

# AERO MODELLER

FULL NATIONAL  
CHAMPIONSHIPS  
REPORT · RESULTS · PHOTOS

AUGUST 1965

TWO SHILLINGS

U.S.A. & CANADA 40 Cts.



HOBBY MAGAZINE

Ju 87 Radio model  
Air Museum No. 4  
Jagdstaffel markings  
B.70 details





# MITCHELL MARKINGS

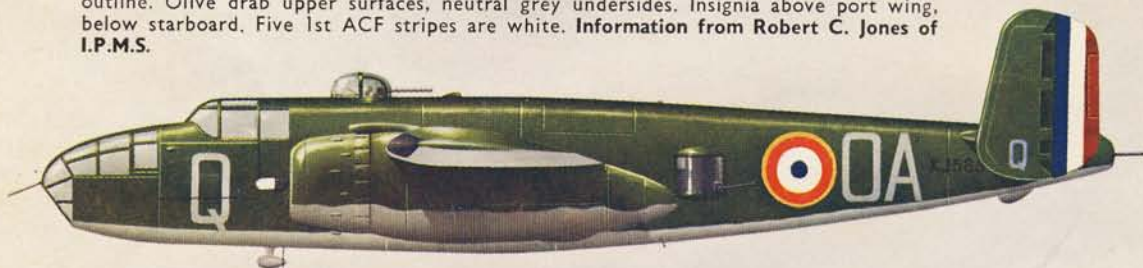
Variants of the North American B-25 for the AIRFIX Kit of the Month



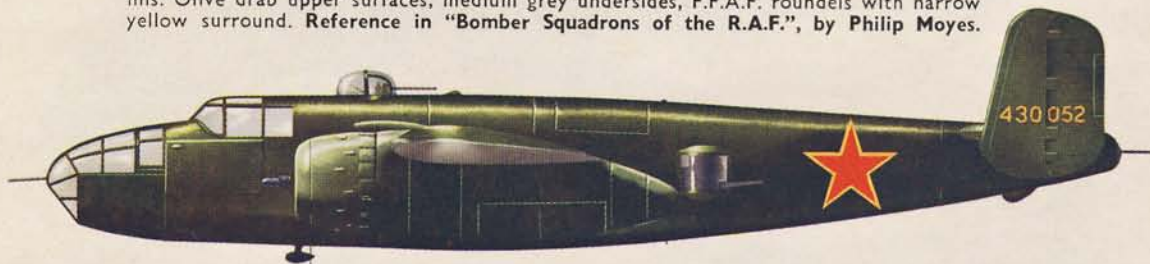
B-25J of the Mexican Air Force (FUERZA AEREA MEXICANA) No. 3503 with "Caballero Aguila" emblem as shown enlarged plus Birds and Sword emblem in black on nose. National markings above and below wings. Upper surfaces and fuselage sides light grey, undersides white, black numerals and red details as indicated, tricolour stripes both sides each rudder. Information from Ing. Jose Villela, Jr.



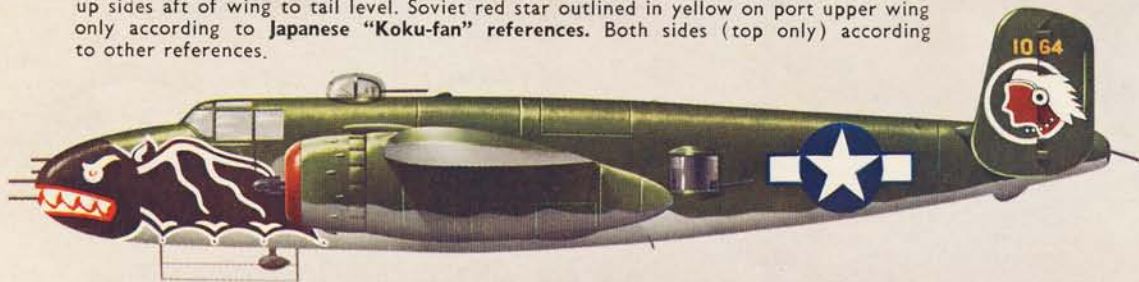
B-25H of the 1st Air Commando Force based at Hailakandi, India, for Burmese Campaign. No. 34271 "DOLLY" has 15 mission marks ahead of name, black 6 with white outline. Olive drab upper surfaces, neutral grey undersides. Insignia above port wing, below starboard. Five 1st ACF stripes are white. Information from Robert C. Jones of I.P.M.S.



Mitchell Mk. III of No. 342 (Lorraine) Squadron Free French Air Force based at Gilze Rijen, Holland, in 1945. Serial KJ585, Sqdn. code OA, individual letter "Q" repeated on fins. Olive drab upper surfaces, medium grey undersides, F.F.A.F. roundels with narrow yellow surround. Reference in "Bomber Squadrons of the R.A.F.", by Philip Moyes.



B-25J of the Soviet Air Force, 44-30052 with all black undersides and olive drab/dark green, and in some cases purplish green, camouflaged upper surfaces. Black extends up sides aft of wing to tail level. Soviet red star outlined in yellow on port upper wing only according to Japanese "Koku-fan" references. Both sides (top only) according to other references.



B-25H of the Bomb Sqdn. (M) 345th Group, 5th A.F. in standard olive drab and neutral grey. Insignia above port wing, below starboard. Indian headdress under serial on vertical tail surfaces. Black "Bat" nose with red and white trim. Red cowl bands. Information from the International Plastic Modellers' Society magazine, March, 1965.

W. WRIGHT.



## Editorial Director

D. J. Laidlaw-Dickson

## EDITOR

R. G. MOULTON

# AERO MODELLER

MAP

HOBBY MAGAZINE

### other modelling angles . . .

Radio control at the British Nationals features in a report in the August issue of **Radio Control Models & Electronics**. Scale models provided a wealth of interest; the cover features a magnificent "Flying Fortress" and the report tabulates details of all the radio models at the meeting, together with a special feature on the B-17 Fortress. An article on R/C boating for newcomers and a few words of wisdom relating to the correct use of relays plus feature on how a radio model is used to track down forest fires make for general interest.

Growing interest in the larger 1/24th scale cars is reflected in the big feature devoted to 1/24th scale in August **Model Cars**. All available models are covered and a fair appraisal given of the future of this class in relation to commercial pay-as-you-race tracks. Cooper-Ford and Cooper Monaco in model 4 wd form and as prototype drawings. Prototype plans include Ferrari 330 LM GT and the pre-war "low" Alfa Romeo type 12c/37 plus the Vauxhall Wensum . . . More on Joining Metals . . . Exclusive photo report on first American National Model Drag Meeting . . . Details of 12 Hour Endurance Race at Hornchurch.

August issue of **Model Maker & Model Boats**—which is incidentally changing the emphasis in title from "Model Maker" to "Model Boats"—includes as a main feature a superb model of a 42 in. fruit ship, the Velards. Plans for the model will be available through Model Maker Plans Service in the customary way, but they are of course shown in reduced scale in the magazine together with photographs and building notes, etc., for the model which also appears photographically on the cover.

## August 1965

VOLUME XXX No. 355

### contents

HANGAR DOORS	360
BRITISH NATIONAL CHAMPIONSHIPS	362
"JUNKERS 87"	370
MOTOR MART	373
JAGDSTAFFEL MARKINGS	374
WORLD NEWS	376
NORTH AMERICAN B-70A VALKYRIE	378
AFRICAN CHAMPIONSHIPS	380
AIR MUSEUM — National Aeronautical Collection	382
OVER THE WAVES	384
TRADE NOTES	386
RECOMMENDED READING	388
JIG BUILDING SHEETED WINGS	389
CLUB AND CONTEST NEWS	390

### cover

Beryl Nelson holds hubbie David's Matra-Moyet 360 "Jupiter" scale entry in the control line class at the British National Championships. Placing 3rd, the "Jupiter" weighs 11 lb.—just on the maximum limit—and has a Merco 35 in the nose, and an Enya 35 at the pusher position in the tail. Control is via the Roberts "Flight Control" system, actuating flaps with throttle.

### next month . . .

First report on the **World Free Flight Championships**, hot from Kauha, Finland, where the Editor accompanied the British Team. Simple rubber job "Little Mavis", 28 in. span and proved over the years by designer John Pool's growing sons. Simple single channel, another approach in answer to the Clutton feature of last month, with model plans too! New engines detailed, another **Air Museum** described, more **Jagdstaffel Markings**, in fact a very full issue with something for everyone—out on August 20th.

### Editorial and

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Direct subscription rate 29/6 per annum including enlarged December edition and index. U.S.A. and Canada direct rate \$4 AEROMODELLER incorporates the MODEL AEROPLANE CONSTRUCTOR and is published monthly on the third Friday of each month prior to date of publication by:—

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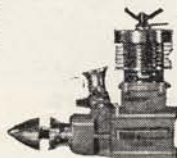


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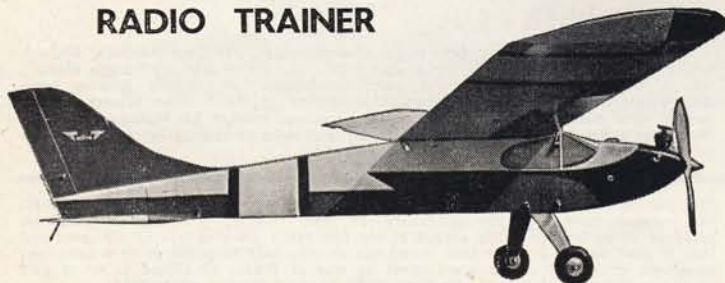
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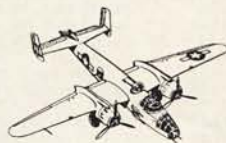
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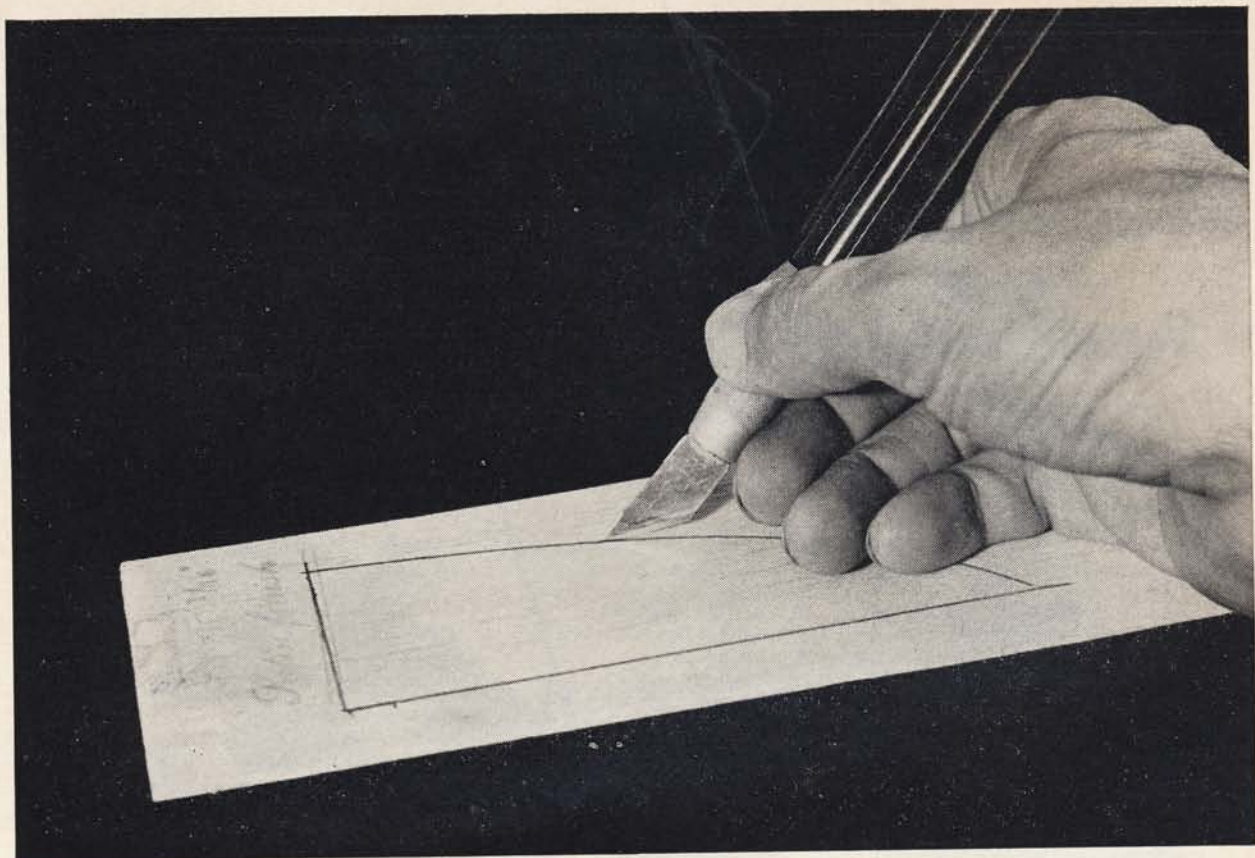
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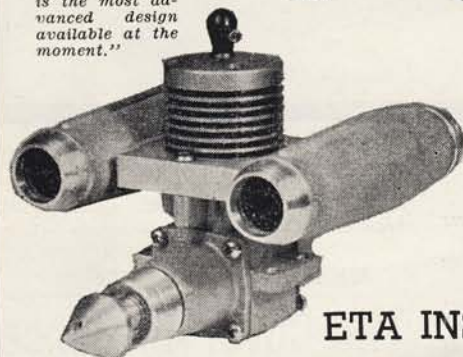


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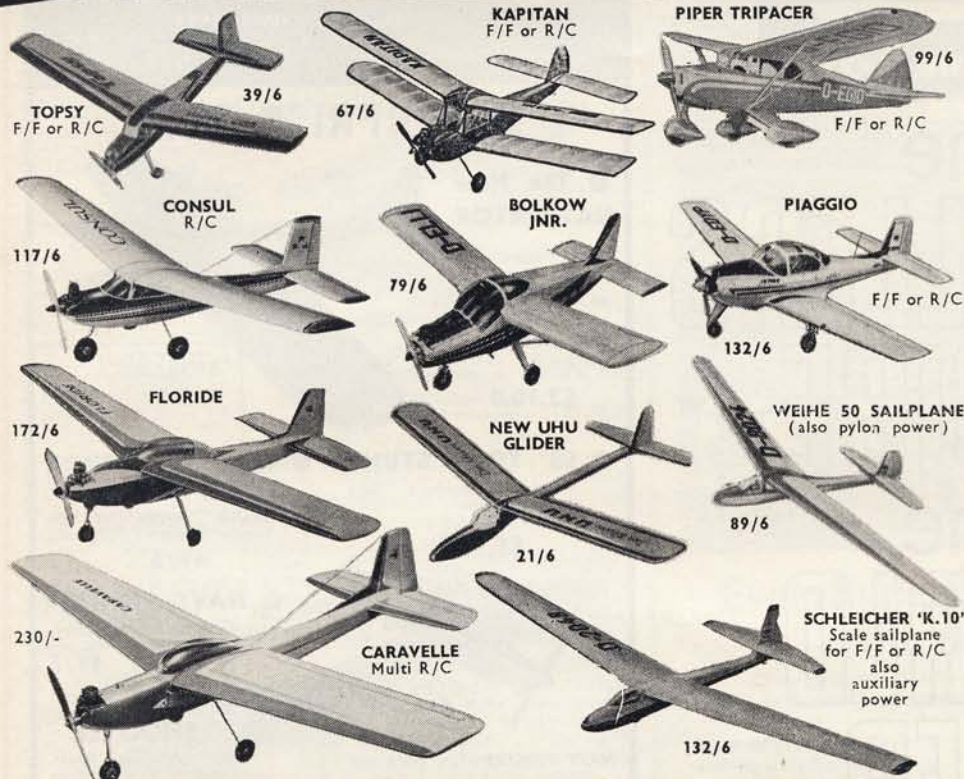
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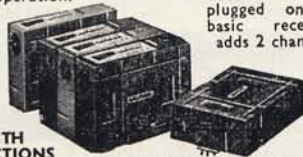
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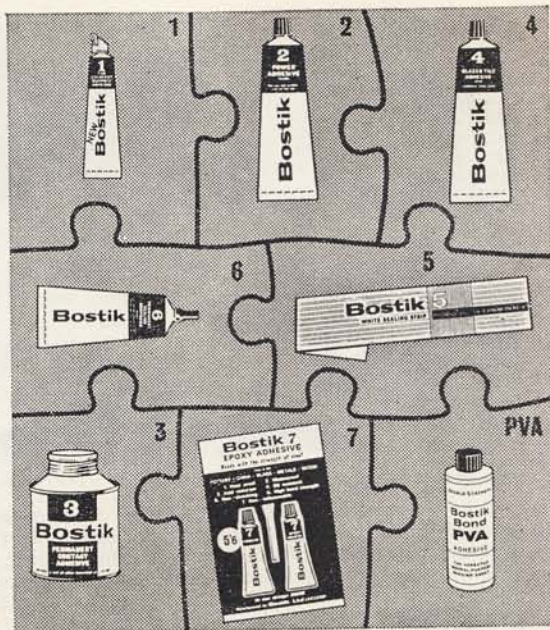
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6 x 4 ...	3/6	11 x 6 ...	12/3	6 x 4 ...	2/6	10 x 5 ...	3/8
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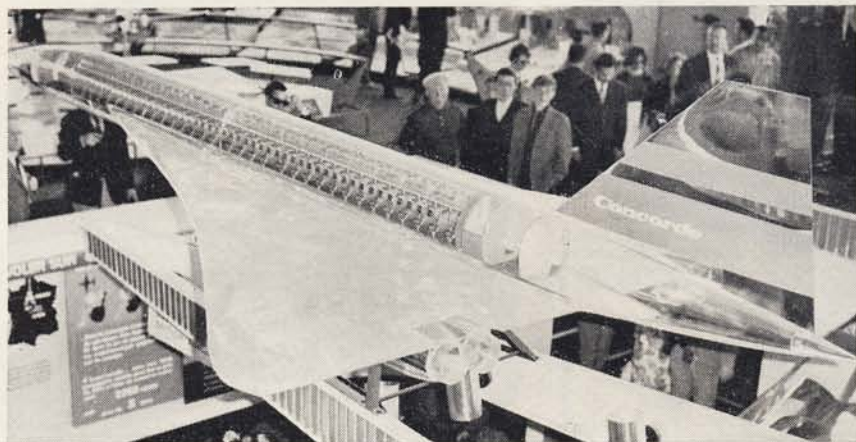
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## HEARD AT THE HANGAR DOORS

Remarkable transparent plastic model of the Concorde seen at the Paris Aero Show this year as noted in text.

### Paris Models

Held on alternate years the Paris Aero Show never fails to provide a fascinating range of professional constructed display models. Manufacturers vied with one another to produce the most impressive display stands and from this has developed a tendency toward extra large scale and working exhibits. Our heading photo this month illustrates what was perhaps the most impressive "Maquette".

This completely transparent plastic model of the Concorde was something like 25 ft. long and yet by virtue of its Perspex (?) construction conveyed an impression of lightness. Superimposed over the Sud stand it was accompanied by models of the Caravelle and other Sud products also in transparent plastic. Of the working models, most impressive was the Ling-Temco-Vought XC-142A V.T.O.L. four motor transport. This not only rotated on its base, but also had working tilt wings and airscrews. Of the unorthodox exhibits the new U.S.S.R. supersonic transport appeared to be much more of an example of model makers' licence rather than a true representation of what the real aircraft might look like. A feature on these outstanding models is planned for the forthcoming *Aeromodeller Annual*.

### Big Show

Peter Farrar's "History of Aviation in Miniature" containing almost 2,000 models to 1/72nd scale has already started its rounds at the air show this year. Airlifted from Exeter to Belgium in June it has now returned for a display held on July 10th at R.A.F. Middle Wallop and can next be seen on July 31st at R.N.A.S. Lee-on-Solent and then again on September 18th at R.A.F. Colerne in Wiltshire.

### S.M.A.E. Summer Gala, August 8th

To be held at R.A.F. Odiham, Hants on August 8th, the *S.M.A.E. Summer Gala* is a first time experiment this year to run an airfield gala in the South during mid-summer. R.A.F. Odiham is situated on the A.32 main road between Alton and Reading approximately nine miles from Alton and 42 miles from central London. The full range of events includes the "Davies B Trophy" and "Short Cup" for class B team racing and P.A.A. Load respectively. (Deferred from the Nationals due to lack of support in previous years). A full list of events can be found in "Contest Calendar" on page 390. All events are 1/6d. each pre-entry to S. A. Wade, 10 S'orer Road,

Loughborough, Leics, or twice the fee for field entry if places are available on the day, this being most unlikely in Combat.

### Honourable Chinese Record

Two Chinese model aircraft designers have broken the existing Russian record of 182.123 Km. for distance of flight with a 203.713 Km. effort, in the R/C distance class.





Nam Yung and Dam Chan Shung aged 26 and 23, members of Hunan Province (800 miles South West of Peking) Model Aircraft Builders Club designed and built the twin engined model. Each engine is 2 c.c. Launched at 05.55 on May 31st the model was followed by train (yes!) at a speed of 30-45 Km/h. with the model flying at 500-1000 m. altitude. After six hours, the model landed at its nominated destination.—From a Radio report 23:00 July 4th in the *European Service of Radio Peking*.

## Errata

Arising out of our report on the Fleet Air Arm Museum last month we are informed that a platform is now mounted over one of the Sea Fury wings, enabling members of the public to inspect the illuminated cockpit. We also wish to correct the impression that the Sopwith Triplane has been transferred to the Royal Air Force Museum. In actual fact it has been returned to the R.A.F. by previous arrangement. (Strange this, because in fact the R.A.F. never operated the type which was at one time the main fighter of the R.N.A.S.!) The public observation area now includes a free car park and closing time is now amended to 5 p.m. for both weekdays and Sundays.

Airborne in demonstrations at the British Nationals Championships at Ouston, were two prototypes of the design given away as a full size plan last month of the "Flying Washboard". Photo top left shows ye editor giving one the heave-ho whilst his assistant Jolix Franklin (who built the models) appears anxious in background. Bottom photo shows Geoff Kent lending "R.C.M. & E." man Tony Dowdeswell a hand preparing the second model for flight. If you have yet to make up your mind about making the Washboard we can assure you it is a spectacle in the air. Construction tip is to add spruce leading edge to the centre fuselage sheet. This prevents sheet splitting on heavy landings.



