

JANUARY 1967

Aero Modeller

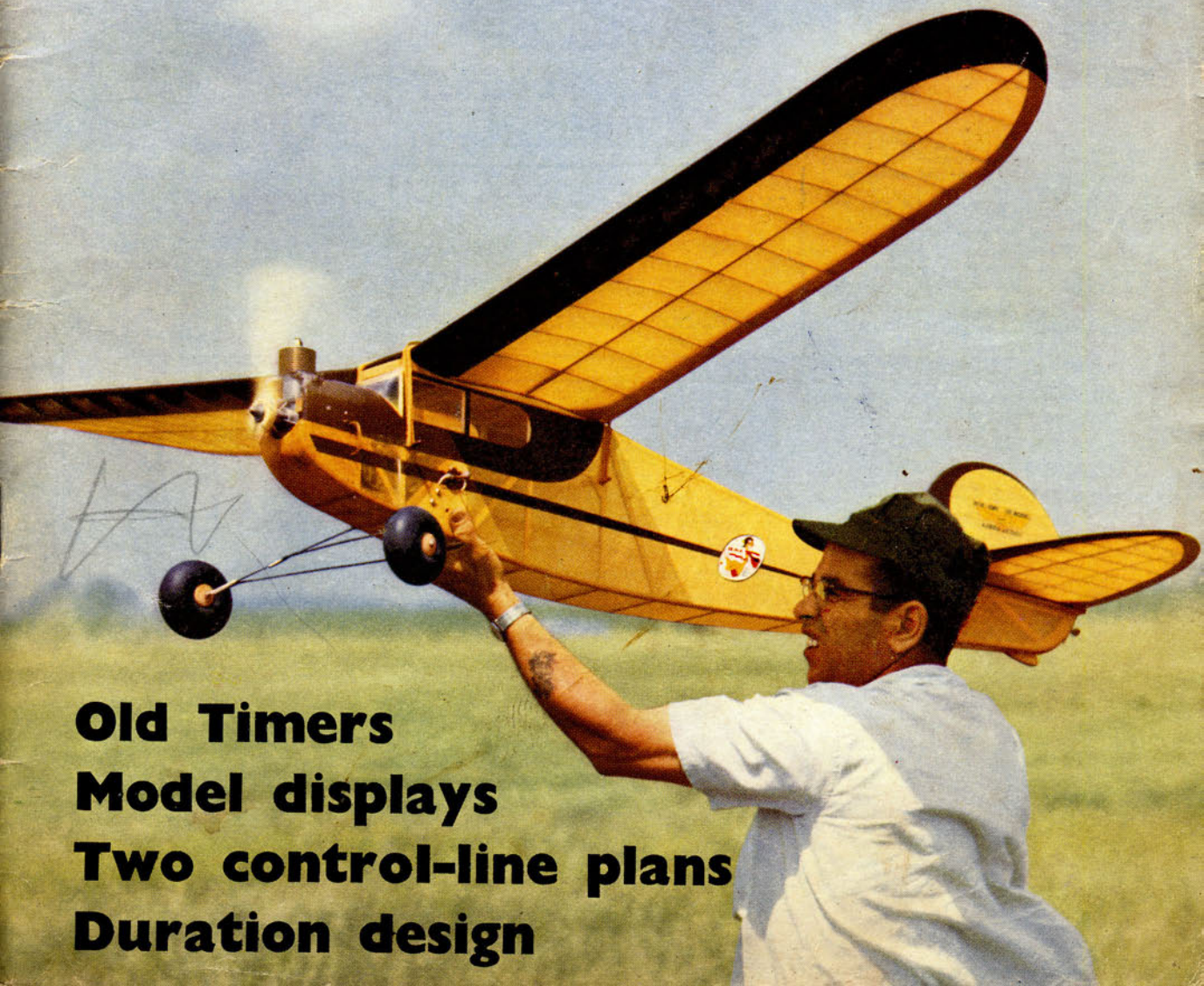
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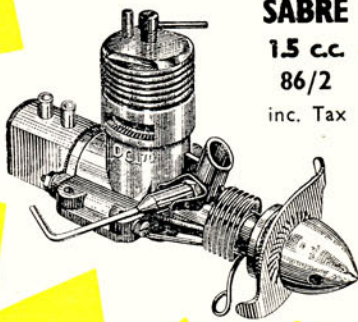
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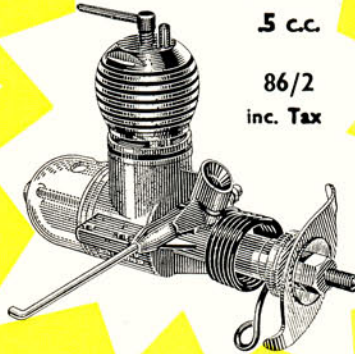
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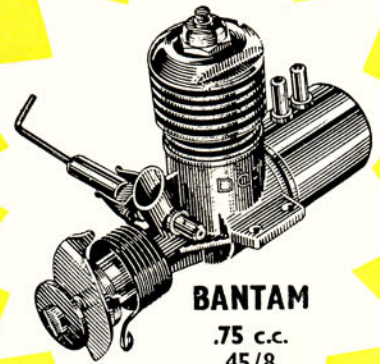
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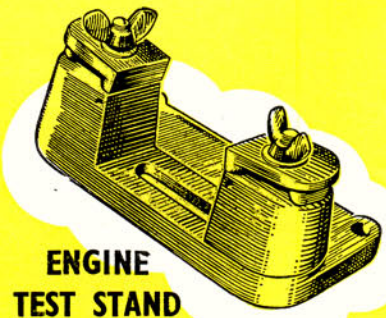
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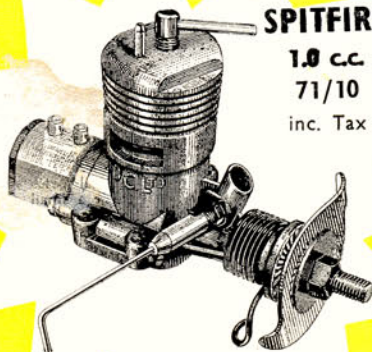
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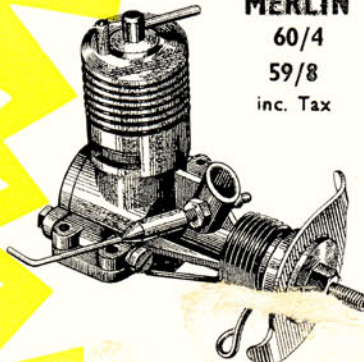


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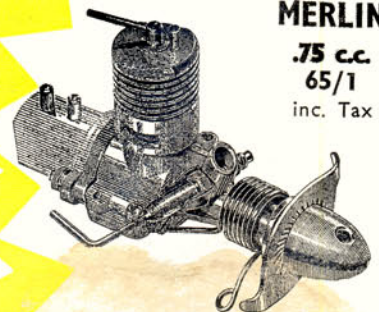
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Aero Modeller

INCORPORATING
MODEL AIRCRAFT

January 1967

VOLUME XXXII No 372

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AN  **HOBBY MAGAZINE**



also MODEL BOATS . MODEL CARS . RADIO CONTROL MODELS & ELECTRONICS . MODEL ENGINEER and MODEL RAILWAY NEWS.

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Advertisement and Subscription Offices: Model Aeronautical Press Limited, 13-35 Bridge Street, Hemel Hempstead, Hertfordshire. Tel. Hemel Hempstead 2501-2-3.
Direct subscription rate 35/- per annum including December edition and Index.

AEROMODELLER incorporates the MODEL AEROPLANE CONSTRUCTOR and MODEL AIRCRAFT and is published on the third Friday of each month prior to date of publication by:-

MODEL AERONAUTICAL PRESS LTD.
13-35 Bridge Street, Hemel Hempstead, Herts
Tel.: Hemel Hempstead 2501 (Mon.-Fri.)

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COMMENT

Made any good resolutions lately? At the turn of the year one is *supposed* to answer the call of inner conscience and swear either to do good, or be better, whichever way one's moral convictions lean. Now is the time for us to drum out those well-worn slogans of progress "Every modeller get a new modeller", "Dump the deficit—don't forget the Society subs" or maybe "I promise to stop the watch as soon as I can no longer see the model".

Whichever resolution one makes, the over-riding consideration for 1967 must surely be to **FLY SAFELY**.

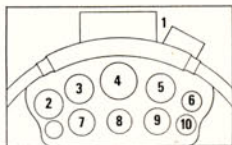
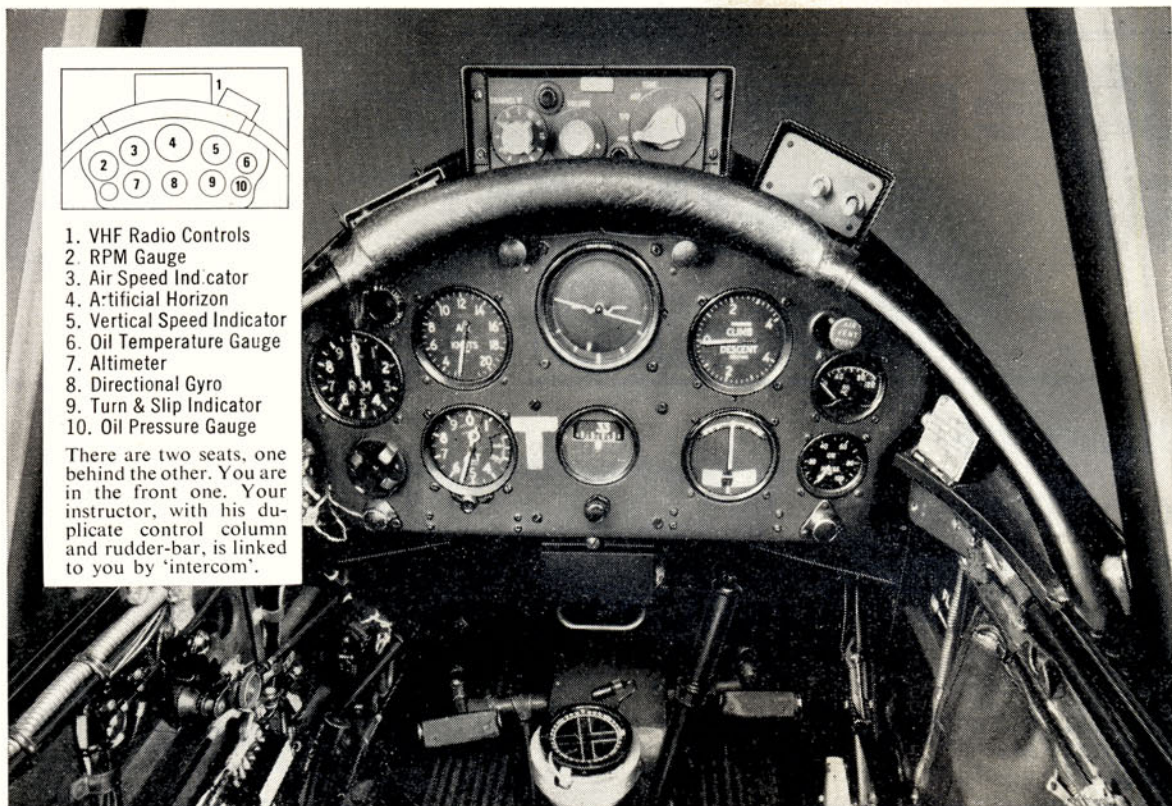
Avoid power lines—and people. Present model designs, and in particular radio control equipment, enable us to fly in practically any form of weather that the traditional British climate can produce. The major difference is that the radio controlled sports models fly faster and are more heavily loaded than their counterparts of even five years back, and since the local fields seem to be turning more and more to radio activity therein lies our biggest accident risk. To the weekend R/C'er we would say "whenever you fill the tank—*add caution*".

cover

Sal Taibi, one of the most prolific designers and certainly one of America's best known power contest modellers over many years, created the "Powerhouse" in 41", 56", 62" and 84" versions. This one, the larger model with a 16 c.c. Forster 99 purring away on coil ignition is typical of the rising enthusiasm for vintage models. It is being launched by Al Tratta of Highland, Indiana, when photographed by Dick Stouffer at a U.S. Vintage event.

next month

Club activity will benefit from **Model Flying Demonstrations**—an account of how Whitefield M.A.C. have organised a demo team for local fetes. Bill Hannan offers another full size plan for a small rubber model, the **Abstract Ant**. More on **Silencers**; making hand beaten **Cowlings**; **Hints and tips** to aid your modelling; an unusual scale subject plus . . . full size plans for Den Rattle's .8 c.c. powered R/C version of Warneford's famous Zeppelin bursting **Morane Parasol**—continuing our alternate month large plan insert feature, out on January 20th.



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6. Oil Temperature Gauge
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There are two seats, one behind the other. You are in the front one. Your instructor, with his duplicate control column and rudder-bar, is linked to you by 'intercom'.

Pilot's-eye-view of the Chipmunk

—initial flying trainer of the Royal Air Force

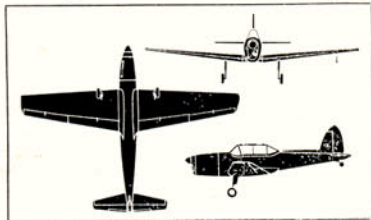


This is the first aircraft you fly. It is in this small, friendly, fixed-undercarriage, piston-engined monoplane that you first get the feel of an aircraft under your control. And it is in the Chipmunk that you experience one of the most thrilling moments in your entire flying career when, after 10-15 hours 'dual' flying, with your instructor, you take off on your first solo flight. Then the wonderful rea-



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likely to be accepted. Even if you are younger than 16, don't hesitate to send in the coupon for your free copy of *Aircrew*, giving all the facts.



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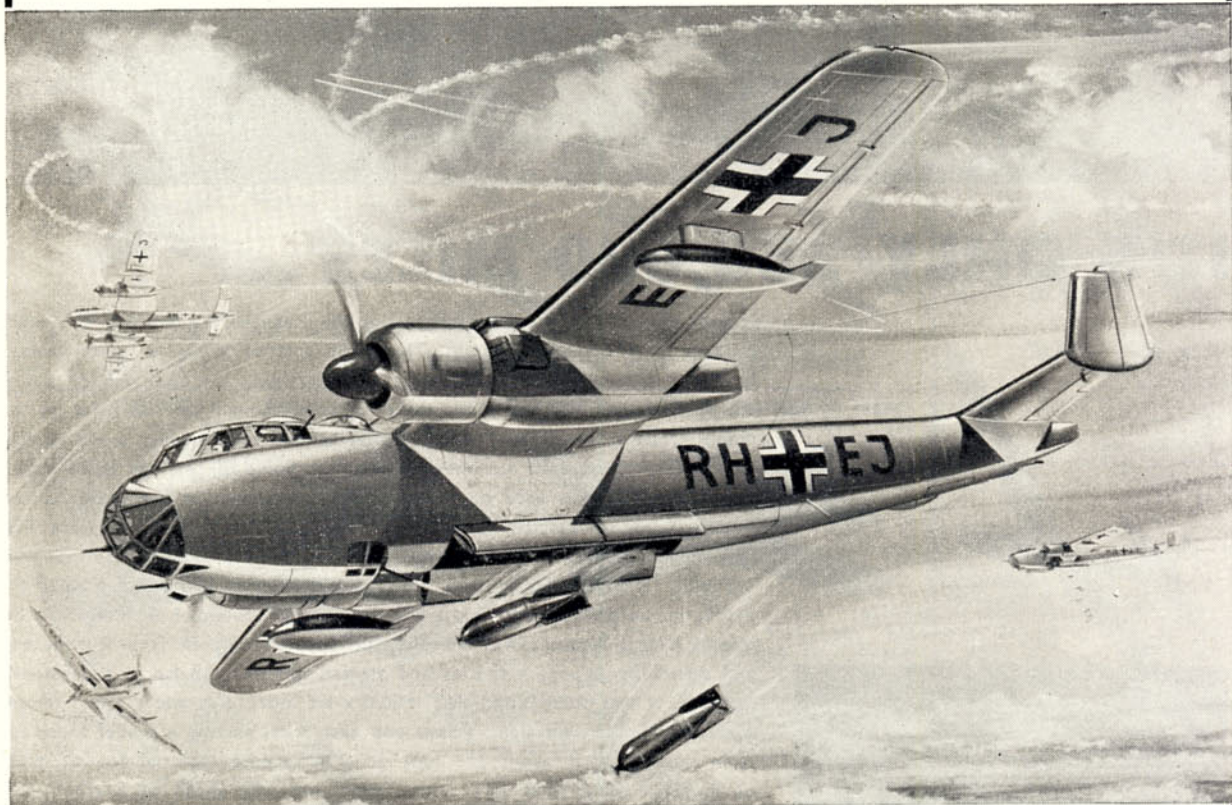
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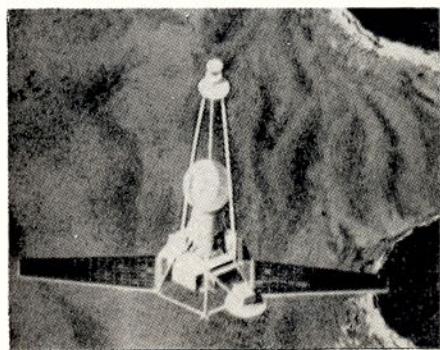
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give or take a few hundred miles—and the Russians are keeping the exact distance to the moon a secret. That's the sort of 'flying' distance that is becoming commonplace in this space age, heralding the approach of a new era of discovery. We know one thing for sure, though—there's Balsa on the moon! Quite a few of the 'packages' that have already made a moon landing have incorporated Balsa for shock protection. Some of the odd Balsa shapes the Americans have used on moon probes are shown in the photo above; first class Balsa, specially selected for the job! The Americans were first to use Balsa for model aircraft, too, and what a revolutionary step that was.

Funnily enough, digging back through old records it turns out that the first large scale demand for Balsa was due to submarines, of all things. During World War I America was cut off from supplies of cork from Europe and Africa by U-boat activities and started importing Balsa as a substitute material. It was soon found that it had a lot more uses and rapidly became a material in its own right. (Have you ever tried making a model aeroplane from cork?). It is about the best general purpose material for all types of model making (including submarines), and way ahead of anything else for flying models. All you need is to be sure to use the best quality Balsa. The first volume shipments of Balsa into America over fifty years ago were pretty crude, and even now some of the balsa you see around is not all that it should be. Balsa needs care in selecting, kilning, grading and cutting. Balsa, in fact, needs the Solarbo stamp on it for you to be sure that it is the best you can buy. We sell mainly to aeromodellers all over the world—but moon probe constructors are not excluded!



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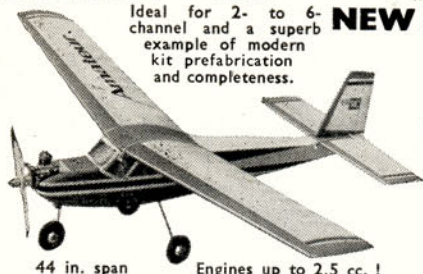
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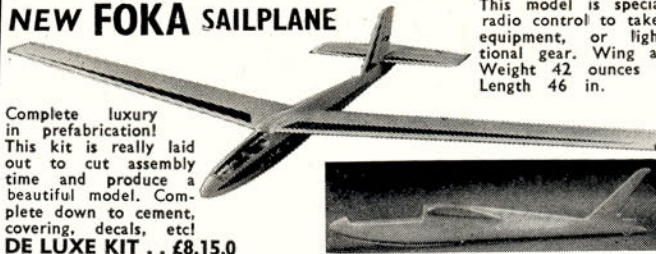
Ideal for 2- to 6-channel and a superb example of modern kit prefabrication and completeness. **NEW!**



44 in. span Engines up to 2.5 cc.!

NEW FOKA SAILPLANE

Complete luxury in prefabrication! This kit is really laid out to cut assembly time and produce a beautiful model. Complete down to cement, covering, decals, etc! **DE LUXE KIT . . . £8.15.0**

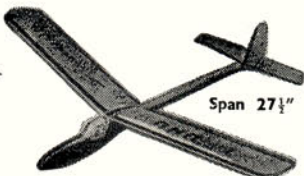


This model is specially designed for radio control to take 2- to 6-channel equipment, or lightweight proportional gear. Wing area 710 sq. in. Weight 42 ounces (without radio). Length 46 in.

Kit includes a COMPLETELY FINISHED MOULDED PLASTIC FUSELAGE incorporating integral wing roots, fin and skid, as shown.

NEW UHU . . . 21/6

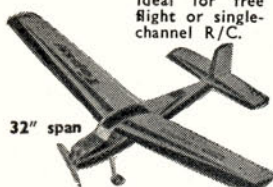
Just the job for the junior 'ace' — really easy to build, yet makes a model with a performance up to genuine top contest standard. A thoroughbred German sailplane design.



Span 27½"

TOPSY . . . 39/6

Ideal for free flight or single-channel R/C.

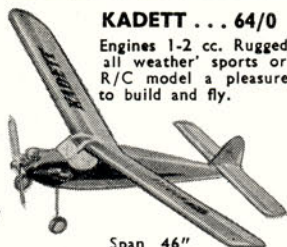


32" span

Smart high wing cabin model with straight-tapered wings. Takes engines up to 1 cc. and performs well on rudder-only R/C.

KADETT . . . 64/0

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



Span 46"

for SINGLE-CHANNEL R/C

CONSUL . . . 117/6

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

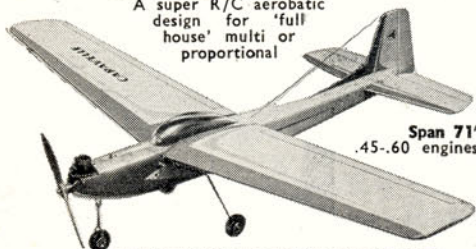


for SINGLE or 2-CHANNEL

THREE SUPER MODELS FOR SPORTS FLYING!

CARAVELLE . . . 230/0

A super R/C aerobatic design for 'full house' multi or proportional

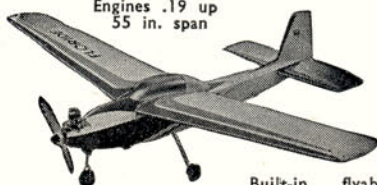


Span 71"
.45-.60 engines

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Engines .19 up
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PIAGGIO . . . 132/6

Engines up to 2.5 cc. Fully prefab. kit includes wheels, canopy, shaped wire parts, etc. A concours winner.



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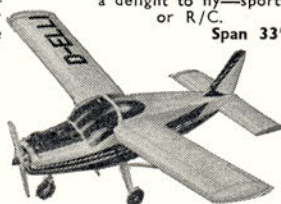
KAPITAN . . . 67/6

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



BOLKOW JUNIOR 79/6

Authentic in detail and a delight to fly—sports or R/C.



Span 33"

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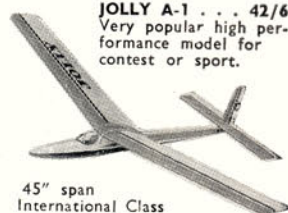
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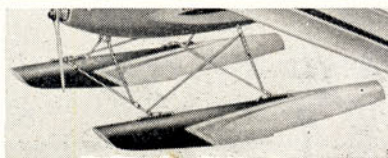
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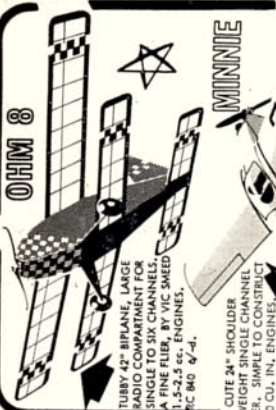
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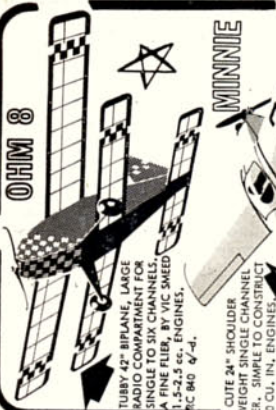
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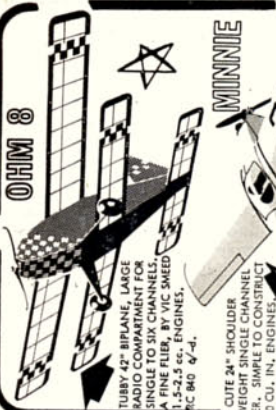
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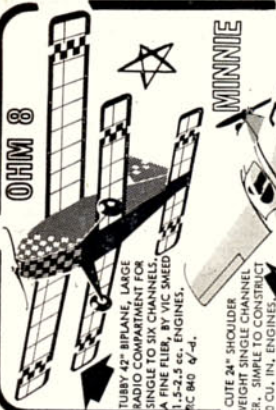
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72" SOARER FOR SINGLE CHANNEL, TWO PIECE WINGS, LAY BOTH WINGS OUT FOR FUSELAGE. BY G. UFFON. G/RC 698 6/64.

SMOKE TRAIL



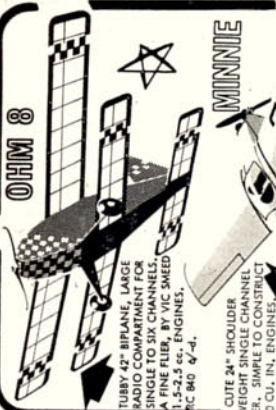
CABIN RUDDER ONLY SPORTSTER, 32", DETACHABLE WING AND TAIL .5-8 cc. ENGINES, HAS 3/1 DETAILS, BY C.A. FOSS. PET 864 3/64.

