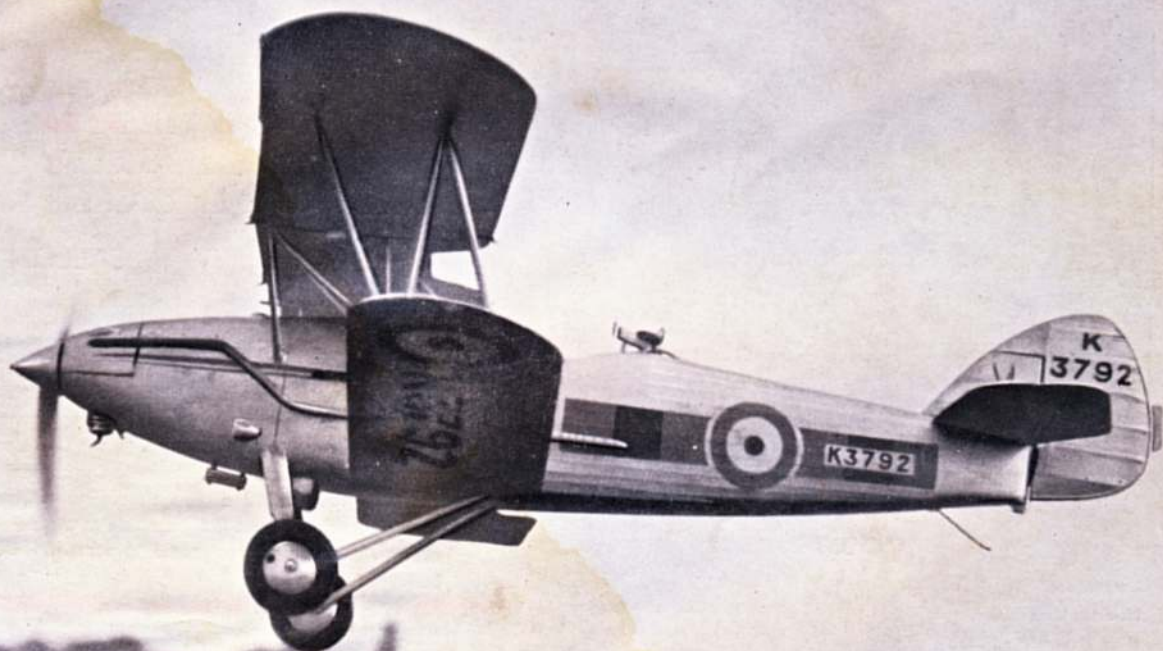


AERO MODELLER

SEPTEMBER, 1952



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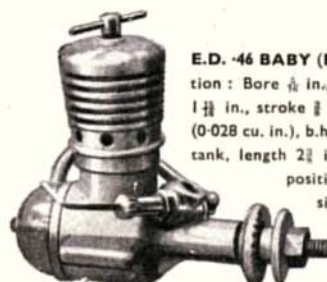
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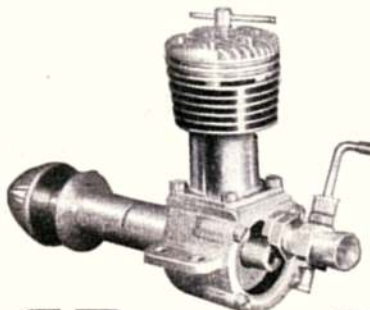
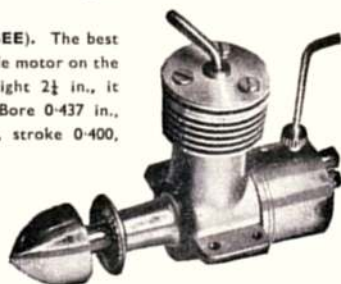


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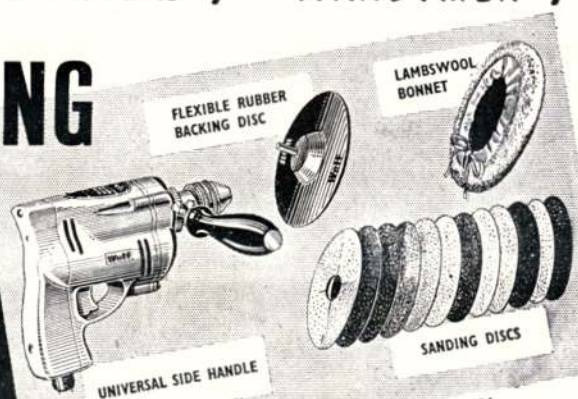
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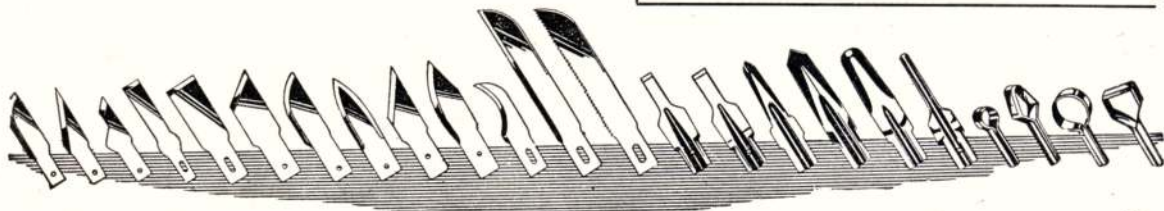
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VOLUME XVII
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WITH two of the four major International Contests behind us we can look back with mixed feelings of satisfaction and regret at our own national placings while congratulating the victors. Once again Sweden proved victorious in the Wakefield with Arne Blomgren winning narrowly from his fellow countryman J. Nilborn, followed closely by double-Wakefield winner Arne Ellila of Finland. Best British placing was Ted Evans, who came into the team at the last moment, at ninth. Other well-known modellers deserving of praise include Joe Bilgri, U.S.A. in fifth place, Lustrati and Kannenworff of Italy and the indefatigable Jacques Morisset of France.

Our own disappointing showing is tempered with anticipatory pleasure that once again that land of plenty Sweden will be acting as hosts in 1953. This year's contest was particularly interesting in that for the first time since 1938 a German team took part, their national champion G. Maibaum leading them at twenty-first place.

Happily our control line team that attended the Belgian Championship of Europe and World Speed Meeting at Brussels with jovial Colonel Yates as team manager came back laden with trophies and covered with glory. Once again we were able to supply a stunt winner in the shape of J. Ridgeway, following admirably in the steps of the brothers Hewitt and "Gig" Eiffelaender who have triumphed in past years. In the speed events Pete Wright took the 2.5 c.c. class, and second place in the 5 c.c. class. Davenport, in his first national appearance took second place in the 10 c.c. speed class, while Claydon won the stunt class of the Concours d'Elegance. As a result the British team were once more acclaimed as winners of the Championship of Europe.

This annual Belgian meeting, held for the first time in Brussels, after three successful years at Knokke, has now established itself as the principal international control line event of the calendar, and attracted entries from no less than eight countries, vying in its wide appeal with that Blue Riband of aeromodelling, the Wakefield Trophy. It was very pleasant to note that Spain has now entered the international aeromodelling arena, and we look forward to seeing their members in increasingly prominent positions as they gain experience of this type of event. Nationally, they are fortunate in receiving very generous government support, backed by the personal interest of General Franco, who has presented prizes at their Nationals.

As these words are being read our team will be lining up at Graz for the International A/2 Contest, won last year by that intriguing "Toothpick" design of Oscar Czepa. They have our best wishes and confident hopes that they will acquit themselves well against increasingly strong opposition, with proxies from Australia and New Zealand adding to the varied nature of the competitors.

We have always stressed the importance of these annual contests, and our experience at home and abroad meeting teams from all over the world convinces us that aeromodelling is an "invisible export" of untold prestige value, that earns us national dividends quite irrespective of our position in the results while we continue to enter teams whose good sportsmanship maintains the age-long British tradition.

Cover Picture

Only the slightly protruding Elfin 1.8 diesel cylinder head identifies this Hacker Demon as a model built to 1/9th scale by Dennis Bryant of the South London (Scale) MFC. Covered with silk and weighing 2 lbs. 2 oz., the model is a perfect reproduction of the full-size aircraft and is decorated in the manner of No. 23 Squadron R.A.F. Another of Mr. Bryant's creditable scale models will be featured in our next issue. Close-range high speed photography by Ed. Stoffel.

We May Be Late !

This Wakefield number may arrive at your local agent slightly later than usual, and we ask you to forgive us just this once for keeping you on tenterhooks for a day or two. The Wakefield came on an awkward date for us, it was preciously near to press date, photographs had to be sent from Sweden, and the report rushed through on a strict schedule to try and meet our customary delivery on the 15th of the month. We hope we made it; but just in case we don't, we thought we'd let you know the reason why.

Engine Analysis and R/C Notes

Keen followers of these regular features and Model News also, will, we know be disappointed at their omission from this issue. We shall be bringing them back with extra good examples of each in October, the Radio Notes containing foolproof illustrated instructions for the AEROMODELLER Receiver, which will go with the popular transmitter, featured in our July number. For Engine Analysis we still have something up our sleeves.

But for this issue, we owe an explanation, and in a few words, it is Wakefield and contest reports. July is the big month for contests and we know that you will want to see pictorial evidence of all that has been going on at the rallies, and in particular, at the Wakefield and World Control-line Championships held this year at Melsbroek instead of Knokke. We have devoted extra pages to our coverage of these important F.A.I. Calendar Events, and, as needs be, the two regular features have had to stand aside. In any case, we would have been the last to bear pressure upon our regular Engine Analysis author and contributor Ron Warring, whose preparation for his Wakefield team membership needed every priority.

Black Mark !

To all followers of Radio Control Notes, we owe sincere apologies, for in last month's diagrams illustrating this department, we published slight errors that might easily lead a semi-amateur radio control fan right up the garden path. In Figs. 2 and 3 the grid resistor and the .05 mfd condenser should have been joined to the LT lead going to earth. Also in Fig. 3, a screen grid should have been shown connected direct to the relay lead. As a security against any chance of erroneous circuit diagrams in future notes, we hasten to assure radio fans, that a new checking system has been evolved, and that all circuits published in future will be accurate beyond dispute.



Customs & Excise Win Again !

In the case of H.M. Customs & Excise v. Mercury Model Aircraft Supplies Ltd., tried in the Queen's Bench Division early in July, judgment was given in favour of the plaintiffs for the sum of £15,290, which represents uncollected Purchase Tax from the time it was first imposed until the result of the test case on the subject. In delivering his judgment the learned Judge expressed every sympathy with the defendants, and the many other firms in like case, but was nevertheless on legal grounds compelled to find in favour of H.M. Customs & Excise.

This important legal decision is bound to have wide repercussions in the model aircraft trade, as with one or two exceptions only, every manufacturer is equally liable for varying sums according to the volume of business done during the period in question. Some optimism can be expressed, however, for the belief that H.M. Customs & Excise will be moderate in their demands—a moderation which is indeed essential unless they desire to cripple a trade that is contributing substantially to our foreign currency earnings.

In plain terms, if H.M. Customs & Excise insist upon prompt and immediate payment of the sums due from Mercury and the other firms likewise involved, then many famous manufacturers may well be forced to go out of business. If they accept payment by instalments, then, given the continuing support of aeromodelling enthusiasts, they will be able to weather the storm, although somewhat battered financially.

Aeromodellers have enjoyed the benefits of the trade's courageous stand in not paying Purchase Tax in the past, and will we are sure express their sympathy in the practical form of buying and buying until it hurts !

A Message to the Aviation Industry

Under this heading the following dig at the full scale aviation industry appears in the current issue of our American contemporary, "Air Trails", and we strongly recommend the comments contained therein to the British aircraft industry, for exactly the same condition applies in this country.

"Has American aviation lost the American boy?" the editor of a contemporary 100% "full-scale" aviation publication asks. He is alarmed—and rightly so—at the tremendous decrease in the number of student pilot permits, the trickle of private licenses, the picayune number of personal aircraft being produced and the alarming spectre of closed airports.

The warning cry is heard echoing through the halls of government in Washington. "The need is upon us to develop a whole new generation of flying men," declares USAF's Chief of Staff Gen. Hoyt A. Vandenberg.

Has American aviation lost the American boy? Not by a long-shot. But it sure has given the youngster a swift kick in the pants. The fact that thousands of air-minded youngsters build and fly model planes, study ground courses within the Civil Air Patrol as cadet students and scrape together precious dollars for an occasional flight lesson is not to the credit of the multi-million dollar American aircraft industry. These "air youth" are carving out careers in aviation in the face of an almost complete lack of interest and assistance on the part of the aircraft interests and government aviation officials—most of whom seem to have forgotten they were once air-minded youngsters themselves.

Air Trails, the magazine of air progress and aeromodeling, edited for and largely written by the youthful aviation enthusiasts, has, since its inception, been requesting recognition and help from the adults-in-aviation for air-modelling programs, gliding and soaring training, lightplane flying and collegiate aviation activity.

The result? Practically complete silence on the part of America's aviation interests.

This is not a we-warned-you tirade. You can't stop the youngsters, gentlemen. They're going to get into aviation in spite of you. But will they get in fast enough, in great enough numbers and with the proper type of training to insure America's place in the air?

The answer is up to you leaders of aviation.

We do emphasise this important point: You've got to put jam on the bread to change it from a staple dish to a dessert. Classroom ground studies are not enough! You've got to let the American teen-ager handle the stick, swing the prop, shoot a landing. You've got to get him out of the hot-rod and into the Cub. He'll meet you more than half-way. His heart is already in the skies.

His spirit is willing, gentlemen, but your sponsorship has been mighty weak.



U.S.A.F. Championships at Weisbaden

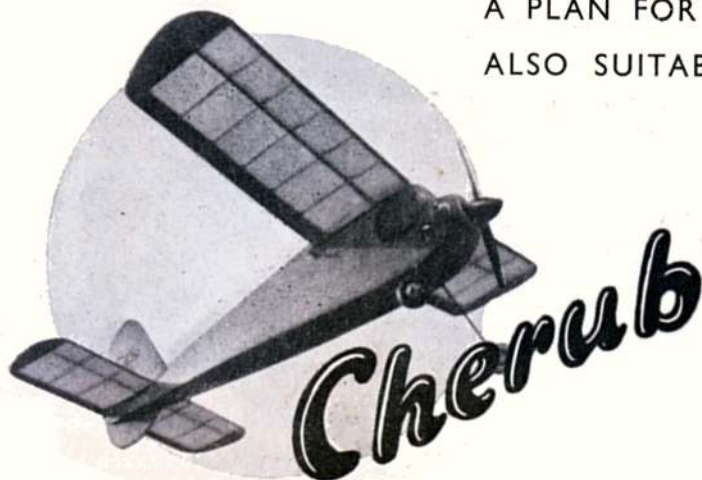
Accompanying photograph was taken at Weisbaden by Harry Hundleby who, together with Henry Nicholls, Eddie Cosh and George Honnest Reddlich attended the United States Air Force Championships at Weisbaden Base, Germany. They went to act as judges at the invitation of Major Joe Hauser, President of the Wings and Wheels Club. A most successful two day meeting was held with competitors coming from as far as England, North Africa, Italy etc., in fact from U.S.A.F. bases over Europe. Finalists go to America for the Air Force Championships at an Air Force base in Texas.

Model in the picture is a Grumman F9F Panther, Dynajet powered, built by A/2c Grayson of Neubiberg Base. Model is shown being launched on its maiden flight which it completed without mishap although the fin caught alight as the model rolled to rest. Prompt action by the Weisbaden fire squad soon attended to this, much to the joy of the squad who had been waiting all day for such an opportunity to demonstrate their talents.

Caught and Deceived!!

Listening to a radio programme whilst engaged at the modelling board, we were half way between spot of wing construction and listening to a quiz, when the voice from the loudspeaker announced one of those "I'll give you a noise and you guess what it is" stunts. We bypassed a couple of squeaky car brakes and bacterian camels, and were just beginning to go one hundred per cent. on the wing, when what should assail our ears, but the unmistakable roar of a model jet. Slightly fluttering in the manner we know so well and coming and going as though whirling around at 120 m.p.h., we were so assured of the certainty of this noise, that we beamed as we announced our conviction to the family. "A Horn" said one uninformed member of the radio guessing team—we chuckled—"Horsefly" said another, and we roared with mirth! But oh, the let-down when that nasty announcer ignorantly identified it as a Bumble-Bee; frankly Mr. B.B.C. we don't believe you!

A PLAN FOR THE POINT FIVE'S AND ALSO SUITABLE FOR THE MILLS .75



*Straight from the
Board of that
Popular Designer,
Vic Smeed*

INCREASING popularity of the .5 c.c. motors creates a demand for small power models which, until fresh contests are arranged for baby motors, are generally required to be of the semi-scale, pleasure-flying type. "Cherub" has been designed with this end in view, but, in having in its 30 in. wing, 153 sq. in. of area, it is also quite capable of handling any motor of up to 1 c.c. All flying with the prototype has been carried out with a better-than-average Mills .75, using an 8x4 plastic propeller, which gives a rate of climb in the order of 800 feet per minute, without introducing any trimming complications whatsoever.

Features of the design are the rugged but simple construction, low cost, and short building time. The all-sheet fuselage takes less than half the time of a built-up job, and that bugbear of most

modellers, the cowling, has been reduced to five pieces of very soft $\frac{1}{4}$ in. sheet. Wing and tail each involve only one rib size and easy sheet tips, so that even a slow builder should be able to complete the whole model in about ten hours building time.

No trimming whatsoever—not even rudder—was needed on the prototype for safe flying. Check that the model balances $2\frac{3}{8}$ in. back from the leading edge (i.e., just forward of mid-chord), try one hand glide, then launch with everything straight and the motor running slowly. Use a Truflex 8x4 for initial tests with motors of .75 or above. Progressively increase motor speeds and make any small adjustments that may be desirable. Probably slight right rudder will be advisable for the best flight pattern, but "Cherub" will turn either way without danger.

Detailed building instructions are issued free with

each copy of the full size plan from the Aeromodeler Plans Service. We can recommend this design to beginners, for its easy to build, easy to fly characteristics, so if you are contemplating a point-five engine, this is your plan.

Stubby nose, with wide-view cabin and neat "side-winder" cowling, are obvious points in this close-up view at left, and front three-quarter at right. All sheet fuselage takes the knocks of sport flying with impunity, whilst simple, standard built-up wing and tail are just the thing for the beginner. Small span of 30 inches makes it one of the easiest-to-transport models we have published.



CHERUB

DESIGNED BY
V.E. SNEED.
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ALL WOODS UNLESS OTHERWISE
STATED ARE BALSA.

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AN A/2 WITH A DIFFERENCE

FORWARDER

By W. TINKER

Aged 20 . . . laboratory assistant . . . member Epsom & D.M.F.C. . . . interested in all types of models, as we gather from his other hobby . . . Square-dancing.



PORPOISE-LIKE in appearance, "Forwarder" was built for the purpose of escaping from the rut of high and shoulder-wing layouts. After test flying it showed that it not only did that, but also possessed excellent towline characteristics not often seen on the standard high wing models; note the rearward towhook position. Gone was that annoying weaving, now replaced by a straight, steady tow, and the designer experienced for the first time the thrill of repeated overhead releases. The Continental claims for better towline stability on low-wing models are in no way exaggerated.

Construction

The construction in the main is orthodox, consisting of mixed balsa and hardwood. The plans are for the lightweight version but this can easily be built up to the Nordic weight by use of balsa sheeting, thereby making a slightly heavier and more robust job. The only difficulty which may arise in the fuselage is the tongue "box". This is a little unorthodox but is quite adequate for the job. It consists of two 1/16 in. ply plates each with a 2 1/2 in. by 1/4 in. hole cut at the correct angle to receive the wing tongues, let into the fuselage sides. To stop up and down movement of the

Sweep-back, and low wing mounting, make this a model that is distinctly out of the rut, yet capable of very high performance.



tongues a piece of 1/2 in. by 1/8 in. hardwood is let into the ply side plates above and below the slot. Each of these cross-bars is then strengthened by a second piece of 1/2 in. by 1/8 in. to form a T-section. Towhook installation is best left till later (see the trimming notes).

Wings are straightforward, but care must be taken to ensure that the port tongue is 1/8 in. lower than the starboard and each wing has 8 in. sweep-back. The details on the plan for the tail unit are self explanatory.

The dethermaliser is of the tip-up tail type and is effective enough for most occasions. I say most, because once the machine clocked a maximum with the D/T in operation at no more than 150 feet altitude. Rig the auto-rudder to give neutral rudder on tow and a right hand turn on the glide.

Trimming

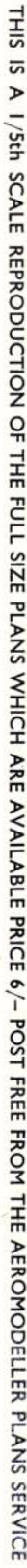
It is essential that the C.G. should be within 1/4 in. either way of the marked position. *On no account let it move forward of the tow-hook.* A C.G. further than 1 in. to the rear of the hook will considerably reduce the possibility of an overhead release.

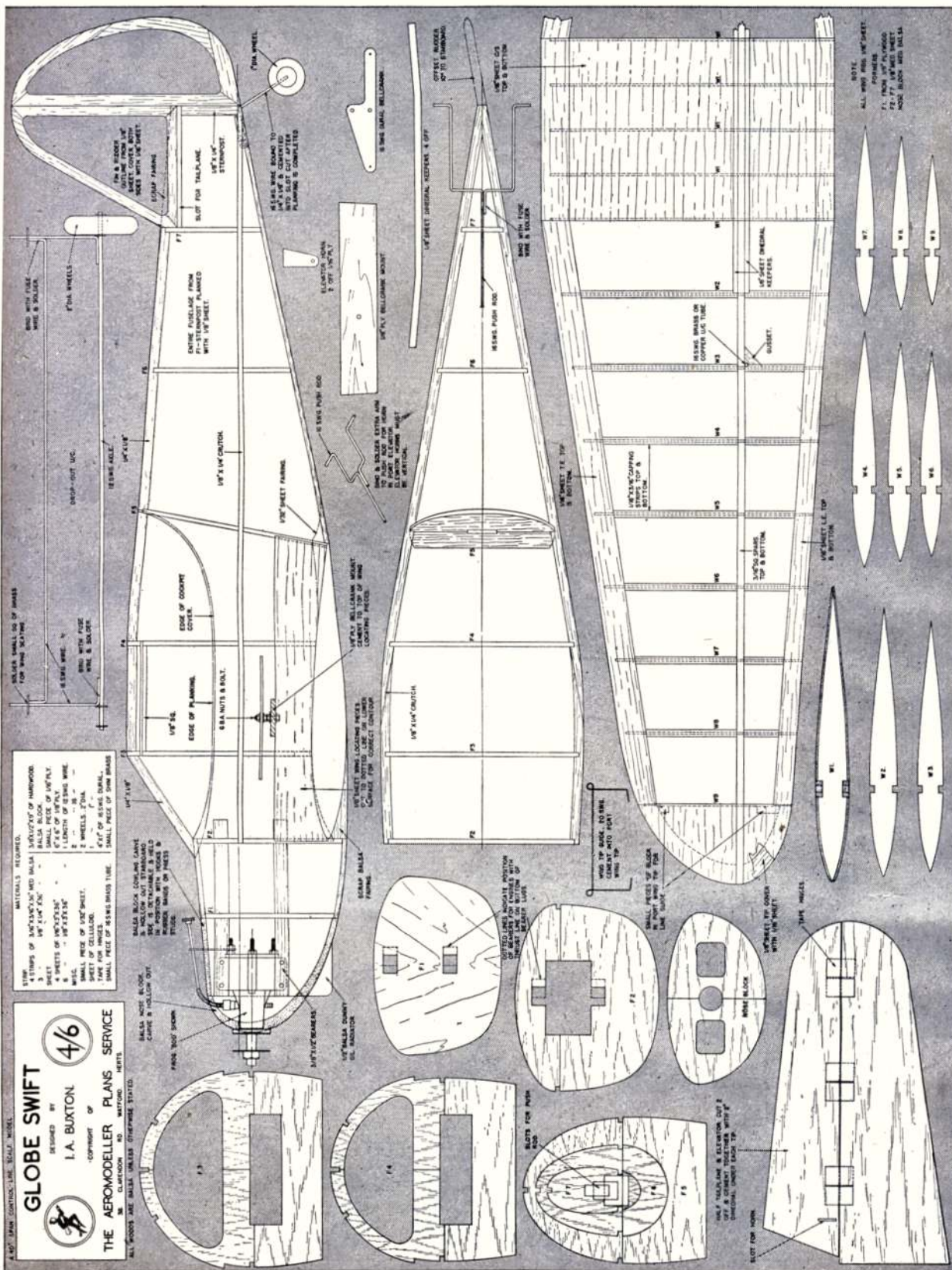
Assemble the model complete with the exception of the tow-hook and with rudder set neutral, wings at 3 1/2 degrees and tail at zero.

- (i) Add weight and hand glide until the model just stalls.
- (ii) Adjust rudder to give sufficient turn to dampen out the stall. Hand launch should give right turn with a very slight stalling tendency.
- (iii) Instal tow-hook 3/4 in. in front of point of balance.
- (iv) Tow launch and fine trim with rudder and packing.