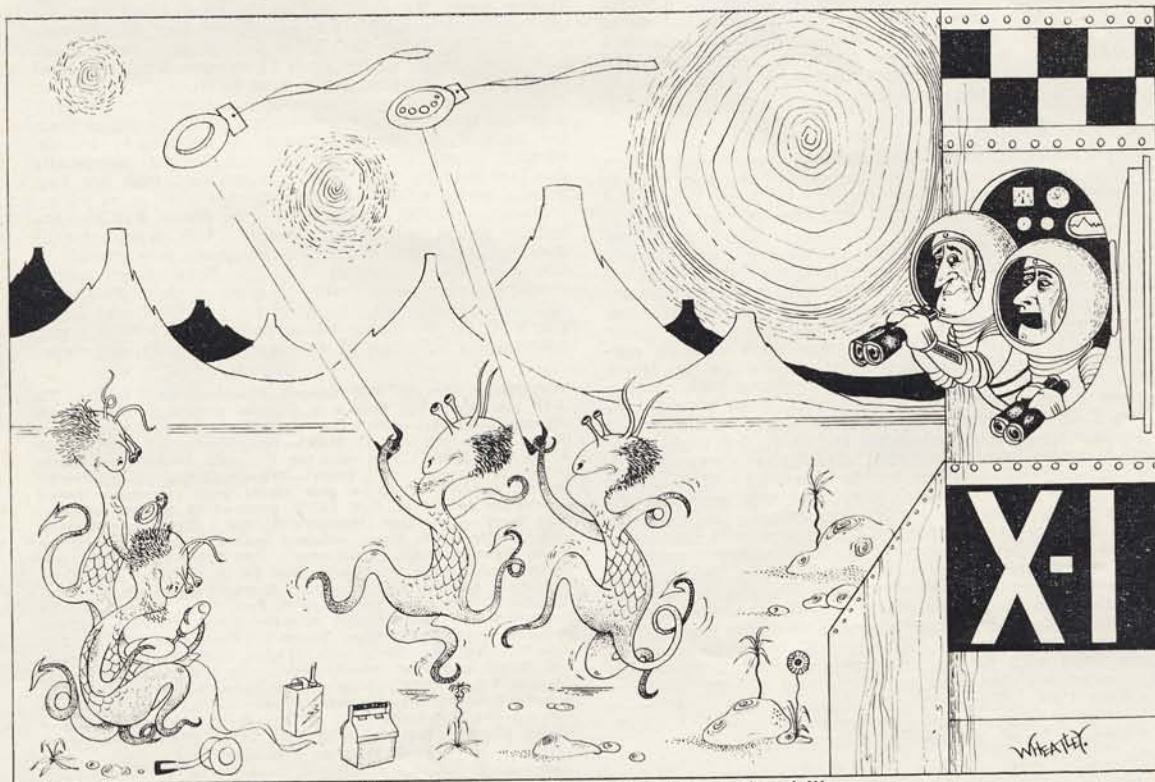
Second prototype of the "Jupiter" as on our cover this month was flown at the Paris Aero Show and for those intending to follow Mr. Nelson's lead, this provides an orange, white and grey alternative colour scheme.

## All at Sea?

The following advertisement has been appearing regularly in Iliffe Transport Publications and we reprint it without charge in view of the extraordinary coincidence of its content.

**"TEAM RACING IN YACHTS."** Rules and tactics simply explained. P. V. MacKinnon and G. Sambrooke Sturgess. In recent years team racing has greatly increased in popularity, and until now there has been no book on the subject; the present work has been published to rectify this omission. The first part contains those sections of the IYRU rules which specifically apply to team racing, taking into account the new IYRU rules adopted in 1959. This is followed by a discussion on tactics of team racing by P. V. MacKinnon, who holds many important offices in the RYA and has made an extensive study of the subject. 6s. net from all booksellers. By post, 6s. 4d. from Iliffe Books Ltd., Dorset House, Stamford St., London, SE1.

Mighty wet out there for control-line we should imagine! We have seen many a pilot heaving on the lines and whipping up the take-off, maybe this yachting Manual will give a few other tips on *model* team racing!



"Heavens be praised, they're civilised!"





# NEWCASTLE NATIONALS

THE 1965 NATIONAL CHAMPIONSHIPS were, for the first time, located in the extreme North. Logic behind this alteration from a conventional Midland or Southern venue was simply that excellent facilities had been offered by the Commanding Officer, Squadron Leader W. G. Drinkell, A.F.C., D.F.C., R.A.F., and the Society of Model Aeronautical Engineers Limited decided by majority vote to meet the past demands of Northern modellers by accepting the offer of Royal Air Force Station Ouston, near Newcastle-upon-Tyne.

Success of the experiment is unquestionable though attendance and entries may not have been as great as in previous years.

The programme had been shortened by removing such events as Class B team race, free flight scale and payload power because of administrative problems and a falling off of entries in 1964. (Note: these events are *not* cancelled but will be found in the list of events for other S.M.A.E. Galas still to be held this year.) Another "first" was the generous offer of on-Station accommodation. Approximately 200 barrack room beds were made available at a nominal charge for the weekend, complete with food and cinema entertainment as well as the N.A.A.F.I. facilities.

As for interest in aeromodelling, it is becoming increasingly obvious that Team Race enthusiasm is on the wane. Fewer spectators, mediocre interest in the finals, few new models and slower performances. Perhaps the most impressive change was that in the Radio Control multi channel contest where spectator interest fell off to an all time low. The constantly repeated standard schedule no longer has the appeal to hold the general public interest and modellers themselves are becoming so blasé that a change seems essential.

## Free Flight

The 400 ft. solid cloud ceiling presented a wintry rather than mid-summer impression for the start of free flight events with the *Thurston Cup* for Open Glider and the *Women's Cup* (in which any class of model can be flown) starting 10 a.m. on the Sunday. Under such conditions it was only natural that the tow-line experts should be reticent to start but once a few had indicated that it was possible to get a good flight with general lift under the solid overcast and not travelling too far with the very low windspeed, things soon got moving. The Glider event and the *Women's Cup* event were virtually concluded by mid-afternoon this largely due to the North Western Area who were efficiently running both contests from a very useful vehicle which had been provided by the C.O. An immediate progress record was provided throughout all stages of events and as the full triple maximum scores became recorded, fly-off names were posted.

Six qualified in Glider for the delayed fly-off in almost dead calm conditions at 7 p.m. The new system of flying, having to start with their lines crossing an imaginary line between two established points prevented the downwind waiting technique but still not make a lot of difference in such calm. Urian Wannop, a regular finalist and now flying for Wallasey seemed unfortunate in having his model pull over to one side for a fairly low launch but otherwise the only evidence of anything unusual was the winner W. Trotter's meandering flight with the slightest amount of lift keeping him airborne in a slow drift across the field in 3:23. Wilf was 4th in 1964. The anticipated favourite "Wiz" Wiseman held on a little too late and descended unusually rapidly with his calm weather design in only 1:22.

The *Women's Cup* drew a very keen entry, and provided quite an exciting finish. Kathy Allen had accumulated 7:52, and Nan Stott 5:28 plus a maximum which had been recorded on the timekeeper's card but lost! This made a claimed 8:28 which everyone was ready to justifiably accept. While last year's winner, Sue Miller, flying the only power entry, was having an off day, her "runner up" of 1964 Shirley Horton went out for her last flight having just the slimmest chance of being able to top either Nan Stott or Kathy Allen. Shirley put on as many turns on the motor as she dared and recorded a most creditable 2:57 which just put her in the lead.

The *Open Power* event held on the 2nd day starting with clear sky conditions but stronger breeze was another repeat build up to the fourth flight fly-off. Silencers do not appear to have had an extensive effect upon performance and ranged from all the varied commercial types to several which have been factored in glass fibre. Improving on her flights on the previous day, Sue Miller qualified for the fly-off with her Cambridge Club design powered by an OS Max 15 but suffered the ignominy of an over-run! Of the eight finalists, Dave Posner with a Super Tigre G15 (Merco Silencer) in 65 in. Dream Weaver XXXV, Mike Green using an Eta 29 in his large lightweight, John West with his almost traditional Dixielander type powered by a G-15 and John O'Donnell with his Gaster tuned Veco 19 had really outstanding rates of climb. But it was West who caught the riser, little though it was, for 3:50 O.O.S. whilst others came down seemingly rapidly in less than 2½ minutes from the great heights. For ourselves, the most interesting incident of the power contest was witnessing the irate threats to evict a certain internationally well-known power modeller from the field if he persisted further in running-in an unsilenced engine on his portable test bench! Admittedly the fact that he was spraying some cars with hot fuel exhaust added weight to their argument.

Simultaneous with power was the *Open Rubber* contest for the Model Aircraft Trophy. This produced a 23 man fly-off. There were probably more new models in this event than in any other at the Nats. Open rubber seems never to grow "old" in spite of the difficulty in obtaining good quality rubber strip. In particular Brian Day's all yellow winner which racked up 7:09 in a real eye-straining flight out of sight was thoroughly well made.

**WINNERS.** 'Speed'—Bill Bessant (Southampton) & Cox TD 049 two line wing, Frog 6 x 6 nylon prop and tuned length silencer. 'Rubber'—Brian Day (Walsall) and smart new yellow tissue open job. 'R/C Scale'—Den Thumpston (CM) with 8½ lb. D.H.9 to 1/7th scale has Veco 45, Orbit gear, bombs instead of ailerons! 'C/L Stunt'—Winner Geoff Higgs (Horwich) at left and 44 oz. trike gear model with runner-up Harold Dowberkin and 54 in. O.S. 35 'S' powered 48 oz. two wheeler. 'C/L Scale'—Tony Day (Handsworth) and 1/6th Beagle Airedale with S. Tigre 46, servo actuated brakes. Roberts' control on Flaps, Throttle, lights and elevator. 'FAI T/R'—Pearl (left) and Kirton, locals from Novocastria and 24 oz. Oliver Tiger design with twin ejector type silencers. Averages 88 m.p.h. airspeed. 'Combat'—team effort with L. to R. Pete Tribe, Richard Wilkins and pilot Doug Simur with launcher Moggs Morris. O/Tiger powered. 'A T/R'—Brian Turner's (Wharfedale) Oliver Cub light blue winner flown with Hughes. 'Glider'—Wilf Trotter (N. Kent) and short nosed model with arched section having drooped T.E. 'Radio'—Stuart Foster (Lincoln) Merco 61, 6½ lb. Nimbus 2 with Orbit reed gear. 'Power'—John West (Brighton) and modified Dixielander with S/Tigre G 15. 'Women's Cup'—Shirley Horton (Crawley) with Tyra Coupe d'Hiver size model, 40 in. span, 4 in. chord.

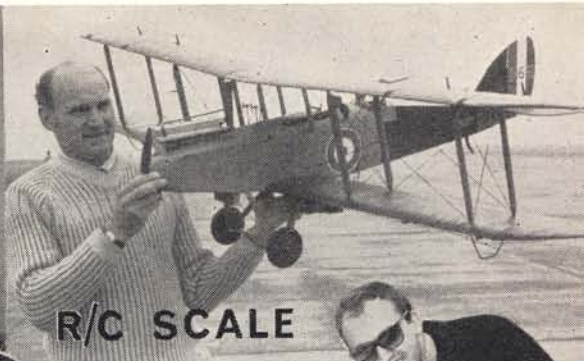




**SPEED**



**RUBBER**



**R/C SCALE**



**C/L SCALE**

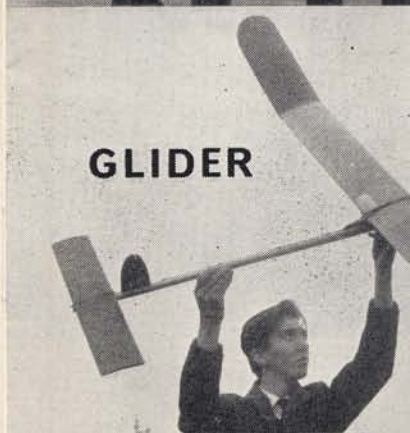


**C/L  
STUNT**

**WINNERS  
OF  
ALL  
1965  
NATS  
EVENTS**



**F.A.I.  
T/R**



**GLIDER**



**12A  
T/R**



**COMBAT**



**RADIO**



**POWER**



**WOMEN'S  
CUP**





1



2



3

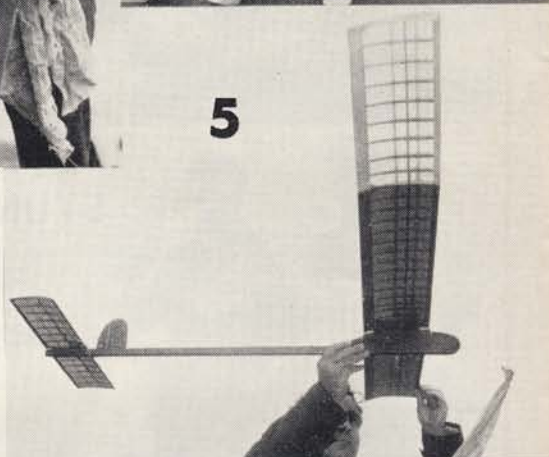


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**FREE FLIGHT.** 1 Bernard Siddle of Newton Aycliffe MAC has the right idea, he's 9 years o'd, model is a "Jackpot". 2 In power fly-off but unlucky was Mrs. Sue Miller. 3 Huge box torsion spars in Maurice Doyle's power job, TD powered. 4 Mike Green looks anxious in power fly-off. Eta 29 took his lightweight vertically at fast rate. 5 P. Perry holds "Wiz" Wizeman's glider fly-off model. Note airfoil undercamber. 6 Chris Watts of Swindon and PAW 2.5 powered APS "Eureka" made in previous week, tested at Nats and finished 6th in power fly-off. 7 Leading ladies, Kathy Allen (Brighton) Nan Stott (Warton) Shirley Horton (Crawley) and Sue Miller (Cambridge) latter three are '63, '65 and '64 winners. Kathy's turn next! 8 Ray Hoff of Sheffield SA entered this swept A/1 glider with Obeche fuselage, wings from a Wakefield. 9 Lou Roberts, 10th in rubber fly-off packed more rubber than most others would in this giant open job. 10 D. Bailey's (Swindon) 74 in. A/2 with features from Therma'nose, Lucifer and Rolling Stone.



6



5



7



8



9



10

## FREE FLIGHT



Major excitement in this large final which has a time limit of 15 minutes was centred upon "Wiz" Wiseman. He delayed his start and then when piling on the turns burst a motor inside the safety tube. Having quickly extracted the mass of rubber he fitted another motor only to discover that the bobbin was too large! Time was running short, he made another change and as the announcement was made for the last minute, he was ready to go again when he found that the hooks on his third motor were wrong for that model! The final wind-up before a crowd which had gathered to see whether he would win the race against time was quite memorable, and it is a wonder that "Wiz" still had the energy to chase the flight after so much effort. As it was, he placed 2nd with 6:53 only a few scant seconds short of becoming the winner.

With his high placing in this and the previous day's Glider event, "Wiz" earned enough points to make him Senior Champion at the Nationals for the first award of the Houlberg Memorial Trophy.

## Scale

With such exciting radio models as a "Boeing B-17 Fortress" (See this month's *R.C.M. & E*) and an "Avro Lancaster" to be found in the car park area plus an engine driven "Vickers VC 10" in the camp site one could have expected another stimulating contest for radio control scale. A "Cosmic Wind" by J. Wingate came first to the line but after a spell of cranky engine starting which was to dog practically all the entries of the day, it attempted take-off only to roll in for a cabin landing immediately afterwards. Dennis Thompson came on next with his now famous D.H.9, a 1/7th scale model of 72 in. span which has added bomb dropping to its repertoire. Once the exploding bombs had gone, the finely detailed model stalled a little but otherwise returned a most realistic performance. Matching the World War I predecessor in every way was Arthur Lalley's "Corsair". Considerably faster than the D.H.9, and steadier in the air, it was building up a fine points total until the final approach when it rolled in, without control. The same happened later in the contest to Arthur's club mate Dennis Bryant who was flying a 59 in. "Miles Sattr". Fortunately both were able to repair their models for subsequent scale and workmanship judging. Another close contender for first place was Dave Platt's "Magister". We have mentioned that most engines were having temperamental fits and starts but Dave's Merco .61 was worst of all and severely handicapped his flight. However, this was not the fault of the engine as he later discovered a 1 in. slit in the fuel tubing! Other entries included a Fokker D7, an SE5A, Siskin, Cosmic Wind, two Mustangs and a Spitfire but the usual problem of being overweight and under-powered unhappily persists.

**Control-line Scale** was judged by Dr. M. F. Hawkins and Kenneth McDonough. The slim division of 18 points between Tony Day's "Airedale" with its working lights, flaps, throttle and brakes, and Peter Ball's "Grunman Gulfhawk" with fully sprung undercarriage and magnificent finish emphasises the high standards. F.A.I. regulations are used for scale, but unfortunately very few entrants bother to make full study of them. (Obtainable from the SMAE at 1/6d.). Thus some were handicapped by being over-weight, or without documents to prove scale, or in one case did not comply with the SMAE Silencer Rule. A pity this, because it eliminated two specially fine models. As for ingenuity of choice this month's cover best illustrates what can be done. J. Collins selected the little known "Heath Baby Bullet" which was a fine effort for one who is far more a sports flier than a hardened contestant, and the Scots lads with McKay's odd sided "Blohm and Vo's Bv 141c", Anderson's "Hawk P-6e" and Jamieson's "Messerschmitt Bf 110c" added to the refreshing changes in the circuit.

McKay takes the honours for determination. His throttle line broke and the model was landed with the Eta 29 idling. Not hurrying, he left the model at rest,

S.A.C. Mackie and last year's winning Sopwith Camel scale C/liner chats with S/Ldr. Drinkell (at left). The hard working C.O. had all the Station personnel interested in seeing that the modellers enjoyed their weekend at Ouston.

reconnected the third line and took off again. For efficiency who can touch A. Briggs and his "Lincoln" starting technique? Takes less time to start four than most to start one! And what happened to the fine "Lockheed C-130" after the first day? It did not appear for judging.

## Combat

Run in two circles throughout the two day period, combat was of a high standard. Most notable entries came from Cannock Outlaws, Sidcup A.S., Worthing Bald Eagles and Northwood. Luton and Sidcup were by far the smartest dressed teams especially Sidcup in black track suits with green club badges. The all wing model is still tops in popularity along with the all-moving tail-plane, also aspect ratio seem to be lower this year. There were some organisational troubles with the competitors blaming the organisers, and vice versa, but as far as AEROMODELLER could see the organising Tynemouth Club, ran well to the SMAE rules, except for some suspect scoring. At one time, two Feltham members had to fly against each other, when in adjacent circles at the same time two Northwood chaps were at it. It would have been little trouble to swap them over, as it is a bit much to travel 300 miles and then have to fly against your own clubmates! One of the most thrilling combats we have seen was that of Moggs Morris against Doug Sizmur both from Northwood. Cuts a plenty abounded and both models were really moving, passing so close every few laps that a sharp click or clonk could be heard above the engine noise as the model bounced apart or the props touched. Moggs was flying a low aspect ratio wing designed by Mike Davies (Outlaws). The final between Neil Tidey (Worthing Bald Eagles) and Doug Sizmur (Northwood) started off sharply and both pilots went right into 'battle'. Sizmur took one cut at Tidey's streamer, then Tidey swooped in and removed all of Sizmur's streamer in one go. Sizmur then made his winning cut, removing the streamer and knot to clinch another win for Northwood. Streamerless, they flew in formation for the rest of the flight. Doug's win was marred by the low type individual who stole his highly tuned Oliver Tiger No. 4321 from his stunt model.

## Speed

Speed was disappointing to say the least, with poor results in all classes except I. For the first time ever at a Nationals, all the different classes were combined and flown in one event, final placings being decided on a handicap percentage system based on the current British Record. This favoured the class I, i.e., 1.5 c.c. engines as the 10 c.c. record (made without a silencer) is way out of reach with the present state of the silencer art. In general, most of the speed boys were anti-silencer, but they *did* all use them. Most amazing performance though not the best was from third place man G. Head (Lee Bees) who until the Nats', had never flown control line. He built the model overnight. Powered by a Cox TD







.09 the design was a copy of Bill Bessant's winning model but with conventional engine bearers instead of a pan. He scored 82 per cent with 81.6 m.p.h. and also flew in several F/F events for the Houlberg Memorial Trophy. Also he won the first "instant" merit certificate (one signed by the late Alex Houlberg before his death). Winner Bill Bessant (Southampton) flew a Cox T.D. .09 red painted wing with a tuned length home made silencer and the engine mounted sidwinder on a Pomadi speed pan. Propeller was a 6 x 6 in. Frog nylon. He made 100 per cent score with 98.6 m.p.h. on two lines. Second place was filled by Ralph Gould (R.A.F.M.A.A.) who also helped to judge stunt. He used a long moment arm Eta .29 powered Mono-line model with a removable top cowl and lower pan. Using a T.M.H.K. 6 1/2 in. x 10 in. dia. propeller Ralph scored 83 per cent with 128.5 m.p.h. Gordon Farnsworth (Sheffield) had his very neat silencer built in and coming out of the rear of the helmet cowl on a Super Tigre G 20 diesel.

### Team Racing

The effect of silencers on team racers has been most marked, as they seem to have evened everyone out, slowing the fast men down to the level of the slower types. A few watches and lap counters were suspect but the organisers soon sorted them out. F.A.I. was run most efficiently by Dennis Nixon (Hinkley) who had to remind many entrants to lighten their models before they flew. Commonest method of lightening was to remove the

silencing parts of the silencers. Whipping was noticeable by its absence, so the elevated observers platform with a marshall keeping an eye on things had the desired effect. Very few new models were seen in action, those present not featuring in the results, including Dick Place and Don Haworth (Wharfedale) who were way down with

**CONTROL LINE.** 1 Ralph Gould (R.A.F.M.A.A.) long moment arm, Monoline, Eta .29 21 in. span model with removal top cowl and T.M.H.K. 6 1/2 x 10 prop. 2 Barry Chaplin (Colchester) warms up Tiger Cub with Oliver manifold and 6 x 5 Super Record prop in Dave Wright's A racer. 3 Moggs Morris (Uorhwood) flew this Mike Davies design in combat, to get through to semi-finals. Note low aspect ratio and tough construction. Soon to be in A.P.S. 4 John Jamieson's handle for Scale Messerschmitt BF 110C has space for extra lines to control twin ED 3.46 engines. 5 Combat Finalists second place Neil Tidey (Worthing Bald Eagles) and Winner Doug Sizmur (Northwood). Both used Oliver Tigers. 6 Mick Reeves (West Essex) with semi-scale Percival Mew Gull has Fox 35 with a home made silencer. 7 Stan Perry has a scale throttle quadrant on Adjustable handle to fly his "Hawker Henley". 8 Second place F.A.I. team racer built by Brian Turner (Wharfedale) and flown by Hughes. Eta 15-111, twin silencer finished in light blue and black. Won at Tern Hill. 9 In foreground Tom Jolley's much modded "Noble". (Last year's winner.) Centre, Tubby Day's much modified Thunderbird, now named Thunderhound. Has angled engine mounting for an enclosed silencer and inverted engine. Has a marked Spacehound look. At rear Tubby's Iroquois V radial cowl model flown in the contest. 10 Gordon Farnsworth (North Sheffield) holding Super Tigre 15 diesel speed entry with enclosed silencer. In foreground his 2.5 c.c. size airframe with 5 c.c. Dooling 29.