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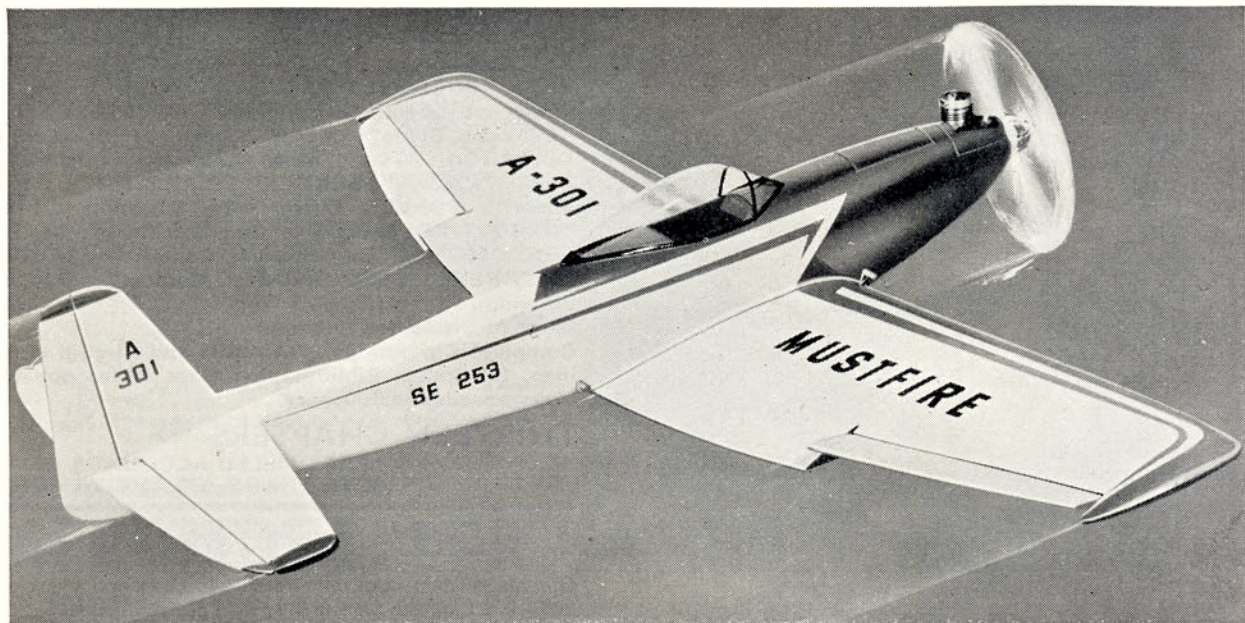
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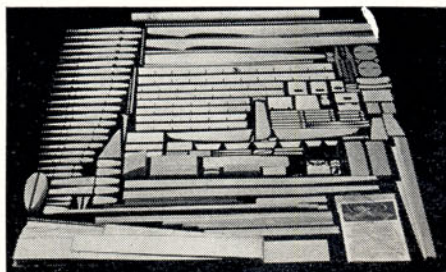


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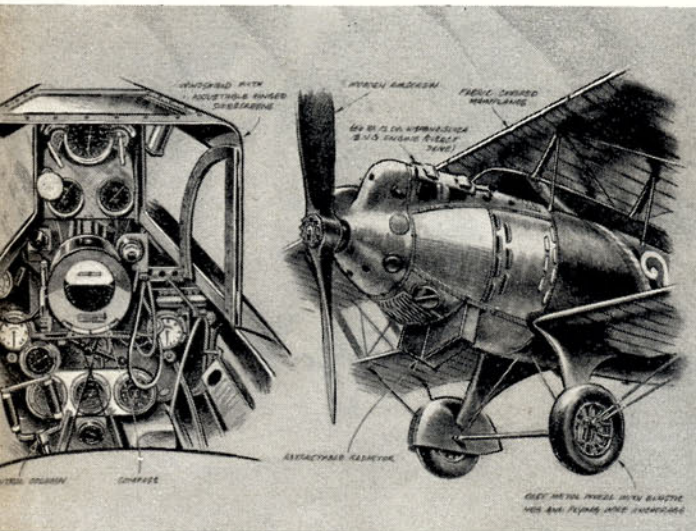
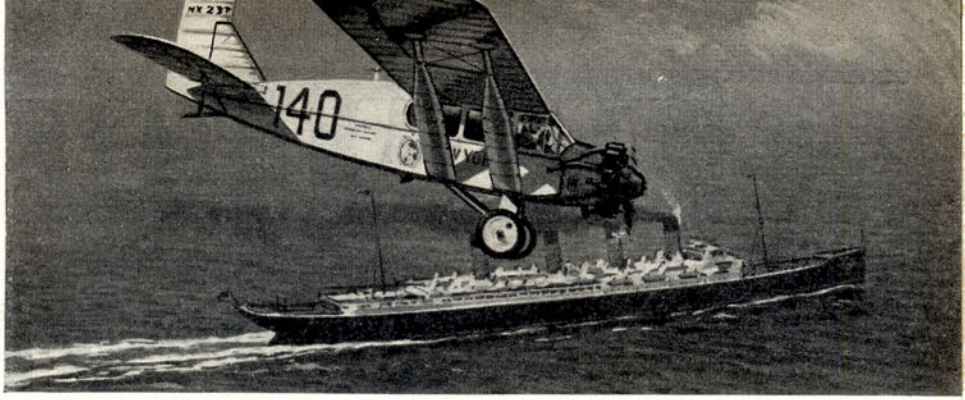
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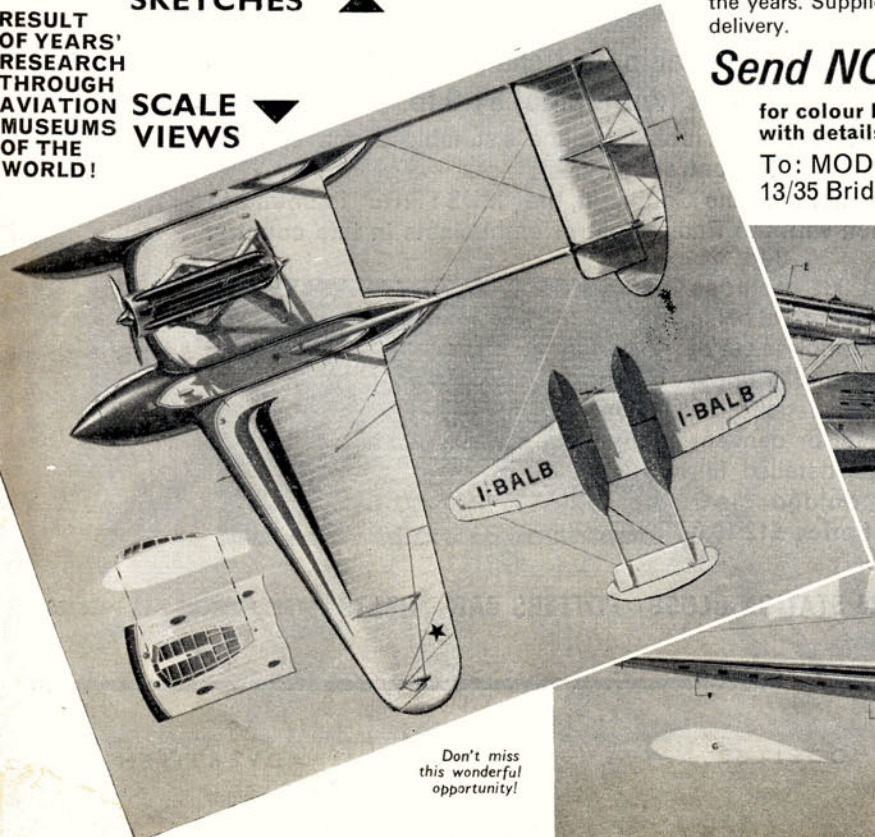
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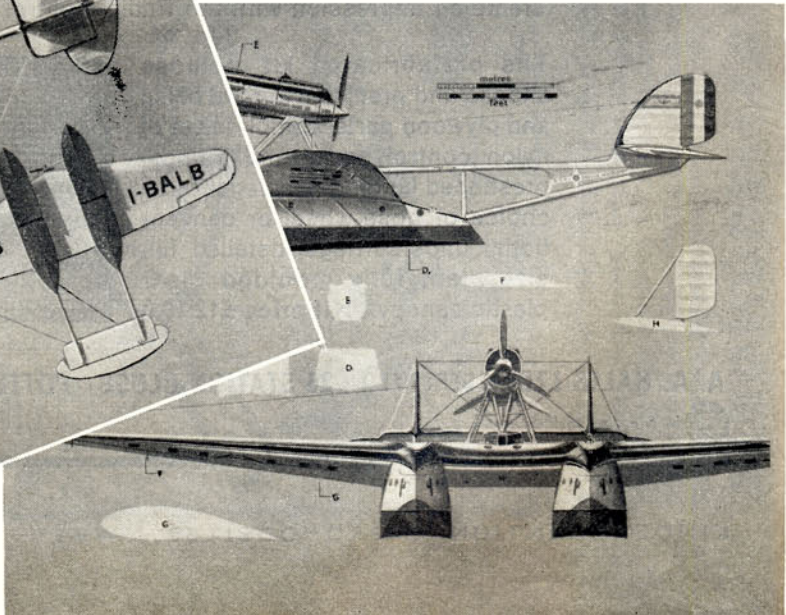
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Aero Modeller

Heard at the HANGAR DOORS



EVERY WORKING MAN needs a hobby, and with Chris it's model aeroplanes,—thus phrases the caption writer for mass-circulation magazine *SHE* in its December edition. The photo in question illustrates one Chris Andrews with a neatly constructed Enterprise Tony stunt control line model, and other models in the background. Chris, a 23-year-old from Romford, Essex, is better known among the "Pop" addicts as one of the most talented song writers of the day, with "Yesterday Man", "I'd be far better off without you", "Girl don't come", "I'll stop at nothing" among them. As writer for Sandie Shaw and Adam Faith, also a singer in his own right as well as a pianist/guitarist who has played with the Beatles, Chris has a young family of three and runs a Maserati for transport. Such a busy man does indeed need a hobby for occasional relaxation and we're pleased you've chosen our hobby Chris and given it such excellent publicity. With talent like that we know exactly who to ask for a name for our next model!

ORGANISED AEROMODELLING in France now comes under the jurisdiction of the Federation Nationale Aeronautique (FNA) and with the dynamic leadership of Jean Ganier, is progressing rapidly. The World Championships for Radio Control in Corsica should offer full evidence of FNA capability. We recently obtained a full listing of French model clubs attached to the Federation Française d'Aeromodelisme which is part of the FNA, and to our pleasant surprise the total is about 240. Most are associated with full-size flying clubs though specialist model groups (there are seven of them in Paris) also appear. The French system of Government subsidy for pilot training through the flying clubs rubs off some of its advantage for the aeromodellers by allowing them use of the airfields when traffic permits. Through

membership of the Flying Club, the aeromodellers can learn to fly at low cost. Many leading French aeromodellers are qualified pilots, power and glider.

THEFT BY RADIO reported last month when two men were each fined £35 for stealing an airbourne R/C model by taking over control with a "pirate" Transmitter brings forth immediate disassociation claim from Swindon MAC in Wiltshire. We should emphasise that the act of piracy took place at Swindon in *Staffordshire* and was nothing whatsoever to do with the well organised and prestige conscious Wiltshire Club.

SIXTH YEAR of scale Schneider Trophy racing models seems hardly credible. It's almost like yesterday when we were making early announcements of this competition held in Varese, Northern Italy. Interests increase annually. Twenty-one entries were assembled in '66 and in the first stage of judging for scale and workmanship, Nedo Nudi of Brescia achieved near perfection with his replica of the Supermarine S6b. (Nudi makes a habit of arriving with the best made and most accurate model—his Curtiss R3C2 was top last year.) In the flight tests, based on actual speeds Magrotti achieved 88 m.p.h. with a Macchi M.52 which isn't exactly hanging around for a scale float plane which has to land and take off water realistically! This gave Magrotti enough advantage to win the '66 event. Nine trophies were awarded and International participation is invited. Aspirants might consider the APS Plan CL 788 for the Macchi-Castoldi MC-72 (25½ in. span for 2.5 cc.), price 8s. including post from our Hemel Hempstead offices.

"YET ANOTHER Public Model Flying ground has just been closed to aeromodellers in the vicinity of London, owing to a child being hit on the head and injured by an

Not Rogues Gallery! This is the Models Commission of the F.A.I. (Federation Aeronautique Internationale) at their last session in Paris in November. Many notable personalities from around the world of Aeromodeling can be recognised. In shirt sleeves is the retiring President Dr. Walter Good (USA), on his left is the F.A.I. Director General, Charles Hennecart.

unprotected model. But very few now remain and unless vigorous action is taken at once there will soon be none at all" . . . Serious warning like this could almost be current but in fact it is almost historical for it was printed 54 years ago in the April 20th, 1912 issue of "Flight". Cause for concern at that time was the pointed end of the popular A-frame twin pusher and the *protector* was a loop of piano wire bound to the extreme front of the longerons. Protectors became obligatory in many clubs and the wire loop appeared on all models of the 1-1-P² type for many years afterwards, leading to the elaborate front skids and undercarriage legs subsequently fitted to the P-1-1 types (propeller-surface-surface, or, in other words, "conventional" layout of today). Other quotes from the 54-year-old report by V. E. Johnson M.A. on Model Flying could also be topical. "The indiscriminate club flying off a number of models at the same time should be suppressed. You can keep your eye on *one* model and keep the model out of your eye, but you cannot most certainly do so when half-a-dozen are going all over the place at the same time". Coo,—if only Mr. Johnson could have foreseen our contest fly-offs, or the full use of our 6 Superhet R/C channels! The same feature reported the second series of officially recorded trials for distance and duration held under the auspices of the Kite and Model Aircraft Association at Parkside, Sudbury, April 10th, 1912. C. R. Fairey's (the subsequent aircraft manufacturer) existing record of 60 seconds was raised to 64

seconds by K. R. Weston of Paddington. G. Rowlands raised the distance record to 398 yards.

POSTAL EVENT that exceeded expectations was that organised by LMK Prostějov, Czechoslovakia, for the A/1 and A/2 international glider classes as first announced in these columns in September 66.

Twenty-three teams from ten different Nations took part in A/2, eleven teams from six Nations in A/1, and a Swiss entrant, Jules Romann, summed it up well when he said "Our results were not so good as we wished; but the pleasure derived from taking part in the competition was most important". All participants received a diploma and Prostějov Town emblem, winners had plaques. The club extends an invitation to others to assume the task of organisation in 1967 and looks forward to meeting many of the postal contestants in person at the World Championships. Brief results indicate the world-wide range of interest. In the A/2 class, 1. Paul Lagan, Christchurch, N.Z. (1,188 secs.), 2. Alan Riches, Vancouver, Canada (1,140), 3. S. Bowles, Norwich, G.B. (1,035), 4. John Cowlin, W. Province, S. Africa (1,000). It is interesting to note that the '67 Canadian A/2 team was in the top ten and took first team place. In the A/1 class, Nat Antonioli and Larry Simpson both of San Diego, U.S.A. were 1st and 2nd with 777 and 455 to help their team win best club place. 3rd was Jaroslav Penicka of the host club Prostějov with 450 secs., and 4th Jack Brown of Santa Clara, U.S.A. (434).

C.H. POSTAL entry forms are now available from our offices for the Coupe d'Hiver event in February—no entry fee required. This annual Aeromodeller organised contest will be flown on Feb 20th or 27th (to suit local conditions) and coincides with the contest held near Paris by *Le Modele Reduit d'Avion* in which a British team will be participating.

INDEX to 1965 Aeromodeller Volume XXXI will be available from January 1st, price 1s. 4d. or 20 cents. This is detailed and cross-referenced to cover any possible clue of memory so that the reader can quickly locate those informative features we were able to provide last year. All subscribers will receive their copies free of charge with the next (February 1967) edition of the magazine.

SMAE A.G.M. was the shortest on record—all business conducted in 45 minutes with hardly a quibble and certainly no Competition Secretary for the coming season. That little problem has yet to be resolved but so far, planning of the events proceeds hopefully. Newly elected officers are: *Chairman* H. J. Nicholls, *Vice Chairman* R. G. Moulton, *Secretary* J. R. Inkester and *P.R.O.* M. Dilly while *Treasurer* S. Lawton and *Technical Secretary* P. Newell continue in office. Only change in fees is the effective removal of the club's 10 per cent discount for bulk re-affiliations so that Seniors pay £2, Intermediates (16-21) £1 and Associates, Juniors and Ladies 12s. 6d. About 40 attended the A.G.M. at the Great Northern Hotel, London, which was followed by the annual dinner and prizegiving (see page 28).

AWARDS for service announced at the SMAE meeting included the fine and well deserved honour of the FAI Bronze Medal for Henry J. Nicholls in recognition of his work in the international field; the Arthur Mullet Memorial Trophy for outstanding work beyond the normal call of duty is awarded to Mrs. Freda Shirt for her efforts at the World Championships and in the SMAE office, and a Fellowship of the Society to R. G. Moulton for his contributions over the years.

F.A.I. MODELS commission reunion in Paris, Nov. 24th, introduced a few new rules which though not yet in all National Club rule books, will be adopted immediately by all Nations. In *Radio Control* the ambiguities of manoeuvre descriptions are clarified and the "Double Stall Turn" is explained to appear to the pilot as a letter "M". Time is increased to 10 minutes with 3 extra minutes for starting. In *Scale* the C/L models can have a wing loading up to 49½ oz./sq. ft. and if multi-engined can have a total capacity of 20 cc. and total weight up to 15.45 lbs. R/C models remain limited to 10 cc. and 11 lbs. regardless of the number of engines, but loading can go up to 32.76 oz./sq. ft. and the pilot can now nominate new optional manoeuvres. In *Team Racing* the major change is for tanks to reduce from 10 cc. to 7 cc. and to carry a pilot's head 2 cm. high, which must be clearly visible. T/R mechanics cannot recover any racer while the engine is running or prior to a touchdown when the engine is stopped. The overhead manoeuvres in C/L Aero-



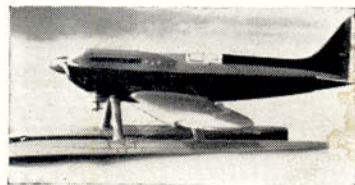
Bill Gough, Chicago, Ill., with self designed canard all-sheet balsa pusher. Wakefield, who said there was nothing new to design?

batics now go to the apex of the circle. Details of all International event rules will most probably appear in our March supplement on the Club movement.

WORLD CHAMPIONSHIPS 1967 are now firmly programmed and next month we hope to be able to give details of other 1967 International contests as well as domestic events. The *Radio Control Championships* take place on Campo dell'Oro airfield, Ajaccio, Corsica, August 23-25th. Air transport will be provided for entrants and official supporters from Nice on 21st, returning 26th August. *Free Flight Championships* are at Sazena, 25 miles NW of Prague Czechoslovakia, August 16th, 17th 18th. Accommodation will be arranged on the outskirts of Prague and camping will be permitted on the airfield.

ERRATA DEPT. last month (apart from calling the Westland Whirlwind the *Western Whirlwind* and referring to Messrs. Putnam as *Putman*) was clearly the first page of the Ripmax advertisement spread. Eagle eyed readers anxious to spot pre-Xmas bargains will be disillusioned to discover that the kit for the Tauri is £11 19s. 6d. not £9 12s. 6d., the Taurus is £17 19s. 6d. not £12 19s. 6d. the Junior Skylark is 65s. not 54s. 6d. and the Skylark 42 in. 76s. 6d. not 65s. On the other hand they'll be relieved to know that the 25 in. Lil Pinto was mis-printed at 143s. 6d.—you can safely take £5 off!

At Italian Schneider Trophy scale contest Nedo Nudi's Supermarine 56b was judged to be best finished.



SCALE COMMENTARY

by J. D. McHARD

Editor Meccano Magazine

SCALE modellers rejoice! For this, perhaps the most exacting branch of the aeromodelling hobby is now, at last, on an equal footing with the rest in international status. The emancipation came about last November, when the FAI finally accepted the recommendations of the CIAM scale sub-committee, and removed the word 'provisional' from the C/L and R/C international scale rules.

For five years scale sub-committees around the world have been working to this end and although, even now, no one would claim that the rules are perfect, they are, I believe, acceptable to the majority of contest minded scale modellers and they have been tried and tested, notably at the International scale contest held at Swinderby during the 1966 World Control Line Championships.

Now, although it is generally accepted that the present rules do pick the right winner there are, nevertheless, some aspects of them that are worthy of further discussion—but more on this point later. First, many people ask me—'Why do scale rules take so long to formulate?' The answer is almost as complex as the rules themselves, but just consider these requirements. Ideally, the perfect set of scale rules should give any type of scale model an equal chance of winning, easy to say, but extremely difficult to achieve. Imagine flying an *Auster* against a *Spitfire*, a *Lancaster* and a *Bristol Freighter* in the same contest! What common basis of comparison can one establish? It's rather like flying a contest between a stunter, a speed model, a combat job and a Pay

Loader, and at the same time trying to give them all an equal chance to win!

Also, one must balance the points awarded for scale fidelity and workmanship against those given for flying performance. What should be the correct relationship between these two sections? It is just as important that good rules should eliminate the magnificent scale model that can hardly stagger into the air as it is to oust the magnificent flying model that only sketchily resembles its full size counterpart.

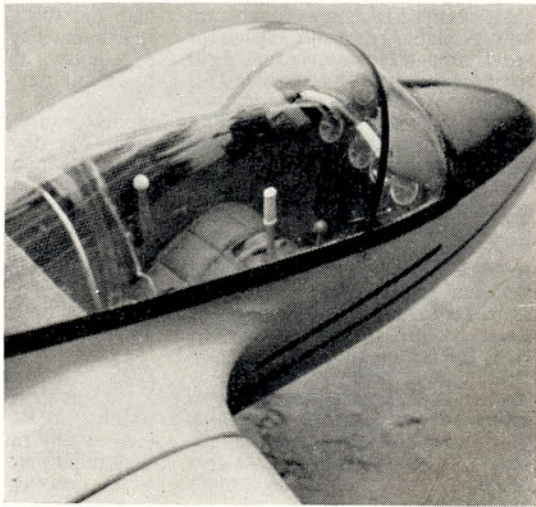
All these conflicting requirements must be considered, and when several countries are involved in the rule formulation process, it is not surprising that it has taken five years to achieve an acceptable set of rules.

Of course, during that time, development of model techniques has not stood still, on the contrary, the last half decade has seen some of the greatest developments in the history of aeromodelling. It is therefore not too surprising that some aspects of the present rules are even now in need of revision, but to await the perfect rules before introducing them officially would mean that there would never be a set of rules; for model development is invariably at least one step ahead of the rule book.

One important revision proposed by the SMAE, and now incorporated in the FAI rules, is the increase in maximum wing loading now permitted for R/C and C/L. Control Line scale models may now be built up to 150 grams per square decimeter (49 oz./sq. ft.) and radio control models are permitted to fly with 100 grams per square decimeter (32.76 oz./sq. ft.) loading. Such figures are now considered perfectly safe and there's no doubt that this loading increase will allow a vastly greater choice of prototype. This I believe, is one of the fundamental requirements of a scale model contest—variety of prototype must be encouraged by all possible means. Any rules which restrict such freedom of choice are bad rules. This brings me to another important point.

In addition to a basic set flying programme which all entrants must attempt, there is an important section which lists a number of 'flight options'. From

Polish modellers are particularly adept at scale work. Bronislaw Malczyk (left) with 75½ in. span "Pliczka M-3" and cockpit of Ed. Ciapala's "Jaskolka SZD-8bis" (below) are typical. Latter model is 126 in. span, and won Polish Nats in September, the M-3 was 4th.



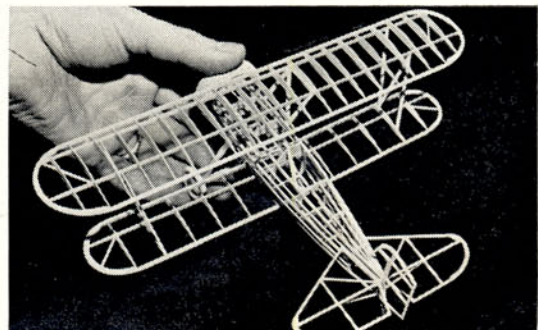
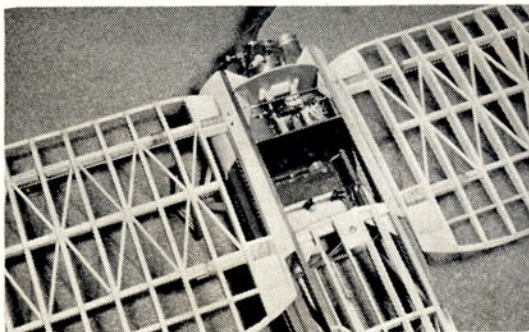
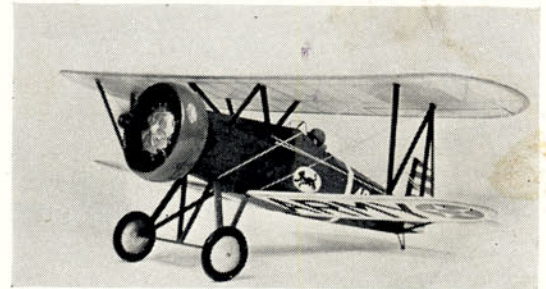
Right: North American Aviation "Flightmasters" have rules for simple scale that can be flown indoors, how about this for a one-club effort? Below the array is Australian Jim Marshall and his Fokker Dr. 1 Triplane from the late P. E. Norman's design (APS plan FSP 453 for 2.5 cc.—6/-) with full pen-
duium control for free flight.

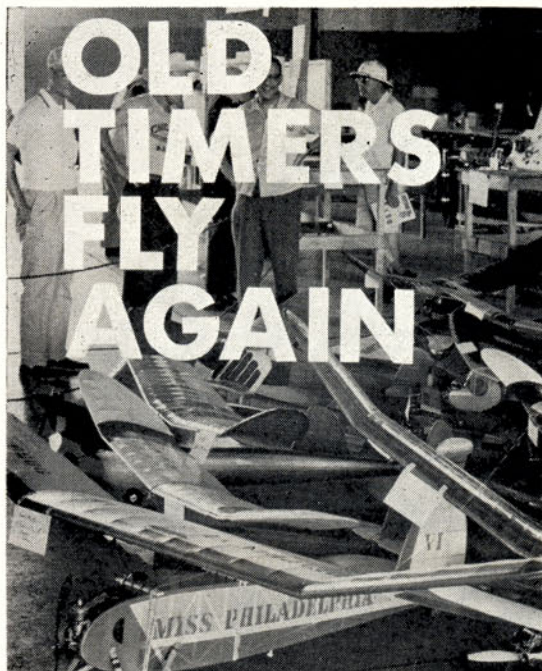
this list an entrant is allowed to select the five 'options' most suitable for his model to perform and there are given 'K factors' in proportion to their difficulty of execution. This, it was argued when the rules were formulated, would allow every type of model to demonstrate functions associated with its full size counterpart, and thus encourage enterprise and diversification. Stunt manoeuvres for fighters—retractable undercarriages, multi engines—are all 'options'. The trouble is that a close study of the rules will reveal that only a few types of machine are theoretically capable of scoring absolute maximum points, and some can score so few points in the important 'options' section that it's hardly worth considering them as entries.

The SMAE scale sub-committee now has the following suggestions under discussion. That all the 'option' points be downgraded and given a common K factor of 1. Thus, functions peculiar to a particular prototype can still be demonstrated for points, but the total number of points to be scored in this section will now be a more realistic proportion of the whole. This will also enable a further broadening of the rules to be considered, since it would allow the introduction of any special functions that the prototype performed to be specified by the entrant even though the options may not be included in the present rules. The present objection to this broadening of the options rule is that local judges would have to decide on what K factor a particular manoeuvre justified—an unacceptable variable in international competition.

