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OCTOBER 1968

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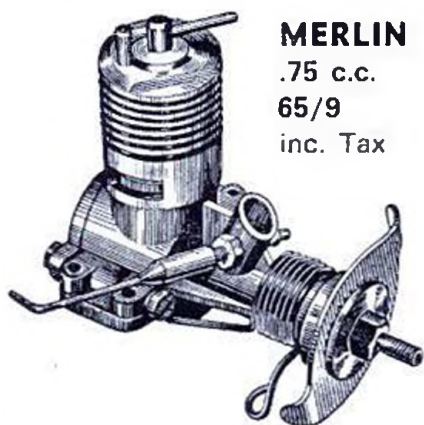
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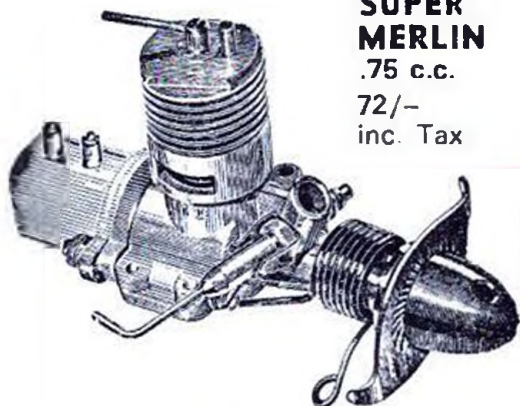
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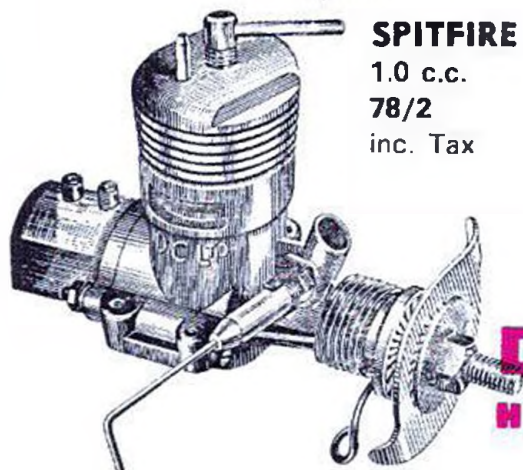
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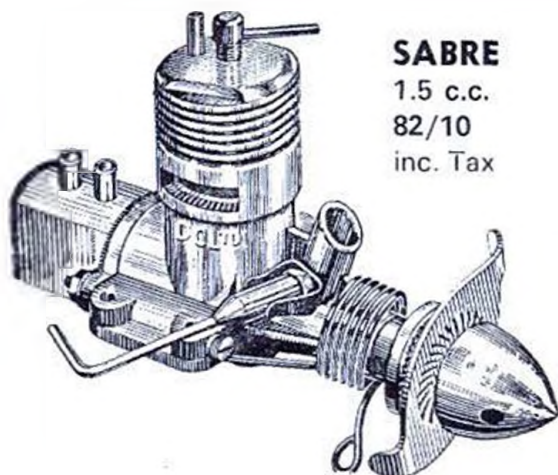
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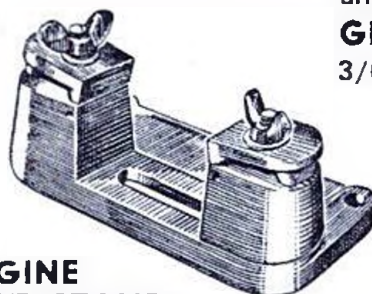
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Aero Modeller

INCORPORATING
MODEL AIRCRAFT

October 1968

VOLUME XXXIII No. 393

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MECCANO MAGAZINE

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COMMENT

Creative hobbies and physical sports are, in theory at least, beyond the sphere of political influence. In our experience at many World Championships, the spirit of aeromodelling has overcome all the differences found in National characteristics and a wonderful feeling of brotherhood pervades the scene. In the same way, this journal normally has no place for comment on International politics, unlike our contemporaries from Soviet zone countries who are constantly extolling the virtues of their singular party. But this is not a normal month and for the first time in almost thirty years we find ourselves obliged to condemn the oppression of a Nation for the sake of Political difference. The names of Czechoslovakian modellers are well known. They are among the leaders of creative design in most classes of aeromodelling. World Champions and record holders, skilled organisers, engine makers and hospitable hosts, the Czechs possess natural affinity with the British personality. So it goes without saying that our thoughts have centred upon the sad events of August in Czechoslovakia. To all our friends in that country we say hold on - the whole world of aeromodellers is saddened by your situation. They will never forget your plight.

Cover

'Madame Elijah', the first of Sir Francis Chichester's Gipsy Moths and the aircraft in which he made those adventurous flights to Australia from New Zealand to Australia and to Japan from Australia, is perpetuated by John Bertola's painting. John's radio controlled scale model is described on pages 537-539.

Next month

Technical Topics from the World Champs, a survey of the new thermal soaring R/C Gliders, highlights of the U.S. Nationals, plus all the regular features - out on 18th October.

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Super MonoKote covers a model faster and easier than any other covering material, yet it gives a high gloss professional appearing finish that you can be proud of. It's strong and tough, easy to clean, fuelproof and simplifies patching over repair jobs. –

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Dr. WALT GOOD
(R/C Pioneer)

When a covering material does all that it is required to do and then adds a bonus of a fine-looking colourful machine, it takes top in my shop. – **WALT SCHRODER** (Editor M.A.N.)

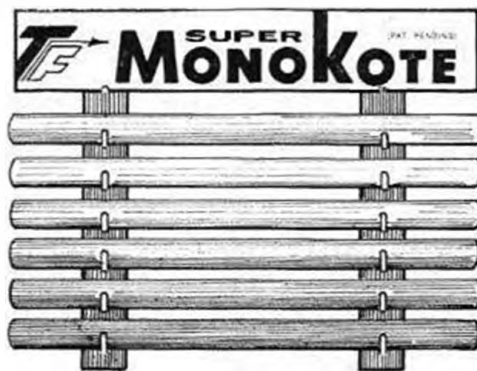
Super MonoKote has been tested for over a year on my radio controlled gliders... I consider Super MonoKote to be the best all-round covering material... –

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There is absolutely no question that Super MonoKote is the fastest known method of finishing a model aircraft... – **DON DEWEY** (Editor American R/C Modeller)

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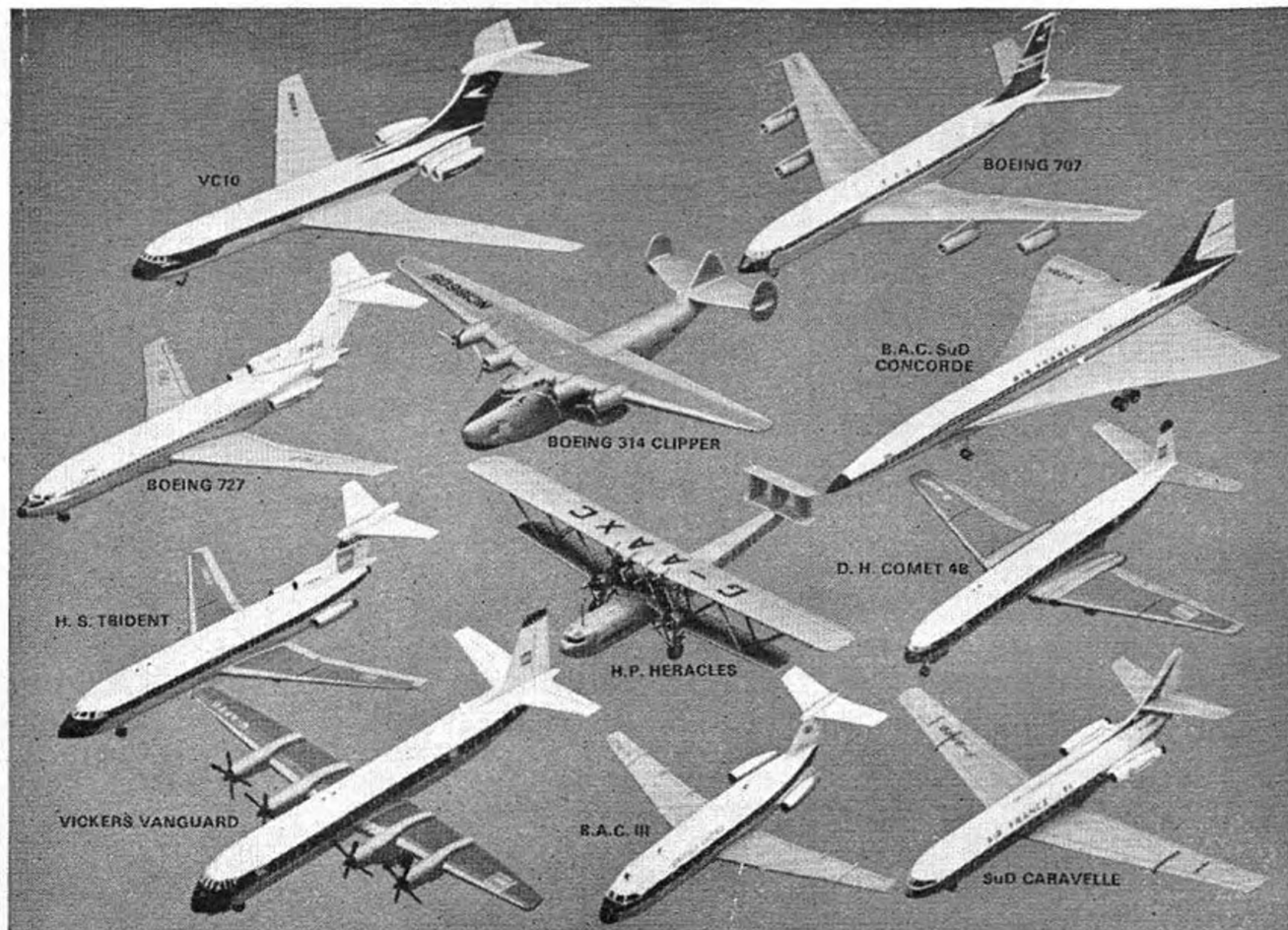
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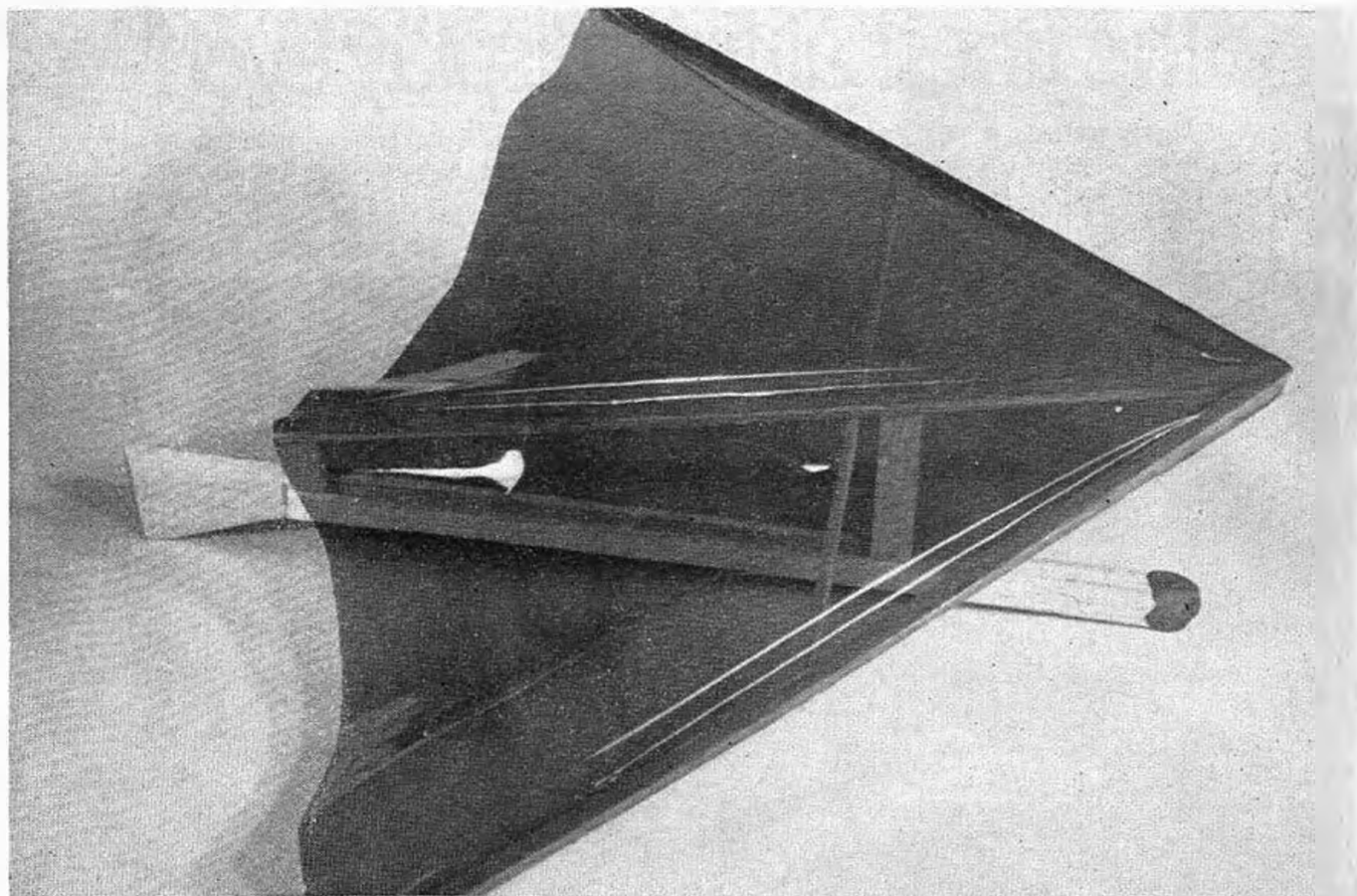
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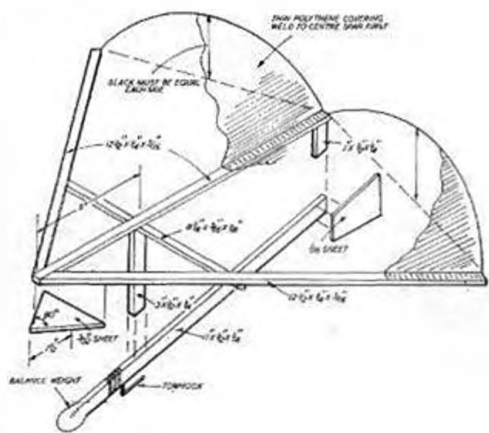
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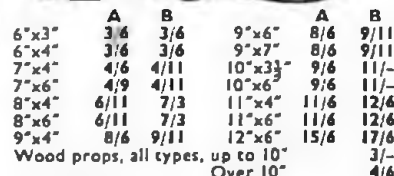
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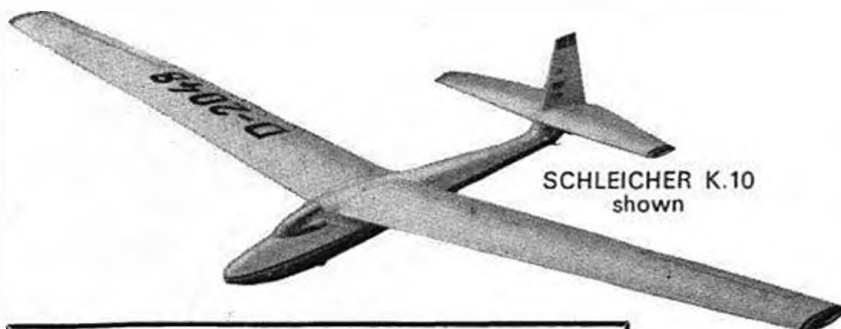


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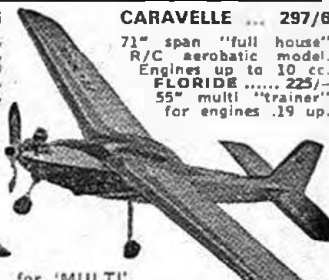
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31" DORNIER Do27 ... 103/6
38" FOCK WULF Fw190 ... 125/0
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KINDLY MENTION 'AEROMODELLER' WHEN REPLYING TO ADVERTISEMENTS



Heard at the HANGAR DOORS

Aeromodeller Bill Cole of West Essex built his own Jodel Bebe D.9 for VW 1200 cc. engine in eight months. It is the first British home-built D.9 and was test flown 20 years after the prototype appeared in France. As a stable mate it now has a Druine Turbulent for company, also unique in that it came from another aeromodeller - Peter Russell. Note those Vespa front forks - and the novel 'door' on Bill's equally home-built hangar.

BREMEN is announced as the venue for the 1969 World Champs for R/C Models. Thanks to Otger Schmolinske, Editor of *Das Flugmodell*, we learn that the V.F.W. company airfield (formerly Focke-Wulf) will be the scene for what promises to be a momentous occasion. According to our info, there will be personal participation from many more Nations than ever before. Among new names in the Championships will be those of the West German team from the host Nation. At the selection trials 16-18 August in Kehl am Rhein, the established leaders were displaced by:

1. Heinz Elsaesser (Simprop 7+1 Super Tigre + Kavan Carb)
2. Josef Wester (Varioprop Rossi + Webra T.N. Carb)
3. Wilbert Schoenfeldt (Simprop Digi 5 Super Tigre R.V. + Kavan Carb)

Kurt Bauerheim, leader in two rounds of the trials had a wing failure while looping to wreck his chances and Fritz Bosch had to be content with 4th place (and nomination as Team Manager).

SCALE international event will be held in conjunction with the World Championships, probably limited to three per Nation. Flying will be simultaneous with the aerobatic contest and it is anticipated that about seven Nations will take part; one of which is sure to be G. Britain! No dates have been set for the Championships. They are to be decided at a D.Ae.C. meeting on the site on October 5.

U.S. TEAM for the R/C Champs will be Phil Kraft, Jim Kirkland and Jim Whitley and a third 'Jim' in reserve - Jim Edwards. All three Jims are Southerners bringing new faces to the fore in the U.S. Selected at the U.S. Nats (see reports in this month's *R.C.M.&E.*), the team places were

closely fought. At one stage Pierre Marrot, visiting from France was leading the Pattern event! Also there were Harry Brooks and Doug Spreng, the Japanese champion Tsao Matsui and expatriate Dave Platt. Dave has yet another Douglas SBD Dauntless and took 2nd place with it, beaten by Granger William's fine flying with his rebuild of the veteran Nieuport 28 model. We shall have news of the Nats in next month's issue.

BELGIAN FBCA organisation is obviously not without problems. That August meeting at Genk, announced last month, was postponed indefinitely. So too was the September 2nd R/C Rally scheduled at Sywell, Northampton. This was the result of an airfield management decision. Apologies to all who had a wasted journey.

COUPE D'HIVER contestants who like to aim for the sun on the South of France ought to enter the *Coupe de la Cote d'Azur*, December 8th on Levens airfield near Nice. Large cash prizes are awarded. Entries to M. Pierre Andreis, 38 Avenue de l'Abre Inferieur, Nice, France.

£100,000 is the budgeted figure presented to Los Angeles City Recreation and Parks Commissioners by the L.A. Model Hobby Association for the replacement of model flying facilities at Sepulveda Basin. When instituted 20 years ago the Model Airport was 66 acres used for all forms of aeromodelling. The area was restricted to 36 acres and is now threatened with reduction to 24 acres. The Hobby Association stated that this could 'deprive thousands of youngsters of a place to fly and cause additional thousands of adults extensive and unnecessary inconvenience'. Their proposition is to include facilities for radio control, free flight

rocketry and model cars with a control tower and club house. It would be dedicated to the memory of Astronaut Gus Grissom.

BIG EVENT of the month is the Northern Gala at R.A.F. Lindholme. Situated on the A.614 between Bawtry and Thorne and not far from Doncaster, the meeting brings back to the North a number of events which have been missing from the Contest Calendar since 1965. Organised by the clubs of the Northern Area, S.M.A.E. the programme includes Rubber, Glider and Power duration, multi channel radio control, all classes of Team Racing and Rat Racing plus Combat Control-Line aerobatics and Free Flight Scale event postponed from windy August 18th. Admission to the airfield will be the purchase of a programme (2s.) and spectators can be assured of a fine display of the best in British contest modelling. One word of caution, not all of the airfield is available for model flying. Visitors are requested to respect the notices concerning restriction of access.

S.M.A.E. Annual General Meeting on November 16th at the Grand Hotel, Leicester will be followed by a prizegiving buffet and general 'noggin and natter' at the Barley Mow, Granby Street. Capacity is limited, tickets can be secured by application to the S.M.A.E. Ltd., 10a Electric Avenue, Brixton, S.W.9 at 10s. per head. Sounds like a grand opportunity to meet one's fellow modellers, to watch the winners collect their awards and to chew the fat over our hobby. Most critical of the S.M.A.E.'s needs is that for new labour at the helm. Many appear to have the impression that money would bring with it new membership services; but believe us, nothing can be done without more will to do the vital voluntary work.

f.a.i. control line world championships

1968

HELSINKI
FINLAND



LITTLE CHANGE AMONG THE CHAMPIONS IN WELL SUPPORTED EVENT reported by John Franklin

'GREAT' is about the only word that sums up the impression left on your reporter after attending the 1968 World Control Line Championships in central Helsinki, Finland. The event was organised by the Suomen Ilmailuliitto — Finland's Flygforbund r.y. (Finnish Aeronautical Association) and their President, Edward Wegelius, together with Finland's Minister of Education, Johannes Virolainen, opened the meeting. This ceremony actually took place after the Aerobatic event had started, but was nonetheless impressive as the 172 contestants from 21 nations lined up with their national flags in the background.

Although the weather was perfect for all four flying days and the official accommodation the best ever — the flying site was far from ideal for aerobatics. Situated on a car park area, just minutes away from the centre of Helsinki, it had the 1952 Olympic stadium at one end and tall buildings on one side, opposed by low buildings on the other. The flanking buildings formed a 'V' shape in plan view and the turbulent air conditions played havoc with the positioning of aerobatic manoeuvres. Flags flying in this area were constantly pointing in opposing directions and those with early flights were getting a distinct advantage — whilst the ultra-light Italian models were severely handicapped.

The flying site disadvantages, and to some extent a lack of 'World Champs' atmosphere because of the site's small size, were more than made up for by the organisation. Contest Director, Sandy Pimenoff, worked extremely hard with a small band of helpers and really roared through the aerobatic and team race flights — as soon as the last team racer landed, the next three were coming into the circle. Such was the efficiency, that events were started an hour later than stated in the programme for the last two days.

Practice was not allowed on the contest site during the events; but Malmi, Airport headquarters of the Finnish Aeronautical Association, was available to those with transport and many modelers made use of the Olympic Stadium car park area. Malmi even boasted a model shop and clubhouse that was open to all contestants.

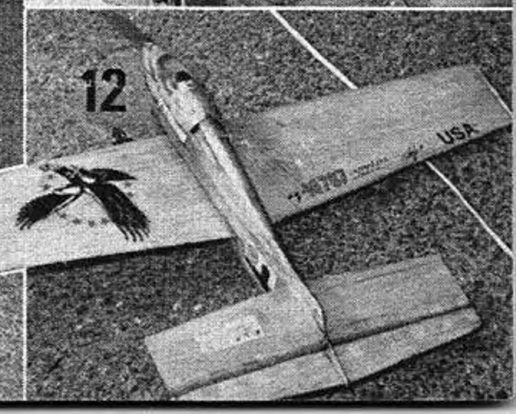
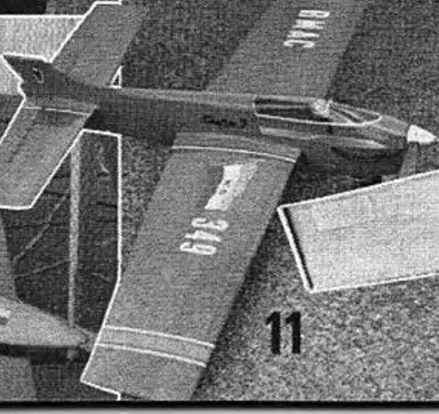
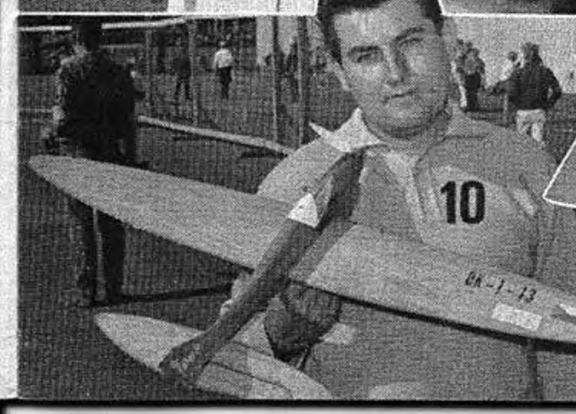
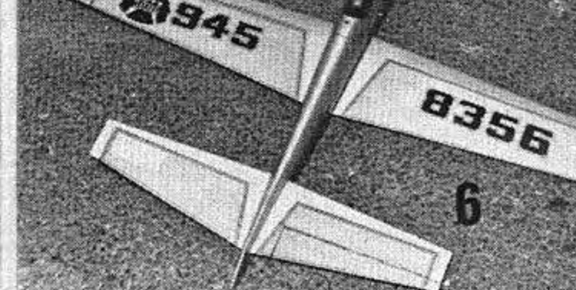
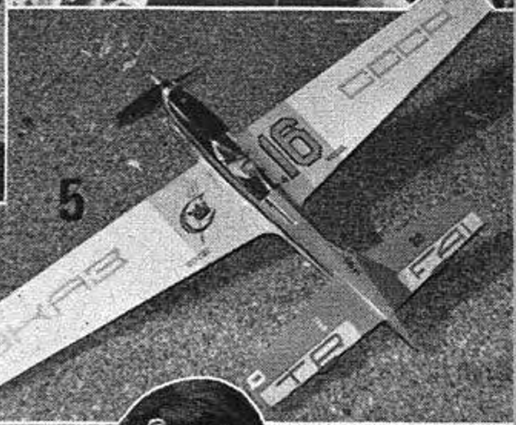
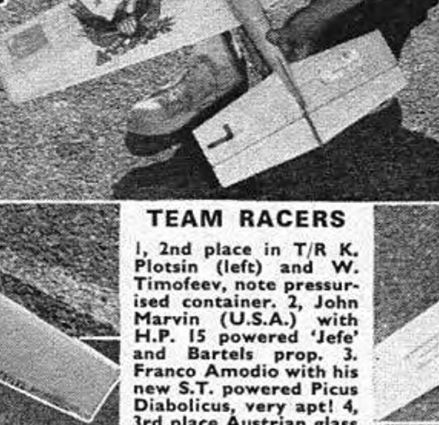
This meeting also had a great social side, and the 'lads' from each nation could be seen performing each night at a very handy venue, within walking distance of the official accommodation. The antics of the 'Dipoly' will be long remembered by those who attended this memorable meeting — like Bill Wisniewski's unmistakable request for more liquid refreshment!

