	75	198	Frag 149
6U.	Skard, A.	-	Norway	11	6 76	109	15	111	3//	Oliver Liger
42	Balacco C	. C	Canada	14	081 8	6.2		_	150	O S May 15
63	Verbolse A		Balaium	1	3	34		_	113	Webra 15
64	Mackenzie D R		Canada	4	1 17	_			110	Oliver Tiger
65	Karlsson G		Swadaa	í é	õ	_		_	50	Weben Mach I

#### October, 1958

#### FRANJO KLUZ TROPHY --- TEAM RESULTS

1,	Hungary	2,556	11.	Yugoslavia	2,182
2.	Czecho	2,500	12.	Austria	2,161
З.	Great Britain	2,434	13.	Switzerland	2,043
4.	Italy	2,418	14.	Canada	1,696
5.	Sweden	2,367	15.	Japan	1,532
6.	Finland	2.305	16.	Norway	1,001
7.	Germany	2,304	17.	Denmark	996
8.	U.S.A	2,303	18.	Australia	864
9.	Poland	2,252	19,	France	723
Ю.	Ireland	2,238	20.	Belgium	272

precise opposite. If one did not get a max. in this round, then there was no hope of placing in the top ten. Lift was abundant, especially during the last half-hour, and the especially during the list han-hour, and the timekeepers were recording maximum after maximum. In the British tent there was cause for concern, for John Bickerstaffe's first model was still in the corn downwind. While he waited for its return, the story While he walled for its return, the assignment of the second even more gloomy; Jays was up and down in only 100 secs.; and Collinson for even less at 1:311 Arthur used a "squeeze" bottle for refueling and relaxed his grip before disconnecting. Net result: fuel before disconnecting. Net result: fuel extracted and a 9-sec, motor run with the timer still ticking! Though Ken Glynn made a max, the final blow was yet to fall, for Bickerstaffe's reserve ploughed in to the right and though he worked fast to of the round and thus the flight was lost. Britain was not alone in misfortune, for

of the round and thus the fight was lost. Britain was not alone in misfortute, for Pecorari spoiled this succession of maxe design which did Misec. off a 3-second engine run. Carl Wheeley, Hying Dean's model, and Ossi Niemi added another max-each and now led the field with Trigges, Hajek, Haker, Stabler and Yujic following closely. In the team results, Hungary had now come well into the lead, and the excellent scoreboard, organised by 'Rushy' and family, with Malcolin Young marking up, was the centre for great study and inter-making. Everything now hinged on the fifth round, and from the way the consistently, there must have been high hopes anong those with the long-peaked A.M.A. caps.

#### Round 5

Stronger than ever, the wind influenced both the leaders out together early in the both the leaders out together early in the round. Niemi was one of the first away, but alsa he was afflicted by the short-run bogey and made only 1:45. Cahn Carl Wheeley then sent off his angular blue-and-red charge for what was surely a max; but again the gremlins were busy, for it chose to roll half-way through an otherwise perfect climb for 1:53.

This climb by 1.53. given to discuss the picture. Hajek "This climb by the picture of the picture. Hajek and Prigygs, each with models carrying several onnees more than required by loading rules, were most biely to carry off the individual trophy by heing more stable in the wind. Yet they could easily lose time as Niemi and Dean had done, leaving Baker the chance to make amends for the mager incident—and Hond sent his model off a searing 50 m.p.h. low level circuit that made many leap for shelter. To the surprise of everyone, owner included, the model then rocketed up at a fantastic rate and scored of everyone, owner included, the model them rocketed up at a fantastic rate and scored a max—sso, until the other's flew, it was an Aussie victory! Not to be outdone, the East furopeans with their team ethicinety (and longer experience of the new rules through extensive existing a long extension of adjunctory).

experience of the new rules through extensive training and a long series of eliminators), made maximums seem so easy. Apart from Vujic who was down in 1:47 and dropped 17 places, the order from third to twelfth place in the fourth round remained un-changed as all the leaders clocked up maxs, and now became first to ninth. Frigyes's max, was the signal for the first evidence, after almost 72 hours at Cranfield, that the Hungarians could be other than serious. The thirty-firey-ger-ol all-rounder, who flies everything from microfilm to jet speed,

#### October, 1958

was well and truly bumped in joyous celebration. With team mates Ordogh and Meczner at fifth and fifteenth place the white-shouldered, blue tracksuited Hungarians had worked hard for a well-deserved victory. Czechoslovakia night well have been in their place had not Cerny pranged in the second round; but then, as we have said before, it is consistency that wins in the end.

then, as we have said before, it is consistency that wins in the end. So fuished the 1958 World Power Championships, Great Britain was in a rather flukey third position, and with worse weather forecast for the following day. British hopes were already focused on the all-weather capabilities of at least two in our Wakefield team.

That evening will be remembered for many forms of celebration, sensible and otherwise; but the highlight was a universal demand to "process" Henry Nichollschief processor of the contest--and after a brief weight-saving operation, H.J.M. emerged from under to deliver his famed Derby Tipster act, and to reveal that his upper lip decor was now 50 per cent of its previous flourishing magnificence!

#### Wakefield

Monday, August 4th, dawned bright but, as forecast, the wind was rustline through the College trees, and soon an overast settled any doubts on the outcome. It was the right kind of weather for John O'Donnell's but not for these long-fuselage Continentals —or so we thought. Wind direction was still from south-west, directly along the 2,000yard runway; but the stronger force was likely to take more models into corn, and our relationships with local farmers had already been strained by unofficial recovery parties from France. This was a serious problem, for it was significant that of all the praises bestowed upon the impecable organisation, the recovery service operated by the South Midland Area was the nost appreciated by the competitors. A three-way radio-link connected base with our-field and boundary, a flect of motorcycles and cars was ready to whisk the filer downwind within seconds of launching, and the gratitude with which some entrants problem for itrong siler giving up all hope of recovery was a joy to behold. Out or provented the system from returning every model "lost", but there were very lev left behåd, more being retrieved from as falme one of the were very lev let behåd, more obeing retrieved from as the offer down who are were were very lev let behåd, more obeing retrieved from as the offer down and the system from returning every model "lost", but there were very lev let behåd, more obeing retrieved from as the obeing retrieved from as the system from returning every theorem of the obeing retrieved from as the system from being to the obeing to the system from the were were level to be the obeing retrieved from as the system from the were were level to be the obeing retrieved from as the system from the were were level to be the down of the obeing to the system from the were were level to be the down of the were were level to be the down of the were were level to be the down of the system from the system from the system from the down of the system from the system from the bestowere were wer

<sup>25</sup> Those who flew early in Wakefield were at an unfortunate disadvantage. The hangars interfered with visibility if the unwary chose to release close to the runwary, and this lost time for Rad Cizek with his XL-58, which was o.o.s. in 2:22. Marc Cheulto of France soon demonstrated that there was lift about beneath the overcast as his weird returngenrage went up fast—but when it sank equally quickly in the lee of the hangars for 1:41 he also pinpointed a trouble area.

We were not alone in noting this, for now the competitors were moving as far as the roped barriers permitted to clear the hangar turbulence—the Italians went almost outside the 'drome. Hungary's best nerformer in home and international events, Gyula Krizsma came out first, We hardly had time to note his name before he had piled a quick 333 turns on the 50 strands for numl section l.actorn rubher and released for quite the lastest rate of climb we had sece. From a prop-field at 33 secs. it had enough height to make sure of a max, and moreover, its abilitude carried it clear of the hanger area. This was the first of the maximums, and we were to see even a faster climb as Muczny displayed his 33.

enough height to make sure of a max, and moreover, its abitude carried it clear of the hangar area. This was the first of the maximums, and we were to see even a faster climb as Muczny displayed his 33seconds motor run for Czechoslovakia, John Palmer's launch could not have been more contrasting—his Ubstrand motor only just got the model out of a sad case of "flounders" and his supporters breathed heavy sight of relief as the well-seasoned incodel made a handsome 2:31. First major casualty was Guilloteau of France who Noreliti high as the str format M and in

dived in, and though quick repairs were made for subsequent rounds, be was virtually eliminated. The sad tales continued as Phil Read got Onishi's japanese model away on a good elimb only to hit turbulence and downdraught for a mere 1:23. Benedeck came out, launched and gust swept the model in a spiral dive.

Ron Draper piled on full turns for his first flight, but what happened at about 20 ft. altitude defied belief -there was a sudden crack and the prop flew off! Flabbergasted onloakers literally willed the model down—but the time was 25 sees, and that constituted an attempt. However, the prop had detached itself in some miraculous way after the rear metor peg had broken and rule 6.3.4 in the P.A.I. code was interpreted to mean that that attempt was cancelled—not the whole flight, but just that first attempt, and this was uplield after appeal to jury! Draper then made amends with a 3.01 and Geoft Lefevre produced a fine max to give Britian two among the 23 leaders at the end of the round, J. O Donnell making 2.30.

5. The boline in making 2 section are very mixed experiences. Ray Monket myed South African Peter Visser's "Wunderhar" off in a snappy 44-second climb to earn a fine max; but the Boxall brothers were finding the aluminium tube fusclage, 04-in. span Japanese model by Nonaka more than a handful. Trimmed by offsetting the wing and rotating the rear fusclage boom to give constantly at the mercy of the 20 m.p.h. guts, each hanch a major operation.

a handful. Trimmed by offsetting the wing sund rotating the rear fuselage boom to give tilt to the tailplane, both of which were constantly at the mercy of the 20 m.p.h. gusts. each launch was a major operation. For New Zealand, Eric Barnacle got the silver fuselage model by Kennedy away for a max, ably supported by good times from our leading junior flier D. Greaves for Dick Wong, and Boh Białdwin for John Malkin (with brother Ed Malkin for John Malkin (with brother Ed Malkin there in person to cheer him on). Bendek had returned a max after straightening out bis model and at the close of the round, llungary was the only team boasting a perfect 540 sees. total, with Finland, Great Britain and the U.S.A. in close pursuit.

#### Round 2

Still overcast, though patches of sunlight could be seen on the lower fields in the distance, the weather was deteriorating as the second round started, but this could not be held to blame for the rash of broken

Novelties. (37) Shigeyoshi Nonake's high aspect, carly winged Wake with light alloy tube fuselinge was more than a handful for Fred Bosall in the strong winds. Calm air performance even suitable. (38) Frenchnan Marc Cheuloi had return genes and inverted tuil assembly en his unusual "Calcoptere".

motors that appeared to affect most teams. First to suffer was Canada's Bob Gordon (ex Shefield)—then John O'Domell, Hond Baker and Ossie Czepa. Each of these had sheet or silk-evered fuselages to withstand the break and make removal easy, but for others it was more serious. Czepa's unique motor tube was a detachable unit, pushed into the rear fuselage section and providing variable nose moment if desired, two ounces overload was evident. After bis motor break, O'Donnell suffered

Serie wheeld

After bis motor brenk, O'Donnell auffered the most ignominous blow of all when both blades of his prop detached themselves on launching! Our photo shows it happening about six feet after leaving John's hands, but at the time it was thought that the prop had caught his windblown coatsleeve. Anyway it was the end of old reliable Maxie Alk, 37, and now the tubular, twin pylon fuselage model had to be used as reserve. It turned in after 8 secs, and that was the end of our strongest house. Geoff Lefevre had been gusted down for only John Palmer to uphold our laurels, with the only Briths max in this round.

U.S.A., who had used with us in the first round, also had their share of trouble. Herb Kothe stalked all the way down on his glide for 1:16 and Sal Cannizzo did likewise for 1:24—both after first round maxs! Strangely the short moment models were not performing as well as expected and to contradict all speculation, the long fuselages from Hungary were going from strength to strength, Benedek and Krizsma repeated maxs, Cizck and Dvorak scored two more for Czechosłowkia and the Italians, Scardicchio, Fea, Licen and Taberna, all

Proxies flew well for their entrants. In (39) J. H. Manville and his nephew with flikar. Nusnki's Japanese model which they flew to get a well-carned 19th place. Enys 15D, suitably cn-

suitably engraved, was presented to them after meeting by Astno who came in person and was 36th. (40) shows Ray Manks flying for South African P. Visser









Recovery service organised by S. Midland Area worked at a fast pace. In (41) we see a competitor ready to follow his model on one of 20 motorcycles. Field service most appreciated was the excellent "Rushy" searchoard in (52), with flags identifying countries, and progressive flight total added on within minutes of each flight. In (43) Malcolm Young prints up a score in foreground as crawd anxionaly follows context progress

heat 3 minutes to bring their team to a close second place. There were five double mass now, Benedek, Krissma, Dvorak, Loeen and Kennedy, and the team order was llungary 1031, Italy 1022, Czechosłovakia 974, Germany 949, and Great Britain 917, Launcheon berak was less lighthearted than on the previous day, and conversation in the tents far more serious in view of the

unexpected turn of events.