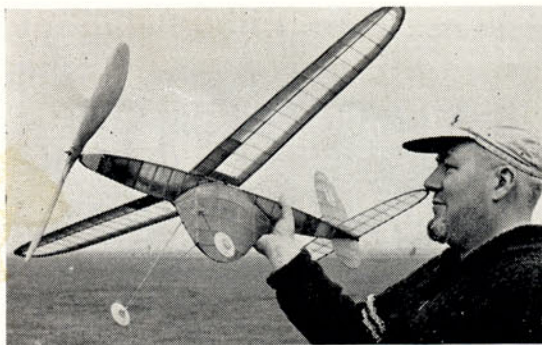
It has been suggested that the adoption of such a downgrading would discourage the more complex and impressive models, but I do not necessarily agree with this viewpoint. My experience has been that a real scale modeller finds his challenge in the model itself, not in the competition. I believe the show-stoppers will still appear at the Nats. but the difference will be that more potential entrants will feel that the rules are for 'em rather than agin 'em!

Below is a revelation of the structure within Den. Thumpston's now famous multi-channel Bristol Monoplane. Note how all control mechanism has to be crowded into cockpit area and thin section of wing for aerobatic strains! To right, and bottom right are views of a Boeing P.12.C made from the new series of American "Cleveland" plans which are half the size of their original $\frac{1}{2}$ " scale! This makes the Boeing a mere 9 in. span—no wonder they are called "Mini-masterplans"! Columnist Doug McHard made this beauty and has flown it in Hangars at British Nats and R.A.F. meetings.





They say that old soldiers never die—nor do the 'character' models of yesteryear now being revived around the world



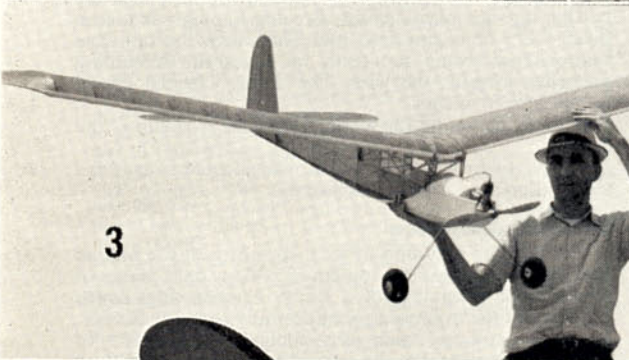
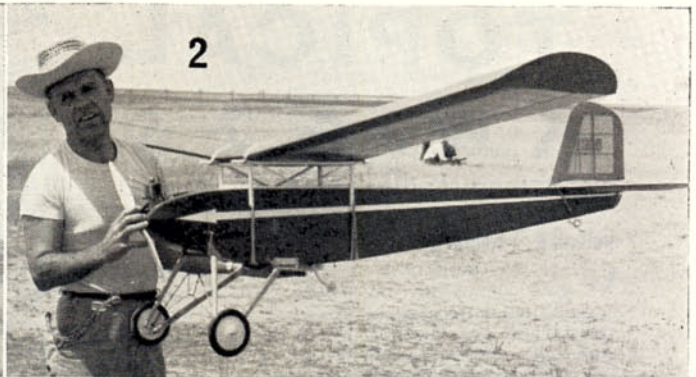
Opposite, at the 1966 Denver Old Timers contest, photographed by Doc Nichol. 1. Local man Bob Blair with a Cleveland "Playboy" Senior version using O&R 60 with coil ignition. 2. Jim Adams from Los Angeles flew a KG-3 with Forster 99 into 2nd place in the antique event. 3. Wendell Browning and 1935 Dallaire Sportster no less than 108 in. span for a Brown Jr., finished at the contest and test flown perfectly! 4. Gull Wing "Spook" by Chuck Went has modern Cox Medallion engine. 5. Sal Ta'bi himself with his huge "Hornet" all the way from L.A. Angeles. 6. Elegant Berkely Custom "Cavalier" cracked-up, had Anderson Spitfire power. 7. Wally Leiper flew a Syncro Ace powered "Marsden" which was Pacific Coast Champ in 1937! 8. Louis Garami's monocoque "Molecule" and his Atom engine design were flown by Rolf Schellenbaum of Albuquerque to third place.

At left. Headquarters for Old Timer enthusiasts at the 1966 U.S. Nats set up by organiser John Pond in a Hangar.



Above, Australian Old Timers, at top is a "3 ft. Gas Model" from American Magazine Plans by Jim Sussions. Centre is Goroon Bradford starting the motor in his Premier "Lion" from the pre-War Premier Model Aircraft Co. Kit and at bottom is Ford Lloyd with a Linman's "Gas Champ", not unlike "KGS" to our tired old eyes.

At Left, in the South Bristol MAC Old Timer contest reported last month, Noel Barker flew a "Jaguar" Wakefield and D. Bailey (Swindon) a "Hi-Ball" with equally vintage Frog 100. A list of vintage plans, withdrawn from our standard Plans Handbook listing but printed to order at slight delay is available, known as the "X" list from our editorial offices. A self addressed and 4d. stamped envelope must be supplied for return postage.



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by 'Pylonius': illustrated: by 'Sherry'

Select Hobby

COME to think of it, it's a bit of a problem making your debut in the model flying hobby in this complicated day and age. A few years ago it was all plain sailing; you just checked out of the local model shop with your Elementary Beginners' Kit, and you were launched upon your noble career. Now things are much different. The sophisticated, ultra-precocious beginner of today wouldn't touch a beginners' kit with a ten foot radio aerial; he must be offered something in keeping with his modern, wonder boy image. A real zingy performance is called for, with a rate of climb faster than the mini-skirt fashion.

Trouble is, though, there is so much on offer in these abundant times, from Wakefield to Radio, that the beginner is apt to get a bit bemused. By the time he's flirted with this idea and that idea, he just gets the idea to flirt, and that's another potential modeller gone to the doghouse. Another danger is that, in his innocence, he opts for a branch of the hobby for which he has no aptitude, like a left hander taking up Team Racing. Obviously what is needed is some sort of selective screening, involving a series of psychological and vocational tests.

One useful sort of test would be that of word association. The examiner suggests a word, say 'Rolls'. If the novice answers 'Bread' he scores heavily in the chuck glider region. If, on the other hand, he answers 'Royce' he might well be considered a likely candidate for multi radio.

Then, of course, there is the popular ink blot test, in which the candidate is shown a series of pictures reminiscent of what Batman would look like if he failed to escape from the oncoming Express. If the novice insists that each bat like blob looks like an aeroplane then his obvious forte is Combat. If he asks 'What Blot?' we have the makings of a good Timekeeper.

We could even extend the screening procedure to the candidates' wives, to ensure the family background is suited to the particular choice. If wifey is not prepared to live in dire poverty, and doesn't take too kindly to the idea of two men in bowler hats sitting in the front room, then Multi Radio would not be advisable. Then again, wifey may be sensitive to neighbourly comment such as, "He's a bit queer, though. Plays with toy aeroplanes. Should think there'd be treatment for that sort of thing these days". In this case it might be recommended that the candidate take up golf.

Highway Robbery

I may have got the wrong end of the stick, but it seems the latest form of crime which Batman, the Avengers and other crime busters will have to pull up their socks (and Whams! Phlatts! etc.) about is the high altitude hi-jacking of expensive radio models. When the goodly citizen of Gormless City flies his custom built supercraft in the hoodlum corpse filled city park he is not to suspect that the sinister False Phase is operating a pirate transmitter from the Putting Green. "Holey Ground" exclaims ominously, starchily.



"Call Batman", cries the Police Chief, running towards the cricket pavilion.

Batman, as usual, is tied up. Coils of laystrate wire are cutting into his plastic chest. Freeing his big bat toe he flicks the 5 cc engine into life. Then with the tailplane between his strong bat teeth he edges the screaming propeller towards the wire. The diving Combat model misses him by inches.

Batman arrives on the scene, "Bring me a Monitor," he cries.

Which is why Spotty Edwards wasn't there to take the school dinner names on Monday.

Official Absence

The burning ambition of most members of the human species is to organise something. You only have to whisper the possibility of a Bingo Festival or a coach outing, and the organising geniuses rally round in hordes. In some activities, such as Athletics, the pressure of officials is so great that the competitors have to fight their way on to the track. Much the same goes for the Soap Box Derby, the National Tiddleywinks Championships and the Edinburgh Festival.

Why then is this human characteristic so deficient in the model flying world? We do marvels, of course, with the scanty resources that we have. Most of our rallies are run on the one man band principle (and won on it, too, at times), and the average modeller of today wouldn't know an official if he were to see one. But enjoyable as this anarchy is to the individualistic modeller, there are times when the odd dogsbody comes in useful, if only to send off the annual re-affiliation return or to write a nasty letter to the local council. But as far as Organisation Man is concerned he's content to stick to the delights of Tiddleywinks and Swimming Galas.

On the other hand there appears to be quite a number of non-club secretaries in existence, each extolling the virtues and magnitude of their respective non-clubs. On evidence it would seem that many of the largest and most thriving clubs exist only on paper, kept alive by the nostalgic memories of sentimental secretaries, recalling those far off eighty membership days of family flying on the local common.

Future Mould

Not true, surely, that ultimate of ultimates we are all dreading? Not really—just a matter of phrasing. The plastic model maker referred to was average flesh and blood; nothing more sinister than an assembler of plastic kits. Although, come to think of it, as the radio stuff gets bigger, faster and more dangerous, we may soon look forward to the day when all the operating is carried out by remotely controlled homonoids.

Thus from the 1984 Aeromodeller: "Winner of the 'Revell' Competition was female type homonoid, Miss Polly Styrene. Miss Styrene is a model by profession."



Dear Sir,

My friend and I both have AM engines. My friend's is an AM 10 which has been run in and was flown in a control line plane in an upright position on a 7x6 propeller. Now the engine has been sidemounted, still with a 7x6 propeller but it is very difficult to start. Once it starts it runs alright but as soon as one let's the plane go, the engine usually cuts out after one circuit.

My engine is an AM 15 which was running in an upright position with a 9x4 propeller. It has also been side mounted in a control line plane and is also difficult to start. Once going it runs O.K. and as soon as the plane is released the engine slows down (once, it cut out). I also have a universal needle valve in it and it has to be open 7½ turns. Is this right? Could you also tell us what is wrong with the engines or is it the way they are mounted? Thanking you.

Stanmore, Middx.

J. E. Kessel.

P.S. The Record diesel fuel seems to make the run better than the normal 3/3 diesel fuel.

These sort of problems are always difficult to diagnose without seeing the model engine and fuel tank set up in action. It sounds very much like fuel feed trouble and this could be caused by all or any of the following. If you are using the tank supplied with the engine it should be turned through 90 degrees so that the filler hole is still on the top surface and the fuel feed pipe at the bottom of the tank towards the outside of the circle. If using a separate tank, make

sure the feed pipe is also towards the outside of the circle and the tank positioned behind the engine more or less on the engine centre line. You should not need to have the needle valve open 7½ turns, this suggests fuel starvation, possibly being caused by dirt in the feed line.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Dear Sir,

I started aeromodelling eighteen months ago. I got my first model Christmas 1964. I had asked for a North Pacific 'Sleek Streak' but as I could not remember the name at that time I got the Keil Kraft 'Robin', which with the help of my father I built and flew it by February.

It lasted till September when it finally crashed into a tree, which when I eventually got it I found it was beyond repair.

That same September I bought my first copy of the Aeromodeller. Wishing to continue aeromodelling I bought the Keil Kraft "Soarer Baby" which as you probably know is a 36in. span glider. I found this model very easy to build and it's a sound flier.

That Christmas I got the Mercury "Sirocco" which is a 32in. wingspan rubber duration model, and on one occasion flew almost 250 yards.

Wishing to get a rather more harder plane I got the Keil Kraft "Pixie" which is scale like and harder to build, though I did not have any difficulties.

When I bought the March edition of Aeromodeller I found there were free

plans of a little pusher model and after studying the plans I decided to build the "Goldwinga".

For my birthday this year I got the Contest Kits "Empress" which is a 78in. glider. This is much more difficult to build than any of the others but I am getting on very well with it.

J. Major.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Dear Sir,

I am thinking of starting on control line flying. As I have no previous flying or modelling experience, could you please advise me on these matters. I have seen the Bouncer in your A.P.S. handbook. Is it a recommended trainer? Is it all sheet balsa or has it any built up parts? Is it aerobatic? Is it very durable? How much would the balsa cost? Coming to the engine, is it best to start with 1 cc. or 1.5 cc. and then work up? Would the A.M.10 be suitable and if so would it be too powerful? Is it the A.M. range which have the same distance between the bolt holes or is it another range of engine? Finally, is it best to buy an engine first or the model first?

I would be grateful if you could answer all these questions, they would help me immensely to get started.

Romford, Essex.

D. Shrimpton

Bouncer is highly aerobatic as it will loop, fly inverted, bunt, do wingovers and horizontal eights with suitable power. The construction is designed to absorb knocks and it is as crashproof as can be expected from a simple structure. The cost of the lines and engine, depends on the type of lines and engine you intend to use, lightweight Laystrate three strand would be most suitable as they will not kink and break nearly as quickly as single lines. The flying surfaces and fuselage are all sheet construction, with a rigid bolt on undercarriage. You can start with either the 1 or 1.5 cc. engine, but the 1 cc. will be a little slower and cheaper to purchase. The A.M.10 is ideal and this has the same bolt spacing as the A.M.15. You will be able to purchase all the materials, including dope and hardware, such as bolts and wheels for just over one pound, it is best to buy the engine first and get to know the starting methods before building the aircraft.

ANNOUNCEMENT of importance to all Golden Wings is a special privilege offer of 2d. in each whole Shilling rebate on Plan orders accompanied by the coupon clipped from this page. **Be sure to add your membership number to the coupon.** The offer applies to plan purchases only and is limited to one order per month per G.W. member. Orders with rebate coupons attached should be addressed to G.W. Plans, 13/35, Bridge Street, Hemel Hempstead, Herts. The rebate is effective on prices listed in the new edition A.P.S. Plans Handbook No. 1 (i.e 3/4 in the £1 reduction). Note that here is no reduction on postage (6d. for orders under 10/-)

Dear Sir,

I am writing on "behalf" of the plane Sharkface which was in the edition of Aeromodeller July 1965. Having completed the plane I put a Pee Wee engine in it. Next day I took it to Chobham Common hoping that it would fly. After I launched it in the air it went up in a spiral turning round six times then the engine cut out and the plane went into a straight glide for a mile or so and got lost.

But I have just finished making Sharkface the second. The plane was built for free flight and not radio control as shown on the plan.

P. Bromley.

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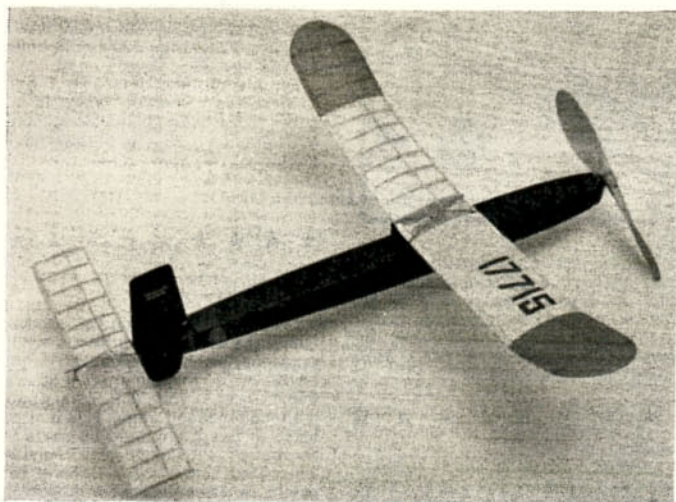
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Take a tip from
the British Champion
and build his
ultra-simple yet
high performance
compact contest
model

By John O'Donnell

DELINQUENT

OPEN CLASS 3ft
RUBBER DESIGN

THE appearance of this design may cause a little surprise amongst those who are acquainted with the *Maxie* (and its derivatives) that John O'Donnell has flown in contests.

Let's start by emphasising that the *Delinquent* is not intended as an out and out contest model. It was designed to try and fill the gap between the small and fairly simple kit rubber models and the usual contest designs. In short, it should be an ideal follow up to, say, the Keil Kraft *Senator*.

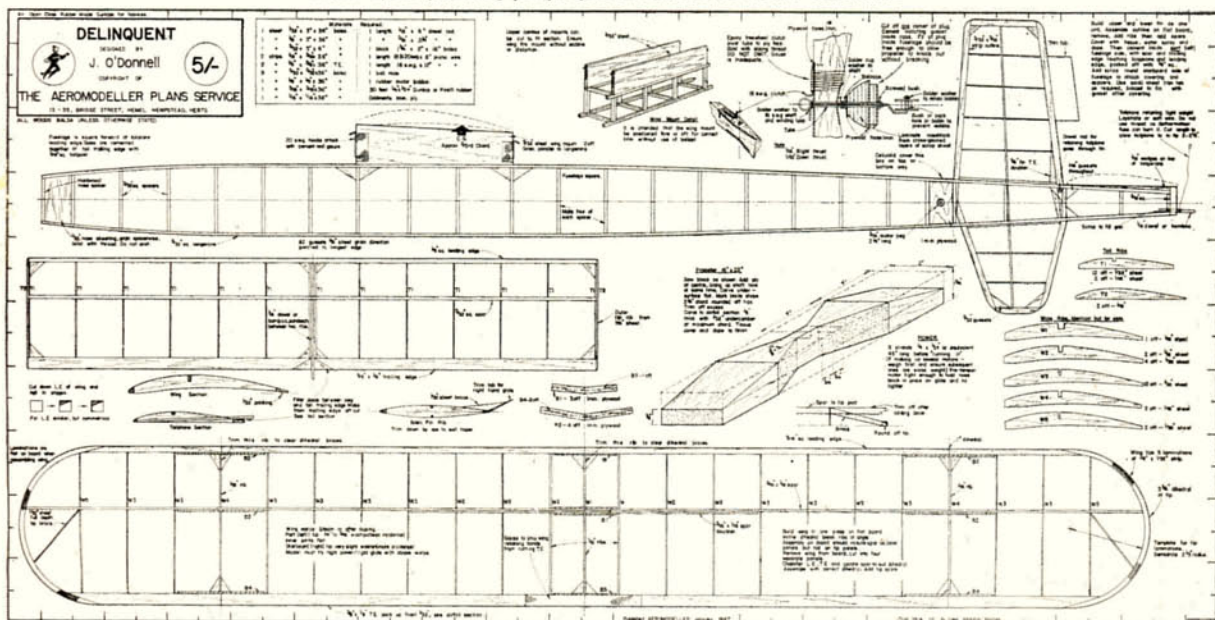
With this as a design concept it was decided to aim at a simple and straightforward layout using a free-wheeling

propeller and with a performance in the three minute plus range. Hence the box fuselage, 'Bilgri' type wing mount, and lack of geodetics.

Much of the credit for the development of this design must go to Eric Speakman (late of Avro M.A.S.), who drew up the original plan and built the prototype. Several others produced in Manchester district have not indicated any need for drastic design changes.

As this is not intended as a modeller's first attempt (although it could be his first rubber model), detailed building instructions of the "Stick Part A to Part B" variety are not provided.

FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE FROM AEROMODELLER PLANS SERVICE
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Instead, attention can be focused onto those aspects that are either overlooked, troublesome or important.

Contrary to most written advice, *buy* strip balsa rather than cut it from sheets. This enables selection to be made on material already in the form in which it will be used. In particular, the ready cut trailing edges for wing and tail can be checked for straightness. The only exceptions to this advice are the fin outline and the wing tip laminations.

It is recommended that pre-coating (double cementing) be employed on all joints. The use of a non-shrinking cement on the flying surfaces is advisable.

The fuselage is straightforward. Medium hard wood should be used for longerons and medium for spacers. Temporary formers are the easiest way to join the sides.

As described on the plan, the fin and underfin are built as a unit, covered, and cemented through the fuselage. Additional spacers and covering supports are then added. The fuselage is covered and doped *before* adding the wing mounts.

The wing is built in *one* piece (in the sequence given on the plan). This avoids difficulties in joining panels of different chords. The tail is straightforward.

The propeller assembly is the most important part of the model and usually the worst constructed. The propeller block should be marked out and sawn out. The hole for the shaft should be drilled and the ply reinforcing pieces cut and *pinned* in position. A short and straight length of the right size wire should be inserted through the shaft hole and checked for alignment. It should be parallel to some faces of the block and perpendicular to others. If it is not, then enlarge the shaft hole and reposition the ply pieces until alignment is correct. Then cement on the ply and recheck. Carving can take an article on its own. The novice should either obtain help from someone more experienced or study the subject. See *All About Model Aircraft* (7/6d. M.A.P.) page 36.

The "Garami" type clutch is recommended as being reliable and self setting. It should be *securely* attached (see plan) to the *lighter* blade before the propeller is covered and doped.

The noseblock is made from laminated layers of ply and sheet balsa. Cut and drill all layers. Cement them together on a length of brass tubing. Align roughly and pin together. Spin the block on a length of wire inserted through the tube and inspect for "wobble". Adjust block whilst cement is still wet and re-spin. Repeat until noseblock is "true". Pin securely and check. This is more accurate and easier than most attempts to drill a complete noseblock.

Bending the shaft should not be difficult. Tackle the winding loop first, and the hook for the bobbin last. Soldering should be done with acid flux (e.g. Bakers Soldering fluid) not resin-cored solder. An "S" hook could be used—but is hard to bend (see p. 405, July 1966 *Aeromodeller*).

The rubber motor is required before the model is finally completed. The rubber should be washed and allowed to dry before lubricating and making up into the correct number of strands. The amount of pre-tensioning turns required can be found by experiment.

The model should be completely covered and doped except for wing mounts. Fit the tensioned motor and

propeller assembly and the tail. Find and mark the positions at which the wingless model balances. Now cement on the wing mounts so their 70 per cent chord position coincides with the marked balance point. This system allows for variations in component weight.

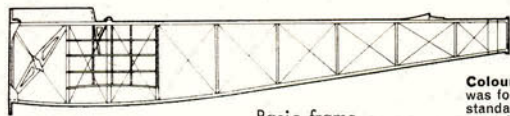
The model should be checked for line-up and rigging. There should be no tail tilt and no warps other than the recommended wing tip washout and washin. Add the prescribed down and side thrust.

Test fly in the usual way—adjust glide angle by tail incidence, glide circle by trim tab, and power pattern by thrust adjustment.

There is nothing critical about the *Delinquent*. It will stand most of the modifications and improvements modellers insist on incorporating. So if you like square wing tips, elliptical fins and the like, you are fairly safe. The power quoted is adequate. Some builders have had the habit of over-powering this design. Whilst it will cope with 12 strands, it really doesn't need that many. The model flies as it is. However, if you wish to keep it, use the dethermaliser, as the "best" flight reported so far is nearly half an hour!



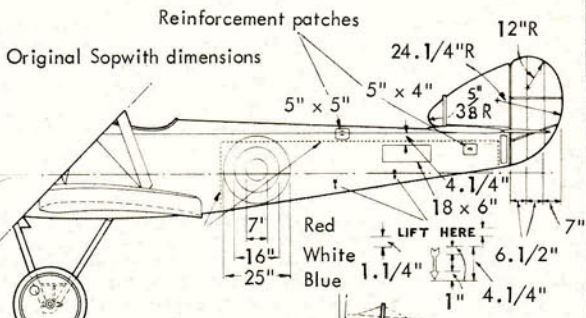
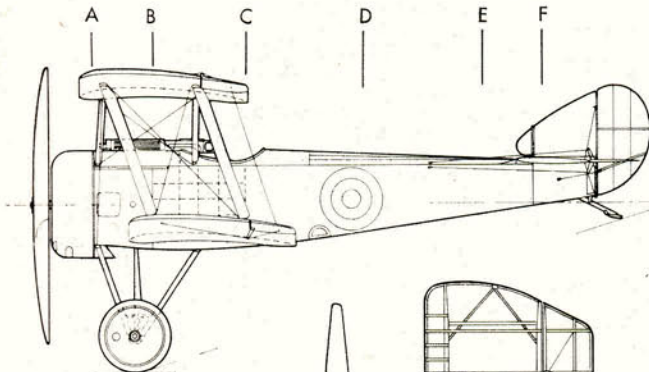
Opposite: Heading photo is of a prototype made by Erik Speakman, note different colour tissue for tip panels. Right: Top is George Swallow with his "Delinquent". Centre: Alan Platten with another, note the twin pylon wing supports and fin to one side of fuselage. Bottom, the nose block assembly of George Swallow's model, showing something of the "S" hook, the locating key on nose and the simple prop shape. *Delinquent* is far from being a "difficult" subject, but when flying it is definitely "wayward".



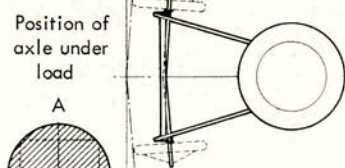
Basic frame

Colour details. The finish of operational Pups was for the top and side surfaces to be doped standard khaki-green with a coat of protective varnish. Under surfaces were left in the natural unbleached linen fabric which, when clear doped and varnished, resulted in a darkish creamy shade. Cowling and side panels were often bright metal but may have been over-

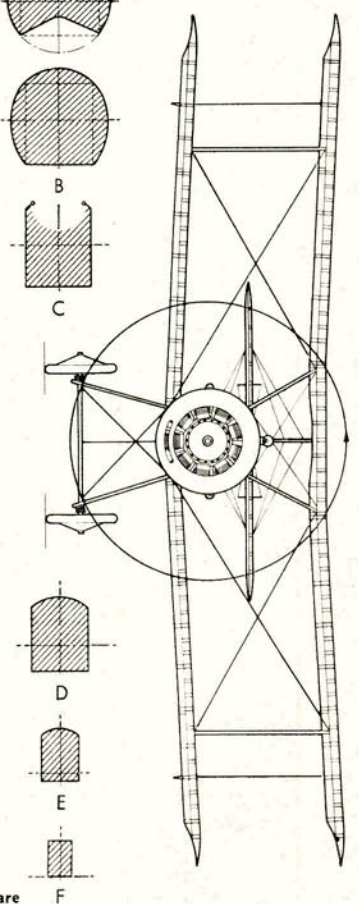
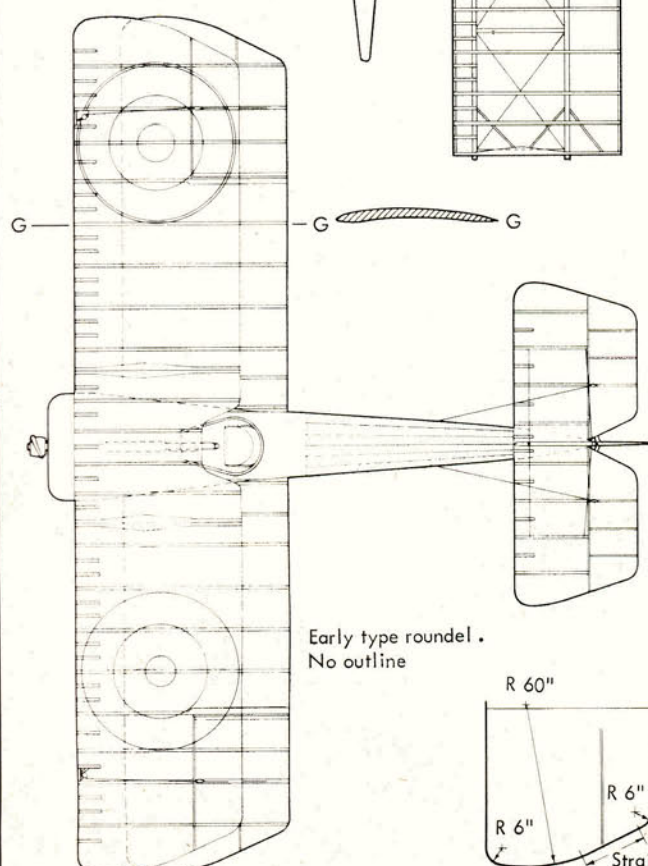
painted dark grey or khaki-green. Centre-section and undercarriage struts were likewise painted; interplane struts were natural varnished wood. Roundels were carried at all four wingtips and on the fuselage sides. Sometimes those on the top and side surfaces were additionally narrowly outlined in white, but not invariably. The shade of khaki-green used on the Admiralty aircraft was darker and greener than that of the Army machines, also the fuselage sides of some Admiralty Pups were left in natural linen finish. For position of wing roundels and location and style of serial numbers, modellers should be guided by photographs, due to the considerable diversity of these. Elevators of Naval machines were painted red, white and blue in equal spanwise divisions (blue foremost), as were the rudders of all aircraft.



