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OCTOBER 1958

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Weask your indulgence over publication of the resules of our competition announced in petition June, 1958, issue of the June, 1958, issue of
AEROMODELLER, bue due to the large number of entries received, the final sifting of the results has taken longer than anticipated. We thank all concerned for their magnificenc support, especially those who wrote such interesting leters, and hope 8 include the names of the winners in che nexs issue of this nagazine.

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## October, 1958

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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 ficlds 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 Butanc, Propane and Methane. Of these, Butane is the easiest to handle. At ordinary temperatures it liguefies 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 licuuefied at ordinary temperatures at a pressure of about 100 lh . per sq. in. or by getting it down to a temperature of minus 40 degrees C .

Methanc-or to give it its common name, "Marsh Gas"-is very widely distributed, being the basic explosive element in coal
mines, does not liquefy until you get it down to a temperature of minus 173 degrecs 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.

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 $($.) 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 liguefied 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.

> This is the seventeenth article in a series about Balsaveood, its growth, properties, processing and many applications-ucritten by John Paterson, Managing Director of Solarbo Litd. . . . . Solarbo are Britain's largest importers of Balsa.


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ONCE AGAIN keen aeromodellers will be eagerly awaiting October isc when they can obtain a new AEROMODELLER ANNUAL. This year the popular mixture seems likely to prove more enjoyable than ever. Laurie Bagley is responsible for another fine cover (reproduced within as frontispiece) depicting the famous Richthofen Fokker Triplane. Articles include Pete Russell on Development of a Stunt Model; Ron Moulton on Engine Speed Control; George Cox on Details for Scale Modellers; two fine Radio Control features, with details of 3 -valve audio tone single channel receiver: Designing for new F.A.I. Power Rules, Rocket Power, Engine and Fuel articles, the latest on finishing Plastic Models. All Wings with a Difference, plus the finest selection of model plans from the world over that we have yet collected, and, of course, the regular Engine Analysis, Contest Results. Records, etc., that are always to be found to keep readers right up to date.

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Assistant Editor $=-\quad=-\quad$ R. G. MOULiON

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## The World Championships

「ur 1958 Wohld Championships for F.A.l. Ruhber 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 later 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 ycars 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. Tam members of the calibre of IErno Frigyes, who placed top in Wakefield, were suflicienty well trained that they could surmount the dilliculty of fying still-air models under blustery conditions of Finglish wind that were completely alien to them.

Let us also pay tribute to the spirit of individuatism 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 individuad award.

For the Society of Model Aeronautical Engineers, organisers of the Championships wo 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 empeted 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 suceessful conclusion: the processors, the timekeepers, the recovery squad and many others, some whe worked behind the scencs 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 Hritish 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 honours. 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. 'l'he 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 formulat.

It is casy to have hind sight, but there is no doubt that flying the now 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 issuc, 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 meeting 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 enpies of the ollicial programmes for both events are available from the S.M.A.E. offices at 23 . each plus postage.

On the cover . . .
Thas suphra phoro of a Jungmeister caught in the midst of acrobatics over typical Aargau scenery in Northern Switzerland was taken by Hens Burgunder. Famed for its rate of roll and ability to ous-fy many other younger designs in precision aerobatics, the Bucker Jungmeister is this month's "Jiamous Biplane". detailed on pages $522: 525$ of this issue.


## Heard

 at the Hangar DoorsCadet lan Cooke of Birmingham A.T.C. ©rsoyink hia rido in the Kelvin Ifaghes SiAA Safirmapm "Flight for the Winner"

## A \&wadi ideat . . . !

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 fiers 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, Malcolin Young states:
"Three of us went to the Team Trials, having flous" our models and achieaing performances of around 135-150 seconds. We had only foren for trimming purposes, and, achile to all intents and purposes they acere ().K. they were not competition prozed. When poe flew at the Trials we scere definilely surprised at the high standards reached by some other fliers.
"Significantly, generat performanse improved at the second Trial, so bi serms we weve nat the only ones to be surprised. Finlking to other fliers, ze found there was a general feeling that modelszare insufficiently proved. Many models had been flown quite a lot, but... and this is the impertant point . . NOT IN COMPETITION.
"There are some groups acho feed thet competition between themselves gives sufficient incentive for developmen, bat to our muds there is no substiate for a proper contest, woith everyone going will out, together with the 'necdlematch' feeling that gops with it.
"There is, we believe, a general demand for more Imernational class campetitions, with the aim of creating a keneration of competition-proven Intermational class models, and, believing self-help to be the best the Northern Heighs M.F.C. whill organise a Wakefield Competition on October 26th, 1958, follozed-if the demand is still alive-by another some time mext March.
"Proposed vente is Chobham Common. This is regarded as a 'pough' 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 2 s .6 d . per head, total to be distributed among the top placers, this club takiug no rake-off. Contest to be run as per International schedule."

Well, there it is, and we applatud the initiative of the Northern Heights fellows in getting down to flling a sad gap in our current flying programmes. Lack of practice was clearly demonstrated at Cranfield lasi August, and it was clearly apparent that many fastern 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 I ondon club could well be followed by other centres, notably the Birmingham district, which numbers some fine Wakelied tliers in its area; also the North-Western Area could surely take care of North country interests. lurthermore, other Championship classes could be


Short's neso Cianbera ll Mk. Io eporsa black and undaite fundirar' stripes to signify thai it is remiota controileal - cemblat bhis abari a nour radia e montrailawi model decor?






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 enguiries regarding the October meeting at Chobham should be addressed to Roy Chesterton, 11 Canopus Way, Stanwell, Middlesex, and we ambicipate a goodly entry that will give the lead 10 many more meethos of a similar nature.

## 

Aprontonemara lan Service desizns alwars meet with success in the many events incorporated in the Americun Sitional Championship Contests and we were particularly gratified to receive the following news from Norman Burgdorf of Affon, Missouri, after this year's meering.
"Ilease accept my congratulations for publishing the fonest model plane magazine in the world. I have been a suldscriber for only tero years, but herae been able to incruase my knozledge of models a great denl.
"I buill a" Aiglet, phons of which came with the December, 1956, issue. The model has been a mast successful ghider. 1 geas able to win the Nutionad A-1 (shider peant on Yaly 22 md at (ilemiezo Narat Air Station. I also set a nese National record of 13 min. 54 sec . despite a rery poor first fight. It is interesting to note that the nld record toas held by an Aiglet. I will huild seqeral more of these and weill do my very best to improve on my 13:54 mark.

I hate built several other planes from your plans and


Frank Zaie illun. tratis our Hritish sumbuegrinulfure "t Cranfictu' Irmed with ladrat Laican and onviabla nccessariok, frank unas everywhere at sher Wiorit Champ mooting. kerping ut, the good teork on faternationad motatiannfijss and foubtirss coblerte ing anta for his nexs yrarboad
they hate all beent very' sucressfil. I am aery pledsed to see 3 wn put out plaus of models that have bern tried and prated. Thanks 10 Wartion Bridge for the fine Aiglet design.
"Keep wh this goad zeork."
Nore information on the L's. Nats will be found on pages 53819 .

## Hilayt for tha winemar

Kelvin and tughes 1 , rd., seientific instrument makers to the airectaft industry, donate a trophy annually to the wimer of the A.I.C. National Acromedelling competiions, and with the trophy goes the admirable hospitality of a day out with the Company. For 1958, the outright winmer of all classes was Cadet lan Conke of Birmingham, who was pieked up by Kelvin Hughes' Ssank Safir on August 13th at Birmingham's Elmaton Airport, and flown south to Luton. There he was shown the latest Hunting Jet Prowost $11 I$ and visited the control tower (o) see the gronsd control equipment. Airhorne again he was shown the new Londen-Yorlishire motorway tracing its ribbon form across Herts and liedfordshire, and by chance be also enjoyed an an-to-air view of the de llaviltand Comet IV off on a test fight from Hatield. Lucky lan is 151 years old, and doubtless the envy of his fellow A.'I'C aeromodellers in Pirmingham.

## Sitswenarelis hueatori!

In an attempt to combine ease of travel with a maintenance of interest in the linited lingdom Challenge Trophy (presented by Scotish donors back in 1951) this yeur's contest was held on the day preceding the Scottish Gala at R N. A.S. Abhutsinch.

Whilst the Scots took the meeting quite seriousily, wery few English aeromodellers, apart from the 'Teeside Group, semed interested in travelling to Scoland, and the Sissenach team was not decided until the actual day of the contest, and even so could root field a full team in rubluer. Bright weather was unfortunately marred by a high wind, and flying was hectic on the short Tan of the aerodrome, some nodels being losi in the river that bounds the down-wind side.

Gilicer Aying was dominated by the Scottish confewtants, Meechan and Sleiph being outstanding, whilst the rubber section also went North of the Border. Power dear enitor. went to the Inglish puan The thought oeaurs.... despite sarious difficulties, but again it was a Scot, bob Parsons, who made best individual time.

The results giving Scotland two firsts dganst the single win of the Finglish contestants, the Trophy gots 10 iss homeland for the first time ever. After years of trying the Scots are justifiably very pleased with their efforts.


# WORLD CHAMPIONSHIPS 



OnCE MORE the S.M.A.E. reputation for first class organisation of Wurld Championship events at Cranfield has been upheld with tlying colours-but what a pity that so skilled an entry should be sutbiectefl to the full strength of a typical British Sou'wester! One hundred and thirty-six conpetitors (whose journeys tutalled many thousands of mile's) returned to their conntries mush the miles) returned to their countrics muth the
wiser for their experience, both technically, in olserving elecir contemporaties in action. and in their apprectiation of our contest conditions.
Perlhaps the most enlizhened of all are the cight whe wore the track suits for (ireat Britain. Whatever one might have expected completely failed to materiatise. Woth Wakefield and y'ower coniests were full of Wakefied and rower connests were fuli of contradietion and constant change- in tefits
so importint an ocesion, but when she results are analysed one chear factor emetyed. The anticipated leaders (including Great Britain) were dworouchly heaten at their own kame by a strictly disciplined, superefficient leam of experts from ltungary,

Obtiged to satlipt still-dir. Longevaitmorncrit modess to a wind force kusting from $15-35 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. , they did sea liy spending more time on the field in practice than anvone else. We shall not easily forke their systenastic approatlo to the cortest for many reasons, of which we give but one observation. Following their practices of taking looth first and reserve moilely out for each round, we witnessed onc occasion for eash round, we witnessed one occasion
when, after at brief wait fors the mument to when, afterablief wat lor the moment to wind, incl sensing kusts), a model hat at fractional over-run. 'the'timekernem had just 15 seconds in which to conter the baet by the time the reserve was airlorne and for at maximum at that! No panic cluse after the first model-1 tae decision to sumat atter the firse merdel-the decciom to sewhe off the reserve, light the d t , stard the motor
and launch was all accomplished as swifty and bumeh was all secum

Cl'o drumery soes the fruits of a double tean victory but to honkj B.aker, paying his own way once mare to enjoy a horld Champs, and brimging with him a pair of
mortels that rated among the best-finislied on the tield. go the highest individual honours. Whilst it may be said that many others were also robbed of individual rictory by cruel atrokes of luck, it is nevertheless quite irue that had Bond's model not landed on the highest pari of a hanhar in his eccond fighe he certainly would have 10 bis second finght he ecriainly would have
led the field in $\mathbf{w}^{2}$. .i. power as well as Wakcficld. Anyone who con come so close to a double individual victory desernes the higluest praine-though lie was seen to dimith at "Fiair dinkum Cobber" 1

Events leading up to the vital days of August 3rd and 4th ware loaded wish inticipation. The Canadians arrived earla in the week and were anxious to xer on an in the week and were anxious to ker on in 1 lampstead I leath, having to be satsfied with short hops. The Janes sent models aberd by shep, only to arrive in I andon and eventually locate their box in \&larwich at a late stage; and, of course, we conld not lave a Chamaps without that frustrating experjence of wintlinge models out of experience of wintime models out of M.M1. Custonis, only thes tome it movolved and New Zealand entries!
Irocessing dav, the eve af the bis events, was blustery, chilly, though occasionaidy çate vinmy Certamy if was na day for castal test flying: but the serjous Hungarins
were out there-and the Swiss, the Finns and the Jtalians, It was tough gesing for thusc used to Cientral European calm, but alrumet miraculously (as though) the humdreds of visitors' wishes were to be answered), the last hour-and-i-half of daylizh was quite dist hour-and-i-hatif of daykigh was quite reasonabie. in this pertud the and was
londed with models, All shapes and sizes londed with models. All shapes and sizes
wrere performink moderately or brilliantly there secmed to be no intermediate prading -and the division between the obvious experts and supparting team members was most noticeable. if this stage it would have buen difticult io forecast oresuli, hut in Power. (iomower, Piusk and ()rdogh wers the wreatest threals to any chance of Jritish the kreatest threads to any chance of british
success, and 1 bernudg uith his proteme
 interest, along with /Zurid from I'oland Their rate of climb wisi faster and al a stecper angle (han any other. Obviousty they hikd this 50-kramme rubleer busines: deviloped to a high depres.