TEAM RACING. Round 1

The first heat in Round 1 of team racing, held on the Tuesday, really set the pace for the Championship, everyone present crowded around the circle to see Stockton/Jehlik (U.S.A.) flying against Trnka/Drazek (Czechoslovakia) and Rosler/Ilg (West Germany). The three models were greatly contrasted, the American's looking decidedly rough but highly practical, whilst the Czech's was an elegant, superbly finished model in the usual Drazek tradition, and the German's just 'so-so'. All three teams started fast, with the Czechs the fastest in the air and pitting at 27 laps — Stockton/Jehlik came down at 36 laps and made a fast stop — this was going to be a fast time. The Czechs retired at the next stop, while the Germans were having starting and overheating troubles. Then came the American's last stop — again Herb Stockton really pulled the model out of the sky and on to the ground with Don Jehlik frantically flicking the very loose H.P.15 for another quick stop. With the Czechs out of it and the Germans doing quite a bit of rough flying, the Americans were able to gain some precious seconds to finish with a 4:26 race time — very fast for 7 cc. tanks and two stops! This early achievement set the pace to aim for, and dashed the hopes of the slower teams. After just one race, it was clear that low 4:30 times would be needed for a place in the final and if one compares this with the last World Champs — on 10 cc. tanks — the Americans could have turned 4:12 or thereabouts, with 95 m.p.h. airspeed and the extra capacity. **Heat 2** with Italian brothers Magli, Finnish brothers Sundell and the German team of Meinhard/Jentsch, was the first race with the new Super Tigre team race diesel, flown by the Italians. All of the Italians had been given these engines just before the Champs., this left them little time to get them sorted out and utilise the full performance. All three teams started well, but the Italians overheated badly and Sundell's retracting undercarriage model suffered from a lack of airspeed. This race was slow and rather a disappointment with all three teams well over 5:00. **Heat 3** promised better things and the Czechs Klemm/Dolejs, who were flying at 108 m.p.h. in practice (solo with whipping) were looked on to set the pace. The Czechs started well, followed by the Swedes Ahlstrom/Fransson and Karremans/Koumans (Netherlands). With their high revving M.V.V.S., the Czechs were making this a three stopper, all the stops were fast with their automatic filling system, but the time of 4:56 was brought about by them being slowed up in the middle — the Swedes finished over a minute later, and the Dutch team retired. The first ever South Africans at a World Championship in Team Race Holz/Menges, were flying against Bulgarian

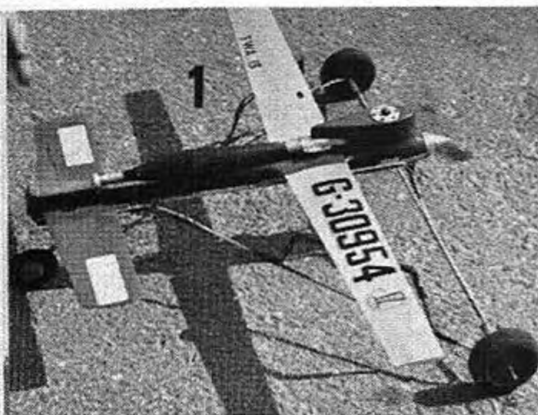
The British team. Back row L-R. Brian Turner, Mick Hughes, Dave Richardson, Geoff Richardson, Malcolm Ross, Derek Heaton. Crouching L-R. Steve Blake, Brian Jackson, Jim Mannat, Gordon Farnsworth, Mick Mayne and Bill Firbank.



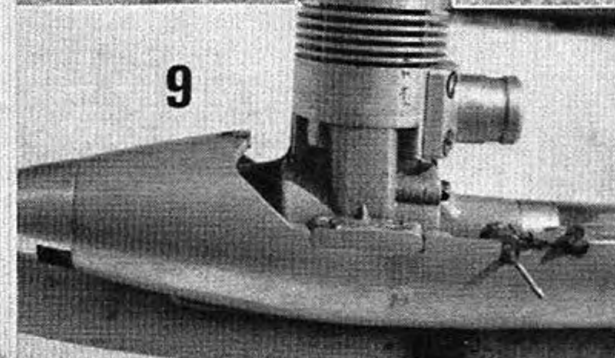
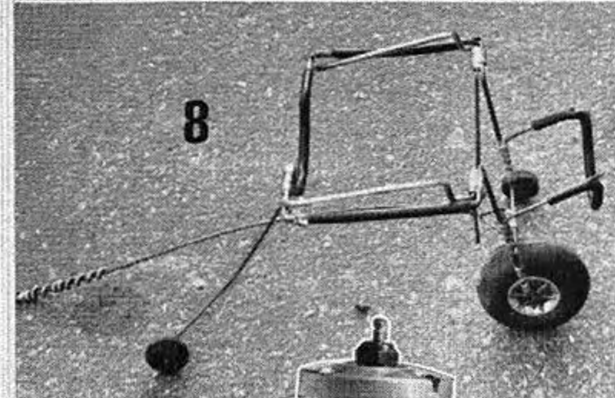
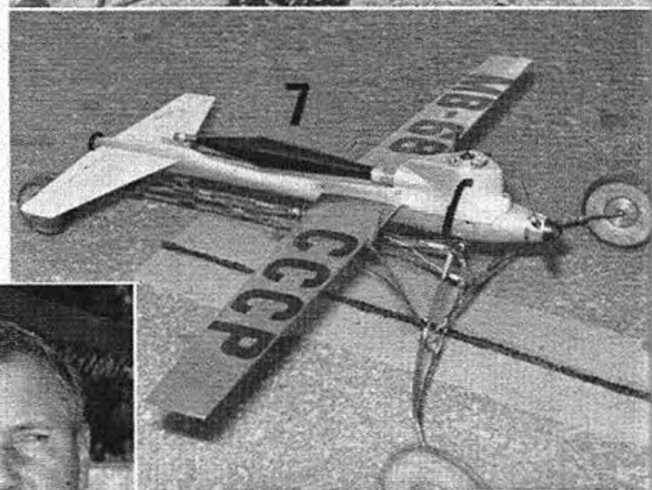
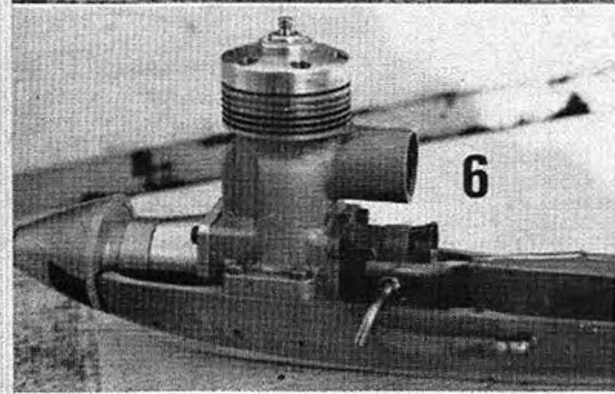
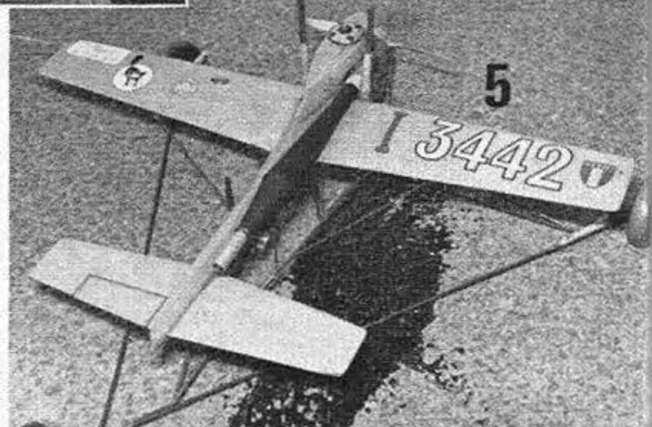


TEAM RACERS

1, 2nd place in T/R K. Plotsin (left) and W. Timofeev, note pressurised container. 2, John Marvin (U.S.A.) with H.P. 15 powered 'Jefe' and Bartels prop. 3, Franco Amodio with his new S.T. powered Picus Diabolicus, very apt! 4, 3rd place Austrian glass fibre fuselage model, note small tail. 5, smart Russian model by Zolotverch / Kobets, very well finished with faired wheel. 6, Silver and clear dope finished racer from U.S.A. by Dunkin/ Wright, sleek model, powered by S.T. G 20D. 7, Gunther (Austria) warms up prior to the final, note pressure filling system. 8, Smart finish on sole Canadian model by Kelly/Parent, S.T. G 20 modified to rear induction, Bartels prop. 9, Russians Babichev / Krasnorutsky with all enveloping wheel model, has shut off and O/D engine, clear finish and fibre glass covered fuselage. 10, Milan Dracek (Czechoslovakia) holds his sleek new model, M.V.V.S.-T.R.S. powered. 11, South African 'Jefe' styled model M.V.V.S. powered by Holz/Menges, very well made. 12, The winning model by Stockton/Jehlik, they also won last year's Criterium with this aircraft and H.P.15.



1. Brian Jackson's 'Pink Lady' moves off to record only British time in speed. 2. The fastest Russian A. Lapin with his Titanium winged model. 3. East German speed model Manfred Polster looked out of date compared with others. 4. This fine looking model is by L. Cernold, has O.D. engine and pipe, a cross between convention and 'Stuppi'. 5. Prototype Super Tigre tuned length pipe on clear finished model by Ugo Dusi (Italy). 6. The winning T.W.A. engine with diecast case as flown by Arnie Nelson. 7. Another neat Russian speed model this time by Malanchuk, same design as Lapin. 8, the smallest dolly ever, built by Roger Theobald, worked well. 9. Home made 'Start' engine by V. Natalenko. 10. Sole Austrian speed man H. Freundt. 11. Imre Toth with his piped Moki powered model, not as fast as usual.



brothers Lutchter and the French Favre/Fabre team in **Heat 4**, but their hopes were dashed when their nicely turned out 'Jefe' type M.V.V.S. powered model bounced and lost its wheel as pilot Niel Holz hit his handle against the French pilot's shoulder. Favre/Fabre also flying a 'Jefe' style model, but this time powered by a Micron 15 hybrid (Eta and Webra bits also), flew rather slowly to finish with 5:27, whilst the Bulgarians recorded 5:42. **Heat 5** saw the first of the U.S.S.R. models in action, Plotsin/Timofeev against Americans Dunking/Wright, and the experienced Italians Fontana/Amodio. The Italian's engine cooked up and broke a propeller at the first stop, so they retired while the Americans' Super Tigre powered model had to have the compression adjusted. The U.S.S.R. team had a very smart rivet line bedecked, lightweight (17 oz.) model powered by a Super Tigre G20D with a shut off on the fuel line, and team manager – stunt flier Juri Sirotkin – used a signalling board and a high frequency loud hailer to instruct pilot Kari Plotsin when to shut off and when to take advantage in the middle. The shut off certainly saved them time, and they could land when the other models were in the air, and stop the engines dead at just the right position on the circle for the pilot to catch it at the best speed – so saving seconds on the glide. They overheated at the end of each run though, and this slowed them to 4:49 but still good enough for second fastest time so far. **Heat 6** saw the first British team in action – Heaton/Ross against Bulgarians Petrov/Nevekhin and the Danish Geschwendtner brothers. With good airspeed and laps, Derek Heaton panicked and tried to get the model down fast – it was going too fast, however, Malcolm Ross missed the catch and the tyre came off. This ruined G.B.'s first chance of a fast time as the model was going very well, but 5:02 was good considering the delay. The Bulgarians, although very keen, showed a lack of experience and let the model go with bad settings. The Danes were proficient, but only recorded 5:39 with their Super Tigre powered model. **Heat 7** was rather flat with a Danish and Swedish team retiring while the Hungarians Molnar/Kuti suffering from a lack of airspeed with their Moki powered swept forward, wing model made 5:07. The second American and U.S.S.R. teams were on in **Heat 8** with Dutch lads Buys/Goudsmit. The Americans Marvin/Albritton were flying an H.P.15 powered 'Jefe', while the experienced Russians Zolotovech/Kobets had an unusual, deep bellied, faired in undercarriage model that looked smart – complete with large cockpit and bright decor. Unfortunately, the American model hit Ernie Kobets on the arm at a pitstop. While this slowed the Americans up no end, it gave the Russians another chance for a re-run in the last heat, but Marvin/Albritton's 5:11 time was very good in the circumstances. **Heat 9** between Poland, Denmark and Italy was slow with the Danes retiring and the Italians Ferroni/Bernabe just making 5:00. Britain's second chance came up in **Heat 10** with the Richardson brothers' rebuilt Eta powered model. This model had been badly smashed in practice after their handle had become hooked to another pilot's arm! Repairs were just effected in time, but the performance was just not good enough, Ekholm/Nore of Finland were first home with 5:21, followed by the Canadians Parent/Kelly flying a most attractive and beautifully finished Super Tigre G20D powered model, modified to rear induction. They 'cooked up' a little and made three stops for 5:31 while the Richardsons finished with 5:46. Stockton/Jehlik were still way out ahead and few teams looked like coming close to the 4:30 mark at this stage. **Heat 11** between Finland, the Netherlands and Czechoslovakia was uneventful and the fastest time of 5:00 went to the Dutch Metkemeyer brothers. Britain's best chance came in **Heat 12** with Turner/Hughes flying against Fisher/Meusburger (Austria) and Mohai/Markotai (Hungary), all three teams being very experienced. Unfortunately, Turner/Hughes had broken a conrod in their Don Howarth prepared motor in practice – so they were using one of the new Eta Elite II's in standard form – but while this had the speed of the 'Special' it was lower on laps and took more flicks to start. All teams went off well with the Austrians slightly faster, and it was a close race. Fisher/Meusburger heated up a lot and did not finish – Turner/Hughes were going very well and British supporters' hopes were high, but an extra pit stop slowed them down by at least 15 seconds, for a time of 4:49, while the Hungarians made a faultless run for 4:37. This heat changed the order at the top and made it 1. U.S.A. 2. Hungary. 3. G.B. **Heat 13** was interesting, with the Russians Babichev/Krasnorutsky and Austrians Kropf/Nitsche against the stunt flier Marc Vanderbeke and W. Gossiaux of Belgium. The Austrians were first home with a fast three stopper for 4:50 followed by the Russians with a home made twin schnurle ported rear exhaust diesel in a fuel shut off equipped model at 4:55, while the Belgians finished at 6:58 after overheating. **Heat 14** had another fast Hungarian team in it Azor/Katona with their '66 model styled like a jet fighter, but still very nice. The other teams were Bulgarians Rashkov/Tinev and Swiss Matila/Meyer who were both going well

in practice. The Hungarians made three very fast stops for 4:50 from their Moki powered model while the Bulgarians also three stopped for 4:56. Matila/Meyer were very slow and missed some catches to finish in just under 8 minutes. The next **heat (15)** saw the fastest Austrians Gurtler/Baumgartner with slower French and German models. The Austrians made three great stops, Gurtler really banging the model into the ground and Baumgartner pitting very quickly with his pressurised fuel system for 4:34. The last race; **heat 16** saw Bador/Bador retire, with the West German Lutkat brothers flying against the fast Zolotovech/Kobets fuel shut-off model. The West Germans finished in 5:00 while the Russians took advantage of the easy race to make 4:55 doing 20 laps to a tank.

So finished the first round of team race with Stockton/Jehlik in the lead with Gurtler/Baumgartner 8 seconds behind them and Hungarians Mohai/Markotai in third position some 11 seconds behind the leaders. It was getting close and while S & J could feel secure with 4:26 the Austrian and Hungarian teams were very liable to disposition in the Second Round.

TEAM RACE. Round 2.

The second round of team race was held the following day with just the same sunny weather conditions as the first. Settings could be more or less left alone. Round two is always more tense as this is the last chance for a place in the final to decide the champion. Fisher/Meusburger (Austria) were the only team to break 5:00 in **Heat 1** with 4:58, a Dutch team retired and a Swedish team 'cooked up' for 5:34. The Americans Marvin/Albritton lost a lot of time in **Heat 2** when they dropped a catch and had to put a tyre back on the hubs for 4:59 while the Russians Babichev/Krasnorutsky made 4:49. **Heat 3** was not spectacular and the British Richardson brothers went wrong in all respects to record 6:19. **Heat 5** had one slow time from Belgium and two other teams did not finish. With **Heat 6** things livened up a bit and Czechs Trnka/Drazek made a three stop 4:48 with Britains' Heaton/Ross making a two stop 4:53 though slowed by the flying style of Trnka. The experienced Italians Fontana/Amodio had an awful engine run and finished in 7:14. Two teams failed to finish in **Heat 7**, but the Czechs Votupka/Komurka made 4:49 with a beautifully finished 'Orion' type model with automatic filling and an M.V.V.S. 2.5 T.R.S. engine using a 180 x 180 mm. M.V.V.S. propeller.

Heat 8 caused some excitement when the Austrians Gurtler/Baumgartner put in the second fastest time of the meeting – 4:30 with three pit stops and flying against a Finnish and Hungarian team. They really banged the model on to the ground and make the fastest pit stops of the meeting to draw loud applause from the crowded circle. This did not change the positions for the final but they had cut Stockton/Jehlik's lead to 4 seconds. The South Africans Holz/Menges made a good start on **Heat 9** with Hasling/Hasling (Denmark) and Billon/Komorn (France) but they were set too lean and overheated badly. The Danish brothers raced on to finish in 4:41 with their H.P. powered model. The crowds thickened to see Stockton/Jehlik in **Heat 10** flying against the Bulgarians Rashkov/Tinev and Hungarians Mohai/Markotai. The American model started off well but slowed down and overheated badly – afterwards it was discovered that the H.P. 15 crankpin had turned blue through lack of lubrication from the bell valve intake. The time was still very respectable though at 4:47 for a sick run, while the other teams were well over 5 minutes. **Heats 11 & 12** were really action packed. **Heat 11** was tragic for the Czechs Dolejs/Klemm who made three great stops with 98 m.p.h. airspeed to record 4:29, good enough for 2nd place, but the jury found Klemm's tank to be 7.35 cc. Whilst we don't doubt the honesty of Klemm (it looks as though he ignored the filler valve capacity) there is no excuse for this sort of thing at a World Champs – we have never seen a more dejected team than the Czechs after the tank check! **Heat 12** was the Russian bid for the final. Plotsin/Timofeev blasted their way through the Danes and Canadians flying with them. Using the shut-off to maximum advantage they made three very fast pit stops for a 4:35 time. **Heat 13** was uneventful and Turner/Hughes were just over the five minute mark with 5:01 in **Heat 14** with Sundell/Sundell going very fast but only making 4:42 due to slow stops. Everyone was looking to Zolotovech/Kobets in **Heat 15** to make a final bid but they only managed 4:58 against a Dutch and Polish team. Austrians Kropf/Nitsche went really well in the last **Heat (16)** but the H.P. powered fibreglass model recorded 4:37 – just two seconds too slow for the final.

So ended the team race heats with Stockton/Jehlik lined up against Russians Plotsin/Timofeev and Austrians Gurtler/Baumgartner for the final on the next day. The three teams were each allowed 5 minutes practice before the final and it was most interesting to see the three different styles of flying on their own, one after the other. The American pilot Herb Stockton walked forward with his



arm fully extended to get the same airspeed he would have with two other pilots in the circle, which was 89 m.p.h. for 45 laps. On the other hand the Austrians were circulating at 93 m.p.h. for 30 laps and by whipping were cheating themselves. The Russians were the fastest at 95 m.p.h. in practice for 40 laps; but they were overheating at the end of each tank.

THE FINAL

The finals 'warm up' signal went and all three teams started up. The Americans used a rubber bulb to pressurise the fuel into the motor (saves touching the lean needle setting) while the Russians and Austrians pressurised the fuel supply by pushing the automatic filler valve on to the tank. The countdown to start began and the organisers' air trumpet sounded the start of the Race of Champions. Russia was first off with Timofeev flicking the motor 3 times, then Austria with 3 flicks in 2.5 seconds, but their H.P. cut in 1/4 lap, so Gurtler ran forward and got the model away from the Russians' take off segment. Meanwhile Don Jehlik had flooded the H.P.15 powered 'Jefe', and had to lift it off the ground and turn it over to clear it. Lucky for him the team race jury did not see it clearly! After 18 flicks the H.P. started, but the Russian model had an 8 lap lead by then. Russia came down on lap 36 after a signalled shut off by pitman Timofeev, for a 5 1/2 second, two flick pit stop, then the Austrians came down on their lap 29 for a quick 6 second stop. Model speeds were about equal now, with the edge to the low lap Austrian model. The Americans landed for a 7 flick, 7.1 second stop on their lap 45, the Russians were down next and Plotsin brought the model in a little too fast; it bounced, but Timofeev caught it and had the engine started with a single flick for a 8 1/2 second stop on lap 69. Then Austria were down at 59 laps for a long stop - some 28 1/2 seconds - re-setting the compression as they were overheating at the end of each tankful. Herb Stockton brought the 'Jefe' down in 1/3rd of a lap on the 89th lap and Don Jehlik took 11.2 seconds for 15 flicks. The Russians came in then for a stop on lap 102, 3 quick flicks and it was away in 5 1/2 seconds, but it still sounded over-compressed; later the Austrians' model came in really fast for a 2 flick, 5.8 second stop on lap 89. At this stage the American model was the fastest, the Russians' overheating a little - then Austria came down at lap 129 for a 7 second stop, followed by Russia and America together,



Arnold Nelson, 'World Speed Champion' with his 159.1 m.p.h. T.W.A. .15 powered 'Pink Lady' model. Engine uses Cox head insert.

Team race champions Don Jehlik and Herb Stockton, World Champions twice running, this is the same model they used to win the 1967 Criterium of Aces.

all teams were down, the Russians had two flicks, starting in 6 1/2 seconds on lap 136, while the Americans gave 9 flicks in 7.5 seconds on lap 134, then all models were away again. The Russians lead down to 4 laps with nearly 2/3rds of the race gone. The Austrians came down again at lap 152 for a slow (for them) 10.5 second stop and went off with a popping run that gradually 'came in'. Then the Russians came down for their last stop at lap 172 for a 2 flick 5.2 second pit with the Americans just coming down as they reached flying speed on lap 182 for a fantastic 17 flicks in 9.1 seconds on their last stop. The two teams were level now and two lights were flashing for both U.S.A. and Austria's rough flying, then the Austrians made their last stop at 189 laps in 4.5 seconds, the fastest of the final. A few seconds later it was all over and the Russians shut off and landed, beaten by the Americans, some 4 seconds or 1 1/2 laps ahead of them; the final times being U.S.A. 9:19; U.S.S.R. 9:23 and Austria 10:28.

Well, Stockton/Jehlik did it again and made it two World Championships in a row - while they and Gurtler/Baumgartner took full advantage of the two warning lights to gain precious seconds, and made the race one of the roughest finals yet seen. Plotsin/Timofeev flew very fairly - had they done otherwise, the results would surely have transposed 1st and 2nd places. Such is the pressure at the top, one must fly as close to the rules as one is allowed, this means the two warnings must be used to advantage - you are allowed to break the rules twice - legally!

SPEED

Remembering the American domination of the speed event at the last World Championships, most nations attended this Championship knowing they would be beaten for the outright win, so the team results took on special importance. The Russians and Hungarians were the only contestants hoping to break into the top positions as the Czechoslovakians' M.V.V.S. tuned pipe engine was not ready in time for the contest. It still needs another 12 months of development work, according to its designer Josef Sladky, who was, for the first time, a spectator.

In practice, all was not well for the Americans. Roger Theobald recorded 164 m.p.h. with the latest T.W.A. piped engine, but Wisniewski was down in the low 150's, both flying 'Pink Lady' designs. The latest T.W.A.15 has a die-cast crankcase, slightly different porting and no insulation between the engine and tuned length pipe. Roger Theobald was also using one of the old .008 thick element Cox 0.15 trumpet heads, locked in with a ring head on the top of this. This arrangement is quite popular now, as it makes a much better cylinder head set up. It eliminates the screw-in glow plug made of steel in an alloy head, and also the end of the glow plug disturbing the internal head contour. As well as this, the head is made entirely from one material, instead of alloy and steel, both having different expansion and heat transmission properties. Theobald also produced the smallest dolly we have ever seen, it allows the model to lift off far sooner and is really stable, not affected by ground bumps as the others are. He also used a glass fibre cone to cover the front portion of the pipe and no finned header (lead in) tubes were used on the T.W.A. pipes. Arnold Nelson, the Californian winner flew a conventional Pink Lady as well as an asymmetrical Super Tigre G.15 powered design called 'Roadrunner'. The reason for the sidewinder mounted engine is that in any wind, or turbulent conditions a vertically mounted engine and cowl is buffeted and usually tries to drag the model out of the circle so slowing it down. With the sidewinder, this does not happen as the side profile is much reduced. Unfortunately, with the engine's cylinder head pointing into the circle, the cowl section just behind the propeller generates a lot of lift. This means that when the engine cuts the model dives for the ground. Only quick anticipation on the controls can counter-act this, but since the T.W.A. asymmetric model was not fully sorted out, Arnie Nelson decided to only fly his Pink Lady and Super Tigre asymmetric model, both using Cox trumpet cylinder heads held on with a clamp ring.

In general, speed was pretty uneventful until the latter part of each round. With the 3 minutes allowed, for up to three attempts at a flight, it was almost like team race pit stops in some cases, as models were set off too rich or too lean for the pipe 'to come in'. Many nations lost chances by having screw sealed tanks that took time to unscrew - fill - then screw up again. The Americans just flipped a soft rubber tube off a stop, filled up and had another go. Round 1 saw no-one surprised by Arnie Nelson's 154.1 m.p.h. flight from his conventional T.W.A. powered model. Completely relaxed, he just trotted round the pylon after a quick come-in on the pipe (no three

laps on the ground this year). Bill Wisniewski flew the same design Pink Lady, but with a conventional glow plug to record 152.9 m.p.h. with Miklos Sebestyen using a Moki S-6T, the only one to get near the two leaders. At 146.6 m.p.h. on a perfect run with the Moki sounding really 'in', it was left up to the Russians to try and break the U.S. lead. A. Lapinin seemed to have the best Russian engine in a most complex model. The wings were titanium sheet, welded all down the trailing edge and then filled with 'in place' expanded polystyrene foam. Beautifully finished, his model was a joy to behold and his flying style completely relaxed using a pump action handle as opposed to the more or less standard 'Uniline' system used by most other nations. 149.8 m.p.h. was recorded to tie for third place in Round 1 with Sebestyen. The Russian engine owed a lot to the T.W.A. engine and pipe which they had examined at the last Championships but other parts of their set up were highly original – like the half length pan with a completely circular section at the front, enclosing the shaft and their simple pieces of 18 s.w.g. piano wire used as torque control units. Malanchuk (U.S.S.R.) followed up teammate Lapinin with 149.1 m.p.h. while Roger Theobald was almost 3 m.p.h. slower at 146.6 m.p.h. This American's swing-over-the-head (model flying round, but Theobald standing still) flying style had to be seen to be appreciated, and he must have had the strongest whip on the field. This being very important as if the engine is off tune they try and whip it up to cut the motor as soon as possible, to get another attempt in the 3 minutes allocated time limit.