Lacing eyelets
1.1/2" pitch. Note starboard side only.



Location of roundel on late aircraft



Drawn by: P.L. Gray
Traced by: A.A.P. Lloyd
SOPWITH PUP (Le Rhône)

Reprints of this feature plus 1/48th scale dye-line prints are available as plan pack AJ 2844 price 2/6d. from AEROMODELLER PLANS SERVICE, 13/35 Bridge Street, Hemel Hempstead, Herts.

Scale ft.

AIRCRAFT DESCRIBED No. 158

by P. L. GRAY

Sopwith Pup

"DAINTY"—is the first adjective to come to mind when describing the Sopwith Pup. Dainty, but with the integrity and character of the thoroughbred which it undoubtedly was; in spite of its absurd (though none-the-less permanent) name. Completed in February 1916 to the designs of Herbert Smith, who was responsible also for the Sopwith 1½ Strutter which preceded it, and to which machine it was so obviously a miniaturisation, it was almost inevitable that it would be called a Pup. Oliver Stewart has recorded that at least two orders were issued by "Officialdom" drawing attention to incorrect nomenclature and stating the machine was to be known as the Sopwith Scout Mark Something-or-other. It was no uncommon marvel that such trivialities should be pursued in the midst of war but everyone continued to refer to the Sopwith Pup by which name, of course, the aeroplane has been exclusively known ever since.

Although fitted with only an 80 h.p. engine the machine met with instant success, its performance was excellent and its handling characteristics delightful. Production orders were placed by the Admiralty and the first production Pups were supplied to the R.N.A.S. Initially some aircraft were fitted with the 80 h.p. Clerget rotary but the majority were fitted with the 80 h.p. Le Rhône. Army orders also followed for the supply of Pups to the R.F.C. squadrons and, due to the demand, sub-contracts for production had to be placed with William Beardmore & Co. The Standard Motor Co. and Whitehead Aircraft Ltd. The parent company and Beardmores built the Admiralty machines while Standards and Whiteheads fulfilled the Army contracts.

Although dainty in appearance the Sopwith Pup was by no means a fragile aeroplane. It was a classic of contemporary design, the keynote of which was simplicity. The wire-braced box girder fuselage was based on four ash longerons with spruce spacers and with a curved top decking of light formers and stringers. A circular aluminium cowling housed the engine and curved panels of the same material were placed behind it on the fuselage sides. The same curve as the cowling was preserved on the fuselage top decking which was ply covered to just aft of the cockpit. Wings were of equal span and chord and based on twin spruce main spars with unusual tip profiles which were fabricated from steel tube, which medium was also used for the construction of the fin, rudder and elevators. The vee type undercarriage chassis was of streamlined steel tube as were the centre-section struts, while spruce was used for the substantial inter-plane struts. Some pups were fitted with a 100 h.p. Gnome Monosoupape engine and could be identified by the cowling which had the lower central segment cut away and additional 'letter box' slot vents cut in the face. Centre-section covering varied quite often—some machines had a narrow slot left uncovered, others had a

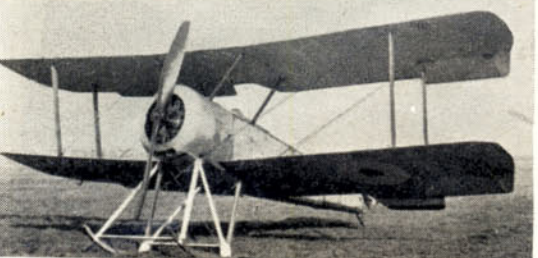
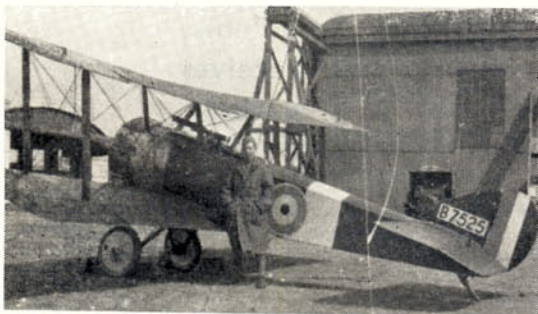
Top: Royal Flying Corps machine built by Whitehead Aircraft Ltd. Next, Middle East Theatre. 3 (Naval) wing at Imbros. Note additionally mounted Lewis gun to fire through centre-section. Elevator stripes peculiar to Naval machine are clear in this photo. Next, Decorative Pup rebuilt by No. 2 (Northern) Aircraft Repair Depot, Catterick. Fuselage thought to be in yellow or orange and black bands. Bottom, Sopwith Pup fitted with skid chassis. Note natural linen finish of fuselage sides of this Naval machine, also elevator stripes may be seen.

(All photos from G. S. Leslie.)

wider area covered with a transparent Cellon material to afford an improved upward view, but the majority were covered completely over with fabric.

The first Pups to see action were those of No. 1 (Naval) Wing located at Dunkerque, which also had Nieuports in its complement. During the period 24th September to 23rd October 1916 this unit was able to claim 8 enemy aircraft shot down. During that autumn it was decided to send a R.N.A.S. squadron to assist the sorely engaged R.F.C. squadrons on the Somme Front. This was formed from a nucleus taken from the Dunkerque Wing Units and established at Vert Galand aerodrome. Designated No. 8 squadron R.N.A.S. it was to become more popularly known as the legendary "Naval Eight". Initially the three flights consisted of a mixed quota of Nieuports,

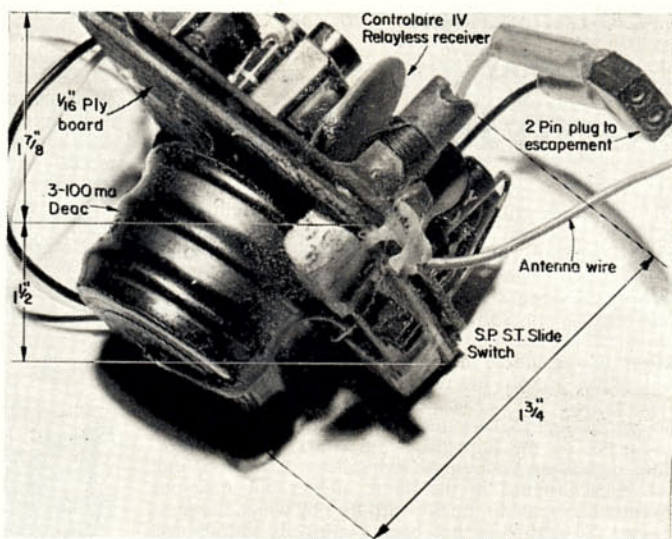
(Continued on page 27)



Strictly Simple

• • • • •
**Stouffer
 Versus
 Boddington**

on unit
 receiver
 packs



TO Box or not to Box? David Boddington described his boxed single channel R/C units in June '66 edition, showing how an interchangeable pack containing batteries, receiver, switch and escapement could be fitted within a balsa framework for compact installation.

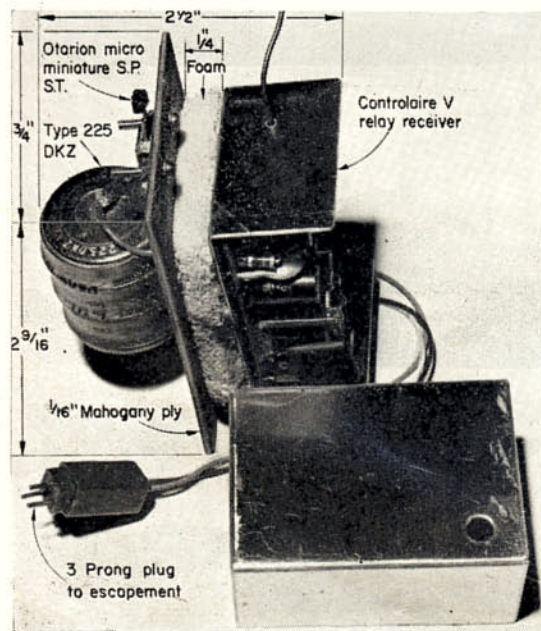
Richard Stouffer, another columnist who advocates the simplest approaches to aeromodelling, takes issue with David's ideas. Here is what he has to say:—

Mr. Boddington has an excellent concept and philosophy with respect to making r/c more reliable and flexible. However, he does not carry the matter to the simplest form which I feel I have accomplished. Secondly, he has restricted the size of the model that must be used to a minimum that is not necessarily the smallest or lightest

model that could be flown. Thirdly, the boxing arrangement permits a possibility of box damage and misalignment in the event of a crash, with subsequent repairs to the box structure as well as the model. Fourthly, there is unnecessary weight in the box and supports themselves. Fifth, the method of attachment of the torque rod to the escapement is open to serious question since vibration could loosen the bolt and nut in flight and leave one with a fly-away situation.

My recommendation is the method worked out for my models in the single channel rudder only category. The ideas are thus:—With modern solid state three volt receivers and related escapements there is no need for foam protection excepting that the base of the receiver be well mounted to additional support. We are not so concerned with relieving engine vibration as we would be with relay types of receivers. Therefore, the receiver and the associated batteries and switches are mounted to one slide of 1/16 in. or 3/32 in. plywood with an epoxy glue. The slide is made just larger than the largest dimension of the equipment so that the unit may be slid between rails fixed to the side of the fuselage or area of installation. The wiring is also epoxied after soldering the connections so that there is little possibility of the wires flexing and breaking under vibration. To get to the switch position use a hole in the fuselage, movable hatch or have the switch protrude through the fuselage for access. I have used all three methods with no problems. The only loose wires are those that go to the escapement. The escapement is also mounted to a slide board for ease of removal to other aircraft. The escapement actuating arm fits into a slotted arm soldered to the torque rod so that no bolts are required to be loosened for removal. In fact, in many of my models I merely tip the model upside down and the units slide out into my hands. The two escapement wires are soldered to miniature plugs, and/or connectors, for ease in assembly or removal in any airframe.

There are some advantages to this system when compared to David Boddington's method. It permits a more flexible installation of equipment with the ability to ad-



Top is a Controlaire IV receiver attached to a ply plate with Deac battery and slide switch beneath plus a loose plug to the escapement. Left, is the cased Controlaire V receiver mounted on foam insulator but otherwise similar in layout.

just the components for ease of installation and placement with respect to the Centre of Gravity. The "Strictly Simple" method places the entire unit under the wing with some difficulty in making any C.G. adjustment. Normally, the final placement of receiver components is made *after* the aircraft is finished and a final C.G. has been determined. The weight of the receiver and equipment is often enough to effect the proper placement of C.G. without adding additional weight to nose or tail. I hate to carry non-working payload. I find that the 100 ma Deac cells provide me with plenty of flying time for a day's flying and they are the smallest practical size that can be fitted to this system. Smaller Deacs could be used if you would be satisfied with fewer flights in a day's activities.

My present system has been working well for several years in single channel flying and even major accidents have resulted in no damage to receivers and actuators in all that time. The units are truly reliable and require not even retuning once set correctly. Should repairs be required to the epoxied units, one will have trouble. It's simpler and easier to make up a new unit. It is possible to remove the receiver from its support slide and scrape and clean epoxy from the back side where soldering a new part in place is required and once tested, re-epoxied in place or a new installation made on new slide board.

A recent installation of a combination valve receiver unit to a battery box with slide, and the connector epoxied to the battery box for the escapement connection is larger than that mentioned, and the slide switch is mounted to the fuselage separately but permanently wired to the system. This unit must go in a larger model so the switch might not be as accessible as in the smaller unit. Otherwise it is identical in concept to the smaller units with the exception of foam backing between the base of the receiver and the battery box to absorb engine vibration.

For larger models, David Boddington's method would be adequate, but for greater flexibility in installation and size of model my preference is the method outlined and seen in the photographs.

David Boddington replies

Such a challenge from one of our most respected correspondents from the U.S.A. (designer of the Simpleton, Simple Simon and the popular Simplex (May '64) cannot go unanswered. David Boddington replies with his views:—

The units described last June were not intended for the smallest possible models, the smaller unit has been used in $\frac{1}{2}$ cc models of about 32 in. span (i.e. *Quest, Sub Mini, Tyro 32*) which is about as small as most modellers want to go. The only damage to boxes has occurred from very severe crashes and the fact that the box then 'gives' a little is considered to be an advantage. With the two pairs of slide rails for each unit there is no risk of misalignment. The weight of the box itself compares favourably with the two plywood slides Dick suggests and the nut and bolt fixing to the torque rod coupling is, of course, an additional safety device and not normally used on the Elmie coupler.

I am not convinced that it is not an advantage to mount the receiver on a resilient base and in any case it is much easier for eventual removal than trying to break a

Right: the Kraft receiver on a foam insulator pad, with a battery box under the plate. Note dimensions in all three photographs, which are by Dick Stouffer and show his units as described in the text.

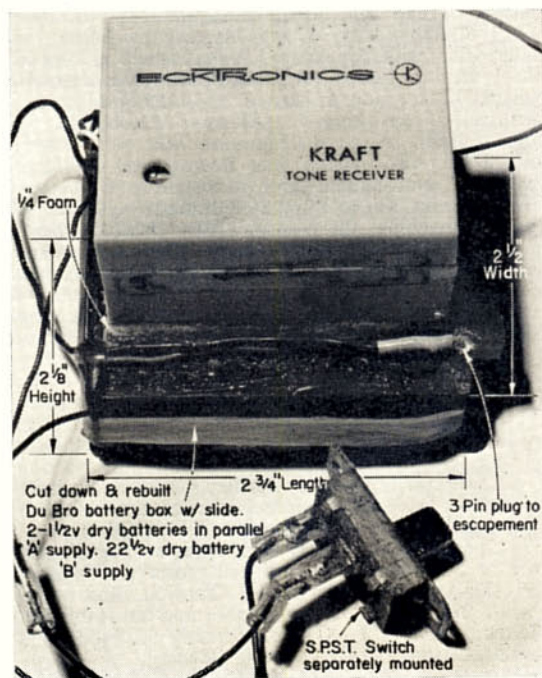
FULL SIZE PLAN *Next month* Single Channel R/C 34" Morane Parasol for .8 cc

receiver away from a ply base to which it has been permanently epoxied. The same applied to Deac's in the event of a failure of one cell and where dry batteries are used, these must be readily removable.

By having the equipment in two sections the use of plugs or connectors has to be introduced, something I was particularly trying to avoid in designing my units, although I cannot see why the two sections could be permanently wired. The slotted arm soldered to the torque also involves having bearings for the torque rod at both ends, increasing the risk of binding.

Like Dick, I, too, hate to carry non-working payload in a model but I fail to see how this system gives real benefit in making C. of G. adjustments. From practical experience, models without the batteries in the nose portion tend towards tail heaviness but with any form of slide-in equipment the limiting factor is the position of the front bulkhead. With both types of unit the batteries for the Rx are mounted as far forward as possible and more than this cannot be achieved.

You may think from my previous comments that I do not consider Dick's ideas to be any good. On the contrary his ideas are *very* good and the more development on these lines the better. Who knows? The manufacturers may eventually catch on to it and produce a sound commercial unit completely pre-wired and ready to install. The nearest we have to it now is a multitude of plugs, harnesses and switches, etc. I shall now experiment with a few of Dick's ideas in the belief, no doubt erroneous, that I can improve on them; now let me see, if I can get a *really* small receiver I could mount the escapement on the same plate and . . .



AS this is written there are 30 aeroplanes on loan to the squadrons of the Air Training Corps (or Combined Cadet Corps) in England, Scotland, and Wales, ranging from the World War II Spitfire to the all-weather Javelin, and including several "rare" types. Those who believe (as some do) that the ATC only get a machine when it is ready for the scrap-heap could not be more wrong—all too often, alas, it is the ungrateful cadets who neglect their aircraft once the novelty of having one, has worn off. In



Vampire T II XH318 at Ferndown, Dorset

recent months at least four have been withdrawn though happily two of these have since been refurbished—a Seafire FR47 (VN441) for RNAS, Culdrose, and a Spitfire 16 (TD135) for Red Lion Motors, Upperhill, near Hereford bought for a "song" when in deplorable state.

Let us look at some of those now on display and which, we trust, are appreciated by the lucky members of the ATC, for there are still many squadrons anxious to obtain an aircraft and they are only issued now after very careful investigation of premises and on confirmation that the enthusiasm is not likely to disappear once all the boys have climbed in and out of the cockpit. If we do our "tour" alphabetically, it will be easy to follow, so let us begin with Aberporth, Wales, where is kept a Mk. 1 Hunter fighter (WT580) once flying at RAF, West Raynham, now in care of No. 1429 Sqn., ATC, Cardigan. From here to Alfreton, Derbyshire is quite a flight, to see a Chipmunk Mk. 10 (WP841) with 1401 ATC which has flown with Durham, Liverpool, Nottingham and Manchester University Air Squadrons. On to Bury St. Edmund's to inspect a fabulous machine, the Vampire FB5 (VV217) flown by de Havilland's test pilot in the Cannes-Montana race, and used later at Farnborough and Boscombe Down, now with 301 Sqn., ATC.

No. 30 Sqn., ATC, Cardiff also have a Vampire (FB9 WL505) and 276 Sqn. Chelmsford is about to get a Meteor 7 (WH132) after raising money for a fence. At Cuckfield, Sussex, an Anson 19 DI-DEK, of Meridian Air Maps, is available for the detached flight of 225 ATC Sqn., whilst the cadets at Devizes are lucky in having a Hunter 4 (WV323), which was "G" of 43 Sqn.; together with the nose section of a Canberra. Elmdon & Yardley's 2030 Sqn. have Chipmunk T.10 (WB758) and one of the best-kept ATC machines is the Vampire T.11 (XH 318) at 2356 Sqn., Ferndown, Dorset, once a "rogue" aircraft at Shawbury and Cranwell. Another Vampire T.11 (DX511) still wearing its Cranwell blue bands is with 221 ATC, Gt. Yarmouth, and at Hamilton, Lanark a Javelin 7 (XH795) formerly 33 Sqn.; and where better than at historic Hendon, a Venom



Meteor T7 WA 697 at Kidderminster

CADET

Britain's static Air Force



Hunter F1 ex WT 684 at Reading

NF3 (WX905) and Vampire FB5 (WA346), with No. 120 ATC.

At Hereford, Vampire T.11 (XE982) with 124 ATC Sqn. and Hertford Vampire FB5 (VV542), of Nos. 14, 73, 130 Sqdns. and 233 Operational Conversion Unit now 936 ATC, attract much attention, though the Meteor T7 (WA697) with 156 ATC at Kidderminster seemed in use for nesting, when



Spitfire 16e TE 184 at Royton, Lancs.

photographed. At Kenfig Hill 2117 ATC have a Hunter F.1 (WT569) and at Northolt, the RAF transport base, 14 Sqn., ATC use a Swift (WK281) flown by 79 Sqn. when in 2nd TAF. Another famous base—now silent—at North Weald, Essex, has Vampire T.11 (WZ458) with 2317 ATC but the Nottingham cadets were unlucky to lose their Vampire FB5 (WA215) when fire destroyed part of their headquarters on 31st May. At Peterborough, with 115 Sqn., ATC, is Vampire T.11 (XE887) and those in the Reading area are doubly fortunate for at the Presentation College with 2287 ATC is Vampire

(XD536) which flew with No. 234 Sqn. and 5 FTS, and at Brock Barracks the cadets of 381 Sqn. have Hunter F1 (WT684) ex 229 Operational Conversion Unit. At Royton, Lancs., one of three Spitfires still in ATC hands—this one Mk. 16e TE184, a post-war machine.

Salisbury's 1010 Sqn. has Vampire T.11 (XD453) in good shape and at Scratchby, Norfolk, Vampire T.11 (XH298) from the RAF College, Cranwell, stands in Duncan Hall School grounds for use of 2356 ATC.

Vampire T11 XD 536 at Reading



“KITES”

described by Leslie Hunt

Venom N.F.3 WX 905 at Hendon



Sealand, near Chester, draws the enthusiasts to see Spitfire 16 (TD248) of the County of Chester Auxiliary Sqn., now 1366 ATC, and the Vampire T.11 (XD393) of 391 Sqn. ATC, though there are rumours of a Hunter 4 (XE702) “C” of 43 Sqn., either additional to, or in exchange for, one of these “Gate Guardians.” Smethwick cadets have Vampire T.11 (XD602) and not far away, at Solihull, believed for use of a Combined Cadet Force, is the second prototype Hunter Mk. 1, (WB195) which first flew

Cadets' Auster AOP9 at Singapore (Photo by Cpl. R. J. Hobbs)



on 5th May, 1952. The boys of Southampton's 424 ATC Sqn. are fortunate in that they have the Fairey Jet Gyrodyne (XJ389, formerly G-AJJP) whilst 413 ATC are said to have (stored) Tiger Moth 83595. All who attended the 1966 RAeS gathering at Wisley came away favourably impressed by the appearance of Vampire FB5 (WA450) loaned for the day by 1349 ATC, Woking, a machine which was once based in the Middle East and then flown from Exeter for anti-aircraft co-operation. With the navigation lights and landing light working and the machine spick-and-span, the officers and cadets set an example other squadrons could well emulate.

Rightly we end this quick trip at Worcester (where this magazine is printed) there to admire Spitfire Mk. 21 (LA198) which was “JX-C” of No. 1 (F) Sqn. and then went to 602 (City of Glasgow) Auxiliary Sqn. as “RAI-G”, and flew from Exeter with No. 3 CAACU. Today it serves with 187 ATC and is refurbished by No. 25 Maintenance Unit at Hartlebury, which accounts for its shine, despite standing out in all weathers. Other squadrons will soon get their own aeroplanes and, we sincerely hope, will treat them with affection—and respect!

SOPWITH PUP (Continued from page 23)

‘Strutters’ and Pups but by the end of the year uniform equipment with the Pup had been achieved: even though some of the airframes had to be fitted with engines taken from written-off Nieuports! Other squadrons becoming operational were 54 sqdn R.F.C. which reached France at Christmas 1916; 66 sqdn R.F.C. on 6th March 1917; 46 sqdn re-equipped with Pups in April 1917.

Although a comparatively light machine and carrying only a single Vickers gun, as against the twin gun armament of the majority of its adversaries, the Pup was a first class fighter and—properly handled—more than a match for any opposition. This was largely due to its extreme manoeuvrability which it retained to a considerable altitude, and where it could out-turn any Albatros with the greatest of ease. Some units increased their armament by adding a Lewis gun to the centre-section but this measure was abandoned due to the extra strain put on that structure.

Much ship-board and experimental work was done by the Admiralty with the Pup. One such aircraft flew off from a small platform mounted on the cruiser H.M.S. Yarmouth during June 1917 to shoot down Zeppelin L.23 in enemy waters. The pilot, Sub-Lt. B. A. Smart successfully ditched the Pup and was rescued by H.M.S. Prince. Landing-on and take-off experiments were conducted on aircraft carriers. Pioneer deck landings were made by Sq-Cdr. E. H. Dunning on H.M.S. Furious on 2nd August 1917;* he was unhappily drowned a few days later while continuing these experiments. Later, experiments were carried out with a variety of skid type under-carriages. A few Pups were used in the Middle East by the R.N.A.S. Before the end of 1917 the Sopwith Pup had been replaced on the Western Front by the Camel, but it was to soldier on with the training establishments until the end of the war.

By great good fortune an example of this dainty little aeroplane still exists, carefully maintained in flying order by the Shuttleworth Trust. Usually it may be seen at the various flying displays throughout the Summer season to bring a touch of acute nostalgia to all old, and not-so-old, flying enthusiasts.

(Assistance of J. M. Bruce Esq., much appreciated in preparation of drawing and text).

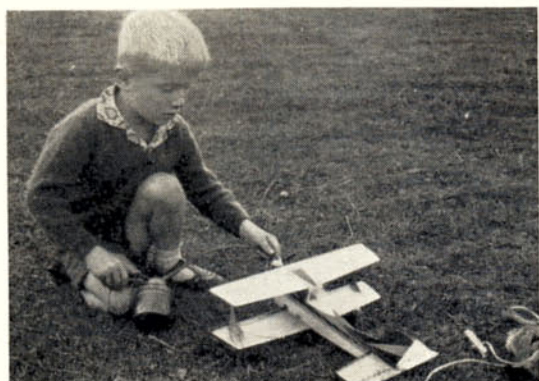
* An American enthusiast Richard King of Rhinebeck is hoping to celebrate the 50th anniversary by repeating the operation off New York with his reproduction Pup.



PRIZE GIVING AND DINNER

Held at the Great Northern Hotel, London, on November 12th after a Council meeting and A.G.M. this year's affair went really well. Speeches were short and crisp, the dinner excellent, and M.C. Ken Bedford kept things moving until 1 a.m. A large array of trophies were presented by Mrs. A. F. Houlberg, our photos showing but a few. 1, Jack Allen (Brighton) collects "K&M.A.A." for A/2. 2, Terry Manley (Blackburn) with F/F "Superscale". 3 Brian Dyke collects massive "Farrow" shield for St. Albans, of which he is Vice-president. 4, Peter Waters (South Wales) with "S.M.A.E. R/C" Cup. 5, Reg Lennox (Birmingham) collects "Model Engineer" for his club, Reg also won "Houlberg Snr." 6, Guest speaker John Crampton tells a tale about an engine. 7, Susan Lawton presenting Mrs. A. F. Houlberg with a bouquet. 8, Jon Clements (Baildon) with the "Gamage" for rubber.