I'rocessing had sun a smooth course. Afeer the International watil at the introduction of these new rules in uas surprising lo liat hiow few models approasthed the specifisation closcly the majority of Iower mondels wire an ounce or so over-weight, the heaviest loaded of all being Lirno firguges of lhumary. carrying $4 \cdot 4$ ounces excens structure, making his tuarg loadiry 10 oz.jso. ft, ! Jonouns for
 of IItuctary (Itih). a picture which disjlayn frop-fight piomer mont fiffesitrely.












 confidpnce is dinplayod by Aaman from Japan, ucas 36ih. (18) Rimgnst thern, by C'rnanda's Parry. (I9) Findand's Niomi, combld have wort, plamed 15th


the smallest Wakefieds went to Heidmuller of Germany, followed by Kernedy (N:/.), Italy's Sicardicchio (note how high thes placed), anul Guilloteau of France, each just a raction over the minimum area recpure. ment. Heaviest of the Wakes was Ossic Czepa's novel bike-pump type fuselage with its motor tuhe interted from front, sealing 10 onuces. Speiking of size, the argest power model was Canadian Georg Parry's 34 unnce 750 sy . in. Whopper, mas han twice the size and weikit of R. Stabler's itlle $355 \times \mathrm{k}$. in. moxlels with delicate wing structure fior the Webra $1 / 5$ Record.
fine weather before sunset gave promise of a break in our tempessuous "summer and an early trimming session was planned by most seaths, particularly those proxy Dyine, and the Americans who still had sume buys to iran out. As the cosmopolitan articy left their comfortable rooms fo $4.30 \mathrm{a} . \mathrm{m}$. practice they witnessed the arrival of a very tired Czech contillgent. Bogged down by visa troubles, the lakls had been waiting for days in the itero Chb at Prague and were only able to leave as the last models were being processed in Cranfiedd.
Exhausted though they were, the Czechs were soon out on the theld after a brief rest, and joined the last minute trimmers in the lighe breece of a bright and clear morning, which gave every hope of develaring into perfect day. I3y 8 o'clock all the Power met were happy with their modelsinctuding the immaculate ' 1 ', Asano from Japan when most have been the calonest and moxt contident competitor on the field

One team was stall missing. A messatye from Moscow apologised for the U.S.S.R. team's non-attendance due to sickness three of their team members, and thas the slim huge we had of seemg them in action was eliminated. 'I'o a man, the entry expressed sympathy for the soviet modellers.

## Power contest siants

Promptly at 9.30 a.m. the Power contest was simballed to start by the firing of a preen Very lisho. There was no greal thurry of atavity, matoy of the excellent sheltens were still fally ocenpied and no single individual appeared anxious to open this Workd (bampionships. Ilowewer, the field procewsors, stewards, timerieepers and the cessors, stewards, timekeepers and the customers. 'though slight at first, the breese became gusty (up to $15 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.) in the firs haff-hour and cloud formations appeared It the wide vista seen from the Cranfield platean. Obviotsisly is was not going to be brixht day, and the simeteepers were soon to be kept husy as team matagers sent out their hest men to take adrantake of the their hest men
carly conditions.

Arthur Collinson few first for Great Britain, setting a standard for climh it height that remained smmatehed elitough the day. It seemed significant chat John Bickerstalfe and bic Jays should also pise the imparession of climbing higles than moset, kiving rise to early hupes of atmoner
(20) Dramasic tant fighe astempt by Britain's Laffuer "pperears tw bee tom marh for manager hob Copharnd! Wingn foldid a seronid later. (21) Arty bantioh by Darne Nim, of tugondan, Popovic. at 12th secen in pie (22). Ao. (23) ix fucumile Krissma from Iftimgary putsinje his all inta the latunch,
 ving, is bring randiad for eweritant 9ah place (25) Italian "xpressiuns as Scuralicchio pilca on lave turtin, wan th (26) Bemetiok the matoktro of so gratimes in typical tannehing staner. (27) Top proxy through gonal Jlying vens Erir Marnarle Jyimz for Aree Zowlander Konmedy at לbh phare. (2ll) Thiral plumer Jahansson irith his magnifirantly finished moster. (29) Chrmpa in Arcion Alan King, ist It ake holder and Mond Makier, 'sh irinamet, prapare for hast vital flighs. (20) Zurad the Polc cam, 2nal a last mourent. hus faldin\#e fluselage (31) (iasel had pome tase flight bringing hirm down to undeserved 16th. (32) Ton from tiv..A. wena Herts Kothe at J5th

Britisin team victory as three maxs. went on the board. "They could have been joined fiy Ken (;lynn, but he was using some reputed "hot" fisel which called for al lonk warm-un ar low compression and thouph the Oliver appeated to "come-in" before he launched, a lourpity-burp climh gave rinly enough height for $2: 05$.

Ven was not alone in making his single mistakie in the first round-Larry Conower wis also "hot"-fucllimg and each time he released, the K \& B went rich and slowed the timer for two over-runs and lost his first llight. Carl l'exkims, with his elegam high-thrusteline desigm. went ofl un an over-tun and loopest in on the second attempt diving with a sixteenth of an inch of Ron Draper's posterior So lang went the U'S.A. team chances, and "old repuhar" limil liresl sparalled down mysteriuusty on the sitide after only $1: 40$

Rivalling the Jritish team for height main, and cerrainly fying fastes than buyone clse on the feeld. Hond Haker's beautifitlyfinsished design rockerted up, anly io perform indescribable mathocuvres as the atuto-tinlset ant sudder simpped into action. Away at great height on the glide, it caught a cust and was sent into a spiral to sporil this otherwise certain max. brother hard luck tale could be whld of Jelczarski (Poland) who had a fractional over-run for an casy max, but, working under the kast kuropean impression that the reserve should be thown immediately for a second attempt, dashed of his stcond model too hurriedly for $1: 48$. Over-rums wete mrofuse-we noted seven in the first round -yet the universal use of clockwork units was otherwise producing some very tight 14.3 and 15 sec. engine rums. Now that the contest was in litl swing. the varied approaches to using fast diesels (as against the very few slow engines) were most interesting. Jim D'atterson (U.S.A.) let his Oliwer rew on an $\times x t$, but launched cross-wind and wasted ator of homith as the model carsered round in a might bank for $i: 5(0$. Takee . bannes was using wide blades of a $9 \times 1$ to load his linya 151 (with intake filed at 45 deprees) and not a few F'roge ${ }^{9} \times 6$ nylons were on sicw in sarious re-worked conditions of the Continental models. By the end of rice firs round there were 28 maxs. on the board, and fitcat Britan, Itidy and the still-tired Czechs, had perfect team tutals of 540 sec. apiece.

## Round : 2

Gusting faster with each hour, the wind was now seriously affecting the caln-air fim models. Without wing warps to pive roll on the climb, or auto-rudater devices to bandle torcpue, the precision-louit wapfree models werc having is rough time after lauthe Asamo had his model whinped round. and with the wind on its topside it just could not kitn more height than for a $1: 18$.
 lua repaired the ravages to score a mak. on his second atiempe, atud then, the the horror of all Jritish onlookers, Collanson did

Processing anxicties as in (33), Edgar and Odette Balasse of Belginm verify the weight of their Kothe trim the former's rubber down to 50 grammes Kothe trim the former's rubber doton to so grammes



Lefril monas'ita comaht hy omf cedmaran. (35) Thb


 d'Honmod's farmesus Hasio. The reserem difed it on folloteing nutimat

## VICTOR TATIN CUP - INDIVIDUAL RESULTS


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5. Meczner, A
16. Pelczarski, T

Finland
Polan
lealy
Germany
ille)
was well and truly bumped in joyous celebtation. With team mates Ordogh and Meczerer at fifth and fifreenth place the white-shouldered, bluc tracksuited Ifungarians had worked hard for a well-deserved victory. Czechoslovakia a well-deserved victory. Czechoslovakia Cerny pranged in the second round; but Cerny tranged in the second rount; but
then, as we hate said before, it is consistency that wins in the end.
So finished the 1958 Workl Power Championships. Gireat Britain was in a rather flukey third possition, and winh worse weather forcesst for the following day: British hopes were alrendy focused on the all-weather capabilitics of at least two in all-weather capabilit.

That cvening will be remembered for many forms of celebration, sensilule and otherwise; but the highlight was a universal demand to "process" Henry Nichollschicf processor of the contest-and after a briet wejphtasaving epperation. HIJ.N. ennerged from under to deliver his fumed Berber lipster act, and to reveal that his Derby lipster act, and to reveal that his
upper lip decor was now 50 pur cent. of its previous flourishing magninicence!

## Windefield

Monday, August 4th, dawned bright but, as lorecast, the wind was rustline through the Cotleze trues, and soon an overeast sertled any doubts on the outcome. It wals the right kind of weather for John ()'1) onnell but not for these long-fuselage Continentals -or so we thoutght. Wind direction was seil from south-west, directly slous the $2,000-$ yard runsway; but the stronger force was likely to take more models into corn, and our relationships with local farmers had already been stramed by unotheial recovery parties from lerance. This was a serious problem, for it was significant that of all the praises beswowed upon the impeceable argnnisation, the recovery service operated by the South Midland Area was the by the South Midland Area was the A threw-way radio-link connected base with ons-ficld and loundary, a fleet of motorcycles and cars was ready to whisk the flier downwind within seconds of launching, and the gratitude with which some entrants collected their models after giving up all hope of recovery was a joy to behold. Only a respectful consideration for the corn crops prevented the system from returning every model "lost", but there were very few left behind, some being retrieved from as far as 3t miles downwind.

Those who flew early in Wakefield were at an infortumate disadvantuge. The hangars interfered with visibility if the unwary chose in release close in the runway, and this lost time for Rad Cizek with his X1 --58, which was o.o.s. in $2: 22$. Marc Cheulot of France soon demonstrated that there was lift about bencath the overeast in his weird returngeared "Colcoptre" with inversed empenmage went un fast-but when it sank cqually quickly in the lee of the hangars for $1:+1$ lie also pinpointed a trouble area.

We were not alone in noting this. for now the competiturs were moting as far as the roped barriers permited to clear the hangar turbulence-thr Italians wemt almost outside the 'drome. Hungary's bese performer in home and international erents, Gyula Krizsma came out first. W'e hardly hau time to note his name before be had piled a quick 333 turns on the 56 strands of round section 1 , actron rubber thit released for quite the fastest rate of climbt we bat seen. l'rom a prop-fold at 38 sees., is had enough height to make sure of a max, and moreover, its ahitude carried it clear of the hangar area. This was the first of the maximums, and we were to see even a faster climb as Mucany displayed his 33 yeconds motor run for Cezechoslovakia

John lralmer's launch could not have been more contrasting-hix 10 -st rand motor unly jusi sot, the model out of a sad case of "flotmelers" and his supporters breathed heavy siths of relief as the well-sensoned nodel made a handsome $2: 31$. First major casualty was Guilloteat of France who

dived in, and though guick repairs were mate for subsectuent rounds, the was virtually elgminated. 'The sad taley contimucd as Phil Read got Onishi's Jiphanse model avay on a good elitub only to hit curbulence and downdraughs for a merre 1:23. Bencdeck came oue, launehed and a gust swept the model in a spiral dive.
Remt Draper piled on full turns for his frrst tlight, hut what happened at about 20 ft altitude delied belief there was a sadition crack and the meap flew oft! Flabbergasted onlookers literally willed the model down-bat the time was 2.5 sees and that constituted an attempt dowever, the prop hat detached itself in sume miraculous way alter the rear mastor pes had broken and rule 6.3.t in the 1..A.1. code was interpreted to mean that that attempe was cancelled-not the whole flight. but just that lirst attempt, and this was but just that hrst attempt, and thes was upheld after appeal wo Jury ( Draper tien made amends with a $3: 01$ and brodl lefevre
produced a time max ko give Britain iwo amony the 23 leaders at the end of the round. J. U'Donnell makins $2: 30$.

T'he proxies were taving very mixed experiences. Ray Monks urged South African lete "isser's. "Wunderbar" off in a smappy 44 -second climb to earn a fine max; but thesccond climb to earn a fond max; out the Duxall brothers were finding the Japanese model by Nomaku more than a handful. "f'rimmed by offsetting the wing and rotating the rear fusulage boom to give tile to the tailplane, both of which werc constantly at the mercy of the 20 m.p.h. custs. cach daunch was a maior operation.
Uor New Zealand, lific Harnacle kot hor Nilver fuseanae model by kemedy awiay for a max, ably supported by good times from our leading junior flier $\mathbf{D}$. Greaves for Dick Wong, and lioh Haldwin for John Malkin (with Wrother Ed Malkin there in person to cheer hint an). Bensedek had returned a max after straightening out his moded and at the those of the round, llungary was the only tcan boasting a perfece 540 secs. Potal. with Finland. Cirene Britain and the $\mathbf{L}^{-S} \mathrm{~S} . \mathrm{A}$. in chuse pursuit.

## Finumale

Still overeast, though nauches of sunlight could be seen on the lower fields in the distance, the weather was deterioration as the second round started, but this could not be lueld to blame for the rasli of broken
motors that appeared to aftect most teams First to suffer was C'anada's Bolv Gordon (ex Sheflield)- then John O'Domell Hond lbaker and Owsic (zepas. Each of thete band sheen or silk-cosered lisedages to withestand the lreak and make remonal easy, but for others it was more serious. Cacpa's unicuac moters tube was a detachalble unit mushed into the rear fuselage secton and provitiog varinble mose monuent if dexired. thoukh the weight penalty of afmess


Citer buis motor break, O'Donnell suffered the mo:s iunominous blow of all when hith Wateles of his prop detached chemselves ot launching! Our photo shows it happening about six feet after leaving Johm's lamds, but at the lime it was thomblet that the prop had caupht his windblown coatsleeve Answay ir was the end of old retiable Aaxie Alk. 3t, and now the tubular, twin yygun fuselage model had to be used as reserve. It tirmed in after 8 seces. and that was the end of our stroakest hope. Geoff lutevre hak been gusted down for nonly 1:38. and 13raper scored $2: 08$, leaving John Palmer to uphold our laurels, with the only llitish max in this round.
L.,S.S., who had tied with us in the first roturn, alao had their shate of trouble. Herb Kothe sialled all the way down ons his plide for $1: 16$ and Sal Cannizao did likewise for 1:24-both atter first round maxs! Stranpely the shart motnent models were not purformink as well as expected and to contradict alt speculation, the long fuselages from llungary were going from strength to strenyth. Benedek and Krizsma repented maxs. Cizek and Dvorak scored two more for Czechosiovakia and the Iralians Scardicchio, teen, Licen and 'Faberna, all
 la (39) J. H. Mannifle and bix nephere rith Mikara suzuki'n Japanasa ntodel trhich they fleze to kria wehtrenturd 19th place. Einva 15D, wailably
graved', wan pre sentral tio them "fier murating by indino icho racher toan 36th. (40)
 plying for South African $P$. Visser






heat 3 minutes to bring their team to a close seconal place. 'These were dive double maxs new, llenedel;; İtizsma, 1 vorak, liseen and 'Kemmedy', and the tum order was llumgary 1031, lialy 1022, (ruchosilowakia 974, (iermany 949, and Great Hritain 917.
luncheon break was less lighthearted Hata on the previous day, and consersation II the tents far more serious ill vien of the unexpected curn of events.

