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F.A.I. 66
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WORLD CHAMPIONSHIPS

FULL REPORT
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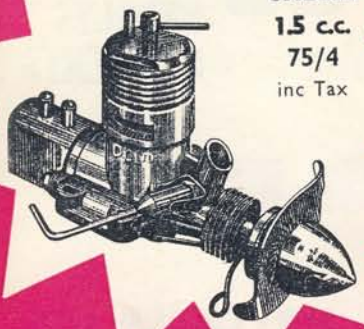

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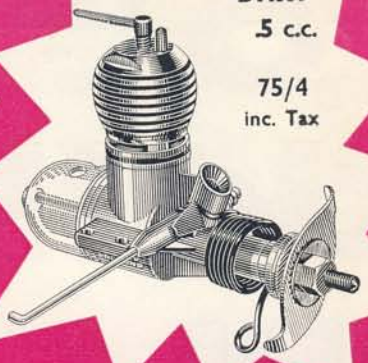

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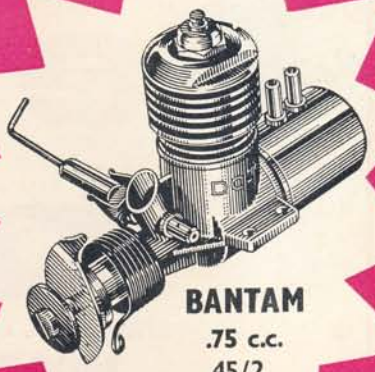

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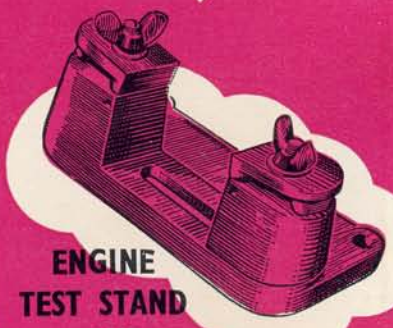

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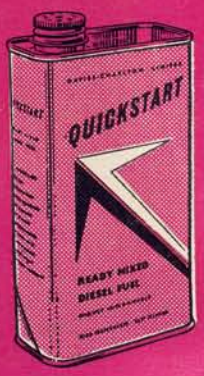

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Aero Modeller

INCORPORATING
MODEL AIRCRAFT

November 1966 VOLUME XXXI No 370

CONTENTS

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COMMENT

Response to our *National Club Survey* has been very interesting. We had slightly less than 200 S.M.A.E. clubs in our list of 1966 affiliations and slightly more than 200 non-S.M.A.E. clubs in our rather dated addressing system. If we are to discard all previous records and include only those who have completed our questionnaire, the 1966/7 circulation list will be reduced by approximately 50%. We know of active clubs that have not responded but these cannot be included in the Survey since either, (*a*) their communication is inadequate for recognition as a club or (*b*) they do not wish for publicity or to receive details of contests, manufacturer's information etc.
Flying field facilities vary from the lucky club with use of three local airfields to those with small areas available in restricted hours. Some clubs meet "as necessary" many others weekly in venues ranging from the local pub to community centres, Parish halls or member's houses. Largest club appears to be Whyteleafe Area M.F.C. with a total of 85 and there are many with a strength in excess of 40 members.

cover

Four years ago in November 1962 we published a Grumman "Gulfhawk" in full colour on our cover. That was the biplane version as built by Steve Jencso of Cleveland, Ohio U.S.A. as seen at the U.S. Nationals that year. Now we have Warren MacZura's "Gulfhawk the 4th" from Granite, Illinois U.S.A., the winning model of the 1966 U.S. Nationals and also the winner of the first international Control-Line Scale Contest. The 1/12th model weighs 4¾ lbs. and is powered by K & B 35. Cowl flaps operate, so do the lights and wing flaps. The finish is exceptional and the cockpit fully equipped. This "Gulfhawk" is a converted Grumman F8F Bearcat. See this issue for full report on the Championships, including the Scale event.

next month

Since 1943, the **Handley Page Halifax** has been a modeller's subject for that was when the A.P.S. rubber driven version first appeared. Now fully updated for control-line operation the Halifax "Vicky" joins A.P.S. and will be December Cover Subject. This 4-engined scale model will be a very popular addition to the plans range. Another W.W.2 aircraft to be a main feature is the **De Havilland Mosquito** drawn by G. R. Duval and reproduced in 1/72nd scale. Full size plans for a **free flight sportster,** technical review of C/L models at the **World Champs, U.S.A. Nats** pictures, **Book Reviews,** the **Webra 1.7 SportGlo** tested and a host of supporting features will be in the bumper "Christmas edition", out on November 18th at no extra charge—2/6d as usual.

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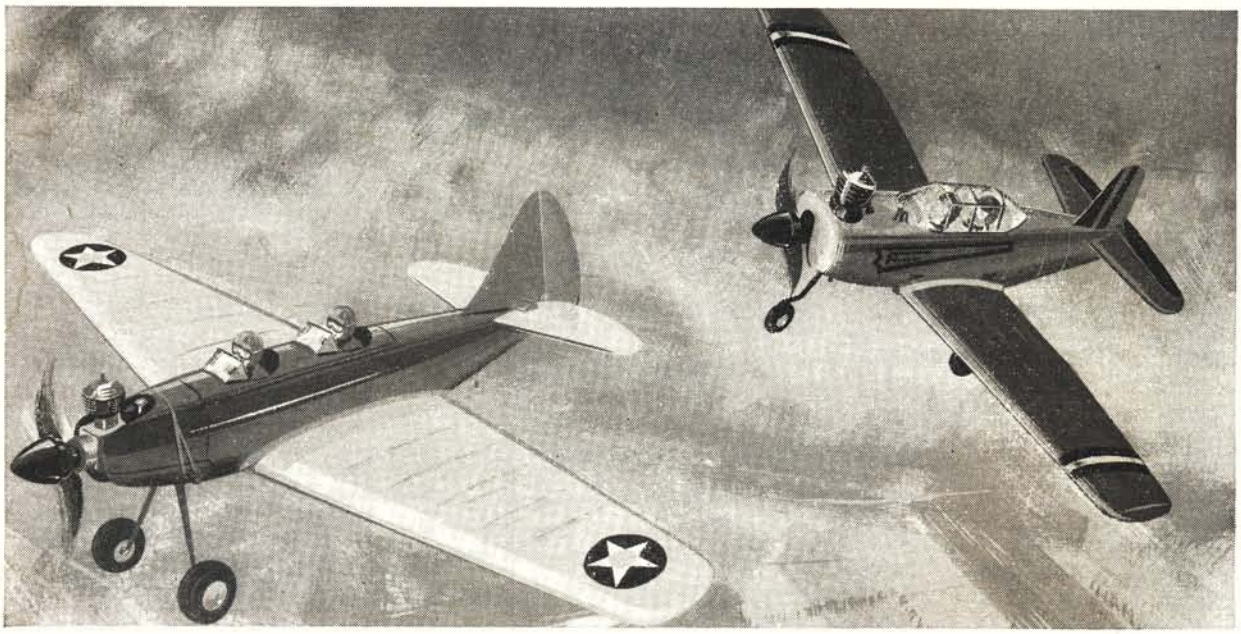

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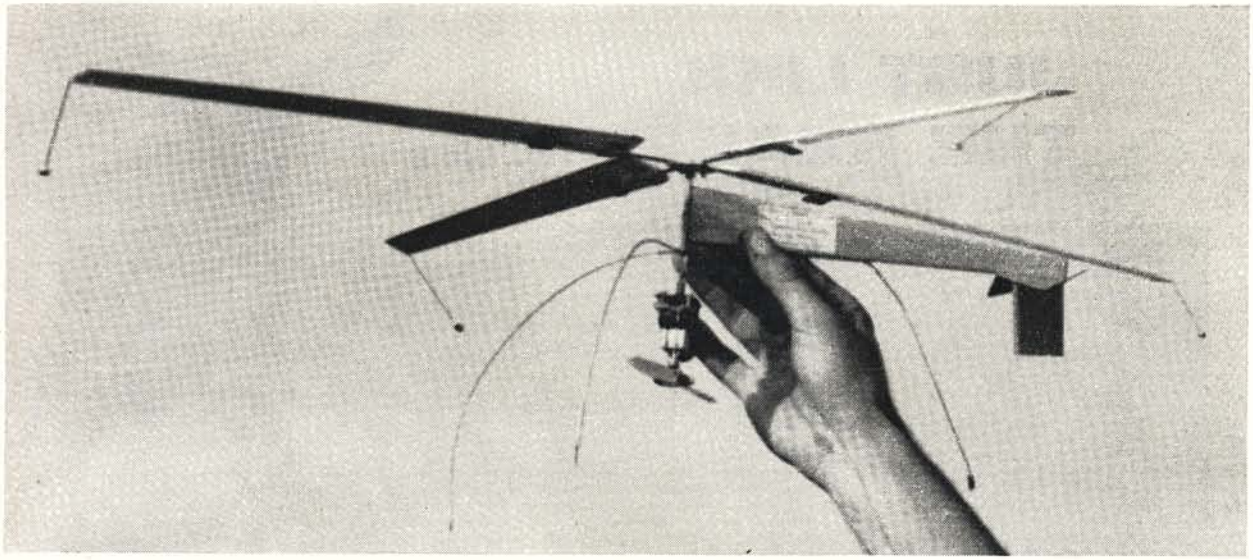
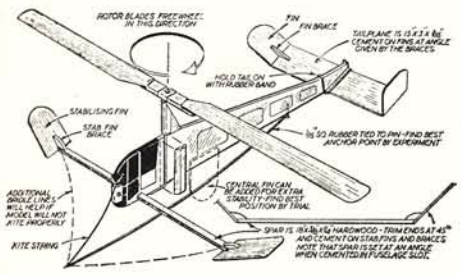


WHIRLIBIRDS ARE TRICKY . . .



One hundred years ago you could buy a rubber powered toy helicopter which actually flew—not very well with its simple stick fuselage and feathers for rotor blades, but it worked. It took man another eighty years to produce a practical full size helicopter—and a little longer still to produce successful flying model 'whirlibirds'.

Even now there is still a lot to be worked out, especially with models. Most successful model helicopters are 'one off' jobs developed by trial and error. Basis, in fact, is a rotor system attached to the crankcase of an engine. The prop. fitted to the engine shaft rotates one way; and the engine and attached rotors in the opposite direction—a simple and efficient method of rotor drive, but the problem comes in stabilising the system. It means using pivotally mounted or skew hinged rotors—and that's where the trial and error comes in!

However, it can be done. And if you get stuck with a powered helicopter you can always try a helicopter kite. You don't have to worry about the airframe side at all—just use sheet balsa and start with a rotor hinge system which has worked on other models. You can go on from there.

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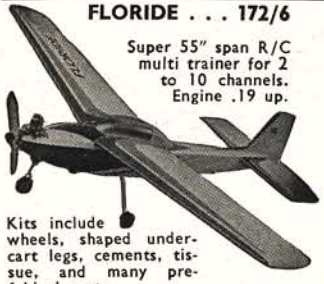

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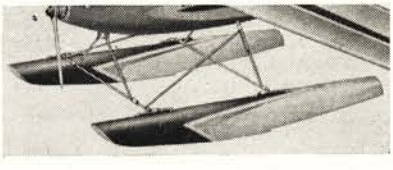

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AEROMODELLER ANNUAL 1966-67 breaks new ground with its cover picture of Dr. Kaletsch's Rotary Wing, which might just conceivably be the new approach to quick lift flying . . . all developed so far with models. Scale modelling fullsize as practised by a number of experts producing aircraft for the spate of historic flying films will fascinate. Peter Chinn gives us a breakdown on Tester's Twelvemonth with the new and interesting engines of the year. Metrics are all the thing today, and we have a fine mixture of conversion tables. Fuel Formulae, once the regular first lesson of the power flyer, is having a new lease of interest in the search for speed and better fuel consumption. Other special aspects of modelling covered include the Latest in Pylon Racing with Goodyear models, Canopy Moulding, Rubber Motors, Swept Wings, the New Materials of the year, Use of Jigs in Construction, Cut and Try Design, some Old Timer models . . plus Why Model Rocketry . . . popular in U.S.A. banned in this country! In addition to this fine miscellany of articles there are some twentynine plans of models throughout the world, selected for their interest, success, unorthodoxy, or specially interesting approach to design or performance, covering all types of control line, free-flight, powered and glider models. Results of British, International and World Championships are included to maintain an unbroken record since 1948.

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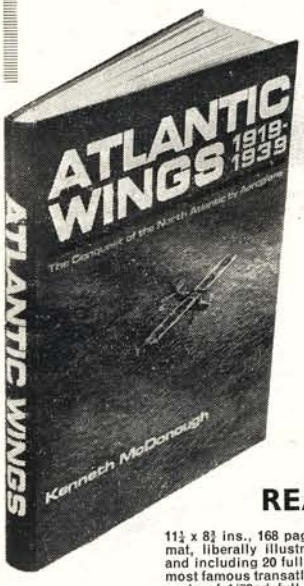

Author Ken McDonough traces the authentic history of North Atlantic aerial crossings 1919-1939 with positively complete factual data and vivid description of each pioneer effort. His superb artwork which introduces every chapter with fascinating wash drawings of outstanding flights extends to fine-line sketches of mechanical details of the aircraft. The twenty full colour paintings have been produced with closest possible adherence to true colour tones of the real machines and are in themselves a treasure for collectors of all things historical in aviation. Here for the first time between one set of covers is the truly complete story. The Sopwith "Atlantic", Linbergh's "Spirit", Balbo's" Savoia-Marchetti", Kingsford Smith's "Southern Cross" and the famous French aircraft, the Brequet XIX "Point d'Interrogation", Levasseur "L'Oiseau Blanc", and Bernard "L'Oiseau Carani" are naturally included in these fine colour plates. Appendices give tabular data on engines employed, Atlantic bibliography and a fascinating tabular summary of all attempts and successful aerial crossings.

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HEARD AT THE HANGAR DOORS

One might be excused for thinking this is one of the Victa Airtourer 100s described on Pages 628/9. It is NOT! George Hahn, of Pottsville, Pa., U.S.A., produced this fine 58½ in. span model for multi-channel R/C. It will be a main feature of December edition Radio Control Models & Electronics with introduction of the design to Plans Service and details of a foam 580 sq. in. wing as well as conventional structures.

HOSPITAL WARDS are deceptive. This month your editor will have had cause to visit three of them. The flower vases, fruit bowls, air of sterilised cleanliness and bustling efficiency of Ward sister and her flock of multi-coloured nurses disguises the loneliness and suffering. One visit which specially impressed was to the Conservator's Ward at East Reach Hospital, Taunton.

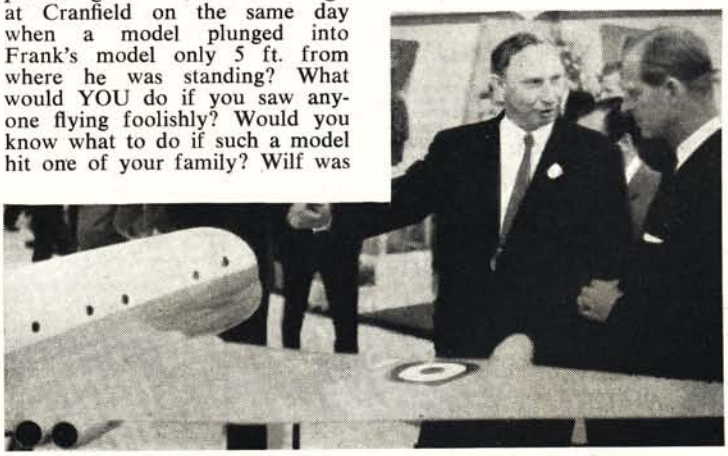
What has this got to do with Aeromodelling? PLENTY!! Wilf Hoer was the innocent father, helping his son Geoff fit a needle valve in the engine of his multi-channel radio model at RAF Merrifield on September 18. They had been on the airfield only a quarter hour when SLAM! Wilf was a crumbled man, almost slain by a radio model UNDER FULL CONTROL. The operator had been demonstrating low-level passes close to a group of Exeter, Illminster and Yeovil clubsters out for a day of sports flying. In a full power extra low pass he lost all appreciation of depth perception, failed to track the model accurately and but for the grace of fortuitous circumstances almost created the third mortality in the history of radio control accidents.

Kneeling over the model engine, Wilf (who will be known to the West Country folk as a modeller for many years) was hit on his right side from the rear. He suffered six broken ribs, a fractured collar bone and a pierced lung. Attention by a medical orderly modeller, who by chance was among the group, helped to save the situation. But, for three long days and night, constant vigil by the hospital staff and the family was essential through a critical period. Even five days later, when blood transfusion was stopped and only the last draining of the collapsed lung remained to be completed, Wilf was very far from being in a "satisfactory" stage. The strain on his wife and son in their continuous attendance during all this suffering was immense. Yet their courage and the strength of wiry Wilf, in his 52nd year, has now overcome this serious case of bodily injury to the stage where the whole family looks forward to an outing with the models again. Wilf bears no grudge.

It was an accident which could have happened many times over. FRIGHTENING? It *should* be to all the show-off radio fliers.

Who knows which angel was protecting Frank Van den Bergh at Cranfield on the same day when a model plunged into Frank's model only 5 ft. from where he was standing? What would YOU do if you saw anyone flying foolishly? Would you know what to do if such a model hit one of your family? Wilf was lucky. A chest or head impact would have been just as fatal as it had been with two others. His lacerations will heal, and the scars may not all show; but his agonising weeks in hospital remain a permanent memory.

Carl Goldberg, celebrated U.S. Model designer/manufacturer made a brief visit to Britain in September, taking in a trade flying session organised by Max Coote of Ripmax. Carl and Max are caught by the candid camera as Carl puts Max's Taurus II through its paces using Citizen-Ship Digital Proportional radio gear. Below, at Farnborough another Aero Modeller candid camera shot of Sir Arnold Hall, Chairman of Hawker Siddeley Aviation explaining to H.R.H. The Duke of Edinburgh K.G. the virtues of Britain's latest military aircraft design—what would we do without models?



THIS MUST NEVER HAPPEN AGAIN — or so we say, yet only a week passes and on September 25th a 15-year-old caught the impact of an .049 single channel model flying low and has extensive facial injuries.

THE SOLUTION? Immediate removal of any offender from any insurance scheme or Club membership will partially bring culprits to heel and see sense. Those who habitually court disaster are already known to most of us. Warn them if you can. Your editor's wish would be to transport them for just five minutes into the atmosphere of Conservators Ward at Taunton. It's enough to sober up any of the new breed of stick happy radio fliers who fondly imagine they are lords of the air.

TOUGH TYPE Sven Erik Pira, a free flight power enthusiast from Strömsund, Sweden, is not one to be easily discouraged. Flying in the "Wentzelpokalen" at Ostersund, he made a good first round flight then crashed whilst trimming. Having no reserve, he then drove a 125 mile round trip for another wing and returned in time to fly two more rounds to score 407 secs. Sounds like determination with a capital "D".

WINTER CUP events approach fast though CH contests have been an increasingly popular feature throughout the year at British rallies. The traditional south coast of France event known as the "Coupe de la Cote d' Azur" will be held on December 4th this year at Levens, near to Nice. A special "Coupé dé la Ville de Levens" trophy will be awarded to the top proxy flown model. Those who want to compete through proxy reps or in person should contact M. Pierre Andreis, 38 Avenue de l'Arbre Inferieur, Nice, France as quickly as possible.

WINTER CUP postal event will also be organised as usual by AEROMODELLER. and applications for entry forms to be distributed early in January can be submitted to the Editorial Offices. The event will be given alternative dates of February 19th and February 26th.

MODEL SHOW at Altrincham, Cheshire, on November 4/5/6th has been organised by the South Manchester Models Group and embraces Aircraft, Ships, R/C Boats and land vehicles, Trains, Locomotives and Model Railway Layouts at St. John's Hall, Ashley Rd.

"The Bells of hell go tingaling-ling-ling" is the title we've heard suggested for another aviation film epic calling for full size reproduction aircraft. This one will depict the destruction of the Zeppelin sheds at Friedrichschafen in W.W.I. and true to form, a 504K has been made in the remarkably short time of three months. Maurice Robinson who did most of the work is seen prostrate on the fuselage decking, keeping an eye on instruments as the rotary engine is given a first ever run-up at Blackbush. John Isaacs, who will be remembered for his "Fury" biplane in January '65 issue, made the wing ribs and sent this photo, taken on August 17, when Viv Bellamy, under whose control the reproduction was completed, made the first test flight. Next epic will be M.G.M's "Battle of Britain" any takers for reproduction Spitfires, Hurricanes, Ju 87s, 88s, or Do 17s?

CHAMPIONSHIP CLAIMS by our free flight correspondent John O'Donnell to the Society of Model Aeronautical Engineers totals 83 minutes 23 seconds out of a possible 99 minutes. This is roughly one third of the figures possible in 1965 where 27 events were eligible for claim as distinct from 9 in '66. The number was reduced to increase popularity but to our knowledge, only Ray Monks rivalled John's scores with about 68 minutes total time.

NEW RECORD in the U.S.A. claimed as a World Record by the A.M.A. is Bill Northrop's 25:92 m.p.h. with a glider over a measured speed course. His model uses the "Foo Too" wing off the power model which established a new altitude record of 16,610 ft. Model is 8ft. span, weighs 5 lbs. and has rudder and elevator controls working off Dee Bee 21 radio equipment.

FIGURES released by the Academy of Model Aeronautics show a membership in '66 numbering 17,500, over 4,000 of which are in 300 registered clubs.

SCOTTISH CELEBRATIONS to commemorate the 100th year of the Royal Aeronautical Society included a fine exhibition of aviation interest, with many models at the Glasgow Art Gallery and Museum, Kelvingrove. Those not able to attend can obtain a fine souvenir book of 132 pages, carrying 63 illustrations, many of them very rare, and titled "Aviation in Scotland". This is the first occasion an account of this nature has been published and much of the material in the history of aviation as it occurred in Scotland has not previously appeared in print. Cost is a nominal 6/- post free from J. Sacharin, 22 Vennard Gardens, Glasgow S.1. to Aeromodeller readers.

Across the country at Edinburgh the Royal Scottish Museum has opened a new gallery of aircraft exhibits which includes about fifty models, most of which are 1/24th scale and represent early aircraft up to the '20's. The show is well worth a visit and also includes engines, it is open from 10 a.m. to 5 p.m.

FIRST WITH THE NEWS, after our own quick announcement of World Championships results last month were *Aviation Magazine* (France), *Ilmailu* (Finland), *Modellistica* (Italy), *Skrzydlata Polska* (Poland), *Model Avia* (Belgium) and *New Zealand Newsletter* in that order. First full account appeared in the Italian modelling journal.

F.A.I. 66

John Franklin reports on the finest C/L contest ever held in Great Britain

Results on P. 616

(Headings for Aerobatics and Team Racing Results are unfortunately transposed).

The biggest, most exacting and undoubtedly most successful International contest ever held in Britain is now but a memory. Over ten months of careful planning and closest co-operation between the Officers of the S.M.A.E., the Royal Air Force and the R.A.F.M.A.A. culminated in a show that will live long among the reminiscences of those fortunate enough to have attended as spectators or taken part. Twenty-one Nations sent teams, two more despatched official observers and another half dozen countries were to be found represented among the visitors. Facilities, ranging from the large hangar used as a 'pits', to adjacent accommodation and restaurant, a trade and vast scale model show by Peter Farrar and a free fuel bank, were ideal. Many were the kind compliments passed by our guests, but few realised just what had been involved in preparation for this World Championships which was generously sponsored by Castrol Ltd.

Take, for example the business of finding two tons of wire mesh, then having to evolve a means of supporting it. Or the design of a lap recorder working directly from the lap scorer's counter over a distance of 200 ft. The task of attending to the needs, physical and social of 8000 spectators. The preparation of printed matter, provision of souvenirs (each contestant had a briefcase from Hawker Siddeley, containing up to 13 items from other sources) and the marshalling of accommodation.

Field organisation, thanks to prior planning and the volunteered services of control-line enthusiasts went without fault. The innovation of continuous practice areas, time-spaced and programmed team race heats and judge-breaks in stunt were universally praised.

Highlights of the meeting were of course the performance of the United States team with their individual and team successes, prevented only by the Czechs from making it a complete walk-over. Josef Gabris's return to Champion status after 8 years in aerobatics is no less an achievement than Bill Wisniewski's incredible 160 m.p.h. in speed and the challenge of the Austrians with their fantastic pit stops in team racing which had both an Air Marshal and an Air Vice-Marshal lending encouragement is something we shall always cherish. Scale too, has now achieved successful baptism under fire, and we fancy could well become a rival to any other class for popularity.

Team Racing

Round 1 Heat 1 on Saturday saw Shneiorson/Provisor (Israel) with an all silver, Eta .15 model having Top Flite Speed cuffed root 7 x 8 prop and full pan, matched against Gombocz/Toth (Hungary) with Moki 2.5 T/R and Sulisz/Rosinski (Poland) who used a Super Tigre powered model similar to Boris Chkourski's Snipe, but with a cockpit atop the alloy engine pan that is integral and tissue covered. Whilst the Israeli's retired (they were competing largely to gain experience) the experienced Hungarians made 4:51 and the Poles 4:56 in the Championships first race. *Heat 2*, was a disappointment as Bador/Magne (France) with their very streamlined, Perspex forward fuselaged topped Micron 2.5 powered model were obliged to retire, leaving Mohai/Markotai (Hungary) to make 5:02 at 82 m.p.h. with their Moki 2.5 T/R powered model, against the Geschwendtner brothers (Denmark) who flew on for 5:28. The first retractable U/C was used in *heat 3* by the Sundell brothers (Finland) in a light blue Oliver Tiger powered Miss F.A.I. style model averaging 86 m.p.h., but troubles struck and 6:12 resulted. Wamper/Gorziza's (W. Germany) low aspect ratio clear finished, Webra Mach II racer was flying at 86 mp.h. and recorded 5:02, the Irish lads Hand/Carrol were slower at 75 m.p.h. but

OPENING CEREMONY Air Vice Marshall B. A. Chacksfield, C.B., O.B.E., A.F.R.Ae.S., President of the S.M.A.E., and M. Charles Hennecart, Director General of the Federation Aeronautique Internationale, make speeches of welcome to open one of the most successful World Championships ever held.

Group Captain B. Hamilton, O.B.E., D.F.C., A.F.C., Officer Commanding R.A.F. Swinderby, whose magnificent co-operation assured the S.M.A.E. and R.A.F.M.A.A. of complete success in administration, congratulates team race winners Don Jehlik left and Herb Stockton right. They are holding "Alfred" their mascot who had to be by the circle for every U.S. Team flight!