#### Round 3

At 13,45 hours the first rays of sunshine filtered across the runway and caused a rush through main control, Winds were stronger but promise of thermal aid attracted a quick flow of competitors, in several cases two from a team flying simultaneously. Cheurlot, Hom a term ting sinuraneously, circulated who was alternating his flights with the inverted-tail model and his equally adven-turous "Ephemere", started a new phase in crashes as the novel gull-shape wings of his reserve folded spectacularly.

The grass was flattening in the constant wind which gusted Draper, Visser (Monks) Ranta and Dvorak down for low times in quick succession, while the unfortunate Guilloteau of France and Swiss Meyer looped straight from launch into the runway.

tet lift was there and all three leading n in the British team collected mass men in the British team collected mass while the Italiams were losing time. Hopes were rising fast as the scoreboard showed the British total creeping up on the Hungarians, but Krizsma, Benedek and Azor were making no mistakes and held their lead with a comfortable 126 sees, margin. One could not help but admire their smooth efficiency—and envy their rapid climbs. No one would claim they achieved any greater height than any of the best models from other countries, but they out here quicker and such tarctics obviously got there quicker and such tactics obviously took liest advantage of the Cranfield geography. At the opposite end of the scale, America's Frank Newquist used only eight strands for a two-minute motor run. In California this might have meant a 120-sec. climb, but here the model depended entirely on thermal aid to carry it through the wind. He scored his only may in this FOUD4

Chasing Benedek and Krizsma for chasing beneates and Krissma for individual lead were a very mixed group, all within 40 sees, of perfect totals, the order being: Michel Permean (France), John Pahner (G.B.), Erick Neinstadt John Palmer (G.B.), Erick Neinstadt (Denmark), Rad Cizek (Czechoslovakia), Sven Tysklind (Sweden), Vincenzo Sven Tysklind (Sweden), V Scardicchio (Italy) and Bond Baker

#### Round 4

U.S. International Contest Committee-man Ed Dolby gave a clear illustration of the wind speed as his Tyrolean hat bounded down the field with Ed hotfoot after it. A number of models were overdue from recovery and reserves had to be brought into action, but most were waiting until the end of the round in a vain hope for less wind and more sun. From 14.30 until 15.15 hours the take-off area was so slack it might have been a club meeting. Then, in the last threequarters of an hour, the sun came through clear blue patches of sky and the rush was on.

Krizsma spoiled his record thoroughly, coming in under power for 35 secs.; John Palmer was caught in turbulence for only 1:13 and Permeau looped his single-blader model to nearly recover, but spiralled in at 21 sees. Such were the fortunes of the leading challengers.

Meaning charlengers, Meanwhile Benedek made another magnificent flight, though 7 sees, short of a max—so there was to be no chance of Benedek a perfect total this year, and Scardicchio scored a max to ensure his second place at this stage and boost the Italian team position. Krizsma's disappointing crash had knocked the Hungarians out of the lead and knocked the Hungarians out of the lead and Czechosłowskia toko tover with steady flying and one max by youthful Simerda. The order was now individually: Benedek 713, Scardirchio 681, Baker and Heidmuller (Germany) at 680, Zurad (Poland) 656, Simerda 652, Cizek 650, Kennedy 645, Johannsson 639 and Lefever 638. In team order, Czechosłowakia 1,882, Hungary 1,877, Italy 1,834, G.B. 1,826, Ireland 1,719, U.S.A. 1,668.

#### Round 5

Managers could hardly contain their impatience to get their men out for the last vital flight. Temperature was dropping vital flight. Temperature was dropp noticeably, the wind stronger than ever.

Scardiochio got off very early and in spite of a good climb, he caught the bad area in mid-field and was down at 2:16. This left Benedek to make 2:38 if he was to make absolutely certain of not being beaten. For once, the Hungarian pattern of advanc-ing to the take-off area varied. Instead of a group, doubtless planning factics, there came a procession with Benedek well in front, deep in thought and with the weight front, deep in thought and with the weight of responsibility clearly set upon his small shoulders. Behind followed his reserve, his recovery man and his manager. The atmosphere was extremely tense as Power

> World Cham pions at work. (11) is Erno Frigyes, working on his Wakefield which was less successful than his power model. and at right, in (45) bearded (15) bearded and mustachio'd Bond Baker ru-minates over his Oliver Tiger, Each competed in both rubber and power, a distinction enjoyed unly 1100 only  $b\mathbf{v}$

Portraits

Champ Frigves held George's model for the last wind-up. He deserved to win so much that in our hearing we heard the most unlikely people wishing him success; but fate was not to be so kind. After an inspiring climb, the tubular fuselage model, with its highly-arched thin airfoil, was caught in the loc of the hangars and descended rapidly in a series of stalling turns for 1:39

At once this set the scoreboard students scampering for time totals of other aspirants. From near certainty, the fifth round had dramatically changed to an open chance for any of eight others who were in third to tenth places at the end of Round 4 of least than seven countries with a chance of individual victory, including Geoff Lefever at the tail end who needed the full 180 secs. to win!

In this "ten little nigger boy" atmosphere the full spirit of the Wakefield reached its zenith. So much was happening at once, the individuals most concerned were not aware of the situation excent that they were aware of the situation except that they were required to do their best. Bond Baker was quite surprised to hear from us that he needed only 2:18 to win, and promptly set to with Alan King in preparation for his last and vitally important flight. for his last and vitally important fight. With only half-an-hour before the close of the contest, British Manager Bob Copland (well aware of our chance) came out with Geoff Lefever for his last effort, Baker waited to see what might happen. He witnessed calamity, the last straw to tax the burdens of British misfortunes as Geoff's wings clapped tip to tip!

The reserve had been lost earlier and time was short for repairs, but the resourceful Copland had matters in hand quickly as he obtained official sanction to Sellstape brace the wings from Polyhedral breaks to fuselage, etc. Then Baker released to a chorus of good wishes—and very nearly did not make it as the model swept round to the right, its great red single prop blade chopping the air slowly by comparison with others, It was an evestraining maximumno one could now heat the tall Aussie who to one could now heat the tail Aussie with bad come all the way at his own expense to work so hard for victory. But there was no anticlimax, for though the individual result was known, the team trophy still hunged on the performance of two Czechs.

Antonin Simerda crashed with only sees, to his credit, and Cizek was down at 18. The battle was now decided, with 1.18 Hungary clear team leaders, but Scardicchio's place could still be challenged. Rune Johannson (Sweden) added another max fortamison (sweden) anded another max to his seconds, then with almost the last flight of the day. Zurad sent off his jacknife fuselage model, hoping for 2:42 and actually scoring 2:48 to gain second place.

Celebrations and international exchanges which are always part of the Cranfield atmosphere continued well into the early hours. Spirits were high in more than one way, and following presentation by Mrs. Palmer, wife of the Warden of the College of Aerongutics, to whom we owe so many thanks, the cups were duly anointed and admired. Our visitors came from the farthermost parts of the world and left even more impressed than ever with the way the contest had been so effectively administrated,







Winners and their spails! (16) Clean-shaven Bond Baker busy with autographs the Wakefield Cup in front of him. (17) shows seven happy Hungarians, the team manger is missing because he was "phoning news of his team's double vietary to Budapost at the time. All vienners received handsome Tankards. All competitors a next colour-printed penant. In (18) Rudi Beek collects the team traphy from Mrs. Patmer, wife of the Warden of the College of Aeromantics (seated in left foregrannd). At left, Alex Houlberg, Chairman S.M.A.E. and F.A.I., at right, Albert Houssel, Severary F.A.I.

Hidden talents of the more colourful competitors made after-contest celebrations even nore merry. Notobles: Fea teith his penny-spinning party trick, Kurt Cecpa with wizard of the pinne irveries. Bond Roker with matchbox drum accompaniment, Rad Cizek and enpped hands "Suxophone".

We looked all-aver for Baker when coaches left for London on Tuesday hut not in his bedroom. Eventually located adeep a build-day, Boud was definitely last to leave Craufield, complete with large model box stored in ye Editor's car boot.

Takeo Asano, a 45-year-old dentist from Hamamatsu, Japan, face aver the North Pole S.J.S. service to London, leaving Tokyo with Professor Hidemara Kimura (here to lecture at International Aviation and Science Cangresces in Madrid and Amsterdam, also to buy some R.-R. Darts for an airliner he designed?) later than other competitors left their European capitals by train—such is the wonder of modern air travel.

R. Stabler was a reserve for Germany, stepping in the Power team when Peters dropped out-this fourth place with a 1-5 c.c. model more than justified his selection.

1

33 333 37

#### Random Notes

Also with 1.5 c.e., Lothar Pirek of Germany, had the most diminative tail—many twoff like the most diminative tail—many twoff like the dimin without 19.8 subolists and a twoff tail tract condition they event of hits me area at the rear end, a mere 59, sq. m.1—largest tail vas Condition Hugh Tucki, 21 Mag. in. "slabstab" and largest percentage of wing area was that of Czech Jaromir Billy, no less than 58 per cent. He won the East European Internationals a few weeks before with a perfect total.

Honours for models meeting all spees on the dot with no tolevance go to Des Woods (Ireland) and Vladimir Novta in Power, Anatol Kossowski in Wakefield.

Doubtless urged by George Reich's previous experiences of Cranfield, the U.S.A. team soon collared all available push bikes and transfer-decorated them with A.M.A. emblems to secure their manopoly!

Sandy Pimenoff of Finland, one of their strongest hopes in power, crashed his best model just before leaving home and lost his reserve triming in strong schods before the event at Cranifield. He did participate, however, Rving prove for transmate Reino Hyvarinen in Wakefield. Recovery system was highly praised by all teams, some competitors became attached to certain motor cycles or the veteran Austin 7, but not, we understand, those who teers transported or 100 m.p.h. plus on a certain piece of fast machinery—tunderful what a 30 m.p.h. following wind induces out of the motor cyclists.

Rune Johannson of Sweden travelled by air via Gothenburg, Oslo, Copenhagen, Hamburg, Amsterdam, Brussels and London by six to arrive at the last moment of processing with his magnificent tubular fuselage Wakefields, after a hectic and fortunate hitch-huke from Bedford station.

Excine mommary of all potter entries, including reserver (six brancht only one-madel) gives the "most popular" vote to Oliver Tiger with 41, followed by Webra Mach 1 (22), Yugostav Aero 250 at seven, Faya 151), K & B 15 and Czech MVVN 58D tieng at jues. Super Tigre G30, Schlasser 2-4, Zeis Activest and Webra 1-5 Record with four each, MVVN 56D, Tailin Mizzard, Tailin Hurrikan three each, two Polish Jaskolka, and Frog 149s, and one each Webra 2-5 Winner, Allbon Rapier, O.S. Max 15, Effin 149, Oliver Tigre G4, super Tigre G31, and Frest and Krizma specials.