## 

At 13.45 bours the first rays of sumshine filtered across the runway and caused a rush through mata cantron. Winds were stronger heat promise of therwizl aid attracted a quick tow of comperitors, in several cases ewo from a ream fleing simaltaneously. Cheurlot. who was alternation his flights with tu inserted-tail masde! and his cupatly asivencuruus "Fphemere", started as new phase in crashes as the novel sull-shape wings of his reserve folded spectacularly.

The prass was fottening in the constame wind which susted Draper, Visser (Alonks) Kanta and Dvorak down for Jow times in gata the succession, while the unfertumate Guallonean of framee and swiss Neyer logped straight from launch into the rumuay.
'et lift was there and alt three leading men in the Fritish team collected maxs while the dalians were lusing time Hopes Were rising fast us the seorebosard slowed the Rritish total creeping ug on the Ilungarinas, bus Ǩrizsma, benedek and Bor were making no mistakes and held hor were makibg no mistakes and held
 their smowth efliciency and eny rheir rapid climbs. No one would clain they achicved any greater height than any of the best models from sther countries, but thes sot there quickes and such tactics obviously soak liest advantage of the (iranfield geography. At the opposite end of the scale. Americais lrank Newquist used only cight ytrabds for a twor-minute metor run. In Civlifornia this might have meant a 120-sect. climbs, but here the model depended entrels on thermal aid to carse it-lbrough the wind. Ile seored his naly mas in this risumd.

## (hasing kenerdek and Kiriasma for

 individual lead were a verv anxed \&roup, all within tu sect. of perfect tumats. the arder being: Amidhel perfect tulats, the John Palmer ( $G, B$.$) Erick Neinstade$ (1)enmark). Kas (Cinek (Czechoslovakia). fren Ty*kind (sweden). Vincenzo Scardiccibio (laly) and Bond Bakes,
## TRentid 4

L.S. International ©antest Committec man lid jobloy gave a clear illustration of the wind speed as his 'I'yrolean hae bounded down the field with E El hotfoot after it. A number of models were overdue from recovere and reserves had to be bromphit into
 of the cound iss a sain brope fior less wind ank more sun. Fermin 1+. 30 until 15.15 hours the take-off area was so slack if minht have been a club meeting. Then, in the last threesuarters of ant heir, the sand cimethethath clear blue patches of ske and the eush was on

Kyiasm: spoiled his record thoroughly coming in under power for 35 secs. ; Johin Pabser wals eaught in turhalence for only 1 1.9 and Perime:u lexugul has single-blader moded th nearly reconer, sut spiralled in at 21 secs. Such were the fortumes of the teadiang challenkers.

Meanobile bencolek made another magnificent tligh, though 7 secs, shart of a max-so there was to be no chance of a perfect total this year, and Scasdicelue seored a max to chsure his second glace at this stage and lomst the Italian team position, kirizsma's disanpointing crash liad knocked he: Ilengarians out of the lead and (zachouslowahia book over with steady tying and one max by youthful simerda. The order wus now indiwidually: Benedek 713 Scardicchio 6S1. Baker and Iteidmuller (Germans') at (ixt, Zurad (Poland) 656 Simerda 652. Cizek 650, Kemedy 645 Johammson 639 arad Jeferer 638. In team oriler, Cecehoslovakia 1,882 , Hungary $1,877$. Iraly" E゙.SA. 1.668.

## Mabinfinis

Manargers could hardly contain thecir ampatience to get theis men out tor the hast vital fighs. Temperature was droppsing moticeat, ${ }^{\text {y }}$, the winal stronger than ever-

Scardicehio pot off very early and in spitc of a good climb. We caught the bad area in mid-fied athel was down at 2:16. This left Benodek to make $2: 38$ if he vas 10 make abosbutely certain of not being beaten. For ance, the 1 fonkarim pattern of advanc. ins: to the takeoff arma varied. Instead of
 came a procession wiah Bencedes well in fromt. deep in thonght and with the weight of rusponsibility clearly set upon his small shoukders. Behind followed his reserse. his recovery man and his mamoger. The attorspghere Wias extremely tense as Iowser


Portraits of F'orhid (Mantjicons ar reark. (11) in Erno Frigyos, acorkills on hais W ahefiedel irhich weas hiss succona/int thean hix pourer meedol, anel of right. in
 alifl muxtur bia's Jomil ISakier ris minuters oter his
Olirer Tiger. Olirer Tiger
fiarh rompreal in bosh rabber and poorra, a dis imetion onjover by only 400 mhiers

Chamg liriswes hed fatorge's model for the last wind-up. Fle deserved to win so much that in mur hearine we heard the most unlikely people wishing him success; but finte was not to be so kiad. Afler an inspiring climb, the tulnalay faselage moklel, with it: hiphly-arched thin sirfoil, was catight in the lee of the hanцars and aleseended rapidly it at serics of stallimg turns for 1:34
it once this set the scorcboard students scampering for time tomala of ather aspirants. IFrum beas certainty the lifth vound had dramatically changed to ant open chance fer ang of eight athers who were in thiod to tenth places at the end of Round 4 no less than seven countries with a chance ati indivichasl victory, including (ecost defever at the taif end wha neeled the full 180 secs. Io win!
Inthis "ren fitede nizker boy" atmosphere the full spirir of the Wrakefeded reached its zenith. So mocls was happening at ance, the individuals mose cuncerned were not atware of the situation except that they were reftired to do their best. Rond Baker way dutute surprised to hear from th that he needed only $2: 18$ to win, and promptly set to with Alan kims in preparation for his last and vitally importatht thght. With onty Jaif-am-heour before the elose of the comtest, British Manazer Bob Coplant (well aware of wur chance) came out with Geoff Ifefever fur his lass effurt. Ibaker waited to siec what might happers. Ite witnessed calanity, the last straw to tax the burders of Sritish misfortunes as Geoff's wings clapped tip to tip!

The rescrve had been lost carlier and time was short for repairs, but the fesourceful Copland bad matters in hand quackly as he obtained afficial sanction to sellotape lirace the wing: from polyhedral breaks to fuselame, ete. 'lhen Baker released to a choras of geod wishes-and very nearly did not make it as the model swept round to the fight, its gerat red single prop; blacle chopping the ar slowly by eunparison with others. If was an eycstraming maximumno one could! now heat the tall dussie who had come all the way at his own expense to work so hard for victors. But there was (nos anticlimax, tor thoukd the individual result wats known, the tean trophy still fanced on the pertormance of ano fizechat.

Amentin simerdn erashed with anly G sers to his credit, and (izek was down at 1 it8. The bnitle was now decided, with linngary clear team leaders, latsoardice hin's glace conk still be chatlenged. Rune Johanisum (sueden) added amother max to his secore und so pipped the ltalian by two scombl, then with almost the lase flight of the day, \%urad sent off his iatekmife might of the das hurat semt off has latimile
fubelage mone for $2: 42$ and acaually scoring $2: 48$ th gatn second place.

Celebrations and intermatoonal exchabses Which are always pare of the Cranfied atmosphere continked well istom flae carly hours. Spirits were high in mure thats one way, and following presentation by Mrs. balrier, wite of the Wardan at the College of Seronatarics, to whom we owe so many thanks, the cepps were duly amoned and admired. Our visitors came froms the farthermost garts of the world and left evern more imprebsed than ever with the way the contest hat loeen so eflectively administrated.
R. G. M.







Aldalen tetents of the more cnlourfit competitars whode afler-ermitest coldbrations eten mars merry. Sotables: Fea with his pemy-spimmity party trick, Kurt Czepa with reizand of the piame irmries. Hand Boker rrith matchlox drunn areompomimenh. Rad Cizek and cupped hands "Saxephtur"'

Hic looked all-ouer for baker when coarhes Peft for Iomdfon on Triestas hw noe in his
 Bond scess definitely lase is laat'r ("ronfirlif. complete seith huge modil bow stored in ve Bilitur's car boot.

Takeo Asome a 45 -vear-old dentist from Hamanatsu, Yoparn, Aleze arey the Wiorth Polo S.L.S service to hombon, lesteing Takyo rith Professor Hidemasa KZumen here po lecture at Intennational Atviation and Science
 in bay somber R-K. Dapls foup on nirtione he designed!') Inter than ather compliefitary left their tererapoton canitals by rean such is the zeonels of modern air tratel.
12. Stobler atas a reserece for Giermary, steppinip in the Poaker leam when Prates dropped wit-hiss fourth plare rith as 1.
modet more thon fustricict his solecrion.

## (tamabin Notes

Alsor zaish 1-5 c.c., I.anhar Piesk of Sicrmany had the mons dimiuedive tail-shany twould fike to knme hore he stabilises such a perrific climh with onty (1). 8 per crith of his pente arces at the rear end. a mere 59 sa, in, l-largest ldil tas Cobrection Hugh Twark's 211 sag-in. "stah-stab" and largesp percomage of zeing arca euas that of C'eceli Jaromiv litly, no trss than 58 per cent. He coon the East Etrropean Internatremols a fero wieeks bsfare with a serfect twitht.

Honowars for mateds mecting atl spees on the dot ath no poderance go in Jles Winods (fridanf) and Vlaflimir Norta in Potcer. Anami K nossomshia in Wadeefielht.

Dondotiess arged by Cierirger Reich's protionas experieners of Cranfichd. the U.S.A. esem soon collared all available pursh bike's and tromser-decoratrd them peiph A.ni.A. mblams ta seciare therir montupoty!

Sandy Pimencif of Pindamf, one of theis strourest hapes it pintive, crashed his best model just before fedzimy hame and lase has rescreve trimmins in strong tainds before tice

 Hymarinen in Wakeftidh.

Recovery system teas haghly pratsed by al reams, some competiturs brcame attorlied to erytain motar cycles ar the veteram Auston 7. but not. twe inderstand those tho terte transporitcd at 100 m.p.h. plus on at certain pieat of fast machuner): teomderfol ethat " $30 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. fotlorsime niond induces out of the motar cyedists.

Rune Johumasom af Siserden pratedled bsb nir ein fothembur, Oshe, Uopewhagen, Hambrers. Amsterdam. Brassets and Lortulon by air to ayriet at the last monurnt af processing
 firlds. after a hectic and fortanate hitch-hike from Bedford station.

Fiucine stommery of oll potecer entries inchating respreps (six brought only omt madel) gites the "most popular" eote to Ohieer Figed rith 41. follonered by Webra . Ihach 1 (2) Yugerlde Aern 250 at seten. Einy 15l), K゙ H H 15 rant (zord MV゙S S81) tiring af jiee Super Tigre G30, schlosser 2.4, / riss Acreves and Hebera 15 Recard scith four enah MVT'S 56 , Taifun Mizzwrit, Taifurn Hurfikum divec each, tave Petish gaskolku. and Frog 1-4Vs, ahd ant each Midera 2.5 Winner, Allhan Mapier, O.S. Max 1.5,
 G31. and fresl and Kivizmu specials.