Below, the now famous "Flute" exhaust system developed by Bill Wisniewksi for his T.W.A. engine in "Pink Lady". Winners' Pewter Tankard and S.M.A.E. emblem shield as given to all participants, plus souvenir programme flank the "Model of the meeting". At bottom is the power unit exposed, showing cooling area on pipe behind rear exhaust port, heat retaining painted area, and small outlet tube at end.

returned 5:24. Hungarians Purgai/Katona in *heat 4* has a fighter like, high mounted tailplane, faired in cockpit, silver finished, mock rivet panelled and pitot tube bedecked model, with very good acceleration from the Moki 2.5 T/R doing 92 m.p.h., at least 4 m.p.h., faster than Valls/Montoy (Spain) and Turlizzi/Signorini (Italy). Rough tactics and whipping caused all three teams to be disqualified! *Heat 5* saw the first British team in action Nixon/Ellis, against non-starter Hertman/Ytreoy (Norway) and Buys/Goudsmitt (Holland), Mick Ellis set off their eliptical winged Eta 15 powered model rather lean and covered 50 laps, though slow at 75 m.p.h. giving 5:27, the same as Buys/Goudsmitt who flew at 80 m.p.h. *Heat 6* brought Hohenberg/Turk (Austria), Ahlstrom/Axtilius, Sweden's only T/R entry and Matile/Meyer (Switzerland) together. The Austrians all flew low aspect ratio, vee tailed designs with plate mounted Bugl H.P. 15D engines. For pit stops, fuel is contained in a glass fibre moulded, pressurized arm tank connected via a plastic fuel line to a finger tip valve that mated onto the tank filling vent. With an upturned rear venturi the Bugl engine is primed by the tank overflow pipe squirting some fuel into the exhaust stack, and down the fins. Flying at 89 m.p.h., their pit stops were literally fantastic only contacting the model for three seconds at the first, slightly longer at the next, little did they know that this 4:33 was to put them in the final. The Swedes and Swiss made 5:17 and 5:16 respectively. *Heat 7* saw Plotsin/Timofeev (U.S.S.R.) with their covered, built in pan, modified Super Tigre, rivet line bedecked model, that was swopped for a Canadian stunter later on and Front/Goldberg (Israel) disqualified for high flying whilst Czechoslovakians Gurtler/Klemm steamed on for a very fast 4:36. Great Britain's Dick Place and Don Haworth were matched against Fontana/Amodio (Italy) and Tortilla/Raatikainen (Finland) in *heat 8* the Italian U/C retracted just as they were off the ground, and they did most of the overtaking at 89 m.p.h. to make 5:00. Place/Haworth had their much modified Eta cut after ¼ lap, so Don opened the needle, restarted, then had two more stops for 5:17 at 82 m.p.h. Sharovalov/Radchenko (U.S.S.R.) were making 86 m.p.h. but were not able to better 5:22 in *heat 9*. Kropf/Russ (Austria) were delayed in *heat 10* after catching Kelly/Parents (Canada) lines at a stop but still returned a 5:04 with the Bugl sounding just right, after some fast stops. Favre/Fabre (France) another Eta modifying team in *heat 11* had an unplanned stop at 98 laps, with their '64 W/Champs retracting U/C model and did not finish, Easton/Patton (Canada) had troubles with their Maple leaf decorated model for 6:54. *Heat 12* with Bedall/Brennan (Ireland), Rivola/Olsen (Denmark), who did not start and Comas/Parramon (Spain) was uneventful, then Le Crone/Mobley (U.S.A.) crashed in *heat 13* whilst Bartos/Neckar (Czechoslovakia) flew their home made engine powered, all white model for 5:32. Baudine/Hanton (Belgium) did not start. *Heat 14* saw two good times a 4:50 from Tautz/Jones (U.S.A.) at 83 m.p.h. whose pit stop and landing methods have to be seen, to be believed. With the vertical detachable mono leg ¼" forward of the C.G., solid outer wing tip skid and nose cowl skid, the all white, transfer covered Eta 15 model is banged on the ground as soon as the engine cuts, running round to the pit man at high speed in a tail up attitude with the cowl almost touching the ground. Rather low on laps it made two stops. Toulouse/Coste (France) had a most interesting Radio Control operated compression adjustment and automatic pressurized filling system operating on their modified Micron 2.5 engine and made 4:54. A fast line up promised action for *heat 15* with Stockton/Jehlik (U.S.A.) second at last years European Criterium of Aces., Brendell/Glodeck (W. Germany) and Fischer/Meusburger (Austria). The Austrians were dogged with a badly missing engine and retired. The Germans used a Webra Mach II with electrical compression adjustment controlled by the pilot for a 5:04. Stockton/Jehlik, at 92 m.p.h. made a fast one stopper and recorded 4:28, the fastest time so far using a much modified Eta. The cylinder head has larger and more closely spaced

fins, the front housing is home made and a new backplate is fitted. This is a Cox .049 plastic front housing complete with cut down venturi, fitted to an alloy backplate. Inside, a home made hollow shaft is linked to the Eta crankpin to give a rear drum induction as used on the 1.5 cc Super Tigres. With the venturi pointing downwards they were covering over 60 laps at 90 plus. The model has low aspect ratio, through fuselage exhaust ducting and machined plate engine mount. *Heat 16* saw brothers Lutkat (W. Germany) doing 95 m.p.h. for 4:51 while brothers Patris (Belgium) were slow at 7:15 Jelman Boulkin (U.S.S.R.) made a 4:39, fourth fastest at this stage flying at 98 m.p.h. for 34 laps, this was a rerun as their first model hit the ground earlier on and really splattered. Trnka/Drazek were again the fastest, in *heat 17* and practice, doing 108 m.p.h. but in the race it dropped to 100 and two stops held this down to 4:45. *Heat 18* the last of the first round had Britain's fastest team, Brian Turner and Mick Hughes in it, with Dutch brothers Bert and Rob Metkemeyer. Brian's propeller was slipping and came off during the warm up and the Eta shaft-ran then flooded, the start signal went and Brian still had to fit a propeller, and start a cold and flooded engine. Doing a slow 72 m.p.h. he made 6:35 whilst the Dutch brothers steamed on at 82 m.p.h. for a 4:54 though they were overheating.

Round 2 flown Sunday started fast in *heat 1* with Sharovalov/Radchenko, Tautz/Jones and Deane/Dickson (Ireland), Tautz/Jones were disqualified for pulling and having the handle off the ground, while the Irish lads improved to 4:50 meanwhile Sharovalov/Radchenko were piling on the steam and two stopped for 4:25 taking them to top spot, a really stunning start to the second day of exciting racing. Lutkat brothers (Germany) in *heat 2* made 4:46 but this was now too slow. Trnka/Drazek (Czechoslovakia) slowed by two seconds to 4:47 in *heat 4*. Place/Haworth had everthing go wrong in *heat 6*. Having crashed a model in practice they were lucky to have a slightly better performance on hand than in Round 1, flying against Wamper/Gorziza (W. Germany) and Fischer/Meusburger (Austria). Their start was good but the lean engine cooked up and would not restart, after many primes it ran again, but rich this time and with low range. *Heat 8* was eventful by any standards, after a long "international" discussion it was pointed out that according to the *Sporting Code* only the pilot was allowed to control the model in flight, so Toulouse/Coste could not use their Grundig Variophon transmitter to actuate in-flight compression adjustment from the mechanic's signals, but they were allowed to use automatic filling with an elastic tensioned syringe strapped to the mechanics left arm for their orange Micron 2.5 powered model. Flying with Heitmann/Ytreoy (Norway) and Sulisz/Rosinski (Poland) things were uneventful till the Polish "upside down Snipe" type model came off the lines and smashed itself to pieces on the safety fence, their lines became wrapped around the French and Norwegian pilots, wire cutters failed and Antoni Sulisz ended up flying the Norwegian model! Jelman/Boulkin (U.S.S.R.) were going well in *heat 10* but they were disqualified after a spot check revealed an 11.5 cc fuel tank, hence their tail end position. Canadians Kelly/Parent were doing quite well in *heat 11* but the engine went off tune so Ken Parent adjusted at stops, taking time off to top the tank up before release! This and an unscheduled stop at 98 laps gave 5:26. Favre/Fabre also returned 5:26 but their retractable undercarriage failed to come down at the end of the race, so it was more of a skid landing. Things were quiet until *heat 13* when Sundell brothers made 4:43 with a little elbow work, in spite of missing the second catch. British hopes for Nixon/Ellis against Bador/Magne and Stockton/Jehlik were slim. Don Jehlik again demonstrated his catch off the bounce system at knee height, accepting the inertia by swinging backwards and up, then refuelling fast for 4:25 equal to Sharovalov/Radchenko. The British lads made 54 laps but were too slow to challenge and were further delayed by hitting the French lines for a 5:36. Italians Fontana/Amodio used a Super Tigre G.20 engine with latest "Super Record 7 x 8" cuffed root propellers for two good stops to record 4:49 with their rather strange looking retractable U/C model. In the very last heat Brian Turner and Mick Hughes made a faultless one stop race but had too low an airspeed to beat 4:42 whilst flying against Gombocz/Toth (Hungary) whose time was 4:48. Thus the finalists were to be U.S.A. U.S.S.R. and Austria.

Pre-race practice time was liberal and served to build up an intense atmosphere with crowded spectator interest. Stockton/Jehlik (U.S.A.) were practising hard and their *Mad Magazine* mascot "Alfred E. Newman" holding a placard with the words (What me Worry?) summed up their hopes. With excellent range (they have made up to 70 laps at 90 m.p.h. +) and good stops they were rated as equal contenders. Hohenberg/Turk (Austria) were as fast as the U.S.A. team but had only half the laps, however their pit stops were almost twice as fast and they had also practised hard. The U.S.S.R. team of Sharovalov/Radchenko seemed rather over confident possibly due to, too much practice in their own country before the meeting. They only had a few half full tank flights then wrapped the motor in rag and waited for the start. This was to be their big mistake! Watching through the protective fencing were the three engine designers who all have a commercial interest in this race, Paul Bugl with Fritz Mandl the Bugl H.P. 15D manufacturer, Jaures Garofali, Super Tigre G. 20D designer and Ken Bedford of Eta.

With the warm up signal from Dennis Nixon a screech of engines broke the silence to stir excitement to near boiling point, Radchenko did not use all of the one minute warm up period. Then came the 30 second cooling off countdown period, all teams pulled the rags off their engines and at the drop of the start flag the Austrians were first away then U.S.A. and U.S.S.R. The Austrians' Bugl was slightly cold, U.S.A. Eta fastest at 90 m.p.h. then the Austrians came-in at 89 m.p.h. while the U.S.S.R. modified Super Tigre was misfiring, very cold and under compressed. Hohenburg and Turk of Austria were fastest and first down at 33 laps for an amazing 3.2. sec, stop, pushing the model hard on take-off. On their 56th lap Herb Stockton swung the natural finished U.S.A. model to a bounce in front of the waiting Don Jehlik, Stockton's handle was not on the ground and simultaneously the Soviet team landed on their lap 47 as U.S.A. got away with quick flicking. For Radchenko it was a long stop with a cold engine, needing retuning. The Austrians came down at lap 69 this time for 5.4 seconds their automatic filling system working well. U.S.S.R. was still missing and the Austrians were flying high as the Americans slowed down through the tank run. By now the Austrians were clearly fastest and as they came down for the third stop at lap 106 for 6 secs a popping U.S.S.R. engine cut at their lap 89. Running neck and neck against the Austrians, the U.S.A. were down at 110, caught in-air, filled, whacked on the prop and away, a truly great stop by Jehlik and the crowds cheered. The U.S.S.R. were still on the ground after running back one segment and U.S.A. became fastest and leading by maybe three laps at this stage. U.S.S.R. was virtually out of the running. Then the Austrians landed for another fast 5.2 secs on lap 144, the U.S.A. slowed slightly and U.S.S.R. lost laps, as on 135 Radchenko missed a catch and had to wait for a glide round again. Well in the lead the U.S.A. motor cut for a low landing on lap 166. Both U.S.A. and U.S.S.R. took off together, still in nose up take off attitudes, and as they did so Hohenburg and Turk ran in for a fast landing over the U.S.S.R. model and under U.S.A. for a 6.2 sec stop at lap 179. This was a truly fantastic job of piloting by Gunther Hohenberg who brought his model nearer and nearer to the U.S.A. team. The U.S.A. lead was diminishing and the Austrian model faster. All eyes turned to the multiple bulbs on the electric scoreboard—as the count ran on to 189, 190, 191, 192 the white light of U.S.A. was only one bulb ahead of yellow for Austria. Timekeeper's flags went up within the space of ¼rd of a lap and the U.S.A. was home at 9:22, Austria so closely second at 9:23. As the crowds cheered, U.S.S.R, still flew on for a last stop at 188 laps and were last to land. American team members dashed across the circle and to chair Herb Stockton then Hungarian Sandor Katona chaired Don Jehlik. Immediately the models were taken away for

1. Winning racer by Stockton/Jehlik U.S.A., with mascot, has modified Eta .15. 2. Finger tip valve and plate mounting of Bugl engines in identical Austrian models, this on Fischer/Meusbergers'. 3. Micron 2.5 Perspex nose, by Bador/Magne, France. 4. 2nd placers Hohenberg/Turk, Austria with vee tail Bugl H.P. 15D engine and pressure filling. 5. Helmut Gorziza, West Germany warms up Webra Mach II with Bartel prop. 6. Dan Jones' U.S.A. Eta 15 model, rearward wheel for fast landings. T. Flite 7 x 8. 8. Stockton/Jehlik modified Eta 15 see text for details. 9. Fastest Briton Brian Turner used Eta, very clean model. 10. Ivan Radchenko, U.S.S.R. warms up note air outlets in pan. 11. Plate mounted M.V.V.S. 2.5 T/R in white bolt-on U/C model by Gurtler/Klemm, Czechoslovakia. 12. Rivet lines galore by Plotsin/Timofeev, U.S.S.R. 13. Electric comp adjustment on Webra Mach II racer by Brendel/Glodeck, West Germany, DC current down control lines. 14. Jet style Canadian model by Kelly/Parent 17½ ounces, Super Tigre G.20D., glass fibre prop. 15. Model that caused all the fuss, advanced mechanic adjusted compression using servos and single channel R/C was deemed "Outside the Rules" for Toulouse/Coste, France and Micron 2.5 T/R auto fill system. 16. Another jet like model from Sandor Katona, Hungary, a Moki 2.5 T/R.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World Speed Champion for the second time Bill Wisniewski USA is pictured within minutes of recording 160.93 m.p.h. in round one. We hear that Bill's club in California, the Valley Circle Burners held a wild party to celebrate the success as three other members were also in the U.S. teams.

processing and the most exciting of team race finals was over.

At the check-over the U.S.S.R. tank was well under at 9.75 cc and also the Austrians at 9.8 cc but the U.S.A. tank was dead on 10 cc right to the limit which seems rather close for an event of this importance. Their range had served to compensate for slower stops (by comparison of course to the Austrians—Jehlik must otherwise be rated as fast) and slightly fading air speed: but my—what a close result!

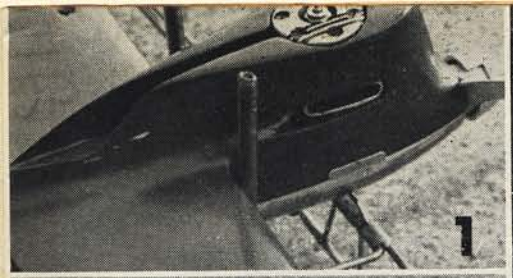
Speed

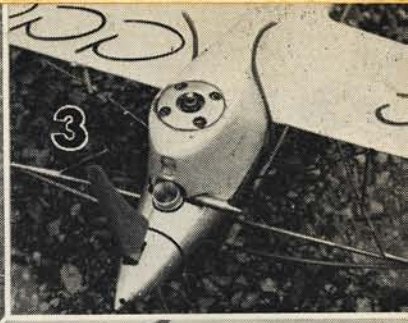
Three days of speed flying with practice sessions interspersed with the three official rounds should have amply satisfied the 37 contenders. Out of 111 possible official flights no less than 44 proved to be total failures. The outstanding performance of the U.S. Team and the fact that the three British team members all broke their National speed record made up for any disappointment. So too did the skilled flying by the Czechs and Hungarians, an object lesson in preparedness which we trust was taken to heart by the others.

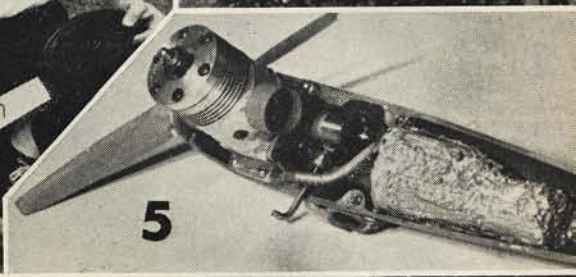
Bill Wisniewski (U.S.A.) established a first round record speed for the class at 160·95 m.p.h. with the official 80/20 fuel mix of Methyl Alchol and Castrol M. As most speed devotees will know, Bill can always be expected to arrive with a new development. In '60 it was hot fuel, '64 the boost ported "wart" engine and this year the boost ported engine used in conjunction with a tuned length exhaust pipe. His *Pink Lady* model now has a higher aspect ratio, .010 Duralumin wing skin and cut down fin to clear the exhaust pipe, top fuselage and cowling in glass fibre, and a thinned down U.S. Harter speed pan is used. The engine is a T.W.A. .15 (Roger Theobald—Bill Wisniewski, Association) with construction as follows: K & B front housing and shaft with smaller crankpin (reduced area, reduced friction), K & B backplate with longer venturi, K & B piston with baffle removed and skirt cut away on one side to half depth leaded steel cylinder liner with boost port and Schnürle transfer method, single exhaust port pointing towards cylinder head so that the pipe extracts exhaust gases direct from the combustion area. The solid cylinder head has a wide squish-band covering almost ⅓rd of its area with a deep parabolic combustion contour. The bar stock machined crankcase is in two sections. The lower half with the lugs, being Loctite sealed to the upper cylinder jacket. The resonant length pipe machined from magnesium bar stock, screws together in sections and the v.h.t. black enamel coating plays an important part with its heat retaining properties. A stock of pipes is carried to suit climatic changes during the day. In the air the 6·4 x 7 in. pitch glass resin filled (Hobby Poxy) wooden propeller is turned at 29,000 r.p.m. using all of .9 b.h.p. of which the exhaust pipe must be responsible for at least 44 per cent. The glass fibre resin is vacuum impregnated into the grain of the propeller, which is then cleaned up and thinned to .045 in. at the tips. Static r.p.m. is approx. 13,000. On Bill's fast flight *Pink Lady* circulated for three slow, rich, laps in the dolly, took off and another 5 slow laps at 80 m.p.h. much to the U.S.S.R. and Czechoslovakians short lived, amusement. As it became hot, the pipe started working and *Pink Lady* accelerated from 80 m.p.h. to 160 m.p.h. *in one lap*! The process is one of perfect anticipation. Immediately on acceleration Bill places his handle in the pylon as the line tension and rapid change of speed demands prompt action. He was lucky to get this flight in, as Dave Balch watching the pylon fork with powerful binoculars saw the handle try to lift itself out, no wonder—he rotated 10 laps in 13.9 seconds. The sideways 70 mm. spacing on the handle cross bar stops seemed to give several competitors trouble, including Bill.

Engine designer Paul Bugl (Austria) was making his first mono line flight and had a style similar to John Steed of the "Avengers" but bounced it. Team mate Heinz Freundt who holds their National record at 140 m.p.h. also used the H.P. 15 glow and crashed, not surprising as the elevator went up when down was applied on the handle. Shlomo Barak (Israel) was the only two line flier and very unstable at a still creditable 120.92 m.p.h. Both Holle and Heinsius (Holland) lacked practice in the pylon, and could not keep the model in for ten laps. U.S.S.R. team member Eugene Moisiakov used a most peculiar control line set up. A .0154 in. (.4 mm.—about 27 swg) wire extended 18 in. from the wing tip and was then wrapped once around a Stanzel type connector button and back on itself (not even soldered) to the other side of the button. Copper plated line is hooked on, (discovered undersize in one instance by Gordon Farnsworth the line checker). Eugene whipped so hard to get up to speed he broke the plated line and made a deep dent near to top of the safety fence, at approx. 140 m.p.h. Only then were the official timekeepers given some protection as they were inside the safety fence. Kevin Lindsey using the rear exhaust M.V.V.S. 2.5 R.L. in a *Stuppi* with a tuned length pipe recorded 130.58 m.p.h. starting rich but coming right onto tune. Bill Firbank crashed one lap after his timed run but made 132.36 m.p.h. with his Super Tigre G. 15 *Stuppi*, Brian Jackson also flew a *Stuppi* with G.15 and recorded 130.81 m.p.h. Italian Giancarlo Ricci with a works G.15 rear rotary induction used a fine pitch propeller and fairly jumped off the ground, but it over revved in the air without getting anywhere. Rolf Miebach (W. Germany) recorded his slowest ever flight with the original *Stuppi* (later swapped with Chuck Schuette's assymetric Duralumin winged, opposite one sided tailplane model, Super Tigre G.15 powered). Chuck tried a T.W.A. engine in practice but elected to stick to the model and motor he knew best; very consistent, both first and second round speeds were 140.69 m.p.h. The Italians could not understand these high speeds and he must have gone home light as one model went to the Italians with engine and the T.W.A. .15 one to an English official *without* the engine. The engine was unmodified except for induction passage polishing, and a home made cylinder head with a wide squish band and 3.4 mm. deep combustion chamber Roger Theobald (U.S.A.) also flying a *Pink Lady* with a T.W.A. and tuned length pipe did not come right into full resonance but still made 150 m.p.h. his weird dancing gait round the pylon suggested he could not have gone faster even if the model had! Josef Sladky (Czechoslovakia) was so relaxed at 140 m.p.h. he took his hands off the controls to scratch his nose!

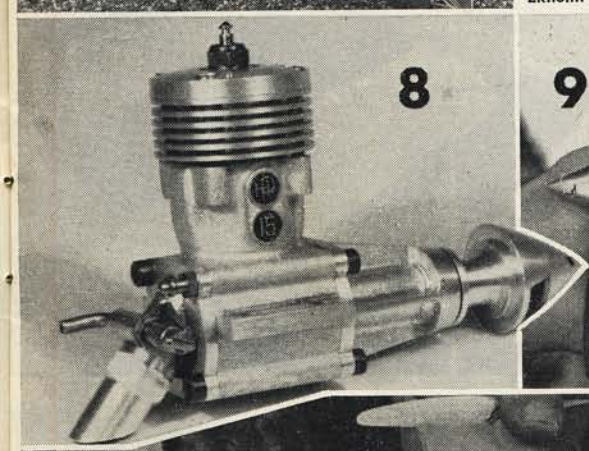
Round two on Sunday saw Heinz Freundt a non starter as his crankpin was not engaged on the rear disc hole after replacing the crankshaft in round 1 and Paul Bugl only just managed to fly at 119.62 m.p.h. Rolf Ekholm (Finland) had his G.15 cut on the tenth lap and as usual he was well up in the results with 135.57 m.p.h. Roger Theobald had two 80 m.p.h. runs with the pipe not working, possibly due to a weather change and a wrong pipe. Team-mate Bill Wisniewski had his model go ahead of him on the second lap, and the resulting shaft-run must have been at fantastic revs, but the resonant pipe automatically cuts itself out as the pipe goes off resonance and enriches the engine. Kevin Lindsey made 135.57 m.p.h., well over the British record and then a 138 in practice, so he then

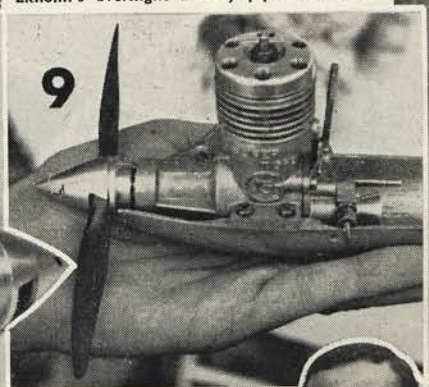


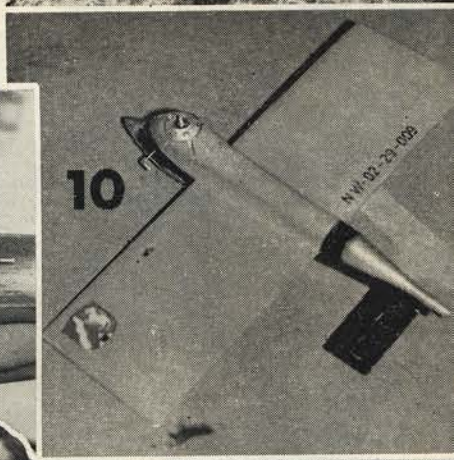


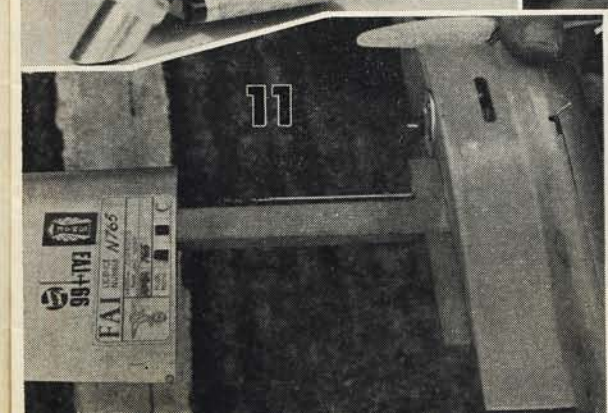


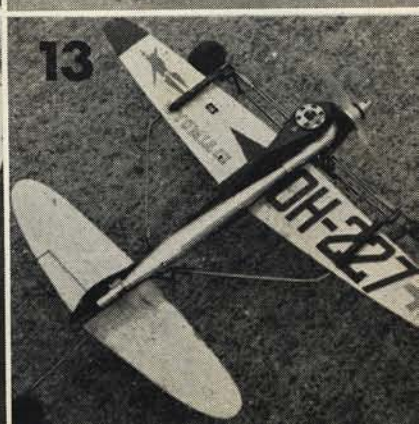
1, Exposed cylinder head, and open through-slot cowling on Super Tigre G.15 speedster by P. Meyer, Switzerland. 2, Roger Theobald, U.S.A.. gets ready for his 2nd flight. 3, Eugeny Mosiakov, modified Super Tigre G.20 powered model, note wrap around pan, letters hand printed by Sirotkin. 4, M.V.V.S. 2.5 RL in Sladky's model, (139.81 m.p.h. for 4th place). 5, Bill Wisniewski's winning T.W.A. .15, (160.93 m.p.h.) note silicone rubber coating to lag chicken hopper fuel tank, and rubber joint for tuned length exhaust pipe. 6, Miklos Sebestyen, Hungary, with two-year-old Moki S3-B powered model. 7, Super Tigre G.15 R.V. powered model of Giancarlo Ricci, Italy. "Pink Lady" lines, black high gloss finish. 8, Bugl H.P. .15G from Paul Bugl's model, has Titanium con. rod that cost £6 10s. 0d.! 9, Super Tigre G.15 R.V. from Kari Jaaskelainens model did 131.58 m.p.h., all the Italian team used these. 10, Rolf Miebach's experimental model with Lindsey tuned length pipe, did 141 m.p.h. at Bochum contest after champs. 11, Mono line unit and wing fixing spar on Chuck Schuette's model. 12, Franz Zilliken, W. Germany, with Super Tigre "Stuppi" (5th with 138.91). 13. R. Ekholm's overnight Lindsey pipe conversion.



