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JULY 1965

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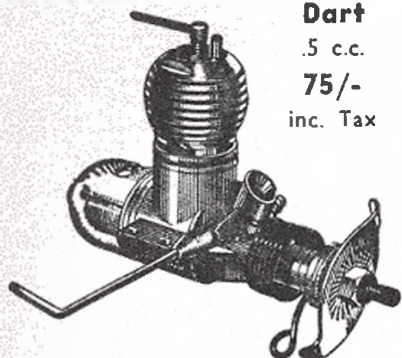
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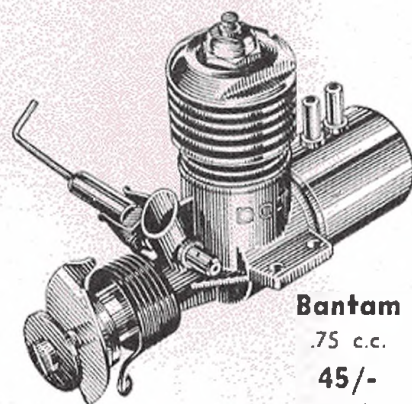
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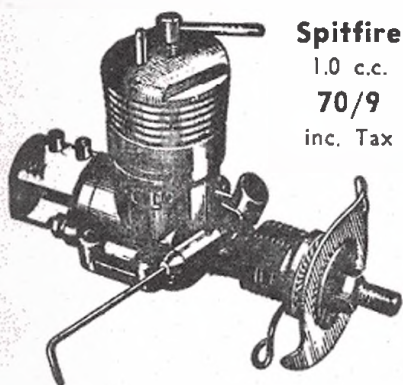


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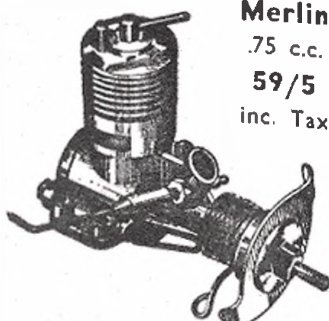
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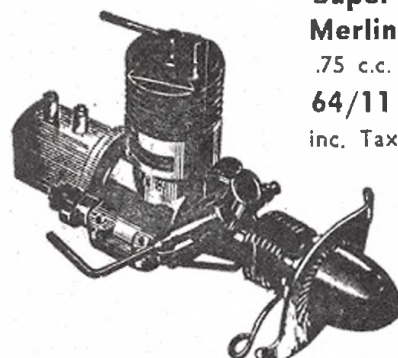
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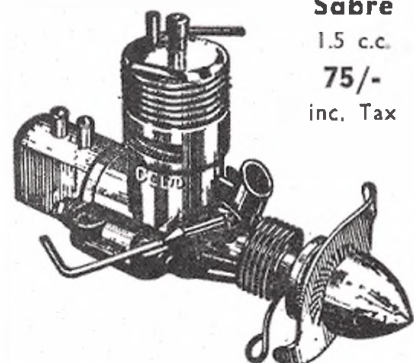


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# AERO MODELLER



HOBBY MAGAZINE

## July 1965

VOLUME XXX No. 354

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## cover

"Spirit of Surfers Paradise" is the name given to the Lancaster B, Mk. VII which arrived at Boggin Hill on May 13th after a lengthy flight from Australia. During the journey parts of the aeroplane were embellished by various stencils and this view of the nose indicates a few. Beginning from the front, the Cat and the Kiwi were painted at Changi, Singapore, the Kangaroo which is part of the Royal Australian Air Force insignia at R.A.A.F. Amberley, the Javelins were put on by "C" flight of No. 60 Squadron R.A.F. at Changi, the large green badge is that of l'Aeronautique Navale, Noumea, New Caledonia, who were the "owners" of the aircraft before it was donated to the Historic Aircraft Preservation Society. Turn to page 310 for further details.

## next month . . .

A really full issue with loads of gen. Motor Mart, Making sheet surface wings in jigs, full pictorial reports on the British and South African Nationals plus other contests of the month and up to date news of all latest developments. Star plan of the issue—maybe even of the whole year, will be the remarkable near scale single-channel Junkers Ju 87 D by Japanese F. Arigaya. This 41 in. model already a great success in its homeland will appeal to all Radio flyers. Also for scale fans, the beginning of Alex Imrie's "Jagdstaffel Markings", with details of the famous Aces of W.W.I. Look for the usual bright colour cover available from July 16th.

## other modelling angles . . .

The full description of the Sebring-winning Chaparral sports car and three view drawings, is the main feature in July Model Cars. Le Mans 24 hour race cars the Iso Grifo and Alfa Romeo GT Zagato are also featured in plan form for the do it yourself body builders. An interesting space frame chassis is featured for the Pittman 196A motor, plus another instalment of rubber driven dragsters, and more on joining metals. From America comes a novelty of "real" gear changing and applications of use at open days, fetes, etc. John Baxter details competition car colours needed for that authentic touch and the Aston Martin DBRL-300 in Chopping Miniatures.

Main feature of July Model Maker is the full size free plan for a 17½ in. fast patrol boat, built by Vosper. Supporting articles include a new and simple Marblehead yacht of hard chine form, description of a New Bedford whale boat with full size functions explained. Hints and tips on radio control from last year's Northern MPBA champion, drawings of two Burnham fishing vessels, a carburetter, the early seaplane carrier H.M.S. Pegasus, two merchant ships and one period ship. Also included are a host of regular features and a further article on vane gear for yachting.

July Radio Control Models & Electronics gives details of R/C gear needed in the 36 in. class yachts and shows examples of home built equipment. For the aircraft men a trimming article to take the pain out of those first few moments is included and fully explained. The cover depicts a 1/6th "Magister" scale model on a blue styled layout. Designers will appreciate a tone generator circuit and the full size plans for a single channel flying boat present something new for the builders. Pic Page shows the conversion of a commercial transmitter and Commercial Developments reports on all the new items.

## Editorial and

### Advertisement offices

38 Clarendon Road,

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## MODEL AERONAUTICAL PRESS LTD

# EXPERTS' CHOICE!

## VERON Concord

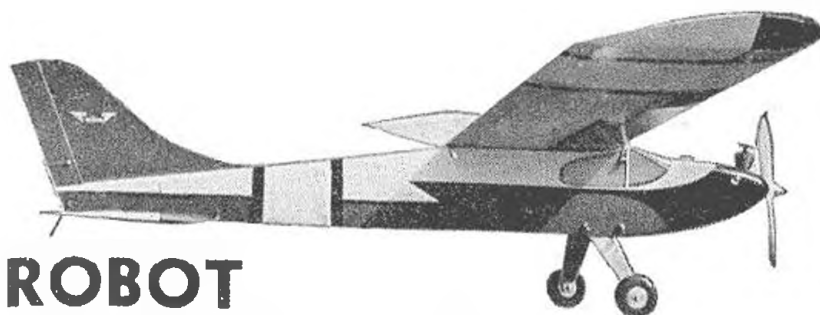
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R/C 2.46 c.c. 96/5

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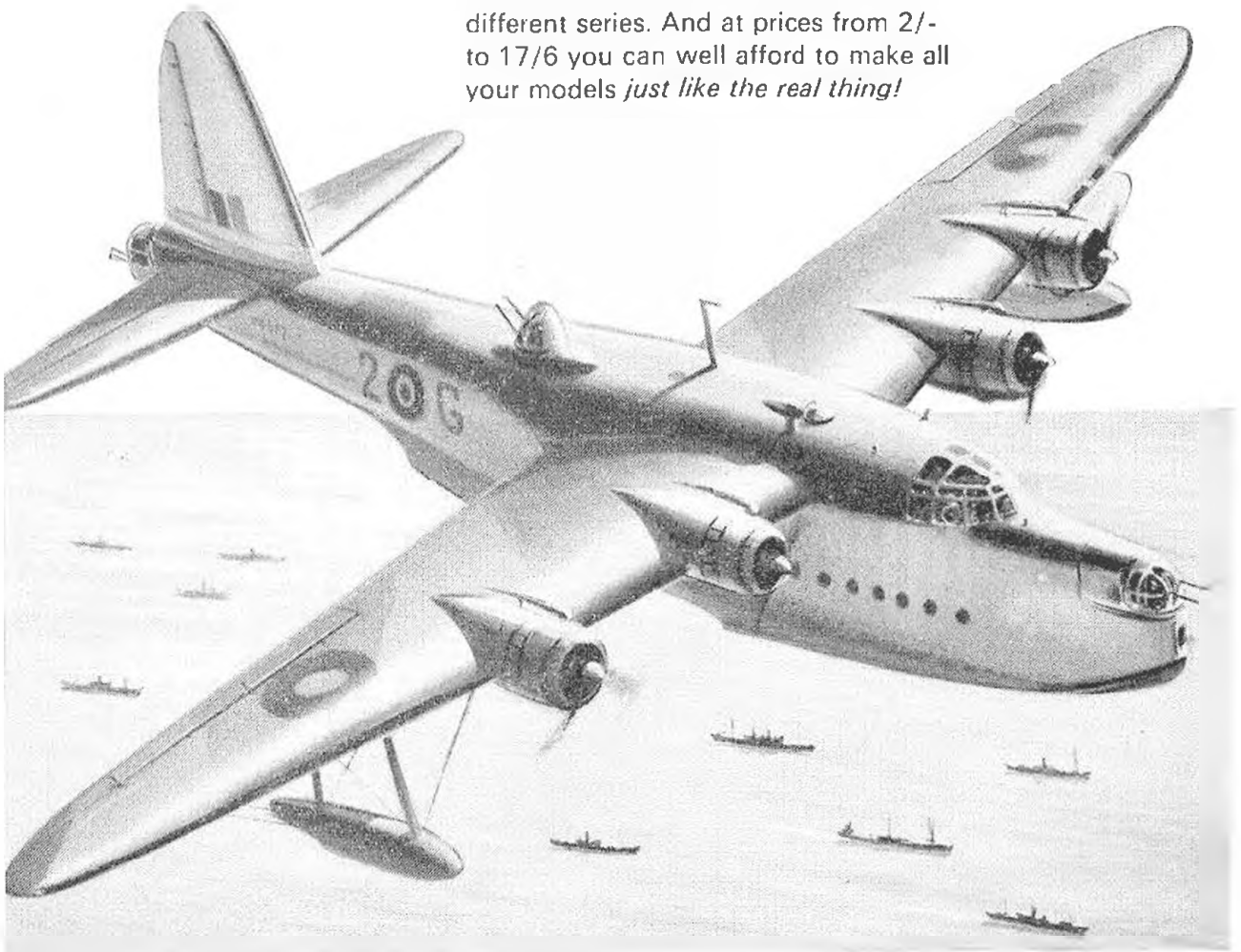
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AIRFIX MAGAZINE 1/6 MONTHLY  
AIRFIX CATALOGUE 9d.

# CHECK CHART FOR BALSA STRIP

This table covers weights for the complete standard range of Balsa strip sizes in wood densities from 6 to 16 pounds per cubic foot. You can use it in various ways, as explained under the individual headings.

## WEIGHT CHECK

The Table gives weight in ounces of the number of strips shown in the second column for the particular strip size required, at 6, 8, 10, 12, 14 or 16 lb. density. For example, with  $\frac{1}{16}$ th sq. strip and 12 lb. density, four strips will weigh .250 ounces. In other words, a single 36" strip of  $\frac{1}{16}$ th sq. strip in 12 lb. density will weigh  $\frac{1}{4}$  ounce. If you like, you can also work out the number of strips per ounce by taking the reciprocal of the table figure and multiplying by the number of strips shown in the second column.

## DENSITY CHECK

In this case you need to know the actual weight of a given 36" length of strip (e.g., by actual weighing). Multiply this weight by the number of strips shown in the second column for that particular strip size and find the same (or nearest) figure under the 'density' columns. For example, suppose one strip of  $\frac{1}{16}$ th sq. weighs .28 ounces. Multiply by number of strips for that size  $2 \times .28 = .56$ . Compare with figures in 'density' columns. .563 is nearest, therefore this particular length of strip is just under 12 lb. density.

## QUALITY CHECK

It needs a lot of experience to judge the quality of Balsa by examination, but there is a much easier answer. Always specify SOLARBO BALSA when you will be sure that the quality is the best obtainable. SOLARBO BALSA STRIP is specially selected and graded for aeromodelling use.

SIZE	NO OF STRIPS	BALSA DENSITY POUNDS PER CUBIC FOOT					
		6	8	10	12	14	16
36" x $\frac{1}{16}$ "	$\frac{1}{16}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{32}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{8}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{16}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{4}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{8}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{2}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{32}$ x $\frac{3}{32}$	.141	.188	.234	.281	.328	.375
36" x $\frac{3}{32}$ "	$\frac{1}{8}$	.188	.250	.312	.375	.438	.500
	$\frac{3}{16}$	.141	.188	.234	.281	.328	.375
	$\frac{1}{4}$	.188	.250	.312	.375	.438	.500
	$\frac{3}{8}$	.141	.188	.234	.281	.328	.375
	$\frac{1}{2}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{8}$ x $\frac{1}{8}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{16}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{4}$	.250	.333	.416	.500	.583	.667
36" x $\frac{1}{4}$ "	$\frac{3}{8}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{2}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{16}$ x $\frac{3}{16}$	.141	.188	.234	.281	.328	.375
	$\frac{1}{4}$	.188	.250	.312	.375	.438	.500
	$\frac{3}{8}$	.281	.375	.469	.563	.656	.750
	$\frac{1}{2}$	.188	.250	.312	.375	.438	.500
	$\frac{3}{4}$	.281	.375	.469	.563	.656	.750
	1"	.375	.500	.625	.750	.876	1.000
36" x $\frac{3}{8}$ "	$\frac{1}{4}$ x $\frac{1}{4}$	.125	.167	.208	.250	.292	.333
	$\frac{3}{8}$	.188	.250	.312	.375	.438	.500
	$\frac{1}{2}$	.250	.333	.416	.500	.583	.667
	$\frac{3}{4}$	.375	.500	.625	.750	.876	1.000
	1"	.500	.667	.832	1.000	1.166	1.333
	$\frac{3}{8}$ x $\frac{3}{8}$	.281	.375	.469	.563	.656	.750
	$\frac{1}{2}$	.375	.500	.625	.750	.876	1.000
	$\frac{1}{2}$ x $\frac{1}{2}$	.500	.667	.832	1.000	1.166	1.333
36" x 1"	1"	1.000	1.333	1.666	2.000	2.333	2.667
	$\frac{3}{4}$ x $\frac{3}{4}$	1.125	1.500	1.875	2.250	2.625	3.000

## ALTERNATIVES

You can also save weight, or increase local strength for the same weight, by using alternative strip sizes. The Table is useful for quick comparison of possible alternatives. For example, if the choice is between, say, very hard  $\frac{1}{16}$ th square and soft  $\frac{1}{4}$ th square for longerons, compare the weights at 16 and 8 lb. density, respectively. The  $\frac{1}{16}$ th sq. will weigh .333 ounces for 4 strips; and the  $\frac{1}{4}$ th sq.  $2 \times .188 = .377$  ounces—only a matter of .044 ounce difference, in this case.

## GRADE CHECK

The method of grading Balsa by density is rather arbitrary, but widely used. 6 lb. density is 'soft' or 'light'. 8 lb. density is 'light-medium'. 10-12 density is 'medium'. 14 lb. density is 'hard'. 16 lb. density is 'extra hard'. From the known weight of a strip, therefore, the table shows you its 'grade'. For example,  $\frac{1}{16}$ th sq. strip weighing around .29 ounces would be 'hard'.

## COMPARISON

This is important for selecting a number of matched strips for longerons or wing spars. In the former case, matched strips ensure that the fuselage will not pull out of shape. With wing spars, matched strips ensure equal strength and weight in each wing panel. Match by weight and physical comparison for bending strength. Select the best strip available for these important jobs... that means SOLARBO STRIP, of course!

# Solarbo

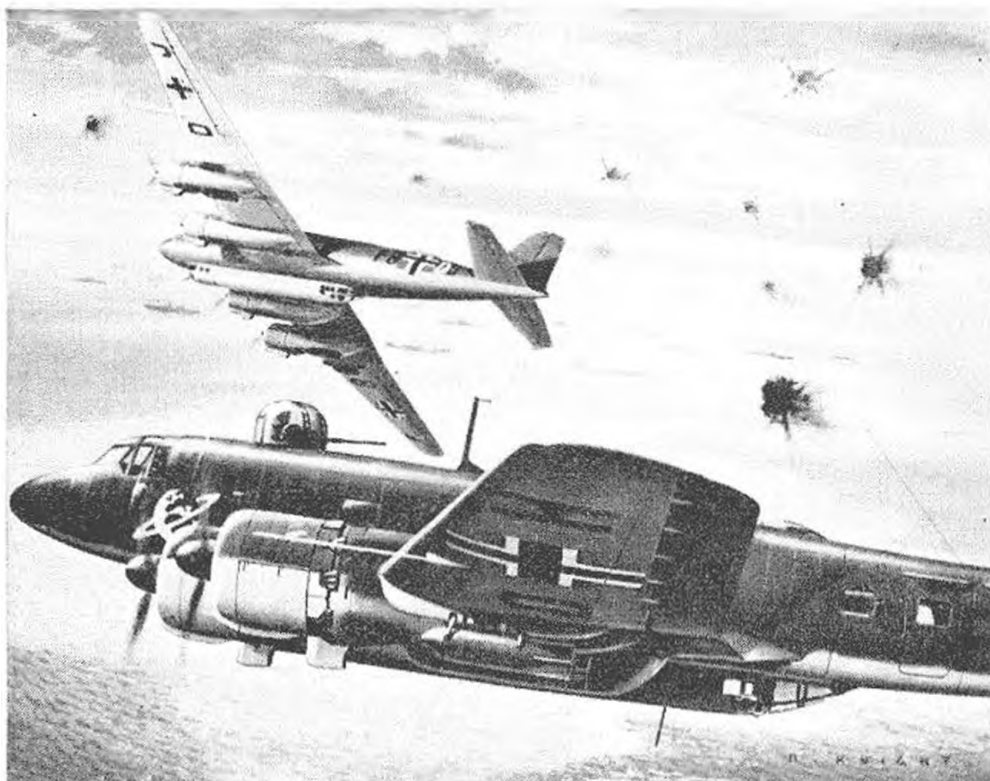
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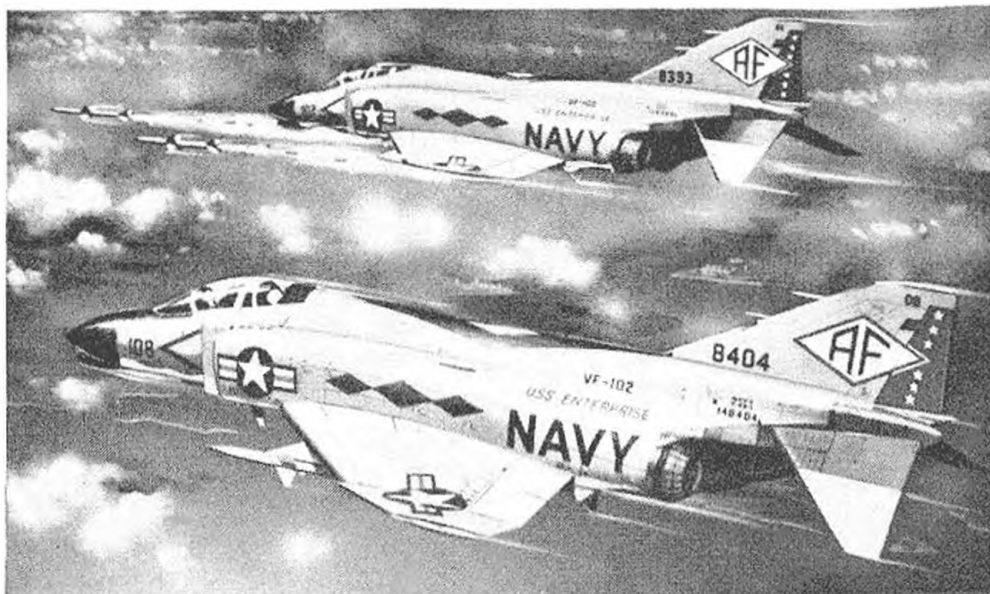
The Condor—a civilian airliner that the Luftwaffe converted to use against the North Atlantic Convoys. The Phantom II—which beat most of the world's existing speed records when it was first in production and is now under order for the RAF. As you build them watch them come to authentic life under your fingers. They make worthy additions to the ever-growing Revell range of models, a range that has something for everybody. Look for them at your nearest Revell stockist.



## H.204 FOCKE-WOLF 'CONDOR'

12/6

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## H.110 McDONNELL 'PHANTOM II'

8/6

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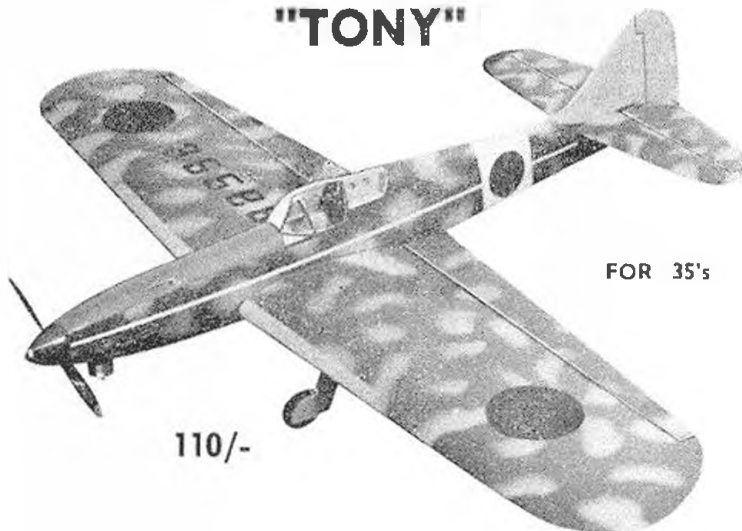
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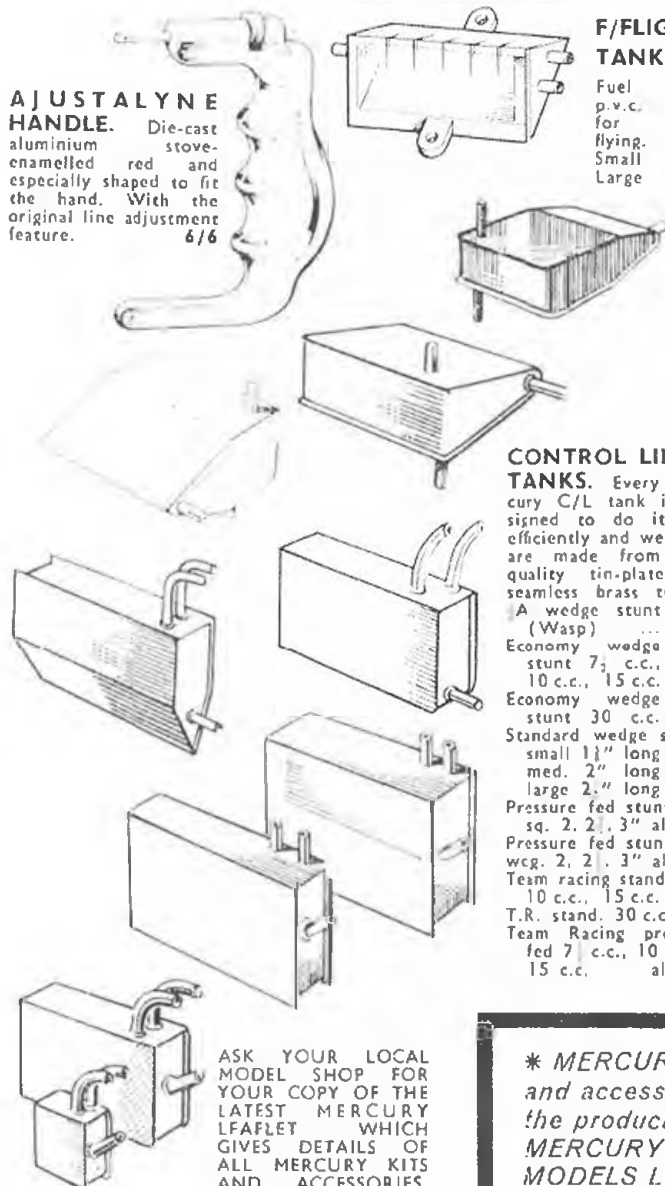
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Economy wedge stunt 7 c.c., 10 c.c., 15 c.c.	3/3
Economy wedge stunt 30 c.c.	3/6
Standard wedge stunt small 1 1/2" long	4/4
med. 2" long	5/3
large 2 1/2" long	6/5
Pressure fed stunt sq. 2, 2 1/2, 3" all	5/3
Pressure fed stunt wcg. 2, 2 1/2, 3" all	5/6
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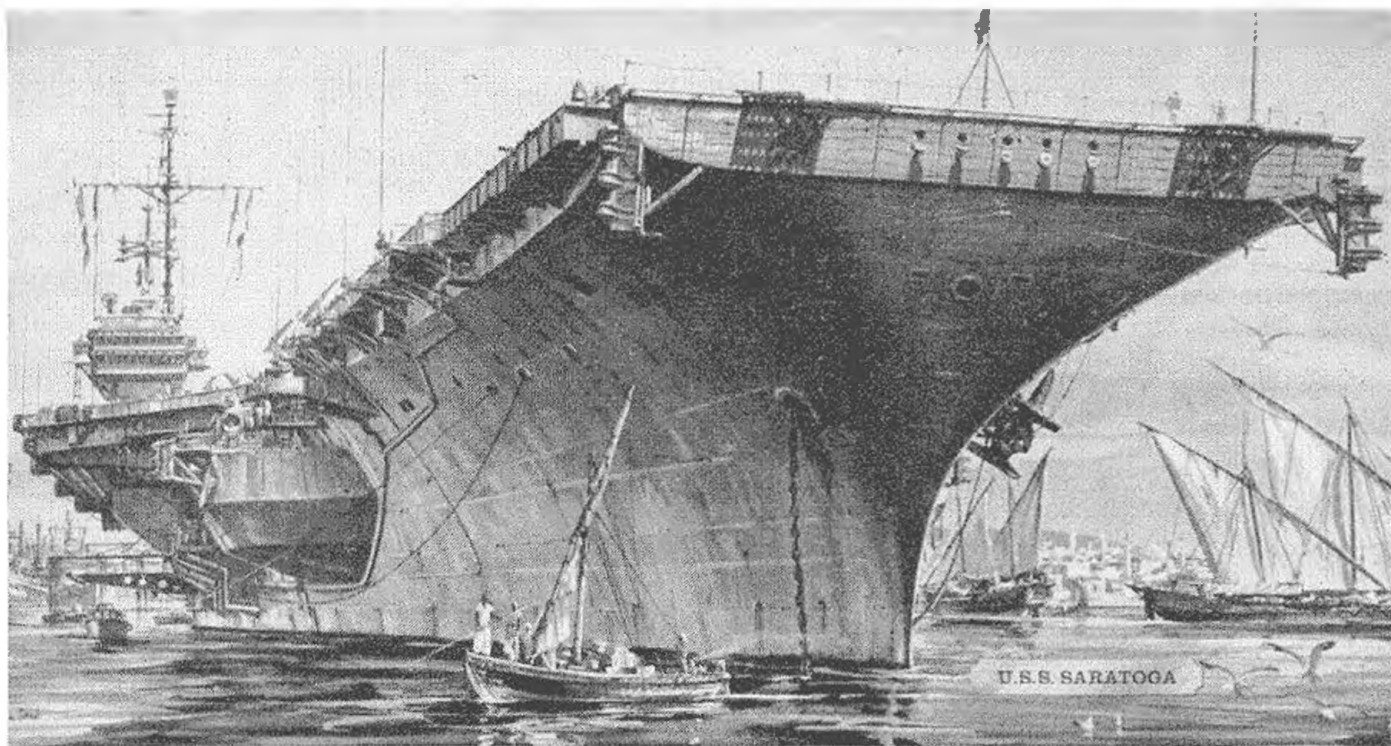
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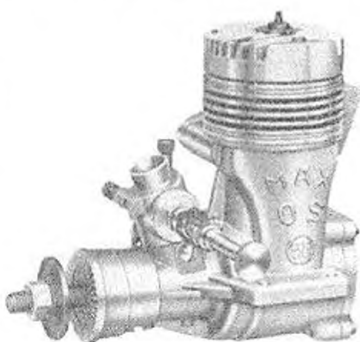
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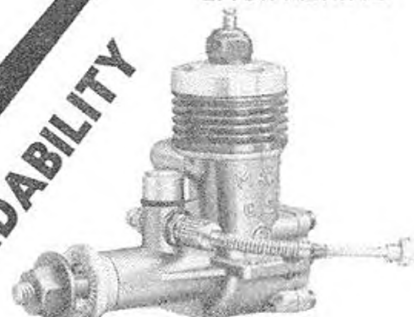


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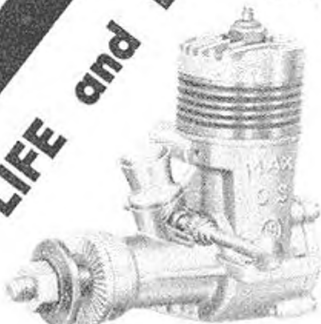


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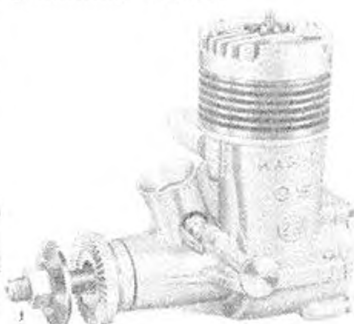
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# Heard at the HANGAR DOORS

## Welcome back!

Arrival of an Avro Lancaster B. Mk. VII on May 13th at the Biggin Hill Air Field was the climax of a long series of negotiations by the Historic Aircraft Preservation Society.

