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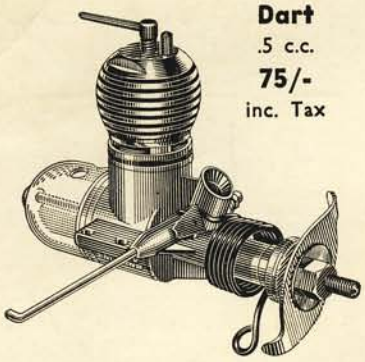

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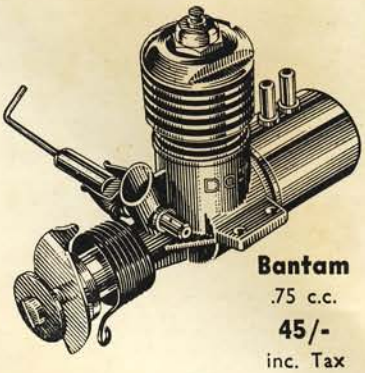

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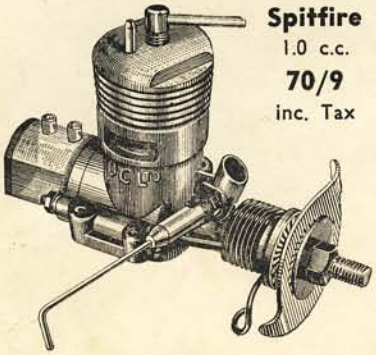

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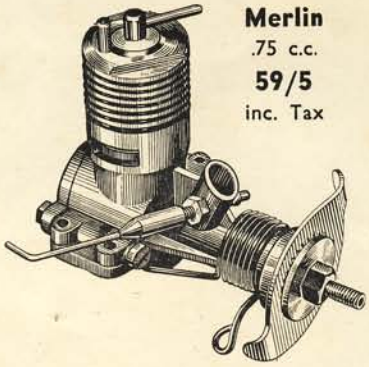

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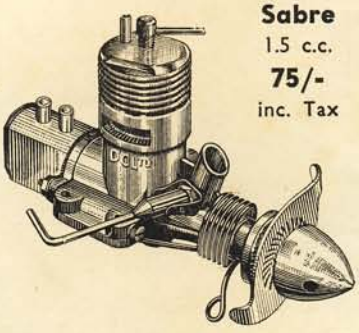

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other modelling angles . . .

Sixteen page booklet in September **Radio Control Models & Electronics** deals with construction of a transmitter, receiver and servo for "Galloping Ghost" control. Enthusiasts will appreciate plans and info. for two Pylon Racers. An article on design of single channel models should prove valuable. For boat modellers, "Do-it-yourself amplifiers" analyses suitable circuits for use with servos.

To launch the new title **Model Boats** an attractive cover painting by artist Laurie Bagley of off-shore power boat racers supports a free full-size plan to make a 30 in. model of one of these glamorous craft. Additional features include drawings of a well-known paddle steamer, the "Gracie Fields" ; a 24 in. yacht model ; the drawings of the old Tilbury ferry boat "Edith" ; a 17th Century Herring Buss ; two merchant ships, the "Benarty" and the "Booker Vanguard"; and the coastal tanker "Hamble" ; plus articles on yacht steering gears, current regattas, outstanding models and other nautical features.

As something of a holiday issue, the emphasis of September **Model Cars** has been on simpler models. Assembly of two of the more interesting imported kits for Ford Mustang Fastback and the illfated Avanti shows how easy it is. Wonderful Italian models in a photofeature ; also opening of first model car fan's pub—the "Horseless Carriage". Another instalment of Team Colours. Rally Austin Healeys are duly chopped. Prototype plans include Mercedes Benz Type 540K special roadster Lotus Cortina GT, Mustang Fastback, and Lotus 19.

September 1965

VOLUME XXX No. 356

contents

cover

Robert Pool of Halifax, Yorkshire, comes from a well known aeromodelling family. His younger brother David assembled this model which they have called "Little Mavis" from parts which Father had helped them to cut out—and covered it himself. Robert is 80 per cent designer of Little Mavis. He built the fuselage on a board without a plan and father prepared the drawing afterwards. He also had to draw the wings and tail according to Robert's instructions. Details of this ideal design for novice flyers will be found on pages 426 and 427 of this issue.

next month . . .

Advance report from the **Criterium of Aces** 1965's most important control line international event which takes place at Liege, Belgium, also the latest news from the **U.S.A. Nationals** and **Championship Technicalities,** with a summary of new ideas seen in Finland. New **Gadgets,** engines and a host of interesting new features are to be included. APS plan of the month will be a scale model of the **DeHavilland Airco DH5** by C. M. Milford to suit small engines. This backwards staggered World War I biplane has always been a tantalising subject and Kit Milford has famed its aerobatic qualities admirably for free flight.

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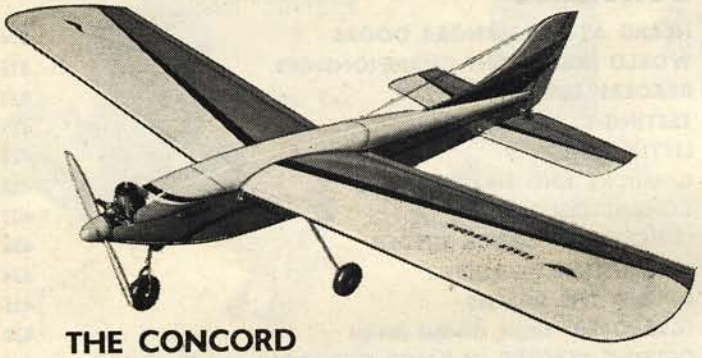

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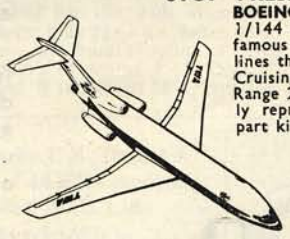

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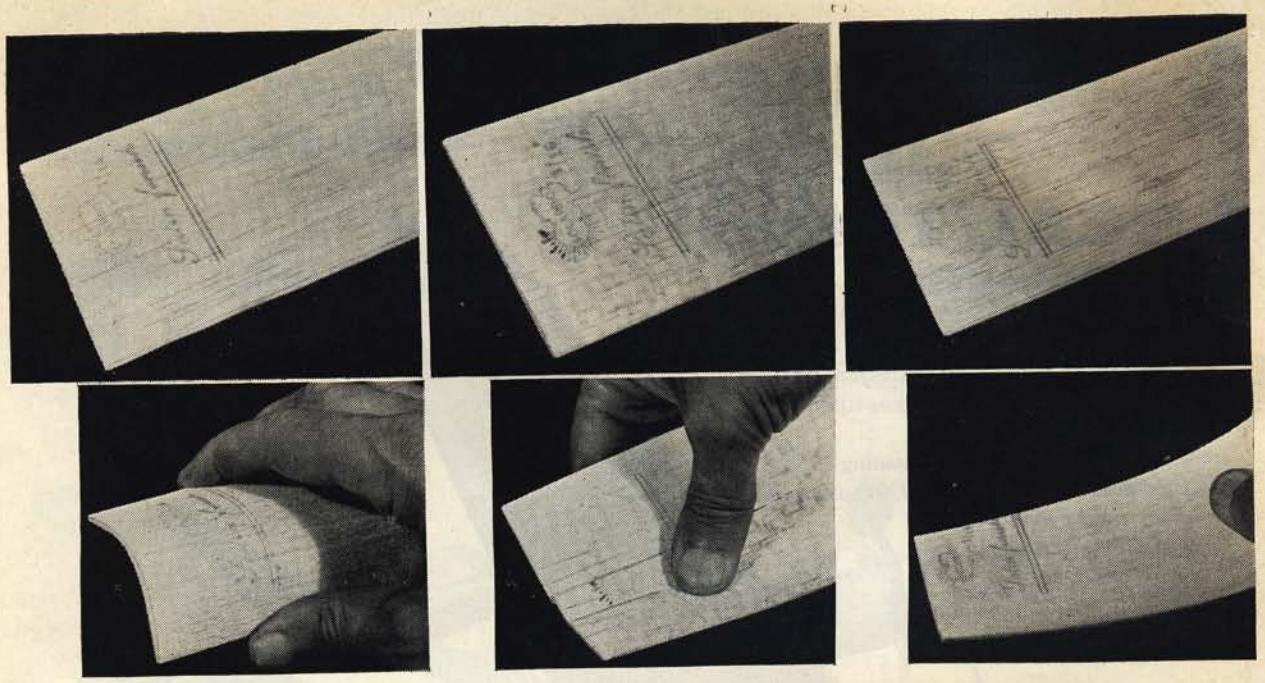

"CUT" and BALSAWOOD SHEET

Here are some more facts about Balsa sheet, illustrated by the picture sets above. On the left we have the type of 'cut' that produces sheet which bends readily from edge to edge. With this 'cut' the lighter the density the more readily the sheet will bend. That's the sort of sheet to select for sheet covering curved surfaces. Choose a light grade but a reasonable *thickness* so that there is no chance of unsupported areas sagging.

The centre photos show 'quarter grain' sheet stiff, rigid and brittle to the point of fracturing if you try to bend it. That's the choice for ribs and other members where you need *stiffness*. Again, select a reasonable sheet thickness and cut back weight, as necessary, by using a light density.

The right hand photos show straight grained stock which is quite stiff edge-to-edge but 'bendable' along its length. This is excellent stock for stripping into longeron sizes in a medium-hard density. Trailing edges and spacers would be better stripped from lighter quarter-grain sheet. If you use ready-cut strips, the same thing applies—'bendable' strips for longerons and stiffer strips for spacers and trailing edges and spars.

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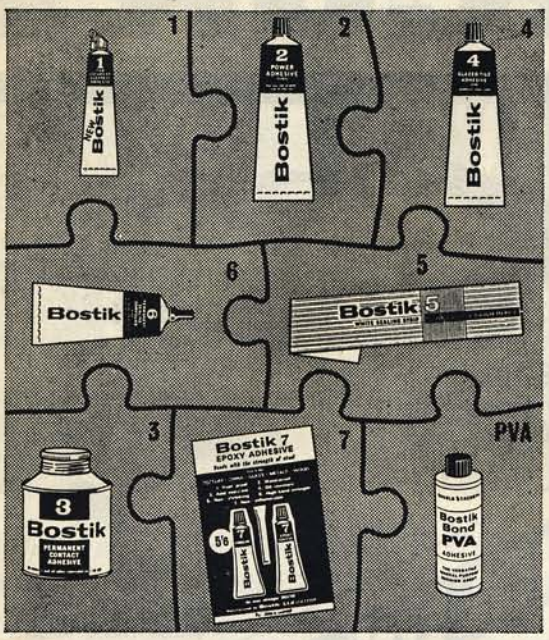

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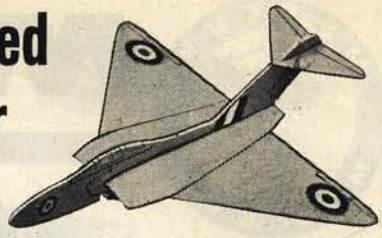

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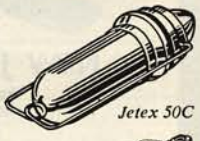
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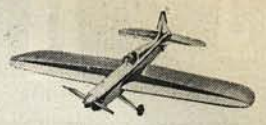

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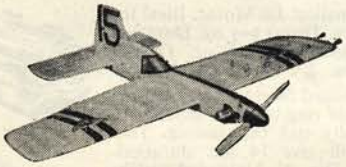

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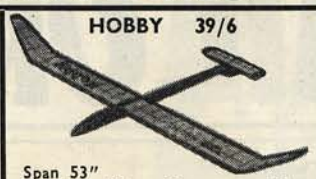
Graupner GLIDERS and SAILPLANES

DONALD DUCK 42/6

Span 43"
An easily built model specially designed for the advanced beginner.

HOBBY 39/6

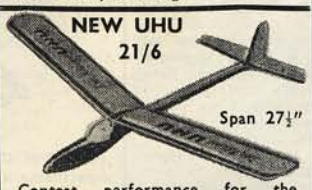


Span 53"
Popular high-performance glider for sport or contest work, towline or slope soaring.

BEGINNER 33/6

Span 38"
Easy to assemble, very good performance. A perfect trainer.

NEW UHU 21/6



Span 27½"
Contest performance for the novice ! Specially designed for easy construction and flyability.

AMIGO Kit 67/6

Pylon Pack 14/6
Span 69¾"
High performance towline or slope soaring model, optional power egg installation and suitable for R/C.

PASSAT 57 57/6

Span 74"
A 'quick-built' model with a top performance for contest work.

WEIHE 50 89/6
71" Span

True to scale and as efficient as the full size craft. Kit includes finished foam plastic fuselage. Ideal for R/C.

FILOU GLIDER or PYLON-POWER
50" Span
57/6

For free flight or radio control !

HS-91 'CLOU . . . 199/6

For R/C rudder only or up to 6-channel !
97" span for towline soaring!
75" span for slope soaring!

GLIDER or POWER !
A TRULY FAB. MODEL and a super kit. Fly as a sailplane or fit detachable nose unit for power ! THE YEAR'S TOP DESIGN !

SCHLEICHER 'K 10'

DE LUXE KIT 132/6
79" scale SAILPLANE
FULLY FINISHED foam plastic fuselage.

A SUPER MODEL in DE LUXE kit form specially designed for R/C and adaptable to pylon power (pylon kit 18/6)

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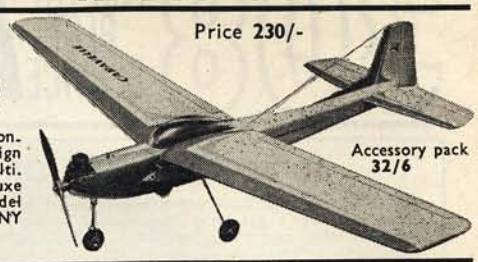
CARAVELLE Price 230/-

Wingspan 71"
For 'multi' only (up to 12 channels)
Motors up to10 c.c.

Fully aerobatic contest - proven design for 'full house' multi. Wonderful de luxe kit, makes a model the EQUAL OF ANY IN THE WORLD.



Accessory pack 32/6

CONSUL . . . 117/6

Super kit contains finished moulded wings, fuselage, tail in toughened foam plastic, all hardware, wire parts, wheels, etc.

41" span rudder-only, for motors up to 2.5c.c.

FLORIDE . . . 172/6

Super 'multi' trainer for 2-10 channel.

Engines 2.5 c.c. to 29 glow. Easy to fly for beginners.

TOPSY
32" Span
39/6

Engines up to 1 c.c.
'Quick-build' model for beginners, sport or R/C. Fully prefabricated kit throughout.

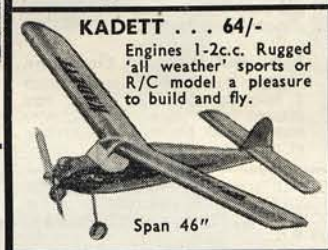
KAPITAN . . . 67/6

Sturdy biplane, easy to build and suitable for rudder only, up—or free flight.

Engines up to 2 c.c.

KADETT . . . 64/-

Engines 1-2c.c. Rugged 'all weather' sports or R/C model a pleasure to build and fly.



Span 46"

PIAGGIO . . . 132/6

Span 44"
Engines up to 2.5 c.c.
Fully prefab. kit includes wheels, canopy, shaped wire parts, etc. A concours winner.

PIPER TRI-PACER 99/6

Span 44"
Engines up to 2.5 c.c.
A wonderfully authentic model with sprung nosewheel, all scale details, etc. A de luxe production.

CESSNA 180 82/6

Span 44". Engines up to 1 c.c. Superb scale model, easy to build and a wonderful flyer. Plenty of room for R/C.

Span 33"

Engines 1-1.5 c.c.

BOLKOW JUNIOR . . . 79/6

Authentic in detail and a delight to fly — sports or R/C. Nothing has been spared in this kit !

ALSO C/L SCALE	30"	MUSTANG ...	62/6
	25½"	MESSERSCHMITT	67/6
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	39"	FOCKE WULF	95/-

SEE THEM AT YOUR MODEL SHOP!

308 FOR THE BEST SERVICE MAIL ORDER

ABOUT OUR MAIL ORDER DEPARTMENT

With all the talk that's going around about how Mail Order isn't what it should be, how customers don't get what they order, or have to wait months for what they do ; we thought this month's advertisement would be a good opportunity for establishing our position.

We have had a Mail Order Department for eighteen years. It is entirely separate from our retail shop, has separate staff, and we think runs fairly efficiently. To prove that this opinion is not purely a product of self-satisfaction we can state as a fact that we have customers all over the world, that we get letters from them every week thanking us for the service we render, and that some of them have dealt with us for more than ten years. To prove our point we quote from a few of these below, and to back this evidence we have handed the originals of all these letters to the Editor of Aeromodeller.

We have never claimed infallibility, that we can do the impossible, or that we can supply items that are unobtainable. But we do claim that we have always endeavoured to give our customers the best service that our resources will permit. Certainly if it's a modelling item of good quality we will supply it; and if it happens to be something in very short supply you will probably have to wait a shorter time for it if you order it from us than from elsewhere.

Why not try us for your next mail order ?

The kit of the Goldberg Skylane has been an outstanding success. With an 049 motor and single channel equipment this is a delightful flier and wonderful value at the economical price of 59/6d.

WHAT OUR CUSTOMERS HAVE TO SAY

N. McK. S., *Singapore*

Having had some dealings with you some years ago when certain items of model aeroplane stocks were difficult to obtain in Australia, and now being blessed (?) with a tribe of small boys who are evincing some interest in model boat building of all things, I immediately thought of you when they put the acid on the Old Man for a boat kit.

D.L.B., *California*

I am very pleased with the rapid service you give me at all times and look forward to more of the same in the future. I received the 2 pans in perfect condition and hope that the ETA 15 Mk. III and silencer will be on its way shortly.

J.N., *Trinidad*

Thanks much for the prompt fulfilment of my order, I am very satisfied with the articles, and desire that you accept my sincere appreciation for the service you rendered me.

D., *Apalachin, N.Y.*

The mufflers arrived in good shape yesterday, which certainly was excellent service. Please find cheque enclosed for $20.50.

M.J.H., *Northern Nigeria*

I would like to advise that the items recently ordered (your invoice 4314 of 11th May refers) arrived in good order and are to my complete satisfaction.

E.S., *B.F.P.O. 43, Germany*

Many thanks for the servos which I received yesterday. I am very pleased with them indeed. Also many thanks for the quick mailing of the items.

SALE ITEMS

ALL THESE ITEMS ARE BRAND NEW

Babcock Mk. II escapements	89/6	reduced to	79/6
Babcock Mk. V ,,	99/6	,,	87/6
Bonner Varicomp RE	89/6	,,	79/6
Orbit 4, Ch., Relay Rx	£48	,,	£39
Bonner Duramites	£5.10.0	,,	97/6
R.E.P. 10 Ch. tran. only	£33	,,	£24
FOX 35X	£5.15.0	,,	£4.10.0

Send S.A.E. for reprints of our recent advertisement listings, hundreds of quality items to choose from.

GET A SUPER FINISH ON YOUR MODEL

Have you yet tried the fabulous INTERNATIONAL POLYURETHANE finish on your models ? The 707 finish is ABSOLUTELY FUELPROOF, and gives a high gloss finish without equal. It is most economical in use and has a very easy brushing characteristic. At 18/3 per pint pack (plus 2/9 postage) this is a must for the keen modeller. The 101 finish is not fuel proof to hot fuels but can safely be used with all diesel fuels and "straight" glow fuels containing no nitro additives. 101 is 7s. per half pint tin plus 2s. for posting and packing.

Colour card available free on receipt of a stamped addressed envelope. DON'T DELAY — SEND TODAY.

WE TAKE ENGINES IN GOOD CONDITION IN PART EXCHANGE AND WILL ALWAYS PAY A REASONABLE PRICE FOR UNITS SUCH AS OLIVER TIGER's, MERCO's, COX TD's, FOX's, SUPER TIGRE's, O.S. 15 and 19 R/C, ENYA 15 and 19 R/C.

OUR CURRENT STOCKS INCLUDE KITS, ENGINES & EQUIPMENT by :

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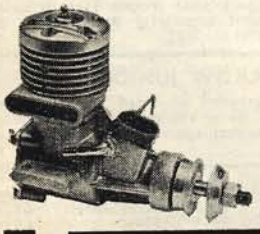
M.E. MERCO MERCURY MIDWEST MODELECTRIC ORBIT
O.S. QUADRUPLEX ROBBE STERLING SUPER TIGRE
TELECONT TOPFLITE VERON WILLIAMS



SUPER TIGRE G.15

The long awaited Super Tigre G15's are now here. This is the most powerful 2.5 c.c. glowmotor available today and is a must for F.A.I. competition work. Now available from stock.

£8.15.0

FLIGHT LINK

We are pleased to announce that as from this month we shall be able to supply the already well-established all-British FLIGHT LINK proportional equipment. A set will be available in our shop at all times for customers to see and we shall be happy to demonstrate this very reliable equipment at any time during shop hours. The price of £89 includes the Transmitter, Receiver and three servos giving proportional rudder (or aileron) and elevator controls, with engine control. Illustrated descriptive booklet available price two shillings.

HENRY J. NICHOLLS & SON LTD.
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308 HOLLOWAY ROAD, LONDON, N.7
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HEARD AT THE HANGAR DOORS

Bright red and white 52 in. replica of Beverly Howard's Bucker Jungmeister poses in front of Hendon hangars. Designed and made by Roy Yates of Paddington, London, the 8½ lb. model is fully aerobatic using duplicated ailerons and has all scale features including the large elevators and rudder. Radio is F & M 10 channel reed with Bonner Transmites, and a Super Tigre 56 engine.

We've Moved!

Reference to our contents page will reveal that the editorial offices are no longer located in our old family house at 38 Clarendon Road, Watford. This is the end of a long tustle with Local Government who want to pull the establishment down and erect one of those edifices to modern culture—a multi-storey car park. The battle has been long and tough but as always the Government wins and soon the property will fall to the demolition squad.

So we are now located in modern offices in the heart of a modern town approximately 7 miles north of our previous address. The address in case you have not already noted it is:

13-35 Bridge Street,
Hemel Hempstead,
Herts.

The new telephone number is:
Hemel Hempstead 2501.

We shall miss the back yard control line site and condensation of our records into more expensively rented property has not been effected without considerable inconvenience. However, this will not in any way affect production of our four magazines including, of course, the new monthly **Model Boats** which is replacing "Model Maker". Once fully established in our new abode, we have ideas for an extensive programme of publications which we know you are going to enjoy.

New Look for Radio Aerobatics? Ex-World Champion Tom Brett introduced this high tail, swept wing design at a recent U.S.A. contest and created a good impression with its aerobatic qualities. Tom still flies reeds because he is happier with them than with proportional control. Photo came to us from the editor of a new model newspaper in the U.S.A., "The Weekend Flyer".

Dangerous Flying

With the coming of virtually fool-proof Radio Control equipment and increasing confidence of the modellers has also come a rather dangerous attitude of the Radio Control modeller that he can safely position his aircraft wherever he wants. Time and time again we have seen near-accidents during landings in confined quarters. Young children have been far too close for comfort to these 6-9 lbs. multi channel models when landing just above the stall speed and likely to drop a wing to diverge their course at any moment.