In strong winds it will be necessary to run forward (downwind) but don't worry over the wings, if they are built properly they will take quite a severe strain. The originals have often bent, but never broken! Best recorded time is 10:30.

| | DATA |
|-----------------------|---------|
| WING SPAN | 32" |
| AREA | 315" |
| TA. SPAN | 25" |
| AREA | 120" |
| TOTAL | 435" |
| of LENGTH | 37 1/2" |
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GLOBE SWIFT

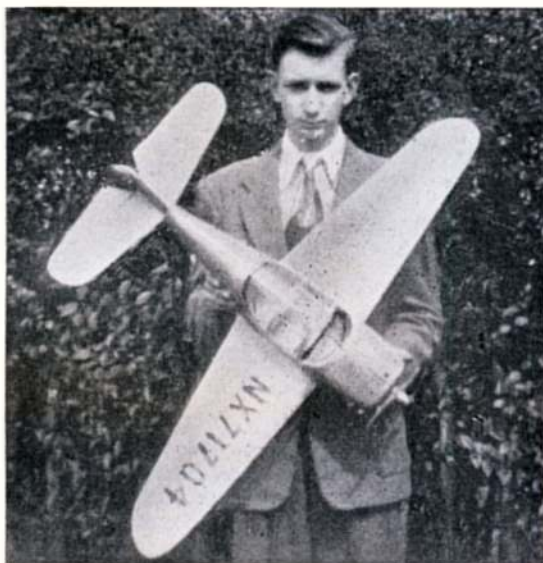
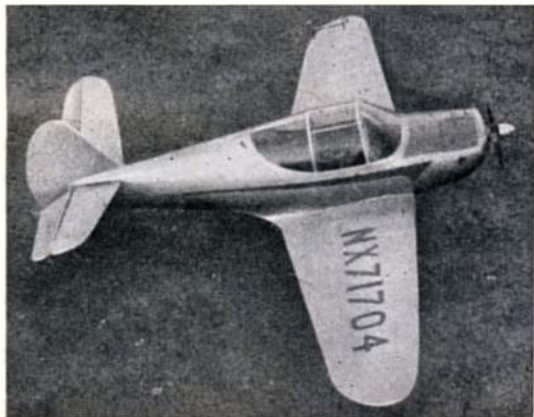
BY IAN BUXTON

Aged 21 Cpl. Radar Fitter in the R.A.F. started aeromodelling at the tender age of 10 main interest is C/L Scale and F/F Sport with 5 c.c. . . . also a Jazz fan; but only good Jazz!

WE had been doing a good deal of flying with barndoor type models, giving our resident audience of small boys the satisfaction of witnessing several prangs (plus the added joy of seeing who could trip over the lines most often). We were very pleased with the performance of these models, but not with the appearance, so it was decided to build something with a little more eye appeal.

Then we saw the AEROMODELLER article on scale controliners (February issue), and so out came the drawing board. We decided to build the model round our Yulon, since it had always given us good service, and the Globe Swift was chosen because of its good looks, short moment arm, and the large cowl, which hides the whole Yulon except the plug. A Frog 500 just protrudes from the cowl.

We decided to keep the model as simple as possible, and the only unusual feature is the dihedral on the tail unit, which necessitates a separate horn for each elevator. The model is extremely strong, the only damage to date being a broken tail unit, caused by dropping a heavy object on it!



A Swift (full-size) was flown in the Goodyear Trophy this year by G. F. K. Donaldson, but did not place. The same machine was given a better handicap for the Grosvenor Challenge Cup, and flying at 142 m.p.h., placed third. Registration of this machine is G-AHUU in Royal Blue lettering and the racing number was 5, in Black, on a White disc background. Another Swift registered in this country is G-AHWH.

Flying

Flying this model is like flying any other C/L job—move the handle and hope!

Use 50 to 55 ft. lines, set the motor screaming, tell your helper to let go, and it's all yours.

A word about take off—if you're over a smooth surface, let her roll a little way to gain flying speed so she doesn't drop back on the U/C legs and rip the tissue on the wings. If on bumpy ground you'll have to whip her off the deck, or hand launch.

Once she's airborne, anything you can do, she will follow.

Complete building instructions are issued free, with each full-size copy of the $\frac{1}{4}$ scale plan opposite, from the Aeromodeler Plans Service.



1952 WAKEFIELD CONTEST

By
C. S. RUSHBROOKE

Scene at right, depicts the Swedish aerodrome on which this year's 'Blue Riband' event was won by resident Arne Blomgren, seen acknowledging victory on the left.



KUNGSANGEN Aerodrome, situated in Middle Sweden, is a sizeable airport serving the manufacturing town of Norköpping, and is undoubtedly well suited for that purpose. As the venue for the 1952 Wakefield Contest, however, it left much to be desired, and the lack of certain facilities so essential to a successful model flying meeting detracted from what could so easily have been a memorable contest.

Since the resumption of the Wakefield Trophy contest in 1948 it has been the accepted practice to house competitors on the contest site, thus providing adequate opportunities for test flying, acclimatisation, and the essential "get-together" spirit that has been a distinguishing feature of the Contests since their inception. At Norköpping, however, no accommodation was available at the airfield, and competitors were housed at hotels in various parts of the town—creating an additional and unanticipated drain upon slender expense accounts that proved somewhat embarrassing.

This, plus the lack of adequate public transport to and from the aerodrome, proved something of a burden to each competing team, and caused a certain amount of preoccupation that affected the whole spirit of the contest. It is to be hoped that this year's lesson will be learnt, for the general opinion showed that the precedents set up by previous meetings in America, England, and later Finland, were sorely missed.

On the credit side must be recorded a number of items of good field organisation, chief among which we commend the highly efficient motorcycle recovery service, and the very complete and detailed scoreboard that kept both competitors and spectators well informed as the contest proceeded. A special credit is due to the hard-working local "Gammen" clubmen, who were faced with a particularly hard job in processing the various models that came to them in a continuous stream throughout the preliminary days. Though inexperienced, they coped with the many essentials of an International Contest with admirable results, though we doubt the advisability of delegating such work to other than men experienced in such matters.





Our first taste of the 1952 Contest came when meeting the American Team at London Airport on the 7th July, followed by joining the British Team on the S.S. "Patricia" at Tilbury Docks.

Thirty-six hours after leaving Tilbury saw us docked at the Swedish port, where the task of off-loading the Editorial car and caravan was soon completed, and a start was made on the 200-mile run across Sweden to Norköpping. Capt. Taylor and his "boys" meanwhile departed by train, beating us to the destination by some four hours.

Fortunately, permission had been obtained to park on the 'drome itself, and we were soon checking up on official information, which we must admit had been somewhat scanty up to that time. Shock No. 1 came when it transpired that a proper "Information Meeting" had been arranged for 8 p.m., and as it was then 7.55 a quick departure was made for the town. Luckily, a volunteer led the way on a Bantam motorcycle, and a hair-raising trip was made through the docks chasing the pipsqueak so determined to show that a Morris Oxford could not keep pace!

Team members and managers were introduced to the gathering individually, and many well known participants in earlier contests were noted. It was a pleasant surprise to see Arne Ellila of Finland present, for previous information indicated that he would be unable to compete this year. Though entries from Australia, Canada, New Zealand, South Africa and Trinidad were to be flown by proxy, other nations were represented by many well known modellers, though only in six cases were full teams available.

A surprise came when a full team from France appeared, as only one official entry had been received from them, though it would appear that the fault here lay with the organisers, who only sent one form to many of the countries invited, which undoubtedly led to much misunderstanding. A very welcome surprise was to meet a personal

representative from Trinidad in the shape of coffee-coloured Thomas H. Bland, who works with B.W.I.A., and had travelled by various air routes to be the first Trinidadian to attend a Wakefield.

There obviously exists some confusion as to just what the Wakefield Contest entails, for it was announced that as Trinidad is not a member nation of the F.A.I. they could not compete officially! There is obviously a need to sort matters out properly, for it must be remembered that the F.A.I. accepted the Wakefield Contest and Rules for the rubber-powered World Championships, and Rule 1 states that "The Competition shall be open to all nations". It was stated that Bland would be allowed to fly, but the matter must be placed before the F.A.I. for adjudication. The lad from Trinidad is a most likeable fellow, and his popularity with all contestants was adequately shown by the terrific applause he received at the prize presentation.

Friday was devoted to processing and test flying, though very few tried out their models during the middle day period. The bulk of test flying took place in the late evening and very early mornings, and Friday evening saw great activity on the airfield. I was not to witness this, being the guest of Mr. Nils F. Testor at a very pleasant dinner party.

Unfortunately, the weather forecast was not at all promising, and, following a very fine early Saturday morning, the anticipated cold front appeared from the South West, and the rather exhausting heat wave gave way to rain and high winds. Most of Saturday was spent on a tour around Norköpping, thoughtfully provided by our Swedish hosts, during which some amusing back-chat took place between Mr. Nauclar and Pierre Deschepper. From their discussions it would appear that much of Norköpping's history will have to be re-written, Pierre pointing out that it was in fact a Belgian and not a Dutchman who founded the city's industry!

In view of the weather, the announced 8 p.m. start of the first round was brought forward by one hour, as it was obvious that the light would not be adequate by the end of the round.

Top of the column: The British Team arrives at Norköpping, laden with model boxes and smiling with confidence. Left to right, they are: Ron Warring, John O'Donnell, Team Manager Capt. Taylor, Tom Dunkley, "Pop" Royle, Roy Nicole and Ted Evans. Centre: (2) A view in the processing room, where it will be observed that Ted Evans gave a helping hand. (3) Dijkstra of Holland gets away early in the first round. Note the poor light conditions.

Round 1

As starting time drew near, it was obvious that things were not going too smoothly. Siting of the take-off area could have been much improved, for with the wind across the narrower width of the field much ground was lost by not siting the area as far upwind as possible. This seems to be a common fault, and it is surprising that such an obvious error is not corrected.

Further, no accommodation was provided for competitors or models, and this factor came in for some rather acid comment all round. The dangers of this oversight became speedily apparent when with little warning a heavy rainstorm broke over the field, and in very short order men and models were well and truly soaked. Rain fell with such intensity that the evening round was cancelled, and the start postponed until 2.30 a.m. Sunday morning. Thus, the anticipated break between rounds 1 and 2 was lost, and all three rounds took place one after the other to finish as early as possible in an effort to avoid thermals.

I suppose I should be used by now to these late night and early morning contests, but my eyes were well and truly swivelling at 2 a.m. when I turned out to witness the start! Nor was I the only one who looked as though a good night's sleep would have been preferred.

First off was the Swiss entry of Bruno Bächli, and in short time models were shooting up in regular procession. Many doubts were expressed regarding the effect of drift, but fortunately the wind veered slightly to the Westwards, and models made for a gap in the perimeter rather than a heavy belt of trees that caused much anxiety. Even so, available clear distance was not great enough and many models were lost in corn crops and trees well away from the field.

Joe Bilgri of the U.S.A. was watched with interest, for it had been evident during test flying that he was a very definite threat. This was borne out when he returned the best time of the first round with a time only 7 seconds under a maximum, though he undoubtedly scored the full time as the model was well up when it cleared the timekeeper's sight. The light factor during the early part of this round proved a handicap to all concerned, and many models were short on duration when passing below the skyline, it being impossible to see once the object had passed into the darker horizon.

The proxy-flown model of Wilson (New Zealand) showed good handling when returning a time of 4.10, whilst Ron Warring, Ted Evans, "Pop" Royle and John O'Donnell all turned in times that appeared useful as a basis for further flights. Last year's winner, Sune Stark, also made the good time of 3.50 and a glance at the list of First Round times shows that all the better known men were showing their prowess. It is interesting to note that the majority of proxy flown models were placed near the bottom, this confirming the

opinion that it is at best a very hit and miss affair to have models flown in such a manner.

This stresses a further aspect of organisation that could have well been improved. At one time it appeared that I would have to fly one of the New Zealand entries myself, having undertaken to look after that Dominion's entries this year. This would naturally have seriously hampered my reporting duties, and I was pleased when Noel Schmidt of Palmerston appeared to take one model off my hands, and the organisers were able to supply the necessary number of proxies. Unfortunately, there appeared to be at least three people in charge of proxy appointments and I was faced with at least as many changes in my list, as a result of which it became almost impossible to know who were flying certain machines!

Four men managed over the four-minute mark in this round, with almost a third of the entry bettering three minutes. Personal observation showed that timekeeping ability varied considerably, and it is fair to say that many of the top men owed their good positions to better concentration by their timers. I am not blessed with the best of eyesight, but it was no hardship to keep many models in sight for half a minute or more after some timekeepers had clocked off. This factor is too important to be overlooked, and is one that the organisers must take into serious consideration next year.

The average of the top twenty men shows 3:36, very good time under the conditions prevailing during this round, when light and wind drift clocked many models off earlier than would be considered a fair valuation of their flights.

Many models were coming up against the usual troubles, among these being that of Frank Bethwaite of New Zealand. His entry was proxy flown by Frank Holland of Swansea, whose experience includes membership of the 1950 team that went to Finland. Tests showed that this model had great possibilities, but whilst being held in position for launching, the nose end suddenly gave way, and the resulting collapse as the rubber tore down the fuselage put the thought of repairs out of the question. Börge Borjesson of Sweden was employing a very thin airfoil section, and this led to failure during flight, two models in succession showing the same fault, and folding the wings in mid-air.

It was obvious by now that Round 2 would see an improvement in light, but the wind was strengthening all the time, to everyone's dismay, and thermal activity was a foregone conclusion as the day grew older.

On opposite page: (4) Ted Evans and Ron Warring at the processing shed: these models were used for the first round only. (5) First man away was Bruno Bächli, a regular representative of Switzerland. (6) Jacques Morisset of France, with his now well-established "New-Look" design, flew to 8th place. (7) Maurice Ferber of Belgium gets away; note small tailplane. (8) Gunther Maibaum's entry placed top in the German team, competing for the first time since 1938. At the 2nd round he was leading, but did not fly again.



Position at end of Round 1

| | | |
|------------------|--------------|--------|
| 1. Bilgri | U.S.A. | 4 : 53 |
| 2. Wilson | N.Z. | 4 : 10 |
| 3. Warring | G.B. | 4 : 02 |
| 4. Ellila | Finland | 4 : 00 |
| 5. Haslach | Switzerland | 3 : 52 |
| 6. Evans | G.B. | 3 : 50 |
| 7. Stark | Sweden | |
| 8. Kannenworff | Italy | 3 : 49 |
| 9. Maibaum | Germany | 3 : 33 |
| 10. BLOMGREN | Sweden | 3 : 30 |
| 11. Lustrati | Italy | 3 : 28 |
| 12. Montplaisir | U.S.A. | 3 : 23 |
| 13. Nilborn | Sweden | |
| 14. Cellini | Italy | 3 : 18 |
| 15. de Vries | Holland | 3 : 16 |
| 16. Royle | G.B. | 3 : 11 |
| 17. O'Donnell | G.B. | 3 : 10 |
| 18. Ferber | Belgium | 3 : 08 |
| 19. Gerlaud | France | |
| 20. Hakansson | Sweden | 3 : 07 |
| 21. Morriset | France | 3 : 03 |
| 22. Nicole | G.B. | 3 : 02 |
| 23. Pelegi | Italy | 3 : 01 |
| 24. Spring | Finland | 3 : 00 |
| 25. Tangney | U.S.A. | 2 : 59 |
| 26. Huhtinen | Finland | 2 : 55 |
| 27. Aribaud | France | 2 : 48 |
| 28. Olsson | Sweden | 2 : 45 |
| 29. Deschepper | Belgium | |
| 30. Jarvi | Finland | 2 : 40 |
| 31. Kennedy | N.Z. | 2 : 39 |
| 32. Mme. Ferber | Belgium | 2 : 37 |
| 33. Knudson | Denmark | 2 : 35 |
| 34. Dijkstra, A. | Holland | 2 : 34 |
| 35. Lidgard | U.S.A. | 2 : 33 |
| 36. Dunkley | G.B. | 2 : 25 |
| 37. Figuera | Trinidad | 2 : 24 |
| 38. Lippens | Belgium | 2 : 21 |
| 39. Gilg | France | 2 : 18 |
| 40. Faiola | Italy | 2 : 16 |
| 41. Goetz | France | |
| 42. Jossien | France | 2 : 12 |
| 43. Reeve | Australia | |
| 44. Jorgensen | Denmark | 2 : 08 |
| 45. Follett | Belgium | 2 : 05 |
| 46. Dijkstra, G. | Holland | |
| 47. Samaa | Germany | 2 : 01 |
| 48. Seldon | U.S.A. | 1 : 56 |
| 49. Piccini | Italy | 1 : 52 |
| 50. Wood | Canada | 1 : 43 |
| 51. Loates | Canada | 1 : 37 |
| 52. Bachli | Switzerland | 1 : 33 |
| 53. du Toit | South Africa | |
| 54. Lipinski | Germany | 1 : 30 |
| 55. Marsh | N.Z. | 1 : 11 |
| 56. Macauley | N.Z. | 1 : 04 |
| 57. Visser | South Africa | 1 : 01 |
| 58. Berge | Norway | 49 |
| 59. Gray | Australia | 46 |
| 60. Hopkins | Australia | 45 |
| 61. Lichte | Germany | |
| 62. Prhvac | Yugo-slavia | 44 |
| 63. Melzer | Germany | 15 |
| 64. Larsen | Denmark | 09 |
| 65. Borjesson | Sweden | |
| 66. Connor | N.Z. | 04 |
| 67. Ferrer | Switzerland | |

Round 2

Without loss of time, Round 2 got under way with commendable promptitude, though a number of experienced modellers tended to hold back knowing that thermal activity would increase the later it got, and the score board clock was watched with greater interest than had obtained during the earlier round.

The excellent score board system showed its worth from now on, and it was quite a job to tear oneself away from the lists to watch the actual flying! With each competitor's name and number on a narrow board, these were so arranged that individual round times plus totals were given, and the boards interchanged according to the scores. In this way, a proper picture could be obtained of the changing fortunes of the contest, and everyone had nothing but praise for the scheme.

Bilgri had unfortunately lost his best model in the first round, and was not able to do so well with his second string. Evans' machine had D/T'd into a fence and broken its back, and he was another forced to use a reserve model. With the wind increasing Warring changed to his "foul weather" model but lost time on his earlier effort.

It was during this round that the expected thermals started to appear, and Arne Blomgren, flying the same model used at Jami Jarvi last year, was one of the first to contact a riser, raising him from ninth to second position. Ellila further improved on his first round time to jump up a further place, and maximums placed Maibäum (Germany) in top place and Gerlaud (France) from sixteenth to fifth. A very-near maximum brought Jan Nilborn up into fourth position, and things began to take on the familiar aspect of a British contest, where thermals can play havoc with any kind of forecast.

Gerlaud's compatriot, Jacques Morriset, also showed improvement, and it was apparent that the French team was a force to reckon with this year. Lustrati of Italy had dropped four places, John O'Donnell had picked up three and there was a general "musical chairs" going on in the placings all round.

Jimmy Tangney came up against one trouble after another, his model finally completely concertina-ing the fuselage to produce a machine that looked for all the world like a tandem monoplane! Rubber motors began to feel the strain and more than one model went the way of all balsa with the heartrending sound so familiar to model fliers.

The enormous value of the motorcycle recovery service began to show itself, and this facility was greatly appreciated by all competitors. Stationed a short distance behind the take-off boards, machines waited with engines running, and it was a fine sight to see anxious modellers dashing from the take-off board to the pillion seats of these small machines, and off they would go in hot pursuit of the model. (We saw at least one over-anxious

modeller miss the pillion altogether, and it was amusing to see the various sizes and shapes of persons trying to balance themselves whilst haring across the field!) In addition to the motorcycles, a string of boys were positioned at the edge of the field, and this system led to many models being effectively recovered which otherwise would have been lost.

Wilson's proxy was unable to hold the pace, and with a flight of 2:47 had dropped from the high placing shown in Round 1, but even so was doing a fine job of work for his far distant entrant.

Three five-minute maximums were scored during this round, with others missing the top limit by a few seconds. Five flights of over four minutes were recorded, and the average time of the top twenty flights in this round showed an improvement to 3:59.

Geared machines were showing up best, though the single skinned long fuselage jobs of the top Americans were not to be disregarded. As a general statement we would say that support for the geared machine was about fifty-fifty, with performance techniques ranging from the spectacular high climb to the steadier—and generally higher duration getting—climb with long motor run. Nothing much in the way of new design features appeared this year, though the Italians produced an interesting machine employing cranks instead of gears.

As the end of Round 2 drew near, anxiety was rife in the British camp, for Nicole's machine had not been recovered from its first flight, and he had no reserve. This is a matter that must be considered in future years, for it undoubtedly handicaps a team if its members are not fully equipped, whether it be with accessories or the requisite number of models. F.A.I. rules permit the use of two machines—or combinations of components—and the lack of a reserve cost Nicole a much higher placing than he finally secured. We do not blame Roy himself for this, for he has his work cut out at college, and had had no time to construct a second machine. We suggest that in future such requirements are made public well before the contest, for the main thing to keep in mind is that the Team represents the country, and any failing of this sort can only harm a national prestige.

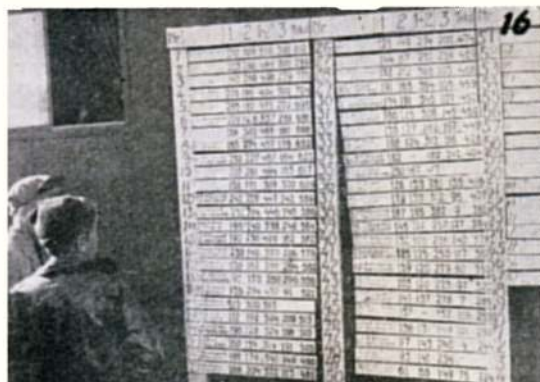
One or two were caught out by the time limit, and a few blanks were scored to close the round at 5.30 a.m.

On opposite page: (9) Proxy fliers give attention to the Canadian model sent by Frank Loates. (10) Thomas H. Bland from Trinidad, whose unexpected attendance created a stir. The model shows evidence of repairs that were necessary after its arrival in a damaged condition. (11) Roy Nicole assists Johnny O'Donnell in the last stages of a big wind-up. (12) Smart take-off by Ted Evans. (13) Pierre Deschepper holds for Mme. Lucienne Ferber, who was the only lady competitor, placed 45th after missing her second flight. (14) Duerell, proxy flier for Wilson of New Zealand. Model was in second place in the first round, finished 34th. (15) The British contingent settled in their allotted enclosure on the field.



Position at end of 2nd Round

| | | | | |
|-----|--------------|--------------|------|------|
| 1. | Maibaum | Germany | 5:00 | 8:33 |
| 2. | BLOMGREN | Sweden | 5:00 | 8:30 |
| 3. | Ellila | Finland | 4:16 | 8:16 |
| 4. | Nilborn | Sweden | 4:46 | 8:09 |
| 5. | Gerlaud | France | 5:00 | 8:08 |
| 6. | Bilgri | U.S.A. | 3:00 | 7:53 |
| 7. | Montplaisir | U.S.A. | 4:21 | 7:44 |
| 8. | Evans | G.B. | 3:47 | 7:37 |
| | Morriset | France | 4:34 | |
| 9. | Warring | G.B. | 3:25 | 7:27 |
| 10. | Haslach | Switzerland | 3:34 | 7:26 |
| 11. | Jossien | France | 4:54 | 7:10 |
| 12. | O'Donnell | G.B. | 3:50 | 7:00 |
| 13. | Wilson | N.Z. | 2:47 | 6:57 |
| 14. | Lustrati | Italy | 3:16 | 6:44 |
| 15. | Kannenworff | Italy | 2:48 | 6:37 |
| 16. | Hakansson | Sweden | 3:15 | 6:22 |
| 17. | Aribaud | France | 3:24 | 6:12 |
| 18. | Stark | Sweden | 2:20 | 6:10 |
| 19. | Lidgard | U.S.A. | 3:32 | 6:05 |
| 20. | Royle | G.B. | 2:43 | 5:54 |
| 21. | Dijkstra, A. | Holland | 3:11 | 5:45 |
| 22. | Cellini | Italy | 2:20 | 5:38 |
| 23. | de Vries | Holland | 2:08 | 5:24 |
| 24. | Deschepper | Belgium | 2:56 | 5:21 |
| 25. | Jarvi | Finland | 2:34 | 5:14 |
| 26. | Ferber | Belgium | 2:04 | 5:12 |
| | Tangney | U.S.A. | 2:13 | |
| 27. | Gilg | France | 2:53 | 5:11 |
| 28. | Spring | Finland | 2:05 | 5:05 |
| 29. | Wood | Canada | 3:12 | 5:04 |
| 30. | Goetz | France | 2:42 | 4:58 |
| 31. | Follett | Belgium | 2:33 | 4:41 |
| 32. | Huhtinen | Finland | 1:45 | 4:40 |
| 33. | Kennedy | N.Z. | 2:00 | 4:39 |
| | Knudson | Denmark | 2:04 | |
| 34. | Lippens | Belgium | 2:17 | 4:38 |
| 35. | Samaan | Germany | 2:29 | 4:34 |
| 36. | Marsh | N.Z. | 2:50 | 4:20 |
| 37. | Dunkley | G.B. | 1:52 | 4:17 |
| 38. | Dijkstra, G. | Holland | 2:05 | 4:10 |
| 39. | Bachli | Switzerland | 2:23 | 4:00 |
| 40. | Jorgensen | Denmark | 1:46 | 3:58 |
| 41. | du Toit | South Africa | 2:21 | 3:54 |
| 42. | Figuera | Trinidad | 1:27 | 3:51 |
| 43. | Loates | Canada | 2:00 | 3:43 |
| 44. | Visser | South Africa | 2:10 | 3:14 |
| 45. | Nicole | G.B. | — | 3:02 |
| | Phavc | Yugo-slavia | 2:17 | |
| 46. | Peligi | Italy | — | 3:01 |
| 47. | Olsson | Sweden | — | 2:45 |
| 48. | Seldon | U.S.A. | :42 | 2:43 |
| 49. | Mme. Ferber | Belgium | — | 2:37 |
| 50. | Piccini | Italy | :40 | 2:36 |
| 51. | Berge | Norway | 1:28 | 2:29 |
| | Reeve | Australia | :13 | |
| 52. | Faiola | Italy | — | 2:16 |
| 53. | Hopkins | Australia | 1:25 | 2:11 |
| 54. | Lipinski | Germany | :11 | 1:44 |
| 55. | Macauley | N.Z. | — | 1:11 |
| 56. | Melzer | Germany | :22 | 1:06 |
| 57. | Gray | Australia | :04 | :53 |
| 58. | Lichte | Germany | — | :45 |
| 59. | Larsen | Denmark | — | :15 |
| 60. | Ferrer | Switzerland | :06 | :10 |
| 61. | Borjesson | Sweden | — | :09 |
| | Connor | N.Z. | — | |



(16) The excellent scoreboard system which might well be adopted for all contests of this nature, provides at a glance the position and times of each competitor. (17) Blomgren's last take-off; the model was lost on its last and winning flight. Was the same model as that used for the previous year's contest in Finland. (18) The winners, l. to r., Joe Bilgi (5th), Arne Ellila (3rd), Arne Blomgren, the winner, and Jan Nilborn (2nd). Seated is Colonel Cervell, F.A.I. Steward.