	1. Hungary 2. Italy 3. Great Brita 4. Yugoslavia 5. Czechoslovi 6. Sweden	2,304 2,259 2,179 2,132 akia 2,104 2,096	7. 8. 9. 10. 11.	LPHON German New Ze Poland U.S.A. Ireland	NSE P y aland	2. 2.	031 012 954 948 865	CUP 12 13 14 15	<ul> <li>TEAM</li> <li>France</li> <li>Finland</li> <li>Belgium</li> <li>Austria</li> <li>Denmark</li> </ul>	RESUI	LTS 1.852 1.627 1.597 1.574 1.490	17. 18. 19. 20. 21. 22.	Can Aus Swi Japa Net Sou	iada traŝia tzerla in therlai th Afr	nd nds rica		470 341 264 791 666 587	
	WAKEFIE	LD CUP - H		DUAL	RESU	LTS		39.	Hakansson.	E	Sweden		97	180	84	52	180	593
١,	Baker, R. S. B	Australia	162 1	58 180	180	180	860	40.	Wong, R.		New Zeala	nd	110	139	126	102	111	589
2.	Zurad, S.	Poland	180 1	16 180	180	168	824		(proxy D	. Greave	es)							
١.	Johansson, R. K. E	Sweden	133 1	46 180	180	180	819	41.	Visser, P. V	N	South Afric	<b>1</b>	180	85	60	82	180	587
1.	Scardicchio, V	Italy web	141 1	80 180	180	136	817		(proxy R.	. C. Mor	nks)							
2.	Benedek, G.	Hungary	180 1	80 180	173	100	813	42.	Barnes, A.		New Zeala	nd	88	129	125	145	92	579
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Ś.	Gordon A	leeland	159 1	60 172	98	168	757	47	Honelin F		Swirzarland	4	106	82	148	156	65	547
í'	Niemsraedt F	Denmark	145 1	80 180	64	180	749	48	Balacco Mr	0 80	Belgium		180	116	180	65		541
5	Poppyir K	Yugoslavia	131	99 180	155	180	745	10.	Cheurlot N	4	France		101	153	55	175	57	541
	Heidmuller B.	Germany	180 1	59 161	180	61	741	50	Duchager 1	H	Austria		84	180	91	81	97	525
	Widell, K. E.	Denmark	180 1	20 180	133	128	741	51.	Blomowist	M.U	Sweden		180	81	132	60	47	500
ŝ.,	Kothe, H. H.	U.S.A	180	76 180	166	133	735	52.	Früges, E.		Hungary		116	180	96	100		492
5.	Krizsma, G.	Hungary	180 1	80 180	35	153	728	53.	Chinchella.	B	Australia		163	49	84	79	106	481
	Cizek, R.	Czechoslovakia	142	081 08	148	78	728		(proxy A	King)								
3.	Dvorak, F.	Czechoslovakia	180 1	80 97	123	138	718	54.	Taberna, S.		Italy	1221	63	180	46	85	105	479
Э,	Tomkovic, M	Yugoslavia	141 1	80 161	59	173	714	55.	Kossowski.	A	Poland		73	138	153	71	37	472
).	Palmer, J.	G. Britain	151 i	081 08	73	127	711	56.	Miestoj, W		Poland		109	113	90	73	82	467
۱.	Perineau, M. HE	France	173 I	80 180	21	155	709	57.	Onishi, M.		Japan		83	129	52	63	135	462
2.	Draper, R.	G. Britain	180 1	28 180	116	100	704		(proxy P.	Read)								
3.	Balasse, E.	Belgium	98 I	80 77	174	163	692		Takko, S.		Finland		65	72	118	142	65	462
٩.	Tysklind, S. L. H.	Sweden	141 1	80 180	71	112	684	59.	Radovan, R		Yugoslavia		80	92	12	180	90	454
5.	Carroli, J. J.	Ireland	125 1	77 159	56	166	683	60.	Newquist, I	F. A.	U.S.A.	A	122	96	180	52		450
5.	Fresl, E.	Yugoslavia	135 1	58 180	75	125	673	61.	Hyvarinen,	R	Finland		180	87	89	83	1	440
<u>.</u>	Smolders, J. J	Netherlands	101 1	80 119	180	86	666	62.	Muzny, L.	1941	Czechoslov	akia	131	02	75	56	69	433
3.	Reich, G. A.	U.S.A.	150 1	61 100	180	73	664	63.	Doyle, M.	10.00	Ireland	and the	100	47	180	95	3	425
9,	Simerda, A.	Czechoslovakia	180 1	12 180	180	6	658	64.	Ranta, S.		Canada		62	78	70	78	136	424
	Hassny, K.	Poland	178	97 178	108	9.9	658	65.	Schnurer, H	- Leen	Austria	1461	96	162	44	62	43	407
Į.,	Licen, A.	Italy	180 1	80 77	103	109	649		Gordon, R.	С.	Canada		162	53	106	86		407
Ł.	Oswald, A.	Germany	105 1	63 33	180	164	645	67.	Etheringtor	.W.C.	Canada	111	180	45	27	42	82	376
	Hertsch, K.	Germany	127 1	68 84	86	180	645	68.	Overlact, G	a	Belgium		82	60	64	93	60	364
2.	Mackenzie, D. K.	Canada	139 1	78 125		103	013	69.	Nonaka, S.		Japan	***	63	113		68	96	329
2.	Grunbaum, P	Austria	81 1	80 180	134	.57	632	= 0	(proxy F.	H. Boxa	all)							
۰.	Maikin, J.	New Zealand	198 1	XA	/6	144	014	70.	Czepa, O.	D	Austria	444-1	83	38	36	95	42	294
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FULL SIZE COPIES OF THIS 1/6th REPRODUCTION ARE AVAILABLE AS PLAN RC710 PRICE 8/6d. PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE.

October, 1958

Britain's leading radio control flyer presents his symmetrical section wing, fully aerobatic model.

## UPROAR

#### By CHRIS OLSEN

WE ASKED Chris Olsen, current British multi radio control champion "Why 'Uproar'?", "Have you ever heard a Fox 29 turning over at 12 000 r.p.m.?" was his rejoinder!

Chris, a 27-year-old Civil Servant in the Scientific Branch, has quito definite ideas on the subject of radio control aerobatic design, which after a four-year development period have resulted in "Uproar".

He believes in a simple yet strong airframe that is relatively light in weight, this being achieved by spruce longerons with sheet covering only at the nose and radio compartment. He does not advise any "beefing-up" of the structure as this is quite pointless, merely increasing weight, decreasing performance, and if a crash occurs, then it is the engine and radio which suffer instead of the plane, which is after all cheaper and easier to replace. The airframe can be built in a week and costs approximately  $\pounds 3$ .

The radial engine mount used is important, as in a crash it gives before the engine and has proved far less prone to vibration than the standard bearer mounting.

The model weighs approximately 5½ pounds with a loading of around 16 ounces per square foot; powered by a Fox 29, or any other good 5 c.c. glowmotor such as the new ETA Mk. VI, it has the necessary reserve of power to produce a high rate of climb carrying 2½ pounds of radio equipment. The original is flown with Chris Olsen's home-built version of the Orbit 8 channel equipment, using special servos designed around the Mighty Midget electric motor. We shall be giving working drawings of these servos in our next



issue and meantime emphasise that neat, careful, and well-supported wiring of the radio and serve equipment is a noticeable feature of the designer's current machines. The resulting reliability of his equipment has undoubtedly been a major factor in his competition successes and will we hope point a moral to others.

An 18 per cent. symmetrical airfoil gives a fast flying speed, great manoeuvrability, and first class wind penetration; for, as we know, "Uproar" has a repertoire which includes consecutive loops both outside and inside, consecutive flick rolls, figure eights, split S turns and many others, including the most beautiful true spins we have yet seen.

As originally flown, ailerons were not fitted; the designer has, in fact, only been using them this senson and we watched some very pleasing rolls as a result during the R/C Eliminators at Cranheld. It is strongly recommended to those other than experienced multi flyers, that they do without this particular form of control in the first instance until plenty of "Uproar" experience has been gained. After all, rudder, elevator, and engine control allow plenty of scope which reminds us that Chris fabricates his own version of the Branco type throttle for the latter form of control, but says that an Ohlsson Gold Scal glowplug of the shrouded element type is essential for satisfactory results when changing to low speed.

Finally we mention for the benefit of those who wish to install British commercial equipment, that the fuselage will need widening by half an inch to accommodate the standard E.D. Reed outfits.

Heading shows Chris with an earlier version bafors ailerons were tried. Below, two fuselags views show the radiul engine mounting on Fox 29, with metal hatch removed to recent the speed control serve and L.T. batteries. View at right shows the receiver compartment with cover off the home-built Rx and two Mighty Midget serves (details of which will be given in an early issue) to operate rudder and elevator



AERO JOORLER



THIS NEW ENGINE in the Frog range uses many of the components of the Frog 150 and is basically the same in overall dimensions, although readily identified by the more parallel gold-anodised cylinder jacket. It is intended primarily as a general purpose and beginner's engine, with good handling and starting characteristics, but by careful development an excellent performance has also been realised with a specific output of 1 B.H.P. per c.c., peak power being achieved at circa 15,500 r.p.m.

In this respect it is something of an anomalya beginner's engine which peaks at quite a high r.p.m., where its performance makes it suitable for contest work (although of 1.5 size and weight). This has been achieved without any marked deterioration at the lower speeds, although the output is moderate in the range 8-12,000 r.p.m.

The manufacturers recommend an 8 x 6 nylon propeller for "sports" use, which is equivalent to a

No. 52 Mk.

Reviewed by R. H. Warring

static r.p.m. figure of only 6,000. At this speed the needle valve setting is absolutely non-critical and can be opened or closed more than a turn either way without affecting running. It becomes, in fact, a very docile

When hot, the "100" will re-start first or second flick with both the compression and needle valve settings left at running position by turning the propeller to block the exhausts with the piston and then squirting fuel into the exhaust openings.

We found, also, that the "100" has excellent lowspeed running characteristics and can be throttled right down by opening the needle valve and reducing the compression until it is barely ticking over. It is also capable of developing good torque under load at such speeds. The "100", for example, handles a 13 x 6 propeller quite readily, turning it at 2,500 r.p.m., and a 12 x 4 propeller at 3,500 r.p.m. Starting is just about foolproof with such large propeller sizes, provided the cylinder is well primed, due to the large "flywheel" effect and running is extremely smooth and quite quiet. Undoubtedly, too, enough thrust is produced with these large propeller sizes to fly a model.

For control line, free flight, or R/C work a 7 x 4 nylon propeller gives about the optimum performance, and the tested engine has been flying an aerobatic 34-oz. R/C model most satisfactorily on this size.





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Main difference between the 150 "R" and the "100" lies in the cylinder, which is entirely new. This is of conventional steel construction, screwing into the crankcase. The bottom cylinder below the flange is, however, very thick (approx.  $\frac{1}{8}$ -in, walls), externally threaded. This serves the purpose of matching the overall diameter to that of the 150 cylinder so that it will fit the same crankcase.

The transfer passages consist of six  $\frac{3}{32}$ -in. diameter holes (in pairs) drilled upwards through the bottom cylinder wall, opening into a deep undercut below the flange. Transfer ports are milled through the cylinder wall immediately below the flange (and below the respective exhaust port openings), leaving the upper part of the cylinder carried on three small pillars.

The "100" retains the short pixton design introduced on the 150 "R", again producing substantial sub-pixton induction. The pixton is even shorter than the 150, however ( $\cdot$ 300 in. as against  $\cdot$ 331 in.), so that for the same stroke the top of the pixton can come lower to open the transfer. Compared with the 150 cylinder the exhaust ports are also lowered to prevent too early opening and are shallower in depth. This latter feature also means that the sub-pixton induction does not extend over such a large crank angle as in the case of the "150".

The cylinder is of leaded steel, machined, hardened, ground and honed to finish. The contra piston is also steel whilst the piston is of cast iron, machined to a simple shape leaving just enough internal clearance for the con. rod little end. The gudgeon pin is  $\frac{1}{8}$  in, diameter silver steel and is a floating fit in the piston. The connecting rod is a standard "150" size light alloy forging with a  $\frac{1}{28}$ -in, dia, big end bearing matching a standard 150 crankshaft.

The steel contra piston does represent a disadvantage in that if the "100" is allowed to overheat the contra will tend to stick. This was particularly marked on the static rig using a propeller shield which virtually climinated cooling airflow past the cylinder. The sticking tendency was appreciably less noticeable on normal bench running with proper air cooling. Thus it appears entirely a matter of cylinder temperature whether or not the compression control is free or tight and only likely to be troublesome in establishing optimum settings for very high speed running.

PROPELLER-r.p.m.	FIGURES
Propeller dia. x pitch	r.p.m.
8 x 6 (Frog nylon)	6,000
8 x 4 (Frog nylon)	7,000
7 x 4 (Frog nylon)	12,400
6 x 4 (Frog nylon)	16,000plus
8 x 34 (Tiger)	11.000
8 x 4 (Tiger	9,800
8 x 4 (Stant)	9,600
7 x 4 (Stant)	10,500
6 x 6 (Stant)	10,500
6 x 4 (Stant)	13.400
7 x 5 (Trucut)	9.000
7 x 4 (Trucut)	11.400
7 x 3 (Trucut)	13.000
6 x 4 (Trucut)	12.500
6 x 3 (Frucut)	13.600
5 x 3 (Frucut)	16.500



Fuel used Frog Super-Powermix.

#### Manufacturer's sketches show salient differences between 150 (left) and 100 Mk. II (right)

'The crankshaft is of leaded steel case hardened and then taken back by heat treatment until the surface is again relatively soft—it can just be marked with a file. Shaft diameter is  $\frac{1}{2}$  in. tapering outside the bearing to a 2 B.A. threaded length for the propeller nut (or spinner). The thicker crank web and larger crankpin diameter of the later 150s is standard on the "100". The induction timing is slightly amended by increasing the size of the hole and moving it round in the direction of rotation so that the port closes at the same time but opens slightly carlier. This retains the easy choking characteristics of the "150" by virtue of the fact that the induction port closes around top dead centre and thus there is little or no blow-back.

The main bearing is a sintered (Vandervell) bronze sleeve reamed to finish size and with the characteristic slack fit of all current Frog engines.

Summarising the potentialities of the new Frog "100" as an engine we can only repeat that it is very easy to handle, extremely flexible and has most of the required characteristics of a beginner's engine, whilst achieving a remarkably high standard of performance. Its power output at peak r.p.m., in fact, is comparable with many of the best of 1 c.c. diesels.