But by far the most dangerous of the temptations of the Radio Control flyer is that of positioning his model near a full size aircraft. Powered machines are usually too fast and immune from such practice. Gliders are another matter. There are a large number of model flying centres which are jointly used by full size Gliding Clubs and Radio Control modellers. Commonsense dictates that the two should be kept wide apart but the modellers must always bear in mind the fact that pupil pilots cannot be expected to retain themselves in a particular section of the sky especially when on their early solos or under instruction. Several years ago a radio control model passed so close to a Royal Air Force *Sedburgh* two seat training glider that it was essential for the instructor to take evasive action. Ever since that unfortunate day the Comamnding Officer of the Royal Air Force Station has limited the use of his airfield and only permits free flight competitions by arrangement with the Commanding Officer of the Gliding School.

Now, from the Canadian News Letter *The Airfoil* we learn that the so-called sport of buzzing full size gliders has become an international habit. Kingston

Radio Control Club are accused of positioning their models close to gliders and the Soaring Club reported the incident. Result was an immediate ban on *all* model flying at Gananoque Airport, a popular contest model flying centre for Canadians. Negotiations proceed to regain use of the field for the free flight enthusiasts who travel up to 180 miles from the major cities and who may now be charged £9 per day for use of the field.

There should be a clear moral lesson here for others who are in a similar position.

Another attitude which seems to be prevalent and is prejudicing the arrangements offered by some Royal Air Force Stations is that of "poaching" the carefully negotiated facilities. "Joe flies there, so why shouldn't I?" is a common and easy enough view to take but Joe happens to be a member of an organized club which has met the requirements of the special insurance indemnity and committed himself not to make too much noise, to fly too early or to race up and down the centre of the runway or even to teach his girl friend to drive round the perimeter track. Yes, Joe's friends (?) are able to get past the guard room on some pretext or another to create these abuses. We would advise modellers to observe rules and regulations if they want to continue their enjoyment of the hobby. All too often a selfish few spoil the happiness of the majority.

Magnificent Men

That "Mag Men" film is now going the rounds and is being released to several large cities after its successful London premier. Thanks to the initial groundwork between ourselves and Messrs. 20th Century Fox Films Ltd., we are pleased to report that cinema managers have been briefed on the co-operation they can expect from local Model Clubs. Here is an ideal opportunity to bring modelling to the eyes of the public. Sheffield Aero Club arranged for one of the actual flying machines to go on display in that city and the North Sheffield Model Aviation Club has been actively engaged in the arrangement of a competition in conjunction with a full scale flying display. Static exhibition of modelling in the Odeon cinema foyer has produced excellent public relations and no doubt, a fair number of new recruits to the hobby. We hope to hear of similar success at other centres.

Invitation to France

Readers of AEROMODELLER and our companion magazine *Radio Control Models & Electronics* will know about the annual event at Brétigny, nr. Paris for Radio Control models. Known as the "Stork's Circus" because it is organised by the Stork's Model Radio Control Club, the date for this year is September 26th. British participants are invited to write to the Club at 220 Route de Corbeil, Saint Genevieve-des-Bois, Seine-et-Oise, France. Last year the highlights of this flying for fun event were aerobatics with half scale wheelbarrows. The French are noteworthy for their experimental models and one can never anticipate what might turn up at the next event. Participation is recommended.

Down on the Riviera on the same day the Aero Club of Monaco are presenting their 8th international contest for Radio Hydro models for a trophy donated by the Prince and Princess of Monaco. This is for single channel models but there is also provision for multi-control in the programme. What a pity these two noteworthy meetings are taking place on the same day.

Sidelights from the World Champs

Travel to Finland by economic circuitous route involved us flying in no less than eight different aeroplanes, three Caravelles, two Metropolitans and three Dakotas. Hard to say which we enjoyed most but the DC3 Dakota gave us the best views.

Martin Dilly clocked 2,020 miles on his way via scenic routes in a Ford van with fellow proxy flyer Chris Hayward both from Croydon club. New Zealander Nev Hopley got as far as Denmark when the Lambretta crankshaft broke so he gave the remains to a mystified but grateful Dane and travelled on by bus, train and ferry.

More corn was damaged by slipstream from the Saab Safir spotting planes than by modellers or troops. Planes flew on criss cross dive pattern directly over the model until personnel arrived close to the spot. System was extremely efficient. Models unclaimed on the spot were deposited at recovery centres. Very few were totally lost.

Quotes from practice day. "I could sit back and watch these beautiful Wakefields all week".—from a proxy power flyer. "If I qualified for power—I would not know how to trim for such climbs"—British Glider team member. There's another good'un—it's coming down beautifully 'fast'!"—British supporter referring to the opposition.

Processing turmoil, as several Nations including some whose Aero Clubs should know better arrived without any pre-processing certification, identity stickers or national markings. Organisation just simply does not seem to be in their respective vocabularies.

International collaboration for model recovery was amazing. Models were returned by those who first spotted them in the woods or located them in deep corn, Nationality regardless.

As this issue is printing the World Championships for R/C are taking place in Sweden and an advance report will appear in our next edition. While en route to the free flight Championships in Finland, we stopped for a while at Stockholm, and secured this photo of the Swedish team. Left to right, they are J. Segebaden ("Mustfire" and Bonner Digimite), R. Dilot ("Taurus" and Min-X reed), J. Levenstam ("Mustfire" and Kraft reed) and kneeling, the reserve man, Lars-Johansson ("Taurus" and Bonner Digimite). Merco 61 engines appear to be a universal choice.

WORLD CHAMPIONS Alberto Dall'Oglio from Vicenza, Italy, finalist in '63 finishing 4th, now winner with a larger model and Super Tigre G.15. Centre: Thomas Koster of Hillerod, Denmark, an ardent young enthusiast pupil of Nienstaedt at his right. In background is Major Penttila, responsible for magnificent aerial spotting. Right, Anton Bucher of Lucerne, Switzerland, athletic and skilful A/2 Champion.

1965 WORLD CHAMPIONSHIPS

BRITISH TEAM WINS GLIDER TROPHY ALSO ONLY NATION IN ALL THREE FLY-OFFS

Every picture is said to tell a story. This is one of a victory. All is over after the 45 minute search, the wild dash back to the field, the desperate 8th flight, and final success in the 9th round. Koster earned his applauded triumph.

AS we de-planed from the DC-3 at Vaasa, brown uniformed East Germans, green jacketed South Africans, blue suited Frenchmen and red track clad Canadians identified the tiny terminal as our last landing point on the way to Kauhava. The Cannucks had just arisen. It was 8 p.m. and the airport was closing down for the night. But here, more northerly in latitude than the Faeroes, or even some of the Yukon, there was no night. And with the late hours came idyllic calm. Who could resist the opportunity of a national airport open to all, and hours of ideal trimming time before next breakfast? In spite of our 21 hour, four-plane journey, Dave Tipper hastened back to join the Canadians at the field after checking into the hotel. We had arrived—this was Finland!

Kauhava was 50 miles or more further inland. The single strip military training airfield and its parallel rough stone base for a taxi track are close to the village. A large school had been converted into an International hostel, and the community hall became the dining room for over 200 overseas visitors plus the large contingent of organisers. The operation was enormous. Extra timekeepers had come from nearby Sweden and Russia. The Finnish Air Force had responsibility for locating lost models with a force of radio equipped militia. Shops were stocked with special souvenirs. The Minister of Education and the President of the Finnish Aeronautical Association gave enthusiastic welcoming speeches. Urho Kekkonen, the President of Finland was Patron of the Championships so adding a degree of official recognition that our own successive governments seem to regard as beneath their dignity.

With such high blessing, all that remained was that the location, administration and weather should be to the modellers' satisfaction. Speaking for the large British contingent of team, proxy fliers and expatriates now flying under another flag we'd say that despite the wetness this was a Championship one could recall with every satisfaction.

Glider

The first event opened with a go-it-alone approach of Norm Ingersoll (U.S.A.). Whatever he hoped to find as he ran a long stretch upwind simply was not there in the cold lull of the moment and 86 seconds was the ultimate answer. First max went to Gerard Klomp—the Dutch have always been consistently good in A/2 Championships—and within minutes we were to see the pattern which established tactics for the rest of the day. East German Johan Schreiner made an appalling launch, the model wheeling on the line to slip off at only 20 ft.; but it recovered and soared to more than 1,000! This indicator sent a group of waiting types to the runway edge. As the next man soared, so the rest flocked off, each endeavouring to join the thermal. Giora Herzberg of Israel went up under three others, and the pull was enough to prevent the tow ring from releasing. Over the top went the glider, forward of Herzberg, to eventually catapult up and rise like the express lift in a skyscraper. "OK mate", said Canadian Jack McGillivary to his launcher and off he went too. So also did South African Pete Visser: but only for 40 seconds as the lift tightened his turn into a spiral dive. In one mass launch of 11, started by Chris Hayward (flying for Thomson of N.Z.) there were three collisions. John O'Donnell and Dave Tipper found their own lift for two easy max's and now Tony Young latched on to two others in a strong bump to give G.B. a perfect start. What a round! Aussie Dave Anderson, sandwiched and bewildered by this game of letting others find your thermals found himself between Scandinavian aces Kalen and Strang alongside Sokolov. Of these only Strang flopped and 59 seconds indicates the power of the associated down-draught. Seven nations had perfect scores, 40 out of 59 had maxed!

Round 2 tactics were another series of mass launches. Each nation had a pair of timekeepers for the contest and could send off competitors in sequence at any time within the 75 mins. allowed. John O'Donnell led a batch of eight, but the wind was dropping and those who have yet to learn the fast tow technique with a catapult release found themselves trapped on tow by the car park and deep grass around the take-off zone. Anderssen of Sweden had to release out of lift for only 56 secs. this way, so did McGillivary, who lost tension

A/2 GLIDER RESULTS

	Name	Nation	1	2	3	4	5	Total
1	Anton Bucher	*Switzerland*	180	180	180	180	180	900
		Fly-off +	240	282				
2	John O'Donnell	Gt. Britain	180	180	180	180	180	900
		Fly-off +	240	152				
3	Kjell Bentzen	*Norway*	180	180	180	180	180	900
		Fly-off +	240	143				
4	Gunner Kalen	*Sweden*	180	180	180	180	180	900
		Fly-off +	240	122				
5	Gerard Klomp	*Netherlands*	180	180	180	180	180	900
		Fly-off +	240	122				
6	Stefan Hubert	*Czechoslov.*	180	180	180	180	180	900
		Fly-off +		210				
7	David Tipper	Gt. Britain	180	180	180	180	180	900
		Fly-off +		193				
8	Thomas Kongsted	*Denmark*	180	180	180	180	180	900
		Fly-off +		122				
9	Herbert Schmidt	*W. Germany*	180	157	180	180	180	877
10	Angus McDonald (*Proxy* M. Dilly)	*N. Zealand*	180	180	180	180	153	873
11	Moshe Goldberg	*Israel*	180	146	180	180	180	866
12	Ivan Horejsi	*Czechoslov.*	138	180	180	180	180	858
	Vasilev Simonov	*U.S.S.R.*	180	180	180	180	138	858
14	Ari Hietanen	*Finland*	134	180	180	180	180	854
15	John Swallow	*S. Africa*	134	180	180	180	175	849
16	Anthony Young	Gt. Britain	180	140	166	180	180	846
17	Rimas Shourna	*U.S.S.R.*	154	146	180	180	180	840
18	Oldrich Prochazka	*Czechoslov.*	180	119	180	180	180	839
19	Johan Schreiner	*E. Germany*	180	117	180	180	180	837
20	Juri Sokolov	*U.S.S.R.*	180	180	180	116	180	836
21	M. Corbin	*France*	180	135	180	156	180	831
22	Markku Tahkapaa	*Finland*	180	180	180	110	166	816
	Jorgen Larsen	*Denmark*	180	121	180	180	155	816
24	Theo van't Rood	*Netherlands*	170	112	180	180	173	815
25	Ugo Acuto	*Italy*	180	129	180	154	157	800
26	Hans Maassen	*Netherlands*	180	180	145	180	107	792
27	Fritz Gaensli	*Switzerland*	180	180	180	180	69	789
28	Pierre Lommer	*Luxembourg*	97	180	180	180	145	782
29	Dieter Ducklauss	*E. Germany*	180	109	132	180	180	781
30	Paolo Dapporto	*Italy*	180	60	180	165	180	765
31	Paolo Soave	*Italy*	180	113	101	180	180	754
32	Aimar Mattano	*Argentina*	114	180	143	180	127	744
33	Giora Herzberg	*Israel*	180	180	68	180	132	740
34	Peter Allnut	*Canada*	180	73	180	180	119	732
	Dale Wilson	*U.S.A.*	99	180	180	180	93	732
36	Robert Rowe	*S. Africa*	141	169	97	180	142	729
37	Jack McGillivray	*Canada*	180	180	92	95	180	727
38	Josef Bucher	*Switzerland*	180	58	180	180	126	724
39	Inge Sundstedt	*Sweden*	180	180	69	114	180	723
40	Richard Nagler	*W. Germany*	180	180	130	55	175	720
	Knut Andersson	*Sweden*	180	56	155	180	149	720
	Karoly Fischer	*Hungary*	180	108	180	114	138	720
43	M. Braire	*France*	180	180	145	57	155	717
	John Foley	*Canada*	86	180	164	107	180	717
45	Albrecht Oschatz	*E. Germany*	101	74	180	180	180	715
46	David Anderson	*Australia*	180	86	180	180	67	693
47	Heinz Geiger	*W. Germany*	100	180	108	180	111	679
	M. Bolland	*France*	180	86	180	53	180	679
49	Per Grunnet	*Denmark*	106	110	180	95	180	671
50	Brian Glenny (*Proxy* P. Lawson)	*N. Zealand*	180	140	93	74	170	657
51	Peter Visser	*S. Africa*	40	153	180	180	66	619
52	Asmund Skard	*Norway*	180	64	118	76	180	618
53	Abraham Kiflawi	*Israel*	180	84	80	180	88	612
54	Norm Ingersoll	*U.S.A.*	86	145	140	70	158	599
55	Hugh Langevin	*U.S.A.*	121	180	180	35	78	594
	J. Thomson (*Proxy* C. Hayward)	*N. Zealand*	180	101	72	180	61	594
57	Norbet Mertes	*Luxembourg*	42	114	180	130	63	529
58	Torsten Strang	*Finland*	59	155	99	66	148	527
59	Joseph Ewen	*Luxembourg*	46	60	—	85	42	233

after a line tangle (maxed at 2nd att.), while Sokolov showed his forward catapult system that shoots the model up without any trouble. After a 20 minute blank in which not one modeller would dare risk a launch, Dave Tipper started a 20-man rush. In the line tangles, Israeli Herzberg continued to entertain. His model made the most perfect flat spin ! First time anyone there had seen an A/2 shaped boomerang ! The delays between bubbles of activity were burning off the chances for 3rd men. Tony Young had yet to fly and he chose the long plod upwind. Running so far we had fears of him being out of sight before even launching—he failed to hook any lift and the time was 2:20. Another in similar straits was Herbert Schmidt of W. Germany. His all-sheet beauty with a T-tail made 2:37. Yet **Gt. Britain** was first in the totals ! Russia and the Netherlands, victors in the '63 and '61 events, were 2nd and 3rd.

Round 3 saw Dave Tipper initiating yet another bubble of piggy-backers as his red tissued model tumbled up from the "straight up and in" full pull launch. Eighteen chased him and they nearly lost it, for most had been watching a Frenchman fishing with Ritz turns and getting nowhere in all of a quarter-hour. Next batch was a small one—only 13 in the launch spree, and then another long lull as 3rd men waited. We now had two "triples" and hoped that Tony Young would regain his form. As one who once racked up 13 max's to reach the 7 min. stage, Tony knows how to find lift, but this time he was deceived again and 2:46 was his score. Still **G.B.** led with a 1,566 total, U.S.S.R. having 1,560 and the Czechs 1,517.

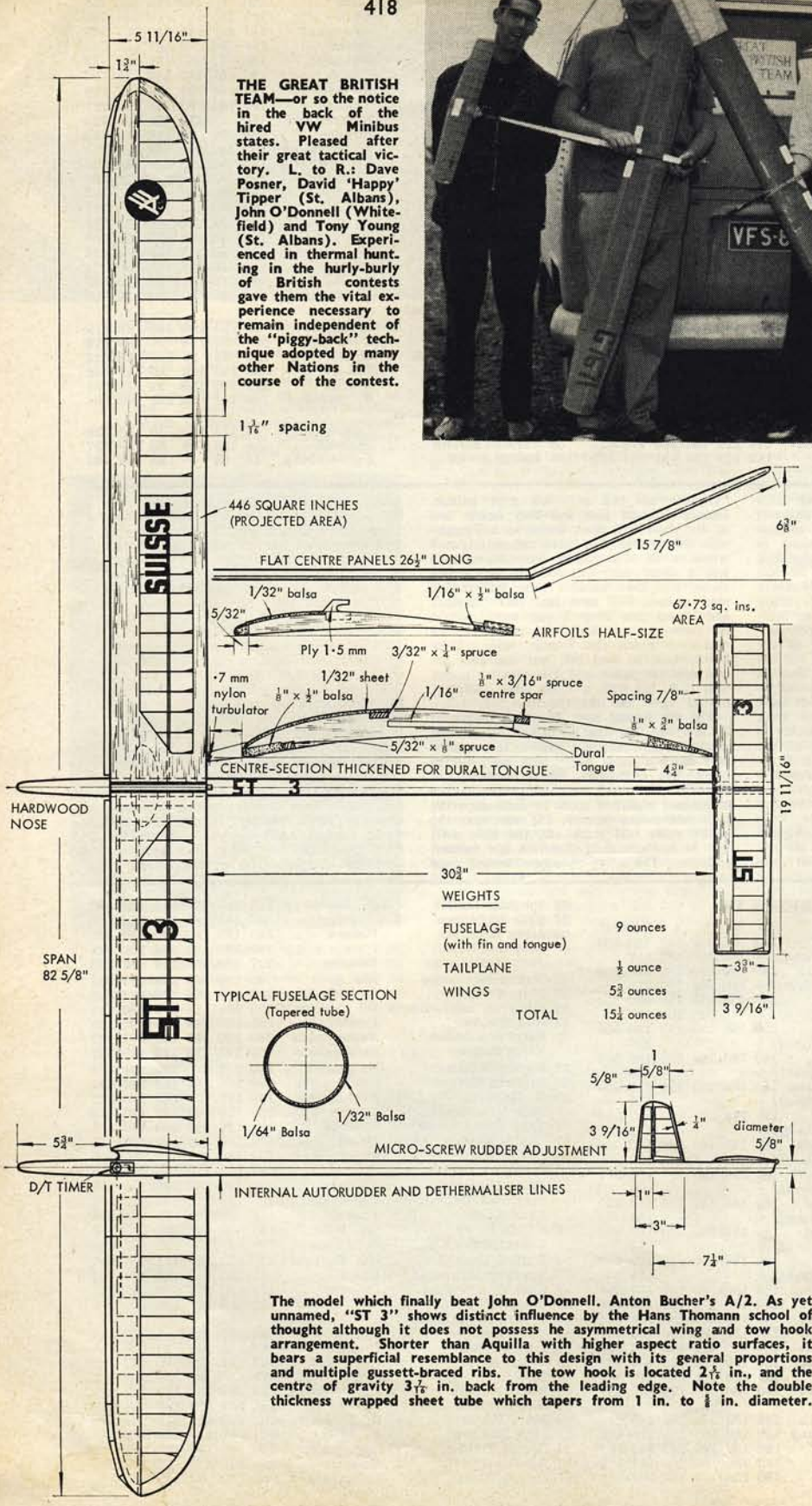
The **4th Round** gave Tony his chance to fly first and this time he picked his thermal where others could not follow. It was now very much a game of keeping one's lift to one's self. O'Donnell found another, but six others followed, and then Dave Tipper completed a perfect score by catching a lift with not a line nearby. He was near the rough stone taxi track and the light drift was in just the right direction for thermal grabbing. The mass of others waited over grass, upwind of the runway and even Sokolov was down in less than 2 mins. from such a launch spot. Simonov came to join us—one of the few who acknowledged British success in thermal picking. Shock of the round was Hugh Langevin's (U.S.A.) d/td descent from tow—the timer was not fully wound ! Most pleasant surprise was Martin Dilly's 4th max with Angus McDonald's (N.Z.) Jedelsky type, one of 11 with perfect scores, two of which were of course British, now firm in the lead with 2,106 to 2,057 from the Czechs.