The entire Italian team were still at this late stage trying to sort out the latest Super Tigre G.15 RV variant with the new Super Tigre tuned length pipes and side exhaust adaptor manifolds. Rev. they did, but the fastest they could go was 132.9 m.p.h. and then with a screaming run that sounded well underpitched. None of the British team managed to record a time in this round, even though after the Americans and Russians Brian Jackson and Bill Firbank must have had the best engines at the meeting – 1966 T.W.A.'s with pipes! Gordon Farnsworth had a fuel leak in his H.P.15 powered 'Stuppie' and did not complete a timed run. In fairness to the Britons it should be noted that 40 per cent of the contestants did not record a time in this round. **Round 2** saw Arnie Nelson really get to grips with the business at 159.1 from his conventional 'Pink Lady'. This was more like it – shades of Bill Wis's 1966 performance. Unfortunately, the other Americans could not manage such a big increase in performance. Wisniewski managed another 23 m.p.h. for 155.3 and Theobald went to 148.5 m.p.h. The Hungarians had been busy inspecting motors and sorting things out but neither Toth nor Bathge managed to record a time and Sebestyen slowed up slightly to 149.1 m.p.h. which meant he went down to 4th place from 3rd as Lapinin recorded an identical speed to his own and Sebestyen's 1st round time. The other two Russians: Natalenko with his piped 'Start' engine, and Malanchuk then recorded 149.8 m.p.h. and 146 respectively to give them 5th and 6th positions, just above Roger Theobald who put in 148.5 m.p.h. A surprise in 8th place in this round was Pagani of Switzerland with 144.2 m.p.h. from his Super Tigre G.15 RV, a Swiss flyer doing this must really have erked the Italians who were by now doing everything possible to get timed runs – but with little success as only Dusi finished, and 129.6 m.p.h. at that! Britain's luck picked up in this round with Brian Jackson managing 138.6 m.p.h. from his T.W.A. powered 'Pink Lady' – but this was only good enough for 13th place. Wisniewski was heard to comment that only the propeller was slowing Brian up! Fate then struck as Bill Firbank smashed his T.W.A. 'Pink Lady' and completely wrecked the model, but fortunately not the motor and pipe. Gordon Farnsworth also managed to bounce his model but with little damage. Pech, the lone representative from Czechoslovakia with the Sladky designed M.V.V.S. 2.5 RL improved on his first round time considerably for a 143.5 m.p.h. flight – it was strangely sad to see just one Czech flying, and then with little enthusiasm. Rolf Hagel, the free flight flyer, had the noisiest and fastest revving Super Tigre we have ever heard (an old G.20G) but a lack of flying experience in the pylon stopped him recording a time. By **Round 3**, most were getting desperate as this was the final chance to record a time, and to break the American, American, Russian, 1, 2, 3 position. Imre Toth managed a perfectly on-tune 145.4 m.p.h. run this time, with his Moki piped model – to jump right into 8th position, and Roger Theobald whipped his Pink Lady just that little bit harder to get the settings right on for the 150.9 m.p.h. and third place – giving the Americans 1, 2, 3 positions. Lapinin did not get a time and the other two Russians slowed down. Feeling pretty competent in No. 1 position, Arnie Nelson flew his asymmetric Tigre

powered model. This was extremely stable and the very much modified Tigre recorded 143.5 m.p.h. *without* a pipe. Pech improved slightly to make 144.8 m.p.h. (the fastest non-pipe speed ever on F.A.I. fuel at a Championship, according to our research), with J. Frohlich (West Germany) turning an identical speed from a Miebach piped G.15. Rolf Hagel (Sweden) managed 135.5 m.p.h. but the British lads Farnsworth and Firbank again did not record times – while Brian Jackson slowed right down to 116.8 m.p.h. on a lean run.

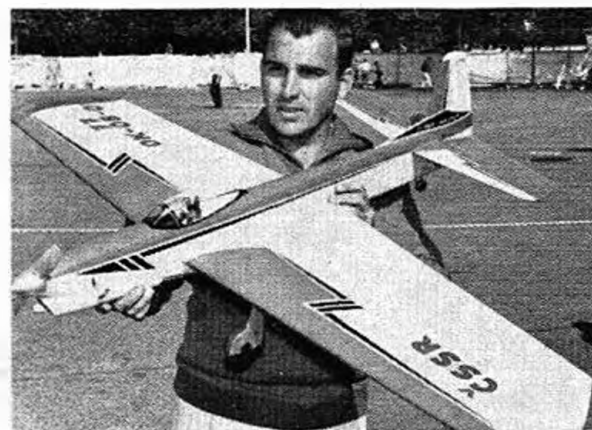
All this added up to a convincing win for Arnie Nelson backed up by two other Californians Bill Wisniewski and Roger Theobald, the T.W.A. makers. From observation at the speed circles, the tuned length exhaust pipe is clearly not a magic formula for higher speeds. Special inherent problems come with the pipe on its own, and it is interesting to note that the Americans tape record the engine runs in practice so they can play them back and listen to the r.p.m. changes in the air after the flight. Whilst the leaders' speeds have dropped slightly since the last Championship, the bulk of the field have closed up on them and the major battle seemed to be the private contest of the non-supported or less well equipped modellers amongst themselves in the middle of the results. You can, if you like, class the pipe with skill of monoline flying, by being hard to obtain (at the moment) and needing complex machinery to make them, it just cuts down the number of modellers likely to fly in F.A.I. speed at National level. We know progress must happen, but if things go on as they are and the same Nations, by dint of their hard and expert work, clean up every time, the also-rens could well stop coming to fly at Internationals unless they think they stand a reasonable chance. The spirit of competition is already lost in some Nations who did not send a full team to this Championships.

AEROBATICS

With the terrific turbulence caused, as mentioned earlier, by surrounding buildings at this site, all aerobatic flyers were at a disadvantage to give of their best. Many who did not fly as well as expected, used the excuse that other nations were gaining points by being used to flying in these conditions – this was not so. True, many are used to flying in strong winds, but not usually turbulent conditions with 180 deg. wind changes.

Models are definitely tending to be more grouped in design. The East Europeans are all influenced by jet-like lines, while the other camps still favour the Nobler configuration. Engine sizes seem to be getting larger, many more using 45's and 49's these days. The most original model was by far the Italians with rather old fashioned looking boxy designs. While these performed some of the best squares we have ever seen in the calm evening air during practice on a playing field near the hotel, they were blown all over the place during the contest, Bagalini's model for instance jumped four foot sideways in a wingover, when it reached the low building roof height and it became a feat of careful anticipation to feed in just enough elevator to correct this sideways blast of air at just the right moment to preserve the straight line of the wingover.

That quiet American, Bob Gieske, puffing his pipe and flying his 'Nobler' based model, impressed everyone most in **Round 1**. Bob flew as though the wind was not there and made consistently level pullouts with steady square corners, but his intersections were poor due to his manoeuvres being stretched on one side by the wind. His landings, though fast, were also very smooth with Bob 'greasing' the model in. Something of a contrast to the lightning take-offs and fast landings of the tandem wheel Polish and Bulgarian models that flopped in and made loud grinding noises from the assortment of



Josef Gabris, 'World Aerobatics Champion' with his two year old 'Super Master' model, M.V.V.S. powered. A popular winner from Czechoslovakia.



The U.S.A. speed team with Finnish Official in striped shirt. L-R, Arnie Nelson, Roger Theobald, and Bill Wisniewski. Tank is being flushed prior to filling with standard fuel.

piano wire tip skids. The biggest surprise performance was from Hank Twerda (Netherlands) who was the best on square manoeuvres, even sharper than Gieske. Hank's largest finned Merco 49 model was obviously pulling like a ton of bricks with the wind, and the side elevation and twin fins made directional changes very easy to spot. While Steve Wooley with his new 'Cobra' model pulled out very low on most manoeuvres and rounded lots of corners off, he was strangely impressive the whole flight flowing together very smoothly with Steve's centre of the circle, relaxed stance contributing towards his score for sure. Unfortunately, only one Frenchman - Lauron - flew in the first round, as Souliac's and Billon's models had not yet arrived by Air Transport! His model was very heavy and he seemed to be having a lot of trouble just keeping it going in the right direction in the wind. Josef Gabris, the eventual winner, and even then the current World Champion, was blown out of all manoeuvres and scored more than 300 below the first round leader Bob Gieske - definitely not the usual Gabris' 'Super Master' type performance. Team race pilot Kari Plotsin from the U.S.S.R. was another to fly a jet-like model and while his square corners were sharp, his all sheet covered model wallowed after each turn and flew a

little too fast for one to comprehend the exact shape of the manoeuvre. He was extremely lucky at the end of his flight when the engine cut unexpectedly and the model was blown in by the wind, but his experience showed and he rescued the model from what would have been a disastrous situation for many. Two nations had line troubles. Louis v.d. Hout's were found oversize and C. Cappi (Italy) had them break on an 18 kilo pull test (no yoke was used and all of the pull strain transferred to one line); Rudi Kessel, as usual, flew his four-year-old pinstripe special model with an unsilenced Veco 45 that must have blasted the judges' thoughts right away, but he was unimpressive and very ragged. This contrasted with Jim Silhavy's flight. As all who saw Jim's immaculately finished Nobler type model called 'Gipsy' fly in England, will know, it is extremely smooth, but this time it appeared unstable and rocked a lot on the lines, it seemed as though the conditions were upsetting the pilot more than the model. But as the flight progressed, Jim became more relaxed and improved all the way through to make what was to us, the smoothest and best landing we had ever seen. Great Britain's luck was as usual taking a hammering. Jim Mannal had his bellcrank platform pull out on the line test, but he was O.K. with his other model. Mick Mayne was first to fly and he flew far too tight a pattern to make the whole thing look untidy and to cut his engine, he flew right at the top of the circle, brought it down too fast, then took too long to land it, stalling it in for a very bouncy landing. Jim Mannal also flew tight manoeuvres and his intersections poor. Steve Blake was the last British team member to fly and his lightweight 'Nobler' had a hard time keeping tight on the lines. All three flew to their normal standard, which, while being generally acceptable at home, showed up badly amongst the world's top flyers, mostly from nations with far more competitive stunt flyers to compete against and compare with. At the close of **Round 1**, the positions were 1. Gieske. 2. Twerda. 3. Wooley. 4. L.v.d. Hout - with Twerda the real surprise.

Round 2 on the second day had slightly less wind and because of this and the fact the contest was in full swing, nearly everyone

AEROBATICS

		Best 2				
		Rnd 1	Rnd 2	Rnd 3	Total	
1. J. Gabris	Czechoslovakia	2224	2622	2607	5229	M.V.V.S. 5.6
2. O. Andersson	Sweden	2289	2599	2611	5210	Fox 35
3. B. Gieske	U.S.A.	2553	2568	2471	5121	Fox 35
4. S. Wooley	U.S.A.	2421	2469	2593	5082	Fox 35
5. L.v.d. Hout	Netherlands	2413	2521	2529	5050	Veco 45
6. H. Twerda	Netherlands	2422	2556	2481	5037	Merco 49
7. W. Bagalini	Italy	2337	2433	2523	4956	Super Tigre 35
8. L. Eskildsen	Denmark	2244	2421	2491	4912	OS Max-S 35
9. J. Silhavy	U.S.A.	2369	2528	1339	4897	Fox 35
10. L. Compostella	Italy	2393	2373	2405	4798	Fox 35
11. I. Cani	Czechoslovakia	2252	2413	2380	4793	M.V.V.S. 5.6
12. K. Plotsin	U.S.S.R.	1944	2510	2257	4767	M.V.V.S. 5.6
13. G. Egervary	Hungary	2138	2384	2346	4730	Veco 45
14. M. Vanderbeke	Belgium	2304	2345	2250	4649	Merco 49
15. E. Kondratenko	U.S.S.R.	2272	2335	1958	4607	Own design
16. J. Bartos	Czechoslovakia	1802	2374	2147	4521	Fox 35
17. E. Bjornvall	Sweden	2015	2152	2306	4458	Fox 35
18. G. Masznyi	Hungary	2216	2233	2199	4449	Fox 35
19. E. Madsen	Denmark	2233	2101	2174	4407	OS Max-S 35
20. J. Lemminkainen	Finland	2133	2065	2267	4400	Merco 35
21. A. Eskilsson	Sweden	1896	2288	2089	4377	OS Max-S 35
22. G. Billon	France	—	2202	2065	4267	Merco 49
23. C. Cappi	Italy	2097	1735	2128	4225	Fox 35
24. V. Eskin	U.S.S.R.	—	2047	2116	4163	M.V.V.S. 5.6
25. E. Mayer	Finland	1849	2001	2133	4134	Fox 35
26. A. Kaminski	West Germany	1870	2049	2056	4105	Fox 35 R/C
27. G. Kaiser	Austria	1765	2067	2036	4103	OS Max-S 35
28. W. Cator	Netherlands	1828	2072	2007	4079	Merco 49
29. T. Vallai	Hungary	179	2043	2015	4058	Moki M-4
30. R. Lauron	France	1729	1936	2102	4038	Merco 49
31. M. Mayne	Great Britain	1800	2040	1997	4037	Merco 35
32. J. Mannal	Great Britain	1878	1857	2139	4017	Merco 35
33. M. Souliac	France	—	1958	1999	3957	Veco 45
34. A. Milanov	Bulgaria	143	2057	1821	3878	Fox 40
35. B. Gasbjorg	Denmark	1738	2014	1858	3872	Merco 35
36. M. Thorner	East Germany	1791	1956	1692	3747	M.V.V.S. 5.6
37. A. Jankov	Bulgaria	1582	1777	1967	3744	McCoy 35
38. J. Ostrowski	Poland	1713	1478	2029	3742	M.V.V.S. 5.6 A
39. P. Germann	Switzerland	1603	1897	1835	3732	Merco 49
40. R. Kessels	West Germany	1761	1844	1611	3605	Veco 45
41. H. Kurtz	East Germany	1620	1762	1825	3587	M.V.V.S. 5.6
42. S. Blake	Great Britain	1827	946	1753	3580	Merco 35
43. W. Goulbier	East Germany	1621	1071	1418	3039	M.V.V.S. 5.6
44. M. Walaszczyk	Poland	1421	—	1421	2842	M.V.V.S. 5.6

AEROBATICS - TEAM RESULTS

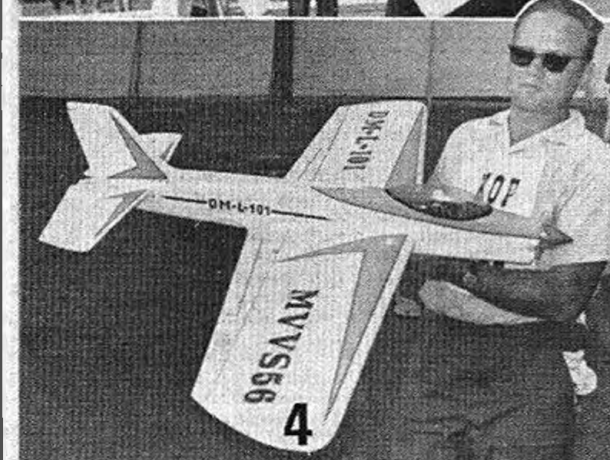
1. U.S.A.	15080
2. Czechoslovakia	14543
3. Netherlands	14166
4. Sweden	14045
5. Italy	13979
6. U.S.S.R.	13537
7. Hungary	13237
8. Denmark	13191
9. France	12262
10. Great Britain	11634
11. West Germany	10373
12. Finland	8534
13. East Germany	7710
14. Bulgaria	7622
15. Poland	6584
16. Belgium	4649
17. Austria	4103
18. Switzerland	3742

ENGINES USED

Fox	12
Merco	11
M.V.V.S.	9
Veco	4
O.S. Max	4
Own design	1
Moki	1
Super Tigre	1
McCoy	1

STUNT (opposite)

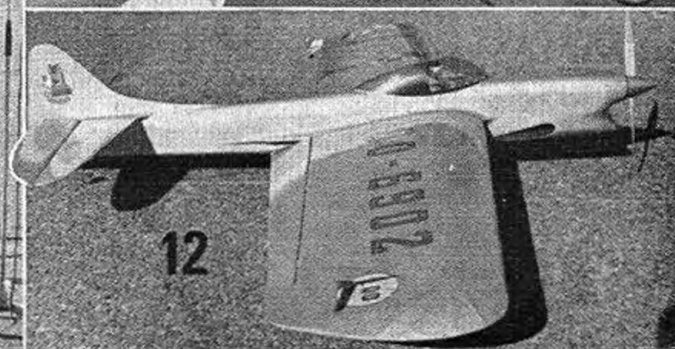
10. Polish model by Jerzy Ostrowski has rocket cover for tandem wheeled U/C, was first to fly in Aerobatics. 11. President of the Finnish Aeronautical Society, Edward Wegelius opens the Championship. 12. Sleek lines of all silver doped model by Critterium winner Marc Vanderbeke - a nice change of profile.



STUNT

1, Jet-like lines are evident on blue and yellow stunter by Angel Milanov of Bulgaria. 2, as a complete contrast, the semi-scale appearance of W. Bagalini's lightweight from Italy. 3, Louis v.d. Hout poses with his new silver doped Veco 45 stunter, flew well. 4, Manfred Thorner of East Germany with a trike U/C model. 5, Monika Bjornwall with husband's Fox.35 powered Goodyear style stunter called Miss Monika. 6, Geza Eger-vaky with his two stunters, Alice I and Alice II, one is based on the P.51 and the other modern jet lines. 7, Luckless Jim Silhavy with his superbly finished 'Gipsy', Sandy Pimenoff, Contest Director in background. 8, Jet lines are evident in Kari Plot-sin's model from U.S.S.R. 9, Ove Andersson with his silver trike U/C model, he was the 'dark horse' that upset form.

(continued opposite)



TEAM RACING

		Rnd 1	Rnd 2	Final	
1. Stockton/Jehlik	U.S.A.	4:26	4:47	9:19	H.P. 15D
2. Plotsin/Timofeev	U.S.S.R.	4:49	4:35	9:23	Own design
3. Gurtler/Baumgartner	Austria	4:34	4:30	10:28	H.P. 15D
4. Kropf/Nitsche	Austria	4:50	4:37		H.P. 15D
5. Mohai/Markotai	Hungary	4:37	5:11		Moki TR-7A
6. P. & O./Hasing	Denmark	—	4:41		H.P. 15D
7. O. & G./Sundell	Finland	5:17	4:42		Oliver Tiger
8. Trnka/Drazek	Czechoslovakia	—	4:48		M.V.V.S. 2-5 T.R.S.
9. Hughes/Turner	Great Britain	4:49	5:01		Eta Elite II
10. Votycka/Komurka	Czechoslovakia	6:29	4:49		M.V.V.S. 2-5 T.R.S.
11. Babichev/Krasnorutsky	U.S.S.R.	4:55	4:49		Own design
12. Azor/Katona	Hungary	4:50	5:00		Moki TR-7A
13. Heaton/Ross	Great Britain	5:02	4:53		D.H. Fta 15
14. Dunking/Wright	U.S.A.	5:14	4:53		Super Tigre G20D
15. Zolotovech/Kobets	U.S.S.R.	4:55	4:58		Super Tigre G20D
16. R. & A./Metkemeyer	Netherlands	5:00	4:55		Super Tigre G20D
17. Rashkov/Tinev	Bulgaria	4:56	5:18		Super Tigre G20D
18. Rosler/Ilg	West Germany	4:58	—		H.P. 15D
19. Fisher/Meusburger	Austria	—	4:58		H.P. 15D
20. Marvin/Albritton	U.S.A.	5:11	4:59		H.P. 15D
21. Brandel/Glodeck	West Germany	5:00	5:00		Webra Mach II
22. Ferroni/Bernabe	Italy	5:00	—		Super Tigre G15D RV
23. D. & H./Lutkat	West Germany	5:00	—		Oliver Tiger
24. V. & M./Magli	Italy	5:53	5:01		Super Tigre G15D RV
25. Rosinski/Sulisz	Poland	6:15	5:02		Super Tigre G20D
26. Molnar/Kuti	Hungary	5:07	5:03		Moki TR-7A
27. Favre/Fabre	France	5:27	5:05		Own design
28. H. & J./Geschwendtner	Denmark	5:39	5:12		Super Tigre G20D
29. Aarnipalo/Ekholm	Finland	5:13	6:39		Super Tigre G20D
30. I. & F./Lutcher	Bulgaria	5:42	5:15		Super Tigre G20D
31. Ekholm/Nore	Finland	5:21	5:18		Eta 15 Mk. II
32. Billon/Komorn	France	5:24	5:35		Micron 2-5
33. Ahlstrom/Fransson	Sweden	5:58	5:24		Oliver Tiger
34. Parent/Kelly	Canada	5:31	—		Super Tigre G20D
35. Swedling/Eklund	Sweden	—	5:34		Super Tigre G20D
36. Buys/Goudsmit	Netherlands	5:44	—		Eta Elite Mk. I
37. R. & G. Richardson	Great Britain	5:46	6:19		Eta Elite Mk. II
38. Matila/Meyer	Switzerland	7:57	5:47		Micron 2-5
39. Karremans/Koumans	Netherlands	—	6:04		Super Tigre G20D
40. Petrov/Nevekhin	Bulgaria	6:30	6:21		Super Tigre G20D
41. Petersen/Ehlers	Denmark	—	6:21		Super Tigre G20D
42. Holz/Menges	South Africa	—	6:45		H.P. 15D & M.V.V.S. T.R.S.
43. Meinhard/Jentsch	East Germany	6:48	—		Oliver Tiger
44. Vanderbeke/Gossiaux	Belgium	6:58	6:54		Eta 15 III
45. Fontana/Amodio	Italy	—	7:14		Super Tigre G15D RV
46. D. & B./Bador	France	—	—		Micron 2-5
47. Klemm/Dolejs	Czechoslovakia	—	—		M.V.V.S. 2-5 T.R.S.

TEAM RACING

NATIONAL TEAM RESULTS

1. Austria	845
2. U.S.A.	858
3. U.S.S.R.	859
4. Hungary	870
5. West Germany	898
6. Finland	913
7. Great Britain	928
8. Denmark	974
9. Bulgaria	992
10. Netherlands	1003
11. Italy	1035

ENGINES USED

Hirtenburger	8
Eta	6
Oliver	4
M.V.V.S.	4
Own design	3
Moki	3
Micron	3
Webra	1

TEAM RESULTS (SPEED)

1. U.S.A.	749
2. U.S.S.R.	723
3. Hungary	701
4. West Germany	678
5. Italy	629
6. Finland	629
7. Sweden	623
8. Denmark	540
9. Poland	426
10. Czechoslovakia	233
11. Switzerland	232

12. Great Britain	223
13. East Germany	209
14. Austria	201
15. Bulgaria	196

ENGINES USED

Super Tigre	17
Own design	6
T.W.A.	5
M.V.V.S.	3
Moki	3
Hirtenburger	2

improved on previous scores. One of the best improvements was from Kari Plotsin who flew very smoothly and this time a little slower to earn another 556 points from his jet-like model. Kari is one of the few stylist flyers and his poses during manoeuvres suggest he is well aware of the pilot's impression left on judges. Ove Andersson (Sweden) was really strong and his 2599 point flight was at this stage, the highest pointed of both rounds, his whole flight was crisp and neat, the squares were bang on and all his pullouts level. The only manoeuvre he did not do so well was the overhead and this could have been air turbulence causing trouble. He used the same tricycle undercarriage model he flew in England at the last Championships and had obviously been practising very hard since then. Eskildsen (Denmark) with a lightweight red tissue covered model, reminiscent of Warburton's 'U-2' flew well, and improved for a crisp flight doing rock steady square turns, but losing out on the superimposition of successive round manoeuvres; here is a pilot we predict will rise to the top. At the top end of the results Bob Gieske made another consistent flight that left a far better impression of this Texan's ability than the first, but the judges only rated an 18 point increase to 2568 pt. — we think a little unjustly. Both of the top Dutchmen Twerda and v.d. Hout found the calm air beneficial and it allowed them to use their larger than average models to full advantage. Twerda improved the most and v.d. Hout enough to jump into 3rd position as Steve Wooley (U.S.A.) did not improve appreciably enough to hold his first round position. 'Mr. Finish' — Jim Silhavy put in a much better flight this time and this elevated him to 4th position. Meanwhile, the World Champion Josef Gabris improved and made some of his more usual smooth and good round manoeuvred flights to rack up 2622 points, some 398 more than his first flight, with the two-year-old 'Super Master'. W. Bagalini with his crop duster style lightweight, flew far better, all his squares being very good, but the flight lacked smoothness and the loops spread as intersections became way off. Britain's Jim Mannal had a very calm moment to fly in and he changed to a smaller propeller but the engine run was too rich and the Crusader was difficult to keep out on the lines. Steve Blake crashed halfway through his schedule at the foot of his 2nd square eight. Actually, he made a perfectly inverted landing — but with the power on, scraping the fin on the ground — he was that low. Mick Mayne flew wider manoeuvres this time and this increased his score, but again he finished with a stalled landing.

The 3rd and final round flown on the last day of the Championship had more or less the same weather conditions as before and this time every contestant returned a score. With the closing order of round 2 being Gieske, Twerda, v.d. Hout, Silhavy and Wooley, it remained to be seen if the next half a dozen including Andersson, Bagalini, Gabris and the experienced Czech Cani could make a dent on the top three. Both Gieske and Silhavy slipped down on points for America and the latter flew half his flight straight and level after the engine coughed a few times due to a rich setting. This was thought by many to have cost the U.S.A. their team win at this stage, but Steve Wooley improved and helped to rescue the situation. Ove Andersson of Sweden made his best flight in this round, his neat silver coloured model performing all the manoeuvres admirably for a score of 2611 only 11 pts. behind Czech Gabris' high total in Rd. 2. Eskildsen confirmed our confidence in him as he had by now steadily improved over all three rounds and most contestants thought his last flight low scored at 2491, as did many with v.d. Hout's 2529. This situation was not really helped by wrong totals being posted on occasions thus sending contestants' hopes soaring or crashing for no reason. Gabris put on another good show and scored 2607 which was just good enough to beat Ove Andersson for the final honour of being World Champion, twice in a row for Gabris.

It is interesting to note that for the second time running, Josef was the only person to stop the U.S.A. winning all three events individually. While no one disputes the results the judges' scoring was erratic. Your reporter had a sneaky look through several of the more important sets of flight cards and found some pretty wide ranging marks. Some judges were obviously more experienced than others in grading top level stunt flying.