The Lancaster, serial NX611 had been donated to the Society by the French Naval Authorities and flown to Australia from its base in New Caledonia. After overhaul, a crew was selected from an enormous number of volunteers and this last flying Lancaster (now registered G-ASXX) started on its long journey homeward. Stops were made at Singapore, Malaya, India, Pakistan, Bahrain, Cyprus and France, and at each point it would seem that the Lanc. picked up a small souvenir marking as evidenced in our cover photograph this month.

This effort is a tremendous tribute to aviation historians and in particular to the H.A.P.S. who will now be responsible for endeavouring to keep the aircraft flying for as long as possible. This is a most costly business and donations or applications for supporting membership to the Society would most certainly be appreciated by the joint secretary at 300 Coulsdon Road, Old Coulsdon, Surrey.

## Good for Frank

Pleasant surprise discovered on reading the Haw-

ker Siddeley Group newspaper was an announcement that Frank Lee Warburton has been awarded a special 10 guinea prize by the Royal Aeronautical Society, 6 guineas by the City Livery Company and the City Guilds of London Institute silver medal as the best student in Great Britain.

Frank is a technician apprentice and gained these awards for his very high standard of work for the K4 aeronautical engineering course. Better known to aeromodellers as the originator of very fine semi-scale control-line aerobatic models notably the Japanese "Teny". Frank has been a member of British representative teams in 1960, 1961, 1962, 1963 in Belgium, Hungary and the U.S.S.R. and he was British Champion in Control-Line aerobatics in 1962/63. We learn that Frank's attentions have been recently drawn to Radio Control where we wish him further aeromodelling . . . and academic successes.

## Want a bib?

No, not the baby kind for untidy eaters but the identification variety as are popularly used for competitions on the Continent. Messrs. Johannes Graupner of West Germany have made available a complete set of competitors' contest numbers on durable bibs. These are available on loan only through their British Ripmax Models and Accessories (Competition Department). Applications should be made in writing. Only condition covering the loan is that the bibs must be returned immediately after use cleanwashed and carriage paid ready for the next users.

## Bf 109

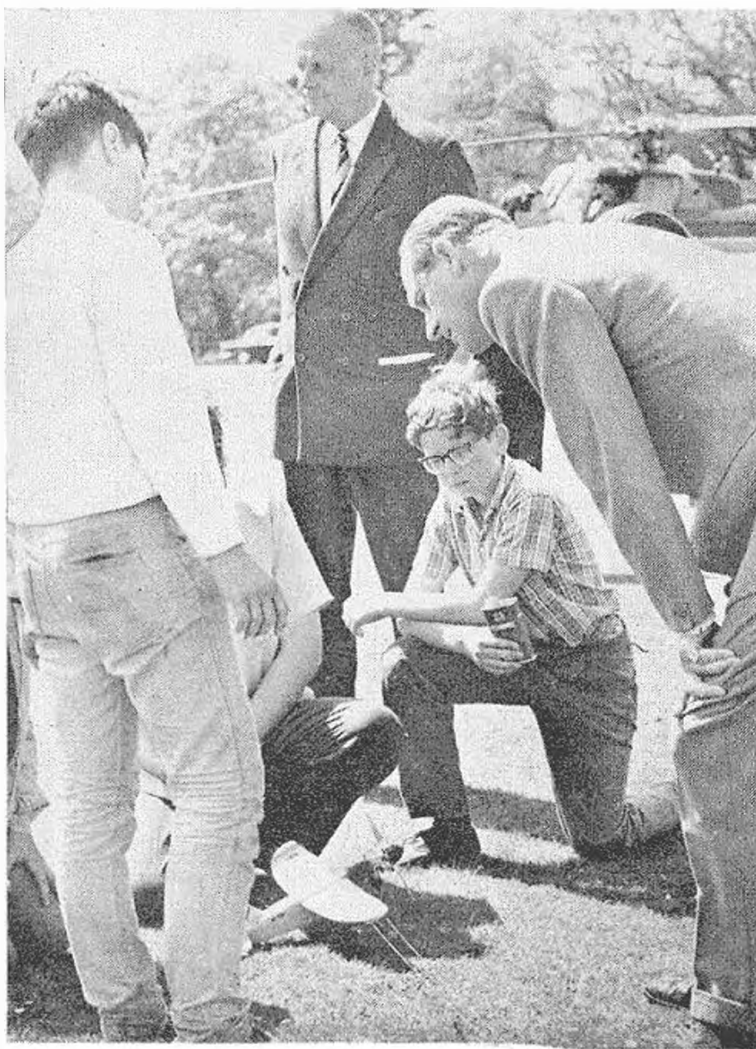
A number of small refinements have been made on our drawing of the Messerschmitt Bf 109E Fighter and these are incorporated on the reprint drawing now distributed through Plans Service, price 2.10d. per plan pack. There is, however, an important alteration which must be noted in the text matter and this concerns the reference to the "Schlageter" Squadron.

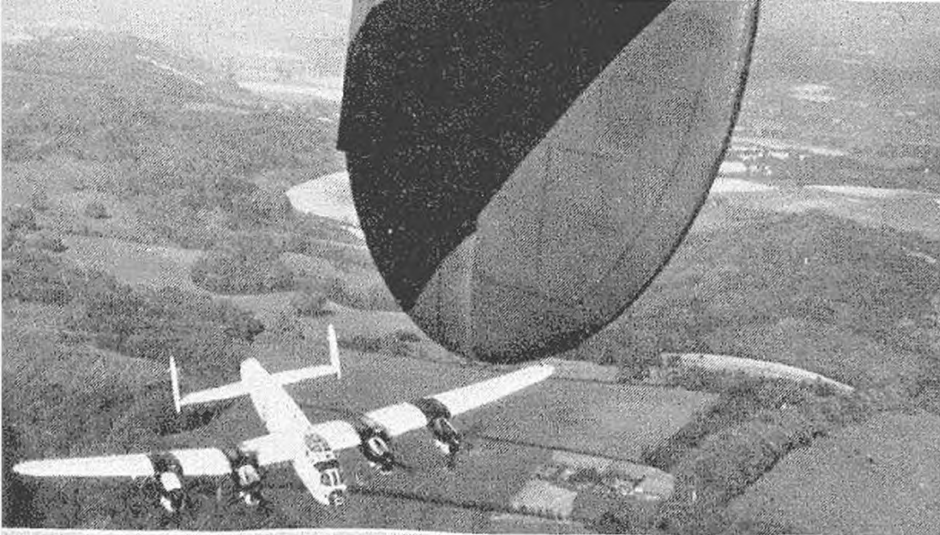
Albert Leo Schlageter, after whom the Jagdgeschwader had been named, was an active participant of German resistance against the French occupation of the Rhineland after W.W.I. He was caught and shot by the French in 1923 after a trial. A second point is that Oberleutnant Roch belonged to the II group of JG26. We are indebted to German and Italian historians for these corrections.

## Well done George!

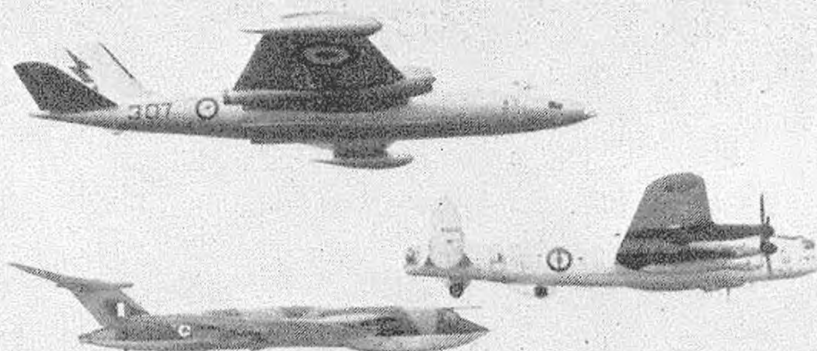
Renowned throughout Scotland for his enthusiasm for all forms of model making, veteran George Leask is retiring from his active business on the Caledonian Model Company, Argyle Street, Glasgow. George tells us that he has really enjoyed his 20 years in the model business and now looks forward to getting back to his modelling for his own fun in a well equipped model workshop which he intends to build near his new bungalow at Gairloch, Rothshire. Twenty years ago George was producing the "Clans-

H.R.H. The Duke of Edinburgh talks to pupils of Brockenhurst Grammar School when they gave a control line flying display as the Duke of Edinburgh toured Brockenhurst Camp site, in Hampshire, in connection with his Award Scheme. Interest in models is of course no passing phase for His Royal Highness is the Patron of the Society of Model Aeronautical Engineers.





Top left this fine study by a "Times" photographer was taken as the Lancaster crossed the Kentish Weald on its last few miles from Sidney, Australia, to Biggin Hill. Fin in foreground belongs to escorting Avro Shackleton of R.A.F. Coastal Command. Lower left formation near Penang Island Malaya was taken soon after departure from R.A.A.F. Butterworth. Escorted on arrival by four F-86 Sabres, the R.A.A.F. Canberra and R.A.F. Victor form a fitting departure tribute. Comparison of weight lifting capacities would be interesting. Note the fins on the Lanc. carry Australian red Kangaroos. These were superimposed by black Elephants, the sign of 249 Squadron at Akrotiri, Cyprus. Istres base, near Marseilles added their insignia below the Elephants. Overall colour is matt white.



man" diesel, a unit which we were proud to own and which powered some of the earliest fully aerobatic control-line models. Modellers north of the border owe a debt of gratitude not only for his maintenance of good supplies but also for his foundation of the Scottish Aeromodellers Association. Happy retirement George!

### Gliding Holidays

Summer training course at the Gliding Clubs which will be found advertising in this and recent issues are to be thoroughly recommended for the fine fellowship and enjoyment they offer. Each club takes trouble to ensure that course members are well fed and accommodated. Particular efforts are made to ensure that as much flying instruction is given as possible during the week although, of course, it is also expected that members will play their part in ground handling, even winch driving. A large number of the course members are aeromodellers and the great majority of the instructors have aeromodelling experience.

In fact, aeromodelling can almost be stated to be a priority for those who succeed in gliding competitions. George Burton, flying for Britain in the standard class for the World Championships as this issue is being printed was a A2 model glider enthusiast while he was a member of the Outlaws (Cannock) club. The most renowned instructor in the country Derek Piggott is well known to all "Oldies" as a pioneer control-line flyer and a member of the 1948 Wakefield team. Visiting this country for the World Championships also were two Aeromodelling Champions, Henri Stouffs for Belgium, the well known

control-line expert and Rudi Lindner flying for West Germany who has the unique distinction of having won the World Model Gliding Championships two years in succession.

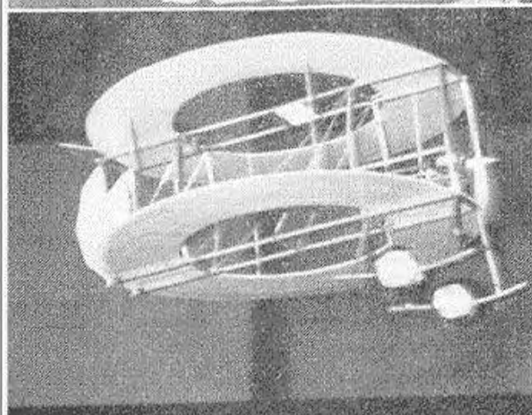
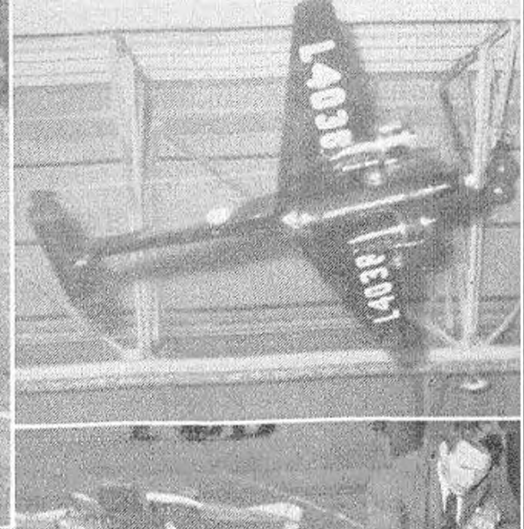
### New Records

Backing up their application at the last F.A.I. reunion for recognition of new radio controlled glider records, the U.S. has now applied for recognition of new radio controlled glider records, the U.S. has now applied for recognition of a new record for distance in a closed course. Frank Colver from California flew his 8 ft. span "Jeteo Imperial" model a total distance of 43.5 miles while circling two pylons 100 metres apart on the cliffs of Corona del Mar on May 8th. Model was slope soaring during the 2 hr. 40 min. flight over the sea cliffs.

### Scale meeting at Shuttleworth

Second of the contests for models of the aircraft in the 20th Century Fox Film "Those Magnificent Men in their Flying Machines", will be held at the aerodrome of the Shuttleworth Collection, Old Warden, Bedfordshire, from approximately 11 a.m. on Sunday, June 27th. The airfield is located off the northern end of the Biggleswade by-pass on the route A.1.

In view of the success of the S.M.A.E. scale meeting at R.A.F. Hemswell, as reported on the following pages, the Shuttleworth Collection authorities are making *all types* of scale model welcome for a bring and display or fly rally. The pleasant situation of this fascinating airfield and its fine museum of preserved vintage aircraft (for which there is an admission charge), make this a date not to be missed.



## Results

### CONTROL LINE

- 1 B. P. Ball, Wanstead (*Hawk P6-E*),
- 2 S. R. Perry, Wolves (*H. Henley*),
- 3 A. C. Day, Handsworth (*Fokker DVII*),
- 4 R. Ivans, Wolves (*H. P. Hampden*),
- 5 H. J. Carter, C.M. (*Great Lakes Spl.*)
- J. E. D. Mackie, RAFMAA (*Sopwith Camel*),
- (Non-silenced Criterium qualification)

460  
410  
375  
369  
365

### FREE FLIGHT

- 1 A. Clements, Rebels (*Fokker Spinner*),
- 2 J. D. McHard, Gravesend (*Dixon Nipper*),
- 3 T. Manley, Blackburn (*Bristol F2b*),
- 4 J. Palmer, Wanstead (*Auster AOP9*),
- 2 C. Edwards, R.F.M.A.A. (*Lee Richards*),

415  
411  
405  
388  
372

### RADIO CONTROL (Static Only)

#### RADIO CONTROL (Static Only)

- 1 B. Thompson, CM (*B.E.2c*),
- 2 E. Coates, Blackburn (*Blackburn Alcedo*),
- 3 E. Wilson, Nunceaton (*Cessna 172*),

330  
200  
187

### "MAG MEN"

- 1 J. D. McHard, Gravesend (*Dixon Nipper*),
- 2 C. Edwards, RAFMAA (*Lee Richards*),
- 3 T. Manley, Blackburn (*Blackburn 1912*),
- 4 J. Bridge, Fyde (*Blackburn 1912*),
- 5 J. Collins, S. Coldfield (*Blackburn 1912*),
- 6 E. Bray, Leicester (*Blackburn 1912*),
- 7 G. Hannah, St Albans (*Blackburn 1912*),

411  
372  
366  
345  
331  
323  
314

Special Prize to W. Evered (*Demoiselle*).

## First S.M.A.E. scale model Rally

R.A.F. HEMSWELL  
MAY 9th

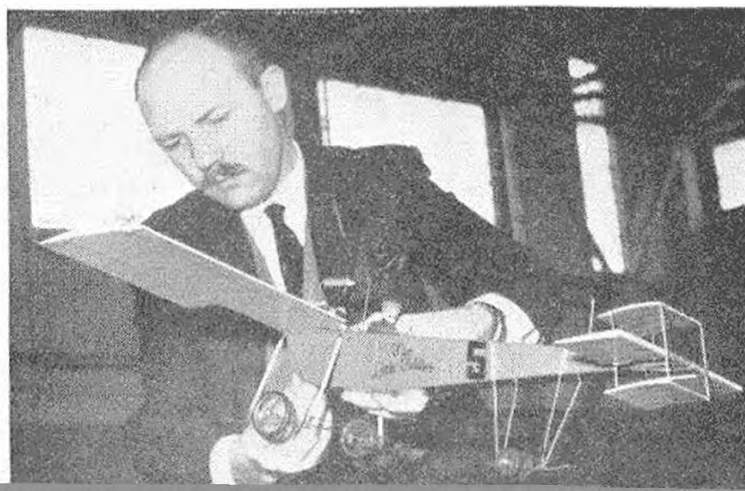
\*Last month's heading appropriately repeated

HAD ANYONE DARED forecast the support for this first venture into all-scale by the SMAE, they would never have been believed, and we suppose that the verbal accounts that have gone the rounds were received with no small dose of scepticism. Nonetheless, 13 pictures here, and a listing of about 75 of the types we could pin down for sufficient time to take scant details should by all that is right, announce the plain fact that scale has arrived in its own right as a contest and rally class.

What would have happened had the day not been one of gale force winds we hesitate to estimate. For this quirk of nature which ordinarily spells disaster for any flying model rally, was in its way responsible for the success of May 9th. Though it must have kept dozens of less intrepid enthusiasts at home, it provided the "open Sesame" of a large hangar for shelter from the blast. Sqdn. Ldr. Blake, Admin. Officer at Hemswell who has always been a good friend of aero-modellers here and at Cuddington, sympathetically O.K'd use of the building, and the hardy stalwarts who had travelled early from the south gratefully laid out their assembled models. As the day progressed the arrivals swelled to a record level for any kind of model meeting. Well over 100 scale types were to be viewed by mid-day, with countless others (either partially intimidated by the high standard of those on show, or simply forgotten in the excitement of seeing such a galaxy of scale stars), left in the countless vans, cars and even coaches, that smothered the tarmac outside.

Rules had to be changed. Free flight qualification was by tethered line RTP (round the pilot) flight after scale committee member Eric Coates made a demo! Control-line, thanks to silencers, was both permissible and acceptable. R/C could only be judged for scale. "Mag Men" entries were grouped into one class. With such exciting subjects ranging from annular to canard and a genuine "bomber" to a flotilla of Blackburns aviating at one end and a series of parade ground static displays at the other it was no wonder that the flow of onlookers was awestruck by the concentrated

Doug McHard attends to the Mills .75 pusher in his "Dixon Nipper", a superb, rib-for-rib replica which flew beautifully on tether line, landing softly on sprung u/c. It won the "Magnificent Flying Machines" event, was 2nd in open free flight scale.



Left: Majority of models were outside the contests but no less impressive as seen in the two groups. Note Supermarine Sparrow, Blackburn Airedale, Bristol Bulldog, Miles Magister and superb Hanriot in upper view and Chiltern, Wicko, Sopwiths and S.E.5 in other view. Many types were in duplicate and triplicate. Action shots of C. Edwards' Lee-Richards Annular Bipe and Bob Ivan's retract gear, bomb dropping Hampden show a little of the exciting atmosphere. Right, Stan Perry and his fine Hawker Henley which is backed by a mammoth data manual to authentic scale. Admiration for scale judge Ken McDougall's D.H.34 was continuous, it was perhaps the "Queen" of the statics though still a capable free flyer.



activity. As a result of this success, similar rallies are envisaged and the June 27th meeting at Old Warden, Beds, is now expanded to an all-comers "bring & show" scale rally.

## Scale Roll Call

### FREE FLIGHT POWER

Sopwith Camel (1/8th), 40 in., Mills 1.3; Sopwith Swallow (Three 1/8th), 41 in., E.D. Bee; Frog 150; AM 10; Sopwith 11 Strutter (1/12th), 34 in., Mills .75; Sopwith Triplane (Two 1/8th), 35 in., D.C. Merlin; D.C. Spitfire; Sopwith Snipe (1/8th), 46 in., Frog 2.49; Albatros D.III (1/8th), 46 in., Mills .3; Albatros D.V. (1/8th), 44 in., Frog 1.49; Cessna 180 (1/8th), 44 in., D.C. Merlin; Dixon Little Tiddler (1/12th), 26 in., Mills .75; Fokker Spine III (1/12th), 35 in., D.C. Dart; Fokker E.IV (1/12th & 1/10th), 29 in., Cox 0.20; 36 in., Mills .75; Fokker D.VIII (1/18th), 22 in., E.D. 4.6; Fokker E.III (1/8th), 36 in., D.C. Dart; Lee Richards Annular Biplane (1/12th), 22 in., Cox 0.49; Blackburn 1912 (Four 1/8th), 47 in., E.D. Bee; D.C. Merlin; D.C. Merlin; Mills .75; Demoselle (1/12th), 20 in., D.C. Bambi; Piper Cub on floats (1/16th), 74 in., Frog 3.49; Hanriot H.D.I (1/8th), 39 in., Moth (1/8th), 55 in., Frog Viper; D.H. 34 (1/12th), 51 in., E.D. Bee; D.H.5 (1/12), 25 in., D.C. Dart; D.H. 80a Puss A.M. 15; Cessna Bird Dog (Two 1/12th), 36 in., Mills .75; 36 in., D.C. Dart; Fritsch Taube (1/12th), 31 in., D.C. Dart; Gloster Gamecock (1/12th), 36 in., Webra 2.5; Druine Turbulent (1/8th), 32 in., D.C. Merlin; R.E. 2e (Two 1/12th), 41 in., D.C. Spitfire; 41 in., Mills .75; Auster ACP9 (1/12th), 37 in., Mills .75; Bristol F2B (1/8th), 47 in., Mills 1.3; Antoinette (1/12th), 31 in., Pee Wee; SE5a (1/8th), 41 in., ME Snipe; Chiltern DWI (1/8th), 36 in., Mills .75; F.E.8 (1/8th), 39 in., Mills .75; Topsy Snipper

(1/8th), 35 in., M.E. Heron; Blackburn B.2 (5/48th), 38 in., Miles .75; Wicko, Wicko (1/8th), 45 in., E.D. Fury; Nieuport 28 (1/6th), 53 in., Rovers 3.5; R.E.8 (1/12th), 42 in., Mills .75; Migret Flea (Two 1/6th), A.M. 15, 44 in., Halberstadt D.III (1/12th), 29 in., Mills .75.

### FREE FLIGHT RUBBER

Nieuport 17c (1/24th), 13 in.; S.E.5a (1/24th), 15 in.

### CONTROL LINE

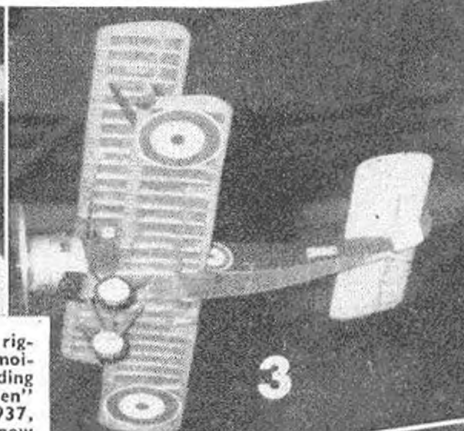
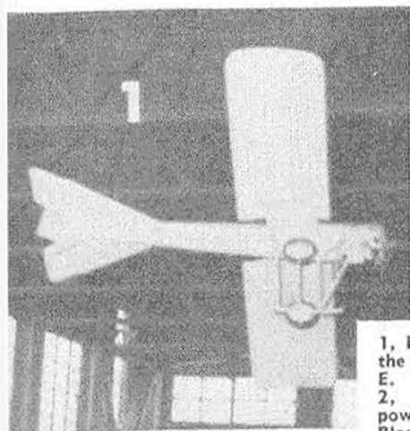
Sopwith Camel (1/8th), 42 in., Frog 500; Consolidated PBV Catalina (Two 5/8th), 62 in., E.D. 246; 61 in., Merco 35; Ryan NYP (1/9th), 62 in., Noisy; Great Lakes Special (1/6th), 54 in., Merco .35; Douglas C.47 Dakota (1/24th), 48 in., Frog 150; Hawker Henley (1/12th), 48 in., Noidee 10; H.P. Hampden (1/12th), 79 in., Kyowa 45; Fokker D.VII (1/8th), 37 in., Taplin Twin; S.E.5a (1/12th), 22 in., D.C. Merlin; Nieuport 28 (1/9th), 31 in., PAW 2.49; Curtiss-Hawk P6-E (1/10th), 37 in., O.S.35; Beagle Auster Airedale (1/8th), 48 in., Fox .35.