The **5th Round** was very much every man for himself. Wind had veered so that a large farm obscured valuable seconds of flight time and this spread the launches. Kalen ran to the very end of the runway —about quarter-mile, and made the first perfect score—a performance soon happily matched by Dave Tipper and John O'Donnell, while Tony Young dodged about the farm to clock exactly 3:00 O.O.S. and secure assured leadership of the team classification. Collisions were still prevalent. Dilly got tangled when set happily to re-

WAKEFIELD RESULTS

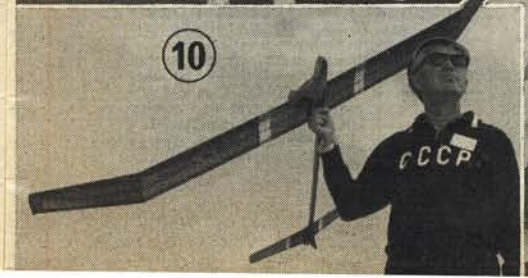
	Name	Nation	1	2	3	4	5	Total
1	Thomas Koster	*Denmark*	180	180	180	180	180	900
		Fly-off +	240	300	360	257		
2	Vladimir Matveev	*U.S.S.R.*	180	180	180	180	180	900
		Fly-off +	240	300	360	217		
3	Bengt Johansson	*Sweden*	180	180	180	180	180	900
		Fly-off +		240	300	196		
4	Lennart Flodstrom	*Sweden*	180	180	180	180	180	900
		Fly-off +				229		
5	Rune Johansson	*Sweden*	180	180	180	180	180	900
		Fly-off +				221		
6	Jurgen Horn	*W. Germany*	180	180	180	180	180	900
		Fly-off +				218		
7	Frank Parmenter	*U.S.A.*	180	180	180	180	180	900
		Fly-off +				212		
8	Egert Oskamp	*Netherlands*	180	180	180	180	180	900
		Fly-off +				200		
9	Alan Armes	Gt. Britain	180	180	180	180	180	900
		Fly-off +				188		
	Julije Merory	*Yugoslavia*	180	180	180	180	180	900
		Fly-off +				188		
11	Vilim Kmoch	*Yugoslavia*	180	180	180	180	180	900
		Fly-off +				183		
12	Masahiro Itoh (*Proxy* J.-olle Akesson)	*Japan*	180	180	180	180	180	900
		Fly-off +				174		
13	Vladyslav Niestoj	*Poland*	180	180	180	180	178	898
14	Karel Rys	*Czechoslov.*	180	180	176	180	180	896
15	Kurt Sager	*Switzerland*	180	178	180	180	176	894
16	Ronald Magill	*N. Zealand*	180	172	180	180	180	892
17	Johan Schulten	*Netherlands*	180	180	171	180	180	891
18	Emil Fresl	*Yugoslavia*	180	180	180	170	180	890
19	Sergio Legnani	*Italy*	180	180	164	180	180	884
19	Arthur Macauley (*Proxy* R. Godden)	*N. Zealand*	180	166	180	178	180	884
21	John Lenderman	*U.S.A.*	180	163	173	180	180	876
22	Gunter Rupp	*W. Germany*	180	180	155	180	180	875
	Vladimir Zviakin	*U.S.S.R.*	180	180	180	180	155	875
	Vincenzo Scardicchio	*Italy*	155	180	180	180	180	875
25	Michael Segrave	*Canada*	180	152	179	180	180	871
26	Joachim Loffler	*E. Germany*	180	180	180	148	180	868
27	Erik Jorgensen	*Norway*	180	144	180	180	180	864
28	Jerzy Kosinski	*Poland*	143	180	180	180	180	863
	Giovanni Cassi	*Italy*	180	180	143	180	180	863
	Jack McGillivray	*Canada*	147	180	180	176	180	863
31	Daniel McDonald	*U.S.A.*	135	180	180	180	180	855
32	Fritz Strzys	*E. Germany*	180	180	180	180	133	853
33	Manfred Reichenbach	*W. Germany*	180	123	180	180	180	843
34	Gad Minikes	*Israel*	160	180	135	180	180	835
35	Peter den Ouden	*Netherlands*	180	180	180	115	177	832
	Erich Rohrer	*Switzerland*	159	143	170	180	180	832
37	Karoly Fischer	*Hungary*	180	127	180	180	164	831
38	Antonin Simerda	*Czechoslov.*	180	107	180	180	180	827
39	M. Boiziau	*France*	180	180	102	180	180	822
40	Erik Nienstaedt	*Denmark*	180	139	140	180	180	819
41	Esko Hamalainen	*Finland*	180	180	98	180	180	818
42	Chaim Kaplan	*Israel*	154	180	119	180	180	813
34	Urs Schaller	*Switzerland*	180	180	89	180	180	809
	Stanislav Zurad	*Poland*	180	150	119	180	180	809
45	Reino Hyvarinen	*Finland*	98	180	168	180	180	806
	Frantisek Dvorak	*Czechoslov.*	180	150	116	180	180	806
	Rone Koen	*Turkey*	180	86	180	180	180	806
48	Bruce Rowe	Gt. Britain	180	89	180	180	169	798
	Robert Rowe	*S. Africa*	145	180	156	180	137	798
50	John O'Donnell	Gt. Britain	111	180	180	144	180	795
51	Vladimir Zapachni	*U.S.S.R.*	93	180	180	150	180	783
52	Karl-Erik Widdel	*Denmark*	171	130	117	180	180	778
53	Brian Roots (*Proxy* B. Halford)	*N. Zealand*	111	180	120	180	180	771
54	M. Degieux	*France*	50	166	180	180	180	756
55	Luis Serrano	*Brazil*	180	106	163	126	180	755
56	Pentti Aalto	*Finland*	162	95	126	180	180	743
57	M. Valery	*France*	110	180	92	180	180	742
58	Horst Kubiak	*E. Germany*	133	84	154	180	180	731
59	Nair Shmueli	*Israel*	121	109	139	180	138	687
60	Peter Visser	*S. Africa*	121	110	127	147	180	685
61	John Swallow	*S. Africa*	133	107	130	180	129	679
62	Henrik Dahl	*Norway*	130	85	100	180	180	675
63	Cordon Hilliam	*Canada*	102	124	175	55	180	636
64	Joseph Glodt	*Luxembourg*	53	60	89	165	180	547

THE GREAT BRITISH TEAM—or so the notice in the back of the hired VW Minibus states. Pleased after their great tactical victory. L. to R.: Dave Posner, David 'Happy' Tipper (St. Albans), John O'Donnell (Whitefield) and Tony Young (St. Albans). Experienced in thermal hunting in the hurly-burly of British contests gave them the vital experience necessary to remain independent of the "piggy-back" technique adopted by many other Nations in the course of the contest.



The model which finally beat John O'Donnell. Anton Bucher's A/2. As yet unnamed, "ST 3" shows distinct influence by the Hans Thomann school of thought although it does not possess he asymmetrical wing and tow hook arrangement. Shorter than Aquilla with higher aspect ratio surfaces, it bears a superficial resemblance to this design with its general proportions and multiple gussett-braced ribs. The tow hook is located 2 1/16 in., and the centre of gravity 3 7/16 in. back from the leading edge. Note the double thickness wrapped sheet tube which tapers from 1 in. to ⅜ in. diameter.

Opposite (1) Very keen Norwegian team tries to protect Kjell Bentzen's long span A/2 as it is prepared for the 7th round. (2) Flying the same model with which he placed 3rd in 1961 fly off at Leutkirch, Germany, Gunnar Kalen of Sweden placed 4th this time with his turbulated sheet surfaced wing model. (3) No shortage of umbrellas in the British camp! Messrs. Wootton, French, Armes, Welch and Posner do their best with extra polythene sheet to keep John O'Donnell's glider dry. (4) Egert Oskamp about to release 5th place man Gerard Klomp's glider. Note the increasing use of National flags. (5) Proxy flying this all sheet Jedelsky wing entry by Angus McDonald of New Zealand, Martin Dilly from Croydon almost made the fly off and gained honourable 10th place. (6) Stefan Hubert of Czechoslovakia was 6th with his multiple rib design, unusual in not having leading edge sheeting. (7) Another without sheeting was South African John Swallow's entry (back to camera) which placed 15th. South Africans (Pete Visser facing camera) flew all three events for a tiring three days. In background is Cessna 150 used by Norwegians to fly to the event. (8) Moshe Goldberg's model is held by Abraham Kiflawi waiting for thermal indication, Model finished 11th. Tony Young (GB) in background was 16th. (9) Lone representative of Argentina, Avro 748 pilot Aimar Mattano did well in his first international to gain 32nd place. (10) Soviet ace Simonov waits for thermal indication as he holds Sokolov's model. Unique on this latest development are the solid block carved wing tips with curves as on Delta aircraft to avoid vortex drag. (11) From Australia, David Anderson and modified APS "Lucifer" gained three maxes and two "holes" for 46th. (12) Most interesting design was Herbert Schmidt's from West Germany with sheetwing and T-tail, placed 9th.



A/2 GLIDER

F.A.I. POWER RESULTS

	Name	Nation	1	2	3	4	5	Total
1	Alberto Dall'Oglio	*Italy*	180	180	180	180	180	900
			Fly-off + 240					
2	M. Bourgeois	*France*	180	180	180	180	180	900
			Fly-off + 239					
3	Eugene Verbitki	*U.S.S.R.*	180	180	180	180	180	900
			Fly-off + 227					
4	Benno Schlosser	*W. Germany*	180	180	180	180	180	900
			Fly-off + 223					
5	Victor Onufrienko	*U.S.S.R.*	180	180	180	180	180	900
			Fly-off + 212					
6	George French	Gt. Britain	180	180	180	180	180	900
			Fly-off + 203					
7	Vladimir Hajek	*Czechoslov.*	180	180	180	180	180	900
			Fly-off + 190					
8	Robert Cherny	*U.S.A.*	180	180	180	180	180	900
			Fly-off + 173					
9	Carlo Lenti	*Italy*	180	180	180	180	180	900
			Fly-off + 163					
10	Jorma Kumpulainen	*Finland*	180	180	180	180	180	900
			Fly-off + 159					
11	Nils Erik Hollander	*Sweden*	180	180	180	180	180	900
			Fly-off + 153					
12	A. Landeau	*France*	180	180	180	180	180	900
			Fly-off + 152					
13	Andras Meczner	*Hungary*	180	180	180	180	180	900
			Fly-of + 142					
14	James Robinson	*U.S.A.*	180	180	180	180	180	900
			Fly-off + 128					
15	Gianfranco Grifoni	*Italy*	180	180	180	180	180	900
			Fly-off + 120					
16	Henry Spence	*U.S.A.*	180	180	180	180	180	900
			Fly-off + *over-run*					
17	Valentin Mozirski	*U.S.S.R.*	180	180	180	164	180	884
18	Birger Bulukin	*Norway*	180	162	180	180	180	882
19	Brian Eggleston	*Canada*	180	180	180	160	180	880
	Torbjorn Johannessen	*Norway*	180	180	180	168	172	880
21	Niels Christensen	*Denmark*	157	172	180	180	180	869
22	Peter Manville	Gt. Britain	164	180	180	164	180	868
23	Ferenc Csizmarik	*Hungary*	141	180	180	180	180	861
24	Don Elliot	*Canada*	132	180	180	180	180	852
25	Paul Lagan	*N. Zealand*	180	180	164	165	158	847
	(*Proxy* D. Welch)							
26	Raymond Hewitson	*N. Zealand*	180	180	180	125	180	845
	(*Proxy* P. Bayram)							
27	Gyula Simon	*Hungary*	180	180	180	140	153	833
28	M. Fernandez	*France*	180	170	141	180	160	831
29	Rudolf Schenker	*Switzerland*	180	163	180	180	108	811
30	Pieter Broerse	*Netherlands*	99	180	180	180	167	806
31	Hans Friis	*Sweden*	180	180	120	180	143	803
	Karl-Heinz Rieke	*W. Germany*	180	171	180	94	178	803
	(*Proxy* H. Seelig)							
33	Martin van Dijk	*Netherlands*	180	180	122	180	129	791
34	Michael Gaster	Gt. Britain	180	130	180	180	112	782
35	Fritz Schneeberger	*Switzerland*	180	53	180	180	180	773
36	Zdenek Malina	*Czechoslov.*	180	180	165	63	180	768
37	Josef Blazek	*Czechoslov.*	180	91	180	133	180	764
38	Lasse Laxman	*Finland*	90	180	180	170	142	762
39	Harry Winn	*N. Zealand*	180	180	170	104	127	761
	(*Proxy* D. Hipperson)							
40	Rolf Kammer	*E. Germany*	180	136	163	180	98	757
41	Peter Visser	*S. Africa*	180	180	175	133	58	726
42	Joachim Benthin	*E. Germany*	180	180	152	180	—	692
43	John Swallow	*S. Africa*	114	102	180	180	107	683
44	Robert Rowe	*S. Africa*	—	165	180	180	123	648
45	Peter Spring	*Switzerland*	25	119	180	180	136	640
46	Seppo Haapalainen	*Finland*	134	173	180	26	114	627
47	Carl-Erik Auner	*Sweden*	14	180	180	180	67	621
48	Norbert Czeranowsky	*W. Germany*	152	94	68	64	180	558
49	Eolo Carlini	*Brazil*	—	180	148	125	94	548
50	Michael Segrave	*Canada*	180	69	—	180	104	533
51	Julian Falecki	*Poland*	121	108	7	180	109	525
52	Ferd Kraemer	*Luxembourg*	54	66	76	66	60	322
53	Oyvind Liberg	*Norway*	31	69	—	116	—	216

lease and the 2nd attempt was a scraped 2:33 to spoil his record. Herzberg showed as yet a 3rd flat spin and the luckless Fritz Gaensli of Switzerland caught a mighty "abwind" to ruin his score with 69 secs. Simonov flopped too: and so did the Soviet Union's prestige as Canadian, Dutch and Finnish modellers persuaded a mightily embarrassed Rimas Shourna to report with model to the Jury. He had flown—for the second time—a short d/t'd test probe upwind of the waiting Sokolov. The responsibility was squarely upon the U.S.S.R. manager Jermakov. Briefing had clearly forbidden such tactics and the Jury of R. Cerny (Czech), G. Derantz (Sweden) and H. J. Nicholls (G.B.) made plain their warning of disqualification. This unhappy moment will now inevitably result in another rule for the book !

Norwegian Kjell Bentzen was first of the eight away in the **6th Round** fly-off for 4 min. max's, and he made it comfortably, but Dave Tipper was to the left of lift which took Klomp well away, and like the Czech, Hubert and Dane, Kongsted was eliminated. John O'Donnell qualified easily and as steady rain fell the next task was to keep the five finalist models dry enough to challenge 5 minutes.

Bentzen was first out from under the covers again, seeking runway lift in the **7th Round** without success. Kalen followed with another long luckless run while Bucher, set to launch from the grass, suddenly wound in his line and dashed with helpers forming a polythene sheet hangar over his model to the runway. He was already a minute in the air when John O'Donnell felt the pull of the same light thermal but the Swiss was far higher and stayed there for 4:42. John pipped the Norwegian by 9 secs. for 2nd place, while Kalen and Klomp tied equal 4th. A more satisfactory finish could hardly be imagined.

Sixty per cent of the contest flights and 12 of the 13 fly-offs were 3 min. max's. This standard, and the British team total of 2,646, are higher than ever before achieved and for that reason alone this contest deserves most space in an all too abridged report.

A/2 TEAM RESULTS

(22 *competing Nations*)

1	Gt. Britain	2646
2	Czechoslovakia	2597
3	U.S.S.R.	2534
4	Netherlands	2507
5	Switzerland	2413
6	Denmark	2387
7	Sweden	2343
8	East Germany	2333

Power

Early morning tests after heavy night rains saw Mike Gaster's reserve written off, George French reported power loss and just before the first round Peter Manville's flood-off failed on test and the auto-rudder loads sheared the wing for a spectacular prang. Not exactly a promising start !

Round 1 started in light rain with wind scarcely more than 3 m.p.h. Johannessen of Norway d/t'd at 4:50 to show the way with the first max. Both Gaster and French max'd with ease, and so did Manville, but it was an over-run ! The re-fly was an arcing climb, losing height for 2:44. Distinction between the re-worked or special engines and the over-the-counter breed was marked. Gaster used his own, Manville and French had G.15's tuned by Kevin Lindsey. It was a horsepower contest with timer accuracy playing an important secondary part and the wetness plus slow timekeeper reaction on engine-runs annoying interference factors. Some seemed not to be able to handle power. Auner of Sweden spiralled in full bore, astonishingly without damage, and on the re-fly dived partially inverted, straight down for 14 secs. ! Unlucky Brazilian Eolo Carlini failed to start his TD Spcl. before the end of the round, so scored a blank—had he attempted a flight he could have used the 15 minute extension for 2nd attempts. On the other hand, the New Zealand proxies, Bayram, Hipperson and Welch all max'd within 25 minutes. Five other nations had perfect scores.

Round 2 was in drying air, wind 3-5 m.p.h. Gaster stalled in his wide circle glide for 2:10 and another ex-World Champ., Schneeburger (Switzerland), had a timer cut early for 53 secs. Most potent model, K. H. Rieke's sheet-covered design (Sept., 1963 issue) proxy flown by Hans Seelig, had the d/t timer come-in early (NOT a Seelig timer !), 9 secs. short of a sure max, and Canadian Mike Seagrave flying a "tiddler" with Cox TD .09 cut early for only 1:09. Both Manville and French max'd—the latter into the woods on 2nd attempt after an over-run, and as lunch was distributed in a downpour our position was 1,014 total in 7th place with N.Z., Italy, U.S.A. and U.S.S.R. having perfect scores

A patch of clear sky downwind at the start of **Round 3** offered brief encouragement, but the Kauhava strip was soon under more steady rain. French had yet another over-run, re-flying in the closing minutes before a torrential downpour, and made it a perfect round after Gaster and Manville had max'd for G.B. The New Zealand models were less fortunate, dropping vital seconds in the wet, with Lagan's and Winn's, the deep-bellied entry from Hewitson retaining its lead along with 20 others who thus far had three max's. In the team scores, the familiar pattern of U.S.A., Italy, U.S.S.R. had resolved itself, **G.B.** lying 7th. A miserable round, everyone very wet and, dare we say it, lacking the excitement of A/2.

More rain heralded **Round 4,** but wind freshened to 8 m.p.h. and with it came drying clear air. Manville's model backed over on the climb to partially dive for a 2:44, and soon after, Mozirski spoiled the U.S.S.R. record with a very flat downwind climb for the same score of 2:44. Wind veered and gave a little recovery difficulty. Gaster and French max'd again. Dave Hipperson, who had edged Winn's N.Z. Jay's type design to top standards (using his own-tuned Super Tigre) suffered wing flutter for a vertical dive on full bore, the reserve making a 1:44 flight. Downwind a desperate search was being made for Finn Kumpulainen's model after its 4th max on a very long flight. The host nation needed a boost after their lowly position in Glider, and he was one of the 16 with a winning chance. Italy and the U.S.A. still had perfect scores, the only scare (if it could be so-called) was the poor starting of Robinson's (U.S.A.) G-15 which was solved by Bob Cherny's handy machine oil primer and compression booster !

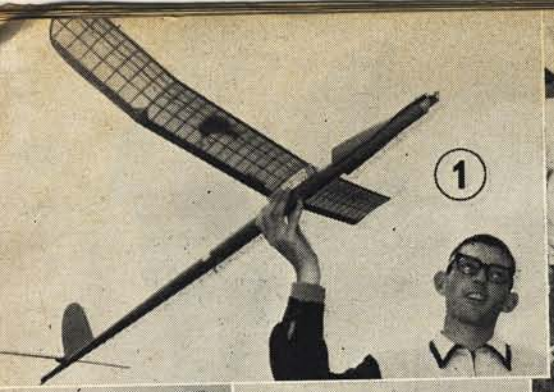
Round 5 tactics for G.B. were to get Gaster and Manville away quickly to allow French plenty of thermal-seeking time. Flying over the grass, Gaster sagged for 1:52 but Manville max'd. When he did get away French had another over-run. The

(1) Brian Eggleston (Canada) lost only 20 seconds in 4th round to drop to 19th, having tail set by Gordon Hilliam. (2) Eugene Verbitski (USSR) and modified G-20 powered fast flying model which placed 3rd using trim elevator in tail T.E. (3) Top of the proxies, Dave Welch and Paul Lagan's 25th placed N.Z. model. (4) Using new Moki S-3 with bulbous transfer, Meczner was 13th in fly-off—usually in top dozen. (5) Hank Spence missed fly-off by one-tenth of a second! (6) Carlo Lenti (Italy) note two piece wings and cowled G-15 placed 9th. (7) Rapid climbing Bob Cherny (U.S.A.) was 8th. (8) George

F.A.I. Power

French heaves his Night Train off on a twisted launch. (9) Vlad Hajek (Czech.) flying yet again into high place at 7th used new M.V.V.S. RL engine. (10) Nils Hollander was 11th for Sweden with Super Tigre G-15. (11) Bourgeouis (France) used his more conventional model for 2nd place only 1 sec. short of a 6th maximum. His thermal flag is erected in background. (12) Fastest sounding engine was Benno Schlosser's (W. Germany) self-modified G-15, almost an entirely different engine which took him to 4th place.

WAKE-FIELD



(1) Ron Magill (NZ), missed fly-off by mere 8 secs. (2) Dan Mc-Donald (U.S.A.) and "Hothead" made four max's after 1st round 2:15. (3) Roene Koen (Turkey) four max's and a "big hole". (4) Alan Armes, best British Wake performance. (5) Old Foxes, Fresl and Kmoch in Yugo team. (6) Mattano (Argentina) and Serrano (Brazil). (7) Lennart Flodstrom & "Mamba" placed 4th. (8) Motor wound, Oskamp waits for Neddy box instruction. (9) Wings kept on jigs for Rune Johansson (5th). (10) Bengt Johansson engages rear fuselage, was 3rd. (11) Akesson and Jap entry.

Moment of despair. 45 minutes of search and recovery had brought his model back in the nick of time. Only two minutes remain for Thomas Koster to make his 8th flight which must be over six minutes duration if he is to beat Matveev who has already qualified for a 9th flight. A broken strand flails and there's no time to replace the motor.

re-fly was a beauty and gave him a perfect score, but so too had all 15 others in the same 4th round position. Coupe d'Hiver Champ. Alain Landeau (France) crashed on power into the runway, but his reserve saved his place in the fly-off, and Hank Spence (U.S.A.) had to re-fly after an over-run for another anxious max. Thus Italy and the United States tied, each with perfect "Full House" 2,700 scores. **G.B.** swapped places with N.Z. to 6th, and now French had the last chance of individual victory

The **6th Round** fly-off was an anti-climax. Trying for 4 minutes, which five gliders had easily managed from 164 ft., the power models were reaching almost three times that height for glide plus 10 seconds power bonus. Yet only Italian Alberto Dall'Oglio exceeded the time. Barrel-chested Bourgeois (France), whose thermal detector was an object of mystery, was unhappily clocked off one second short, and Spence (U.S.A.) had one watch at 10 secs., the other 10.1 secs. for a power over-run to negative his flight. George French seems fated to 6th place as last time in Austria, but at least he shared the distinction of being consistently highly placed along with veteran Vlad Hajek (Czech), Verbitski (U.S.S.R.), and Meczner (Hungary). What happened to Frigyes? He failed to qualify, making 4th place in the Hungarian trials.

TEAM RESULTS: F.A.I. POWER

(21 *competing Nations*)

1	Italy	2700	5 Hungary	2594
	U.S.A.	2700	6 G.B.	2550
3	U.S.S.R.	2684	7 N.Z.	2453
4	France	2631	8 Czech.	2432

Wakefield

Atmosphere was still damp but without rain when **Round 1** opened with Erik Neinstaedt (Denmark) returning the first of what were to be 41 max's (out of 64 flights) at 8.15 a.m. Lenderman surprised us with his purposeful **down**-wind launch and Parmenter (both U.S.A.) with a very wide circle which would be hard to trace in strong wind, but the only real bothers were motor breaks. O'Donnell suffered, so did the Canadians, but Ron Magill capped the lot by smashing his light wing (1¼ oz.) in a javelin launch! The re-fly with reserve was a max, but for Finn Reino Hyvarinen there was no second chance as his model looped to recover low for only 1:38. Alan Armes and Bruce Rowe had maxed for G.B., and five nations had perfect scores.

In **Round 2,** Armes almost spun-in on power but recovered for a max. Lone modeller Roene Koen of Turkey was down-draughted, Rowe looped and hit a building and O'Donnell returned to form. This was a brighter weather round, with A/2 style themal seeking. The Dutch and Swedes each had a line of transistor amplified thermistors on the upwind leg, some linked by walkie-talkie. We watched Oskamp (Netherlands) wait for 12 mins. with motor fully wound, shaft locked and blades folded until Peter den Ouden his team-mate gave the tip to launch. Others chose the quick-wind system at the risk of missing the passing lift. This gave rise to almost as much unwinding (W. German Reichenburg, for example) as winding up, and models went off in bursts of activity. Veteran Vilim Kmoch (Yugoslavia) set an unofficial altitude record which took 3 mins. of d/t action to come down and this helped emphasise the developing pattern of Sweden-Yugoslavia and the Netherlands leading teams. Twenty-six competitors had double-maxes.

After 15 minutes of the **3rd Round** had been spoiled by rain, weather brightened with wind 5-8 m.p.h. Conditions were deceptive—a model might appear to climb in lift only to sag out in the glide. Bruce Rowe and Alan Armes were OK, though the latter cut his d/t too fine for comfort and later, John O'Donnell allowed 2 mins. grace on his d/t (unintentional) and took 4 minutes to come down for a 9 minute flight. A map and compass search took the recoverers straight to the model in the woods. Schulten lost 9 seconds to spoil the Dutch score, so now it was Sweden v. Yugoslavia, very much as in 1963, except that the Italians, leaders of that year were not doing so well in 5th place. The initial climb of two competitors, Matveev (U.S.S.R.) and Parmenter (U.S.A.) was exceptional, and one could see little to prevent them qualifying for the inevitable fly-off, for which so far 18 were eligible.