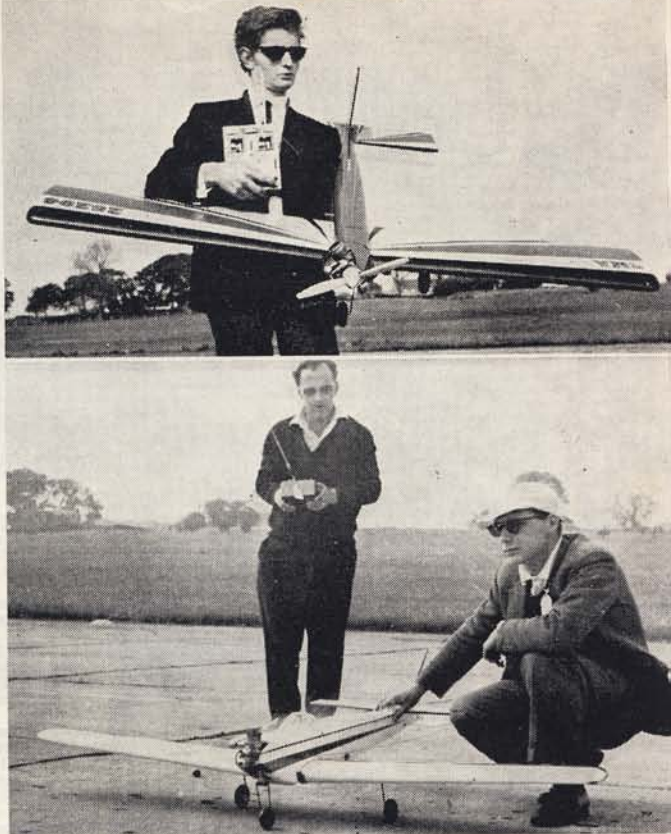
Right: Gorge Bradley, Lincoln, flew F & M Digital proportional equipped "Kwik-Fli" low wing. Placed fifth in round one but subsequently dropped to 14th after second flight when equipment continually cycled in and out of "failsafe" mode, interrupting flight and forcing flier to land model. Lower right: Roger Hargreaves, Rolls Royce M.A.C., flew Citizenship, proportional in Taurus to 10th place. Basically "intermediate" system employed aileron servo coupled to rudder control, with rudder neutraliser at full throttle, giving virtual "full house" control coverage.

their new silver and blue racer which features internal lead out connections. Ken Long (Wharfedale) many times a winner was absent, so the field was wide open for new names to be made. Nothing very exciting happened in the heats but the final was one of the closest ever seen and many spectators were convinced the final placings were other than announced. The contestants themselves were not too sure. Balch/Dell (Hayes Feltham) were going nicely only to over-heat after a 'comp-tweak' on the last tank full, with their low aspect ratio elliptical plan form Oliver Tiger powered racer. The 'silencer' used was just an Oliver Manifold with the two exhaust outlet pipes protruding from the cowling. They made third place with 11.09. In first position, Pert/Kirton (Novocastria) again using an Oliver Tiger, but this time with a home made silencer in another low aspect ratio elliptical planform model, were only two seconds ahead of the second place team with 11.04. They used a standard 'Tigress' tank but made a total of six stops. Second place team Turner/Hughes (Wharfedale) were the sole Eta finalists with a double sided Eta silencer in the light blue, and black model that had won at Tern Hill. All the models were flying at approximately 88 m.p.h. with the Wharfedale entry getting a few more laps than the winners and seemingly doing all the overtaking.

A racing had some spectacular prangs and was efficiently run by the R.A.F.M.A.A. under the worthy and efficient directorship of "Penny" Farthing. Turner/Hughes (Wharfedale) won this year and made a 4:08 heat time. In the final with them, Davey/Hudson (Wharfedale) made the fastest second round heat time of 4:46. Juniors Jackson/Smith (Feltham) unfortunately crashed at the first pitstop after 46 laps. With two models only circulating it was a rather tame final and did not hold the crowds at all as team race finals usually do. Maybe this was due to the excellent combat going on in the adjacent circles. In the last semi-final Nixon/Ellis (Hinckley) smashed in grand style when the wing fell off their model in the air! One of the worst line tangles we have ever seen at the 'Nats' happened in the second round when Laurie (Novocastria) overtook Smith/Jackson (Feltham) and touched lines. Smith/Jackson then crashed and somehow their lines became bound round Laurie's feet and he was really 'Winding Up' until helpers with wire cutters rushed into the circle, including Dave Balch who took over flying the model.

## Gold Trophy

Conditions for the Gold though not pleasant in the general sense, were perfect for flying and judging, overcast and cool with a slight breeze. After the perennial difficulty of getting the first competitor in the circle and airborne organiser Bridget Russell kept up an uninterrupted flow of fliers for the judges Peter Russell and Ralph Gould. Most interest centred on Harold Dowbekin's (Horwich) immaculately finished yellow and black model, with the looks of Sirotkin's 1964 World Championships model. Powered by the new stunt O.S. 35 'S' turning a 10 x 6 Top Flite the 48 oz., 570 sq. in. wing area model used *Aries* type built up wing ribs. The most original shape was by Mick Reeves (West Essex) who was flying another immaculately turned out model, this time a semi-scale Percival *Mew Gull* with scale cockpit details and dashboard layout. Finished in white polyurethane paint with black Fablon letters stuck on the wing, with a 56 in. wing span and a Fox .35 using a Merco silencer it crashed on the first flight when the fuel ran out halfway round a clover leaf. With his second flight Mick placed 5th. Geoff Higgs (Horwich) flew early and made a good but not outstanding flight, marred by a considerable over-run that cost him his landing pattern points, using last year's trike U/C model re-finished in one part polyure-



thane and with a new fin. Total weight was 44 oz. Associate member Harvey was the only competitor who did not lose marks for exceeding the line angle requirement, most of the others being so anxious to fly smoothly that they were going over the 45 deg. limit, even on plain loops, losing marks accordingly. Tubby Day (Wolves) was flying his midnight blue radial cowl model again which looked a trifle twitchy in the air, and Tom Jolley (Reddich) flew the model he won with last year and had difficulty with his Fox 35, caused, he thought by the Fox muffler. (This was the only report of mufflers causing handling difficulties). His pattern included some excellent manoeuvres, but surprisingly, some quite poor ones also and he, like Geoff Higgs, lost points at the end of the schedule; but for the opposite reason, he cut early on both flights. Geoff Higgs' protégé and clubmate Darbyshire had his engine cut inverted, after a very good flight. He settled down into an inverted glide and appeared to be resigned to an inverted landing, then suddenly he flicked it over and did an immaculate landing on the wheels to a roar of applause from the spectators. J. Mannal (Lincoln) did not record a flight as when airborne he hit another modeller in the pit area, his model flying in all directions—the pieces of course!

## Multi Channel R/C

Although at one time a marked reticence of volunteers to run the event prejudiced the possibility of having Multi at this year's Nationals, Malcolm Douglass and members of Newcastle, Dunfermline and RAFMAA clubs stepped into the breach in fine style.

Multi was, as usual, to F.A.I. aerobatic schedule and of the 39 entries received, 28 actually turned up to fly. Most of these were divided among strong R/C camps, including West Essex, Sutton Coldfield, LARCAS, Lincoln, Derby and Ulster, with four from Northern Ireland making the sea crossing.

Low wing models predominated, the popular designs being *Taurus* and *Uplift*, with only three shoulder wingers contending. A much wider range of equipment was in evidence this year, including F. & M. (12), Orbit (7), two each of Citizenship, and Metz, one each of Kraft, R.C.S. and Remcon, plus a couple of homebuilts. Two competitors had actually built their own reed banks.

Proportional equipment did not show up in the large





1



4



6



8



10



11



2



3



5



7



9



12



13

SCALE. 1 Tom Jolley joked with scale rules, entering this "Skyshark" with stunt wings, scored high for flying, came 6th. 2 A. G. Devonshire's (Mansfield) Merco 49 SE5A weighs 7½ lb., has O.S. radio, is 54 in. span, stalled at take off. Holding tail is S/Ldr. Drinkell, O.C. Ouston. He was everywhere! 3 Scale judge Cesare Milani is briefed by Den Bryant on Satyr features. Other judge was ace scaleman John Simmance. 59 in. span, McCoy 60 powered, with F & M radio the Satyr weighs 9½ lb. 4 H. J. Carter's well detailed D.H. 60 Moth has folding wings, Frog 500, over-ran time on flight. 5 A. J. Briggs' superb Lincoln made crowd pulling c/l flights, alas no plans for judges! 6 Pete Ball's (Wanstead) Grumman Gulfhawk in action, Merco 49 pulling 5½ lb. bright orange beauty to 2nd place. 7 John Wingate's (Christchurch) realistic Cosmic Wind unhappily rolled after take-off. 8 Ball's Gulfhawk in static pose, almost everything works! 9 T. McKay's Bv 141c made weird sight in the air. 10 Dave Platt's victim of a split fuel line, a Miles Magister in R/C. 11 Arthur Lalley (Bromley) and Corsair, a treat to see airborne, Merco 61, F & M radio. Colour neg. has lightened the blues in this pic. 12 D V11 by P. Ranson a trifle heavy at 10 lb. for Super Tigre 56, failed to take-off. 13 J. Anderson's Hawk P-6E C/liner, one of several Scots entries.



numbers perhaps expected—only four sets in fact, two F. & M. Digital 5's, one Orbit and one Citizenship. The latter, flown by Roger Hargreaves is in fact basically an intermediate system with coupled aileron and rudder control, but by ingenious use of a micro-switch cut-out, it is possible to uncouple the rudder at full throttle giving virtually "full-house" control as Roger ably demonstrated in the competition.

Multi began just before mid-day on Sunday after the qualifying scale flights. Murky, low cloud conditions cramped piloting style since it was difficult to maintain straight and level flight for any real distance without the model becoming partially obscured by the 400 ft. cloudbase. The damp also had its effect on engines—making starting difficult and running erratic. Flying standard was, however, well up, with youthful Stuart Foster (Lincoln), using his experience to give him a high first round score of 1,573, chased by D. Read of Rolls Royce M.A.C., who with 1,476 points proved himself a flier to

watch for the future. Others outstanding included Frank Knowles, whose masterful positioning of manoeuvres placed him third at the end of the first round behind Foster and Read. The first round in fact had to be carried over to Monday, when the tailenders enjoyed bright sun and almost windless conditions.

Lack of time precluded a full second round and it was therefore decided to fly as many competitors as possible before the tight 4 p.m. deadline, working down the scoreboard from the existing top positions. This of course held little prospect for low scorers, who were depending on the second round to better their positions.

Those at the top, however, were not to be ousted and although Frank Knowles came through with impressive 1,782 high point flight of the event which levered him up from third to second place, above Read, Foster remained in first position, maintained with a 1,765 point exhibition performance using *Nimbus II*, a design he has flown continually over the past two or three seasons.

## Official Results

### SPEED (Subject to confirmation)

	Handicap %	m.p.h.	class
1 W. Bessant (Southampton)	100	98.6	1.5 c.c.
2 R. Gould (RAFMAA)	83	128.5	5 c.c.
3 G. Head (Lee Bees)	82	81.6	1.5 c.c.
4 I. Roffey (Brixton)	79	131.6	5 c.c.
5 J. Penton (N. Sheffield)	78	78	1.5 c.c.
6 B. Jackson (Workop)	74	104	5 c.c.
7 G. Farnsworth (N. Sheffield)	73	87.5	2.5 c.c.

### WOMEN'S CUP

	(Open R/G/P)
1 S. Horton (Crawley)	8:35
2 G. Stott (BAC Warton)	8:28
3 K. Allen (Brighton)	7:52
4 M. Day (C/M)	7:38
5 B. Howarth (L/M)	7:25
6 D. Miller (Cambridge)	6:48
7 W. Smith (L/M)	5:49
8 J. Pollard (Novocastria)	4:53
9 P. Vincent (C/M)	3:50
10 D. Reece (L/M)	3:45

### THURSTON CUP (Open Glider)

	9:00 +
1 W. Trotter (Nomads)	3:23
2 G. Martin (W. Coventry)	2:26
3 U. Wannup (Wallasey)	2:25
4 P. Trenchard (C/M)	1:43
5 P. Liddell (BAC Wharton)	1:28
6 D. Wiseman (York)	1:22
7 P. Woodhouse (Lincoln)	8:53
8 J. Cartwright (B & West)	8:40
9 R. Moseley (Lincoln)	8:31
10 P. Bayram (Lincoln)	8:26

### R.A.F.M.A.A. TROPHY (1/4 Team Race)

	Heat	Final
1 Turner (Wharfedale)	4:43	9:06
2 Davy (Wharfedale)	4:43	9:13
3 Jackson (Feltham)	4:44	
4 Johnson (RAFMAA)	5:02	
5 Dell (Feltham)	5:06	
6 Laurie (Novocastria)	5:37	
7 Hardcastle (Wolves)	5:50	
8 Wright (Colchester)	6:24	

### S.M.A.E. TROPHY (Multi Control R/C)

	1.	2.	Total
1 Foster	1573	1765	3338
2 Knowles	1462	1782	3244
3 Read	1476	1603	3079
4 Wingate	1396	1388	2784
5 Jones	1272	1330	2602
6 Allen	1220	1271	2491
7 Blair	1130	1266	2396
8 Troy	1172	1208	2380

### HOULBERG TROPHIES

	(for Individual Champions)	Pts.
Senior		
1 D. Wiseman		192
2 G. Head		178
3 D. White		173
Junior		
K. Taylor (E. Grinstead)		34
C. Tippler (Leicester)		19

### R/C SCALE

	Flight	W'm'ship	Total
1 D. Thumpston (CM), DH9	299	361	660
2 D. Bryant (Bromley), Miles Satyr	198	307	505
3 A. Lalley (Bromley), Corsair F4V	220	283	503
4 D. Platt (Wanstead), Miles Magister	142	344	486
5 D. Brunt (LARCAS), P-51D Mustang	215	126	341
6 K. Jones (S/Coldfield), P-51D Mustang	215	126	341
7 N. Baumber (S/Coldfield), Spitfire IX	227	64	291

### GOLD TROPHY

	Pts.
1 G. Higgs (Horwich)	1047
2 T. Jolley (Reddich)	938
3 M. Dowbekin (Horwich)	916
4 D. Day (Wolves)	914
5 M. Reeves (West Essex)	862
6 S. Darbyshire (Horwich)	831
7 Cole (Horwich) 797; 8 Brownlow (Horwich) 791; 9 Jackson (Cosmo) 772; 10 Sharpe (C.M.) 761; 11 Mayne (Lee Bees) 709; 12 Harvey (C.M.) 602.	

### SIR JOHN SHELLEY CUP (Open Power)

	9:00 +
1 J. West (Brighton)	3:50
2 D. Posner (Surbiton)	2:35
3 M. Green (Lincoln)	2:22
4 C. Pittard (BAC Wharton)	2:07
5 J. O'Donnell (Whitefield)	2:03
6 C. Watts (Swindon)	1:49
7 B. Edwards (Croydon)	1:21
8 Mrs. Miller (Cambridge)	9:00
9 G. Doncaster (Baldon)	8:50
10 S. Savini (Wallasey)	8:44

### DAVIES "A" TROPHY

	(F.A.I. Team Race)	Final
1 Peart/Kirton (Novocastria)		11:02
2 Turner/Hughes (Wharfedale)		11:04
3 Balch/Dell (Feltham)		11:09

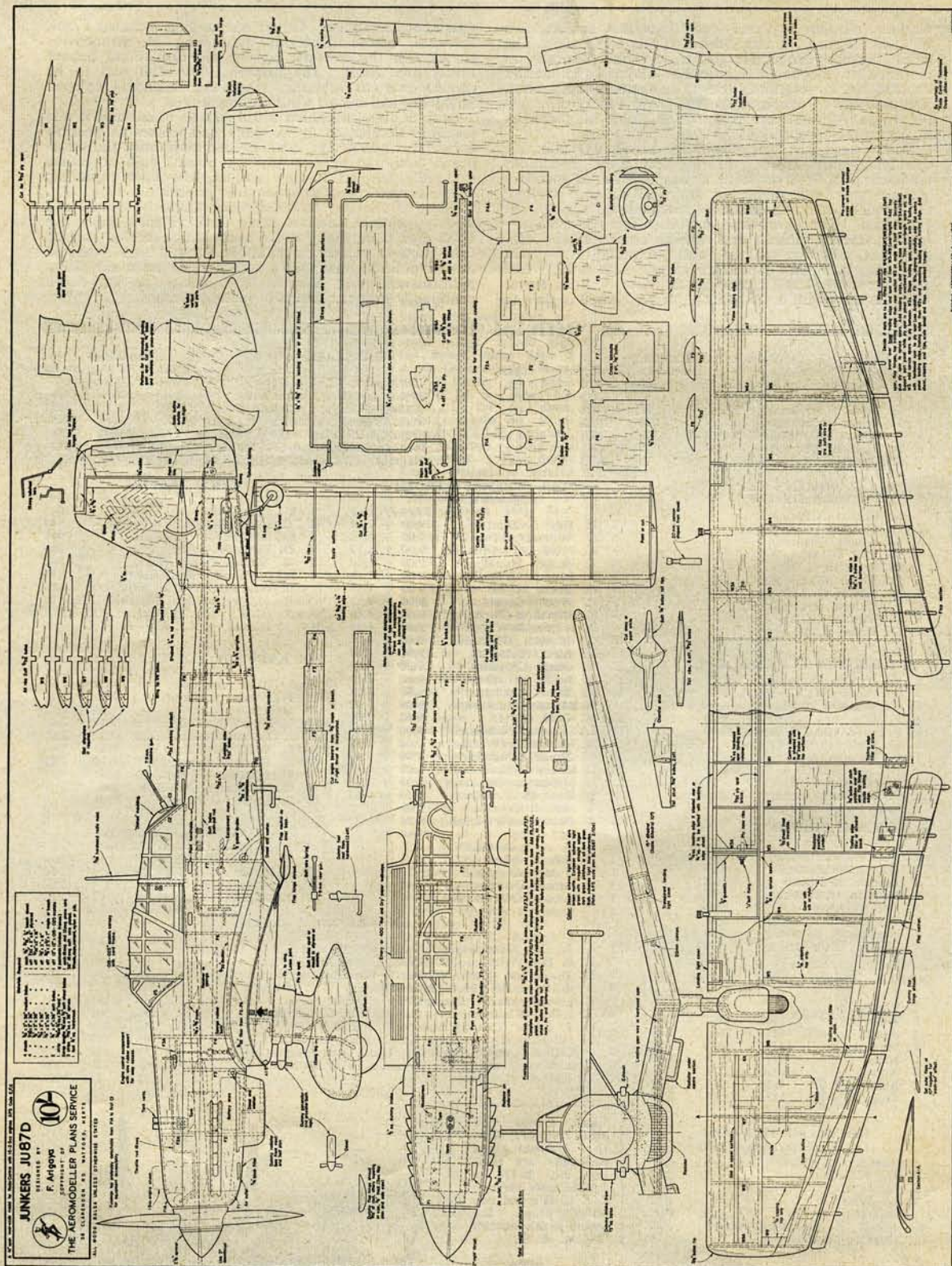
### KNOCKE NO. 2 TROPHY

	(C/L Scale)	71	437	508
1 A. J. Day (Handsworth), Auster-Beagle Airedale		89	401	490
2 B. P. Ball (Wanstead W.H.Ks), Grumman Gulfhawk		110	280	396
3 D. W. Nelson (Derby C.Liners), Matra-Moyner Jupiter		92	274	366
4 S. B. Perry (Wolves), Hawker Henley		70	291	361
5 J. S. Anderson (E. Renfrewshire), Curtiss Hawk P-6E		178	145	323
6 T. Jolley (Kidderminster), Douglas XA 2D Skyhawk		43	278	321
7 H. J. Carter (Country Member), D.H.60 Moth		105	173	278
8 J. Jamieson (Dumbarton), Messerschmitt Bf 110c		57	168	225
9 J. Collins (Country Member), Heath Baby Bullet		68	130	198
10 T. McKay (Dumbarton), Blohm & Voss BV141c		53	85	138
11 M. Gilbert (Feltham), S.E.5A				

Three Bristol R/C MAC clubsters, Norris, Harrison and Alexander are making this B-17 to 1/12th scale for two K & B 45's and two idling props. See feature in this month's 'R.C.M. & E'.







FULL SIZE COPIES OF THIS 1/6TH SCALE REPRODUCTION ARE AVAILABLE FROM A.P.S. PRICE 10/- POST FREE. QUOTE PLAN NUMBER FSPBB4 WHEN ORDERING.



— from Japan —

Fujio Arigaya's  
41 inch span  
near-scale model  
for rudder-only  
radio control and  
1.5 c.c.-2.5 c.c.  
engines



## Junkers Ju 87 'STUKA'

NO CLAIM IS MADE for this design to be true to scale in all respects. However, the purists will find that the drawing includes the scale outline indicating the deviations in the tail surface and wing tips.

This Japanese model has already accumulated a fine reputation in its homeland and the designer is renowned for his series of scale and semi-scale projects all of which are operated on single channel. This is one of his earlier and most used creations. It employs a rubber driven compound escapement driving the rudder with 3rd position for a motor control escapement. Other designs from the same school have employed aileron-only control and with the benefit of the later type motorised servos for the single channel Fujio has incorporated as many operations as: ailerons, flaps, motor speed, steering nose wheel and kick elevator, all off one servo!

### Fully tested

We specially selected this Ju 87 "Stuka" for the reason that it is so well proven and is surprisingly

simple to make in spite of its unorthodox cranked wing appearance.

### Dive bomber

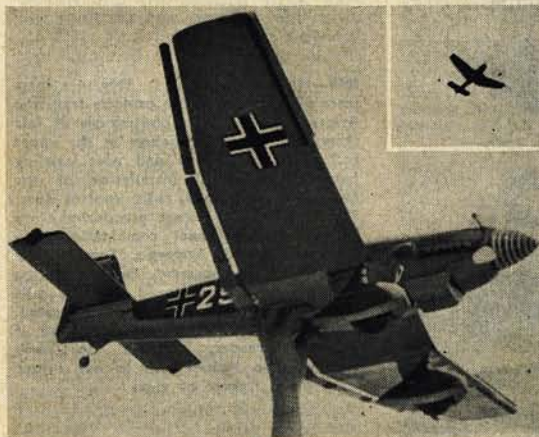
The Ju 87 was a German dive bomber used in the earlier years of World War II, and having generous dihedral angles, offers a surprising stability to make it suitable for model flying. Strangely enough, very few free flight models apart from the well established design in Aeromodeller Plans Service\* have appeared, yet performance is not in the least hazardous as was that of the full size.

For anyone looking for something out of the ordinary for Radio Control flying, even for local rough field operation, here is a thorough recommendation. It lends itself to a variety of colour schemes and the plan itself is one of the most detailed in our range. One has the option of using anti-stall slots in the wing tip panels, the trailing edge flaps can be used for trimming and the entire wing and undercarriage actually knocks off easily from the underside of the fuselage in the event of minor disaster.