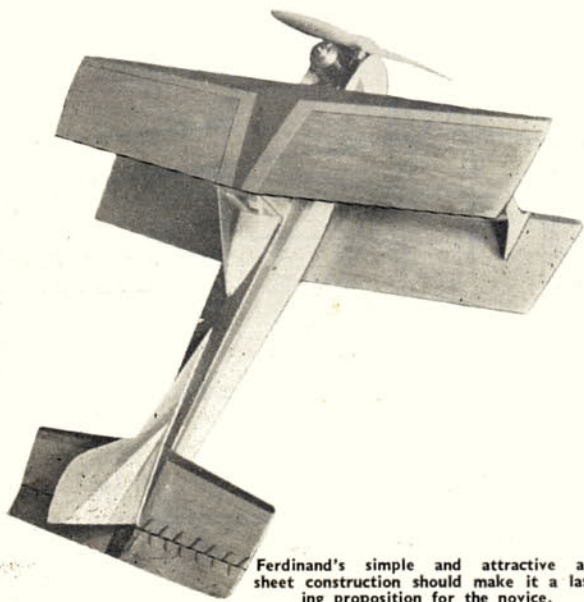
Colin Barrett, age 5, a keen flier, fills the integral Cox Babe Bee tank ready for another flight of Ferdinand. His sister Christine, age 3, is also a keen control line flier.



FERDINAND

Designed by I. Barrett

A simple all sheet 15" span biplane for .049 (.8cc) engines. All sheet construction with modern lines and inexpensive to construct, ideal for G. W. members. Full size Plans, pages 30 & 31.



Ferdinand's simple and attractive all-sheet construction should make it a lasting proposition for the novice.

THE ADVENT of the small glow-motor, especially those used to power the plastic ready-to-fly model, has meant that many youngsters find themselves with an engine and no model in which to put it—because plastic ones do not last forever! Here's an inexpensive and efficient replacement airframe!

Ferdinand, an out of the rut small biplane control-line model, was published in the September 1959 AEROMODELLER. This, the first Ferdinand, has now been redesigned for the .049 glow-motor, and now has a more rakish appearance but still retains its original name.

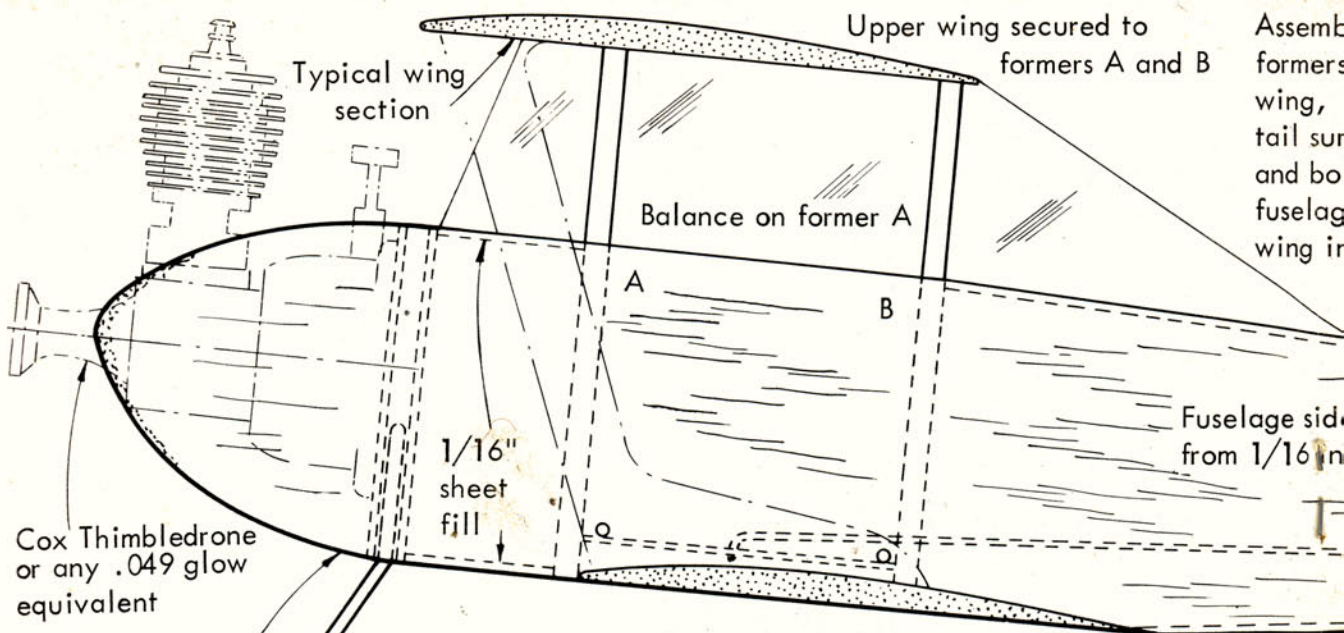
Construction is simple, and the material requirements small. Starting with the engine bulkhead, sandwich the undercarriage between the ply/balsa/ply former, and bolt on the engine. Cement on the fuselage sides, adding formers A and B. Make the tailplane and elevator assembly and cement to the rear of the fuselage sides.

Cut the wings from $\frac{1}{8}$ in. sheet balsa, and sand to the correct section. Insert the ply stiffener in the lower wing, and make the bellcrank assembly. Couple the pushrod to bellcrank and elevator, and cement the lower wing to the underside of the fuselage.

Add the top wing and interplane struts, and sheet the top and bottom of the fuselage. Cut out the fin and sand to section, but before cementing to the fuselage, smear the starboard side with cement and allow to dry. When the cement has dried, its contraction will have curved the fin, so giving the required offset.

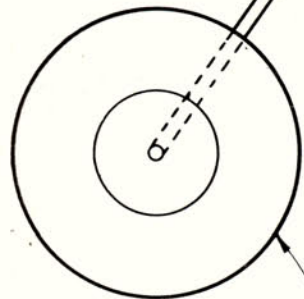
Enclose the cockpit with celluloid using the patterns as a guide. The model can now be given two coats of clear dope, sanding after each, and then decorated to choice. Keep the colour to a minimum, as this adds weight and reduces performance. Finally, fuel proof the whole model. Make sure the controls and elevator are free moving and not sealed or tacky with fuel proofer. If necessary, scrape some paint of the hinges and oil them, working the elevator up and down to make it free. For those of you who need more detailed building notes and how to fly it instructions we suggest study of the M.A.P. book "All about Model Aircraft" by Peter Chinn. This book has chapters on every aspect of model building for the novice including construction, finish and most important how to fly your control line model. At 7/6d this represents great value, as well as an all time reference guide.

Ferdinand is easy to fly providing you look after the lines and give the right control line handle movement at the right time. Start off on 25-30 foot length lines and if you fit *Ferdinand* with a stunt tank, loops and inverted flight are possible. If you want to keep your flying site don't forget to fit a silencer! Happy flying with Walt Disney's happy bull!



Cox Thimbledrone
or any .049 glow
equivalent

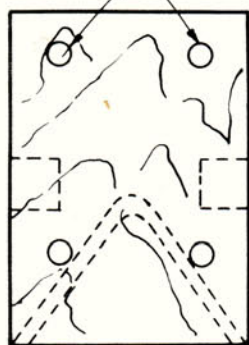
Leave open



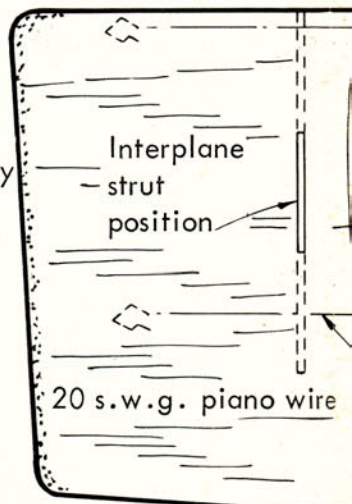
1.1/2 in. diameter wheels

14 s.w.g.
undercarriage
sandwiched
between ply

Radial mounting holes



Engine former
1/8 in. sheet
balsa faced
both sides
with 1/16 in. ply



20 s.w.g. piano wire

Fuselage
sides

Offset fin
over tailplane
and fuselage

1/16 in. sheet balsa
surfaces

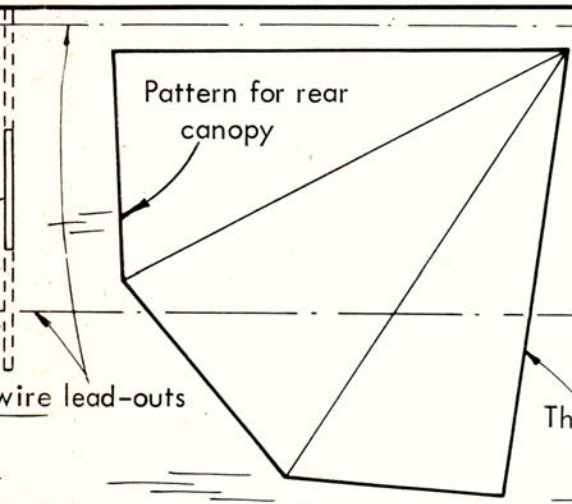
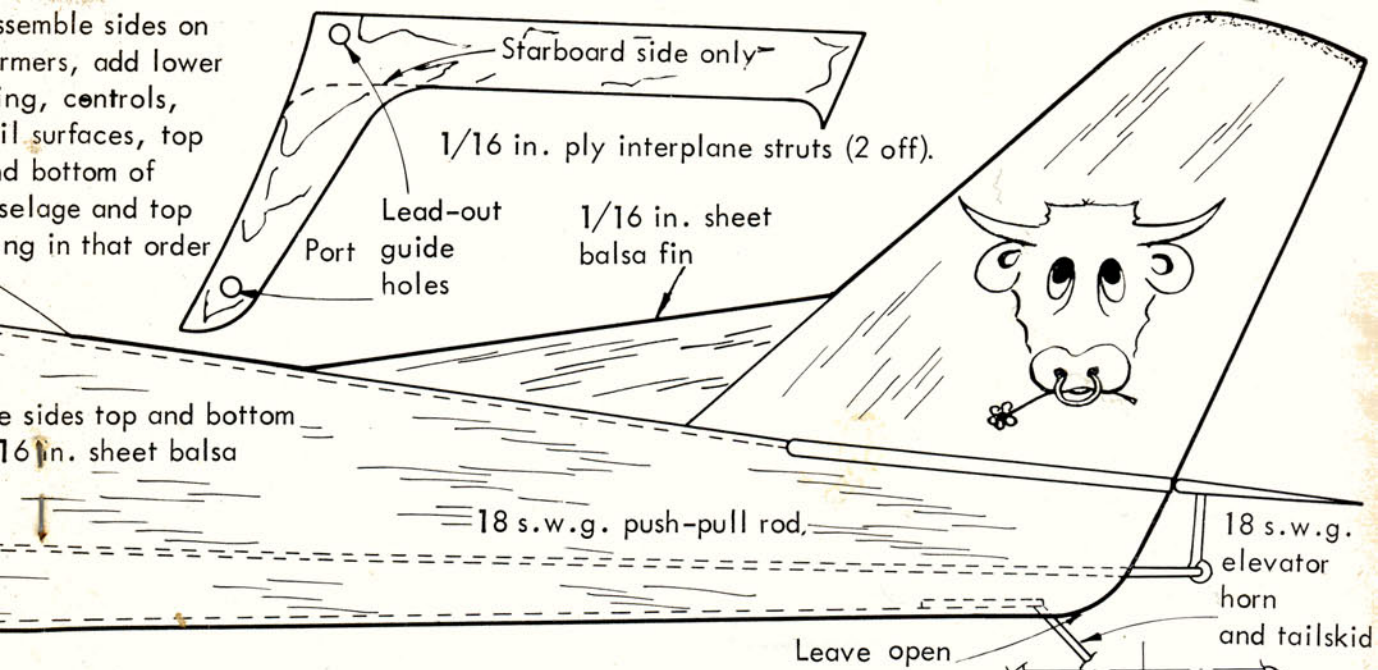
Thread cross-sewn for hinge

Bend horn thus
and cement to elevator

Assemble
formers
wing,
tail sur
and bo
fuselag
wing in

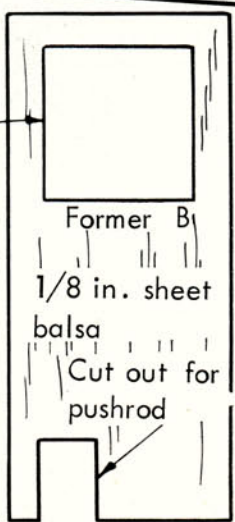
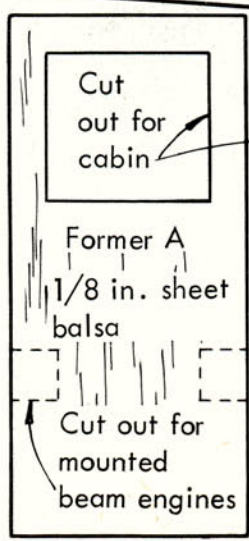
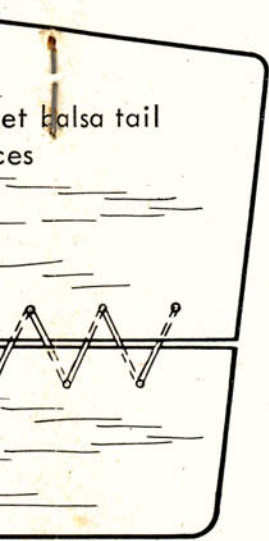
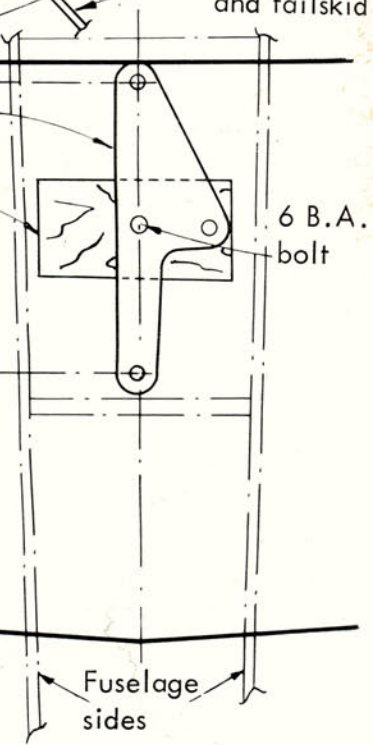
Assemble sides on
formers, add lower
wing, controls,
tail surfaces, top
and bottom of
fuselage and top
wing in that order

Use sides top and bottom
1/16 in. sheet balsa



Dural or ply bellcrank

Ply insert on lower wing only



FERDINAND

A nippy 15" wing span sports control line biplane, ideal for small field Sunday fliers. Suits .049 (.8 cc.) engines. DESIGNED BY I. BARRETT.

BASIC Aeromodelling

PART EIGHT

Doping and fuel proofing the correct way with Cellulose and Acetate

CONVENTIONAL covering materials such as tissue, silk or nylon need doping to finish, both to seal the pores in the material and to give a "water-proof" surface, as well as making it possible to handle the covering without indenting or damaging it. In addition, doping may also produce tautening of the covering material. This is not so essential in the case of tissue coverings (which are tautened by water spraying and then allowed to dry); but absolutely essential in the case of silk and nylon covering which relies on dope treatment for drawing taut.

Dopes which tauten are known as shrinking dopes, and their shrinking power is directly related to the "strength" of the dope. "Strength" is really a nominal description as shrinking power can vary with the type of dope and formulation. In general, only clear dopes are shrinking dopes, but all clear dopes do not necessarily have this property. For silk or nylon covering a dope with good tautening properties is required, which may be described as "shrinking dope", "tautening dope" full strength "dope" or "glider dope" (the latter being the same dope as used on full size gliders). These are all used unthinned.



When applying the first coat of clear dope to tissue thin 50 per cent with thinners and try to flow it on rather than brush it in. Cheap brushes are suitable for clear dope application and should be stored in the dope if possible by attaching the handle to the lid.

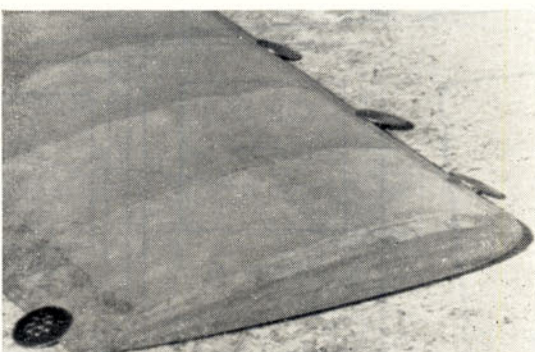
For tissue coverings dopes with high shrinking properties are to be avoided, although it should still have some tautening properties. The latter can be controlled by the addition of thinners. Thus a "glider dope" can be rendered suitable for application to tissue covering by the addition of at least an equal proportion of thinners. There is no exact or ideal proportion of thinners since this will depend on the actual shrinking power of the original "full strength" dope; and also to the component to which it is to be applied. Thus fairly rigid structures, like fuselages, can benefit from the use of 'full strength' dope (although excessive tautening may cause brittleness of the covering). Structures liable to warp, such as wings and tailplanes, are treated with thinned down dope.

As a general rule, typical clear shrinking dope should be thinned by the addition of an equal amount of thinners for all tissue coverings. The degree of tautening and "proofing" obtained can then be controlled by the number of coats. Thus tissue covered fuselages can be given three or four coats; wings two or three coats; and tail surfaces one or two coats. With very fragile frameworks the dope should be thinned down still more and the number of coats reduced. Very light tailplanes on small models, for example, are sometimes best left undoped.

The number of coats required will also be governed by the type of tissue. Some tissues, like lightweight Modelspan, require at least two coats to fill the pores in the covering. On the other hand, an excessive number of coats is undesirable since this can induce warps and will also add weight.

The use of a non-shrinking clear dope on tissue is seldom satisfactory as although this may fill the pores and give a measure of "weatherproofing" it will probably cause the covering to slacken off and develop wrinkles. Dopes of this type are, however, often used as a final coat to produce sealing without further tautening, after an initial coat or two of thinned down shrinking dope. Clear dopes of this kind are often called "banana oil". Actually there is no such thing as "banana oil" as such. It is a popular name which has become allied with the description of a non-shrinking clear dope, often with a semi-gloss finish.

The fact that shrinking dopes have to be used on tissue coverings also introduces another factor which is not commonly appreciated. Although warping can be avoided by pinning or weighting down wings and tailplanes when drying (just as with water spraying),



Light structures such as this tailplane should be pinned down whilst the dope dries out to prevent the framework twisting, use large head drawing pins pushed IN THE BOARD to clamp structure. Don't push them through the L.E. or T.E. if possible.

such dopes will continue to exhibit slight tautening powers for up to a week or so. This is the time taken for the dope to finally and completely dry out and become stabilised.

This means that for a lightly constructed competition model, where even slight warps can affect trim quite appreciably, wings and tailplanes after covering and doping should be *aged* before the model is finally trimmed. This means leaving them for about a week at least after the completion of doping. Any small warps they may have taken up will then be permanent and not likely to change. This is not necessary in the case of true anti-warp structures (e.g. geodetic wings and tailplanes and fins).

Similar ageing effects are noticed with silk and nylon coverings after doping, but here the structure is invariably much more rigid and less likely to be warped as a consequence. These covering materials are only suitable for rigid structures, anyway, due to the fact that they *have* to be tautened by doping.

The technique is basically the same, but using stronger clear dope. Enough coats must be applied to seal the pores of the covering material and produce a fully proofed surface. Some silks and nylons are of very open weave and take several coats of dope to fill. Others can be filled with one or two coats. The first coat or two should always be full strength shrinking dope. Subsequent coats can be thinned down. As many coats as necessary can be given, each coat improving the degree of "proofing" and the general rule is at least twice the number of coats that would be given to a corresponding tissue covering. An excessive number of coats, however, will add unnecessary weight. Also, in the case of silk covering, too many coats of dope tend to make the covering brittle.

All the comments so far apply to the use of conventional clear (tautening) dopes for producing a basic overall finish. These are normally cellulose dopes based on cellulose nitrate (although some based on cellulose acetate have rather better "waterproofing" qualities but less shrinking power).

Cellulose dopes are not fully waterproof, and they are also attacked by glow fuels, but they are the most suitable dopes for basic finishing.

To improve the waterproofing quality of cellulose dopes more coats can be given. There is a limit to what can be done in this respect with tissue coverings without making the tissue brittle and adding unwanted weight, so it is difficult to make tissue covering fully waterproof—i.e. so that it will stand



For fuel proofing use soft hair brushes of good quality as this last glossy coat will reflect every brush mark, especially loose bristles! Wash fuel proofer out of the brushes before it dries or it will ruin the brush.

up to rain or very damp weather without slackening off. Thus the virtue of "banana oil" or a coat of acetate dope as a final coat.

With silk or nylon coverings enough coats can usually be given to make the covering sufficiently water-resistant and not slacken off in damp. If such covering does slacken in damp, this indicates that insufficient number of coats of dope have been given. Again a final "sealing" coat in a more water-resistant clear finish can be given.

To protect conventional dopes against attack by engine fuels, a final coat of fuel proofer is usually given. This, in effect, is a clear "varnish" type of coating with no shrinking properties but formulated so as to resist attack by fuel constituents. In addition to standard "fuelproofers" formulated and sold as such, modern clear lacquers (varnished) of the polyurethane epoxy and polyester type are equally suitable and preferred by many modellers. All will do the required job of producing a final "sealed" coating which will not let fuels penetrate through to attack the underlying cellulose dope. They will also materially improve the "waterproof" qualities of the covering.

Basically, fuelproof coatings are only required with glow fuels. Diesel fuels do not attack conventional dope finishes, but diesel-powered models are frequently fuelproofed to reduce the possibility of the covering soaking up fuel and thus keep the model looking cleaner as well as preventing its weight from increasing.

NEXT MONTH—Butyrate and Epoxy finishes.



Large tins of dope are more economic to purchase and many reliable types are available. Always make sure the room has plenty of ventilation whilst you are doping—dope fumes are not the most pleasant of smells.



When removing masking tape never pull it straight off as shown, always double it back on itself or the paint will pull off with the tape, with some paints remove tape whilst paint is wet. Tape edge can be sealed with clear dope.

SCALE
QUARTER FULL-SIZE

Trailing edge of
1/16" x 1/2" & 1/16" x 1" balsa

16 s.w.g. push rod

Control horn
(steel or nylon)

1/2" balsa engine
bearer extensions

3/8" thick Styrofoam
ceiling tiles

Nylon reinforcing strip

1/8" hard balsa T.E.
extension

1/8" medium/hard
balsa elevator

Nylon
hinges

Soft balsa tips

20 s.w.g. lead out
wires

7 5/8"

3/4 oz. balance
weight in right
tip

To suit
crank case

STYROBAT
DESIGNED BY PETER SHORT

Bearers and
posts - 1/2" sq. beech

1/2 x 1/8 light/medium
balsa spar

Leading edge
laminated from
3/8 x 3/4" balsa
medium hard

1/16" ply reinforcing
top and bottom

1/16" ply bell-crank
mounting plate

2" bell-crank with
6 B.A. pivot bolt

Feed pipe

Fuel tank

1/16" balsa lining in tank
bay

tear lumps out of the material, unless great care is taken.

Hot Wire Cutter

The best method is to use a hot wire cutter, (fig. 1) this can be made with a piece of resistance wire about 16 in. long (obtainable from any radiospare shop), bending it in half twice (giving a length of about 4 in.) and twisting the four strands together. Solder a length of twin

CEILING TILE COMBAT MODEL

flex to each end of the resistance wire, wrap the joints with insulating tape, and stretch the wire in a fretsaw in place of the blade, taking care not to short-circuit the wire to the metal frame of the saw. The resistance wire is connected via the twin flex to a supply voltage of about 6 volts (preferably from the mains through a step-down transformer, if available, although a battery will do providing the circuit is broken after each cut, to prevent excessive drain on the battery). The tool cuts best when the wire is at dull-red heat. If the wire is too hot, add a strand; if it is too cold, remove one.

Finishing

Nylon is the best covering medium and its extra weight compared with heavyweight tissue, is not detrimental to the performance as the uncovered model will be lighter than a comparable model using traditional construction. P.V.A. white glue should be used to apply it, although balsa cement/dope could be used providing care is taken *not* to allow this to come into contact with the styrofoam. The covering must be applied as taut as possible due to the fact that dope cannot and must *not* be used for shrinking or filling the pores. Tissue can, of course, be water shrunk.

Give the entire model one or two coats of *emulsion paint* of the desired colour to fill the pores, add trim with enamel paint, and fuel proof the entire surface.

Materials Required

Balsa One sheet 1/4 in. x 3 in. x 36 in. hard. One sheet 1/2 in. x 3 in. x 36 in. medium/hard. Two strips 3/8 in. x 1/2 in. x 36 in. medium/hard. One strip 1/2 in. x 1/2 in. x 36 in. light/medium. Scrap 1/2 in. sheet 6 in. x 2 in. and triangular fillets behind bearers. Soft block for tips. Plywood Two pieces 8 in. x 7 in. x 1/4 in. One piece 2 1/2 in. x 2 1/2 in. x 1/4 in. Hardwood Two lengths 1/2 in. x 1/2 in. x 9 1/2 in. beech. Three lengths 1/2 in. x 1/2 in. x 1 1/2 in. Styrofoam Three 1 ft. x 1 ft. x 3/8 in. thick ceiling tiles. Miscellaneous 3/4 oz. lead tip weight. Two 21 in. lengths 20 s.w.g. piano wire. 8 in. 16 s.w.g. piano wire. Coleman's Mustard tin, 1/4 in. copper for tube. Scrap brass tube for leadout guides. 2 in. bellcrank. Steel or nylon control horn.

STYROBAT was intended to present a radical change in model design. The shape is very similar to current combat models for it was thought that use of a proven shape of known performance would illustrate any increase of the advantage of lighter and stronger construction.