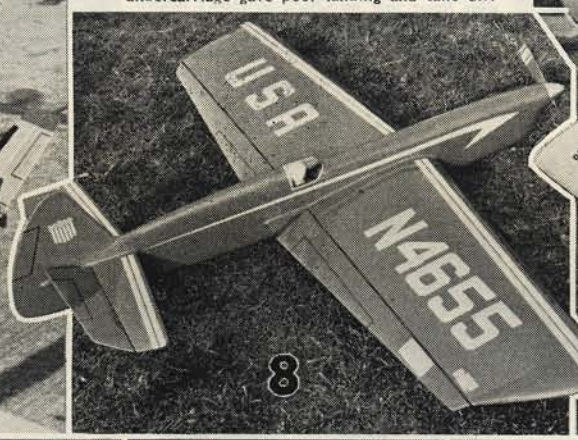


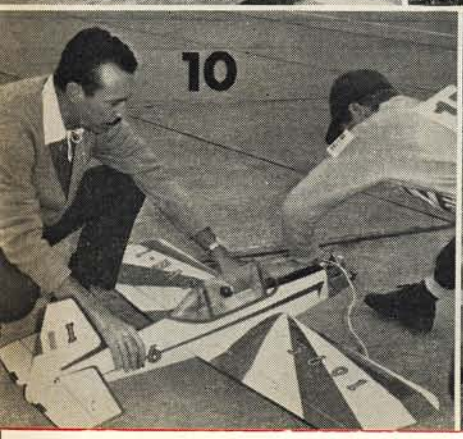






1, Junani Kari with 4-year-old Veco .35 "Woodpecker", placed 5th, seen here in Rd 1. 2, Surprise 9th placer Ove Anderson, Sweden, Fox .35 and O.S. silencer, looks R/C modellish. 3, Can't miss this one can you, by Rudi Kessels, W. Germany, Veco .45, red/white/black, placed 39th. 4, Twin tail fin sleek looker from G. Billon, (France) Fox .35, Top Flite 10 x 6, placed 31st. 5, G. Masznyik. Hungary, with Fox .35 "Trygon", 56 in. span, electric servo, controls fuel mixture strength. 6, First to fly, K. Plotsin, U.S.S.R., mono wheel U/C new look model. 7, Old hand G. Egervany, Hungary, 20th place, jet fighter lines Veco .45 did not like wind. 8, Finish supreme by Jim Silhavey, Fox .35 Nobler lines, placed 2nd, top scorer for U.S.A. 9, Jan Bartos, Czechoslovakia, with low aspect ratio model, M.V.V.S. 5.6, black and white, shaft run ruined one flight, alloy wheel spats. 10, The model that "breaks all the rules" large cabin, upright Super Tigre .35, low wing and dihedral, by Walter Bagalini, with his father Marnio holding, flew well, placed 7th. 11, Dave Kelly, Canada, with jet age stunter, 55 in., Fox .35, 20 per cent airfoil, 610 sq. in. 12, Youry Sirotkin, U.S.S.R., with his rivet line bedecked model, mono wheel undercarriage gave poor landing and take off.





applied some mods for the next round. Most of the other contestants recorded times only a few m.p.h. different from their first round times. Carl Enquist (Sweden) took to monoline gliding after his engine and pan left the model and sailed over the safety fence.

Round three started in pouring rain on Monday and an interesting system was used by several teams. This was to utilise one attempt by not going into the pylon in the hope of better weather later on for a second attempt. The weather *did* improve. Barak with his two liner was set for a faster flight but went off tune after 5 laps and Piero Muzio (Italy) with a works Super Tigre was off form with the engine flat out at 121.57 m.p.h. again revving high. Finnish competitor Kari Jaaskelainen flew eight laps with one cross bar in front and one behind the pylon fork, then he put it right but after three more, he thought he had completed his run and came out of the pylon. No flight was allowed. The Finns made their protest but this was not allowed after an inquest. Miklos Sebastyen (Hungary) flew the standard team design as used for the last two seasons with a Moki S.3 and hit the ground while whipping up to speed. Ricci was again over revving, then bounced whilst being timed and had a three lap shaft-run—the longest of the meeting if that's any distinction. Zbynek Pech (Czechoslovakia) used his first attempt as a test flight, then made 138.94 m.p.h. Adolf Malik (W. Germany) came out of the dolly too early, hit the ground and did not fly again. Roger Theobald (U.S.A.) had a lean run then could not get off the dolly at his second attempt. Bill Wisniewski was very fast, but lifted his handle for an instant, then put it back—unfortunately no flight. Kevin Lindsey's engine mods did *not* work out and slowed him down to 110.19 m.p.h.! Brian Jackson made a repeat of his round one time and Bill Firbank was told his flight had finished by another team member, so he lifted out after only 7 timed laps.

So ended the flying with the U.S.A. in positions 1, 2, and 3 *quite something*! Bill Wisniewski called an impromptu meeting open to anyone to explain the working principles of his exhaust pipe, giving all the measurements and engine details as so many people had requested on the field. This was giving away in one night, all he had achieved in four years of research and development so on behalf of the international audience, we say *thanks* Bill.

Glass fibre is becoming popular, all the Austrians and Americans used it for fuselages and Rolf Miebach covered his wing with it. Sladky's model looked as though sandpaper was unheard of, very rough for a Czech model, and Renzo Grandesso of Italy had a model with a clear finish built from Cirmola wood. The American models were extremely stable and had a good glide, which can't be said for the *Stuppi* designs. Pressure fuel tanks dominated, but the U.S.A. and Hungarians used Chicken hopper tanks, few pen bladders were seen. Control handle design has more or less standardised ranging from the large handle used by Holle to the very small and neat U.S.A. types. Both the Dutch and Austrians lacked vertical stabilising bars and Freundt borrowed Gordon Farnsworth's. The backwards pump action was used by the Finns and Soviet Union, but the U.S.S.R. team arrived with handles not to the 70 mm. stop spacing requirement as did Rolf Miebach, some Swedes and Dutch. When this was pointed out they commented they were O.K. in Hungary but the rule book said *no*, so they made impromptu mods. with rubber tubing and washers.

The T.W.A. was *the* engine of the meeting, but with lots of sorting out, the H.P. 15G could be a strong challenger soon, the Moki S-3s were flat out so were the Starts and M.V.V.S. and Super Tigres, but some new look engines can be expected in '68. It will be very interesting to learn international reaction to the U.S.S.R. proposal that "*Resonant exhaust pipes be prohibited*" which is tabled for discussions at the November F.A.I. meeting.

Aerobatics

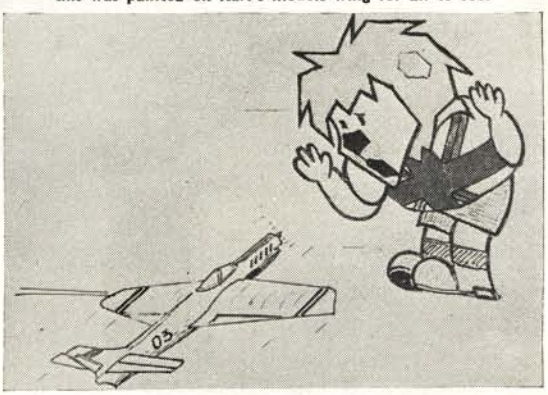
Extremely close standards of the leading dozen or so stunt aces resulted in constant position changes throughout progress of the three long rounds of aerobatics. The Swinderby "Zephyr" played its part with occasional 20 m.p.h. gusts to disturb the confidence of those used to calmer air, and it is not coincidence that the larger models tended to score high marks. Truly it was an endurance test for competitors, judges and hundreds of fascinated spectators alike. Not a crash nor even a single sour note jarred opinion on what was one of the best stunt events ever seen anywhere. Though the judging was (as usual) criticised

Josef Gabris, once again World Aerobatics Champion. M.V.V.S. 5.6 gives plenty of power, but wind upset his first flight, second flight was fast but "right on" and third flight made meetings highest score.

for variation of standards, few would dispute the eventual results.

Round one started at 5.45 a.m. when U.S.S.R. contestant Kari Plotsin became the first competitor to fly in serious action. Ironically, the U.S.S.R. team had only arrived eight hours earlier, so Kari was at an extreme disadvantage. His jet fighter-like model with swept back tailplane, fin and wingtips was similar to Sirotkin's with a monowheel undercarriage that marred the take-off, this being a stretched jump into the air with the M.V.V.S. 5.6 revving fast. On the wing root was a neat "World Cup Willie" emblem, hands held up in horror as a U.S.S.R. stunt model came in to the attack. Plotsin's flight total of 2407 was only good enough for 15th position by the end of the round. Walter Bagalini (Italy) had a strangely impressive model that must break all the accepted design rules for modern Aerobatics. Its large cabin, low wing and extreme offset of a Super Tigre 35 added to the unusual impression of it stopping "to change gear" as it negotiated each of the square corners. Slow but steady, its 2539 pts were good for 10th. Lew McFarland was blown about a little and his Veco .45 powered 10% enlarged "Shark 45" weighing 63 ozs with detailed cockpit did not perform as well as expected though every judge must have had him in their top eight. Rivalling

World Cup Willie being shot down by Kari Plotsin's stunter, this was painted on Kari's models wing for all to see!



Lew, Josef Gabris (Czechoslovakia) was also bugged by the wind and his M.V.V.S. 5.6 powered model was badly upset, at times. Few realised that after an 11th place in Rd. 1 he would climb to the top. Jim Silhavey (U.S.A.) must have the ultimate in paint work for a stunt model, his all red Fox .35 "Nobler" style model has a glass like, mark free finish all over. No wonder he was called "Mr. Finish". A consistent flier, Jim did not warm up on his first flight so taking 9th place though to many Britishers he was the most impressive. Steve Wooley (U.S.A.) flew his Fox.35 powered "Argus" from the 1960 Budapest World Championships, and though very sleek it too did not like the wind being bumpy on square pull outs and generally a little too light, however this was good enough for second place as his style obviously met with the approval of most of the Judges. Juhani Kari of Finland seemed not yet really "into the groove" but impressed the judges sufficiently to top Rd. 1 with a score of 2753. Reigning Champ Youry Sirotkin (U.S.S.R.) had a rivet line and fancy paintwork model of similar design to Plotsin's utilising the monowheel U/C built into fuselage. The U/C doors stated (in Russian) "Moscow—Hands Off". Though impressive when static it was not so stunning in the air, the short rearward monowheel gave it almost vertical take-off. It would not fly in the wind happily despite the variable lead-out positions and earned him 2654 pts sufficient only for 3rd place. Jan Bartos (Czechoslovakia) made a good first flight but again, had a rapid into the wind take-off making 2613 for 5th place. Ove Andersson (Sweden) did not do too well in Rd. 1 but he was to improve later on flying a silver, red and black, trike U/C, model powered by a Fox .35 with an O.S. silencer. Luciano Compostella (Italy) had plenty of sharp action in his flight, and on several occasions nearly put his squares in the ground due to wind gusts, a great pity this, for Luciano is always a strong challenger. Dr. Geza Egervary (Hungary) had, for him, a very poor flight with his Veco .45 powered "Alice" model floating off in overhead manoeuvres, Dave Kelly (Canada) had two nice "Hustlers" powered by Fox .35's, with a perfect Aeroglass dope finish and Y & O 10 x 6 propellers, but he lacked practice as his interests are spread into all control line classes. The British lads did not fare too well, Jim Mannal made 17th place with 2365 pts. flying his usual Merco .35 "Crusader" a little too slow. With very small loops and also multi sided eights,

At left E. Struik's (Holland) Grumman Tracker flies a level lap past control tower. Centre, Willi Hupgens, W. Germany, takes off T.A. 154. Bottom, 4th place Taplin Twin powered Fokker D.7 by H. Blender, W. Germany.

the wind blew him off course. Tom Jolley with 2356 was in 18th position, contest nerves seemed to upset his squares. Flying fast, his silenced light blue model was "obvious" for its quietness. Harold Dowbekin was in his first international contest and muffed all his square manoeuvres with his O.S. Max S. 35 powered black and yellow model due to nerves and each mistake upset him still more, though he made some of the best take-offs and landings of the meeting. To sum up, the wind was the biggest handicap of this first days flying and the general standard was not as expected. Judge Bob Gialdini appeared to be very discouraged with it all, perhaps the early start had something to do with it, but this certainly eased the burden later on.

Round two also started on the Saturday, and ran on into Sunday, saw more keenly fought competition with experienced pilots coming through, also the judging seemed to settle down. Lewis McFarland (U.S.A.) improved slightly and took the lead with 2317 pts. his "Shark .45", so big and noisy, gives the impression that its about to over-run one standing by the circle, but then, impression is an important phase of Aerobatic contests Juhani Kari (Finland) did not do so well this time flying his Veco .35 ageing "Woodpecker" model of Kiev 1962 vintage. Everyone was watching him for something extra but it did not materialise. Jim Silhavey (U.S.A.) was consistent, improved to 5th position and many spectators thought this his best flight (with 2870 pts.) but not the judges. Juhani Kari went to 2nd place, then Josef Gabris put in a great flight really getting to grips with the business of bringing himself up to 3rd position with 2917 pts. Louis van der Hout (Netherlands) changed from his fast flying Merco .49 "Millie Mustang", used in Rd. 1, to a Veco .45 powered "Olympus" and improved by 245 pts. Very large, his Olympus handles well in the wind, really pulling on the handle. Youry Sirotkin was again leaping all over the place, flying jerkily and overdoing his squares in a flight that did not flow at all, every correction being most noticeable. Jan Bartos (Czechoslovakia) scoring 10 pts. was plain unlucky. In an effort to stop V.T.O. he fed in some down-elevator and promptly sawed the propeller down to the spinner. Judge Geoff Higgs ran out but could not stop the engine as vibration made the needle valve impossible to grip, then Gabris came to the rescue and threw a rag into the spinner. Tom Jolley (G.B.) changed to his dark blue reserve model that had not been flown for sometime hoping for an improvement, but in fact his score was lower than Rd. 1. Harold Dowbekin (G.B.) was much the same again and also, scored less as did Jim Mannal. With McFarland, Kari and Gabris as 1, 2 and 3 at this stage, the third round was to become the vital decider for what appeared to be a chance for at least five potential winners.

Round three started on the Sunday, and Monday mornings downpour of rain interrupted it, but despite this it set a cracking pace with nearly all contestants improving. Josef Gabris (Czechoslovakia) made a very good but fast flight that well earned the meetings highest flight score of 3096 pts. This gave him a strong lead over McFarland who really "had to go". During his flight Lew shouted to Steve Wooley after his horizontal eights, didn't get a reply then shouted again and almost seemed to scream! Steve thought he had forgotten his sequence and motioned to do square eights. It transpired later he was wanting to know what had happened to the wind direction! Although a very crisp flight it earned 2992 pts. That clearly made him 2nd to Gabris at least. Real surprise came later with Jim Silhavey (U.S.A.) who improved to 3012 pts, though some of his pull outs from squares were shaky. This put him in 2nd position between Gabris and McFarland. Ove Andersson (Sweden) had the luck of the game with dead calm to fly in. Nothing special in the wind, he still gave a good show this time as leading "unknown" with 2745. Dr. Geza Egervary (Hungary) touched the ground in his triangles, however he scored 2401. His countryman Gabor Masznyik (Hungary) had a radio control servo linked to the needle on his Fox .35 with a potentiometer in the handle. Power to operate the servo was passed down the lines to vary the fuel mixture strength. Tom Jolley searching for an improvement went back to his Rd. 1 model to score 2361 so making him the best British flier with 21st position.

As the "names" concluded their flights it became obvious that Josef Gabris was to be a popular winner. He has become well known and liked since his debut in international modelling over ten years ago, and many of us remember his win of the Championships at that memorable 1958 meeting in Brussels.

By far the toughest manoeuvre this time was the triangle with nearly all but the top four doing one right angle corner, horizontal eights became double D's with the vertical intersection length overdone almost to the point of starting a square eight, also

they were bunched, becoming taller and narrower, as were a lot of square loops and bunts.

P. Brennan of Ireland was one of the few to do good triangles. With slick timing, competitors were on and off as fast as the judges could stand up, stretch, and clip fresh score cards on the boards before getting down for the next session. All credit to a smart team of C/L stuntmen who were running it, take a bow Noel Falconer, Dave Day, Cyril Green *et al* along with Jim Inkester's team of calculating ladies in the tower who totalled no less than 650 score cards within moments of receiving them from the judges, and if you think it's an easy job just try it sometime!

Scale

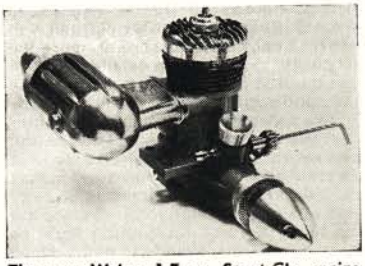
The F.A.I. specially sanctioned the S.M.A.E. to run the supplementary International Scale model contest with the World Control Line Championships and although it attracted fewer models than at any British Nationals it really pulled in the crowds. Judging by its success it is likely to become a World Champs class.

On average the standard of presentation was very poor, two of the models being entered without any documentation at all! This essential for the judges is too often overlooked at National level but is totally unexpected at so important an event. The winning *Grumman F8F Bearcat* in the colours of Al Williams' 4th "Gulfhawk" as made by Warren MacZura (U.S.A.) was constructionally perfect—it could hardly be faulted for workmanship; every edge, corner etc. was crisp and sharp *and* it was well documented. This was needed, as the extremely high gloss Gulf Orange finish with a lack of all surface details was just like the real aircraft which had filled rivets and high gloss all over to cut down drag for racing. Several 10's were scored on this model and this is quite unusual for scale! With opening engine cooling gills, working wing flaps, engine speed control, lights and drop tank, the only part that was "missing" was a dummy engine and a retractable undercarriage,. Proxy pilot Bob Gialdini had never flown the model before coming to England and he only made one flight with it as he was also an Aerobatics judge. It's a pity Warren MacZura could not be there as his 1/12th scale, 35½ span 4¾lbs flew. In second place G. Britain's Tony Day did well with his American *Shinn* trainer. After spending several hours the night prior to the contest polishing and adding details he set off with a rich engine run on the first flight and demonstrated the throttle, taxiing and landing, though he could not manage the three 45° elevation laps. The second flight was with 25% Nitromethane added to the fuel and a great improvement on the first but the nose wheel was damaged. A novel twist on this model is the cockpit lock which is scale and locks the hood down just as the real thing. Bob Ivans (Great Britain) had added some extra details to his *Potez 63* and was good enough for third place but his starting was not too good. Set rich for the first flight he throttled down for touch and go then dropped the bomb which exploded with the usual loud Ivans bang, making speed competitors in the next circle jump. Harold Blender (Germany) in 4th place with a white *Fokker D.7* powered by a Taplin Twin made a slow and very realistic flight, all straight and level. On landing the wind tipped it up and broke the Taplin front housing, also chipping the propeller. On the 2nd attempt, starting troubles delayed things, the Taplin now having a new front housing, and he took off cross wind, which promptly tipped the model over. A pity this, because his static parts made him 3rd in that section. Unfortunately for Stan Perry (Great Britain) in 5th place not all his gadgets worked as he would have liked on his *Hawker Henley*. W. Hupgens (Germany) with a *T.A. 154 Moskito* just flew round and round as did E. Struiks' (Holland) *Grumman Tracker* with two .15 glow Webras. This was scaled up from a plastic kit and no scale information was provided, also it did not have any working extras though it was very well made. T. Wilson's *Fokker Friendship* from Ireland suffered from a lack of detail, the touch and go being accomplished by waiting for one of the E.D. 2.46 Racers to cut, so he could take off again on one engine. J. Carreras (Spain) entered a *Tipsy Nipper* but this could not fly as he broke the Super Tigre con-rod running up in the pit hangar, also he did not have any documents.

In the main, competitors handicapped themselves by not reading the rules, but the onlookers really warmed to this event with plenty to watch as the two rounds were flown.

Below, top, T. Wilson, Ireland, entered this Aer Lingus Fokker Friendship. No extras on this model, engine control would have helped. Bottom, cockpit detail in Warren MacZura's proxy flown Grumman Bearcat.

Below, top, Bob Ivans tunes Enya 60 engines prior to take-off with Potez 63, whilst wife restrains—in flight bomb dropping caused quite a stir! Side view of MacZura's Bearcat fantastic finish and construction.



The new Webra 1.7 cc. Sport-Glo engine made in West Berlin and distributed in the U.K. by Veron, the subject of next month's Engine Test.

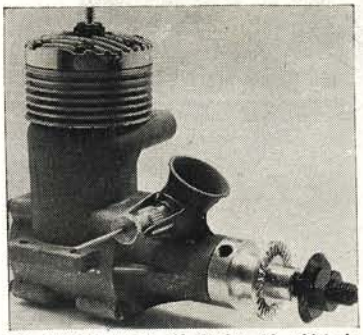
LATEST ENGINE NEWS

By Peter Chinn

A PRINTER'S error in last month's article which escaped editorial attention resulted in the HP-15G being quoted as developing 0.48 bhp at 25.500 rpm. No doubt quite a few eyes popped at such a high peaking speed. In fact, this should have read 0.48 bhp at 20,500 rpm. Unfortunately, the heading photo caption was also altered, repeating the same error.

It is, of course quite possible that the HP-15G might peak at slightly higher rpm than the official 20,500 with which the maker's performance curves credit it. G.15's for example, on average, peak at around 22,000 rpm and a good one may go even higher. However, it has to be remembered that the HP-15G has a higher stroke/bore ratio than is found in other current racing 2.5's (1.041 against 0.933 for the Super-Tigre) and that, all else being equal, a slightly lower peaking speed is to be expected

The HP-15G's were unlucky not to do better at Swinderby. If Heinz Freundt had been able to repeat his Austrian record-holding speed, he would have been right up there with Sladky and Zilliken, tying for fourth highest speed behind the three Americans. There was no doubt, However, about the potential of the HP-15D diesel version in the team racing. This became obvious during that immensely exciting final when the Austrian model and the American model were running neck and neck. The fact that the Austrian pair, Hohenberg and Turk, lost the Championship by an official "one second" in no way diminishes their impressive performance. The HP-15D restarted instantly and ran like clockwork.



The K&B Torpedo 40 Series 66 which is currently making a name for itself in the U.S. as a Rat Racing engine. Outwardly similar to the Torpedo 29F featured in this months Engine Test.

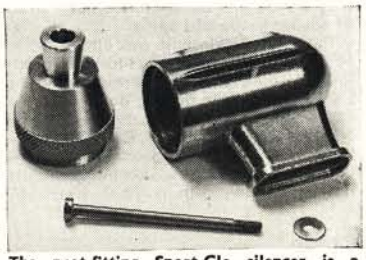
If the regular production engines are as good as this, the HP-15D looks like becoming one of the major contenders in the FAI team-racing field.

Reverting to the subject of rpm, it is interesting to note that Bill Wisniewski estimates that his engine with tuned expansion chamber exhaust system, peaks at about 27,000 rpm. The engine normally runs at around 28,000 rpm in the air and has reached nearly 29,000. Quite obviously the engine is putting out an immense amount of power, for which the exhaust system is, to a very considerable extent, responsible. Bill Wisniewski told us that, with the engine test-propped for approximately 28,000 rpm, removal of the exhaust system would cause rpm to drop to about 23,000 rpm. In other words, the exhaust chamber is increasing the bhp, under these conditions, by something like 80 per cent.

This would mean that, if the engine were producing. say, 0.50 bhp at 23,000, it would. on the same prop, be putting out 0.90 bhp at 28,000!! However one must remember that the Wisniewski engine and tuned exhaust system have been developed as an integral unit. Without the expansion chamber the porting, etc. is probably relatively inefficient and 0.50 bhp could very well be an over-optimistic estimate of its output in this condition, just as an 80 per cent increase in power would be a totally unrealistic figure for any conventional racing 2.5 when fitted with a similar exhaust system. There is no question however that, to haul a model and monoline around at 160 mph takes an awful lot of power. Few speed flyers reach these sort of speeds with 10 c.c., let alone 2½.

It is quite clear that, at the present time, 2.5c.c. speed engine development is virtually at a standstill in Europe. The Czechs, Hungarians and Italians, who, in the past, have provided most of the winners, came to the Championships expecting to be beaten by the Americans. This much was evident from the conversations we had with them.

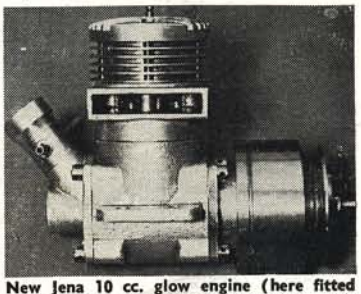
So far as the Czechs are concerned, the fly in the ointment is the fact that MVVS are now being obliged, by the authorities, to spend less time on developing hot specials and to devote themselves to more mundane items for the benefit of the Czech model movement as a whole. This year's Czech engine was, therefore, the current 2.5RL, to which Sladky had applied a little of his wizardry to gain a well-earned fourth place.



The neat-fitting Sport-Glo silencer is a simple die-cast aluminium expansion chamber and absorbs very little power from the engine.

The Hungarians were using the MOKI S-3 engine, basically unchanged for the past couple of years or so. Rudi Beck told us, the day before the contest, that their prospects were not good: they had apparently ruined their best engines and models at a Russian contest earlier in the month.

Jaures Garofali, Renzo Grandesso and the Italian team offered no excuses but merely lifted their shoulders and turned their palms in resignation. They were using pre-production examples of the G.15-RV disc-valve engine that will be coming on the market in the near future, but apparently had had insufficient time to experiment to get the best out of the engines. Basically, this motor is similar to the disc-valve converted G.15 that we described a couple of months ago, but has the front intake replaced by a strengthening web. The fastest Super Tigres were, in fact, Chuck Schuette's G 15 followed by the three West German G.20's and the Russian modified G.20 of Lapinin.



New Jena 10 cc. glow engine (here fitted with flywheel for model hyroplane use) from Jenoptic Jena, the former Carl Zeiss optical works in East Germany. No technical data available on this engine at the moment.

Aluminium piston with a single Dykes type ring as used in the K&B Torpedo 40 Series 66.

GOLDEN WINGS
AERO MODELLER
MODEL CLUB

Are you between 10 and 16 years of age? Then don't ———delay, join today

M. Green Jr. aged 6, is a future "Golden Winger" for sure. He is proudly holding "Boxcar constructed from the plan on the following pages.