On the full size plan are the developed templates for each of the major components, it also incorporates the basic building instructions. Whilst the original employed a .09 cu. in. glow plug engine, the model will take a full range of engines from the more powerful 1 c.c. diesels through to 2.5 c.c.—if you want something that is "hot".

\* APS Plan FSP/CL675 is for a 34 in. span free flight (.5 c.c.) or control line (2.5 c.c.) scale Ju 87 "Stuka", price 5/- plus 6d. postage.

(Continued overleaf)



Simplified in cross section and altered in the size of the tailplane, and chord of the wing tip, this "Stuka" by Arigaya becomes a practical local field flyer for simple rudder only operation. Inset flight view at left indicates the spectacular appearance when airborne. Trailing flaps and ailerons are soft wire mounted and can be used for trimming.



This angle emphasises the cranked wing and extra 5 degrees of dihedral for stability safety factor. True scale dihedral is 10 degrees. Plan is reproduced by courtesy of Denpa Jikken Co. Publishers of "Radio Control Technique", Japan.



Whilst the fuselage is of reasonably standard assembly, having flat solid sheet sides with verticals attached prior to assembly on the engine bearers and main bulkheads, the wing demands a different technique to normal.

### The cranked wing

One must decide whether or not slots are to be used. We are assured and know from experience with larger designs that they can be of value. Since they should present no difficulty in construction they are therefore recommended. This means that the alternate ribs and false leading edge have to be prepared.

Wing construction starts with the port (left) panel when ribs W4-W9 are glued over the lower trailing edge and the bottom spar. This structure is made more complete by addition of the upper spar, the flap hinges, the top trailing edge and the rear section of rib W3 which is situated at the dihedral break. Spars are left over-long and the cranked  $\frac{3}{8}$  in. ply centre section spar is attached to the front face of the spruce spars up to the inner face of rib W4. The free end of the centre section spar is cranked upwards and away from the building board whilst working on the rest of the structure and when all joints are dry, the structure is removed from the board and a repeat procedure for the starboard (right) panel out-board to rib W3 produces another outer wing joined onto the ply spar. When this structure is complete and joints dry, trim the over-length spars at the W3 position and add the pieces of spruce spar to the rear face of the ply spar on the cranked section between the W3 ribs.

The shaped landing gear is secured to the ply spar with bolts and clamped with a slotted hardwood spar using a strong adhesive such as Araldite.

Now to fill in the basic structure of the centre section. The  $\frac{1}{8}$  in. spruce spars act as keying points for the rear sections of ribs W1, which can be

aligned by eye. Link them with the flat centre panel of the trailing edge and do the same for the nose portion. Then fit ribs W2, aligning carefully by eye and add remaining leading and trailing edges. The entire cranked portion of the wing is sheeted on the top surface with  $\frac{1}{16}$  in. balsa and the outboard panels are reinforced from the spars forward with sheet, and strips of capping on the ribs, on the top surface only.

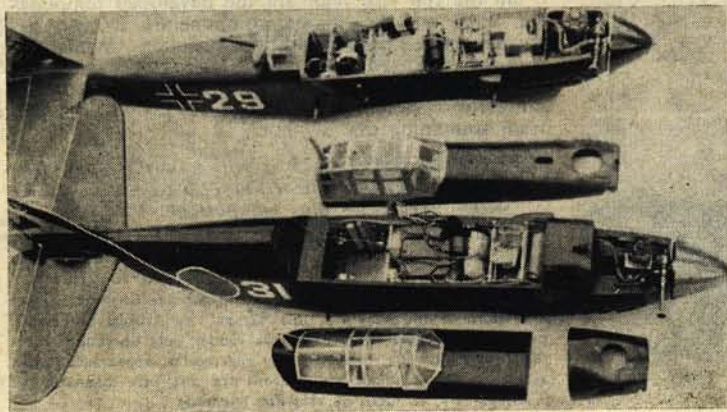
Apart from the cranked wing, the remainder of the structure is perfectly standard. The undercarriage spats can be carved from soft balsa or alternatively moulded in a plastic. This is a matter of modeller's choice but one thing is essential in that one must allow a loose joint for flexibility on hard landings.

Installation of the radio control equipment is clearly indicated on the drawing but the Japanese design allows a push-pull rudder action only. A British escapement would require to be modified with an internal bellcrank to convert the normal torque rod motion to push-pull action. Another alternative would be to modify the rudder to have internal type of angled torque rod lever.

As for the colour scheme, one could employ the desert colouring of light and dark brown mottle camouflage or the European scheme of light green with irregular straight edged dark green patches, or, all-over very dark green upper surfaces. In all cases, use light blue under-surfaces. The APS Scale plan BL2687 (2/10d.) gives further information.

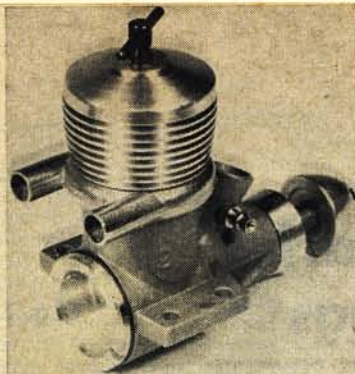
### Others wanted?

In presenting this first design from the Arigaya stable, we invite readers to comment on other semi-scale or exact scale single channel models they would like to see added to our range. Dependent upon the response, we can then plan further additions for the future.



**NO—Not two of them!** This is a fore-taste of other semi-scale projects from the Arigaya stable. This photograph at left shows the "Stuka" fuselage in the upper half with the canopy and nose cowling removed to reveal installation of the Enya .09 engine and radio control gear. The fuselage will accept practically every known single channel combination. In the lower half is Arigaya's "Tony" fighter with similar arrangement. Escapement has in this case been removed from its rails and the cowling for the engine is separated. The "Tony" is equally attractive and if sufficient readers request, we will endeavour to include this in our future range of plans.





The very clean casting are clearly seen above on the new Taipan 2.5 series '65. Note also the twin outlet exhaust manifold.

### Taipan 2.5 Series 65

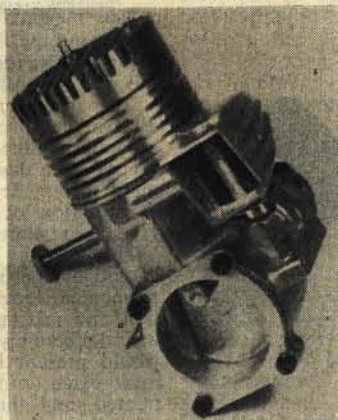
The latest Taipan 2.5 produced by Gordon Burford of Australia designated series 65 is again a very well made and tough sports engine. Of 2.5 c.c. capacity it is a diesel with front rotary shaft induction, the shaft running in a plain bearing and having a  $\frac{1}{2}$  in. thread to take the spinner nut. The cylinder is of the screw-in variety and will accept a die cast twin outlet collector ring of real quality production that is clamped on by the screw down cylinder jacket. This is the first evidence of a diesel silencer design from outside Europe. Still using considerable sub-piston induction, the porting system is triple transfer in the walls, simultaneous with the early exhaust, which is most generously "dwelled" for about  $\frac{3}{16}$  in. of piston travel. Vital statistics: bore .575 in., stroke .562 in., weight 5 oz.

### Latest 1965 Super Tigres

Super Tigre always known for their complicated engine numbering system are now producing several new types aimed at the American market, with the exception of a diesel called the G-33 of 1.6 cc. capacity. It is front rotary induction with a one piece crankcase and slip in cylinder liner, solid cylinder head, long compression screw and removable backplate held on with four screws. The shaft runs in a plain bearing and a removable venturi insert is used. A radio version has not been announced but this could be a future development as the removable venturi and the exhaust stock look just right for modification. The G-20 .23 R/C and G-20 .19 R/C now use the simplified throttle linkage as the ST .51 R/C. The ST G-15 is now incorporating a spinner machined to fit an F.A.I. speed model, new internal head contour and a front race dust cover, plus an optional backplate for the free flight fiends is now available. This is a timely and very clever device that replaces the standard backplate and converts the engine to radial mounting. It includes a pressure connection and is heavily gusseted to minimise distortion. Size is 1  $\frac{13}{16}$  in. square. Aimed at the nitro burning Rat Race addicts, the ST G-40 RV is an entirely new engine with rear rotary disc valve induction, robust one piece crankcase slip in cylinder liner deeply finned cylinder head and twin ball race supported shaft. The ven-

## MOTOR MART

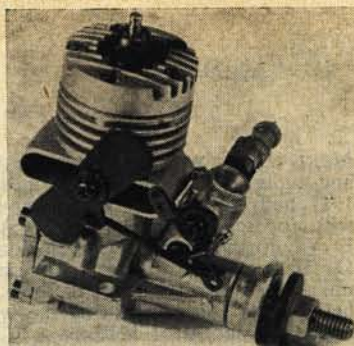
turi is set low down at the base of the back plate in a central position and is retained with grub screws. The shaft appears to have a very short overhang. Bore is 21.5 mm. and stroke 17.5 mm., very much over square in keeping with modern thinking on fast running engines. A new 5 cc., the ST 29 RV, is also being produced and this is basically similar to the 40 but with the inclusion of an integral spinner unit and shallower finned head. These engines are not on general sale at present, some examples may be seen around but these are mainly supplied for evaluation purposes. A new speed .60 and .65 are also under development. Cliff Telford from the U.S.A. made 162 m.p.h. at the King Orange meeting in Florida using a prototype 29 with a  $6\frac{1}{2}$  x 11 in. propeller and hotted up K & B racing fuel—hotting up being the addition of more Nitromethane. Spares and sales of Super Tigre engines are limited in G.B. but Roland Scott does most of the range.



Rear view of the new O.S. butterfly valve exhaust throttle shows valve in open position for full speed running on a '50' —latest O.S. size is a '58'.

### Tiger Tattle

No, this is *not* the latest petrol sales gimmick but the title of a duplicated newsletter from J. A. Oliver. The first of the new issue deals with all the tools needed to dismantle an Oliver engine in the correct manner and tips in fitting their engines for the best results. Oliver are now selling their tools, and prices can be obtained on application to the works. "Tiger Tattle" is free on submission of a stamped and addressed envelope to the works.



O.S. Max 10 above displays its larger brother's radio control parts scaled down to 1.8 c.c. size.

### O.S. Max 10 and Max-R 60

Latest in a succession of new engines from the O.S. factory in Japan are the Max 10 and Max-R 60. The Max 10 is a very well made and finished little engine with all of its larger brother's radio control gadgets scaled down. Weighing only 3 oz. it features a centre pivoted exhaust "chopper" linked to the rotating brass barrel type choke. With a plain bearing shaft and strong one-piece crankcase that has the exhaust stack tapped to take a silencer, plain lapped piston and liner, it seems an ideal Sunday sports flier's engine, capable of taking plenty of hard knocks. The spray bar has a neat right angle connection fitted behind the needle retaining spring to allow a fully cowled installation without any unsightly fuel tubing sticking out. At the British Nationals reported elsewhere in this issue, we were able to examine one of the very latest O.S. engines. This was one of the few O.S. Max-R .60's produced so far and was presented to Keith Hearn of Melbourne, Australia, by Mr. Owaga on the occasion of his recent visit to Japan and tour of the O.S. factory. First impressions are very favourable as it looks really rugged and tough with its robust castings and short shaft overhang. The rotating barrel exhaust restrictor is linked to the venturi throttle and the air induction is by means of a drum valve through the centrally located venturi. It will be interesting to see if the factory produces a speed version of this engine as it looks a most suitable layout.



Rear view of the O.S. Max-R 60 gives an immediate impression of toughness and 'right' design. Throttle and exhaust are linked by a short push rod and the servo linkage arm comes out in just the right place for a slim cowling though the tank and mounting former may call for a cranked end on the push rod.



MOST JASTAS WERE EQUIPPED in the same manner, and units in existence, or formed in the spring of 1917 had Albatros D III. These were supplemented with, or replaced by the later Albatros D V and D Va during the summer. Fokker Dr. I and Pfalz D III began to appear in the autumn, and many units had a small number of these, mixed equipment being quite common during the winter of 1917 and the early months of 1918.

Some units were completely equipped with Fokker Dr I as late as June 1918 until Fokker D VII became available in sufficient numbers to replace them and the remaining Albatros D Va. and Pfalz D IIIa still on charge. As a rule the Fokker D VII formed the main equipment of the Jastas until the Armistice, although other units were operating Siemens D IV, Pfalz D XII, and Fokker D VIII, some Jastas serving on quiet sectors of the Front still had Albatros D Va and Pfalz D IIIa until late in 1918.

Unit markings continued to be used until the Armistice, although losses were often so high that machines were collected from aircraft parks and flown in action before any unit or personal marking could be applied. With changes in aircraft type, sometimes slightly different unit markings were carried, for example, Jastas having painted cowlings on Fokker Dr I, on receiving Fokker D VII sported this colour in various ways, some units only painted the nose cowling of the D VII, others painted all the metal panelled portion of the nose, and others again carried their unit colour as far back as the cockpit!

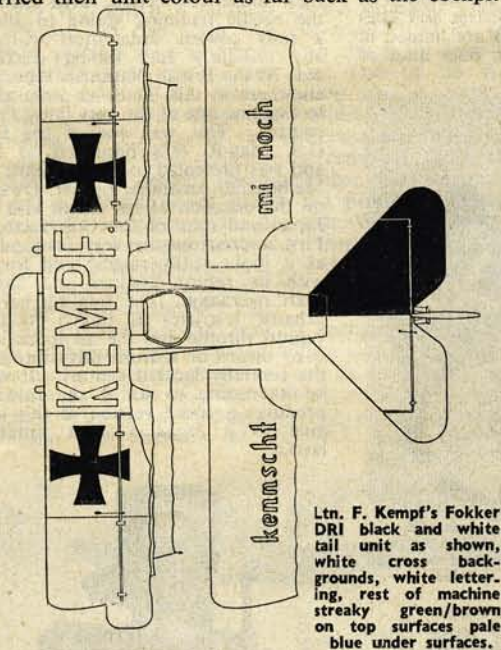
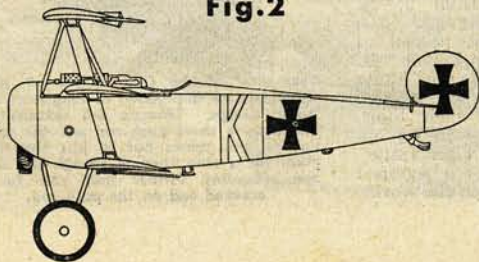


Fig.2



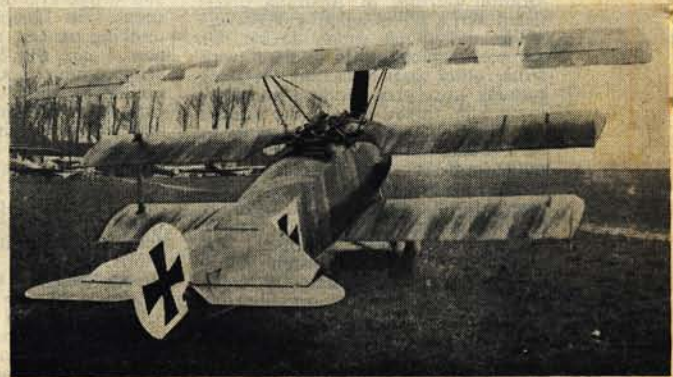
## A NEW SERIES

Jagdstaffel  
Markings

by ALEX IMRIE

Streaked and unstreaked areas on rear fuselage and tail unit Fokker DRI. (Streaked area is a lighter colour. Unstreaked is very dark green/brown. Border on bottom fuselage and tail unit light blue, white rudder and cross background.)

Fig.1



## Factory Finish of Fokker Dr I

The machine shown above (Fok. Dr. I 512/17), is wearing the finish and markings with which Fokker triplanes emerged from the Schwerin works during the early months of 1918.

The uppersurface colour of Fokker Dr I's has always been a controversial topic with historians and modellers alike. It was known that a dark dirty green, often described as a dark olive green, was the main colour. It has now been ascertained from the examination of relic triplane fabric that this dark green was nearer to a blackish brown in places.

The streaky method of application, whether caused by the brushing out of the dark green brown pigmented dope on the white fabric, or by the addition and mixing of a lighter colour dope at places, was deliberately effected, so that the uppersurfaces would present light and dark areas, offering better camouflage properties. Some parts were not so treated, and they possessed the one shade of dark green/brown.

The streakiness mentioned was usually introduced chordwise on the wings, vertically on the fuselage sides, and diagonally on the fuselage decking and tail unit. Components were of course, doped individually before assembly, but no attempt seems to have been made to line up areas that were streaked, the tail unit of 512/17 is a good example, and Fig. 1 prepared from the original photograph shows the streaked and unstreaked areas.

Machines were not streaked uniformly, some aircraft were streaked all over the uppersurfaces, so that the lighter colour predominated, they appeared light greenish brown: others streaked to a lesser degree would present a dark greenish brown appearance. All undersurfaces were doped pale blue.

On the mainplanes the greenish brown and pale



blue met in a straight line along the centre of the leading edge. On the tail unit the pale blue was allowed to continue round the leading and trailing edges for about 1 in., this was also done on the fuselage, the pale blue extending up the fuselage sides for about 1 in. above the bottom longerons.

Patée crosses were carried on square white grounds on the fuselage sides immediately ahead of the tailplane leading edge, also on the top surface of the upper wing and on the lower surface of the lower wing, the rudder which was white also carried the cross Patée. The machine type abbreviation and serial number was stencilled on each side of the fuselage ahead of the cross in black, and was difficult to read unless at close quarters if the background happened to be a dark (or unstreaked) area.

### Jagdstaffel 2 (Boelcke)

Autumn 1917-Autumn 1918

Fokker Dr I and D VII

Fokker Dr I's began to arrive during the autumn of 1917, these machines were finished in the normal factory scheme detailed above. The unit marking consisted of black and white tailplane, elevator and rear fuselage proportioned as follows: Port side tailplane, elevator and rear fuselage (top and bottom surfaces) painted white. Starboard side tailplane, elevator and rear fuselage (top and bottom surfaces) painted black. The two colours meeting on the air-

craft centre line. Pilot identity markings varied from fuselage stripes and symbols to the example shown in Fig. 2. This was the machine flown by Leutnant Kempf, the inscription, "kennst mich noch?" carried on the top surface of the centre mainplane means, "do you remember me?" All lettering on the aircraft was in white.

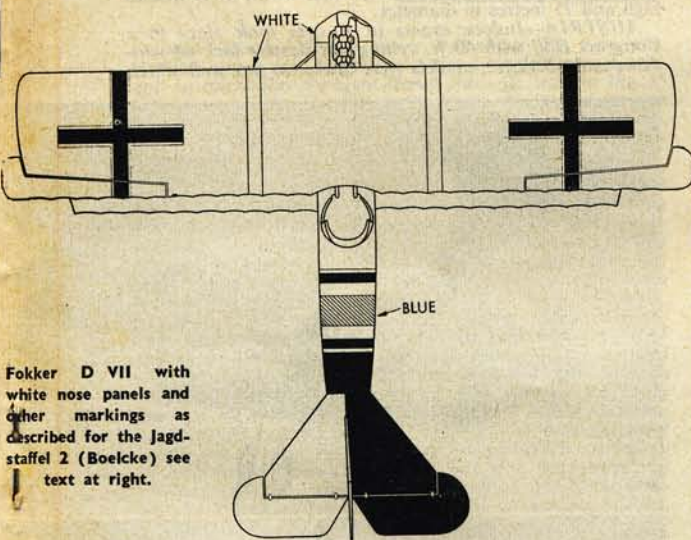
During the spring of 1918 the white cross backgrounds were painted out in the appropriate surface colour, leaving the cross with a thin white border, and in April the curved sides of the crosses were straightened out as per directives from the High Command, this resulted in the crosses having rather thick arms in proportion to their length. (See AEROMODELLER, December, 1957, for details).

The Triplanes were replaced during June by the Fokker D VII, and with this change in equipment an addition to the unit marking was introduced. The nose panels of the D VII were painted white, see photo below and Fig. 3 for proportions, also since the fin was used as the dividing line between the tailplane colours, on the top surface they did not meet on the aircraft centre line due to the amount of fin off-set to counteract torque.

Vzf. Jentsch joined Jasta Boelcke in August and was allotted a Fokker D VII that had the fuselage and wings painted a light sky blue, the unit marking being as described. Pic. below shows a Fokker D VII from Jasta Boelcke, this aircraft (332/18) is an early production machine built by the Fokker works at Schwerin, the fuselage is covered with white fabric, and is doped the streaky green/brown common to the Dr I, the wings are lozenge fabric covered, and the proportions of the wing crosses suggest that they are modified Patée crosses. The white colour of the port tailplane has been extended in the form of a flash on the fuselage decking and side as pilot personal marking. Unusual is the aircraft type and serial number stencilled in white, on this machine the wheel covers are also white. Fig. 3 depicts the Fokker D VII flown by Obltn. Bolle, shown are the two white wing bands that he carried as leader's marking, these bands continued round the leading edge, and extended back on the undersurface of the top wing to the front edge of the main spar. The fuselage bands went completely round the fuselage, and appear to be the following colours: white-black-white-blue-white-black-white. The fuselage aft of the coloured bands, except for the white section on the port side, was coloured black. The other side view in Fig. 3 shows another machine of the unit carrying a spade on a white band as personal marking, this being repeated on the fuselage decking. Wings and fuselage were covered in lozenge pattern printed fabric. All Fokker D VII's of Jasta Boelcke had white fins.

(TO BE CONTINUED)

NOTE: Jagdstaffel 2 was re-named Jagdstaffel Boelcke by Imperial Decree after Boelcke's death.



Fokker D VII with white nose panels and other markings as described for the Jagdstaffel 2 (Boelcke) see text at right.

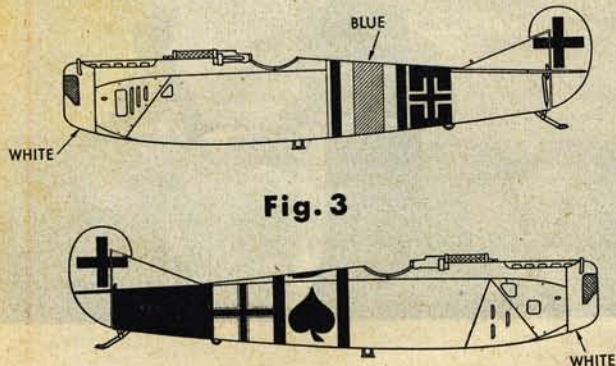
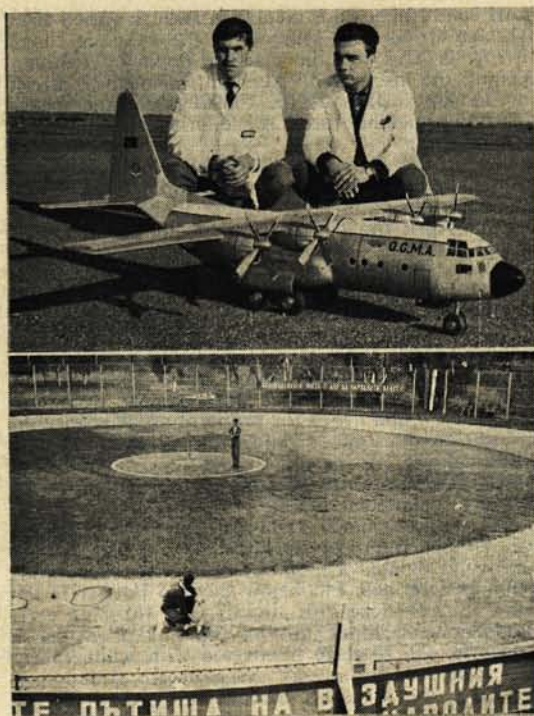


Fig. 3







**WEST GERMANY**—The popular Walldorf International contest held 10 miles from Heidelberg will take place on 5th September. We understand that no pre-entry is required and there will be camping or sleeping facilities in a hangar. Contest classes include A/I, Chuck gliders, powered glider, all F.A.I. free flight events including tailless classes of each. Enquiries should be sent to W. Muller, 6909 Walldorf, Lilienthalstr. 8, West Germany.