SPEED

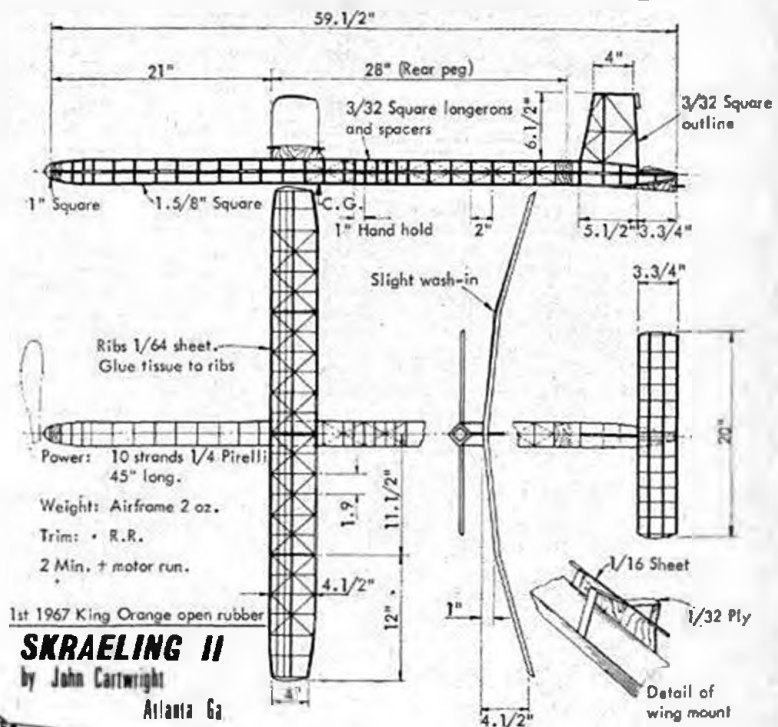
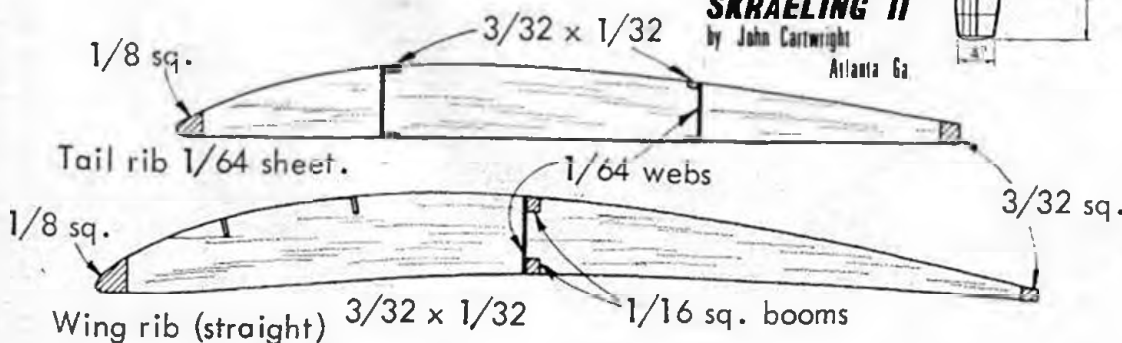
SPEED			Round 1		Round 2		Round 3		Best Time		Engine
			Km/h	m.p.h.	Km/h	m.p.h.	Km/h	m.p.h.	Km/h	m.p.h.	
1.	A. Nelson	U.S.A.	248	154.1	256	159.1	231	143.5	256	159.1	T.W.A. 15 & Super Tigre G15
2.	W. Wisniewski	U.S.A.	246	152.9	250	155.3	249	154.7	250	155.3	T.W.A. 15
3.	R. Theobald	U.S.A.	236	146.6	239	148.5	243	150.9	243	150.9	T.W.A. 15
4.	A. Lapinin	U.S.S.R.	241	149.8	242	150.4	—	—	242	150.4	Own design
5.	M. Sebestyen	Hungary	241	149.8	240	149.1	233	144.8	241	149.8	Moki S-6T
6.	V. Natalenko	U.S.S.R.	176	109.4	241	149.8	236	146.6	241	149.8	Own design
7.	V. Malanchuk	U.S.S.R.	240	149.1	235	146	218	135.5	240	149.1	Own design
8.	I. Toth	Hungary	—	—	—	—	234	145.4	234	145.4	Moki S-6T
9.	Z. Pech	Czechoslovakia	208	129.3	231	143.5	233	144.8	233	144.8	M.V.V.S. 2-5 RL
10.	J. Frohlich	West Germany	—	—	226	140.4	233	144.8	233	144.8	Super Tigre G15
11.	F. Pagani	Switzerland	—	—	232	144.2	225	139.8	232	144.2	Super Tigre G15 RV
12.	K. Bathge	Hungary	220	136.7	—	—	226	140.4	226	140.4	Moki S-6T
13.	K. Jaaskelainen	Finland	218	135.5	226	140.4	—	—	226	140.4	Super Tigre G15 RV
14.	A. Malik	West Germany	225	139.8	—	—	—	—	225	139.8	Super Tigre G15
15.	B. Jackson	Great Britain	—	—	223	138.6	188	116.8	223	138.6	T.W.A. 15
16.	L. Cernold	Sweden	213	132.4	218	135.5	220	136.7	220	136.7	Own design
17.	D. Scheiderei	West Germany	—	—	220	136.7	209	129.6	220	136.7	Super Tigre G15
18.	R. Hagel	Sweden	—	—	—	—	218	135.5	218	135.5	Super Tigre G20G
19.	A. Rachwal	Poland	217	134.8	215	133.6	—	—	217	134.8	M.V.V.S. 2-5 RL
20.	L. Corti	Italy	214	132.9	—	—	—	—	214	132.9	Super Tigre G15 RV
21.	V. Dusi	Italy	—	—	209	129.6	211	131.1	211	131.1	Super Tigre G15 RV
22.	S. Skotniczny	Poland	209	129.8	204	126.8	196	121.8	209	129.8	Super Tigre G15
23.	M. Polster	East Germany	201	124.9	195	121.2	209	129.8	209	129.8	Own design
24.	P. Muzio	Italy	204	126.8	—	—	—	—	204	126.8	Super Tigre G15 RV
25.	M. Lahtinen	Finland	202	125.5	189	117.4	200	124.3	202	125.5	Super Tigre G15
26.	R. Ekholm	Finland	—	—	201	124.9	131	81.4	201	124.9	Super Tigre G15 RV
27.	H. Freundt	Austria	—	—	—	—	201	124.9	201	124.9	H.P. 15G
28.	G. Camburov	Bulgaria	—	—	188	116.8	196	121.8	196	121.6	Super Tigre G15
29.	N. Hansen	Denmark	176	109.4	187	116.2	180	111.9	187	116.2	Super Tigre G15
30.	B. Martinella	Sweden	—	—	—	—	185	114.9	185	114.9	M.V.V.S. 2-5 RL
31.	D. Ehlers	Denmark	182	113.1	—	—	158	98.2	182	113.1	Own design
32.	H. Geschwendtner	Denmark	—	—	—	—	171	106.3	171	106.3	Super Tigre G20G
33.	G. Farnsworth	Great Britain	—	—	—	—	—	—	—	—	H.P. 15G & Super Tigre G15
34.	W. Firbank	Great Britain	—	—	—	—	—	—	—	—	T.W.A. 15

OPEN RUBBER CONTEST DESIGN

'What happened to John Cartwright?' What indeed! John left our shores after making his mark in British Contest and now resides in the U.S.A. He won a couple of major contests with this design last year and the following is reprinted from the *National Free Flight Society Bulletin*.

An all-up airframe weight of two-ounces is not easy to come by for an Open Rubber design, especially where strength is to be maintained. John solved the strength problem on the fuselage by glueing glass fibre strands around the motor section after doping was completed. The strength gain is tremendous, the weight gain, negligible. John is continually questioning U.S. building practices and says that the most perplexing practice he has seen in the U.S.A. is the persistence in using wide trailing edges in the wing and tail structures. According to John, and he is an aeronautical engineer (working at Lockheed-Georgia), the trailing edge contributes much less to wing strength than most people imagine.

So there we have it! John appears to be showing the flag well, and his design will be of interest to many of his compatriots.



**ACTUAL
SIZE
AIRFOIL
SECTIONS**

JUNIOR ENTHUSIASTS

A SELECTION OF YOUR LETTERS AND QUERIES
PLUS MONTHLY HINTS AND TIPS



Dear John,

I have been a member of Golden Wings for some time. This is my first letter. I enclose a photograph of my latest models. On the left is an A.P.S. Griffon powered by an O.S. Max 15 - I have not flown it yet. On the right is a model of my own design called Spuggy, powered by a Frog 150, which I have stunted successfully.

These models are a great improvement to my first ones. Thanks for the tips I have seen in *Aeromodeller*.

Handsworth Wood,
Birmingham 20.

David Richards



Own design Spuggy and A.P.S. Griffon are two of David Richards' models. Griffon should be fast with O.S. Max 15.

Dear John,

I have recently joined the Golden Wings Club (number 13429) and would like to know if the *Aeromodeller* plans service has a plans pack of the Spitfire Mk. II (2). As I have not had the *Aeromodeller* magazine for long I would not know if it had advertised or included this plan. If the plans service does make a plan of this aircraft please could you tell me the price and plan number?

I have been aeromodelling for about two years now, my first models being rubber-powered. I have built a couple of larger aircraft but my cat always seems to be able to get at them and has a strange desire for clawing the tissue off my models!

I have only one engine, a Frog 80 diesel. I would like to start on R/C but it is a little expensive! F/F is more my line, I think.

Old Harlow.

Nicholas Jordan

I suggest that you get your parents' consent to hang your models from a wall in your room, but be careful with the decorations. Ordinary string looped round the undercarriage will hold the model (out of reach from the cat).

Our Plans Service does not include the Spitfire II, but can offer the Mk. Vb and Vc as pack 2347 or the Mk. IX and XIV as pack 2740, each is 2s. 6d. plus 6d. post.

Dear John,

I have a Keil Kraft 'Snipe' which flew well until it hit some trees and broke part of its wing. I repaired it and tried again. I found that when I had it turning right under power its glide was nearly a spiral dive, so to save adjusting the thrust line I had it turning left under power and right on its glide, this seemed to work, but on its third flight it started off turning left but after about 15 seconds it turned right and made an 'S' shape, after that it flew straight out over a steep wooded valley. After a long search I found it up a tree.

I hope you can tell why this happened and how I can stop it.

Roslin, Midlothian.

Paul Cobbey

Whilst the Snipe is an excellent model it will spiral into the ground if a tight turn is allowed to develop. If this happens you should warp the left wing tip slightly inclining the trailing edge upwards. This should stop the model dropping a wing in right-hand turns. From what you say about the last flight, it sounds as though the tailplane and fin vibrated into another turn position, this causing the flight path to vary.

Dear John,

Could you please tell me the specifications for A-1 and A-2 gliders. I have a K-K Caprice which I have just re-tissued and it flies really great. Is this an A-1 or an A-2 glider? I would like to try my first power

model and I'm considering the 'Sweetheap' which you have given plans for in the September *Aeromodeller*. I am clear about everything except the steel lines used and don't know where to obtain these.

Also, I have sent 6d. for two new Golden Wings transfers, as I had to sacrifice my others when I re-tissued Caprice.

Otley.

C. Flatters

For competition specifications you should write to the S.M.A.E., 10A Electric Avenue, Brixton, London, S.W.9. The Caprice falls into the A-1 class. Single strand steel wire is obtainable from most model shops. For Sweetheap very thin wire is recommended, and remember to handle it with great care as it kinks very easily. Nylon fish line of about 8-10 lb. breaking strain would also be suitable for Sweetheap.

TIPS OF THE MONTH

When fuel proofing the inside of an engine cowling with bolts previously fitted, one often finds that despite the greatest care taken, the threads on the bolts become clogged, to the extent that the nuts cannot be freely fitted. To overcome this, simply slide a length of fuel tubing over the bolt before fuel proofing or painting; when removed, the threads are left absolutely free.

'Dettol' bottles when empty make useful mixing bottles for fuels for those poor unfortunate engines, whose owners expect them to suck up without complaint any and every queer concoction presented to them. The bottles are graduated on either side, enabling exact proportions of each constituent to be used.

Dear John,

I have just joined your club - membership No. 135255 - and think it is a marvellous idea. I would like some advice on scale control line models. The things that puzzle me are: a) what is suitable for control lines, b) which are the best bellcranks to use and also how many times would you clear dope one sixteenth sheet balsa for wings.

I enjoy reading *Aeromodeller*, especially Golden Wings page.

Liversedge.

J. McKenna

Control lines and bellcranks depend on the size of model concerned. For models with over 1 c.c. motors you should use steel wire, such as light Laystrate and a variety of bellcranks, metal or Paxolin are available. Three coats of clear dope should be sufficient for balsa sheeted wings. For extra strength, tissue paper can be doped on.

Full answers to your control-line queries are contained in Aeromodeller Pocket Data Book which is 5s. plus 1s. post and packing from the editorial offices.

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

9/68 2d. in the 3/- Rebate
plan purchase coupon
for Golden Wings Members
C.W. No.

Your free plan!

36 inch span scale model for
free flight or radio control
to suit .8cc (.049) engines.

Designed by Jack Headley

BEAGLE PUP 150

OUR FIRST impression of the Beagle Pup was that surely it had been designed by an aeromodeller, as it was such a perfect subject for a scale model.

Imagine a plane with lots of dihedral, an adequate tail-plane, and an ideal undercarriage, plus a roomy fuselage for all the radio equipment. From what we have read about the design it seems that Beagle decided to save extra fuselage weight and costs by providing an enlarged tail assembly. Whether or not, this is true is immaterial, but we wish more designers would take this approach!

Three Pup designs have so far been disclosed, the 100 and 150 are almost identical, and the 180, which has a little more wing area (the numbers, incidentally, refer to the engine horsepower.)

Our model is of the Pup 150 which is a four seat version of the basic 100 design. The construction follows the general lines of two previous models, the 'Swannee' from Feb. 1966 *Aeromodeller*, and the 'Moonbeam' from R.C.M.&E. This 'all balsa' construction system is ideal for small rudder only types, and is very robust, and not at all as heavy as would at first appear. Our 'Moonbeam' together with a friend fly regularly from the local slope, and both have survived landings into the too numerous cactus bushes, with far less damage than that suffered by the retriever. Those cacti hurt! However, to the construction. Rather than give a tediously detailed account of glue A to B before C but after frame 6, we've indicated the main steps. The intermediate work should be obvious after a careful study of the plan.

The fuselage is initially built *upside down* on the plan, by first gluing the sides to the cabin floor, and frames 4 and 6. When dry, add the remaining frames, and the top and bottom sheeting. Note that frames F6 and F7 are constructed from strips of 1/32 in. sheet which are first soaked in hot water, glued together, then wrapped around card formers. Add the tailplane and fin, and the nose and tail blocks and carve to shape. The wing is built in two pieces. Start by fixing the leading edge and ribs to the lower surface. The wings are then joined by the main

The Pup's large tail surfaces, cabin and tricycle undercarriage are evident in these views. Spacious interior is a boon for radio installation, actuator mounting shown right, almost lost in large fuselage.



spar - undercarriage attachment. Make sure the U/C spar fits snugly between the two main spars. Add the upper sheet, and block tips and sand to the final shape.

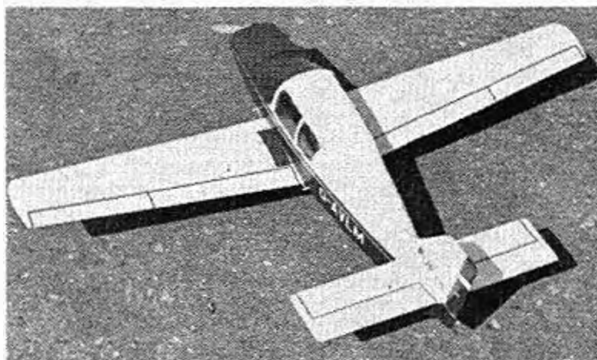
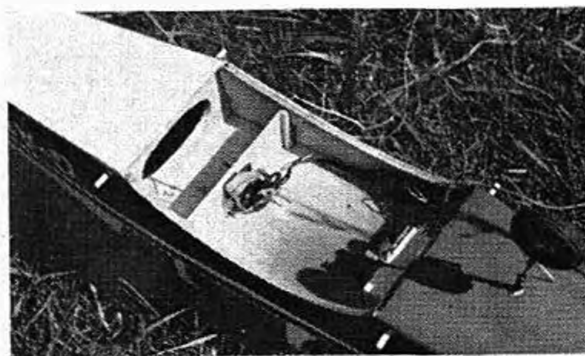
Now finish off the wing cut-outs in the fuselage, using the completed wing as a guide.

No particular radio installation has been shown on the plan. The original was fitted with an escapement, as our picture shows. The amount of rudder travel should not be too great initially, and the system sketched will permit the right amount to be obtained during the first few flights.

Use the batteries to obtain the correct balance, rather than moving the radio around. When the C.G. is located correctly fix the battery location by an additional bulkhead.

The complete model was first clear doped, and then covered with Jap tissue. Apply a further coat of clear dope, then spray on the colour. Two or three coats provided a very satisfactory finish. The original was red and white as the photos show.

Establish the correct setting of the elevator tab by first obtaining a smooth glide. Set the rudder for about 1/4 in. movement, and make a few flights, revising the engine alignment as required. Some sidethrust will probably be necessary. The original model weighed just under 16 ozs. all up when completed.



AIRCRAFT
DESCRIPTION
Number 176

HEINKEL He162

DRAWN & DETAILED

By P. Lloyd

BACK IN 1944, the disclosure of the VOLKSJAGER project must have seemed encouraging to the Luftwaffe. Indeed had any of the allied powers known of the details, they would certainly have been caused some concern to say the least.

The estimated production figures alone were ambitious some 1,000 machines per month was projected, and agreed by the manufacturers involved; and this before the prototype was complete, let alone test flown. Bringing an air of doubt to this possible undertaking, was Goring's particular dream of vast quantities of VOLKSJAGERS flown by air-minded N.S.F.K. trained Hitler-Youth after a limited period of glider tuition, with rapid conversion to their 500 m.p.h. mounts on the airfield! Thus the rate of supply of pilots would be equal to the numbers of aircraft rolling off the assembly lines, in underground and strategically distant factories.

Part of the dream was possible; that is, the aircraft itself was capable of being produced quickly – largely from non-strategic materials, and to a basically simple design. Indeed the rapidity of this was borne out of the prototype's well quoted record of 'drawings to aircraft and flight' in something like 3 months; due mainly to 'round the clock' working by all involved.

The prototype was unfortunately destroyed in a demonstration flight, not due to over-enthusiasm of the pilot for this obviously lively machine, but due to airframe failure. Bonding techniques used were sometimes faulty, perhaps due to their then novelty but unfortunately both pilot and aircraft were lost.

Support for the project was not lost however; and development continued incorporating modifications – the most obvious being a tailplane of larger span, anhedral wing tip extensions, a more curving 'spoiler' like under-camber of the trailing edge at the wing root. The leading edge of the wing root had a small wedge-shaped section strip added to both port and starboard for about 20 inches of the inboard leading edges.

Contrary to usual German practice the pre-production prototypes were delivered directly into training squadron units to 'work' up under field conditions, training pilots and ground crew at the same time.

These early aircraft were variously equipped with 20 or 30 mm. cannon – subsequently standardised on the former with an increased ammunition supply – and powered by BMW 003 A-1; A-2 or BMW 003 E-1 or E-2 gas turbine units. General construction was as follows:

Fuselage was monocoque with dural formers and skin; wheel well doors, cannon access doors were ply and wood. The removable nose cap was a one-piece ply moulding. Tailplane was mixed steel and dural, with some ply skinning. The turbojet was itself, once covered, a reasonably streamline shape, and was accessible if not appealing to its 'piggy-back' position, it was rapidly interchangeable, only mounted by 4 bolts, an advantage when one considers the life (50-60 hours) of early units. Under-carriage was conventional tricycle, wheels retracted hydraulically but were lowered by large springs compressed while the wheels were 'Up'. Only the mainwheels had brakes.

Drawing attention to the original conception of 'green' pilots flying the He 162, a couple of built in 'reminders' make one think twice.

Firstly, the nose wheel was housed in a wheel well which protruded between the pilot's legs – and in turn provided with a window to give an indication of the front wheel position. Secondly the nose wheel ram and spring assembly when in the 'down' position triggered a rod which

protruded through the nose cap in front of the canopy – clearly visible to the pilot. The aircraft had a jettisonable canopy and an ejector seat fired by a 20 mm. cartridge – a refinement in those days; although with the gaping intake of the turbojet so close, possibly a necessity!

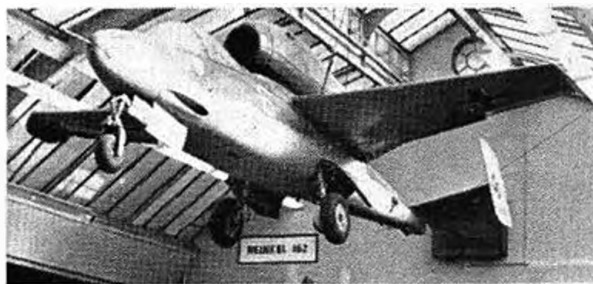
The starting of the BMW 003 was a ritual worth mentioning. Seemingly involved, it was no doubt reliable, and comprised the Reidel starter, which was a 10 h.p. 2-stroke 2 cylinder motor, itself either started by an electric motor, or by a pull cord recoil starter. This ran on its own supply of petrol with oil added, and when running, was coupled to the turbine mainshaft by a centrifugal clutch and dog system.

The 003 unit itself ran on crude J-2 diesel fuel, but wouldn't start on it, so when the Reidel had reached some 800 r.p.m. petrol was injected to a starting ring of 6 nozzles, 2 spark plugs and a vibrator and coil with a 24v battery then ignite this and run on, warming up the combustion chamber. As the speed of the turbine reached 1,200 r.p.m. the J-2 fuel proper was injected through a separate ring with 16 nozzles – when all was burning well, at 2,000 r.p.m. both the Reidel and the petrol supply were shut off. Jet pipe temperature was not to exceed 750 deg. C, the rated shaft speed on J-2 was 9,500 r.p.m. with a life of 50-60 hours between overhauls.

Sub-variants only differed in detail equipment such as engines although one variant the A-9, had an experimental Vee tail. The He 162B derivatives were intended for lightweight use of the Argus pulse jet units like those of the V-1 flying bombs – due to the design of the pulse jet unit, these had to be launched either by rocket or catapult before the pulse jet would work.

The He 162C and 162D were rather more adventurous experimenting with swept forward and swept back wing planforms and butterfly tails, with the Heinkel-Hirth 011 turbojet.

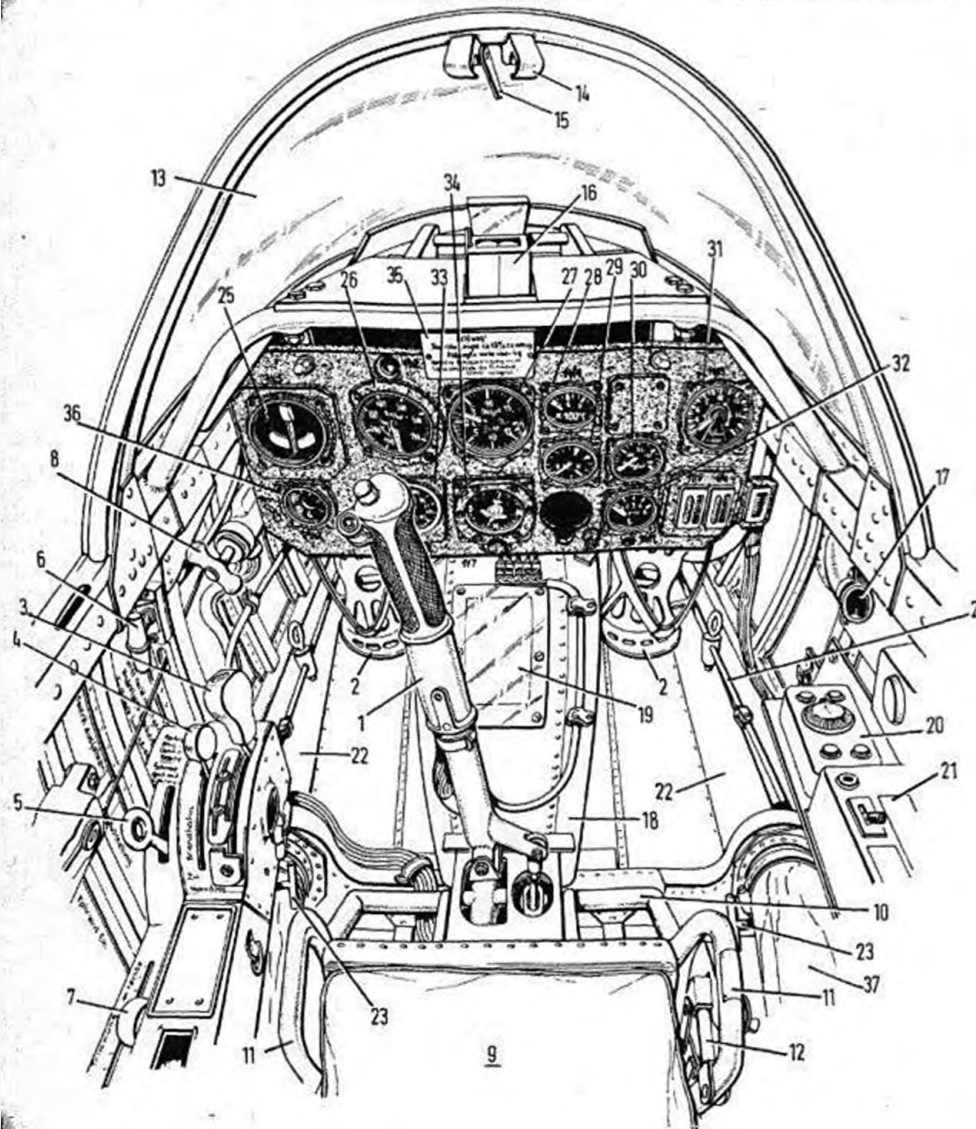
Finally, in spite of all the hopes for this fighter it was the old story of being too late – only some 116 'Salamanders' were completed, with many more discovered in part assembly in tunnels, mines and caves. Most aircraft were assembled at Leck, some 50 He 162s belonging to JG/1 abandoned there due to lack of fuel, etc. and nearness of allied forces. Allied pilots had reported sightings of this aircraft, but no combat comparison ever seems to have been made. Evaluation trials were conducted by both the R.A.F. and U.S.A.F. after hostilities, and examples preserved for design study and museum exhibition. Three of these machines in Canada, France and in London have been closely studied for the preparation of our drawings. We would like to thank in particular Mr. T. Steel for his research at Rockliffe Museum, Ottawa. Messrs. McCann & Willis of the Imperial War Museum, London, and the author wishes to thank the editor for his study of the aircraft in the Musée de l'Air, Paris.