|  | 1. H | 2,304 | ALPHONSE P |  |  |  | PENAUD |  | CUP - TEAM RESULTS |  |  |  | 17. | Canada |  |  | 1,470 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2. Haly | 2.259 | 7. | Germany |  |  | . 2.031 |  |  | . France... |  | 1.627 | 18. | Australia |  |  | 1.341 |  |  |
|  | 3. Great Britain | .... 2.179 | 8. | Now Zealand |  |  | 2,012 |  |  | Finland ${ }^{\text {c }}$ |  |  | 19. |  | Switzerland |  | . | 264 |  |
|  | 1. Yugoslavia | ... 2.132 | 9. |  | nd.. |  |  | . 954 |  | Belyium |  | 1.597 | 20. |  |  |  |  | 791 |  |
|  | 5. Czechoslovaki | kia 2.104 | 0. |  |  |  |  | 948 |  | Austria. |  | 1,574 | 21. |  | herla |  |  | 666 |  |
|  | 6. Sweden | ... 2.096 | 11. |  |  |  |  | . 865 |  | Denmiapk |  | 1.490 | 22. |  | $h$ A |  |  | 587 |  |
| WAKEFIELD |  |  | INDIV | VIDUAL P |  | RESULTS |  |  |  | Hukansson. E Wong. $R$. | E. | Sweden |  | $\begin{array}{r} 97 \\ 110 \end{array}$ | $\begin{aligned} & 180 \\ & 139 \end{aligned}$ | $\begin{array}{r} 84 \\ 126 \end{array}$ | $\begin{array}{r} 52 \\ 102 \end{array}$ | $\begin{aligned} & 180 \\ & 111 \end{aligned}$ | $\begin{aligned} & 593 \\ & 589 \end{aligned}$ |
|  | Bakor, R. S. B... A | Australia | 162 | 158 | 180 | 180 | 180 | 860 |  |  |  | New Zeal |  |  |  |  |  |  |  |
|  | Zurad, S. .... Pol | Poland | 180 | 116 | 180 | 180 | 68 | 844 |  | (proxy D. G | Greave |  |  |  |  |  |  |  |  |
|  | Johansson, R, K. E S | Swedon | 133 | 146 | 180 | 180 | 180 | 819 |  | Visser, P. W. |  | South |  | 180 | 85 | 60 | 82 | 180 | 507 |
|  | Seardicehio, V.... Italy | Italy | 141 | 180 | 180 | 180 | 136 | 817 |  | (proxy R.C | C. |  |  |  |  |  |  |  |  |
|  | Benedek, G. ... H | Hungary | 180 | 180 | 180 | 173 | 100 | 813 |  | Barnes, A. |  | Now Ze |  | 88 | 129 | 125 | 145 | 92 | 37 |
|  | Kennody. D. R. (proxy E. A. Barnac | New Zealand acle) | 180 | 180 | 05 | 180 | 164 | 809 |  | (proxy D. L <br> Kekkonen. A. | Lattef |  |  | 180 | 180 | 74 | 134 |  | 568 |
|  | , Fea, G. ${ }^{\text {a }}$ Italy | traly | 161 | 180 | 140 | 132 | 80 | 793 |  | Dormanr |  | Germany |  | 180 | 135 | 72 | 69 | 112 | 568 |
|  | Lefever, G. J.... G | G. Britain | 180 | 98 | 180 | 180 | 126 | 764 |  | Sucer, H. |  | Switzerlan |  | 180 | 87 | 180 | 77 | 28 | 552 |
|  | Azor, L. ... H | Hungary | 180 | 131 | 180 | 98 | 174 | 163 |  | Cannizzo. S |  | U.S.A. |  | 180 | 84 | 116 | 85 | 74 | 549 |
|  | . Gardon. A. ... Ir | Ircland | 159 | 160 | 172 | 98 | 168 | 757 |  | Heralin, E. |  | Swizerlan |  | 108 | 82 | 148 | 156 | 55 | 547 |
|  | Niemstaedt. E...- D | Denmark | 115 | 180 | 180 | 64 | 180 | 749 |  | Balasse, Mrne. | e. 0. | Belgium |  | 180 | 116 | 180 | 65 |  | 541 |
|  | . Ponoric. K. ... Yu | Yugoslavia | 131 | 99 | 180 | 155 | 180 | 745 |  | Cheurlot. M. |  | France |  | 101 | 53 | 55 | 175 | 7 | 541 |
|  | - Heidmuller, B... G | Germany | 180 | 159 | 161 | 180 | 61 | 741 |  | Durhager, |  | Austria |  | 84 | 180 | 91 | 83 | 97 | 535 |
|  | Widell, K. E. ... D | Denmark | 180 | 120 | 180 | 133 | 128 | 741 |  | Blamqwisr. M | M.U. | Sweden |  | 180 | 81 | 132 | 60 | 47 | 500 |
|  | Kothe, H. H. ${ }^{\text {a }}$ | U.S.A. | 180 | 76 | 180 | 166 | 133 | 735 |  | Frijyes, 5. |  | Hungary |  | 116 | 80 | 96 | 100 |  | 492 |
|  | Krizsma. G, $\quad \mathrm{H}$ | Hungary | 180 | 180 | 180 | 35 | 153 | 723 |  | Chinchells. |  | Auseralia |  | 16 | 49 | 84 | 79 | 106 | 481 |
|  | Cizek, R. … C | Czechosloyak | 142 | 180 | 180 | 143 | 78 | 728 |  | (proxy A. K | King) |  |  |  |  |  |  |  |  |
|  | Dvorak. F. $\quad$ C | Czechosloyak | 180 | 180 | 97 | 123 | 138 | 718 |  | Taberna. S. |  | Izaly |  | 63 | 180 | 46 | 85 | 105 | 479 |
|  | . Tomkavic, M. ... Y | Yugoslavia | 141 | 180 | 161 | 59 | 173 | 714 |  | Kossowski. A. | A. | Poland |  | 73 | 138 | 153 | 71 | 37 | 472 |
|  | . Palmer, J. ... G | G. Britain | 151 | 180 | 180 | 73 | 127 | 711 |  | Miestoj, W. |  | Poland | ... | 109 | 113 | 90 | 73 | 82 | 467 |
|  | . Perincau, M. .f Fr | France | 173 | 180 | 180 | 21 | 155 | 709 |  | Onishi, M. |  | Japan |  | 83 | 129 | 52 | 63 | 135 | 462 |
|  | Draper, R. ${ }^{\text {a }}$ G | G. Britain | 180 | 128 | 180 | 116 | 100 | 704 |  | (proxy P. Re | Read) |  |  |  |  |  |  |  |  |
|  | Balasse, E. ... Be | Belgium | 98 | 180 | 77 | 174 | 163 | 692 |  | Takko, S. |  | Finlan |  | 65 | 72 | 118 | 142 | 65 | 462 |
|  | Tysklimd, S. L. H. Sw | Sweden | 141 | 180 | 180 | 71 | 112 | 684 |  | Racovan, $\mathbf{R}$ |  | Yugoslay |  | 80 | 92 | 12 | 180 | 90 | 454 |
|  | . Carroli, J.J. .n Ir | reland | 125 | 177 | 159 | 56 | 166 | 683 |  | Newquist, F. | A. | U.S.A. |  | 122 | 96 | 180 | 52 |  | 450 |
|  | Fresi, E. ... Yu | Yugoslavia | 135 | 158 | 180 | 75 | 125 | 673 |  | Hyvarinen, R. |  | Finland |  | 180 | 87 | 89 | 83 |  | 440 |
|  | . 5 molders, J. J. .f N | Netherlands | 101 | 180 | 119 | 180 | 86 | 666 |  | Muzny, L. |  | Crechos | kia | 131 | 102 | 75 | 56 | 69 | 433 |
|  | Reich, G. A. .n U | U.S.A. | 150 | 161 | 100 | 180 | 73 | 664 |  | Doyle, M. |  | Ireland |  | 100 | 47 | 180 | 95 |  | 425 |
|  | . Simerdz, A. ... C | Czechoslovak | 180 | 112 | 180 | 180 | 6 | 658 |  | Ranta, S. |  | Canada |  | 62 | 78 | 70 | 78 | 136 | 424 |
|  | Hassny, K. ... Pola | Polar | 178 | 97 | 178 | 108 | 97 | 658 |  | Schnur |  | Austria |  | 96 | 162 | 44 | 62 | 43 | 407 |
|  | . Licen, A. ith lita | taly | 180 | 180 | 73 | 103 | 109 | 649 |  | Gordon |  | Canada |  | 162 | 53 | 106 | 86 |  | 407 |
|  | . Oswald, A. ... G | Germany | 105 | 163 | 33 | 180 | 164 | 645 |  | Etheringron, $W$ | W.C | Canada |  | 180 | 45 | 27 | 42 | 82 | 376 |
|  | Hertsch, K, ... G | Germany | 127 | 168 | 84 | 86 | 180 | 645 |  | Overlace, 6 |  | Belgiu |  | 82 | 60 | 64 | 93 | 60 | 364 |
|  | . Mackenzie, D. R. C | Canada | 139 | 178 | 125 | 94 | 103 | 639 |  | Nonaka, S |  | Japan |  | 62 | 113 |  | 68 | 96 | 329 |
|  | , Grunbauni, P. ... A | Auseria | 81 | 180 | 180 | 134 | 57 | 632 |  | (proxy F. H. | H. Baxa |  |  |  |  |  |  |  |  |
|  | Malkin, J. (proxy R. Baldwin) | New Zealand | 148 | 129 | 11 | 76 | 144 | 614 |  | Czepz, 0 . Guillorezu. R. |  | Austria France |  | 83 | $\begin{aligned} & 38 \\ & 86 \end{aligned}$ | 36 100 | $\begin{aligned} & 95 \\ & 36 \end{aligned}$ | $\begin{aligned} & 42 \\ & 66 \end{aligned}$ | $\begin{aligned} & 294 \\ & 288 \end{aligned}$ |
|  | . Bluhm, P. ... Fr | France | 180 | 106 | 94 | 117 | 105 | 602 |  | O'Dannell, J |  | G. Britain |  | 150 |  | 78 |  |  | 236 |
|  | . Hamalainen, E, fi | finland | 162 | 59 | 104 | 167 | 105 | 597 | 73. | Meyer.J. |  | Switzerla |  | 5 | 80 |  | - | - | 165 |



FULL SIZE COPIES OF THIS I/6th REPRODUCTION ARE AVAILABLE AS PLAN RC7IO PRICE 8/6d. PLUS 6d. POST FROM AEROMODELLER PLANS SERYICE.

## Britain's leading radio control

## flyer presents his symmetrical

section wing, fully aerobatic model.

# UPROAR 

## By CHRIS OLSEN



We ASKED Chris Olsen, current lBritish multi radio control champion "Why "Uproar'?". "Ilave you ever heard a Fox 29 tuming over at 12000 r.p.m.?" was his rejoinder!

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

He believes in a simple yet strong airframe that is relatively light in weight, this boing 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 pointloss, merely increasing weight, decreasing performance, and if a crash oceurs, 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 buile in a week and costs approximately $£ 3$.
'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 $5 \frac{1}{6}$ 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 E'TA Mk. VI, it has the necessary reserve of power to produce a high rate of climb carrying $2 t$ pounds of radio equipment. The original is flown with Chris Olsen's home-buile version of the Orbit 8 channel equipment, using special servos designed around the Mighty Midget eloctric motor. We shall be giving working drawings of these servos in our next
issue and meantime cmphasise that ncat, careful, and well-supported wiring of the radio and servo equipment is a noticeable foature 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 Aying speed, great manocuvrability, and first class wind penetration; for, as we know, "Uproar" has a repertoire which includes consecutivo loops both outside and inside, consecutive flick rolls, figure eights, split $\$$ turns and many others, including the most beautiful true spins we have yer seen.

As originally flown, ailerons were not fitted; the designer has, in fact, only been using them this season and we watched some vory pleasing rolls as a result during the R/C Eliminators at Cranfield. It is strongly recommended to those other than experienced multi Hyers, 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 seope which reminds us that Chris fabricates his own version of the lbrameo type throttle for the latter form of control, but says that an Ohlsson Gold Seal glowplug of the shrouded element type is essential for satisfactory results when changing to low speed.

Finally we mention fot the benetit of those who wish to install liritish commercial equipment, that the fuselage will need widening by half an inch to acconmodate the standard 1:I). Reed outfits.

[^0]

＇This new lengine 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 hamding and starting characteristics， but by carclul development an excelient performance has also been realised with a specific output of＇ 1 B．II．I＇ per c．c．，peak power being achieved at circa 15,500 r．p．m．

In this respect it is something of an anomaly－ a 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 $8 \times 6$ nylon propeller for＂sports＂use，which is equivalent to a

# ENGINE FROC <br> ANALYSIS <br>  

 No． 52Reviewed by R．H．Warring

static r．p．m．figure of only 6，000．At this speed the needle valve serting 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 engine．

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

We found，fliso，that the＂ 100 ＂has excellent low－ speed running characteristics and can be throttled right down by opening the needle value and redueing the compression until it is barcly ticking over．It is also capable of developing good torgue under load at such speeds．The＂ 100 ＂，for example，handles a $13 \times 6$ propeller quite readily，turning it at 2,500 r．p．m．，and a $12 x+$ 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＂Hywheel＂ effect and running is extremely smooth and quife quict． Undoubtediy，too，enough thrust is produced with these large propeller sizes to fly a model．

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


## specirication

1）isplacement： $1 \cdot 025$ c．c．（ 00025 cts in．） Hare：：－16 im． Stroke： 460 in
Thore／st roke ratio： 0.9
lbare weight； 3 ounces（less tank and spiliter）
34 ounces（with turk， spinmer anal prop）
Max．H．IA．P．：• 103 at 15,5016 r．p．m
Max．torque： $\mathbf{S . 2}$ ounce－inches at 9.000 r．p．m．

Power rating：0－1 B．illip per c．c．
Power weight ratio：－ 0.34 IS．II．P／ounce Mraterial specifiention：
Cylinder：leaded steel，harbened
Pision：cast iron
Contra piston：mild steel
Crankease：light alloy pressure die castine
Crankshaft：leaded steel，ease hardened and stress relicved
Connectink rod：lisht alloy forsing
CVlinder jacket：dural（anodised gold）
Main bearinx：Vandervell simered bronze sleeve
Spinner：light alloy（anodised blue）
Spraybar：brass
Propeller nut：2B．A．
rank：moulded nylon
Manufacturers：
International Model Aircraft Led． Morden Road．Merton
Rernit Price
Bare engine 55 s．
Presentation ser 65s，4ヶ1．

Main difference between the 150 " R " and the " $100^{\text {" }}$ lies in the cylinder, which is entirely new. 'lhis is of conventional steel construction, screwing into the crankease. The bottom cylinder below the llange is, however, very thick (approx. 古-in. walls), externally threaded. 'Ihis serves the purpose of matching the overall dimmeter to that of the 150 cylinder so that it will fit the same crankease.