Who'll be my "Galahad"? Pert Miss Lina Chua helped Robert Chan-ze of Singapore to make this fine example. Has Tairfun "Hurricane" 1.5 c.c. diesel, Orbit single channel and O.S. escap. Made from British 54 in. span Mercury kit. Right top: 18 in. span all sheet Avro Triplan indoor scale replica made in three evenings by Harold Warner of California. Made 25 secs on a test hop. Below is J. O. Akesson of Sweden and his "big" Wakefield with mighty span and tiny tail plus long fuselage. Note fine wing structure with criss-cross ribs.

## World News

Two Webra Mach 1 (2.5 c.c. diesel) and two Webra 3.5 c.c. Bully diesels power this Lockheed C-130 control line model. Weight is 19 lb. and span 78 in. It is in Portuguese Air Force markings and was made by Victor Figueiredo of the aeromodeling section, O.G.M.A. Portugal and his asst. Control-line circuit in Bulgaria is at Plovdiv. Speed fliers Podchyiski and Vassilev are about to make a flight on opening day.

**AUSTRALIA**—Attempts on the World duration record may soon be made by ex-Gold Trophy winner Brian Horrocks and Max Starrick from Salisbury North, South Australia. They have two models in preparation, each 84 in. span, using Australian made Taipan 2.5 c.c. diesels. All up weight is intended to be 9 lb. including fuel capacity for 18 hours of flight with the engine running at 8,000 r.p.m., driving an 11 x 4 in. prop. Radio equipment will be Grundig 8 channel Superhet with 4 Musclemite servos and Mercury cells for power supply.

**CZECHOSLOVAKIA**—More than 30 competitors were attracted to each of the February and March indoor contests for models to the F.A.I. and the 35 Cm class. Best time so far under the 45 ft. ceiling is 10 minutes in the smaller category, 12 minutes in F.A.I. Many well known Czechoslovakian internationalists have taken up indoor flying and Josef Gabris, the control line stunt flyer has proved to be particularly skilled having made a 35 Cm model which weighs 0.0075 oz. without rubber. The Czechoslovakians hope that in 1966 an international event will be run in their industrial fair hall which is 40 metres high and 75 metres in diameter.

**AUSTRIA**—Indoor events in Austria took place in a Congress Hall with 40 ft. ceiling but despite lack of windows and obstacles, models were drawn to one wall which







Czech aces take to indoor. Above, F/F power expert Rudolf Cerny and 75 cm. model. Right, C/L stunter Josef Gabris launches 35 cm. model. Both class winners.

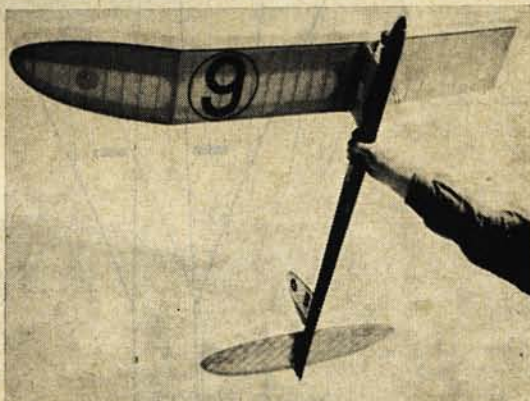
Above, Indoor helicopter at Czech contest by J. Husak. Simple push-pull type is capable of good duration. Below, Rudolf Schenker of Switzerland has a two piece wing on his FAI power model in 1965 national team. Striking feature is mechanically operated incidence differential control for climb and glide.

reduced possible flying times by about 50 per cent. Average times with the paper covered models were 4 min. and in microfilm the time was 6 min. 12 secs. in the 35 Cm class which, like the open class, for models up to 60 Cm span was won by Walter Hach. This represents the beginning of indoor flying in Austria. Expansion is expected.

**AUSTRIA**—Annual inter-city control line contest on the F.A.I. Calendar was held 28th-30th May at Vienna with five city teams taking part including visitors from Zurich, Switzerland; Prague, Czechoslovakia; and Munich in Germany. Weather was extremely poor for team racing and the 3rd rounds of stunt with many models crashing. Team race was won, we understand, by the Czechs Trnka/Drazek flying their "Orion" (AEROMODELLER, May 1965). Fastest heat time was 4:44 and they won the final in 9:57 just two seconds ahead of Gurtler/Baumgartner of Vienna, a young team using a Bugl engine and model design. The winners had only four pit stops but a somewhat reluctant engine. International speed was naturally centred on the new rearward facing exhaust MVVS glow plug engine which proved to be difficult to tune. The event was won by Freundt of Salzburg, Austria, with a fastest speed of 208 k.p.h. beating the Czechs Pech and Sladky by a narrow margin.

**ARGENTINA**—Results of the 18th National Championships held at Rio Cuarte in April proved to be most exciting in the Wakefield class with Cano and Colombo each making full maximum scores, the only ones to do so in the entire meeting. Veteran flyer Colombo won the fly-off. Other well known names in the results were Sandham, who won power, and Leys, who was top in F.A.I. speed and placed high in other classes as well gaining 3rd in F.A.I. team race. Fastest team race time was 5:52 by Bianchi and Saluberry.

**NEW ZEALAND**—New F.A.I. team race record time has just been established by Geoff Tennant of Palmerston North with Owen Rogers as mechanic. The time of 4:18.4 was established with an Eta 15 Mk. 2 using the normal two piece spray bar in a design based on "Fresco". The model enjoyed a single stop run at an average air speed of 95 m.p.h. and the prop was a Frog 7 x 6 nylon warped to increase the pitch to approximately 7 in. Geoff is the bulletin editor of the Club Newsletter and would like to correspond with fellow enthusiasts in



the U.K. to exchange information, we would be happy to put others in touch with him.

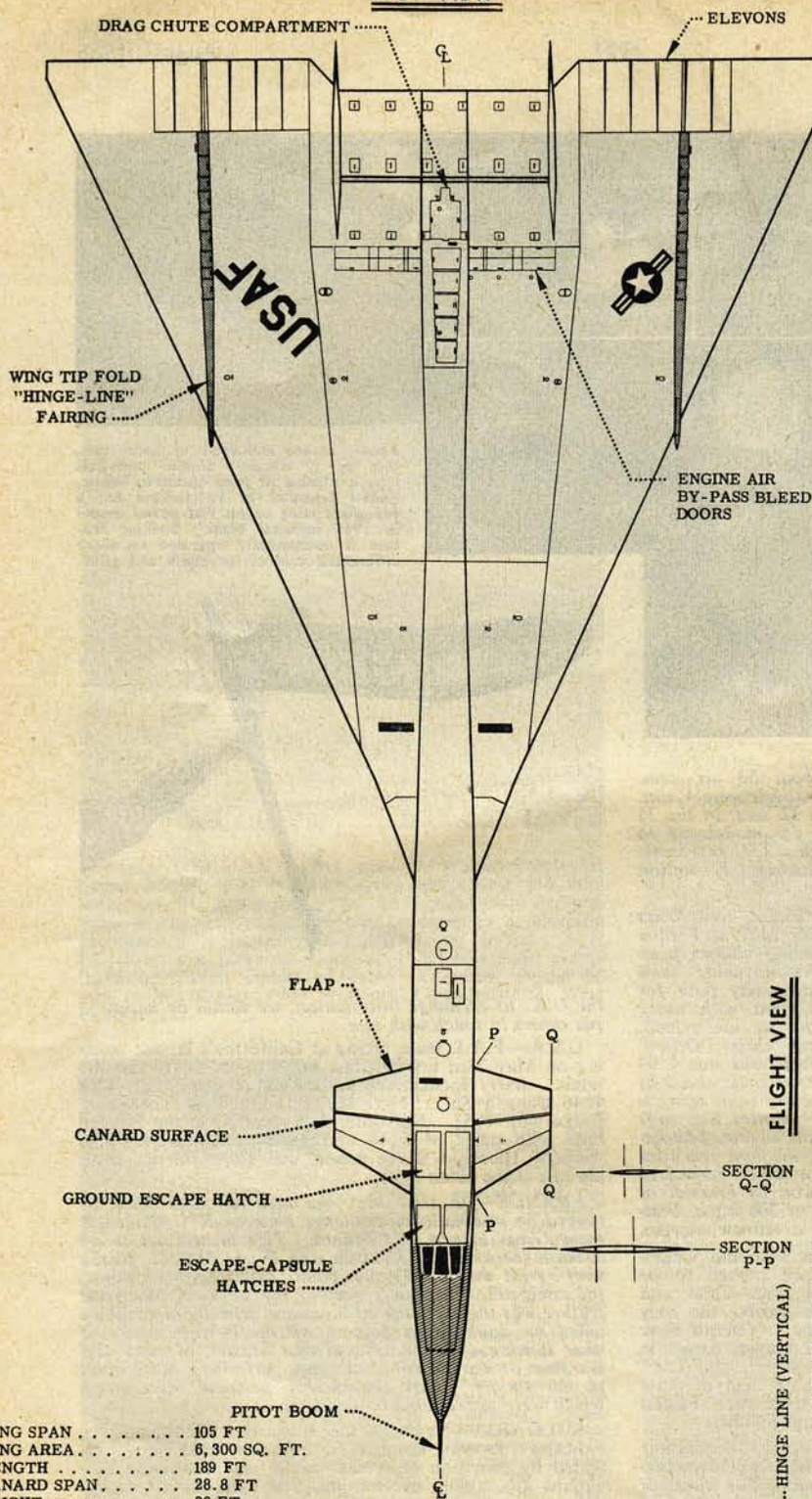
**U.S.A.**—F.A.I. team racing at California's largest meeting on May 23rd brought fast times in the heats and the finals. Barr/Norsikian were fastest in the heats with 4:46 using a Super Tigre diesel followed by Theobald/Burke with 4:52. The order was reversed in the 200 lap final with times of 9:44 and 10:34 respectively. The winners Theobald/Burke made five stops in the final, the last at the 196th lap.

**FRANCE**—On 16th May the aeroclub at Rouen arranged an international challenge between R/C modellers from Great Britain and France. This turned out to be a battle between Ed Johnson and Pierre Marrot, finally won by Ed with a very slim points advantage. However, the competition was only part of the weekend, the great feature was the exchange of ideas and friendly atmosphere aided no doubt by a magnificent lunch with plenty of wine flowing. We understand that Messrs. Mardon and Gardner of the British contingent performed more spectacular though rather unorthodox personal manoeuvres which were appreciated by everyone.

**BULGARIA**—News of the Bulgarian Championships indicates a growing keenness for the hobby in all categories. Aided by provision of special circle (see photo) the Bulgarians are rapidly overcoming their handicap of supply difficulties and the results show extensive use of imported equipment. The winning F.A.I. performance was 210 Km/h by Rashkov, who also teamed with Tineo to win F.A.I. team race at 5:01. At a later contest Ivan Vassilev pushed the speed figure up to 225 Km/h a new national record established with a Super Tigre G20/15 and a Tornado 5 1/4 x 8 in. prop.



# TOP VIEW



WING SPAN . . . . . 105 FT  
 WING AREA . . . . . 6,300 SQ. FT.  
 LENGTH . . . . . 189 FT  
 CANARD SPAN . . . . . 28.8 FT  
 HEIGHT . . . . . 30 FT  
 ENGINES . . . . . 6 GENERAL ELECTRIC YJ-93

PERFORMANCE

SPEED . . . . . MACH 3 (2000 MPH)  
 RANGE . . . . . INTERCONTINENTAL  
 ALTITUDE . . . . . 70,000 TO 80,000 FT  
 GROSS WEIGHT . . . . . 500,000 LB APPROX.

# FLIGHT VIEW

SECTION Q-Q

SECTION P-P

HINGE LINE (VERTICAL)

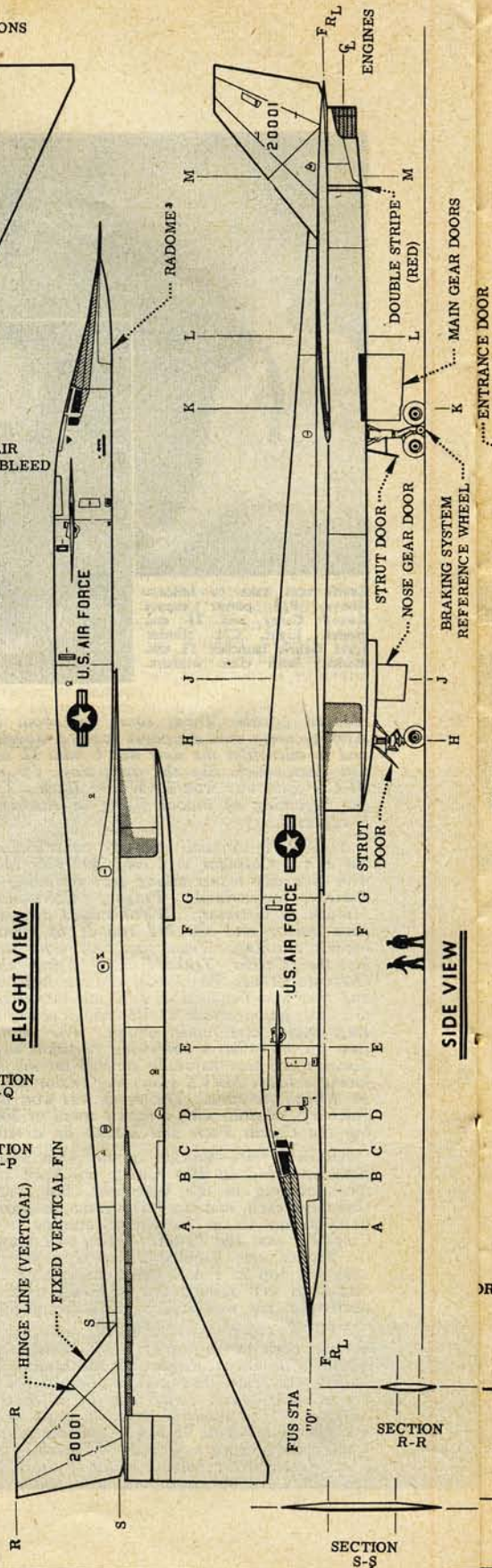
FIXED VERTICAL FIN

R

S

20001

# SIDE VIEW



NORTH AMERICAN AVIATION INC. XB-70A



ENTRANCE DOOR

TWO-POSITION WINDSHIELD

ADJUSTABLE WINDSHIELD RAMP

U.S. AIR FORCE

## SUBSONIC WINDSHIELD CONFIGURATION

... VARIABLE INTAKE-DUCT RAMPS

SECTION  
N-NC<sub>L</sub> WING FOLD BP 386.2

NOTE:  
LOWER FUSELAGE CONTRIBUTES  
COMPRESSION-LIFT AT HIGH SPEEDS...

ENTIRE AIRPLANE . . . . . GLOSSY WHITE FINISH  
(EXCEPT ENGINE BAYS AREA)  
ENGINE AREA . . . . . NATURAL STEEL FINISH  
TIRES . . . . . "ALUMINUM PAINTED"  
ANTI-GLARE PANEL . . . . . (FLAT-BLACK)  
ALL LETTERING . . . . . BLACK  
NATIONAL INSIGNIA . . . . . RED, WHITE & BLUE  
WING-TIP FOLD FAIRING . . . GLOSSY BLACK

## MANUFACTURER'S DRAWING

This detailed scale drawing of the North American XB-70A "Valkyrie" has been prepared by the publicity department of North American Aviation Inc., Los Angeles, U.S.A. The scale is 1/288th. Currently involved in a test programme to investigate the problems of supersonic flight with such large aircraft, the XB-70 has had more than its full share of misfortune at the hands of politicians as well as in its advanced engineering. At present it is proving to be extremely successful, and may well become the primary equipment vehicle for future supersonic transport operations. One of the major difficulties in engineering is that of countering the extreme high temperatures involved with the use of steel and titanium alloys. Stainless steel honeycomb sandwich construction was developed to provide installation and titanium used for almost 10 per cent of the total structural weight. Special welding equipment had to be designed to assemble the aircraft due to extreme close limits and lack of access in the thin wing structure. This included the remarkable electron beam gun system of welding, operating on the same principle as a television tube with the gun aiming a beam of electrons to fuse metal in a weld. A second B-70 was recently rolled out of the Palmdale factory, having some modifications to the structure, but the aircraft is not destined for production since it was removed from allocation of funds by the U.S. Government. Modellers have discovered that this Canard delta layout offers an amazingly stable plan form even with a simple profile sheet model, and a semi-scale plan of the B-70 has been established in our range as plan U784 price 4/6d, plus 6d. post for some time. This is a 23 in. span model to suit engines of up to 1 c.c.

DROOPED LEADING EDGE...

## FRONT VIEW

FOLDING TIP POSITIONS  
LATERAL AND LONGITUDINAL  
STABILITY AT HIGH SPEEDS

## BOTTOM VIEW

ENGINE  
REMOVAL  
DOORSSECTION  
A-ASECTION  
B-BSECTION  
C-CSECTION  
D-DSECTION  
E-ESECTION  
F-FSECTION  
G-GSECTION  
H-HSECTION  
J-J

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MAIN GEAR ROTATES

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# AFRICAN CHAMPIONSHIPS

Don Kotze launches Keith James' (Bulawayo) A/2 glider at Central Champs. Below, Brian Sheppard's winning combat model an Oliver Tiger powered A.P.S. Peacemaker being launched by Allan Van Breda.



EASTER IS AN IMPORTANT DATE for aeromodellers in the Southern Hemisphere, in particular for those in Central and South Africa. Two championships were held on Easter weekend, 17th and 18th April, one at Salisbury, Rhodesia in Central Africa and the other at various sites around Cape Town, Western Province for the Republic of South Africa.

Though detached geographically from the more populated aeromodelling centres of the world, enthusiasm and quality is by no means lacking in these parts. In fact, if one were to make an assessment of quality amongst the actual numbers of aeromodellers, those in Africa would probably rate as having one of the highest standards in the world.

## Central African

Entries at Salisbury were not as numerous as expected, but represented the cream of Central Africa's aeromodellers with flyers coming from Bulawayo, Ndola, and the Royal Rhodesian Air Force as well as an excellent representation from the host club, the Mashonaland Model Club.

The committee of the M.M.C. had worked out a tight flying programme for the two days with the control line events being staged during the mornings and free flights during the afternoons. The radio events were flown continually throughout the two days.

From the start it became evident that Alan Van Breda and Brian Sheppard of the M.M.C. were going to set the pace in team racing, Alan winning the 1A, and the F.A.I. events plus Rat Race and Brian clinching the Class B.

With perfect flying conditions, 1A free flight turned out to be an excellent event, the entrants finding some healthy thermals. Winner, Mike Cook of the M.M.C. flew a hybrid "Starduster/Dynamo" design powered by Cox T.D. 0.49.

A very trying breeze that monotonously moved around the compass throughout the afternoon provided a trying time for the A/2 sailplane competitors. Mike Cook's modified "Inchworm" won the event.

Roger Stern of M.M.C. gave an impeccable performance flying his "Shark 45" into first stunt place against some fine flying from Lex Goldman of M.M.C. and Don Kotze of Bulawayo who used a beautifully prepared "Aries".

Combat events provided the large crowd with some exciting flying. Class 1, won by Brian Sheppard of M.M.C. with Alastair Sutherland of Ndola a close second. Class 2 gave Lex Goldman of M.M.C. his first win of the Nats.

The single channel R/C event turned into a battle between Don Sweetenham of Ndola and his "Jackdaw" and Alastair Sutherland, Don eventually taking the honours with some convincing flying.

Multi proved to be a very tight contest and the judges had their work cut out to decide second and third places, Bernard Onslow of the M.M.C. taking an undisputed first with his beautifully prepared Cliff Weirick "Candy" using the South African manufactured "Constellation 7" proportional radio gear. Second place was taken by V. Brand of the R.R.A.F. flying a "Senior Falcon" and third place went to Jack Cramp of Bulawayo with his "Beachcomber".

An excellent entry in perfect flying conditions was the feature of the Open Glider event. First, second and third places went to the Salisbury Club, Roger Bridges taking first place with his "Empress", followed by Chris Holland and a "Pasadena".

Open Power event provided some thrilling, if rather erratic flying and gave a well deserved win to "Podge" Burton of M.M.C. flying a most unconventional looking model that suffered from chronic wing flutter on the climb. Roger Bridges took second place (O/D) with Mike Cook in third position using an O.S. Max 19 powered "Calypso Major".

Entries in scale were both diverse and interesting. Roger Stern's "Sikorsky Kingfisher" which featured throttle control gave him another victory. Mike Wilkinson of the M.M.C. presented a beautifully prepared "Thunderbolt" which proved somewhat



temperamental on take-off, but performed well on leaving terra firma.

Mike Cook flew the only free flight model, a Babe Bee powered "Turbulent" that had a delightful scale take-off but disliked the idea of flying intensely eventually pulling a square foot of turf over itself so failing to qualify.

Alan Van Breda of the Mashonaland Model Club and (appropriately) Nationals Secretary deservedly collected the High Points Trophy, having proved to be the most versatile modeller at the "Nats", by diversifying flying between Team Race, Free Flight power and chuck glider.

## South African

In the Republic, control line and free flight sections were organized by Western Province M.A.C. and R/C section by the Cape Radio Flyers. Weather was not too good and only the latter part of the last day was really satisfactory.

Free flight entry was comparatively large and all events flown with five flights of three minutes each

with the result that open rubber ended in a full house score for both Brooke-Smith and Savage from the Cape, finishing in that order after the sixth flight. Twenty entries in A/1 Glider, flown in a rising wind proved to be a battle between those veteran all-rounders Brian Partridge from Johannesburg and Pete Visser from the Cape. Brian set a new national record of 10:23 to win. In chuck glider (best three out of six chucks) a new youngster Dick Tucker came to the fore to beat the regular winner Robbie "The arm" Rowe but it was Robbie who topped the A/2 results with a "Lucifer", Brian Partridge taking 2nd place and Pete Visser 3rd.