Flying early in the **4th Round** Alan Armes proved how well trimmed his Hyvarinen designed "Jeppe" (June, 1960 Aero-modeller) was with a superb glide that made 3 minutes a mere formality. This was a vital round for many, including the current Champion Joachim Loffler of East Germany, who fell 32 seconds short. British Champ., Bob Godden, flying New Zealander McCauley's model, dropped just 2 secs. and Emil Fresl flying in a Yugoslavian team for the 30th time. (All categories from team racing to F.A.I. Power) broke both motor and best model. His reserve dropped 10 vital seconds which gave the perfect scoring Swedes a team lead. Fischer the only representative for Hungary, spun in to destruction (the reserve max'd), and Barry Halford flying for Brian Roots (N.Z.) broke two props and motors in quick succession. Rapid repairs earned him his max. Just as deserving was Swedish proxy flier Akesson with the colour doped Japanese entry from M. Itoh. Sluggish on the climb but a good glider, the model owed much to the skills of the bearded Swede. Now there were 15 quadruple maxes including Armes. O'Donnell returned 2:24 and Rowe a maximum, so that **G.B.** was in 12th place.

It was strangely quiet for the **5th Round.** A sudden rush of activity sparked off by the walkie-talkie equipped group of Norwegians, sent a bubble of models off in an enormous thermal. Alan Armes was among them but seemed to fall out and just scraped in his last max before disappearing behind the farm! Good for Alan—only modelling for two years and now our Wakefield finalist! Bruce Rowe d/t'd early for 2:49 and O'Donnell made his third max with almost the last flight of the round. Now it was the turn of Poland's Niestoj

(*Continued on page* 440)

Vladimir Matveev swapped models with Bob Hatchek at the Wakefield event in France. Now his design incorporates much of the American's ideas. This is the 8th round. Matveev winds calculatingly as watchers observe Johansson's model already airborne. The flight was a wonderful demonstration lasting 9 minutes 22 seconds, and landing scarcely 100 yards away.

READERS' LETTERS

COMMENTS ON RECENT FEATURES

That Lancaster

DEAR SIR,

I have been reading AEROMODELLER since early 1942 and with eager anticipation have I looked forward to it each month.

Even more so since being posted to to this "Pearl of the East"—where you can't fly rudder only without being trampled by natives and mahau carts and things.

Imagine my pleasure when I received the July issue. Right smack on the front page was a photo of a Lanc. with her nose crawling with pretty little Javelins. Success at last! I was made, 60 Sqdn. was in the news! People stopped muttering as I walked by. That "twit" who makes little toy aeroplanes has a picture, etc., etc., and inside! oh Joy! it says "The Javelins were put on by "C" Flight of 60 Sqdn. R.A.F. at CHANGI? *oh Dear!*"

LAC E. PANNELL.
60 Sqdn. "C" Flt.
R.A.F. (E),
R.A.A.F. BUTTERWORTH.

DEAR SIR,

It was with interest that I saw on the cover of the July AEROMODELLER a picture of the last Lancaster at Biggin Hill. It seems you have managed to identify nearly every stencil that happened to find its way onto the nose of the aircraft except the little man with the marshalling bats next to the Kangaroo. Having just returned from Cyprus I can tell you that this was put on by Transit Aircraft Servicing Flights (T.A.S.F.) at R.A.F. Akrotri. It seems that just about every aircraft that landed at Akrotiri not belonging to the unit, departed with one or more such men somewhere on the aircraft. The small cross with a lynx superimposed on it behind the "owners" badge also comes from Akrotiri but was the doings of 13 Sqdn. out there. I was at Biggin Hill for the Air Fair and saw the Lanc. but did not really recognise any of the emblems. I certainly do now, thanks to your photos.

D. ARMITAGE.
R.A.F. Cosford.

. . . and the Burnelli

DEAR SIR,

As an aero-enthusiast who has been making an intensive study of Burnelli type aircraft over the last two years I was delighted to see your article on the Burnelli Cunliffe-Owen "Flying Wing".

Unfortunately your article is rather faulty, with respect to the facts in many places.

Firstly the engines were rated at 710 h.p. at 4,000 ft., 815 h.p. at 6,000 ft., and only a take-off output of 900 h.p. for the Cunliffe-Owen.

Secondly the first Burnelli was the RB-1 which first flew on June 21st, 1921 with Bert Acosta at the controls. This plane spanned 74 ft. The RB-2 had a wing span of 80 ft., not 84 ft. When you say the CB-16 was advanced for 1920, I think you really mean it was advanced for the nineteen-twenties, for it first flew on January 8th, 1928. You then miss mentioning the Burnelli GX-3, 49 ft. span and powered by two 95 h.p. motors, it was the Burnelli entry for the Guggenheim safe plane competition. It employed many aerodynamic innovations.

Though the UB-14 did crash on January 14th, 1935, it was rebuilt as the UB-14B. This plane flew into Hatfield on January 12th, 1938 from Holland. The UB-14 or UB-14B should not be confused with the Cunliffe-Owen machine. Though at one time it was intended to build the UB-14 in England (with Kestrel engines) the Cunliffe-Owen OA-1 was a quite new design.

The CBY-3 "Loadmaster" has always been the property of the Burnelli Corporation and is currently in dead storage in a Maryland airport. The main cabin is 20 ft. wide, 19 ft. long and 6 ft. 6 in. high at its maximum depth, not 20 x 26½ as you quote. (I take cabin to mean internal sizes.) The gear was not a quadrangle, but of the configuration used on the OA-1 only all-wheels were double.

R. MARKHAM.
Manchester.

Silencers

DEAR SIR,

During the first six months of this year I have heard a lot of praise for S.M.A.E.'s "cure" for the sick body of aeromodelling, the silencer —also a lot against. No one seems to realise, however, that the use of silencers will not make any difference in the long run because once people *forget* that model engines used to be much noisier, then the complaints will start again so we'll be back to "square one". When this happens we shall be unable to do anything about it, after all, we cannot silence silencers, can we? What we are up against then is this: no matter how well engines are silenced, as long as they make any audible sound people will complain about it!!! Neither will they stop complaining until we all give up aeromodelling and take up a more worthwhile Sunday afternoon pastime, such as taking a nap in the garden or watching the dreaded "Box"!!

In spite of silencers, we are getting complaints of noise at our local flying field, and I have heard that if the people involved go to a magistrate, they can get an injunction which will result in our losing it, regardless of the fact that we have permission from the Forestry Commission to fly there. What can we do about this state of affairs? The answer to this was given very well in Mr. Webster's letter (March 1965 AEROMODELLER) and the sooner we can get something done along those lines, the better it would be for aeromodelling generally.

J. C. BOXALL.
Portsmouth, Hants.

Take up Fishing!

DEAR SIR,

In the article "Model Location and Recovery" by M. Dilly on page 320 of the July 1965 issue of AEROMODELLER, there is an unforgivable mistake. Fly fishing is the only branch of angling where it is a "sin" to use a spinning (correct name fixed-spool) reel. A centre-pin reel is always used for this activity.

Obviously Mr. Dilly has dropped a very big clanger. (Should I give up C/L flying and only go fishing?)

K. S. REYNOLDS.
Anfield, Liverpool 6.

Clutton's Approach

DEAR SIR,

After reading the *Sharkface* article in a recent copy of AEROMODELLER I feel I must write to give a fuller appreciation of what controls the speed in a model, or any aircraft for that matter.

The remarks about a heavy model not being able to penetrate unless it has a powerful engine are, to say the least, rather misleading.

Talking only of the glide to begin with, speed is directly proportional to the square root of the wing loading and hence the heavier we make any given model the faster it will glide. Incidentally, the angle of glide will *not* alter if the weight is added at the centre of gravity, nor will stability be affected.

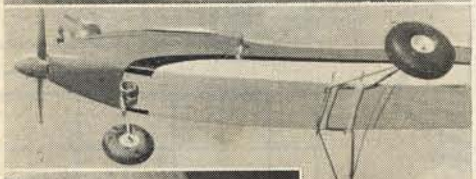
The reason that Sharkface has such a high airspeed is not only that it has a powerful engine but that it has plenty of downthrust. With conventional R/C models with fixed trim, i.e., single channel, there is no increase in speed with full power than on the glide. It is just that the power is used up in the climbing.

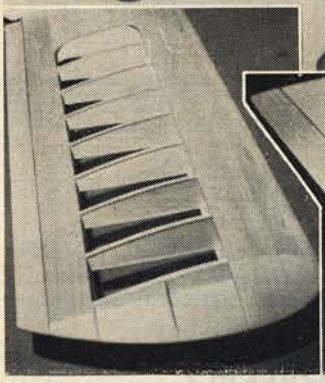
When additional downthrust is added to such a model it will then fly faster under power than it does on the glide. This is technically called "re-trimming by thrust" and many of today's new designs are using this principle by large amounts to produce more "interesting" flying.

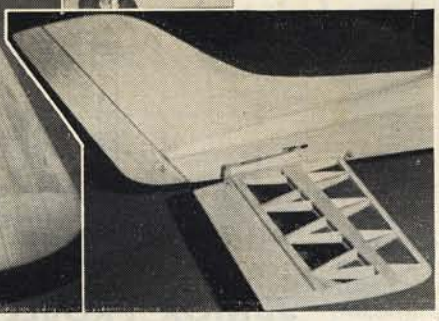
There is a limit however. It is when the amount of downthrust that has been applied has retrimmed the model to a speed which is faster than the engine power is capable of fulfilling. This is the time to use a larger engine.

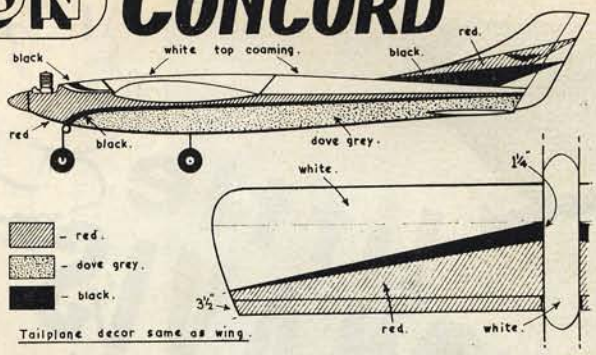
C. F. BASHFORD.
Royal Aeronautical Society's Flying Model Section, Hawker Siddeley Aviation, Hatfield.

VERON CONCORD









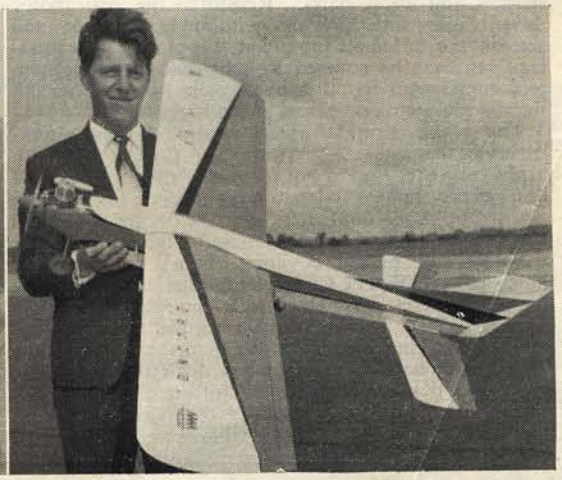
. . ON TEST

Colour decoration scheme clipped from plan above indicates general proportions of Concord. Mick Charles followed the scheme in "International" polyurethane which gave superb finish, photos at left show moment of truth as Concord becomes airborne for the first time. Braced undercarriage and sprung nose wheel are evident while wing structure and rather thin sheet fin of generous proportions plus antiwarp tail structure are seen below. Bottom views show air test with Ernie Green at Remcon contro's and builder Mick Charles with the well finished test piece.

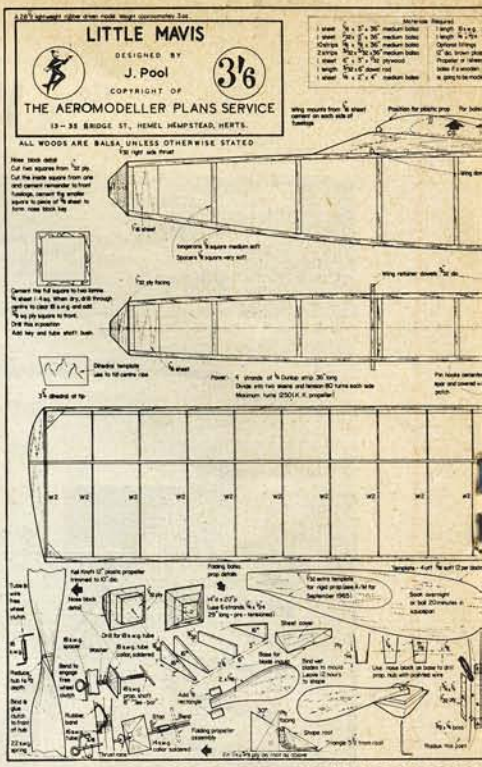
EVERYTHING about this £11.15.6d. kit seems to emphasise both completeness and bulk. The 66 in. span with a 15 per cent airfoil thickness measuring 12½ in. chord (giving an effective area of 728 sq. in.) makes it quite a sizeable model though not by any means over large when compared with other multi-channel designs. In one respect it is smaller than most and this is on the 52 in. overall length. In fact the short coupled tail surfaces are quite a distinction. Concord loses nothing to stability, in fact it is rock steady in all conditions and will execute extremely tight looping manoeuvres by virtue of the short fuselage. The plan illustrates installation of British Climax servos but our model as made by Michael Charles easily accepted Remcon 10 channel receiver, Deac pack and four Bonner Transmites in the fuselage. The servos were fitted at the relatively aft position shown on the plan and balance came out perfectly as recommended with a Merco 61 in the nose. Prefabrication of the fuselage block parts is a great aid; but as we have already commented, construction of the tailplane is a little tiresome with its 57 separate parts (not 90 as erroneously stated last month).

First attempts at a test flight were frustrated when rudder kept coming in as soon as the Merco 61 was revved-up. A loose PC board in the Remcon Rx was suspected but this was not the primary cause. ¼ in. off the Keilkraft 12 x 6 in. nylon propeller cured the out of balance effect which was creating vibration but there was still a degree of interference remaining due perhaps to unequal blade area. We changed to a Topflite 12 x 6 in. wooden propeller and the troubles disappeared. First test flight was made by Lt./Cdr. "Ernie" Green U.S.N. in a 15 knot wind. The 7 lb. model lifted off after 50 ft. of natural run at slightly less than full power. Immediate impression is one of controlled speed and rock steady stability. Concord sits in the air beautifully and does not have that characteristic of being marginally distant from impending disaster which is common to many another faster design. That the pilot was happy with it was evident when after only three minutes in the air the Concord was going through inside and outside loops, rolls in either direction, inverted flight, reversals and Immelmans. Approach to landing on up trim with low throttle was a "natural". The fixed nose wheel is certainly no handicap, the rudder will air-steer on the ground but the makers advise extra rudder area for those who want to spin, so would we. Another point in Concord's favour for stability was that the elevator servo went 'trimmable' (non-neutralising)—Another job for radio expert Roy Bale to sort out for us. Ernie brought the model all the way down solely on the trim servo. Points to watch : Brace the undercarriage legs, arrange easy access to the tank which must have extensions fitted to the tubes and the internal flexible tubing and pick up weight replaced (ours fell apart and the tubing kinked), fix the tailplane and avoid all metal to metal linkages.

Verdict : Excellent value and a design that can be thoroughly advised for the first approach into multi, it could even be flown rudder only!—but why? An 'economy' kit, less wheels and accessories might be a good thing for those with less to spend.



As on the Cover



FULL SIZE COPIES OF THIS 1/5TH SCALE REPRO QUO

THIS MODEL USES fairly stout wood sizes for its small size to allow for youthful handling and the anticipated crash. (Not so far fortunately). It is important to use very soft balsa, mainly because it is easy to cut, but also for performance reasons. Wing and tail leading and trailing edges can be a little firmer, and the ribs are best cut from medium "quarter-grain" $\frac{1}{32}$ in. sheet, but light $\frac{1}{16}$ in. sheet will do.

The fuselage is assembled in the usual manner. Two sides are built first over the plan, these are then removed and split. Find two suitable blocks, or make up two sheet formers to the width of the fuselage *between* the sides. Lay one side flat on the bench, put the blocks at either end of the parallel part of the fuselage (top view) and use set square to make sure that the top side lays exactly above the lower one. Then glue in the spacers between these two supports. Allow this to dry, then remove from the bench, cut nose and tail spacers and fit these with the help of rubber bands and pins. Draw the tail end in also, and cement. Then add the rest of the spacers and sheet parts. Reinforce the rear motor dowel hole with ply or celluloid. Cut out and cement the tailplane mount at this stage. The fuselage can then be covered with lightweight modelspan and doped with 50/50 dope-thinners twice. Then fin the wing mount side pieces and dowels.

The wing is straightforward except: (1) Use a non-shrinking cement—*i.e.*, "Titanine". (2) Cut ribs with a ply template. (3) Do not force any ribs in place, and don't expect cement to lengthen short ones. (4) Note the tilted root parts—and extra rib reinforcing at tip and roots. (Very soft wood for these.) Lightly round off L.E. & T.E. before covering. Don't try to get a knife edge T.E. (5) Cover and dope before joining the two halves. (6) Then tack cement at L.E. top spar and T.E. positions and assemble the wings together, checking dihedral. When dry and firm stick tape hinges below. Again when dry cut through the tacking and the wings can be folded. Then fix the pin hooks, reinforcing with extra tissue or nylon (underskirt) patches. This flexible wing is very good when the model turns over when landing in wind.

JUNIOR PROBLEM?

John Pool's sons Robert and David pr the answer with their 28½ in. model

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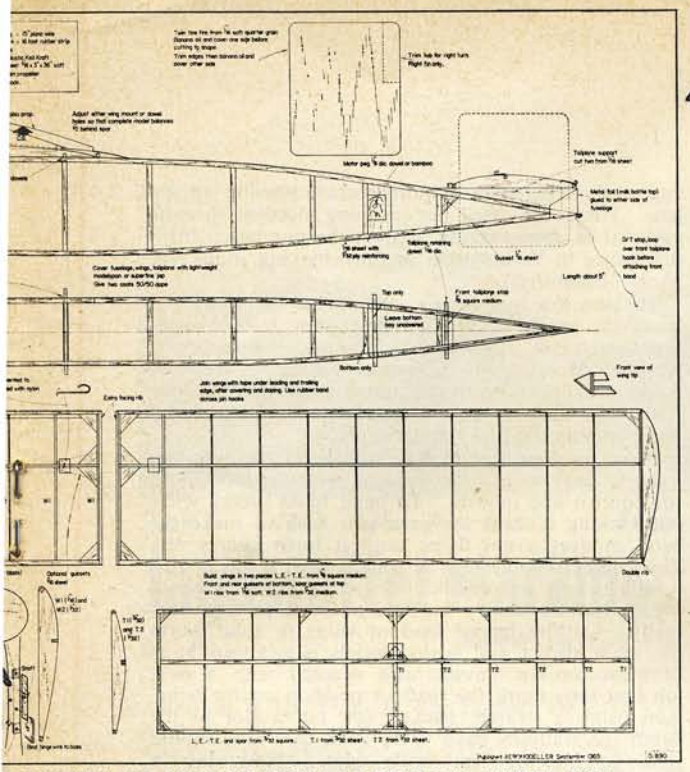

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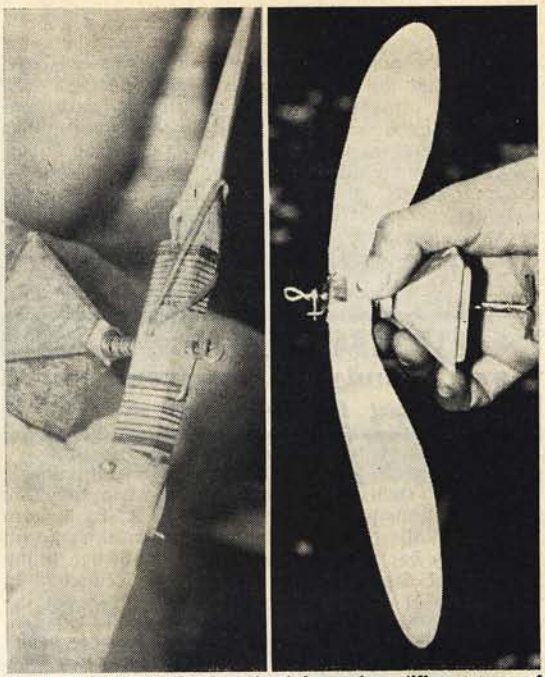
Build the tailplane as the wing and cover and dope before fixing fins. The fins are from very soft quarter-grain $\frac{1}{16}$ in. sheet. We covered the sheet with tissue, with banana oil before cutting to shape. Then the fins are cut out and the edges on the uncovered sides chamfered to a knife edge. Then the second side, which is the outside side is covered. Fins are finally cemented in place. For small field flying fit a D/T. The nose block can be cut from block or laminated from sheet. Drill and bush with 18 s.w.g. brass tube, and glue ply reinforcing back and front. Then shape as desired. The K.K. plastic prop is cut down with an ordinary knife and the edges trimmed with the same. These props can be sanded just like hard balsa. The scratch marks can be removed with metal polish. Free wheel is straightforward and essential to prevent spinning at the end of the power run. Don't forget the soldered tube or washer to take the pull of the motor behind the prop. Motor details are on the plan.

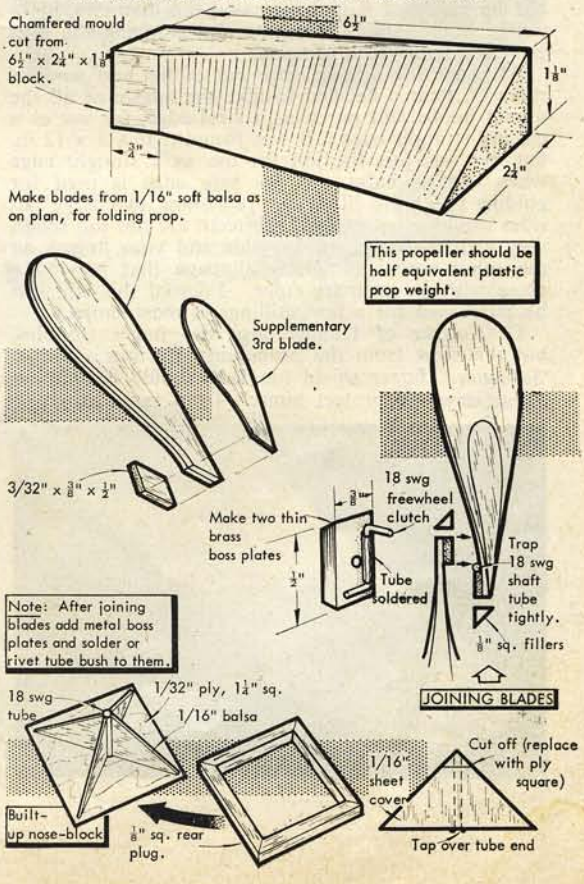
Flying

With the c.g. approximately as suggested (use ballast or move wing to get this) glide test and adjust for a smooth right glide with tailplane packing and the right fin trim-tab. The glide won't be very flattering and may need re-adjusting. For power trim use plenty of turns initially (2-300 at least) and add side-thrust until a rather flat right climb is achieved on the turns. Climb will begin to look respectable between 6 & 900 turns, and the original needed no extra trimming between the early stages and the maximum turns used so far—1200. We've wound some of these motors (made from dad's old contest motors) to breaking at 1300 plus.

It is essential to key the tailplane with small balsa blocks at L.E. & T.E. positions otherwise each flight is likely to be different with dire consequences. Mark the top of the noseblock and fuselage, and glue in all packing.