The transfer passages consist of six $3^{3}$-in. diameter holes (in pairs) drilled upwards through the bottom cylinder wall, opening into a deep undercut below the flange. 'I'ransfer 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 piston design introduced on the $150^{\prime \prime} \mathrm{R}^{\prime \prime}$, again producing substantial sub-piston induction. The piston is even shorter than the 150 , however ( 300 in . as against $\cdot 331 \mathrm{in}$.), so that for the same stroke the top of the piston can come lower to open the tramser. Compared with the 150 cylinder the exhatust ports are also lowered to prevent too early opening and are shallower in depoh. This later feature also means that the sub-piston induction does not extend over such a large erank 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 whitst the piston is of cast iron, machined to a simple shape leaving just enough internal charance for the con. rod little end. The gudgeon pin is $\frac{1}{1}$ in. diameter silver steel and is a floating fit in the piston. The comnecting rod is a standard " 150 " size light alloy forging wish a ${ }^{5}$-in. dial bige end bearing matching a standard 150 cramkshaft.

The steel contra piston does represent a disachantage in that if the " 100 " is allowed to overheat the contra will tend to stick. This was particularly marked on she static rig using a propeler shield which virtually; diminated cooling airflow past the cylinder. The sticking tendency was appreciably less moticeable on normal bench numing with proper air cooling. Thus it appears entirely a mater 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.

|  | liggures |
| :---: | :---: |
| Propeller dire. spich | r.p.m. |
| $8 \times 6$ (fizon nylon) | (6, 01011 |
| $8 \times 4$ (Foug nylars) | 7,0U0 |
| 7 \% 4 (tiruy nylon) | 12,400 |
| 6x 4 (5rox nylon) | 16,000plus |
| $8 \times 3 \mathrm{~L}$ (Jincr) | 11.0100 |
| $8 \times 4$ (lizer | 9,800 |
| $8 \times+$ (Stant) | 9,6(8) |
| $7 \times 4$ (Stant) | 10,301] |
| $6 \times 6$ (Stant) | 10.5010 |
| $6 \times 4$ (Stant) | 13,400 |
| $7 \times 5$ ('Vrucut) | 9,000 |
| $7 x+$ (Tructi) | 11.4 (10) |
| $7 \times 3$ ('1rucut) | 13,000 |
| $6 \times 4$ (Tructat) | 12.500 |
| $6 \times 3$ (I'rucut) | 13,600 |
| $5 \times 3$ (I'tucni) | 16,500 |

liacl used lirog Super-l'owermix.
Manmfartarar's skeptches shome saliens Wij)croncea betrean 1.50 (Irfi) and 100 Mh. ${ }^{1 I}$ (right)
The cramkshaft 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 $\frac{8}{38} \mathrm{in}$. lapering outside the bearing to a 2 lB A. 1 hreaded length for the propeller nut (or summer). The thicker crank web and larger crankpin diameter of the later 150 s is standard on the " 100 ". The induction timing is slightly amended by increasing the size of the hole and moving it ronat in the direction of rotation so that the port closes at the same time but opens slightly earlier. 'l"his retains the easy chokiug characteristics of the " 150 " be virtue of the fact that the induction pore closes around top dead centere and thes there is litte or mo blow-back.

The main hearing is a siutered (Vandervell) bronze sleese reamed to finish size and with the characteristic slack fit of all current lirog engines.

Summarising the potentabities of the new lirog "100)" as an engine we can only repeat that it is very casy to hadde, extremely flexible and has most of the required charteteristics of a begimer's engine, whilst achieving a remarkably high standard of periormance. Its power oupput at peak r.p.m., in fact, is comparable with many of the best of 1 ccc . diesels.



Famous Biplanes No. 17

Designed in 1935 yet

## still regarded as the

finest precision
aerobatic machine

described and drawn<br>by G. A. G. COX

'Ine: Versibleles 'l'reaty, 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 buiding of pliders and commercial aircraft under a certain size was permited, 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 achiesed parity with the Home Defence Force. Just how Hitler succeeded in forming the 1 uftwaffe 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 "maiplanes" and airliners. The first important step was the training of airerews for this clandestine air force, and for this purpose sailplanes and "sport" aircraft were manutactured in large numbers, all flying with civil registrations of course.

The liücker concern, supplier of the vast majority of the EuftwatIe's tramers, was establyshed in 1933 and headed by Carl Bücker, former managing director of the Svenskit hero A.B. of Stockholm. Their first
Henting shemes Boverty Howard. the American stmat ace juse mixxing " bunner hedd adoft by hero pules. This parlicular bure" in 1936. Helomin Lined up for the 1938 Lackherd Arrobatic Trophy at taginon, Coventry, HB.WSC in chrome yollow arith rest erien und blixters on cint wax form by H. Liardon of Suitzerland. Note she stoted effect of the elevator here in the fall "up" peosifion
product was the "Jungmann" two-seat basic trainer, followed in 1935 by the "Jungmeister" adranced aerobatic trainer. The two machines were basically very similar, and in fact used many jigs and components in common. Another common factor was their immediate success and popularity. These trim littlo 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 much-sought-after acroplane for acrobatic nying.

Beverly I Ioward, the American aerobatic pilot is as grood a judge as any, and claims that the Bui. 133 is the finest precision aerobatic machine ever builr. His own specimen, incidentally, was taken to the U.S.A. in the airship "I Iindenburg" by the late Captain Alex Papana, a Rumanian aerobatic pilot in 1936. Afrer two changes of owner and one change of engine (because of the spares ditticulty) it now bears the flamboyant decor shown on the drawing.

There are about twenty-five "Jungmeisters" still nying in Switzerland. HB-MHI is one of several recently sold by the air force and restored to virtually new condition. This machine was buile in $19+0$ by A. (i. Dornier Flugzeuge at Altenrhein, the factory which built the Do.K.

The Late C'unt Cantneusenf thrillod ontoakern az previoua Luckited Aerobutir Conteass in Gireat Bripain trith his per. formmnee in ECoflP, which was flown wi Coventry in 19:5 urithont the rudiler exfomion. His pretiens mosint was EVC.AEX. The Conents "party piece" was a flich roll at almose granml level just bifara finat toacheflater-photn $A$. T. (ibhbina



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 Treutonic thoroughness．Both the fusclage and the tail are of welded chrome－molybdentum steed tube．The wing panels（interchangeable top for bottom） are constructed in wood with ewo J－section spars and normal drag bracing between．Jabric covers the entire airframe except for the metal nose panels．The split－axle undercarringe 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 character－ istic stalky appearance when airborne．Either the 140 h．p．Hirth 13M506 six－cylinder in－line，or the Siemens Sh．1＋A4 seven－cylinder radial engine of Cobour scherre for EC－ALIP in basically；rhrorrue gedlouc weish red and white undercerriage lrge，and radialing atrips on red and mhite uniprcarriage fas，and radiating ortips on light bium franiage wiripe with rudder carrying darker bifur mhapes aeporated hy a centre yellowe band．Cour in polished alminininu，propelier warnimherl soond with black rear facon， nafural leather cuffa ape firind to atmi ende．Pilot＇a hmlome moin whita with red burs－photo G．A．Cinll


160 h．p．could be fitted，although the latter was the more common．One of the greatest virtues of this aterobatic biplane is its rate of roll and ability to perform flick manoenores at very low altitude－a characteristic fully exploited by the late Count Contacuzene in his many spiriled 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 Lnckheed Aerohatic Trophy at Baginton in July．The aerodynamically－balanced control surfaces with forward edges projecting below or above tixed portions of wing and tail give full suatch action and are powerful enough to hold the aircraft in any of many incredible attitudes．

[^1]



Power MOBELLING is now divided 80 per cent. "open" and 20 per cent. F.A.L. 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 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 mado windy weather flying rather a problem. With Eureka it was decided to keep the weight down to about $12 \%$ 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 $1 / 6 t h$ REPRODUCTION ARE AVAILABLE AS PLAN PET $71 I$ PRICE 5/- PLUS 6d. POST FROM AEROMODELLER PLANS SERVICE

l'ropeller tip position determined the height of the pylon as wing was required to be clear of propeller slipstream, and tho tailplane was moved more into the prop blast. The fin was placed behind the tail for convenience with the pop-up tailplane I.'T' and also to give extra moment to the fin area. (lims in front of the tailplane had proved rather disastrous with sone of Norman's earlier noodels.) This rear fin set a fashion which is now a characteristic of many 13ritish power designs. 'The thought of letting the motor run at fuld power on such a small, lightweight design was rather frightening; but after a few scconds 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 llow 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 improvernent in the glide.

Now for the construction of the model. The wing and taiplane 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 $\frac{1}{\frac{1}{2}-i n}$. sheet sides of the body and the, $\frac{3}{3}-\mathrm{in}$. 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 $\frac{1}{2} \times \frac{1}{6}$-in. longerons, the spacers, and the $\frac{d}{} \times$-in. pylon member are added. Then the other tin. sheet sido 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 picces of $t-i n$. shect (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 dope.

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 Cizy Boy fame. The right wing is warped to give about 2 degrees wash-in at the dihedral jointthis is equivalent to about $\frac{1}{2}$. packing under the L.E. and both the tip panels aro washed-out about I 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 tailphane is left flat.

Secure tho wing and tail to the fuselage. Check the C.G. position is between 70 por 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 rudkier straight, tilt the tailplane-right hand side up-until a glide circle of about $50-\mathrm{ft}$. dinmeter is achieved. Now increase the

## Important Patents ${ }_{16}$ No. 2



Limited run fuel tanks with detachable headers are relatively conventional but Vanderschel's invention of 1956 way at that timenovel and is, today, different in so far as the header tank is a permanency, carried by the model. According to his invention the header is communicated to an external, preferably transparent, fight tank by means of a flexible tube rising ahove the header fucl level. The zube extends through a piscon-like stopper which is adjustable within the flight tank to afford a prederermined capacity. On removal of tho piston and tube, afier starting on the header tank, engine rum is obviously limited by the fighe tank contents while the rosidue in the header outlet tube draing back to its origin. The flight tank is secured to the fuselage by a spring elip and may be adjusted angularly to provide efficient leed for the model's normal fight angle.
engine revs and trim the power turn by means of the rudder tah only. Remember to move the tab in small amounts - about $\frac{1}{3}$ in.-especially when the engine is running at full speed. The best arrangoment is with the tab obout $\frac{1}{1} \mathrm{in}$. 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 tho incidence. It has been found that increasing the tailplane incidence will speed up the climb and will open the R.F. turn. Docreasing 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 fick to the right straight into the glide without stalling.

The best of the "Lureka" originals climbed to about 500 ft . on a 15 secs. engine run and would glide for another 4 to $4 \frac{1}{2} \mathrm{~min}$, 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 - liuriek a !


## 10

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

I.ast month sce reconted 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 Hillard continues
We ind an encinv, a fuel system, a control system -buc dicl wo have an airplane? Sure, we had "Breathless", but with all this new rig, it no longer qualified us al model airplane in the eves of the 1.A.J. Why? because the F.A.I. rules establish a wing loading limit of 16.38 ounces per square foot of supporting surfice (which inchudes the tail surface). We had about $7 \frac{1}{1}$ square feet of supporting surface, but our airplane weighed reer 81 b . with a full load of fuel aboard.

The answer was obvious; we had to add some areas. We thought about making a biguer horizontal stahiliser, but this might adversely affect the light characteristics. We deceded to add a lower wing and make it into a biphane.

I had an old wing in my serap 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 Breathiess", since I had a smatler version, thus the name.

We made a test light with the lower wing addition. Is looked pood, 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 Hights had been made with the airphane ligholy loaded. Next came a full load tile ofl test. Since these would be short Hights, 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. Pwo previuus crashes had shown that the wing could not withstand too heavy an impact load. We decided to simatate 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 casily repaired.

Welmesday, April yth, we tried a full load take-off. 'The airplane coukn't make it. We even used smaller propellers, knowing full well that this woukd increase our fuel consumption, but the amplane just wouldn't take ofl. Alter several unsuccessful attempts 1 decided to make an experiment. I removed the lower wing and tried amother full load take-off. The airplane, even with a much higher wing loading took off and elimbed quite well. This proved that the elrag of the lower wing was more eftecrive than its lift, at least with the power which was aviabible to us.
hut the wing loading was too high as a monoplane. We refigured the allowable fuel, we seretched every ponst that we coukd, all to no avail. Then I hatd another idea- Figure everything as closely as possible and make just a smatl stub wing instead of a full lower wing. 'I'his would rake the airplane into a sesquiplane. The stub
wing would meet the wing loading reģuirements, but perhaps its drag would not impair the take-off

It was a good iden, as events later proved out. However, before we had a chance to ery 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 attempr for Saturday, April 12\%h. On Friday, April 11th, we had planned to make our final test fights. 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 Bobs I unham's for a radio check and to pick up the transmitter. While there we discovered that the receiver was working all righe, but loob was having trouble with his transmitter modulation pattern, We had been making all of our test fights using a labhook transmitter. We decided to use the Babcock since our time was short.
However, so much time had gone by as we qried to lick this unexpected prohlem 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 bafle. 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 exhatist batle worked perfectly. However, at the end of the flikht, for a reason which we did not have time to analyse, the control system locked in right rudeler, and the airplatne crashod. Although the damage was comparatively minor, since the airplane was very lightly lomded, it stifl meant several hours of repair work.

Most of Sunday, April 13 th, was spent in reparing 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 downharted, but not discouraged. We re-scheduled again for Tuesday, April 15 th. We wanted to make some final test flights with the new srub wing on Monday.