John Swallow of Johannesburg came to the top in Wakefield and since the events were being used to select a three-man team to go to Finland (each destined to double up for other classes) it soon became apparent that it would be a tough choice for the jury to select from the four or five names who were obvious strong candidates. Rob Rowe led again in 1/4A power flying a "Ramrod 250" but all the familiar names tumbled in open power when John Carswell of the Cape set a new national record of 858 seconds.

"Pelicans" were once more a great favourite for open glider, this popular APS Glider is, despite its increasing age, a first class model for getting the lift in open events. Rob Rowe led the field with a handsome margin, other designs used being the APS "96A", "Meanderer" and the Keil Kraft "Caprice".

Perhaps the most exciting event of the weekend was F.A.I. power with the team contenders going all out. To win, Rob Rowe set a new national record of 823 seconds with John Swallow and Pete Visser fairly close behind with Brian Partridge down to 6th place having missed a flight. Perhaps this set the seal for the team selection for it was the three leaders of this event that were chosen to go to Finland.

Combat provided a good final between Newton of the Cape and Allen of Maritzburg, the former winning. In 3rd place was Eric Bekker and he also won the stunt event. Team race was disappointingly thin in entries. Newton won F.A.I. with 6:30 using a three-year-old model and Class B went to Bekker largely by default of the opposition which succeeded in breaking its "up" line.

Thus Robbie Rowe became an obvious senior championship winner, leading junior being Alastair de Wet and the team event went to the "A" team from Western Province M.A.C. namely Rowe, Visser and McCullagh. We have already mentioned in a past issue something about the R/C team which was selected at the same time after a solid weekend of intensive flying and is Culverwell, Wessels and Sweatman.



More Central Champs views. Above, the multi radio control second place man Rick Rand a R.R.A.F. pilot with his "Senior Falcon" using "Constellation 7" proportional R/C gear. Below left, happy stunt winner Roger Stern—with K & B 45 powered Jetco Shark 45. Unorthodox open F/F winner by Podge Burton has flexible type glider wings which flutter wildly during the climb. Model was powered by a Frog Viper.



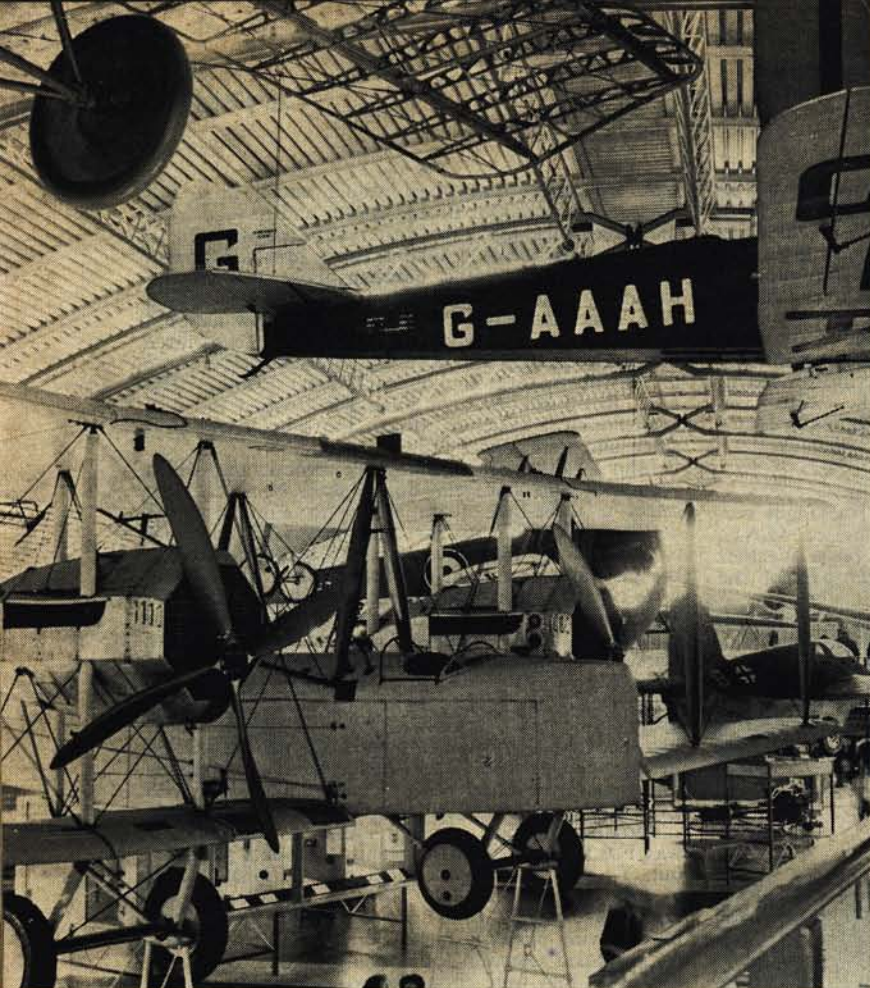


## AEROMODELLER VISITS AN AIR MUSEUM

Part 4—National Aeronautical  
collection SCIENCE MUSEUM

educational visits from schools. Museum policy is directed by the Ministry of Education.

One of the pleasing aspects of the collection is the way in which the visitor is conducted from the entrance to the rear of the hall virtually in date order of development. One is greeted by aircraft of the 1910 period and a replica of the famous Wright flyer, then transported through the decades of change to the first of Britain's jets, the Gloster G.40 proudly supported at the rear along with the Supermarine S.6B, a Japanese "Baka" man carrying flying bomb and the original Rolls Royce "Flying Bedstead". These can be conveniently viewed from the Museum restaurant which forms the extreme end of the building. The roof of the collection is in the form of a metal arch so creating the atmosphere of an aircraft hangar. Whilst this might be aesthetically desirable, it does just the same distract one's attention from the subjects and renders



CONTAINED WITHIN a specially designed extension at the rear of the Science Museum in London, the National Aeronautical Collection is undoubtedly the most extensive exposition of aviation history in Great Britain. Initially, the collection was distributed in sections of the Science Museum and then given temporary separate galleries in an adjacent building. The comparatively new extension is impressively crammed with a large selection of historical aircraft models and engines sufficient to keep any visiting enthusiast fully occupied for a day.

A distinction which it enjoys is an elevated walkway, so enabling the visitor to view the suspended exhibits at eye level. A prop-boss

view of a SE5A, for example, is an unusual facility and one can reach almost within touching distance of a Spitfire and Hurricane.

Cockpits on exhibition create another distinction. One look directly into a replica of the famous transatlantic Vickers Vimy cockpit to study the elementary controls or view a Vickers Vanguard, English Electric Canberra or Gloster Meteor with demonstrated ejector seat experiment for comparison. (In the Navigation section of the Museum there is also the nose of a Comet Mk. 1).

During 1964 1,365,000 visitors passed through the collection for which there is no entry fee. A high proportion of these would have been from the organized

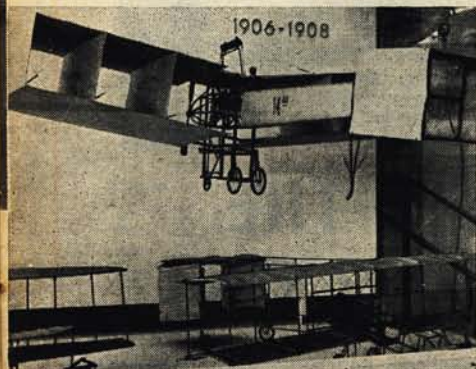


General view top left embraces Fokker E.1 framework at top, D.H. 60 Moth "Jason" and Vickers Vimy famous long distance flyers with Avro 504 and Me. 163 in background. Above, a World War 1 model scene with "Jenny" framework, R.E. 8 Fokker D.R.I. and Bristol F2b Fighter. Left, ground level shots showing Gloster-Whittle, Spitfire Mk. 1A and the famous Supermarine S6B with the SE5A in right hand view. Note aero engine displays.





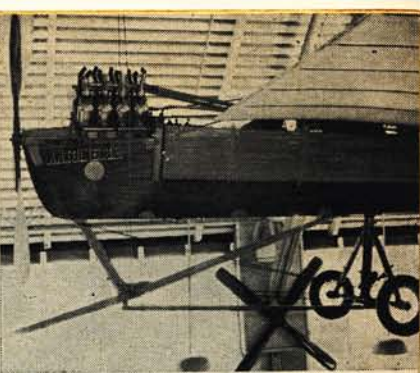
Nose view at right comparing the S6B and Antoinette. Below, early models showing the Bristol Boxkite and Santos-Dumont. Underside views of Spitfire and Hurricane show undercarriage action and at bottom, D.H. 60 and SESA nose views from the elevated walkway.



photography a little difficult. On the other hand, the model displays are very well arranged, particularly so in the case of the first world war collection, where an authentic painting backcloth does much to enhance the impression of the fine models. Since many of the models have been donated by various manufacturers, there is no constancy in scale but an effort has been made to keep models in each case to a common scale. There are some particularly fine exhibits, some of them donated by amateur modellers and others prepared by professional model making companies or by the the Museum staff. A skeleton framework of a Curtiss Jenny which has been presented by the Royal Aeronautical Society, a metal Junkers Ju 52, a Handley Page HP 42 Heracles and a cutaway model of a Lancaster fuselage are specially noteworthy. So also are the colourful, if less detailed, replicas of many airships.

New additions are constantly planned but because of the limited capacity these are restricted to smaller exhibition items. At the time of our visit a wheel from a Westland Lysander had just been put on show to display its internal springing and a six cylinder motor Rolls Royce-Continental 300 was being made ready for display.

Here is a place in which one can browse and admire the achievements of the past. One can gaze upon the Vimy or Amy Johnson's Moth "Jason" and ponder on their great long distance flights or admire the smooth lines of the Messerschmitt 163

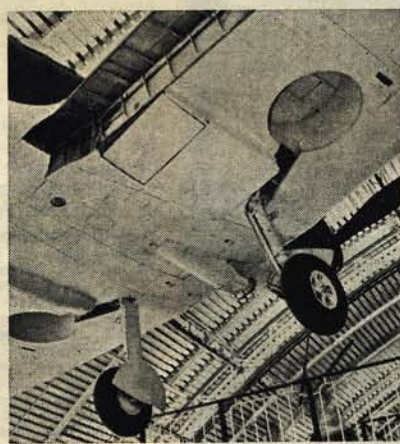


Komet and imagine its fiery departure whilst small boys around comment upon the size of the "airscrew" on the nose (it is actually a generator 'screw'). Definitely a show not to be missed by any visitor to London.

**Aircraft on view during our visit**—1903 Wright Flyer (Reproduction), 1909 Roe Triplane, 1910 Antoinette, 1910 J.A.P./Harding (Bleriot type), 1912 Cody biplane,

FZG-76 V-1 Flying bomb 442795, Rolls-Royce "Flying Bedstead" XJ 314, Hurricane I L1592 KW-Z.

**Cockpits on exhibition**—Vickers Vimy (Reproduction), Gloster Meteor from EE 416, English Electric Canberra from VX 185, Vickers Vanguard (T.C.A. Mock-up), Comet 1 (Navigation Section).  
**Address**—National Aeronautical Collection, Science Museum, Exhibition Road, S. Kensington,



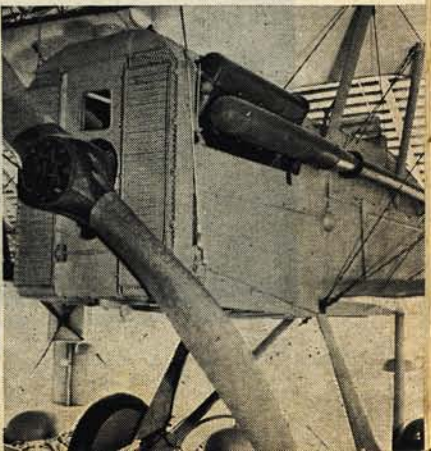
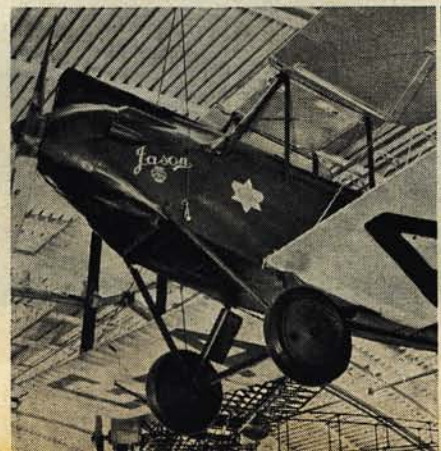
Fokker E.I. monoplane, S.E.5A. F 939 ex. G-EBIB, Avro 504K D 7560, Vickers Vimy (Transatlantic), De Havilland DH60G Gipsy Moth G-AAAH "Jason", Hill Pterodactyl la. J 8067, Cierva C.30A AP507 ex. G-ACWP, Supermarine Spitfire MK1a P 9444 RN-D, Gloster G.40 (E.28/39) W4041/G, Focke-Achgelis Fa 330 100509, Messerschmitt Me 163B, Oka 11 "Baka" 15-1585,

London, S.W.7.

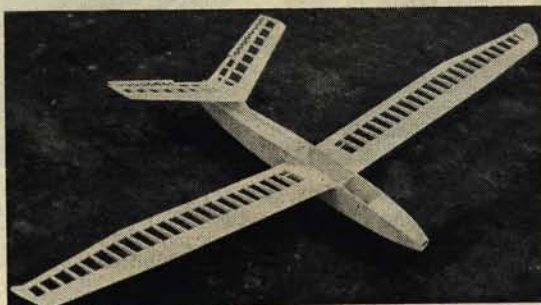
**Situation**—Close to S. Kensington underground railway station.

**Open**—10 a.m. to 6 p.m. weekdays, 2.30 to 6 p.m. Sundays. Closed only on December 25th and Good Friday.

**Admission**—Free. Part of the Science Museum incorporating several similar collections ranging from automobiles, naval craft, to astronomy and chemistry.







## OVER THE R/C WAVES

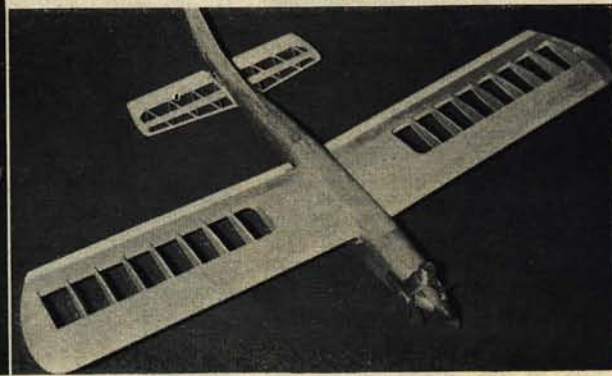
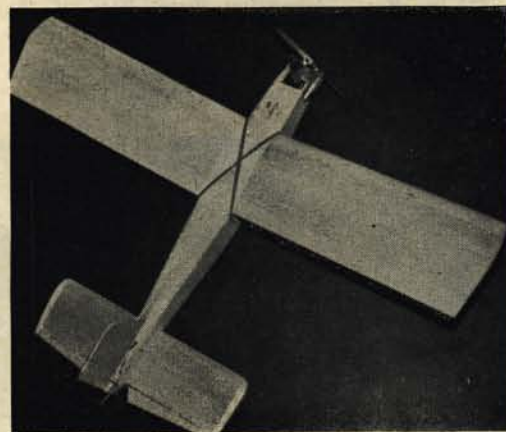
IN THE EIGHT MONTHS that have elapsed since we first announced the proposition by Gerry Nelson in the *East Bay Radio Controllers "Carrier"* newsletter from San Diego there has been a tremendous surge of interest in the new pylon racing class in the U.S.A. This is now spreading to Japan and this country. To recap on the rules, the intention is to retain the atmosphere of the Good Year races in miniature. Wing spans are 50 in. with a minimum allowable area of 450 sq. in. The largest engine permissible is .40 cu. in.

Top right; American pylon racer with side mounted Super Tigre 40 R/C engine by Bob Halvorsen. Span 50 in., area 600 sq. in., 38 in. long, weight 4½ lb. Ready to fly with 10 channel reed equipment and known as the "Eight Ball".

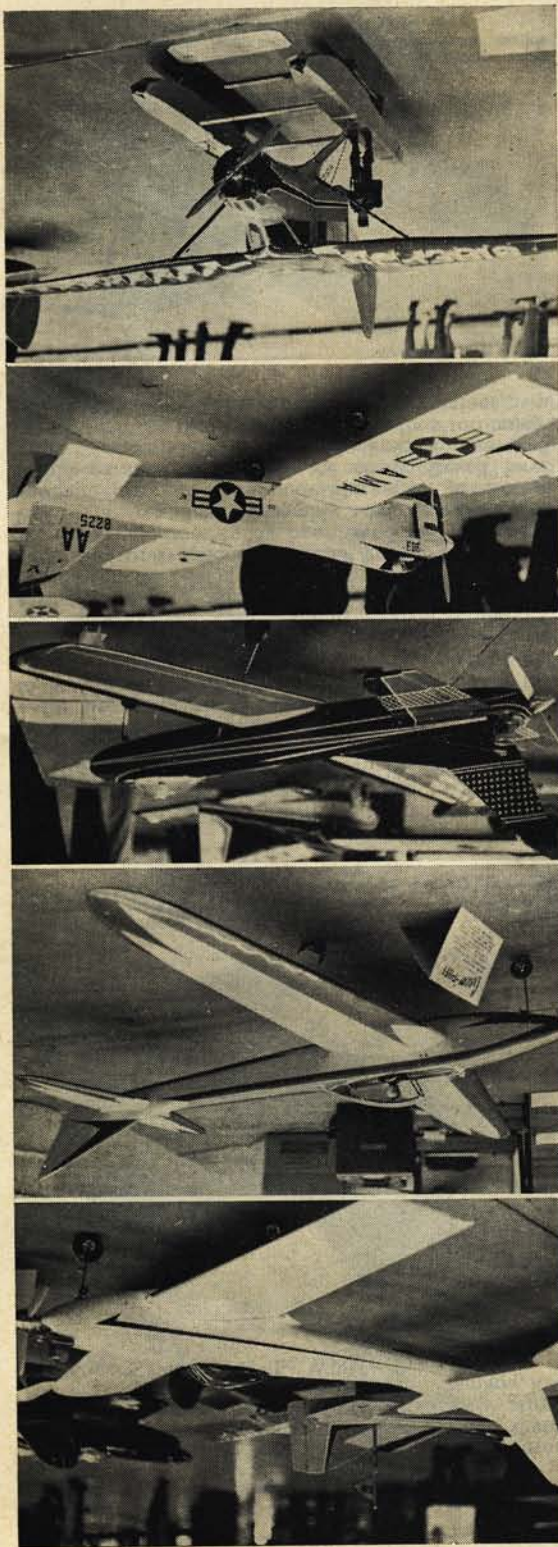
Top left; Wieslaw Schier designed this WS-66 "Marathon" radio model for a record attempt in Poland some time this year. Details were included in the 1964/65 "Aeromodeller Annual" with dimensioned 3-view. Photograph of the partially completed airframe shows the glider type wings and Vee tail formation. A 1 c.c. diesel is mounted in the nose and a larger engine as a pusher at the extreme rear. In the centre fuselage a 1,500 c.c. tank should hold enough fuel for prolonged duration. An additional small noseplane is to be mounted for elevator control-line behind the engine in the nose.

At left centre; kits we have under construction, the Graupner "Clou" which includes two sets of wings as described last month. Has more parts in it than most full blown multi-channel power designs, an ideal model for the man who enjoys his construction. Enterprise "Navigator" is extremely simple thanks to the Styrene core wings and tail which are balsa sheeted and save a lot of construction time. See photograph below for completed airframes as made for us by Mr. Wells.

Structure of the Veron "Concord" with Remcon 12 and Merco 61 installed weighs 6 lb. Made by Mick Charles, our test model is now covered in heavyweight nylon, finished with high gloss Polyurethane paints and ready for tests as we go to press. Note generally tough structure. Prefabrication of the fuselage parts is a great aid. Tailplane takes longest time per unit to construct.







and minimum weight 4½ lb. The fuselage must be at least 3½ x 7 in. at the cockpit and the model has to be able to taxi and must carry a licence number.

The Californian course is a loop of ¼ mile which is covered in 10 laps for a distance of 2½ miles per race. Models are flown simultaneously from standard start and an association has been formed known as the "National Miniature Pylon Racing Association". Gerry Nelson made available a range of suitable designs in plan form and the first kit of one of the more successful models to be issued is Joe Martin's "Demigut Special" is about to appear from Sterling models of Philadelphia at \$18.95. Because the regulations varied slightly from the existing AMA rules the growth of interest has led to AMA acceptance of the new class but for insurance purposes the models are required to fly over the standard AMA pylon racing course. This is arranged slightly differently to the original proposition, being 528 ft. between the vertical pylon markers with a start and finish point 100 ft. upwind from the downwind marker. A standing start is used and the models are flown on a counter-clockwise left hand turning course over five laps with two or more planes flown simultaneously. This makes the distance per flight a theoretical minimum of one mile.

### Concord

Latest model coming through our work benches is Veron's "Concord" which is equipped with 10 channels of Remcon 12, Bonner servos and a Merco 61. This is also a testing piece for polyurethane paints and is, as we write, practically ready for flight tests with a spectacular finish. Weighing 7 lb. 1 oz. ready to fly, the Concord is a typical Veron kit complete down to the wheels and even the links for pushrods. The only criticism one could offer concerning this design is that by following the traditional development of tail structures one has a relatively small part of the model with about 90 parts which takes longer to make than any other single component.

### Toledo Conference

The 11th annual conference of radio fliers at Toledo must surely contribute in a tremendous way to the progress rate of commercial R/C development. This is a manufacturer's forum, open to all enthusiasts and never fails to attract the leaders of design and the top contest modelers. Imagine a 200 x 120 ft. hall crammed with nothing but R/C exhibits and all of them new material! From here we can only be envious—photos in column at right will whet your appetite. Significant revelations were a range of five different commercial "Galloping Ghost" type systems including the Glass City "Miniplex" which weighs only 8½ oz. installed and is Ken Willard's latest subject for 049 control. Maybe at last this wagging surface system will gain acceptance after years of pioneering by fliers like those Howards-Boys and McEntee and Chas Riall. Designwise, models are growing in area. Expect big spans up to 9 ft. and more bipes, two kits for full stunt double-wingers are mooted.

Selection of five outstanding models which were photographed by Bob Halvorsen at the Toledo Conference. Top model has a glass fibre fuselage with Super Tigre engine, second is Vic Husak's 8½ ft. span "Cream Puff" which weighs 9 lb. and has a total area of 1,150 sq. in. Because of the larger size the wing panels are plug-on. The tailplane has a sandwich type construction. Pusher in the centre is Ed. Kazimirska's. Next a semi-scale "Crusader" type and at bottom a beautiful true scale Stinson Reliant SR-7 with Sampey proportional 404 gear, built by Don Hickman complete with scale pilot on the float.