### RADIO

Blackburn 1912 (1/6th), 63 in., O.S. Max; Sopwith Camel (1/8th), 42 in., O.S. 15; R.E.8 (1/10th), 49 in., A.M.15; Blackburn Airedale (1/12), 44 in., E.D. Racer; A.W. Siskin (1/8th), 54 in., Merco 49; Bristol Bulldog (1/6th), 59 in., Merco 49; Miles Magister (1/6th), 67 in., Merco .61; Cessna Skylane (1/8th), 53 in., Frog 3.49; Luscombe Skypal (1/6th), 63 in., E.D. Racer; Sopwith Pup (1/8th), 49 in., Merco .29.

### SOLID (NON FLYING)

Demoselle 18 in., all metal; Antoinette, 8 in., (1/70th), plastic



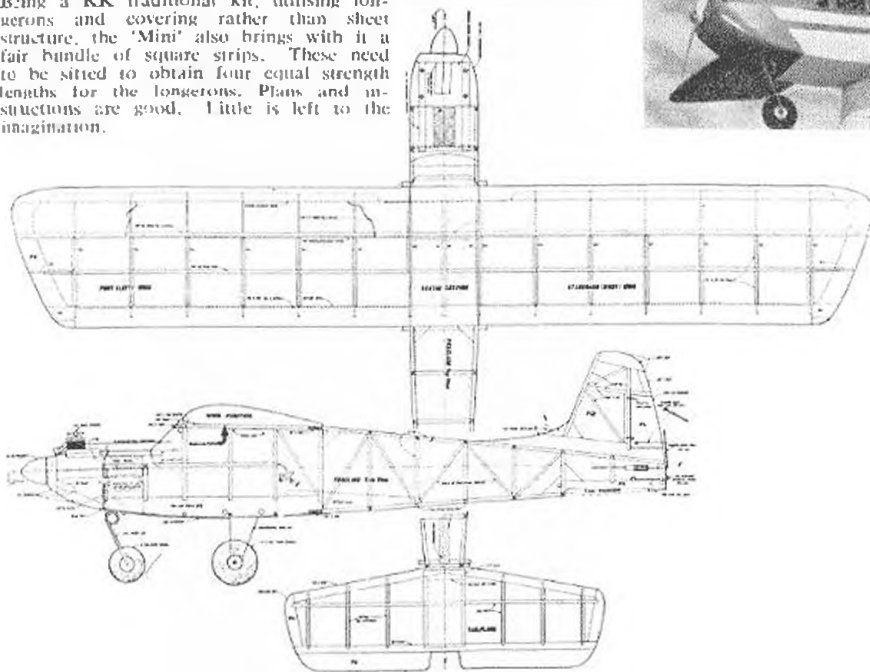
1, Blackburn 1912 under the rafters, with builder E. Bray anxious below. 2, T. Manley's Mills powered Bristol F.2b and Blackburn which earned him a pair of 3rd places. 3, First flight indoors was by E. Coates' Sopwith 11 Strutter.

4, In brass, with full rigging, W. Evered's Demoselle was an outstanding non-flying "Mag Men" entry. 5, Made in 1937, G. Harrison's T.K.2 now has Cox .020, converted from rubber. 6, E. Wisbey's Swiss Cub on floats wt. 4 1/2 lb., Frog 3.49 D.



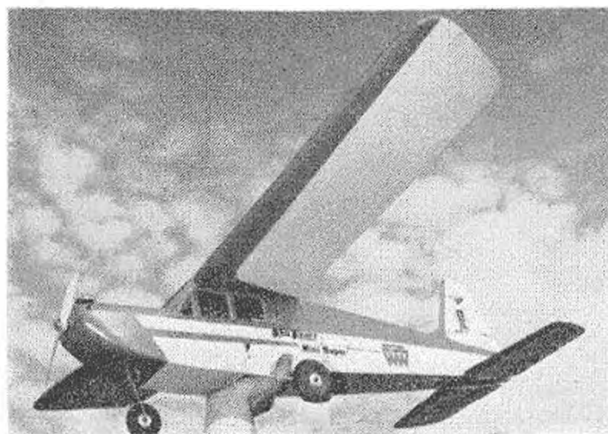
## Testing KeilKraft's Mini-Super

OPENING the £4.10s. (including purchase tax) kit for this long awaited Radio Control design gives an immediate impression of completeness. Undercarriage is pre-formed, sponge rubber wheels of acceptable weight and a metal 'clunk' tank are items of hardware that the lone modeller really appreciates. As for the wood, this too is well prepared with a pre-shaped leading edge for the wing panels and all parts cut ready to push out and assemble. Being a KK traditional kit, utilising longerons and covering rather than sheet structure, the 'Mini' also brings with it a fair bundle of square strips. These need to be sited to obtain four equal strength lengths for the longerons. Plans and instructions are good. Little is left to the imagination.



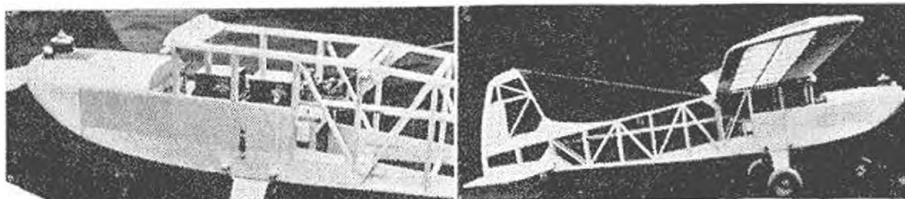
Assembly was a charm. Only the tail seat and fuselage parts PL at the base needed slight trimming to fit. The nose cowl also needs a groove to accept a silencer but that really depends upon the engine and chosen silencer. Our selection was an O.S. Pet 1.6 c.c. glow plug engine with a Spinallie unit. This proved adequate for the job.

Criticism of the structure is twofold. The tail is made of square stock, having superimposed strips added at 'rib' positions



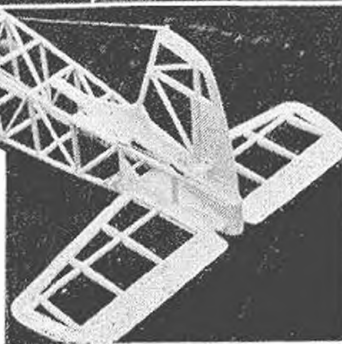
which are then sanded to a section. We did not find this particularly easy and would have preferred to pre-cut the tail ribs with holes for the central spar. Secondly, the front wing dowl is attached to the leading edge fairing and vertical struts only. It seemed insecure and proved vulnerable at the first test glide when the beautiful transparent windscreen shattered as the dowl came adrift. We now have a block screen alas!

Equipment used was at first a Kraft KV3K receiver and the

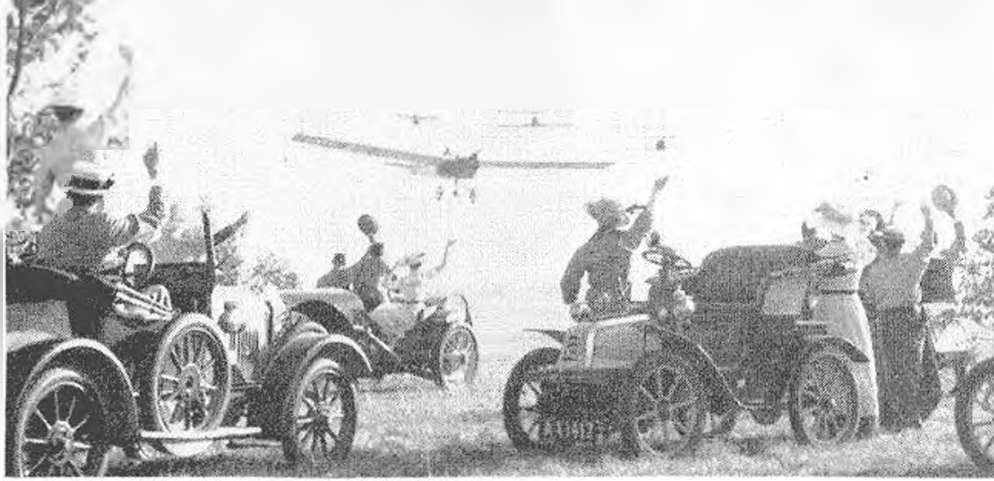


Flight shot shows constructor Michael Charles making the first power launch on our local field. His fine workmanship is revealed in upper view. Colouring is Blue and Blue/White—plus the kit, club and S.M.A.E. transfers.

Structural pictures illustrate the tri-cycle landing gear (on plywood fuselage base) broad chord low aspect ratio rudder, built up fuselage, sheeted, very strong wings and the installed OS 101 servos with receiver behind. Elevators can be arranged with little difficulty.

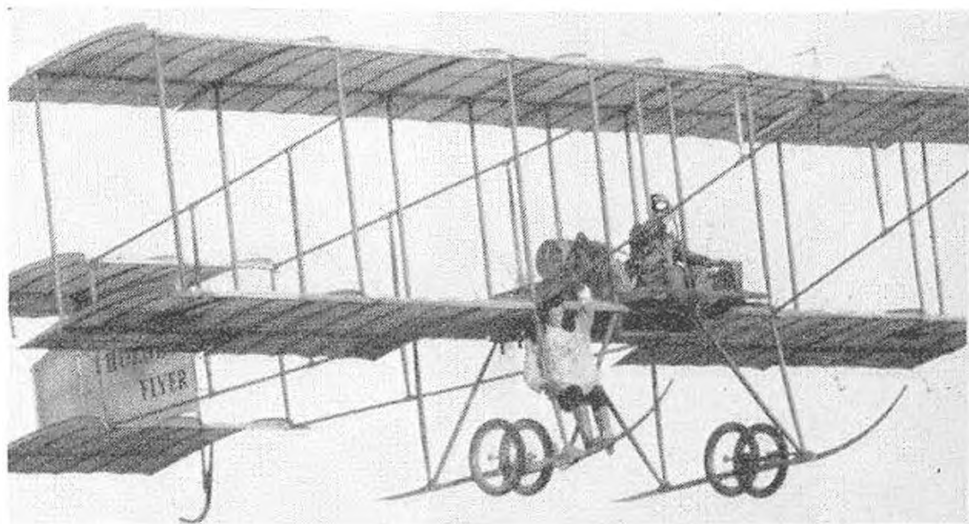


new OS motorized single channel servos types S101 and S101M. The Rx was over sensitive to the servo motors and didn't function properly. It was changed to a "Minimac" and the equipment works well except that motor control is sporadic. O.S. have to sort this out somehow—it was enough for us to fathom the tentacle directions of the 8 wire S101 Octopus without instructions. At 2 lb. 13 oz. all up weigh. the "Mini Super" becomes quite a lively performer despite the 'Trad' appearance in this age of cabinless wonders. Verdict top class value, just the right size to have for precision flying and adaptable to six channel multi-control. A perfect first R/C model.



## "Those Magnificent Men in their Flying Machines"

Now showing at the Astoria, Charging Cross Road, London, this is a 2 hr. 12 min. film and will fascinate all aviation enthusiasts. blending rib-tickling humour with a sincere appreciation of the efforts made by those gallant pioneers in the early days of flying—definitely not to be missed by any aeromodeller! Scale modellers should also not miss the "Mag Men" model contest at Old Warden, Biggleswade, on June 27th.

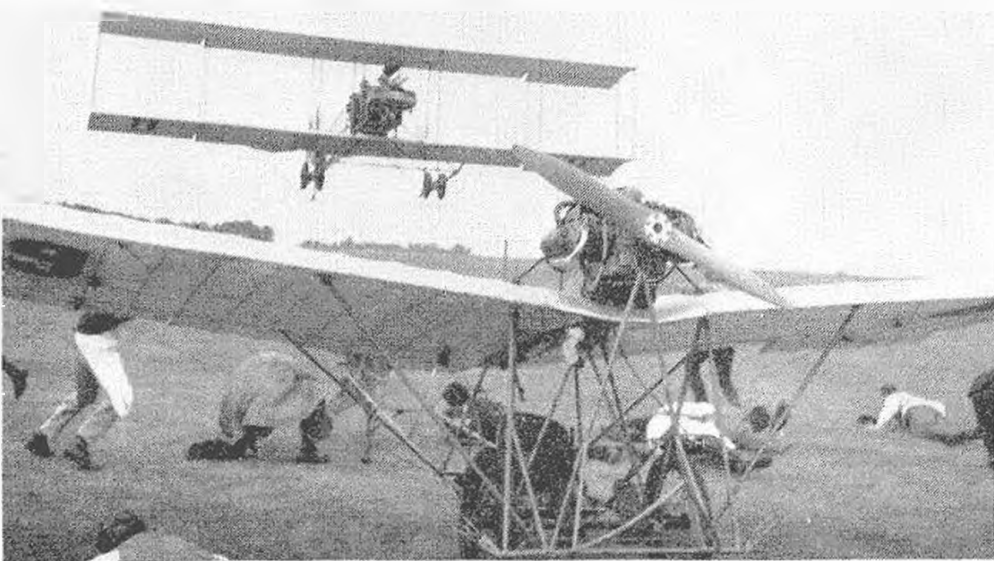


### DRAMA

Emilio Ponticelli played by Alberto Sordi (the Italian entry) is dramatically rescued from his burning Bleriot in mid-air snatch by the gallant American pilot Orvil Newton, played by Stuart Whitman in the closing stages of the great race from London to Paris. Ponticelli has already crashed a Phillips multiplane, Passat Ornithopter and Lee-Richards annular biplane, so he provides plenty of excitement for the cinema-goer in this epic film.

### ACTION

The fated No. 11 an Eardley-Billing biplane entered by the German High Command and flown by Colonel Manfred von Holstein (Gert Fröbe of "Goldfinger" fame), is about to touch down according to the book of instructions at the Dover check point. Unhappily No. 9, the Demoiselle flown by the amorous Pierre DuBois (Jean-Pierre Cassel) and other entries are in the line of landing. This is one of but many exciting examples of skilful piloting to be seen.



### DUNKING

Von Holstein loses his book in a hilarious scene when it is snatched from its fuselage rest by an antagonistic seagull. Anxious to recover the manual in order to know what to do next, the Prussian pilot upsets the appcart when he approaches the tail end and winds up in this attitude, eventually treading water whilst hanging on for dear life.

If you want to see more spectacular flying and brilliant air-to-air photography, of these magnificent replicas, you'll just have to go to see 20th Century Fox Films Co. Ltd.'s "Those Magnificent Men in Their Flying Machines".



# TRADE NOTES

## (MAINLY CONCERNING NEW PLASTIC KITS)

A NEAT TRIO from AIRFIX this month are the *H.P. 42 'Heracles'*, *CA 13 Boomerang* and a *Bell P39Q Airacobra*. The Boomerang and the Airacobra are both to 1/72nd scale while the Heracles is produced at 1/144th and despite this, builds up into a fine 'medium-sized' model. We built up two Airacobras, one as the prototype aircraft and the other in the colours and marking of No. 601 Squadron who were briefly equipped with these machines. We chose aircraft AH-601 as our subject which, as well as being the Wing Commander's aircraft enjoys a serial No. coincidental with the Squadron number.

As far as actual construction of these kits goes, little need be said except, perhaps, to add that the tricycle undercarriage layout demands nose weight to ensure a reasonable three point stance. Cockpit side windows were a little tricky and required careful handling with tweezers and accurate use of cement, but otherwise the kits went together easily. Strips of Sellotape were used to mask off the fin and rudder on the prototype model and matt colours were applied carefully to represent the National striping. Purists should attend to the excess of rivets and the tail profile. Price of the Airacobra is 2/-.

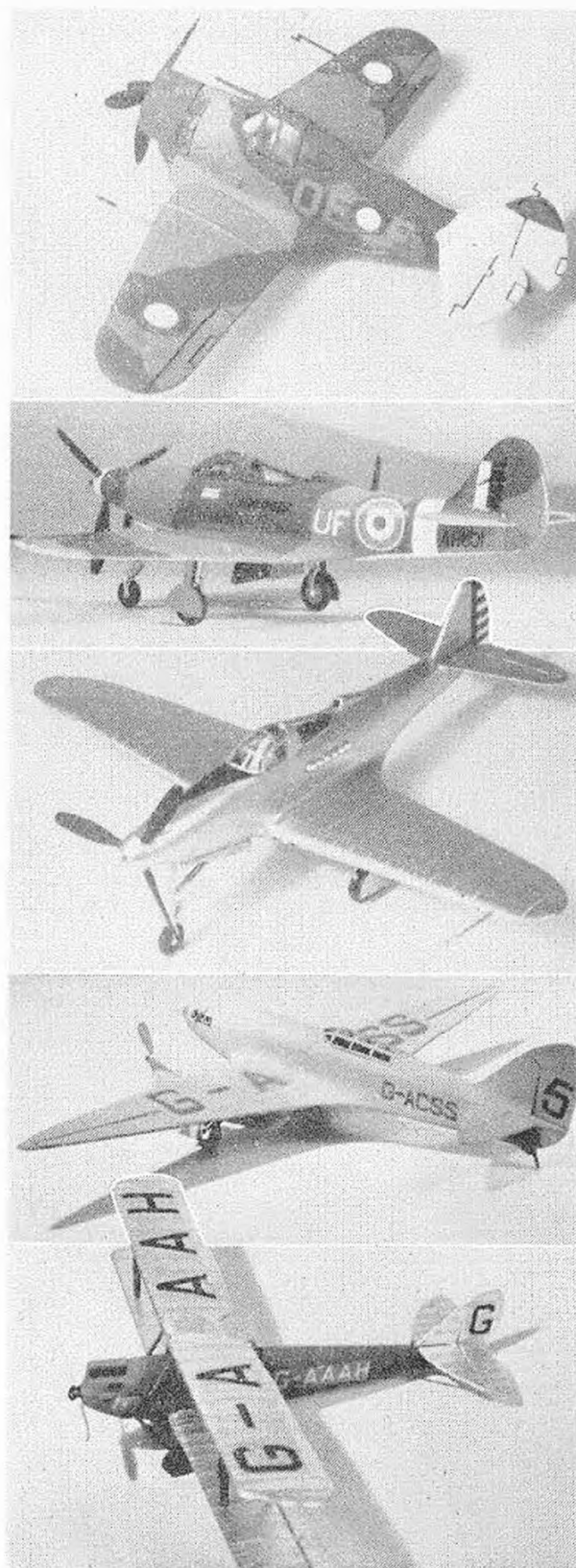
The Commonwealth CA 13 Boomerang, again 2/-, also goes together quickly and easily, and the markings and colour details supplied by Airfix are accurate for an aircraft of either Nos. 4 or 5 Squadrons R.A.A.F. in operation in New Guinea, Solomon Islands and Borneo. Ours, the white tailed QE-F, depicts a machine of No. 4 Squadron R.A.A.F. and was painted as per Airfix's instructions. A three part wing, with lower wing halves and centre section as a single moulding ensures accurate alignment of wings with fuselage, but the resulting gap between upper wing halves and fuselage definitely required filling. Undercarriage is also fairly 'fiddly', but when finally in position, looks nice, delicate and realistic. The Boomerang kit has 31 parts.

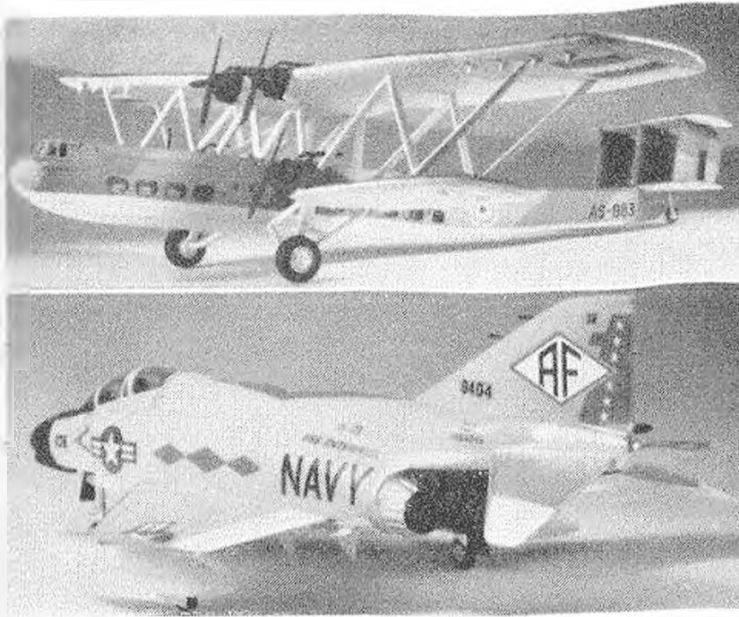
Last from Airfix is the 'Heracles' and just to be different we chose to build ours as the impressed 'Helena' of 1940. This machine, originally the property of Imperial Airways was taken over by the R.A.F. as a detached transport duties aircraft with No. 271 Squadron and carried the Serial AS 983. This aircraft ended its career when it was dismantled at R.N.A.S. Donibristle in December 1941 following an accident the previous year when a motor had cut on take off. Although the damage was repaired it is doubtful whether the machine ever flew again.

Airfix's model is one of the nicest we've seen and goes together extremely smoothly. For the tricky job of biplane wing construction, a jig is supplied with the kit to ensure correct alignment of upper and lower surfaces and the otherwise difficult job of strut positioning, etc., is simplified. Colours for the impressed 'Helena' are dark earth and dark green camouflage patterned upper surfaces and matt yellow undersurfaces and struts. The yellow continued up the fuselage sides to a line just below cabin windows and the name 'Helena' appeared on both sides of the nose in black lettering. Serial was also in black on both sides of rear fuselage. Large R.A.F. red, white, blue flashes were carried on the under side of both upper wings, outboard of the struts, and roundels appeared on the upper surfaces, fuselage sides and underside of lower plane. Price of Airfix's superb 74 part kit is only 4/6d. —the value is remarkable.

Two new "Trailblazers" have arrived from Frog. They are the D.H. 60G *Gipsy Moth* and the D.H. 88 *Comet Racer* both in 1/72nd scale. The Moth, G-AAAH Amy Johnson's famous 'Jason' in which she became the first

Left, top to bottom, plastics described in this feature. Airfix CA-13 Boomerang in the markings of No. 4 Squadron R.A.A.F. (Kookaburra booklet No. 2 gives much extra information). Airfix Bell P-39 Q Airacobra in No. 601 R.A.F. markings as well as the "clean" little marked prototype are next. D.H. 88 Comet shows thick trailing edge in unfortunate angle for fourth photo but this view best displays the altered colours light and dark blue with black name and race number for the 'Orphan'. Bottom, D.H. 60 G Moth 'Jason' as flown by the famous Amy Johnson to Australia. Both these latter kits are by Frog at 2/6d.



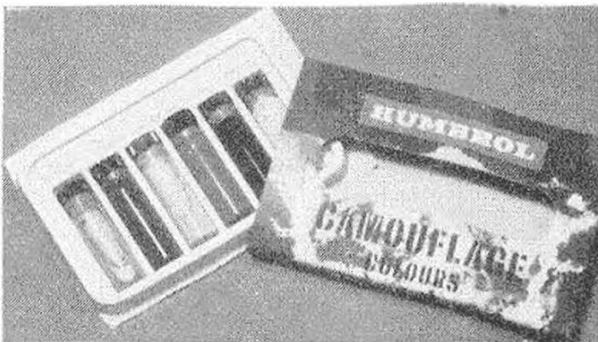


woman to fly solo from England to Australia, is a beautiful 28 part kit which builds up into a truly delicate replica of this well known aircraft.

The Comet Racer, 2/6d, as is the Moth, is one of the easiest to make plastics we have seen. All parts are beautifully smooth and wing tongue and tailplane, etc., are superb. We coloured ours in matt light blue with dark blue flashes around spinners and dark blue registration.

Finally, a new one from REVELL—the McDonnell F4B-1 Phantom II. This is a superb model in every way and its size at 1/72nd scale when compared with the Gipsy Moth for instance, needs to be seen to be believed. The only parts with which we had difficulty were the undercarriage legs—these were tricky to locate and the model had to be held upside-down until they were dry. Incidentally, this is one trike geared aircraft that will stand on all three legs without the need for nose weight! Price is 8/6d.

One of the most common requests received is for 1/72nd scale transfers to suit modified plastic models and to make good that unfortunate omission of the Luftwaffe "Swastika" which is left out of a number of ranges for political reasons. MAX ABT of Saint-Cloud, France, is fulfilling this gap in what we can only describe in a magnificent way. To date he has produced three "Pochettes" each of which contains a well produced camouflage pattern diagram, history of a French Air Ace and a transfer sheet containing roundels, fin markings and personal insignia. These are for a Spad XIII Nieuport 17 and 23. Next to come are a range of Russian stars and markings of varying sizes, a complete sheet of 60 Swastikas, and personal markings of World War II Aces including Ciostermann's Tempest. The charge for each "Pochette" is 2/6d, or 40 cents per single item or 7/- (S1) for a set of three.



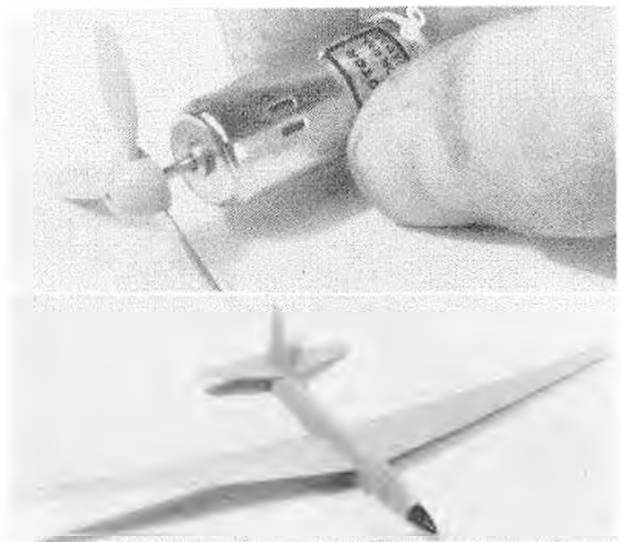
Pride of place among the month's plastics are Airfix's remarkable Handley Page H.P. 42 which we camouflaged as described in text. Also the accurate Revell F-4 Phantom in U.S. Navy markings which is accurate right down to the blunt tail leading edge. Excellent value at 8/6d, the Phantom lends itself to markings of all three U.S. forces plus modification to Fleet Air Arm and Recce versions.

Talking of coverage, HUMBER OIL produced a special Camouflage enamel pack at 2/6d. This contains six phials of the standard matt colours, yellow, white, Dk green, Dk earth, "sky" and black.