Dear Sir,

Please could you tell me if there is any set of regulations about putting your own serial numbers on aircraft. As I have several aircraft and only two Golden Wings transfers, is there any way of obtaining more?

Walthamstow, London. *P. Wilson.*

There are no set regulations for putting serial numbers on model aircraft except if you are an S.M.A.E. member, then you are required to put your registration number on the upper surface of the wing in letters at least ¾ in. high. Spare Golden Wings Club transfers are available from this office, at 6d a pair plus S.A.E.

Dear Sir,

I have recently finished building your *Skybolt* from the plan given in the June edition of Aeromodeller, and am thoroughly pleased with it, since I managed my first "bunt". I have been reading *Aeromodeller* now for about eight months and I always look forward to the next edition. My next model is to be the A.P.S. *Rascal*, which will be powered by a Frog 150 diesel. Can you recommend to me a good .19 glow motor, as I am thinking of buying one to power the A.P.S. *Peacemaker*.

Littleborough, Lancs. *S. Holt.*

Thanks for the news of your first control line stunt flights, the Rascal is an ideal follow on from Skybolt, and the Peacemaker will do absolutely any stunt in the book, but it will be fast with a .19 glow engine. It will fly well with a 2.5 cc engine and this would seem more suitable for your needs. However the following .19 glow engines all suit Peacemaker. For cheapness the McCoy .19, this has plenty of power and would substitute for a good 2.5 cc diesel. More expensive and with more power the following engines are to be recommended. Veco .19, Veco .19 BB and K&B .19.

Dear Sir,

I was wondering if there was any way to make transfers to decorate my models. If there is a way could you please forward it.

Stroud, Glos. *J. Lusty.*

You can make your own transfers by painting the design in dope on the glued side of a gum label. Firstly draw the design out with a soft pencil onto the gum side of the label. Apply one even coat of full strength clear dope with the label pinned down, and allow to dry. When dry, paint the colour design onto the clear dope with a soft brush, try to flow the dope on rather than brush it in. When you want to use the transfer just soak the label in water and slide on as usual.

This month's plan

Ever fancy a "quickie" which could be knocked up in an hour or so and ready to fly the same evening?

Mike Green's "Boxcar" is just the job no matter whether you want to make it for the family or your own spot of fun. It can be free flight or indoor RTP (round the pole) and is ideal for all our Golden Wings Club members as an introduction to the very simple type of rubber driven model.

Why not make one for local park flying?

First select your wood carefully, all you will need are a couple of sheets of 1/16 in. balsa and four strips of 3/32 in. square, plus scrap wood, a piece of ply, wire and a standard commercial plastic propeller (rubber type of course—not power model variety).

The 1/16 in. sheet should be selected fairly soft and in the case of the wing, flexible to allow the camber to be put in easily. The 3/32 in. strip is of "medium" grade. Use a fairly slow setting adhesive for this sort of construction, enabling neat work.

Continued overleaf

ANNOUNCEMENT of importance to all Golden Wingers is a special privilege off er of 2d. in each whole Shilling rebate on orders accompanied by the coupon clipped from this page. Be sure to add your registration number. The offer applies to *plan purchases only* and is limited to one order per month per G. W. member. Orders *with* rebate coupons attached should be addressed to G. W. Plans, 13/35, Bridge Street, Hemel Hempstead. Herts. The rebate is effective on prices listed in the new edition A.P.S. Plans Handbook No. 1 (i.e 2/- in the £1 reduction). Note that there is no reduction on postage (6d. for orders under 10/-)

Dear John Bridge,

I am between 10 & 16 years of age and would like to become a member of the "Golden Wings Club". With this application I enclose postal order, (International Money Order) for 2/6d. to cover cost of the enamel club badge, two coloured transfers and membership card.

NAME IN FULL .....

ADDRESS .....

.....

YEAR OF BIRTH.....**SCHOOL** .....

NAME OF ANY OTHER CLUB OR CLUBS TO WHICH I BELONG (if any) .....

SEND TO:- GOLDEN WINGS CLUB, AEROMODELLER, 13-35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS.

SPECIAL PRIVILEGE OFFER exclusive to Golden Wingmen

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2d./1/- Rebate allowance coupon for Golden Wings Member

Your FULL-SIZE plan!

Cut fuselage sides accurately to the longeron outlines which are $\frac{1}{16}$ in. inside the full outline (make sure you make a right and left side!!!) and glue the longerons and spacers on the inner faces. Cut out formers, not forgetting the apertures for the motor. Smooth any roughness on the inside so that it will not abrase the rubber motor. Glue in the reinforcement support for the motor peg.

Assemble the fuselage, beginning at the rear which is pinned and glued first. Insert formers F2 and F3 and when firm, proceed with the nose. Take care that alignment is accurate, i.e. no bulges or twists; though with reasonable care, no problems should arise. Sheet the top and bottom, not forgetting to cut away a small area for access to rear motor peg from the underside. Cut ply nose former with the angular key on one corner to shape accurately and glue in place. Smooth off with fine grade sandpaper. Put a few turns of cotton thread around nose, this prevents "bursting" and makes for a lasting job.

Cut the wing to shape in one piece (not much to do here) and fit the ribs to the underside—see that curve is uniform, i.e. all ribs are stuck on properly. Cut carefully in centre, leaving, if possible, a little material in the centre uncut (the cut is all the way through at front and rear), bend to dihedral angle and reinforce with bandage on top.

You should have no problem with the tail assembly —just a little care to see that fins are stuck on at right angles to tail. The stiffeners in the centre are also keys to prevent the tail twisting so mark carefully their position before fixing. The tail is attached by one or two elastic bands to allow a little adjustment, DO NOT glue this to the fuselage.

The undercarriage is optional, but if fitted it does enable R.O.G. (Rise off ground!).

The noseblock may be rather tricky for a youngster and it is advised that the "old man" or somebody with the "know-how" helps to make it. Similarly, the shaft may be difficult, so let a senior have a go.

Laminate two pieces of $\frac{1}{8}$ in. sheet together, cut to the size of the rear face. Glue on the shaped ply facing—this is important, and the nose plug. Drill a hole to take the bush (preferable) or tubing as an alternative bearing. Insert bush bearing, using a little cement on the outside of the bush for firm fixing. Don't get the cement inside the tube.

Start bending the propeller shaft at front end with the winding loop, slide on propeller, washers, nose block and allow enough wire for the hook. When bent, slide on a length of valve rubber or plastic tubing to protect the rubber. The motive power is $\frac{3}{16}$ in. strip rubber of four strands, length just shorter than between front and rear hooks. This should be lubricated with a few drops of castor oil or commercial rubber lubricant.

Flying

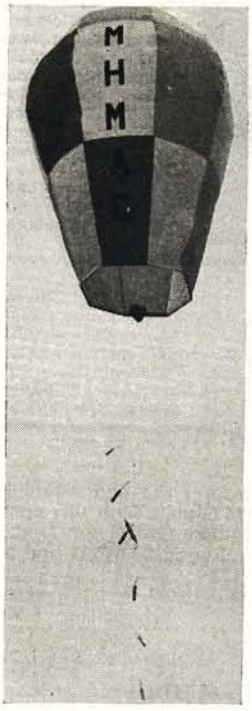
The model balances about mid chord. One third to a half of the wing chord back from Leading Edge should be about right. The tail should be level when viewed from the front. There should be no warps and if they are present, start working on them by steaming out.

Hand glide the Boxcar first. You will probably have to pack up the tail Trailing Edge about $\frac{1}{32}$ in. If it stalls (unlikely) pack up Leading Edge $\frac{1}{32}$ in. at a time.

When satisfactory, try a powered flight with approximately 50 turns. If it seems OK, try a few more turns. Correct any left turn under power by $\frac{1}{32}$ in. side thrust, i.e., on left side of block, turning the thrust line slightly to right.

Any floundering under power is cured by more downthrust, again by $\frac{1}{32}$ in. at a time.

If correctly built, you will arrive at a good trim after 3-4 flights, though it is stressed that you make only one adjustment at a time. You can proceed to longer flights with 400-500 turns, but be careful not to run out of space!



Make a HOT AIR BALLOON

Vince Redfern's tissue Hot Air Balloon rises at Cranfield, trailing a series of fireworks. The cotton wool "fire" can be seen suspended in the middle of the opening. Preparation of the Balloon is rather an involved process. Fellow modellers restrain it at the base, keeping the tissue clear of the pre-heat fire whilst another steadies it against the wind.

By Vince Redfern

Hey-ho and up she rises! This multi coloured chequered tissue Market Harborough M.A.C. Missile was launched at Cranfield last month to a gasp from admiring modellers. Trailing underneath was a string of two-penny bangers, each with a separate dethermalizer type fuse attached, so that it would provide a series of thirty second interval explosions as the balloon soared across the airfield. We thought it a good idea to give details of Vince Redfern's balloon in time for those who like to celebrate Guy Fawkes' night—November 5th—in a rather unusual way.

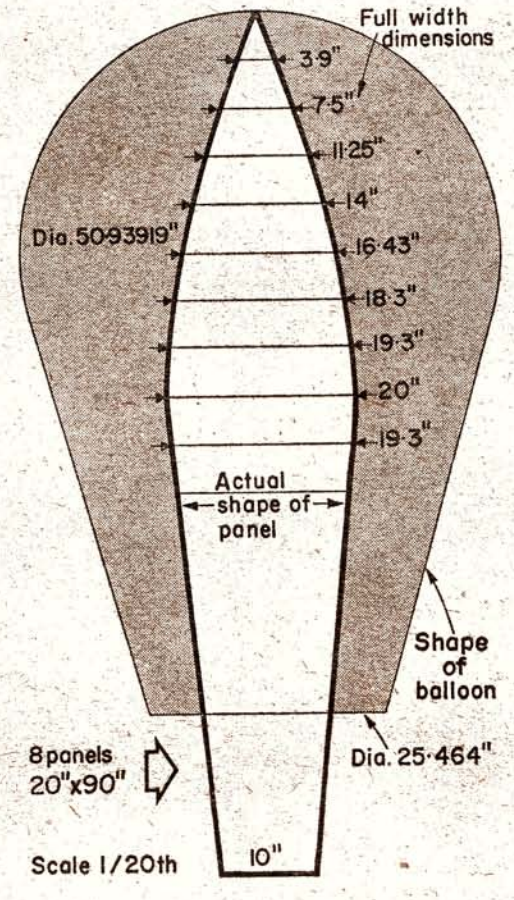
All you need to make this particular Hot Air Balloon is a selection of various tissue sheets, 24 in number, each measuring about 20 in. by 30 in. The adhesive used by Vince is Evo-stik Resin W, a P.V.A. adhesive which is quickly absorbed by the tissue providing almost instantaneous joints. One will also need some scrap balsa in about 10 inch lengths preferably ¼ in. sq. to make up the base octagon; a few lengths of fuse wire, and a ball of cotton wool to provide fire once it has been soaked in methylated spirits.

Vince Redfern employs an ordinary blow torch to pre-heat the balloon before the cotton wool is set alight: but one could use a variety of heating devices if one wished, for example the modern butane picnic stove is ideal.

First stage of manufacture is to make up eight panels measuring 20 x 90 inches each composed of three different coloured sheets of tissue joined on the short edges. The first of these is cut to shape after folding in half and measuring out the dimensions quoted on the drawing. Note that the dimensions are actually for the full width and must be divided by two to obtain the half width dimension. The lower half of the balloon is a straight taper. Once the first template is cut, it is laid over the other seven prepared panels, which are then cut to shape and the joining sequence begins. This is little more than a series of concertina joins and a series of folds on alternate edges joined with P.V.A. glue until the two last edges can be joined together to make the balloon.

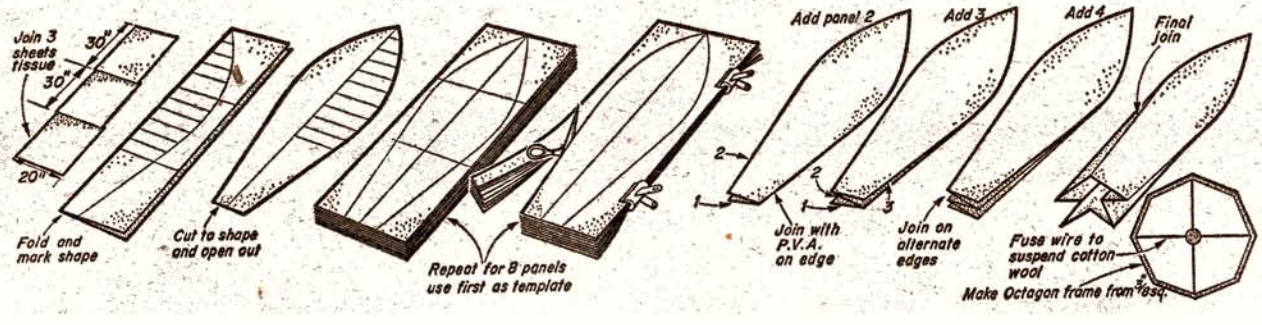
Do not be disappointed if you find yourself with the odd patch required at the apex—this is quite normal and indeed acceptable because after all, Aeromodellers cannot be expected to be perfect tailors!

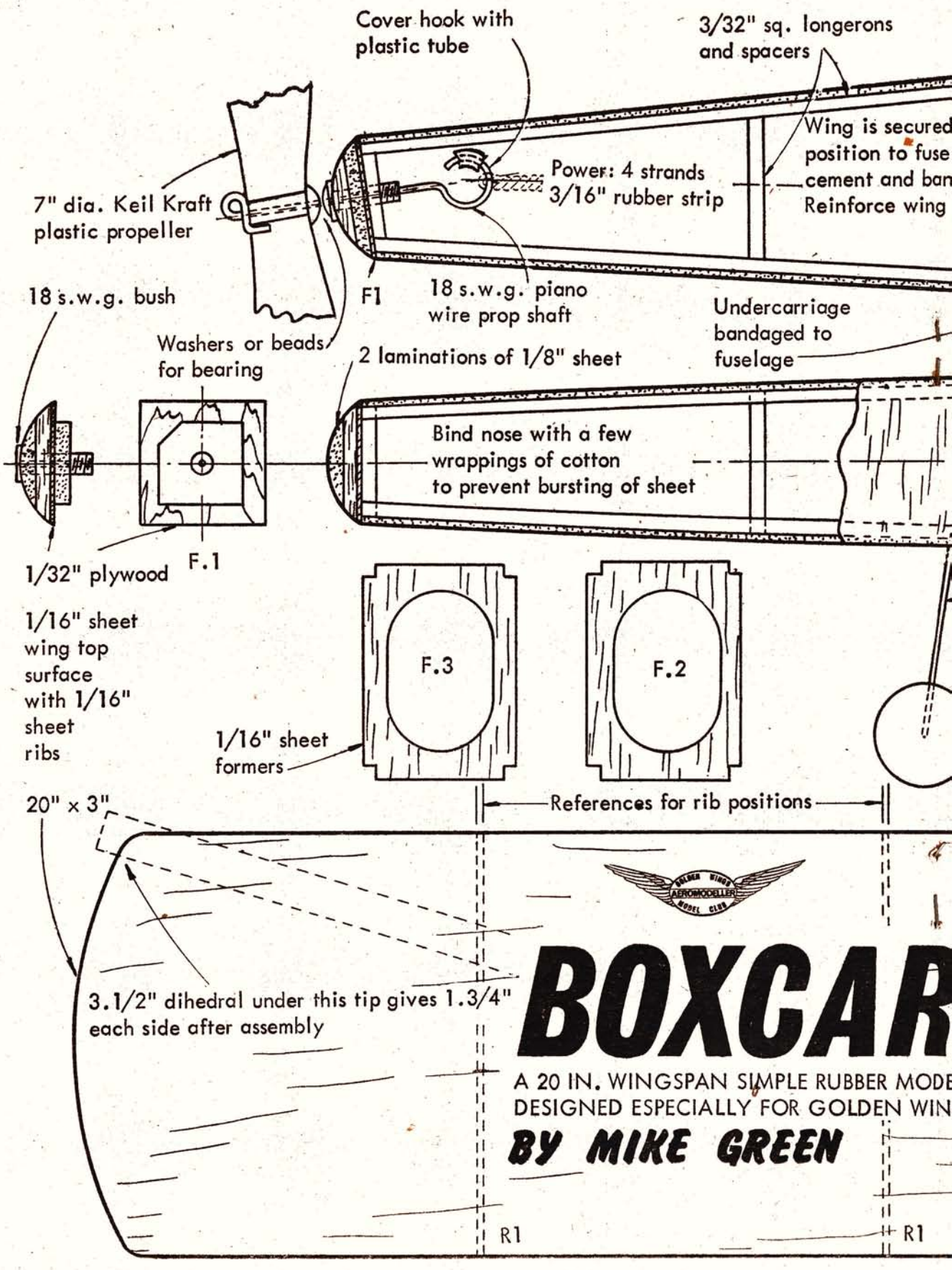
A rigid brace at the open end of the balloon is essential. Make up the octagon from the scrap pieces each measuring 10 inches long. Join it to the tissue after reinforcing the joints as necessary with household pins and wrap the tissue round, glueing firmly. The balloon should be folded for transportation and can be collapsed more or less to the shape of one panel then rolled up leaving the rigid base frame free. On the field, open it out, tie a cruciform of fuse wire across the opening attaching to it quite



firmly the ball of cotton wool. After gathering together a number of helpers to aid in the pre-heating process, apply heat through the open space taking care to avoid fire! When the tissue seems warm and the balloon wants to rise, pour some methylated spirits over the cotton wool, light with a match, or blow torch if you have been using one for pre-heating, hold on for a few moments more to build up heat and *let her go!*

You will find that a balloon of this size will carry quite a lot of pay-load, in fact as much as a pound of assorted items, but safety precautions *must* be observed under all circumstances and it is our firm suggestion that you restrict activities to "dry" ascents for your tests where there are nearby houses. The balloon will rise to 100 ft. or more merely from the heat of the picnic stove or blow torch.

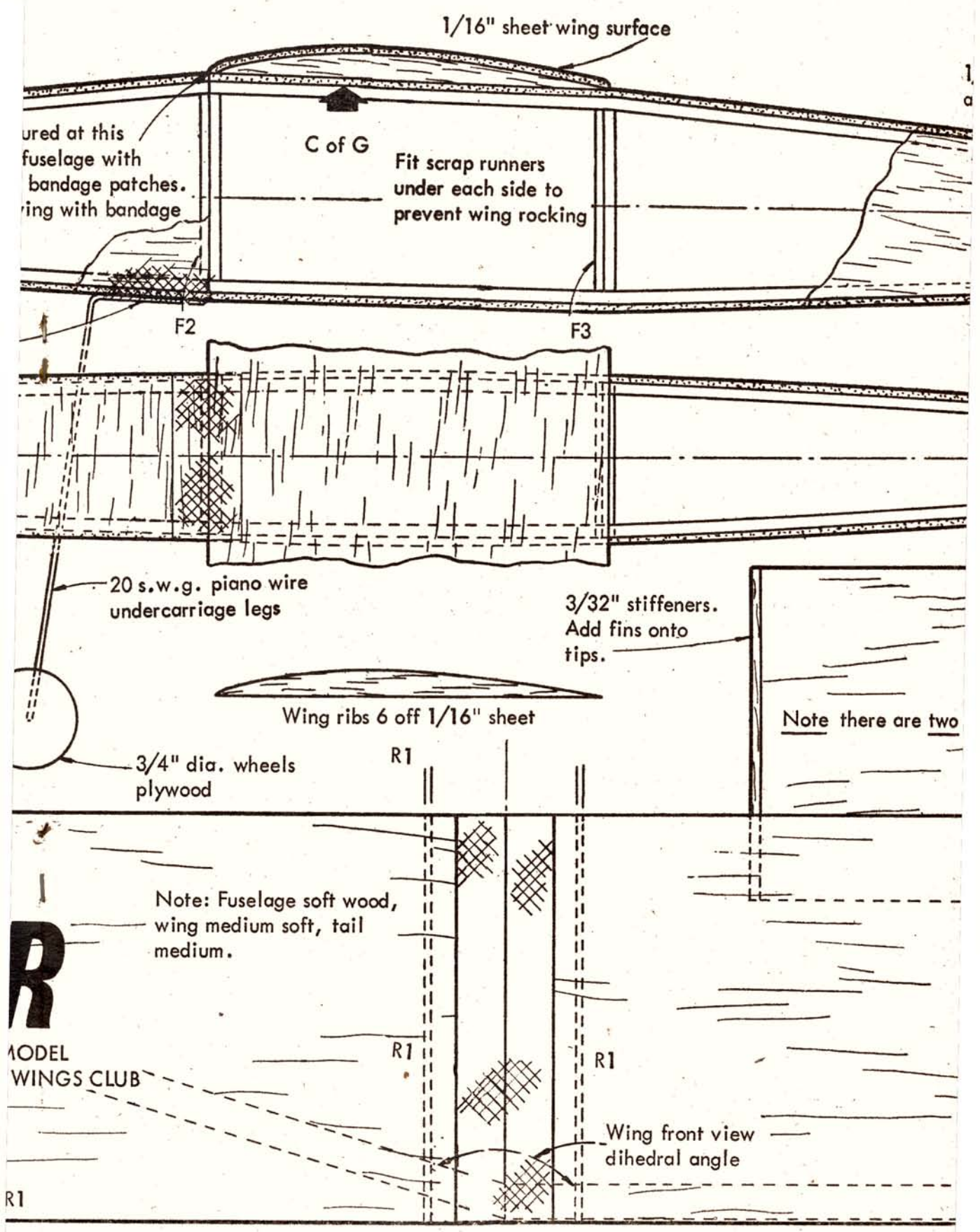


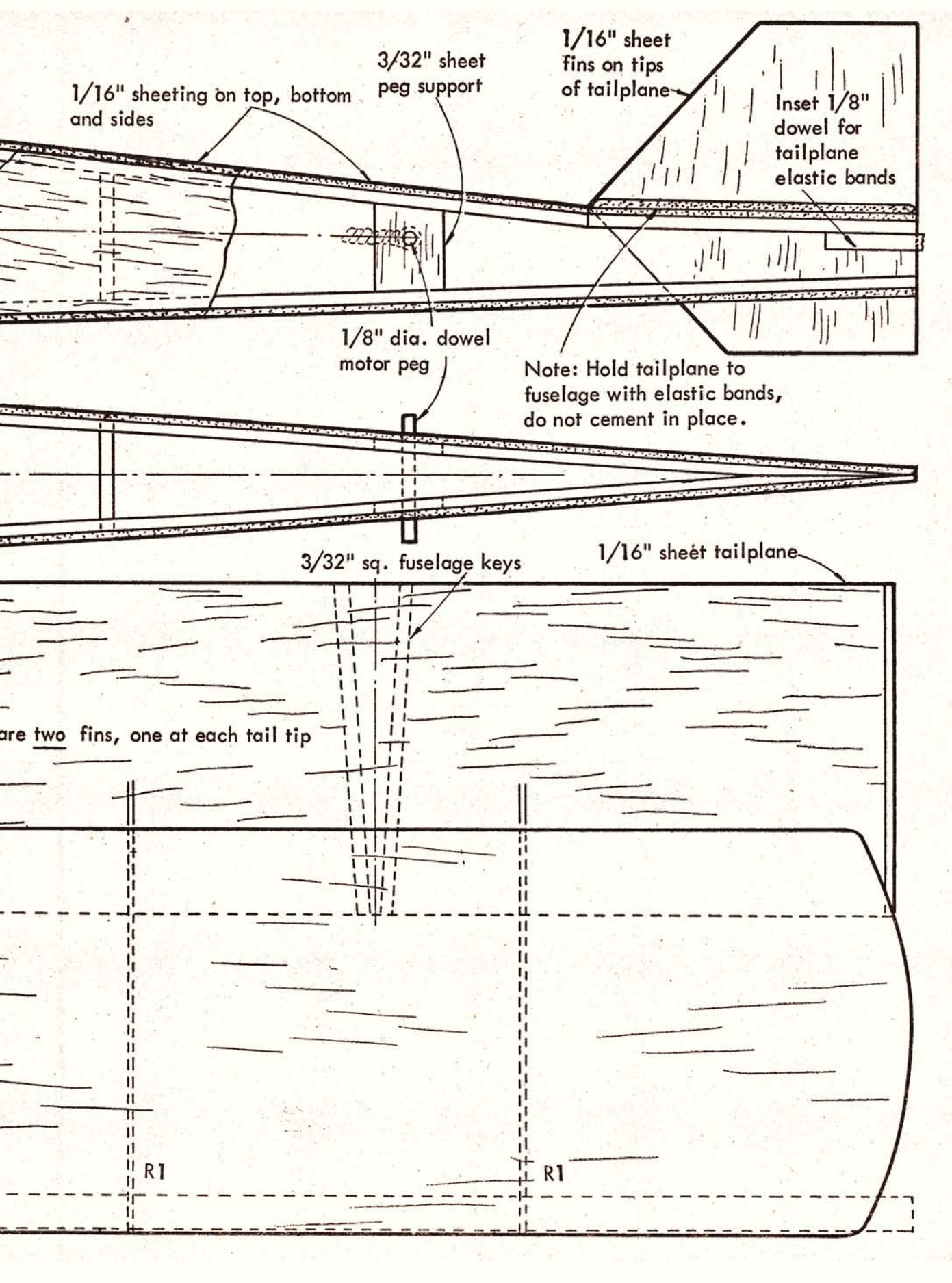


BOXCAR

A 20 IN. WINGSPAN SIMPLE RUBBER MODE
DESIGNED ESPECIALLY FOR GOLDEN WIN

BY MIKE GREEN


1/16" sheet wing surface
ured at this
fuselage with
bandage patches.
ing with bandage
C of G
Fit scrap runners
under each side to
prevent wing rocking
F2
F3
20 s.w.g. piano wire
undercarriage legs
3/32" stiffeners.
Add fins onto
tips.
Wing ribs 6 off 1/16" sheet
Note there are two
3/4" dia. wheels
plywood
R1
Note: Fuselage soft wood,
wing medium soft, tail
medium.
R1
R1
Wing front view
dihedral angle
R1


1/16" sheeting on top, bottom and sides
3/32" sheet peg support
1/16" sheet fins on tips of tailplane
Inset 1/8" dowel for tailplane elastic bands
1/8" dia. dowel motor peg
Note: Hold tailplane to fuselage with elastic bands, do not cement in place.
3/32" sq. fuselage keys
1/16" sheet tailplane
are two fins, one at each tail tip
R1
R1

TOPICAL TWISTS

by 'Pylonius': illustrated: by 'Sherry'

Solid Citizen

I TRY, in my feeble way, to soften up the freeze frozen face of the beleaguered modeller into a brave little grin, but that letter last month on 'Early Solids' in which little wooden planes, flown by little wooden airmen, had little doggy dog fights with real little doggies, makes me as solemn as a government white paper.