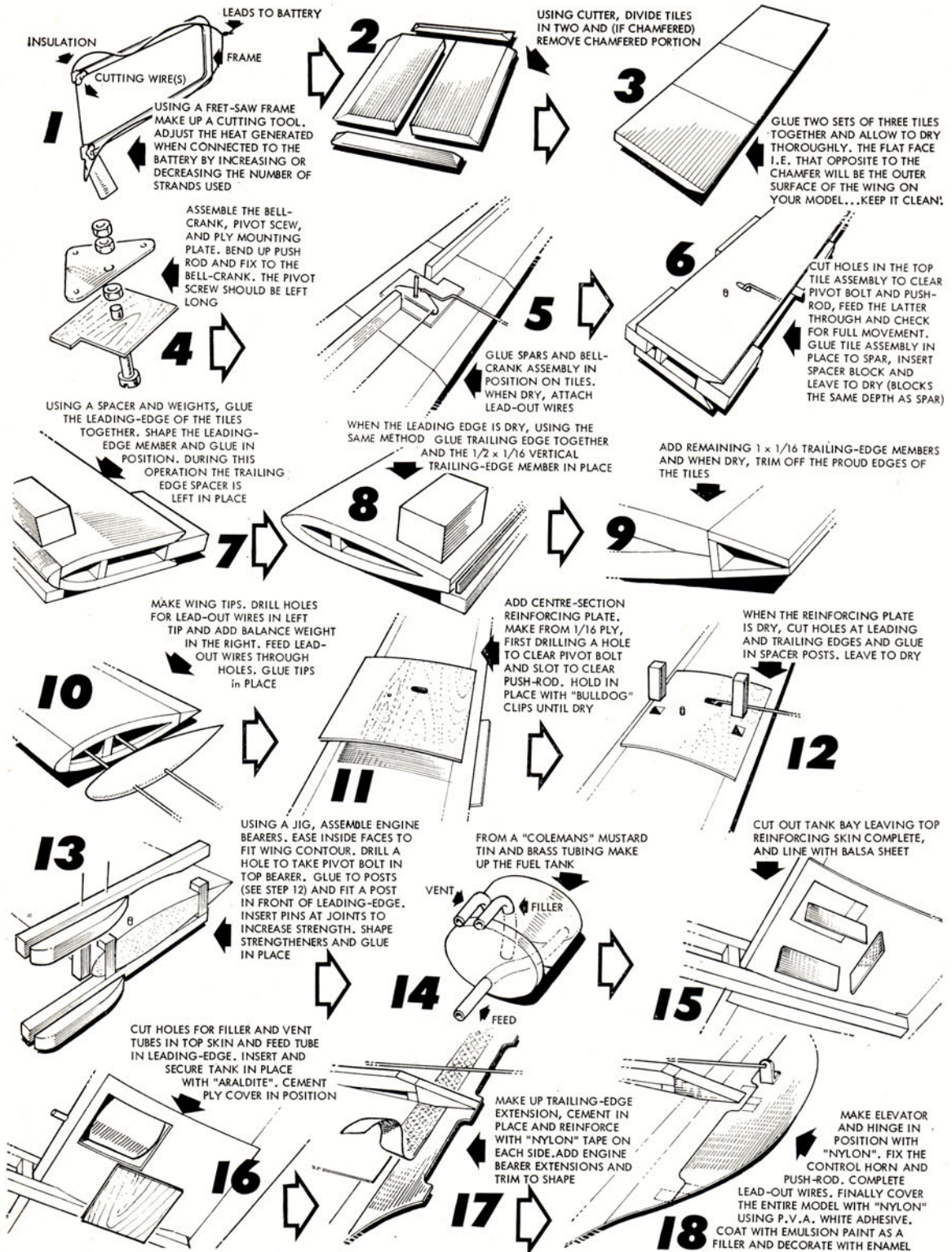
Materials

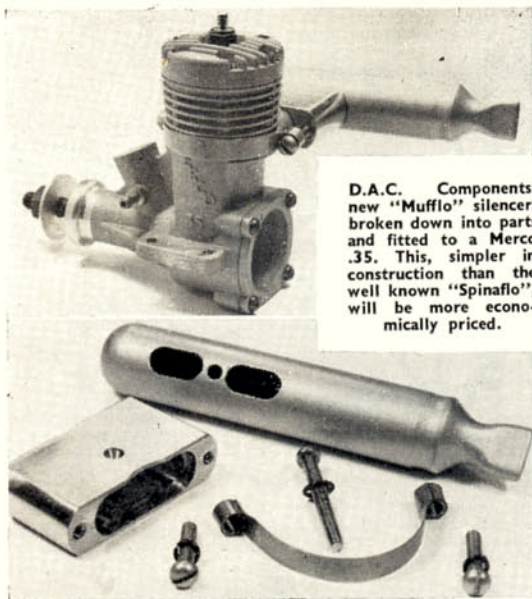
The moulded expanded polystyrene wing is not new in the field of aeromodelling, but home-made mouldings are difficult to produce accurately. Styrobat uses three ordinary styrofoam ceiling tiles 3/8 in. thick and one foot square, with the minimum of cutting and shaping. The weight of these tiles is negligible compared with the weight of a set of ribs, which they replace, and they cost only two pence, at 6d. to 9d. each.

Adhesives

It must be stressed before commencing construction that only a limited number of adhesives can be used. Balsa and polystyrene cement, as well as "Bostik", "Evostik" and "Durofix" are quite unsuitable, and a P.V.A. white glue or special E.P. adhesive should be used for best results. Only wood to wood joints should be suitable for these adhesives. Engine bearers and spacers should be "Araldite" in place. Similarly, cellulose or butyrate based dopes should not be used when finishing the model.

Firstly, the styrofoam panels should be cut to size. All that is necessary here is to cut each tile exactly in half, forming six pieces each 6 in. x 12 in. These could be cut using a sharp knife or razor blade, but this tends to





D.A.C. Components' new "Mufflo" silencer, broken down into parts and fitted to a Merco .35. This, simpler in construction than the well known "Spinaflo", will be more economically priced.

Allouchery Revival

ONE of the longest established model diesel manufacturers—older than any British marque—is the French firm of P. Allouchery, who have been making Allouchery "Eclair" ("Lightning") model diesels for more than twenty years. In fact, two of Allouchery's earliest motors, the Eclair 0.7 cc and 1.25 cc models are, with only slight modifications, still listed.

The current Allouchery Eclair range comprises five basic models, all diesels, ranging from 0.7 to 2.5 cc. Two of these, the elderly 0.7 and 1.25 already mentioned, are spindly looking long-stroke engines, very much in the tradition of early model diesels and resembling, somewhat, the Mk.1 Mills 1.3. This is not surprising, really, since the original Mills 1.3 of 1946 very definitely looked as though it had been inspired by the Eclair 1.25. These are simple 3-port two-strokes—i.e. the cylinder includes the induction port as well as transfer and exhaust ports, as on many pre-war model engines and, in fact, as still used by many small two-stroke petrol engines.

The 1.25 is now available also in an "R/C" version, a simple throttle valve being added to the horizontal intake which projects rearward from the upper section of the crankcase just below exhaust port level. The engine has a bore and stroke of 10 x 16 mm. or 0.3937 x 0.6299 in. (the Mills 1.3 had a bore and stroke of .400 x .640 in. and, thus, exactly the same stroke/bore ratio) and displaces 1.257 cc or .0767 cu.in.

The 0.7 cc model is similar in design to the 1.25 but with a slightly more "modern" stroke/bore ratio (1.22 : 1) derived from a bore and stroke of 9 x 11 mm. The quoted performance of 5,500 rpm on 20 x 10 cm (approximately 8 x 4) prop, nevertheless, takes one back to those more leisurely days when, in Europe, five figure rpm were apt to be looked upon as figments of American manufacturers' imaginations! Like the 1.25, the 0.7 has a hardened steel crankshaft running in an aluminium alloy crankcase, cast-iron piston and contra piston, hardened steel crankshaft and hardened steel connecting-rod. Both engines include a translucent cup-shaped fuel tank suspended below the intake tube.

Allouchery's other three models are more modern in conception. The 1 cc "Cormorant" (Cormorant) is a shaft

Latest Engine News

By Peter Chinn

rotary-valve engine with radial porting and over-square (11 x 10 mm.) cylinder. It is quite a neat looking little engine with unusual multiple transfer ports. Allouchery claims for it a speed of 11,000 rpm on a 7 x 4 Top-Flite which, if substantiated, would be very good indeed.

Very definitely out of the rut, too, is the Eclair 2.5 cc "Turbolid" which sports a "compresseur" built into the front end. Since this rotates only at crankshaft speed, one must conclude that its value lies in sales appeal rather than in providing any worthwhile supercharging effect, but it certainly offers a new look in air intakes. The intake is an annular one immediately behind the prop and is in the form of a turned housing, fitted over the crankcase nose and extending forward to surround the rear end of the dural prop driver on which are machined the compressor blades, ten in number. Air is thereby directed rearward and into a chamber leading to the rotary valve, picking up fuel from a needle-valve on the way. The rest of the engine is, apart from unusually generous cooling fin area, fairly orthodox and features a radially-ported hardened steel cylinder, cast-iron conical crown piston and a hardened steel crankshaft running in a plain bearing. The engine weighs 6.6 oz.

Finally, there are the 2.5 cc "Komak" and "Super Tele" models. The Komak is similar in appearance to the Turbolid but has a normal type shaft-valve intake placed vertically in front of the cylinder. It also has the crankshaft carried in two ball journal bearings. This is Allouchery's high-performance model although one is bound to treat with some reserve the manufacturer's claim of an output of 0.5 bhp and also the quoted rpm figures which include 17,000 rpm on an 8 x 4 Top-Flite and 21,000 rpm on a 7 x 4 Top-Flite.

The "Super-Tele" is basically the "Komak" with the addition of a throttle valve for R/C work. All three Allouchery 2.5 cc models employ a 15 x 14 mm. bore and stroke.

New British Silencer

D.A.C. Components of Horsham, Sussex, whose well-known "Spinaflo" silencers were among the first on the U.K. market, are introducing a new inexpensive range under the name "Mufflo". These are of spun aluminium construction and of rather different internal design, but the machined aluminium adaptor block type fitting, as on the Spinaflo, is retained. A large range of block sizes, tailored to fit individual types of engines is available and these are mated to various size silencer barrels according to engine capacity groups.

We have had on test two prototype units. One of these, intended for .40 cu.in. engines, was checked on a McCoy 40. It reduced rpm by 5-7 per cent on typical prop sizes

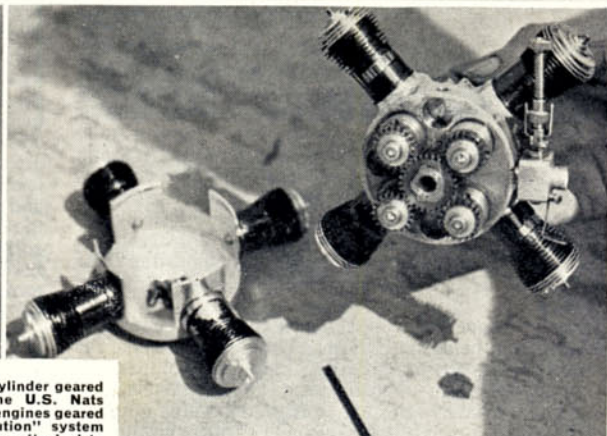
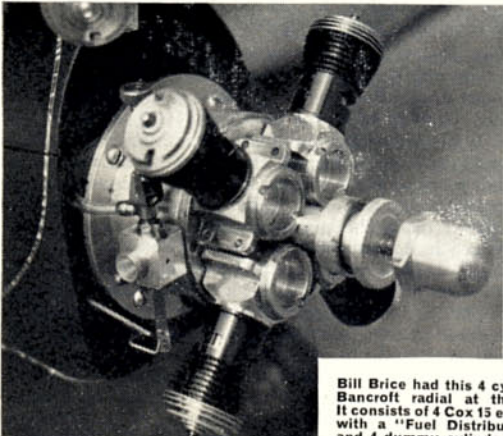
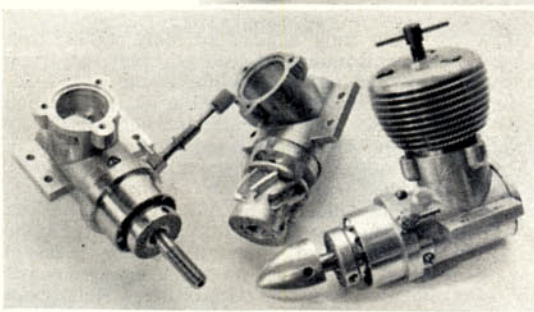


The Allouchery Eclair Cormoran and component parts at left. This attractive looking little 1 c.c. diesel weighs 2.7 oz. Right the Allouchery Eclair Komak 2.47 c.c. diesel. They claim no less than 0.5 bhp for it. Below the highly unorthodox induction system of Allouchery's "Turbold" avec compresseur. Not to be taken too seriously!

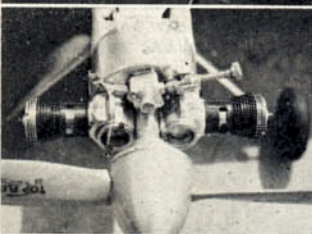


but silencing was noticeably better than had previously been obtained on this engine with another type of silencer. This Mufflo had an outside diameter of 1 in., was 5 1/4 in. long and weighed 2 1/4 oz. We also tried on the McCoy 40 (as it happened to fit) a smaller size Mufflo, only 4 1/2 in. long, 3/4 in. diameter and 1.9 oz and actually intended for the Merco 29/35 and McCoy 29/35, but the rpm drop was considerably greater, amounting to as much as 30 per cent bhp loss on 10 x 6 and 10 x 4 props. Obviously, the larger size is to be preferred, possibly for the 29's and 35's as well as for the 40's.

A most attractive heat-resistant sprayed finish is applied to these new D.A.C. silencers and a more secure type of fixing is also being adopted.

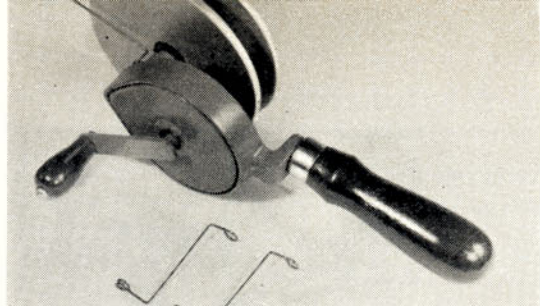


Bill Brice had this 4 cylinder geared Bancroft radial at the U.S. Nats. It consists of 4 Cox 15 engines geared with a "Fuel Distribution" system and 4 dummy cylinders attached to the cowl which on the production model are utilized as mufflers. A 4 cylinder radial 60 sells for \$95, later to be produced are flat twin and 1200 3 cylinder radial engines. The original Bancroft 60 utilized 4 Enya 15 engines which were abandoned in favour of the Cox 15. In these photos, above and right a Bancroft "60" radial 4 is seen with cowl removed. Stock Cox 15s have intake assembly removed and fitted in reverse, into the Fuel Distributors and gear housing. Below left is One of William "Bill" Brice's small experimental engines this one features two .010 Cox Tee Dee engines. Above it is an experimental prototype Horizontal twin.





Humbrol twin pack epoxy adhesive costs 6s., twin pack includes instructions.



Tempo glider winch imported by Ripmax is robust and well made, two eyelets are supplied.

It's not too late to select that extra gift or two from this latest selection of **Recent New Trade Items**

NOW that glow plug engines are more popular than ever in Great Britain good lead acid batteries are in demand. A new one to the modelling world is the **Exide Type MRP7** originally developed for use in coal mines and fire alarm systems where reliability and light weight are governing factors. The cell is 2 volt, has a capacity of 4Ah at the 20 hour rate of discharge and only weighs 12 ounces when filled with electrolyte. It measures 3½ in. high x 2 13/16 in. wide x 1 5/32 in. long. This is a leak proof unit and our test sample has started large radio motors and little tiddlers alike without any signs of 'giving-up' or letting us down on a calm sunny day and not being able to fly 'cause of a dead battery. Retail price is around 26/- and they are available from Exide Service Agents.

Lindoe & Co. (Models) Ltd are one of the older established manufacturers in G.B. and though not well known in the high performance contest model sphere they must have produced some of today's top fliers through their excellent little novice kits. Of the three Easy-to-Build models we constructed and flew two, the *Piper Colt* and *Comanche* both going together well and our youthful constructor did not find any faults. At 8/11d each the pre-printed and die-cut parts are satisfactory, the exploded view plan easy to follow, as are test flying instructions. Plastic wheels, propeller and rubber are included in these useful little models, also available is the *Piper Tri-Pacer* at 8/11d.

One of modelling's best known names has recently changed this being the Humber Oil Co., who make the Humbrol and Britfix products—now the company is called **Humbrol** and all its products will bear this name in future. They have been busy lately and a whole range of new goodies are available ranging from knotting to epoxy adhesive. The *Plastic Knotting* comes in a screw top tin at 4/6d and is excellent for fuel proofing engine bearers, as well as having other uses. The gold and silver

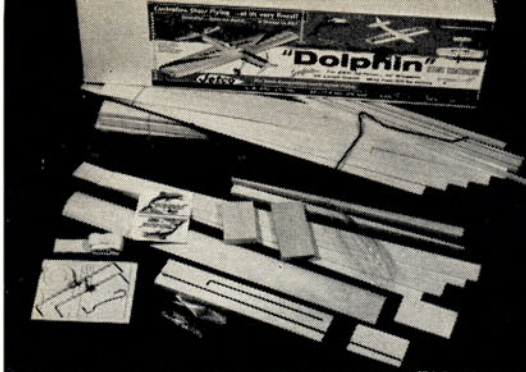
Lindoe 'Easy-to-Build' Piper Comanche constructed by Robert Gray for our review.



Spray Paint is in aerosol cans at 4/11d a go, or 9/6d if you purchase the special twin pack, it's very hard to get an all over even finish by brushing metalised paints, so a spray can is the best way out for those without a separate spray gun with compressor or bulb operation. Of greatest interest to most modellers will be the *Twin Pack 88 Epoxy Adhesive* at 6/- a pack. This as the name implies is a two part adhesive in a blue and black tube to distinguish the hardener and adhesive that are mixed together in equal proportions. Not limited in its application to wood, it will bond metal, wood, glass, celluloid and rubber to each other or any other surface. This represents very good value at 6/- and every modeller will find it handy around the workshop or on the flying field as the job can be heated to lessen curing time.

From **Henry J. Nicholls Ltd** come several imported items from the U.S.A. For rat-race and .35 combat fiends the *Veco Large Pressure Feed Tanks* are highly recommended. Both at 14/9d the T31-D is 3½ ounces whilst the T31-C is smaller with a 3 ounce capacity, time tested they are strong and well soldered. The Series 200 *REV-UP 7x8* team race propellers are being seen more often these days and performance is 2-3 m.p.h. better than the older series though the blade changes are nearly unnoticeable, these cost 6/- each. Another handy item is a *Glow Plug Spanner* to fit most glow plugs robustly made with a strong tommy bar. This saves you trying to get that plug out with pliers as nothing looks worse than a torn up plug and cylinder fins to those who care for their engines, and it only costs 2/6d also it lasts for ever. The *Veco Shaft Extension* is sometimes hard to get but its very useful to get a longer and slimmer cowl on a stunter or radio model, this puts the propeller driver forward ¼ in. and fits all U.S. and most British engines with ¼ in. shafts, well made this sells at 7/11d. Lew McFarland's *Jetco Shark .45* is in stock at £9.9.6d for the larger control line stunt engines .45 etc, but for those who like its racey lines and only have smaller engines all is not lost as the *Jetco Dolphin* is in the same style but spans 49 in. for .29-.35 engines with 516 sq. in. of area. The undercarriage is preformed, parts die cut, fuselage block top pre-shaped with two sheet plans and a colourful transfer sheet. For £5.14.6d. you also get silver soldered elevator and flap horns.

A recent visit by Max Coote of **Ripmax** left the office fair snowed under with goodies to interest all modellers. The scale like *Graupner Rubber Wheels* with riveted nylon centres incorporating webs and the ribbed rubber tyres should give your model that realistic touch and the 2 in. size at 10/6 are most attractive though a trifle heavy. They also have a wide range of Japanese wheels. The *McCoy* range of cheap but practical glow engines are now on sale with new attractive bubble packs and the clear folding top plastic boxes make ideal work room storage

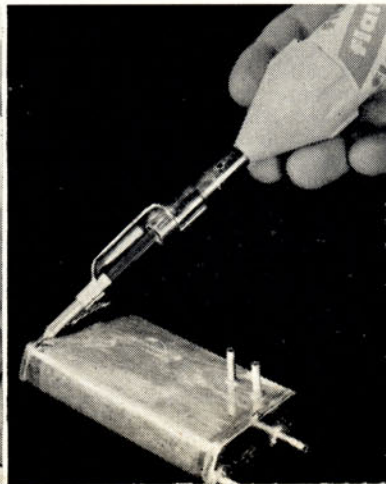
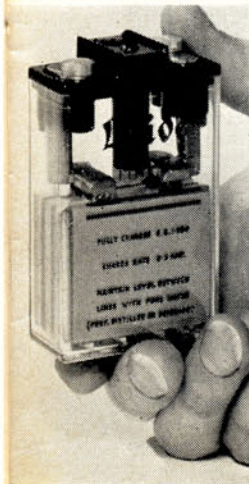


Left, Jetco Dolphin .29-.35 stunter. Right, Comp'ete - a - Pac treatment of A.P.S. Gipsy Moth, pack cost £2.15.6d. + 10s. for plan.

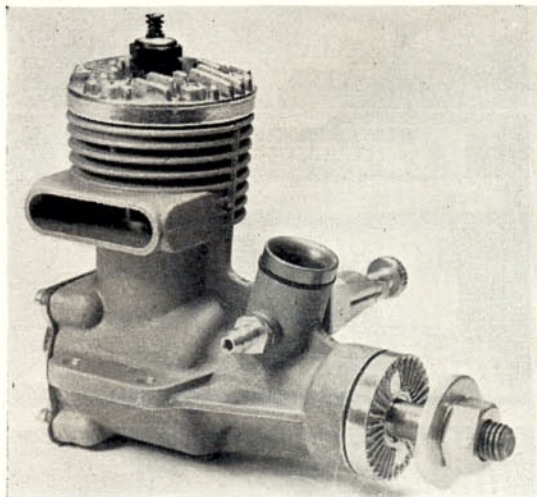


receptacles. Also the McCoy Golden Glowplugs are sold in factory sealed replacement pack containers at 6/11d each. The *Tempo Glider Winch* is now in stock and it's comfortable gearing ensures rapid return of the line that is wound onto a plywood drum through a piano wire eyelet. Two spare eyelets are supplied and although at £2.5.0 it's not cheap; it will last forever providing it's not subjected to thrown handle model release tactics. Still on glider towing the *Graupner Tow Handle* is a simple little plastic moulding to hold in the hand and comes complete with a nylon line and tow pennant, a handy gift at 5/11d. The *Titan Fuel Bottle* is the one you may have seen around with the long filler spout that goes to the bottom of the bottle so you can fill the tank without turning the bottle upside down, a spare sealing cap is also supplied for 6/-. The *Top-Flite Hawker Hurricane* for .19-.35 engines is a semi-scale stunter of 42in. wingspan and comes with the fuselage all preformed from sheet balsa so all you have to do is cement the formers in then add the remaining fuselage half. Large transfers are supplied together with a very clear plan, at £3.2.6d. The *Graupner Jolly* to the A/1 glider specification is an ideal training model with a moulded cockpit canopy and clear printed parts on good quality balsa, everything is included right down to tissue paste and rubber bands at £2.2.6d. Two control line scale kits are offered from *Sterling Models* both primary trainers the Fairchild PT-19 and Stearman PT-17. The *Fairchild* can also be built up as radio control or free flight and the well filled box includes an enormous amount of wood, large transfer sheet, pre-formed undercarriage legs, also an aluminium cowling with the air intake shaft holes etc. already cut out, for .19-.60 engines depending on which version you build. As a contrast the *Stearman* is control line only and 32½ in. wingspan for .19-.35 engines. The leading edge is very neatly slotted for the ribs, all the parts well die cut and the kit again includes nuts, bolts, and an aluminium cowling. Of the two the Stearman takes our eye most with its attractive box and crop duster details on the plan, who will be the first to make one spray flour? They retail at £5.9.6d, and £4.18.6d each respectively. Lastly, the *Graupner Amateur* is an ideal club or Sunday flier for 1.5 cc engines and single channel radio control. Wingspan is 43½ in. and the kit includes all

(Continued on page 42)



Left, Exide type MRP7 2 volt cell. Flamidor blow torch and Yeco T-31D pressure tank. Humbrol's bright spray paint display. Above, Performance Kits Buzzard Glider kit contents. Sterling, Stearman C/L crop duster, plenty of building in this one. Lindoe Piper Colt an ideal first model, constructed by Stephen Gray.



THE Veco 19-BB belongs to a diminishing breed of engine: the high-performance, high-quality, all-rounder which can be switched from one kind of model to another. In these days of increasing specialisation, there are very few motors that can be regarded as particularly well suited to more than one or two types of model. By contrast, we can think of four or five applications in which the Veco can be expected to be competitive.

For example, fitted with the standard venturi insert and Veco No. 107 glowplug supplied, and running on suction feed and a mild fuel, the 19-BB makes an excellent modern successor to the 3.5 c.c. diesels that used to be much favoured by British modellers for C/L stunt flying with medium size models. In this same state of tune, the Veco's even and useful performance at medium r.p.m.—i.e. its ability to pull a fine-pitch 10 or 11 inch prop—would be suitable for a sport-type or scale free-flight model.

In contrast, the 19-BB can also be a very potent power-unit for open type power-duration contests. For this, one substitutes the special large bore venturi (identifiable by its red anodised finish), installs a pressurised fuel system with the aid of the backplate pressure take-off fitting (both optional extras) and, by running on the hottest fuel available, one has an engine, compact and not too heavy, capable of outperforming all but the best international class free-flight motors.

Finally, if our C/L—F/F enthusiasts' interests should later turn to radio-control, the Veco can have yet another lease of life. The manufacturer makes a special R/C version of the 19-BB, but the only real difference between the models is in the addition of a coupled throttle system and a shielded type glowplug and conversion is therefore relatively simple. The production 19BB-R/C has the crankcase modified to accept the throttle type carburettor and semi-rotary exhaust restrictor and, of course, a replacement crankcase, in addition to the throttle parts, could be purchased, but it is quite easy (and a lot cheaper) to modify the existing crankcase. This can be effected by shortening the intake boss by approximately 13/64 in., so that the R/C carburettor can drop down into the correct position, where it is held in place by two grub screws through the standard spraybar holes. Incidentally, it is only necessary to purchase the actual throttle parts since the same needle-valve assembly is used in both versions. If preferred, the exhaust duct can be drilled, reamed and faced to accept the exhaust restrictor, but

Peter Chinn's

Engine Test

VECO 19-BB

"easy-handling, high performance motor."
 "The overall handling qualities of the Veco 19-BB on test were extremely good."

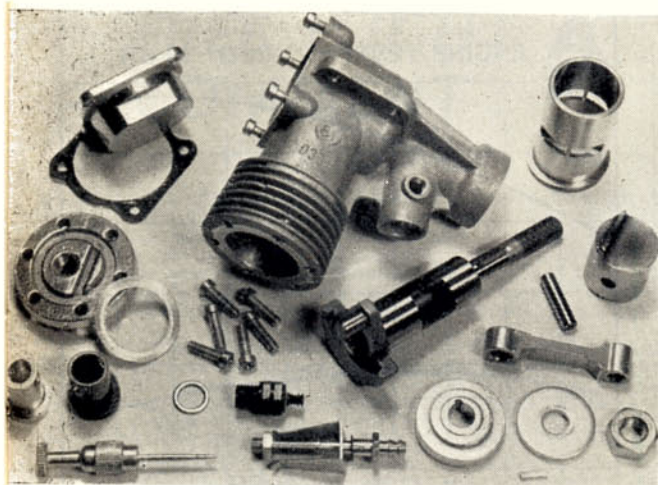
this is not essential since, in the U.K., a silencer will normally be required and the coupled exhaust restrictor can, in these circumstances, be omitted. The Veco Products Corporation do not, as yet, offer silencers for their engines, but we understand that silencers suitable for the 19-BB can be obtained to order from D.A.C. Components of Horsham, Sussex, makers of "Spinaflo" and "Mufflo" silencers.