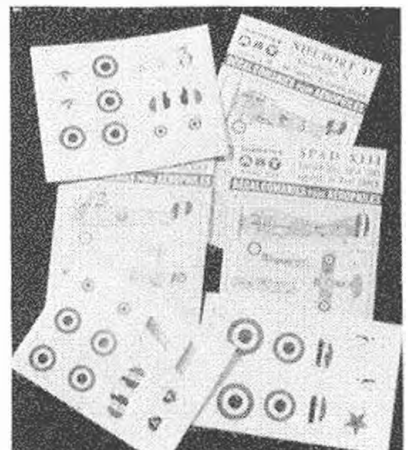
We have given the manufacturers our own opinion of these and understand that the yellow is to be darkened in tone for at the moment it is far too near primrose than ochre to meet the approval of any ex-Air Force man's memory.

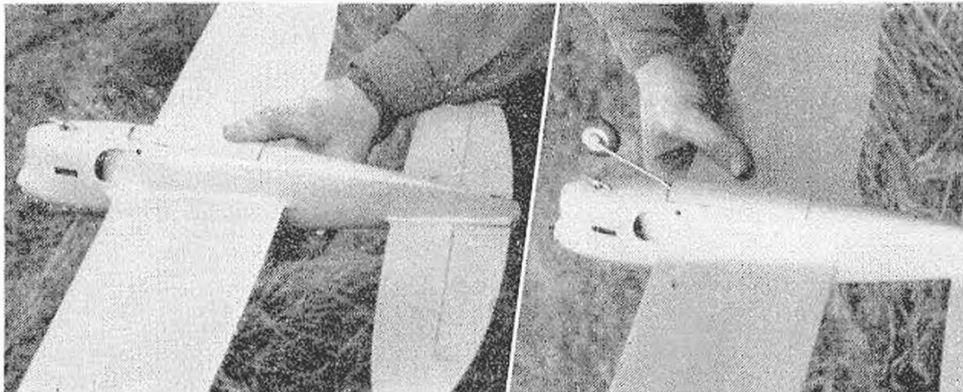
The other colours tend also to be lighter in shade than our own carefully preserved various colour snips but we must say that they are the closest yet to the true colours as used on bombers and trainers throughout the 2nd World War and fighters of the 1938-40 period.

Those who care to motorise plastics will be interested to learn of the new MABUCHI "Baby" motor which idles wonderfully on 1.5 v. and will slip inside a wide range of models particularly those with radial engines. Distributed by RIPMAX at 5/6d, the motor can be built into most plastics quite easily. Also from Ripmax what we thought at first to be just another ready-to-fly model in the 'toy' category turned out to be quite different. Moulded in polystyrene, like a plastic kit model, but complete except for cementing the tailplane in position, an 18 in. span scale Lockheed U-2 is a real flying model.



Above is the tiny Mabuchi "Baby" motor suitable for plastics and the 18 in. span catapult U-2 Glider both from Ripmax, described in text. At right, French Decal-Gomania by Messrs. Abt showing three individual insignia for French W.W.I Aces plus descriptive packets including drawings and markings information. Left, the Humbrol camouflage colour pack which retails at 2/6d.





The extended and retracted positions of Olaf Sundell's undercarriage can be clearly seen at left, note the door is closed in both positions to stop grit getting in and the air duct outlets are ducted around the sides of the U/C. Model is similar to the A.P.S. "Miss F.A.I.". The fuselage cross-sections at right are two thirds full size showing the extended and retracted positions. Use these for scaling to actual size when making components.

## Seventh in our series of Retracting Undercarriages descriptions as used in an International team racer

### By Olaf Sundell

FOLLOWING THE INTEREST aroused at the Criterium of Aces 1963 by Kjell Rosenlund's retracting mono wheel in his *Miss F.A.I. Team Racer* (u/c published December 1963, *AEROMODELLER*) it was thought that most of the new team racers seen at the races would be sporting these drag reducing devices. This has not been the case in Great Britain but several systems have been developed in Italy, Finland and France indicating that there is a definite advantage available with a retracting leg and wheel.

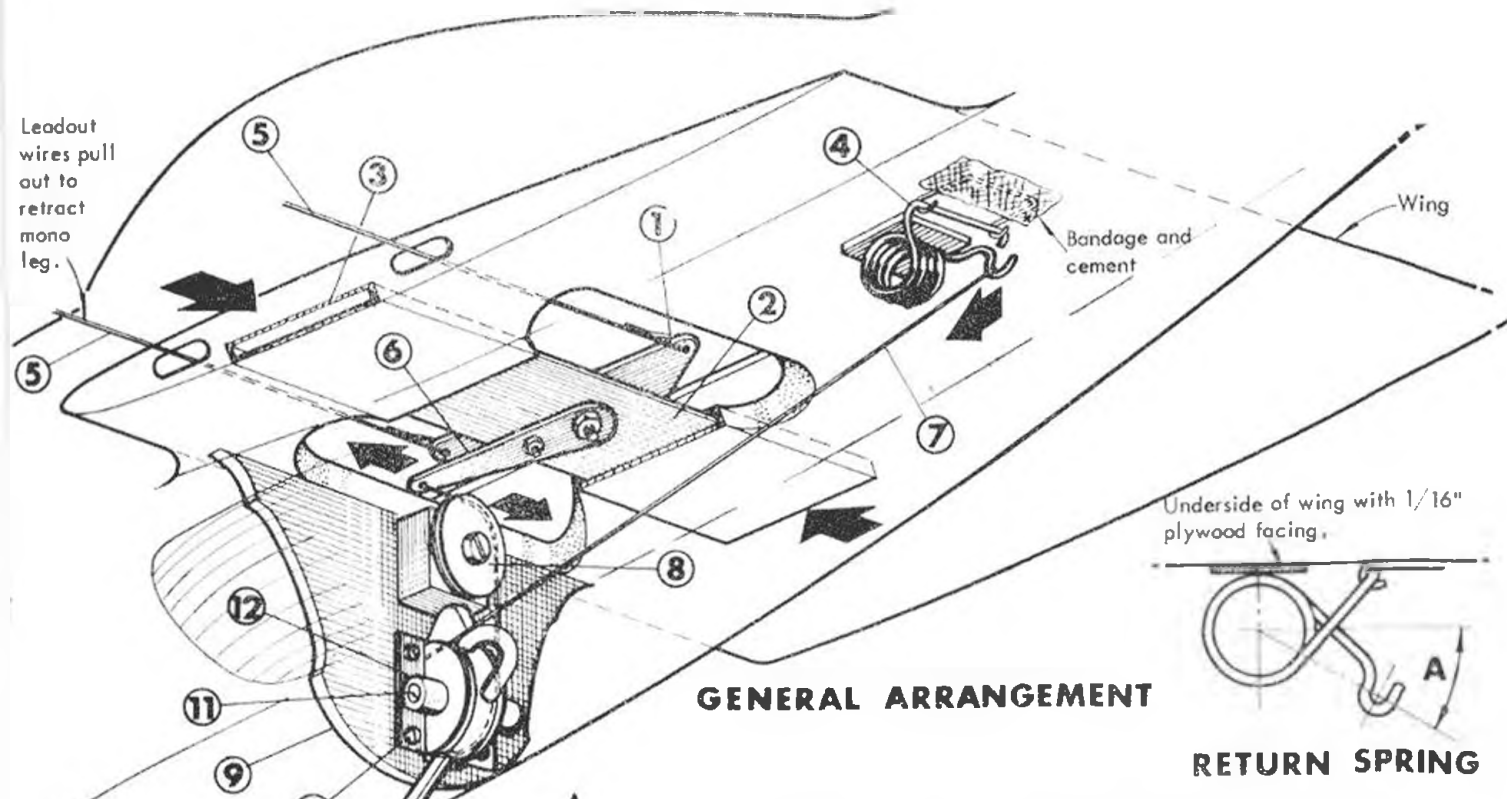
Olaf Sundell from Finland was very impressed by Kjell's retracting gear so he decided to include a system in his next model. Unfortunately the only known fact about Kjell's system at that time was the use of centrifugal force as the prime mover, through the bellcrank. Starting from scratch his own system was installed in his new "*Alert*" team racer, that was named with a sideways glance at his pit man brother. A glass fibre fuselage was used to allow more internal space for the mechanics. Many racing fans will say, "what is the point of all the extra trouble and effort, and what will I gain? The answer to this one, is the fact that the Sundells lost their place in the final at Genk in 1963 by a mere 1.8 secs., and the retracting U/C would have saved the day for them, and after all, that's what team racing is all about. If on the other hand you are not so worried about those few odd secs. and are still trying to beat five minutes, do not waste your time making a retractor, when the time could be used more effectively in practice. Another requirement of a retracting U/C is *absolute* reliability, so aim for the very best standard of workmanship you can achieve.

Construction is quite simple and only the wheel (8) and leg mounting hub (12) require any machining. The bellcrank (1) is made from 1.5 mm. dural and mounted on a 1.5 x 20 x 90 mm. dural slide bar (2) that is in turn a sliding fit in two glass fibre boxes (3) built into the wing. Make sure of close fitting boxes by wrapping the glass cloth around the slide bar and moulding them at the same time. The slide bar moves approx. 1 in. in the glass fibre boxes this movement being due to centrifugal force in one direction and spring (4) the other. Wind the spring for four turns from 1.5 mm. piano wire with angle "A" approx. 30 deg. The centrifugal force acts through the lines (5) so the retraction weight should be about 5-7 times the model weight. Due to wheel (12) and spring (4) the U/C movements are fast and

it is impossible for it to stop at any intermediate position. The exact tension in spring (4) must be arrived at by experiment due to the differing model weights, and the fact that the momentum of the spring gets larger as the leg is pulled in. A 1.5 mm. dural arm (6) is bolted on to the slide bar (2) and the retracting cable (7) is firmly attached to it. Cable (7) is heavyweight Laystrate and passes over aluminium wheel (8) which is bolted to the 3 mm. plywood former that is in turn epoxied into the glass fibre fuselage. The steel, silver soldered pivot bearings (10) are bolted to the plywood former. Pivoting leg hub consists of two parts, a 3 mm. piano wire axle (11) and an aluminium wheel (12) which has two cable grooves turned into it, shown in sketch, and two 3 mm. dia. holes for the U/C leg. The 3 mm. dia. U/C leg (13) is bent at one end to take the wheel and into a U shape at the other to be a tight push fit in hub (12). The hub hole into which the shorter length of the leg passes should break through into the pivot bearing hole as shown. Press the leg into the hub and then notch the proud part of the leg with a Swiss file, until the pivot bearing (11) passes through. This forms a key-way and alleviates any chance of the leg coming out of the hub. The retracting cable (7) that starts at arm (6) and runs around one side of wheel (8) now passes around hub (12) where it changes from one groove to another and then passes aft to spring (4).

With an approx. 1 in. movement of the bellcrank during flight a small deflection is noticeable on the elevator when the wheel passes in and out. This causes the wheel to jump very slightly, although not enough to be visible from the outside of the circle. This can be cured by curving the slide bar, but this is not worthwhile. The wheel cover is essential for streamlining and isolated from the rest of the mechanism. It is closed at all times with the U/C up or down to stop grit getting in. When retracting, the U/C leg that normally rests against the lower edge of the plywood former, will first pry the cover into the open position then the leg slides along the edge of the cover until the wheel is in, the cover then springs back sealing the hatch off.

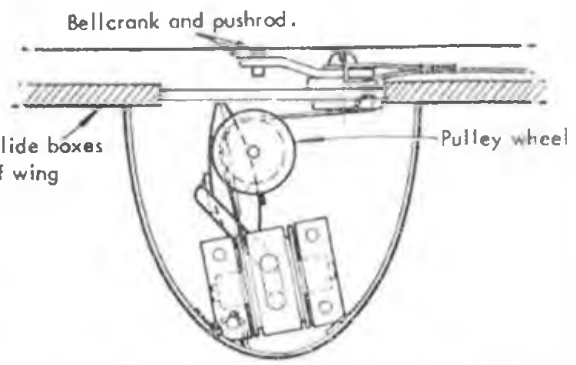
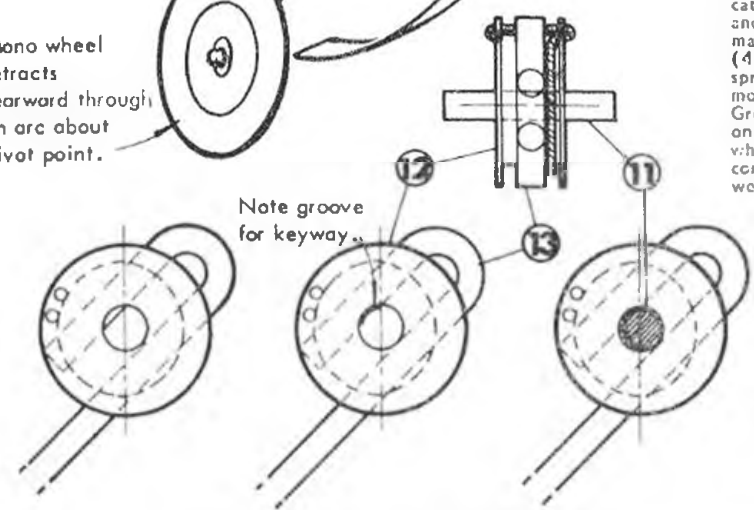
This U/C system has withstood the rigours of a whole season of racing plus of course the essential hard training. Successes with the system include 1st at the Scandinavian Championships in Denmark and the fastest true contest time in Finland of 4:24.



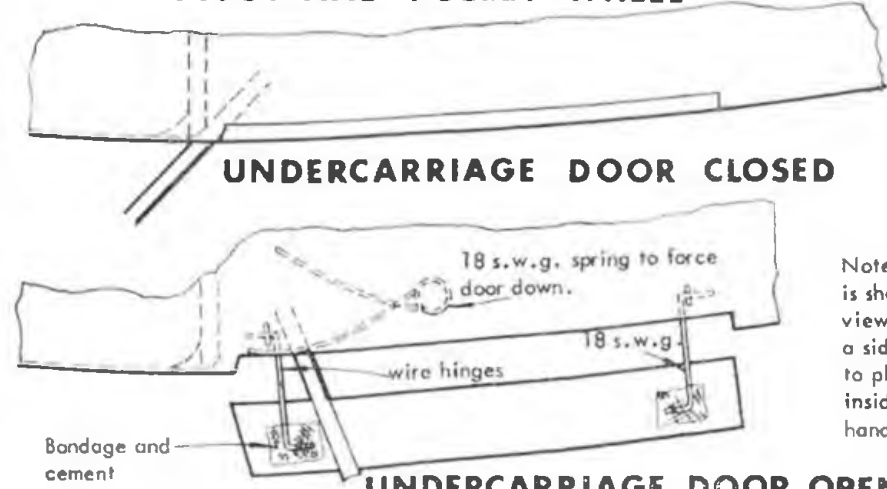
Retraction of the mono-leg is achieved by the bellcrank (1) being pulled over due to centrifugal force. This in turn moves bar (2) that slides in boxes (3). Arm (6) that is bolted to bar (2) has a flexible cable fixed to it, passes around wheel (8), and hub (12) to spring (4). When arm (6) moves over in flight it therefore pulls cable (7) and winds the undercarriage up against the tension spring (4). As the leg is pulled in it catches on a wire hook fixed to the door. This pulls the door and closes the fuselage entry hole. Extension in flight is automatic, when the line tension becomes less than that of spring (4), i.e., when the model slows down and does not pull so much, spring (4) pulls cable (7) back into its original position, so moving the other parts and arm (6) bolted to the slide bar. Great care must be taken to see that the leg is not pushed back on the ground as it may make cable (7) jump off wheel (8) when it becomes slack. The finished undercarriage must be as compact and light as one can make it, or the F.A.I. racer may weigh more than the 24.6 oz. limit if a silencer is used as well.

Mono wheel retracts rearward through an arc about pivot point.

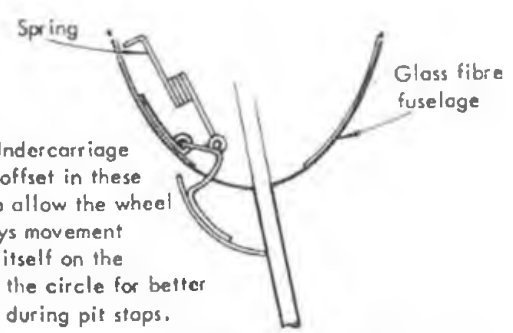
Note groove for keyway.



**UNDERCARRIAGE DOOR CLOSED**



Note Undercarriage is shown offset in these views, to allow the wheel a sideways movement to place itself on the inside of the circle for better handling during pit stops.



# Model location and recovery

concluding the 'bring 'em back alive' feature by Martin Dilly

O.K., SO YOU'VE FOUND YOUR MODEL. It's 80 ft. up a tree with no branches for the first 70. There are several possibilities here, some more dangerous than others, in the absence of a trained monkey you could try to climb up. This isn't as silly as it sounds, miracles have been worked with a hammer and a pound of 6 in. nails, and reasonably fit types like the Brighton boys do pretty well without artificial aids, climbing some extremely hairy looking trees by means of pure muscle.

If you're not the athletic type, don't despair, all you need to do is to get a rope over the offending branch and the model's as good as down. We often see people with this in mind throwing rocks and ropes up at models in trees, if they're unlucky, they just tire themselves out, and if they're lucky they'll break the model into bits small enough to drop out of the tree. The proper way to approach this situation is a little more scientific and requires a child's archery set. The best we've found yet has a strong steel bow and costs about 21/- at your local toyshop. You'll have to make some new arrows, or rather harpoons, from 3 in. O.D. aluminium tubing, as shown in the sketch. The point can be weighted with lead or a nail held in place with plastic padding, or else a 2 B.A. screw can be tapped into the tubing, no feathers are necessary, as the trailing nylon line provides adequate stability. 60 lb. breaking strain nylon monofilament has proved ideal, giving a maximum height of around a hundred feet at full draw with a 27 in. arrow.



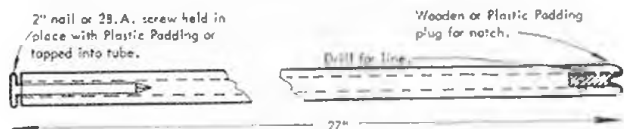
Wrap joint between rope and nylon with Sellotape to build up a gradual taper to ease the joint round branches.

The line is best laid out in a loose heap, preferably on a smooth surface, perhaps the polythene bag the archery gear is kept in, making sure the arrow end of the nylon is on top of the heap, and the other end is firmly held, these precautions save the annoyance of having the arrow travel 6 ft. upwards dragging a tight wad of knotted nylon, or else seeing all your line disappear for ever up the tree with the model. Another possibility is to use a spinning reel, as used by fly-fishermen, although 60 lb. nylon might well be too inherently stiff for this to work well while being pulled off by the arrow.

A little practice is worthwhile, but soon it should be able to put an arrow over any selected branch with two or three shots. The nylon line alone is often strong enough to shake and manipulate quick thick branches but it may be necessary to pull up a thickish rope on the end of the nylon for more stubborn cases.

Once the arrow is over the branch, the technique for getting it down the other side is fairly simple, the

nylon is gently shaken and jiggled so the arrow slides over or through any obstructing twigs or branches. This is why the original wooden arrows are discarded, as they're not heavy enough to penetrate foliage, for the same reason, foliage penetration, the feathers are a disadvantage, and get pulled off by twigs soon anyhow. Low friction in the system can be fairly important, and all knots should be arranged to give minimum resistance to being pulled through foliage by the arrows, as it's only the arrow's weight that pulls everything over the branch and down to the ground again the other side. It helps to wrap tape round the join between the nylon and the rope to taper off the variation in thickness, as shown, this eases the joint over clefts in branches.



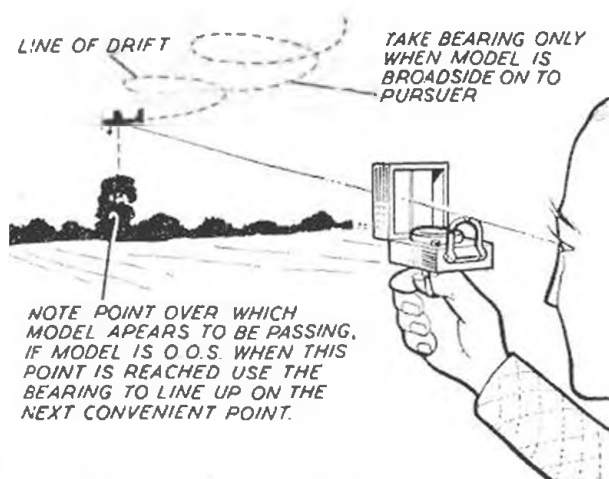
Harpoon made from thick-walled aluminium tubing.

A chain-saw could be incorporated in the rope and used to saw through branches, but, in general, major surgery of this type is best avoided, as falling branches and trees have a habit of damaging people.

Some people have found a set of bamboo poles, arranged to plug together is a help in prodding fairly low models out of trees and off buildings, the top pole can have various fittings attached to it to hook round the model or branches, or to cut rubber bands. The fewer external lines or bands on a model the better.

One warning. Do make sure there's nobody in the line of fire when indulging in Robin Hood-type activities, also, when an arrow gets caught in a twig, be very careful about pulling it out by heaving on the nylon as, when the twig finally breaks, the tension on the line is likely to be pretty high, probably higher than the tension on the bow-string was in the first place. The arrow whistling down out of the tree usually comes as a special surprise to the bystanders, so make sure everybody's aware of the situation.

The foregoing will possibly inspire some efforts in the development of simple and workable location and recovery systems, in particular some variation of the elevated mirror system would be of considerable value. Meanwhile, the Croydon arborial recovery service is available at an exorbitant fee to cover the cost of replacement arrows, however, we may well be using it ourselves, so why not gather the bits together yourself and be independent? The whole gear will cost around £2, or rather more if you buy a lot of heavy rope, but the initial cost could be borne by your club, a small charge for each successful recovery being made to reimburse the funds. An inventory of the equipment is a good idea to prevent odd items from being left under trees by successful recovery teams.



## Marching Compasses

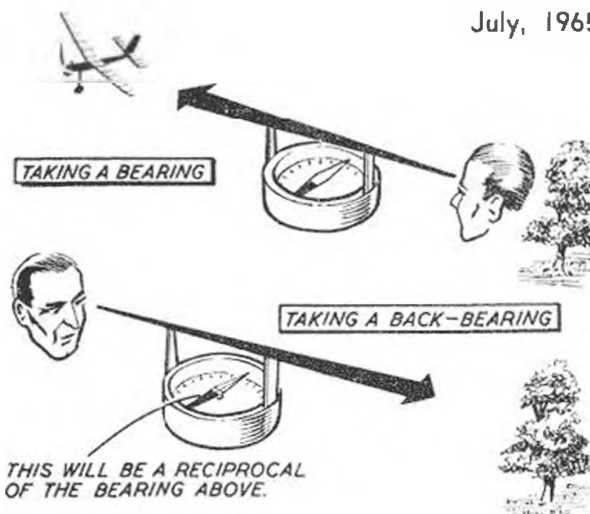
sketches show how to use them

A FEW POINTS regarding some of the marching compasses at present available seem relevant after discussing recovery techniques.

The most frequently used compass is the ex-Government *Mark 1 Compass, Magnetic, Marching*, this is obtainable at Government surplus stores for around 15/-, and is very sturdy. It weighs 5½ oz. and its folded size is 2½ in. x 3½ in. x 7 in. in., thus it's not too much of a nuisance to slip into a pocket. Apart from its durability, this compass is specially suitable for model location as, due to its reflector-surrounded sighting slit, very accurate bearings may be taken on models or landmarks.

The needle is locked when the compass is closed, thus preventing damage to the bearing due to accidental jarring, but there is no liquid damping provided; the needle is therefore sensitive to minor swings which might be troublesome in a strong wind.

Another compass worth considering is the Silva "*Ranger 15T*", this is a Swedish instrument designed for professional use, and costs 72/6d. It measures 4 in. x 2½ in. x 8 in. when folded, and comes with a lanyard, the weight is 3 oz., due mainly to the Perspex base plate, which is likely to be specially useful when used in conjunction with a map. An inch and centimetre scale is incorporated and the compass



THIS WILL BE A RECIPROCAL OF THE BEARING ABOVE.

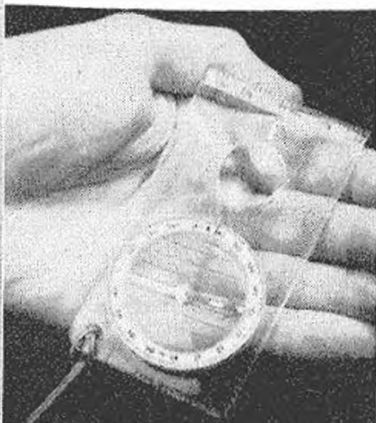
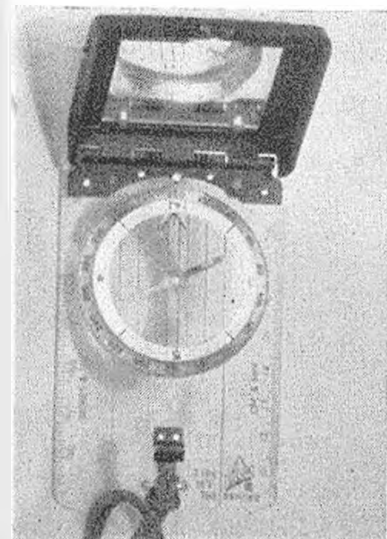
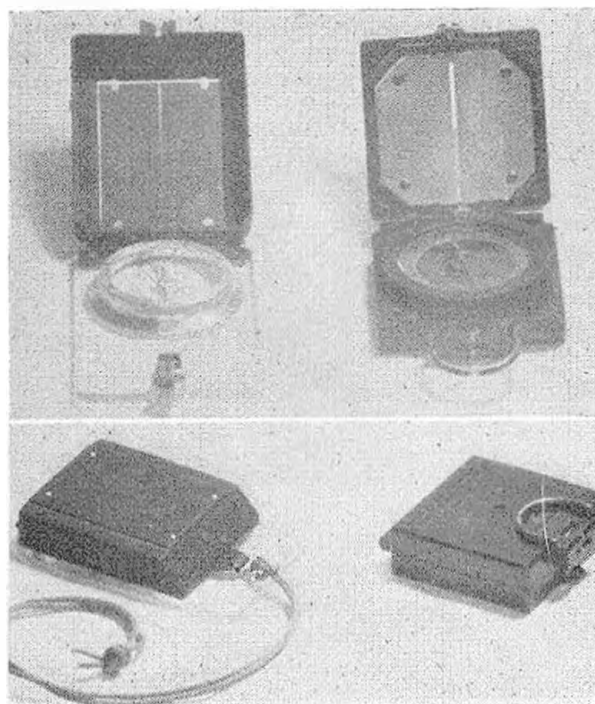
bowl is liquid-filled to provide quite efficient damping of the needle. The compass comes complete with a very comprehensive booklet on the various methods of using it, a more expensive model incorporates declination adjustment, so that local variations between magnetic and true North can be pre-set.