With Germany in the lead, and Sweden and Finland very close behind, the final round got into its stride after a half hour break. During this round the "go-as-you-please" order of the first two attempts was changed for a rather peculiar draw system. Instead of a flight order by countries, as is the usual way, individuals were called within certain time brackets, and it was found that some teams had to place two men in the field at the same time, which did not make for easy handling or for intelligent tactics.

Here again the reserve model question came to light, for Gunther Maibäum had no competent machine with which to make his third flight. A second model was in existence, but it was untested, and he hung on in the hope that the lost model would be returned in time. Nicole's machine was brought back to control just after the close of Round 2, so he was able to make a good flight of 4:02, an improvement of one minute over his first round time. What a pity he had to miss Round 2.

Thermal activity was increasing all the time, four maximums being scored during this round, plus a near-maximum for proxy-flown Marsh's entry from New Zealand.

Frantic efforts to improve on one's position were going on all round, but Blomgren put paid to all aspirations when returning a further maximum flight, to be the very popular winner. Arne, twenty-nine years old and a radio engineer by trade, has been a regular Wakefield flier for some years, and will be remembered by many British aeromodellers as a competitor at Cranfield in 1949. Flying also at Jami Jarvi in both 1950 and 1951, he is a strong upholder of the geared machine, and

Position at End of Round 3

| | | | | | | | | | | | |
|-----------------------|---------|------|-------|--------------------|----------|------|------|---------------------|-------------|------|------|
| 1. BLOMGREN, A. | SWEDEN | 5:00 | 13:30 | 22. Jarvi, J. | Finland | 3:11 | 8:25 | 44. Huhtinen, P. | Finland | — | 4:40 |
| 2. Nilborn, J. | Sweden | 5:00 | 13:09 | 23. Deschepper, P. | Belgium | 2:29 | 8:10 | 45. Ferber, Mme. L. | Belgium | 1:46 | 4:23 |
| 3. Ellila, A. | Finland | 4:39 | 12:55 | 24. Aribaud, H. | France | 1:53 | 8:05 | 46. Reeve, W. R. | Australia | 1:41 | 4:10 |
| 4. Lustrati, S. | Italy | 5:00 | 11:44 | 25. Samaun, G. | Germany | 3:20 | 7:54 | 47. Bachli, B. | Switz. | :04 | 4:04 |
| 5. Bilgi, J. | U.S.A. | 3:42 | 11:35 | 26. Figuera, T. M. | Trinidad | 3:58 | 7:49 | 48. de Toit, D. | S. Africa | — | 3:54 |
| 6. Kannenworff, L. | Italy | 4:49 | 11:26 | 27. Lidgard, E. | U.S.A. | 1:43 | 7:48 | 49. Berge, G. | Norway | 1:15 | 3:44 |
| 7. Gerlaud, E. | France | 3:00 | 11:08 | 28. Royle, J. | G.B. | 1:45 | 7:39 | 50. Visser, P. | S. Africa | — | 3:14 |
| 8. Morriset, J. | France | 2:55 | 10:32 | 29. Dijkstra, A. | Holland | 1:47 | 7:32 | 51. Phayv, J. | Yugo-slavia | — | 3:02 |
| 9. Evans, E. W. | G.B. | 2:44 | 10:21 | 30. Spring, H. | Finland | 2:25 | 7:30 | 52. Peligi, G. | Italy | — | 3:01 |
| 10. Montplaisir, C.M. | U.S.A. | 2:33 | 10:17 | 31. Knudson, E. | Denmark | 2:47 | 7:26 | 53. Seldon, S. | U.S.A. | :03 | 2:46 |
| 11. Gilg, P. | France | 5:00 | 10:11 | 32. Ferber, M. | Belgium | 1:56 | 7:08 | 54. Olsson, R. | Sweden | — | 2:45 |
| 12. Warring, R. H. | G.B. | 2:22 | 9:49 | 33. Nicole, R. F. | G.B. | 4:02 | 7:04 | 55. Piccini, F. | Italy | — | 2:36 |
| 13. Haslach, T. | Switz. | 2:20 | 9:46 | 34. Wilson, | N.Z. | — | 6:57 | 56. Faiola, D. | Italy | :01 | 2:17 |
| 14. Cellini, G. | Italy | 4:06 | 9:44 | 35. Follett, P. | Belgium | 2:15 | 6:56 | 57. Ferrer, T. | Switz. | 2:06 | 2:16 |
| 15. O'Donnell, J. | G.B. | 2:42 | 9:42 | 36. Tangney, J. F. | U.S.A. | 1:35 | 6:47 | 58. Hopkins, L. D. | Australia | — | 2:11 |
| 16. Stark, S. | Sweden | 3:26 | 9:36 | 37. Hakansson, A. | Sweden | :09 | 6:31 | 59. Lipinski, G. | Germany | — | 1:44 |
| 17. Goetz, A. | France | 4:24 | 9:22 | 38. Dunkley, T. | G.B. | 2:07 | 6:24 | 60. Macauley, A. | N.Z. | — | 1:11 |
| 18. Marsh, B. | N.Z. | 4:56 | 9:16 | 39. Jorgensen, B. | Denmark | 2:20 | 6:18 | 61. Melzer, R. | Germany | — | 1:06 |
| 19. Jossien, R. | France | 1:31 | 8:41 | 40. Dijkstra, G. | Holland | 1:57 | 6:07 | 62. Gray, S. W. | Australia | — | :53 |
| 20. Maibbaum, G. | Germany | — | 8:33 | 41. Kennedy, D. | N.Z. | 1:20 | 5:59 | 63. Lichte, M. | Germany | — | :45 |
| 21. Wood, J. H. | Canada | 3:29 | 8:30 | 42. Loates, F. C. | Canada | 1:37 | 5:20 | 64. Larsen, J. M. | Denmark | — | :15 |
| 21. de Vries, C. R. | Holland | 3:06 | 8:30 | 43. Lippens, G. | Belgium | :07 | 4:45 | 65. Borjesson, B. | Sweden | — | :09 |
| | | | | | | | | Connor, M. G. | N.Z. | — | |

is a regular selection for Sweden's Wakefield Team.

Ellila still further improved his times with a flight of 4:39 but was pipped for second place by Jan Nilborn, who also scored a maximum to place him 14 seconds above the Finn. Lustrati of Italy was another to get the maximum score, bringing him with a jump right from fourteenth to fourth.

Joe Bilgri, still flying his second string, improved his time but could not quite catch the leaders, and Kannenworff (Italy) made up for years of disappointment by gaining a very creditable sixth.

Both Ted Evans and Ron Warring were due out at the same time for the concluding round, and both unfortunately got the same poor patch of weather! Both launches were excellent and seemed set for a really high duration, height gained being adequate. However, both seemed to get a down draught and ended their flights in just over two minutes. This factor seemed to be general throughout this round, for while some got thermals and high times, from quite mediocre launches, others failed to get good durations following really high altitude flights.

The sound of continuous motor horns drew attention to a strange procession coming across the field. Blomgren, who had been away looking for his lost model, had been met by a convoy of cars,

and he was returned to the field sitting on the bonnet of one with the others acting as escort! Congratulations were showered on him, and the traditional Scandinavian custom of tossing the winner was enacted. Nilborn also came in for this attention, and the ever-popular Ellila had his share of good humoured fun. (The winning model is still missing as this is written, but it is interesting to note that the machine is exactly as flown in Finland last year, and had in fact only been trimmed a few days before the contest.)

Proceedings were wound up in the evening with a dinner given by the Norköpping Automobile and Flying Club, when the F.A.I. stewards, Major-General P. R. af Uhr and Colonel F. Cervell welcomed the guests and spoke about the success of the contest. Faults were freely admitted, and we have no doubt that next year's event will be all the better for various shortcomings being noted in 1952. A very pleasant evening included the prizegiving, when Madam af Uhr presented Arne Blomgren with the famous Wakefield Trophy, and applause came fast and furious as different individuals collected the special plaques presented to all participants. Thus bringing to a close yet another Wakefield Trophy Contest, for which the best description we feel is that applied to the curate's egg—good in parts!

| AUSTRALIA | | | | |
|---------------------|------|------|------|-------|
| 46. Reeve, W. R. | 2:16 | 1:13 | 1:41 | 4:10 |
| 58. Hopkins, L. D. | :46 | 1:25 | — | 2:11 |
| 62. Gray, S. W. | :49 | 0:04 | — | :53 |
| BELGIUM | | | | |
| 23. Deschepper, P. | 2:45 | 2:56 | 2:29 | 8:10 |
| 32. Ferber, M. | 3:08 | 2:04 | 1:56 | 7:08 |
| 35. Follett, P. | 2:08 | 2:33 | 2:15 | 6:56 |
| 43. Lippens, G. | 2:21 | 2:17 | :07 | 4:45 |
| 45. Ferber, Mme. L. | 2:37 | — | 1:46 | 4:23 |
| CANADA | | | | |
| 20. Wood, J. H. | 1:52 | 3:12 | 3:29 | 8:33 |
| 42. Loates, F. C. | 1:43 | 2:00 | 1:37 | 5:20 |
| DENMARK | | | | |
| 31. Knudson, E. | 2:35 | 2:04 | 2:47 | 7:26 |
| 39. Jorgensen, B. | 2:12 | 1:46 | 2:20 | 6:18 |
| 64. Larsen, J. M. | :15 | — | — | :15 |
| FINLAND | | | | |
| 3. Ellila, A. | 4:00 | 4:16 | 4:39 | 12:55 |
| 22. Jarvi, J. | 2:40 | 2:34 | 3:11 | 8:25 |
| 30. Spring, H. | 3:00 | 2:05 | 2:25 | 7:30 |
| 44. Huhtinen, P. | 2:55 | 1:45 | — | 4:40 |
| Lumes, O. | — | — | — | — |
| FRANCE | | | | |
| 7. Gerlaud, E. | 3:08 | 5:00 | 3:00 | 11:08 |
| 8. Morriset, J. | 3:03 | 4:34 | 2:55 | 10:32 |
| 11. Gilg, P. | 2:18 | 2:53 | 5:00 | 10:11 |
| 17. Goetz, A. | 2:16 | 2:42 | 4:24 | 9:22 |
| 19. Jossien, R. | 2:16 | 4:54 | 1:31 | 8:41 |
| 24. Aribaud, H. | 2:48 | 3:24 | 1:53 | 8:05 |
| GREAT BRITAIN | | | | |
| 9. Evans, E. W. | 3:50 | 3:47 | 2:44 | 10:21 |
| 12. Warring, R. H. | 4:02 | 3:25 | 2:22 | 9:49 |
| 15. O'Donnell, J. | 3:10 | 3:50 | 2:42 | 9:42 |
| 28. Royle, J. | 3:11 | 2:43 | 1:45 | 7:39 |
| 33. Nicole, R. F. | 3:02 | — | 4:02 | 7:04 |
| 38. Dunkley, T. | 2:25 | 1:52 | 2:07 | 6:24 |
| GERMANY | | | | |
| 20. Maibaum, G. | 3:33 | 5:00 | — | 8:33 |
| 25. Samaam, G. | 2:05 | 2:29 | 3:20 | 7:54 |
| 59. Lipinski, G. | 1:33 | :11 | — | 1:44 |
| 61. Melzer, R. | :44 | :22 | — | 1:06 |
| 63. Lichete, M. | :45 | — | — | :45 |
| Hartmann, W. | — | — | — | — |
| HOLLAND | | | | |
| 21. de Vries, C. R. | 3:16 | 2:08 | 3:06 | 8:30 |

| 29. Dijkstra, A. | 2:34 | 3:11 | 1:47 | 7:32 |
|------------------------|------|------|------|-------|
| 40. Dijkstra, G. | 2:05 | 2:05 | 1:57 | 6:07 |
| ITALY | | | | |
| 4. Lustrati, S. | 3:28 | 3:16 | 5:00 | 11:44 |
| 6. Kannenworff, L. | 3:49 | 2:48 | 1:49 | 11:26 |
| 14. Cellini, G. | 3:18 | 2:20 | 4:06 | 9:44 |
| 52. Pelegi, G. | 3:01 | — | — | 3:01 |
| 55. Piccini, F. | 1:56 | :40 | — | 2:36 |
| 66. Faiola, D. | 2:16 | — | :01 | 2:17 |
| NEW ZEALAND | | | | |
| 18. Marsh, B. | 1:30 | 2:50 | 4:56 | 9:16 |
| 34. Wilson, D. | 4:10 | 2:47 | — | 6:57 |
| 41. Kennedy, D. | 2:39 | 2:00 | 1:20 | 5:59 |
| 60. Macauley, A. | 1:11 | — | — | 1:11 |
| 65. Connor, M. G. | :09 | — | — | :09 |
| Bethwaite, F. | — | — | — | — |
| NORWAY | | | | |
| 49. Berge, B. | 1:01 | 1:28 | 1:15 | 3:44 |
| SOUTH AFRICA | | | | |
| 48. du Toit, D. | 1:33 | 2:21 | — | 3:54 |
| 50. Visser, P. | 1:04 | 2:10 | — | 3:14 |
| Allen, E. | — | — | — | — |
| Moore, B. | — | — | — | — |
| SWEDEN | | | | |
| 1. Blomgren, A. | 3:30 | 5:00 | 5:00 | 13:30 |
| 2. Nilborn, J. | 3:23 | 4:46 | 5:00 | 13:09 |
| 16. Stark, S. | 3:50 | 2:20 | 3:26 | 9:36 |
| 37. Hakansson, A. | 3:07 | 3:15 | :09 | 6:31 |
| 54. Olsson, R. | 2:45 | — | — | 2:45 |
| 65. Borjesson, B. | :09 | — | — | :09 |
| SWITZERLAND | | | | |
| 13. Haslach, T. | 3:52 | 3:34 | 2:20 | 9:46 |
| 47. Bachli, B. | 1:37 | 2:23 | :04 | 4:04 |
| 57. Ferrer, T. | :04 | :06 | 2:06 | 2:16 |
| TRINIDAD | | | | |
| 26. Figuera, T. M. | 2:24 | 1:27 | 3:58 | 7:49 |
| Bland, B. A. | — | — | — | — |
| Bynde, J. | — | — | — | — |
| UNITED STATES | | | | |
| 5. Bilgri, J. | 4:53 | 3:00 | 3:42 | 11:35 |
| 10. Montplaisir, C. M. | 3:23 | 4:21 | 2:33 | 10:17 |
| 27. Lidgard, E. | 2:33 | 3:32 | 1:45 | 7:48 |
| 36. Tangney, J. F. | 2:59 | 2:13 | 1:35 | 6:47 |
| 53. Seldon, S. | 2:01 | :42 | :03 | 2:46 |
| YUGOSLAVIA | | | | |
| 51. Prhvac, J. | :45 | 2:17 | — | 3:02 |

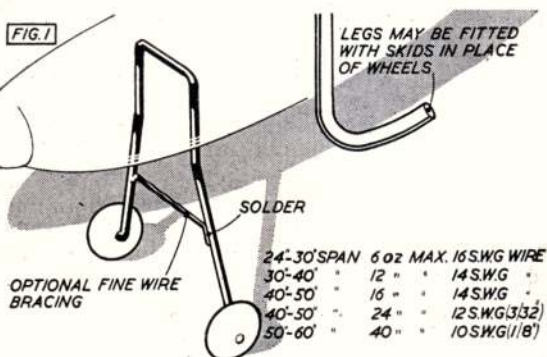
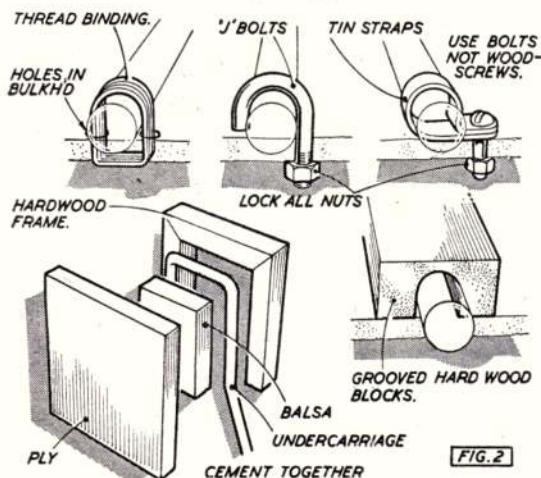
Airframe Construction

PART SEVEN

UNDERCARRIAGES

PROBABLY more arguments have centred around undercarriages on contest models than on any other single feature of design. Even where rules call for rise-off-ground flights, many contest models (rubber models in particular) do not need what could properly be termed an "undercarriage". Just a whisker of wire will suffice to fall within the definition that the model should be capable of supporting itself on the ground in a normal attitude!

Few high performance rubber models have any appreciable take-off run, particularly if there is any wind; they simply hop straight into the air as soon as they are released. In fact it has been demonstrated on occasion that a high-powered rubber will "take-off" without any undercarriage at all, simply by resting the tail on the ground and holding the fuselage so that the propeller is clear. Release the propeller first, then the fuselage, and off goes the model without any trouble. People who believe that an undercarriage *should be* an undercarriage do not take kindly to that, particularly as the functions of a "whisker" undercarriage are little more than a concession to the rules, and actual take-off is almost identical to that of the "no undercarriage" type.

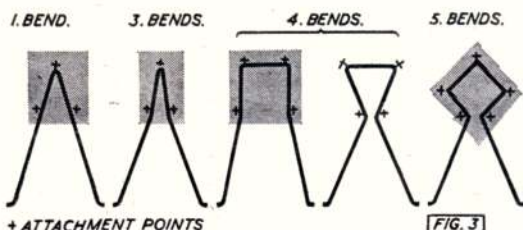


Why do modellers go to such trouble to virtually eliminate the undercarriage? Mainly because it is a parasite. It adds both weight and drag and only serves a useful function for the take-off. No contest model is really expected to land on its undercarriage, except possibly under ideal conditions. Most landings are often well out of the airfield, perhaps in built-up areas where a normal landing is not possible.

In the case of a sports model the question is a little different. Ideally, the designers want such a model to land on its undercarriage, and think of it as normal take-off gear, even if the majority of flights are hand launched. Logically, too, the larger (and heavier) the model the more vulnerable it is on landing and the more desirable that it should land properly. This is particularly important with Radio Control models where the normal duration type "crash landing" is highly undesirable and might well damage equipment.

The problem of undercarriage design and construction is thus twofold. First the "duration" type undercarriage, where the unit is regarded as a parasite, and secondly the sports model (including Radio Control models) where the undercarriage is considered very necessary. Since performance is not the main aim in the latter case, "weight" and "drag" factors become relatively unimportant.

Since we started talking about duration models, we will deal with undercarriages for these types first. The problem of which type of undercarriage to use on a duration model is really one of personal preference, bearing in mind the type of model you normally fly. The power model offers the simplest example since this, as a type, is substantially the



same in all model sizes and far less subject to controversy than rubber model undercarriages. For a power-duration model the simple wire cantilever undercarriage is still the best and is almost universally employed.

This takes the form of two wire legs, bent as one and securely anchored in the fuselage—Fig. 1. The ends of the legs are angled to form stub axles on which the wheels are located, or (a modern trend) the ends of the legs are simply bent backwards to form skids. This type of skid undercarriage has been borrowed directly from the rubber model and is about the only noticeable change in power-duration undercarriage design since the late 1930's. Where wheels are used, these should be of the lightweight type—plastic rather than rubber tyred on the smaller models. Since power model wheels come in for some severe loading, particularly on the larger sizes, metal hubs are the rule.

Such a simple cantilever undercarriage is strong enough and flexible enough for most purposes. Drag is low and weight is also low, providing the right size of wire is used. A common fault is to use wire which is far thicker (and heavier) than it need be. Provided you select good quality spring steel wire, the sizes given in the table appended to Fig. 1 are quite adequate. If such an undercarriage does tend to splay out due to the weight of the model, then a simple spreader bar soldered across the legs will obviate that trouble.

There are a variety of ways in which such an undercarriage can be fixed in the fuselage. The simplest is to attach it to a ply former, usually the front former or firewall. (Fig. 2 details a variety of ways in which this can be done.) Thread binding is by the far the simplest method and quite adequate up to Class B free flight models. Tin, metal straps or "J" bolts are more commonly used on large models, and for control line stunt models too. The "sandwich" method and the use of grooved wooden blocks is quite satisfactory on most small models. There are other methods, but these are the main ones employed. Fig. 3 shows some important design features relative to the shaping of the legs.

A disadvantage of all such fixing is that the undercarriage is not detachable as a unit. Three detachable types are shown in Fig. 4, of which type B is probably the best and most reliable. In type A the vertical box is prone to break loose in a heavy landing and further, if the fit of the wire is on the slack side, the whole undercarriage may drop out.

Type C is heavier, but positive and generally satisfactory. Soldering a second wire to the top of the main leg increases the rigidity of the leg at this point. For contest work, detachable undercarriages have the advantage that they can be removed to save weight and drag in hand-launched contests.

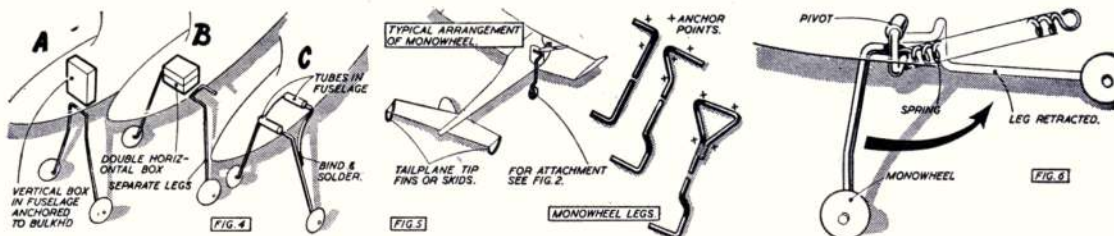
If weight saving and drag reduction is considered important a single leg undercarriage can be used, as in Fig. 5, but the price paid for this saving is a certain loss of "ground stability" on take off. As soon as the tail of the model rises the machine is balanced on the single wheel and relies on wing lift to keep it from toppling over. Some models are quite satisfactory in this respect, others very "chancy". Most designers prefer to play safe and use a two-leg unit.

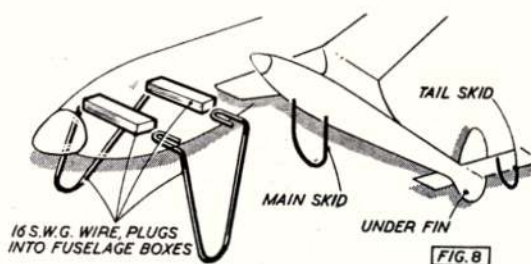
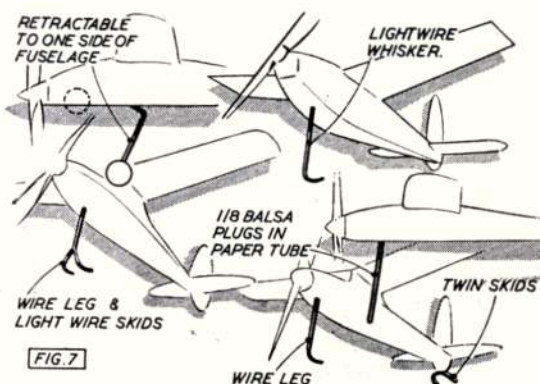
The same basic defect applies to the retracting undercarriage, which is invariably mono-wheel on power duration designs. Actual drag saving is problematical and the propeller is more exposed to damage on landing, also the weight of such a unit must be heavier than its fixed monowheel counterpart. It is probably true to say that the main reason for using a retractable undercarriage is that the designer wants to be different. Of the variety of systems which have been tried out that in Fig. 6 is the simplest, as well as effective.