October, 1958



#### Famous Biplanes No. 17

Designed in 1935 yet still regarded as the finest precision aerobatic machine

## described and drawn by G. A. G. COX

THE VERSAULLES TREATY, with its famous Nine Rules limiting German air activity, was intended to finish once and for all that nation's hopes of dominating Europe. Only the building of gliders and commercial aircraft under a certain size was permitted, and yet early in 1935 Hitler dropped a political blockbuster by announcing to Sir John Simon, the Foreign Secretary, that the German Air Force had achieved parity with the Home Defence Force. Just how Hitler succeeded in forming the Luftwaffe and equipping it with modern weapons is now past history; in retrospect we can see how futile was the attempt to stifle a German military renaissance. Theoretical advances in aeronautics proceeded unhampered; the Dornier Do.X, largest aircraft in the world at that time, was built at Altenrhein in Switzerland; bombers and troop-carriers were built as "mailplanes" and airliners. The first important step was the training of aircrews for this clandestine air force, and for this purpose sailplanes and "sport" aircraft were manufactured in large numbers, all flying with civil registrations of course.

The Bücker concern, supplier of the vast majority of the Luftwaffe's trainers, was established in 1933 and headed by Carl Bücker, former managing director of the Svenska Aero A.B. of Stockholm. Their first

Heading shows Boverly Howard, the American stant acjust missing a banner held aloft by two pules. This particular Jungmeister was flown to the U.S.A. in the airship "Hindenburg" in 1936. Helow: Lined up for the 1938 Lockheed Aerobatic Trophy at Huginton, Coventry, HE-MIC in chrome yellow with red trim and blisters on cavt was flown by F. Liardon of Switzerland. Note he alotted effect of the elevator here in the full "up" position product was the "Jungmann" two-seat basic trainer, followed in 1935 by the "Jungmeister" advanced aerobatic trainer. The two machines were basically very sinilar, and in fact used many jigs and components in common. Another common factor was their immediate success and popularity. These trim little biplanes were not only sold to many European countries, but also licence-built in Holland, Czechoslovakia and Switzerland. Even today, twenty-three years after designing, the "Jungmeister" is still a muchsought-after aeroplane for aerobatic flying.

Beverly Howard, the American aerobatic pilot is as good a judge as any, and claims that the Bü.133 is the finest precision aerobatic machine ever built. His own specimen, incidentally, was taken to the U.S.A. in the airship "Hindenburg" by the late Captain Alex Papana, a Rumanian aerobatic pilot in 1936. After two changes of owner and one change of engine (because of the spares difficulty) it now bears the flamboyant decor shown on the drawing.

There are about twenty-five "Jungmeisters" still flying in Switzerland. HB-MIB is one of several recently sold by the air force and restored to virtually new condition. This machine was built in 1940 by A. G. Dornier Flugzeuge at Altenrhein, the factory which built the Do.X.

The late Count Cantacusene thrilled onloakers at previous Lockheed Aerobutic Canteats in Great Britain with his performance in EC.A.D., which was flown at Coventry in 1955 without the rudder extension. His previous mount was EG.AEX. The Count's "party piece" was a flick roll at ulmost ground level just before final loweh-down-photo B. T. Gibbins







Of pleasing appearance in all attitudes, the Bu.133 is a clean sound design. Particularly praiseworthy is the neat cowling of the nose portion, evidence of the legendary Teutonic thoroughness. Both the fuscinge and the tail are of welded chrome-molybdenum steel tube. The wing panels (interchangeable top for bottom) are constructed in wood with two 1-section spars and normal drag bracing between. Fabric covers the entire airframe except for the metal nose panels. The split-axle undercarriage has sprung, oil-damped shock absorbers rather like the front forks of a motor-cycle. The long travel of these legs gives the "Jungmeister" its characteristic stalky appearance when airborne. Either the Siemens Sh.14A4 seven-cylinder radial engine of Golour scheme for EC-ALP is basically chrome yellow with while undercorriage legs, and radiating airlpa an wing and tailplane upper surface. Black registrelian letters, having separate by a centre yellow band. Covel is polished balamining, propeller varainde wood with balar rea faces, natural leather cuffs are fitted to strut ents. Philothe helmed was the in eith red barz-photo G. A. Cult



160 h.p. could be fitted, although the latter was the more common. One of the greatest virtues of this aerobatic biplane is its rate of roll and ability to perform flick manoeuvres at very low altitude—a characteristic fully exploited by the late Count Cantacuzene in his many spirited displays in this country. Following his style, the Swiss pilot F. Liardon also treated us to a most remarkable series of flick rolls during the 1958 Lockheed Aerobatic Trophy at Baginton in July. The aerodynamically-balaneed control surfaces with forward edges projecting below or above fixed portions of wing and tail give full snatch action and are powerful enough to hold the aircraft in any of many incredible attitudes.

A number of Jungmeisters are still retained on the Swiss register for private and club operations, among them HB-MHB the subject of one of the drawings overleaf. This has a value scheme of basic erram with red trim. It was made by A. G. Dornier Flugzenge in Switzerland, during 1940, secial number 39, and has a Siemens motor, type 14, number 28268, driving a Swiaz-made Infonger profiler. It is owned by the Aero Club at Kloten, Zurich-photo M. Rutherfoord





MODELLER

"Hottest of them all"



. . . . . . . . . . . . . . . .

In response to universal request — we bring you the fastest climbing of all open Power designs. —only 12 ounces for 2.5 c.c. By NORMAN MARCUS

## EUREKA

POWER MODELLING is now divided 80 per cent. "open" and 20 per cent, F.A.I. if the 1958 entry figures in British contests are any measure, and the demand for fast climbing lightweights is on the upswing. Here we have the "hottest" of them all. Norman

Here we have the "hottest" of them all. Norman Marcus has been out of the contest sphere for a season or so (explained by his marriage on August 9th), but his Eureka design has been making its mark in the hands of John O'Donnell, winner of Power at the Nats. The design was evolved to improve upon the *Jaded* 

Maid which, although successful, had some drawbacks.

It was too fragile, being rather on the large side for its original 12-oz. weight which made windy weather flying rather a problem. With Eureka it was decided to keep the weight down to about 12 oz. and to reduce the general size of the model to make a sturdier job. The wing span was determined by the size of Norman's model box!

The thrust line was moved upwards and the fuselage was shaped so that the side areas (and side view of the wing) would roughly balance about the thrust line—to equalise the moments of the side forces about the C.G.

FULL SIZE COPIES OF THIS 1/6th REPRODUCTION ARE AVAILABLE AS PLAN PET 711 PRICE 5/- PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE

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Propeller tip position determined the height of the pylon as wing was required to be clear of propeller slipstream, and the tailplane was moved more into the prop blast. The fin was placed behind the tail for convenience with the pop-up tailplane D.T. and also to give extra moment to the fin area. (Fins in front of the tailplane had proved rather disastrous with some of Norman's earlier models.) This rear fin set a fashion which is now a characteristic of many British power designs. The thought of letting the motor run at full power on such a small, lightweight design was rather frightening; but after a few seconds motor runs Norman chanced his arm and let it go flat out. Much to his amazement and joy Eureka climbed almost vertically, slowly turning in right-hand spirals-and that was how it flew contest after contest. Unfortunately, the glide proved to be rather inconsistent, with the model "falling out of the sky" on occasions. Reason for this was that when the motor cut, and the model speed reduced suddenly, the laminar flow over the wing broke away at the first spar and did not re-attach itself properly. A sheeted leading edge version of the model showed considerable improvement in the glide.

Now for the construction of the model. The wing and tailplane are straightforward in their original form, but if it is decided to use geodetic construction, as in the John O'Donnell modification, care should be taken to "build in" the slight warps into the wing (see trimming notes). The tail is flat and quite simple. The fuselage was built in "mid-air". First the 1-in. sheet sides of the body and the 3-in. hardwood motor mount should be cut to shape. The mount is glued to the left-hand side of the fuselage and is left to dry. Make the fuel tank from 005-in, tin sheet and cement it in position. Next the & x 1-in. longerons, the spacers, and the & x 1-in. pylon member are added. Then the other 1-in sheet side is cemented in place. The fuselage should be held flat until the glue has dried completely. Add the pylon sheeting, and the hard balsa wing (and tail) mounts. The fin is built up from pieces of  $\frac{1}{2}$ -in. sheet (it has proved to be completely warp free) and is cemented to the body. Now smooth the fuselage to shape and fill the grain with sealer. Give one coat of coloured dope and then finish with fuel proofer. Norman uses Banana Oil with diesel engines.

Cover the centre portion of the wing with heavyweight Modelspan tissue and the outer panels and tailplane with Jap tissue (or lightweight Modelspan). Give all surfaces three coats of clear dopc.

Now for the trimming. It should be emphasised that the method described here is for fast climbing power models of the pylon variety that climb and glide in right hand circles. Norman has used this system on all his successful models: it was suggested first by Paul Gilliam of *Circy Boy* fame. The right wing is warped to give about 2 degrees wash-in at the dihedral joint this is equivalent to about  $\frac{1}{4}$ -in. packing under the L.E. and both the tip panels are washed-out about 1 degree relative to the dihedral joint rib. These warps should be built-in when setting the dihedral before the wing is covered, otherwise trouble will follow with the wing twisting in changing atmospheres. The tailplane is left flat.

Secure the wing and tail to the fuselage. Check the C.G. position is between 70 per cent. and 80 per cent. of the wing chord. The wing and tail incidences are 3 degrees and 1 degree positive respectively. The engine should not have any downthrust or sidethrust.

On low power and using short engine runs (about 5 secs.) adjust the glide. With the rudder straight, tilt the tailplane-right hand side up-until a glide circle of about 50-ft. diameter is achieved. Now increase the



header fuel level. The tube extends through a piston-like stopper which is adjustable within the flight tank to afford a predetermined capacity. On removal of the piston and tube, after starting on the header tank, engine run is obviously limited by the flight tank contents while the residue in the header outlet tube drains back to its origin. The flight tank is secured to the fuselage by a spring clip and may be adjusted angularly to provide efficient feed for the model's normal flight angle.

engine revs and trim the power turn by means of the rudder tab only. Remember to move the tab in small amounts—about sin.—especially when the engine is running at full speed. The best arrangement is with the tab about in out to the left-hand side. If the tab is moved sufficient to affect the glide trim, correct this with tailplane tilt or by varying the incidence. It has been found that increasing the tailplane incidence will speed up the climb and will open the R.H. turn. Decreasing the tail incidence has an opposite effect, so watch for spinning.

When the trim is correct, the model will climb vortically, turning to the right (about 1 turn every 6 to 8 secs.), but rolling to the left. When the motor cuts the model will flick to the right straight into the glide without stalling.

The best of the "Eureka" originals climbed to about 500 ft. on a 15 secs, engine run and would glide for another 4 to 44 min, in evening air.

If a ball-bearing type diesel (weighing about 6 oz.) is used, the engine position should be moved backwards to keep the C.G. about 75 per cent. of the wing chord,

I trust those who build this "potent heap" will have as much fun as I did with it—and exclaim — EUREKA 1 1



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## **BIG** BREATHLESS

#### Concluding the story behind a 5 hour, 29 minute record flight set up at Los Angeles

Last month we recounted the background to Ken Willard's World Duration Record flight at Sepulveda Basin, covering the fuel feed, receiver battery and engine speed control problems. Ken Willard continues

WE HAD AN ENGINE, a fuel system, a control system -but did we have an airplane? Sure, we had "Breathless", but with all this new rig, it no longer qualified as a model airplane in the eyes of the F.A.J. Why? Because the F.A.I. rules establish a wing loading limit of 16.38 ounces per square foot of supporting surface (which includes the tail surface). We had about 71 square feet of supporting surface, but our airplane weighed ever 8 lb, with a full load of fuel aboard.

The answer was obvious; we had to add some area. We thought about making a bigger horizontal stabiliser, but this might adversely affect the flight characteristics. We decided to add a lower wing and make it into a biplane.

I had an old wing in my scrap box which we renovated and adapted to the "Breathless". It no longer was the "Avalon Breathless", with all these changes, and we kept referring to it as the "Big Breathless", since I had a smaller version, thus the name.

We made a test flight with the lower wing addition. It looked good, so I built up a new lower wing. With the area of this lower wing our supporting surface went up to  $9\frac{1}{2}$  square feet. However, all of the test flights had been made with the airphane lightly loaded. Next came a full load take-off test. Since these would be short flights, it also meant that the landings would be with a full load. We did not want to fill the fuel tanks because they hung from the wing. Two previous crashes had shown that the wing could not withstand too heavy an impact load. We decided to simulate the weight by strapping steel plates to the under side of the fuselage, thus on landing they could sheer off with only minor damage which would be easily repaired.

Wednesday, April 9th, we tried a full load take-off. The airplane couldn't make it. We even used smaller propellers, knowing full well that this would increase our fuel consumption, but the airplane just wouldn't take off. After several unsuccessful attempts I decided to make an experiment. I removed the lower wing and tried another full load take-off. The airplane, even with a much higher wing loading, took off and climbed quite well. This proved that the drag of the lower wing was more effective than its lift, at least with the power which was available to us.