Plan and sketch detail below give info on three different types of propellers that can be used on "Little Mavis" design. The Keilkraft 12 in. plastic trimmed to 10 in. diameter is basic. Most refined is the two blade folder detailed on plan and above left showing hub detail, or one can make the two blade free-wheeling balsa prop using folding blade template as on plan and method detailed below. Photo, above right, shows shaft assembly, freewheel clutch arrangement and shape of blades.



AUSTRALIAN reader W. Johnson from Queensland, suggests that the little red plastic push on caps used on Britfix cement tubes can be used as tank vent seals. We have seen many used on team racer tanks and combat models. Flatten the vent tubing slightly as this makes for a nice tight inside fit and stops the cap falling off in the air. They are also good seals to have on when the model is in the workshop, to stop dust and dirt getting inside the tank and then blocking the spraybar when the engine is next started.

GIMMICKS
and handy hints from our post bag to help you

To stop small 8 B.A. nuts from getting lost inside the hollow stem of a plug spanner when they are being positioned in a cramped space R. Pask from Primrose Valley, Yorkshire, recommends blocking up the tommy bar hole with scrap balsa and then filling the rest of the tube with tissue paper cemented in place so that just sufficient space is left to get the nut in, flush with the end of the socket wrench. Hold the nut with a spot of oil or fuel and then get it started on the thread. Once it is biting, another socket wrench with a hollow inside can be used to tighten it right down.

Burnt fingers are a thing of the past for J. Lunt from Littleover Derby. His P.A.W. .19D ran very hot and the compression screw was very hard to undo, so by push fitting some old fuel tubing over the tommy bar he insulated it and increased the diameter, making it much easier to operate and stopping the heat getting through to his fingers.

After cutting a large slice out of his best wooden ruler G. Pearce decided to take the advice of all the model books and purchase a steel edge, for use as a cutting straight edge. It was found that a $\frac{1}{8}$ x 12 in. flat file was just the job for use as a straight edge when cutting balsa. If the safe edge is used for guiding the knife blade the remaining two large flat sides are of great use. If the teeth are not too rough they grip the balsa on one side and your fingers on the other so stopping any slippage that may take place with an ordinary ruler. Files of this size can be purchased for a few shillings at most shops.

G. Couper of Dundee also has finger troubles, but this time from the propellor. He uses a plastic '*Safeguard*' finger shield (no lady should be without one it says) to protect himself from those annoying cuts and nicks often acquired when starting an engine. These are used for pushing needles through material in dress-making and can be purchased for a few pence in Woolworths or dress-making shops (*see photo bottom left*).

To stop the fuel tubing coming off the spray bar when the engine is running P. Harfitt, from Loughborough, Leics, recommends the use of a retaining washer. With $\frac{1}{16}$ in. bore fuel tubing, a Meccano washer is slipped on to the tubing and when the tube is fixed to the spraybar it is pushed on to the spraybar clamping the fuel tubing in place.

From the Leicester M.A.C. newsletter the next two gadgets deal with tube bending and leadout wires for control line models. To bend brass tubing without kinking it, heat the area you wish to make the bend in over a gas flame until it turns cherry red. Then quickly immerse it in water, when it has cooled it will be soft and ductile. To re-harden after bending, re-heat to cherry red and allow it to cool normally. Getting buried leadout wires in solid wings for team racers and scale models neatly can be a problem for the novice. To succeed with a neat job first time mark the leadout position on the wing, then using a straight backed saw cut a slot to the depth the leadouts have to be sunk to. This should give you a $\frac{1}{16}$ in. wide slot. Now lay a length of 16 s.w.g. piano wire in the bottom of the slot and fill the remainder with balsa filler or plastic wood, leave until thoroughly dry then twist the protruding end of the piano wire with pliers to break the joint and pull it out. A perfect leadout tube will remain so that all you have to do to complete the job is to attach a piece of metal tube on the wing tip to act as a bearing.

Many uses have been published for old ball point pen refils. C. Watson from Penkridge, Staffs, recommends colouring clear dope with the ink. Cut the metal tip and ball off then wash the ink out into a small dope jar with some thinners. The thinners can then be used for thinning clear dope, result translucent coloured clear dope with no increase in weight.

D. S. George from Liskeard, Cornwall, uses the following method to put his S.M.A.E. number on his models. Make up a set of tinplate numbers and cement small pieces of $\frac{1}{8}$ in. square balsa on to the underside to raise the number off the surface to be lettered. Remove the centre wire from a number 2 Uno stencil then fill with Humbrol enamel paint. the paint is just of the right consistency for the stencil, so run the stencil around the outside of the letters and remove stencil until paint dries. When dry, fill in centre of the letter with a brush.

Cheap and easy to make hinges that can be used on elevators and other moving parts are always welcome to most modellers. A. Andrews from Mitcham, Surrey, uses split pins with piano wire hinges. Make the hinge from three $\frac{3}{64}$ x 1 in. split pins placed together sideways with a short length of 18 s.w.g. wire through the eyes to act as a pivot. Retain the pivot wire by putting a blob of solder on each end of it, don't worry if the solder spills on to the hinges as they are made from stainless steel and will not solder up. If the hinges are to be fitted to sheet control surfaces smear some Araldite on to the pins before they are pushed into the wood, with built up surfaces the pins are pushed through the leading or trailing edges and opened out. The size of split pin is not critical as long as wire of the right gauge can be obtained to act as a pivot.

PART TWO OF A NEW SERIES

Jagdstaffel Markings

by ALEX IMRIE

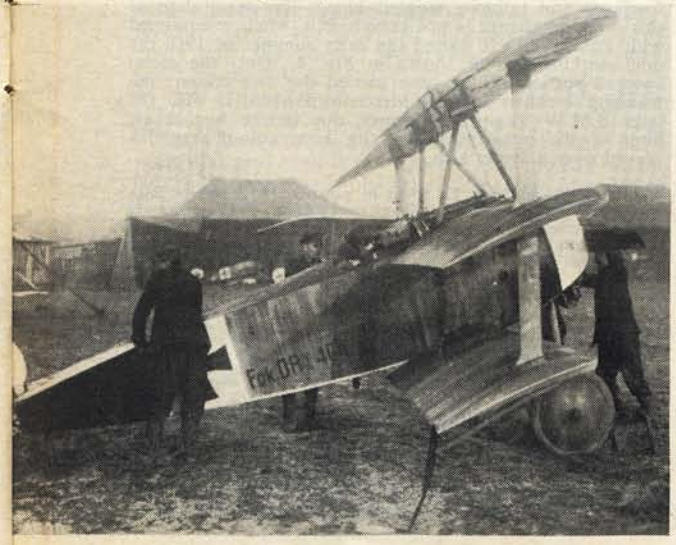
Jagdstaffel 12

Summer 1917-*Autumn* 1918

Albatros D III, D V, D Va, Fokker Dr I, D VII

AT THE BEGINNING of the period this unit had a mixed equipment of Albatros D III and D V. The unit marking consisted of white spinners, black rear fuselages and tail-units, a black band was also carried on fuselage nose immediately behind the spinner, these machines were finished in the normal factory scheme of varnished plywood fuselage, pale blue wing undersurfaces, early machines having dark olive green and mauve uppersurfaces, while the later aircraft had lozenge fabric covered wings. Many of the later aircraft retained the pale blue wing undersurface colour, and only the wing uppersurfaces had the lozenge printed fabric. Pilot identification was obtained by the usual fuselage symbols and examples are given in *Fig.* 4. (*Continued overleaf*).

Heading shows Fokker Dr. 1 and Albatros D Va lined up at Toulis near Laon early in March, 1918. Below, Hauptmann Ritter von Tutschek's Fokker Dr. 1 404/17 finished in standard factory markings except that rear fuselage and tailplane are painted black and motor cowling white. Bottom right view taken later shows thin white ground to fuselage markings and the rudder painted out making complete tail unit and rear fuselage black. Fig. 4 at right, shows the black tail units, white spinners (and black band behind) on the Albatros; Fokker Dr. 1 with white cowling; and D VII white nose cowls, fin and rudder with blue fuselage. All personal insignia black or white.



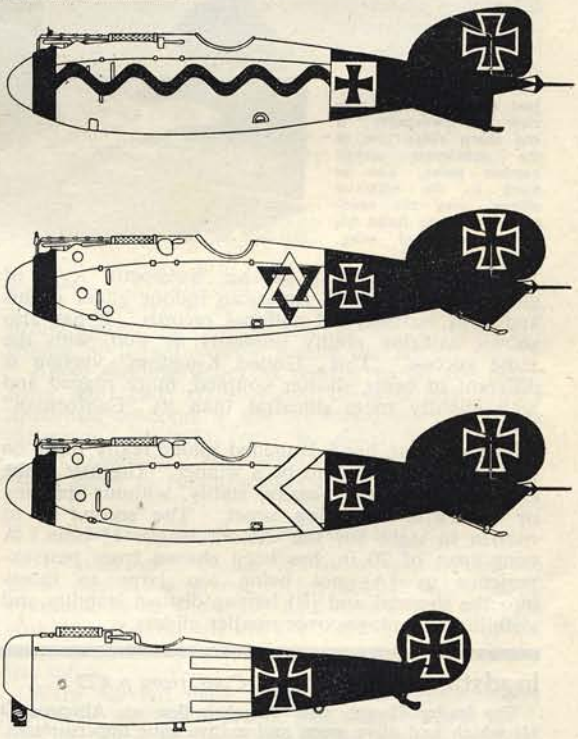
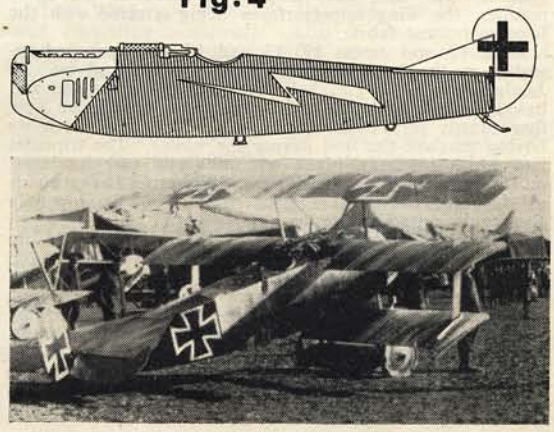


Fig. 4



When America's ace chuck glider flier called we set him to work on this outstanding feature with plans for . . . SWEEPETTE

by LEE HINES

Just evident in the plan view of "Sweepette" is the sharp ridge line at the maximum airfoil camber point. Lee at work in the editorial offices, uses the sandpaper block to finish his well constructed wing.

IN THE PAST FIVE YEARS the "Sweepette" type of glider has dominated American indoor glider events and held virtually all national records. It has also shown amazing ability outdoors as well, with the same success. This "United Kingdom" version is different in being shorter coupled, more rugged and with slightly more dihedral than its "Californian" mate.

The outdoor hand launched glider really must do only two things well to be a winner. The first is the ability to "thermal" easily, stably, without spinning or otherwise becoming upset. The second is to remain in sight for the desired length of time. A wing span of 20 in. has been chosen from past experience as (A) not being too large to throw into the thermal and (B) having distinct stability and visibility advantages over smaller gliders.

The tools required are: (1) Several sanding blocks of various shape and size; (2) Wet and dry paper in grades from 280 to 600; (3) Knives of various types (a favourite is a small Xacto using snapped-off injector-type razor blades); (4) A good razorplane (Lee's is a "little giant" brand), which is indispensable when shaping the wing and tailplane airfoils; (5) Measuring instruments (18 in. steel straight edge ruler and 1 in. micrometer are indispensable to any serious modeller); (6) A right angle triangle; (7) Flat smooth, working surface, preferably glass (with smooth edges); (8). An up-to-date diary record book; and (9) A good "eye" for errors (experience should provide this knack).

Supporting equipment includes white P.V.A. glue, a good, clear, non-pulling acetate glue and sanding sealer. P.V.A. glue is the best to secure the components to the fuselage as it doesn't dry out and crack like most acetates, and stands impact much better. The non-pulling acetate glue is used only as final skim over all joints as a base for the sealer, and to acquire a bit more strength as the forces incurred at launch are very high indeed.

After selecting the wood to suit a light or windy weather glider, lay out the wing so that the heavy end is toward the glide turn. This reduces trimming to a minimum. Carefully cut the outline and scribe the dihedral breaks accurately with a sharp knife. Be

Jagdstaffel Markings *Cont. from p.* 429

The leader Haupt. von Tutschek flew an Albatros D III which had olive green and mauve wing uppersurfaces, completely black fuselage, except for the cross outlines, black wheel covers and the usual black tail unit and white spinner. He later flew a D V marked in the same manner, the wing uppersurfaces being covered with the lozenge printed fabric.

Jasta 12 and Jastas 13, 15 and 19 were grouped together at the beginning of February, 1918 and became Jagdgeschwader 2. Tutschek was given this command and based himself with his old Jasta 12 at Toulis, he now flew mostly on Fokker Dr. I, a few of these machines having reached the unit during the winter. The triplanes had white cowlings, black tail units and rear fuselages, and initially were flown with the white cross backgrounds as delivered, these were later painted out leaving only the regulation white border.

Tutschek's triplane (Fok. Dr. I 404/17) carried no special markings (*see photos*), but bore two black and white leader's streamers attached to the trailing edge of the lower mainplane, these were about three feet long and on the ground they were normally stowed by wrapping them around the base of the interplane struts. Tutschek was shot down and killed in 404/17 on 15.3.18 and the command of Jagdgeschwader 2 was given to Obltnt. Berthold, and he introduced new markings throughout the formation.

Jasta 12 retained their white noses, but now had the fuselages and tailunits painted blue. The exact date of this marking change is not known, but, when re-equipped with Fokker D VII during the early summer of 1918 the unit marking was as shown in *Fig.* 4. Only the metal covered portion of the nose carried the unit colour, the machine shown is an early Mercedes powered D VII. On later B.M.W. engined machines, due to the further aft limit of the metal panelling, the Jasta colour was displayed over a larger area.

Fokker D VII of Jasta 12 taken in summer 1918. White nose cowlings, blue fuselage and tail unit are evident. Fuselage crosses are not carried, machine in foreground having two white fuselage bands. White tail of another machine just in view—this has a single broad white band only around fuselage. Pilots of these aircraft are not identified.

READY—STEADY—GO ! The grip is important—engage the forefinger as at left. Swing the arm back for a full throw, make javelin launch style paces forward and with overarm action follow through the launch with the model in a banked attitude.

gentle at the edges though. Sand a slight amount of washout into bottom of each tip, then sand the entire bottom smooth with 400 then 600 wet and dry paper on a block. Upsweep may be used to increase climb if so desired, but .03 in. should be more than enough.

Shaping the top may look formidable at first introduction, but the razor plane is a wonderful aid to confident, accurate execution of the chore. From the beginning one must remember that the wing thins in proportion to the chord as you work toward the tips. Reference to the centre airfoil section on the plan, measuring with rule, micrometer and good old "eyeball" will show if you are on the right "line" or not. When the top has been block-sanded so it measures close, the back is flat enough, and the high point curves proportional, sand with 600 W/D paper (by hand, not block) to remove sharpness from high point leaving a ridge as per plan. This final sanding removes fuzz and light scratches. The ridge should be virtually not existent within an inch on each tip.

Cut the wing at the break marks and sand the dihedral angles with a flat sanding block (about 320 paper). The designer holds the panel in his left hand, and moves the block carefully across at an angle and tries it with the adjacent panel until he gets a flush contact at the correct dimension. Others jig the panel at the correct height at the edge of their building board and sand it this way, but the reader may have his own method which is better for him.

Before gluing the panels together, poke several pin holes in the "dihedralled" ends of the four panels. This effectively strengthens the joints as "gussets" are formed by the glue that squeezes into the artificially enlarged pores. Now secure the tip dihedral breaks with P.V.A. glue, check dimensions and allow to dry ½ hour, sand and secure the centre break in the same manner.

Shape and sand the tailplane using the razor plane then 400 and 600 W/D paper. Cut the tail in the centre and re-glue with anhedral as per plan, using P.V.A. glue. The rudder needs attention to the grain angle (see plan) and airfoil symmetry. Rudder shaping and smoothing is aided by leaving some stock to hang on to, just below mounting line.

The fuselage is made from strong balsa, with basswood or spruce as possible alternatives. Weight will be greatly increased using hardwood, but some modellers prefer them. Spruce tends to be too flexible, and in fact whips on a hard launch, which naturally kills the climb.

Use the fuselage bottom as a datum surface to measure incidence settings and section depths at various stations. Bevel wing mount area to match dihedral as shown on plan, and carefully shape elevator mount area to match elevator airfoil.

Shape the finger-grip to suit the side of the fuselage you throw from. Although the designer throws right-handed, he uses the fingergrip on the left. As he throws very sidearm, a right bank still occurs, and although this is best for him, everyone must try variations to find out what works best.

Glue all components to fuselage using P.V.A. Remember to shift the wing about .06 to left of centre and "skew" left tip back so that centre break appears about .015 inches out of parallel with fuselage. This is an invaluable built-in trim technique which saves lots of bending and tip weight which would be necessary otherwise. It also insures against right turning tendencies that sometimes are built-in when a glider is built "straight".

Rudder alignment must be straight or slight left when viewed from the front. The tail may have a small amount of left tilt, but *no* right whatever if the tail mount is shaped correctly the elevator will be flat bottomed when attached.

Now is the time to apply glue skins to all joints. Use P.V.A. glue first, allow to dry thoroughly, then use the non-pulling acetate glue.

Form the finger grip radius with sandpaper around a dowel, to a comfortable fit for the maximum control . Arrange it so the index finger is pressing firmly against the fuselage side, as this decreases any chance of lateral wobble during the launch.

Apply sanding sealer as desired to fill the grain. Sand after each coat. Good finish is not terribly important outdoors as the thermal doesn't know the difference. Visibility may be aided though, by a bright colouring. For added grip apply 280 or 320 W/D paper to fuselage sides and fingertip radius.

Trimming and Launching

To assist streamlining imbed some lead in the nose—about 2-4 grams. This should allow some Plasticine to be added for final trim and to act as a cushion. Balance should be 55-57 per cent of the wing chord from the leading edge. Start nose-heavy for safety.

Warp the left main panel so that approximately .06-.09 in. wash-in appears. The slight wash-in (positive incidence) of the glide-side main panel prevents spinning-in from a poor launch or in a violent thermal.

This wing-type demands that the tips have washout (negative-incidence). This is mostly imparted automatically from the "toe-in" at the tip breaks, and partly from the sanding of the bottom as described earlier.

By spending at least 15 minutes hand-gliding an outdoor glider as follows, the initial throw should be close enough to final trim that nothing drastic happens. First, make glides from shoulder heights to check turn, and stall or dive tendencies. Usually, the only trim necessary is wing tip weight, left rudder tab and left roll for the tail. Now hand-glide more firmly to the left and up. Some practice will show you how. Sixty feet may be reached by this method, which will allow observation of the nose-up tendency, glide circle and stall recovery, as if it were descending from a full launch. If you believe you have it right now, here is a run-through of the proper *hard*-handglide pattern. Glider climbs slightly while turn-

SWEEPETTE XX Mk IV

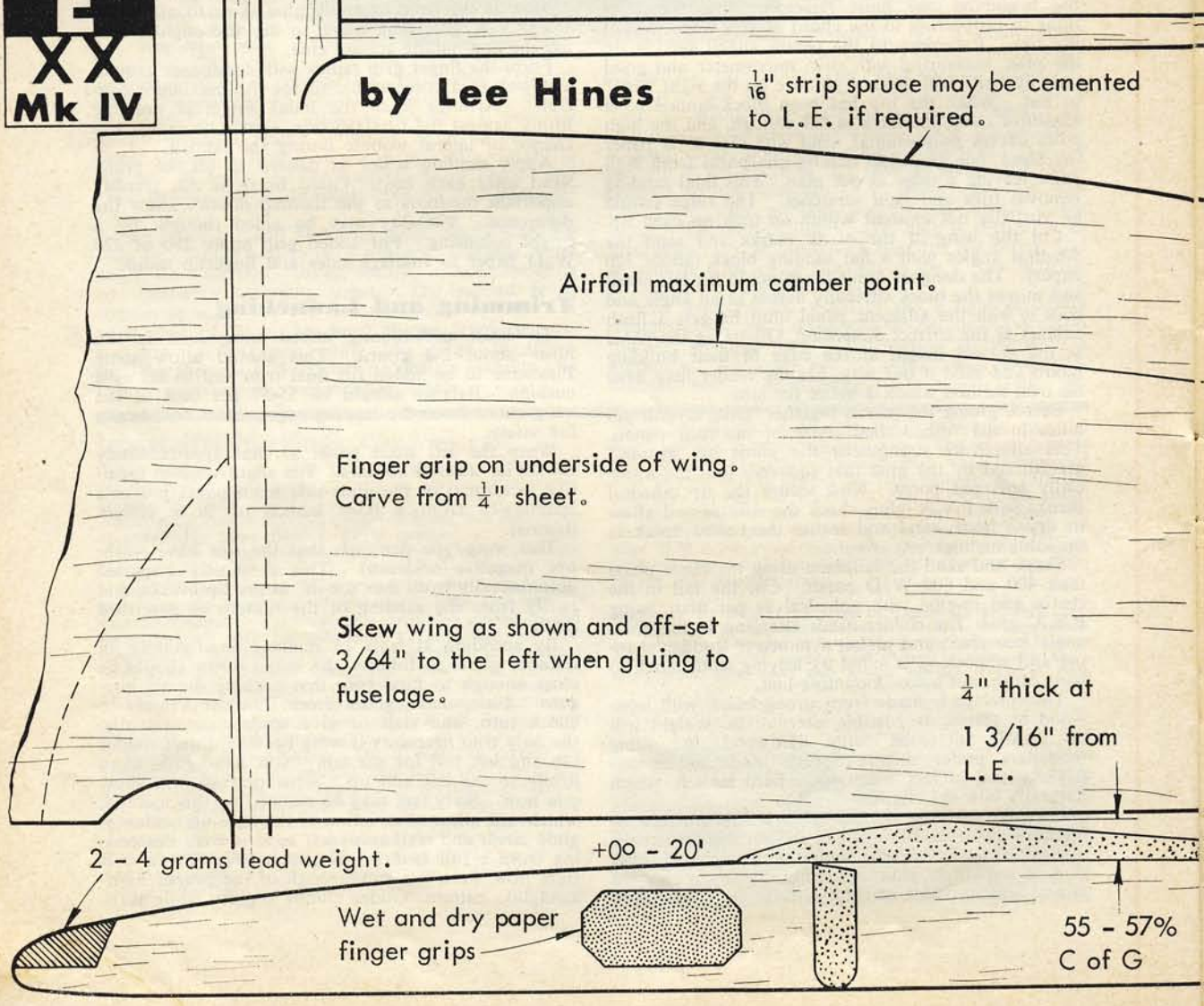
ing in a left bank, then, as speed falls, drops its nose, and swoops left, losing some altitude as it slows to normal glide speed and turn. Because the transition to the left is not perfect it is safe to assume that when launched hard to the right, transition will occur.

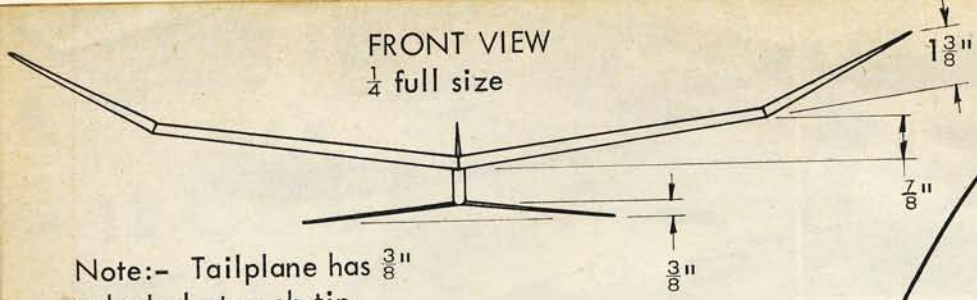
The left-turning effect of the wing shift with skew elevator bending and tilt and left rudder are brought to balance by the built-in incidence and wash-in of the left main panel to achieve the safest, most forgiving trim. Sweepettes of all sizes prove best when trimmed this way.