Left: Captured test example, repainted as Air Min 61 serial 120072 and crashed at Farnborough (IWM Photo MH 4886). Below, top to bottom, Frontal view of the Rockcliffe example showing fairing over two-stroke Reidel starter motor. Efflux close-up is of the French Musée de l'Air exhibit. Undercarriage (and photo opposite page) is of the Imperial War Museum aircraft, and lastly, the Rockcliffe exhibit in Canada.

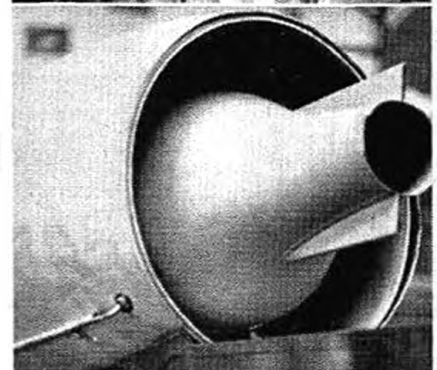
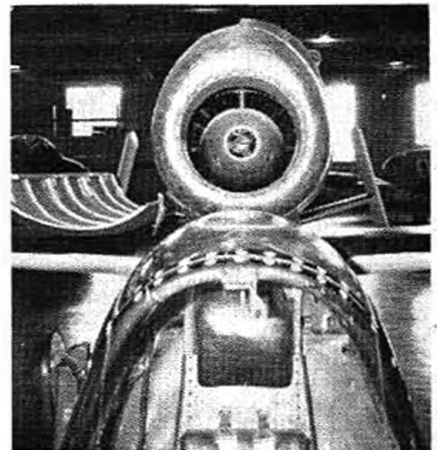
REPRINTS OF THIS FEATURE PLUS 1/32nd SCALE DYE-LINE PRINTS AND INCLUDING DRGS. OF THE He 162B DERIVATIVES ARE AVAILABLE AS PLAN PACK SF 2819 PRICE 5s. (plus 6d. postage) FROM AEROMODELLER PLANS SERVICE.



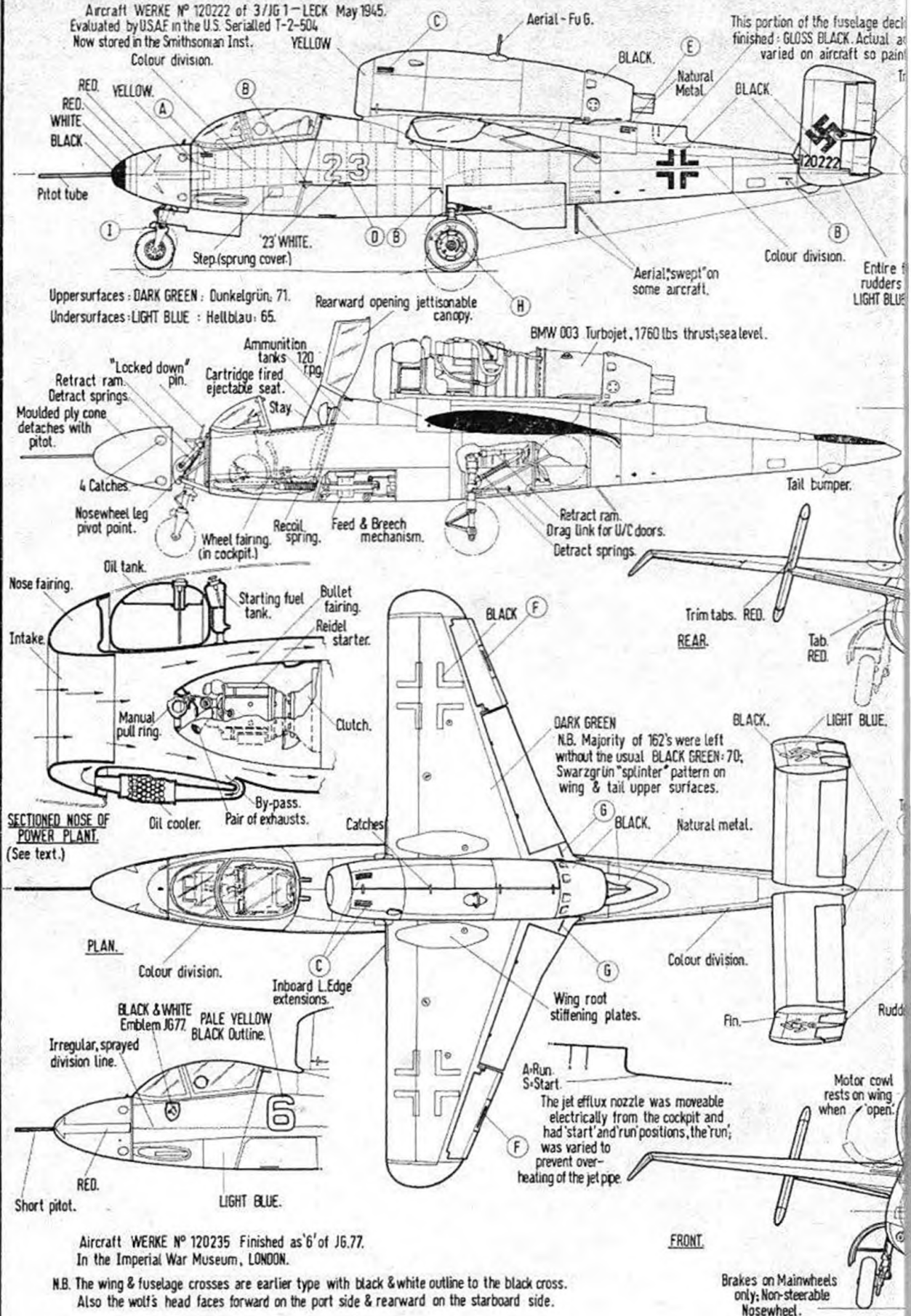
- | | | |
|--|---------------------------------|----------------------------------|
| 1. CONTROL COLUMN WITH GUN BUTTON & RUDDER PEDALS. | 13. FRONT CANOPY. | 25. TURN & BANK INDICATOR. |
| 2. THROTTLE LEVER. | 14. CANOPY CATCH. | 26. AIRSPEED INDICATOR. |
| 3. FUEL COCK. | 15. RELEASE FOR 14. | 27. RATE OF CLIMB/DESCENT. |
| 4. UNDERCARRIAGE SELECTOR. | 16. 'REVI' GUNSIGHT. | 28. JET PIPE TEMPERATURE. |
| 5. U/C OPERATING LEVER. | 17. FLARE PISTOL CHUTE. | 29, 30. PRESSURE GAUGES. |
| 6. TRIMMING CONTROL. | 18. NOSEWHEEL COVER. | 31. REVOLUTION COUNTER. |
| 7. FLAP CONTROL. | 19. WINDOW FOR VISUAL CHECK. | 32. FUEL CONTENTS. |
| 8. EJECTOR SEAT. | 20. RADIO SELECTOR. | 33. ALTITUDE. |
| 9. SEAT HANDLES. | 21. STARTER & ELECTRICAL PANEL. | 34. COMPASS. |
| 10. ST'D. HANDLE WITH EJECTOR TRIGGER. | 22. CANNON BLAST TUBES. | 35. LIMIT DATA (SEE MAIN DWG.) |
| | 23. CANNON FORWARD MOUNT. | 36. FLAP INDICATOR. |
| | 24. MANUAL COCKING LEVERS. | 37. CANVAS RECOIL SPRING COVERS. |

29: RED RIM. 30-32: YELLOW RIMS.

COCKPIT LAYOUT HEINKEL He162A-2.



Aircraft WERKE № 120222 of 3/JG 1—LECK May 1945.
Evaluated by USAF in the U.S. Serialised T-2-504.
Now stored in the Smithsonian Inst.
Colour division.



Aircraft WERKE № 120235 Finished as '6' of JG 77.
In the Imperial War Museum, LONDON.

N.B. The wing & fuselage crosses are earlier type with black & white outline to the black cross.
Also the wolf's head faces forward on the port side & rearward on the starboard side.

HEINKEL He 162 A-2. 'Salamander'/'Volksjäger.'

Drawn & Traced by AAP LLOYD

Aircraft WERKE N° 120076 Formerly of 1/JG 1 - LECK May 1945. Now re-finished as aircraft '4' of 9/JG 77.
In the Canadian War Museum, ROCKCLIFFE.

Checking
area
painted.

Trim tabs.
RED.

BLACK.

BLACK

Natural Metal

Flare pistol chute.

ST. RD. SIDE.

Colour division.

Colour division.

YELLOW

Emblem of JG 77, a grey wolf's head; Shield: WHITE; Outline and wolf head: BLACK. Tongue: RED.

Wire fins and
rings finished
BLUE: Hellblau.

N.B. ROCKCLIFFE Aircraft has BLACK GREEN
"Splinter pattern on wing & tail upper sides.

PORT SIDE.

Colour details as for starboard side, except Wolfs head-
faces forward on both sides of fuselage.

WING & FUSELAGE SECTIONS.

LIGHT BLUE.

Trim tabs.

RED.

Elevator.
30° up or down.

Bumper.

Mainwheel doors.

Flap 45° max.

Aileron.
18° up, 18° down.
Trim tab.

55° Anedral
Wing tips.

"LIMIT" Plate 35

See cockpit
drawing.

Achtung!
Stauröhr zeigt ca 10% zu wenig
Abfangen nicht über 4g
Negativ beschleunigung nicht länger als
3 sek du Tritwerk sonst ausgeht.

Equivalent:

Caution! Pitot tube shows 10% to little. Do not flatten out
above 4g. Do not use negative acceleration more than 3secs
otherwise the turbine shaft will fail.

Notes on stencilling should
be located on the various
views by their circled letter.
Notes B and D accompanied
by a small red arrowhead.
Note H in red lettering; and
I in white on a red panel.

BLACK Cartridge & link chutes

Cannon access
doors

Nosewheel door

UNDERPLAN.

STENCILLING LIST.

- | | | |
|-----|---|---|
| (A) | Außenbordsteckdose
im Bugradraum. | Electrical socket in
nosewheel well. |
| (B) | Hier Unterbocken. | Under supports (trestles) here |
| (C) | Vor dem öffnen der
Spannverschlüsse oben
Verschlüsse links u rechts öffnen. | Before opening the catches
above open latches left
and right. |
| (D) | Sauerstoff Anschluss. | Oxygen connection. |
| (E) | Vor dem Start muss startmannschaft
Kontrollieren ob Düse auf
S-Stellung gefahren! | Before the start
the starting crew
must check that the
nozzle has gone into the
S-position. |
| (F) | Nicht Anfassen. | Do not touch. |
| (G) | Nicht Betreten. | Do not walk here. |
| (H) | Achtung: Räder nicht ternlem
beror reifen luftleer. | Caution: Do not split the rims
before deflating the tyres. |
| (I) | Reifen Fulldruck 3atü. | Tyre pressure 3atmospheres. |

Scale: feet 0 1 2 3 4 5 6 7 8 9

topical twists

by 'Pylonius':
illustrated by 'Sherry'

Artistic Uplift

Reading that article about the American sculptor who wooed the art lovers with dollied up bits of W.W.I aircraft, prompts the thought that the day may yet come when that derisive concoction of balsa and tissue, known as the model plane, may be regarded as the ultimate thing in activated art. Thus a model meeting would not be described as such, but rather as an ethereal happening. And it would not be the local model shop proprietor who would be asked along to judge the club Concours event but the President of the Tate Gallery.

It could even be that the model plane artefact would do much to narrow the credibility gap that exists between the public and the more advanced schools of art. The reclining figure with holes might leave John Citizen gaping in perplexity, but with the model plane exhibit a demonstration could be readily given for his artistic edification; a flick of the prop, a couple of circuits around the gallery, and all would be sweet understanding.

Come to think of it, model plane sculpture could hold its own quite easily with any of the modern gimmick studies. Could anything be more freaked out than a power duration model, and would not a Combat wing put even Picasso on his mettle?

There are possibilities in Vintage, too. We can, perhaps, hope that the hobby may be retrieved from the museum into which it is fast disappearing and redirected to the art gallery. That early model, with its maquette-type wire-work and dead skin covering would surely get the plaudits of the pundits, as, too, would the ample, suggestive curves of the pre-war Wakefield.

Pitching it Strong

To me 'variable pitch' might suggest nothing more than a last second change of wind producing a launch into the deck. But to the more scientific minded it seems to have something to do with the way the prop blades adjust themselves for a contest-winning climb.

Amazing though what some people can do with a few pieces of wire and a fully equipped workshop. For my own part, if I manage to bend a hook on a prop shaft after the tenth attempt I think I am doing well. Trouble is I all too often exhaust my vocabulary of swear words half-way through the operation, and this can be most



'I suppose it's the novelty of seeing a woman fly a model plane.'

frustrating. After that it's just a case of going round the bend.

The trouble with all this trendy gadgetry is that it sets impossible standards in expertise and expense for oldie hairless types like myself, still living in the razor blade era. Take the power model, for instance. Time was when the only major item of expense was the fifty bob 'deasil' up front. Gadgetry, if any, would run to a weighted trim tab and a five bob pneumatic timer. But what a difference today! Recently I had a look at a typical modern power job. You know the sort - if you flew it over London Airport there'd be noise complaints from the residents. Anyway, it simply dripped with expensive gadgetry; of which the specially imported timers alone would keep my modelling budget going for a year.

And what of launching such a precious package into vasty space? Obviously, you couldn't do it with the gay abandon of the carefree Sunday morning flyer; it could only be done with the grim-faced intensity of one who is gambling with fate. Anything could happen to the masterpiece as it plunges from cherished sight beyond the airfield boundary. Will it lodge in some impenetrable thicket, there to rot in perpetuity? Or will it be found shorn of engine and other valuable by scavenging youths?

Back in the earlier contest day, when a ten bob per model limit was considered extravagance enough, there would be great lamentation if a model were to come to grief, or, horror of horror, be plucked into oblivion by a hungry thermal. The only consolation would be a grand write up in the local press.

Exceptional Flight by Elastic Band Powered Model Aeroplane

On Sunday, 25th August, at 10 a.m., Mr. Aloysius Shrimpton, a well-known local model builder and a founder member of the Little Trampton Kite and Model Aeroplane Club (affiliated to the Royal Aero Club) launched his elastic band powered cantilever wing monoplane from the club flying field at Cowslip Meadow. Fellow members clapped and bravoed and his gallant little silver and blue model soared up on a favourable wind to disappear from sight behind the 14th century tower of St. Swithin-by-Water. At this point the model was sighted by the Rev. B. E. L. Fry, who recorded the event in his Ornithological Year Book.

The model eventually came down to earth in the old market place at Filchester at exactly 11.45 a.m., where the broken dial on the obelisk clock testifies to this fact. The model plane suffered only a slight fracture of a secondary undercarriage strut.

We have since learned from Mr. Tangent Trigg, a local sportsman, and former Royal Ordnance Survey official, that the model aeroplane flew a distance of two and one-quarter miles; a flight of outstanding merit which has now an honoured place in the annals of the Little Trampton Kite and Model Aeroplane Club.

'That's the last we'll hear of him and his "best and biggest" model in the club.'





PLANE ON THE COVER I

D.H.60 Gipsy Moth

SEEN ON our cover this month and depicted here is the aircraft in which Francis (now Sir Francis) Chichester made the first solo Moth flight to Australia. Several accounts of this flight are obtainable, examples being, 'The Lonely Sea and Sky' by Francis Chichester, 'De Havilland aircraft' by A. J. Jackson and 'The Story of the British Light Aeroplane' by Terence Broughton. Starting on December 20, 1929 Francis Chichester took until January 25, 1930 to arrive at Darwin in a flight filled with adventure and including a long delay caused by a broken propeller and strut in a nose over at Tripoli. *Mme. Elijah* was then shipped to New Zealand a year later and fitted with floats from a N.Z.A.F. Moth for an epic navigational flight via the small Norfolk and Lord Howe Islands during the return flight to Australia. This aircraft was subsequently wrecked during a landing at Katsuma, Japan on July 17, 1931 whilst attempting to fly to England via the Aleutians and Canada. By no means was *Mme. Elijah* the only notable Gipsy Moth although much of her adventures remain unknown to the majority of the public. Another immediately coming to mind being *Jason*, the aircraft in which Amy Johnson flew to Australia later in 1930. The story of this was given in August 1958 *Aeromodeller* (sorry, back numbers no longer in stock!).

Although this new model is designed for multi channel R/C and .60 cu. in. size engines, it could still be used as a successful rudder only, or rudder/engine model with motors of around 5 cc., or even free flight as was the original plan 'FSP 135' in our range. Already one of the best selling in Plans Service, J. Bertola's model entered in



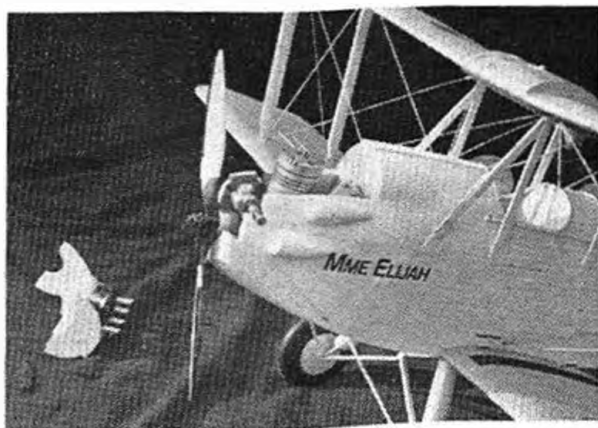
1/6th scale for R/C
and .49-.60 engines
by J. BERTOLA

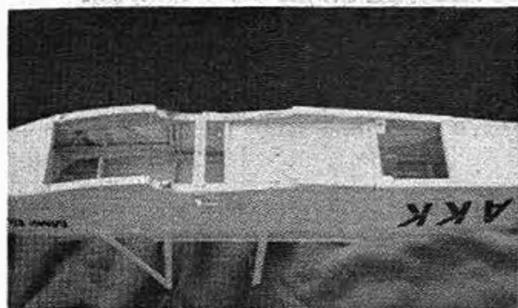
the *Model Engineer* exhibition (Jan. 3 to 13), 1968) showed that a modified version could be completely competitive in this age of super scale models. (A photograph of the original appeared in the M.E. Exhibition report in March *Aeromodeller*.) With the details given every builder should be able to produce an accurate replica which is a truly practical flying model. Now for the construction which is basically straightforward and simple.

Build two fuselage sides flat over the plan at this stage leaving the lower longeron complete at the wing position (shown dotted) to obtain an even curve to the nose. Before fitting spacers etc., in the cockpit section, cover with white Monokote to provide a smooth interior. Join the sides on to the bulkheads starting at the cockpit section. Cut and drill the engine mount to suit your engine and fix in position. Fit the ply wing supports inside the fuselage frame and add $\frac{1}{4}$ in. sheet filling from lower longeron to top of wing support, between spacers. Add the top formers, spine and rear cockpit bulkhead. Slide tank into position, padding with thin strip foam. Many of the cockpit details should be fitted at this stage, the seat being made from thin card covered with thin leatherette. Add the false floor, covered with Monokote, make up the elevator trim unit and fix by seat. Compass and joystick should also be fitted, remaining details added on completion of model. Fit the cabane assembly to fuselage taking care to obtain the correct incidence angles. Longerons may require recessing to achieve fitting. The front section of the fuselage back to undercarriage strut is of $\frac{1}{4}$ in. sheet balsa and this together with the lower $\frac{1}{4}$ in. sheet balsa should now be added. Fit ply plate, drilled to fit dowels on movable centre section and screw fittings aft of cockpit together with fitting for elevator control as shown on plan. Cut 1/16 in. sheet balsa to approximate size, seal and sand to a smooth finish before fitting. Cover the inside of the cockpit area with Monokote. Now attach 1/16 in. sheet to fuselage framework, cover with nylon doped on, cutting at positions shown, and leave overlaps for realism. Cut slot for rudder bar and mount support in position also cut holes for elevator control wires.

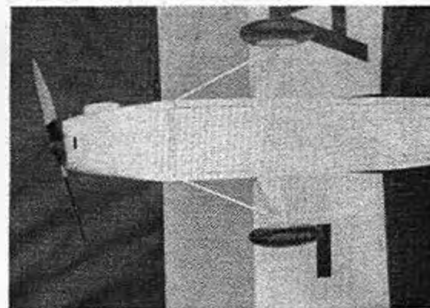
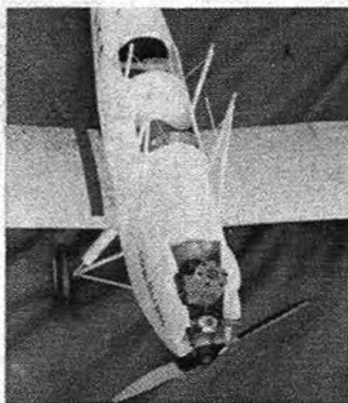
Build the lower wing first, pinning spars in position over plan (spars should be previously attached to braces). Drill the ply for undercarriage and ribs for Bowden cables

White fuselage and silver surfaces make 'Madame Elijah' a distinctive subject as chosen by John Bertola. Close up at left shows access to Marco 61 when dummy Gipsy engine is removed with upper cowling. Story of ZK-AKK is given in 'Ride on the Wind' by Francis Chichester (Hamish Hamilton 30s.), a book well worth reading.





Wings are a practical one-piece tip to tip, and lower unit includes area of fuselage base as removed above. Revised C-section details are on plan, original upper wing bolted to struts. Other photos show rigging and cockpit areas of this remarkably realistic scale model.



Information on the other Moth variants, the Cirrus & Metal Moths and especially Amy Johnson's 'Jason' are included in the A.P.S. Plan 2708 price 2s. 6d. plus 6d. post.

at this stage. Build one wing at a time cutting wider slots in the ribs to take ply braces, add leading, trailing edges and tips. Add dummy top spar at aileron position for covering attachment, making sure that the spar is at an angle and notched for ribs. Chamfer top and bottom to required angle and cut in hinge positions so that hinges can be fitted after covering. Add control horns, Bowden cables and fix $\frac{1}{4}$ in. square balsa to wings (top and bottom) to take card inspection hatches when covered. At centre section of wing, mount the two side members in position, filling this lower space between them and ply rib with scrap balsa. Check before firmly set that the whole unit fits tightly into fuselage before covering centre section with $\frac{1}{4}$ in. sheet. Bolt on the undercarriage strut so that it will swing back in the event of a heavy landing. Add dowels to front to slot into ply plate. These also take the rubber bands for the front undercarriage strut. Cover with nylon, upper surface first to allow for bolting the rigging tags to blocks as shown then cover the underside. Coat with clear dope then add 'party streamers' which are $\frac{1}{4}$ in. wide, for rib tapes. The top wings are built the same as the lower, excepting ailerons, plus the fuel tank. Add ply ribs for tank section and attach the ply for wing fixing. Check that centre section fits onto struts, then add blocks for rigging wires, and 1/16 in. sheet on tank section top and bottom. Cut thin card for tank ribbing and glue on both sides. Nylon cover (the underside wing first) to allow for bolting on of rigging tags, dope and add rib tapes. Fix slots which are made of card, doped on both sides to retain curve, and add filler cap, vent, etc., to tank. Wing struts are made from $\frac{1}{4}$ in. dowel and 22 s.w.g. piano wire, sandwiched between balsa and sanded to section.

Notch tailplane spars for ribs, pin in position over plan and glue ribs into position. Slide false leading edge into slots and glue, then curve leading edge into position (pinned until set). Cover centre section top and bottom with 1/16 in. sheet. Build up elevator gluing ribs into spar and trailing edge. Make slots for hinges, round edge of spars to allow movement. Fix horns to ply ribs. Add blocks for tailplane support, which is constructed of wire and balsa sanded to section. Cover (underside first) to lose bolt heads, clear dope and add wing tapes. Before

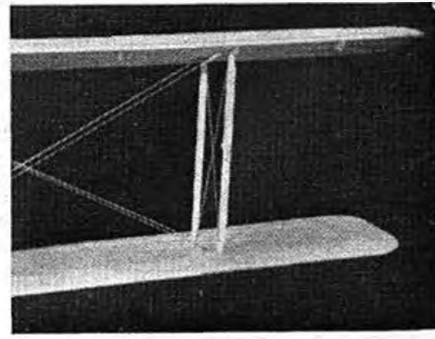
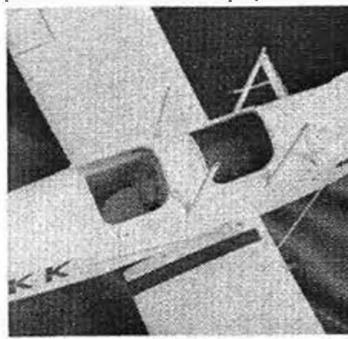
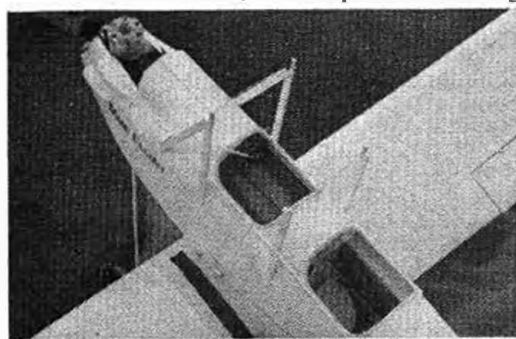
mounting to fuselage, fit tailskid and spring. Rudder is built by sliding ribs over outside shape and glue into spar carefully avoiding warps. Add horn to ply rib, dowel for top movement and hinge at bottom. Fix fin section to fuselage. Fill in base with block balsa and sand to shape. Shape edge of spar for movement. Cover and add tapes.