But the wing loading was too high as a monoplane. We refigured the allowable fuel, we stretched every point that we could, all to no avail. Then I had another idea—Figure everything as closely as possible and make just a small stub wing instead of a full lower wing. This would make the airplane into a sesquiplane. The stub wing would meet the wing loading requirements, but perhaps its drag would not impair the take-off.

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Bv

Ken Willard

It was a good idea, as events later proved out. However, before we had a chance to try it, we ran into a couple of problems in other areas. As I mentioned, the full load take-off tests were made on April 9th. We had scheduled the attempt for Saturday, April 12th. On Friday, April 11th, we had planned to make our final test flights. We also had some final fuel consumption tests and radio checks to make. We made the fuel consumption tests in the morning. Fine. That afternoon we went down to Bob Dunham's for a radio check and to pick up the transmitter. While there we discovered that the receiver was working all right, but Bob was having trouble with his transmitter modulation pattern. We had been making all of our test flights using a Babcock transmitter. We

However, so much time had gone by as we tried to lick this unexpected problem that we couldn't possibly make the attempt the next day, so we re-scheduled for Sunday, April 13th. On Saturday, April 12th. I decided to make some test flights to familiarise myself with the exhaust baffle. Saturday is a pretty busy day at the Los Angeles Model Airport, so we set out early in the morning. We made the flight. The exhaust baffle worked perfectly. However, at the end of the flight, for a reason which we did not have time to analyse, the control system locked in right rudder, and the airplane crashed. Although the damage was comparatively minor, since the airplane was very lightly loaded, it still meant several hours of repair work.

Most of Sunday, April 13th, was spent in repairing the airplane. Russ Nichols, who had flown out from Washington, not only to act as observer on this flight, but also to attend the F.A.I. meetings, was downhearted, but not discouraged. We re-scheduled again for Tuesday, April 15th. We wanted to make some final test flights with the new stub wing on Monday.

As luck would have it, Monday afternoon, with all the repairs completed and the stub wing installed, our test flights showed that everything now appeared to be in good order. We met the F.A.I. weight requirements, the airplane would fly, and the engine should run long enough to break the record.

Following these final test flights, we took the airplane over to a Supermarket and weiched it on a certified scale, as required by the F.A.I. Then we went back to my shop to see if we could eliminate the one remaining possible source of trouble—the radio noise. We tried condensers across the motor servo contacts, reversing the polarity, removing the diode across the relay, all to no avail. In fact, we still do not know the answer to that problem. We do know, however, that in searching for that answer, we almost nullified the flight for the next day. About 11 o'clock Monday night, April 14th, in the course of soldering a contact, the soldering iron slipped and burned the nylon gears in the motor servo. For a few minutes it looked hopeless. Then by virtue of some careful filing, we finally got the gears to the point where they would turn through the distorted teeth. It was far from perfect, but there was nothing else we could do. By this time it was 1 o'clock Tuesday morning, and we were scheduled for take-off at 6 a.m.

We loaded all of our gear into my car. Bill went home to get some sleep. I closed up the shop and went to bed. I slept fairly well, all things considered. It probably

was due to the fact that I was just about exhausted. We had agreed to rendezvous at the Los Angeles Model Airport at 5.15 a.m. Keith Storey, past president of the Academy of Model Aeronautics, had been appointed directing official, Russ Nichols was chief observer, John Brodbeck was chief timer. Bill Glick would be my assistant, and I would fly the airplane. Although the F.A.I. rules do not specifically state that the airplane must be controlled by one man throughout the entire period of an endrance flight, we decided to do it that way in order that there would be no question.

Although rendezvous time was 5.15 a.m., I wakened at 4 a.m. and decided that I might as well get up.

I arrived at the appointed time just as the others drove in. Johnny Brodbeck told me that as he was driving out to the Airport he heard a radio news broadcast, which said that an attempt was going to be made by a United States team to break the world's endurance record. We later discovered that this news release had come out from the F.A.I. convention. I had not put out any advance publicity. My own personal preference is to accomplish an objective and announce it afterwards.

We began the final preparations for the flight. The first thing we did was to wind in the turns into the escapement. We were driving the escapement with  $\frac{3}{16}$  in, rubber. The escapement is mounted well forward in the airplane and the rubber coming out the tail gave us a useful length of 39 in. Our tests had shown that we could safely wind into this length of rubber 2,200 turns.

We wound in the 2,200 turns in the escapement and let the fuselage set while we measured out the fuel for the flight. Since we had not had any flights longer than 16 minutes in length, and because our test programme had been on such a rush basis, I decided not to try to carry a full load of fuel. I figured that on this flight if we beat the Russian record, which was the official record, we would have met the objective which Russ Nichols had set for us, insofar as the F.A.I. convention was concerned. I also figured that a couple of days later we could put in more fuel and go for the full length of time. So, we put in 50 fluid ounces (about 46 avoirdupois ounces).

Then we assembled the wing to the fuselage, and everything was ready for the take-off. We had decided to make the take-off fron the dirt road leading into the Los Angeles Model Airport because the airplane



needed about 300 feet for take-off-the runway at the airport is only 200 feet long.

In assembling the wing to the fuselage, I canted it very slightly so that the left wing was slightly offset to the rear. This was so that when airborne the airplane would circle to the left, even though the controls were in neutral. My planned flight pattern was to take off and let the airplane circle for altitude while free-flighting, then throttle back to a cruising r.p.m., fly the airplane up-wind, then let it circle without commands, and drift with the wind until it was well down-wind, then fly it back up-wind and repeat the pattern. This way I could conserve my commands.

I forgot one thing, however. When I canted the wing to the left it also made the airplane turn to the left on the take-off. On the first attempt I was not prepared for this. The road is only about 30 feet wide, and the airplane started its take-off run and turned to the left before I was ready to correct for the turn. It ran into the weeds and up-ended.

Fortunately no damage was sustained, so we went back to the starting point, I cleaned off the engine, restarted it, and at 6.32 a.m. the second and successful take-off was made. This time I was ready for the left turn and was holding right rudder until the airplane got up enough speed for the rudder to actually start the airplane turning to the right, then I let out and only blipped in an occasional right rudder until the airplane took off.

Lady luck was with us on this take-off, also. A slight breeze came up right down the road, and the airplane was airborne in 209 feet.

With the load of fuel aboard, the airplane climbed slowly, and although I had never canted the wing before, once again luck was with me and the left circle was ideal.

I let it climb to about 500 feet. Now came the next critical point in the flight. Could I adjust the engine r.p.m.'s to a good cruising speed? I went at it very gingerly. Since the engine was at high speed I pressed the transmitter three times and held momentarily, then let up and listened. There was no appreciable change in the noise of the engine. I tried it again. Again no result. The third time that I gave it engine speed control of short duration, we could actually hear the engine slow down and, as it so happened, it sounded like a pretty good speed. I let it run for about 10 minutes. During this period the airplane very, very slowly lost altitude.

When the airplane came down to about 200 feet of altitude I decided I had better increase the r.p.m. and go back up. This meant that I had to go down through minimum speed, and this was another critical point. We felt certain that we had established a minimum r.p.m. where the engine would continue to run without overheating due to the back pressure in the exhaust. But this was going to be the first test of that minimum r.p.m. with the fuel tanks under full pressure. We had not had time to try it previously.

I pressed three times and held. Tensely we listened to the engine. It passed through minimum speed and started back up without a hitch I let up on the button when the engine got to high speed, only to have it go back down to a cruising speed. For a moment I panicked, and then I remembered that although we were dealing in fractions of a second, under tension I was not allowing for the time required for the sound of the engine to get from the airplane to me. I repeated the process and this time just as the engine started up to high speed I let up on the button. The engine stopped at high speed and the airplane started to regain altitude. During all

Glick holding "Big Breathless". Picture shows airplane and fuel system detail very well



of this procedure the airplane had come down to about 100 feet. The ground looked awfully close, too.

By now the airplane had been in the air about 20 minutes. The engine was running well and the radio was working. The airplane was climbing back to a safe altitude. I breathed a sigh of relief and relaxed slightly.

The next time it became necessary to reduce the engine speed I did much better. I hit a cruising r.p.m. which fit the airplane very well. For about 30 minutes I didn't have to touch the engine control again.

The airplane droned on. As we approached the 3-hour mark, and with only about 10 minutes to go, although nothing unusual was happening, we all began to tense up. The Russian record was within our grasp. I put the engine into high speed and let the airplane climb to about 800 feet altitude. I figured that even if the engine were to quit now I would be able to glide the airplane long enough to break the record.

It was an unnecessary precaution. As we passed three hours and 10 minutes the airplane was a speck in the sky. I throttled the engine back to minimum speed, then turned and we all shook hands on having broken the Russians' record.

Next came another hour of circling. The temperature had gone up, the sun was out, it was getting quite warm, and a slight breeze had come up. I found it necessary to send the airplane up-wind with considerably more frequency.

With our conservative figuring, we had looked for a little better than four hours endurance on this flight. As we passed four hours and 15 minutes, I thought I had an excellent chance now, not only of breaking the Russians' record, but also of exceeding Dr. Gobeaux's claim of four hours and 27 minutes.

Once again I put the ongine into high speed and sent it high up into the sky, then throttled back to minimum r.p.m. There was only about 10 minutes to go, and I figured that with the altitude and an occasional thermal, I could stay up now for at least four hours and 32 minutes.

Four hours and 32 minutes came and went, the airplane was still high in the sky, and the rate of descent was extremely slow, oven at minimum r.p.m.

We shook hands again. By this time the radio news broadcasts of the morning had brought out several spectators, including T.V. and Newsreel cameranen. Everyone was most co-operative. Naturally there was

#### Bill Glick left, Ken Willard right, pose with "Big Breathless" following the record flight

a continuous habble of voices, but whenever I wanted to make an engine speed change I merely had to mention the fact and the area became as quiet as though no one were present. Four hours 45 minutes passed. Even

Four hours 45 minutes passed. Even with our most liberal estimates this was the maximum endurance with the amount of fuel which we were carrying. I expected the engine to quit momentarily.

Five hours passed. What could the engine be running on now? Certainly there couldn't be any fuel in it, yet it kept right on running. At five hours and 15 minutes I began to get concerned. The wind had come up and we were using up commands fairly rapidly.

Bill and I talked it over. I finally made the decision that we would shoot for 51 hours.

At five hours and 25 minutes 1 told the assembled newsmen that I was now going to manoeuvre the airplane down to the ground.

The F.A.I. rules require that you land within 500 metres of your point of take-off on an endurance flight. A fly-away at this time could ruin the entire flight. I decided to dump the airplane on the ground within the prescribed distance, even if the engine was still running.

I brought the airplane down in a spiral to about 150 feet altitude. Just at that time the engine sputtered and died. The airplane was in a good position for a precision landing, so I manoeuvred it in a right turn until I had the glide pattern set up for a spot landing at the point of take-off. The "Big Breathless' came in and landed 29 feet from the point of release.

Keith Storey and Russ Nichols, who were recording all of the necessary details, Johnny Brodbeck, Bill Glick and I, were trying to figure out where the extra time for the engine run came from. We finally decided that the biggest single factor, in addition to our being conservative, was the fact that at take-off the temperature was  $62^{\circ}$ . When we landed the temperature was  $95^{\circ}$ . This would give about 18 per cent. fuel expansion to part of the fuel during the latter part of the flight.

Thus it is apparent that in addition to all of the many details which were required in preparation for this flight, several things combined to make the flight successful beyond our wildest expectations. For example, the slight wind down the runway at take-off; the temperature increase giving us fuel expansion with the resultant increase in duration, and then also the fact that during the last two hours of the flight I was able to fly the airplane at minimum r.p.m. for a great portion of the time by taking advantage of thermal currents.

So, the history of this flight once again proves that although nothing takes the place of good preparation and attention to details, an occasional smile by dame fortune can make things a lot easier.



#### ABO กักสามารถ



WE WISH TO REMOVE possible misunderstanding about production of the Wright system radio control units. This system invented by Les Wright, the Technical Manager of H.M.V. (N.Z.) Ltd., was originally manufactured by that company and marketed by its usual distributors. It was decided to discontinue production. An improved model, known as the Wright system, is now being produced by Wright Radio Control Ltd., and distributed by Scale Model Supplies Ltd.

In an advertisement in our April issue "Betta" Model Aeroplane Supply Co. stated that they had not been able to procure any "H.M.V. Wright system radio control units" since last July.

As Wright Radio Control Ltd. informed us that Wright system units were being produced, we published in our May "Trade Notes" an apology for what we described as statement". "an irresponsible

Although the new model Wright units (with which H.M.V. are not concerned) are being produced, the statement that "H.M.V. Wright system radio control units" are not being produced is correct. We are satisfied that this advertisement was inserted in good faith by "Betta' Model Aeroplane Supply Co., to whom we apologise for the remarks in our May "Trade Notes".