Now back to the rubber model. If you want to go the whole hog and eliminate the undercarriage as far as possible the "whisker" type is the solution, up to and including Wakefield sizes. Size of wire is chosen as the minimum diameter which will support the weight of the model without buckling. (One leading American modeller went to the extreme of using a balsa "whisker" which fulfilled take-off needs. What matter if it snapped off on landing? It was readily replaced! Fig. 7.)

To conform to "three-point" requirements of an undercarriage with a "whisker" for the main leg, the other two points are usually provided by attachments to the tailplane. These may be endplate, underslung fins, or possibly light wire skids. Further examples which have been used are shown in Fig. 7.

During recent years a more rigid form of "whisker" undercarriage—more truly a skid undercarriage—has come into use. Typical examples are shown in Fig. 8, the main unit usually being detachable for ease of transport. Again this has proved very satisfactory in practice and





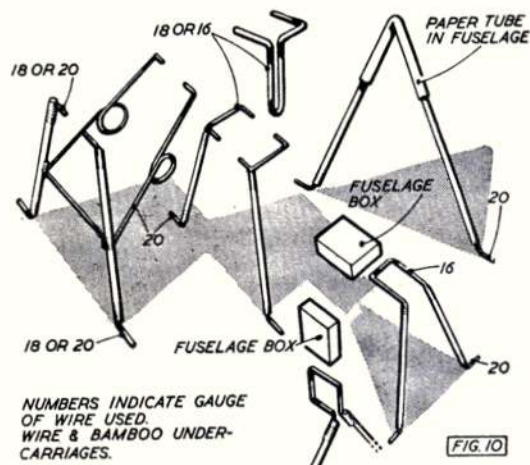
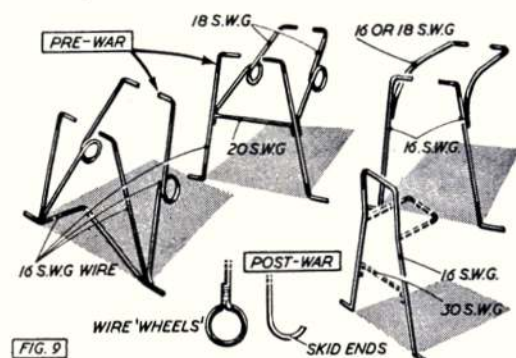
is virtually unbreakable. There is nothing to break except the fuselage fitting, and the legs themselves having a reasonable amount of flexibility should reduce the chance of this. Main disadvantage of the scheme is the extreme length of wire employed, which has to be 16 s.w.g. for the main leg(s) on models of Wakefield size.

Wire has always been favoured for undercarriages on account of its flexibility and freedom from breakage. Development of the all-wire undercarriage is detailed in Fig. 9, where it will be seen, the amount of wire used has gradually been reduced, saving both weight and drag. (Wire sizes quoted are for Wakefield models.) The two main disadvantages of the simple wire cantilever unit are (a) difficulty in arriving at a good detachable fitting in the fuselage and (b) using 16 s.w.g. as the maximum wire thickness desirable on account of weight, a tendency for the legs to splay out. The latter can be obviated by using a light spreader soldered in place, 30 s.w.g. being adequate.

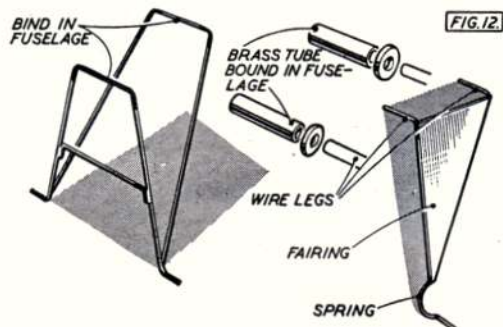
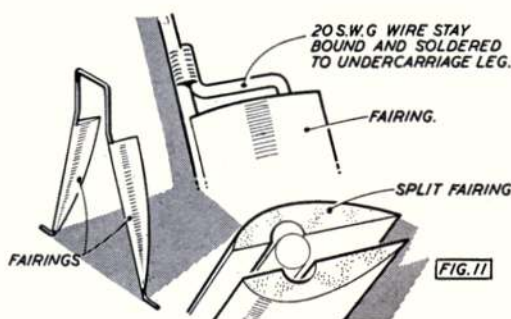
Another reason that wire is widely favoured is that really tough, good-quality bamboo is hard to come by. The bamboo and wire undercarriage has been developed to a comparable stage—Fig. 10—but to compare in *weight*, the section of bamboo used must be quite small. Such legs tend to fracture readily either at the point of entry into the fuselage (if plug-in type), or where bound to the top wire fitting. Weight for weight the all-wire unit compares very favourably and is robust.

A whole book could be written about undercarriages for sports models but in the main it can be said that these follow orthodox duration

practice, with suitable elaborations. For one thing we come to a category where there is no argument as to whether to use wheels or "skids". Wheels are the invariable rule, and usually of larger diameter than those used on duration models of similar size. The duration model relies on its wheels for take-off only; if possible we want the sports model to land properly as well. Here the larger the diameter of the wheels the better, especially if you consider the nature of the ground on which most landings will be made. Normal landings on grass airfields are possible provided the wheels are large enough and located well forward. Appearance enters into the question, and whilst wheels of an exaggerated size with the undercarriage swept forward in front of the propeller may be all very well for safe landings, such a unit looks both awkward and clumsy. Power modellers used to build undercarriages with a track equal to one half of the span or more, with literally yards of wire incorporated in the construction. Actually the wings—or rather the lift produced by the wings—plays a greater part in keeping a model upright on landing than does a wide track. A wide track may have the undesired effect of "digging in" and swinging the model violently to one side as soon as it lands.



NUMBERS INDICATE GAUGE OF WIRE USED
WIRE & BAMBOO UNDERCARRIAGES.



For small sports models of the power type we can borrow directly from the duration sphere and use simple wire cantilever undercarriages. These will give quite satisfactory service, and if necessary we can slightly increase the diameter of the wire used for the legs for greater rigidity, but since for the same size of model a smaller engine will be used (and thus a correspondingly smaller propeller) the length of undercarriage leg will be shorter. Wire of "duration size" should therefore be rigid enough.

To improve the appearance of wire undercarriage simple fairings of the type shown in Fig. 11 will be all that is necessary. They can be cut from balsa, suitably shaped and then bound to the legs with silk or tissue, preferably the former. To prevent the fairing twisting out of line a small wire fitting is soldered to the top of the leg to which the fairing is secured. The fairing can be in one piece or split and grooved to fit around the wire which is sandwiched between the two balsa layers. Such wire undercarriages are suitable for sport models of up to 3 lb. in weight, provided the right diameter wire is selected. The only damage likely to occur is a split fairing in a particularly heavy landing.

For larger, heavier models the old fashioned type of all wire undercarriage is still widely employed. (Fig. 12.) Addition of a secondary leg makes for a more rigid assembly but to prevent the unit splaying out some form of spreader bar must be employed. Such an undercarriage can be bound in the fuselage as a permanent fixture, or made detachable, plugging into metal tubes securely fastened in the fuselage. These tubes should have

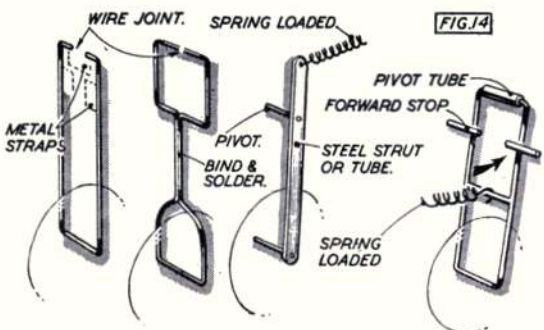
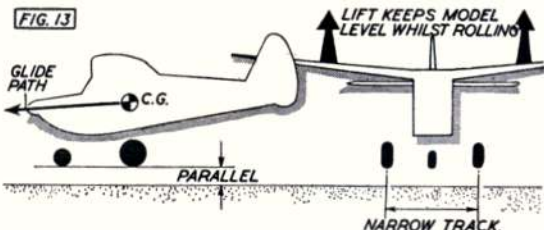
large metal washers soldered to each end and be firmly bound in place so that there is no risk of their being knocked sideways into the fuselage.

Where appearance is of primary concern there is no reason why a suitably shaped fairing block of balsa should not be bound between the two undercarriage legs. Alternatively the fairing itself can be some form of flexible covering.

Attractive for the sports model, and particularly the Radio Controlled model is the tricycle undercarriage. The "Rudder Bug" has done more to popularise the nosewheel undercarriage than any other. This model has almost the ideal proportions for tricycle gear—small track on the main wheels and these located close behind the centre of gravity, and a nosewheel of generous size, so located that the normal attitude is nose down.

The latter is an important feature in the design of a successful tricycle undercarriage. During glide approach the attitude of the model relative to the ground is nose down. If the nosewheel hits the ground long before the main wheels it will tend to bounce the nose of the aircraft up into the air and produce a bad landing. Ideally all three wheels should touch at the same time. Full size aircraft with tricycle landing gear make a controlled approach and are pulled up or flattened out just above the runway so that the main wheels touch first. After running for some time the wings lose lift and the nose slowly drops until the nosewheel is also contacting the ground. We cannot duplicate this same procedure on a model unless we employ an excessive nose-down ground attitude which would look ridiculous, but we can make an effective compromise by having a small nose-down attitude.

(continued on page 539)



A home-built Rev-Counter

By S/LDR. SHOLTO DOUGLAS

THERE cannot be even one, among the many thousands of power modellers, who has not at some time or other, wished to know just how many revs his particular engine is turning out. In July we were able to feature E. J. Hook's electronic device for tackling this task; but his rev counter involved work more akin to the radio enthusiast and which was probably beyond the capabilities of most aeromodellers.

There was a time when nearly every aero-modeller's tool kit included a rev indicator of the vibrating reed type; but that phase appears to have passed into obscurity, helped no doubt by the wide variance of readings that could be obtained by a selection of those "instruments" even when applied to one test engine at set constant speed! So the indicator designed and built by S/Ldr. Sholto Douglas has a double interest, for not only is it simple enough for any mechanically minded and equipped modeller to tackle, but it is also very accurate for any reading obtainable from a model engine.

Construction of this indicator starts at the back with a simple item such as a meat paste pot lid, (the type that is $1\frac{1}{8}$ ins. inside diameter is best) suitably drilled centrally to take the back piece, which is threaded internally for the shaft, and externally for the centre piece. By having this external thread constant for all sizes, it is possible



Mounted on a Frog 150, the complete unit may be judged for size. Diameter is slightly less than $1\frac{1}{8}$ ins., and the general contour resembles a transparent spinner.

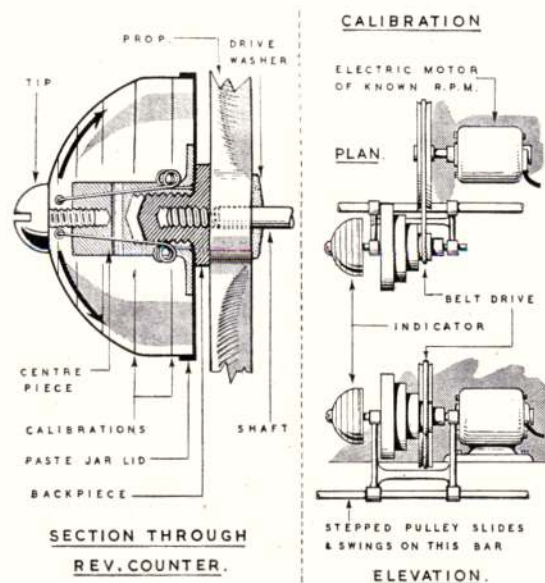
to make a set of different back pieces with changes of internal thread for varying engines.

The centre piece, drilled and tapped to suit the outside thread of the back piece, has a hole for a tommy bar, and can thus be used as a replacement for the normal airscrew nut, the whole indicator remaining in place throughout the flight. Since it is no larger than the average aluminium spinner, it then doubles both for appearance and indicating r.p.m. at take-off.

Now for the parts that do the work and actually show the revs per minute. Four holes are drilled in the base of the centre piece and connected by saw cuts as two pairs. Both holes and sawcuts should fit the wire as closely as possible. Then two lengths of 30 gauge piano wire (control-line wire) are each bent into a square "U", with a double coil on either side. The ends are passed through the holes in the base and bent square so that they are locked in the saw cuts, and clamped there securely when the meat paste back plate is sandwiched between centre and back pieces. Top bars of the two loops that now project from the base of the centre piece are now bound with fine copper wire as balance weights and these are painted white.

For reading off the revs, a form of dial is necessary, and this is provided by a bowl or dome,

Diagrammatic section of the rev-counter at left shows how the unit is used to replace the normal airscrew nut. Calibration details are for large diameter belt drive, description on next page gives simpler friction drive details.



moulded from perspex sheet and made to fit just inside the lip of the lid back plate. To do this, a turned wooden form was pressed against heated perspex and through former holes in plywood sheets. When held near an electric fire, or heated in a domestic electric oven, the transparent sheet softens and can easily be moulded, providing the job is done quickly. The sheet should be clamped lightly between the ply sheets to prevent the lot from becoming pushed through, or given the chance of becoming wrinkled. Acetate sheet can be used instead of perspex, but, being softer, it scratches more easily.

When moulded, the dome is drilled to take the last item, which is the screw slotted tip, which retains the dome on to the back plate by screwing into the centre piece. Now the indicator is complete—but for calibration.

Calibration

Assembled complete, the indicator should now be fitted to a suitable motor of known r.p.m. By means of a pulley system, described later, the speed of the indicator can be varied against the electric driving motor, and at each stage the white circle made by the out-flung bars of the wires can be measured for diameter by calipers and noted. Once the desired range is recorded, for example, from 5,000 to 12,000 r.p.m., the dome is detached from the unit and held reversed in a lathe or suitable device, when circles of appropriate diameters are lightly scribed by dividers inside the

dome. These are then coloured to any scheme preferred, using coloured drawing inks. Different ranges could be made by altering the gauge of the spring wire or the copper wire balance weighting.

As shown in the diagram on the opposite page, the test rig and pulley system for calibration consists of a hardwood or metal series of pulley steps whose diameter is worked out to gear with the diameter of a wheel on the electric motor.

The calibration rig used by S/Ldr. Sholto Douglas differs slightly in that, instead of using a large flexible driving belt such as we have shown to go around both the electric motor pulley and the stepped pulley, and which, is much larger than the Hoover belt, a friction drive is used.

The Hoover belt on the original test and calibration equipment was fitted around a 4 inch diameter pulley on the electric motor. Known revs of the motor were 1,450 and, with the belt fitted, the outside diameter of the driven pulley was 4½ ins. This is used to drive the stepped pulley by friction and as the latter pulley slides and can swing to any position, different speed ranges can quickly be arranged without the need for belt changes.

On test, the indicator gave no doubt as to its efficiency, as the white painted balance weights varied their throw with changes of speed, showing that, providing calibration is accurately marked, a reliable rev counter can easily be made by any modeller with facilities for turning.

AIRFRAME CONSTRUCTION *(continued from page 537)*

Another point against excessive nose-down attitude is that take-off will be prolonged, or even become impossible, since the wings are at such a low (perhaps negative) angle of attack when the model is moving forward on all three wheels. Fig. 13 summarises some of the desirable features.

Before anyone has flown or observed the behaviour of a model with a tricycle undercarriage the natural impression is that it would topple over immediately it touched the ground, especially if the nosewheel hits first. Again, of course, it is wing lift which prevents this from happening. At the moment of striking the ground both wings are lifting strongly and continue to lift all the time the model has any forward speed, decreasing as the model slows, provided the model is not thrown into an extreme nose-down attitude giving the wings zero angle of attack, or less.

Structurally the nosewheel undercarriage does present problems. The main wheel assembly is quite simple; the wire cantilever type is quite satisfactory, even for really heavy models, and this can be anchored to a ply plate secured in the fuselage.

If the nosewheel struts fold up the wheel itself will be driven into the bottom of the fuselage and most probably the model will tip over. On the "Rudder Bug", flying at an all-up weight of something like 5 lb., ⅛ in. dia. wire used for the

nosewheel struts is readily bent unless the landing is quite normal and smooth. Double struts are essential, securely anchored to a strong point.

On lighter models a double strut of simple design will suffice, but heavier models need something more robust. If it can be done without undue complication, a sprung leg assembly would be desirable as this could more readily absorb shock without distortion. In other words the front leg is made as rigid as possible, but also free to pivot backwards under load, this sprung action absorbing landing shocks.

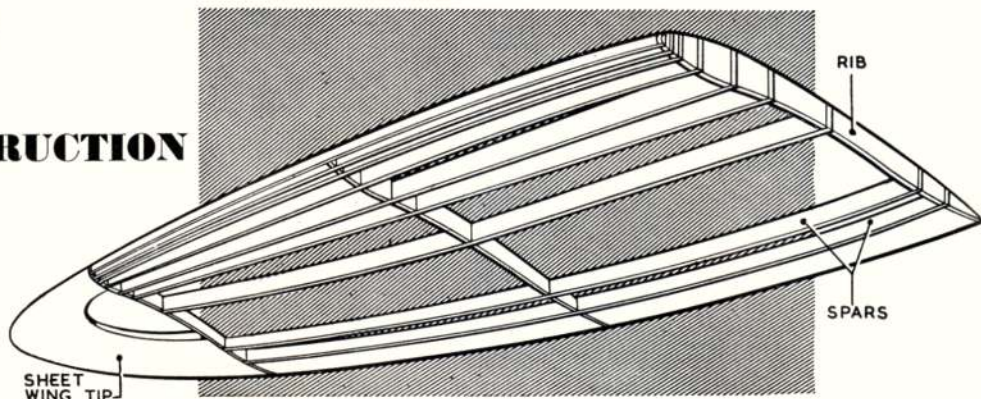
One of the most attractive schemes for general use would appear to be the torsion bar type of nosewheel assembly, described in the February issue of the AEROMODELLER. This would appear to meet all the needs of normal shock absorption without being unduly complicated or heavy, and can also be adjusted for rigidity by varying the proportions of the unit. Other possible assemblies are shown in Fig. 14.

A final point about nosewheel undercarriages. In almost every case the nosewheel itself is mounted in a U-shaped wire leg which becomes a permanent fixture in the fuselage, and once the unit is assembled the wheel cannot be removed. Therefore it is imperative to use a nosewheel with a solid rather than a pneumatic type, as it may be difficult to repair the latter, and impossible to replace.

NOVEL WING CONSTRUCTION

By

P. O'KEEFE



THE method of wing construction to be described was evolved for an experimental model, in which I required a very thin wing, as strong as the normal type, or as near so as possible, and it had to support the wing tissue to a uniform airfoil shape along the whole length of the wing.

The method, briefly, is to have a series of thin sheet spars running the full length of each wing, at stations corresponding to the "percentage of wing-chord" stations usually used for plotting a wing section. There is no need to have spars at every station, the modeller must plan the omission of certain spars so that the section still retains its correct shape. An example is given in Fig. 1.

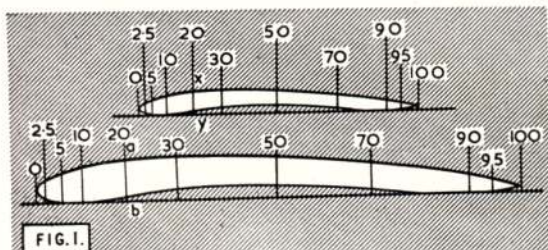


FIG. 1.

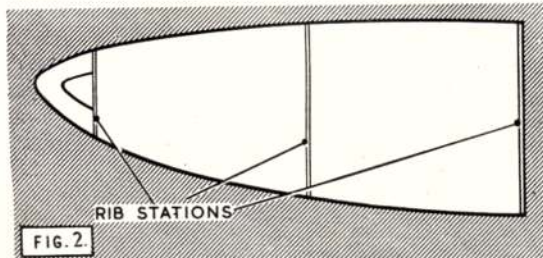


FIG. 2.

Now sections are drawn for 3, 4, or more places on the wing, depending on its span (see Fig. 2), and the height of the ordinates drawn. A full size front and rear elevation is now drawn, and the spars cut according to the size and shape produced in these elevations. Fig. 3 illustrates this. Wing ribs are now formed, one for each section previously decided upon in Fig. 2. They are cut from $\frac{1}{8}$ inch sheet balsa (or thicker for larger models), and Fig. 4 shows how these are formed. The balsa is cut twice as deep as the required rib, and a middle line drawn chord-wise across it. Ordinate stations are then marked off along it, and the lower ordinate shapes shown at each station by taking measurements from the drawing with dividers. Now slots are cut from the top of the rib down to these points, the slots being of the width required to take the thickness of the spars. The ribs are fixed upright on the plan in their correct positions, and the spars cemented firmly in place. L.E. and T.E. are filled in to suit. A wing tip is fitted to the outer rib, the one shown being of sheet with the centre cut away for lightness. When well dry, the whole wing is taken off the board, and all surplus balsa trimmed off the ribs, down to the level of the spars.

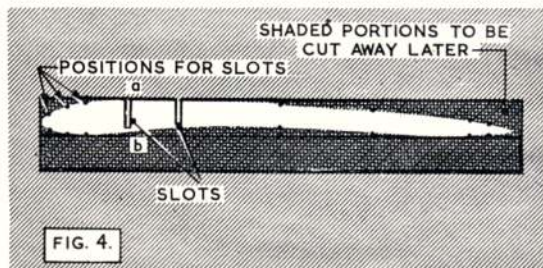


FIG. 4.

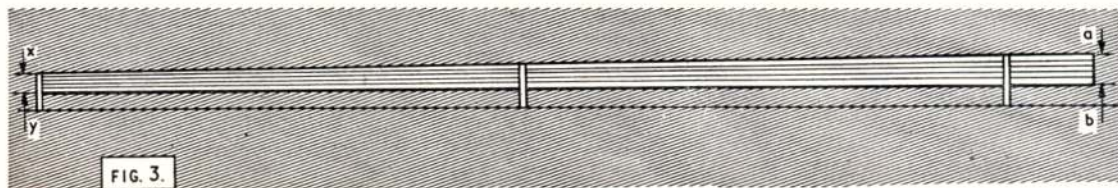
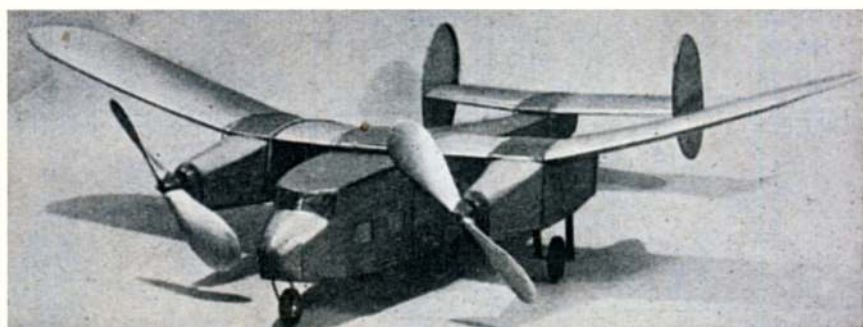


FIG. 3.

FULL-SIZE
PLANS ARE
OVERLEAF
FOR THIS
TWIN-MOTOR
RUBBER JOB



The A-M AIRCOACH

BY VIC DUBERY

IF you have always fought shy of any twin-engined model, here is a chance to have a go without much expenditure of time and money. For a few evenings work you can have a model which, while simple, looks and flies realistically and does not create any storage or transport problems, in fact it will go into a shoe-box!

The construction is straightforward and all important notes are on the full-sized plan. The best way to build the wing is all in one piece, flat on the board (after tracing the wing and tail halves as indicated). Do not cement the main spar overlap until all is set. Then crack the trailing and leading edges to make the dihedral on the outer panels, prop up the tips with 1 inch blocks, and cement the spar overlap and cracks. The surplus bit of centre-section spar is trimmed from the underside after the cement is dry.

When the nacelle sides are being assembled, a temporary spacer is used to hold them together at the front. After the front former is set in place this must be cut away. Carve the noseblocks carefully from $\frac{1}{4}$ in. sheet and don't forget to fit a plug on the back of each, made by reference to the hole former. Small washers, or home-made tinplate bearings, are used to receive the 20 gauge propeller shafts.

The success of any model depends on its airscrew so make these with care, and be sure to make them opposite hand. Of course, if you make them both the same the model will still fly alright, but you will miss the treat of having a "torque-less" trim. Commercial props can be used, machine cut balsa ones if obtainable small enough, KK plastic cut down, or even Frog "Mark V Interceptor" spares, but left-handed ones are not obtainable. The original model was improved with a simple catch freewheel.