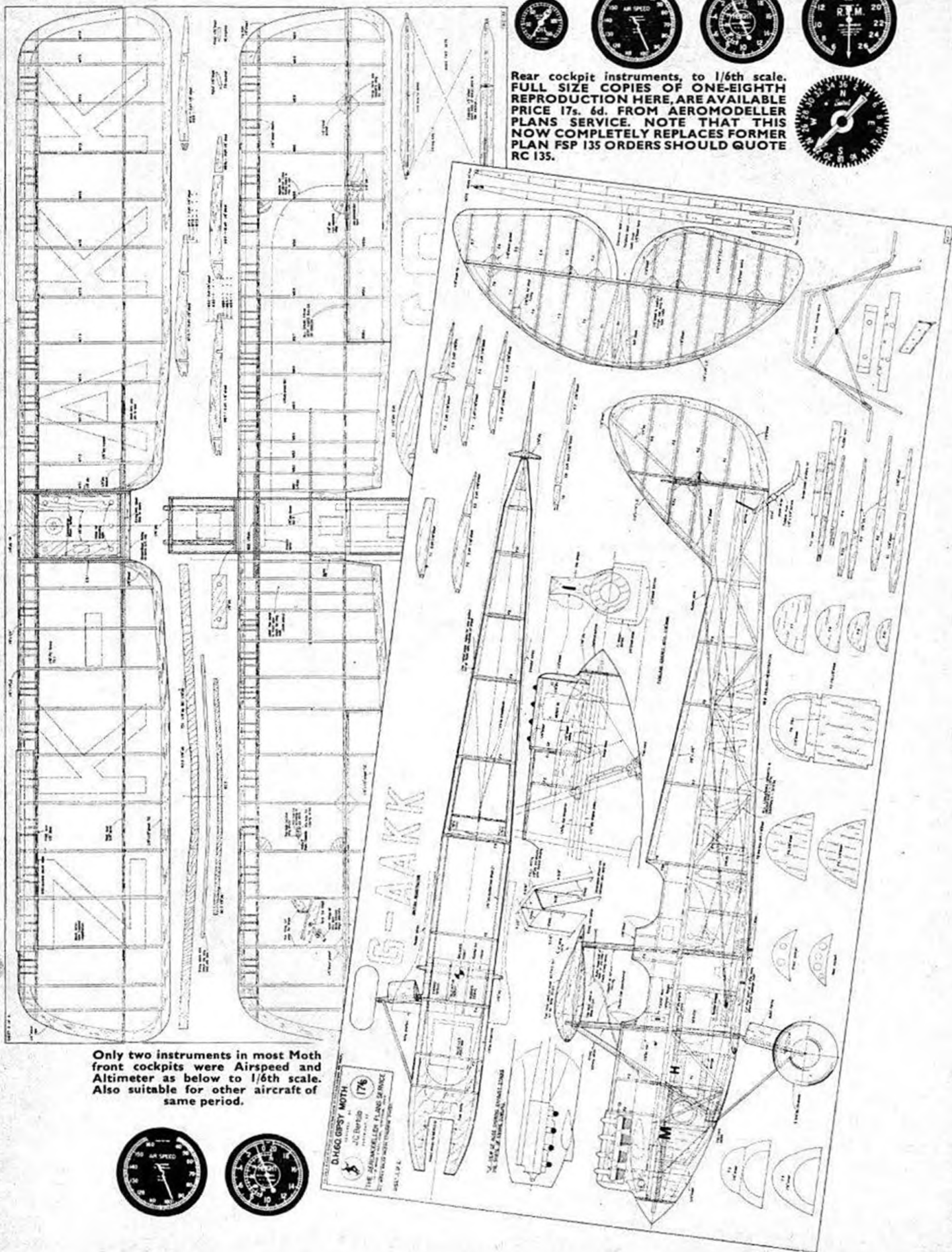
Cowl and Engine

Add balsa to front of ply former, sand to approximate shape and glue to fuselage, also spot glue balsa rear former in position and build up between with block balsa to required height. Add $\frac{1}{4}$ in. sheet cut to shape for top and when cowl is sanded to shape remove from fuselage and hollow out for engine. Cut slot for silencer. Dummy cylinders are made of thin card, mounted on base. Rub soft lead pencil on edges then dope well. The manifold is made from balsa and when shaped rub hot knife over to give a burned effect. Add exhausts which are made from gummed paper rolled around a dowel.

Finishing

Mask cowling section with Sellotape (see photographs and plan for shape) paint and rub down until a smooth finish is obtained. Add fittings which can be made from balsa, card and pins and screws for rivets. Scribe lines to represent movable sections, also doors below cockpit. Paint the remainder of fuselage and fixed fin white, but no more than two coats or the canvas type texture will be spoilt. The underside of lower wing centre section is also white and add card hatches. Exhausts are silver. Fix padding to cockpit and glue instrument panel in position. Make rims for instruments from thin brass, punch to shape and form indentations for rivets. Attach green canvas over scraps of balsa on 1/16 in. sheet, in front cockpit to indicate 'stores'. Paint wings silver, top and bottom, also tail section and black registration letters on wings and fuselage. *Mme. Elijah* is also in black. Control line wire is used for flying wires, and 22 s.w.g. piano wire bent as shown for rigging, held in place with plastic tubing slid over fittings. (Made taut this rigging adds greatly to the rigidity and strength of the finished model.) A radio installation is shown on the plan, but this of course varies with equipment available.



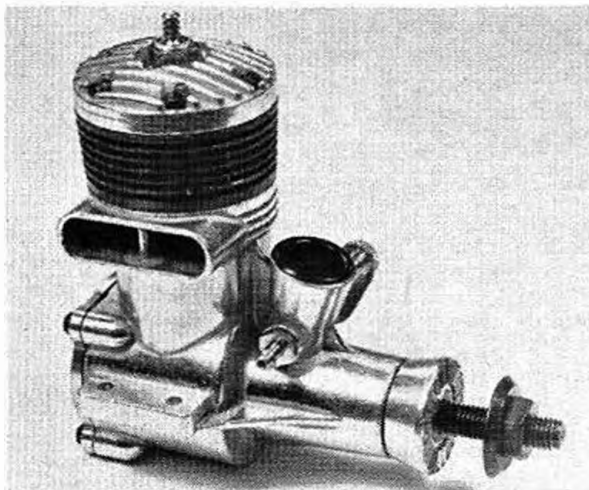


Rear cockpit instruments, to 1/6th scale. FULL SIZE COPIES OF ONE-EIGHTH REPRODUCTION HERE, ARE AVAILABLE PRICE 17s. 6d. FROM AEROMODELLER PLANS SERVICE. NOTE THAT THIS NOW COMPLETELY REPLACES FORMER PLAN FSP 135 ORDERS SHOULD QUOTE RC 135.

Only two instruments in most Moth front cockpits were Airspeed and Altimeter as below to 1/6th scale. Also suitable for other aircraft of same period.



DH60 GIPSY MOTH
176
THE AEROMODELLER PLANS SERVICE
10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100



ENGINE TEST by Peter Chinn

K & B STALLION 35

'represents uncommonly good value at present day model engine prices'

RECENTLY put back into production after a lapse of nearly two years, the K&B Stallion 35 is a 5.78 c.c. glowplug engine of orthodox design, and priced at only £5 9s. 6d. including U.K. purchase tax, represents uncommonly good value at present day model engine prices.

The Stallion 35 was originally introduced by the K&B company of Los Angeles in 1963 as a new, low-cost alternative to their .35 cu. in. engines in the well-known Torpedo range. The engine was priced at a modest \$9.95 at a time when its lowest-priced competitor was listed at \$6.95. Now, despite the fact that rival makes have gone up by as much as 70 per cent, the Stallion is still being offered at its 1963 price.

In general, the Stallion follows the design layout common to nearly all K&B Torpedo engines produced prior to the introduction of the more specialised and relatively expensive Series 61, 64, 66 and 67 twin ball-bearing contest motors. It is based on a unit crankcase/main bearing casting which extends upwards only as far as the exhaust duct, the cylinder being a separate component with integral cooling fins.

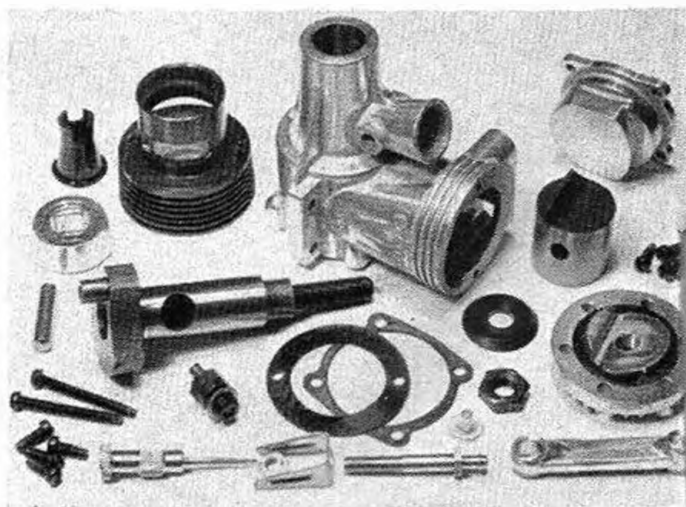
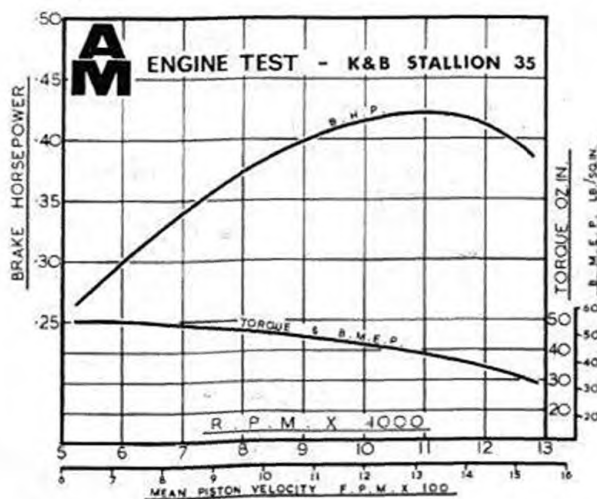
Although the Stallion looks very much like the Torpedo engines of the fifties, it incorporates several improvements aimed at making it more robust. The crankshaft journal, for example, is a full $\frac{1}{2}$ in. dia., instead of the $\frac{7}{16}$ in. shaft used by the older Torpedos, and the crankcase casting has thicker walls, longer and heavier beam mount-

ing lugs and a more sturdy front end. An aid to minimising crash damage, the crankshaft ends at the prop driver and a replaceable $\frac{1}{4}$ in. dia. stud is inserted to carry the prop nut and washer.

Such economies as are evident in the Stallion tend to show in simplification and not in any reduction in the quality of parts. The crankshaft has a circular valve port which registers with a similar port in the bearing giving, incidentally, a (measured) timing of 35 deg. ABDC to 43 deg. ATDC. (Exhaust and transfer periods are, respectively, 146 deg. and 128 deg.) The piston has a continuous gudgeon-pin band and the pin itself is solid without end pads. The piston skirt is plain parallel lapped. The cylinder assembly is tied to the crankcase with two screws only and, since composition gaskets are used for the cylinder head and cylinder base joints, frequent dismantling is to be discouraged as it will usually entail replacing these gaskets.

Standards of construction and finish are generally good and, we are bound to say, are in marked contrast to some other low-priced engines in the medium capacity group that we have examined recently.

The manufacturer does not offer a silencer for this engine, but suitable Tatone and Spinaflo silencers are available. Our tests were carried out with the engine as supplied, i.e. 'unsilenced'.



Starting qualities of the Stallion 35 were good, the required procedure being perfectly orthodox and straight-forward. Cold starts were quickly obtained after a prime into the exhaust port: hot restarts merely required one preliminary turn of the prop with the intake choked.

About 30 minutes rich mixture running-in were required to eliminate an initial tendency to tighten and another 30 minutes took the engine up to the point where it would hold an even speed at the optimum needle setting. Running-in was carried out in the accepted manner of a series of short runs with cooling-off periods between each. After this, the engine was given approximately one more hour before actual performance figures were taken.

The Stallion delivered its maximum torque at quite low speed, but the figure indicated, 50 oz. in., was fairly good. Beyond 6,000 r.p.m. the torque curve declined steadily, resulting in the peak of the power curve occurring at approximately 11,000 r.p.m. where a figure of 0.42 b.h.p. was recorded. While this is not particularly high by .35 cu. in. engine standards generally, it should be remembered that the Stallion is aimed rather more in the direction of the 'fly-for-fun' modeller than at the contest fiend. For the latter, K&B make a stunt type 35 and a combat 35 in the regular plain bearing Torpedo range, plus a very high performance twin ball-bearing 35 in the Torpedo 'Series 64' range.

The maximum output of the Stallion is undoubtedly restricted to some extent by the rotary valve porting (simple, circular, 11/32 in. dia. crankshaft port and circular bearing port) and to a considerable extent by the carburettor venturi insert which reduces the carburettor bore from $\frac{1}{2}$ in. to 9/32 in. dia. Taking into account the further restriction of the 5/32 in. dia. spraybar, the effective choke area is, in fact, reduced by over 60 per cent.

This ensures good fuel suction and means that the engine should not be critical as regards installation or handling in various types of models. However, if the user should require more power and can tolerate some loss of fuel suction, removal of the venturi restrictor will give a very worthwhile increase in power. We made a few quick checks here and from the performance figures obtained, estimated that output is increased by more than 25 per cent to around 0.53 b.h.p. at between 12,000 and 12,500 r.p.m. Incidentally, the Stallion is fully capable of operating on suction feed with the venturi insert removed: it is not necessary to resort to pressure feed provided that the engine is not over propped and is allowed to turn at reasonably high speeds.

A further increase in power is possible with the use of a higher percentage of nitromethane in the fuel. We have, in fact, tested a Stallion 35 on an American fuel containing approximately 25 per cent nitromethane and, on this, with the intake restrictor removed, an output of 0.57 b.h.p. at 12,500 r.p.m. was determined. Actually, the engine's response to increased percentages of nitromethane (compared with the performance on our basic 5 per cent mixture) was not very marked and, in view of the high cost of such fuels in the U.K., this is not an approach that we would recommend. One of the attractions of the Stallion is its low price, an advantage that will be nullified if costly fuels are used.

SPECIFICATION

Type: Single cylinder, air-cooled, loop-scavenged two-stroke cycle, glowplug ignition. Crankshaft type rotary valve induction and bushed main bearing.

Bore: 0.790 in. **Stroke:** 0.720 in.

Swept Volume: 0.3529 cu. in. = 5.783 c.c.

Stroke/Bore Ratio: 0.911:1.

Weight: 8.8 oz.

General Structural Data

Pressure diecast aluminium alloy *crankcase/main bearing unit* with cast-in porous bronze main bearing bush. Hardened steel counterbalanced *crankshaft* with 0.500 in. dia. journal, 0.343 in. bore gas passage and 0.219 in. dia. pressed-in crankpin with nylon conrod retainer. Machined cast-iron *piston* with fully floating solid *gudgeon-pin* having domed and polished ends. Forged aluminium alloy *connecting-rod* with plain eyes and oil hole at lower end. Non-hardened leaded steel *cylinder* with integral cooling fins and blued anti-corrosive finish on non-working surfaces. Finned pressure diecast aluminium alloy *cylinder-head* held down with four screws, plus two long screws securing complete cylinder assembly to crankcase. Composition *gaskets* used under cylinder head and cylinder base flange. Pressure diecast aluminium alloy *crankcase back-plate* secured with four screws. Pressure diecast aluminium alloy *prop driver* keyed to flat on crankshaft. Replaceable *prop-stud* with steel retaining washer and hexagon nut. Brass spraybar assembly and plastic venturi restrictor. Beam mounting lugs.

TEST CONDITIONS

Running time prior to test: 2 hours.

Fuel used: 5 per cent pure nitromethane, 25 per cent Duck-hams Racing Castor-oil, 70 per cent I.C.I. Methanol.

Glowplug used: K&B KB-1L standard long-reach as supplied.

Air Temperature: 54 deg. F.

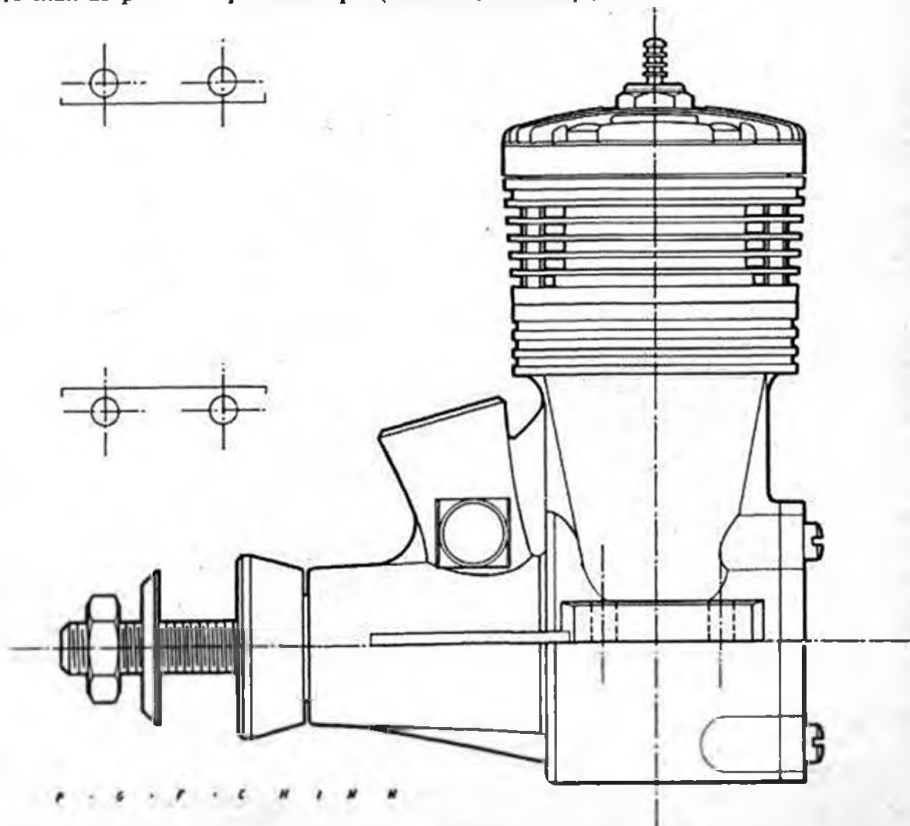
Barometer: 29.45 in. Hg.

Silencer: Nil.

The majority of users will find the performance of the Stallion 35 perfectly adequate in its standard form with venturi insert fitted. The following are r.p.m. figures obtained on test with the engine in this condition and running of 5 per cent nitro fuel: 9,450 r.p.m. on 11 x 5 Top-Flite wood, 9,800 r.p.m. on 11 x 4 Power-Prop wood, 9,550 r.p.m. on 10 x 6 Top-Flite nylon, 11,200 r.p.m. on 10 x 4 Tornado nylon, 12,000 r.p.m. on 10 x 3½ Top-Flite wood.

Power/Weight Ratio (as tested): 0.76 b.h.p./lb.

Specific Output (as tested): 73 b.h.p./litre.





AT A TIME when many contests are becoming do-it-yourself affairs the **Richmond Tenth Anniversary Rally** was a welcome change. Even though it was held at Chobham Common (on July 14), home of many casually organised contests, the impression created was that the contest *mattered* to the organising club. They obviously tried to do more than merely accept entries, collate scores and redistribute receipts as prizes. To this end plaques were ready for award at the close of the events (that this is *news* is significant in itself), and I understand that the Championship Cups were worth winning. (£30 was generously donated by 3 Richmond club members for the trophies - Ed.) I was particularly sorry to miss this event - but Bruce Edwards sent results and the following brief report:

'Rain delayed the start till about 10.45. The wind freshened during the day, so that an overlong D/T, meant a lost model in the woods or somewhere on the golf course. Several suffered this fate and one or two ended up in the Tank Factory. We flew from the cross-roads car park. Lift was patchy, but strong - as were the downdraughts. Only rubber had a flyoff.

Spire of Richmond having lost his only model on his last flight, the flyoff was an all-Croydon affair between Kaynes and Hipperson. Both had most interesting flight patterns reminiscent of radio aerobatics. Dave had the better air and won convincingly.

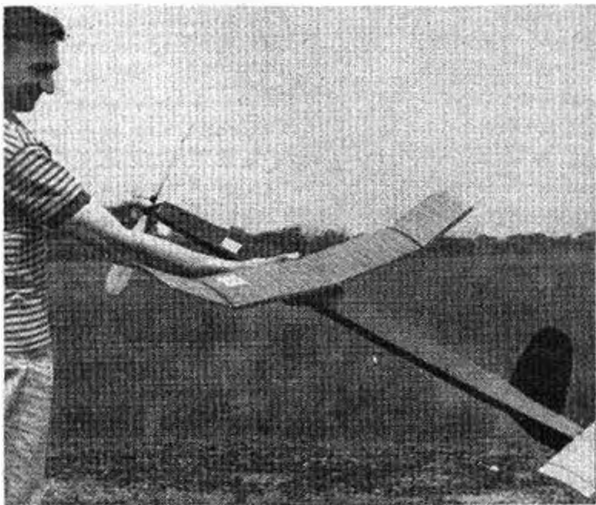
The Gala championship was open to anyone flying in three or more events. Only two people seriously contested this. Russel Peers and Ken Smith. 38 seconds separated them at the end of the day. John Lorimer was the only junior to have a go and so his position as Junior Champion was undisputed.

Entries were somewhat disappointing, probably due to the uncertain weather. In addition to the trophies the club subsidised the prize money.'

It was certainly an attempt worthy of better luck with the weather.

Chobham has also been the scene of *Saturday evening* contests organised officially by the **Croydon Club**, but in practice by Dave Hipperson. I understand that he is supplying a report and results of the four such contests held during July so I will not comment specially on the one that I attended.

These events certainly represent a worthwhile attempt to stage a Free-Flight Contest that tests the performance of the model as



FREE-FLIGHT COMMENT

by John O'Donnell

distinct from the flier. This, of course, is not to everyone's liking, as I hear that several expected entrants did not compete as they did not consider their models 'good enough' - an obvious reflection on their normal reliance on lift.

I have reservations as to whether the mythical 'still air' really exists. Certainly if there is any wind then lift, even if weak, is usually present. Nevertheless an evening (or early morning) contest is much more likely to establish the correct relative performance of the models than one held at more customary hours.

There are of course certain difficulties. Time is clearly limited and becomes shorter when it is most needed, i.e. if the evening is windy. Visibility can be critical especially if a flyoff is needed. Whilst the need for such a 'decider' is inconsistent with the idea of still air contest and rules to match, it has certainly been required at these initial events. Inevitably the flyoff has to be held when the light is failing and accurate timekeeping becomes very difficult if there is any real drift. Croydon's solution was to allow the timekeeper(s) to use binoculars. Whilst they consider the move to be successful, I am very far from convinced. It certainly increases the O.O.S. score but it does not necessarily ensure that flights are timed to their conclusion. Should binoculars be generally allowable, then they will become essential for success - and will surely have to be provided by the competitor. The implications by now should be pretty obvious. The performance of 'optical aids' varies more than that of the 'normal' eye - and this could be another case of the 'cure being worse than the disease'.

From what I saw at the fourth and last of these evening contests, they require *better* organisation than usual - as there is so much reduced leeway for mistakes and delays. So far, I would say that the idea is better than its execution.

The **South Bristol Summer Gala** was held at R.A.F. Hullavington on July 28. The conditions were very reminiscent of the 1966 Nationals with the wind blowing directly onto the same thick wood. This time however, there was a *little* less drift and accurately D/T'd maxs were comparatively safe.

Attendance was quite good and bright, even sunny, weather all day produced plenty of flying. Coincidentally the three open events each had exactly the same number of trebles - the surprise event being rubber, where I had expected more from the way the score-board looked in early afternoon. There were several tales of woe. Butch Hadland cut his D/T too fine and recorded 2:59 - admittedly a few yards short of the forest: Ray Pavely lost a model on his second max and declined to continue.

The power flyoff only had four participants. Dick Johnson had his open model located, but not then retrieved, in the wood, and decided to check his F.A.I. reserve just before the flyoff. The model appeared to D/T at the end of the motor run, and certainly broke the wing. As it featured V.I.T. a premature D/T should be impossible. I was first away on the flyoff only to find very mediocre air and barely squeezed 3 minutes out of my H.P.15D powered F.A.I. model. The other three participants followed and found even worse sink - with George Fuller (ETA 29 stretched 'Dixielander') just beating Roger Baggott (G.15 open model).

The rubber flyoff (of almost half the low entry) was also won by the first one away - in this case Russel Peers. His model D/T'd well over the wood, but was not found. As he had already lost his first model in crops adjacent to the 'drome it was rather an expensive victory.

Dave Hipperson was second at the expense of putting a model into the wood. Mary Day had trim trouble after a rather shaky launch with a very tight flat circle that terminated on the runway.

The host Club's flyoff representative, A. Bracey, had lost his only glider on its third max. Out of the other qualifiers Dave Wiseman found little assistance. Gerry Ferrer and I found weak lift, and Elton Drew rather more. His fishing rod A/2 was still somewhere in the trees when he returned at dusk. A further search the following evening was successful however.

Vintage is South Bristol's speciality and not surprisingly this event was well supported by them. Protagonist, John Mayes flew twice (with different classes) to achieve first and third with an 'Interceptor' and a 'Scram' respectively. In between came Martin Dilly. Top: R. Wade with 'Flying Minutes' vintage Wakefield design at his club's S. Bristol Gala on 28th July. At left is often mentioned, rarely photographed Alan Nobbs of Halifax with his latest Open Rubber model. Alan is celebrating his 30th year of free flying with the Northern Area.

with a 'Supa Dupa' designed by his one time club-mate Norman Marcus.

From conversation it appears that the Vintage enthusiasts are realising the snags with running such an event on conventional duration lines. Vintage is obviously influenced by sentiment and 'happy' memories and yet only a limited choice of design is really suitable for straight endurance. A nominated time is being contemplated – but perhaps a 'concours', with a qualifying flight, might be even more suitable.

Another of the **S.M.A.E. area centralised events** was held on 11 August. Support in the North for these meetings is noticeably declining compared with recent years. The Northern Area venue is now regularly attended by representatives from three or four areas so the original purpose of this type of contest is hardly being achieved.

Conditions at Topcliffe were ideal for thermal flying and were fully utilised by the Wakefield fliers out for the Gutteridge Trophy. Tactical flying, with pilot models when appropriate, now seems fully accepted as the way to win. This technique enabled Dave Wiseman to record seven maxs plus a 3:59 flyoff.

This top score rather overshadowed Ray Monks' 20:15 with his new V.I.T. model and my 19:56. Participation at Topcliffe in the Team Power and A/1 events was conspicuous by its absence. The Glider fliers seemed to prefer the areas domestic events with Jeff Palmer and B. Mackey maxing out in area A/1 and open respectively.

Conditions the other side of the Pennines at the N.W. venue at Cark were such that the only scores in the S.M.A.E. events were those of the other three in Whitefield's power team! They were low, but even so they cost Brian Hooley a power model (seen floating away in the local estuary).

In addition to the S.M.A.E. events the additional open (and combat) events were sponsored by my club as the **Whitefield Gala**. This was deliberately *not* advertised widely as the field was not considered suitable to justify long-distance attendance. In the windy conditions prevailing both entries and scores were low. Both Russel Peers and Brian Picken flew Wakefields after a single flight with an open rubber model, to place in that order. Alan Moss topped power with an F.A.I. model whilst Terry Dilkes won glider with two maxs only. Russel was second in both. Chuck glider was won by Roy Roberts.