Ducted fans have now lifted themselves right out of the "novelty" class, thanks to the introduction of the Veron "Imp System" Impellers, and we are pleased to note that the full range of five fan sizes is now available. Latest is the 'Type "E" no less than 41 in. diameter and specially designed for 3.5 c.c. It forms an interesting comparison with the smallest type "A" 3% in. diameter fan for the point-fives. Prices range from 7s. 3d. to 7s. 9½d. retail, and each comes neatly boxed with Phil Smith's hints for duct design and fan installation clearly



Above: New fans for 3.5 and .5 c.c. by None: New Jans for 3.5 and 5 c.c. by Veron. Below: Arro 504 1/48th scale plastic by Merit is from George Cox's Famous Biplane original and uses his "Quicklock" assembly



detailed on the back. Now that the large size is in production, perhaps we shall be seeing more high speed deltas, due to the advantage of better power/weight ratio with the larger engines. Phil had his latest at the Northern Heights Gala and it is seen, along with his established Fairy F.D.2, Sabre and Lavochkin, in our heading picture. Called the Deltaceptor and powered by an A.M.10 diesel, it could not be more aptly named, as all who witnessed it climbing at Halton will readily testify.

New plastics from Airfix in their Series 2 range at 3s, each retain the popular 1/72nd scale and cover two of the great World War II twinengined favourites, the Bristol Beaufighter and the twin-boom Lockheed Lightning. No less than 55 pieces go to make the finished Beaufighter T.F.X., Single-engined types new to the Series 1 Airfix range are the long-nosed Focke-Wulf 190D and Douglas A4D-1 Skyhawk at 2s. each.



Jim is one of those controline addicts who has been trying to get through the stunt schedule for several seasons but without success. The problem seems to be that as soon as he has gone through his five consecutive loops, he no longer seems to retain good control, and he always complains of "tight" lines. His pal Pete pointed out that when his lines were laid out on the grass they had small "waves" in them and on his suggestion that they did not appear correct. Jim made out another set of lines, but still the same result. still the same result.

side of the wire than the other. pecause more tension is put on one worse by tending to make it coil up, unters or a rag often make the line Lightweight or single or multi strand should always be unwound correctly with the reel pointing in the same direction as the line and. Attempts to stranghen ince by pulling at one to stranghen ince by pulling at one ANSIVER: Jan is making the common musical col unwinding his control inter from the reel by pulling it off sideways, i.e., at 90 degrees to the direction that rob intervention. What would YOU do in a case like this? Turn the page for the solution to the problem, printed below.



IRONING THEM STRAIGHT

### MODELLER

A. D. Kingswood's

Me. 109

CONTROLINER FOR 1-1.5 c.c. ENGINES



THE GROWING popularity of the new, more powerful 1 c.c. and 1.5 c.c. engines has created a demand for more controline scale designs to suit this size of engine. What could be more suitable than the angular Messerschmitt 109? Alan Kingswood's model has now amassed several seasons' flying with an Elfin 1.49 and its robust construction with all parts sheet covered and ply tailplane, make it virtually indestructible.

To make construction very easy, the designer has adopted the old free-flight system of employing a horizontal crutch to which are attached the engine bearers, and fuselage formers are then superimposed

above and below the crutch spacers. Thus the fuselage is started by building up this k-in, x k-in, crutch over the plan view, with appropriate thickness spacers between the main crutch and engine bearers to suit the crankcase width of your motor. Apart from the front circular F1, only the 1-in. ply F2 is a one-piece structural former, and this is now added prior to installation of the tank, bellcrank and push rod control mechanism. Plank the fuselage with 1-in. strips approximately is -in. wide, allowing a cutaway for the cockpit area and eventual wing seating. Make up 36-in, vertical tail surfaces and h-in. ply tailplane and hinged elevator FULL SIZE COPIES OF THIS 1/4th SCALE REPRODUCTION ARE AVAILABLE AS DRAWING CL 709 PRICE 3/6 PLUS 6d. POSTAGE FROM AEROMODELLER PLANS SERVICE



assembly ready for attachment to the rear fusciage after the planking is sanded over. The tail wheel can now be added and work started on the wing.

Since the undercarriage is a very important feature of this model, hend it first and make sure all angles are correct in plan and side elevation so that it will fit the ply plates recessed into the wing. First make up the wingspar to the front view, with dihedral brace attached. Then fit all ribs over the plan, rocking the spar to obtain correct positions and line up the ribs when attached to the leading edge. The u/c supporting plates should be fitted in after the rear section of the u/c is bound to the ply dihedral brace, then the rest of the u/c is hound to the ply plates and when satisfied that all is thoroughly set, sand all over and cover the wing with  $\frac{1}{2}$ -in. sheet taking note to chamfer the rear  $\frac{1}{4}$ -in in order to obtain a reasonably sharp T.E. The strength of this wing construction is such that repeated wingtip landings can be made!

After fitting the tips, finish with fine sandpaper, add  $\frac{1}{16}$ -in. ply line guide and fit wing to the fuselage making sure that it is at the correct angle.

Next, carve the upper and lower nose cowling block which can either be a permanent fixture or used as a detachable cowling held in place with snap fasteners. They should, of course, be hollowed out to suit your particular engine. Then fit the cabin, radio masts, chin radiator, exhausts, airscoop and mark the gun channels prior to covering the whole model with tissue and applying at least two coats of sanding sealer. An authentic colour scheme would be upper surfaces very dark green, lower surfaces "sky" blue and bright yellow spinner.



ENGINE SPEED CONTROL is fast becoming a standard feature for engines specially produced for radio control in the U.S.A., Japan and Germany. Carburettor intake control has not been found altogether suitable for all conditions, demanding specially produced glowplugs for certain temperatures and to obtain the desired speed range. Latest announcement from Veco Products Corporation is the use of incorporated exhaust baffle together with intake throttle. "Chopper" action on the exhaust blank is connected with the throttle arm and can be altered to provide a variety of interconnecting ratios. Advantage of using both exhaust and throttle is that it is no longer necessary to blank the exhaust off to the extent of not being able to hear the engine at reasonable distance.

Fein Und Modell Technik (Webra) announce their 34 c.c. Bully and 2:46 c.c. Komet with new accessories, notably intake throttle, exhaust collector and vacuum pump units to be used with the Stegmaier radio control system. These twin ball race engines have large crankcases and appear to be particularly robust to withstand heavy duty work.

Company claims are for 26 b.h.p. at 13,000 r.p.m. in the case of the smaller engine and 34 b.h.p. at 14,000 r.p.m. for the 34 c.c.

Envied motor at the Cranfield World Championships was the new Czechoslovakia MVVS 1958D. One of the units was dismantled for inspection and we took advantage of shooting a photo (at right) to show how the motor utilises the porting system introducing by Enva 15D. Transfers are, however, much larger than the Jap motor, allowing the use of 3, as against 4 holding down screws and the crankshaft port area is more generous. Local field checks with a tachometer showed that the engine matches a re-worked Oliver Tiger HI on r.p.m. Most unique feature is the inclined transfer port which appears to follow the modern theory that the first flow of high pressure transfer gases should be across the piston to avoid any wastage going straight out through the exhaust port, and also to divert other gases, entering the upper cylinder opposite the exhaust. In other words, this progressive porting system introduces a new method of controlling the transfer gas direction in model engines.





LAST MONTH we gave details of Mr. Morgan's first metal models, the Wright flier and Bleriot XI, and a point which was overlooked in our description of the models was the choice of solder and means of obtaining such neat joints.

Much cunning and craftiness has to be applied, as unlike silver solder which blends in colour pretty well with either brass or copper, soft solder is a real menace, being so dissimilar in colour and with a perversity in application with its associate tool, the soldering iron, that it calls for very carefullyprepared control in quantity and direction. In fact, it has been found better to dispense entirely with the soldering iron except for tinning flat mating surfaces, and to use what Mr. Morgan terms "Single Shot assembly" whenever possible, so assembly" that no surplus solder is exposed to view, or requires subsequent removal. This entails use of a methylated spirit lamp for heating very small parts, "Spitfi.e" gas jet for small parts and petrol blowlamp for large components. For silver soldering, "Easiflo" or Thesseo Melt-Esi is the best choice for flux for solder with 640 degrees C.

Soft solder should be lead-free, melting point 300 degrees C, and heat applied by meths lamp with Baker's fluid as a flux.

Now for details of two more famous aircraft subjects in Mr. Morgan's series:

#### VICKERS VINY

On June 15th, 1919, a British twin-engined biplane, the Vickers Vimy, crash-landed at Clifden, Co. Galway, in Ireland after a non-stop flight of 15 hours 57 minutes across the Atlantic Ocean from St. Johns, Newfoundland.

The pilot, Captain John Alcock, and his navigator, Lieut. Whitten Brown, thus made the first direct air link between Europe and the American continent, to be followed by the frequent and regular air lines of today.

The fusclage of this model is made in 20, 22 and 24 s.w.g. semihard brass sheet, wire stitched and silver soldered with the forward top fairing soft soldered in position. The wings and centre sections are all in 22 s.w.g. semi hard brass sheet.

Wheel tyres are made in copper tube loaded and bent round a mandrel, the cut ends being aligned and butted together. Propeller bosses are made up in sheet brass laminations, sweated together and slotted to receive the root ends of the blades—and all controls work from the cockpit.

#### MODELLER



#### SPIRIT OF ST. LOUIS

On May 21st, 1927, a young airman, Charles American Lindbergh. received world-wide applause at the conclusion of an epic solo flight of great endurance by man, machine and engine, after crossing the Atlantic ocean from New York to Paris. This flight, covering 3,639 miles, took 331 hours to accomplish and did much to sway aircraft designers towards the monoplane trend then developing and at the same time the static radial aero engine proved itself beyond any doubt to be more compact, lighter, mechanically simpler and definitely more reliable than the liquid-cooled engines then in use, for long distance air journeys involving hazardous weather conditions

The NYP model has a one-piece double surface 22 s.w.g. semi hard brass sheet wing the camber of the top surface being formed after bending and cramping over shaped wooden formers finally being soft soldered along the entire length of the inside of the chamfered trailing edge.

Rear fuselage and cabin portion is built up in 22 s.w.g. brass sheet, all joints being wire stitched and soft soldered and the front fuselage and engine cowling panels are also wire stitched and soft soldered being made in 22 s.w.g. copper sheet, pre-formed around a wooden pattern block.

Engine and propeller assemblies comprise of no less than 105 separate detail parts.

The undercarriage oleo legs are internally sprung and the pilot's cockpit and cabin contain:— Dashboard and instruments, control column, rudder bar and engine controls, pilot's seat with safety belt, the periscope (extending and retractable), food racks, life raft, water Lottle, amemometer for compass. Some of the extremely fine work involved in Leslie Morgan's metal models can be seen in these three photographs, opposite is the Ryan NYP Spirit of St. Louis with calin door sugar open so that the instrument panel can be seen. The undercarriage is spring an seen in the sketches below. On the Vicker's Vinsy fabore and sketched opposite) detail extends to working Scarfe rings, swivelling guns working controls and detailed propellers. It would be a hard task to match such artistry in wood, but in metal Mr. Morgan seems to have no peer





hin, internal strap as per section view. Construction withstood a fullwinds motor break in second round. Below is Erno Frigyes's power winner, notable for its weight, and impeccable black and yellow finish. Timer kicks auto rudder prior to cutout for right glide turn after right spiral climb. Hardwood spars and trailing edges, diamond sheet fuselage blends to spinner at nose. Sketches opposite: A George Reich (U.S.A.) usesVee section keys to prevent side wobble on folder prop, with deep root section, hinge tubes bound to rear of boss. If Steel turbulators had a lethal appearance, were cemented to blades of Bill Etherington's Canadian Wakefield, to improve efficiency. C Always noted for new ideas, Austria's Ossie Czepa had this

THIS IS THE FIRST instalment of the vast store of technical data accumulated by AEROMODELLER staff at Cranfield. Above is Bond Baker's

Wakefield, one of the cleanest designs on the field. Fuselage made with hin. sheet wet-moulded over a handcarved forme, two halves joined by a



ring hinge unit prop boss turned to fit his spinner with turned root unit and pinch bolt to retain adjustable pitch blade. On opposite side is similar unit holding balance weight, both of which fold by spring action. The whole is fitted to a removable fibre tube motor unit which plugs into fuselage (or airframe!). rear D Anatol Kossowski's folding prop has turned aluminium blade roots, pivot lugs incorporated, allows variable pitch-from Poland. E Lazlo Ordogh's sense of humour provided light relief on his two models with sheet pylons cut to illustrate Samson and Delilah. IN Austrian F. Reiss had sheet covered wings-top and bottom--roots of which were extended to take wing retaining bands. At nose, Webra Mach 1 is on cantilever plate bearers with generous downthrust, non-adjustable unlike those in G which could be moved via rear screw tension. This was a feature of Wieslaw Schier's reserve Polish design. II shows the neat cowl used by Lothar Piesk of Germany to enclose his Taifun Hurrikan 1.49. J Rear end of Schier's power model has a knock-off tail via claws on bracket bolted to fuselage.