"Thermaling" is the primary objective of outdoor glider flying, and generally, the highest launches on the field are not essential to win. Launch accuracy is more important than altitude, as only six attempts are allowed to achieve three good flights and messing up just one launch naturally lowers your chances. Lee's technique is to merely keep his arm warm, pick his time and only throw about 85 per cent of full power *all day*. If the thermal is there, usually another 10 ft. of altitude doesn't matter, and as launching areas are sometimes not ideal running surfaces, the chance of stumbling is greater at or near full power, as you naturally run harder to get that extra push. Another point against hard launches is that throwing hard usually saps your arm power so that you may not have any left for your last flights.

A simple way to added height is to squeeze the glider tightly and stretch your fingers to achieve a

by Lee Hines





Note:- Tailplane has 3/8" anhedral at each tip.

catapult-like assistance. That is why the no-slip sandpaper grips were glued on!

The run should be slightly to the right of the wind, and the roll-out should occur so that the glide begins 90 deg. to 150 deg. left of the wind direction. This allows the glider to be aided into proper left glide turn by the wind. Notice when you launch in thermals how the roll-out is actually up! And altitude is much better than last time, when you hit a "downer"! Funny, *no?* **no!**

As mentioned earlier, experiment with various configurations, and change any features you think undesirable. This is the only path to progress. And while you're at it, if you stumble across a good glider D-T arrangement, let Lee know, will you please? He's lost too many as it is, and his good wood stock is really low.

AEROMODELLER VISITS AN AIR MUSEUM

Part 5 — The College of Aeronautics, Cranfield

THIS MONTH WE make a departure from our usual range of visits to historic aviation collections and deal with a display that is *not* generally open to the public. It is the "Component and Aircraft Demonstration Laboratory" in the Department of Aircraft Design, at the College of Aeronautics, Cranfield. We were able to take these photographs and examine the historic exhibits during their open day on Friday, June 25th, this year and were particularly pleased to note a few additions since the last open day. The airframes are used to demonstrate various fabrication processes used in detail design and some are employed for ground tests. Since the students at the College would particularly benefit from study of a wide range of structures, the aircraft collection has become extremely diverse and includes some unusual prototypes. In fact it could be said that practically every one of the exhibits has some unusual feature and only the "conventional" types such as the Chance-Vought Corsair IV have been disposed of in recent years. This was taken over by the Historic Aircraft Preservation Society and can now be seen in the Fleet Air Arm Museum as mentioned in our July issue.

Not all of the exhibits are complete, the sections displayed are the more interesting parts of th aircraft they represent. For example, the nose unit of a Bristol Beaufighter, the tail of a Supermarine Swift and another of the Canadian Sabre IV also the partially completed prototype airframes for the Supermarine S545 and Hawker P 1121. Only direct fighter relic from the war period in any state of completion is an example of the Messerschmitt Me 163 which has at some time been repainted from its original colouring but is just the same possibly the most realistically marked of the several examples preserved in this country. It contrasts with the Boulton-Paul BP 111 Delta in bright yellow finish held suspended on jacks no doubt for instruction in undercarriage operation. This is opposite an unusual but unsuccessful prototype of the Westland Wyvern with the Rolls Royce Eagle engine driving contra rotating props. An Avro-Canada CF 100 carrying N.A.T.O. camouflage almost dwarfs the other representative fighters for size including the Canadair Sabre which is adjacent. The Hawker Tempest Mk. 11 is in a good state of preservation and must be quite a rare bird these days, it faces a Hawker Seahawk representing the Royal Navy. Perhaps the most unusual of all the airframes is the experimental Saunders-Roe flying boat fighter, a type which still bears its manufacturer's prototype registration and never seems to have been blessed with military roundels. The bulk of the hull is most impressive, and must be a classic example for study of induced and profile drag. Rotary wing examples are the German Focke-Achgelis single seater and an early Sikorsky R-4 which is in itself a fascinating piece of history which we hope will always be safely preserved. There are in addition numerous examples of aircraft structures and components such as undercarriage units, sections of wings and control mechanisms, castings and forgings.

Since the collection is not generally open to the public we regret that we cannot give further details but suggest that readers anxious to view the interior of building 11 at Cranfield should wait the opportunity of the next open day, possibly in June, 1966, with maybe a TSR-2 to view.

Complete Aircraft on View during our visit—Saunders Roe Flying-boat-Fighter G-12-1 (Anodic Grey, Boulton-Paul BP 111 experimental delta VT 935 (Gloss Yellow & Black), Supermarine S.545 Prototype (Anodic Grey & Green), Westland Wyvern (RR-Eagle) 137, Hawker Seahawk (Dk. Grey & White) WM 994, Avro Canada CF100 (Dk. Green/Dk. Grey & Med. Grey) 18393, Canadair Sabre (Anodic Grey) 219, Messerschmitt Me. 163 (Dk. Green/Med. Green & Sky) 191659, Hawker Tempest Mk. 2 (Dk. Green/Dk. Grey & Med. Grey) LA 607, Sikorsky R.4 Helicopter, Focke-Achgelis rotor-kite, plus many component units.

Panorama at top of page embraces the collection of airframes at the College, protected by air conditioned hangar and well treated by aviation engineers, these historic machines are perhaps the best used of all preserved aircraft in Great Britain.

One of several Me 163 rocket fighters brought back to this country after the war; this airframe has been restored in authentic colouring and exemplifies first serious attempts at rocket propelled flights. Bottom photographs illustrate the almost conventional Seahawk, an example of the bifurcated duct engine and the equally unorthodox Saro flying boat fighter which for the purpose of the open day was placed out of doors to allow more room in the hangar.

ROUND THE RALLIES

Hayes Free Flight Gala

Run on June 27th at Chobham Common the 1965 Hayes Free Flight gala was blessed with good weather, but not consistent conditions as many of the accepted experts found out to their cost when hunting for the max's. ½**A Power** and **Vintage** were poorly supported but the glider event helped to swell the takings thus making decent prizes for the better supported events. Jim Baguley planned to have the Glider fly off last, to get some still air, but this misfired and there was lift aplenty about, enough to lose winner J. Cartwright's model O.O.S. at no less than 16:35! He was one of the contestants who did not have to re-enter (one re-entry was allowed after one bad flight). Power fly off was in almost still air and recently married Vic Jays came home the winner by 1:19 advantage over that travelling man J. O'Donnell. Fly-off results: **Rubber:** 1, R. Bailey (Surbiton) 11:40; 2, F. Boxall (Brighton) 8:45; 3, B. Cox (R.A.F.M.A.A.) 6:58. **Glider:** 1, J. Cartwright (Bristol and West) 16:35; 2, C. Foss (Brighton) 9:22; 3, D. Coffin (Southampton) 4:33; **Power:** 1, V. Jays (Surbiton) 4:29; 2, J. O'Donnell (Whitefield) 3:10; 3, D. Posner (Surbiton) 2:53. Other events: ½**A Power:** 1, J. Boxall (Lee Bees) 8:18; 2, M. Brown (Maidenhead) 7:49; 3, G. Cornell (Croydon) 7:43. **Vintage:** 1, A. Wells (Hornchurch) 7:46; 2, M. Beach, 5:31; 3, N. White (South Bristol) 3:30.

Hayes Control Line Rally

Also held on June 27th the Hayes control line rally at Charville Lane had a fair entry and some really classic combat flying. **Speed** entries were not too good, missing the usual contingent from North Sheffield. Flights were made in all five classes and a handicap event. John Hall from West Essex was outright winner with his Carter tuned Dooling .29 powered model.

Combat was more open than usual with most of the top Northwood men taking a day off on a trip to the Norfolk Broads, yes boating! But we don't think the results would have changed even if they had been there. Forty-six entries were accepted and most of the heats were so so, but not the final. Equal third places were taken by M. Davies (Outlaws) and A. Dell (Feltham/Hayes). Mike Davies had his usual fleet of top notch models there and we are pleased to say that Mike's model will soon be an A.P.S. plan to match the other great combat designs in our range. In the final between Ray Sibbald (Sidcup) and Richard Wilkins (Northwood/Sidcup) Sibbald was first away and Wilkins was delayed on the ground losing one point, Sibbald then took a cut followed by two minutes of fabulous combat with both models attacking each other every second. Wilkins then hit the ground and was off again quickly but with a popping motor run so he ditched to correct the setting. Sibbald then took two more cuts against Wilkins who retaliated with a small snip at Sibbald's streamer. Sibbald then hit the ground with only 40 seconds to go and he could have stayed down and still have won, but no, he went up again losing one point on the ground and in the 25 seconds left Wilkin's model swooped in and made three perfect cuts to finish up the winner by four cuts to three. All the contestants and spectators were unanimous in agreeing that it was the best combat bout, let alone final, they had ever seen.

Burtonwood Criterium

Held at R.A.F. Burtonwood (Warrington) and run as one of the S.M.A.E. centralised C/L events by the N. Western Area this first "Criterium" was a great success. Organisation was excellent in all respects and the N.W. Area must be congratulated for their efforts. Alternative team race circles were laid out inside the hangars in case of very bad weather; warning discs were used in the team race circles, and the results were typed out on the spot 'and' duplicated so that each contestant could take home all the details with him. This meeting also incorporated **Rat Racing** which attracted 20 entries of whom only seven managed to record a time. Fastest heat was by D. Sizmur (Northwood) with a sheet wing profile fuselage and sidewinder engine. Ray Meekins' (Delta) had a real beauty that was nicer looking than most team racers (see photo). Ray also used a "hot glove" starting technique with a box of four 1,000 DEAC's strapped to the pitman's wrist. The power was stepped down to a 2 volts, 4 amps. In the final Meekins' model ran in, then Bradley's model ran into it and broke its fuselage in half. Then Jolley's ran in and a helpful type went into the circle to retrieve it so completing disqualification of all finalists! Jolley was rated the winner. **F.A.I. team racing** was of a good standard with most pilots watching the warning signals by their pit sectors. Fastest heat went to Place/Haworth (Wharfedale) at 4:44 in a one stop race. Second fastest were their clubmates Hudson/Davy at 4:48.5 and Turner/Hughes third with 4:59 only one second ahead of Franklin/Ives from Wanstead. In the final, Place ran in at the start then retrieved and restarted to join the others. Hudson was the fastest but low on laps with Turner the slowest. Place's model ran in again on the second stop Turner's motor cut at release on the second stop and was restarted one lap later. The race proceeded at a fast pace with Place retiring, and Davy getting green and yellow signals for leading his lines over Hughes before his model had overtaken. Hudson/Davy won at 10:40.6 with Turner/Hughes in second place at 11:11. **Class B team racing** was poorly supported but had a very good final. Skitt/Hardcastle (Wolves) came in first with their Eta 29 powered cream and natural wood finish racer at 9:10. Laurie/Wallace were second with 10:06. Dugmore/Bell were disqualified when the silencer fell off their Eta 29 model. The difference was remarkable, an increase in noise being accompanied by a 4 m.p.h. speed increase the model doing about 115 on straight fuel with a new motor. Speed had poor support and was run as a handicap event. Winner, J. Penton (Sheffield) achieved 75 per cent of the current record with 77.9 m.p.h. using a 1.5 c.c. engine. Second placer M. J. Smith (N. Sheffield) also used a 1.5 c.c. close on the winner's heels at 77.4 m.p.h. Brian Jackson came in third with a 2.5 c.c. doing 102.6 m.p.h., only three 5 c.c. engines recorded a time and as Ivor Roffey bounced his McCoy 60 in a flash of flame as the pan sparked and the fuel bladder burst, no 10 c.c. model recorded a time. Criterium team member J. Mannall (Lincoln) won **Stunt** with his "Crusader" at 1,097 pts. scoring mainly on his circular manoeuvres. Harold Dowbekin (Horwich) had an off day and returned 1,063 pts. for second. E. Brownlow (Horwich) was third with 1,004 pts. In general the standard of flying was very good with the usual top men slightly off form and the also-rans on their best form. **Novice stunt**, a new event had a simplified schedule with all the square manoeuvres deleted and the rest re-factured for a maximum score of 1,000. E. Herbert (Blackburn) won with 584 pts. flying a Lew McFarland designed "Dolphin", powered by a Fox 29 with an Enya silencer. M. Gagg (Handsworth) was second with 464 pts., and M. Scotto (Bilston) third with 124. **Combat** was running all day and both A and B events were staged. Class B was rather ragged with little to commend it, mainly due to a lack of practice with the big models and glow engines. Kilted Scotsman A. Oakley (Mad Mac) flew a much modified A.P.S. "Peacemaker" with an Oliver Tiger Major 3.5 c.c. engine, against Doug Sizmur (Northwood) in the final. Class A was won by Pete Smith of Outlaws with Dunker of Mad Mac second. In the final Smith soon lost all his streamer to Dunker, who then crashed on a bunt. Smith then took a cut off Dunker, crashed, was soon up again and took another cut with Dunker crashing for the last and final time. On his way to the final Smith removed Stoo Holland and R. Wilson pushed Doug Sizmur out in the first round. ½**A team racing** resulted in another win for Turner/Hughes (Wharfedale) in a fated final. After the start Turner/Hughes took off and caught Davy/Hudson's lines. As the marshal went in to retrieve the models, his head caught the lines of the Rudd/Balch model, making for a hard prang. After all the teams had repaired their models the final was re-run. All the models were quick away with Turner/Hughes the fastest, Rudd/Balch lost a wheel on the first stop and this was hunted for and replaced. Turner's model then ran in but he was able to reach it by lying flat on his stomach and stretching into the circle. He then ran halfway around the circle to get the best starting position and went on to win. Rudd's model ran in, and he was disqualified on the second

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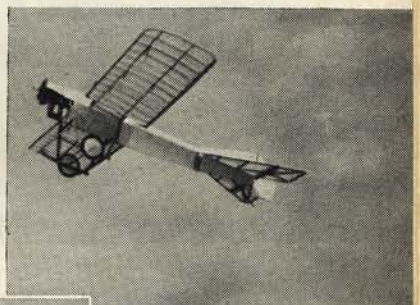

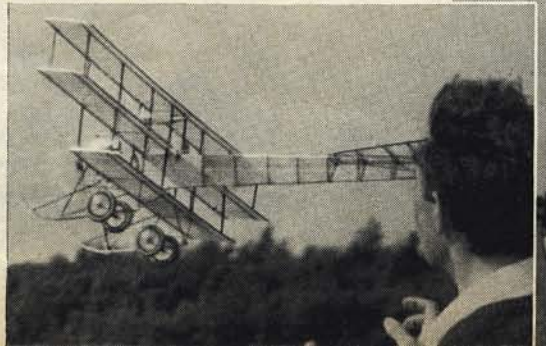

MAG MEN WINNERS at Old Warden were D. Jackson, seen launching his detailed Amco .87 powered Avro Triplane on a test flight. At right, S. B. Manns of St. Albans launches Merlin powered Blackburn monoplane for realistic flight at very low speed.

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pit stop. A very good rally terminated with issue of duplicated results and all participants awaiting announcement of the next Burtonwood date.

Scale at Old Warden

Second contest for **"Magnificent Men . . ."** mode's was held at The Shuttleworth Collection airfield, Old Warden, Beds, on June 27th. Nine finalists presented outstanding entries and the winner chose the involved "Avro Mk. 4 Triplane" as his subject. D. Jackson of Hayfield, nr. Stockport was still completing the Avro as the contest commenced. First tests showed little inclination to remain straight and level but by cleverly filling in the flying wires in outer bays to get dihedral effect, the Avro was made to fly most realistically. S. B. Manns placed 2nd with a "Blackburn 1912 Mono" that also needed lots of persuasion but eventually rewarded the crowd with an orbit of the field at low altitude. In 3rd place Bunny Newman deserves extra credit for persistence in repairing the severed longerons of his "Vickers 22 Bleriot". After splicing the tail unit back in place it flew better than ever before! Fourth man was Peter Dunham flying yet another type the "Deperdussin". This 56 in. model gained top scale points having genuine brass tank and instrument cases, and a real fur collar for the pilot. However, scale speed at all of 5 m.p.h. was not enough to combat the breeze.

Not many scale rallies can boast opening by flying demonstration of a Bristol F2b Fighter and close by aerobatics of a Twin-Wasp overpowered Boeing-Stearman PT-17. (Surely the noisiest private aircraft in Britain?)

S.M.A.E., F.A.I. Gala

Held at R.A.F. Hemswell on July 4th the all F.A.I. Gala included the **free flight scale** event removed from the Nationals programme. Winner was T. Manley (Hawker-Blackburn) flying his impressive "Bistol Fighter" to score 533 pts. In second place J. Palmer (Wanstead) flew an A.P.S. "Sopwith Triplane" with club mate R. Jarvis coming third with a "Sopwith Snipe". Unfortunately three entrants did not produce any documentation at all so they had to be disqualified. When will the scale-men learn the rules? Full set from the S.M.A.E. costs 1/6d. In **control line scale** P. Ball won with his "Grumman Gulfhawk". Stan Perry flew his "Hawker Henley" to second place and R. Ivans made third with his "Hampden" bomber. The AEROMODELLER Trophy for **Multi Radio control** was won by Paul Rogers (H. Wycombe) flying his O.D. shoulder wing blue and white model. It has an 18 per cent symmetrical section with a twin glow plugged Super Tigre 56 for power, F & M 10 radio gear and Bonner Servos. In second place Frank Knowles flew his O/D "Andromeda" with Merco .61 and F & M two stick propo. radio. Rogers Snr., had to judge the event as no official organisers were present and no spectacular flying was in evidence another query—where 'are' the R/C organisers?? Bickerstaffe was unfortunate to crash in a horizontal eight during the contest. **F.A.I. team racing** was run in the main by Kevin Lindsey who gave an amusing commentary over the P.A. system. Turner/Hughes came in first at 11:18 after a fastest qualifying heat of 4:54 flying their blue and black Eta powered model. Eta engine designer Ken Bedford came second, in the Allan/Bedford team with a fastest heat of 5:06 and a final of 11:54. Third place went to Green/Knight also using an Eta, but this time in a low aspect ratio model, their fastest heat was one second slower that Allan/Bedford at 5:07, with 12:35 in the final after a long delay starting the motor. **Stunt** was clearly won by Dave Day with a score of 2,000 pts. over J. Mannall who came second with 1,724 flying his "Crusader" kit model. In all only seven flew in stunt. Mick Reeves came third and broke two mode's in the process including his nice "Mew Gull" that he had already repaired from the Nationals. **Glider** was a tacticians event and many of the well known modellers could be seen waiting down wind of those who towed up for a lucky patch of lift. Winner Gareth Skinner flew an A.P.S. Lucifer with 3 in. lopped off the moment arm and a strengthened rear end. Being F.A.I. five rounds were flown and the glider winner made 14:30. Hot on his heels came Al Wisher with 14:10 with A. Wells third at 14:06, all very close. **Power** was a win for Ray Monks flying his OD model. John West filled second place with 12:46, whilst new man Roger Baggot made third with a 57 in. span O.D. model using a Russell silenced Cox TD 15. "Mastermodels" man, L. Barr topped **rubber** at 13:42 with Dave Hipperson not far behind at 13:17. Reg Lennox who usually only flies open rubber had a hybrid model with '56 vintage wings spanning 58 in. that incorporated an 'overcarriage', i.e., upside down U/C leg to stop the wings breaking if the model blows over on landing. Sounds like a useful device for lightweights.

Clwyd 1965

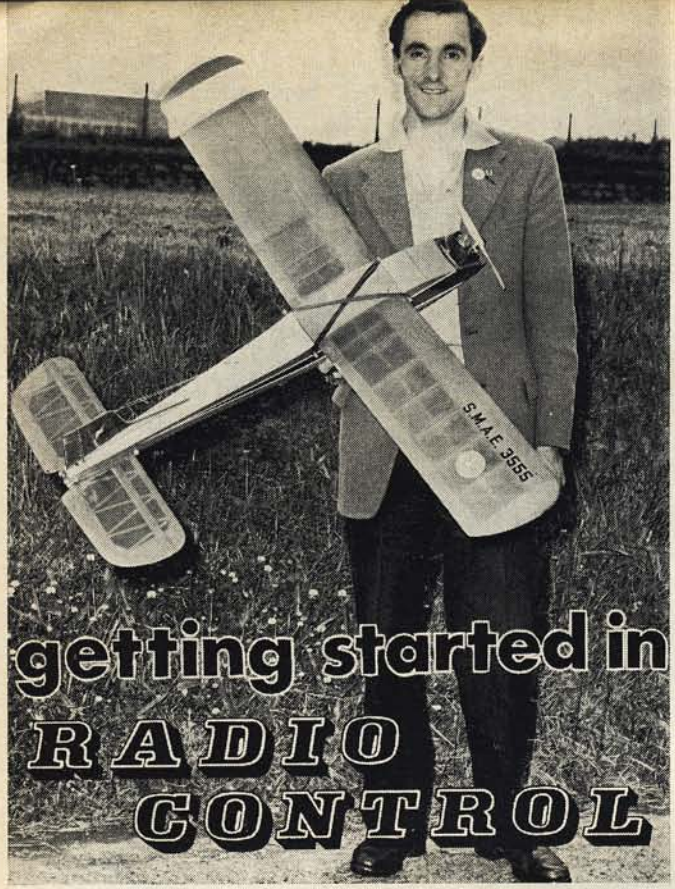
Chester M.F.C. did not have a very good start to their Clwyd Slope Soaring meeting on the 11th July, with rain and strong winds but conditions improved.

R/C was divided into two classes, **Single Surface** and **Multi** each having two rounds. In the first round of the Single Surface event all competitors had a hard job staying up for the nominated time of three minutes, models not being trimmed for the conditions. For the second round flown later in the day conditions improved slightly but P. J. Teakle (Weston) could not maintain his lead against the consistent flying of P. Dowham (Enfield) who won with an aggregate error of 67 seconds. Third was "that man" Eric Clutton (Five towns). The Multi Event produced all the excitement of the day with R. Donaghue executing the long awaited 'bunt' using Space Control in a model that looked more like a power stunter, but neat loops by A. L. Gwynn (Larcas) made him a clear leader after the first round.

There was good flying in the **Free Classes.** Once again A. Moss of Whitefield took home the Gosling Trophy. A precedent was created in the Junior Class by Miss Hannay who won the event; the ladies having the upper hand in this class throughout the day.