Use coloured tissue to cover the model, a dark colour on fuselage, nacelles and fins (one side only) and a light colour on wings and tail. To improve the final appearance and make it more realistic make the following additions:— (i) Dark tissue

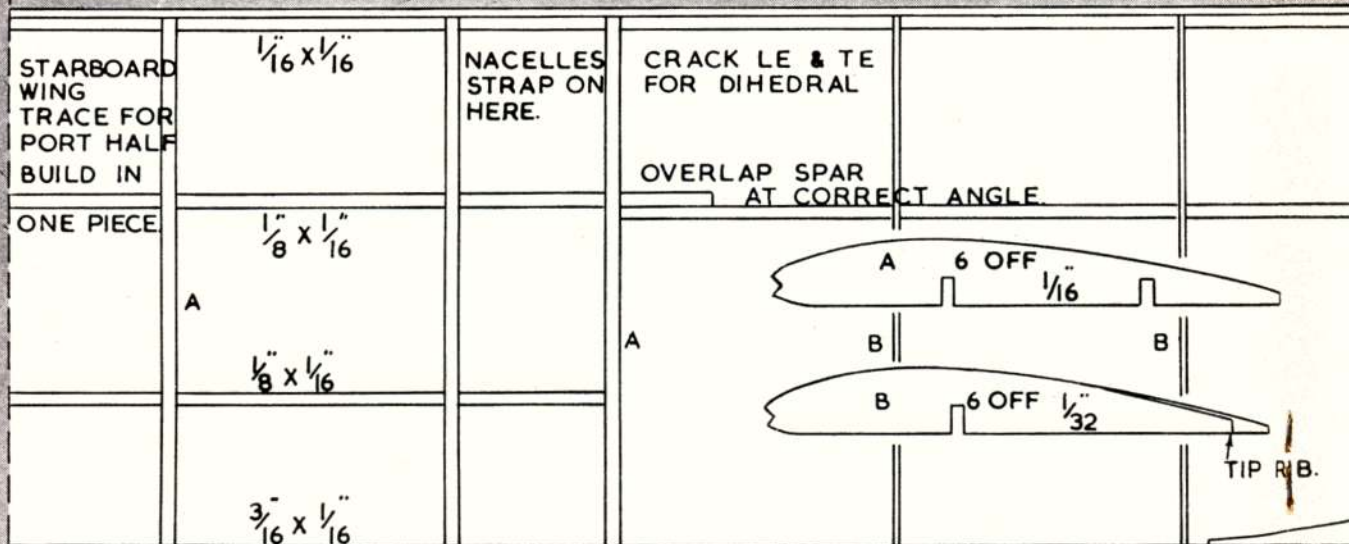
over the top of the wing at nacelle stations and the portion over the fuselage; (ii) a similar (triangular) strip between the centre ribs of the tail-plane; (iii) white tissue "windows" on fuselage; (iv) registration letters of tissue stuck on wing and fuselage; (v) thin strips of black tissue or indian ink lines to represent ailerons, flaps and elevators. All except the fins should be water shrunk and doped with thinned dope—one coat on wings and tail, two coats on fuselage and nacelles.

Power in each nacelle was two strands of $\frac{1}{8}$ in. flat rubber 12 in. long. For best results this should be rope-tensioned but neither this nor a freewheel is absolutely essential.

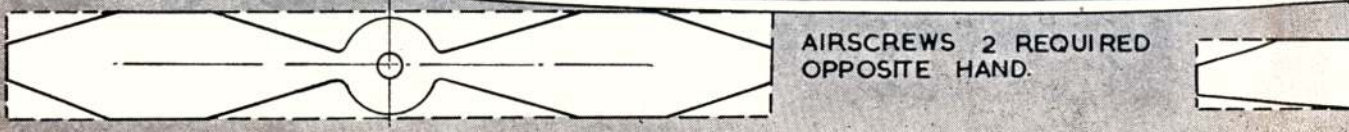
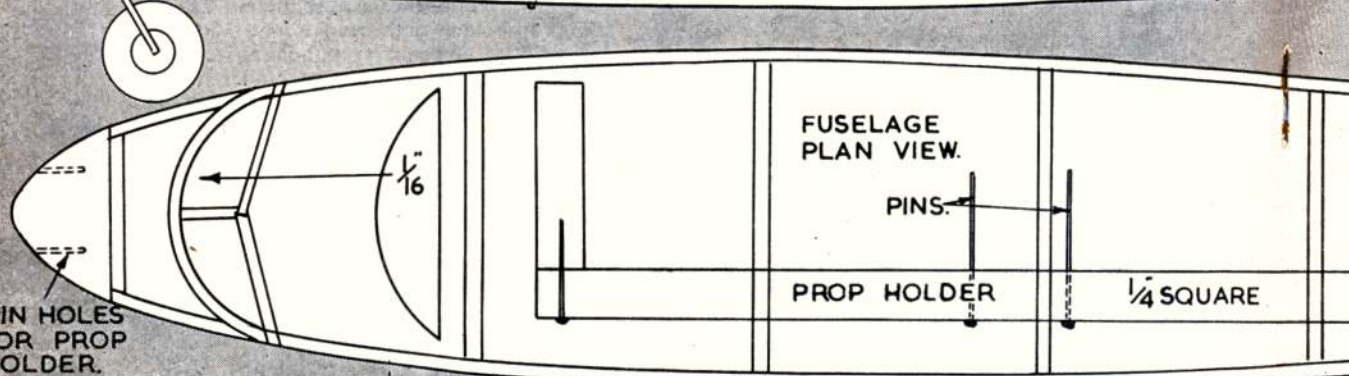
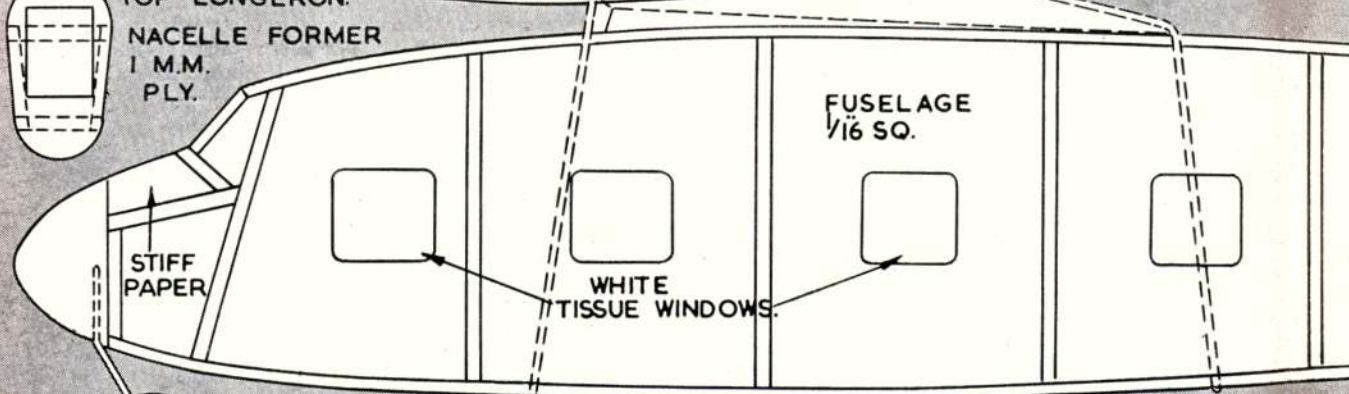
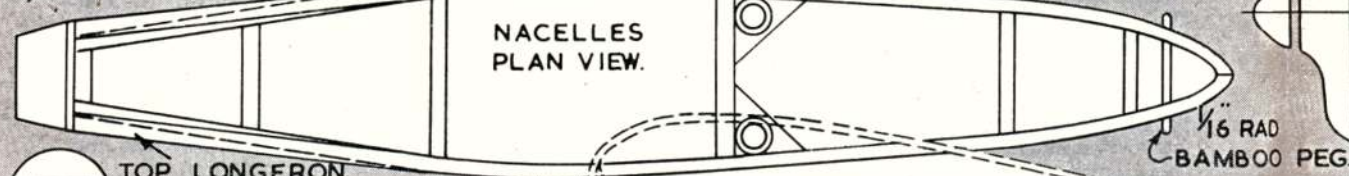
All that remains now is the prop-holder to hold one airscrew while the other is being wound. This gadget is essential, otherwise winding needs too many people and launching is difficult. It is plugged into the fuselage nose.

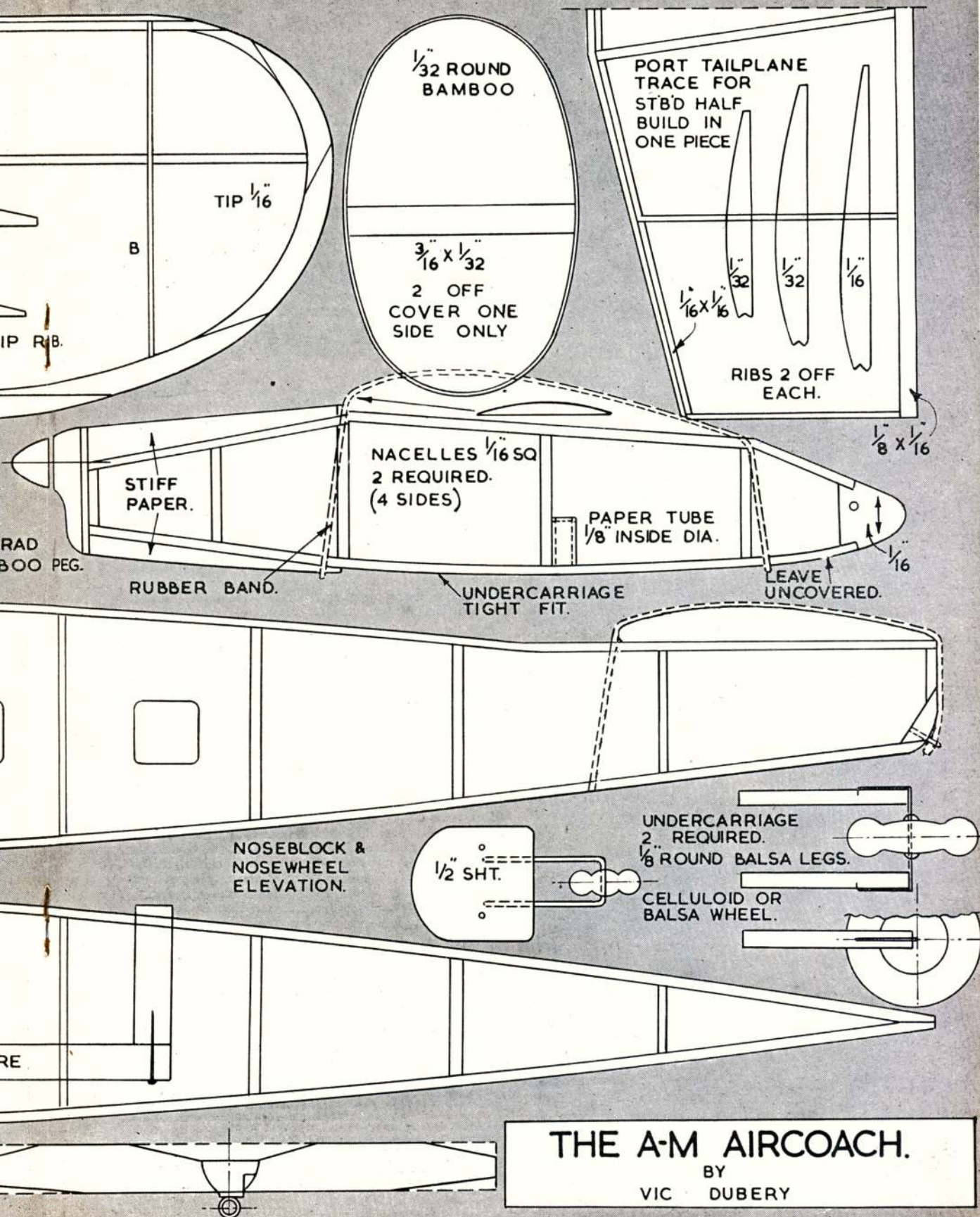
Finally strap firmly, with rubber bands, the wing and tail on to the fuselage and the nacelles complete with props, rubber, and wheels, on to the wings. With the wing in the position shown, the C.G. should be somewhere between the centre-section spars. Glide test, adding incidence to the wing to produce the flattest glide. Then plug in the prop-holder and wind about 100 turns (the correct way!) on each prop, hold as for an ordinary hand launch, remove the prop holder smoothly but smartly and let go with suitable forward speed. It will go straight as a die if there are no warps. Gradually increase the turns and watch for any signs of a stall. It should not stall, as adequate downthrust is built in, but this can be increased either at the nose-blocks (make sure both sides are identical) or under the leading edge of the wing at the nacelles. If more than $1/16$ in. is required, something is wrong—check the C.G. and test glide again. If only a slight stall is present, this can be corrected by offsetting the tail to produce a turn.

This little job takes off and flies very steadily and makes R.O.G. flights around 45 seconds at a low altitude—on full winds (900 turns).



$\frac{1}{4}$ SHT NOSEBLOCK.





THE A-M AIRCOACH.

BY
VIC DUBERY

2nd World Speed Championships of Europe • REPORTED BY

FOR three years in succession this world-famous meeting has been held at the well-known coastal resort of Knokke-sur-Mer so that the announcement that Brussels was the venue for 1952 came as a surprise to us in Britain.

The teams were housed at Evère, a military drome lying between Brussels and Melsbroek, where the actual contest site was situated. With Evère being some distance from both, this arrangement had disadvantages compared with Knokke, where the site was in the town square and team members housed in nearby hotels.

The contest site was, however, a magnificent achievement on the part of the Belgian enthusiasts who constructed it. The instigator and guiding genius being that well known contest flier George Lippens. It consisted of two circles close to one another, with a control box situated between the two. The actual surface was some form of bituminous material used extensively for aerodrome runways during the war.

Some ten nations were competing with notable newcomers such as Spain, Norway, Denmark and three lads from the U.S. Navy stationed in North Africa.

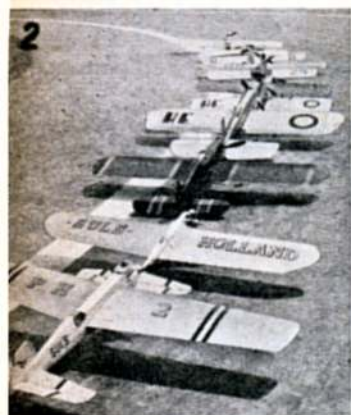
Saturday morning saw brilliant sunshine and the teams transported to Melsbroek for breakfast followed by practice flying until lunch time. Rumour had it that practice flying actually commenced at Evère at 5.30 a.m., when certain British team members aroused the camp to the soothing note of a Dooling 61!

Pits, consisting of "line corridors" with tables at one end shaded by gaily coloured continental sunshades, were available for each team. Very soon both pits and tracks were hives of activity, with the tuning of screaming racing engines, and the ear-splitting racket of Dynajets adding to the normal noises of Belgium's biggest airport. Lunch time came too soon for those with last minute adjustments, and finally at 2 p.m. one and all were assembled for the Concours D'Elegance.

After the Concours there was a brief but significant lull and we judges retired to the "Monkey Cage" to prepare for the first flights. This erection, so named by virtue of its wire mesh surround, housed no less than 17 officials, but it must be pointed out that the organisation was highly efficient in spite of the appearance of "too many cooks". Messrs. Chapart, Babusiaux and Major Borgniet were timing 5 c.c. and 10 c.c. on the large circle whilst Messrs. Ferber, Asselberg and myself took the 2.5 c.c. and Stunt on the smaller tracks.

First man to register an official flight was Labarde of France who completed an exemplary flight in the inimitable Labarde style. Most of the teams were using mechanical starters but in spite of such aids there were far too many competitors who forfeited an "attempt" through failing to start in the specified three minutes. Claydon, the first Britisher to fly, failed in this manner, and when Davenport skidded off the dolly to hit the

Top (1) Battle of Spain and Ream of the United States Navy fight it out in the team race. (2) Line-up of stunt models for the Concours d'Elegance. Claydon's winning Ambassador is near front. (3) Major Borgniet, left, and M. Roussel examine the winning Concours model. (4) Pete Wright gets down to it when topping up his fast E.D. 2-46 Glo. (5) Smart Dutch team racer has a Frog 500, was built by Janssen, seen here. (6) Speed Concours line-up, winner by Schoenfeldt of Norway is flush rivetted Dooling 29 job in foreground.



September, 1952

and 4th Championship

HARRY HUNDLEBY

tarmac on the other side of the circle, things did not look too bright for us.

The Spaniards flew one of their many jets which promptly ran amok and finally caught fire. They did, however, make several excellent runs and subsequently took first two places in this class.

On our stunt circle the other judges and myself had little time to spare, for both stunt and 2.5 c.c. models arrived in a never-ending stream. Being used to judging stunt in this country I was surprised at the low standard of flying, only the top four or five men being up to our Gold Trophy standard.

Around "tea-time" (how one misses that afternoon "cuppa") speed and stunt flying were brought to a temporary halt and the team race got underway. The less said about the British entry the better. Claydon's model was used, with Ridgeway and Davenport as mechanics. Neither had been in a team race before and this factor coupled with a tricky motor, the peculiarities of which were only known by Claydon, kept our entry on the ground. It also managed to catch fire at one period which added to the general entertainment. Fortunately for us the whole team race side of the meeting was something of a fiasco, only the Dutch boys appeared to have any real experience. Models would certainly have failed to pass British rules, the winning Belgian racer having no cockpit whatsoever! The Spaniards had a fast and most unusual diesel powered swept wing job which was well flown by Movo, but again was a bad starter and spent most of its time on the ground.

With the recommencement of speed and stunt flying we saw Pete Wright in action for the first time, but Lady Luck seemed to have temporarily deserted our team, for his motor cut prematurely on the attempt. One most impressive youngster in the 2.5 c.c. class was Sorenson of Denmark, whose model almost outpaced him on several flights, when he finished flat on his back.

Sunday morning found the sun beating down with even greater intensity on perspiring competitors and officials. Such dry heat was obviously not going to lead to any new records being broken, and keeping supplies of carefully concocted fuel "brews" out of the sun, was a further problem for the speed boys.

As I sat in the judges' box and surveyed the scene I could not help but reflect how truly continental it all looked. The pits in the far corner with their brightly coloured awnings seemed for all the world like a scene on the boulevards, disturbed, not only by the angry noises of models, but by the steady throb of Belgium's largest airport. I noticed a jet, a stunt model, and a Boeing Stratocruiser all within my line of vision at one period. And what a wonderful mixing ground the pits had become by this time. Technicalities were discussed in sign language, accessories were borrowed and exchanged, all in that spirit of good will and fellowship that aeromodellers never fail to promote.

(7) Doctor Millet uses the French team's starter assisted by Labarde, centre, and Bastange at left. Model is powered by Italian Super Tigre 2.5 c.c. (8) Four wheel dolly used by Hagedoorn of Holland in the speed event was much larger than the model. (9) Speed line-up with British models in the foreground. From bottom to top: Ridgeway's diesel job, next two, Claydon's Super Tigre and Dooling 29, Davenport's Dooling 61, Pete Wright's E.D. 2.46 and Dooling 29. (10) British Team conflag in the pits, visitor Pete Donavours-Hickie at right.



(11) Sorenson of Denmark who showed remarkable ability in the 2.5 class. (12) Peter Ridgeway primes by blowing through the tank vents. Engine is an Eifflaender product. (13) Another speed line-up with Belgian models on show. Open top coverings are definitely current fashion.



(14) Team race was started with teams in the centre. Here the U.S. Navy boys run to their McCoy powered Quest; but all to no avail, as witness the sleeping attitude of pilot Ream in No. 15, whilst pit boys keep cranking. (20) shows a frequent scene as a D.C.3 lands in the background to Labarde preparing to fly.



(16) Battlo, left, and Gogorcena, right, with the unusual swept wing Spanish team racer. Note engine in cabin. (17) M. Boin, President of the Concours Jury congratulates Claydon of Gt. Britain on his win. (18) Dutch team race pit crew in action. Left is Krevlen, and right Janssen; motor is Frog 500. Wet tarmac and stripped crew indicate the short thunderstorm.



(19) Cappi at left and Garlato at right were representing Italy. Here starting the latter's 2.5 c.c. job.

When Pete Wright set a cracking pace for the day with a 5 c.c. flight of 186.528 km.p.h. British hopes began to rise. Later on he bettered this figure with 193.548 km.p.h. Then Pete Ridgeway, who suffered a little through nervousness on his first stunt flight, went swiftly and smoothly through the book, to record 632 points out of a possible 650. This gave him a comfortable lead over his only serious rival Janssens of Belgium, who flew very well indeed.

Pete Wright then brought out his E.D. 2.46 c.c. Gloplug model which suffered from incorrect motor setting on its first flight. Pete seemed to wait ages before putting his wrist in the yoke on the second, and I for one did not expect the model to complete the necessary 14 laps. However, it did, but with precious little flying time to spare. A speed of 158.590 was announced, which raised a terrific ovation from the crowd and which subsequently proved to be the fastest time in this class.

Now the white-coated French team appeared, headed by the renowned and rotund Dr. Millet who performs such delicate operations on McCoy 60's and Dooling 29's. "Le Docteur Volante" gave a wonderful and fairly literal performance, with both feet leaving the ground as he swept round in pursuit of his 5 c.c. model. His speed was 198.395 which put him top in this class, relegating Wright to second place.

With a first in the Concours, a first in the 2.5 c.c. speed, a first in the stunt and a second in the 5 c.c. speed, it was now fairly essential for Davenport as the only possessor of a 10 c.c. job, to make a good placing in this class, if we were to be in the running for the Championship of Europe. Three attempts are permitted for each flight and a flight is recorded once the contestant has placed his wrist in the pylon yoke. Davenport had used all but the last attempt at his last flight, so that the rest of us were not particularly sanguine of the result. The model safely left the dolly and we waited for the motor to cut as it had done on previous flights, but No! It went on. Then it faltered, and so did our hopes. Davenport all but took his wrist out of the yoke. He finally made it with a speed of 225 km.p.h. and the motor cutting before the end of the last lap. Even then the issue was in the balance as the judges were not all in agreement as to whether he had lifted his wrist, which would have nullified the flight. Fortunately they decided the figures were to stand and Great Britain had another second place. Top man in the 10 c.c. class was that very cheery Italian Battistella who flies a workmanlike Dooling 61 model which also gained him a World record. See page 556.

Again flying stopped in the middle of the afternoon for the team race. With Belgium, Holland, Spain and the U.S. Navy fighting it out in the final. At least I think it was the final for I never did finally sort out the so-called heats. In any event most of this contest was



HOLLAND
(Above) Hagedoorn, Janssen,
Van de Caay, van Hattum, Suls,
Krelen.



BELGIUM
(Above) Lippens, Cordier, Autre
Janssens, Folie.



GT. BRITAIN
(Above) Wright, Ridgeway,
Yates, Claydon, Davenport.

DENMARK
(Below) Sorensen, Madsen,
Hauke, Eriksen.

YUGOSLAVIA
(Bottom) Ilristic.



FRANCE
(Above) Bastange, Millet Jr.
and Doctor Millet, with Labarde
in foreground.

SPAIN
(Below) Gogorcena, Yllan,
Batillo, Arraiza.



ITALY
(Above) Garlato, Cappi, Battis-
tella.

UNITED STATES NAVY
(Below) Long, Ream, Davidson.



TEAM PARADE



conducted on the ground. The time taken to start motors was appalling, as the winner's time denotes, and I was sadly disappointed in the whole affair.

At 5 p.m. the heat became even more oppressive and black clouds indicated an approaching thunderstorm. Rain fell for a short while and brought just the right sort of humid atmosphere for racing motors. Claydon

took advantage of it and got in a good 5 c.c. flight having previously placed fourth in the 2.5 c.c. class.

By the time the rain had gone the meeting had drawn to its conclusion. Alec Houlberg, Col. Yates and myself retired to the administrative buildings where M. Roussel and his hardworking compatriots were plugging away at the final results. Our patient wait outside the "office" finally bore fruit as we were handed a sheet announcing that Great Britain had once again won the European Championship.

All credit to the British team who each gained a vital place in the respective classes to make this victory possible. All credit to the British Motors such as the E.D. 2.46 and the Eiffelander diesels, flown by such men as Wright and Ridgeway. Particularly Pete Wright who I know the other team members will not mind me singling out. This is Pete's second year in Belgium, where his consistent flying has done much to contribute to British success.

Finally a vote of thanks to the "Federation de la Petite Aviation Belge" for their splendid hospitality, and a tribute to their first class organisation.

An interesting footnote heard at the splendid dinner we enjoyed at the Belgium Aero Club, was the fact that the control line "arena" at Melsbroek has been appropriately named "Place de Lippens" as a tribute to the initiative and inspiration of the man so largely responsible for its creation.

(21) Colonel Yates, British Team Manager, receives the Knokke Trophy awarded to the winning nation. (22) Journey home for British Team was enlivened by filling Team Trophy with a bottle of Champagne. Trophy proved extremely difficult to drink out of.