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

Followink these fimal test fights, wo took the aimplane over to a Supermarket nend wei heal is on a certified scate, ats requirel by the F.A.I. Then we went back to my shop 10 see if we could eliminate the one remaining possible source of trouble- the radio noise. We tried condensers across the motor servo comiacts, 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 geard in the motor servo. For a few minutes it looked hopeless. 'Ihen by virtue of some carefu! filing, we finally got the poars to the point where they would turn through the distorted tecth. It was far from perlect, 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 $6 \mathrm{a} . \mathrm{m}$.

We loaded all of our gear into my car. Mill 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 Storcy, past president of the Academy of Nodel 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 I.A.I. rules do not specifically state that the airplane must be controlled by one man throughout the entire period of an endurance flight, we decided to do it that way in order that there would be no guestion.

Although rendezvous time was 5.15 a.m., I wakened at $4 \mathrm{a} . \mathrm{m}$. 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 Aisport 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 tinal preparations for the flight. The first thing we did was to wind in the turns into the escapement. We were driving the escapement with is in. rubber ' The escapement is mounted well forward in the airplane and the rubber coming out the tail gave us a useful lenget of 39 in . Our tests had shown that we could sately 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 llight. Since we had not had any fights longer than 16 minutes in lengih, and because nur 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 kussian record, which was the official record, we would have met the objective which liuss Nichols had set for us, insofar as the F.A.I. convemion was concerned. I also figured that a couple of days later we coukd put in more fuel and go for the fu!l length of time. So, we put in 50 fluid ounces (about 46 avoirdupois ounces).
'Ihen we assembled the wing to the fuselage, and everything was ready for the take-ofl. We had decided to make the take-off fron the dirt road leading into the I os Angeles Model Airport because the airplane

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

In assembling the wing to the fuselage, I canted it very slightly so that the left wing was slightly offset to the rear. '[his was so that when airborne the airplane would circle to the left, aven though the controls were in ncutral. 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 repcat the pattern. This way I could conserve my commands.

1 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 ensine, 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 brecee came up right down the rond, and the airplane was airlonme in 209 feet.

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

1 let it climb to about 500 fect. Now came the next critical point in the flight. Could I adjust the angine r.p.m's to a good cruising speed? I went al it very gingerly. Since the engine was at high speed 1 pressed the eransmitter three times and beld momentarily, then lot 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 entine speed control of short duration, we could actually hear the engine slow down and, as is so happened, it sounded like a pretty grood 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 fect of altitude 1 decided I had better increase the r.p.m. and go back up. This meant that 1 had to go down through minimum spect, and this was another critical point. We felt certain that we had established a minimum r.p.m. where the engine would continue to rom 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 zime to try it previously.

1 pressed three times and held. 'Tensely we tistened to the engine. It passed through minimum sused and started back up without a hitch I let up on the button when the engine got to high speed, only wh have it go back down to a cruisine speed. l'or a monient I panicked, and then 1 remembered that athough we were dealing in fractions of a second, under tension I was uot 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 1 let up on the hutton. The engine stopped at high speed and the airplane started to regain altitude. During all


## Hill Gitick left, Ken Ifilharrl rizht, ponse rish "Hig Hrwathirns" fultorcing the record llighs

a continuous babble of voices, but whenever 1 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. Ever with our most liberal estimates this was the maximum endurance with the amount of fuel which we wese carrying 1 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 is kept right on rumning. At five hours and 1.5 mimutes I began to get concerned. The wind had cone 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 $5 \frac{1}{2}$ hours.

At five hours and 25 minutes 1 told
of this procedure the airplane had come down to about 100 feet. The ground looked awfully close, ton.

By now the airplano had been in the air about 20 minutes. Ihe 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 hecame necessary to reduce the engine speed I did much better. I hit a crasising 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 und let the airplane climb to about 800 feet altitude. I ligured that even if the engine were to duit 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 rurned and we all shook hands on having broken the Russians' record,

Next came another hour of circling. 'I'he temperature had gono up, the sun was out, it was getting quite warm, and a slight breezo 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 litele bettor than four hours endurance an 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 hack to minimum r.p.m. 'Ihere was only about 10 minutes to $\mathrm{go}^{2}$ 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 broadeasts of the morning had brought out several spectators, including T'.V. and Newsreel cameramen. Everyone was most co-operative. Naturally there was
the assembled newsmen that I was now going to manoeure the airplane down to the ground
'The I'.A.I. rules require that you land within 500 metres of your point of take-off on an endurance thight. 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 ruming.

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

Keith Storey and Russ Nichols, who were recording all of tho necessary details, Johnny Brodbeck, Bill Glick and 1 , were trying to figure ont where the exira 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 remperature was $62^{\circ}$. When we lended the temperature was $95^{\circ}$. This would give about 18 per cent. fuel expansion to part of the fuel churing the later part of the flighe.
'T'hus it is apparent that in addition to all of tho many details which were required in preparation for this flight, several things combined to make the flight successful beyond our wildest expectations. lior 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 tly 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 fight once again proves that although nothing takes the place of good preparation and attention to details, an occasional smile by damo fortune can make things a lot easier.



We wish to reatove posvible misunderstanding about production of the Wright system radio control units. 'Ihis system invented by les Wright, the 'Technical Manager of H.M.V. (N.Z.) I.td., was originally manufactured by that company and marketed by its usual distributors. It was decided to discontinue production. An improved model, known as tho Wright system, is now being produced by Wright Radio Control I.td., and distributed by Scale Model Supplies Lad.

In an advertisement in our April issue "Betta" Model heroplane Supply Co. stated that they had not been able in procure any "MAV Wright system radio control units" sinco last Juls:

As Wrighe Radia Control I.d. informed us that Wright system units were being produced, we published in our May "'rade Notes" an apology for what we described as "an irresponsible statement"

Athough the new model Wright units (with which H.MIV. are not concerned) are being produced, the starement 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 " l 'rade 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 mote that the full range of five fan sizes is now available. Iatest is the Type " $E$ " no less than $4 \frac{1}{2} \mathrm{in}$. diameter and specially designed for 3.5 c.e. It forms an interesting comparison with the smallest type " $A$ " 38 in. diameter fan for the point-fives. Prices range from 7 s . 3 d . to 7 s . $9 \frac{1}{\mathrm{~d}}$. retail, and each comes nearly hoxed with l'hil Smith's hints for duct design and fan installation clearly.


Above: New fans for 3.5 and .5 c.c. by Veron. Below: Avro 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 farge size is in production, perhaps we shall be seeing more high speed deltas, due to the advantage of better power/weight ratio with the targer engines. Phil had his latest at the Northern Heights Gala and it is seen, along with his established Fairy F.D.2, Salre and I avochkin, in our heading picture. Called the Delaceptor and powered by an A.M. 10 diesel, it could not be more aptly mamed, as all who witnessed it climbing at Halton will readily testify.

New plastics from Airfix in their Series 2 range at 3 s . each retain the popular 1/72nd scale and cover two of the great World War II twinengined favourites, whe Bristol Beallfighter and the twin-boom Lockhoed lighening. No less than 55 pieces go to make the finished Beaufighter T.F.X., Single-engined types new to the Series 1 Aifix range are the long-nosed looke-Wulf 1901) and Douglas A+D-I Skyhawk at 2s. each


Jim is one of those controline addicts who has been tryine to get through the situnt schedule for scveral seasons but without success. "I'he problem seems so be that as soon as he has gone through his fiwe consecutive loons, he no longer sernis to retain sood control, and he always complains of "tight" lines. Iis pal Pete pointed out that when his lines were laid out on the grass they bad small "waves" in them and on his suggestion that they did not appear correct, Jim made out anolier set of lines, but still the same result.
 auo vo and si worsuon janu osneajq 'din |oos it aytu of Kuipuel Aq s.row



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What would YOU do in a case like this? Turn the page for the solution to the problem, printed below.

## A. D. Kingswood's

The growisk popularity of the new, more powerful 1 c.c. and 1.5 cc . 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 hats now amassed several scasons' flying with an Eiffin 1.49 and its robust construction with all parts sheet covered and ply tiolplane, make it virtually indestructible.
'I'o 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 helow the crutch spacers. Thus the fuselage is started by building up this $\frac{1}{k}-\mathrm{in} . \mathrm{x}_{\mathrm{B}}^{\mathrm{\beta}}$-in. crutch over the plan view, with appropriate thickness spacers belween the main crutch and engine bearers to suit the crankease width of your motor. Apart from the front circular F 1 , only the $\frac{1}{8}$-in. ply F 2 is a one-piece structural former, and this is now added prior to installation of the tank, bellerank and push rod control mechanism. l'lank the fuselage with $\frac{t}{d}-\mathrm{in}$. strips approximately tion. wide, allowing a cutasay for the cockpit area and eventual wing seating. Make up $\mathrm{T}_{6}-\mathrm{in}$. vertical tail surfaces and fanin. ply tailplane and hinged elevator fuLL SIZe COpIES OF THIS li4th SCALE REPRODUCTION ARE AVAILABLE AS DRAWING CL 709 PRICE $3 / 6$ PLUS $6 d$. POStage from AEROMODELLER PLANS SERVICE

assembly ready for attachment to the rear fuselage 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, bend 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'i supporting plates should be fitted in after the reat section of the u/e is bound to the ply dihedral brace, then the rest of the u/c is bound to the ply plates and when satisfied that all is thoroughly set, sand all over and cover the wing with is-in. sheet taking note to chamfer the
rear $\frac{1}{}$-in in order to obtain a reasomably sharp 'I'L. The strength of this wing construction is such that repeated wingtip landings can be made!

After fotting the tips, finish with fine sandpaper, add 直-in. ply line guide and fit wing to the fuselage making sure that it is at the correct angle.
Vext, carve the upper and lower nose cowling block which can either bo a permanent fixture or used as a detachable cowling held in place with snap fasteners. "1hey should, of course, be hollowed out to suit your particular engine. Then fit tho cabin, radio masts, chin radiator, exhausts, airscoop and mark the gun chamnels prior to covoring 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 "slyy" blue and bright yellow spinner.

lidgine spren coneron is fast becomang 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 amouncement from Veco Products Corporation is the use of incorporated exhatust hafte together with intake throttle. "Chopper" action on the exhatust blank is connected with the throtule 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 cxhaust off to the extent of not being able to hear the engine at reasonable distance.
Fein Und Modell 'l'echnik (Webra) announce their 34 c.c. Bully and 2 th c.c. Kinmet with new aecessories, notably intake throtte, exhaust collector and vacuum pump units to be used with the Stegmaier radio commel system. These win ball race engines have large crankcases and appear on be particularly robust to withstand heavy duty work.

Company clams are for 26 b.h.p. at 13,000 r.p.om in the case of the smaller engine and $-3 f$ b.h.p. at $1+, 000$ r.p.m. for the $3 \cdot+\mathrm{cc}$

Envied motor at the Crantield World Championships: was the new C\%echosiovakia MVVS 19581). One of the units was dismanted for inspection and we took advantage of shonting a photo ( $n$ fight) to show how the molor utilises the porting system introducing by Enya 151). Transfers are, however, much larger than the Jap motor, alowing the use of 3 , as against holding down screws and the crankshaft port area is more generous, Local field checks with a tachometor showed that the engine matches a re-worked Oliver 'liger 111 on r.p.m. Wost unique feature is the inclined ransfer
port which appears to follow the modern theory that the first flow of high pressure trimsfer gases should be across the piston to avoid any wastage going straight out through the exhaust port, and also to elivert 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.


fast Month we gate detials of Mr. Morgan's first metal models, the Wright fleer and Ibleriot XI, mad a point which wats overlooked in our description of the models was the choice of solder and means of obtaining such neat joints.

Wheh cumning and craftiness has to be applied, as unlike silver solder which blends in colour pretty well with either brass or copper, saft solder is a real menace, being so dissimilar in colour and with a perversity in application with its associate zool, 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 timing Hat mating surfaces, and to use what Mr. Morgan terms "Single Shot assembly" whenever possible, so that no surplus solder is exposed to view, or reguires subseguent removal 'This cntails use of a merhylated spirit lamp for heating very small parts, "Spitfi.c" gas jet for small pan ts and petrol blowlimp for large components. Fior silver soldering. "Easiflo" or 'Ihessco Melt-Lisi 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 detals of two more famous aircraft subjects in Mr. Morgan's series:

## VMKKMARA VIMMy

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 uir bink between turope and the American continent, to be followed by the frequent and regular air lines of today.

The fuselage 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.


## SIIIRTT (DF ST' I.OHIS

On May 21st, 1927, a young American airman, Charles Lindhergh, received world-widapplase at the conclusion of an epic solo flight of great endurance by man, machinc and engine, atter crossing the Allantic ocean from New York to Paris. This might, covering 3,639 mites, tonk $33 \frac{1}{d}$ hours to accomplisth and did much to sway aireraft designers towards the moneplane trend then developing and at the same time the slatic radial acro engine proved itself beyond anty doubt to be more compact, lighter, mechanically simpler and definitely mere relialle than the liguid-cooled engines then in use, for long distance air journeys involving hazardous weather conditions.
The NYP' moded has a one-piece double surfice 22 s.w.g. semi hard brass sheet wing the camber of the top surface heing formed after bending and cramping over shaped wooden formers finally being suft soldered along the entire length of the inside of the chamfered trailing edge.

Rear fuselage and calin 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 heing made in 22 s.w.g. copper shect, pre-fotmed around a wonden pittern block.
Engine and propeller assemblies comprise of no less than 1105 separate detrial parts.
The undercarriage olen legs ard internally sprune and the piken's cockpit and cabin contain:- Dashboard and instrumens, control columa, ruder batr and congine controls, pilot's se:a with safety belt, the periscope (extending and retractable), tood racks, life ratt, water Lottic, inemometer for compass.