But competition is competition. After all, my own article on 'Early Solids' was well received by Mothercraft Weekly, and perhaps an attempt at a sequel, 'Early Non-Solids' will have the knitting circle in stitches:

"During the First World War model flying came virtually to a standstill. I can still hear the flapping noise it made. Every time I tried to fly my Huntz Kollarschtud Pusher a policeman would come tearing along on his bike blowing a whistle. But the worst thing was the shortage of suitable materials. Japanese bog oak was more or less unobtainable, whilst to use German sausage skins was to court attack from fiery old patriots with walking sticks. However, we were quick to improvise. Wickerwork ear trumpets, weathered aspidestra leaf, elastic sided boots and dessicated gum arabic were but a few of the substitute materials. And were they useless! The real enthusiast, though, favoured hot Zeppelin fabric, although many of us made do with extruded water wings.

For my own model flying efforts on Wanstead Flats I was highly recommended by the Ministry of Agriculture."

Combo-Jumbo

"Bert! You seen this questionnaire from the model book. How come it was addressed to me? Thought you were the Secretary this year."

"Have another think. I did the job last year, and the year before."

"But I'm President and Chairman."

"Only because you didn't have the gumption to write to the Duke of Edinburgh and Mr. Harold Wilson. And, anyway, I happen to be Hon. Club Treasurer."

"Fat lot of Hon. Treasure you've got to look after."

"That's because you don't pay your subs. And, by the way, what club is that addressed to? Oh, that explains it, we disbanded the Twelve Counties Aero Society last Christmas. Its now the South of England Model Flying Group. Don't you remember? You wanted to call it the All England Model Club after you put in that chuck gliding stint on Blackpool sands."

"All the same, its a bit thick expecting me to be Secretary of a club, and I don't even know its blinking name."

Oversight

Much in the news these days are those super Timekeeper characters with the 3 x 3 min. optic magnification. Their feats of long distance blinkering are such that, if the eagle is king of the air they should be raised to the peerage. Thus, when the stop watch is still ticking away its deathless seconds the model flyer is half way back to base with his model, or as least half way up a tree. This is known in scientific circles as persistance of vision.

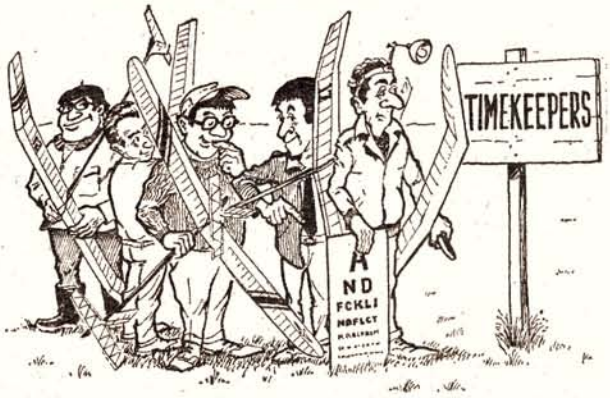
A frequent accompaniment to these optic marathons are the long range blather forecasts. This amenity is provided by a vocal group of the model flyer's cronies, who, contrary to the practice on most airfields throughout the world of talking the planes down, do their utmost to talk the model up. The chants of 'There it is' and 'Still well in sight' declaimed with authorative finality leads the subdued timekeeper to suppose he is suffering from some acute visual defect. In fact, he is convinced that the only way out of the awful predicament is to pretend to have the model in sight, too, and return a maximum score.

The close harmony group really earns its top rating at fly-off time. When as many as a dozen models are launched simultaneously it is only the most optimistic timekeeper who imagines he is timing the right model. The average timekeeper is soon given to understand by the cheer leaders that the highest, most distant model is the one to which he is attached, and given the professional assurance that a flight of such excellence could not fail to clock less than seven minutes even on a dark, foggy night.

From the Heights

Model Rallies just ain't what they used to be. Where is that pinnacle of glory that once we knew as The Northern Heights? To what limbo of nostalgic memory have all its Kings and Captains departed? Where is the merry tumult of yesteryear, the side shows and the festive coachloads of clubsters? All vanished, like the once glorious weather, into damp, thin air.

We shall not see its like again.



F.A.I. '66

CONTROL-LINE WORLD CHAMPIONSHIPS

R.A.F. SWINDERBY AUGUST 26th-30th

OFFICIAL RESULTS

Team Positions—SPEED

		total (Km/h)
1	U.S.A.	727.02
2	W.Germany	666.73
3	Czechoslovakia	660.36
4	**Gt.Britain**	**641.73**
5	Hungary	639.52
6	Italy	632.44
7	France	623.18
8	Sweden	384.79
9	Austria	372.51
10	Holland	296.09
11	Israel	194.59
12	Denmark	162.51

SPEED

			Round 1		Round 2		Round 3	
			Km/h	m.p.h.	Km/h	m.p.h.	Km/h	m.p.h.
1	Wisniewski, W.	U.S.A.	**258.99**	**160.93**	—		—	
2	Theobald, R.	U.S.A.	**241.61**	**150.13**	—		—	
3	Schuette, C.	U.S.A.	**226.42**	**140.69**	**226.42**	**140.69**	222.22	138.08
4	Sladky, J.	Czechoslovakia	**225.00**	**139.81**	215.57	133.95	**220.86**	**137.24**
5	Zilliken, F.	W.Germany	216.87	134.77	—		**225.00**	**139.81**
6	Pech, Z.	Czechoslovakia	215.57	133.95	215.57	133.95	**223.60**	**138.94**
7	Mailk, A.	W.Germany	216.87	134.76	**222.22**	**138.08**	—	
8	Krizsma, G.	Hungary	**220.86**	**137.24**	216.87	134.76	218.18	135.57
9	Lapinin, A.	U.S.S.R.	—		**220.86**	**137.24**	216.87	134.76
10	Miebach, R.	W.Germany	204.55	127.10	218.18	135.57	**219.15**	**136.40**
11	**Lindsey, K.**	**Gt.Britain**	—		**218.18**	**135.57**	177.34	110.19
12	Ekholm, R.	Finland	—		**218.18**	**135.57**	—	
13	Grandesso, R.	Italy	206.90	128.56	**216.87**	**134.77**	214.29	133.15
14	Ricci, G.	Italy	—		**215.87**	**133.95**	—	
15	**Firbank, W.**	**Gt.Britain**	**213.02**	**132.36**	—		—	
16	Sebestyen, M.	Hungary	210.53	130.81	**211.76**	**131.58**	—	
17	Magne, J.	France	**211.76**	**131.58**	196.72	122.24	204.55	127.12
18	Burda, S.	Czechoslovakia	**211.76**	**131.58**	198.90	123.59	192.51	119.60
19	Jaaskelainen, K.	Finland	**205.71**	**127.82**	211.76	131.58	—	
20	Moslakov, E.	U.S.S.R.	—		204.55	127.10	**210.53**	**130.81**
21	**Jackson, B.**	**Gt.Britain**	**210.53**	**130.81**	—		**210.53**	**130.81**
22	Toth, I.	Hungary	**206.90**	**128.56**	—		200.00	124.27
23	Heinsius, H.	Holland	—		**206.90**	**128.56**	194.59	120.92
24	Jennaton, J.	France	—		**205.71**	**127.82**	**205.71**	**127.82**
24	Pecquet, B.	France	**205.71**	**127.82**	**205.71**	**127.82**	—	
26	Cernold, L.	Sweden	**201.12**	**124.97**	—		195.65	121.57
27	Muzio, P.	Italy	200.00	124.27	191.49	118.99	195.65	121.57
28	Barak, S.	Israel	194.59	120.92	—		189.47	117.73
29	Geschwendtner, J.	Denmark	**192.51**	**119.62**	186.53	115.90	—	
30	Bugl, P.	Austria	—		**192.51**	**119.62**	—	
31	Fischer, J.	Austria	—		—		**180.00**	**111.85**
32	Enquist, C.	Sweden	**183.67**	**114.13**	—		179.1	106.02
33	Provisor Y.	Israel	—		—		—	
33	Meyer P.	Switzerland	—		—		—	
33	Holle, W.	Holland	—		—		—	
33	Freundt, H.	Austria	—		—		—	
33	Pagani, F.	Switzerland	—		—		—	

AEROBATICS

			Round 1	Round 2	Final
1	**Stockton/Jehlik**	**U.S.A.**	4.28	4.25	**9.22**
2	Hohenberg/Turk	Austria	4.33	—	**9.23**
3	Sharovalov/Radchenko	U.S.S.R.	5.22	4.25	**10.35**
4	Gurtler/Klemm	Czechoslovakia	4.36	6.10	
5	**Turner/Hughes**	**Gt. Britain**	6.35	4.42	
6	Sundell/Sundell	Finland	6.12	4.43	
7	Trnka/Drazek	Czechoslovakia	4.45	4.47	
8	Lutkat/Lutkat	W. Germany	4.51	4.46	
9	Gombocz/Toth	Hungary	4.51	4.48	
10	Fontana/Amodio	Italy	5.00	4.49	
11	Deane/Dickson	Ireland	7.45	4.50	
12	Tautz/Jones	U.S.A.	4.50	—	
13	Mohal/Markotai	Hungary	5.02	4.52	
14	Toulouse/Coste	France	4.54	4.53	
15	Metkemeyer/Metkemeyer	Holland	4.54	5.00	
16	Plotain/Timofeev	U.S.S.R.	—	4.54	
17	Cipolla/Cipolla	Italy	5.10	4.58	
18	Sulisz/Rosinski	Poland	4.56	—	
19	Arroyo/Ruiz	Spain	5.10	5.01	
20	Wamper/Gorzlza	W. Germany	5.02	5.25	
21	Purgal/Katona	Hungary	—	5.02	
22	Tortilla/Raatikainen	Finland	5.13	5.03	
23	Brendel/Glodeck	W. Germany	5.04	5.18	
24	Kropf/Russ	Austria	5.04	5.21	
25	Bartos/Neckar	Czechoslovakia	5.32	5.04	
26	Geschwendtner/H. & J.	Denmark	5.28	5.12	
27	Matile/Meyer	Switzerland	5.16	5.52	
28	**Place/Haworth**	**Gt. Britain**	5.17	—	
28	Ahlstrom/Atilluxs	Sweden	5.17	—	
30	Jarvi/Aarnipalo	Finland	5.46	5.18	
31	LeCrone/Mobly	U.S.A.	—	5.18	
32	Comas/Parramon	Spain	—	5.19	
33	Hand/Carroll	Ireland	5.24	5.46	
34	Kelly/Parent	Canada	—	5.26	
34	Favre/Fabre	France	—	5.26	
36	**Nixon/Ellis**	**Gt. Britain**	5.27	5.36	
37	Cator/Harskamp	Holland	6.24	5.27	
38	Buys/Goudsmit	Holland	5.27	—	
39	Bedell/Brennan	Ireland	—	5.30	
40	Bador/Magne	France	—	5.31	
41	Rivold/Olsen	Denmark	—	5.41	
42	Easton/Patton	Canada	6.45	5.43	
43	Vanderbeke/Merlin	Belgium	6.35	7.35	
44	Baudine/Hanton	Belgium	—	6.45	
45	Patris/Patris	Belgium	7.15	—	
46	Front/Goldberg	Israel	—	7.13	
47	Shnelorson/Provisor	Israel	—	7.29	
48	Fischer/Meusberger	Austria	—	—	
48	Heitman/Ytreoy	Norway	—	—	
48	Turlizzi/Signorini	Italy	—	—	
48	Valls/Montoy	Spain	—	—	
48	Jelman/Boulkin	U.S.S.R.	—	—	

TEAM RACING

			Round 1	Round 2	Round 3	Total
1	Gabris, J.	Czechoslovakia	2539	**2917**	**3096**	6013
2	Silhavey, J.	U.S.A.	2584	**2870**	**3012**	5882
3	McFarland, L.	U.S.A.	2635	**2886**	**2992**	5878
4	Wooley, S.	U.S.A.	2690	**2766**	**2947**	5713
5	Kari, J.	Finland	**2753**	2715	**2835**	5588
6	v. de Hout L.	Holland	2387	**2632**	**2924**	5556
7	Bagalini, W.	Italy	2539	**2617**	**2795**	5412
8	Sirotkin, Y.	U.S.S.R.	2654	**2728**	**2681**	5409
9	Andersson, O.	Sweden	**2594**	2445	**2745**	5339
10	Maszniyk, G.	Hungary	2354	**2519**	**2725**	5244
11	Bartos, J.	Czechoslovakia	**2613**	0010	**2595**	5208
12	Simonov, V.	U.S.S.R.	2439	**2513**	**2641**	5154
13	Compostella, L.	Italy	**2590**	2502	**2509**	5099
14	Twerda, H.	Holland	2229	**2541**	**2543**	5084
15	Sbragia, G.	Italy	2497	**2500**	**2531**	5031
16	Chalupa, A.	Czechoslovakia	**2508**	2347	**2496**	5004
17	Vanderbeke, M.	Belgium	**2593**	0461	**2307**	4900
18	Seeger, K.	W.Germany	2222	**2539**	**2361**	4891
19	Plotain, K.	U.S.S.R.	2407	2390	**2482**	4889
20	Egervary, G.	Hungary	2277	**2455**	**2401**	4856
21	**Jolly, T.**	**Gt. Britain**	**2356**	2115	**2361**	4717
22	Tupker, P.	Holland	**2348**	2200	**2343**	4689
23	Patiala, P.	Finland	2102	**2374**	**2298**	4672
24	Souliac, M.	France	**2277**	2226	**2373**	4650
25	Kaminski, A.	W.Germany	**2302**	**2294**	2239	4596
26	Lemminkainen, J.	Finland	2247	**2272**	**2318**	4590
27	Mothwurf, E.	Austria	**2188**	1780	**2399**	4587
28	Vellai, T.	Hungary	2172	**2245**	**2316**	4561
29	**Dowbekin, H.**	**Gt. Britain**	**2323**	2174	**2194**	4517
30	**Mannal, J.**	**Gt. Britain**	**2365**	**2120**	2088	4485
31	Billon, G.	France	2113	**2201**	**2165**	4366
32	Turk, H.	Austria	2081	2268	—	4349
33	Deane, P.	Ireland	1905	**2059**	**2138**	4197
34	Galli, G.	Switzerland	1841	**2089**	**2044**	4133
35	Lauron, R.	France	0186	**1990**	**2070**	4060
36	Kazimierowski, S.	Poland	**1919**	**2139**	1771	4058
37	Kelly, D.	Canada	**1918**	1915	**2115**	4033
38	Kaiser, G.	Austria	**1926**	**2079**	1905	4005
39	Keesels, R.	W.Germany	**1829**	1764	**1942**	3762
40	Brennan, P.	Ireland	**2018**	**1713**	—	3731
41	Hartmann, H.	Switzerland	1696	**1724**	**1864**	3588
42	Cohen, P.	Belgium	0638	**1878**	**1703**	3581
43	Zmidzinski, A.	Poland	**1759**	**1698**	1570	3457
44	Kraszewski, S.	Poland	0183	0377	**2124**	2501
45	Bedell, P.	Ireland	—	—	—	—
45	Parent, J.	Canada	—	—	—	—
45	Patton, B.	Canada	—	—	—	—
45	Matile, G.	Switzerland	—	—	—	—

Team Positions—TEAM RACING

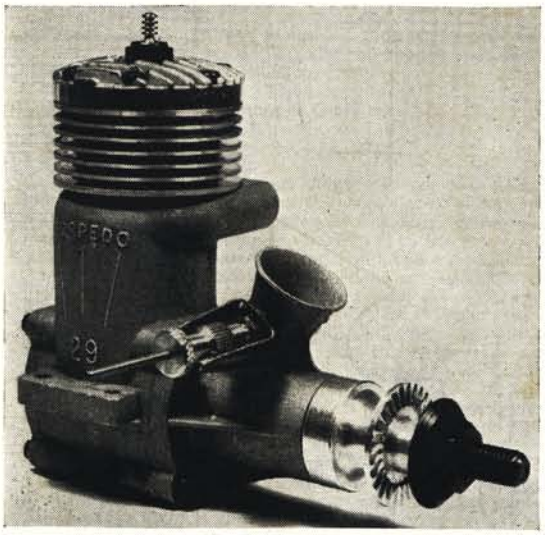
1	Czechoslovakia	14.25	6	**Gt. Britain**	**15.26**
2	U.S.A.	14.33	7	Ireland	15.44
3	Hungary	14.42	8	Holland	15.48
4	W. Germany	14.52	9	France	15.50
5	Finland	15.04	10	Belgium	20.35

Team Positions—AEROBATICS

1	U.S.A.	17473	6	Finland	14850	11	Austria	12941
2	Czechoslovakia	16221	7	Hungary	14661	12	Switzerland	11258
3	Italy	15597	8	**Gt. Britain**	13719	13	Poland	10016
4	U.S.S.R.	15452	9	W.Germany	13246	14	Ireland	9833
5	Holland	15329	10	France	13079	15	Belgium	9580

SCALE

			Scale Pts.	Flight	Total	Model
1	MacZura, W.	U.S.A.	1258	450	1708	Grumman Bearcat
2	**Day, A.**	**Gt. Britain**	1096	296	1392	Shinn
3	**Ivans, R.**	**Gt. Britain**	767	447	1214	Potez 63
4	Blender, H.	W.Germany	1017	131	1148	Fokker D 7
5	**Perry, S.**	**Gt. Britain**	857	156	1013	Hawker Henley
6	Huppens, W.	W.Germany	636	350	986	T.A. 154
7	Struik, E.	Holland	366	353	719	Grumman Tracker
8	Wilson, T.	Ireland	284	270	554	Fokker Friendship
9	Carreras, J.	Spain	289	0	289	Tipsy Nipper



ENGINE TEST by Peter Chinn

★ ★ ★ ★ ★ ★ ★ ★ ★

K&B Torpedo 29F

★ ★ ★ ★ ★ ★ ★ ★ ★

To Mark K&B's 20th Anniversary as an Engine Manufacturer, we present this report on the Modern Successor to the Original Torpedo 29.

K&B stands for Kading and Brodbeck, the partners in the original K&B Manufacturing Company which began operations as a very small sub-contractor to the American aircraft industry during the latter part of World War II. Immediately after the war, the company first turned to the production of a lawn sprinkler, but, as a successful free-flight power modeller from pre-war days, Johnny Brodbeck's interests, not unnaturally, lay in the direction of model engine manufacture and, late in 1946, the company entered the model motor field with their first engine, the original Torpedo 29.

At that time, there was an unprecedented demand for model engines and innumerable small concerns were springing up all over the United States (and to a lesser extent in the U.K. and Europe as well) and plunging into the model engine manufacturing business. There were a lot of average engines, some thoroughly bad ones and a few very good ones. The Torpedo 29 was one of the latter and, largely as a result of this, and a continuing policy of producing sound designs, K&B are today, one of the four or five American makes, only, that have survived from those early post war years.

K&B are, in fact, one of the most firmly established manufacturers in the model engine business. Now a subsidiary of the Aurora Plastics Corporation, with John Brodbeck as vice-president, K&B make a large range of model aircraft engines of all types, fuels and accessories, and are also engaged in the booming slot-car business. In charge of the engine division is Bill Wisniewski, speed winner at the last two FAI World C/L Championships, who has been responsible for the design of K&B's line of ball-bearing contest engines that first began appearing in 1961.

THE ORIGINAL K&B Torpedo 29 was a spark-ignition engine with shaft rotary-valve and plain bearing. Later, when glowplugs became popular, it appeared in a suitably modified version called the "Glo-Torp". K&B still list a plain bearing 29 but, as representative of the latest K&B design trends, we have chosen, instead, the current 29F ball-bearing model, for this report.

The 29F is one of two 5 cc. motors produced in K&B's "Series 64" range of high performance contest motors. The other one, the 29R, is intended as a C/L speed motor and has rear induction via a rotary disc type valve. The shaft-valve 29F was introduced primarily for contest free-flight work, although it is obviously well suited to many other types of installations.

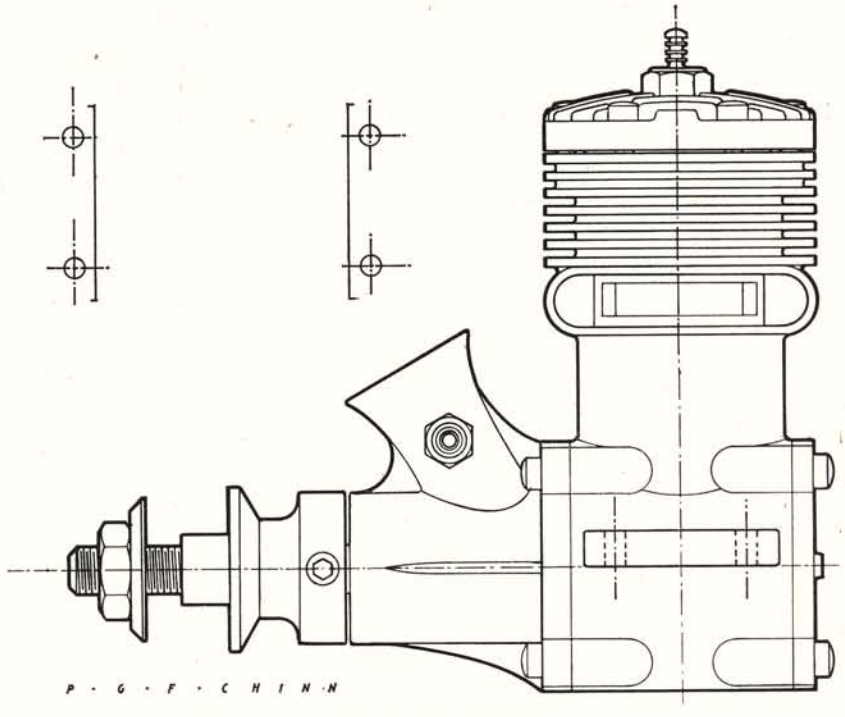
The 29F is not simply a shaft-valve version of the 29R. Although its piston displacement is similar (actually a trifle smaller) it has a different bore and stroke, producing a much nearer to "square" bore and stroke combination than the low (0.900/1) stroke/bore ratio of the 29R, a wedge type (instead of hemispherical) combustion chamber, and none of its components are interchangeable with those of the 29R. It does, however, have certain design and structural features common to all the Series 64 engines.

Notable among these are the special Wisniewski 3-piece crankshaft design, the general characteristics of which were described in our report on the K&B 15R in the August issue. The main journal of the 29F shaft is ½ in. dia. and has a 0.345 in. bore gas passage. The crankweb, into which the hardened crankpin is pressed, is a generous 0.300 in. thick. The large rotary-valve port is timed to open at 28 degrees ABDC and to close at 48 degrees ATDC (our measurements).

A much improved method of securing the prop drive assembly to the end of the crankshaft was adopted with the Series 64, 29 and 35 models. On the 15R and all the Series 61 engines, the drive hub was both keyed and secured to the shaft with an Allen grub screw engaging a flat on the shaft. This was not entirely satisfactory. The improved assembly uses a 0.125 in. dia. steel ball inserted in a hemispherical depression in the shaft and engaging a U-section keyway in the hub. The latter is firmly keyed to the shaft in this manner and the grub-screw now serves only to retain it.

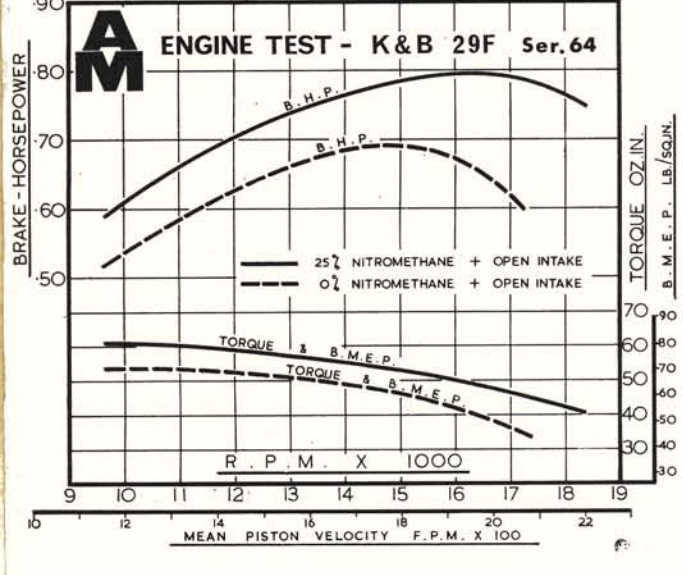
The structural layout of the 29R is a little different from most other current 5 cc. engines. The crankcase and cylinder barrel are a monobloc unit, but both the front bearing housing and the crankcase backplate are separate and are each attached to the crankcase with four screws. At the front, the 1.125 in. o.d. ball-bearing serves to locate the front housing in the crankcase. The engine is set up to operate on a pressurised fuel supply and the recessed backplate has a central boss into which one can screw a brass nipple for pressurising a

FULL SIZE SIDE ELEVATION AND MOUNTING HOLES



rigid tank, or, alternatively, a blanking screw can be fitted where it is desired to use a bladder tank.

The cylinder barrel is sleeved with a short, thick-walled drop-in iron liner located, in the usual way, by a flange at the top. It has orthodox rectangular ports timed to open and close at 70 degrees (exhaust) and 62.5 degrees (transfer) each side of BDC. Unlike the Series 61 engines, which featured a hard-chromed piston, the Series 64 models use a hardened iron piston. This has an annular rib above the gudgeon-pin bosses to maintain piston roundness and has a relieved skirt diameter below the gudgeon-pin. The piston crown is flat with a straight baffle radiussed on both sides. The cylinder head contours form a squish area on the transfer side and a wedge shaped combustion chamber on the exhaust side. The long reach K&B glowplug is located centrally in the head. In external dimensions, the 29F is identical with the Series 64 and Series 61 Torpedo 35 engines and mounting details of all three models are the same. By tradition, and unlike most other loop-scavenged engines, all K&B Torpedos have had the exhaust duct on the left side, and the 29F is no exception. K&B do not, as yet, offer silencers for their engines and our performance figures for the 29F are the result of tests on the engine in its unsilenced state.



Exceptionally high torque

For these tests, we used the backplate pressure fitting in conjunction with a Veco T-31 pressure tank. Initial running-in was done on a straight fuel mixture of 75 per cent methanol and 25 per cent castor oil. The 29F did not need an excessively long running-in period and, within an accumulated running time of one hour, the engine held a steady speed, with the needle set for maximum r.p.m. on both straight fuel and on the somewhat hotter Supersonic-1000 blend.

recorded for a 5 cc. engine and the corresponding performance was the extremely high maximum torque developed and the resultant high performance on relatively large props. Our test model registered some 54 oz. in. torque at around 10,000 r.p.m. on straight fuel and over 60 oz. in. on Supersonic-1000. Both these are the highest we have recorded for a 5 cc. engine and the corresponding

Parts of the Torpedo 29F. Noteworthy are the special crankshaft with concealed counterbalancing and the separate front housing with large diameter ball-bearing. The engine is for operation on pressure feed only.