Overseas mail has provided results of the **Spanish Postal A/2 contest** held in June. These arrived with souvenir pennants.

We can certainly be satisfied with our showing. Norwich and Whitefield took first and second (not as captioned in last month's heading photo) in the over-21 team event, with myself and Dave Oldfield the top two individuals. Norwich were also listed as second in the 'juvenile' team contest, but Mike Woodhouse assures me that this is an administrative (or perhaps translational) error and not rejuvenation of their members!

My correspondence has also produced a couple of letters from Ken Reith, currently with the R.A.F. in Singapore. He reacted to my mention of my use of a large diameter fibre-glass fishing rod on my new F.A.I. power model by detailing his experiences with this form of construction on an open power model.

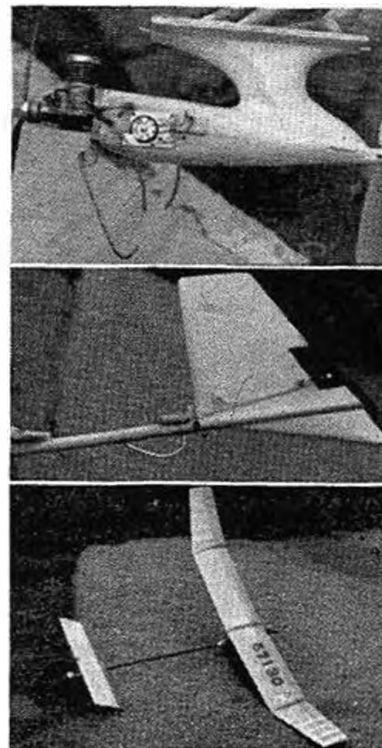
In short, he is very satisfied and fully recommends the method as being ideal for 'long life' fuselages. He epoxy-glued the rod into a notch in the bottom of a $\frac{1}{2}$ in. ply pylon core, screwed and glued a ply engine mounting bulkhead to the pylon, and then added $\frac{1}{2}$ in. balsa laminations to complete the rest of the pod and pylon. The whole model, with G.15 on a backplate mount, came out at just under 15 ozs.

My F.A.I. model is a lot less 'pod and boom' and at a casual glance merely looks as if it has a very slim fuselage. The rod runs right to the front bulkhead, has the pre-shaped pylon added first, then balsa top and bottom, and finally sheet sides. The whole was then faired into a smooth taper.

This is certainly not claimed as a 'new idea'. The American magazines mentioned it years ago, and *Flying Models* even published a full article and plans of Bob Hunter's 'Tri-Fai' back in June/July 1960, including this construction as one of its *less* novel features. Alan Moss of my club produced a $\frac{1}{2}$ A model last season by 'Aralditing' a fishing rod directly into the backplate of a T.D.049. I can't provide photos of this as it went O.O.S. upwards on D/T.

Nevertheless the construction has not caught on in the way it has for A/2 gliders where it is now almost standard. Fears have been expressed to me regarding flex, weight and other troubles. None seem to have been justified by my experience. As a guide the rod used on my F.A.I. model was rather heavy at 3 ozs. for an example 45 in. long, 0.7 in. outside dia. tapering to 0.55 in. Any items attached to the rod require either epoxy or perhaps polyester (glass-fibre resin) adhesives.

Three views at right are of the glass fibre fishing rod boom construction used by Ken Reith, with the R.A.F. in Singapore. This is an Open Power design for a Super Tigre G.15. Below is John O'Donnell's H.P. 15D engine on his F.A.I. model which has created so much interest at recent events. It seems unlikely that this engine will now enter production due to its complexity.



SOUTH BRISTOL RALLY

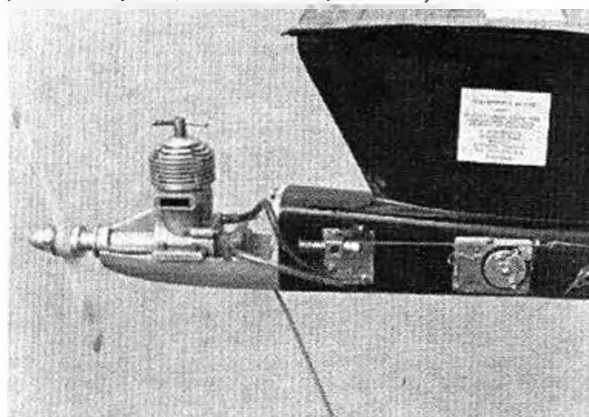
R.A.F. Hurlavington, 28th July, 1968

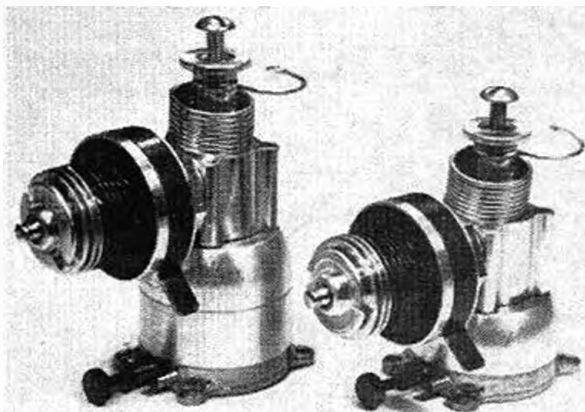
POWER: 1. J. O'Donnell (Whitefield) 9:00+3:04; 2. G. Fuller (St. Albans) +2:30; 3. R. Baggott (Birmingham) +2:25; 4. D. Wiseman (York) +2:08; 5. R. Johnson (St. Albans). RUBBER: 1. R. Peers (Congleton) +6:56; 2. D. Hipperson (Croydon) +4:19; 3. D. Morley (Birmingham) +3:55; 4. G. Pink (S. Bristol) +3:30; 5. Mrs. M. Day (C/M) +0:07. GLIDER: 1. E. Drew (Bristol and West) +4:42; 2. J. O'Donnell (Whitefield) +3:22; 3. G. Farrer (Swindon) +3:01; 4. D. Wiseman (York) +1:42; 5. A. Bracey (S. Bristol). VINTAGE: 1. J. Mayes (South Bristol) 6:58; 2. M. Dilly (Croydon) 6:42; 3. J. Mayes (S. Bristol) 6:01; 4. R. Wade (S. Bristol) 4:52; 5. J. Down (S. Bristol) 3:59.

RICHMOND RALLY

Chobham, 14th July 1968

South Championships: 1. K. Smith (Croydon) 24:55 (4 events); 2. R. Peers (Congleton) 24:17 (5 events); Junior J. Lorimer (Woking) 17:04 (4 events). RUBBER (8 entries): D. Hipperson (Croydon) 9:00+5:08; 2. I. Kaynes (Croydon) +2:39; 3. M. Spire (Richmond) GLIDER (20 entries): 1. M. Doyle (Belfast) 7:10; 2. Ellis (R.A.F. M.A.A.) 7:09; 3. A. Turner (Southampton) 7:07. POWER (9 entries): 1. F. Chilton (Crookham) 8:42; 2. K. Smith (Croydon) 8:10; 3. R. Johnson (St. Albans) 8:09. A/1 GLIDER (10 entries): 1. C. Morris (St. Albans) 5:40; 2. M. Dilly (Croydon) 5:37; 3. M. Shepherd (Abingdon) 4:55. (Jnr.) COUPE D'HIVER (10 entries): 1. J. Mabey (Croydon) 4:47; 2. R. Johnson (St. Albans) 4:28; 3. Hadland (R.A.F.M.A.A.) 4:20. JA POWER (6 entries): 1. J. Boxall (Croydon) 7:35; 2. R. Kenward (Croydon) 7:01; 3. K. Smith (Croydon) 6:54. CHUCK GLIDER (7 entries): Best 3 of 5, 1 min. max. 1. A. Slater (Leatherhead) 2:51; 2. M. Fantham (Richmond) 2:40.





Latest ENGINE NEWS

by
Peter
Chinn

On Running-in Glowplug Engines

From time to time we are asked how an engine should be run-in. There are no hard and fast rules here. Different types of engines have to be treated differently.

It is a pity that all model engine manufacturers do not give specific instructions in the matter of how their engines should be run-in. Where recommendations are given, these often tend to cloud the issue by reason of the wide variations in running-in periods quoted. On the one hand we have a factory stating that their products require but 60 seconds running-in time, while another talks in terms of four to six hours.

Just how a running-in period should be carried out is another thing which is rarely explained. 'Run the engine slowly with a rich needle setting for the first 30 minutes' is a typical instruction. From which, the uninitiated might well be tempted to connect the engine to a pint can of fuel, start it up and leave it to its own devices for half-an-hour. The chances are that, at the end of this period, the engine (particularly if it is one of the larger lapped piston types) will have acquired the benefit of no more than two minutes' effective running-in time.

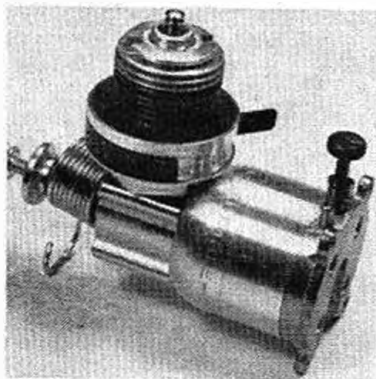
If this seems to be hard to swallow, we would mention that, as an experiment, we once ran a lapped piston .29 at a rich setting for ten hours almost continuously, after which it was still too tight (yes, we de-vernished it first) to run out a 2 oz. tank of fuel at the optimum needle setting. Another

experiment was to run a .45 R/C motor at a low throttle setting in a series of long runs totalling 12 hours. Under these conditions the engine was lightly loaded and was never allowed to get very hot. Good conditions for running-in, one might think. Again, while this polished up the bearing surfaces admirably, the piston/cylinder fit was still so tight that the engine would not run for more than a minute or two when brought up to its normal full-throttle speed.

The lesson to be learned here is that, in nearly all cases, a series of short, fairly fast runs, with cooling-off periods between each, is the most effective method of running-in a new engine.

Most people understand that the basic idea behind running-in is, to put it crudely, to 'rub off the high spots' of the moving parts and so reduce friction. So far as the rotating parts and bearings of a model two-stroke are concerned, this is a perfectly straightforward process which is achieved without difficulty provided that the parts have been properly fitted in the first place and are adequately lubricated. In fact, if these were the only parts to be considered, we could probably forget all about running-in procedures apart, perhaps, from operating the engine a little on the rich side for the first few runs to aid cooling and lubrication.

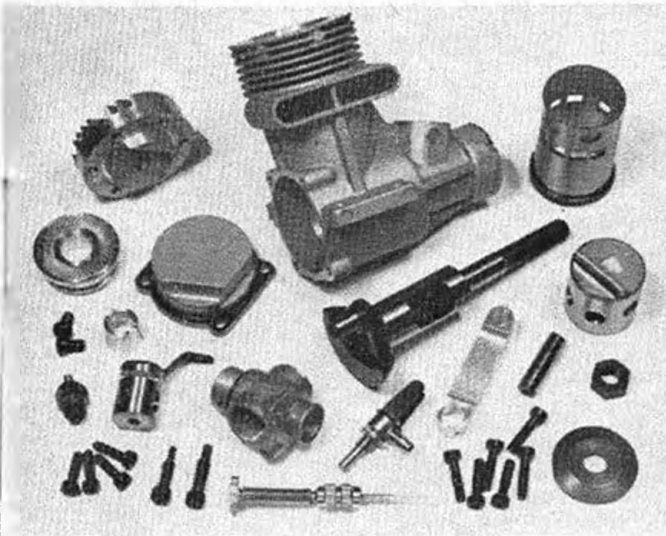
The critical parts, obviously, are the piston and cylinder. These are subjected to considerable heat from combustion and the situation is aggravated during the initial stages through the extra heat generated by the friction of new parts. This results in the piston expanding more than the cylinder and unless measures are taken to reduce heat (i.e. by running the engine extra rich so that the number of firing strokes are reduced and, at the same time, heat is absorbed through evaporation of the excess fuel) clearance will be reduced to the point where friction overcomes the power available and the engine is brought to a stop. This may happen gradually - i.e. one may be warned of its impending occurrence by a falling-off of revolutions for a few seconds before the engine actually stops - perhaps giving one time to hastily open up the needle-valve. Or it may happen quite abruptly - so abruptly, perhaps, as to kick the propeller loose. While such a seizure may not cause any obvious damage to the piston and cylinder (actual picking-up of the metal is fairly rare) it can stress other parts and may,



Top: Comparison of Cox QZ with and without FK tank extension. Engine is lengthened by 7/16 in. but fuel capacity is increased approximately 5 1/2 cc. Centre two photos show the tank fitted, and detached.

Left: The new Taipan 61 R/C, a well made engine of orthodox design that is now being imported into the U.K. in small numbers. A detailed description of this Australian built motor will follow shortly. **At Right:** Nicely finished parts of the Taipan 61 include bronze bushings for both small and big end, 15 mm. shaft journal, two ring piston, hemispherical head, replaceable prop stud and optional spinner.





for example, result in premature ovality in the connecting-rod bearings or cause damage to a disc valve.

Coming back to the question of why a model engine responds best to a series of short runs with cooling off between each, it appears that the slight distortion of the piston and/or cylinder that usually takes place as they heat up, does not, at first, follow a constant pattern. It has been suggested that this is a process which begins in the actual manufacture of the engine, due to the stresses that are set up in the parts as they go through the various stages of machining, etc., and that molecular stability is achieved only after the parts have been subjected to a series of heat treatment processes in their natural environment. In other words, the repeated heating and cooling of a new piston and cylinder that takes place in the course of a series of runs, gradually settles the parts into their final shape by a series of microscopic movements while the running-in is actually being carried out.

This theory does appear to be supported by our own findings over many years of handling hundreds of new engines and bringing them up to the stage where they are in a fit condition to be tested for power output. Running-in, or 'breaking-in' as our American friends call it, is very much the unwelcome chore of engine testing and is one which we would willingly dispose of more quickly if it were possible, but we know of no short cuts.

We have heard it said that ringed engines do not require running-in. It is true that many ringed R/C engines can be put straight into a model and flown. Nevertheless, we still feel that it is a good idea to first give the engine a few preliminary runs on the ground and, when it is airborne, to make a habit of throttling down at frequent intervals to avoid needlessly lengthy full-speed operation. In any case, a ringed R/C engine, just as any other type, can be expected to improve after an hour or two of running time has been logged. As the rings become bedded-in, piston seal will be improved, giving better starting and, probably, more reliable idling.

Coming back to lapped piston engines — which, after all, are very much in the majority — it is usually found that the smaller engines

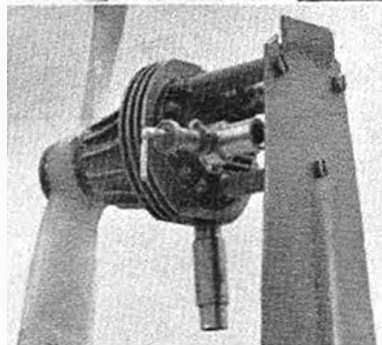
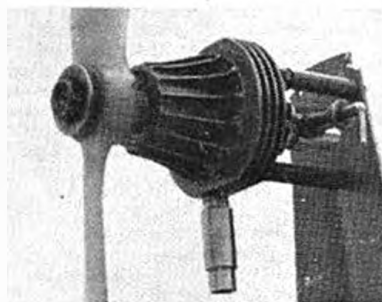
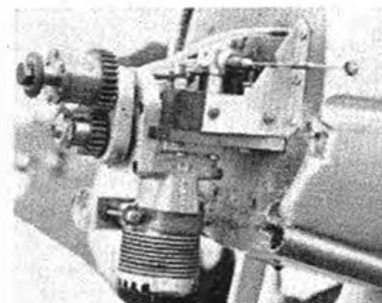
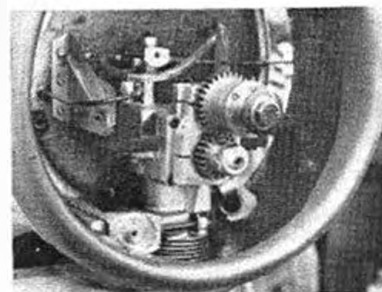
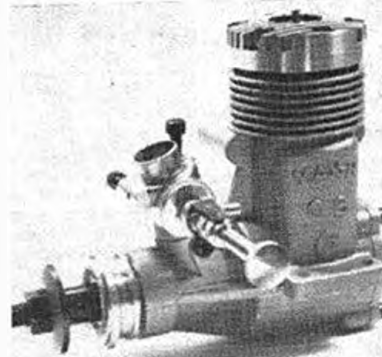
are those that call for the least running-in. With some, such as the American Cox and Wen-Mac .049 (0.8 c.c.) glow motors, running-in need take no more than a few minutes. In the 0.9-.15 cu. in. (1.5-2.5 c.c.) sizes, too, the risk of the engine overheating to the point of seizure is less severe. As capacity goes up, however, one must be more cautious.

Needless to say, the use of a high nitro-methane content fuel for running-in is not recommended. Quite apart from the fact that it is very much cheaper, a straight methanol and castor-oil mixture (not less than 25 per cent castor-oil) runs cooler and is therefore better for the engine when it is new.

The actual running-in time necessary will, as we have said, vary considerably from one type to another but, in general, we feel that it should not take more than about 60 minutes of accumulated running time to bring any engine to the point where it can hold a steady speed on being leaned out to its maximum r.p.m. on a suitable prop, provided that running-in consists of not less than thirty separate runs with cooling-off periods between each. Our practice is to start off with short runs of up to one minute and to gradually extend these until, at the end of the period the engine is being run for three or four minutes at a stretch. By this time too, it should be possible to close the needle-valve down to the full-power setting. Such a procedure will take about three hours' work to complete.

It is true, of course, that most engines tend to improve slightly as further running time is logged beyond the point at which they are freed off. There is a stage in the life of every engine at which it is at its peak and beyond which its performance then begins to fall off. Obviously, one cannot regard the period required to build up to this point as part of the legitimate running-in time. So far as test motors are concerned, our current practice is to record the time needed to bring the engine up to the point where it is freed off and to then give it an equivalent period of extra running time at the optimum needle setting as a bonus. This we regard as fair treatment and we would take a dim view of any manufacturer who expected us to go on running an engine for six or eight hours in the expectation of obtaining a more favourable output figure.

Although designed primarily for R/C pylon racing, the new O.S. Max-H 40P should be of interest to C/L Carrier fans on account of its very high power (0.94 b.h.p. on 30 per cent nitro) combined with an exceptionally low idling speed. Engine uses Dykes ringed piston and twin ball-bearings. Parts at left, whole assembly at right. Centre pair of photos show Dennis Bryant's J:2 reduction gearing on scale Gauntlet with McCoy 60. Bottom: J. Howard's Wankel type unit, operates at 15000 r.p.m., seen at South Coast R/C Rally.



CONTEST REPORTS

1968 BURTONWOOD C/L CRITERIUM July 28

THIS WAS a very happy meeting, blessed with a very reasonable attendance, but although boasting almost 100 entries, not up to the size of the last previously held Criterium in 1966. The meeting was also favoured with very fair weather, quite ideal for flying – warm, bright, but with an obscured sun, and a gentle breeze.

Most of the events didn't get under way until about 11 o'clock, and the prize-giving had to be delayed until the final completion of *Combat*. This latter boasted 35 flyers and was run by A.C.E., with help from Whitefield and Scunthorpe. The general standard of flying was high, in particular the two semi-final bouts. In the first, Dowling (A.C.E.) took two skilful cuts in the closing seconds of the bout from the vestigial remaining length of opponent Phipps' (F.A.C.C.T.) streamer. After a fair amount of initial time spent on the ground, French (Scunthorpe) outflaw Heywood (Whitefield) in a first-rate encounter in the other semi.

Not surprisingly, the final to follow became an anti-climax. Dowling removed all of French's streamer in his first cut. With the score at two cuts to one in French's favour, Dowling had to change to a reserve model following a line tangle and lost considerable points. Nevertheless, French, who is a much-improved flyer, thoroughly deserved his victory.

It could almost be said that the Feltham/Hayes invasion dominated the *Rat Race* event run by Sharston M.A.C. Qualifying times were very fast, with Rudd (Feltham/Hayes) leading the field at 2:48.0. There was only one mishap during the day, this in the second semi-final, causing a re-run. The first semi-final was marred by some very tough tactics in the centre.

In contrast, the final went off very smoothly with Rudd's K&B 40 RV model winning with a fast 5:46 to average 104.5 m.p.h.

The *Stunt* event, which was run by Congleton M.A.C., disclosed an apparent upsurge of interest with a quite sizeable entry list featuring many new names. In spite of this, it was the old face of Tom Jolley (Rodent Operatives Incorporated) who, forsaking his more recent love of rat racing, came from behind to top the list after a points dropping first round flight when he failed to signal manoeuvres correctly.

The $\frac{3}{4}$ A Team Race, run by Leigh M.A.C., was poorly supported indeed, both in number of entries and general standard of flying. Nevertheless, experience showed through, and Place/Haworth (Wharfedale) easily won an uneventful final in 8:14.4 (following their fastest-of-the-day qualifying time of 3:46.5).

Without previous experience in this field, F.A.I. Team Race was run by Liverpool and D.M.A.S., but with the expert assistance of Leigh M.A.C. The event opened with a fast 4:26 by Place/Haworth (Wharfedale) and the first two heats produced the three fastest qualifying times. Fastest non-qualifiers were King/Rudd (Feltham/Hayes) at 4:58.0.

This event had its share of re-flights and one write-off – the biggest dispute arose when the organisers, in their enthusiastic ignorance, came to process the finalists' models – not a project that they will lightly undertake in the future!

The final went off very smoothly with Place/Haworth coming in 20-odd seconds ahead of Laurie/Peart (Novocastria) for 10:00.6.

It was well after six o'clock before the competition ground to a halt. Cash prizes down to third place were awarded by Chairman Dennis Allman on behalf of the N.W. Area Committee, and everybody went home looking forward to the next occasion.



Rat Race		Final	Semi-Final
1. Rudd	Feltham	5.46.0	2.53.2
2. Lambert	Feltham	6.14.2	3.02.6
3. Laurie/Peart	Novocastria	6.35.3	3.16.4
4. Longhurst	Feltham	7.00.0	3.09.0
A Team Race		Final	Time
1. Place/Haworth	Wharfedale	8.14.4	3.46.5
2. Longworth/Muncaster	Novocastria	10.06.0	4.10.6
3. Humphrey/Devanish	Wharfedale	10.30.0	4.05.0
F.A.I. Team Race		Final	Time
1. Place/Haworth	Wharfedale	10.00.6	4.26.0
2. Laurie/Peart	Novocastria	10.22.0	4.41.0
3. Longworth/Muncaster	Novocastria	10.54.0	4.52.8
Aerobatics		Agg. Points	
1. T. Jolley	Rod. Op. Inc.	1,061	
2. T. Taylor	Rolls Royce	921	
3. M. Reeves	Wanstead	900	
S.M.A.E. Combat			
1. French	Scunthorpe	2. P. Heywood	Whitefield
2. F. Dowling	A.C.E.	Phipps	F.A.C.C.T.

FIRST THERMAL SOARING CONTEST

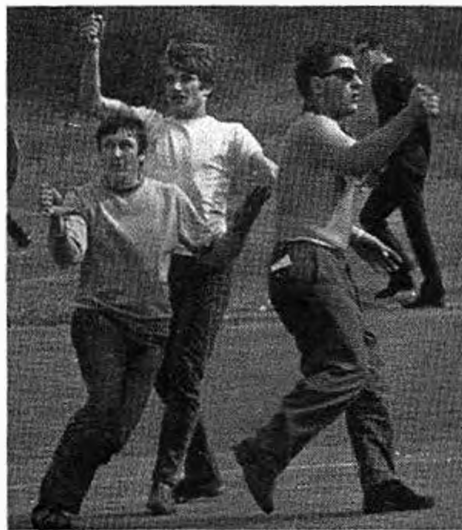
Radio assisted free flight in Sussex

AUGUST 18th 1968 may go down in Aeromodelling history as the day a 'new' contest class was born in Britain. (Similar events are established in Italy, France and Belgium.) S.M.A.E.'s South Eastern area received 15 entries for their thermal soaring event at Golden Cross near Lewes, Sussex. The entrants travelled from as far afield as Somerset, Suffolk and Hilversum. This support was most satisfactory and perhaps encouraged by the first fine day for weeks, 100 others turned out to watch in the sun. The sun shone all day with a moderate west wind which blew diagonally across the Golden Cross airstrip near Lewes and reached force 4 by mid-afternoon. The lift was there from early on as the seagulls demonstrated, but it soon became apparent that, as the wind increased, it was not possible to continuously circle in lift for any time, otherwise the model would be carried downwind and not be able to return to the landing area. The landing area was about 100 yds. square and set out just down wind of the launch point. All flights had to terminate in the landing area to score. A few, but only a few, good times were lost due to near misses, but it was generally agreed that the size of the area was about right. The point of having one at all was to deter any Free Flight entrants!

The models were a mixed bunch; converted slope soarers being the most popular. Those with a very high wing loading, such as Ken

BURTONWOOD

Left: Winner of both team race events along with team-mate Dick Place was Don Haworth seen releasing their new model here. At Right: the strong (fore) arm brigade circulating noisily with rat racers straining their lines. Winner Dave Rudd has stripped for action.





John Knight receives first prize at the thermal soaring meet from veteran modeller Harold Towner who donated a Barometer to perpetuate the event. Below is Ken Binks' famed 'Susie Que' busily overshooting the landing area.



Bink's 'Susie Que' were at an obvious disadvantage as were those with a very light wing loading. The latter because they lacked the 'penetration' to regain the landing area after flying downwind.

It was good to see that there were some 'specials' built for the event. By far the largest was Chris Foss's 'Utopian' now fitted with 10 channel reeds. There were also a number of converted A/2s with a variety of radio gear mainly single channel, and although this type were best at finding and staying in the lift, they lacked the 'penetration' necessary to score and ended up far downwind.

The A.P.S. 'Aries' represented a compromise solution and two were flown. Pat Teakle has an undercambered airfoil section and Skyleader digital gear, whilst Nick Nave's had some home-made Galloping Ghost gear with a pulsing, rudder and trim only on elevator off the Rand throttle arm.

The contest was similar to a free flight duration contest with the difference that 300 ft. tow lines or unstretched bungy lines were allowed and a 6 minute maximum was set, but never achieved. It soon became evident that as soon as a stopwatch was started all thermal activity ceased, consequently some of the best times were put up in practice. Pat Teakle achieved several flights over 3 minutes and at least one over 4.

Both methods of launch were used each having its own set of devotees. The 'Bungy Boys', preferring their solo method and refusing all offers for their models to be towed, did not seem to gain as much height as those who trusted others with towlines. There

were a number of experienced Free Flight men on hand some of whom had a busy time towing having first received their instructions from the worried owners, rather like professional jockeys.