RESULTS

SPEED—2.5 c.c.

| | | |
|-------------------|---------------|----------------|
| 1. Wright | Great Britain | 158.590 km. h. |
| 2. Sorensen | Denmark | 155.844 " |
| 3. Labardé | France | 138.995 " |
| 4. Claydon | Great Britain | 130.909 " |
| 5. Gariato | Italy | 129.963 " |
| 6. Ridgeway | Great Britain | 126.315 " |
| 7. Cordier | Belgium | 124.967 " |
| 8. Millet, Junior | France | 124.137 " |
| 9. Millet, Senior | France | 122.033 " |
| 10. Cogorcena | Spain | 117.263 " |

SPEED—5 c.c.

| | | |
|---------------|---------------|----------------|
| 1. Dr. Millet | France | 198.395 km. h. |
| 2. Wright | Great Britain | 193.548 " |
| 3. Labardé | France | 191.489 " |
| 4. Janssens | Belgium | 189.473 " |
| 5. Batagne | France | 178.217 " |
| 6. Haocke | Denmark | 175.609 " |
| 7. Hagedoorn | Holland | 171.428 " |
| 8. Claydon | Great Britain | 162.895 " |
| 9. Lippens | Belgium | 157.894 " |
| 10. Cordier | Belgium | 156.521 " |
| 11. Brambini | Norway | 136.882 " |

SPEED—10 c.c.

| | | |
|-------------------|---------------|----------------|
| 1. Battistella | Italy | 233.766 km. h. |
| 2. Davenport | Great Britain | 225.000 " |
| 3. Dr. Millet | France | 216.867 " |
| 4. Labardé | France | 211.764 " |
| 5. Bastagne | France | 211.764 " |
| 6. Cordier | Belgium | 205.714 " |
| 7. Cogorcena | Spain | 204.545 " |
| 8. Millet, Junior | France | 196.721 " |
| 9. Hagedoorn | Holland | 190.476 " |

STUNT.

| | | |
|-------------|---------------|------------|
| 1. Ridgeway | Great Britain | 632 points |
| 2. Janssens | Belgium | 597 " |
| 3. Follie | Belgium | 543 " |
| 4. Capi | Italy | 540 " |
| 5. Suls | Holland | 490 " |
| 6. Sorensen | Denmark | 484 " |
| 7. Haocke | Denmark | 465 " |
| 8. Cordier | Belgium | 315 " |
| 9. Madsen | Denmark | 136 " |
| 10. Batlio | Spain | 119 " |
| 11. Eriksen | Denmark | 105 " |
| 12. Claydon | Great Britain | 90 " |
| 13. Hristic | Jugoslavia | 30 " |

TEAM RACING.

1. Equipe Janssens — Cordier (Belgium), 15 km. in 20 mins. 14 secs.

JET SPEED.

| | | |
|--------------|---------|----------------|
| 1. Yllan | Spain | 225.000 km. h. |
| 2. Cogorcena | Spain | 214.285 " |
| 3. Kreulen | Holland | 189.473 " |

CONCOURS D'ELEGANCE

| | | | | |
|-------------|----|-------------|---------------|---------------|
| Stunt | 1. | Claydon | Cappi Suls | Great Britain |
| | 2. | Haocke | | Denmark |
| | 3. | Ex-aequo | | Italy |
| Speed | | | | Holland |
| | 1. | Schoenfeldt | | Norway |
| | 2. | Dr. Millet | | France |
| Team Racing | 3. | Battistella | | Italy |
| | 1. | Hagedoorn | | Holland |
| | 2. | Batlio | | Spain |
| | 3. | Janssen | | Holland |

JET. An Honourable Mention for Mr. Cogorcena (This category not qualifying for points)

INTER-TEAM CONTEST FOR CHAMPIONSHIP OF EUROPE

| | |
|------------------|------------|
| 1. Great Britain | 480 points |
| 2. Belgium | 695 " |
| 3. Italy | 850 " |
| 4. France | 975 " |
| 5. Denmark | 1,125 " |
| 6. Holland | 1,175 " |
| 7. Spain | 1,345 " |





through successive birthday and Christmas presents a series of Meccano sets, can put a few of the parts to very good practical use for his aero-modelling.

Here's the recipe:—

- One of No. 2.
- Four of No. 5.
- Three of No. 16.
- One of No. 18a.
- Four of No. 24.
- Three of No. 26.
- Three of No. 27a.
- One of No. 38.
- Two of No. 54.
- Six of No. 59.

All part numbers are Meccano only.

Sequence of construction will come naturally to any Meccano owner; but there will remain the actual winding drum or wheel, which is best made

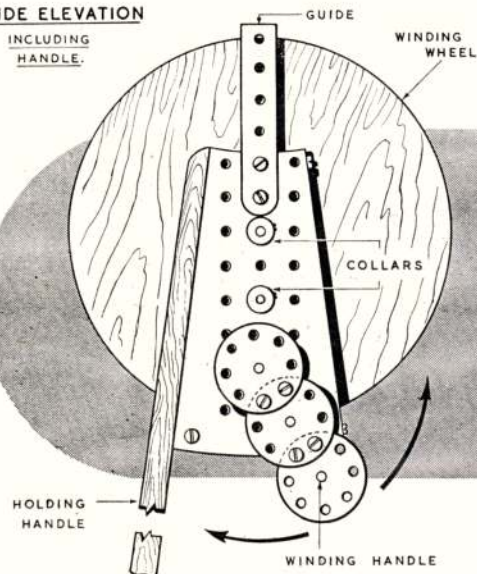
WHEN we paid our visit to the Ipswich club on Gamage and Pilcher Cup day, earlier this season, one of the many gadgets observed in use was a very robust Meccano construction by Brian Mays, in the form of a glider winch. Not that there is anything particularly unusual about a winch made from Meccano, for varied specimens of this sort can be found on almost any model flying field; but this example attracted us with its sturdy construction and generous winding ratio.

Brian has obliged us with a couple of sketches and temporary loan for photographic purposes so that any reader who has in the past collected

from plywood. A 2 in. diameter centre core of half-inch ply or thicker is sandwiched by two 6 in. circles of one-eighth ply. Use a strong glue and additional woodscrews to make sure that the whole thing will not collapse at the first drop onto the ground. Cut a nick in the edge of one ply side so that the odd end of the line can be retained in cotton reel fashion, when not in use, and make sure that the line is securely attached at the "inside" end on the ply centre core. The long strap used for a line guide is bent to come within $\frac{3}{4}$ in. of the drum, and one of the holes can easily be conveniently arranged to place itself centrally.

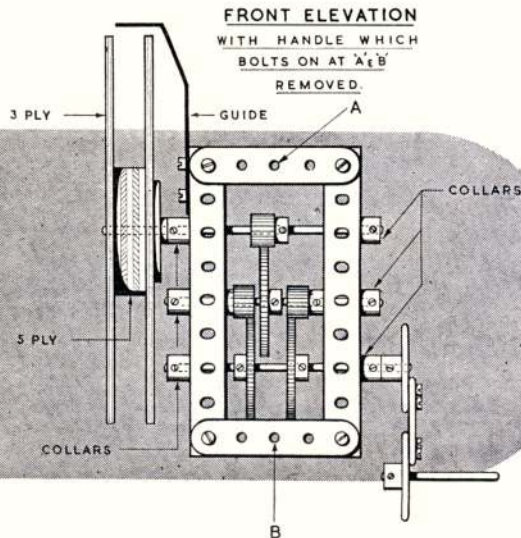
SIDE ELEVATION

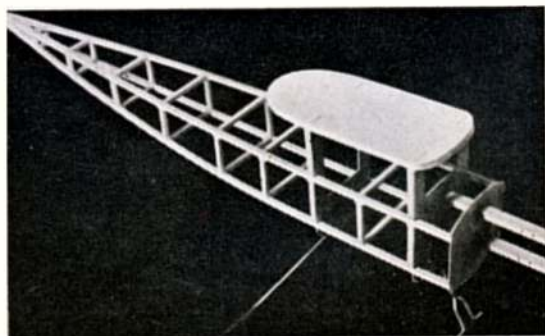
INCLUDING
HANDLE.



FRONT ELEVATION

WITH HANDLE WHICH
BOLTS ON AT 'A' & 'B'
REMOVED.





How a simple box construction can be used as a basis for a rounded section fuselage is shown in these two photographs of a model built by the Rev. F. Callon. Upper photo (Figure 6 in the text) shows the basic fuselage, almost square in shape, and ready for the half-round formers and stringers to give it a more realistic and pleasing section.

In the lower photo (Figure 7 in the text), the formers have been added, and comparison with the other view shows how much the appearance has been improved. Note that the tricycle undercarriage has been firmly fixed in place before additions are made to the basic fuselage.

ESPECIALLY FOR THE BEGINNER

PART XXIX

by VIC SMEED

SIMPLE DESIGN PROCEDURE



THE design of a model aircraft is well within the capabilities of the average aeromodeler who has built three or four successful models of a similar type. There is no mumbo-jumbo about it—it is a logical, step-by-step process which requires only a very little mathematical ability and a glimmering of rudimentary principles, plus a certain amount of what is quaintly known as “common”-sense. Naturally, a great deal of knowledge and experience goes into a high-performance model, but nearly everyone can design an ordinary model which will fly safely and well, and there is no thrill to compare with the sight of one’s own brain-child on its first successful flight.

Many would-be designers are put off by the idea that they are not artists and possess no ability to draw; certainly someone with an eye for “line” could produce a nicer-looking model, but an aircraft can look right without being beautiful, and models are no exception to the rule, “If it looks right it will work right”. Fig. 1 shows a simple lay-out which uses all straight lines, the only curves being the airfoil sections, and these can be traced or obtained ready drawn. Such a model would fly quite satisfactorily and would not look unattractive when built. The procedure for producing this or any other design is just a question of finding the answers to a standard set of queries, and we propose to give these queries, together with the way to find the answers for various sizes of model, illustrating by actually working out a design from scratch.

1. What sort of model is it going to be? Well, we’re going to draw up a power model, since most people wish to design one of these, and, if the necessary building experience is there, a power design is actually simpler than a rubber or glider model. For initial designs, a straightforward cabin lay-out is the easiest and promises most chance of success, but from experience we know that all modellers are ambitious (particularly with their first o.d.s!) so the particular job we will follow through here will be a cabin model with one or two extra little “frills” which, while not being essential will improve the appearance and render the construction more interesting.

2. What it is NOT going to look like! This is the most difficult step in any design—there are so many models about that it is impossible to draw up a new one that hasn’t some similarity to something or other, at least in outline or appearance. There is nothing more galling than to take out a new model and have people say “Oh—built a ‘...’, have you?” or “H’m. Based on the ‘...’, isn’t it?” One’s own taste is of course the deciding factor, and all that can be said is that it is wisest to go in for a plain high wing job, without too many complex curves or difficult shapes. Remember, **you’ve** got to build it! Our own approach to this particular design is something that looks quite modern and semi-scale—say, a cabin with all-round visibility, and a scallishly wide fuselage. High wing mounting (simplest and surest) and single fin etc. And if we’re having a

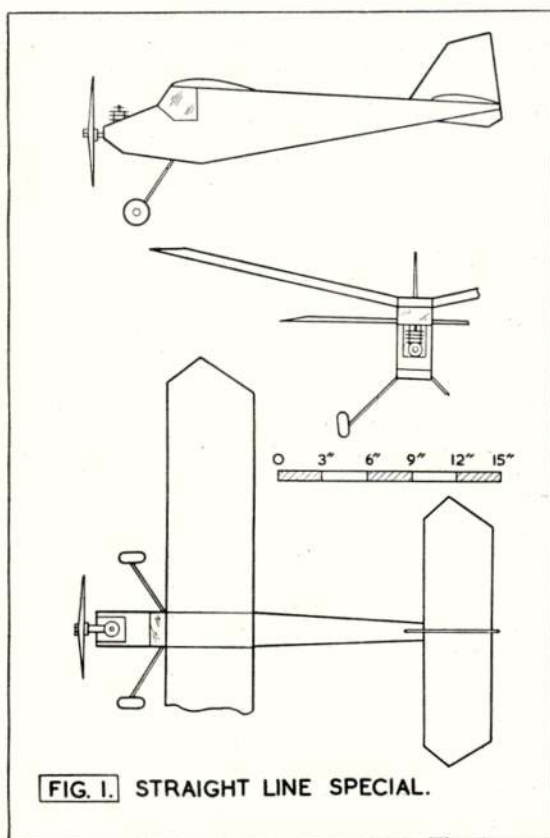


FIG. 1. STRAIGHT LINE SPECIAL.

fattish fuselage we can sidemount the motor, which gives us the "looks" of a cowling while saving the bothers of starting an inverted motor. Never did have any luck with inverted engines! With this lay-out forming in our mind, we can see that a tricycle undercarriage might look rather

smart—out with the paper and let's see how its beginning to shape (Fig. 2).

Straight dihedral will be in keeping with the scalish lines, and quite efficient enough for the type of zippy but semi-scale flight wanted. Just for a change, how about tapering the wings? Um—all those ribs! Let's taper part of it, just to break up the squareness of a constant chord—say, the t.e. at the tips. The tips should be fairly simple, and for attractive appearance the wing and tail tips should always match. A rectangular tailplane is perfectly suitable, so that squarish wingtips will be best. What we now have in our minds (and on the backs of several old envelopes) is something like Fig. 3.

3. What size is it to be? This will depend, obviously, on the motor available, and the best guide is to fit a wing area to the motor size; different motors develop such widely different power that it is difficult to find a fixed figure, so we have made out a list of some typical motors and recommended wing areas for them (Table 1). If your motor isn't on this list, your model shop should be able to tell you what listed motor it compares with; alternatively, you won't be far out if you use 225 sq. ins. per c.c. for modern diesels. Use the listed figures for preference, though. Our own model will have roughly this figure, which makes it suitable for .75 c.c.—1 c.c. diesels, and if we built it lightly any of the new .5s will fly it, which gives us quite a wide choice.

4. What sort of wing should it be? Most power models use an aspect ratio of from 6 to 8, which ensures reasonable airfoil efficiency and a good strength/weight ratio. (Fig. 4). Taking the average of 7, we must juggle with the area until, roughly, the chord goes seven times into the span and $\text{span} \times \text{chord} = \text{area}$. Instead of trial and error, we can use the simple expedient of taking the square root of $(\text{aspect ratio} \times \text{area})$; in our case $7 \times 225 = 1,575$, the square root of which is

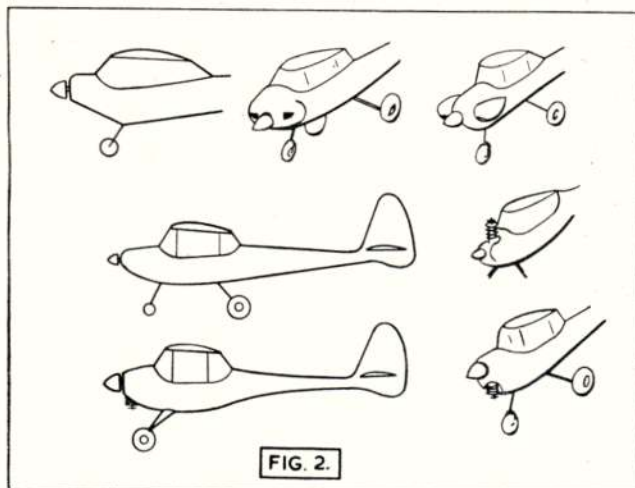


FIG. 2.

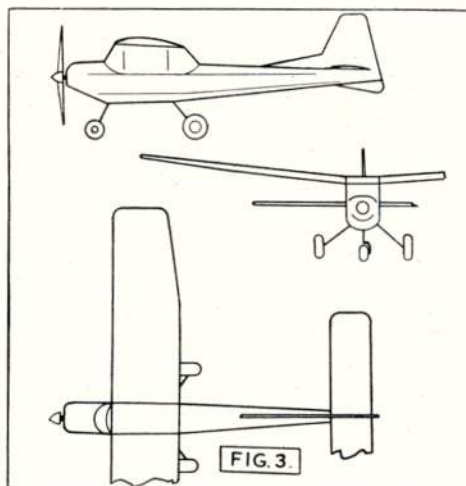
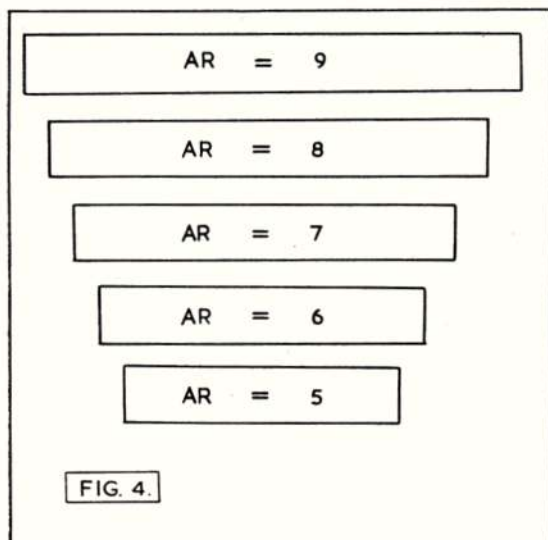


FIG. 3.



near enough 40. The chord will then be one seventh of 40 in., say $5\frac{1}{2}$ in., which gives an area of 230 sq. in. We can make this easier by making the middle part of the wing, say 20 in. with a chord of 6 in. (120 sq. in.) and making the outer parts, which we want tapered, make up the other 105 sq. ins. of our original desired area. Each tip will be 10 in. span, which, divided into 105, gives $10\frac{1}{2}$ in., which will be the aggregate chord (see Fig. 5). In other words, 6 in. tapering down to $4\frac{1}{2}$ in., which is just right. Two rules come in here—the tip chord should never be less than 3 in. if possible, and it should never be less than half the root, or widest, chord. (Put officially, the taper ratio should never exceed 2). If we use soft block tips and slightly round them at the leading and trailing edges very little area will be lost—about 1 sq. in., leaving a total of 224 sq. in.

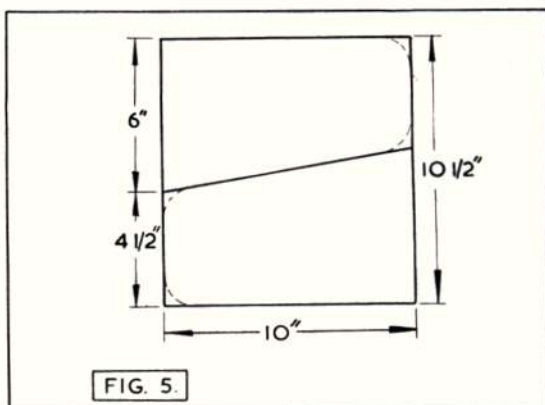
It is as well at this stage to decide on the airfoil section to be used, since this will affect construction, tailplane area, and so on. For this type of model one of the all-rounder sections is best—something with a flat or only slightly undercambered lower surface. Such aerofoils are not particularly critical and are usually free from vices and peculiar characteristics, which makes them easy to use. We favour a little undercamber and a reasonable thickness, giving a slow glide but having low drag to help the climb. Our own job will use an airfoil we've had good results with—basically RAF 32, but with a little less undercamber to thicken up the trailing edge for warp resistance. The three or four tapered ribs at the tip will use the top and bottom outline of the main rib from the leading edge back (see "Airframe Construction", June, 1952). This airfoil has a small C.P. travel and good all-round characteristics, but Clark Y, Grant X8, Gottingen 398, NACA 4412, USA 27, and similar sections, are all quite suitable for the type of performance we wish to obtain.

5. How big a tailplane? Tied in with the answer to this question is, of course, the length of the moment arm. A rule which can be used here relates the tail area to the moment by converting the moment in wing chords to a fraction, *viz.* moment 3 chords, area $\frac{1}{3}$; moment 4 chords, area $\frac{1}{4}$, etc. The moment arm should not generally be less than $2\frac{1}{2}$ chords and not more than 4; we propose to use the average figure of approximately 3. This means a tailplane area of about 35 per cent., which gives us a figure of about 80 sq. in. for our particular model. An aspect ratio of from 3 to 5 is usual on tailplanes (lower than on wings to get a better R.N.), and if we use 4, a span of 18 in. and a chord of $4\frac{1}{2}$ in. will give 81 sq. in., less what is lost on rounding the tips, 1 sq. in. again, total 80 sq. in. The mean wing chord is slightly less than 6 in., so an 18 in. moment arm (from the wing C.P., roughly $\frac{1}{3}$ back from the leading edge, to the mid-chord of the tailplane) will give the desired moment of approximately 3.

6. What construction are we going to use?

Before we can start drawing a plan, we must have a general idea of the structure that is going in. There are three golden rules for the aircraft designer: (a) Simplicity is the sign of genius; (b) what you don't put in can't go wrong; (c) simplicate and add a little lightness. This boils down to producing the required shape in the simplest possible manner, which usually means with the fewest pieces of material we can get away with. Wings and tails are pretty standardised, usually employing about a 2 in. rib spacing and a simple spar lay-out. For small models a fairly large leading and trailing edge and a single spar are quite adequate; our model will use two spars, and anything larger can adopt any of the recognised lay-outs, and even a sheeted leading edge if desired. **You have to build it, remember!**

Most of the structural variations which show up are in the fuselage and attachments. The slab-sider arrangement, pure and simple, is the strongest all round, weight for weight, though the crutch type of construction runs a close second. We will plump



for the slab-sider (Fig. 6), but will add a half-round decking top and bottom to break up any boxy appearance (Fig. 7). The general shape should have already been decided in the preliminary sketches, and it only remains for us to work out a rough idea of how we're going to get that shape. Personal taste and building ability are the main things, but do keep it fairly straightforward. Detail of the actual structure can wait till the plan is under way.

7. How do we go about the plan? We have by now a reasonable amount of data which we can transfer to paper. Decorators' lining paper is the cheapest white paper—around 2/6 for a 36 ft. roll 20 in. wide—and it is quite good enough for normal use. About 8 in. from the top draw in a datum line, and across this draw verticals to indicate the wing and tail positions, using the calculated moment, which is the only fuselage dimension we yet have. It is usual, incidentally, to make the datum line the thrust line, and a useful tip is never to place the tailplane below this line. The depth of the body is largely a matter of taste; too deep a one looks a bit grim and too shallow a one looks equally poor and may bring side area troubles. Better too deep than too shallow, but we can get over this by matching the body to the wing, making its maximum depth (which normally occurs at the $\frac{1}{3}$ chord mark) equal to or slightly less than the mean chord of the wing. Thus, a long thin wing gets a slim body and vice versa. Our own job will have a body depth of 5½ in., approximately, using this rule. Normal width proportions would be about 60 per cent. of this figure, for an upright or inverted motor; in our case we are sidemounting the motor and we should therefore make the nose width sufficient to enclose all but the compression lever of the motor. This means a width of 3½ in., which is as wide as we need anywhere in the body, so we will carry this width on back to the trailing edge of the wing. Usually, of course, the body widens slightly from the nose to the $\frac{1}{3}$ chord mark, and tapers from there to the tail. We must now determine where through the side view the thrust line will run; since the wing is placed high, the centre of resistance of the whole model can be expected to be slightly above the centre line of the fuselage (unless an oversize undercarriage is used) so that if we dispose the maximum depth of the body about equally above and below the datum line, using the D.L. as the thrust line, we shall be fairly certain of having the thrust line passing below the centre of resistance. Any nosing-up tendency under power can then be cured by the addition of a little downthrust. If this arrangement doesn't fit the desired shape, the thrust line should be higher rather than lower, and if this still doesn't suit, it will be wisest to design in a small amount of downthrust.

At the $\frac{1}{3}$ chord point, therefore, the maximum depth is marked off and short lines drawn parallel with the D.L. Through the upper point the angle of incidence is laid off and drawn in, and the resulting line will form part of the fuselage outline—the wing mount, of course. The angle of incidence

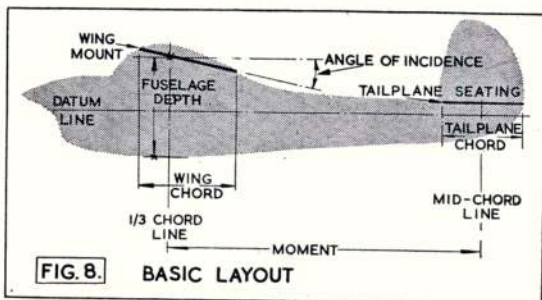


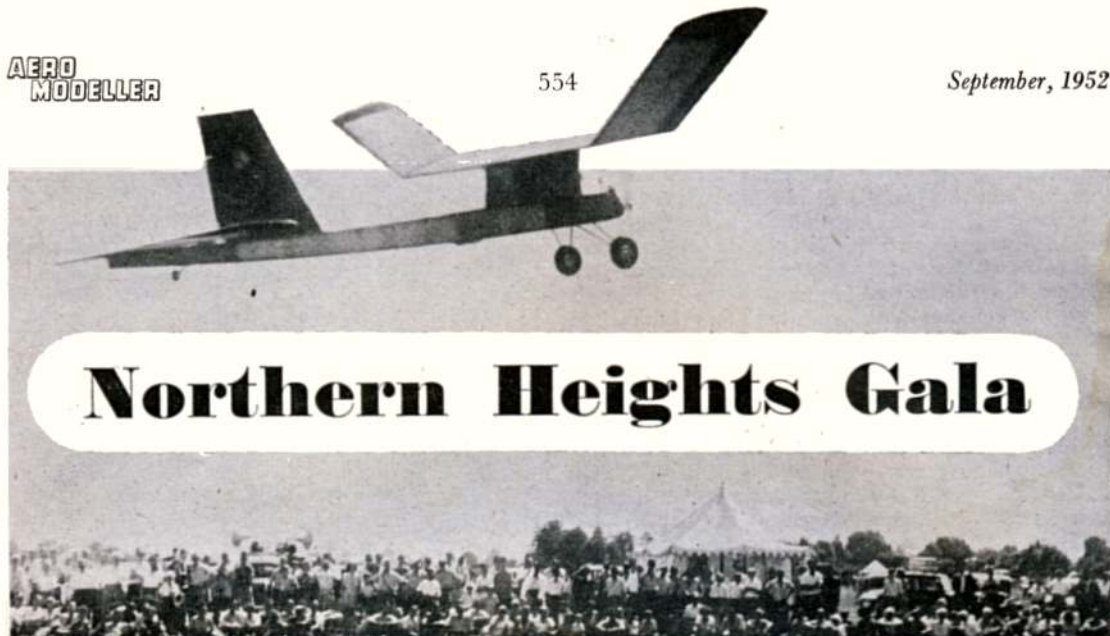
Willie's wing loading is still too high dear!

should really vary according to the aerofoil used, but for practical purposes 3 to 4 degrees is average and may safely be used with almost any airfoil for non-critical performance. It is recommended that the fuselage be made "square" at the wing mount to afford a good platform area and thus reasonable freedom from wobbliness. The tailplane mount can also be drawn in, but before we can sketch in the actual fuselage outline we must undertake the only tricky part of the whole business—the placing of the heaviest single item, the motor, to obtain the correct C.G. location.