SPECIFICATION

Type: Single cylinder, air-cooled, loop-scavenged two-stroke cycle glowplug ignition with ball-bearing crankshaft. Shaft type rotary-valve induction.
Bore: 0.725 in. **Stroke:** 0.720 in.
Swept Volume: 0.2972 cu. in. (4.870 c.c.)
Stroke/Bore Ratio: 0.993 : 1
Weight: 8.8 oz.
General Structure Data

Pressure diecast aluminium alloy *crankcase/cylinder-block unit* with drop-in cylinder-liner. Pressure diecast aluminium alloy *main bearing housing* secured with four screws and containing one ¼ x ⅜ in. front and one ¼ x 1⅛ in. rear Fafnir ball journal bearings. Counterbalanced, non-hardened *crankshaft* of "Stressproof" steel with pressed-in hardened .219 in. dia. tubular crankpin. Cast-iron lapped *piston* with baffle and internal annular stiffening rib. Forged Alcoa 2014 aluminium alloy *connecting-rod*, unbushed, with single lubrication hole at lower end. Hardened, 0.178 in dia. tubular *gudgeon-pin* with aluminium end pads. Pressure diecast aluminium alloy cylinder-head secured to cylinder casting with six screws. Pressure diecast aluminium alloy *crankcase backplate*, with provision for fuel tank pressurisation and secured with four screws. Machined aluminium alloy drive hub, keyed to crankshaft and fitted with ¼ in. dia. stud, steel washer and hexagon nut for propeller attachment. Brass spraybar type needle-valve assembly. No gaskets—metal to metal joints throughout. Beam mounting lugs.

TEST CONDITIONS

Running time prior to test: 1½—2 hours.
Fuels used: Test 1: Straight 3/1 methanol/castor-oil.
Test 2: K&B Supersonic-1000 (approx. 25 per cent nitromethane).
Fuel system: Open intake (0.375 in. dia. choke) with spray-bar. Pressurised fuel feed.
Glowplugs used: K&B/KB-IL 1.5 volt platinum filament, long reach, as supplied.
Air Temperature: 42 deg. F.
Barometer: 30.45 in. Hg.
Silencer Type: Nil (see text)

b.m.e.p. figures are just about as good as anything achieved to date. In both respects the 29F bettered the Series 64 disc-valve 29R despite the fact that the 29R, by peaking 3,000 or so r.p.m. faster than the 29F, was able to show a maximum b.h.p. 10-25 per cent higher depending on fuel used.

As the performance graph shows, the maximum power developed by the 29F was just under 0.70 b.h.p. at 15,000 r.p.m. on straight fuel and almost 0.80 b.h.p. at a little over 16,000 r.p.m. on Supersonic-1000, both of which are outstandingly good. Typical static prop r.p.m. included 10,300 on a 12x4 Trucut, 11,700 on an 11x5 Top-Flite (both of which are far above the usual speeds with 5 cc. engines), 15,000 on a 10x3½ Top-Flite and 15,500 on a 9x5 Top-Flite.

The general handling qualities of the 29F were extremely good. We found is easy to hand start at all times. For such a powerful engine, it was uncommonly docile, only demanding that it be treated with little more respect when prop diameter was reduced to 8 inches. The needle-valve was a bit sensitive when running on straight fuel, but quite normal on Supersonic-1000 fuel. The 29F also ran very steadily and with little vibration at practically all speeds tested. Incidentally, the 29F does not, despite is high performance, appear to be excessively hard on glowplugs.

The Torpedo 29F is not a cheap engine, but it is unquestionably a very worthy descendant of its famous ancestor of 20 years ago.

Power/Weight Ratio (as tested on straight fuel): 1.25 b.h.p./lb. (As tested on Supersonic-1000): 1.45 b.h.p./lb.

Specific Output (as tested on straight fuel): 142 b.h.p./litre. (As tested on Supersonic-1000): 163 b.h.p./litre.

Glass Fibre Glider Fuselages

Hints on the use of fishing rods as glider fuselages.

By Mike Woodhouse

THERE are at present quite a number of A/2 Gliders flying with fibre glass booms, using many and varied methods of construction both good and indifferent.

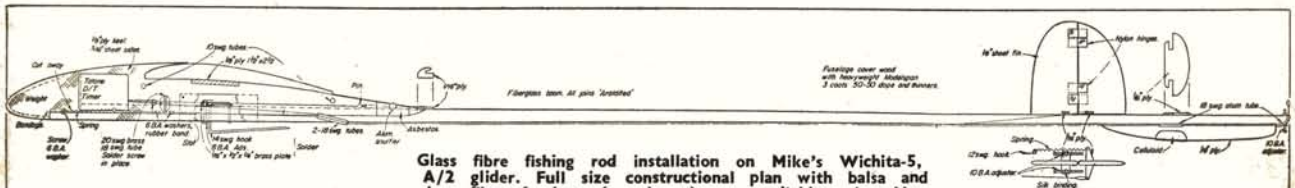
I was curious to try one to find out whether the claimed advantages were valid or not. Claims of extra strength and durability plus quicker building are always desirable features on any model. I have since found that these claims are only partly true; the fuselages are tough but take more time than conventional units to produce.

To obtain as true as possible a comparison with a normal fuselage I used exactly the same force layout (i.e. dimensions) as on all my other A/2 gliders.

It appeared that due to considerable strength the fibre rod could be used as the main structural member of the fuselage, an assumption that has proved correct in practice.

Several problems have arisen and are cured thus: All jointing of other materials to the rod must be with an epoxy resin such as Araldite, and all joints must be cleaned, especially the rod, as surface impurities must be removed. The time needed to cure "Araldited" joints creates the time delay. The adjustable tow hook assembly is simply moved in a slot cut through the rod, no extra reinforcement being necessary. The whole nose portion is covered in bandage (glass fibre could be used to advantage here) to give the wood parts strength, this is better balanced to that of the rod. Lastly there is no need to tissue cover the rod.

In practice this fuselage has proved to be no heavier than a normal one, but stronger. The criticism of excessive whipiness" has not appeared. In all, the extra trouble and expense (rods cost £1 0s. 0d.—£1 10s. 0d.) seems worthwhile.



Glass fibre fishing rod installation on Mike's Wichita-5, A/2 glider. Full size constructional plan with balsa and glass fibre fuselage (as shown) are available, plan No. M.A. 404 price 7/6d. plus 6d. postage, from A.P.S.

READERS' LETTERS

Spectators' view

Dear Sir,

May I say how much I was impressed by, and how thoroughly I enjoyed the World Control-line Championships held at Swinderby. The organisation was first class, the standard of workmanship excellent and the flying beyond comparison. It was obvious that the competitors took a great pride in the fact that they and their models were taking part in the Championships and this is surely all that really matters.

For me, at least, the displays of Combat flying were the high spots of the events. So enthralled was I by the antics of the models, and their pilots, that my own stock of models will soon be the richer by three combat jobs.

I would also like to say how much I enjoy reading your magazine, there is no other which does as fine a job as the "Aeromodeller".

Buxton, Derbys. *G. B. Sadler.*

P.S. What a wonderful opportunity the press and broadcasting service missed here. There was ample material for many Television programmes yet only scanty coverage was given. Newspapers reports were limited to a few lines. Perhaps the priorities of these concerns are a little mixed!

We are sorry that you missed the Television, Radio and Newspaper reports which were liberal in every local newspaper covering the vast area from Sheffield to Lincoln and also the Nationals:-Daily Mail. The Guardian, Times, Telegraph, Sunday Times. I.T.V. Television provided coverage in two programmes and there was a broadcast on the National B.B.C. Light programme for four minutes in Radio Newsreel. In fact, the press coverage for this meeting was greater than we have ever had for any Aeromodelling event and may yet be extended through the use of stock film taken during practice and competition periods by Press ciné photographers.

Clwyd controversy

Dear Sir,

I have been requested by the Chester Model Flight Club and many of the entrants who attended the Clwyd meeting on July 10th to draw your attention to the report that appeared in the September edition as this report would appear to contain certain inaccuracies and would not give the reader a clear impression of exactly what happened.

At the time of cancellation of the competition, which was some time after 2 o'clock, only 5 entries had been received in free flight classes, and only 1 flight had been made, namely 23 seconds. Most of the 45 entries in the R.C. classes were rather worried about possible damage to their equipment and were not particularly keen on attempting a flight. As most of the Committee and I have been resident in this area for many years, we have a fair idea of forecasting the weather for the next few hours and we knew there might be a slight break in the rain, but this would be too short a time to hold a properly organised competition to give all a fair chance of showing their capabilities. The Committee decided that there should be a cancellation and announced this at the site. It was also announced by loud hailer in the car park some half mile away by my assistant secretary. Dr. Haupt, who also visited all cars containing models and informed the occupants of this. Only two complaints were received regarding the cancellation.

Those taking part in the competition that was held on Sunday, September 11th, the date of which was decided on *July 13th*, were rather grateful that the original competition had been abandoned and another date fixed. The result of this latter competition has proved the point.

Chester. *C. R. Filtness.*

Changes considered

Dear Sir,

I was very interested to read the correspondence both as to fly-off and the possibility of reducing the performance of open rubber models.

As you well know, in a democratic society such as S.M.A.E. Ltd., a large amount of time must elapse between the formulation of new rules and their being put into effect and it is obviously too late now to make any rule changes before 1968.

I would, however, welcome any suggestions both for and against any changes in the present method of deciding free-flight events, all which suggestions will be carefully considered by the Free-Flight Sub-Committee and I hope that the correspondence will continue throughout the coming winter months in your magazine. It is only in this way that it is possible for the Free-Flight Committee to ascertain the view of active contest modellers.

Hove, Sussex. *I. C. Lucas.*
Chairman Free-Flight Sub-Committee, S.M.A.E. Ltd.

Encouragement

Dear Sirs,

What a wonderful cover picture on the September AEROMODELLER, all the males large and small obviously engrossed, while the only lady yawns widely!

The main purpose of my writing to you is to pass on an idea. If we want to get youngsters to take up the hobby here is a way to encourage them:-

1) Take some 1/32", $\frac{1}{16}$" and $\frac{1}{8}$" balsa, bits of scrap etc.
2) Build a few simple chuck and catapult gliders, profile types, biplane etc.
3) Take them to the local park and start flying.
4) When the lads gather round let them have a go, show them how to trim and how easily repairs can be made and keep talking.

I discovered this method while training my kids in the way they should go and now we have 20 or 30 gliders of all shapes and sizes and a keen following of potential aeromodellers.

This keeps my arm in trim for those chuck glider contests and reminds me of what we all tend to forget in these expensive and over-automated days—*Aeromodelling is fun.*

See you down the park?

Berkhamsted. *G. O. Mitchell.*

Timekeeping

Dear Sir,

I am impressed with the ingenuity of the idea for limiting rubber model performance put forward by D. Furbank in your August issue.

However, I am strongly opposed to any restrictions being imposed on the performance of this class of model, thus creating yet another experts class with the accent on Thermal catching.

In my experience, three, three minute flights in open rubber are by no means a formality in conditions other than good, and plenty of instances spring to mind of open rubber competitions being won with a score of less than 9 minutes.

Turning to the fly-off, competitors normally seem to wind and launch at much the same time, so all get similar air. If lift is present, restricted performance models will go out of sight just the same as unrestricted, resulting once more in a timekeepers' eyesight competition. Without lift, top durations of unlimited models are about 5 to 6 minutes probably timed down at least to the skyline in the frequently calmer early evening conditions. If, in a dead air fly-off, drift is enough to take models out of sight, those with a better performance, by reason of their greater altitude, will usually stay in sight longer.

In saying "hands off open rubber" I believe I speak not only for myself but for many others who enjoy competing under the present rules.

Rochdale, Lancs. *M. C. Reeves.*

Many thanks

Dear Sir,

May I through your columns express thanks to all the members of the R.A.F. M.A.A., and the S.M.A.E., who worked so hard to ensure the success of the World Control Line Championships. All concerned are deserving of the highest praise.

The excellent facilities at Royal Air Force Swinderby and the constructive help of Group Captain Hamilton OBE., DFC., AFC., and his staff are especially appreciated. Without this help the meeting could not have been held at all.

Finally, I would like to mention all the competitors and spectators whose support ensured the ultimate success of the meeting.

Thank you.

London, S.W.9. *N. J. Butcher.*
Chairman S.M.A.E.

STRICTLY SIMPLE

David Boddington offers his findings on R/C model float design

Float Planes for Fun and Freedom

THERE can be few areas in Great Britain that are more than a few miles away from reasonably sized stretches of water, and yet the fact remains that these possible flying sites have so far been ignored by the Radio Control flying fraternity. Even with the complaints of overcrowded flying fields, few modellers have "taken the plunge" into the deserted waters.

Why?—I don't know, but I can promise that for anyone who is prepared to convert their old land-based "bus" to float work there are some wonderful experiences in store. The sight of the model taxiing out and then, as you open up the engine, she rises up onto the rear step; speed builds up and onto the front step with the twin wakes getting smaller. Finally the moment when she actually breaks away and points her nose skywards—it really is exhilarating. Landings can be equally exciting and the satisfaction of skimming the model onto the water and barely disturbing the surface is ample reward for the work involved. Naturally, as with most worthwhile undertakings, a little patience and practice will be required to achieve the best results. This is one aspect of our hobby that has not been very well covered in the modelling press but any experimenting that is called for adds to the excitement and interest. It is not intended that this article should give all the facts and figures relating to float design but merely sufficient to rouse your enthusiasm and enable you to get started with the thrills of float planes—the rest is up to you!

Choosing the Site

A preliminary inspection of a quarter inch scale map of your local area will help to locate suitable lakes, reservoirs, disused gravel pits, etc., for possible flying sites. I would sugest that the minimum size stretch of water is in the region of 100 yards square but much will depend on your own flying skill and also the features of the surrounding areas. When you have selected the most promising areas from the map pay a visit to them to gain first hand knowledge of their possibilities.

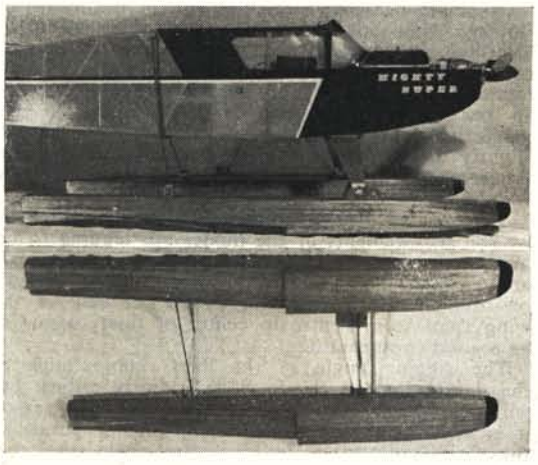
Find out who owns them, or holds the various "rights" of the waters and whether flying R/C model aircraft in the area would be permissible. For instance you may not be at all welcome on a reservoir where fishing and sailing are allowed or where part of it is set aside as a wildfowl sanctuary. Few sites will be completely clear of trees and other obstacles but providing they are not too numerous and close, they do not present any greater hazard than on normal flying sites. A final and most important requirement for flying off water is some method of retrieving the model after it has landed. Even with engine control there is still the occasion when the engine will stop and the 'plane will finish sitting in the middle of a large expanse of water. It can take an awful long time for a gentle breeze to blow your model back to the bank and, short of being a keen swimmer, the best method of recovery is by boat.

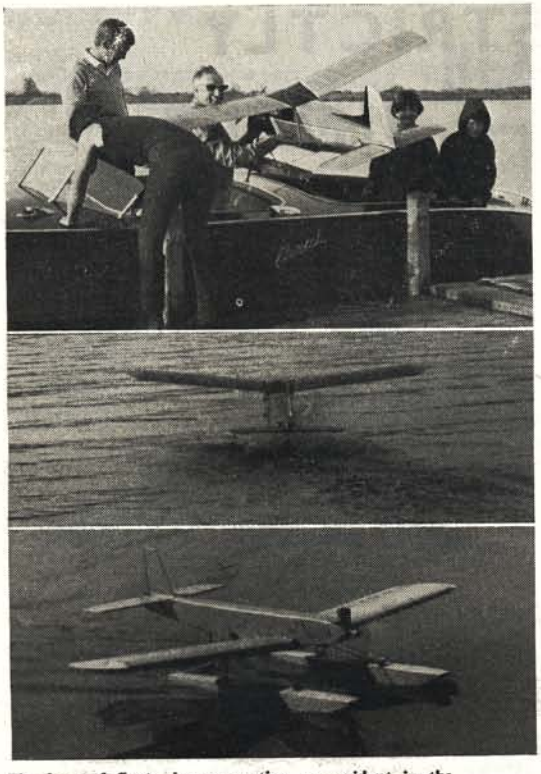
Design of Floats

The length, width and volume of floats for a particular size and weight of model can be theoretically worked out according to the bouyancy required.

Wing Span of Model.	Weight of Model less floats.	Length of Float. (twin float required)	Max. width of Float.
30"-40"	14-20 ozs	22"	2½"
40"-50"	2-3 lbs	26"	2¾"
50"-60"	4-5 lbs	30"	3"
60"-70"	7 lbs	34"	3½"
70" & over	9 lbs	36"	4"

Held, in upper photo, by well-known Australian modeller Keith Hearn, to whom it was demonstrated at Lake Biwa, this attractive R/C seaplane was built by Mr. Mitsui of the Mt. Hiei R/C Club, Japan. Model is equipped with O.S. 10-channel superhet and powered by O.S. Max-50 R/C engine. Below are author's floats as described.





The joys of float plane operation are evident in the above photographs. At the top "Mighty Super" is taken aboard a power boat for mid-lake launching but this is not entirely essential. Centre feature illustrates a rough Wake as the model first leaves the launcher. This gradually streams out to twin wakes prior to take-off. Lower picture illustrates a simple but practical floatplane made by Paul Rogers of High Wycombe and flown by himself and his father during a holiday a few seasons ago on the Italian Riviera. Flown from the beach off the sea it proved to be a tremendous attraction to the holiday-makers and performed faultlessly. Floats were of more simple design but to the same general proportions as those illustrated on the page opposite.

As a rule of thumb, the length of float can be taken as 75 per cent to 80 per cent of the length of fuselage. It is essential that a reasonable amount of the float is forward of the propeller to prevent nosing under. This means that the length of float forward and rear of the step is roughly between 45 per cent and 55 per cent and equal lengths respectively. The position of the step is always slightly ahead of the centre of gravity position to the extent of $\frac{1}{8}$ in. for the smallest floats to $\frac{1}{4}$ in. for the largest.

The spacing distance apart of the floats is dictated by the requirements of the model not tending to tip over with floats too narrowly spaced or too wide and causing the model to be directionally unstable on take-off. Here a spacing of 20 per cent of the wing span from centre to centre of floats seems to be a good compromise.

The rigging angle of the floats comparative to the datum line of the fuselage is fairly critical but will vary from aircraft to aircraft. For this reason it is sensible to have one of the anchor points of the floats adjustable to vary the angle, the rear fixing point normally being the most practical. An indication of correct angular setting can be obtained from the following examples:

(1) With an excessive positive angle setting of the floats (i.e., with the nose of the model pointing towards the water when at rest) the rear of the floats remain submerged as the model attempts to accelerate. This may cause the model to be unable to rise onto the front step and therefore become airborne.

(2) Too great a negative angle may cause the model to nose under the water. This occurs when the model gains speed and the tail lifts thus pushing the front ends of the floats under the surface.

Alternatively, with just a little too much negative angle, the model with the tail up will immediately plane on the forward part of the front step and begin to veer in either direction. The ideal to aim for is with the model accelerating rapidly under full power and rising onto the step. At this point the rear of the floats should be just touching the water to help maintain a straight path. The latter is, of course, essential if rudders are fitted and it is necessary to maintain directional control with them. All of this may sound rather complicated, but in reality it is just a matter of using common sense and making small adjustments. An average setting for floats on a high wing model is about 3 deg. negative.

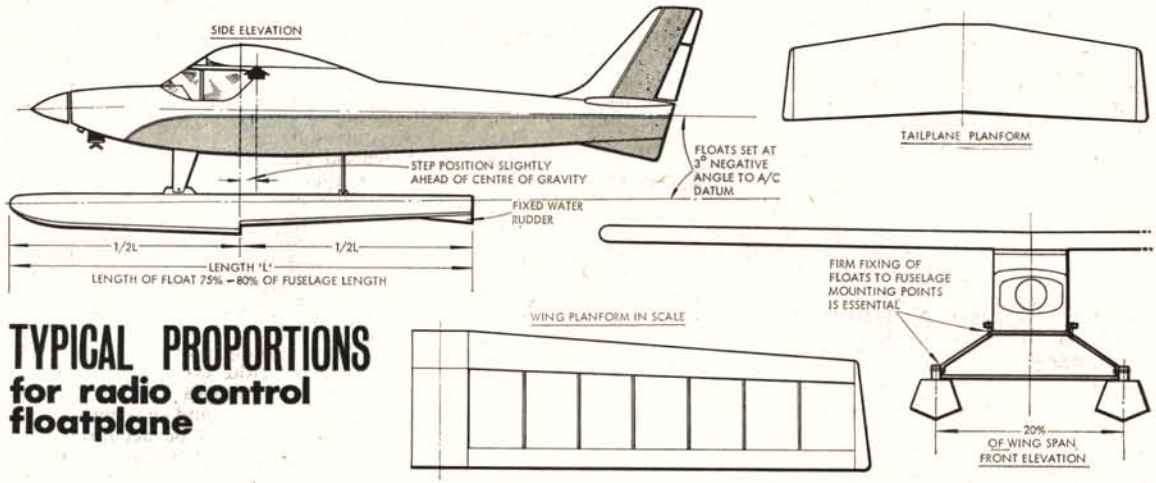
Modellers who are used to taking their 'planes off from tarmac will know that as soon as the model "un-sticks" it tends to accelerate and climb rapidly. This is due to the sudden release of friction of the wheels on the tarmac and, to a lesser extent, of the wheels on their axles. In floatplanes this effect is greatly increased due to the considerable suction between the underside of the step and the water. There are a number of ways to minimise this, the obvious one being the formation of the step. In addition, the underside of the floats are "Veed" and the sides sloped in towards the top. In full size practise the underside of the floats are also concave in cross section to reduce surface tension; but this has not been found to be necessary in model work. Further refinements and modification may be made to help reduce the surface tension further and these will be considered in the article on construction.

The use of fixed or movable rudders on the floats is a matter of trial and error. For a shoulder or high wing, stable and slow flying model operating rudders need not be fitted provided the air rudder is of reasonable size. For a faster flying Multi acrobatic type aircraft it is probably advisable to have interconnected rudders to be able to taxi under control at acceptably slow speeds. The simple answer is—if you can manage to do without, then do so, because it is easy to foul them when putting the model in, or taking it out, of the water.

The Model

Your model should be thoroughly checked over for possible entry points for water and sealed off as efficiently as possible. Although from experience little water is thrown up to the fuselage there is always that risk of a ducking and the more water we can keep out of the fuselage, the better. A point to watch here is the use of PVA glue, if this gets soaked it is likely to dissolve, so it is safer to use balsa cement in construction if you know it is going to be used for float work.

It would also be worthwhile grainfilling and



TYPICAL PROPORTIONS for radio control floatplane

doping the interior balsa before covering as additional protection. Unavoidable openings, such as cabin tops, wing and tail seatings, etc., can either be completely sealed with polythene sheet secured with masking tape or the edges trimmed with foam plastic strip to give a tight joint between component parts. Torque rod bearings and holes for throttle linkages, etc., can be well greased to resist water penetration. Switches mounted internally and operated by a push/rod, as in some multi-installations are the most suitable for flying off water.

Radio gear can be protected by wrapping in polythene bags held in place by rubber bands but there are limitations here when using escapements and for tuning receivers. Should you be considering flying off salt water areas then *maximum* protection becomes doubly important. One thing in favour of water is its greater resilience than *terra firma.* Make sure, then, that the radio equipment is soundly installed and that the anchor points for the floats are substantial. Wing and tailplane should be securely fixed too.

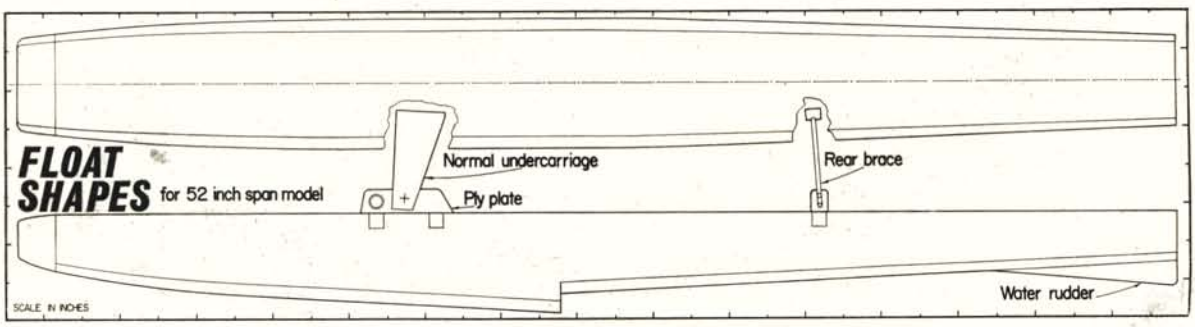
Flying

The addition of a pair of floats to a model will almost certainly bring about a trim change, the most likely being an underelevated effect. This is brought about through the increased drag from the floats at a low level. Re-trimming is best carried out, especially with single channel models, gradually and over land in the normal manner. Once the correct trim is achieved sit back and wait for a fine day with little wind!

Our initial efforts were quite entertaining as well as instructive and exciting. The floats I made and fitted to our long suffering "Mighty Super" were barely large enough, in fact they were awash at the rear of the top decking. For the first take-off, and we had not test flown it previously, we decided to leave the trim as normal and release at full power. The result was an immediate attempt at submarine activities fortunately stopped by the natural bouyancy of the model.

The second release was made with the motor at slow throttle and full up trim, the motor was slowly opened up, and up-elevator pulsed on. Once she was up on the step all tendencies to nose under disappeared and she took to the air climbing at about 60 degrees. Landing was a matter of judging accurately the approach and flare-out as we had lost the engine, in general it is probably better to fly the model onto the water than to attempt too much in flaring out.

Take-offs, after the technique was learned, were all satisfactory with only the initial stages of opening up the engine at all critical. Landings produced a variety of results ranging from an absolute skimmer, which finished up hitting the side of the only boat on the water, to a nose-in following a too high approach.



MAYFLOWER

A 38 inch freeflight Sportster for up to .75cc

designed by A. Healey

HERE'S a sports model that should satisfy a wide range of our readers. It lends itself admirably to Radio Control and is beautifully stable in flight so that it also becomes a worthwhile project for the novice. Designer A. Healey chose the well-known Cessna Bird Dog and Skylane series as an inspiration for the general lines and we think he has achieved the effect very well indeed by producing this "caricature" of the famous American light planes.