OPPOSITE: (1) Third in Rubber at F.A.I. Gala, Reg Lennox (Birmingham), with vintage model, wings '56, tail '58. Note 'overcarriage' to protect wings in event of model being blown over. (2) Glider winner at F.A.I. Gala, Gareth Skinner (Cambridge), flew APS "Lucifer" with shortened (4 in. off) and strengthened fuselage. (3) Ray Monks (Birmingham), makes a comeback with his Power win at the S.M.A.E., F.A.I. Gala. Cox-15 special in O/D model. Thread turbulator on wing L.E., auto incidence tailplane. (4) Class B Combat winner at Burtonwood. True Scot A. Aokley (Mad MAC) flew a much modified APS "Peacemaker" with Oliver Tiger Major and external bellcrank. Developed Edmonds Reguflo fuel tank used. (5) Aeromodeller Trophy winner Paul Rogers (High Wycombe), at F.A.I. Gala with charming fiancée Viviann Head who added up all the scores. Paul's father was a judge, making it a Rogers' event ! O.D. shoulder wing model with twin plugged Super Tigre 56 and F & M 10 radio gear. Home-made silencer. (6) Pete Smith, left (Outlaws), combat winner at Burtonwood with his pit man ; model is a "Dominator" by Mike Davies, soon to be in APS Oliver Tigre 2.5 with a Webra silencer. (7) John Hall's (West Essex) winning speed model at Hayes, made 148 m.p.h. on two lines. Carter tuned Dooling .29 with Record 7 x 8 propeller. Alloy leading edge on wing. Silencer is in fact an extended exhaust duct attached to top half of model. (8) J. Mannal (Lincoln), 1st at Burtonwood and 2nd at the F.A.I. Gala, is Stunt. He flies a Merco .35 Mercury "Crusader" very effectively. Is in team for Criterium of Aces. (9) Close-up of the Place/Howarth (Wharfedale) F.A.I. racer seen at F.A.I. Gala at Burtonwood, placed 3rd at latter. Note renewable Jones/Burke U/C Allen key brazed to compression screw and Eta silencer which have centres removed, front blanked off and the rear end capped with severed outlet holes drilled radially around the edge. (10) Ray Meekins' (Delta's) elegant Rat Racer seen at Burtonwood. Ray placed second with an older model. Racer shown has Fox 36X B.B. engine, Veco spinner, 8 x 8 Top Flite Power Propeller and large bore fuel tank filler. Letraset letters and white finish. (11) Very different Supermarine S-5 type stunter by C. Elliot (C.M.), seen at Burtonwood, not entered Fox .40 is enclosed in cheek, also home-made silencer. Wheels buried in "floats". (12) Novice stunt winner at Burtonwood, Eric Herbert (C.M.), flew a Lew McFarland Dolphin model, kitted by Jetco, to top place. Fox 29 with Enya silencer, finished on silver and black.

BELOW: Multi-channel winner at Clwyd being launched by A. Hulme for A. L. Gwynn is an Engel kit with Metz 3 + 2 channel R/C on rudder/elevator. Beautifully finished model, made excellent loops, weighs 4½ lb., had only flown with rudder before contest. Bottom pic show B. Downham of Enfield, who won single channel at Clwyd, collecting Tankard from H. F. Wilde who demonstrated single channel tail-less soarer, using his ancient Clwyd Queen.



getting started in RADIO CONTROL

Author D. S. George, many times contributor to our columns with photographs and gadgets, ventures into this full-scale article feeling the challenge of Eric Clutton's approach to Single Channel Radio Control as being a trifle too unorthodox. Quarter scale plans opposite enable one to make this simple design.

FOLLOWING Eric Clutton's interesting and amusing approach to small field R/C flying which drew more reader reaction than any other R/C design we have ever published here is another modeller's experience of single channel R/C flying from a slightly different angle.

D. S. George is, of necessity, a lone wolf flyer living far from any organized modelling activity in Cornwall; consequently everything he tackles must be based on what he can read in the aeromodelling press (AEROMODELLER of course!), any odd tips he picks up from itinerant modellers, and a dash of personal trial and error. As far as flying grounds are concerned he is at least fortunate in having plenty of open moorland within easy reach.

After many years of free flight and control line he finally set to to fly R/C, in nearly as fool-proof manner as possible. With no one to assist in any way, it had to be a case of self-help, so it was necessary to choose the right equipment from the start. The radio being the most expensive item it obviously had to be something durable and which would go in a variety of aircraft for future use. After much deliberation the choice was the R.C.S. Guidance System. This proved very easy to fit in a model and required no specialised radio knowledge. The only addition which found to be a great help for reliability was the use of DEACs instead of dry batteries for the receiver.

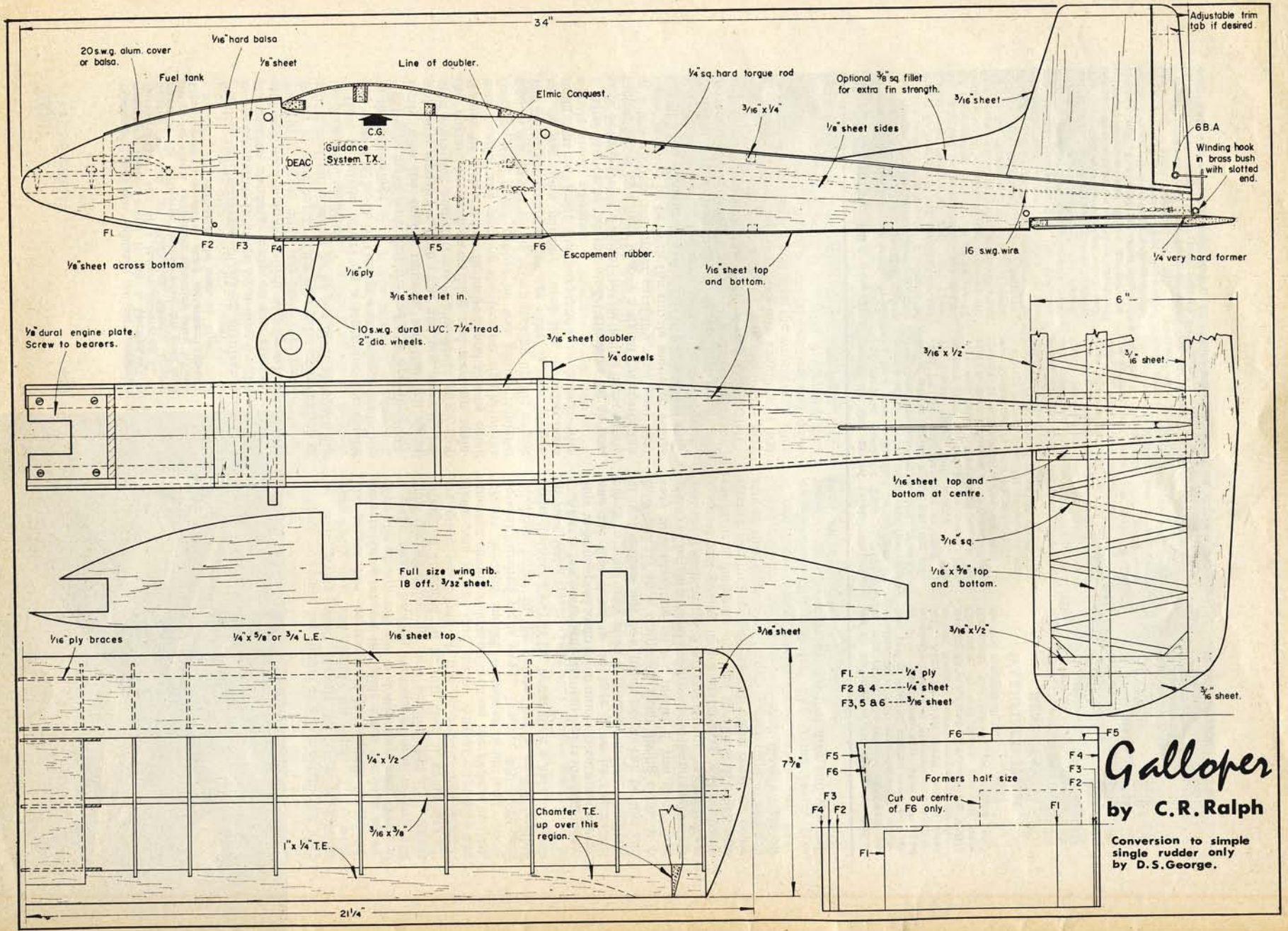
Now came the choice of the first model, and looking at practically every kit on the market and most plans available there were always snags or weaknesses evident. Something not too small, to have a reasonable glide and not so large as to be expensive to build and maintain after crash damage was required. Above all, it had to be able to stand up to violent crashes while learning to fly, and also capable of flying in a decent strength wind. Final choice was the *Galloper* design which was shown ¼ size in the March 1963 issue of *Radio Control Models & Electronics,* but was scaled up and a rudder only model produced. (The original was for Galloping Ghost control). The only modifications necessary were to omit the battery box, fit a $\frac{3}{16}$ in. solid sheet fin to stand up to ground bouncing inevitable in early flights, and to incorporate the original elevators as part of the tailplane outline. The Guidance System receiver and DEACs fit all together in the space under the wing with the Conquest escapement behind, and let's face it, the very small model does present installation difficulties in one's first R/C model besides being quite a handful to fly single handed. One must stress here that in the author's view there is nothing to beat this as a first R/C model. Powered by an A.M. 15 diesel it has loads of power, and with the wing nylon covered it is virtually indestructible. With as near a perfect set-up as one could wish for, reliable crashproof radio, reliable and simple power plant (*no* glow troubles), and a plane of reasonable size both from flying and visibility point of view, the author was ready to go flying. Radio checks showed everything O.K. with engine running or stopped so

. . . Part 12 contributed by D. S. George

the glide was checked which appeared pretty good. Next step was to start up and try a power launch, and away went *Galloper* literally galloping up and down in a series of sickening stalls, the engine finally cutting at the top of one, and as far as one could see the radio control just didn't exist. Down she plunged smack into the ground and cartwheeled from one wing tip to the other. Apart from a slightly bent needle valve there was no damage. Now, how many kit models or so-called beginners' plans would have lasted that long?* Obviously although the glide looked O.K. a bit of nose "up" crept in, so in with a bit of tail packing and away it went again. This time it was a perfect climb away in a gentle left circuit, and a mere blip on the button brought her round in a complete turn. After several circuits the engine cut and *Galloper* came in to a reasonable landing fairly close to the "pilot". The glide was beautifully flat and at a reasonable speed, not just dropping out of the sky because the engine stopped. Incidentally, although *Galloper* could be flown without an undercart it does make good landings on it even on rough moorland grass.

Once experience had been gained the model was taken out in rougher conditions, and it will fly in anything that doesn't blow the transmitter over standing on the ground, again proving that a very small model is not always advantageous in this respect. It has now flown continuously for a whole season, and apart from dents it is as good as new. On several occasions it has withstood a power dive into the ground at 45 degrees due to pilot error and in every instance the radio has stood up to the crashes and worked faultlessly, the only damage being broken spray bars on the engine. Another advantage of this model being so reliable is that being single

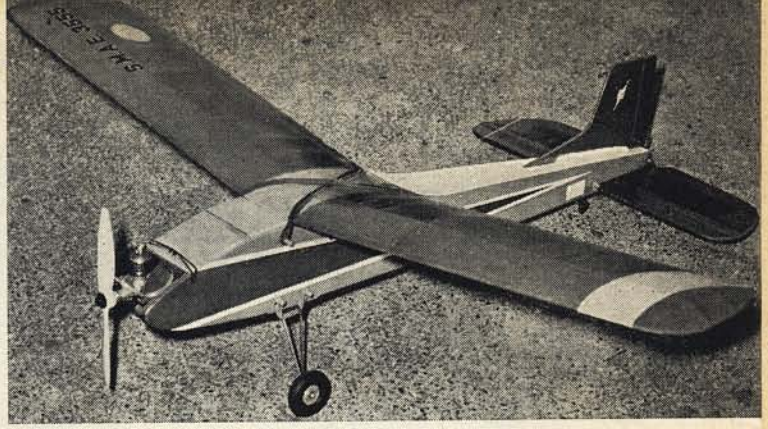
* *What about the Aeromodeller Plans Service designs?—"Timber" and "Lumpers"—two for* 1.5 *c.c. that bounce away from any knock with impunity*—ED.



Galloper

by C.R. Ralph

Conversion to simple single rudder only by D.S. George.



"Galloper" was first published in our companion magazine "Radio Control Models & Electronics" in March 1963 as part of a feature illustrating C. R. Ralph's approach to "Galloping Ghost" control methods. D. S. George has converted this good basis design for simple escapement operation using 1.5 c.c. Clean model is result of using an exhaust shield/muffler in the nose.

handed the technique of flying involves a heave-ho launch followed by a dive for the transmitter standing ready on the ground, and you need a model which will fly safely without a signal until you have the transmitter in your hand. This particular combination of model and radio seems to be the ideal approach for the lone hand modeller.

How to advise others on a technique for similar fun with R/C? D. S. George's experience leads him to the following:

Always make sure that the radio is operating correctly with the engine running, see that left signal and right signal are both clear and not upset by engine vibration, and if there is any doubt *at all* stop the engine, re-check everything and start up again. Before the author's first flight he found that by being over careful and packing the receiver tightly in the fuselage with foam rubber he was getting doubtful signals due to the whole set-up picking up the engine vibrations through the fuselage sides. A little loosening of the radio packing cured this, but the main thing was to resist the temptation to launch with signals *almost* all right.

After launching, let the model climb as far as possible before giving a signal, height is the finest safety factor, but if you have to give a signal for correction at a low altitude remember carefully what your next signal is going to be with the simple sequence actuator like the Conquest, and make it just a short blip, enough to just start the nose turning in the required direction. It is most helpful on the first few flights to repeat aloud when launching "next signal right", and then throughout the flight repeat aloud "left", and "right", each time a signal is given. This may sound stupid, but it is surprising how easy it is at first to forget the last signal and give the wrong one; after a while it just becomes a mental reaction and quite automatic, but the point is whatever it sounded like, the model came down safely on that first flight.

Once you have the model at a fair height just keep at first giving short signals to keep it circling reasonably near and slightly up wind. Then, when the engine cuts, be prepared for slightly longer signals to be given on the glide since the lack of engine slip stream will give a slower response. Try and set the model heading reasonably near to you and into the wind for the first landing, but if it comes overhead at about 50 ft. just keep it going straight by letting well alone. If it is on a reasonably straight glide path it will land itself. Any attempt to make another circuit at low altitude on the glide is useless, always let the model overshoot and land safely several hundred yards away. Practice will make spot landings better in the future, but a model landing some distance away is far better than a hideous crash at your feet.

After a few successful circular flights the beginner is sure to be tempted to do some more violent manoeuvres, and the first thing to do here is to let the model climb to what may seem a fantastic height. Nobody at first realises just how much height can be lost and how quickly in a couple of steep diving turns. It is easy to concentrate on the model if you don't have plenty of height in hand and dive it into the ground before you see it coming up. Your first attempts at holding on a signal and getting into a spiral dive will probably result in a flattening out and terrific stall when you release the button; one of the nicest ways to come out of this is to give a short signal right at the top of the stall and the model will bank sharply right off it and come away level. Again, when you have accomplished this and feel like trying loops, give yourself even more height for that dive and you will keep out of trouble.

World Champs. (*cont. from* 422)

to weep for he lost a chance in the fly-off by only 2 secs. East German Fritz Strzys and Russian Zviatkin also slipped, so that 12 were now left to try for 4 minutes in **Round 6.** Yugoslavia had two, Merory and Kmoch, and Sweden all three men. These five each had the technique of pre-stretching their rubber. Altitude gained by the 12 finalists varied roughly in the order of the final result, but only three remained clear for the **7th Round** and these were Thomas Koster of Denmark, Vlad Matveev, U.S.S.R. and Swede Bengt Johanssen. Five minutes seemed almost too easy to the independent spectator, but the aim for 6 mins. in **Round 8** was a mighty task. Fifteen minutes were allowed per round, and 30 mins. recovery time between rounds. The Saab Safir was on constant watch and troops, now sodden with three days of searching wetness were keyed up for the toughest task. For now the wind was towards a wood, and upwind, a deep black cloud promised powerful risers as it approached.

Bengt Johanssen was away first—he was high but without any aid from the air made 3:16. Matveev chose a different spot, caught lift that seemed to null the wind and made a wonderful flight of 9:22 to to land only a hundred yards from the launch point! What could ever beat that? The Dane was nowhere in sight. Abandoning a reserve model which was not sufficient for the task, he chose to chase his 7th round flight. Time slipped by. Five minutes from the end of the round, Matveev was being congratulated on his victory. A minute later a green Vauxhall was spotted at full speed across the field. It **was** Koster **and** he had his model!

Cheers wiped away his exhaustion temporarily as he rushed to weight check, then hastily engaged the winder. A broken strand dangled from the motor. **"No—go on",** yelled the crowd as he hesitated in a frantic wind-up to beat the clock. With less than a minute to spare before the red flare signified the end of the round he launched amid tremendous cheers of encouragement and went into sure lift for another 6 minute max! One could only feel sorry for Matveev and at the same time admire the courage of the young Dane. Which of them might now win in the **9th Round?**

Matveev made a quick change of launch point when he realised the drift was backing up and now at 180 degrees to that of an hour earlier. He released as Koster was winding. A minute separated their launchings and a hundred watches were on each of them. Conditions were ideal. Lift had seemingly gone and Matveev was down at 3:37. After his high climb with a fresh motor, Koster's model surpassed the Russian by 40 secs., and so became the World Champion. It was fitting that his tutor Nienstaedt had opened the contest with the first recorded flight.

WAKEFIELD TEAM RESULTS

(25 *competing Nations*)

1	Sweden	2700
2	Yugoslavia	2690
3	U.S.A.	2631
4	Netherlands	2623
5	Italy	2622
6	W. Germany	2618
7	Poland	2570
8	U.S.S.R.	2558
9	New Zealand	2547
10	Switzerland	2535
11	Czechoslovakia	2529
12	Denmark	2497
13	GT. BRITAIN	2493

PLASTICS OF THE MONTH

THREE NEW KITS this month, from famous manufacturers. Let's take a look at the MONOGRAM 1/48th scale Focke-Wulf FW 190 first. This, like their previous P-38 Lightning model, can be built up in any one of six different versions, including the FW 190A-7/R2, 190A-8/R3, 190A-5/U8, 190A-7/R3, 190A-8/R1 and finally the 190A-5/U3 Tropicalised variant of this machine.

All extra parts required for these changes are supplied in the kit and the very fine transfer sheet includes complete markings for all six versions. While on the subject of transfers we must mention that these supplied by Monogram are the finest set we have seen representing what must surely be the first true *matt* examples to be supplied with any plastic kit—they are excellent. On the construction side, the model goes together well with the usual Monogram precision and leaves little to be desired. We had only minor difficulty with the landing gear assembly—the legs would not locate positively into the wings and wheel doors stood proud of the legs themselves whereas they should be perfectly flush and close up to the wheels. Monogram's model leaves 3/16 in. between the bottom of the doors and main wheels; this gap should be less than 1/16 in. and can be easily rectified by trimming down the stub axles and cementing wheels close up against the legs themselves.

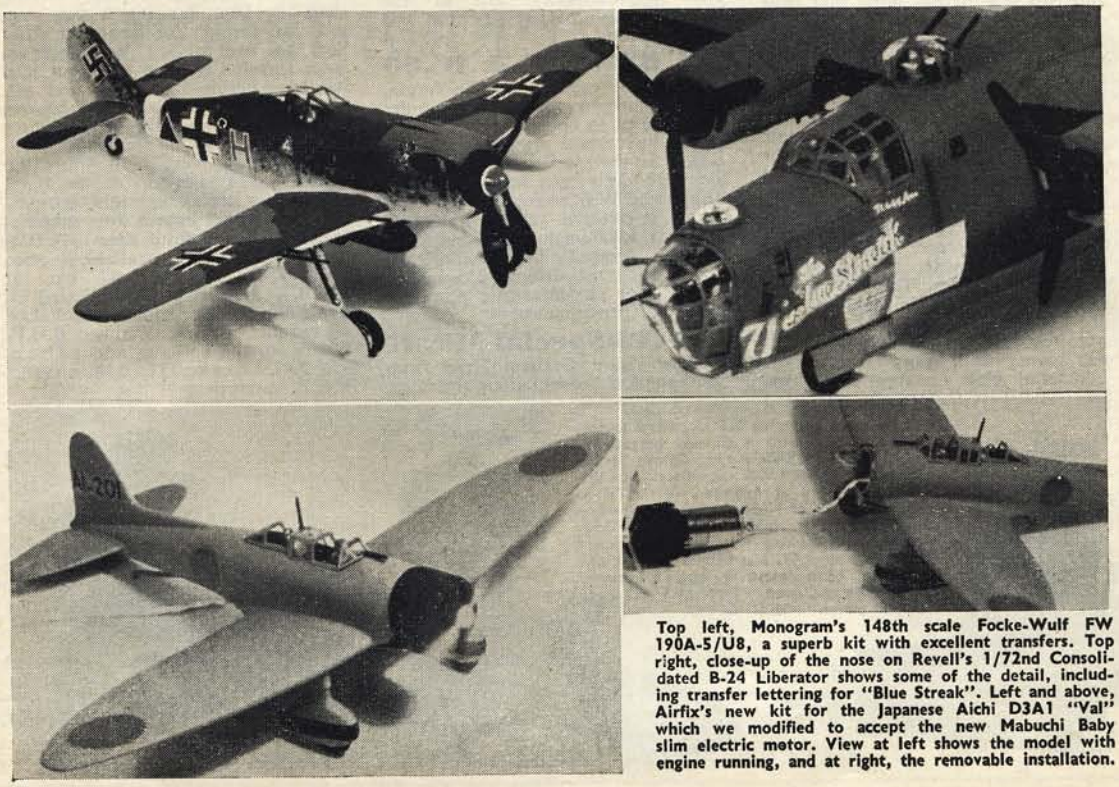
We chose to build the 190A-5/U8 version with splinter camouflage in two shades of green (black-green and dark green), since this is possibly the most colourful example. The "battling mouse" (Die Micky-Maus) insignia on the nose suggests that this aircraft belonged to 11/SG1 ground support fighter unit in the early months of 1943 although the reason why the 'mouse' should face tailwards on the model and towards the nose on full size machines is a mystery. Price for this 55 part kit is 13/6d.

Next, a new one from REVELL LTD. This, the B-24D Liberator "Blue Streak" must surely come close to being this firm's largest 1/72nd scale model. The individual aircraft "Blue Streak" is a famous B-24, having a number of "firsts" to its credit and a presidential citation for 110 combat missions flown. Considering the kit from a constructional angle—we are not too happy. For a start, the wing halves were slightly bent when we received our sample. This could be due to their size and flexibility but whatever the reason, the wings were difficult to build satisfactorily and trouble was experienced with the flaps.

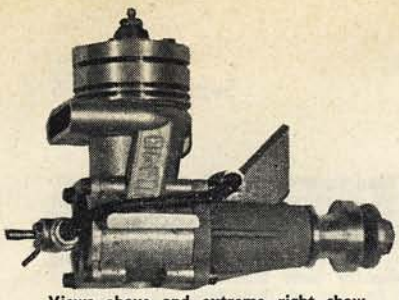
When finally joined together, the gaps and overlaps of wing halves were very pronounced and required heavy filling around engine nacelles. Transparent parts such as the cockpit canopy "glasshouse" nose and assorted turrets also required minor modification. Trouble was experienced in fitting the wings to fuselage. Wing sockets were excessively tight and again filing and filling was required to obtain a smooth joint—even then the wings flexed and cracked alarmingly.

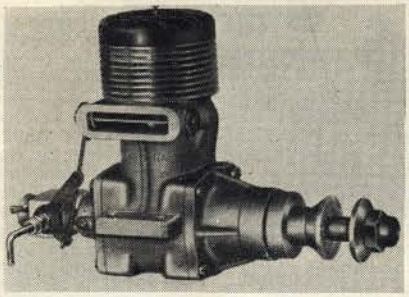
However, when completed the model did look very much like a Liberator and is, as a whole, an accurate model—but whatever happened to Revell's usual high quality moulding? Price for this large 80 part kit is 12/6d.