Next month we will endeavour to overcome this problem and complete the design. In the meantime intending designers should sketch a few likely lay-outs and draft out the necessary figures; drawing can get to the stage shown in Fig. 8, or, if the wish to get on is felt, there is no reason why ribs etc. shouldn't be cut out.

| Motor | Area recommended | Dimensions* at AR 7 approx. |
|-----------------------------|------------------|-----------------------------|
| | sq. ins. | ins. |
| All modern .5s | 160—200 | 36 × 5 |
| Mills .75, Amco .87 | 200—230 | 39 × 5½ |
| E.D. Bee | 220—250 | 41 × 5½ |
| Mills 1-3 | 280—320 | 46 × 6½ |
| Elfin 1-49, Javelin | 350—400 | 50 × 7½ |
| Elfin 1-8, E.D. Comp. | 380—420 | 52 × 7½ |
| Elfin 2-49, E.D. 2-46 | 520—570 | 63 × 9 |
| Amco 3-5, D.C. 350 | 650—700 | 70 × 10 |
| Amco BB 3-5, Yulon 29 | 750—800 | 74 × 10½ |





Northern Heights Gala



EVERY year, for as far back as our memory will take us, the annual Gala Day at Hawker's aerodrome has been blessed with magnificent weather and attended with a galaxy of models seemingly especially prepared for the day. To combat the difficulty of local recovery, this year, towlines were limited to 150 ft., power runs to 10 seconds, and two flights only were required for open duration events. The results published on page 566 will show that this had little effect upon performance.

Innovations were numerous. The Queen Elizabeth Cup, hitherto run for large size rubber models is now for 1,000 sq. in. power jobs. The new specification attracted a commendable number of entries, and it is with special pleasure that we congratulate our regular contributor Vic Smeed for his win with a model not unlike that we advised in our May issue, using an Amco 3.5 engine. From after the meeting reports in club news-sheets, we gather that with the changeover to power, there is a renewed interest in this contest, and we may expect increased entries in future.

The "R.A.F. Review" cup, for radio control,

Heading shows D. King's gigantic 15-lb. radio entry, which succeeded in punching holes in two car number plates during the meeting with its Super Cyclone's crankshaft! Top left: Sir Frank Spriggs, K.B.E., Managing Director of the Hawker Siddeley Group, congratulates Vic Smeed, winner of the Queen Elizabeth Cup. Winning model is seen with Smeed Bros. in action (centre). Bottom left: Ed. Rogers, "older than he looks", he says, and super detailed Bristol 1911 racer, control-line, realistic even to the noise of its petrol motor.





had but one simple requirement to place it beyond all scope for judge's human error. Flying for a limited, less than three minute flight, each entrant had only to make a spot landing to gain points. U.S.A.F. man, R. C. Lawyer, a member of the West Middlesex club, placed nearest to the spot in this game of aerial "bowls", using Ivy equipment in a KeilKraft Jr.60.

Larger than ever entries in the Team races, we understand there were nearly fifty class A models flying, meant that the hangar tarmac was one constant buzz of activity. D. Langston repeated his W.E.A. success with a fast class A win at 50.5 m.p.h. and Bill Morley's West Essex "Fruit Nose" class B entry added yet another laurel to its collection with 10 miles at 66 m.p.h. But apart from the contests, there remained the dozens of sport fliers who were constantly diverting our attention from the launch and chase boys. P. E. Norman's "Mew Gull," Alan Baker's Autogiro, Phil Smith's remarkable ducted fan "Lavochkin" contributed in equal proportion with the contests to make it a day well-spent.

R. G. M.

Bottom opposite: Expert Polish Air Force Association members, Nachtmann and Frank Frye, with the former's beautiful radio entry. Below: Alan Baker's Autogiro created a "stir" during the day with its many consistent flights, and also when it was discovered as an entry in the Helicopter contest, from which, of course, it was later excluded. Bottom right: Queen Elizabeth Cup competitor is Colonel Yates with his enlarged Mallard. The Colonel's summer attire is indicative of the magnificent weather conditions.



Left: Ron Mead, 3rd with Dooling 72-in. streamliner in Queen's Cup. Above: Rupert Moore and Johnny Nunn examine Phil Smith's ducted La.17.



Above: Ian Doucett emulates his rubber helicopter, was 1st last year. Autogiro control-line by Ridley of Willesden has large rotor diameter, stabilised by outrigger. Right: Tony Dalkiewicz at right icon Concours with superb fully detailed Luscombe Silhouette.





WORLD NEWS

Continental scene on the left, is the site in Milan for the International control-line stunt and speed "Giornate Ambrosiane" contests, at which some very high new record speeds were made by Italian and French aeromodellers.

Italian International

Belgium, France, Switzerland and Italy participated in the two day meeting organised by the Aero Club of Milan, at the site which is shown in the heading photo. Thanks to Ing. Frachetti, who has done much to popularise this annual affair, the visiting teams had a grand time, and proof of their satisfaction may be seen in the two new world records which will now be claimed. Dr. Millet of France recorded 131.5 m.p.h. with his 5 c.c. entry and Battistella of Venice really earned himself a place on the Italian team for Melsbroek, with a fine record of 149 m.p.h. with his Dooling 10 c.c. job. All flights were made using a regulation pylon, the first time this has been used in Italy.

Nordic Countries Contest

Four other countries, Denmark, Finland, Norway and Sweden took part in the Eighth Annual Nordic Contest which was run in evening air with little thermal influence. Even so, times in the A2 glider half of this team contest were high indeed, with

Denmark first at 1111 secs., Finland second, with 1071 secs. and Sweden third with 1007 secs. Each country provided a team of four, two of them with A/2's and the other two with F.A.I. class power models. In the Power half, the order was Finland, Norway, Denmark and Sweden. Times were not spectacular but this form of flying is still developing in the Nordic countries. In Concours d'Elegance, a Danish "Flamingo", made from A.P.S. plans, brought first place for Vagn Petersen.

German Nationals

Politics, we gather, are rearing their ugly head among the German aeromodellers, and from past experience of this self-same problem, we can only hope that the modellers will see daylight and not allow the hobby to become tainted with unrelated affairs. The Nationals, held at Forchheim private airport, near Nuremberg, was an eight contest affair, which decided the Wakefield, A/2, and International Power teams. As reported in the Wakefield account, elsewhere in this issue, the Wakefield team were sent to Sweden; but there is

WIDESPREAD CONTRASTS! Left, a Bee powered KK Ladybird by Armand Josephin of Nicosia, CYPRUS. Centre, another Ladybird, with Mills '75 at Los Angeles, CALIFORNIA and Right, snowy scene in SWEDEN where glider enthusiasts enjoy





This column: Above, Danish Team at the annual Nordic Contest, held this year at Vandel. L. to r.: Power Champion Pedersen, Mogens Edrup, Arne Hansen, Borge Hansen the Glider Champion, and Danish pioneer Knud Flensted-Jensen, author, and who started the Danish model movement. Bottom, Is 16 year old Bjarne Jorgensen, Rubber Champion, with Swedish designed "Tempa" Wakefield. Next column: Top, at the German Nats., Hans Geiger of Tübingen placed 13th in Tailless. Called "Schlauchkurbler," model has d/t units in anhedralled tips. Centre, H. Wildhacck of Marburg, U.S. Zone launches a typical A/2 for clubmate. Bottom, In California, Frank Cummings has twin boom Wakefield with opposed single bladers. Each fuselage has 14 strand, 3/16 inch motor, airframe weighs 3 1/4 ounces. Stripes are for visibility.



some doubt as to German participation in the other International events. Greatest advance shown by competitors at the Nats, was in the tailless class, known as the "N" class, though the top time of 7:59 aggregate is not exciting. This type of model tied with the A/2 class for popularity in numbers and we note that the longish fuselage, with pod front end for cross section is becoming common. Introduced by the Hanover glider experts, this "new-look" in A/2 fuselages, as shown in the photo on this page, is spreading as a correspondent says "like a contagious disease"





AROUND THE

Butlin's

RALLIES

ON JUNE 22nd

Skegness

By 2 p.m. the rain clouds had started to roll away and the flying prospects seemed much brighter—until it was learned that *full size* flying would be going on for the rest of the day. In view of the small size of the Skegness Aerodrome, model flying would have been extremely dangerous, and H. W. Barker (S.M.A.E. East Midland Area Secretary) quite rightly ruled that it would be asking for trouble to continue the free flight contests under the circumstances—so this side of the programme was reluctantly abandoned and attention concentrated on the team racing event at the Camp Sports Field. This contest was for Class "A" models—the final being between two Grimsby club teams. Pete Munday won with a conventional E.D. 2-46 powered original of 20 in. span, at a speed of approximately 60 m.p.h. The other finalist was fellow club member Bob Brown. Something of a sensation was caused when BOTH competitors were disqualified for rule infringements in the closing laps and the entire 200-lap heat had to be restarted—much to the dismay of both teams, as the models were by this time getting very much the worse for wear.

After presenting the prizes (£5 to each member of the winning team), S/Ldr. R. A. Lewis, D.F.C., Manager of the Camp, expressed regret that the free flight part of the meeting had had to be cancelled. Another model contest is to be held on Sunday, September 21st, at all four Camps, but in the case of Skegness, this will almost certainly be an all-controline affair. A decision

we heartily endorse in view of the proximity of the airfield to the sea (about $\frac{1}{2}$ a mile at the nearest point). The Camp Sports Field is situated in a relatively sheltered spot, has a fine turf surface and is sufficiently large enough for team race, speed and stunt events to be flown simultaneously. From the "spectator appeal" angle, C/L flying is of course the best proposition and *providing that display model flying* is included in the programme, this next meeting at Skegness can provide a wonderful boost for aeromodelling.

BILL DEAN.

Filey

Weather dawned fairly bright with a breeze on the Sunday morning, the wind fortunately blowing parallel to the coastline. Had it been out to sea it would have been disastrous, as the free flight contests were flown on a strip of grassland on top of the cliffs. Butlin's provided a chalet for use as a central point, P.A. equipment, and an enormous ring of chairs to fence the contest area off. Their Entertainment Manager, Mr. O'Brien, and other officials, taking a keen interest and providing every assistance. Two coach loads of modellers arrived from Barnsley and district on the morning of the contest. The glider, rubber and power got under way in the morning, and continued all day.

P.S. Butlin's employ a full time aeromodelling instructor on their staff who gives demonstrations during the week—a very good thing.

DON BROCKMAN.



Which twin has the A/2? In the heading photo, Butlin's aeromod instructor settles a query in amiable manner.

G. Langdale (Lincoln & DMC), Concours winner at Skegness with twin Elfin 2-49 powered controline de H. Mosquito.

Three Grimsby team race entries at the Skegness rally. A. G. Balding and his Elfin 2-49 Mercury Mk. 2., Ron Goddard and a similarly powered duplicate model, and at the right the winner, Peter Munday and his 20 ins. span original design using an E.D. 2-46.





Ayr

The weather gods were kind to aeromodellers at the Heads of Ayr, Scotland, when in bright sunshine some three hundred people turned out to watch the Model Rally held at Butlin's, Ayr.

A tricky, but on the whole favourable wind gave the entrants something to think about. Mr. Joe McMaster of Glasgow once more proved the old adage that beauty goes hand in hand with performance by winning both the Concours d'Elegance and the Free Flight Power competition. His 'plane, a "Toreador" model, was powered by a Frog 500, and had quite an eventful day. See Scottish page for further news of this meeting.

T. McAINSH.

Drogheda

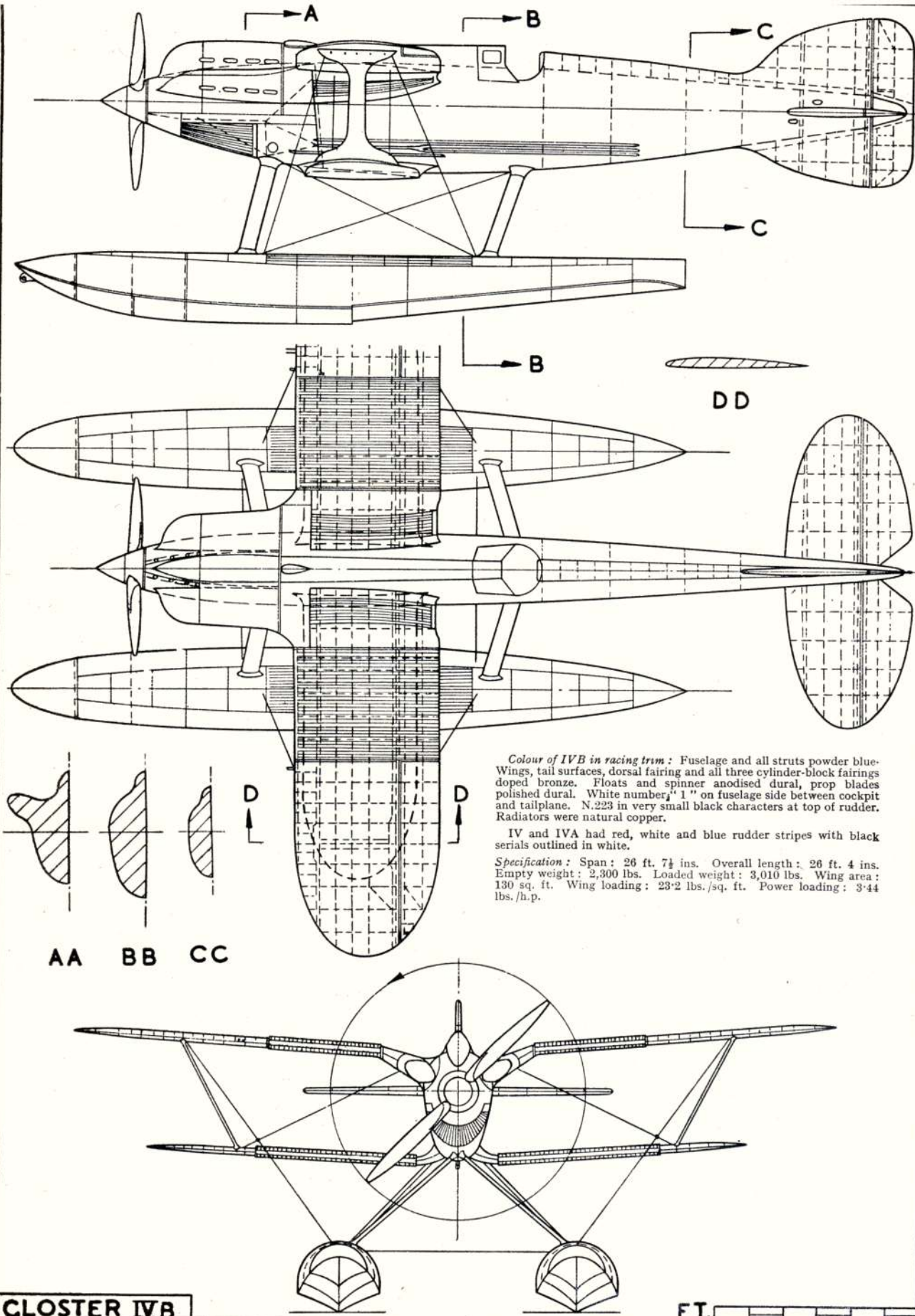
Also a Butlin's meeting, but held on June 8th, was the Control Line Rally at the Irish Holiday Camp at Mosney, near Drogheda, and run by the Drogheda Model Flying Club with the great assistance of Camp Controller, Mr. D. Scaife, and his Public Relations Officer, Miss P. Vere Hunt.

After a bad start, the weather cleared up for the evening and the finals of the six sections of the Rally, were held in good weather. Open Stunt, Novice, Class "A" and "B" Team Race, Flying Scale and Streamer Cutting were on the programme, to provide campers with a splendid afternoon and evening's entertainment.

PATRICK HUGHES.

Top: At Ayr, Instructor Roy Maxwell points out something on the Fokker to band leader Ronnie Caryl. **Top right:** At Filey, Peter and Silvia Stringer, aided by Ron Calvert at mike, saw that events ran well. **Next:** S/Ldr. Lewis at Skegness and winning team racer. **Centre:** Mick Crawford (Foresters) and "High Society" team racer at Skegness. **Next:** Silvio Lanfranchi collects Power 1st prize at Filey from Mr. O'Brien, camp Entertainment Manager. **Bottom right:** Ken Barker (Grimsby) and catapult MiG 15 at Skegness. **Bottom left:** Mrs. Scaife, wife of the Drogheda camp controller, presents the Butlin Trophy to J. J. Carroll of Dublin.





September, 1952

AIRCRAFT DESCRIBED NO. 51

By G. A. CULL

THE
GLOSTER IV's

The Gloster IVA reserve machine at Venice. Seen pushing against the fin is a rigger of the High Speed Flight who is well known to our readers—none other than our old friend and Wakefield exponent, Eric Smith.



THE Schneider Trophy contests gave rise to a justly famous series of thoroughbred racing seaplanes, and of the British machines, the Gloster IV's were unexcelled in sheer beauty.

Designed by H. P. Folland, who had previously produced Schneider racers in 1924 and 1925, three Gloster IV's were laid down in 1926 for the next year's contest at Venice. The new racer was to be a biplane, for at this time the monoplane had yet to prove entirely its racing virtues, and the rigid biplane rigging was a strong point when the new danger of flutter was being felt. First off was Gloster IV N.224, from which it was seen that the top wing faired into the two side cylinder blocks of the special 900 h.p. Napier "Lion" racing engine. The airframe was a masterpiece of wooden construction and the fuselage was built on light longerons and hoops and double-diagonally planked with spruce strips which formed a stressed skin. Forward of the cockpit, a third inner layer of spruce was used and all wings and tail surfaces had this double load-bearing spruce skin laid over multi spars and ribs. The thin interplane struts were of solid dural, float struts were wooden-faired steel tubes and the floats were duralumin. The fin was integral with the fuselage, and tail-plane incidence could be adjusted on the ground.

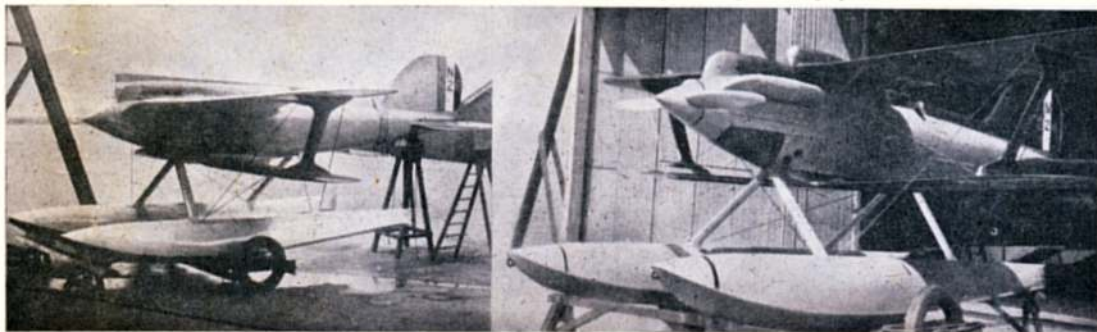
In due course the Gloster IVA, numbered N.222 and the IVB, N.223, were delivered and differed from the IV in having smaller wings and fin and rudder area redispensed above and below the tail. To gain maximum benefit from the slipstream, coolant radiators were fitted to both wings. These were of .005 in. corrugated copper sheet mounted

flush on both surfaces and similar radiators were carried on the floats. Forming part of the underside of the nose, was the oil tank-cum-cooler, later strengthened as a result of bursts, and oil cooling pipes were fitted along the fuselage sides.

The Gloster IVB with the geared Lion engine was used for the 1927 Schneider Trophy contest at Venice, and the direct-drive Gloster IVA held in reserve. Flown by F/Lt. Kinkhead, the IVB went well but had to retire after the fifth lap because of severe vibration caused by the collapse of the spinner. The two Supermarine S.5's flew on to win, but the Gloster IVB proved to be slightly faster than the slowest (ungeared) S.5 and attained a fastest lap speed of 277 m.p.h.

Thereafter, the Glosters served well as trainers for the 1929 and '31 contests and, to improve the view, suffered the addition of a strut-braced centre section to the top wing and an external header tank was fitted. In March, 1929, the IVA and B returned to Gloster's to be cured of yawing at high speed, and the IVA had fin and rudder decreased below the fuselage and added on top, but was still not corrected. Consequently, both the IVA and IVB were fitted with fins and rudders above the fuselage as on the IV which never had this trouble, and all was well. As trainers, the trio of Gloster IV's outlived many engine changes and were worked off their floats. The veteran IV, N.224, was sold and went to Croydon in 1930 and on December 19th, of the same year F/Lt. Boothman crashed the IVB, N.223, while landing in fog and, as the fuselage broke in half, this left the IVA, N.222, as the last of the breed.

Below, left, is the original Gloster IV, and right, the same machine N.224 after training modifications with centre section, raised top wing and longer wooden interplane struts. All photos by courtesy of Eric Smith.





FIFTH ANNUAL WEST ESSEX GALA AT FAIRLOP

SELDOM has Fairlop been so fully used for a model meeting than the occasion of the W.E.A. Gala on June 15th. Control points for the nine events were widely, and wisely, disposed, and thanks to the co-operative support of volunteer timekeepers, the large number of entries was ably and efficiently dealt with. Outstanding among the winners, full details of which are given on page 566, was the new fastest speed registered in Great Britain for class VI, by R. "Gadget" Gibbs of East London club. Unfortunately flown without the use of a pylon but nevertheless piloted without a trace of whipping, the 141.5 m.p.h. recorded speed represents a triumph for the Checksfield Bros. who designed and constructed the engine to make it an All-British effort. John "Lulu" Barker scored a maximum with his chuck glider, the actual time being over 9 mins. Honours for "Sport of the day" should go to Piacentini who withdrew his 90 m.p.h. Team Racer from the final as he considered it a menace to the other finalists, even though it won its heat.

R. G. M.

Top left: Power winner Pete Buskell, uses Elfin 1-8 for FAI 2-5 class because he has 5 of them! Top right: Gadget Gibbs and his fast model, with engine designer Ron Checksfield.

Above: A. G. Sicale with conventional but successful 2 year old "Avalanche", glider winner. Here: John Gorham and winning "Ghost".



Above: Ted Hemsley launches his consistent radio entry, Forster 29 petrol ignition motor. Extreme left: 3, 2, 1 in the team race class A, all from High Wycombe, all green and cream with E.D. 2-46s. P. Johnson, R. Edmonds and D. Langston. Below: Radio winner, Roger Clark with brand new model he had not flown before contest. Elfin 1-49 engine, own equipment.





Scottish Page

IN the Butlin's contests on June 22nd, the Scottish camp at Ayr had the highest entry. Model flyers from as far away as Stirling, Monifeith, Edinburgh, and Dundee, joined with the clubs nearer at hand to boost the entry figure up to 74, about 20 more than the nearest rival. In spite of not too favourable conditions as regards terrain and wind force, some pretty good flying was seen. The West of Scotland Area comp. committee, who handled the organisation, did a good job, and threw into the bargain a C/L stunt contest with a prize of a free seat in the special bus to the U.K. Challenge Match at Tilstock. This was eventually won by Ian Clarke of **GLASGOW M.A.C.** McMaestro McMaster collected 1st in the Concours, and 1st in the F/F power with his "Toreador". Out scouting for his model after its first flight, Joe found an Ayrshire cow contentedly munching about six inches of "Toreador" wing tip, but accurate field repairs enabled him to complete his winning aggregate. In the Class A team race final, the competition was literally cut-throat. Bill Jardine's (**KILMARNOCK**) Elfin 2:49 racer came whistling around the corner, and clipped Bill Chrystall (of **GLASGOW B.**) in the neck. Bill C. was unable to continue with his hazardous job of pit stop man, but Bill J. had to withdraw from the race with a shattered wing. Pete Kimantas won the rubber duration for the "Barnstormers", and Bill McConnachie got 1st in the glider comp. for Glasgow M.A.C. Here's looking forward to another enjoyable day at Butlin's, Ayr, and an even higher entry. September 21st is the date, so how about it?