# TRADE NOTES

THREE NEW Revell 1/72nd scale WW11 fighters form the core of this month's plastics line up and these are the *Grumman F4F-4 Wildcat*, *Bell P-39 Airacobra* and, less in the general run, the *Nakajima Ki-43 "Oscar"*. We'll take the Wildcat first.



Revell's 2/- Wildcat here in British Martlet delivery guise. Note the unusual markings of this aircraft which are explained as a temporary U.S. civilian registration pending delivery prior to American entry into the war.

First known as the "Martlet" in this country, we built ours as a rigid wing as opposed to a folding (Martlet 1) version of this tubby fighter as it appeared during delivery to this country. This particular machine was unusual on a number of accounts—for a start the airscrew was unpainted and appears to have a dull natural metal finish. Secondly, at the time our reference photo was shot, the aircraft enjoyed 1939 style wing and fuselage roundels yet boasted a vertical flash marked *rudder*—as unlikely a combination as one could imagine. Also, the wing registration of NXG2 is, in itself, unorthodox.

On the construction side the kit goes together from 25 parts as smoothly as one has come to expect. U/C is a very dainty assembly when complete and another feature is the removable engine panel (the whole of the top half of the cowl). Revell have again "gone sliding" on their cockpit canopies and covers with the result that these units look too bulky.

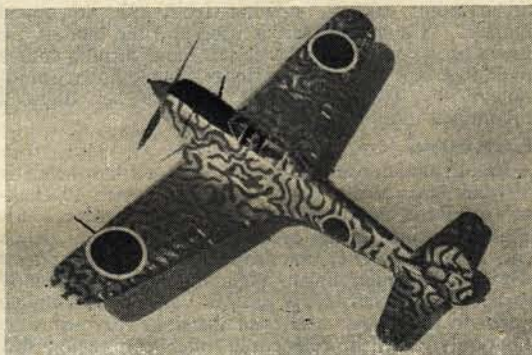
The Airacobra which we built to instructions as a



Russian P-39 forms the second of the Revell trio incorporating a neat and gimmick free cockpit canopy—removable engine panel is just visible on port side.

Russian marked machine provoked a comparison between this and the recent Airfix release of the same model (see last month's Trade Notes). Of the two we would give the slight edge to Revell—but the difference is only slight; if the Revell version is excellent then the Airfix model is very good.

The magazine *Flying Review*, issue dated July, 1965, will prove a useful reference when tackling the third from Revell, the Ki-43, giving, as it does, full colour drawings of over one dozen variants of this model. Ours, like the makers instruction sheet, depicts a machine of the 64th Fighter Sentai, 2nd Chutai (1944). The lead aircraft of this outfit differed slightly from Revell's example in that the engine cowl carried a ring of russet brown, a further vertical white band appeared on the fuselage forward of the Hinomaru in addition to the one aft, and the Fig. 5 was omitted from the rudder. A nice kit this, incorporating a sliding cockpit that is far superior to the style used on the Wildcat, and good value at 2/-



Ki-43 'Oscar' provides a real test for those requiring an authentic colour finish. Eagle eyes will notice the transfers are transparent enough to let the markings be seen through, a fault but the only one on this kit. Remedy with removal of camouflage from this area.

Airfix's latest is a nice big *Mitchell* at (need we say it?) 1/72nd scale. Here again is a model that can be painted in a host of colour schemes (see inside front cover) we chose the French markings of entire upper surfaces olive drab and undersides medium grey as a quick and fairly straightforward scheme. A reasonably simple model to build, once the fuselage contents such as upper gunner and pivot, crew, controls, rear gunner, waist gunner and nose wheel U/C leg have been located and the second fuselage half brought into position to lock them in place. We didn't much like the dorsal gunner's cockpit cover—this was a poor fit and required a certain amount of chopping and changing before it located. The glasshouse nose structure was also slightly inaccurate and required scraping to achieve a fit.

Price for this welcome addition is 6/-.

Our "Navigator" from the *Enterprise* kit for this new issue of the 54 in. multi-channel trainer model is now complete and only awaiting rotation of delivery of a "Flight Link System" before actual air tests. This is the second time out for us as far as the Navigator is concerned. We made the previous "B.M.P." kit with the conventional wing structure and it served its time well. The new model is practically identical except that the wings and tail are now supplied as ready moulded styrene plastic cores.

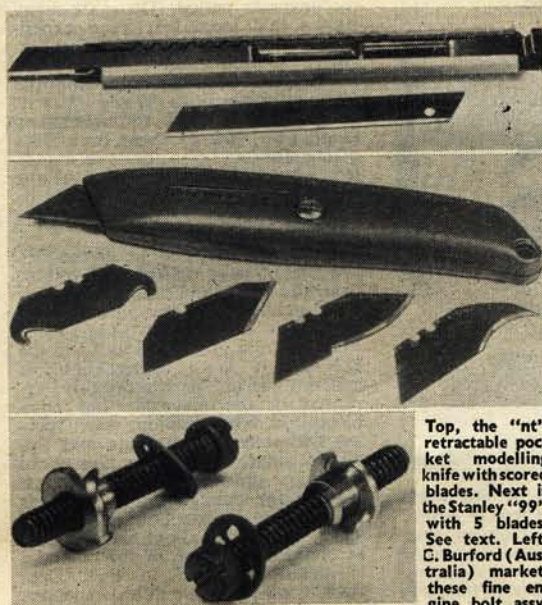
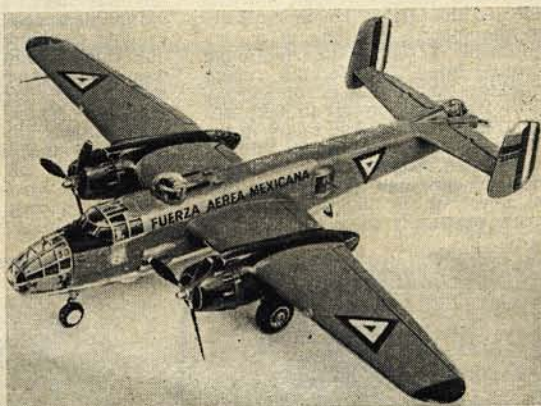


We ran out of UHU-por at a fairly early stage but on Enterprise kits' recommendation used "Copydex" instead. This takes a little longer to dry but is equally effective. The wing comes out at 20 oz.—heavier than a normal structure but seemingly stronger. The weight of our fuselage and tail unit with Merco .35 tank and undercarriage installed is another 2 lb. 10 oz. Points to watch during construction are to avoid fin warps by inserting a rectangle of opposite grain wood, to apply strong bandage over the wing root joint and to stick the plywood wing dihedral keepers with PVA glue instead of Impact which is difficult to utilise in such a case.

We also ran out of sheet for the tip sections.

The spruce trailing edge addition is noteworthy also the fairly light Gremlin wheels and handsomely pre-bent undercarriage. Price of the kit is £7/10/- which makes it a most economic and robust investment for R/C multi beginners. More on flight tests on the finished model at a later date. *Photo, page 384.*

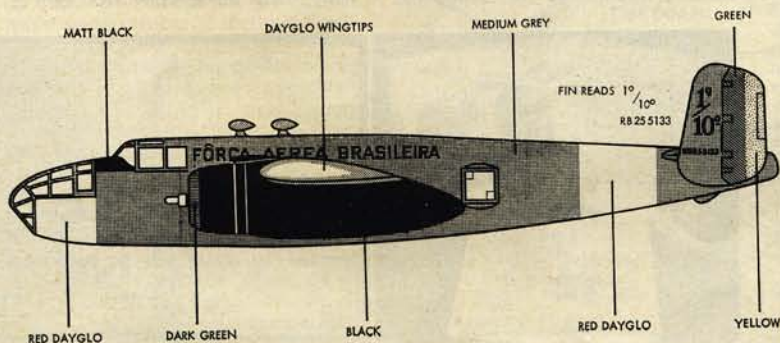
Cutting tools are a model maker's essential. We were intrigued by the new Stanley accessory known as their Handyman's knife No. 99 which has a most useful blade system. The handle contains five different blades each for special purposes and some



Top, the "nt" retractable pocket modelling knife with scored blades. Next is the Stanley "99" with 5 blades. See text. Left, C. Burford (Australia) markets these fine engine bolt assys with blind nuts.

double ended. A thumb switch enables one to set the sharp straight cutting blade into any of three positions or to fully retract the blade for safety. At 8/6d, it is a very handy tool to have about the house and in the portable tool box for flying fields.

For finer work the Japanese retractable blade-cutter knife by the "nt" Company offers a complete change in modelling knife techniques. Distributed by Ripmax at 7/6d, complete with two spare blades, packed in an attractive blue plastic wallet it has extensible blades which are heavily scored into 12 segments. When one has exhausted the point of the leading blade it is a simple matter to snap a  $\frac{1}{8}$  in. section and start again with another sharp point. We have been using one for over a year and such is the sharpness of the blade we have only consumed four segments. Again, a tool which would be very handy for general field as well as model workshop use.



The Airfix North American B-25 "Mitchell" kit offers a wide range of colouring possibilities. At top of page is our treatment with Free French Air Force markings having the reversed colourings of roundels, etc., as detailed on inside cover feature this month. Note that the red and blue are lighter than R.A.F. identification colours. Artist Walter Wright chose to make his model in the Mexican Air Force colours as in the 2nd photo and has provided the diagram at left for a further choice in Brazilian Air Force markings, information for which was kindly provided by Capt. Carlos Dufriche.



## RECOMMENDED READING

more aviation literature  
reviewed

OUR COLLECTION this month opens with something which really comes under the category of 'Listening'! Rodney Crouch Ltd. of Sevenoaks are producing a series of six 45 r.p.m. records or aircraft "sounds", first of which has the Avro 504K on one side and the DH53 "Humming Bird" on the other. Retailing at a very reasonable 12/6d., these *Aerosound* records bring to life the superb knockings and noises of veteran engines from starting up to take off, flight, and landing. The rotary in the 504 is an absolute charmer. All one needs is an Aerosol of castor fumes to squirt now and again and a film of a veteran in flight to make a dream practically come true. Follow-

of floatplanes and flying boats from Henri Fabre's amazing first hydrocraft which can still be seen in the Musée de L'Air Paris, through to the Martin XP6M and Saro Princess. To our mind there is insufficient on the fabulous Short "C" flying boat, one of the most stable and seaworthy of its type ever produced and certainly one which established the "boat" as a means of air transport beyond comparison. The Schneider races which produced many outstanding float plane designs are dealt with far too briefly so that in fact this book covers much of the lesser known types and is therefore more of general pictorial interest rather than of genuine historical value.

edited and prepared the manuscript and copious collection on photographs for publication. There is certainly no lack of controversy and we are sure that Mr. Bruce has been most faithful to the author in producing a volume of which the late A. R. Weyl would be truly proud. This exposé of the Fokker concept which sells at £4/4s. and is published by Putnam, covers 420 pages and innumerable photographs, diagrams and tables. It gives due honour to Platz who is claimed to be the designer of the better Fokker aircraft of the 1st World War and responsible for many of the transports which gained very much success in the inter-war period. There are many stories told from first hand experience of intrigue and subterfuge involved in production of aircraft and preparation of new types for the German airforce in World War I. Undoubtedly a book to recommend to all who wish to know both sides of the story and also for scale modelers who will revel in some of the unusual types. The M.17E would be a real challenge with its all-moving tail surfaces.

Specifically devoted to aeromodeling the 74 page well packed volume from the Rajo Publications Inc. New York, publishers of the magazine "Flying Models" and entitled "*Model Plane Building from A-Z*" sells at \$2 in the U.S.A. It is a compilation of material which has previously appeared in the magazine but combined in a most ingenious way. Opening with interspersed hints and tips of the gadget review type plus about 20 3-view drawings of scale aircraft suitable for enlargement it proceeds to data on construction and design which covers just about every side of aeromodeling. Some of this material is already included in the "Data book" which we publish ourselves in arrangement with the same Company. The book concludes with a



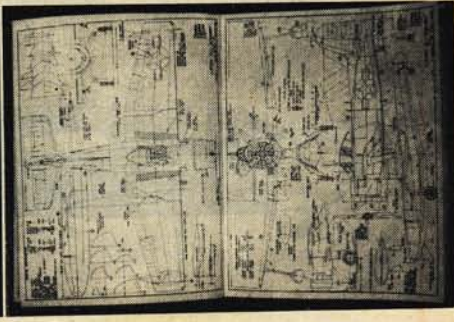
ing in the series will be the Tiger Moth, Rapide, Lancaster, Spitfire and Hurricane.

Two new imports in the series of Morgan books, supplied by W. E. Hersant Ltd. of Highgate, N.6, at 23/6d. each are "*The B-17 Flying Fortress*" and "*The Seaplanes*".

Written by Steve Birdsall, the B-17 story covers 56 pages with innumerable pictures and diagrams to illustrate the development of the famous bomber. Scale modelers will appreciate the detail but unfortunately there is a general lack of cross sectional information on the 4-view tone diagram which occupies one page and is not to any particular scale. The story of the B-17 could well fill a heavier volume and we hope that the success of the first book will inspire additional appendices on the same subject.

The "*Seaplanes*" is written by Henry R. Palmer and covers 52 pages with a rapid scan of the development

It was known when he was working on "*Fokker: The Creative Years*" author and renowned German aviation historian A. R. Weyl was going to produce a work that would remain controversial for all time. Unhappily the book was not printed before the author's death. J. M. Bruce has



**Aerosound**  
D.H.53 Humming Bird  
Avro 504K



fascinating range or reduced scale drawings for unusual designs, mainly R/C which have appeared in "Flying Models". Altogether very much worth the American price and something to which one could constantly refer.

The impact of the 20th Century Fox Film "Those Magnificent Men in Their Flying Machines" has no need for further emphasis but we must mention the fine cartoon book which has come from Dennis Dobson, London. This unusual format 'square' includes a wonderful range of sketches by cartoonist Ronald Searle which alone are well worth having. The amusing plot of the Mag Men film is conveyed in a wonderful style

and authors Richardson and Andrews provide appropriate text. If you enjoyed the film then you will certainly love the book, although perhaps at 21/- a copy it is more in the "gift" range. Something to treasure if you have a guinea to spare or a generous aunt.

To the ardent scale modellers the name Paul Matt is already well known for his devotion to authenticity. Paul has now produced a "Historical Aviation Album" which is imported by W. E. Hersant, Highgate, London, N.6, at 23/6d. This is volume I. It includes beautifully clear drawings to exact 1/48th scale of a range of 10 aircraft from the early Curtiss flying boat to the Lock-

heed P-80 Shooting Star. Drawings are not cluttered by unnecessary detail or dimensions which tend to obscure the shapes. Instead they establish the standard which is well matched by the excellent description and photo selections of each type. Certainly to be thoroughly recommended, in particular for the drawings of the Curtiss SC-2. This makes a fine "clean" subject for scale. So too does the Cessna 140 or the little known Waterman Racer. This "Gosling" simply screeches out to be made for rubber powered scale. More power to Paul's drawing pen and research methods if he is going to treat us with a similar selection in ensuing volumes.

## Jig Building sheeted wings

(from S.A.M.A.A. Newsletter)

THIS describes an extremely simple method of building fully sheeted wings not confined to any one type of wing, but equally applicable to all.

Why sheeted wings? Particularly in the case of modern free flight designs, the tendency has been towards thinner wings, in some cases down to 6 per cent. A conventional built-up wing will allow some sag between the ribs, in which case the thickness/chord ratio is reduced considerably! Of course, leading edges can be (and often are) sheeted—but why not sheet everything? Eliminate spars and trailing edge too.

No claim is made for originality, and there may be some to whom this is old news but there will be many who may find the method as useful as did Sandy Bennie of East London, South Africa.

This explanation is confined to the building of undercambered wings, flat-bottomed or bi-convex sections may be built "right way up" and so present no problems, while undercambered sections need to be built "upside down".

The basis of the jig comprises a number of  $\frac{3}{16}$  in. sheet uprights, one per 3 in. or so of wing panel length. These are shaped by first spot-gluing blanks together (1) and cutting firstly, a uniformly flat base and, on the opposite edge, the UPPER curve of the wing section, LAID ON ITS BACK (2). Thus one edge of the stack of blanks will be flat, and the other concave. These cuts should be made with a bandsaw or some similar

device to ensure a vertical cut (3). Now  $\frac{3}{16}$  in. sq. notches are cut into the wing section curve (4), the stack of uprights is separated and the uprights are joined with  $\frac{3}{16}$  in. sq. strips, to the length of the largest wing panel (5).

Now for the wing. First, join enough sheet to give one-piece top and bottom skins. To the upper skins, glue pre-carved leading edges. While this dries cut the wing ribs which should be thicker than used for a conventional wing.

If the surface sheet used is thicker than  $\frac{1}{16}$  in., it will need a little assistance before it will follow the curve of the section, so the usual "dope-on-the-inside, water-on-the-outside" procedure should be followed.

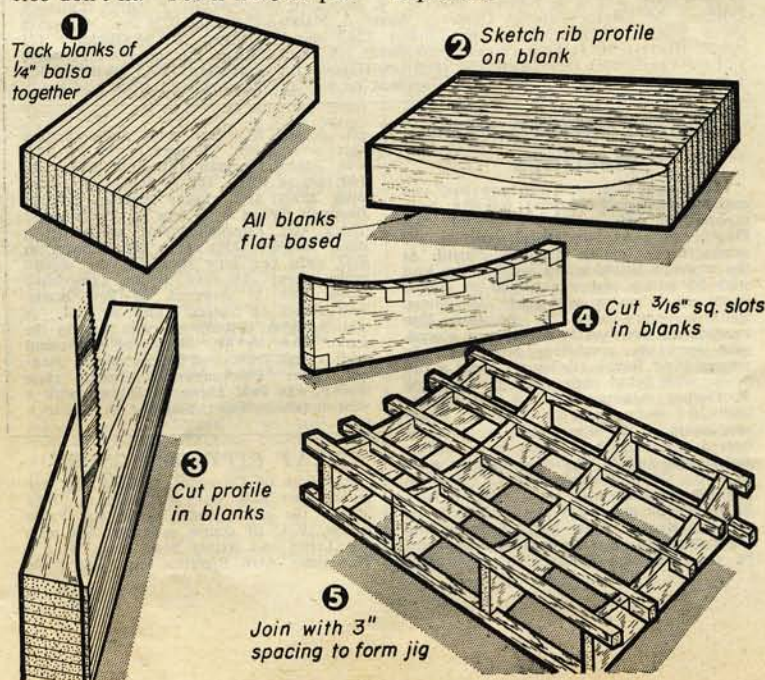
Now lay the UPPER skin down in the jig, complete with leading edge, pin well, and add the ribs W-fashion (watch this—"straight" ribs don't fit. You'll have to plot

diagonal ribs!) When this glue is dry, simply add the bottom sheet (on top of the structure in the jig) and you have a wing! A little doping and covering with paper or silk and you'll have your most efficient wing yet.

If this sounds complicated—it isn't! It has, up to now, actually been quicker to build a jig and a wing, than to build a conventional wing alone.

The disadvantages are few. There may be a slight weight penalty—for FAI power this presents no problem; but this can be avoided if a little time is spent at the balsa rack selecting light wood. A disadvantage is in the quantity of balsa required, but your wing won't break in a hurry.

Advantages are, of course, the fact that the section is true everywhere and the fact that once the jig is made, wings are easily duplicated.

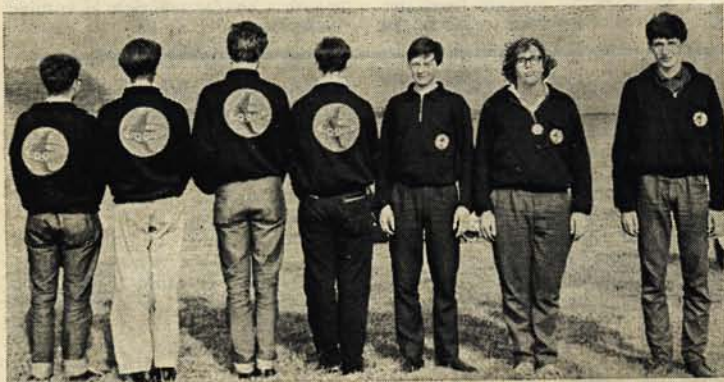




# Club and Contest News

## TOUGH COMPETITION IN FARROW

For the second year running there was a fly off in the Farrow Shield held on May 16th. The Baildon "A" team came out tops with their four men making a 22:3 fly-off time between them, an average of five minutes each on their last flights. Tynemouth were close on their heels with a total fly-off time of 15:22 from their team and York were very unlucky to only make 35:48 missing the fly-off by a mere 12 seconds. In the White Cup flown on the same day at the area venues T. Payne (Northampton) made three max's and a 3:36 fly off to clinch a win over G. Doncaster (Baildon) who made 9:00 + 2:48. Northampton also won the Frog Junior cup by the skill of D. Brown who made 6:46 beating P. Whitehead (York) 4:31 into first place. The young R. Pool, following his father's hobby made 3:35 for fifth place with "Little Mavis" soon to appear in A.P.S.



Seen at the Nationals, some members of the Sidcup Combat Team in their black track suit tops with the green club emblem on the back, and front pocket. Left to right, David Vettergreen, Peter Gillow, Phil Thornton, Terry Andrews, Tony Bowling, David Cale, and R. Sibbald.

## Teams for Criterium of Aces

As a result of their showing at the team trials held on May 23rd at R.A.F. Hemswell the British Control Line teams for the Criterium of Aces to be held at Lieze, Belgium, 27-29 August, will be as follows. 'Combat', B. Bumstead (Northwood), P. Smith (Cannock Outlaws), M. Davies (Cannock Outlaws), 'Stunt', J. Mannall (Lincoln) 1008 pts., M. Reeves (West Essex) 676 pts., 'Speed' K. Lindsey 124.3 m.p.h. (Hayes), R. McGladdery 121 m.p.h. (Hayes), B. Jackson (Workshop/Sheffield) 119 m.p.h., 'Team Racing' Place/Horward 5:01.6 (Wharfedale) Dell/Balch 5:05 (Feltham/Hayes), Turner/Hughes 5:07.5 (Wharfedale). Team manager Kevin Lindsey will be assisted by Flt. Lt. Ralph Gould (R.A.F.M.A.A.).

## South Eastern Area Meetings

The South Eastern Area have had two major inter-area meetings recently both reported in their excellent newsletter "Sea Dog". First was the latest round in the annual battle for the R.A.F.A. Shield. At the moment Brighton are well in the lead with 52 points and way behind in second place are Crawley with only 16 points. With an entry of 67 at the June 20th meeting no less than 50 maxes were scored, such were the conditions prevailing. In rubber Fred Boxall (Brighton) made a full house with fellow club mates J. Allan and T. Garner making 8:55 and 8:54 respectively for second and third places. Power was again a Brighton benefit with members I. Lucas and J. West both making full houses and D. Welch coming in third at 7:30. Glider was topped by C. Foss at 9:00 of Brighton with D. Taylor of Tunbridge Wells in second slot with 7:58. At the Rat Race meeting held on June 27th, there were not so many entries as expected by the organising Elliott club. Split into

## DEMONSTRATION FILM

Dagenham M.A.C. from Essex were recently treated to a showing of the Worthing Bald Eagles film of club activities and the 1962 World Control Championships at R.A.F. Kenley. "Flight Link" proportional gear was demonstrated by a director of Flight Link to the club members and a flying demonstration has been arranged for a later date.