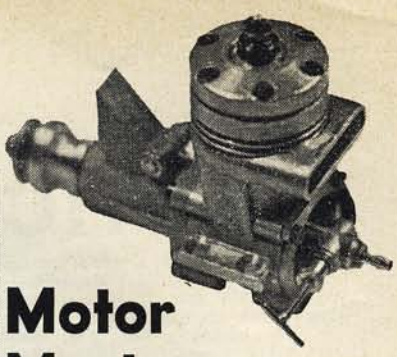
Finally from AIRFIX, the Japanese Aichi D3A1 'Val' of Pearl Harbour fame (infamy?). This is quite a refreshingly unusual choice of kit by Airfix and one which does them credit and represents the now usual great value at only 3/-. We took the opportunity of motorizing our sample with the tiny Mabuchi "Baby" motor reviewed in July issue. This was merely Araldited lightly into the inside of the cowl/nose ring (kit part 26) with the shaft protruding forwards. The prop was carefully trimmed and drilled for a light press-on fit for the shaft and the whole unit plugged into the fuselage as a friction fit. Twin wires from the motor were taken down the fuselage to emerge through holes for the plastic stand. A 1.5 v. pencell battery was used to supply power, being simply connected up to the wires whenever it was required to go for a short "hop". A nice, simple model this, and a useful addition to the range.



Top left, Monogram's 148th scale Focke-Wulf FW 190A-5/U8, a superb kit with excellent transfers. Top right, close-up of the nose on Revell's 1/72nd Consolidated B-24 Liberator shows some of the detail, including transfer lettering for "Blue Streak". Left and above, Airfix's new kit for the Japanese Aichi D3A1 "Val" which we modified to accept the new Mabuchi Baby slim electric motor. View at left shows the model with engine running, and at right, the removable installation.







Views above and extreme right show the new Russian "Start" engine used by Natalenko of Leningrad. Note combined features from Super Tigre G15 and MVVS 2.5 RL. At right is the new Rossi 60 R/C which weighs 15½ oz., with a claim of 1.4 b.h.p. ! Has combined exhaust and intake throttle.

Motor Mart

Ueda from Japan

First examples of the Ueda engines to reach the British model market have been loaned to us by Henry J. Nicholls & Son Ltd. for review—the .45 R/C and .09 R/C. Prices are £9/14/3d. and £2/15/6d. respectively. Packed in an attractive expanded polystyrene box with English language instruction booklet the .45 has a notable feature in the free running shaft bearing. A Ueda glow plug is supplied. Details of these Ueda products were published in our January issue but to re-cap, the .45 weighs 9¼ oz., turning an 11 x 6 at 11,000 r.p.m. and 12 x 4 at 12,000 r.p.m. The 0.9 is lightweight at 3.3 oz. and comes with conveniently tapped exhaust stack to accept a silencer or throttle.

From Leningrad

Natalenko's latest "Start" speed engine is revealed for the first time above. With rearward facing exhaust and two side bypass ports that twist around to the front of the liner it looks most impressive. The square section air intake is of massive proportion and at 90 degrees to the shaft to obtain ram effect to draw the fuel efficiently from the offset needle valve. A backplate mounted remote needle valve is used for metering the fuel mixture. Note the solid head and extra large top crankcase cowling fin as on the Super Tigre G.15. On regulation F.A.I. fuel 75 per cent Methanol-25 per cent Castor it turns 17,000 r.p.m. with a wide blade Grish 7 x 9 Nylon Tornado propeller. In its first official contest times of 133.6 m.p.h. and 135.5 m.p.h. were recorded but a few more m.p.h. will come with time says fellow Leningrad club member Nick Turkin. The Russians are also interested in the effect of silencers on team racers and speed models.

New Enya .60

Saburo Enya's new 60 II T.V. is a rugged radio control engine with many new features to supersede the old .60 plain bearing engine that has been produced for many years. Completely re-designed, it claims only half an hour's running-in for maximum performance, and a horsepower range of 0.9-1.1 B.H.P. at 10,000-12,500 r.p.m. The shaft is supported on two ball races and the throttle linked to a rotating bar exhaust restrictor in a square cornered exhaust stack so permitting the case of a silencer. The engine has an external chrome finish for some parts and very tough castings. Low speed idle is claimed as 2,000 to 2,500 r.p.m. On a 12 x 6 or 11 x 8 propeller. A non-radio version is also available price approximately £13 in the U.S.A. and £14/10/10d. for the radio version.

2.3 B.H.P. K & B .60

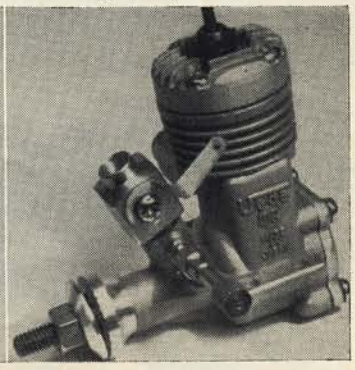
K & B engines in California, U.S.A., have a new 10 c.c. under development to be produced in speed and radio control versions. Claimed B.H.P. for the speed version is no less that 2.3! This does not surprise us, with Bill Wisniewski working on them. It has not yet been released and only 1,000 engines are said to be planned. Virtually hand made, each engine will cost around £35 in the U.S.A., not an unrealistic price for such high performance.

Cox .15 Special Mk. II

Office visitor Graham Head from Southampton brought along the latest Cox .15, the special Mk. II. Quite different to the generally available Special its most distinguishing features are the use of a single side exhaust outlet for loop scavenging instead of the usual Cox four-square opposed porting, the teardrop shaped transfer ports cut or cast into the opposite lower side of the liner and a gold anodised crankcase. The exhaust port should make silencing easier. A few of these engines were in use at the World Free Flight Championships but distribution is not yet world-wide.

FOK from Hungary

Drawn to our attention by Bold and Burrows' Model Shop at St. Albans, three sizes of the Hungarian FOK diesel engines are being imported into Great Britain. The 1.47 c.c. capacity costs £3/4/11d. and is a very nice diesel. With a deep blue anodized spinner nut, head and backplate it is quite unmistakable, and comes packaged in a plastic bubble pack. A tommy bar is provided for the spinner nut. With a plain bearing shaft the front housing is very rugged, just the job for beginners. The liner has two exhaust ports and two large transfer passage ports cut into its lower inside faces fore and aft. The integral cast air intake has an offset beam spray bar with a sheet steel needle retaining spring. Example submitted was very tight when the piston was at the top of the bore, and if they are all like this, prospective owners will have a long running-in session in front of them. A 0.94 c.c. version is available price £2/19/11d., and a 2.47 c.c. at £3/10/-. A seven-page duplicated instruction leaflet is supplied including all technical details. Claimed B.H.P. figures for the 0.94 c.c. and 1.47 c.c. and 2.47 c.c. are 0.12, 0.18, and 0.3 B.H.P. respectively.



An original Bulgarian 2.5 c.c. Glow motor, the "DOSO" with a claimed horsepower of 0.28 at 13,000 r.p.m. Centre is the Hungarian "Fok" 1.5 c.c. diesel now being distributed at 64/11d., is similar to the "Rebell" and has most useful performance. Extreme right the Ueda .09 Glow-plug engine looking very much like a scaled down modern .49. Has simple rotary choke throttle, brass insert in head to prevent plug wear and good lapped piston finish.

CLUB NEWS

PROPORTIONAL R/C AT EXETER

Exeter & District Radio-Control Models Club are fortunate in having TWO flying grounds available within a few miles of the city, thanks to generous land-owners. Their annual Westpoint Trophy has been won by Brian Rosier of Topsham with his all-polystyrene biplane "Stagger-by", powered with Merco 49 and using Flight Link proportional. Second was Phil Lacey (Crediton) with an own-design and own developed proportional and third young Roy Mann, son of the Club secretary with a beautifully made and finished Pee-wee single-channel job. Gene Cotter has test-flown his new "Cosmic-wind"—type low-wing (Merco 61, Flight Link propo) successfully. Yet another Flight Link flyer, Harry Stillings, is singeing the heather on Woodbury Common with low-level burn-ups, but has a bad habit of giving "up" when inverted at 6 ft.—this has happened three times in a fortnight, but his "Concord" (and radio) survived with minor damage and are still going strong.

WINGS vs SAIL

Approached by the local Council, the clubhouse landlords, to see if they will move to let a local yacht club toke over all of their shared clubroom. Southampton MAC have decided to stay put. The alternative accommodation was at a higher rent. Three free flight members attended the Nationals. John Mabey managed to reach the rubber fly-off much to his surprise whilst the other two entered glider and found all the downdraughts. Club P.R.O. shamefully admits towing his glider into a team race practice circle, and luckily for him he was only struck by the control lines. The racer crashed and the P.R.O. received a few cuts and bumps, which let him off lightly to judge by the look of the snarling pit crew and pilot.

Pen Pal Wanted

Japanese F.A.I. Power class enthusiast Kunijo Ojio, 13 Yanagisawa-Cho, Gifu, Japan, seeks correspondence with experienced fliers in Europe—using the English language. The Japanese habit of mixing "L" and "R" offers forgivable but amusing literal errors. This "flee fright" fan looks forward to letters from Eulope.

S.A.A. Scottish Gala

The following notes on the goings on at the Scottish Gala are quoted from the Hornet and Glasgow M.A.C. News Sheet. "Scottish Gala on June 27th seemed little changed for having S.A.A. sponsorship, following the events abandonment by the S.M.A.E. except that no entries from south of the border were to be seen. Attendance figures were not helped by the fact that no-one knew where the contest was to be held until a fortnight beforehand, and matters seemed worse because F/F and C/L had to be held at venues 40 miles apart. In fact, the maximum number of bods seen at Ballageich, where F/F was held, was six. A third of these were G.M.A.C. members. Tommy McLaughlin flew his Wake in open rubber, to win by virtue of being the only entrant, but had the dissatisfaction of losing his model over the distant horizon—and he's still looking for it. John Brown also made an attempt, but broke his model in the strong wind, which caused the end of Tom Preston's (Edinburgh) rubber job as soon as it was bought out of its box. Francis Ballardie made a gallant attempt to get to the event, but came to grief in his dealings with the Western SMT. (Local bus servce—Ed.)

Over at Pitreavie, the sun shone, but entries again were nothing great. Ken Johnston decided to risk his ¼A team racer and won the event. As Donald Gordon was in Sweden, John Welsh was in Italy and Tony Docherty's F.A.I. model failed to materialise, the only other event Hornets members were concerned in was the rat-race—definitely the biggest shambles for a long time. This was supposed to be a six-up affair, but due to prangs and line tangles three at a time was more usual".

Continued on page 444

CHUCKING AT CRAWLEY

During their Thursday club meetings in June, Crawley D.M.A.C. have run a series of chuck glider contests. The flights were made by each contestant, including five juniors who competed in a separate event. Jack Darby's "Early Bird" was by far the best for outdoors flying in evening conditions, due to its good launch height. Results: 'Senior': (1) J. Darby—222 secs.; (2) P. Cameron—168 secs.; (3) R. Flain—154 secs. 'Junior': (Equal 1sts) L. Holloway and N. Wragg—94 secs.; (3) S. Tisch—61 secs.

Uxbridge C/L Rally

Twenty-seven entries in **Rat Racing** and 29 for **Combat** attended the Uxbridge C/L Rally held on June 13th. M. Davies (Outlaws) won over Richard Wilkins (Sidcup) in the Combat final with zero points to Wilkins'—2. Rat Racing was flown in two heats, one 35 lap sprint and a 70 lap race with one stop, points being awarded to each entrant who finished. The fastest five went collectively into one 140 lap final with Tom Jolley (Kidderminster) returning 9:02 to win followed by Dave Balch (Hayes) at 15:08 with Fairbanks (Delta's) coming third with 16:30. Quite a spread-out result!

Combined S.M.A.E. and Club Contest Calendar

August 22nd — *Glasgow Hornets C/L Rally.* College Milton, East Kilbride, ½A, F.A.I. and B T/R, Combat. Pre-entry 2/6d. to G. McCree, Siloch, Langgrig Rd., Newton Mearns, Glasgow. 5/- field entry.

August 22nd — *Hayes C/L Rally.* Hayes Circuit Charville Lane, Hayes, Middx, Class B combat to proposed S.M.A.E. rules and ½A T/R.

August 29th — *South Coast Gala,* Chobham Common. Open R/G/P, Tailless Glider, ½A power and all in F.A.I. event.

August 29th — *Woodford Rally.* Woodford Aerodrome, Stockport, Cheshire, Open R/G/P, Tailless Glider, Coupe d'Hiver, Chuck Glider, F/F and C/L Scale, Single and Multi R/C, ½A, F.A.I., B T/R and Combat. Pre-entry 1/6d. to: U. A. Wannop, 13 Dene Court, Stockport, Cheshire.

August 29th — *S.M.A.E Indoor Meeting.* R.A.F. Cardington, Bedfordshire.

August 30th — *Surbiton F/F Gala.* Chobham Common, Open R/G/P, ½A power.

September 5th — *S.M.A.E. Northern Gala.* R.A.F. Church Fenton, nr. Leeds. Open R/G/P, Tailless, P.A.A. Load, Multi R/C, Team Racing, ½A, F.A.I. B, Combat, Stunt. Pre-entry by 15th August to: S. A. Wade, 10 Storer Road, Loughborough, Leics.

September 5th — *Boscombe Down Rally.* Everly Dropping Zone nr. Tidworth, Wilts. Combat, F.A.I. Power, Free Flight Scramble. Details from Dr. M. F. Hawkin, Officers Mess, R.A.F. Boscombe Down, Amesbury, Wilts.

September 12th — *South Midland Area Rally.* College of Aeronautics, Cranfield, Beds. All classes F/F, C/L, R/C, including Coupe d'Hiver and Chuck Glider except Speed, B T/R and scale. Pre-entry to: T. Payne, 7 Silverdale Road, Northampton.

September 19th — *Crawley Rally.* Great Buckswood Farm, F.A.I., R/G/P, ½A Power, Single Channel R/C spot landing, chuck glider, Combat (no re-entry). Pre-entry Combat to N. Tidey, 64 Reigate Road, Brighton 5, Sussex.

September 19th — *Wanstead Warhawks C/L Rally.* Hayes Circuit, Charville Lane, Hayes, Middx. F.A.I. Team Race, S.M.A.E. 'A' Combat. Pre-entry 2/6d. to: G. A. Green, 20 Meadowside Road, Upminster, Essex, by 5.9.65.

Rallies Additional to Previous S.M.A.E. and Club Contest Calendars

October 10th — *Northern Heighs Gala.* R.A.F. Halton, Bucks, R/G/P ½A and R/C Spot Landing, Combat, Helicopter, Queen Elizabeth Cup.

October 10th — *Lincoln F/F Rally.* R.A.F. Hemswell, Lincs. Open R/G/P, Single Channel R/C, all in Vintage pre-1951. Pre-entry to: K. Barrat, 1 Geneva Ave., Lincoln.

October 17th — *2nd Imperial College Combat Rally.* College Sports Ground, Sipson Lane, Harlington, nr. London Airport. Class 'A' Combat, 'B' Rat Racing. Pre-entry 3/- to: Comp. Sec. 27 Marlbrough Road, Brentwood, Essex.

October 24th — *N. Area F.A.I. Meeting.* R.A.F. Topcliffe, R/G/P, Team Race, Stunt, Combat. Team event for top F/F club. Pre-entry by October 10th to: J. Moseley, 7 Elmwood Avenue, Watton, nr. Wakefield, Yorks. Snr. and Intermediate 2/6d., Jnr's 1/6d. Field entry 3/6d.

November 7th — *Blackheath Gala,* Chobham Common, Bill White Cup.

CLASSIFIED ADVERTISEMENTS

PRESS DATE for October issue, 1965, August 26th, 1965.

ADVERTISEMENT RATES :
Private Minimum 18 words 6/- and 4d. per extra word.
Trade Minimum 18 words 12/- and 8d. per extra word.

Box Numbers to count as six words when costing.

Box replies to be sent care of Advertisement Department, Model Aeronautical Press Ltd., 38 Clarendon Road, Watford. Copy received after first post on August 26th, 1965, will be held over until the next issue, unless cancelled in writing before 20th of following month.

An advertiser complained that he had to spend so much on postage sending money back to advertisers after selling the gear he had listed in these columns that the deal cost him more than he expected. Replies should be accompanied by a stamped addressed envelope for the convenience of the advertiser and also to ensure that you get a quick answer. Cash should be sent in the form of a cheque or Postal Order if possible.

Of course, the revelation in such a complaint is that whatever you advertise SELLS if you put it in Aeromodeller Classifieds. At only 4d. a word it is a bargain rate. Have you anything you want to turn in for cash to change your modelling theme ? Just list your copy, send 4d. for each word, minimum 6/- and we will get it into the next issue.

FOR SALE

Tiger Moth scale drawings, four sheets 38 in. x 28 in. general arrangement, structure details and engine—24/- set. J. A. Brixey, 28 Layton Rd., Parkstone, Dorset.

Oliver Tiger works tuned £4.10s. Pee Wee with spare glowhead prop wrench 25/-. T.D. 010 immaculate £2.5s. Mills .75 with spare carb, conrod, etc., £1. Foyle, Flat 4, 4 Summers Close, Brooklands Road, Weybridge, Surrey.

Min X 10 channel superhet outfit, 27.195 Mcs. as new. £40 bargain. Maxamite servo unused (transistorised) £6, Merco 29 R/C 30 min. use £5, Merco 35 R/C 1 hour's use £5. N. Butterworth, Rylands P.O., Beeston, Notts. Telephone: Nottingham 255469.

Unused 52 in. span semi scaled Spitfire C/L stunt, silk covered with OS Max 35, also Mini Reptone with two actuators, Offers. Dodd, 2 Pant Hyfryd, Cymau, Wrexham.

New Eta 15 mk. III, partially run in, tank, spares, £6 o.n.o., wood, plans, magazines, etc. Lelliott, 242 High Street, Feltham, Middx.

Two Cox Tee Dee's .010 complete with props, starter springs and hypodermic fuel filler at £3 each, three Cox Pee Wee's with props at 30/- each. W. L. Trowill, 38 The Close, Kirkham, nr. Preston, Lancs.

Min 'X' 10 relayless, regen Rx, four Bonners, one Annco, harnessed, with charging panel and DEAC, £38; Orbit 6 relay Rx with servos £19; matching simultaneous transistor Tx, fitted switches four extra channels £18. All as new. Box 755.

Disposing of dated but utterly reliable single channel relay equipment to standardise on lightweight gear. All very little used—condition as purchased. Graupner Bellaphon tone Tx with 6 volt internal accumulator, very powerful, matching Mikroton 30 v. Rx and Telematic servo, complete outfit £8. Ace Marcytone (filter-tone-crystal controlled) Tx and matching Rx completely interference-free outfit, pulses well £10. Graupner Mikrokombi lightweight Rx with matching escapement and battery box —operates off most popular Tx's £4. Box 756.

Studies force to sell—one R.E.P. Dekatone Tx and Transistorised Rx —not used £35, also one Transistorised Musclemite servo £5. Haines, 51 Redhill Drive, Fishponds, Bristol, Tel. 654841.

Aeromodellers 1943-1953. Offers, M. C. Muir, 16 Somersby Road, Nottingham.

Latest Orbit 10 channel Tx and Rx complete with five new Citizen Ship servos, owner gone proportional, £115 o.n.o., ring Watford 42859.

Selling up: Magazines, hundreds; C/L, R/C models, equipment, engines and accessories, s.a.e. list. Stilefield, behind shop, Todd Lane North, Lostock Hall, near Preston, Lancs.

Edmonds Eta 15 Mk. 11. £4, no offers, A.M. 35 35/-, E.D. Hornet little run £1, K.S.B. engine timer mint condition 15/-. B. Montgomery, 72 Seafield Road, Dublin 3, Eire.

Space Control Mk. V. (P) perfect condition, transmitter rebuilt to highest specification by Geoffrey Pike, including his own modifications; all power packs, charger, spare receiver; perfect proportional for half cost of new untried systems! Only £150 or near offer; also two new Space Control servos at £11/10s. each. Roger Allton, 22 Hollies Drive, Edwalton, Nottingham, phone 46452 or 231061.

WANTED

For school modelling club Mills P75 spares. Smith, Longhill County Secondary School, Falmer Road, Rottingdean, Brighton, Sussex.

Back issues aviation magazines, particularly, His-Air-Dec; Air Progress; Flying Review; Flip Ross, 30 Wahackme Road, New Canaan, Connecticut, U.S.A.

American Elf engines or similar engines, have many spare ignition engines to trade including spare parts. Steve Ditta, 48-13 98th St. Corona, Queens, New York, U.S.A.

Jetex 200, Cox TD .09 state condition and price. Apply to R. T. Chisholm, 14 Sloane Court East, Chelsea, London, S.W.3.

Information, cockpit details, etc., Roumanian (1 AR 80) also adult pen pals to exchange information, magazines, interested WWII aircraft. V. Postolaki, 1662 Guerneville rd Santa Rosa, California 95401 U.S.A.

TRADE

Ex-Government Stop Watches, 45/-. Illustrated leaflet on request. Charles Frank, 67-73 Saltmarket, Glasgow, C.1.

HOLIDAY ANNOUNCEMENT : Gone Flying—See you in Sweden ? Closed August 7 until August 27. Ed. Johnson, Radio Control, Larkhill, Wilts, England.

Rossi 60, 10 c.c., chromed, £17; Rossi 60 (chromed) R/C £19/10s.; Rossi 60 STR, £13/10s.; Speed pan for 2.5 c.c. with spinner, £1; 5 c.c. pan, £1/5s.; 2.5 c.c. team race pan, 13/-; four grades glow plugs, 4/- each ; Vulcan jet, £12; 6 x 8, 6 x 9, 6 x 10 speed props, 3/-; 7 x 8, 7 x 9, 7 x 10, 3/2d., 9 x 11, 9 x 12, 9 x 13, 4/-. Rossi, Via Pace 13, Brescia, Italy.

E.D. Racer disc-valves refaced for easier starting and more power; send complete back-plate and 6/- P.O. Sure-Start, Ltd., Barrhead, Glasgow.

BOOKS

American Magazines. Year's subscription "Model Airplane News", 46/6d.; "American Modeller", 35/6d.; "Air Progress", 39/6d. Full catalogue free. Willen Ltd. (Dept. 1), 61a Boadway, London, E.15.

SAILPLANE & GLIDING—The magazine for all gliding enthusiasts. Published alternate months. Send 4/- for current copy or £1.4s. for a year's sub. to British Gliding Association, Artillery Mansions, 75 Victoria Street, London, W.1.

Model-Avia the model magazine that covers the world of model flying. Edited in French. Send for free specimen and subscription details: Model-Avia, 31 rue du Printemps, Bruxelles 5, Belgium.

MODEL NEWS (Australia)—published Bi-monthly, 12s. per year, sterling posted direct, covers all Australasian Aeromodelling in pictures, features and plans. 11 West King St., Southport, Queensland, Australia.

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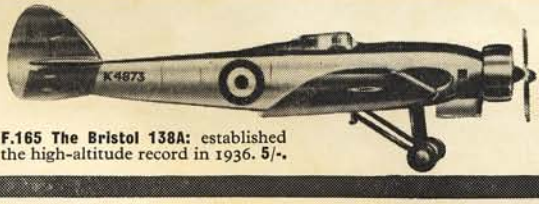

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