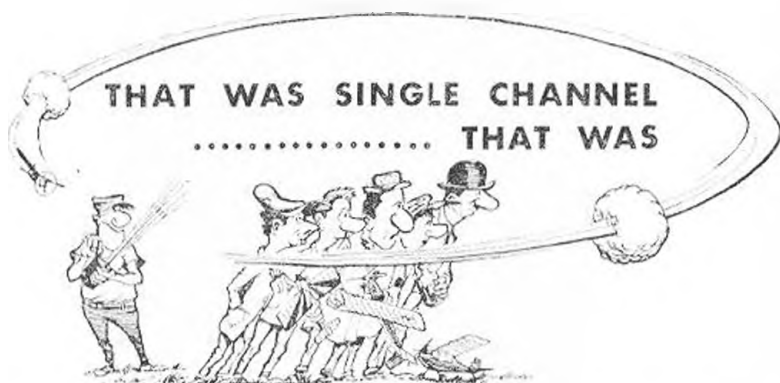
A further Silva compass is the "*Explorer III*", which retails at 30/-; it doesn't incorporate a sighting mirror but for taking rough bearings and checking lines of drift it would be quite useful. Again made with a transparent base, the "*Explorer III*" has a magnifier moulded into the Perspex, the compass bowl and dial assembly are identical to the "*Ranger 15T*".

United Technical Supplies, of Tottenham Court Road, have available a well-made Swiss mirror-sight compass called the "*Recta*". These are being sold at 2 guineas, the strong metal housing slides open to erect the mirror, which is of chrome-plated metal.

Whichever compass you finally decide on, do have it easily accessible, it's most annoying to watch your model disappear into the distance, knowing the compass and/or binoculars are a quarter of a mile away in the car.

Left, the Silva type 15T "*Ranger*" an outstanding compass distributed by B. J. Ward Ltd., selling at 72/6d. Below; an economic compass the "*Explorer*" III also from B. J. Ward, at 30/-. Right, comparative use of "*Ranger*" and ex-Government compass.





or "Getting started  
in Radio Control"

PART ELEVEN

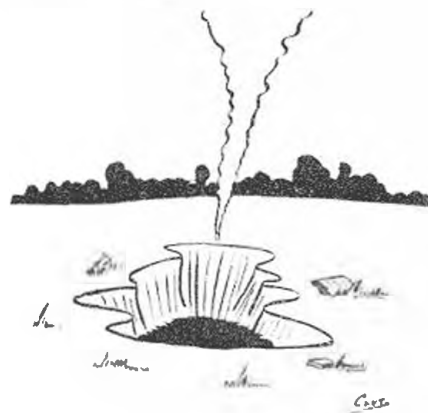
Eric Clutton reveals in his own inimitable way an approach to small-field R/C aerobatic flying on a low budget . . . . .

. . . . . introducing the  
**FULL SIZE PLAN**  
**"SHARKFACE"**  
for .049—.09 (.8cc—1.5cc)

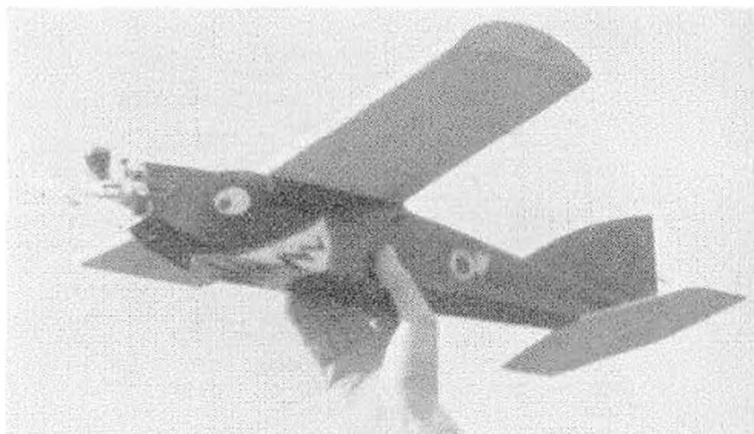
ONE UNFORTUNATE DETERRENT to radio control interest is that it is too complicated—how often do we hear, "I would have a go at radio but I can't be bothered going to all that trouble!"

I'm inclined that way myself so I have sympathy for this view!

Working on the theory that if anything can go wrong it certainly will prove the point, I decided to see what could be done about simplification of this R/C business. This becomes a matter of elimination. The first things one can eliminate are valves—those little glass bottles full of bits of wire which need a power station to operate. All-transistor receivers are now virtually indestructible and will operate off quite small batteries.



"Small batteries  
are an advantage  
when the model  
stops suddenly".



Next, it is possible to fling out those chattering little relays. These are fairly reliable but they are not crashproof (not for the sort of crashes I have anyway!)

"A heavy  
not 'penetr  
it has a  
engine".  
'Sharkface'

### Saving Weight

All-transistor, relayless receivers can be obtained which work off three volts—these are the ultimate at present, the battery weight of two pencils or even two subminiature pencils being very low indeed.

Switches can easily cause trouble so out they go. The receiver will simply plug into a three pin socket when required. These sockets can be cut down quite a lot if they are not mounted on a bulkhead.

If we are to operate off a single 3 volt battery supply the motorized actuators are excluded. Escapements come in two kinds—compound and sequence.

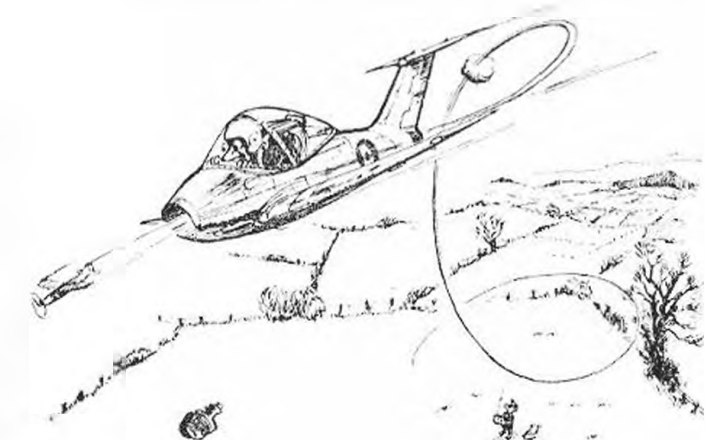
Compound escapements are light and they work very well, but they are more complicated (that word again) than the ultra-simple sequence type which are also more crashproof. This is really a matter of choice but I plump for the sequence escapements because of simplicity—the escapements, not me!

The escapement should pull in on  $1\frac{1}{2}$  volts to be safe, and some escapements, e.g., the Elmic Conquest may require slight adjustment of the armature spring for reliable operation on  $1\frac{1}{2}$  volts. Don't overdo this or vibration will affect it.

## Batteries

That practically takes care of selection of the radio gear: All-transistor, relayless and with a simple escapement, all operating off 3 volts. The use of these small batteries is a great advantage and if the model stops suddenly (as when trying to bore to Australia) the heavy parts just keep on going, and the "lighter" these heavy units are, the better! This equipment could be installed in an average type of radio-cum-sports flying model and some pleasant flying is possible—whenever the weather is suitable! This is unfortunately not very often as the average single channel model tends to disappear downwind at a fast rate on a normal windy Sunday. To "penetrate" into the wind and make all-weather flying possible the model *must* fly fast—there is simply no other way to do it.

To fly fast we must have plenty of power. A heavy model will not penetrate unless it has a powerful engine fitted—it will just cock its nose up and woofle



model will  
ate' unless  
powerful  
Author's  
at left.

along! The engine doesn't have to be particularly powerful for its size, it's the engine capacity in relation to the model size that counts. A fast flying model will hit the ground with quite a thump if something goes wrong so it must have built in BOUNCE! One of the best ways to do this is to reduce the overall size of the model; this means that we can use a relatively small engine and the smaller models are easier, quicker and cheaper to build in case you hadn't noticed!

## Size of the Model

I decided to build mine just large enough to hold the radio equipment and this, together with a reasonable length for the escapement rubber, almost designed the fuselage automatically. An unwept fuselage nose helps to reduce landing shocks. Did someone say undercart? This unnecessary complication adds weight, drag and building time—and trips the model up when it lands. Integral tanks fitted to some motors are not really big enough for radio operating and those nasty, soggy plastic bottles make me shudder! A tin tank is much better, team-race tanks being very satisfactory. These tanks can be built in

"If necessary —  
kick the model  
in the desired  
direction".



and forgotten just like a control-liner. (Hoorah for Keil Kraft and the tank they've included in the new Mini Super kit).

## Fix the Tailplane

We never use a detachable tailplane on a control-liner so why use them on a 6 ft. 6 in. span R/C slope soarer.

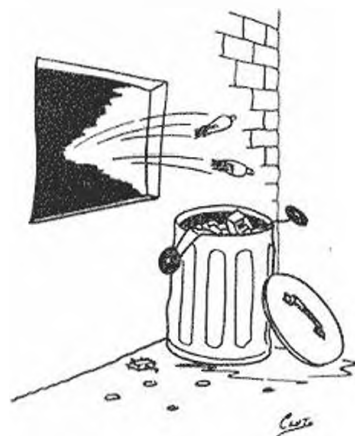
On "Sharkface" the sheet tailplane is simply stuck to the bottom of the fuselage—another way is to do away with the tailplane altogether and produce a tail-less model *R.C.M. & E.* has featured a tail-less design (*Tadpole*) of mine which was a parallel development to "Sharkface". It has many advantages, but for those of you who prefer the relatively orthodox ———!

Wings are a necessary evil on radio controlled models, they are often tricky to build and are the first component to break, so my wings will be as small as possible—consistent with a reasonable glide. Sheet wings are good and experiments indicate that they give better performance in strong wind because of their low drag (the tail-less design has sheet wings), but the lift is poor from a flat plate section and with the small wing fitted to "Sharkface" this may make the vital difference. Built-up wings do not have to be flimsy. A glance at the "Sharkface" plan will convince you of this! The prototype was covered with heavyweight tissue and has yet to receive any structural damage apart from the odd scrape when it has clobbered the runway.

When mounting the escapement the accent is on "bounceability" and all torque arm fittings should have slop in them to avoid any chance of binding.

(Continued on next page)

"Valves, relays,  
switches are  
OUT".



## Single Channel R/C

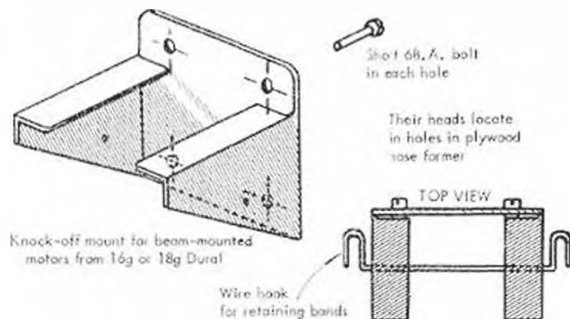
(Continued  
from p. 323)

Fins are functional devices which must also supply a reasonable hinge for the rudder and possibly location for the receiver aerial. A major point of consideration when designing the fin is to try to keep it out of the way of the wing in a crash! Even pencells have some inertia so a plywood bulkhead is fitted for them to push against, and the area between this bulkhead and the nose former is stuffed with tank and block balsa. The tank is arranged to give suction feed—I had endless trouble when I fitted a motor with an intake below the crankshaft. This resulted in gravity feed from the fuel tank and I never did get that motor to run properly.

The design has left no room for engine bearers. These clumsy great lumps of timber take up more room than they are worth and a radial mount is simpler (that magic word!). This mount is detachable and held in place by rubber bands. The arrangement is almost completely crashproof and another great advantage is that different motors can easily be tried. "Sharkface" has had two different Cox .049s a vintage Arden .009 and a Frog 150 diesel up front—all at different times of course!

### Use .8 c.c. to Start With

For the cautious flyer an .049 is advised. This will give quite a snappy performance and will probably be sufficient power for most button pushers. For those who like to live dangerously the 1.5 c.c. diesel is the obvious choice, but be warned—you need hair on your chest for this one! "Sharkface" does not become vicious however, and things happen only



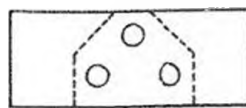
Engine bearer for beam mountings and knock-off attachment.

slightly faster. Rudder movement may have to be reduced for the less intrepid.

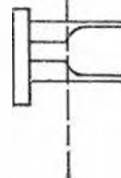
I am inclined to favour the diesel because it is much cheaper to run. There is also no chance of a burned out plug or a flat glow battery.

With the higher powered motors response to control is very rapid indeed and flick rolls or reversals can be executed quite easily. Sometimes these are even intentional. With an .049 the response to control is still rapid and a turn is produced by simply blipping the button. This will kick the model in the required direction. Rudder is only held on when you are brave enough to attempt a spiral—don't worry though—the model recovers instantly when your palsied hand releases the button.

Blipping for control is very economical on both transmitter receiver batteries. I bought my Futaba



Cutting 3-pin plug and socket to minimum size



Socket modifications at left, simple circuit opposite.

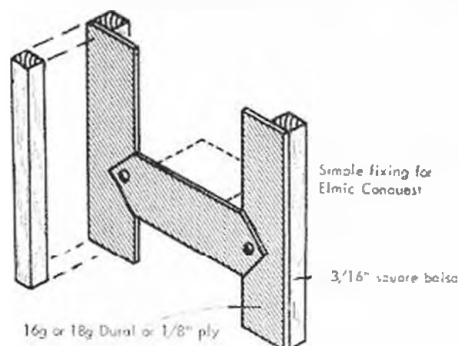
transmitter early in 1964 it was secondhand then and with the original eight pencells installed. I am just thinking of changing these batteries (May 1965)! The Rx batteries last quite well too—last summer I flew almost every day for six weeks on two sub-miniature U-16s and I finally changed them when they dropped to just over 2 volts. The six week period included losing the model twice (at dusk!), resulting in it being left out and switched on for two whole nights! A pair of normal pencells should last a whole season but much depends upon the escapement used.

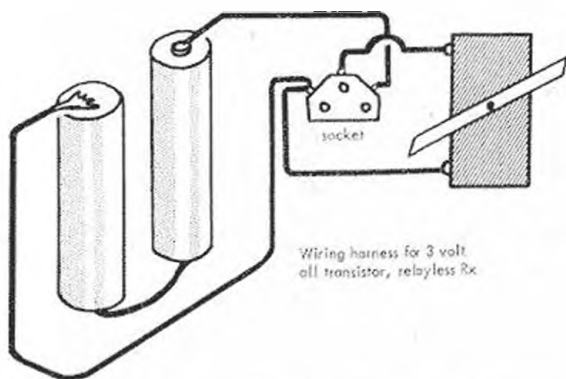
### The Escapement

Small models do not require any elaborate fixing for the escapement; in fact they are better off without this and should have as few complications as possible. Some escapements must be mounted on a ply bulkhead and the Citizenship is of this variety, but many can be simply glued straight into the fuselage with a reinforcing strip on each side. The new O.S. escapements are excellent in this respect. The Elmic Conquest may offer a problem, but the system shown in the sketch works very well and is SIMPLE with a capital 'S'! Whichever escapement is used it should be aligned in the fuselage so that the rudder motor exerts a straight pull on the escapement hook.

Wiring an all-transistor relayless equipped model is the height of simplicity, particularly if no switch is used. Even plugs and sockets should be kept to a minimum and my wiring method is shown in the sketch. The batteries are soldered in position as frequent replacements are not necessary. Do not be tempted to use the thinnest wire for your circuit—this is very attractive and has many uses but it will not stand the rough and tumble of a small radio model I use the thickest wire available, which results in practically no voltage drop and does not fracture in a heavy landing (a heavy landing is when rudder sticks on at 500 ft.).

The response of the Rx and escapement to a Tx signal must be utterly reliable and I usually run the escapement motor down while testing. If the rudder





Wiring harness for 3 volt  
all transistor, relayless Rx

sticks or skips just *once* this is not good enough. This testing is done at home so that only a quick check is needed on the field.

Test flights are simple if a compound escapement is fitted—just make certain that the model will turn to the left under power! A slight bias to left rudder will ensure this, but don't overdo it. With CG in the correct position check for glide, and if all is well chuck it into the air with the motor going flat out. A fairly hefty heave will be necessary.

If a sequence escapement is fitted the above drill still applies. "Sharkface" will probably turn left anyway, but a *very slight* touch of left rudder bias will ensure this. Start the motor, check that the next control will be right rudder and launch. If the model is trimmed for maximum "penetration" it will probably sink slightly after launching, but a quick dab of right rudder will point the nose up and it will climb away.

## Flying

The sequence flying of a fast R/C model is an art and must be acquired by practice. If our model has a built in slight left-hand turn and a wide right hand circle is desired, a quick blip of right rudder will start this off. The model will gradually straighten up and if left alone would commence to turn left. Before

this happens get rid of the unwanted left rudder signal by means of a very quick blip and continue the right turn by giving a dab of right rudder when it appears necessary. I prefer the model to have a slight turn built into it—with the larger engines. "Sharkface" can be out of sight *upwind* in a very short time indeed! A built in turn means that it will eventually reappear!

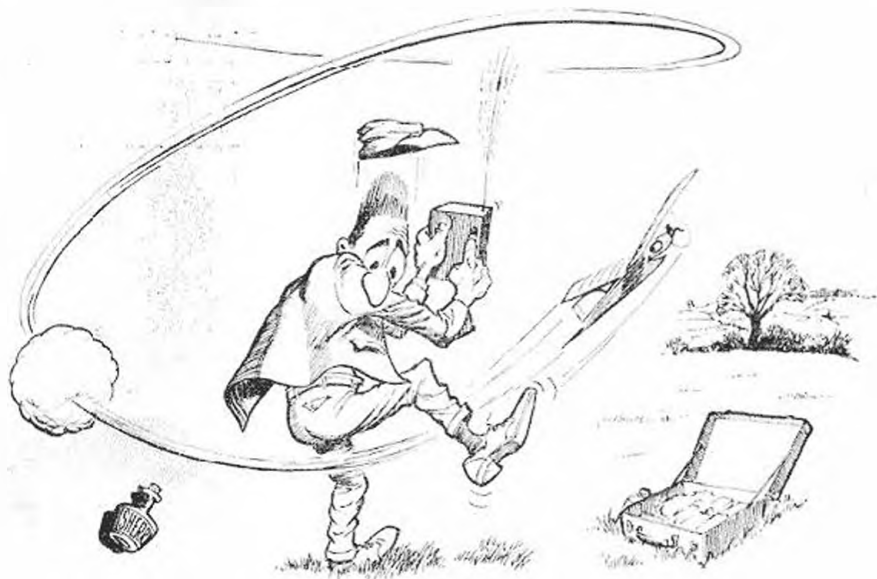
These small models should not be allowed to stray too far downwind in spite of their excellent penetration. They are not easy to see, and a wrong control can lead to confusion followed by crunch! Vivid paint work is of some help but the best insurance is to zip about within a reasonable distance from the transmitter—it is fairly easy and far more satisfactory.

## Extra Tips

A few final thoughts: All dowels are simply inserted and *not* glued in position. If a 1.5 c.c. motor is fitted to "Sharkface", move the wing forward to compensate for the extra weight. The excellent "Terrytone" Rx is far too bulky for small models and the printed circuit board is a little vulnerable because of its size. This board can be cut across the middle, the components placed face to face with 6 B.A. bolts holding the two halves of board together and at the right distance apart. Use three wires to bridge the cut P.C. lands and we have a "double-decker Terrytone" more compact and crashproof and suitable for quite small models (but not, unfortunately, "Sharkface").

Try slope-soaring a powered radio model—I have done this off the Shropshire hills and spiralled the model down into the valley, well below my feet. It is quite a sight to look down on to the model and the speed appears to be fantastic! (Thinks, "Must take a control-liner and try wing-unders"). An obvious application for my type of radio model is a form of pylon racing around a small course and this might easily give the multi-boys a run for their money in spectator appeal. Of course all spectators should be issued with protective head-gear! P.S.—and don't forget that SILENCER!

'Keep the model close to you — or it will soon disappear from view — control response is very rapid indeed'.



A 1.5 c.c. (.09 cubic inches) stunt model

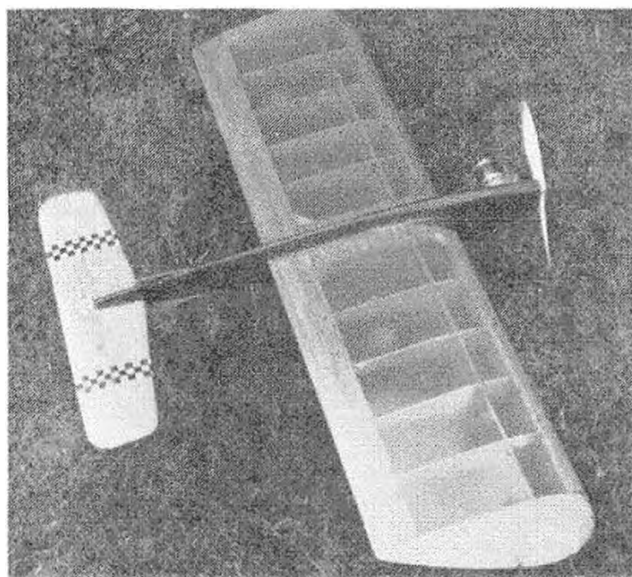
# "KETCHUP"

28 inches wing span with profile type fuselage and simple construction

designed by R. Walden

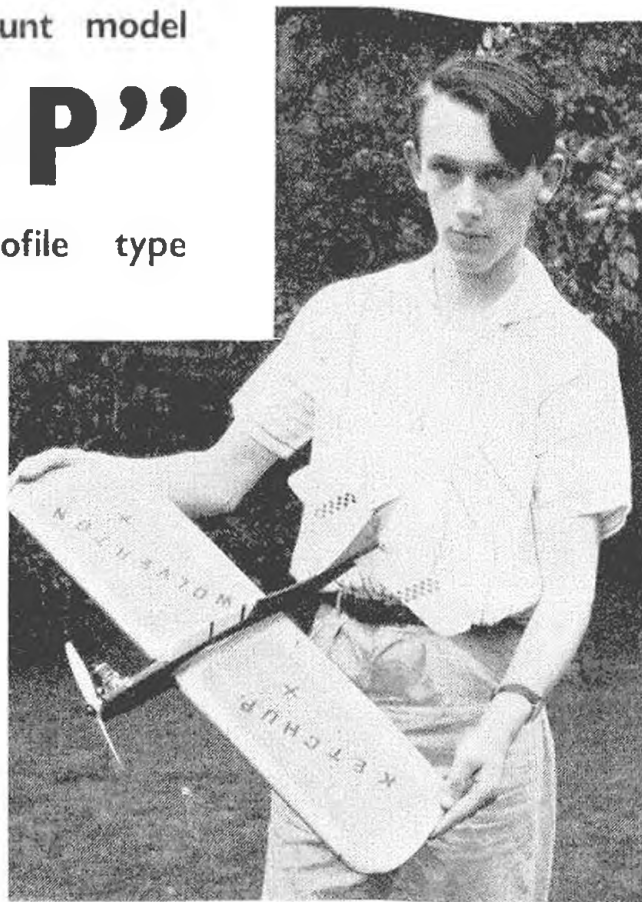
THIS IS THE 7th in a series of simple lightweight stunters designed around an A.M. 15 diesel powerplant. Though many early attempts were fairly manoeuvrable, they lacked strength. One version with 2 sq. ft. wing area and 7 oz. weight had an exceptional performance until a vertical landing splattered it over the local recreation ground.

The latest development as planned here is really manoeuvrable yet easy to fly. Strong for its weight (it is not intended as a trainer), it is also quite attractive. When complete, the original weighed just 7½ oz. which is a good figure to aim at.



Remember that wood selection is important. Ribs should be very light and that 1½ in. thick sections take up a lot of sheet! The leading edge too should be fairly light, though do not choose brittle wood for this and the trailing edge which can be medium soft grade. Strength in the fuselage is important, so choose medium wood here and shape it down to reduce weight.

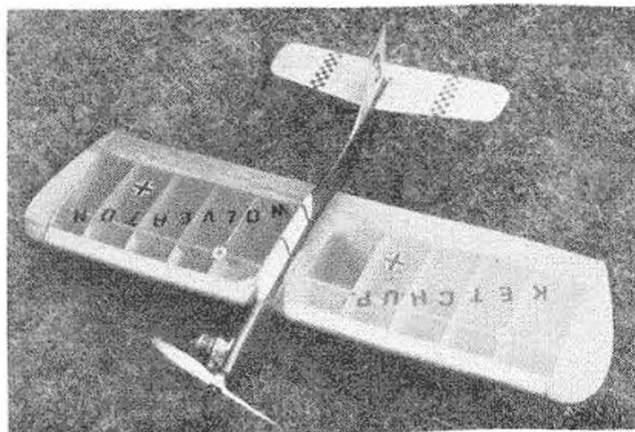
Construction is begun by cutting the leading edge, trailing edge and ribs from sheet. Cement ribs to bottom trailing edge, add leading edge top and bottom and plane and sand to fit front piece. Cement in position ply bellerank mounts, with bellerank mounted in position (use a dab of solder here to



Designer displays small dimensions of this easy to make fully aerobatic stunt model in photo above. Note the Cross & Cockade insignia decorations for combat.

Inverted view at left indicates the symmetry of 'Ketchup'. If it does happen to land this way up the cabin saves the impact from any risk of damage to the fin.

Below, ready for action. This model also doubles for F.A.I. or S.M.A.E. combat by accepting 2.5 c.c. engines. However, this is not for the less experienced!



prevent nut unscrewing). Finish wing construction with leadouts, leadout guides and push-rod, sheet tips and tip fairing blocks, gussets, and fill in for trailing edge. Sheet centre section and set aside to dry.

Now cut fuselage and mark engine bearer positions to suit engine. Any 1.5 c.c. or good 1 c.c. will do. Double cement or use P.V.A. or Araldite for bearers. The  $\frac{1}{16}$  in. sheet doublers must then be securely cemented on to fuselage and set aside to dry.