Sume of the extronely fine acurt inomired in hestio Moreanis metel models cun bn secn in theso three photographs. uppoxitu in the Ryan Nip' Spirit of St. Jouis rish


 and detuiled propellera. it would ben hard task to monteh kurh artisdry in mond, bat in thetal Mr. Morans armato hatw no prer


$\frac{1}{3}$ in. internal strap as per section view. Construction withstood a fullwinds motor break in second round. below is Erno l'rigyes's power winner, motable for its weight, and impeccable black and yellow finish. 'limer kicks atuto rudder prior to cutout for right glide turn afrer right spiral climb. Hardwood spars and trailing edges, diamond sheet fuselage blends to spinner at sose. Sketches opposite: $A$ George Reich (L.S.A.) useslee section keys to prevent side wobble on folder prop, with deep root section, hinge tuhes bound to rear of boss. IB Steel iurbulators had a lethal appearance, wore cemented to blades of Bill letherington's Canadian Wiakelield, to imporve efliciency. C Always noted for new ideas, Austria's Ossic Czepra had this
Seen
'fheis is the firss instalment of the vast store of technical data accumulated by Aeromodener staff at Cranfiekl. Above is Rond Baker's


Wakefield, one of the cleanest designs on the tield. Fuselage made with 古 in. sheet wet-moulded over a handcarved torme, two hatves joined by a

Championships
ring hinge unit prop boss turned to fit his sppinner with turned root unit and pinch bole to retain adjustable pitch blade. (Jn 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 rear fusclage (or airframe!). B Anatol Kossowski's folding prop has turned aluminium blade roots, pivot lugs incorporated, allows variable pitch-from Poland. It lazlo Ordogh's sense of humour provided light relicf on his two models with sheet pylons cur to illuserate Samson and Delilah. IN Austrian $\mathrm{F}:$ Reiss had sheer covered wings-rop and bottom--roots of which were extended to take wing retaining bands. At nose, Webra Nach 1 is on cantilever plate beapers with generous downthrust, non-adjustable unlike those in tir which could be moved va rear screw tonsion. 'This was a feature of Wieslaw Schier's reserve Polish design. Il shows the neat cowl used by I othar Piesk of Germany to enclose his 'laifun IIurrikan 1-49. IRear end of Schier's power model has a knock-oil tail via claws on bracket bolted to fuselige.



# 1958 U.S. NATS. <br> REPORTED IN WORDS AND PICTURES 

By Tom Pearson, George Aldrich and Howard G. McEntee



Sixe of the propeller Kives "clar to the sype af model axpeme teft, It is Don Giurnett'm
 Cargo viuner which
 balluxs on orne flight. Airfrumtr treighs 20 "I and noging is a Cow Thermal - Heppher . B c.e. Fight must hast 40 secm. from 20 seras. ongine ran.
light in the oppo-
 . 8 ret Hrcoord Hinlier a! 109 m.p.h.. also Thermal Hohtur porened, has contral cia Menobine oprrated talt at tif

Ati, moads leading to Glenview Naval Air Station, Chicapo, seemed crowded with model builders' cars on Sunday, July 20th. "llye L'nited States Navy were to be the cordial host to more than 1,200 modellers for the eleventh year in succession.

P-A.1. and Indoor events were flown Monday. Low position of ceiling lights caused some cries of anguish as model alfer mokel was hung up. Outdoors, Janes Patterson of Granada, California, won [iA. 1. with the same model he brought to

Cranfield, just beating Larry Conover.
'l'op ".l" speed (up to 3.25 c.c.) was almost $1!$ m.p.h. slower this year, the team of Mortin and Crogan of Dallas, 'Texas, won with $1+3-48$ mp.h. Combat was the usual mess of lost tempers, fast planes and scattered wreckage. Nany fellows were asing pen-bladkler tanks or crankease pressure fed tanks to ensure a long stendy run. There were the usual number of /lalf fiasts, Omegas and Sreeposucepers, but when
the dust had cleared, the Filite Sireak hy Cearge Aldrich had won two out of the three first places.

Noblers, (hiefs and Thunderbirds were prominent in stunt. History was made when George Adrich failed to place in open stunt. An interesting side note in that George Hew many demonstration flights with an Oliver Tiger Plite Soreak flying through an excellent A.M.A. stunt scloctule. I'be rumour was about that George is scaling down a Nobler to suit the Oliver for the

1959 Narionals.


Top left, Jumea Tunduk of Mosmodole L.f.p plocert third in G/L nomle wish fobldink ariming Corsnir poucerard by Tuin Dooling 60 (in line ) alternatic fir. ing, sounds like a Aenctrel fan motor. Top, right. Champion Woorly Hhanrhard's Cox ${ }^{\prime \prime}$ c.e.epoueveral 25-inch Soprish Tri.
piast.
Bastom fofi,
 Wioshy terand of Berivick, Ma. Six Forx 19, and four Jet. mastern:' Kighf, libier. ator placed fifah for Eid Childrass of Cinfifornia, 7 fle, $1.4+1 b$..


Class I 3 speed had some interesting clevelopments. The top time was $155.11 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. 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 satne team broke Ray Gibbs's l-.A.I. 5 c.c. spect record. 'They used a Dooling 29 it a plane spanning 175 inches: 30 sy. in. "ing; $15 \frac{1}{2}$ in. length and $17 \frac{1}{2}$ ounces in weight. Model was constructed of basswood and covered with nylon and green fibreglass resin. Speed was approximately $157.66 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Tom 1)ean's Aeronca Crop Duster again won first in open scale. 'l'his year Dean had some tough competition in the form of a $1 \cdot t-(5 N$, a Focke Wulf 190 A5 and a $13-2+11$. Open scale is the ultimate in precision construction, but some of the builders should become better flyers, there were many hearthreaking crashes. Birnst Berke of New York passed out when his P-47 crashed! This plane, powered by an old Hassad 72 , had operating cowd haps, retracting $\mathrm{u} / \mathrm{c}$, motor control, drop tamk thaps. Cuckpit detail was perfect. A plastic aluminium coating

[^2] (3) Norm Dierfuman's *uper S.E..5a (3) Nornt (ifrimanh Ruphers Laternter with
 testelecor. (5) Mamdall sopinn stunt winnar. (6) Dutailud II. 25 Mitehell. (7) de Halt tow wing afyle. (B) Ter rific P-17 by Berkr crashtrlin wimf.
 poteder in resint binder. (9) Varia. tion on the "Detroiter" dexigt"
simulated the real finish. A $9 \frac{1}{2}$-fout span, 23-pound 13-36 created a sensation bur failed to plate. Bob Heminway of Andubon Park, New Jersey, won team racing with the able assistance of his father amel sister. Team Racing seems to be a dying event. 'Ihe mumber of entries was low, bur quality was high, time for 10 miles $7: 4 \%$.

An 18-year-old boy from Pairfax, lowa, really sel the older fellews looking. Don Gurnett's 9 -font span Thermal Hopper 049 Clipper Carko plane lifted a 3 -flight total of $1.11 \cdot 25$ ounces. II is plane carried a maximum one-flight load of $51: 1$ ounces. Not bad for a 20 -ounce plane!

Thursday evening liob Jauderdale of Huntsville, Alabama, broke his former F.A.J. 10 c.e. record of 167 m.p.h. with a Alight of $171 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. Bob alse won ( speed with the same MeCoy 60 plane with $168.16 \mathrm{~m} . \mathrm{p}, \mathrm{h}$. Competition was really hot in (: speed this year. All of the top nine speeds were over $160 \mathrm{~m} . \mathrm{p} . \mathrm{h}$.

Wordy Blanchard of Llampton, Virgina, was again Open and Grand National Champion.

1958 will have to go down as "aileron year" in $1 \mathrm{R} / \mathrm{C}$. 'There were actually about 280 entrams all told, but, of course, some of these are mulaple entries, where a fellow was in I'ylon and Stunt. In Nulti, they
selected 21 of the top qualifiers to fly in the Championships on last three days. Necdless to say, the thying was absolute tops then. First four positions were taken by Bob, Stumam, Howard Bonner, Bill Deim. All from the lakKS. California, and Kasmirski from Chicago; all were flying Astro Hogs powered by IS\&Bs with Orbit equipment and Bonner servos. Next was Walt Good, then Jim Martin from 'lonnessere, both with 'l"ITV. l-irst four all 8-channel reeds, and atter Martin were threc more of same. At leas 19 of the 21 used ailerons! Three of the 21 used ailerons linked to a rudder, all these being "l"l'PW". This seems to offer quite a bit of promise, as soon as some work had been done on the system.

Pylon was very interesting with quite a few planes designed especially for the event. Won by a 1 ( $/$ R( man wilh neat shoulder winger and
 de Bolt next with hot bipe, followed by Bonner with a brand nesw Astro Hisg that weighed it Ib . and Hew beatifully with a fo! R Rudder aboun as usual, Intermediate lousy. 102 Malti entrants, 99 in open Rudder, 12 in Jr.-Sr. Rudder, 29 Intermediate.

Quict again settled on Glenvicw and only memories were left as the suilors swept up the balsa and paper.



Cluß local Newspaper publicity can work in more than one way. I have betare me two atromotelling: "mentionse" in the local press, one most favourably from the 1.oughton, lissex, area where the DEBDENALHS Cluly were given front paze hilling for their fine display in connmetion with the Debden F-uir week; but the other tuakes a rather cliflerent picturs:
1t arises trom a Wiatord Court case when It arises from a Watord court case when n neightemer was charged with malicious
wounding of the farher of his next-door aeromondellimg youngster. The neighbour had been amoyed by comintal engine funning mod decided to take the law into his own hands and climls over the fence to forcilly stop the noise. Resule was a fine of $\mathcal{C}, 10$ and a further binding over io keep the prace for twelve months for the irrate neighbour whist the aeromodeller's father was wko warnel lo kerep the peace. I rrust that you will all sce the mearal in this all too true atory. Now for an appeal for an owner. Driver 'Thompson of R.A1.S.C. Aldershot informs anc than he has found an Aiglet (ilider with mos identification. The owner can pick up the model from Main (Guard laom ot Monheim lharracks.
 Aldershot,

## D.analera

DARTFORD M.F.C. have been to moxt of the (ombat Rallisa but turfortunately have not been alsle to organise their own regular event this year. They are very been on the Miles Contest special 3.5 ce and have been using this motor to very gorod effect.

In HAYES M.A.C. there is juhilation chat Pele Hedgeman and Josh Marshall should have quatified to so to blolland for the International 'l'ailloss event. ENIFIELD AND D.M.A.C. ram the team race trials at Cramficle very elfectivels, cheir only clab entramt, Buls Pige, in speed, was unlacky

## S.M.A.E. CONTESTS

## September 2lst

Model Eingineer Cup, 'Yam Gilider; Halfax 'Trophy, Open lower. (Area (entrofised)
September 28th
leam llacine in, A, B. (Avea Centralised) October 12th
Farrow Shicid, Team Rubher;
S.M.A.t. Cup, $A 2$ (ilder.
(.irca ( entrolised)

Octoler 26th
Hamley Trophy, Open I'ower:
Frog Junior 'J'roply, Open Rubier 'Glider. (Arca Centralised)
not 10 bet an othicial ruth, athough he managed 104 m.p.h. ati the day.

## Sontl Easiern

The S.F. Area S.M.A.E. are happy to anmounce that they have secured use of Royal Nival dir Station! Ford, near Arundel, for the South Coast Gala on October 19 th. Nil classes of free-flight will be held and details circularised in due course.

## minntleerin

LENTHERIJEAD M.A.C. bave been giving liying elisplays at kecal feses durink the course of which over one hundred balloons have been burst. 'Jheir interest in combat has now reached the extent where they can arrange a league within their own group for comtests heginning Septenber. grouph for comests heghning septeniber. Southern Area kally will be held at Heaulied
on sieptember 28 th in conjunction with the On ieptember 28 th it conjunction with the Wesi Ilams and S. Area Rally. Jeaulieu has now been handed tack to the forestry Commission and the Verdurer of the Now Forest will only grant permission to use Beaulicu and Sroney Cross once each year. The contests will be for open frec-flighte, all chasses, team race three classes. sturt combat and radio. As the date coincides with the Area Cientralised S.MI.A.E- Teater Race Conest, the organisatom will under aike tu forwned oflicial results for those members compering at Beandien but from outside she Southern Area.

## Findarmals

MELTON AND D.M.A. have been active at locat feter and gala days and have now concluded negotiations for use of two good llying grounds which will be of great howd to boost their membershing One help to boast their mermbership. One and-buy" sale-in fact anorber is planned for the future to help club funds. Sunday, Aukust 3 rd, as World Championship spectators xill lue aware was not the dis th husk it rally, but STRATFORD-UPONAVON M.A.C. wemt ahead with their s at Wellesbourne Aerodrome, the outstanding item of day being like rambers of Hall Creen, Birmingham, with his A. M.35powered stanter. (Olub menders have been giving impromptu talks, in particular Hrian H-owler spoke on the AP.S. Pedpas with E.D. Rucer, explaining the methods he employed in its construction. This zype of club entertainment is particularly beneficial for the less experienced members and I wish Gorthe less experienced members and wish
more dubs would do the same. In

One of the Kenton M.A.C. Pracemakers gets arcay at the Giodnhining control-line Rally

IUCLiNALL AND D.M.A.C., remm race and combat are catching on fast, but new members are still required and should contal:t IP. IIasian!, 24 Rockwoud Crescent, Hucknall. T"huy hase the use of the lucal kolls Royce Sports firound on Sunday mornings.