4A, A and B classes some quite exciting races were flown. Winner in the 4A final was Atkins/Freeman (Elliotts) doing the 140 laps in 10:57. The A final was a three man affair and closely fought, Jeffrey/Bearman retired at 63 laps leaving Sagers/Tidey and Freeman/Atkins to battle it out. Sagers/Tidey were the winners at 9:17 only two laps ahead of the second place team. In class B the Langridge/Howe Fox 35 powered rat flew home, well ahead of Sagers/Tidey at 9:44. A static display and contest was won in the senior class by W. Moesli of Gravesend with a well built and finished single channel radio 'Chickenhawk'. Junior class winner was Paul Howe of Elliotts with a well detailed 'Short Seawear'.

## BEAT CITY GOINGS ON

Members of Liverpool & D.M.A.C. are pretty busy these days according to "Blue Print" the club's lively newsletter. Pylon racers, R/C of course are spreading with Joe Lebot and Arthur Searl both "at it". Newcomer Alan Brereton has made some

## Dunfermline C/L Rally

Held on May 16th at Pitreavie playing fields the Scottish organisers were very surprised to see a large group of contestants from the London area. These were members of the newly formed "Contest type" Delta club. The weather conditions were perfect and as the two scale models "chickened out" at the last moment, that event had to be cancelled. Results as follows. 'Combat' 1 Flockhart (Dunfermline), 2 Donaldson (Leuchars), 'A T/R' 1 R. Meekins (Delta) 16:29, 'F.A.I. T/R' 1 D. Gordon 11:56, 2 King (Delta) 12:14, 3 Reid (Dumbarton) 14:04, 'Rat Race' 1 R. Meekins (Delta), 2 Goodhead (Delta), 3 Russell (Glenrothes).

## Southern Multi Fliers

Concentrating mainly on scale this season Southern Multi Fliers have an impressive array of models. Dennis Halford has built and flown successfully a 'Bucker Jungmeister', 'Taylorcraft D' and 'Focke Wulf 190', all around 6 ft. wing span, whilst Bill Blake has flown his 'Fokker E.III' and has a 57 in. span 'Fokker Triplane' ready for its maiden flight. Ray Brown has had six flights with his 1/6th 'S.E.5a' equipped with a Merco 61 and F & M radio gear and he has several more models under construction. Douglas Pierpoint has recently flown his own design low wing model with Bonner Digimite R/C gear and retracting tricycle undercarriage which worked perfectly and looked very clean in the air. The club would welcome any other multi or scale enthusiasts.

## 'E' Type Dixielander

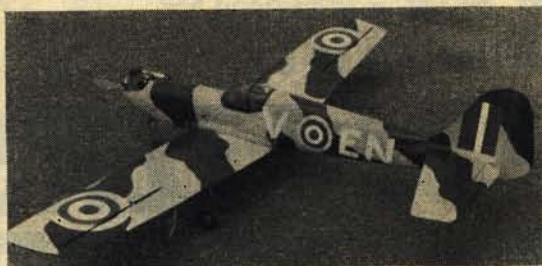
Now back into contest flying in earnest George Fuller proved that he has not lost his touch by winning the Croydon Gala with his 'E' type Dixielander. This has a 58 x 7 in. wing (four more panels than standard) a slightly longer moment arm and a standard tailplane. With an Eta 29 Vic up front turning a 9 x 4 in. Tornado propeller on 30 per cent nitromethane fuel it is very potent indeed. George has had motor troubles but has sorted this out by using a pen bladder tank set in a fuselage bay just behind the pylon. The bladder is filled by means of a hypodermic syringe and the pressure line blanked off with a clothes peg until the motor is started by a cylinder prime through the priming hole in the silencer.

## MODEL FOUND

Flying Officer W. C. Walker of 2 Gliding Centre, R.A.F. Kirton-in-Lindsey, Gainsborough, Lincolnshire, informs us that he has found a power free flight model in first class condition. About 4 ft. wing span it is coloured blue and yellow and was found in a field adjacent to the airfield.

of the F/F contest boys jealous with the vertical climb of his Metz radio equipped Goldberg "Senior Falcon" and the Southport juniors, control line fans are now out doing some free flight. Their best ever lesson, on how not to do it, was given to them by Roy Buckland with an E.D. Super Fury powered K.K. "Gaucho" when he let it off into the wild blue yonder on a three minute engine run and no D/T! Ken Brown an active member from the past has been putting in plenty of flights recently with a car load of instant vintage rubber models and gliders.





## Bletchley Buckaneers Whitsun Meeting

The Buckaneers' R/C Multi contest on Whit Sunday at Podington was graced with good weather. The two main objectives of the contest were to put the idea of two flight lines to the test, and to provide a multi channel contest for those who could not get to the Nationals at Newcastle, held on the same day. Situated some 300 yards apart the two flight lines were a great success, no troubles being experienced at all. Flight controls at each line were linked by field telephone. The 19 entrants were allowed three rounds each with a final fly-off for the top four scorers in the three rounds. Geoff Franklin flying a 'Taurus II' took first place using a Merco 61 and Orbit proportional. Second place went to Ed Johnson flying a much modified 'Taurus' with camouflage finish and Bonner Digimite proportional radio gear. He also used a Merco 61. Geoff Pike the silencer man, came in third using F & M proportional and his own design 'Plain Jane' model. It is interesting to note that the top three all used proportional radio gear of different makes, so clearly there is no set favourite yet. Four models crashed, Jack Morton's 'Tiger Moth' and Peter Walters' 'Altair' were written off as was Pete Greet's model. E. Smithwaite's model would not take off so Pete Walters had to stop it with his foot before it reached the spectators, which severely damaged the wing. Spectator attendance was high and over 500 programmes were sold.

## IRISH CONTESTS

Weather is always a talking point at the Irish Free Flight Nationals and this year was no exception as can be seen in the scores especially 'Open glider' where only four max's were scored, two of these by the winner. Most models were A/2 size though Peter Deane and John McNally were using smaller models. Liam Murtagh made 7:35 and led all the way with Gerry Fitzpatrick taking second at 6:36. D. Flaherty surprised everyone by making third place with 4:44. 'F.A.I. Glider' was the only event run to F.A.I. rules as there were not enough entries in the other classes to make it worthwhile. This resulted in the first and second place open glider men making the same positions again with J. McNally in third place at 4:02. Winner and second were 7:39 and 6:36 respectively. Gerry Fitzpatrick won the 'Open Rubber' with 8:53 and was prevented getting a full house by the model going O.O.S., which is quite good for a second model as the No. 1 was damaged after landing on a fence. A. Gordon made second with 6:4, followed by M. Walsh at 6:14. In 'Open Power' John O'Sullivan using a Cox .09 model made 8:50 with perfect engine runs each time and Maurice Doyle came only five seconds behind him flying a Cox .15 model to 8:45. Third place went to Des Woods using a Cox .049 to announce his comeback after a rest from modelling.

Ed. Johnson's winning model as seen at the Bletchley Buckaneers Whitsun radio meeting. Underneath the camouflage it is a much modified Taurus with Bonner Digimite radio gear and Merco 61.

## Contest Calendar

- |           |   |
|-----------|---|
| July 18   | S.M.A.E. Indoor Meeting, R.A.F. Cardington, Beds. Not restricted—open to all interested spectators.   |
| July 18   | Easher Open Intermediate R/C Rally, not Woburn Abbey, venue now Old Warden Aerodrome, nr. Biggleswade. Rudder, elevator and engine speed control only. Pre-entry to: W. R. Oberg, 109 Longwood Avenue, Tolworth, Surbiton, Surrey.                                |
| July 18   | Feltham C/L Rally, Hayes control line site, Charville Lane, Hayes, Middx. Combat and Rat Racing.  |
| July 25   | Burtonwood Criterium, R.A.F. Burtonwood. Combined class speed, Stunt, Novice Stunt, Rat-Racing, A Combat to 2.5 c.c., B Combat to 6 c.c. Team Racing 1/4 A, F.A.I., and B. Starts 10 a.m. Pre-entries 1/6d. to: U. A. Wannop, 13 Dene Court, Stockport, Cheshire. |
| July 25   | Bristol R/C Rally, R.A.F. Hullavington. Multi events including Scale and Intermediate.  |
| August 1  | East Anglian Area Gala, R.A.F. Upwood. Open R/G/P., combined F/F, F.A.I., and Coupe d'Hiver.  |
| August 8  | S.M.A.E. Summer Gala, R.A.F. Odiham, Hants. Open R/G/P, P.A.A. Load, Chuck Glider, Multi R/C, 1/4 A and B Team Racing, Combat, and Stunt. Pre-entry to: S. A. Wade, 10 Storer Road, Loughborough, Leics.  |
| August 22 | Glasgow Hornets C/L Rally, College Milton, East Kilbride, 1/4 A, and F.A.I. Team Racing, Combat. Pre-entry 2/6d. to: G. McCree Sloch, Langgrig Road, Newton Mearns, Glasgow. 5/- field entry.   |

## WANSTEAD SCALE MODELS

Several Wanstead Warhawks members attended the first S.M.A.E. all scale meeting and they came home very enthusiastic for more contests of this type. Pete Ball won the control line section with the model he used to place second at the '64 Nationals namely an 'A.P.S. Curtiss Hawk P.6.E.' and John Palmer placed fourth in the free flight with an 'A.P.S. Auster A.O.P.9' converted to pendulum elevators. At the Nationals Pete again came second in control line scale but this time with his 'Grumman Gulfhawk' decorated in the colours and markings of the machine flown by Al Williams, this was Merco 49 R/C powered and had three line control. Dave Platt placed fourth in Multi R/C scale but did not manage a really good flight due to a missing engine run, caused by a leaking fuel line in his 'Magister'.

The Ulster 'Control Line' Nationals had to be cancelled due to high winds that evening making walking difficult at times. Limerick team racers were notable for their good finish and some of the combat models were to a very high standard. The Southern entries were impressive and the new date has been set for August 28th. The day was not wasted as the boys trooped off to the local bakery and had a good natter whilst the women-folk sorted the food out. Coleraire and district branch of the Ulster M.A.C. had their first 'Multi R/C' comp. on May 16th. Berti Troy made the first and winning flight with a "Soraco" using an F & M Mator R/C set up and set the standard for the other contestants to aim at. Second place went to Ross McKenzie flying a "Taurus" that he had not practised with very much and using Grundig 8 R/C. Third spot was captured by Roy Hunter flying a "Super 60" with some of the dihedral removed and using R.C.S. radio gear. In the first seven places there were no less than five "Keil Kraft Super 60's".

## THIRD RED CAP

For only one shilling free flight and radio modellers can get 14 pages of top notch gen in the "Red Cap", the newsletter of the Sheffield S.A. Edited by Ron Firth an active all rounder to be seen at most rallies, its contents include a report of the 1964 contest season, an open rubber model plan by John Turner including full size propeller blanks, making sheet propellers for rubber models, a radio control glider, electric R.T.P. details including the pylon, beginners guide to radio control, and lastly details of an actuator for R/C gliders designed by John Turner.

## INVERTED HANDLE

Peter Gardner of Bletchley Buckaneers is busy building a scale R/C Douglas Invader for two 35 engines and they report that the whole club will be watching its maiden flight, expected soon. John Bourn late of the Hayes club at last managed to talk someone into flying combat against him, his intrepid opponent being their youngest member 11 year old Richard Bass who flew a K.K. Firebird with a P.A.W. 2.5 against John's O.S. Max 19 wing, managing to cut his streamer. Half way through the combat he broke the Firebird fuselage, removed the back end, turned the handle upside down and flew it as a wing, with the flaps acting as elevators. Richard's father has also been dogged with bad luck whilst flying his Frog Attacker, once the lines parted and then the elevator came adrift. Sell e'm some Sellotape someone!

## R.A.F. LYNEHAM MODEL CLUB

Operating for nearly a year now R.A.F. Lyneham M.A.C. have 40 members including six juniors. Several prizes have been won at the R.A.F.M.A.A. Championships and they are doing quite well in the Western Area S.M.A.E. rallies. Sgt. Jim Abbotts won their last club rat-race flying his Eta 29 powered rat at 95 m.p.h. A free flight rally is being held shortly for the non control line types in the club, no doubt for some pre-contest practice for their members.



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# THE *TRAIL-BLAZERS*



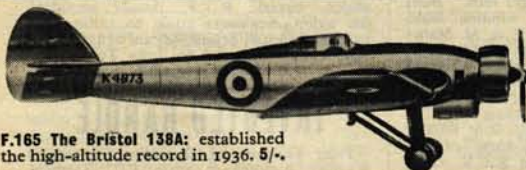
**F.167 The Westland Wallace:** the famous plane that made the first historic flight over Mount Everest in 1933. 3/6.



**F.166 Spirit of St. Louis:** the famous plane which carried Lindbergh in the first solo crossing of the Atlantic in 1927. 3/6.



**F.168 The Comet Racer:** in 1934 outright winner of the England to Australia Air Race. 2/6.



**F.165 The Bristol 138A:** established the high-altitude record in 1936. 5/6.



**F.163 The Vickers VIMY:** the plane that flew the first non-stop trans-Atlantic flight. 6/6.



**The F.164 Supermarine S.6B:** The Schneider Trophy outright winner. 2/6.



**F.169 The Gipsy Moth:** the first solo flight by a woman, England to Australia, 1930. 2/6.

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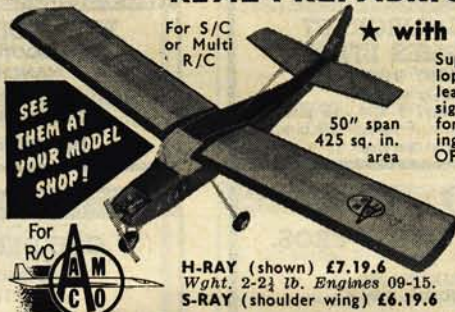
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J.A. T/R: Messrs. Turner/Hughes, 1st; Davy/Hudson, 2nd; Jackson/Smith, 3rd; Johnson, 4th; Dell/Balch, 5th.

Combat: Messrs. Sizmur, 1st; Tidey, 2nd; Morris & Holland, 3rd.

Unaided by "works support", special motors, or other assistance, beyond normal Oliver service.

More "Oliver Tiger Power" to you, gentlemen.

J. A. & J. S. OLIVER, "Four Acres", Ringwood Road, Dorset, England

## SPINAFLO SILENCERS

42/6d. to 62/6d. over 65 types

These bright anodised units are a rewarding investment for all discerning modellers. Fuel economy and model cleanliness are but two of many side benefits. Made to fit any sidestack engine. Mini for .09 to .15 Standard for .19 to .35 Super for .49 to .61

All complete with mounting strap, adaptor block machined to close limits and colour anodised rotary flow diffuser.

D.A.C. COMPONENTS, Albion Rd., Horsham, Sx, Eng.



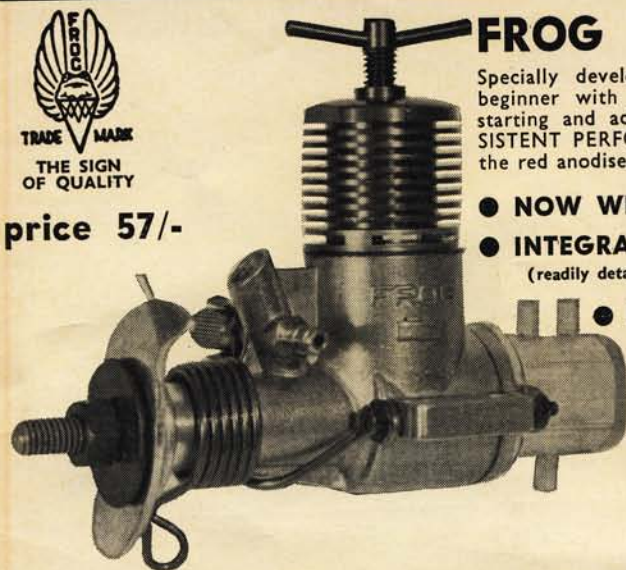
# FROG

## DIESEL ENGINES

Backed by 20 years experience in the development and manufacture of miniature diesels, a 'Frog' engine ensures you **DEPENDABLE POWER** at a genuinely **ECONOMIC PRICE**.



price 57/-



### FROG '100' Mark III

Specially developed for the sports flyer and beginner with a particular emphasis on easy starting and adjustment—plus **REALLY CONSISTENT PERFORMANCE**. Readily identified by the red anodised cylinder jacket.

#### ● NOW WITH SPRING STARTER

#### ● INTEGRAL PLASTIC TANK

(readily detachable, if preferred)

#### ● RUGGED, 'CRASHPROOF' CONSTRUCTION

Front rotary (crankshaft port) induction specially developed for optimum timing. Precision honed cylinder bore; centreless ground piston; tough, hardened steel crankshaft. Precision made throughout from highest specification materials—a power unit you can really depend upon!



#### SPECIFICATION

Displacement: 0.99 c.c.  
(.060 cu. in.)  
Bore: .416"  
Stroke: .460"  
Mounting dimensions:  
(Beam) 1 1/4" x 1 1/4"  
Height: 2 1/2"  
Length: 2 1/2" (less tank)  
Crankcase width: 1 1/2"  
Weight: 3 ounces  
(3 1/2 oz. with tank)  
Piston: Meehanite  
Cylinder: Hardened steel  
Crankshaft:  
Contra-Piston: Meehanite  
Con. rod: Alloy forging  
Crankcase: Light alloy  
pressure die casting  
Main bearing: Bronze  
Model Sizes: Free flight  
34"-48" span. Control  
line 15"-36" span (depending on type, etc.)

### OTHER ENGINES IN THE FROG RANGE

### EVERY "FROG" ENGINE GIVES YOU:

- ★ **DEPENDABLE, DEAD-EASY STARTING!**
- ★ **SMOOTH, FLEXIBLE PERFORMANCE!**
- ★ **EXCEPTIONAL POWER to WEIGHT RATIO!**
- ★ **OUTSTANDING LIFE AND DURABILITY!**
- ★ **AN ENGINE THAT STAYS ON TUNE!**

FROG ENGINES ARE OBTAINABLE FROM YOUR MODEL SHOP

### Guarantee

Every FROG ENGINE is fully guaranteed to be free from any mechanical or material defect and is precision manufactured to the highest degree of British engineering skill and craftsmanship. Spares and servicing facilities are also readily available, if required.

Manufactured and Distributed by

## A.A. HALES LTD

26 STATION CLOSE,  
POTTERS BAR, MIDDLESEX



.8 c.c.

#### FROG "80" Mark III . . . . . 54/6

Latest version of this world-famous 'sports' diesel now fitted with spring starter and other detail improvements for even better performance. Twin exhaust stacks, angled needle valve. Built-in compression screw lock.  
Capacity: .79 c.c.  
(.048 cu. in.)  
Bore: .400"  
Stroke: .392"  
Weight: 1.9 oz.  
Speed range: 3,000 to 16,000 r.p.m.  
Front rotary valve.



1.5 c.c.

#### FROG "150" Mark III . . . . . 59/6

A superb high-performance diesel for 1/4 A Team Racing, the smaller stunt model, or sports or contest free flight. Now fitted with spring starter—and performance uprated!  
Capacity: 1.49 c.c.  
(.060 cu. in.)  
Bore: .500"  
Stroke: .460"  
Weight: 3 oz.  
(3 1/2 oz. with tank)  
Power: approx. 15 bhp at 15,500 rpm



2.5 c.c.

#### FROG "249 BB" . . . . . 79/6

A true competition engine designed for top performance and featuring twin ball races, high speed rotary (crankshaft) induction and special cylinder porting. Robust design ensures great strength and extremely consistent performance.  
Capacity: 2.494 c.c.  
(.152 cu. in.)  
Bore: .581"  
Stroke: .574"  
Weight: 6 1/2 oz.  
Power: Approx. 0.3 bhp at 15,500 rpm  
Angled needle valve.



3.5 c.c.

#### FROG "349 BB" . . . . . 87/6

3.425 c.c. capacity (.209 cu. in.) ball race engine specially suited for Combat or larger stunt models. Original design of rear-mounted barrel valve induction for really smooth performance with a large size diesel.

#### FROG "349 BB" R/C . . . 105/-

Special radio control version fitted with exhaust muffler and barrel-throttle for fully flexible speed control.





# WEN-MAC has the action

## WEN-MAC FLYING WING



"Ready-to-Fly" enters a new era of flight . . . with the complete line of Flying Wings. They're designed for flying fast-action stunting. Each is powered by the all-new super thrust HOT SHOT .049 automatic starter engine with stunt tank. Wingspan: 24 1/2".

£3.9.11



## R.A.F. DAY FIGHTER

From Britain's World War II air battles comes the R.A.F. DAY FIGHTER. Features the ultimate in action . . . a pilot you eject from the cockpit while flying. He then parachutes to earth! This all-white fighter with British roundels on its air frame is highly detailed.

Powered by Hot Shot .049 engine with Rotomatic starter. Wingspan 21 1/2".

£5.19.8

SENSATIONAL  
READY TO FLY

# KEILKRAFT

## HURRICANE



£4.19.10  
COMPLETE  
inc. Tax

A fine realistic model moulded in high impact plastic. Features clear plastic canopy, exhaust manifolds, four cannons, radio aerial and authentic insignia. Fitted with the very successful WEN-MAC .049 glowplug motor on nylon mounting and with 3 bladed nylon propeller. Complete in attractive carton with control line handle, Terylene lines, glowplug clip, lead, battery plug and full instructions.

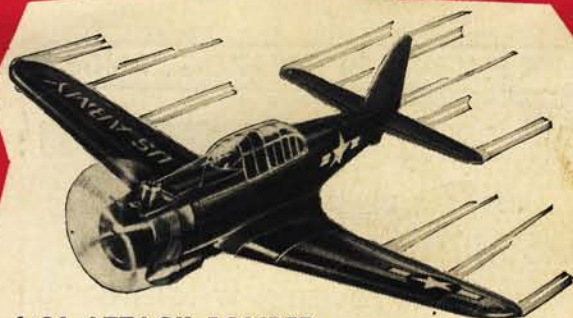
MODELS DROP BOMBS,  
SHOOT ROCKETS,  
OR EJECT PILOTS  
WHILE IN FLIGHT !



## Bomb Dropping AEROMITE

Ideal plane for beginner or expert. Drops bomb while flying. Features aluminium-metalised fuselage. Rotomatic starter .049 engine. Tri-cycle landing gear. Comes complete with control lines and handle.

£3.15.0



## A-24 ATTACK BOMBER

Flies 35 m.p.h. in 30 foot flight circle. Drops a bomb when the "pilot" pulls a 3rd control line. Dive brakes. Rivet detail. Nylon prop. Tinted canopy. Rugged and durable. Starting and flying instructions engraved on wings and fuselage.

£5.19.8

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information, kits and  
hundreds of accessories.  
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