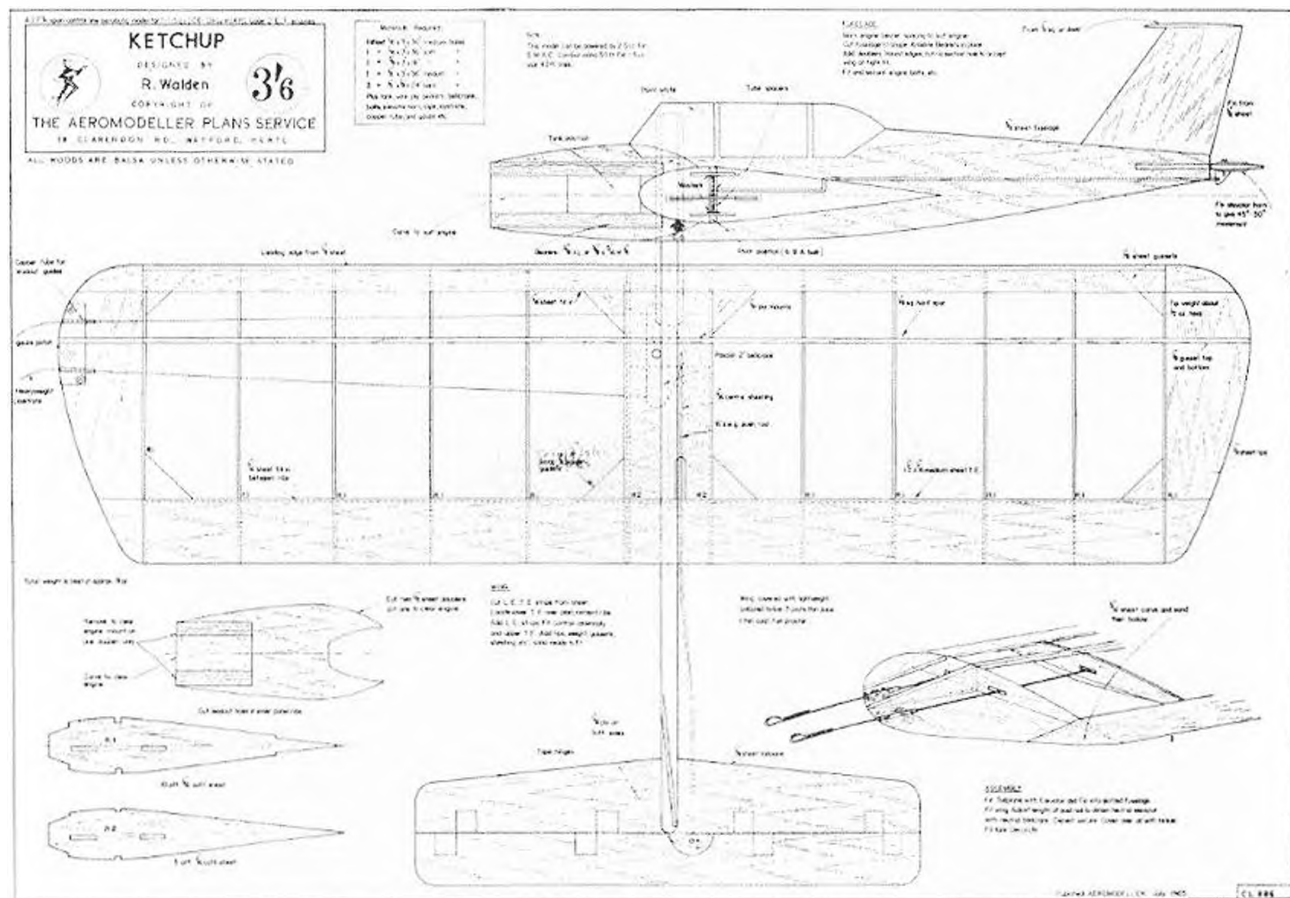
Tailplane and elevators are cut, sanded and hinged with nylon, then covered with lightweight coloured tissue. Fit dural or nylon elevator horn with  $\frac{1}{16}$  in.

lightweight tissue as follows. . . . Tack down at trailing edge with dope, stick to leading edge and surrounds, then stretch and dope all over, using thin dope. Wrap round L.E. in one piece, then complete.

Now cement tailplane and fin into appropriate slots in the completed fuselage. Bend push-rod to engage elevator horn. Paint cockpit area white or silver and add a few dabs of colour elsewhere to brighten things up. Go easy with the colour dope as it quickly adds weight.

When everything is dry apply thin overall coat of Butyrate clear fuel proofer. Give a thick coat around the nose section. Add transfers when dry.

Full size copies of this 1/5th scale reproduction are available price 4/- incl. post from Aeromodeller Plans Service. Quote Plan No. CL 886



ply strengtheners. Dope for good finish and leave to dry. Fin is made in the same way, using  $\frac{1}{16}$  in. sq. spruce, hard balsa or  $\frac{1}{16}$  in. dowel for the spike. Then sand, cover, finish and hang to dry.

Fuselage should now be dry so carve, plane and sand to shape. Hollow to fit engine, rubbing cement well into nose section for good fuel proof assembly. Araldite engine bolts into position and fill holes in doubler. Give one or two coats of dope and cover with coloured tissue, heavyweight, dope to finish off.

Carve and sand wing to final shape. Trim wing hole in fuselage to snug fit over sheeting. Glue in well with cement, PVC or glass fibre with bandage reinforcement, ensuring that wing is square in all directions. Give one coat of dope over all wing structure and cover with two pieces only of coloured

followed by Humbrol clear enamel to seal.

No undercarriage was fitted to the original model but this is a matter of personal choice. A small dural bracket attached to lower engine lug bolts now supports a  $1\frac{1}{2}$  in. plastic wheel for landings only. This minimises holing the undersurface. A longer undercarriage may be fitted for take offs.

Practically any stunt tank of the right size for your engine can be strapped to the side with rubber bands, tinplate straps or Neoprene and self tap screws. Although line tension problems rarely occur it is better to have initial flights on a fairly calm day.

The original is very manoeuvrable and capable of speeds of 50 m.p.h. with an A.M.15 using a line length of 40-45 ft. Happy stunting!

AEROMODELLER VISITS AN  
**AIR MUSEUM**

Part 3 . . . Fleet Air Arm

FIRST OPENED TO THE PUBLIC during the Jubilee Review of the Fleet Air Arm on May 28th, 1964, this Museum at H.M.S. Heron, R.N.A.S. Yeovilton, Somerset, is a classic example of how the Senior Service is able to cope with a situation that has already deterred others.

is given to the famous Fairey Swordfish, elevated on a steel structure and armed with a dummy torpedo. Although the placard states that it is decorated in the manner of that used by Lt. Cmdr. Esmonde, V.C., D.S.O., R.N., the markings and general colouring are most unfortunately

the Historic Aircraft Preservation Society, with new wings, etc., being made by apprentices at R.N.A.S. Arbroath, Angus.

Beside the aircraft there is a particularly fine range of large scale models which have been presented by various Companies with Naval connections. A full display of flying clothing, medals, engines, armament, war records, safety equipment and photographs is expertly arranged and a little appreciated side of R.N.A.S. activity is revealed by a model of an airship. Adjacent to the Museum there is a public observation area where one can see the day to day work of a bustling Station. Sea-Vixens, Scimitars, Gannets, and the full range of Navy helicopters create an impressive display of continual activity.

**Aircraft on View** during our visit were the Attacker F.1, WA473 "146" I (ex-Abbotsinch, 5th prod. A C); Corsair IV KD431 "E2-M" (ex-C. of Aeronautics—acquired by HAPS) Swordfish VG105 "H" (should be VG105 with pre-July 1942 roundels); Whirlwind XK944 "229" E; Sea Fury WF 726 "115" O (Decorated as Cdr. D. T. McKeown's Korean Campaign A C); Seafire F. MKD, SX137, Martlet AI 246 (ex-Loughborough College). Also on strength at H.M.S. Heron but not in the Museum is the airworthy Swordfish LS326 preserved in the markings of the Bismarck action from H.M.S. Victorious. To come, is a Supermarine Walrus.

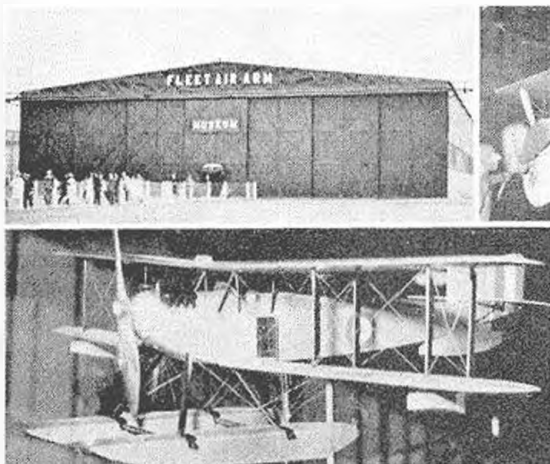
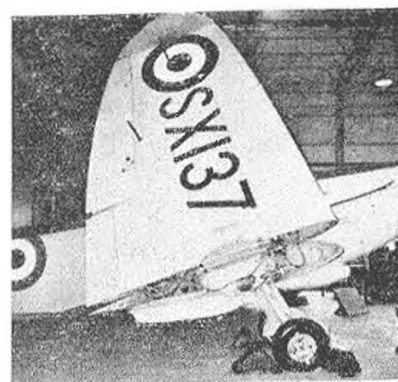
**Address.** F.A.A. Air Museum, R.N. Air Station, Yeovilton, near Yeovil, Somerset. Tel: Ilchester 333.

**Situation.** No. 11 Hangar adjacent to route A303.

**Open.** Weekdays 10.30 a.m.-6 p.m. except Mondays, Sundays 2 p.m.-6 p.m.

**Admission.** Free, donations welcome to support the Museum. Party trips by special arrangement.

**Two famous Fleet fighters, the Seafire and Seafury. Note the shine. Few Air Museums have such dust free exhibits. Top picture shows the Martlet and Swordfish.**



The smart black hangar stands prominent near the A303 route. Airworthy Swordfish carries two Admirals and a Lt.-Cdr. as crew, all were involved in famous war actions. Models are typical of many on show.

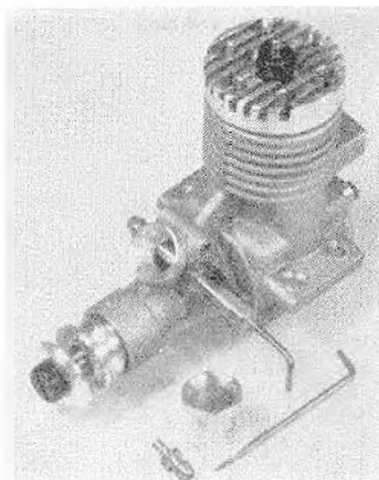
Without any financial allocation and dependent entirely upon enthusiasm of serving Officers and Ratings, the Museum was authorized by the Admiralty in February 1964 following proposals that had been made in the very first instance by the then Commanding Officer of R.N.A.S. Yeovilton in 1963. He had been anxious to allow a more interesting view of the Station for the general public who were in the habit of stopping on the adjacent trunk route to the West Country in order to watch the flying. A Seafire, Martlet and Swordfish were to be placed on view adjacent to a public enclosure.

From this idea stemmed the facility of a special hangar made spick and span true Navy style and now filled with a wonderful collection of Naval Air History.

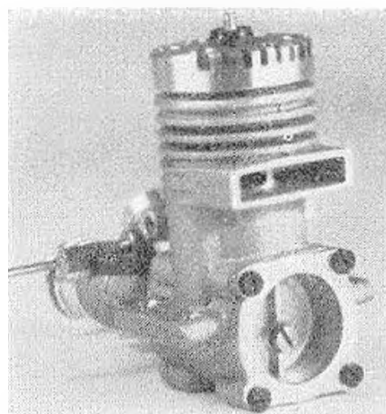
(It is interesting to note that among the exhibits one can find R.N.A.S. origins in all sorts of items including the very first Tanks which were crewed by R.N. personnel.)

Pride of place in the exhibition

incorrect and represent a mixture of early and late Swordfish colouring. Other aircraft are displayed on the ground and in the case of the Seafire and Seafury with their wings in the folded position. When the Museum was first opened, a Sopwith Triplane which had been prepared by Hawkers was on show but this has now been transferred to the R.A.F. Museum, and is to be replaced by a Supermarine Walrus currently being reconstructed from a wreck acquired by



Above and below the M.V.V.S. 2.5 RL displays its steeply raked air intake and rearward facing exhaust stack, note radius on the liner port.



### M.V.V.S. 2.5 RL

Known mainly as an engine that features in the International contest results, M.V.V.S. engines are being advertised for sale by "Tenco" of Belgium. A prototype was flown by J. Sladky of Czechoslovakia to fourth place at the 1964 World Control Line Championships with a speed of 138.6 m.p.h. on regulation F.A.I. fuel, i.e., standard castor oil and methanol mixture only. The production M.V.V.S. 2.5 RL is a departure from normal layout with its rearward facing exhaust stack, that would lend itself admirably to a silencer built into the fuselage of a speed model. Somewhat different to the Sladky original it has a much shorter venturi and small dia. front housing. Front rotary induction is through a steeply raked air intake, at approx. 45 degrees to the shaft, with two venturi inserts for suction or pressure feed and twin Schnuerl ports similar to that used on the Super Tigres that enter at each side of the liner. The piston is quite heavy and has a flat top that was rather rough on the example examined. The stout connecting rod is bushed at both ends. A very short liner is used and

## MOTOR MART

the exhaust ports have slight radius on the corners. No gaskets are used and the whole engine seemed very well fitted. Internal cylinder head contour is hemispherical with a 3/32 in. wide squish band around the edge. A pressure fitting nipple is supplied together with an optional spade shaped needle. The crankcase is very robust with one ball race fitted to support the shaft at the rear. This is a British Hoffman Ury, JIM race. It looks as though a very small ball or roller race was intended for the front end but was not available, hence the empty housing. Weight is just 6 ounces. The M.V.V.S. 2.5 T/R, 5.6 c.c. stunt, 5 c.c. speed and hand carved team race propellers similar to those tested in *AEROMODELLER*, September, 1964, are also advertised by "Tenco" in the Belgian magazine "Model Avia".

### New Gee Dee Pike Silencer

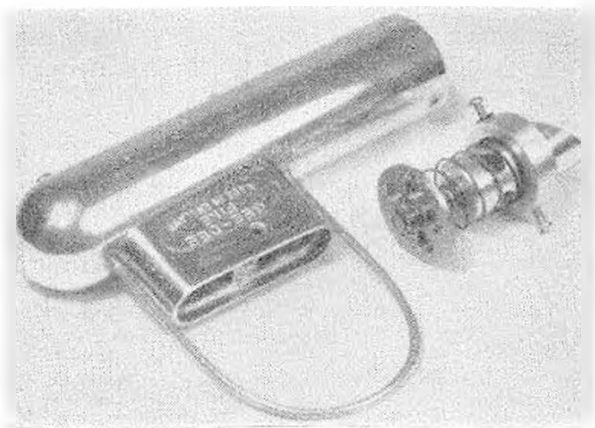
The new GEE DEE PIKE *Competition* silencer available in a few weeks is a development of the standard silencer now on the market. This does not mean that the standard will be discontinued, to the contrary the new silencer is for contest modellers who want that "something" extra. Instead of the screw fixing system previously used the silencer is strapped to the body with a 3/32 in. dia. stainless steel rod that passes around the engine crankcase and is attached to the silencer by two hollow screws (bicycle spoke nipples) with rolled threads .010 in. larger than the hole size. Thus, even if the hollow screws do fall off, the silencer should not come off the engine and will be held by the oversize threads. The mounting adaptor is now made from aluminium and incorporates a

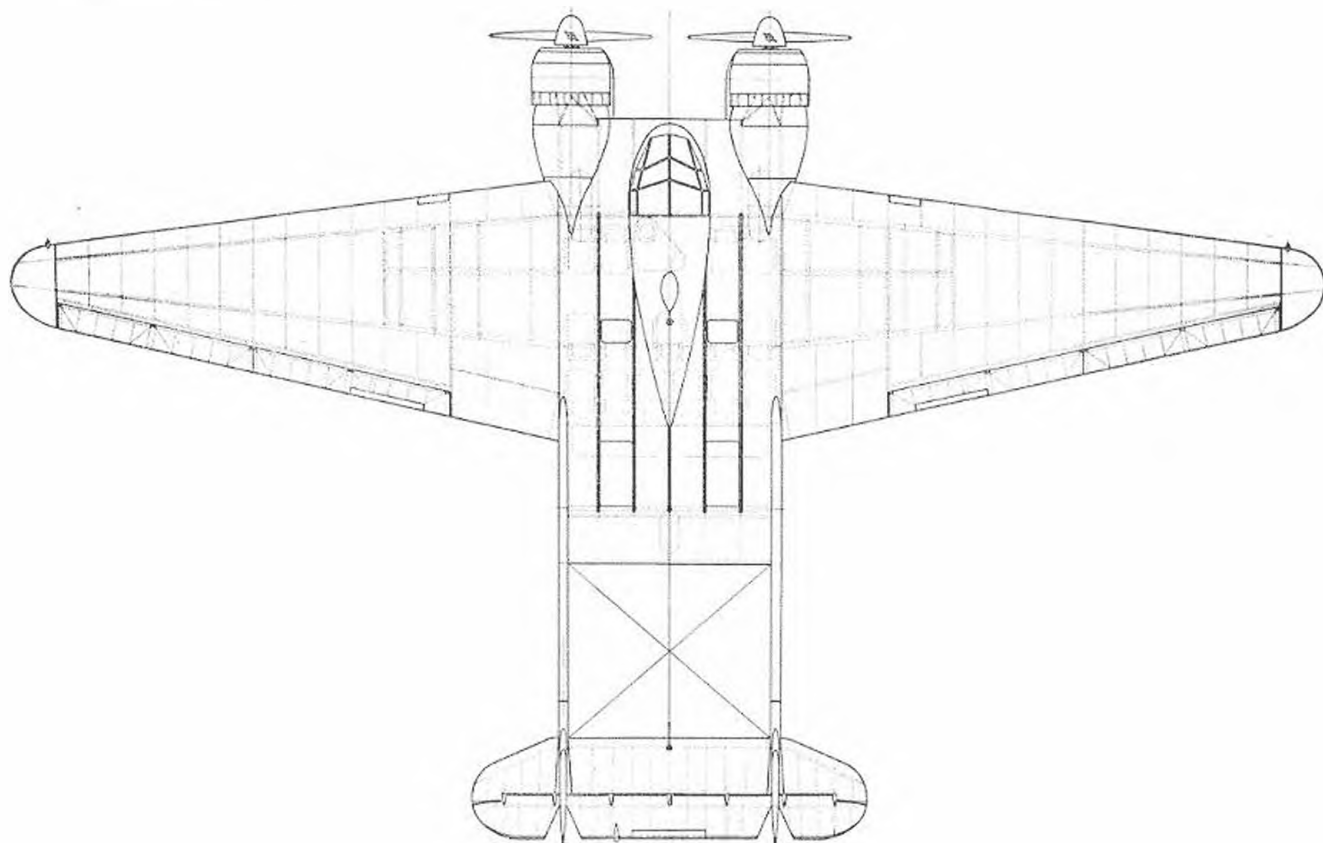
very clever priming hole that turns through a right angle directing the prime right on to the sides of the piston. A redesigned tail assembly is used with an enlarged outlet, smaller valve dia. and larger ports and two nimonic steel springs to replace those previously used. A castellated nut and pin is used to lock the assembly firmly. A modified adaptor will also be available for those who want to fit the silencer to a Super Tigre .56 and .60. Prices for the *Competition* are 62/6d. for the Merco .49 and .61 and 65/- for the Super Tigres. Reported to give virtually no power loss at all and with the engine running much cooler the fuel consumption is approx. 10 per cent more than the standard silencer. Total weight including strap is a fraction over two ounces. The standard silencer will still sell at 59/6d. and will have a strap fitted to it. If current owners would like a strap fitted to the standard Gee Dee Pike silencer, send 1/6d. for P & P with silencer, this is a free service. A shortened version for the Merco .29, .35 and McCoy .29, .35 will be available at 62/6d.

### Hotted up Fox 36X

Just announced is the new Fox 36X BB from the Fort Smith factory, the home of Fox in Arkansas, U.S.A. Not replacing the 36X with needle roller bearings, the 36X BB is an additional model featuring mostly internal modifications to boost the power, the only external difference being the angled glow plug. Weighing 8 ounces with a bore of .800 in., stroke .715 in. and .36 cu. in. capacity, it has an enlarged crankshaft, port, lubrication holes drilled in the connecting rod, honed piston, polished and cleaned up casting and higher compression ratio. Price in the U.S.A. is \$19.95 compared with \$11.95 for the 36X. Riley Wooten, three times U.S. Nationals combat winner thinks it should take a Rat Racer to well over 120 m.p.h. Most Fox engines are available in G.B. from Roland Scott as well as Fox glow plugs, three for 12/9d. or twice the price for the R/C Shieldmaster type.

The Gee Dee Competition silencer at right clearly shows its double steel spring and castellated locking nut. Note the two screw fixing for the outlet pipe, and the stainless steel wire strap. Total weight just over 2 oz.





AIRCRAFT DESCRIBED Number 143

## Cunliffe-Owen "Flying Wing"

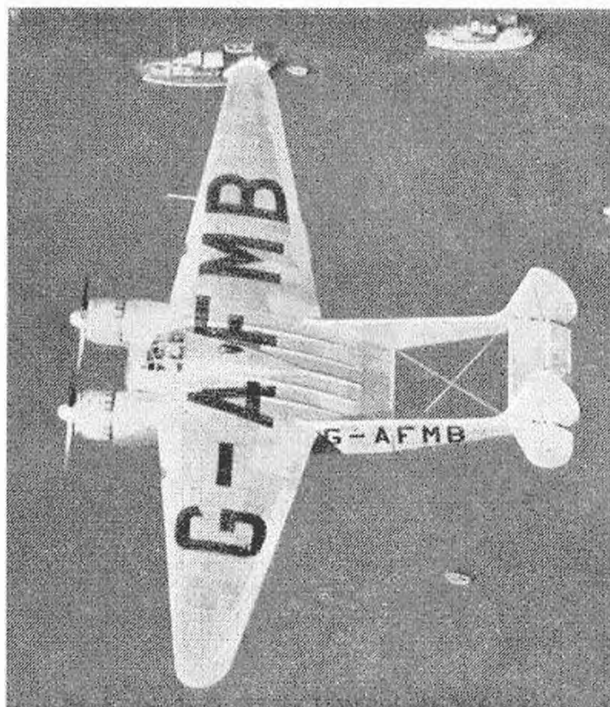
AERONAUTICS is a curious subject of recurring interests. The range of experiment in the first quarter century of successful powered flight was such that whatever appears this year or next will owe something in its originality to an early attempt no matter how obscure. Not all the 'new' ideas come to a successful re-development stage. Swing-wings, variable thrust swivel nozzles, ducted fans are exceptions.

Now the pendulum swings to the lightweight structure with exceptional lifting capacity and leading British aero-technical magazines draw recent correspondence in their columns to the efforts of Vincent Burnelli.

Ordinarily we would not have given this seemingly 'dead' project more than a cursory study, yet when our files revealed the detail in these three views we began to realise how the Burnelli "lifting fuselage" or "Thick wing" conception is so very suitable for any flying scale project—free flight or radio control.

So, with no more excuses, here is one twin-engined type in which the close proximity of the engines and simplicity of structure offer a minimum of design and operational difficulties. Outset of the engines would take care of asymmetric power output, aided by inset or 'toe-in' of the vertical tail surfaces.

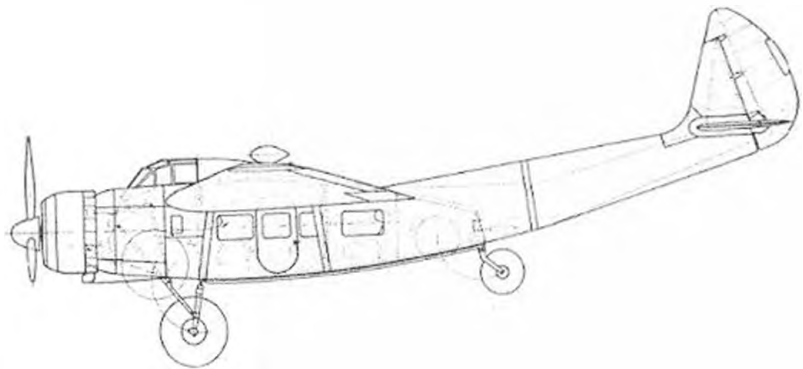
This 1939 view of the Cunliffe Owen U.B. 14.B test flight from Eastleigh, Southampton, where it was made reveals the extended and thickened centre section which formed the 15 passenger cabin.



## ALL VIEWS ARE TO 1/144th SCALE

Small diameter engine cowlings and streamlined integral mountings on the centre section is clear on the view below. The British prototype is seen being pushed out for its first test flight in this "Acroplane" photograph.

Who will be the first to make a flying scale model of this interesting twin-engined aircraft?



and what could be easier than this reverse tricycle undercarriage arrangement.

The Cunliffe Owen 'Flying Wing' G-AFMB was a 15 seat 235 m.p.h. transport flown in 1939 with a projected range to take in transatlantic operation. Conversion for war use was envisaged but it was not used as such and the single British machine ended its days in French Equatorial Africa with the Free French Air Force. Commercial prospects were



nulled by the hostilities and though supported by all associated with the aircraft, particularly those who experienced its remarkable stability, Messrs. Cunliffe Owen were unable to produce more than the one airframe. The Bristol Perseus XIVc engines rated at 900 h.p. each were selected for their small diameter and German VDM electrically operated controllable pitch feathering airscrews were used for the first time in a British aircraft. Between and above the nacelles, the pilots' cockpit held a wide range of vision, and in the 12 ft. 6 in. wide cabin, with 6 ft. headroom, there was an atmosphere of spaciousness that contrasts with the tube like transporters of today. The cabin was in fact a thickened wing as seen in the side elevation drawing. (Apologies for lack of cross-

sections—none are available but the wing had NACA 2415 section tapering in thickness to 2409 at the tips).

An American design, the U.B. 14B stemmed from a series of Vincent Burnelli 'Wings' which first appeared in 1924 as the R.B.2. This 84 ft. span machine made its fame by carrying a car within the 'fuselage' and was the largest commercial freighter of its time in 1925. Next, came the larger, 90 ft. version C.B.16, an advanced design created for the U.S. Banker P. W. Chapman. Retractable undercarriage air conditioning and a kitchen were advanced features for 1920.

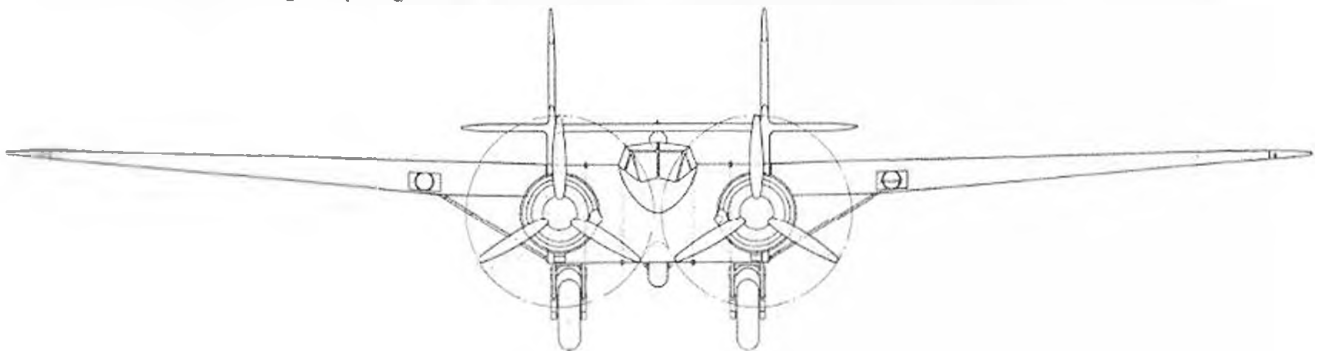
The U.B. (Upper Burnelli) 20 of 1929 reverted to a fixed landing gear but was the first machine to use the Goodyear "Balloon" tyres. It was flown with a Ford car suspended under the main cabin.