Construction

The Veco 19-BB is unique among current .19 class engines in that it combines a large (12 mm.) diameter crankshaft (with appropriate gain in gas passage cross-sectional area), with a ball journal main bearing. Using standard ball bearing sizes it would be impracticable to accommodate the outside diameter of a 12 mm. i.d. bearing within a 19 size crankcase, but by virtue of a special arrangement between Veco Products and the Fafnir Bearing Company, this difficulty was overcome in the case of the 19-BB. Fafnir actually make a special type of rear bearing for the Veco 19-BB, an arrangement that was not entirely unconnected with the fact that an influential member of the Fafnir staff happens to be a keen R/C enthusiast. The front, reduced diameter, end of the shaft is also carried in a ball-bearing; in this case a standard 1/4 in. i.d. bearing with 5/8 in. o.d.

The crankshaft itself is heavily counterbalanced by means of a crescent counterweight plus cutaway web flanks each side of the crankpin. The intake passage through the shaft is very large, for a 3 1/4 cc. engine, at 0.340 in. bore and is fed from a large rectangular valve port and parallel sided main bearing aperture. These give a total intake period of 190 degrees of crank rotation, timed, according to measurement of our test sample, to open at 34 deg. ABDC and to close at 44 deg. ATDC.

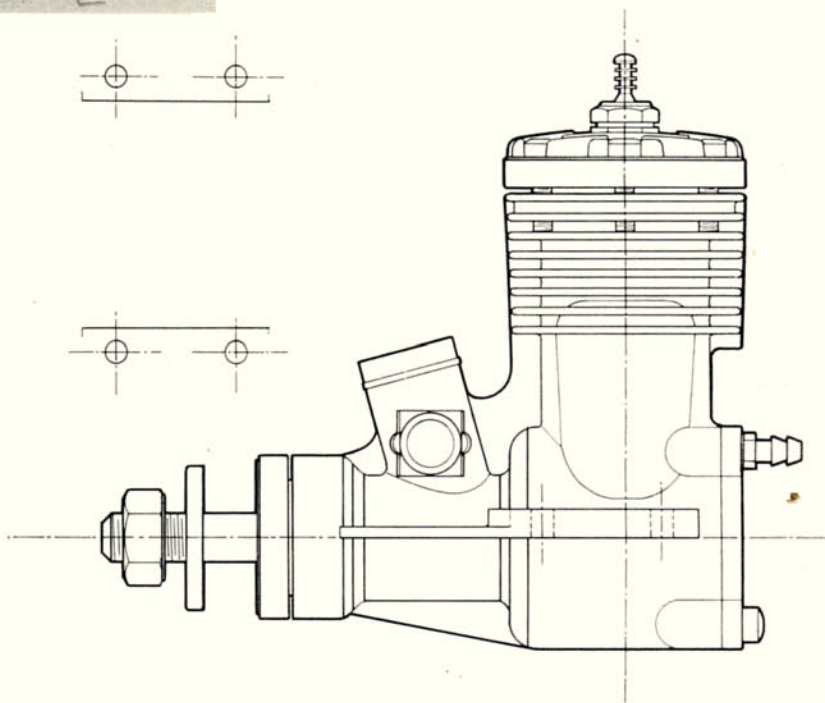
The cylinder ports are of moderate area, each being divided by a centre bar and radiused at the ends. The exhaust port opens at 70 deg. BBDC and the transfer port 8 degrees later. No cylinder offset is used and exhaust and scavenge periods are, therefore, 140 degrees and 124 degrees respectively. The cylinder liner, which is of unhardened leaded steel, has a wall thickness of 0.058 in. and is located by a flange at the top with a 0.012 in. soft aluminium gasket between the top of the cylinder barrel and the underside of the liner flange. A 0.015 in. soft aluminium gasket is used to make the joint between the



Above, parts of the Veco 19-BB. Note the size of the crankshaft journal, unusually large (12 mm) in a ball-bearing engine of this displacement.

Rugged crankcase and high power output should make the Veco 19-BB a firm favourite as seen in the heading photograph, a radio version is also available.

FULL SIZE INSTALLATION DRAWING



SPECIFICATION

Type: Single-cylinder, air-cooled, loop-scavenged, two-stroke cycle, glowplug ignition, with ball-bearing crankshaft. Shaft type rotary-valve induction.

Bore: 0.634 in. **Stroke:** 0.633 in.

Swept Volume: 0.1998 cu. in. = 3.274 c.c.

Stroke/Bore Ratio: 0.998 : 1

Weight: 6.2 oz.

General Structural Data

Pressure diecast aluminium alloy **crankcase/cylinder-block/front housing** with drop-in unhardened leaded steel **cylinder-liner**. Case-hardened steel counterbalanced **crankshaft** with 12 mm. main journal and 0.187 in. dia. crankpin and mounted in two Fafnir **ball journal bearings**. Pressure diecast aluminium alloy **prop driver** keyed to crankshaft with 1/16 in. square sunk key. Heat-treated cast-iron **piston** with flat crown and baffle and internal stiffening rib. **Connecting-rod** machined from extruded aluminium alloy with pressed-in phosphor-bronze big-end bearing. Fully-floating 0.156 in. dia. tubular **gudgeon-pin**. Pressure

top of the liner flange and the cylinder head which is recessed for this purpose.

The piston is of an inoculated cast-iron similar to Meehanite, hardened by heat treatment and with the fitted skirt area extending from just below the crown to immediately below the gudgeon-pin holes. A good, stiff connecting rod, with ample small end bearing area and a phosphor-bronze bushed big end, is used and is coupled to the piston by a fully-floating hardened tubular gudgeon-pin with brass pads.

The complete engine is strongly made and standards of fits and finishes are good.

Performance

The overall handling qualities of the Veco 19-BB on test were extremely good.

Firstly, the engine called for very little running-in time. Our test model was given a nominal two hours but was, for all practical purposes, run-in after less than one hour. Slight variation may be expected between indi-

diecast aluminium alloy **cylinder-head** with glowplug offset to exhaust side and recessed for soft aluminium **gasket**. Head secured to main casting with six Phillips screws. Pressure diecast aluminium alloy crankcase **rear cover** secured with four Phillips screws. Removable 0.235 in. bore aluminium **venturi insert** with rubber sealing ring and retained by plated brass **spraybar assembly** having hardened steel needle-valve seat. Optional 0.295 in. bore venturi and optional backplate nipple for operation on pressurised fuel supply. Beam mounting lugs.

TEST CONDITIONS

Running time prior to test: Approximately 3 hours.

Fuel used: 5 per cent nitromethane, 25 per cent Duckhams Racing Castor-Oil, 70 per cent I.C.I. Methanol.

Glowplug used: Veco No. 107, 1.5 volt platinum filament, long reach, as supplied.

Fuel system: Standard venturi insert as fitted, suction feed.

Air Temperature: 50 deg. F.

Barometer: 29.95 in. Hg.

Silencer Type: Nil (see text).

vidual examples of the 19-BB but at no time should these motors call for tediously long periods of running-in.

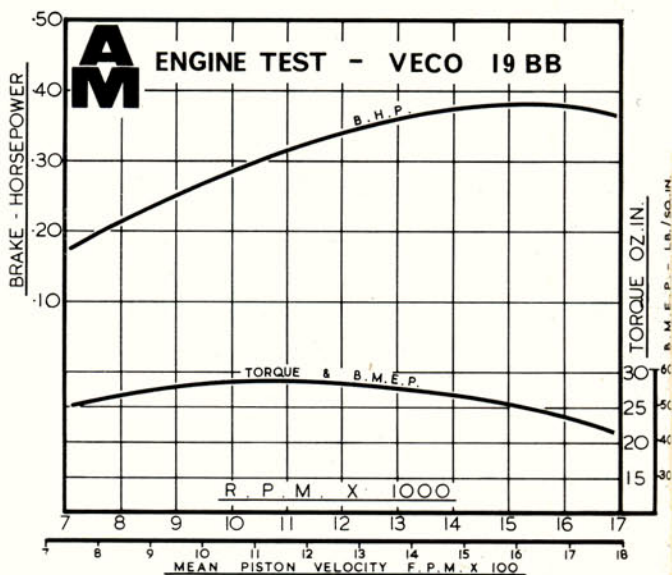
Secondly, starting was very easy. Starts were quickly obtained using orthodox procedure, i.e. an exhaust prime when cold; intake choking when warm.

One handling characteristic that is worth mentioning, is that the needle valve, while not sensitive in so far as the engine will start and run on a wide range of settings, does need to be adjusted carefully for maximum performance, especially when the engine is propped for speeds below 12,000 r.p.m. This is because the Veco takes several seconds to respond to any needle-valve readjustment. Accordingly, when tuning the needle, sufficient time should be given for the engine to respond to a new setting before a further adjustment is made.

On test, with the engine in perfectly stock condition—i.e. fitted with the standard venturi insert and running on suction feed—the 19-BB recorded a maximum torque of 29 oz. in. at 11,000 r.p.m. and a maximum power of over 0.38 b.h.p. at approximately 15,500 r.p.m. Having regard to the fact that the engine was also using an economical grade of fuel, this is extremely good.

A somewhat higher level of performance is possible by burning a high nitromethane content fuel and replacing the standard venturi with the optional large bore red venturi, plus pressure feed. We checked the engine in this condition also (using 50 per cent nitro) and gained up to 1,000 r.p.m. on various props. Actual prop r.p.m. achieved under these conditions included 11,000 on a 10×4 Tornado, 11,900 on a 9×5 Top-Flite wood, 12,800 on a 9×4 Tornado, 14,000 on an 8×5 Power-Prop. Except for open free-flight contests, however, it is clear that the performance of the engine is fully adequate in normal trim and running on mild fuel.

Veco engine sales in the U.K. are handled by Ripmax Ltd. The 19-BB is not a cheap engine, but for anyone



who wishes to obtain an easy-handling, high-performance motor that is also sufficiently versatile to suit a number of different types of models and which, moreover, can be expected to outlast several such models, it could prove to be a very good buy.

Power/Weight Ratio (as tested): 0.98 b.h.p./lb.
Specific Output (as tested): 116 b.h.p./litre

TRADE NOTES

(continued from page 39)

the usual Graupner goodies and P.V.A. glue. Graupner Rubber Scale type wheels and a coil spring nose wheel with preformed main undercarriage and plenty of die cut parts will make this much in demand. Lightweight multi could also be installed with a 2.5 cc engine as the wing totals some 280 sq. in. area. The exploded view drawing on the plan makes assembly easy for this kit retailing at £4.5.0.

Butane blow torches, you may think do not have a large modelling application, but you will be wrong. Of the two we have tested we will deal with the cheaper and smaller first. The **Flamidor** is made of a portable soldering iron than a blow torch but burns butane gas through a bunsen burner type top with the open flame striking a pointed copper soldering bit clamped in a grip that slides up and down the burner to move it in and out of the flame. We have soldered tanks and small diameter piano wire undercarriage legs with it and also radio components that came adrift on the field with great success allowing flying to continue to the hours of darkness. Neat and compact, this is very handy at 37/6d, ideal for all fine work and emergency repairs.

The **Ronson Blowtorch** is also a Butane burning device but for heavier work with several alternative attachments. In standard form at 35/- you get the blow torch and a large gas cylinder for naked flame jobs and the 2,000 degree flame will silver solder with ease, as well as heat jobs for making press fits. The Blowtorch kit at 79/- has a large soldering bit, flame ducting tube and flame spreader included in a neat metal carrying case that's just the job for carrying around the flying field. We have used the soldering bit on a control line model for every soldering

job, lines, tank, horns etc. with complete success and its always being borrowed at rallies for split tanks etc. Both outfits included a comprehensive instruction booklet and assembly only takes seconds, the gas cylinder being removable for storage. The big difference about the Ronson is that the flame has a gas regulating tap that allows the right setting for any job from a wide ragged flame to a fine pencil point.

Performance Kits have a new release this month, this time a glider called the **Buzzard**. Wingspan is 60 in., area 345 sq. in. and power pod conversion details are shown. Ribs are die cut, but other parts are all printed clearly on the sheet balsa. The wing is in two pieces with knock off panels and radio control installation is possible though details are not shown on the plan. Construction is easy and should not present difficulty to anyone who has built a novices model before. Colour tissue is included and the full size plan shows the materials required for 0.75-1 cc power conversion are extra, available at 38/10d.

The very popular Aeromodeller Plans Service **Gipsy Moth** is the first of several **Complete-a-Pac** wood and construction packs. These kits are made by J. Scott of Earlston and are basically all the materials required to construct the A.P.S. plan version. As an example, the Gipsy Moth for 8-10 cc engines and S/C radio control scale includes plenty of good quality Solarbo wood, A.P.S. Plans Handbook, carbon paper, and tracing paper for transferring the plan parts to the sheet balsa, tissue, block, wire and hardwood for £2.15.6d + 10/- for the plan, rather cheap for a scale job eh! Permission of the designers has made it possible for the following plans, all favourites, to receive the same treatment, Cessna 172, Tiger Moth, Ju 87, Wizard of Oz, Peacemaker, and Splatt, to convert them to **Complete-a-Pac** kits.

FREE FLIGHT COMMENT

. . . . By John O'Donnell

The "Contest Season" now seems to extend well into November and this year has certainly been no exception. Traditionally held late in the year the sixth **Northern Area F.A.I. Meeting**, staged at Topcliffe on 23rd October, was *once again* lucky with the weather. Entries, however, were lower than usual with several "regulars" conspicuous by their absence. The obvious explanation is the correct one—Team Trials just a fortnight later.

Those who did attend seemed quite happy with the contest, the organisation, and the plaque and merchandise awards. Processing was attempted in part with the weighing of Wakefield motors and the provision of standard fuel for the power entrants. It was quite apparent that some Wakefield fliers still work by length and not by weight of rubber—as motors presented for processing ranged from 36 to 45 grams. Competitors were left, as usual, to find their own timekeepers—a task becoming steadily more difficult with the advent of tactical flying and the resultant delays.

Thermal spotting and tactical flying were evident in Wakefield—much to the delight of the glider fliers waiting downwind. This did not last long and there was eventually a mixed group of Wakefield and glider fliers downwind waiting for someone to test fly. Conditions seemed rather peculiar with small and weak patches of lift, and launching close to a thermalling model was no guarantee of success. Best time to fly was early, as demonstrated by Dave White who recorded 13:36 with a very simple-looking design. This score did not look as if it would be good enough—but several likely looking contenders, particularly Ron Pollard and Gerry Tideswell, slipped on their final flights.

Even glider scores were not as high as expected and adequately illustrate the uncertain lift. Jon Clements seemed to have a relatively easy win, obtaining four maxs. from his "Wichita" towards his 13:57 score. Gerry Abbott filled second place with a "Shorty" style model, whilst Tony Young edged out Mike Reeves from third place. I managed to find a new way to lose a contest by dropping the line (and pennant) over the wing when releasing in a thermal. Unfortunately the line did not stay on all the way to the ground!

Power had a small entry but top places were keenly fought. Winner was Terry Toolan flying a derivative of my "Pendleton Fault" design. He flew so late that he only completed his flights by dint of borrowing a retrieving bicycle from other competitors. Both Roger Baggott and Ray Monks could have won—but Roger D.T'd very early on one flight and Ray had a premature motor cut for a very short flight. Such cutting and general difficulty in tuning seems a malady caused by straight fuel, as an immediate cure can be provided by just a few per cent of nitromethane.

On the same day, but at the other end of the country, the **Torbay Autumn Rally** was held at Woodbury Common. Barry Hyde of the organising club sent a report and results.

Again the support suffered from potential entrants preparing for the Trials. In particular support from the London and Southern districts was lacking.

Early morning torrential rain ceased just before the contest was due to start, and entrants enjoyed calm, if lifeless, conditions. Gliders were particularly handicapped and Elton Drew worked very hard for his 7:44 winning score. Power was poorly supported but still needed a flyoff. This was a $\frac{1}{2}$ A affair with Dave Hipperson's model being seen rather longer than John Bailey's.

It was obviously Dave's day as he then went on to win the 6-way rubber fly-off with a new and brightly coloured model. This was Bob Bailey's model (pictured in last month's "Comments") were the only ones to overshoot the common—but Bob suffered from a pale and faded colour scheme, and had a fruitless search till dark. Dave and Bob returned "by moonlight" and were very impressed to find the organisers waiting for them! Remarks in *Northern Area News* that "the organisers gave the impression of being there for the competitors' benefit" reveal a free flight situation unusual enough for comment.



Top, John West (Brighton) used his No. 1 F.A.I. power model for 3rd flight in Open Power which he won at Richmond Gala. Above, Mick Brown (Maidenhead) with 2nd place $\frac{1}{2}$ A model. His 3rd flight max cost him the model, one of many lost.

Results: Rubber: 1. D. Hipperson (Croydon) 9:00+6:34; 2. R. Burgess (Bristol and West) +5:01; 3. J. Bailey (Bristol and West) +4:55; 4. R. L. Bailey (Croydon) +4:42; L. F. Long (Torbay) +3:34; 6. B. Bow (Bristol and West) +3:25. **Glider:** 1. E. Drew (Bristol and West) 7:44; 2. C. Chapman (Torbay) 7:35; 3. C. Bailey (Bristol and West) 6:41. **Power:** 1. D. Hipperson (Croydon) 9:00+3:55; 2. J. Bailey (Bristol and West) 9:00+3:32; 3. N. Wittchell (St. Albans) 8:31.

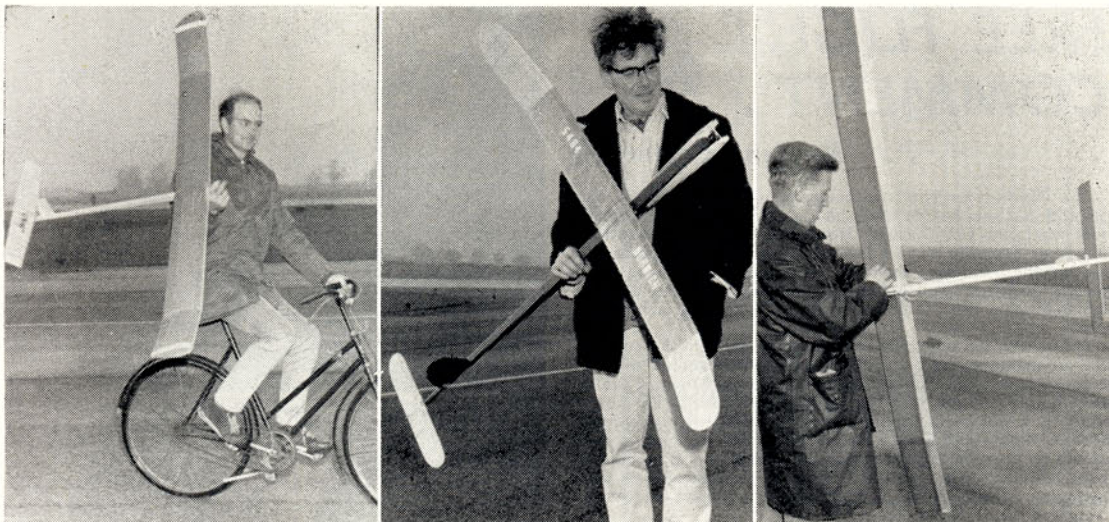
Another event favoured by the weather man was the N.W. Area's "**Rootes**" Trophy Event held at the B.A.C. 'drome at Salsbury. On arrival the weather was so calm that a model had to be flown before a decision could be taken as to where control should be pitched. It did not stay quite that calm all day, but a move upwind in early afternoon enabled maxs to continue inside the airfield—highly necessary in view of the best-kept perimeter fence I have seen for many years.

The "Rootes" is a team event with a club's best two in individual scores in each of rubber, glider and power going to make up its team total. Four flights are required so as to prevent all-rounders flying all classes and thereby encourage a true team effort. The calm conditions meant that this did not quite succeed this year—and I was able to contribute more than my share towards Whitefields' clear win over Wallasey. Scores were around 68 and 65 mins out of a possible 72.

Individual events held in conjunction with the Rootes saw most entrants "double up" their first three flights—but a few either like exercise for their money or have a reluctance to put up too many eggs into one basket. It was the first time I have ever managed a triple treble (R.G.P.) without re-entry, nevermind three times four maxs., so I went home very well pleased.

It was also the first time I had needed the bow and arrow that I have carried for the past two seasons. A late evening test flight with a Wakefield terminated well up an awkward tree. Recovery by means of a line shot over the branch was almost effortless—even though it was the first "live test" for the equipment. Martin Dilly's article in the July '65 *Aeromodeller* gives the details of a system that I can recommend.

The **Trials** to select the teams for the 1967 Free-Flight World Championships have been the subject of much concern of late.



Tony Young makes use of wheeled recovery vehicle of dubious sex, leads the A/2 trials.

Geoff Lefevre and Wakefield, tying with Dave White for third position.

Jack North prepares sheeted wing A/2 reserve, is in fourth place for team.

When originally scheduled for October and November 1966, there was widespread apathy as to the implications—except perhaps on the N.W. Area Committee. It took an initial date change, then the cancellation of the October meeting, plus the absence of entry forms and a remarkable lack of information from the S.M.A.E., to arouse real interest in what was happening. About this time the free-flight sub-committee started to show some interest.

Stan Wade's decision to hold the November meeting as scheduled, with a second Trials in the Spring of 1967, was supported by the sub-committee but they rearranged his original timetable governing the actual flying. The arrangements actually used spread all events over both the Saturday and Sunday, on a R/P/G rota, with one hour rounds. Eventual realisation as to when the sun sets in November forced events to start and finish early.

Despite the object of the Trials (to select the 1967 teams) the organisation of the actual meeting was little different to a club gala. The events were run in rounds and there was occasional weighing of models and rubber motors but it was still a case of a couple of people giving out flight cards to competitors and leaving them to find their own timekeepers. In short, the "organisation" was under-staffed.

The round times were lax—with at least one well known power competitor flying several minutes after time. (He was very closely watched by competitors on subsequent flights, and nearly missed another round). Despite the importance of standard fuel this was not supplied and entrants were left to supply their own. I heard of at least one flier who had brought only enough fuel to test fly!

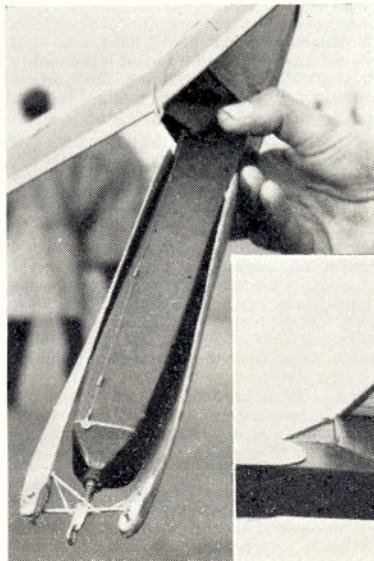
The Autumn run of calm contest weather finally broke for the 5th and 6th November—and conditions over the two days were extremely varied. Weather at Topcliffe on the Saturday morning was far better than at home—but was still breezy enough for many maxs to end outside the airfield. The wind dropped towards evening, but was back with rain for Sunday morning. There was even talk (amongst Wakefield contestants) about requesting a curtailment of flying after three complete rounds. This did not find approval—but the weather promptly improved to the extent that the final rounds were almost calm. At least the anticipated travel and flying difficulties with fog did not materialise.

The early starts gave trouble to a few people—including the Comp. Sec. who had previously delegated Martin Dilly to "stand-in" and organise the initial power round on the Sunday. Competitors, of course, were expected to be there regardless—but there were so many modellers at my hotel that the management provided a specially early breakfast.

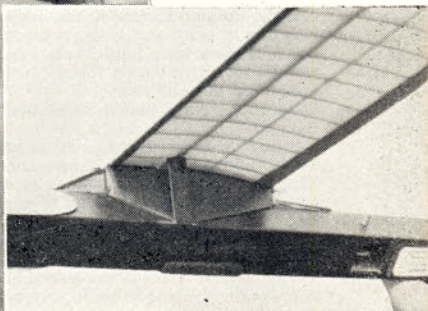
Tactical flying was very evident in glider—especially during the first round when most of the entry trooped 200-300 yards

downward of control and waited for someone to fly. Dave Wiseman surprised many by launching "on his own" and towed for minutes on end, watched by everyone else. A handful of London Area fliers took themselves off crosswind in the hopes that no-one else could thereby use their lift. Throughout the weekend lift seemed weak and localised and hence tactical flying was not always successful. Finding one's own lift could still be disappointing as it often petered out very quickly. The windy round on Sunday morning certainly spread out the scores although Pete Jellis managed to record his third max. Top positions changed about considerably, and the eventual winner was Tony Young with 4 maxs and a 40 sec. third flight! Following scores went down at intervals of a few seconds.

Wakefield had not quite the same emphasis on tactical flying due to the inherent drawbacks of having to wind rubber. The third rainy round brought the already mentioned suggestions of "calling it a day"—but the flights achieved left top positions pretty well unchanged. These stopped much the



L. Burrows of Blackheath uses a moving wing on his Wake, note line to noseblock and runners on wing pylon with rubber band tensioner at rear of pylon, is 5th in trials.





Margaret French and Joe Savini compare power designs, 2nd and 3rd in the trials so far. Hubbie George does the flying—not Margaret by the way!

same throughout the contest even though Dave White and Dick Godden both launched into the same sink on their fifth flights—and let Ray Monks take top place. There was some gadgetry seen and this is now taking the same approach as power—i.e. towards trim changing devices rather than efficiency increasing ones. Examples present included Geof Lefever's auto-rudder and Lou Burrows' sliding wings.

The Power event looked quite impressive in comparison with the others as "straight" fuel has still left models with performances in excess of the 3:00 max. A good engine is undoubtedly essential but there seemed to be plenty about. Inevitably most of the entry used Super Tigres. Nine or ten competitors with double maxs on Saturday all "dropped" in the wet and windy third round early on Sunday—some disastrously! Others had trouble with stalling on glide—presumably through trimming too close in calm weather. Worst afflicted entrant was Jim McCann who broke one model and then lost his reserve on its first max. Luckiest was probably Ray Monks whose G15 cut at 2 seconds to give him a 19½ second "attempt" for his third flight. He then went on to top this event as well as Wakefield. (He also did five flights in glider).

My good season of "open" contest caught up with me at the Trials and the less said the better. But a lot could happen at the second Trials—especially if it is held as early as some of the sub-committee are said to want. As the S.M.A.E. A.G.M. failed to produce any volunteer to replace Stan Wade, retiring after three hard years as Comp. Sec., arrangements for the Trials are doubtless in a state of flux.