The contest times may seem low but it must be remembered that every flight terminated at the point of launch.

	Flight (mins.)			Total	Model
	1	2	3		
1. J. S. Knight (R.A.F. M.A.A.)	2:07	2:43	2:40	7:30	'Bjorn' (German kit) Bonnar 4 RS Proportional
2. C. Foss (Sussex R.F.)	2:02	2:07	2:24	6:33	'Utopian' 109 own design F & M reeds
3. N. Nave (Brighton)	1:37	1:48	2:15	5:40	'Aries' G-G on rudder (home built)
4. P. Teakle (West Mendip)	1:27	0:50	1:41	3:58	'Aries' Skyleader proportional

Mention should be made of David Hughes who flew a model reminiscent of R. F. Gosling's 'Tern' style. He made the longest flight of the contest only to land some 10 ft. short in his anxiety to get down. This cost him third place. Ken Binks found that the high wind loading on his 'Susie Que' was unsuitable for the conditions until he borrowed some higher aspect ratio wings. Paul Newell also had a model with a high wing loading and was never able to get much height on the line. He claimed that he had only called in on his way to the slopes at the nearby 'Long Man' but became so fascinated that he improvised a towhook and entered.

The winner John Knight, flew a 'Bjorn' he had built from a German kit and had fitted with Bonnar 4 R.S. proportional gear. The model towed well and had an exceptional glide. He avoided the pitfall of trying to fly too close to the stall and demonstrated the advantage of having a 'clean' model from the aerodynamic angle.

Veteran modeller H. J. Towner presented John with a beautiful barometer, which he had donated for the event. The winner also collected £1 from the sweepstake. Incidentally, the sweep was most popular and makes one ask why the practice is not extended to the Nationals. If done, the Open Glider winner could easily collect £20 or so.

What conclusions should we draw from all this? Firstly, that this is a very weather dependent event and for once the day was right. Perhaps it should be run in conjunction with other Free Flight events rather than have to stand on its own. The line length of 300 ft. was too short for the day. A model can only operate within an inverted cone about its point of launch. The longer the line the greater the chance a model has to remain in lift if the breeze is strong. Clearly there is a lot to be learnt in technique, both launching and flying. No one type of model stood out as better than any other but clearly a 6 ft. to 8 ft. model with a wing loading of about 8-10 ozs. per sq. ft., is a good performer in most conditions. However, in light winds it could well be beaten by a lighter loaded model of the A/2 type.

To win this type of contest both skill as a pilot and experience as a designer are required. No clear advantage was established by the use of expensive radio equipment and it would seem that proportional rudder plus trim on the elevator is sufficient.



CLUB NEWS

Popsiclessell Aero-modelling according to North Western Area publicity hounds. Judy Cooke, Miss Aero-modelling 1968 poses with Veron Cessna R/C scale model to drum up the locals for the shindig at Woodford.

IS THIS a vintage year? After that super Nats, we could well claim it to be, but in more ways than one if we are to judge by the number of 'Old Tyme' model craft we see around these days. Oldest oldie I've seen is a Mann & Grimmer A-Frame Pusher re-creation. This gave me the urge to try my hand at some be-whiskered design, too. Main criticism of the design is that balsa is much too frivolously prescribed. Have to remember, though, that back in those days it was used to reach the sky, now it costs it.

Another question. Are you an Exonian? Now, before you go sorting through your old school ties let me tell you that the term applies to the natives of the wild reaches of the Rive Exe. If, therefore, you have the necessary residential qualifications, plus an interest in C/L flying, then R. Elliott of the **Exmouth & D.M.A.C.**, would be happy for you to join him and his happy band of rotarians on Rolcoe Bridge Playing Fields any Sunday morning. Mr. Elliott also asks if there are other clubs around Exeter which dabble in the circulatory art; if so he'd be interested to hear from them. Club C/L interest covers the whole spectrum: team race, Combat, and yes, even speed. What is more the Exeter R/C Club has offered to build them a navy carrier deck. Club interest, too, in free flight, but contest wise the West country is too far removed from the centre of competition life for any real enthusiasm to generate. Hope, one day though, that the S.M.A.E. will stage a few comps in that part of the world. And, still with the Society in mind, the club offers its congrats on a truly fine Nats. Mr. Elliott can be reached at 3 Holne Rise, Exeter. (What's the matter with all those Western Area events? - Ed.)

The nearest I've been to Bonnie Scotland is to a march past of the Dagenham Girl Pipers, but we keep in touch in spite of the vigilance of the Nationalists, with the occasional letter infiltrating across the border. One to hand is from A. Finch of **Glasgow M.A.C.** He informs us that an enlightened Renfrewshire County Council has included aeromodelling in its Evening Classes prospectus. Scottish modellers who may be interested in advancing their education in this most desirable way should keep a weather eye on the local newspapers for enrolment dates.

The latest count of heads (very desirable in a R/C club) adds up to a membership total of no less than 52 in the **Sheffield S.A.** - and all S.M.A.E. members, too! Interest strikes a nice fifty-fifty balance between F/F and R/C, though there is evidence of some overweighing on the R/C side as the Sunday morning turnout of transmitters is reaching saturation point. Club event, presumably open, scheduled for September 22, is a Soaring Comp. Prizes offered are unusual: sets of stainless steel cutlery and a transistor radio. Details forthcoming. Trevor Faulkner who sends this information,

Contest Calendar

- September 22nd **Sheffield S.A.** Slope Soaring, Single, Multi and F/F. Details (S.A.E.): P. Scarle, 44 Todwick Road, Sheffield 8.
- September 22nd **R.A.F.M.A.A.** Championships, R.A.F. Hullavington (inc: All-in FAI for Thurston Trophy open to all).
- September 22nd **L.A.R.C.A.S.** Slope Soaring Fly in. Clwyd, N. Wales.
- September 29th **Wanstead Scale Rally**, C/L and static. Pre-entry 5/- to A. Harknett, 24 Mayfield Road, Chingford, London, E 4. At Charville Lane C/L circuit.
- September 29th **Luton D.M.A.S.** Slope Soaring Rally, Rudder only, Multi, Magnet, F/F and Chuck Glider (Max. 20" span). Pre entry 3/- and S.A.E. to L. Rudd, 38 Windsor Road, Barton, Beds. 10.00 a.m. start at Ivinghoe.
- September 29th **Northern Area Gala**. Open R/G/P, Multi R/C 1/2 A T/R, A T/R, B T/R, R/R, Combat and Stunt, and F/F Scale. Admission 2/- by programme. 10.30-5.30 at R.A.F. Lindholme, off A614 between Bawtry and Thorne.
- October 6th **Irish F/F Nationals**-Details: M. Doyle, 14, Bloomfield Road, Belfast, BT5, 5LT.
- October 6th **NA Vintage**-Topcliffe.
- October 6th **Scottish Gala** 1/2 A. F.A.I. R/R, Combat and R/C Spot (SAA), East Fortune.
- October 6th **Kidderminster M.A.C.** R/C Rally. Single channel rudder (button) only. Details: M. Straight, "Green Inn", Hoolbrook, Kidderminster, Worcs. Held at flying field off main road between Hoolbrook and Kidderminster.
- October 6th **Northampton M.A.C.** Combat Rally. Pre-entry 3/- to J. Cooper, 6 Weston Way, Northampton. Field entry 5/- at Midsummer Meadow, Northampton. Silencers required.
- October 13th **Imperial College C/L Rally**. A Combat and B. R/R. Pre entry 5/- to G. Walker, Willow Farm, Saddlebow, King's Lynn, Norfolk. At Sipson Lane, Harlington, Hayes.
- October 13th **Vintage Model Rally**. All welcome, Old Warden airfield, Nr. Biggleswade, Beds.
- October 13th **Northern Area Slope Soaring**, Single and Multi R/C, Magnet and F/F. Details from D. Pask, Brandon Nurseries, Brandon Lane, Shadwell, Leeds 17. At Tinkers Monument, Naw Mill, Nr. Huddersfield.
- October 13th **South Coast Gala**. Open R/G/P, all in F.A.I., Open Tailless and Vintage. At Chobham Common.
- October 20th **Torbay Rally**. Open R/G/P Coupe d'Hiver, All-in F.A.I. and Chuck Glider. Woodbury Common, Nr. Exmouth.
- October 20th **Edinburgh Rally** 1/2 A, F.A.I. T/R and R/R, Glenburn Road, East Kilbride.
- October 20th **East Anglian Area C/L Rally**. A combat, B R/R and Mouse Race. Pre-entry 3/- per event to R. Baker, 33 Mawson Road, Cambridge. S.M.A.E. members with cards only. At R.A.F. Honnington, Nr. Thetford.
- October 27th **St. Albans Winter Gala**. All in F.A.I. Coupe d'Hiver A/I Glider, Chobham Common.
- October 27th **London Area Rally** third round, F.A.I. T/R, 1/2 A T/R and Combat, Hayes C/L circuit, Charville Lane, Hayes.
- October 27th **Northern Area Vintage Rally**. (Pre 1951) plus A/I glider, Open Power (T. Pannell Trophy), R.A.F. Elvington.
- November 10th **Richmond DMAC Winter Gala**. Chobham Common.

SMAE CONTEST CALENDAR

- September 22nd *F.A.I. Glider (K. & M.A.A. Cup) } Area
Open Power (Frog Snr.) } Centralised
Open Rubber } Venues
- September 29th **Northern Gala** }
Open Rubber }
Open Rubber (Caton Trophy) }
Open Power (Hamley Trophy) }
Open Glider (C.M.A. Cup) }
R/C Multi (Taplin Trophy) }
1/2 A Team Race (Budapest Trophy) }
B Team Race (E.T.A. Trophy) }
F.A.I. Team Race (Wharfedale Trophy) }
Combat }
C/L Aerobatics }
Rat Race }
October 5th/6th 2nd Free Flight Trials }
(Entrants only) R.A.F. Barkston Heath. }
*Denotes Plugge Trophy event }
†Denotes Free Flight Individual Championship event }

was much taken by the recent feature on v/pitch propellers, suggesting that it really put the 'E' in 'S.M.A.E.' - I know where it put me, right back in the beginners' class.

Sad to say, the future of that most admirable of all stencil mags, the **Northern Area News** is in the melting pot. The current issue, shorn of its familiar dressings, is an emergency effort put out by John Pool, one of the stalwarts who has kept the N.A. flag flying over the years. It now seems that, in order to maintain the mag's reputable high standard, it will be necessary to produce it more or less on a national basis, as it can no longer be sustained by Area interest alone. We must sincerely hope that the necessary help will be forthcoming. Apart from this survival discussion there are several pages of contest reports and results; the sort of thing the N.A. News had always done so well.

I've heard of the book of the film, but never before the club of the film. Introducing, then, the **Blue Max (Bolton) M.A.S.**, of recent origin. Geared mainly to the interests of the younger generation it got off to a flying start. Well, not quite flying, perhaps, as its first big event was a static display at the Haywood Schools Fete. One member was taken aback when asked if he got his diesel oil from the local garage. Believe it or not, kids, old daddy-o here used to buy the stuff just that way back in the old 'deesil' days. Bernard Whitaker, the Hon. Sec., slips in a word of appreciation to the **Aeromodeller** staff for such a helpful and instructive magazine. Aw, shucks!

Featured prominently in the **R.A.F.M.A.A.** Newsletter is one, Chief Tech. C. Hadland, now well known to civvy street for his prowess in the tough, perfectionist world of national F/F contesting. His recent outstanding success was to win the Model Aircraft Trophy for Open Rubber at the Nationals. He demonstrated that this was no fluke by coming third in the Wakefield event at the same meeting. On the C/L side, Jnr. Tech. Taylor got a first in Stunt at both the Wanstead and Elliott Rallies. High quality flying, then, can be expected at the major R.A.F. event of the year, the **Inter-Command Championships** to be held at Hullavington on 21/22 September. The programme covers every branch of flying: F/F, C/L, R/C and Concours - the latter event for the **Aeromodeller** Trophy. Contest flyers, generally, might wish to know that the All-in F.A.I. event for the **Thurston Trophy** on the Sunday is open to civilian S.M.A.E. members. Details from M/AEO Belleini, Sergeants Mess, R.A.F., Watton, Thetford, Norfolk.

The 'one-off' model contest is fast finding favour as a club get-together device. Mostly the contests are for the simpler rubber and glider designs, but the **Southampton M.A.C.** have gone more ambitious with their 'Pal Joey' event. 'Pal Joey', in this case, is not an outing to a Musical, but the small R/C rudder job from the A.P.S. list. Rules have been devised to give reward to all round modelling ability judged on a simple flying schedule and a Concours. Response was fantastic; fifteen entries, no less. And even this figure might have been improved upon had there been a longer preparation period than the eight weeks allowed. Senior winner was John Hook, and Junior, Tony Butterworth. Happy to say, the event was every bit the social success hoped for, with R/C and other denominations competing merrily together. Another such event next winter.

Club newsletters are ever the work of the odd enthusiast, labouring doughtily and single digitally on typewriter and duplicator to bring the gospel to the sit-back-and-trust members. An ironic reminder of this situation is given in the **Woking & D.M.A.C.'s** newsletter, where the last page, a blank one, is headed, 'This page is for items contributed by you'. Yet another 'bring-the-bods-together' idea in this newsletter. Two C/L members have offered to teach the 'wire-less' types the gentle art of handle waggling, and it is hoped the Radio boys will reciprocate by giving their C/L tutors a work out on the bleep button. Obviously a case of turn and turn about.

The **North Western Area's** newsletter, *The Message*, packs a lot of perky info into its pinky pages. Item which caught my pinky eye was a bit about R/C flying at R.A.F. Woodvale. Seems there is a complaint that transmitter activity is interfering with the distress monitoring beacon. Someone signals a loop and out pops the Duty Officer with rubber dinghy and survival pack at the ready. Result is that no flying is allowed at the Forby end of the flying field. Yet another newsy item from Woodvale. Last April the first R/C steam powered air mail flight was made. Three much stamped and fancied up envelopes were attached to the now famous steam 'Comet' and sent up aloft. Upon landing the packets were taken to Ainsdale Post Office for franking and despatch to the U.S.A. Collectors please note.

Is C/L a dying art? Gloomily, the news-sheet of the **Model Aeronautical Council of Ireland** suggested it might well be, and had forebodings of a moribund C/L Nats Meet. But it turned out there were signs of life in the old corpse yet; it proved the best C/L Nats on record. Resuscitation is attributed to the transplanting of a hearty influx of visitors, very expert comp types, from across the water. This

helped to bolster up an otherwise lean entry and to give a bit of mini-international needle to the proceedings. Some good ding dong stuff from the bhoys of Ireland, North and South, and from contingents of the Feltham/Hayes and Wharfedale clubs. It is hoped that the overseas response to the Irish Nats on 14/15 September will be equally enthusiastic.

An American newsheet titled 'The Satellite' comes to us from sunny California, and seems to be a joint effort of clubs in the land of syrup of figs. The editorial sermonises a bit; suggesting that if mankind were sufficiently involved with its hobbies it wouldn't get all steamed up over things and turn nasty. Apart from the fact that ostriches are rotten flyers I know I get steamed up and nasty after a near miss by a rampant radio job. Everything big California way. Winner of the Texaco Trophy, a sort of portable skyscraper, flew an 8 ft. span old timer, Flying Quaker (loose prop?) into such a King Nimbus of a thermal that it took sixty miles to get the heat out of its cross braces.

Keep on your sun specs, for we move only a few miles south to explore 'Scatter', a newsletter title which is a play on the South California Aero Team. The whole issue is devoted to a eulogistic analysis of Free Flight. In essence it attributes to the free flying model all that is artistic and poetic in miniaturised flight. Moreover it avers that free flying is more directly concerned with the science of aeronautics than controlled forms of model flying where the interest is basically a mechanical one. I suspect that Scale enthusiasts, for instance, would be likely to forcefully repudiate this thesis. Mention in the survey is made of Jim Cahill's 1938 Wakefield Winner, 'Clodhopper' which, in my humble opinion, would make an ideal Vintage project. But not the original version, though. If memory serves me correctly, the fuselage was carved out of solid block!

Good flying facilities for C/L and F/F, but insufficient members to enjoy them. That is the substance of the report from the **Potters Bar M.F.C.** Modellers of all ages are asked to contact the Secretary S. Uxley, 53 Brackendale, Potters Bar, Herts.

The battalions of the **St. Albans M.A.C.** seem at present to be in peaceful occupation of their Normansland flying ground; the anti-model forces having apparently called a temporary truce. Good flying on the patch Thursday evenings in spite of a generally poor summer. No contests have been rained off or blown off, and this has enabled the club policy of a wide participation contest programme to pay good dividends, with plenty of model craft, sport and contest, taking the evening air. On the C/L front the fledgling demo team flexed its uncertain wings at a Potters Bar Hospital Fete. A goodly show, but much practice needed for the truly polished display. A return booking nevertheless. Happy 'escape' for maestro George Fuller when the Tank Factory Fire Brigade turned out to rescue his tree'd model at Chobham. George hasn't quite the climb of his models. Model design featured in the newsletter is the hippity, hoppy 'Karribidis', which is a sort of helicopter with an engine chasing a wing!

Crawley Club's 'Turbulator' also concerns itself with the question of an integrating contest programme; seeing the answer in the staging of as many evening events on the club field as possible during the longer days, but the dread thought of winter is in the air, and ways of brightening up the club indoor evenings are being looked into. Bad news on the comp front: Tangmere will not be available for the South Coast Gala. Alternative fields are being sought, but there is the 'last ditch' prospect of an all-F/F affair on Chobham. This brings to mind the recent news of a scheme to close down a large number of R.A.F. dromes. Many, no doubt, will be those 'twilight' fields which we rely upon - or rather hope to rely upon.

Finchley C/L Rally, 23 June

High winds gave competition something of a harassing time, but only Stunt was badly affected, making most manoeuvres difficult. Rat Race produced a quadruple of Feltham teams, and 'A' and 'B' Combat provided the usual thrills.

Rat Race 1st. A. Longhurst, Feltham. 6 mins. 36 secs.

Stunt 1st. M. Reeves, Wanstead. 935 points.

B Combat 1st. B. Heath, Feltham.

A Combat 1st. V. Hunt. A.C.E.

(Total entry of 54.)

Boscombe Down M.A.C. Meeting, Middle Wallop, 30 June

Beautiful weather attended upon this somewhat unusual programme of R/C Spinning and Spot and a F/F Scramble. 200 enthusiasts turned up, but mainly to watch the fun it seems, as entries were not overwhelming. A good day, nevertheless.

R/C Spinning. J. Singleton, Druids. 54 spins.

Spot Landing. J. Singleton, Druids.

F/F Scramble. Price, Cheltenham.

We find 'Seadog', the newsletter of the **South East Area** in a self congratulatory mood after the successful R/C Rally at Golden Cross: good weather, a good turnout and a well run event - what more could be asked? Cause for more self congrats is an Area win over Florida in the July round of the Postal Glider contest. Graham Gates reports that, weatherwise, Florida has outtrained our soggy little island by a drenching number of inches. Inevitably, flyers had to contend with tropical size thunderstorms on the day of the comp, squeezing in their flights between the major a.m. and p.m. downpours - and squeezing out afterwards.

We reported earlier on the Irish C/L Nats, where visitors from over here tended to dominate the event, now, an item in the **Belfast M.F.C.'s** Newsletter tells how the Irish got a bit of their own back when Maurice Doyle, the editor of the mag, got a first in Open Glider at the Richmond Gala. Let's have more of such two way trophy trafficking.

If the **Anglia Club** hasn't gone vintage, its newly devised transfer certainly harks back to the early days of Anglian glory. The insignia designed by Ken Collins, depicts the head of a Viking on a red shield, and is the fiercest thing I've seen with two horns since I was chased by a bull. The club can boast a strong F/F power section which includes such power men as George French and Roy Collins. And quite strong on the R/C side too; the club's private flying ground providing just the right sort of attraction.

I should have thought that the only Scouting movement in the model plane world was looking for those lost planes, but from Czechoslovakia comes a plea for contact with model builders who are members of the Scouting fraternity. Over there, apparently, model building Scouts are no rare phenomenon, and one such, Jaroslav Rybak, kpt. Napeky 45, Svitavy, Czechoslovakia, would like to hear from kindred Scouting spirits. (Hope they'll let your letters through lads.)

Finally a word on safety from the **New Zealand Newsletter**. A typical multi model has an impact value of 700 ft. lbs. The muzzle velocity of a .22 rifle is 150 ft. lbs. Draw your own horrific conclusions.

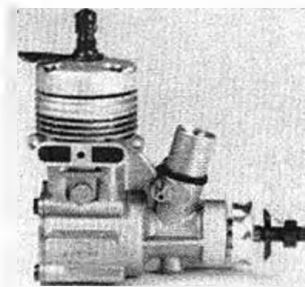
Pen Pal wanted; anxious to obtain plans, mags. etc. Stanley N. Nartey, H/No. 23, Adama Avenue, Adabraka, Accra, Ghana.

Looking out for your news and views.

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G.15 RV DIESEL	10	19	9
G.15 RV GLOW	10	19	9
G.20/23 BL	6	12	3
G.20/23 R/C	7	17	0
G.21/29 RV	12	1	6
ST 35 STUNT (PB)	7	9	9
ST 35 S R/C	8	17	6
ST 35 COMBAT	7	9	9
G.21/40 RV	12	19	0
G.21/40 RC R/C	13	7	6
G.21/46 R/C	10	12	6
ST 51 BB	10	12	6
ST 51 BB R/C	12	1	6
ST 56 BB	12	15	0
ST 56 BB R/C	14	7	6
ST 60 BB	12	15	0
ST 60 BB R/C	14	7	6
G.60 RACING RV	24	3	0
G.60 RV R/C	26	9	0
G.60 FI R/C	24	3	0
G.71 RV R/C	24	3	0
G.71 FI R/C	24	3	0

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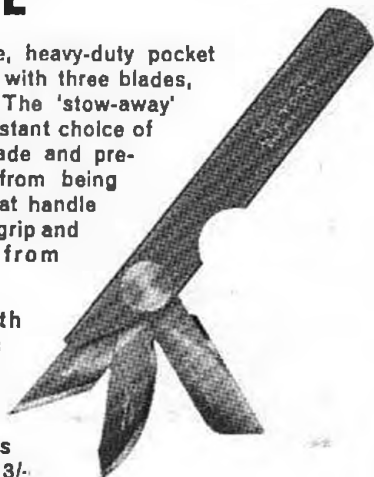


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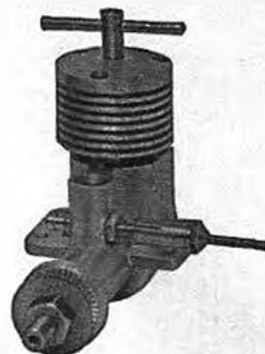
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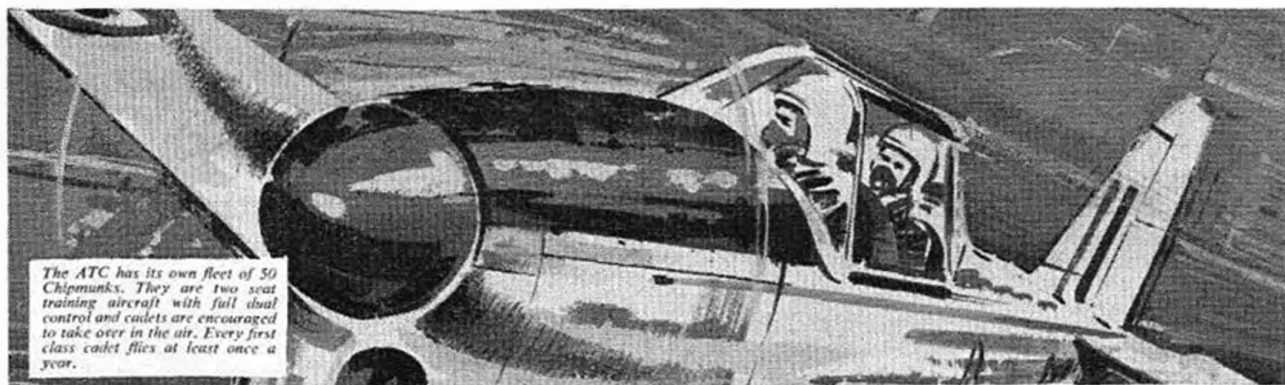
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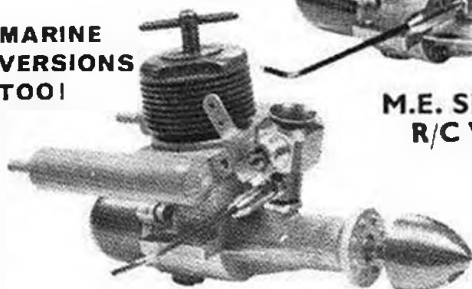
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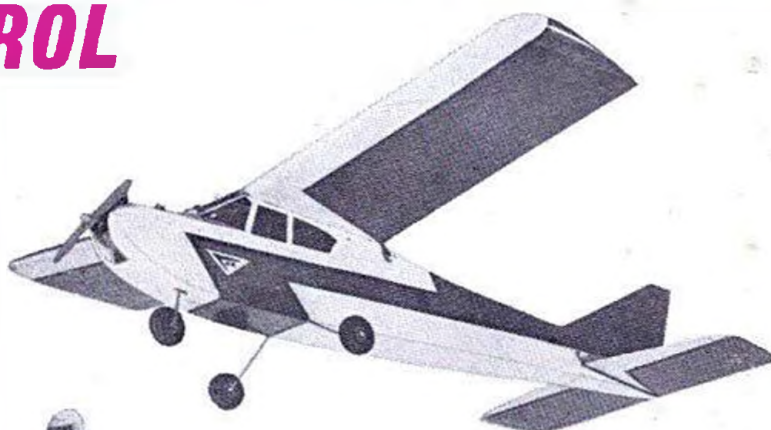
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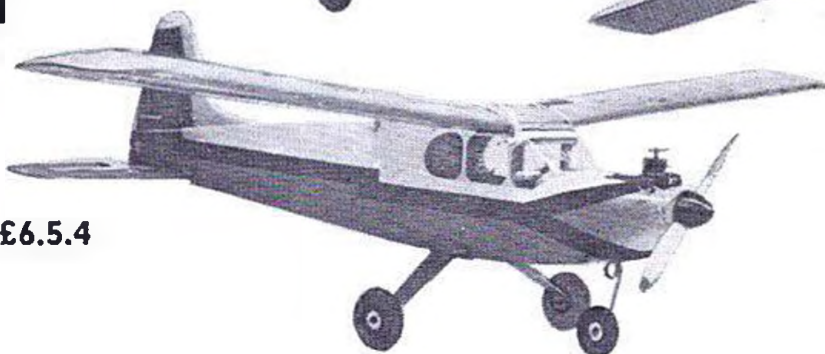
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