Then came the U.B. 14 in 1934, reduced in size to 71 ft. span but short lived as the original crashed with incorrectly fitted control cables in January 1935.

During W.W.II efforts to produce Burnelli transports were unsuccessful and the XCG-13 glider, although superior to the comparative CG-13A, did not enter production. Yet one more Burnelli wing was made, when the Canadian Car and Foundry Co. produced the CBY-3 in 1946. This 86 ft. machine first appeared as CF-BEL-X and then became N17N when in Florida in 1952, then YV-X-ERC in Venezuela. Efforts have been made to return the machine to the present Burnelli Co. It was unusual in having four wheel main gear, but the expansive 20 x 26½ x 7 ft. cabin indicates how it utilises the Burnelli concept and concentrates the disposable load close to the C.G. and undercarriage.

### Details of the V.B. 14B.

Span, 73 ft. 6 in.; Length, 44 ft. 6 in.; Height, 12 ft.; Power, three Bristol Perseus XIVc of 900 h.p.; Weight empty, 9,500 lb.; Disposable load, 9,500 lb.; Wing loading, 23 lb./sq. ft.; Speed, 225 m.p.h. at sea level, 235 m.p.h. at 6,000 ft.; Stalling speed, 67 m.p.h.; Initial rate of climb, 1,250 ft. per minute; Ceiling, 22,000 ft.; Duration, 10 hours.



This Japanese design by S. Huiyama of Hiroshima has a glass fibre fuselage and wing plus fully retractable landing gear, including the cover plates for full streamlining. Radio is Hope 10 channel and the engine an O.S. 50. The nose leg retracts forwards, hence the deep cowling.

## OVER THE R/C WAVES

LATEST IN RADIO CONTROL  
DEVELOPMENTS

**T**HE world is a huge place, the geographers would have us believe; but the extensive use of imported radio control equipment is rapidly tending to weld the aeromodellers into a closely knit community. We realised the other day that a model built from standard over the counter components could have a basic British kit, Italian engine, Japanese or German radio gear, American servos and perhaps a pair of French wheels. Air travel too shrinks the globe and when Keith Hearn of Melbourne, Australia popped in to say hello, he fascinated us with his account of radio control happenings in Japan, whence he had just come.

We hope to publish a full story in a later issue as we understand that Tony Farnan is to send it; but for the moment, think upon the fact that twin

engined stunters, floatplane and flying boat multi-channel models and huge 20-50 c.c. launches are the current mode in Osaka. Keith saw Gerry Nelson and Bob Dunham demonstrating the new style semi-scale pylon racers out there, and no doubt the Japanese modellers will soon get cracking with them. They challenged Gerry to show how the thin, flat based airfoil racers would stunt . . . so he did—beautifully fast and big manoeuvres. Proportional is on the way from O.S., K.O., and Micon, the latter in three versions of progressive complexity.

Keith is no slowcoach in radio himself. The photograph shows his scale Fokker F.VII "Southern Cross" made by the Air Cadet group which he instructs. An 8 mm. film we've seen shows the blue and silver model to be most impressive in flight.

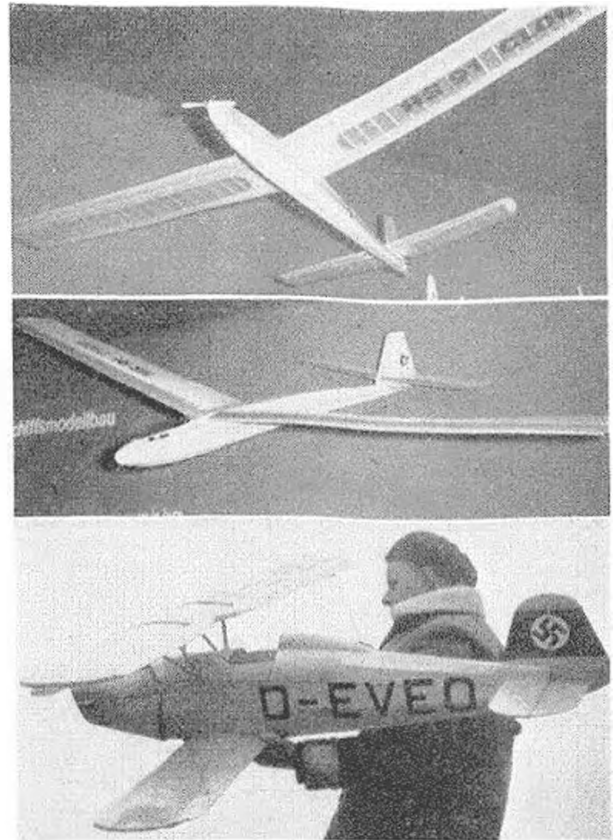
Left, made by Brian and Robert Whellan and Mark Bishop of 20 flight, A.T.C. Melbourne, under the guidance of Chief Instructor Keith Hearn, this "Southern Cross" is 9 ft. 3 in. span and is powered by an O.S. 50 with O.S. 10 channel r/c gear. Below, a family of "60s" on our local field. Stephen Penton with a "Sub-Mini" from RCM & E plans, the review "Mini-Super" made by Mick Charles and a "Super 60" by Roy Bale.



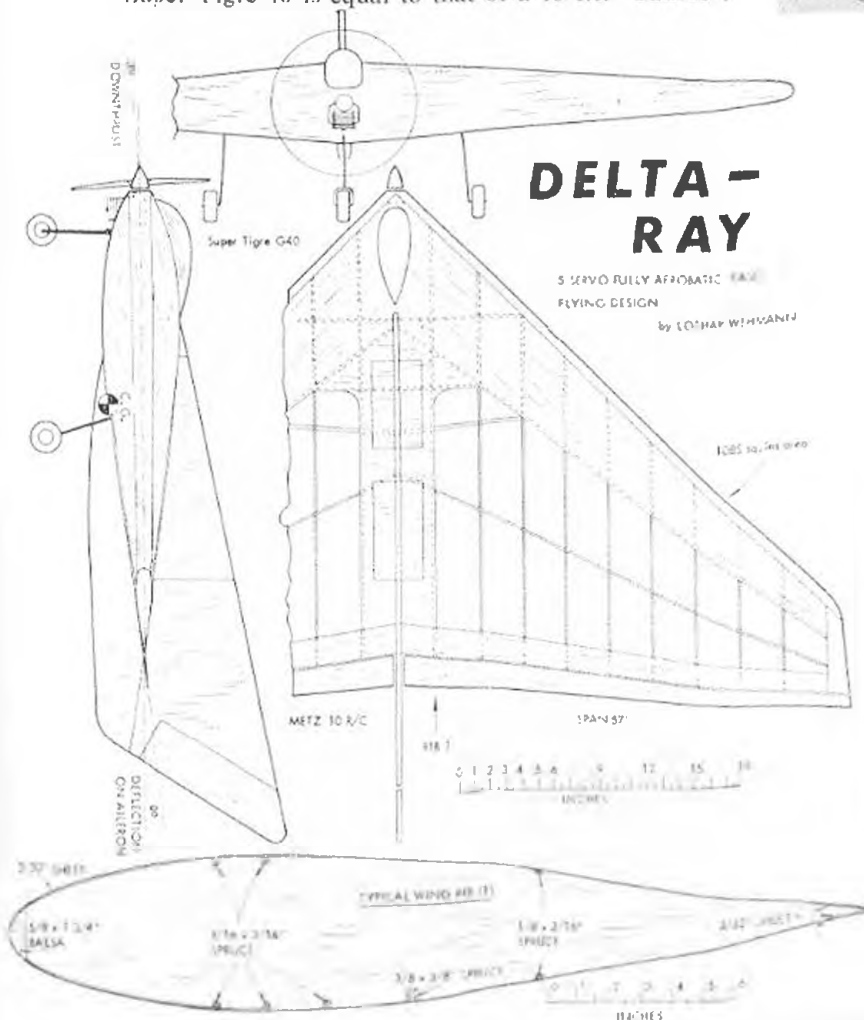
In the last Australian Nats, the wing bands which are internal, failed just after take-off. Looks spectacular on film! Little damage was suffered luckily.

Graupner's kit for the "Clou" is now being distributed by Ripmax and we have our test model well under way. This really is a beauty for the multi channel slope soaring glider fan, and noting that the designer is none other than Hans "Bellamatic" Schumacher it is no wonder that the list of contest successes in Germany with the prototypes is already long. Two sets of wings are provided, each with many closely spaced ribs. The "short" span is for aerobatics, long span for thermal soaring. Additionally one can fly as a power-glider with .8 c.c. mounted in the plastic nose cowl. Price at £9.19.6d brings it into comparison with multi-channel aerobatic model kits, and not at all unfavourably too for there's a mighty lot of wood in the box. Happily we note that the extent of die-cutting has stepped up in this new Graupner set, very few parts call for the fretsaw.

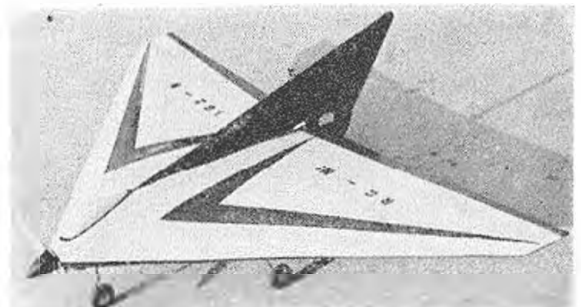
Delta models always look modernistic and invite comment. Lothar Wehmann of Versmold, West Germany, has been a tailless model specialist for over 25 years, and his swept wing "Rothen" design is nationally famous. Now he has gone to the delta and the drawing on this page shows his layout. Ribs are of a self made balsa-ply and spars are hardwood as noted. There is no wing twist or "wash-out" but the ailerons are deflected 8 degrees. With relatively large centre section depth over the long chord, all servos and gear are neatly buried. Metz 10 channel is used with separate servos for rudder, engine and ailerons, a Bellamatic for the elevator and a Graupner Servo Automatic on a trim tab. Speed with the Super Tigre 40 is equal to that of a 10 c.c. "Taurus".

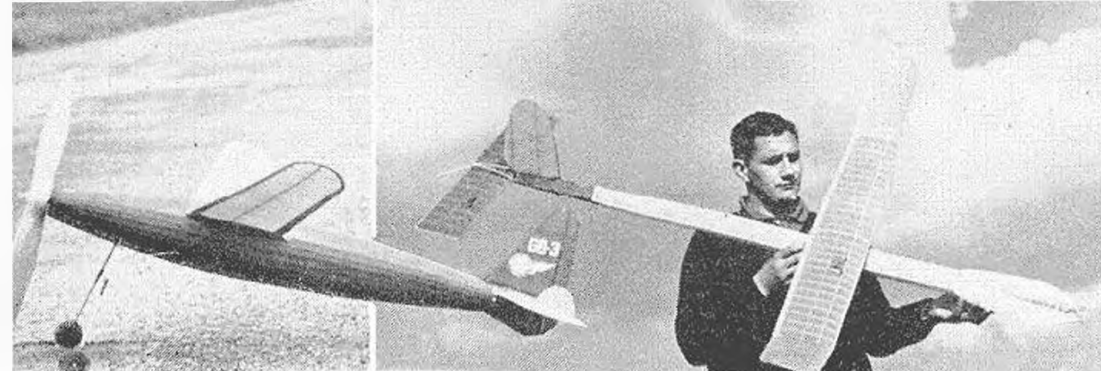


Top, two versions of the Graupner "Clou" with and without the nose engine, 74 in. span for aerobatics and 96 in. span for thermal soaring. Quite a kit, it should be popular with the slope enthusiasts. P. Wilson is seen with his Bucker "Jungmeister", strutsless alas, but with scale size tail we are assured. Model is 55 in. span and first had a Merco 49, now a Super Tigre 56. Weight is 7 lbs. and the full schedule is possible. Radio gear is F & M 10 and Bonner servos.



Lothar Wehmann's Delta-Ray below and left is a fierce looking device, understandably fast and fully aerobatic. Models in this format are also robust and stand up to a lot of hard usage.





## Round the Rallies

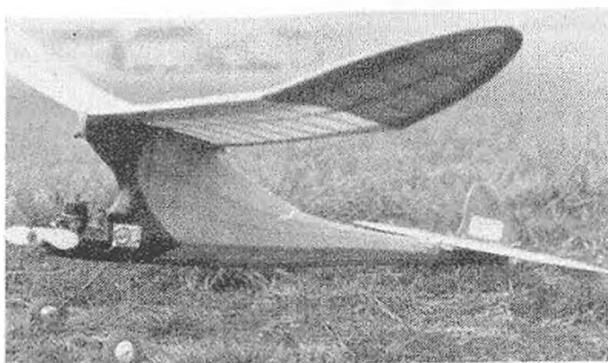
### Wanstead Warhawks Control Line Rally

Run on May 16th the Wanstead Warhawks control line rally attracted 52 entries, 13 in team racing and 39 combat. Combat was full of surprises and for once all the usual stars failed to shine. By the quarter finals all the Northwood lads had been removed mainly by the efforts of Pete Smith and Mick Smith from Cannock Outlaws who were really on form. Baird of Delta flew very well to beat Davis in the semi final but did not do so well in the final. When Smith took one small cut Baird took nearly all of Smith's streamer off then Smith took two more cuts and played safe for the remainder of the combat time by keeping well behind Baird who could not reverse the position. In the second round of F.A.I. T/R during a heat all three teams had to be disqualified due to an obstruction, followed by a counter obstruction and then a mild "Punch-Up" between two teams and high flying and whipping from the remaining team. Fastest heat time was 5:20.3 put in by Franklin/Ives followed by Gillespie/Goddard with 5:20. The final was between the Feltham, Wanstead and St. Albans clubs with all three models doing around the 86 m.p.h. mark for varying lappages. This was uneventful except for the Franklin/Ives model running in alter the grass centre circle had caught the lines at the first pit stop when the pit man missed the catch. Gillespie/Goddard were doing 50 + to a tank with their red and orange Eta 15 powered racer that also had an Eta silencer. Second place team Hutchinson/Peak from Feltham used a standard Oliver Tiger and a silencer in a low aspect ratio model. Results:— F.A.I. TEAM RACING: 1, Gillespie/Goddard (St. Albans) 11:17.8; 2, Hutchinson/Peak (Feltham), 12:18.1; 3, Franklin/Ives (Wanstead), 36 laps. COMBAT: 1, P. Smith (Outlaws); 2, Baird (Delta); Equal 3, M. Davis (Outlaws), A. Dell (Feltham, Hayes).

### South Bristol Vintage Meeting

The wet conditions that persisted through the day did little to dampen the spirits of the old time enthusiasts who flew in the South Bristol Vintage Meeting held on April 25th. Many different designs were present including *Raff V's*, *Lulus*, *Fugitives*, *Saints*, *Banshee* and the ubiquitous *Slickers*. Noel Barker had a fleet of huge power models that gave a wonderful display of low level leisurely flight. Oldest design flying was a 1919 "1-frame" pusher by Cpl. Boonham of R.A.F. Lyneham. Glider had a good entry and it was one of the many *Sunnan-*

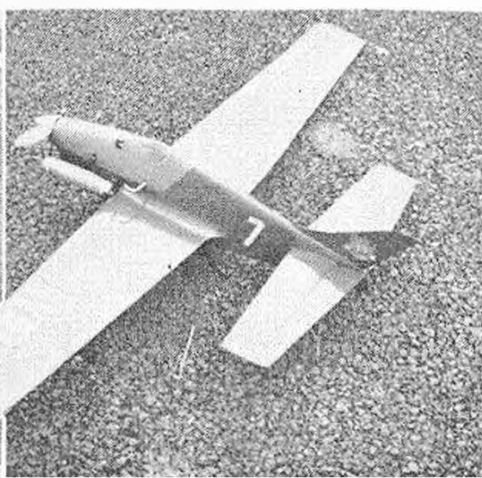
Above left to right, S. Bristol rubber winner R. Wade's G.B.3 made 2:41 in fly-off. John Blount (Croydon) with his 300 sq. in. model in the rubber fly-off at the Airtech Rally. Uses 18 strands of 50 in. long rubber. J. Leitch gets his 2nd place *Banshee* away at S. Bristol. Below, J. Down's power winner at S. Bristol, *Slicker* 50 with A.M. 25 power.



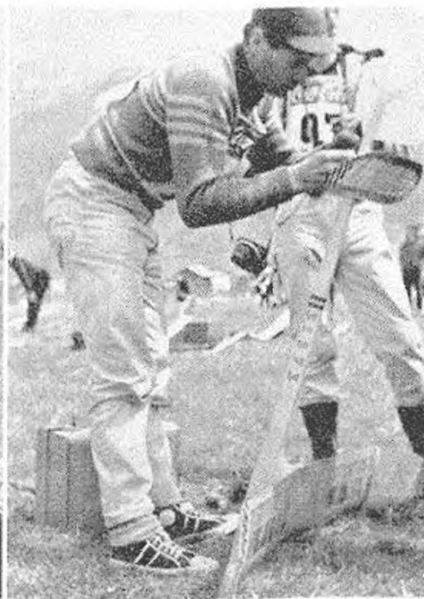
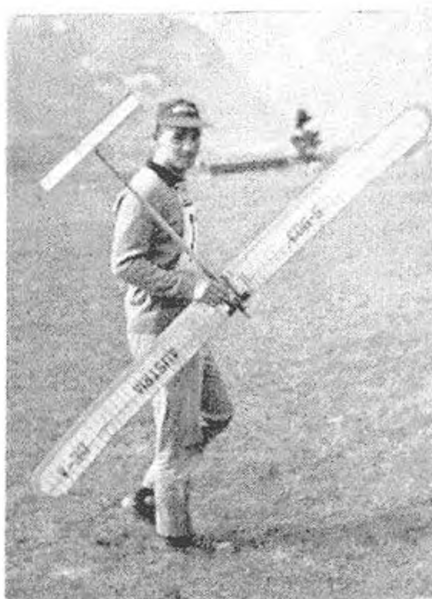
*vindy* entered that won this one in the hands of Stan Spencer. A.P.S. designs were hot on its tail in the form of a *Lulu* and *Fugitive*. Rubber was a case of effort being rewarded in the shape of a magnificent G.B.3 streamliner by Roy Wade, who beat the second place *Raff V* of G. Pink by a mere second. Power was disappointing and all the models flown were touchy on their trimming, but really gave onlookers a thrill as they grooved up in a vertical corkscrew climb. Winner John Down flew a new *Slicker* 50 powered by an AM 25. Second place was taken by an Arden 199 *Banshee* flown by John Leitch.

Results: GLIDER: 1, S. Spencer, *Sunnanvind*, 4:52; 2, R. Greenslade, *Lulu*, 4:44; 3, C. Roedling, *Fugitive*, 3:18 (All S. Bristol Club). RUBBER: 1, R. Wade (S. Bristol), G.B.3, 5:41; 2, G. Pink (S. Bristol), *Raff V*, 5:40; 3, B. Bow (Bristol & West), *Rocketeer*, 3:55. POWER: 1, J. Down, *Slicker* 50 AM 25, 5:39; 2, J. Leitch, *Banshee* Arden, 199, 4:59; 3, J. Mayes, *Thorobred Elfin* 1.8, 2:38 (All S. Bristol Club). CHUCK GLIDER: 1, P. Hacking, *Heave Ho*, 1:49; 2, J. Mayes, *Maxwell's*, 1:48; 3, S. Harvey, *Warring's*, 1:16 (All S. Bristol Club).

(Continued on page 338)



Left, 3rd place combat man at Wanstead Rally M. Davis with low aspect ratio wing. Oliver Tiger powered and silenced. Note the trailer packed with many combat models and gear. Right, F.A.I. T/R winner by Gillespie/Goddard, Eta 15 III and silencer, 7 x 8; Super Record propeller. Line hatch in wing.



FIVE S.M.A.E. members competed in this annual contest organized by the SALZBURG MFC on April 24, 25, George French, John West, Dave Welch and Joe Savini flying Power and Tom Chambers Wakefield. Best individual success against a very large entry from West Germany and Austria and the official World Championship Teams from East Germany and Czechoslovakia was George French's 3rd place in Power. The contest was flown in excellent conditions, warm with only a light breeze so that despite the small size of the field and the encroaching snow covered mountains there was little difficulty with model recovery.

Of technical interest was the almost universal use of the Super Tigre G15 although the perform-

## AUSTRIAN International at ZELL am ZEE reported by Tom Chambers

ance of the latest Czech MVVS power units was comparable. These engines produce climbs which are certainly higher than at the last World Championships in 1963 and the models of Czechs Malina and Hajek will be a great interest in Finland in July.

Wakefield was of great interest to the solo English flyer as there were a number of models using fairly 'short' tail moments with 'small' tailplanes. The top models did, however, use longer moments combined with 'Russian' type outrigger props. These were designed to give a very short motor run of around 35 secs.

Both in Wakefield and A2, thermal seeking methods were used with competitors running to all corners of the field to launch under models already in lift.

### Results

**A2 GLIDER (1st Team) AUSTRIA**  
1—A. Riedlinger, W. Germany, 900  
210 + 282.  
2—H. Gieger, W. Germany, 900  
240 + 133.  
3—M. Koller, Austria, 900 + 215.  
**WAKEFIELD (1st Team): W. GERMANY**  
1—R. Hofsass, W. Germany, 900.  
2—G. Rupp, W. Germany, 892.  
3—A. Martin, Austria, 885.  
**POWER (1st Team): W. GERMANY**  
1—H. Mildner, W. Germany, 876.  
2—D. Ebner, Austria, 870.  
3—G. French, Gt. Britain, 865.  
(Joe Savini 11th and John West 6th)

Top, M. Keller, 3rd in A/2; Wake winner Hofsass and Joe Savini preparing "Faital". Left, Czech A/2 by J. Poolipny. Right, no names but what a charming helper-retriever!

Examination of the F.A.I. code reveals that this is quite in order as the rules regarding timekeepers does not state that they must stay within 10 metres (30 ft.) of the launching point as is usually considered in this country.

The A/2 glider class was the only one to reach a fly-off probably because this contest lends itself to thermal detection more readily than the other events. The glider winner found excellent lift on his winning flight and the sight of his model soaring upwards towards the nearly 9,000 ft. mountains was a fitting end to an interesting contest.

Next year this event will be held at WELS. British flyers are assured that they will find a wonderfully hospitable welcome and an excellently organized contest.





Club display by Luton & District M.F.C. showing the radio control centre piece. The exhibition raised funds for reconstruction of their church hall meeting place.

## Club & Contest News

### International Fliers

Rune Koen from Istanbul, Turkey, one of the "characters" of the 1963 Wakefield final in Austria is to compete again for the much coveted trophy. Rune is being flown to Finland by sponsorship of Messrs. Kodak. We know that this courageous little Turk will try his best to get into the final fly-off this time. In 1963 he had four max's on the board only to hit a bad patch for the fifth flight when the motor bunched. Swedish team will be strong. In a 10 flight two day marathon trial May 15/16th at Norkopping long strings of maximum flights proclaimed the high standards. In A.2 Gunnar Kalen led with eight max's, a 95 and 144. Second man Sunstedt also had eight max's plus a 75 and 127. 3rd was Knut Andersson with seven max's in his score. Leading Wakefielder was Bengt Johansson and eight max's plus 144 and 178 while 2nd man Lennart Flodstrom dropped on only one flight, the demoralising first, at 118 secs. Rune Johansson completes the team with six max's. Power fliers scored lower totals. Auner led with 1643 secs. including seven max's. Holland and Hans Friis followed closely. Hagel crashed, missing a flight and was 6th. This still gets him a place in the Nordic Championships team which is made up of 4th to 6th places in the trials.

### Dual Indoor C/L Flying

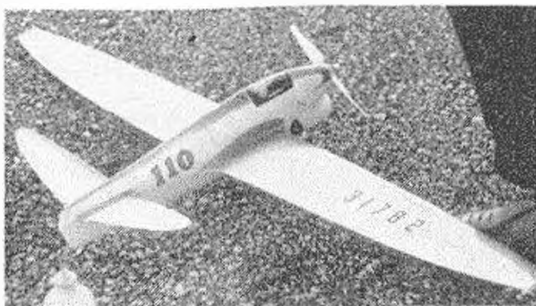
During the Easter week Sheffield S.A. took part in an annual display of modelling and handicrafts at St. Mary's Church, Sheffield. The club was allocated a stage and an area for static exhibition. Twenty electric R.T.P. models were flown by pilot control from outside the circle. As an added attraction Club Secretary Harold Sharp devised a centre pylon camouflaged as a control tower with two independent control systems. Thus two models were flown together by spacing the top pylon line 12 inches apart to avoid spectacular mid-air collisions. All models were scale and powered by standard commercial electric motors. Motor life was about 1 hr. and the club provided replacements. Biplanes gave most realistic flight and the monoplanes were the fastest, especially a "Piper Cherokee" which flew at an estimated 25 m.p.h. Static models on display ranged from a glass cased microfilm covered model, a 12 ft. span glider to a class B team racer. Many of the spectators expressed interest in joining the club, even two girls! Oh well, perhaps the club

members aren't so bad looking after all! If you would like to meet these two, and maybe the rest of the club why not go to their meetings at the Central Technical School, Leopold Street, on the second and fourth Fridays of the month?

### Share Their Sorrows

A tale of misfortune was the story brought back from Ternhill by the combat modellers of Handsworth M.A.C. who were all eliminated in the first round. They were not too disappointed, as it all goes down to experience, never to be forgotten. "Tubby" Day picked up second place in stunt and that was some job in those winds. Tony Day made second place in scale with his well known "Pökker DVII". They need new members, so any lone wolves in the area are invited to come to their club meetings which are held every other week at the Gestone Avenue Junior School, Handsworth. They fly every Sunday at Perry Hall playing fields, near the Greyhound race-track, at the precinct shopping centre.

Dick Place's latest FAI team racer, Eta 15 powered, as seen at the team trials. Silver and light blue finish.



### Imperial College Control Line

Held on May 9th near London Airport the first ever contest run by the Imperial College Union was a great success with fine weather but a trifle too well ventilated, for most contestants except the combat boys who used the wind to an advantage. Combat was not without incident, "Bazz" Bumstead broke a connecting rod after about a minute of his third round heat, the propeller flying off and being promptly "pinched" by a souvenir hunter. Pete Tribe was flying a very much worn *Razor Blade* with a warp like a Wakefield propeller in the wing and carved his way through to the final only to be beaten by club-mate "Stoo" Holland flying very well with his *Flingel Bunt*, that seems to fly far better in the wind. Race entries were low at 12 so four heats were arranged but as the result of a draw the final was five up. Unfortunately Gillespie of St. Albans stepped into the circle and was hit by another model, this resulted in having eight stitches put in his scalp. COMBAT: 1, S. Holland (Northwood); 2, P. Tribe (Northwood). RACE RACING: 1, R. Meekins (Delta), 9:25.1; 2, F. Bradley (Feltham), 10:12.8.