AGRO MUCELLER



537

AERO MODELLER

Size of the propeller gives a clue to the type

gives a cline to the type of model extreme left. It is Don Gurnetts 108-inch Jonn Clipper Cargo winner which lifted 3 1b. 3j oz. ballust on one flight. Airframe weight 20 oz. and angine is a Cox Thermal - Hopper . 8 co. Flight must last 40 sees. Form 20 sers.

40 sees. from 20 sees. engine run. Right is the oppo-

Right is the oppo-site—diminutive U.S. & c.e. Record Holder at 109 m.p.h., also Thermal Hopper powered, has control via Monoline operated tab at tip

## 1958 U.S. NATS.

REPORTED IN WORDS AND PICTURES

By Tom Pearson, George Aldrich and Howard G. McEntee



ALL ROADS leading to Glenview Naval Air Station, Chicago, seemed crowded with model builders' cars on Sunday, July 20th. The United States Navy were to be the cordial host to more than 1,200 modellers for the eleventh year in succession.

F.A.I. and Indoor events were flown Monday. Low position of ceiling lights caused some cries of anguish as model after model was hung up. Outdoors, James Patterson of Granada, California, won F.A.L with the same model he brought to

Cranfield, iust beating Larry Conover.

Top "A" speed (up to 3.25 c.c.) was almost 11 m.p.h. slower this year, the team of Mortin and Crogan of Dallas, Texas, won with 143.48 m.p.h. Combat was the usual mess of lost tempers, fast planes and scattered wreckage. Many fellows were using pen-bladder tanks or crankcase pressure fed tanks to ensure a long steady run. There were the usual number of Half Fasts, Omegas and Sweetsweepers, but when

the dust had cleared, the Flite Streak hy George Aldrich had won two out of the three first places.

Noblers, Chiefs and Thunderbirds were prominent in stunt. History was made when George Aldrich failed to place in open stunt. An interesting side note in that George flew many demonstration flights with an Oliver Tiger Flite Streak flying through an excellent A.M.A. stunt schedule. The rumour was about that George is scaling down a Nobler to suit the Oliver for the 1959 Nationals.



Top left, James Funduk of Rosedale L.I., placed third in GL scale with folding ving Corsaic powered by Twin Doaling 60 (in line) alternate fir-ing, sounds like a ducted fan motor. Top right, Chumpion ducted fan motar. Top right. Champion Wondy Blanchard's Cas .8 ec.-pueered 25-inch Soparith Tri-plane. Bottom left, 23 lb. of 11.36 hy Wesley Levan of Berwick, Pa. Six Fox 194 and fan Jet-masters! Right, Liber-atar nbreed fifth for ator placed fifth for Ed Childress of California, 7 ft., 1411b., four K & B 298

Class B speed had some interesting developments. The top time was 155-11 m.p.h. This was about 2 m.p.h. faster than last year and was set by the team of Harris and Shelton of Baton Rouge, Louisana. One evening this same team broke Ray Gibbs's F.A.I. 5 c.c. speed record. They used a Dooling 29 in a plane spanning 171 inches; 301 sq. in. wing; 151 in. length and 171 ounces in weight. Model was constructed of basswood and covered with nylon and green fibreglass resin. Speed was approximately 157.66 m.p.h. Tom Dean's Aeronca Crop Duster again won first in open scale. This year Dean had some tough competition in the form of a F4-U5N, a Focke Wulf 190 A5 and a B-2411. Open scale is the ultimate in precision construction, but some of the builders should become better flyers, there were many heartbreaking crashes. Ernst Berke of New York passed out when his P-47 crashed! This plane, powered by an old Hassad 72, had operating cowl flaps, retracting u/c, motor control, drop tank flaps. Cockpit detail was perfect. A plastic aluminium coating

Pics from Geo. Aldrich show outstanding madels at Glenview. (1) Three funnous Astros, Bonner's, Dunn's (in cortre) and Dunhum's nusc. (2) In George's apinion R. MacDonald und J. Silhavy of Gleveland uera beat stunt fliers, used Noblers. (3) Norm Diechmon's super S.E.Sa was 6th. (4) Rood's Lowender with new Anderson Spit 65 and Boeing test decore. (5) Randall's open stunt winner. (6) Buchidell's open stunt winner, (6) Buchidell's open stunt winner, (6) Buchidell's open stunt weiner, (6) Verlief (7) do Holt low uing style. (8) Terrific P.5T by Berke crashed in wind. was painted with aluminium porder in resin biader. (9) Voriation on the "Detroiter" design simulated the real finish. A 9½-foot span, 23-pound B-36 created a sensation but failed to place. Bob Heminway of Andubon Park, New Jersey, won team racing with the able assistance of his father and sister. Team Racing seems to be a dying event. The number of entries was low, but quality was high, time for 10 miles 7:47.

An 18-year-old boy from Fairfax, lowa, really set the older fellows looking. Don Gurnett's 9-foot span Thermal Hopper.049 Clipper Cargo plane lifted a 3-flight total of 151:25 ounces. Itis plane carried a maximum one-flight load of 51<sup>3</sup>/<sub>2</sub> ounces. Not bad for a 20-ounce plane!

Thursday evening Bob Lauderdale of Huntsville, Alabama, broke his former F.A.J. 10 c.c. record of 167 m.p.h. with a flight of 171 m.p.h. Bob also won C speed with the same McCoy 60 plane with 168-16 m.p.h. Competition was really hot in C speed this year. All of the top nine speeds were over 160 m.p.h.

Woody Blanchard of Hampton, Virginia, was again Open and Grand National Champion.

1958 will have to go down as "aileron year" in R/C. There were actually about 280 entrants all told, but, of course, some of these are multiple entries, where a fellow was in Pylon and Stunt. In Multi, they

selected 21 of the top qualifiers to fly in the Championships on last three days. Needless to say, the flying was absolute tops then. First four positions were taken by Bob Dunham, Howard Bonner, Bill Dean. All from the LARKS, California, and Kasmirski from Chicago; all were flying Astro Hogs powered by K & Bs with Orbit equipment and Bonner servos. Next was Walt Good, then Jim Martin from Tennessee, both with TTPW. First four all 8-channel reeds, and after Martin were three more of same. At least 19 of the 21 used ailerons! Three of the 21 used ailerons linked to a rudder, all these being TTPW. This seems to offer quite a bit of promise, as soon as some work had been done on the system.

ARD

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Pylon was very interesting with quite a few planes designed especially for the event. Won by a DCIRC man with neat shoulder winger and TTPW—speed being 31:03 m.p.h. deBolt next with hot bipe, followed by Bonner with a brand new Astra Hog that weighed 73 fb, and flew beautifully with a '19! Rudder about as usual, Intermediate lousy. 102 Multi entrants, 99 in open Rudder, 12 in Jr.-Sr. Rudder, 29 Intermediate.

Quiet again settled on Glenview and only memories were left as the sailors swept up the balsa and paper.





CLUB LOCAL NEWSPAPER publicity can work in more than one way. I have before me two zeromodelling "mentions" in the local press, one most favourably from the Longhton. Essex, area where the DEB-DENAINS Club were given from page billing for their fine display in connection with the Debden Fair week; but the other makes a rather different picture

with the Debden Pair week; but the other makes a rather different picture. It arises from a Watford Court case when a neighbour was charged with malicious wounding of the father of his next-door acromodeling youngster. The neighbour had been annoyed by continual engine unning and decided to take the law into furning and decided to take the law into his own hands and elimb over the fence to forcibly stop the noise. Result was a fine of  $\pounds 10$  and a further hinding over to keep the peace for twelve months for the irrate neighbour whilst the aeromodeller's father was also warned to keep the peace. I trus Was also warned to keep the peace. I trust that you will all see the moral in this all too true story. Now for an appeal for an owner, Driver Thompson of R.M.S.C. Aldershot informs me that he has found an Aiglet Glider with no identification. The owner can pick up the model from Main Gunet Room at Blenheim, Barracks, Aldershot, if he can satisfactorily identify the model.

#### London

DARTFORD M.F.C. have been to most of the Combat Rallies but unfortunately have not been able to organise their own regular event this year. They are very keen on the Miles Contest Special 3.5 c.c. and have been using this motor to very good

and the other using the head the state of the effect. In HAYES M.A.C. there is jubilation that Peter Hedgeman and Josh Marshall should have qualified to go to Holland for ENUMPER D the International Tailless event. ENFIELD AND D.M.A.C. ran the team race trials at Cranfield very effectively, their only club entrant, Bob Page, in speed, was unlucky

#### S.M.A.E. CONTESTS

- September 21st Model Engineer Cup, 'Feam Glider; Halfast Trophy, Open Power. (*Area Centralised*)
- September 28th Team Racing ‡A, A, B. (Area Centralised) Farrow Shield, Team Rubber; S.M.A.E. Cup, A 2 Glider. (Area Centralised)

- Cober 26th Notober 26th Hamley Trophy, Open Power; Frog Junior (Trophy, Open Rubber/Glider, (Area Centralised)

not to get an official run, although he managed 109 m.p.h. on the day.

#### South Eastern

The S.E. Area S.M.A.E. are happy to Inc. 5.r., Area S.M.A.E. are happy to announce that they have securized use of Royal Naval Air Station, Ford, near Arundel, for the South Coast Gala on October 19th. All classes of free-flight will be held and details circularised in due COURSE

#### Southern

LEATHERHEAD M.A.C. have been giving flying displays at local fetes during the course of which over one hundred balloons have been burst. Their interest in combat has now reached the extent where they can arrange a league within their own group for contests beginning September. Southern Area Bally will be held at Headlicu Southern Area Kaily will be held at Heaulieu on September 28th in conjunction with the WEST HANTS CLUB. Tirle will be the West Hants and S. Area Rally. Beaulieu has now been handed back to the Forestry Commission and the Verderer of the New Forest will only grant permission to use Beaulieu and Stoney Cross once each year. The contest will be for some close some each year. The contest will be for open free-flight, all classes, team race three classes, stunt, combat and radio. As the date coincides with the Area Centralised S.M.A.E. Team Race Contest, the organisation will undertake to forward official results for those members competing at Beaulieu but from outside the Southern Area.

#### Midlands

MELTON AND D.M.A. have been active at local fetes and gala days and have now concluded negotiations for use of two good llying grounds which will be of great help to boast their membership. One successful club night netwity was a "bring-and-buy" sale—in fact another is planned for the future to help club funds. Sunday, August 37d, as World Championship spectators will be aware, was not the day to held a rally, but STRATFORD-DPON-AVON M.A.C. went ahead with their's at Wellenbourne Aerodrome, the outstanding item of day being Mike Lambert of Hall Green Birningham, with his A.M.35-MELTON AND D.M.A. have been item of day being Mike Lambert of Hall Green, Birningham, with his A.M.35-powered stunter. Club members have been giving impromptu talks, in particular Brian Fowler spoke on the A.P.S. *Pedro* with E.D. Racer, explaining the methods he employed in its construction. This type of club entertainment is particularly beneficial for the less experienced members and I wish more clubs would do the same. In

One of the Kenton M.A.C. Peacemakers gets away at the Godalming control-line Rally

HUCKNALL AND D.M.A.C., team race and combat are catching on fast, but new members are still required and should contact P. Watson, 24 Rockwood Crescent, Hucknall, They have the use of the local Rolls Royce Sports Ground on Sunday mornings.

#### East Anglia

SOUTHEND SENIOR M.C. are now SOUTHEND SENIOR M.C. are now opening a junior section for those up to sixteen years: contact D. Daines, 24 Whittingham Avenue, Southend-on-Sea, Essex, CAMBRIDGE M.A.C. hired a coach for Sunday, August 10th, to travel to Debden for the East Anglian Gala, but many models disappeared into a damp, snake-infested wood, downwind, and a Lucifer, Man'telle, Stomper and A.M.10 are still there! However, a crowd of scratched are divity woolding corrected at 6 on a free are still there I However, a crowd of scratched and dirty modellers emerged at 6 p.m. after several hours searching, with Mike Hobbs's model which had been dielodged from unclimbable tree after many hunks of wood had been hurled in its direction. Dusty Miller now receives the club Power Trophy and R. Godden and C. Ning are runners-up. Controlline duration is rearing its ugly head in NORWICH M.A.C. and during the August Rank Holiday week the club record which had been a mearer 8 min was raised August hank Holday week the club record which had been a meagre 8 min. was raised by Mr. Arthurton to 464 minutes and then to 1 hr. 10 min. Flight refuelling was used, the engine a 25 David Anderson using KK fuel. Mr. Arthurton has been practising night flying for an anticipated attempt on the World duration record.