Results: Rubber: 1. R. Monks (Birmingham) 13:31; 2. R. Godden (Cambridge) 12:53; 3. G. Lefever (Norwich) 12:43 and D. White (York) 12:43; 5. L. Burrows (Blackheath) 12:41; 6. R. Bailey (Reading) 12:20; 7. D. Hipperson (Croydon) 12:09; 8. J. Maybey (Lee Bees) 11:53; 9. R. Lennox (Birmingham) 11:33; 10. B. Halford (Norwich) 11:18; 11. M. Dixon (Birmingham) 11:12; 12. R. Elliot (Lee Bees) 10:57; 13. J. O'Donnell (Whitefield) 10:45. Power: 1. R. Monks (Birmingham) 14:12; 2. S. Savini (Wallesey) 13:41; 3. G. French (Essex) 13:28; 4. J. West (Brighton) 13:12 and B. Martin (Tynemouth) 13:12; 6. M. Gaster (Surbiton) 13:05; 7. T. Toolan (Whitefield) 13:04; 8. P. Buskell (Surbiton) 12:55; 9. D. Posner (Surbiton) 12:36; 10. K. Glynn (Surbiton) 12:07; 11. B. Hooley (Warton) 11:57; 12. G. Miller (W. Coventry) 11:51. Glider: 1. A. Young (Croydon) 12:40; 2. M. Wood-

house (Norwich) 12:32; 3. T. Punter (Hayes) 12:22; 4. J. North (Croydon) 12:06; 5. P. Jellis (Croydon) 11:49; 6. A. Crisp (Croydon) 11:38; 7. C. Hayward (Croydon) 11:28; 8. B. Halford (Norwich) 11:28; 9. B. Haines (York) 11:27; 10. N. Moore (West Coventry) 11:19; 11. J. Burke (Norwich) 11:08; 12. D. White (York) 11:05; 13. D. Tipper (St. Albans) 10:59; 14. E. Drew (Bristol and West) 10:56; 15. J. Blount (Croydon) 10:52; 16. J. O'Donnell (Whitefield) 10:46; 17. A. Wisher (Croydon) 10:31; 18. W. Parker (Norwich) 10:28; 19. R. Monks (Birmingham) 10:25; D. Wiseman (York) 10:20.

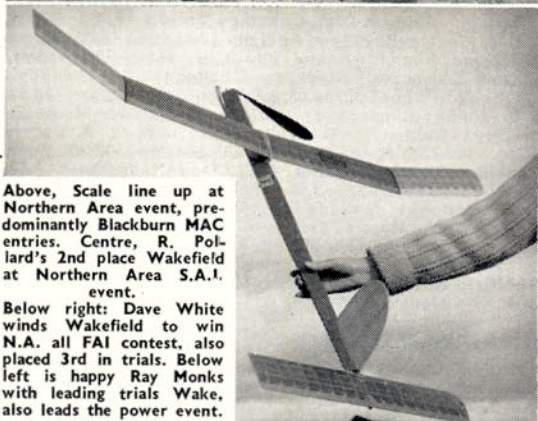
6th N. Area F.A.I. Meet

SIXTH of the Northern Area F.A.I. Galas for *Internationale* Class fliers only on October 23rd at R.A.F. Topcliffe, Yorkshire had good weather despite a few rain showers and a flurry of snow driven by a light wind. Free flight entries were a little lower than usual, due to the nearness of the team trials one presumes, the long journey north to Topcliffe being too much for some, twice in a fortnight. Power was won in the last moment by Terry Toolan (Whitefield) flying a Super Tigre powered all black O/D model. A close second was R. Baggot (Birmingham) who unfortunately lost nearly a minute by under D/T'ing on one flight, undoubtedly, losing him first place, as did a 0:23 sec. flight of Ray Monks (Birmingham) when the motor cut after launching. Glider was a clear win for Jon Clements (Baldon) flying a *Wichita* who only dropped one max, with Gerry Abbott (York) in second place with some steady flying for 13:29, including two maxs. Scores were low for the conditions. Bill Lee



Above, Scale line up at Northern Area event, predominantly Blackburn MAC entries. Centre, R. Polard's 2nd place Wakefield at Northern Area S.A.I. event.

Below right: Dave White winds Wakefield to win N.A. all FAI contest, also placed 3rd in trials. Below left is happy Ray Monks with leading trials Wake, also leads the power event.



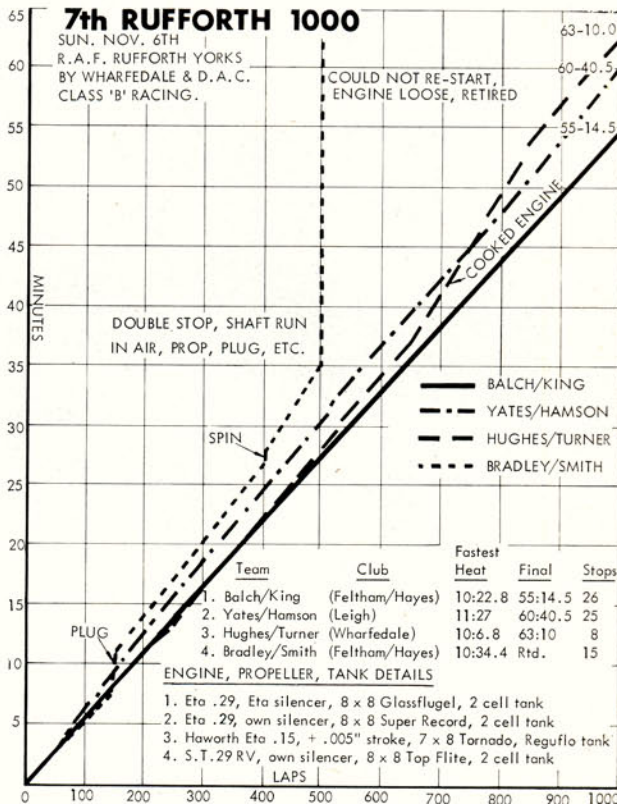
'gave up' with 8:20 for three flights. **Rubber** saw Dave White (York) take the lead early on and top spot with 13:36. Though competition warmed up about 4 pm, bad luck held the opposition at bay. Derl Morley (Lincoln) damaged his model beyond repair, Ray Monks (Birmingham) propeller dangled out of the front and spun his model down. (He's got either good rubber or funny wire as he found his 'S' hook had straightened out!) Then Henry Tubbs (Baildon) and John Shaw (Sheffield S.A.) had good climbs followed by poor glides, Ron Pollard (Tynemouth) and Gerry Tideswell (Baildon) could have beaten White with 2:49 and 2:23 respectively, but Ron went into sink and Gerry knocked a blade off his propeller just before launching. The Selby and District Concours Trophy for **F.A.I. Scale** was a 100% biplane event, threequarters of the entries came from Blackburn Aircraft M.F.C. Only four models came to the starting line and the best take off went to Terry Manley (Blackburn Aircraft M.F.C.) with his *Bristol F2b* for second place whilst Eric Coates (Blackburn Aircraft M.F.C.) took top spot with a *Jungmann*. Harold Yates (Wharfedale) lost several points when he hand launched his *Gloster Gladiator* for third place. D. Clarkson made 4th place with a *Sopwith 1½ Strutter*. **Stunt** was judged by Geoff Higgs and this resulted in another win for Jim Manall (Lincoln) with Harold Dowbekin (Horwich) in second place. Unfortunately we do not have any details of the **Combat** event or results. **Team Racing** had less entries than usual but the noise level was up on most models. Heaton/Ross (Leigh) broke their elusive 5 minute barrier for the first time with 4:52.2. Fastest heat was a real sizzler for Hughes/Turner at 4:24.2. with Don Haworth's Eta they were going really well and had one fast stop. Prior to the final, a fly-off was flown between Place/Haworth (Wharfedale) and Franklin/Ives (Wanstead Warhawks) as there were only 0.4 secs between them at 4:38.4 and 4:38 respectively. The Wanstead lads eliminated themselves when Franklin bought the model in rather fast and Ives removed the tailplane in the catch! The final was spoilt by the fractionally oversized tank of Balch/King (Feltham/Hayes) model which was checked afterwards. Had it been checked earlier the fly off would not have been needed.

Results:—Selby & Dist. Concours Trophy—F.A.I. Scale. 1, E. A. Coates (Blackburn Aircraft)—Jungmann. 2, T. Manley (Blackburn Aircraft)—Bristol F2b. 3, H. Yates (Wharfedale) *Gloster Gamecock*. **Stockton Challenge Cup:—Power.** 1, T. Toolan (Whitefield) 14:03. 2, R. Baggot (Birmingham) 13:33. 3, R. Monks (Birmingham) 12:07. **E. C. Muxlow Memorial Trophy:—Rubber.** 1, D. White (York) 13:36. 2, R. Pollard (Tynemouth) 13:13. 3, G. Tideswell (Baildon) 12:38. **John Neasham Trophy:—Glider.** 1, J. Clements (Baildon) 13:57. 2, G. Abbott (York) 13:29. 3, A. Young (Croydon) 13:08. **Wilkinson Challenge Shield:—F/F Team Award, Whitefield M.A.C.** 37:09. **Rivers Trophy:—Team Race.** 1, Hughes/Turner (Wharfedale), 9:40.5. 2, Place/Haworth (Wharfedale) 9:58.9. 3, Franklin/Ives (Wanstead Warhawks) did not fly. **Sheffield Shield:—Stunt.** 1, J. Mannall (Lincoln) 12:10. 2, H. Dowbekin (Horwich) 11:90. 3, M. Cole 9:70.

Richmond Gala

Held at Chobham Common on November 13th the poor initial weather improved to fair with very little lift about, only two fly-offs being needed. The rubber fly-off was the usual timekeepers eyesight test and was won by J. Maybey (Lee Bees). John West (Brighton) in the power fly-off used his F.A.I. model having demolished his open model attempting his third flight. After an eight second motor run he returned 3:08 for his third flight and 3:52 from a ten second run in the fly-off. In all 103 entries were taken and for the first time a Public Address system was used on Chobham, this being available to other clubs on request.

Results: (18 entries): J. Maybey (Lee Bees) 9:00+5:43; 2, R. Lennox (Birmingham) +4:29; 3, F. Sharp (Blackheath) +4:22. **Power:** (15 entries): J. West (Brighton) 9:00+3:52; 2, B. R. Peers (Congleton) +3:14; 3, T. Payne (Northampton) 8:21. **Glider:** (24 entries): 1, A. Wisner (Croydon) 8:31; 2, A. Young (Croydon) 8:19; 3, P. Jellis (Croydon) 7:40. **All in F.A.I.** (14 entries): 1, D. Welsh (Brighton) 8:40; 2, A. Young (Croydon) 8:19; 3, R. Johnson (Croydon) 7:38. **A.1. Glider:** (15 entries): 1, G. M. Hannah (St. Albans) 6:28; 2, C. H. Morris (St. Albans) 6:16; 3, P. Newell (Surbiton) 6:15. **A Power:** (5 entries): 1, D. Hipperson (Croydon) 9:00; 2, M. Brown (Maidenhead) 7:40; 3, J. W. Keynes (Croydon) 6:15. **Coupe d'Hiver** (8 entries): 1, B. Rowe (St. Albans) 6:00; 2, D. Hipperson (Croydon) 5:48; 3, R. L. Bailey (Croydon) 4:42. **Chuck Glider** (4 entries): 1, A. T. Slater (Leatherhead) 2:45.



South Coast R/C Rally

Held at Golden Cross on October 16th the organisers feared attendance would be low due to the Midland Area Rally on the same day but this was not so. Equally as many cars as '65 arrived and although some of the big names were missing and the multi entry not very large, some good flying was seen. Weather gradually deteriorated and the entire programme, with the exception of scale was flown off. Single channellers had two flights each and of the 28 entries only a few managed to get inside the 82 ft. diameter landing circle let alone near the spot, but there were not as many flyaways this year. Steve Rose (Wanstead Warhawks) placed nearest on his second flight with only 13 foot error flying a Basil Murley designed *Mini Lumpers*, (Cox .09, Minimac Rx, home made Tx, and Conquest escapement). Second nearest was local man Ken Binks (Eastbourne) flying a small glider to 17 ft. error. Basil Murley (Wanstead Warhawks) placed third with 23 ft. error. The afternoon was devoted entirely to the Multi fliers using a free style schedule with some compulsory manoeuvres. Frank van den Burgh (Bromley) won with ease using Kraft proportional gear, well ahead of second placer Brian Burt (Surrey) with Norman Butcher (Surrey) in third place. Open pylon race was rather disjointed with rain, and full size aircraft departures, and Frank van den Burgh won this with 1:19 for the mile with Brian Burt again in second position, at 1:59.

Coming Events

- Dec. 26** Brighton Free Flight Gala, Chobham Common, Open R.G.P.
- Jan. 22** Blackheath Gala, Chobham Common, Open R.G.P. Bill White Cup for Power. Pre-entry to M. Stagg, 85, Wiverton Rd, Sydenham, London, S.E. 26.
- Feb 12** Airtech Open R/C Spot Landing Contest, Commences 10 a.m. 2/6d entry fee, R/C licence and Insurance must be produced.

Rufforth 1000 lap 'B' Team Race

With 14 entries the 7th Annual 1000 lap team race for class B (5cc) team racers run by Wharfedale M.F.C. (and in particular John Horton) was, as usual, a great success. The rain stopped for the first Le Mans start 200 lap elimination heat of round 1. For full details of the fastest four and their best heat time see graph with 'plotted action' opposite.

CRAWLEY SCALE CONTEST

J. McCarthy took top honours with an unfinished S.E.5A at the Crawley club contest. Very well built the construction made up for the incompleteness of the model. Pete Cameron placed second with a Keil Kraft Provost flown R.T.P. and Jack Derby third with a Breguet 901 Sailplane with its cockpit detail only lacking a pilot, thus losing valuable points. The following Sunday saw the flying take place on a calm day but only J. McCarthy took advantage of the conditions and flew to gain more points. Unfortunately the cowl fell off, and as this contained the ballast quite a few aerobatics were performed before it hit the deck.

CLUB and CONTEST NEWS

Bagnall Memorial Cup

Competitors converged on Hixon Aerodrome on October 9th with single channel models to compete for the John W. Bagnall Memorial Cup. 14 entered the contest and after much fine flying the winner was declared as John Mathews (Stafford) who has now won this Cup three times in a row, so he stands down next year! Runners up were 2nd, Stan Robinson, 3rd, Dick Benstead. The Cup and Prizes were presented by Mrs. J. W. Bagnall.

Model Found

Mr. Nalder, 259 St. Leonards Road, Windsor, Berks., has found a yellow free flight model in his garden. Claimants should queue by letter to the above address.

NEW CLUB

A new club has been formed in Hants., called **Christchurch & D.M.F.C.**, with 24 members, but they need some more experienced adult members—they have about six at the moment, so the Junior/adult ratio is 4:1. The *Bournemouth Daily Echo* has given them a good write-up, giving details of their meeting place and flying sites. Anyone requiring details of the club should contact Mr. D. K. James, 9 Southbourne Overcliffe Drive (telephone Bournemouth 48512).



Eliot Horwich's "Blackburn Monoplane" held by Lynda Pearce, "Miss Aeromodelling", with Mrs. Fox, lady Chairman of Whitefield Council, and Mayfair Manager, Mr. Woolf. All part of a "Mag-Men" display, see report below.

Indoor Display Recruits Members

When the film "Those Magnificent Men in their Flying Machines" came to Whitefield club's local cinema, the Mayfair, the club turned out in force to put on a display in the foyer. This was a great success although a trifle trying to the cinema staff at matinee sessions on Saturdays. The show lasted for two weeks gaining the club publicity and new members, most of which were surprisingly in the middle age group. Eliot Horwich made a supreme effort to semi-finish his *Blackburn Monoplane* which was used as the centre piece with his *Bristol Scout*. Also displayed were the following:—*Bucker Jungmeister*, *Fokker D.III*, *D.H. Comet*, and several free flight power models to make up the background. Six volunteers made up plastic kits, these being supplied by a local model shop. They held a press conference and Lynda Pearce, Miss Aeromodelling '66, was introduced to the local Council Chairman's lady Mrs. Fox. Alan Moss set up a Flyball single channel radio system which delighted the small boys who could operate it. On the strength of this success they are to put on a Modelling Evening at a local Youth Club. Again a static display will be arranged and Terry Toolan, noted for his rapid building will be building a model on the spot hoping it flies the same evening. Indoor R.T.P. team racing is another attraction as well as 'pure' indoor free flight.



Members of the Church Lads Brigade Company attached to Bangor Abbey, Co. Durham, taking part in a craft course to obtain the Duke of Edinburgh's award. Left to right: J. Long, A. Watterson, R. Edgar, Mr. Sloan, the Instructor, and D. McNeil (standing at back).

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Irish News

From the M.A.C.I. News Sheet we hear that Maurice Walsh passed away recently at a very young age, and will be sorely missed by all Irish aeromodellers. Maurice was the M.A.C.I. Treasurer for four years and a keen free flight flier as he represented Ireland in the 1955 World Championships and has recently been proxy flying Frank Aiken's model to some first places. The M.A.C.I. Annual General Meeting was held on Saturday November 26th with a dinner and prize awards later. After seeing the Irish lads in action during the off-duty hours at the C/L Champs we expect that it was a riotous affair. The Irish Free Flight Nats had cloudy, damp and calm weather until about 1 o'clock when the wind sprang up as the contest flying started. poor visibility and the wind made O.C.S. flights quite common in 1 1/2—2 minutes. Glider seemed to suffer most in this respect and an *Empress* flown by John McNally took top spot. Out of 14 entries 7 recorded times. Rubber was topped by J. Fitzpatrick with 8:02 the best score of the meeting. Open Power had the first three places go to Belfast members in the order of M. Doyle, G. Dickson and R. Armstrong. They also triumphed in Scale with C. Doyle taking top spot flying a *Waco Hadrian*. Their Radio Control Nationals, by contrast had perfect weather on September 17/18th, at Casement Airfield, events were single channel and intermediate on Saturday with F.A.I. Multi and Scale on Sunday. Single channel was one of their better efforts, Frank Orr, Ulster M.F.C. flew an elderly *Keil Kraft Super 60* through a well placed pattern and took the top spot. Only three models were ready to fly in Intermediate, then one found his engine was rocking about—so there were two—Ken Law with a *Caravelle* and Robert Stirling, A.P.S. *Uplift*, placing in that order. A predictable win was achieved

CLUB NEWS

Continued from page 47

by Loudon Blair in F.A.I. Aerobatics and he was on his top form, also flying an A.P.S. *Uplift*. Berti Troy, *Soracco*, should have placed second only his engine played up and H. Dagg pipped him to the post with a *Thomas Morse*

Duster Biplane (which has since figured in Ireland's first mid-air R/C collision). John Evans put in a fine flight with a well built and finished *U.S. Marines Cessna* in scale but there was no opposition for him.

Feltham's Flush Season

This season has given Feltham D.M.A.C. their highest number of contest placings yet. Out of 53 contests entered they have obtained 29 first placings, 16 seconds and 27 thirds! Many of their younger members are making a name for themselves in 1/4 A team racing and combat and they hope to maintain this high standard. Combat is still their most popular event with Rat Racing catching up fast (34 entries at the last Imperial College Meeting), many clubsters finding the unrestricted model and motor rules to their liking, also giving them a slight insight to team racing. At the moment they are using Super Tigre .40 R.V., K&B .40, and Fox .40 RR. With improvement to the models they are hoping to break the three minute barrier next season. Their team race teams are still fighting against those Wharfedale lads who take the top spots and tuned length silencers are hoped to improve their standards next year. New members are always welcome at Tuesday club meetings at Cardinal Road Infant School, Nr. Feltham Station, from 7.30 onwards, activities include film shows, indoor flying etc.

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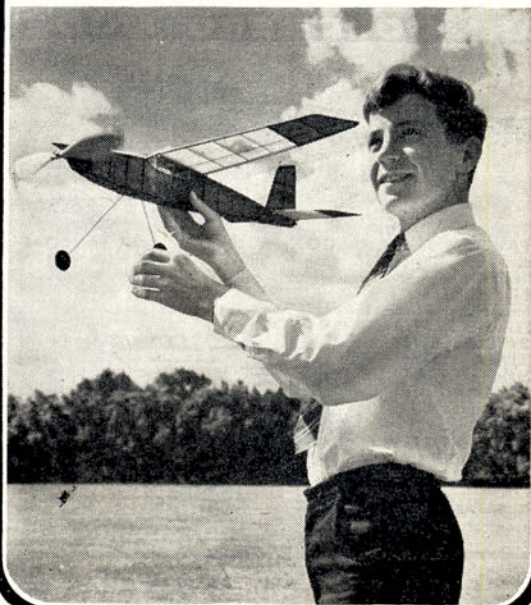
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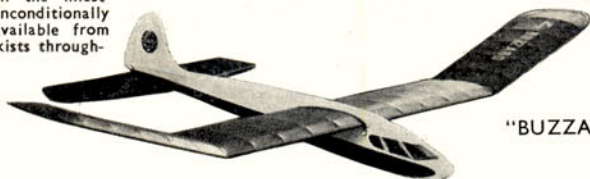


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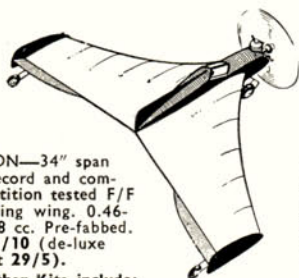
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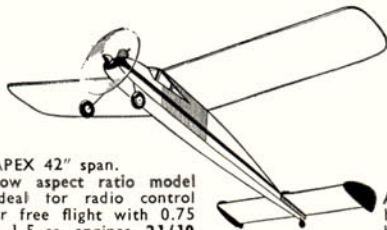


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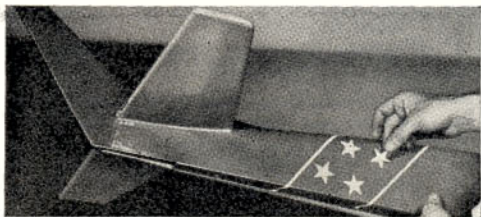
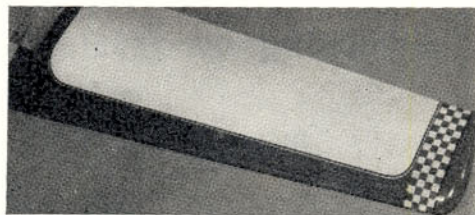
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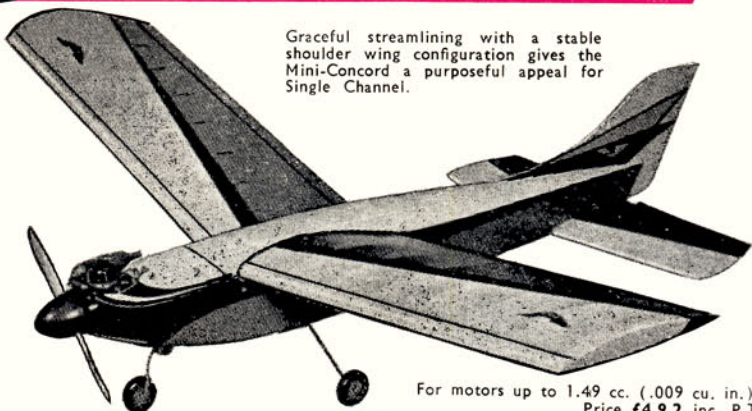
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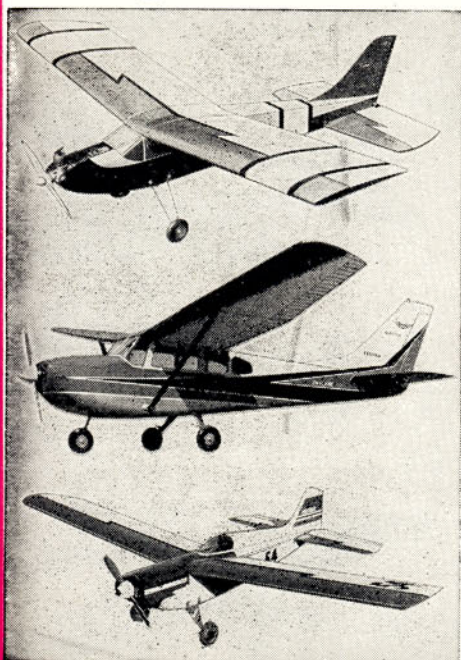
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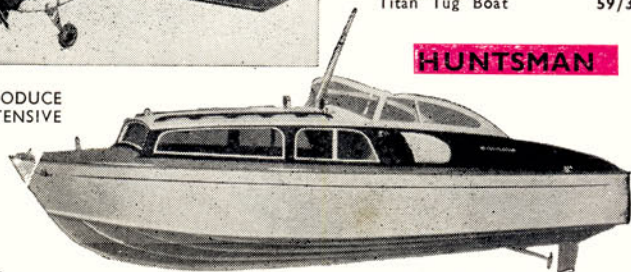
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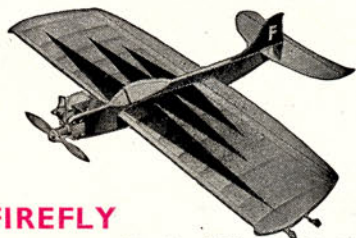
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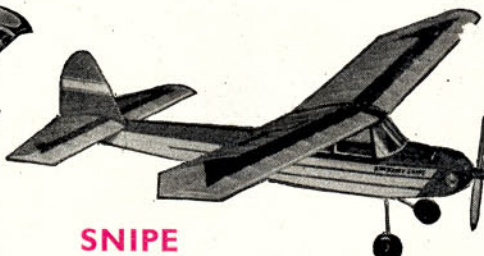
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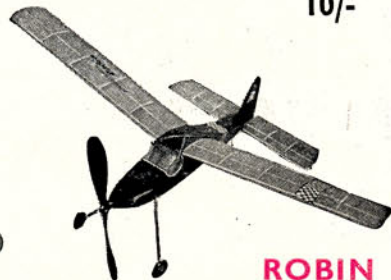
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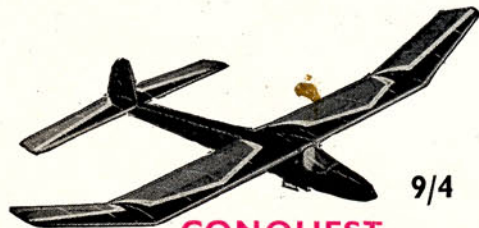
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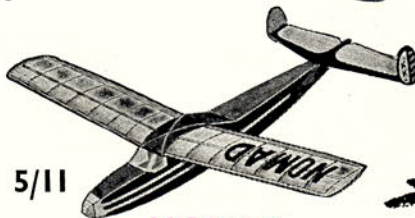
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