Here's an extract from Bob Burns', **STEWARTON M.A.C.**, letter. It describes some of the Stewarton Club's sport flying antics. "... It was originally a 'Spartan' last year, then the fuselage was gutted and a new one built, as a low wing. Three weeks later it had the wing on a parasol and a new small lower wing, and was a biplane. Bright red with white numbers. The following week it had a new tail unit, scaled from a 'Stuka' and a gun turret with dummy gunner had sprouted midway along the top deck. The paint job was German desert colour, red mottled with green. It flew well after a lot of trimming. Last week a

second engine sprouted out of the top decking on a pylon—a 'Bee' to aid the 'Comp. Special'. Now anything can happen, twin powered flight in a climb, then level flight with the Comp. only, or a powered landing with the 'Bee' whining away. It has been fitted with an Army smoke bomb, which lays smoke screens, and as its owner likes variety there is no saying what it will be like by next week. I must say that a few lunatics like this make more fun than a whole club full of competition fans . . ."

The **SCOTTISH AEROMODELLER'S ASSOCIATION** had quite a good day for their contests at Lanark on June 8th. The competitions included the Scottish National Rubber (Robin Taylor, Glasgow M.A.C., 11:30 agg.); free flight scale for "The **AEROMODELLER** Trophy" (John Paterson, Eaglesham "Aeronca"). The Montgomery Cup for A/2 sailplanes (Gordon Fudge, Paisley M.F.C., 6:08 agg.). The nearby Lanark Loch took a few victims in the day's flying, with Bob Grieve of **DUNFERMLINE'S** glider, and Bill McConnachie of **GLASGOW'S** Rubberdub ditching in. However, the Lanark Club had an excellent air-sea-rescue outfit in operation, a canoe being kept in their clubroom for this purpose. Junior club member Campbell Arroll fished out one or two models before they became submarines, and between times went flying to gain two third places.

On June 29th, also at Lanark, the **WEST OF SCOTLAND AREA** held their final area eliminators in rubber, glider and power, for the Scottish U.K. Trophy team. The top twelve in each class in this eliminator will take on the other Scottish S.M.A.E. areas, in the all Scotland Final, to choose the actual team. This all Scotland Final will be held at Balado, near Kinross, on August 24th, and the outcome will be a first-rate team, so "Watch out, England, you're going to be got at!!" However, the West Scottish area eliminator saw most of the expected names qualify for Balado, with one notable exception in hard-working comp. secretary, Bill Meechan. Bill doesn't get very many spare minutes to build and fly, on account of the area's intricate contest and flying display schedule, but when he does show up with a model you can bet your last bawbee it's a worthwhile project. This time it was a natty line in an A/2 sailplane, featuring geodetic style structure throughout. Bill demonstrated the model with a few short line flips tip-up tail d/t working like a dream. Comes his first comp. flight, the job gets every inch of the 328 ft., and then keeps climbing like a power job. A five min. max. no bother at all, but no d/t pops. A not so unhappy ending though, about a week later the job turns up safe and sound, and that's that. Mac.

Air Sea Rescue at Lanark. Bill McConnachie grins as Skipper Arroll reverses out for another retrieve. Right: 1952 "Aeromodeller" Trophy winner John Paterson with his Aeronca Sedan.



CLUB NEWS

Nine men went to Fairlop from High Wycombe, flew through all the heats, won all the semi-finals and placed 1, 2, 3 in Class "A" T.R. at the WEA Gala. A good example of club effort.



CONGRATULATIONS to our Control Line Team for their success at Melsbroek, and particularly to the stalwart of the team, Peter Wright, who placed top in the 2.5 c.c. speed class. Poor conditions did not exactly favour our Wakefield men at Norkopping as you will have read in the full Wakefield Report in this issue. Let us hope that better weather will favour the A/2 (now to be known as Championship Glider Class) Team at Graz in Austria and the power boys at Dubendorf in Switzerland.

At home, reasonable spells of bright weather have shone upon club organised Gala days and we hope that Old Man Sol will look benevolently upon the Nationals at Gosport which will have already taken place as you read this.

Northern Area

On Saturday, June 7th, members of the **SHEFFIELD SOCIETY OF AEROMODELLERS** gave a control line demonstration at the Ashford-in-the-Water (a beauty spot in the peak district) and great excitement was caused by one of the models belonging to the vice-president, Mr. D. Gordon, which caught fire during a pit stop. Charles Exley, acting as mechanic, found himself doing fireman's duty! As a result of this demonstration other local carnival committees are interested and are sending out similar invitations.

The Northern Area boys shower congratulations on Bill Farrance for his record aggregate of 23.02 in the A/2 trials. This is believed to be the highest figure ever recorded in an S.M.A.E. event. From their News Sheet we quote one little thought for the month which might well apply to many of us. "An hour's quiet thinking on Saturday may make all the difference on Sunday."

LEEDS M.F.C. has such a crowded programme that it has taken to weekday evenings for contests. One such event, recently run, was a prototype contest restricted to kit models of not more than 24 in. span and 5/6 cost. The general idea being to produce a set of models with performances limited to suit the open spaces of Leeds. 'Tis said that the spectacle of experienced flyers trying vainly to reach the minute mark was encouraging to the novices. Nigel "Chips" Chippendale won the kit-plus-cash prize for Junior Entrants in this novel contest.

The control line department of this seventy strong club represented the sport of aeromodelling on Leeds Children's Day. This big Festival of Sport is a famous

annual event and this year saw the result of much patient work by the Leeds boys to have our hobby included in the Festival, at the request of the organising authorities. Before a crowd of 50,000 packing the giant natural arena of Roundhay Park the lads gave a slick polished display which was very much appreciated.

Organisers of "Yorkshire Evening News" Second National Model Flying Festival have introduced an event for this Sherburn-in-Elmet Meeting, which will appeal to the Bowdenites immensely since it is a novelty contest which should be right up their street. Any kind of model is suitable, be it glider, jetex, rubber or power and the general idea will be that the first flight will be of one minute duration and the second of two minutes, no restriction being placed on the motor run. Dethermaliser employment will be allowed; but we fancy that the man who knows his sport model best will be the winner. Don't miss this big meeting on September 7th, pre-entry before the end of August will give you a saving of 6d. per event.

A new Club has been formed in Wakefield under the title **HEATH AEROMODELLERS**, which is to encourage Control Line flying. Although other types are encouraged, the accent in this club is on control line, especially the building and flying of scale types. Indoor programmes are planned and a display team has been organised for local gala days with a regular programme of team racing, mock combat, stunting, drogue towing, balloon bursting and comedy acts. Lone hands in the area are welcome to contact the Secretary, who is listed with the new clubs at the end of this news.

South Midland Area

Lack of support for recent Area semi-centralised events led to an amalgamation with the London Area for July 20th, flying off the Women's Challenge Cup, Jetex and Farrow Shield on Fairlop Aerodrome. This area is particularly hard up for a suitable regular venue for its area events, in spite of a profuse number of aerodromes within its boundaries. Although permission can be gained at some of these aerodromes, it would seem that the more co-operative sites are placed to one side of the area, involving long and awkward travel arrangements for distant clubs.

Members of **HENLEY MODEL CLUB** are going all out to gain Merit Certificates this summer. They already have eight members with "A" Certificates and on June 15th, D. C. Painter and A. W. M. Cooke flew identical gliders at high averages to get their "B."

East Anglian Area

Further news from **CAMBRIDGE M.A.C.** on their September 14th All Team Race Rally gives us the specification for a "½A" class of racer. Wing area is to be 35 sq. ins., minimum lines to be 20 ft. long, the tank 7.5 c.c. and motor to be fully cowed. Pilot sizes should be in keeping with the model with the head not less than ½ in. deep. Maximum motor capacity to be .99 c.c. and the distance between wing and tail to be at least equal to the wing chord. As this is the first rally including this class we trust that enthusiasts within travelling distance will journey to Cambridge and take along a "½A" model to have a go.

Midland Area

A bus load of **FORESTERS (Nottingham) M.F.C.** visited Butlin's, Skegness, a few weeks back, and enjoyed a day by the sea. Contests? . . . the less said the better. The F/F was cancelled and the C/L a shambles. Mike Crawforth's class A racer turned over on the grass and pranged his needle-valve.

However, the Cranwell Rally the week after made up for this, and the Foresters did quite well. Mike was on his back sick of the Palsy, and mechanic J. Howard (junr.) couldn't get, so Doug Bolton and Jim Weston assisted J. Howard (Sennr.) to victory. Mike was dragged from the bus considerably bucked at the result, to collect the silverware. The same team also came second in class B. Doug rounded off his success by winning the radio trophy in an expensive manner. The tailplane twisted around the rest of the model as it executed a loop, the resulting manoeuvre terminating some six feet underground!

Geoff Dunmore recovered the leading half of his fuselage with a **LEICESTER MODEL AERO CLUB** Bulletin during the recent club "Ace" competition, and won the senior part of this event. Other bods are complaining he installed so much hot air in this covering that the model just would not come down! A new club glider record of 15 mins. 10 secs. has been set by P. H. Ball with his "Quickie" A/2 sailplane which we presented as a full size plan in the March issue.

Western Area

SOUTH BRISTOL MODEL AERO CLUB have been seen in their flowered shirts at the recent West Essex and Northern Heights Gala days with particular emphasis on the team race contests. We have observed the Bristol boys in action and notice an improvement each time. They always seem to manage to find a place in the team race finals and at their present rate of progress should find themselves at the top of the list at some of the later events.

South Eastern Area

Recent outbreaks of foot and mouth disease have resulted in many clubs temporarily losing the use of their flying fields. This has especially effected the area championships with the result that preliminary rounds were cancelled and the contest will eventually be held at the area rally. The club glider record of **CANTERBURY PILGRIMS** has recently been broken by 16-year-old D. Powell with a time of 15:21 from only a 50 ft. launch. Vic Smeed, designer of many popular A.P.S. plans, is to be congratulated for his win of the Queen Elizabeth Cup at the Northern Heights Gala. Vic has competed each year for this Cup since its introduction, and to use his own expression has never "... been within spitting distance". **EASTBOURNE** are handicapped by local foot and mouth disease; but

following successful negotiations with the Corporation, control line activities are starting. Carnival demonstrations have been given by the **SEVENOAKS** boys with control line models, and others in this area keen on line flying are the **WORTHING** clubsters who had a good time, particularly in the team race at the Northern Heights Gala.

SOUTHERN CROSS AERO CLUB congratulate member Grahame Gates for his third place in the Lady Shelley with his new 21 ft., yes twenty-one feet, tailless sailplane. This club has a special interest in large models and on a recent outing when the smallest wing span to be seen was nine feet, six maximums were scored in two hours. Pity there was not a contest on at the same time!

Northern Ireland Area

The second Ulster Nationals were held on Maydown Aerodrome, Co. Derry, on the 21st and 22nd June. Poor conditions on the Saturday for the glider contest resulted in a close win for J. Bennett with a Jinx over Norman Osbourne with his own design A/2. Sunday brought better conditions for the power event which was again won by C. Knight who apparently makes a habit of collecting cups annually, by winning the team race for the second year in succession also. All of these wins may be attributed to the **BELFAST MODEL FLYING CLUB**, whilst the Hyland Trophy was taken by T. Smith of the **NORTH DOWNS M.F.C.** with a biplane which flew very well.

Southern Area

Flights at the West Essex Gala by members of **GRANGE M.A.C.** counted as scores in their three corner contest with the Kentish Nomads and a New Zealand Club, final results showing that Grange gained an easy win with 52 minutes against the Nomads 27 and the New Zealanders' 17 minutes. Top scorers were Tony Brooks and Jim John with 14 and 12½ minutes respectively, the former flying his "Ohlson 23" pylon model which was featured in last months "Model News" and the latter an A/2 sailplane.

1952 CONTEST CALENDAR

| | |
|-----------|---|
| Aug. 17th | International Model Aircraft Contest. (Blackpool.) |
| 24th | { All Herts Rally. (Radlett) Bolton M.A.S. Rally. (Edgeworth) |
| 31st | { Centralised. (Cranfield.) BRITISH CHAMPS. Rubber/Glider/Power. TAPLIN TROPHY. Radio Control. Daily Dispatch Rally. (Woodford.) |
| Sept. 7th | Yorkshire Evening News Rally. (Sherburn in Elmet.) |
| 14th | U.K. CHALLENGE MATCH. (Centralised.) |
| 14th | Cambridge M.A.C. Team Race Rally (½A, A, B). |
| 21st | Butlin's Contests. All classes. (Filey, Skegness, Ayr and Pwllheli.) |
| 21st | Southern Counties Rally. (R.A.F. Thorney Island.) |
| 28th | { FROG SENIOR CUP. Power. (Area.) MODEL ENGINEER CUP. Glider. (Area.) South Midland Area Rally. (R.A.F. Halton.) |
| Oct. 5th | Roberts Flying Boat Cup (Danson Park Lake, Welling Kent.) |
| Oct. 11th | { Centralised. DAVIES TROPHY. A and B Team Race. RIPMAX TROPHY. Radio Control. C/L SPEED. All Speed Classes. |

Clubs are invited to send in details of Special Galas or Open Days for inclusion in this regular Calendar.

In the Hamley Trophy Jimmy John managed a triple maximum and followed up with another 7½ minutes with his Frog 1:50 powered T-Bar. Tony Brooks also made a triple maximum in the same contest but his fourth flight was 3 minutes 20.

WEST ESSEX GALA RESULTS

OPEN RUBBER

- | | |
|-----------------|----------------|
| 1. J. Gorham | Ipswich |
| 2. J. B. Knight | Kentish Nomads |
| 3. J. Palmer | Croydon |

OPEN GLIDER

- | | |
|----------------|-----------|
| 1. A. G. Swale | Streatham |
| 2. M. Mayhew | Apsley |
| 3. R. Gilroy | Croydon |

OPEN POWER RATIO

- | | |
|-----------------|---------------|
| 1. P. Buskell | Thames Ditton |
| 2. A. J. Brooks | Grange |
| 3. G. Fuller | St. Albans |

RADIO CONTROL

- | | |
|---------------|------------|
| 1. R. Clark | Battersea |
| 2. T. Hemsley | Bushy Park |
| 3. J. Fox | Hatfield |

CONTROL LINE AEROBATIC

- | | |
|----------------|---------------|
| 1. Alan Hewitt | S. Birmingham |
| 2. P. Smith | Chingford |
| 3. B. Harper | Outlaws |

CONTROL LINE HANDICAPPED SPEED

- | | | | |
|----------------|----------------|--------|-------|
| 1. R. Gibbs | E. London | M.p.h. | Class |
| 2. A. V. Coles | Bristol & West | 141.5 | VI |
| 3. M. Dilly | Croydon | 95.1 | II |
| | | 77 | I |

TEAM RACE

- | | |
|----------------|--------------|
| Class A. | |
| 1. D. Langston | High Wycombe |
| 2. R. Edmunds | High Wycombe |
| 3. P. Johnson | High Wycombe |

- | | |
|-------------------|-----------|
| Class B. | |
| 1. R. Bourne | Godalming |
| 2. Miss B. McCann | Workop |

CHUCK GLIDER

(Best three flights out of five)

- | | |
|--------------|----------|
| 1. J. Barker | Surbiton |
| 2. Jackson | Satyr |
| 3. Coles | |

NORTHERN HEIGHTS GALA RESULTS

THE QUEEN ELIZABETH CUP (Power)

- | | | |
|--------------|---------------------|-------|
| 1. Vic Smeed | Canterbury Pilgrims | 451.5 |
| 2. J. Lewis | Northern Heights | 442 |
| 3. R. Mead | Northern Heights | 408 |

FLIGHT CUP (Glider)

- | | | |
|----------------|----------------|-----|
| 1. E. Wallace | Surbiton | 523 |
| 2. L. Wheatley | Sutton-by-Pass | 402 |
| 3. M. Lobban | St. Albans | 380 |

FAIREY CUP (Rubber)

- | | | |
|----------------|----------|-----|
| 1. E. Bennett | Croydon | 566 |
| 2. R. Atkinson | Ipswich | 515 |
| 3. P. Allaker | Surbiton | 504 |

THURSTON TROPHY (Helicopter)

- | | |
|----------------|--------|
| 1. M. Ingram | Jetex |
| 2. P. Vashford | Pharos |
| 3. V. King | Pharos |

DE HAVILLAND TROPHY (Open Power)

- | | | |
|-----------------|--------------|-----|
| 1. J. Swainways | W. Middlesex | 430 |
| 2. M. G. Marcus | Croydon | 383 |
| 3. F. Chatwin | Birmingham | 352 |

R.A.F. REVIEW CUP (Radio Control)

- | | | |
|------------------|------------------|----------|
| 1. R. C. Lawyer | W. Middlesex | 13 yards |
| 2. S. Collins | Northern Heights | 19 yards |
| 3. S. Sutherland | West Essex | 21 yards |

CORONATION CUP (Team Race "A")

- | | | |
|-------------|--------------|-------------------------|
| D. Langston | High Wycombe | 10 miles at 50.5 m.p.h. |
|-------------|--------------|-------------------------|

MODEL ENGINEER CUP (Team Race "B")

- | | | |
|-----------|------------|-----------------------|
| W. Morley | West Essex | 10 miles at 66 m.p.h. |
|-----------|------------|-----------------------|

THE "AEROMODELLER" CHALLENGE CUP

- | |
|-------------------|
| (Points Champion) |
| Tony Brooks |
| Grange |

CONCOURS D'ELEGANCE

Power, Mr. Tipper; General, Nachtmann (P.A.F.A.); Scale, T. Dakiewicz (P.A.F.A.); Unorthodox, W. Manuel (St. Georges Heights); Radio Glider.

A most interesting collection of "Club News" sheets have arrived from the **WEST HANTS AERO; MODELLERS ASSOCIATION**. Under the title "Subject Normal" the association issues this sheet to members and friends with compliments and we might suggest that other P.R.O's contact H. M. Dick the Secretary at 5, Wakefield Avenue, North Bourne, Bournemouth to obtain a sample of this excellent little publication. We hope you have enough spare copies Mr. Dick!

Inter-Club activity with team race meetings appears to be popular with the west Hants Boys. At one recent meeting the **SWANAGE** Team succeeded in trouncing the three other West Hants machines in spite of their superior speed, which sounds like the old story of reliability being the keynote for successful team racing.

South Western Area

WEST BUCKLAND SCHOOL M.C. has 19 enthusiastic members, ten of them being power fans and their favourite motor is the E.D. Bee. At present the power record is held by G. B. Nuttall with his Bee powered converted "Vanda" at 12:04. Not yet affiliated to the S.M.A.E., we understand the club will be joining the society and we expect to hear news of competition activities from that quarter before long.

London Area

An interesting account was given to a recent London Area Committee meeting concerning a wayward model belonging to a Streatham member. Apparently the model landed in a field belonging to one of the local farmers, whereupon it was smartly retrieved and carried off. Asked to return the model, the farmer denied knowledge of it, which statement he again repeated in the presence of a Ministry of Civil Aviation policeman. During the week local police visited the possessive gentleman, as a result of which the model was returned in a badly damaged condition. The question now arises as to how many other models have been lost to this farmer, current rumours have it that there is a barn-full somewhere on his property! There does not seem to be much ground in the more recent rumour, following a report from the World Gliding Championships in Spain that a certain species of sun-glasses enabled the wearer to detect thermals. Were this so, we understand that the Croydon Club would be equipped immediately! From the **CROYDON CLUB** we learn of many successes on recent gala days, three third places were taken at the West Essex Gala in rubber, glider and speed whilst at the Northern Heights "do" E. Bennett won the rubber event with a 300 sq. in. lightweight. Norman Marcus placed second with his new 2.5 c.c. "Eureka", which he lost. Flying off all three flights within ¼ an hour R. Standing placed top in the Club entries for the C.M.A. Cup with 12 mins. 48 secs., the model being a modified "Fugitive". Judging by the thermal collecting that was going on on July 20th we fancy Croydon will be well up in the results of the Farrow Shield.

The **DAGENHAM M.A.C.'s** Annual competition for their Glider Trophy was held mid-week at Fairlop. Still air conditions called for fast running when towing up the heavy weights. C. Newall came out top man with an aggregate of 8 mins. 59.5 secs. using his own design model. A "Mercury Marauder" placed second for R. Stubbs. Speeds in the region of 80 m.p.h. are reported by B. Eastarbrook who is flying an "Elfin 1:49" powered "Midge". **NORTH KENT M.A.S.C.** wish to draw attention to their "Roberts Flying Boat Cup" for rubber powered flying boats, which will be

held at Danson Park Lake, Welling, Kent, on Sunday, October 5th, between 11 a.m. and 5 p.m. Specifications and complete details can be obtained from J. Ball, 46, Boundary Road, Sidcup, and we would advise any who have not yet enjoyed this novel departure from the normal rut of model flying to go along and participate.

BUSHEY PARK M.F.C. recently had a day out on Chobham Common to compete for the Curtis Cup which was presented by the Club Treasurer. A winning time of 8 mins. 41 secs. was put up by R. Dawkins with his 94 inch span A/2 (difficult, isn't it, to change from this familiar A/2 title to the new name "Championship Glider Class", perhaps we shall have to call it the C.G.C.)?

Entries from the Loudon Area in the Women's Challenge Cup provided representatives from St. Albans, Thames Valley, West Essex and Upton Park, Mrs. Holt from the latter club flying the model with which she placed second last year made two very nice maximum flights and totalled 11 mins. 15secs., which will surely put her among the first three. Down-draughts were very much in evidence for the other competitors.

North Western Area

Flying in fresh winds at Lobden Moore near Rochdale, **WHITFIELD M.A.C.** member A. Bagnall totalled 12 : 15 to place top from that Club in the C.M.A. Cup. His model is a modified Hoverking. In the Flight Cup A. D. (Dekker) Bennett did 12 : 13 with his diamond pylon Wakefield, losing the model on its third flight. Windy air conditions handicapped the Huddersfield Rally on June 27th, where H. O'Donnell won both rubber and Chuck Glider with aggregates as low as 3 : 54 and 0 : 40 respectively. A. Wrigley won the power class with 5 : 50 to make it a Whitfield all round victory, except for glider.

WALLASEY M.A.C. reports several successes; on June 22nd their Team crew travelled to Butlin's camp at Pwllheli and won the event by 40 laps with their modified "Lazy Daisy". We understand that a few eyebrows were raised when this same model was given a high marking for originality of design in the "Concours" event! At the Merseyside Annual Slope Soaring Competition held at Clwyd on 28th June, Stan Hinds, Secretary of the Club placed top for the best flight of the day of 4 : 01 with his own design A/2 (or should it be C.G.C.!). The model, is four years old, has a leading edge C.G. position and weighs no less than 23 ounces, with that combination it should certainly have penetration for slope soaring!

Entries from as far afield as Cardiff and Swansea attended the **MERSEYSIDE'S TENTH ANNUAL CLWYD MEETING** and were unfortunately handicapped by the high winds. The high time reported in the previous paragraph by the entry from Wallasey was on a par with previous year's performances in spite of the inferior conditions.

From the design aspect most models were either in the Nordic class or old machines modified. No one seems to have tied the problem up and produced a special slope soaring design and it is interesting to note that in the last three years, models with pylon wing mounting have shown their inherent tendency to edge nose into wind all the way. The popular trend last year was the dorsal fin arrangement which kept the model headed into wind provided it soared high enough to clear the strong up current of air near the hill; but few models seemed to be able to gain sufficient height before they began to turn. The pylon layout would appear to be



Brilliantly coloured shirts are now "as worn," by the W. Essex band of merry men, seen here after their victories at the Northern Heights Gala team race.

more successful from its performances in the last three meetings.

However in spite of all the problems successful slope scoring involves, most people seem to have had a thoroughly enjoyable day and next year's Clwyd Meeting promises to be more enjoyable than ever. The medals are certainly worth winning and something the new owners will undoubtedly prize. Here are the results of the 1952 Meeting :

| OPEN | | | |
|--------|-------------|--------------|------------------|
| 1. | J. Weir | North Wirral | 3 mins. 30 secs. |
| 2. | J. Cochrane | Aintree | 3 " 10 " |
| 3. | R. Twomey | Cardiff | 2 " 35 " |
| NORDIC | | | |
| 1. | S. Hinds | Wallasey | 4 " 1 " |
| 2. | B. Williams | North Wirral | 2 " 20 " |
| 3. | G. Tector | North Wirral | 2 " 3 " |
| JUNIOR | | | |
| 1. | B. Calkin | Wallasey | 2 " 23 " |
| 2. | P. Morton | New Brighton | 2 " 20 " |
| 3. | M. W. Heath | Chester | 2 " 2 " |

Best attempt of six flights counted for final time.

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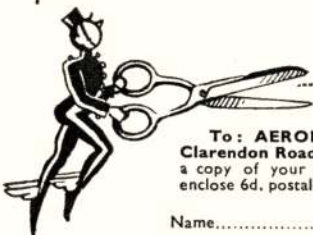
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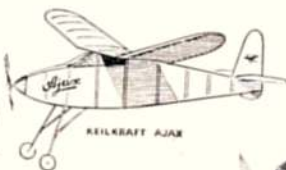
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