#### Western

VY CSIEFIN Royal, Air Force Colerne was the scene of the Bartiett Trophy meeting organised by IRISTOL ACES M.A.C. with good attendance and ideal weather. Topping the results were K. Horry in Rubber, with a perfect 9 min. for BRISTOL AND WEST, J. Down with 7.9 in Glober for SOUTHI BRISTOL (he also won Power with a perfect 9 min, total) and in Combat. Smith of BATH M.A.C. battled his way through to win. In the final team events. South of BATH M.A.C. battled his way through to win. In the final team events. South Bristel lead with 48:33 against the Bristol Aces M.A.C. 33:05. Six clubs took part in this contest, BRISTOL R/C M.A.C. have their 8-reed job by Doug Sheeppard test-flown and demonstrated that flick half rolls below 50 feet can be dangerous. half rolls below 50 feet can be dangerous. By digging deep enough he recovered the engine in the subsoil! Don Cole's 6-reed Smog Hog is awaiting its turn on the flight line, SWINDON M.A.C. had their first indoor meeting for some years and members showed that not all of the old tricks have been forgotten. K. Hart flew a natty line in Microfilm and the Chairman's Jetex Fizzer circulated with much violence.

#### For Your Diary

September 14th Croydon Gala, Open Rubber/Glider/

Power, Slope Staring. September 21st Leicester Rally, Stapleford Hall, Near Melton Mowbray, Stunt, Combat, R/C. September 28th

- ptember 28m C. H. Roberts Cup. Dawson Park, Bexleyheath for Flying Boats. West Hants and Southern Area Rally, Beaulieu. All Classes F. F. C. I. R.C. St. Albans Slope Soaring. Ivinghoe
- Beacon. Open and R/C. October 5th Bill White Rubber, also Glider and Power. Chobham October 19th South Coast Gala, R.N.A.S. Ford, November 2nd

- St. Albans Slope Soaring. Ivinghoe Beacon. Open and R/C.

#### South Western

South Western The S. WEST R/C M.F.S. has suffered (like everyone slee) from strocious "summer" weather, and only two club millies have heen possible so far. However, at the Devon Rally at Woodbury Common, Exeter, conditions were ideal, with aurshine and light-to-moderate winds. The Wilson-Smith Cup. flown to the Rynnax schedule, was won by Harry Stillings (Exeter) flying his now-veteran aerolatic model "Zoom", with 75 points; second was K. Williams (Salcombe) 53 points. Harry's model scored floadmin) 55 points. Harry's model scored floadman's RoB, using tone-control for rudder and elevator. K. Williams gained second place largely through excellent spot-Inndings within 30 feet. Several members have gone over to the Hill Rx, and are delighted with results. Four new membrox RHLY Go to the clrh first the De rally WHLY for the son may both were such well-known personalize as how how were such well known personalize as how how were such RALLY on August 17th. This year the rally attracted 93 entries, among which were such well-known personalities as Dave Posner, Mike Gaster, Vic Jays, J. Baguley, G. Fuller and J. and P. Manville. With maximum fight time fixed at 4 min. it soon became obvious that mass would be coming fast and furious. Altogether 19 mass were scored. Several models were lost on first Right attempts and among these were Dave Posner's Oliver Tiger powered Dream Weaver, George Fuller lost his rubber model on his third flight, having already scored one max, and climbed a tree to retrieve it. Both Fuller's and Posner's models were seen to d/t. But despite a long retrieve it. Both Fuller's and Poiner's models were seen to d/t. But despite a long cross country run and an intensive search the models were not found. As usual, this event drew most of the 1,000 spectators at the rally, and the standard of the combatants was very high. In the final Brian Hopkins of S. Bristol met fellow club-mate Jim Sullivan after having given a wonderful display of attack and evasion, neither being able to cut the other's streamer Jim Sullivan had to retire as a result of a nid-air collision. Also nun concurrently with the Open events Shield for which clubs in Devon and Cornwall only could compete. This turned uut to be a very tight fight between Exmouth and D.M.A.C. (the organisers of the Rally) and Plymouth M.F.C. Exmouth won with the narrow margin of 10 points to 8 points. to 8 points.

Power			
1. J. Manville	Bournemouth	622	secs.
2. B. Cox	St. Albans	598.	5
3. J. Baguley	Haves	575	
Rubber			
1. J. Russell	Bristol West	653	secs.
2. G. Fuller	St. Albans	585	
<ol><li>'I', Benson</li></ol>	Cowley	535	
Glider			
t. J. Ralph	Glevun	634	secs.
2. A. Chapman	Hayes	565	
3. B. Cox	St. Albans	499	
Radio Control			
1. H. Stillings	Exeter	75 r	points
<ol><li>K. Williams</li></ol>	Bodinin	55	*1
3. H. O'Heffernan	Plymouth	53	
Combat			
<ol> <li>B. Hopkins</li> </ol>	S. Bristol		
2. J. Sullivan	B. Bristol		

#### **East Midland**

Bomber Command Eliminators for the R.A.F. Championship attracted forty competitors from seven Stations to R.A.F. Scampton, but he weather was really foul. Stunt and Combat just managed to cope with the high winds, but the effect on team racers was distastrous and of eight starter none fittished the course!

#### Northern

Since the last OLDHAM D.M.A.C. report was published in these columns the club has lost three flying fields and an

unfortunate situation whereby the son of a farmer gave them permission to operate on a field was created when the farmer himself blew his top and literally threw the bod so his land. However, a new field has been obtained but far inferior to previous flying site. BAILDON M.F.C. played an important site DAILDOIN M.P.C. played an important part in the Northern Area's decisive victory at Cranfield for the Area Championships, J. Pannett's Super Creep topped the Power team score with 7:57; C. P. Millar had two maximums in Rubber but both his models, has flight. A number of models were collected a fortnight later when members came down a fortnight later when members came down to attend the World Championships. SHARSTON D.M.S. had an A.1 Comp which was won by C. Helliwell and C.1, continues to increase in popularity with five Enyas, Fox 15, Eta 29s and Vecos making their noisy mark. A. Cook won the club Stunt event flying a Frog Aerobat, CHEADLE AND D.M.A.S. Glider event was won by Brian Faulkner with 5:12, followed by J. Wingate 4:14, and M. Turner 2:29. Strone winds limited ducations. 2:29. Strong winds limited durations. Home-made compound escapements are used in Arthur Hailey's *Smog Hog* which will be fitted with a 3-reed outfit.

#### North Western

SOUTHPORT M.F.C. had a Slope Soaring Contest with a thrilling finish with only a few seconds separating leaders. Conditions were perfect at the flying site on the local sand hills with a 50-ft. rise, and Fred Hradbury was only short of five seconds of the club record with 1:07 The "Development of Hritish Aviation" was the title of an Fishibition at Longford Hall in Stretford, Manchester, and CHORLTON M.A.F.C. played a big part in publicising the show by providing wenty-five models including Hrian Spencer's S.E.S.a. Charlie Jackson's Black Magie and Pelican plus demonstrations of building and a round the pole flying Spitfre V members were recruited during the first week. SOUTHPORT M.F.C. had Slone :1 week.

#### South Midland

One of these years we shall have perfect weather for the annual Cranfield meeting weather for the annual Cranfield meeting where South Midland Area clubs piley host to the rest of the country. This was the best-attended and most successful of the series to date, in spite of poor conditions which must have influenced many would-be visitors. The Cranfield plateau appeared to break up the weathers to that for once we break up the weather so that for once we were at least having more sun and less rain than elsewhere. Wind strength was 15 m.p.h. plus, so mass were reduced to three minutes. Nevertheless, some powerful thermals, and late dyts caused the loss of several power models, one of which was returned by a farmer in person who was quite placed with the downwind conduct of retrievers. The high-powered (Hornet and Fox 35) "bombs" from Surbiton did not come into the winners list, but extended their reputation for noisy, list, but extended their reputation for noisy, fast climb. Rather than fly-off, the top three in Power chose to toos for prizes—wisely in view of workening weather—so that in reality these three are equal first. Rubber did have a fly-off and the winner lost his model to corn downwind! Combat was organised (for once) hy Oxford Meteors who coped with the 62 entries in able fashion, having few arguments and then ouly with the recognised trouble-

and then only with the recognised troubleand ther only with the recognised round-makers who are swiftly carning such a poor reputation for themselves. Tribe and Sadler were worthy finalists after no less than seven jourts! Radio was less exciting, clearly the top men—and others—were off form, so points were low. Howard Boys won an A.M.25-he might make a new model for it! A.M.25—free might make a new model for fit Chuck glider must come to the Nats. Mentioned only in the advance notice sent to S.M.A.E. clubs, 24 entries turned up. With encouragement this figure would be trebled. Top time for a single fight was Smith's (High Wycombe) 51 secs. Team Racing drew a good entry, and the finals were fought out long after most of the many coaches and cars had turned home-wards. They missed a fine "Tortoise and Hare" Class B final, won eventually by a Frog 500 in the swept wing Whatefedde model that was first seen at the 1956 Waterbeach Nats.

Congrats to all the winners—and thanks to the South Midland clubs who turned-to and helped run the meeting. Abingdon, and helped run the meeting. Abingdon, Oxford Meteors, Lutton, Wayfarers, Walford, Cowley, Stevenage, Letchworth, Apsley and High Wycombe. As a result of generous support of the raffles and the good entry, money prizes were added to the modelling goods awarded.

Radio Control (19 entries)					
Multi Sin	de				
1. G. H. Redlich 65 1. H. Bo	vs.	23			
2. S. Unwins 45 2. I. Rob	inson	171			
3. E. Johnson 333 3. T. Air	ev	9			
Free-Flight	- /				
Power (62 entries)					
1. I. Bickerstaffe Rueby		9:00			
2 R. Draner Coventry		9:00			
3 K Glynn Surbiton	100	9.00			
Rubber (30 entries)					
1. D. Poole Birmingham		2:09			
2. D. Latter Men of Kent		1:47			
3 X Elliott Men of Kent		8.43			
(Hider (52 entries)		0.11.			
1 D Varley Birmingham		8:25			
2 R T Abbey Coventry		8.07			
3 I Wingate Cheadle		7.28			
Combut (62 antries)		1120			
1 B Sadler Derby					
2 P Tribe Northwood					
Team Pace					
"A" (AS entri	(as)				
1 Dowillassett Fourie Endeau	OUL	8.50			
2 P. Hartwell Enfield	0	0.20			
3 M Kandrick W Bronwich		0.58			
"R" (16 entrie	e)	1.00			
1 & Bayter Wharfedala	.,	0-41			
2 Winch W Kegay		11.16			
3 I Davou Whasfadala		tirnd			
Chuch Clidge (24 anterior) hast 2 of	65 01	nete			
CHIRA CHIRE (24 CHIRE) DESC 2 OF 5 CHUCKS.					
1 M. Smith High Watcom!	8	02.1			
2 C Simoon St Albany	<i><i>n</i></i>	76.8			
2. D. Channes St. Albans		74.9			
a. D. Oreaves Learnington		(4.0			

All raffles and lucky programme prizes were claimed by correct ticket holders.

#### Pen Pals

Wanted for J. Carsley, 8 Berwyn Avenue, Thingwall, Wirral, Cheshire, anyone over-Thingwall, Wirral, Cheshire, anyone over-ses, preferably aged 14 years. For Ronald M. Bray of 6 Rosslyn Avenue, Shoreham-by Sea, Sussex, anyone in America or Canada aged about 14 years. For John Courillot, 46 Rue des Boussicats, Auwerre, Yonne, France, anyone in the U.S.A. (if possible a girl) about 17 years (I) interested in radio control and rocketry. For M. Isbister, 166 Broad Lane, Norris Green, Liverpool II, anyone aged 11 interested in free-flight power and glider. For W. H. Longley, 49 Fouraere Crescent, Downend, Bristol, American or Japanese interested in con-troline, stuut and combut. For W. Hayward, A rolatice or Japanese interested in con-troline, stunt and conduct, for W. Hayward, 39 Rolls Koad, Jermonder, London, S.E.I, anyone interested in radio control. For G. E. Dunn, Route No. 2, Jefferson City, Mo. U.S.A., anyone in Britain or Germany interested in awapping booka, free-flight, team race and combat. Master G. Pitt, Bartholomew Road, Levin, New Zealand, wants an American or Hritish pal 18 years old and controline major interest. Vladimir Krotel, Praha 13, Moskervska 48, Czecho-slovakia, wants a radio control entusjast in England. He can correspond in Russian, which should be handy for those who volunteered to translate for us1B. Mukhoujic, St. Paul's School, Jalapahar, Darjeeling, volunteered to transite for us to anawnon-St. Paul's School, Jalapahar, Darjeeling, India, is 15 and wants a keen aeromodeller correspondent. Tun Hla Aung, 3/80 47th Street, Rangoon, Union of Burma, India, is 15 ant warns a ... correspondent. Tun IIIa Aung, 3/80 47th Street, Rangoon, Union of Burma, is a leading filer in those parts, 18 years, at University, wants a contact from England, Russia, Germany, Yugoslavia, Hungary and Czechologyakia. The CLUBMAN

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