Commence by marking out fuselage sides on medium $\frac{1}{16}$ in. sheet Balsa with former positions marked on the inside face (a ball pen is ideal). Cut the formers very carefully, making sure to alter position of the beaers if a different engine mounting is required. It is usual to mark the centre line on top and bottom as a guide when checking alignment before top and bottom sheeting is added. Now bend undercarriage wires to shape, bind and cement wires to F2 and F3 respectively. Cement F1-F3 on bearers carefully and allow to dry. Cut out sides laying one side flat over the plan. When the F1-F3 assembly is dry, cement and pin temporarily F1-F5 on one side sheet, squaring up as one proceeds. Add opposite side sheet and allow to set. Next, cement a scrap $\frac{1}{16}$ in. sheet stern post in place, bringing both sides together at the rear and add remaining formers, wing mounts, gussets etc. Make sure the centre line marks line up, otherwise you will get a built-in turn if you are not careful ! Add top and bottom decking, soft block around the nose, dowels, cabin windows, bind and solder the undercarriage wires.

Mark and cut out all wing ribs, cut trailing edge and join as shown on plan. Fix ribs on main spar, cement the leading and trailing edges and allow to dry. Remove from the plan and place the opposite wing half assembly in its place. Whilst the cement is drying add rear spar on to first wing half. Where a spar has to be cracked it makes a neater job to mark its position and to trim the odd rib (W3 and T3), to allow the spar to have a direct line from either side and not the more usual appearance. Build the centre section, incorporating dihedral braces and top sheet, over the plan. Add bottom sheet later. Lastly, cement both wing halves to the centre section, checking for accuracy and having $2\frac{1}{2}$ in. dihedral under each tip. Strive to be accurate as it saves a lot of unnecessary flight trimming.

On the tailplane, ribs are fitted over both spars at once. Due to the shallow depth of most tailplane ribs it may be found better to recess the top of T1 and T2 for sheeting *after* assembly with a model knife and sandpaper on small block. The sheet between T1 is not recessed but cemented *between* the two ribs flush with the bottom edge. Tape and cement front and rear where rubber bands pass.

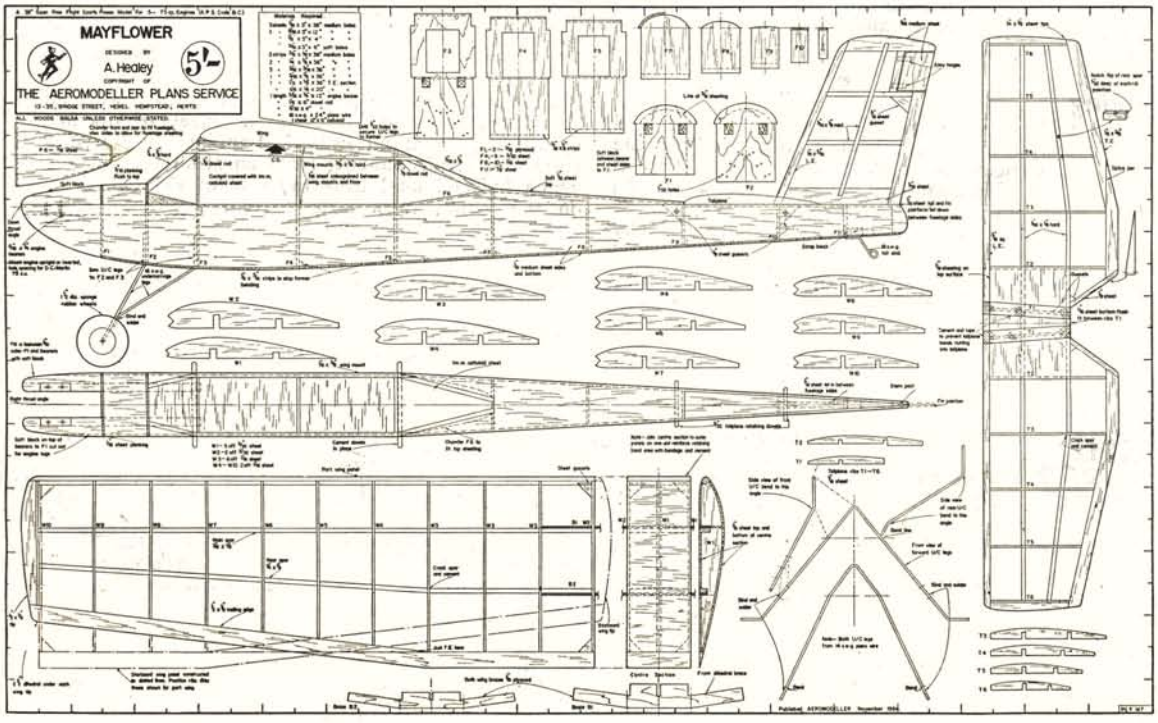
The fin and rudder are made of $\frac{3}{16}$ in. strips in a flat frame and cemented to the fuselage when dry.

Lightly sand the entire model, cover with tissue, then dope (2 coats) followed by colour decoration.

Test glide with model balancing at 40 per cent chord and trim to fly in right hand circles.

It's a very easy model to fly. Like the famous vessel used by the Pilgrim Fathers, this 'Mayflower' will ride the rough spots for you and "come across" as our U.S. friends say, to give hours of enjoyment.

FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE FROM AEROMODELLER PLANS SERVICE PRICE 5/6d. incl. POST. QUOTE PLAN PET 917 WHEN ORDERING.



Round the Rallies

REPORTS · RESULTS and PHOTOGRAPHS FROM RECENT EVENTS

CRANFIELD, top left, intricate structure for open rubber entry by P. Beer is 66 in. span, and 10 oz. flying weight and has Hoerner tips on prop and wing. To right is Glider winner M. Bayram, of Lincoln, and left below, another winner, A. W. Wells, of Hornchurch, who topped open rubber and also 3rd in glider as well as entering Coupe d'Hiver with model seen here. To right are Booth and Taylor, of Rolls Royce, Derby, with ½A racer and far right, Allan Dell with ½A class winner. CLWYD photo below shows Peter Water's Mistral type entry being launched.

The **Clwyd Soaring Meeting** was held on reserve date September 11th. It would appear that *free* slope soaring is on the wane, the usual entrants were at the meeting but were flying R/C at least three former Gosling Trophy winners were seen flying in this class. Standard of model has also been lowered and the Chester Club are considering changes for 1967. In *Junior Glider* M. Hewitt, of Chester, took the lead early in the afternoon and kept a watchful eye on the score board for possible rivals.

A. Moss was leading the *Open* at one time to lose to B. Faulkner who followed up his lead of the A/2 by that of the Open, thus preventing a 'hat trick' by A. Moss, winner of the *Gosling Trophy* in 1964-65. Two points noticeable at this meeting were, the number of good unofficial flights made after the contest and the number of persons who flew only for sport and who could not be persuaded to enter. It would appear that this lack of interest in competitions is increasing—too long to wait for a flight?

R/C events were supported better than ever with 25 "Single" entries and 30 "Multi". R. Donaghue of Larcas was first away in multi aerobatics and set a standard that was not bettered. Conditions were variable and the wind died to nothing. It was decided to make the first round of the single surface event and a nominated flight of four minutes instead of flying the set course. Early competitors found it difficult to stay up, but some good performances were put up by D. Pask, of Wharfedale (one sec. error) and J. Fellows of Kidderminster and K. J. Emmett of Sheffield both with only two seconds out.

Second round of multi involved flying as many laps as possible round a fixed course in the set time of four minutes. Once again R. Donaghue did well covering 6½ laps which remained the best score until just before the end when R. Tom of Bridgend launched his model with water cascading from the wings and raced round in drizzling rain to record seven laps.

The second round of the single surface event was favoured with a little more lift and so it was possible to use the set course.

First away was B. Spencer of Ashton who managed a very creditable 4½ laps which was only bettered by S. Ward of Larcas with 4½ laps. Scoring for the single surface event showed a tie for first place between J. Fellows and D. Pask so for the first time at Clwyd a fly-off was necessary. This took the form of a two minute nominated flight won by J. Fellows

Clwyd Results

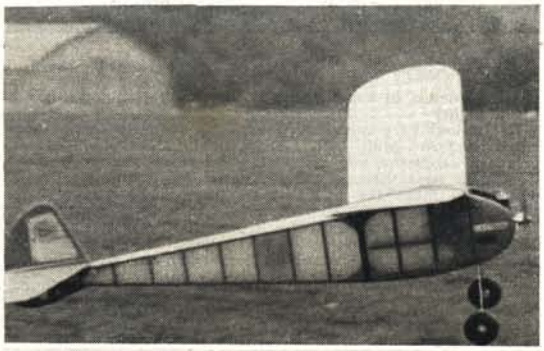
R/C Multi, 1, R. Donahue (Larcas) 108 pts.; 2, P. Heeley (West Mendip) 93 pts. **R/C Single.** 1, J. Fellows (Kidderminster); 2, D. Pask (Wharfedale). **A/2** 1, B. Faulkner (Lymm) 7:42. **Open.** 1, B. Faulkner (Lymm); 2:54. **Junior.** 1, M. Hewitt (Chester) 1:31. **Gosling Trophy.** B. Faulkner (Lymm).

Cranfield '66 was probably the best attended model meeting of the year outside the Nats. It was the first rally we've heard of where combat flyers went "On Strike" as Heanor Club disputed a judge's decision and bodily blocked the circles

CRANFIELD and HALTON old timer parade included Noel Barker and his Anderson Spitfire powered 1935 Kovel-Grant 1 and Paul Brown with APS "Ladybird" rubber driven bipe.

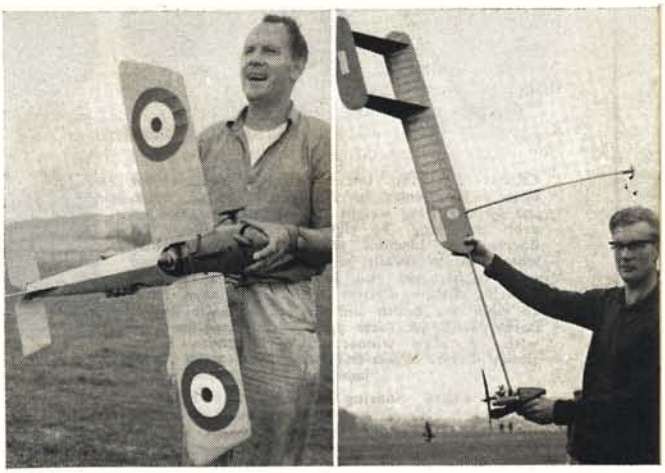
and also the first for a long time where the three fly-off batches of free flighters have landed within the airfield boundaries. Wind direcuon from an unusual quarter and at considerably less than normal strength meant that the day became a very pleasant outing with small groups of sport flyers, vintage enthusiasts and scale fliers dotted about the field. *Free Flight* events were very well supported attracting many of the "old" names back to the fold—with youngsters in attendance. The fly-off for Chuck Glider with four entries making maximum scores typifies the day.

In the two previous years top honours in both rudder and multi *Radio Control* events have been taken by Bob Tom, and Peter Waters from South Wales who were both out to make it a 'hat trick'. Bob was out of luck, but Pete repeated his success. Multi Aerobatics was a free style event, competitors flying ten chosen manoeuvres from a twenty item schedule, with a six minute time limit. With two flight lines thirty entrants managed two flights during the afternoon.



F.A.I. team race with 37 entries, saw some fast times recorded, fastest in Rd 1 were Franklin/Ives (Wanstead) then Brian Turner and Mike Hughes used a Don Haworth Eta .15 for 4:30.5 with one stop in Rd 2 King/Balch (Feltham/Hayes) had better luck than usual with his Oliver Tiger powered Trident and one stopped 4:36.8. Place/Haworth (Wharfedale) who were right out of luck at the World Champs regained form with 4.34.5 using Don Haworth's new central mounted drum valve intake that puts the fuel up into the transfer area on the much modded Eta. The final was noted for its clean flying and both Wharfedale teams had an unplanned stop during the race.

½*A Team Race* had 30 teams. Alan Dell's model has now flown in no less than 16, yes sixteen finals and it made a very quick 4:20 in the heats and it now begins to show its age. Out of the fastest nine in the semi finals Smith/Brown made 4:27, Alan Dell 4:12, Dave Frey alslo 4:12 and Heaton/Ross 4.33. Fry and Dell flew together as one team and let Heaton/Ross in for the final. Smith/Brown's model hit Fry at a stop soon after the start and a re-run was granted while they quickly patched the leading edge for a little drag reproduction. In the second attempt their lines bound and it really splatted leaving little usable at 91 laps. Booth/Taylor (Rolls Royce) had a neat and well finished all white model that placed second 9:43 to Alan Dell's almost final weary model with 8:54. In *Aerobatics* Geoff Higgs (Horwich) fresh from his stunt judging stint at

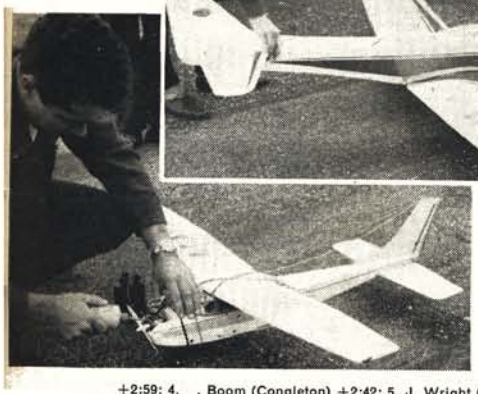


HALTON above, at left, Fred Longbon and M. E. Snipe powered one-eighth scale "Morane N" weighing 30 oz. and Alan Cooper, helicopter winner with 78 in. Eta 15, 30 oz. McCutcheon machine. At left is J. Haggart's vintage "Simplex" complete with ignition Ohlsson, and Bob Hutchins, back in the field after a long spell with his 12-year-old Sopwith Dolphin (ED.46).

the World Champs topped this event with 3131.1 pts. over Jim Mannal (Lincoln) with 2923 pts. In second place, Dave Day (Wolves) another World Champs organiser came third with 2921 pts. in all, seven out of 10 entries flew—rather disappointing.

SOUTH MIDLANDS AREA RALLY
1966 RESULTS

½A Team Race (30 teams). 1, Dell/Fry (Feltham/Hayes) 8:54; 2, Booth/Taylor 9:43; 3, Smith/Brown (Feltham/Hayes) 91 laps. **F.A.I. Team Race** (39 teams). 1, Turner/Hughes 9:59; 2, Place/Haworth 10:12; 3, King/Balch 10:58. **C/L Aerobatics** (10 entries). 1, G. Higgs 3131 pts. 2, J. Mannal 2924 pts.; 3, D. Day 2921 pts. **Combat** (68 entries), 1, M. Delaney (Northwood); 2, J. Chamberlin (Heanor); 3, P. Whiddit (Norwich); 3, S. Smith (Feltham/Hayes). **Chuck Glider.** 1, R. Lennox (Birmingham) 3:00+0:55; 2, R. Fleetwood (Hornchurch) +0:48; 3, P. Bayram (Lincoln) +0:46. **½A Power.** 1, J. O'Donnell (Whitefield) 8:45; 2, R. Monks (Birmingham) 8:07; 3, G. Cornell (Croydon) 6:46. **Coupe d'Hiver.** 1, J. O'Donnell (Whitefield) 5:33; 2, V. Taylor (St. Albans) 4:59; 3, J. North (Croydon) 4:57. **Open Power.** 1, R. Monks (Birmingham) 9:00+5:00; 2, M. Green (Lincoln) +4:32; 3, K. Glynn (Surbiton) +4:13: 4, J. O'Donnell (Whitefield) +3:52; 5, A. Russell (North Kent) +2:36. **Open Rubber.** 1, A. Wells (Hornchurch) 9:00+5:59; 2, R. Monks (Birmingham) +5:52; 3, R. Lennox (Birmingham) +5:42; 4, B. Day (Walsall) +5:36; 5, D. Reece (C.M.) 5:32; 6, J. North (Croydon) +5:26; 7, M. Day (C.M.) +5:13; 8, R. Elliott (Lee Bees) +5:05; 9, D. Wiseman (York) +5:05; 10, G. Cornell (Croydon) +4:58; 11, R. Paveley (Hornchurch) +4:39; 12, L. Barr (Hayes) +4:26; 13, T. Faulkner (Sheffield) +4:17; 14, P. Beer (St. Albans) +3:50; 15, R. Burgess (Bristol & West) +0:05. **Glider.** 1, M. Bayram (Lincoln) 9:00 +3:17; 2, G. Ferrer (Swindon) +3:15; 3, A. Wells (Hornchurch)



SOUTH MIDLAND AREA GALA: Above left, 3rd in free style multi aerobatics, Dennis Hammant's Hermes original, used Merco 61 II power and Kraft KP6 proportional radio. Left: entered in single channel Spot Landing event, Whitehead of Chingford M.A.C. with Goldberg Skylane, used MacGregor radio like many others, and Cox Medallion .049—Q.Z. silencer very effective.

CHOBHAM SUMMER GALA open glider class winner was Ron Burgess of Bristol & West with a 3:57 fourth flight in deciding fly-off.

+2:59; 4, . Boom (Congleton) +2:42; 5, J. Wright (Northern Heights) +2:31; 6, C. Hayward (Croydon) +2:27; 7, D. Wiseman (York) +2:20; 8, J. Baguley (Hayes) +2:13; 9, A. Lawes (Southampton) +2:00; 10, A. Crisp (Croydon) +1:41; 11, D. Wisher (Croydon) +1:35. **Multi Channel R/C.** 1, P. T. Waters (S.W.R.C.S.) 2416 pts. 2, E. Johnson (Larkhill) 2403 pts. 3, D. Hammant (Grimsby) 1965 pts. **Single Channel R/C.** 1, L. Benstead 55 pts. 2, J. Wylie 61 pts. 3, M. Daish 72 pts.

Northern Heights Gala simply was not the same event this year and we'll not expand on the reasons but establish right now the facts that the gala WILL be held in '67, on September 10th with the *Queens Cup* for Radio Control. Such is the trend. Downwind woods took a toll of free-flighters including helicopters and vintage types, but not enough to deter the experts who overshot the foliage to land among the bungalows in the village! Combaters and spot landing R/Cers enjoyed their day no less hazardously. Mid-air collissions seem to be all part of the combat game, and some of the post-contest multi-channel flying was decidedly dodgy. It's no fun close to an 8 lb. monster on an inverted pass!

The bright spots of the day were undoubtedly Ray Monk's collection of the Championship and *Queen's Cup*, R. Merryfield's spot landing with imitation radio controlled *Banjo* and the magnificient B.E. 2e in Concours d' Elegance from M. Clements.

NORTHERN HEIGHTS MODEL FLYING CLUB GALA 1966 RESULTS

Open Glider "Flight" Trophy. 1, D. Bailey (Swindon) 9:00; 2, A. Wisher (Croydon) 8:34; 3, G. Ferer (Swindon) 7:10. **Open Rubber "Fairey" Cup.** 1, J. Berryman (Bristol and West) 9:00+5:40; 2, R. Lennox (Birmingham)+5:35; 3, D. Pavely (Hornchurch) +4:40. **Open Power "de Haviland" Trophy.** 1, G. Fuller (St. Albans) 8:49; 2, T. Payne (Northampton) 8:31; 3, P. Perry (Birmingham) 7:45. **Queen's Cup (F.A.I. Power)** 1, R. Monks (Birmingham) 9:00; 2, D. Pymm (Walsall) 6:55; 3, B. Blizzard (Stevenage) 5:47. **½A Power.** 1, R. Baggott (Birmingham) 9:00; 2. D. Pepperell (Stevenage) 8:02; 3, R. Monks (Birmingham) 7:42. **Helicopter 'Thurston" Trophy.** 1, A. Cooper (St. Albans) 6:54; 2, R. Bail (C/M) 4:28; 3, G. Walker (Birmingham) 4:12. **Radio "Flying Review" Cup** 1, K. Merryfield (Southend); 2, B. Burt (Hillingdon); 3, G. Saw (Esher). **'A' Combat "Keil" Trophy.** 1, Pollard (Feltham/Hayes); 2, Ledger (Heanor); 3, Hunt (Heanor); 3, Eagling (Luton). **½A Combat.** 1, Heather (Feltham/Hayes)/ 2, Pollard (Feltham/Hayes); 3, Peake (Feltham/Hayes); 3, Stevens (Feltham; Hayes). **Gala Champ—"Aeromodeller" Trophy** R. Monks (Birmingham).

RESULTS East Anglian Gala R.A.F. Upwood. 21st August 1966

Combined F.A.I. (29 entries) 1, J. O'Donnell (Whitefield) 15:00; 2, P. Bayram (Lincoln) 13:50; 3, B. Halford (Norwich) 13:26. **Glider** (44 entries incl. 13 no score, 7 trebles) 1, B. Halford (Norwich) 9:00+2:00+1:57; 2, J. O'Donnell (Whitefield) +2:00+1:54; 3, A. Young (St. Albans)+1:55. **Rubber** (26 entries incl. 8 no score, 11 trebles) 1. R. Paveley (Hornchurch) 9:00+2:26; 2, G. Tideswell (Baildon)+1:21; 3, R. A. Wells (Hornchurch)+0:18; **Power** (20 entries incl. 8 no score) 1, N. Witchell (St. Albans) 9:00; 2, V. Taylor (St. Albans) 8:29; 3, B. Martin (Tynemouth 7:56. **Coupe d'Hiver** (8 entries incl. 3 no score) 1, J. O'Donnell (Whitefield) 4:54; 2, D. White (York) 4:37; 3, M. Dilly (Croydon) 4:32.

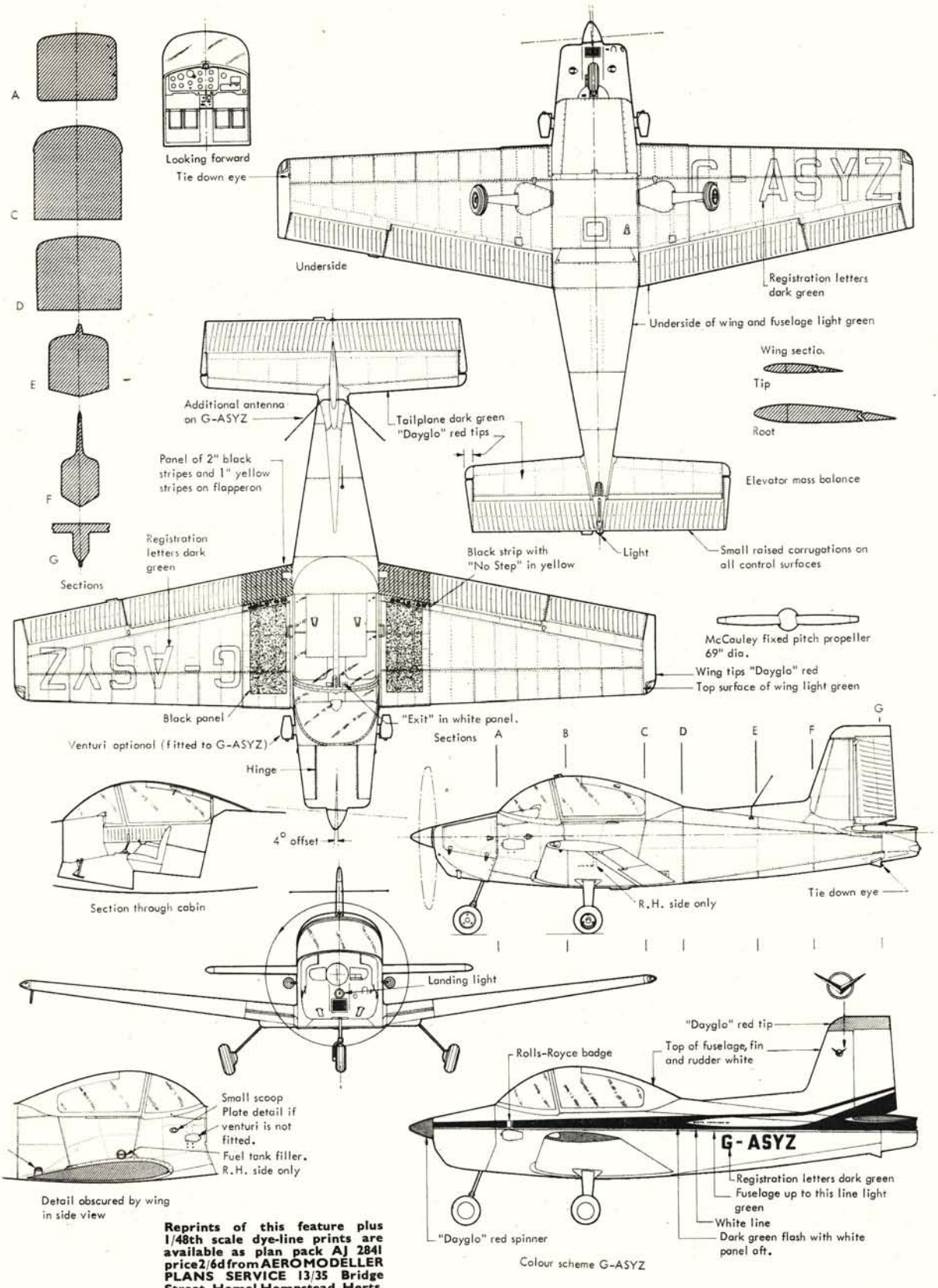
RESULTS Chobham Summer Gala 28/29 August 1966

Vintage 1, J. Mayes (South Bristol) 7:36+1:42; 2, G. Abbott (York) 7:36+Lost Model. **Coupe d'Hiver** 1, J. North (Croydon) 5:25; 2, G. Cornell (Croydon) 4:39; 3, J. O'Donnell (Whitefield) 4:34; **½A Power** 1, J. O'Donnell (Whitefield) 8:56; 2, G. Cornell (Croydon) 6:56; 3, J. Boxall (Croydon) 6:11. **A1 Glider** 1, J. O'Donnell (Whitefield) 6:14; 2, A. Crisp (Croydon); 3, C. Morris (St. Albans). **Open Power** 1, J. O'Donnell (Whitefield) 8:55; 2, J. West (Brighton) 8:40; 3, J. Boxall (Croydon) 8:20. **Combined F.A.I.** 1, J. O'Donnell (Whitefield) 13:34; 2, C. Morris (St. Albans) 12:42; 3, A. G. Young (Croydon) 12:21; 4, R. Elliott (Lee Bess) 12:19. **Chuck Glider** 1, A.T. Slater (Leatherhead) 4:15; 2, A. L. Rogers (Leatherhead) 3:28. **Open Glider** 1, R. Burgess (Bristol & West) 9:00+3:57; 2, A. R. Wells (Hornchurch)+2:58; 3, C. Foss (Brighton)+2:25; 4, C. Grieg (East Grinstead)+ 2:16. **Open Rubber** 1, F. G. Sharp (Blackheath) 9:00+5:30; 2, D. Hipperson (Croydon)+5:20; 3, R. Pavely (Hornchurch)+4:56; 4, D .Wiseman (York)+3:45; 5, C. Foss (Brighton)+3:30; 6, J. Clements (Baildon)+2:24. **Gala Champion** 1. J. O'Donnell (Whitefield) 54:16; 2, G. Cornell (Croydon) 45:45.