## East Anglia

SOUTHEND SENIOIR M.C. are nuw operning a juntor section for those up to sixteen years: contact 1). ()aines. 24 Whittingham lyenue, Southend-on-Sea, bissex. CAMMBIIDGR M.A.C. hired a coadi for Sunday, August 10th. to travel to Deteden for the Fiat Anglian Gala, but many models disappeated into a damp. smake-infested wood, duwnwind, and : Lucifer, Mam'selle, Sromper and N.N. 10 are still therel I lowever, a crowd of seratelied and dirty modellers emerged at 6 pr.m. after several hours searching, with Alike Hobbs's model which hat been disladged from unclimbable tree atfer many hunhs of wood hadi been harled in its direction. Dusty Miller now receives the club Power Trophy and R. Godden and C'. King are runners-up. Controline daration is rearmag its ugly head in NORWIC1 M.A.C. and during the dugust Jank Holiday week the ehbl record which had been a meagre 8 min. Was raised by Mr. Arthurton to $46 \frac{1}{2}$ minutes and then to 1 hr. 10 min. Flipht refuelling was used, the engine az $2 \cdot 5$ David Anderson using KK fuel Mr. Arghurton has been practising night flying for an anticipated attempt on the World duration record.

## Western

Royal dir loorce Colerne was the scene of the Farthet Tremhy mecting organised by IBRISTOL ACES M.A.C. with Hood asterdance and ideal woather. 'ropping the results were K. Ilorry in Rubber, with a perfect 9 min. for BRISTOL AND WESE, J. Down wirh $7: 9$ in Gilider for SOLTII BRISTOL (he also won lower with a pertect ? min, total) and in (combat, Smith of BATH M.A.C. battied his way througl to win. In the final team events. South Rristol luad with $48: 33$ agminst the Bristol Aces \$1.A.C. $33: 105$. Six clubs took part in this coneest, BRISTOI. R/C M.A.C. have their 8 -reced job by Joug theppard isst-flown and demonstrated ohat thick half rolls below 50 feet can be dangerous, By digging deep enough he recovered the engine in the sthbsoil! 1) on Cole's 6-red Smog How is ataitiong its turn on the flikht line. SWINDON M.A.C. had their first indoor meeting for some years and members showed that not atl of the old tricks have Deen forgotien K. IFart Hew a matiy line in Migrofim and the Chamman's Jetex Fizzer circtalated with much viokence.

## Tror Your biary

September 14th
Croydon Gala, Open Rubber'Gider/ Power, Slope Suarimg.
Suptember 21st
jucester Ralls, stapleford Hall, Near
Melton Mowhray, Stunt, Combat, $\mathrm{R}^{\prime} \mathrm{C}$. Scptenser 2sth
$\therefore$ II. Koterts Cup. Dawson IJark, Hexlcyheath tor flying Buass.
Wext liants, and soupherr hra Rally,
Beaulicu. Al Classes E. F. C... 1 . IR (.
St-Albans Slope Soaring. Ivinghoc Beacon. Open and $R_{1}^{\prime} C$.
October 5 : h
Bill White Rubber, also Citider and lower. Cholsham.
October 191h
South Coast Cala. R.N.A.S. loord.
November 2nd
St . Albans Slope Suaring. Ivinghoe Beacon. Open and $\mathrm{k} / \mathrm{C}$.

## Nopath Wexdern

The S. WEST R/C M,F.S. has suffered (like cyeryone else) from atrocious "summer" weather, and only iwo club rallies have been possible so fart. However, at the Devon Rully at Wondloury Common, Exeter, condstions were ideal, with sunshine and light-to-moderate winds. The Wilson-Stmith Cup. Hown to the Ripmax schedule. was won by Harry Stillings (Exeter) 月ying his now-veteran oerohatic moxlel "\%oom". with 75 puints; second was K . Williams (Hudmin) 5 's points; third II. O'Hefternan (Salconbe) 53 points. IIarry's model scored on penerration and more accurate patternflying, but the smoothese flyer way Hilton O'Ileffernan's $R 6 B$, using tone-control for rudder and elevator. K. Williams gained second place largely through exceltent spotlandings within 30 feet. Several members have wone vere to the Hill Rx, and are delighted with resulus. Four new members delighted with resulss. Four new meinhicns were added to the club's lise at the DEVON
RALITY on Augusr 17 th. This year the rally ntetncted 93 entries, among which were such well-known personalities as Dase Posner. Mike Gaster, Vic Jays, J. Hagulicy, G. Fuller and J. and P. Manvile. Wieh maximum flighe time fixed at 4 min , it som beeame obvious that maxs would be coming fast and furious. Atrogether 19 maxs were scored. Several models were lost on first flisht attempts and ameng these were Dave Posner's Oliver 'Tiker powered Dream Weaver. Gcorge Fuller lost his rubber model on his third flight, having already scored one max and climbed a urec so retrieve it. Both Fuller's and posner's models were secn so d/t. Hut despite a long cross country run and an imtensive search the models were not found. As usual, this evens drew most of the 1,0010 spectators at the rally, and the acandard of the combatants was very high. In the final Drian Itopkins of S. Itristol met fellow clut)-mate Jim Sullivan after having given a wonderful diaglay of atteck and evasion, neither being able to cut the ot her's streamer. Jim Sullivan had to retire as a result of a mid-air collision Also nun concursently with the Open events was a contest for free flight. Rubber. Gtider and Power for the S. Western Area Shield for which elubs in J)evon and Cornwall only could eompetc. This turned out to be a very tight fight between Exmouth and I).M.A.C. (the organisers of the Rally) and Plymouth M.F.C. Exmouth won with the narrow margin of 10 pointa won with

## Poxect

| 1. 5. Mantille | Bourncmouth 622 |  |
| :---: | :---: | :---: |
| 2. B. Cox | St. Albans | 598. |
| 3. J. Bakutey | 1 l | 575 , |
| 1. J. Russell | Bristol Weat | 653 |
| G. Fuller | St. Albans |  |
| 3. T. Henson | Cowley | 53 |
| , |  |  |
| 1. J. Raiph | Glevun | $63+$ se |
| 3. A. Cox ${ }^{\text {2 }}$, | llayer |  |
| $\begin{aligned} & \text { 3. 13. Cox } \\ & \text { Radio Com } \end{aligned}$ | ¢t. Aban |  |
| 1. H. Suillines | Exeter | 75 point |
| 2. K. Williams | Bodinin |  |
| 3. 1I. O'teffernan | 11 ymouth |  |
| . |  |  |
| 2. J. Sullivan | B. Brisfol |  |

## Eant Midland

Bomber Command Eliminitars for the R.A.F. Championship attracted forty comperitors from seven Stations on RX,A.F. Scamptun. but the weather was really foul. Stunt and Combat just manayed to cope with the high winds, but the effect on team racers was distastrous ated of eight matarter none fintislied the course!

## Northern

Since the last OLDJIAM D.M.A.C. report was published in thewe columns the club has lost threc flying fields and an
unfortunate situation whereby the som of a farmer kitve them parmission to operate on a ficld was created when the farmer himself blew his top and literally threw the bod so his land. However, a new ficld has been oboained but far inferior to previous fying obianmed but far inferior to previous Gymg
site. RAll,DON M.F.C. played an importint site. RAll,DON M.F.C. played an important
part in the Yorthern. Irea's tecisive victory part in the Northern Irea's theisive victory
at Crambeld for the Area Championships. at Crandield fur the Area Championships. tean fuore with 7:57; ©. P. Millar had two maximumx in Rubber but both his mevels, together with 1 as Ileys's, were lisst un their last flight. A number of modela were collected a fortnight later when mernbers cance down to attend the World Championships. SHARRSION D.M.S. had an A;1 Cotins SHARSTON D.M.S. had an A, Contrp
which was won by C. Ihelliwell and (Dl which was won by C. Ifelliwell and ['/] five Enyas. Fox 15 , Et: 29 s and Vicens making their nuisy mark. A. Cook won the club Stunt event flyine a Frog Aprobat CHEADLE AND DMAS Cifeder was won by Irian laulkner with $5: 12$ was won by frian baukner with $5: 12$, infotwed by. Wingate $4: 14$. and A1. Turner
$2: 29$. Strong winds limited durations. llomeamade conmpoume excapements ar uned in Arihur llailey's Smos llog which will be fitted with a 3 -reed oulfit

## North Wentern

SOUTIEPOT M.J.C. had it Slone Soaring Comest with in thrilling firnish with only a fow seconds separaining leaders Conditions were perfect at the flying site on the local sand hillis with a $50-\mathrm{ft}$. rise on the local sand hilis with a SO-ft. rise, and Fred Ihradbury was only short of five
seconds of the club record with $1: 07$ seconds of the club record with $1: 07$
'I'he '1Development of Hritish Aviation' The "Development of Hritish Avation Indl in Sirctford, Manchester, ath CHORI,TON M.A.F.C. played a big part in publicising the show ly providing t wenty-five models includjng Hrian Spencer's S.E.Sa. Charlie Jackson's Mack Wagic S.E. Sa Charlie jackson's Biack whise
and felicun plis demonstrations of building and Peficon plus demonstrations of ould inn
and a round the pole flying Spitfire powered by' Mighty Midget. 'Iwo new members were recruited during the first weck.

## Sonth Midlanil

One of these yeara we shall have pertect wather for the annual Cranfield meeting where South Midland Area clubs glay hosit to the rest of the country. This was the best attended and noot iuccessful of the gerics to date, in spite of poor conditionn which must have inftuenced many would-be visitors. I'he Cranfield placeau appeared to break up the weather so fhat for once we were at least baving more sun and less rain han elsewhere. Wind atrength was $15 \mathrm{~m} . \mathrm{p} . \mathrm{h}$. plux, so maxs were reduced to three minutes Nevertheless, some powerful thermals, and aie dits caused the lose of several power models, one of which was returned by a farmer in person who was guite pleased with the downwind conduct of retrievers. The high-powered (1lomet and ifox 35) "bombs" from Surbitan did not come into the winners list, but cxtended their reputation for moisy; fasi climb. Rather than fy-off, the top three in lower chose to toss for prizes-- wisely in vew uf workening weather-so that in reality shese three are cqunl first. Rubber did have a $\mathrm{l}_{\mathrm{y}} \mathrm{r}$-off and the winner lost his node! to corn lownwind!

Combat was organised (for oncel) by Onford Meteors who coped with the 62 entries in able fashion, having few arguments and then enly with the recognised iroublemakers who are swittly earning such a poor eputation for liemselves, Tribe and Sadler were worthy finalists after no less than seven jousts! Radio was less excitimg, clearly the top men-afio others - were off form o points were lew. Howard Hoys won an 1.M.25- he mishe made a new moded for it ! Chuck plider must conse to the Nats. Hentioned only in the advance notice seme to S.M.A.E. clubs, 24 entrics turned up. Wialt encouragement this figure would be trebled. Top lime for a single fight was Smith's (1ligh Wycombe) 51secs. 'Veam

Racing drew a good entry, and the finals were fought out lons: ufter fmost of the many conthes and cars had iurned home. wards. "l'hey missed a fine "lortoise and Hare" Class $B$ final, won eventually by a Frop 500 in the swept wing Wharfedale model that was first seen at the 1951 Waterbeach Nits.

Comgrats to all the winners-and thanks (s) the South Midland clubs who turned-to and belper run the meeting. Abingdon Oxford Metcors, Luton, Wayfarers, Watford. Cowley, Stevenage, Ietchworth, Apsles and liph W'ycumbe. ins is result of penerous support of the raftics and the pood cotry; monty prizes were added to the modelling goods awarded

RESULTS
IRadio Control (19 entries)

1. (r. Jl. Kedlich 65 1. H. アoys
2. S. Unwins 45 2. J. Robinson 171
3. I. Johnaon lish 3. 'I'. Airey 9

Pincer ( 62 entrics)

were clained by correct licket bolders

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Wanted for J. Carsles, 8 Bewsin dvenue. 'Thingwall, Wirrat, Chexhire, anyone overseas, preferably axed 14 years. Fior Ronald A1. Bray of 6 Royslyn Avenuc, Shorchan-by Sea, Sussex, anyone in America or Cumada ased about 14 years. For John Courtillot. 46 Rue des Heusticats, Auxerre, Yonne. France, anyone in the U.S.A. (if possible a kirl) about 17 years (1) interested in radio control and rocketry. Fior N. Isbister, 160 Broad Lane, Norris Giren, liverpool 11. anyone aged 11 interested in free-flight power and plider. lior W. H. Longley, 49 Fouracre Crescent. Downend, Bristal. 49 Fouracre Crescent, Downend, Bristen. Iroline, stumt and combat. Fior W, llayward. 34 Rolls Koad, Dermondsey, London, S.IE. 1. anyone interested in radio control. Fior (;) F. Dunn, lRoute No 2, Jefferson City, Mo. U.S.A., anyone in Britain or Cermany interested in swapping besohs, free-fight, team race and combat. Master G. Pitt, Bartholomew Koad, Ievin, New \%ealand. wants an American or Hritish pal is years old and contraline major intereat. Vhadimir Krotel, Praha 13, Moskesvgka 48, Czechoslovakia, wants a radio control enthusiast in Eingland. Ite can correspond in Russian, which shoutd be handy for thuse who volunteered to translate for us! H. Dukhoujic, Sr. D'aul's School. Jalapahar, Darjecling. India, is 15 and wants a keen acromodeller correspondent. 'I'un 11 la Aung, $3 / 80$ 47th Sireet, Kangoon, Union of Burma is a leading fier in those parts, 18 years, at Lnisersity, wants a contact from Fingland, Russia, Germany, Yusmslavia, Ilungary and Czechosloyakia.

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