RESULTS RAF Topcliffe Northern Area Meeting, 25 September

Vintage (14 entries). 1, G. Tideswell (Baildon) 8:52; 2, R. Hymes (Teeside) 8:04 3, L. Roberts (Lincoln) 7:45. **Tony Pannett Memorial** (open Power) 21 entries 1, R. Monks (Birmingham) 9:00+4:32; 2, M. Green (Lincoln) +4:30; 3, R. Peers (Congleton) +2:51; 4, R. Lea (Congleton) +2:31; 5, B. Hooley (B.A.C. Warton +2:10. **Coupe d'Hiver** 9 entries 1, D. G. White (York) 5:18; 2, J. O.Donnell (Whitefield) 4:47; 3, S. Fitzpatrick (Baildon) 4:34. **A1 Glider** (14 entries) J. O'Donnell (Whitefield) 9:00, 2, M. Reeves (Lee Bees) 8:57; 3, R. Monks (Birmingham) 6:59.

NORTHERN AREA MEETING, RAF TOPCLIFFE, below, left to right, Gerry Tideswell of Baildon with winning vintage entry—N. Blacklock's 1940 Gutteridge Trophy winner from APS plan. Is so close to original it does not have a prop stop—as 26 years back! D. Wostenholme of East Lancs flew a Laurie Barr "Pinocchio" to sixth place, had take off problems. Right is Keith Harns, very happy with relatively ancient Dennymite powered model.



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Drawn by Ian R. Stair,
Traced by A.A.P. Lloyd

Scale ft

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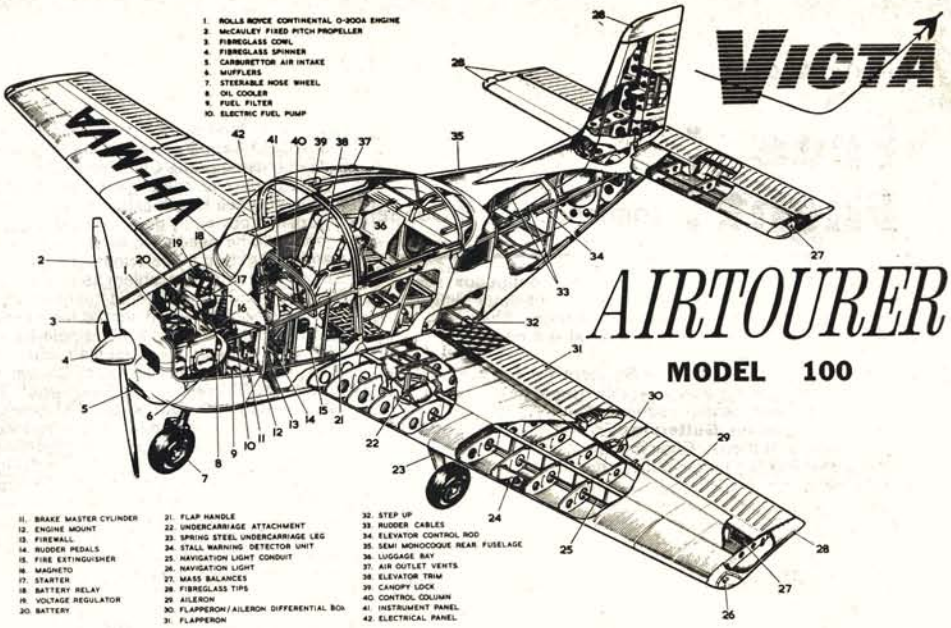
NUMBER 156

DRAWN BY I. R. STAIR

VICTA AIRTOURER

MODEL 100



Cutaway drawing and photograph below illustrate the angular yet attractive lines of this Australian lightplane. Emblem on fin of 'TJC is that of London School of Flying at Elstree. It carries standard size fuselage letters.

IF EVER a lightplane could be said to have been done less than justic in the hard commercial world, then it would certainly be the Victa Airtourer, the first ever Australian venture into lightplane production. For the simple facts are that no sooner had its sales prospects reached such proportions that it became a threat to the export field of the big American lightplane manufacturers, then it was virtually squeezed into removal from the market.

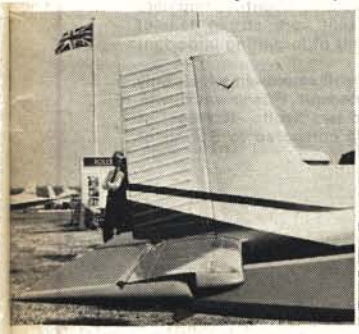
The design actually originated in the 1952 design contest organised by the Royal Aero Club for a cheap two seat tourer. Henry Millicer's winning entry was a wooden aircraft, and was eventually made in '60. The Victa company, more famous for their rotary mowers, undertook quantity production of the metal re-design and the result was almost instant success. For the Victa offered, at the right time, an aircraft that was tough, easy to fly, stressed for and capable of aerobatics, using the reliable Rolls Royce Continental 0-200-A flat four cylinder aircooled engine of 100 h.p. and highly adaptable as a school trainer.

It had unusual ailerons and "flaperons" in that the flaps move in conjunction with the ailerons when depressed to give full span operation for slow speed conditions. There is a small split flap as well, under the fuselage. This in turn produced comparatively small wing area, and correspondingly large tail area percentage so that the general proportions make it very much a scale modellers' dream, particularly for free flight or radio control.

Structural features of the Airtourer are extraordinarily simple. The fuselage is slab sided with a series of straightline tapers and apart from the large cockpit canopy which demands experiment in model sizes, there is nothing to deter the modeller who wants to get quick results. This extends to the spring steel Whitman undercarriage and even the central control column, shared by the pilots. At first viewed with suspicion of feeling "off-centre" in action, the control system did in fact gain lots of praise.

Nine Airtourers of the 100 version appeared on the British register, plus another of the more powerful 115 version G-ATHT. We wrote to each of the owners for their colour schemes but alas they seem to have lost all interest and only one replied. This club referred us to another periodical and appeared unable to describe their aircraft colours. At least we can add to the info on the drawing that G-ATJB based at Tollerton is Chocolate and White with Chocolate on tips and spinner whilst 'TJC at Elstree is Blue and White. Other registrations are G-ASYZ, —the demonstrator with smaller fuselage letters, at Swansea, 'TEX at Merioneth, 'TGC, at Newtownards (plain red and white), 'SZA at Cardiff, 'TCI and 'TCL at Sunderland and 'TCK at Biggin Hill which is similar in colour to 'TJB except for red spinner and tips and buff lower fuselage and undersides.

Span: 26 ft. Length: 20 ft. 9 in. Height: 7 ft.



One piece elevator and tail plane make the Airtourer ideal as a scale model subject. Surfaces are externally fluted at angles for rigidity. Landing lamp in the nose of 'SYZ, the demonstrator is one of few external changes among Airtourers.

Free Flight: comment by J. O'Donnell

PROVIDING coverage of the almost continuous series of contests held in recent weeks has obvious difficulties—not the least of which is space limitation. The worst of all events to describe are the area-centralised contests—of which there have been two.

I flew both of these with the Northern Area at Elvington. The August 14th meeting was very slow to get underway as a stiff breeze blew onto some rather difficult retrieving country. I concentrated on the **Gutteridge** (Wakefield) as it counted for the season's National Championship, but started flying too early and expended much effort in producing a mediocre score. The time was not wasted as it stopped my flying glider until after 5 o'clock by which time the weather was much improved. The use of two models then enabled me to record a treble in 35 minutes flat.

The flyoff was entertaining enough as Brian Baines, Dave Wiseman and I lined ourselves out downwind of those test flying. We consequently all launched into the same well marked thermal. Brian's model "fell out" whilst "Wiz's" and mine went up. I had the slower running D.T. timer so went O.O.S. at 7:48. "Wiz" was not pleased at having D.T.'d in sight!

The most disgruntled story came from Wallasey where three members recorded good scores in the Team Power only to have their 4th member decline to stop at the field long enough to fly.

The next Area meeting on 11th September, suffered from other events being staged simultaneously. These were the **Clwyd** Re-fly and the **Northern Heights Gala**—both reported separately in "Round the Rallies". London Area, upset at the choice of date for N.H.G., decided that Chobham was to be the official Area Venue. This left Halton as a *non*-area venue and hence ineligible to count for the S.M.A.E. events. Prospective entrants therefore had the choice of "prestige" or prizes. I decided that the chances of a hat-trick in the Queens Cup were worth less than the National Championship—and went to Elvington again. One person managed to get the best of both worlds—Dave Hipperson, who flew at *both* Chobham and Halton!

Ray Monks decided to "give" me the Championship by going to N.H.G. (and collecting the **Queens Cup**). This was very cleverly judged as I did enough (13:22) in the Area A/2 event to stay in front regardless. Even so, it wasn't top at Elvington as Bobbie Howarth did 13:43. Weather was as near a "still air" day as I've seen for a long time, and was reflected by no flyoffs in Power and only 5½ minute ones in the **Farrow Shield.**

The only full house team score reported to me is by St. Albans flying at Chobham. Brian Dyke, Bruce Rowe, Pete Putnam and Roger May all went on to record respectable flyoffs "just in case". Croydon were very close, only missing out by 2 or 3 seconds—Ken Smith being the unlucky man.

The **East Anglian Gala** on 21st August was once again held at R.A.F. Upwood and attracted widespread, although not particularly numerous, attendance. Early morning weather was almost unbelievable, being calm, sunny and with plentiful lift. Activities were curtailed for an hour in the afternoon by the take-off of a Fairey Delta/Concord. By the time *model* flying was allowed to recommence the sky had clouded over and it had become quite breezy. Not very long afterwards the rain, through which many competitors had driven, arrived at Upwood—and continued until dark.

Flyoff prospects were hardly encouraging—but six out of the seven glider qualifiers made their extra flight in the rain. Barry Halford and I succeeded in tying for first place with exactly two minutes—and had to make yet another flight. This gave victory to Barry by just three seconds.

Rubber had eleven trebles, and only three flyoffs! Ray Paveley won with 2:26 O.O.S. and spent till dark vainly trying to locate the model. (The R.A.F. found it on the 'drome the following day). Second was Gerry Tideswell with his small rough weather model, whilst Bob Wells (who damaged a prop blade on his car door whilst trying to obtain shelter during winding) recorded a nominal score. The remainder decided that conditions were too bad, even though they did provide a solution to the rubber flyoff problem.

Power (won by Nigel Witchell), Coupe d'Hiver and F.A.I. didn't need flyoffs, which was probably just as well.

The August Bank Holiday weekend saw the staging of a two day **Chobham Summer Gala** to cater for free-flight modellers disinterested in the C/L World Champs. I went to Chobham via Swinderby and came away very doubtful about the practicability of tuned length exhaust systems for *F.A.I.* Power. A lot of work had obviously gone into the C/L Speed Systems, and even more will be needed to extend it for f/f, where trim difficulties and in-flight r.p.m. determination must complicate the problem. *Open* power is no problem as it is quite easy to "overpower" a model to the stage of being "untrimmable."

The Chobham event should have been called the "Hipperson Rally" as it was run virtually single-handed by Dave (apart from the periods when he made his rubber flights). Support seemed down compared with a normal Chobham Gala, but was blamed more on holidays than Swinderby! The weather was quite flyable although rather windy at times, and decidedly wet at intervals on the Monday. I had a very hectic time, especially as Ginger Cornell was making a determined attempt for the Gala Championship. We both ended up flying Coupe d'Hiver models in open rubber to increase our aggregates. Andy Crisp also started off with championship hopes—but wasn't helped by losing two models.

One novel feature was the holding of the combined F.A.I. event over both days. Fliers could split their flights how they liked, and could double them with other events.

The only events with perfect scores were glider (won by Roy Burgess with a 3:57 flyoff) and rubber (in which George Sharp had a slightly higher O.O.S. score than Dave Hipperson who used a 300 sq. in. model for the flyoff). Two other events also had a fourth flight! Vintage had a tie at 7:36 between John Mayes who made a "flyover" with his Elfin powered "Thorobred", and Gerry Abbot who lost his "Bazooka" on its third flight. The A/1 event was officially won by Andy Crisp—but his final flight was mis-timed and he declined to accept first prize.

The only "blank" weekend in this period was that provided by the cancellation of the **Northern Gala**—due to difficulties in obtaining an airfield. Neither venue *nor cancellation* had been announced publicly—but there were people who assumed that it was Church Fenton as usual and made a wasted journey. The weather was pretty bad so at least they didn't miss much flying!

A similar lack of general distribution applies to information concerning the f/f Trials. At the time of writing (mid Sept.) the position is that the first Trials (1st & 2nd Oct.) have been cancelled due to military exercises at Everleigh, that the November Trials will be held at Topcliffe with a very tight schedule of short rounds, and that another meeting will be held in the Spring.

British representation at this Summer's International f/f contests has been provided by private venture parties. Last month's "World News" described the Yugoslavian contest at Lesce Bled, attended by George French, John West and Dave Welch. They commented that other countries had sent their World Championship Teams, and there were certainly many well-known names on the results list. Straight fuel *has* cut down rates of climb—but has also led to tuning troubles being commonplace. The "big threat" expected from the Italian Team failed to materialise for just this reason.

Andy Crisp and Bob Bailey (who sent me details) also went on a continental tour and managed to attend *two* events for much less mileage. The first was a French contest held near Amiens on 14th/15th August on an excellent field with warm weather but 20 m.p.h. wind. Attendance was good.

The French glider towing technique of using an off-set tow-hook to permit a circling tow whilst waiting for lift was seen. The standard continental Wakefield trim seems to be right climb/left glide and eliminates the need for wing warps to control the initial power burst. Some of the power models including the winner had spiral type climbs and featured auto elevator, but *not* auto rudder.

The only British success was Andy Crisp's third in Wakefield with 732 seconds—about a minute behind the winner.

Andy and Bob then went on to a German contest held the following weekend at Homberg near Saarbrücken. The field was extremely small, even unsuitable, but the weather was very calm and lift weak. Again many participating countries had held selection trials and consequently sent very strong teams! Organisation was intricate to the extent of forgetting important parts of the processing.

The Wakefield event went to one flyoff round—in which only the German winner cleared the 4 minute mark. Power was flown-off in the same good air and needed two flyoffs—R. Hagel of Sweden proving the winner with 4:45 compared to Spring of Switzerland who did 4:20.

CLUB & CONTEST NEWS

FLYING DISPLAY ON H.M.S. HERON

A team of aeromodellers from Bristol, Chard, and Ilminster provided one of the highlights at R.N.A.S. Yeovilton, Somerset, (*H.M.S. Heron*) Open Day and Flying display. The crowd 12,000 strong were treated to two displays, one before and one after the full size Navy air display. Mr. Taylor of Ilminster gave some fast flying shows with his Model Airplane News plan. *Sidewinder* delta radio control model and Mr. Trotter gave the aerobatics a brush over with an *A.P.S. Uproar*, and Mr. Bond of Westlands with an A.P.S. Gypsy Moth.

Radio control flight demonstrators from Bristol, Chard, and Ilminster who gave a good show to the 12,000 strong crowd of spectators.

S.M.A.E. STRENGTH

From papers just released by the S.M.A.E., the actual number of clubs registered is lower this year than in the past, but on the whole, membership is pretty static being only 169 members less, than for '65. 28 clubs had not renewed their membership and this reflects fairly and squarely upon club officials who are obviously losing heart and letting clubs fall into a stagnant condition with members gradually drifting away.

Several clubs did not reaffiliate *any* of their members prior to June 1st. and have lost their voting power on the strength of this for the next A.G.M.

A breakdown of S.M.A.E. membership as of July 30th is as follows, with last years figures in italics. Full members in clubs 1523 (*1509*). Associate members in clubs 1371 (*1205*). Country members 208 (*448*). Associate members not in clubs 359 (*468*). Total membership of Society 3461 (*3630*). Total number of clubs (not including new clubs) 174.

Individual club voting strengths show a change from last year, Wanstead Warhawks 52, St. Albans M.A.C. 34, Lee Bees M.A.C. 34, Bald Eagles M.A.C. 32, Feltham & Dist. M.A.C. 32, Northampton M.A.C. 27.

A recognised S.M.A.E. club is one with five members of whom at least one must be a full member. As well as belonging to a well organised body, S.M.A.E. membership brings such additional benefits as insurance coverage, organised contests, and a news-sheet if you are a full or country member. Every member can have a say in the Society, even the Associate by going through his club and area delegate to the society Officers.

LEICESTER SOCIAL AND CONTEST

Leicester M.A.C. are holding their Annual Social and Re-Union on December 6th at the Glen Hall. The Rythmichords provide the music to which is added party games, dancing etc. Last year this function was attended by over 100 past and present modellers, so it should be a good do. Leicester Education Committee are running a course on radio control modelling at the Wycliffe Further Education Centre, this shows a welcome outlook in the right place. It is a pity this attitude is not more widespread. Let's hope all the locals can get in and no one gets crushed in the rush. Gala Day at R.A.F. Barkston Heath by loan of Grantham M.A.S. had almost all types of bad weather, wet until 2 p.m. with low 180 ft. cloud, then high winds. In the Open Glider event D. Sirrell lost his glider in the clouds at 49 secs. having also lost it at the Nationals when it was recovered five weeks later. In Open Power, Frank Barnett had a slight (slight!) engine over run of 24 secs, losing itself after 12 secs in low cloud. John Randall should have won the stunt comp as his open power model had a considerable variety of stunts including three consecutive barrel rolls and loops. Unfortunately each of the three control line classes only had a single entry.

Film Show and Display

St. Albans MAC have been busy winning more contests this season, all free flight, of course! including Helicopter at the Northern Heights Gala, where ex-team race pit man Allan Cooper took the honours. They have stopped all power flying at Nomans Land Common except between 10 a.m. and 7 p.m. due to noise complaints from local residents. Most of the noise is caused by unattached local radio flyers who are flying models up to 15 minutes' duration. However, they hope to make arrangements with the local council whereby they can fly power models with 10 second engine runs and silencers outside the hours allocated. An exhibition of model aircraft was staged at a local cinema in conjunction with the *Mag. Men* film and this combined with George Fullers' performance in class B free flight at the *USA Nationals* has given them a large amount of press coverage. They hope this can be used to advantage with the local Council when the time comes for getting restrictions lifted.

Scottish Radio Control Champs

Organised by Kirkcaldy MAC. sponsored by Leven Town Council and the SAA, the Scottish National Radio Control Championships, held on August 21st, had 15 entries and the Multi winner won the Caledonian Cup presented by Tennent Caledonia Breweries Ltd. Results: Multi Channel: 1, J. Cooper (Sutton Coldfield) 1778; 2, B. Purslow (Larcas) 1717; 3, I. Dunn (Perth) 1638. Intermediate, 1, A. Lewis (Perth) 621; 2, K. Hall (Kirkcaldy) 550; 3, D. Muir (Edinburgh) 70. Single Channel, 1, A. Oakley (Firth of Clyde) 354; 2, P. Malone (Edinburgh) 200; 3, D. McIntyre (Irvine) 115.

TWO CONTESTS CANCELLED

The first Free Flight Team Trials due to have been run on Oct. 1st and 2nd were cancelled due to no suitable venue being available on the date, and the Free Flight Sub Committee were unable to resolve the situation. The second Trials on November 5th and 6th are to be at RAF Topcliffe, Yorkshire. Also the East Midland Area Speed and Combat Rally to have been held at RAF Barkston Heath, October 9th was cancelled, unfortunately these notices reached our office too late for inclusion in October issue. Rally organisers should note: if a contest has been advertised in the *Aero Modeller*, readers will assume it's still on, unless they see a cancellation. Organisers should be aware that a notice sent to us a week before the event cannot be published in time, so remember, keep us informed *well in advance*.

N. AREA GEN

"Northern Area News", the free flight newsletter, has 18 pages in its September issue, including five designs, Chris Jackson's model box and rubber model winding holder. Contests are reported in detail, and one page gives basis details of six French Coupe d'Hiver models. Frank Anderson, Editor of the Canadian "Airfoil" newsletter, gives some interesting notes on the tuned length of racing engine inlets and exhausts, but most of this seems to be generalisation rather than proven facts with models and engines. After watching the USA tuned length pipes in action at the World Control Line Championships, we wonder how free flight men will get over the 10- to 15-second coming-in period whilst the model picks up speed and r.p.m. An interesting news sheet at 9d. an issue. Available from Ron Firth, 30 Struan Road, Sheffield 7, Yorks.

Coming Events

October 23	*Northern Area F.A.I. Meeting.* R.A.F. Topcliffe, Yorkshire. Rubber, Glider, Power, Team Race, Combat and Stunt. These events are all run to F.A.I. rules. Selby & District Concours Trophy for Scale.
October 23	*Torbay Autumn Rally.* Woodbury Common, Nr. Exmouth. Open Rubber, Gliders, Power, Chuck Glider and A/1 Glider. Field entry, re-entry allowed.
November 5 & 6	*S.M.A.E. Free Flight Team Trials.* R.A.F. Topcliffe, Yorkshire. Pre-entry to:— S.M.A.E. Competition Secretary.
November 6	*Wharfedale Class "B" 1000 Lap Team Race.* R.A.F. Rufforth, Nr. York. Pre-entry to:— Mr. Hughes, 73, Western Drives, Offley, Yorks.
November 13	*Richmond Gala.* Chobham Common, Surrey. Open Rubber, Glider, Power, a/1, Coupe d'Hiver, ½A Power, Chuck Glider Combined F.A.I. Spot time, closest flight to a sealed envelope time, for any event.
November 20	*Welsh Rally* North Cefn-Bryn Common, take A4118 from Swansea, then right along B4271. Open Rubber, Glider, Power and Chuck Glider.
December 4	*Crawley Winter Rally.* Chobham Common, Surrey. Coupe d'Hiver, A/1 Glider, Chuck Glider.

NOTE TO ALL CLUB SECRETARIES
A master list is being compiled for 1967 contests, so to avoid date clashes please notify Aeromodeller as soon as possible about your rally. Send date, venue and road numbers, also events and pre-entry address. *Clubman.*

S.M.A.E. Contest Results

March 27th (Area Centralised), note these are the final and official results. *F.A.I. Glider.*—K & M.A.A. 1, J. Allen (Brighton) 2:20; 2, C. Foss (Brighton) 2:17; 3, J. Edwards (Croydon) 1:39; *Open Power.*—*Frog Senior.* 1, G. Head (Lee Bess) 4:27; 2, A. Moss (Whitefield) 1:23; 3, T. Payne (Northampton) 0:57; *Open Rubber* 1, H. Tubbs (Baildon) 4:17; 2, J. O'Donnell (Whitefield) 4:01; 3, W. Horton (Crawley) 0:47. *Coupe d'Hiver* 1, P. Cameron (Crawley) 2:55; 2, A. Crisp (Croydon) 0:51; 3, M. Brown (Maidenhead) 0:20.

April 17th (Area Centralised). *Open Glider.* 1. D. Yates (Wigan) 9:00+2:11; 2, M. Pressnell (Essex) 8:49; 3, L. Moore (W. Coventry) 8:45. *Open Rubber*—(Gamage Cup) 1, J. Clements (Baildon) 9:00+3:57; 2, A. Wells (Hornchurch) 3:28; 3, B. Day (Walsall) 3:11. 4, D. White (York) 2:27. *F.A.I. Power—Halifax Trophy.* 1, D. Edwards (St. Albans) 13:42; 2, A. Percival (Grantham) 13:40; 3, S. Savini (Wallasey) 13:28.

July 17th All scale Meeting R.A.F. Swinderby. *Control Line* 1, A. Day (Handsworth) Beagle Airdale 663 pts.; 2 B. Ball (Wanstead Wh'ks) Grumman Gulfhawk 597 pts. 3, H. Carter (Tamworth) Little Toot 532 pts.
Free Flight (*Superscale Trophy*)
1. T. Manley (Blackburn Aircraft)—Bristol Fighter 727; 2, E. Coates (Blackburn Aircraft)—Jungmann 645; 3, R. Jarvis (C/M)—Sopwith Schmider 596.

August 14th (Area Centralised) *Team Power—Keil Trophy* 1. Brighton 28:54; 2, Whitefield 28:15; 3, Cambridge 26:55, *Open Glider* 1, J. O'Donnell (Whitefield) 9:00+7:48; 2, D. Wiseman (York)+6:28; 3, R. Pollard (Tynemouth)+5:08; 4, B. Baines (York)+3:19; 5, M. Woodhouse (Norwich)+3:10; 6, A. Wisher (Croydon)+0:10. *F.A.I. Rubber—Gutteridge Trophy* 1. M. Dixon (Birmingham) 12:17; 2, R. Elliott (Lee Bees) 12:14; 3, R. Monks (Birmingham) 12:06. Radio Control Multi (Leigh Flats, Southend) 1, E. Johnson (Bristol) 5368:5; 2, P. Newitt (Larcs.) 5026:5; 3, F. v.d. Berg (Bromley) 4995.

Stunt finalists at the R.A.F. (Germany) M.A.A. Championships, right 1st, Louis van de Hout (Netherlands) with his large semi-scale Mustang stunter as flown at the World Champs and Cpl. Jones (Laarbruch) 2nd who is said to have a rapidly improving standard of flying.

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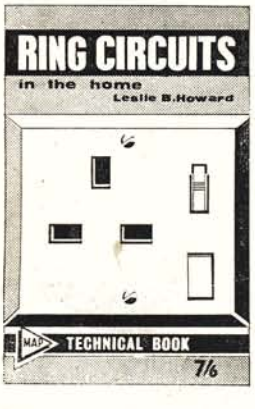

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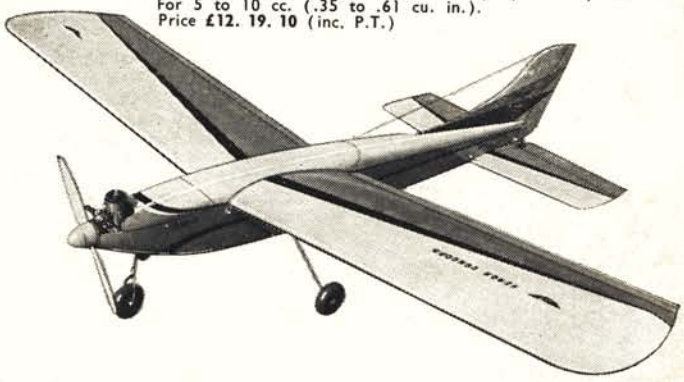

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