### FIVE TOWNS DISPLAY

Forever trying to publicise aeromodelling, the Five Towns M.A.C. have been very busy with two flying displays. The first was local where they went through a familiar routine including combat rat racing and a '35' size dog fight between stunt models with a realistic commentary given by both pilots through hand held microphones from the centre of the circle. A scale Nieuport 28 by Mick Hardley took off with a very rich engine run and gave the crowds a thrill with its realistic circuits and bumps, even stopping then revving up again to take off. Their second display at Waterhouses did not go so well due to lack of spectators and very muddy conditions, but the donation to the club funds, from the organisers did!

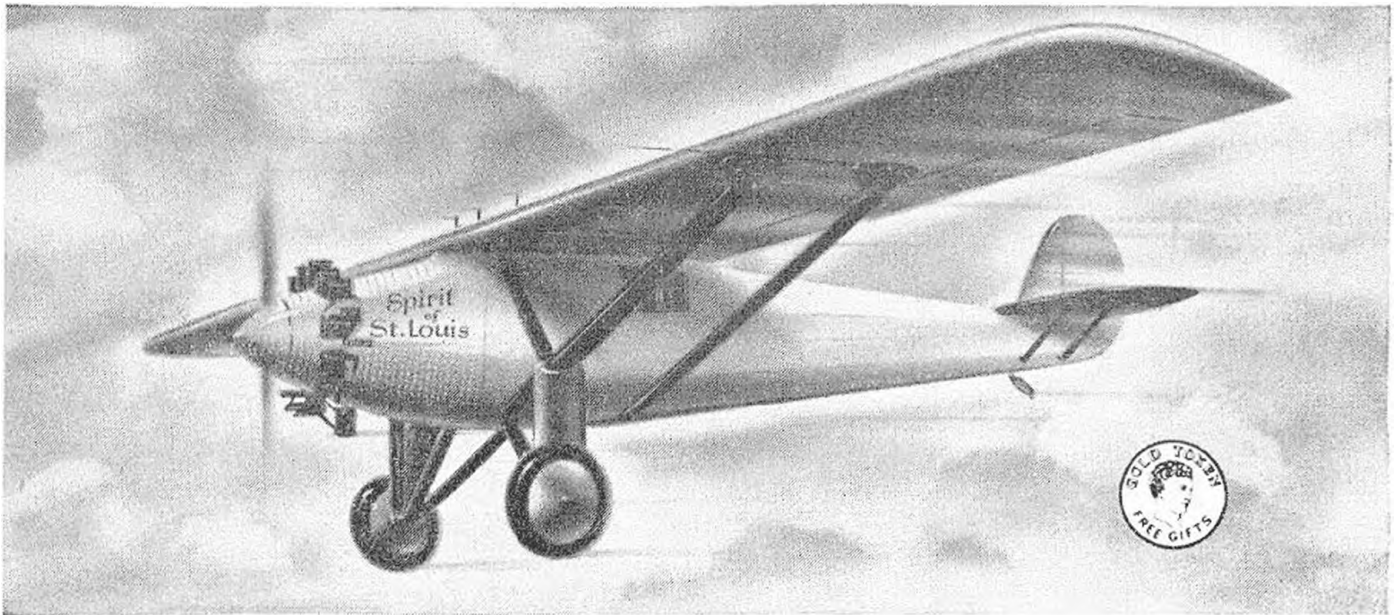
### CLUB STRENGTH

At the S.M.A.E. Council meeting held on April 24th the voting power of each S.M.A.E. club was revealed for the next A.G.M. to be held in London on November 14th. Each club receives one vote per full member, so this does not mean that Wanstead is the largest club in the country, it is just that they have more full members, 'all' their members in fact. Positions of the top 10 S.M.A.E. clubs are as follows: 1. Wanstead Warhawks (London), 35. 2. Whitefield (N. Western), 29. 3. Lee Bees (Southern), 27. 4. Hayes (London), 26. Equal 5th, St. Albans (London) and South Bristol, 25. 6. Woking (London), 23. 7. Feltham (London), 21. 8. Crawley (S. Eastern), 20. Equal 9th, Baldon (Northern), Northampton (S. Midland) and Walfasey (N. Western), 19. Equal 10th, Delta's (London), Whitfedale (Northern) and York (Northern), 18.

### SCOTS CALEDONIA SHIELD EVENT

April 25th saw members of the Scottish Aeromodellers Association on a trip to the seaside to compete in the annual inter club contest for the Caledonia Shield. The site at Dundonald Camp, between Troon and Irvine was not everyone's choice and emphasises the difficulty they are having in obtaining a flying field suitable for major contests combining both F.F. and C.L. Team racing was flown off from the barrack square which was rather gritty and did not improve the models. This is used in the absence of the Junior Leaders Regiment. F.F. and Combat were flown with the Isle of Arran and the Firth of Clyde as a scenic background, but this was soon blotted out by the rain that marred the afternoon's proceedings. Fortunately the wind was blowing inland but a 2 min. max. was necessary to prevent models landing on a nearby main road. Combat suffered from the attentions of the half dozen 'cows' that shared the area and seemed to have a healthy appetite for car polish, banana skins and detached streamers, one even having a go at a model! The results revealed a struggle between the two Glasgow clubs, Hornets and Glasgow M.A.C., Hornets winning by a mere one point.

# Lindbergh's 'Spirit of St Louis' Now a Frog Trail Blazer kit 3/6



Lindbergh, the Flying Fool, left New York in his overlaid plane 20th May, 1927, to fly solo across the Atlantic. Others had tried for the \$25,000 prize and all failed. Some had lost their lives, too.

For two days the entire world waited anxiously for news, and finally Lindbergh touched down at Le Bourget in Paris . . . as the first man in history to fly the Atlantic solo! The Spirit of St. Louis was a modified RYAN M2. A super-inspected 223 b.h.p. Wright J-5 Whirlwind and a duralumin Standard Steel Co. propeller were provided. The 36 ft. M-2 wing was enlarged to 46 ft., with the same Clark Y wing ribs, but for efficiency the spacing was reduced to 11 in., leading edge wrapped with ply, and airfoil shaped balsa blocks used to fair the tips. The ailerons were reduced by 1/5 from the M-2 size to avoid wing stress, and became diminutive tabs by comparison, though quite effective for lateral control. With the larger wing and need for internal fuel tankage plus a large tank in the fuselage around the centre of gravity, the

tail unit had to be shifted back 2 ft. and nose length extended 18 in. to compensate. Another major requirement was for an extra 2 ft. 9 in. undercarriage track with bungee cord suspension on long travel legs to take the terrific load.

The fuselage was welded steel, the wings wood, with steel tube brace struts. Fuel tanks were tailored of "Terplate". Fuselage was lined with balsam wool around the cockpit. Wing struts were covered with balsa fairings, and all strut component joints sealed with beaten aluminium covers. Most important of all was the blending of the Ryan spinner into the square frame of the main fuselage with machine-turned polished cowlplates . . . possible only by placing the pilot aft. Also bulk fuel tankage had to be near the c.g. Lindbergh preferred being aft of the weight mass, anyway, in case of a crash, and an emergency periscope was devised.

*Frog have brought the 'Spirit of St. Louis' to life in their new Trail Blazer series. Kit includes superb scale models of Lindbergh and ground crew. In the shops now, only 3/6d.*

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## COMBINED S.M.A.E. AND CLUB CONTEST CALENDAR

June 20	S.M.A.E. Area Event. F.A.I. Power, Rubber and Team Glider.
June 26-27	Ulster R/C Champs. S.M.A.E. Multi, Single Channel rudder only. Intermediate class. Details from: T. W. R. Galway, 34 Rodens Park, Belfast 5.
June 27	S.M.A.E. R/C Meeting. R.A.F. Upwood.
June 27	All-scale Friendly Rally. Old Warden, Biggleswade.
June 27	Scottish Gala, Irving. R.G.P., 1A power, 1A F.A.I., B Team Racing, Combat. Pre-entry 2/6d. to: A. Oakley, 9 Elizabeth Street, Dunfermline, Fife. Field Entry 2/6.
June 27	Hayes C/L Rally. Hayes Circuit, Hayes, Middlesex. Class 'A' combat and all speed. Starts 10 a.m. Entry on field 2/6d.
June 27	Hayes F/F Rally. Chobham Common. Open R/G/P. AA power. Combined Vintage (pre-1951). Entry on field 2/6d.
July 4	S.M.A.E. F.A.I. Gala. R.A.F. Hemswell. R/G/P., T/R Stunt, Combat, Multi R/C, C/L and F/F Scale.
July 11	S.M.A.E. Indoor Meeting. R.A.F. Cardington. Not restricted—open to all interested spectators.
July 11	Claydon Slope Soaring. West slopes of Moel Ffiamau, nr. Mold. Open and Junior A-Z. R/C Single Surface, R/C Multi.
July 18	East Grinstead Gala. Ashdown Forest. Open R/G/P. 1A power. Starts 10.30 a.m.
July 18	Esher Intermediate R/C Meeting. Woburn Abbey. Rudder, elevator, and engine speed control only. Entry: W. R. Oberg, 109 Longwood Avenue, Tolworth, Surbiton, Surrey.
July 18	Feltham C/L Rally. Hayes. C/L Circuit, Hayes, Middx. Combat and Rat Racing.
July 25	Burtonwood Criterium. R.A.F. Burtonwood. Combined speed, Stunt, Novice Stunt, Rat Racing, 1 F.A.I. and B Team Racing. A Combat to 2.5 c.c., B Combat to 6 c.c. Starts 10 a.m. Pre-entries 1/6d. to: V. A. Wannop, 13 Dene Court, Stockport, Cheshire.
July 25	Bristol R/C Rally. R.A.F. Hullavington. Multi events including Scale and Intermediate.

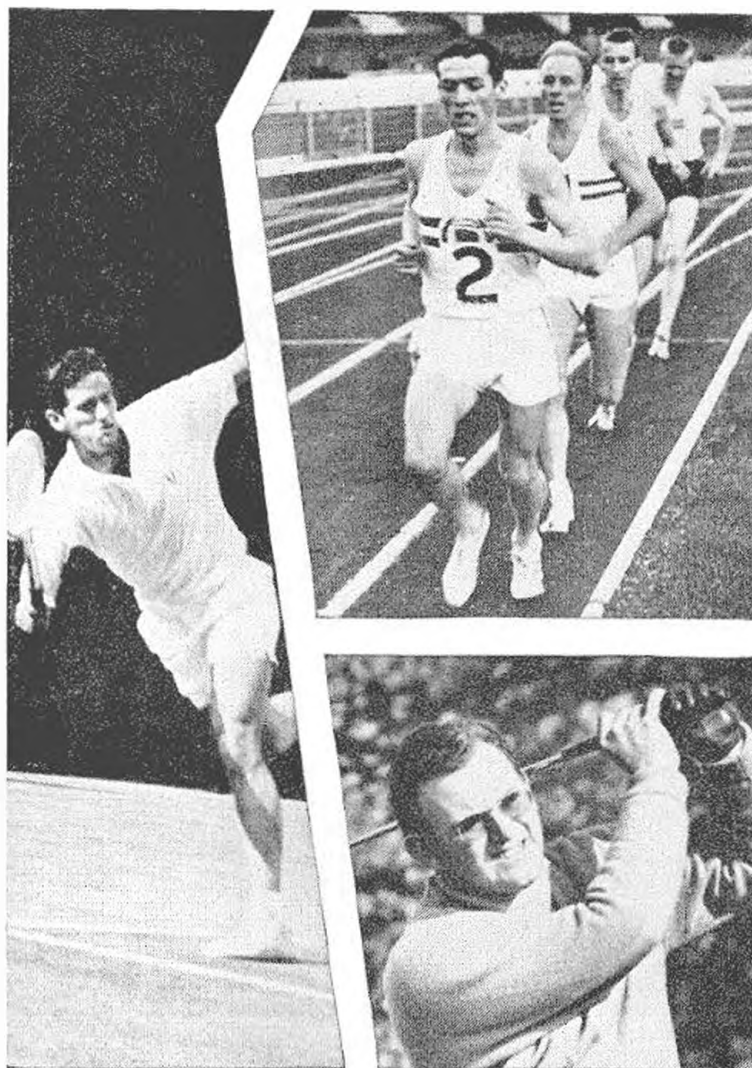
## Rallies Additional to Previous S.M.A.E. and Club Contest Calendar

August 1	East Anglian Area Gala. R.A.F. Upwood. Open R/G/P, combined F/F, F.A.I. and Coupe d'Hiver.
August 29	Woodford Rally. Woodford Aerodrome, Stockport, Cheshire. Open R/G/P, Tailless, Coupe d'Hiver, Chuck Glider, F/F Scale, C/L Scale, Single and Multi R/C, 1A, F.A.I. and B Team Racing, Combat. Pre-Entries 1/6d. to: V. A. Wannop, 13 Dene Court, Stockport, Cheshire. "Open" Scale.
October 3	Luton and Dist. M.A.S. Slope Soaring Rally. Ivinghoe Beacon, nr. Dunstable, Beds. Single and Multi R/C, F/F and chuck gliders. Starts 10.30. No power models. Details from: D. W. Bateman, 14 Ridgeway Drive, Dunstable, Beds.

(continued from page 334)

## Airtech Free Flight Gala

The first Airtech F/F Rally held on May 2nd at Haddenham had ideal conditions and no less than 15 triple maxes were scored in the open rubber event. Approx. 500 people attended with 128 entries evenly divided between open R/G/P and chuck glider. Results:—GLIDER: 1. A. Dell (Feltham) proxy flown K. Lindsey, 12:57; 2. J. C. Wright (Hornchurch), 11:28.4; 3. P. Newell (Surbiton), 10:12. RUBBER: 1. I. L. Barr (Hayes), 14:57; 2. A. Wisher (Croydon), 14:32; 3. R. Monks (Birmingham), 14:30. POWER: 1. J. West (Brighton), 9:00; 2. Glynn (Surbiton), 8:29; 3. Baggot (Birmingham), 8:23.5. CHUCK GLIDER: 1. S. Marriott (Abington), 8:46; 2. R. Fleetwood (Hornchurch), 6:28.



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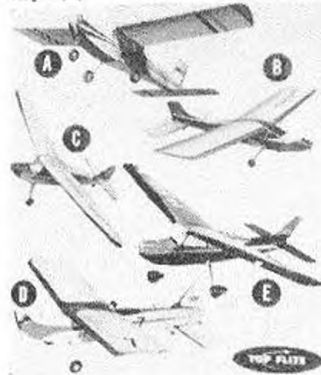
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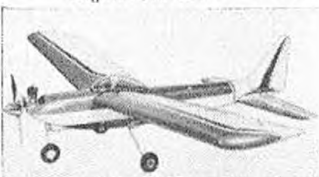
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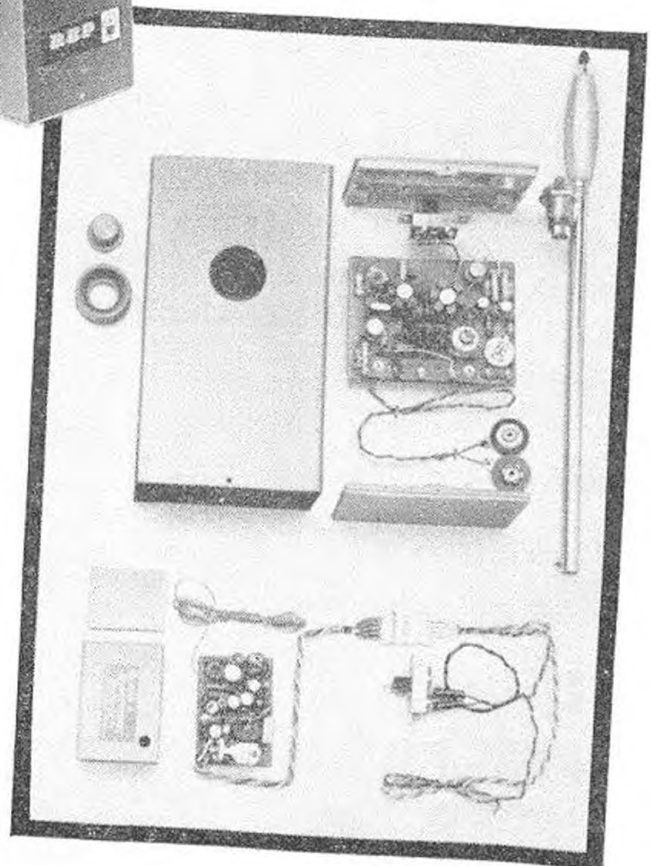
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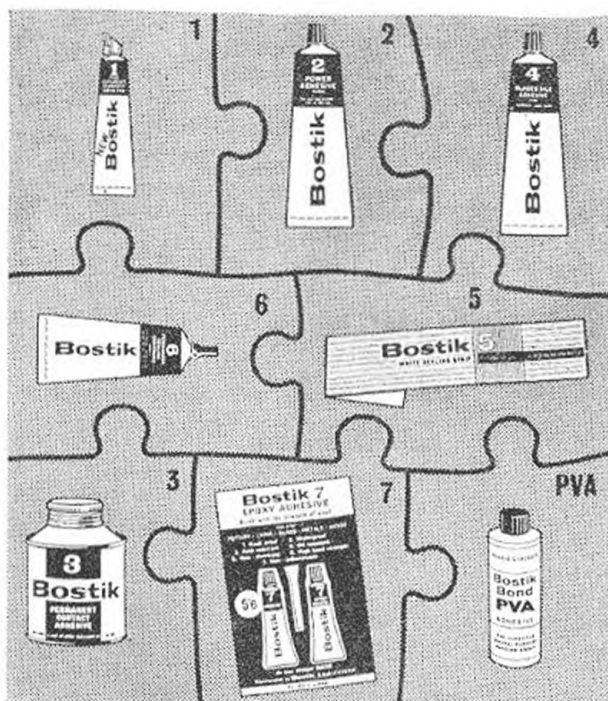
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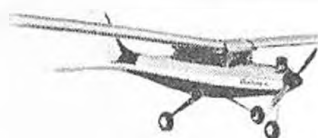
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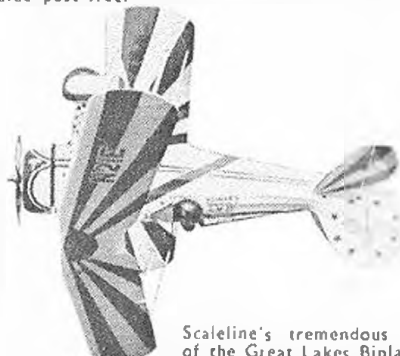
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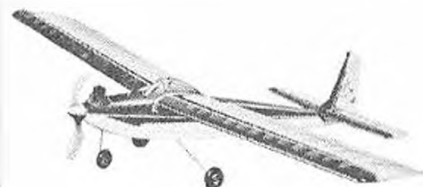


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## KITS R/C

### GOLDBERG

Junior Falcon (for .049)	1	17	6
Falcon 56 (for 15-19)	4	15	0
Senior Falcon (35-61)	9	15	0
Falcon & Skylark 56 wing kit	2	7	6
Jun. Skylark (2 .020's or 1 .045)	2	7	3
Skylark 56 (2 .09's or 1 15-19)	6	3	0
Skylark (for .049)	2	19	6

### TOPFLITE

Taurus (for 45-61)	16	10	0
Tauri (for 19-29)	10	10	0
Schoolmaster (for .049)	3	12	6
Schoolboy (for .010-.020)	2	5	0
Roarin 20 (for .010-.020)	1	16	6
Rascal (for .010-.020)	1	16	6
Cessna (for .010-.020)	2	9	11

### DeBOLT

Jenny (24 h. construction) (for 19-45)	7	2	6
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### STERLING

Mustang, Spitfire and King Cobra scale (All for 45-61)	13	2	6
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### VECO

Beachcomber (45-61)	13	10	0
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### WILLIAMS

Duckhawk (15-19)	12	18	6
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### MIDWEST

Hustler Delta (15-19)	9	10	0
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### SCALELINE

Gt. Lakes (45-61)	23	15	0
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### JETCO

Citation (35-61)	12	7	6
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### VK

Challenger (19-49)	9	10	0
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### KEILKRAFT

Super 60 (29-35)	5	9	11
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Mini Super (09-15)	4	10	0
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### MERCURY

Aeronca Sedan sc. (15-19)	3	14	0
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Matador (09-15)	1	6	5
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Wizard (049)	1	7	6
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### VERON

Concord (for 35-61)	11	15	6
Robot (for 15-19)	4	3	6
Skylark (for 15-19)	5	3	6
Mini Robot (for 049-09)	2	7	3
Viscount (15-35)	5	19	3

### GLIDERS for R/C

Graupner K.10 79"	6	10	0
Hegi Bergfalke 90"	8	1	9
Engel LO.100 80"	8	0	0
Robbe Zugvogel 94"	9	13	6
Robbe Rhonadler 73"	5	2	11
Graupner Weihe 50"	3	19	6

### CONTROL-LINE KITS

#### Ambroid

Ares Stunt (for 29-35)	5	14	6
Stuka Stunt (for 19-35)	5	14	6
Whipsaw Combat (00-19)	1	11	0

#### Goldberg

Voodoo Combat (19-35)	1	8	3
Lil Satan (for 049)	12	6	
Junior Satan (for 15-19)	1	3	11

#### Jetco

Shark 15 stunt (15-19)	2	12	6
Shark 45 stunt (35-61)	5	14	0
Mustang scale (19-35)	6	9	6

#### Sterling

Skylark stunt (for 35's)	5	14	0
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#### Veco

Smoothie stunt (29-35)	3	19	11
Thunderbird stunt (35's)	5	1	6
Hurricane stunt (35's)	5	7	6

#### Topflite

Jun. Nobler (15-19)	2	16	9
Nobler (29-35)	4	15	0

### ENGINES

Merco 61 R/C	12	15	9
Merco 49 R/C	11	19	8
Merco 35 & 29 R/C	7	12	6
Merco 35 & 29 stunt	5	19	6
McCoy 35 R/C	5	9	6
McCoy 35 stunt	3	6	3
McCoy 29 stunt	2	17	0
McCoy 19 stunt	2	9	6
Cox Pee Wee .020	2	2	6

### Cox Babe Bee .049

Cox Golden Bee .049	2	2	6
Cox Medallion .049	2	12	6
Cox Medallion .09	4	5	0
Cox Medallion 15	5	7	0
Cox T.D. .010	6	7	3
Cox T.D. .020	4	16	0
Cox T.D. .049	4	5	0
Cox T.D. .09	5	7	0
Cox T.D. .15 Spec.	5	16	0
Throttle for Medallion 049 and 09	7	19	9

### Throttle for Med. 15

Fox 35X stunt & comb.	2	7	3
Fox golden 40 BB	2	12	0
ETA 15 Mk. III D	4	10	0
ETA 29	12	10	0
K & B 19 R/C	7	8	6
K & B "SG1" 15 R	7	1	11
K & B "SG1" 29 R	7	18	6
Johnson 36 BB stunt	9	18	0
Johnson 36 combat spec.	9	17	6
Enya 15 stunt	9	19	6
Enya 19 stunt	4	6	8
Enya 15 R/C	5	0	7
Enya 19 R/C	5	8	7
OS 15 stunt	6	9	0
OS 19 stunt	6	9	0
OS 15 R/C	5	18	1
OS 19 R/C	7	11	2
OS 49 R/C	8	9	5
We also stock AM, D.C., Frog, and Webra diesels.	11	8	9

### R/C EQUIPMENT

#### MacGregor

Minimax receiver	8	19	6
Matching tone t/mittter	10	19	6
Terrytone Rx kit	5	19	6
Tone Tx kit	4	5	0
Transmitter case & aerial	2	15	0

#### F & M

10-Ch. complete	87	15	0
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#### Grundig

4-Ch. transmitter	39	2	6
8-Ch. transmitter	47	5	0
New superhet receiver	30	17	6
2-Ch. filter units	10	19	0

## READY - BUILT RADIO - CONTROL MODELS

We can build any model from kit or plans to order and will be pleased to quote you according to model, finish and fittings required.

### R.C.S.

Comp 10 complete	62	0	0
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### Adams

Magnetic Actuator	4	5	0
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### Bonner

Duramite multi servo	5	9	6
Amplified S/N	9	17	6
Amplified trim	9	7	6
Varicomp RE escapement	4	9	6

### Elmic

Conquest escapement	1	15	0
Commander compound	2	19	2
Corporal engine esc.	2	7	2
Compact new compound	3	7	4

### O.S.

K.I. Compound esc.	2	16	3
K.II compound S.	2	9	1
S-25 motor esc.	2	0	11
S-45 motor esc.	2	7	4

### Modeletric

Slim Jim servo relay comp.	3	10	0
Slim Jim servo rayless 4P	3	8	0
Slim Jim rayless comp.	4	15	0

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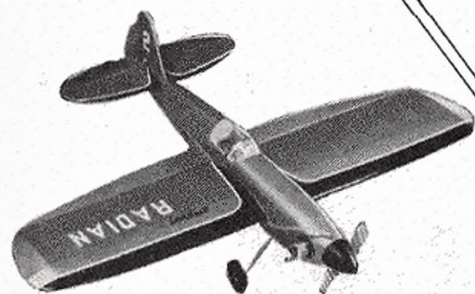


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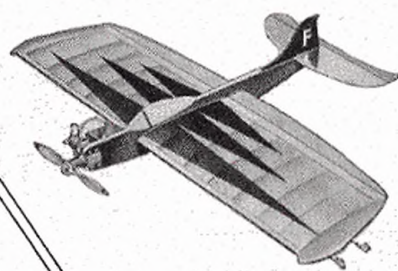
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**RADIAN** stunt model  
with coupled wing flaps and elevators

The latest thing in small stunt controliners for 049 motors. Kit contents include die-cut parts, stunt tank, preformed U/C, formed canopy, all hardware, full size plan and instructions. 22" wingspan.

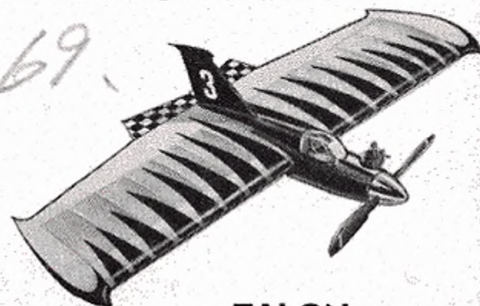
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**FIREFLY**

Stunt model with "profile" type fuselage, specially designed for engines under 1 c.c. Kit contains die-cut parts.

Wingspan 20". 18/2



**TALON**

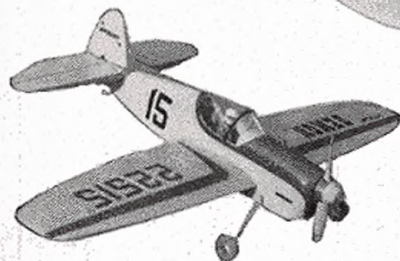
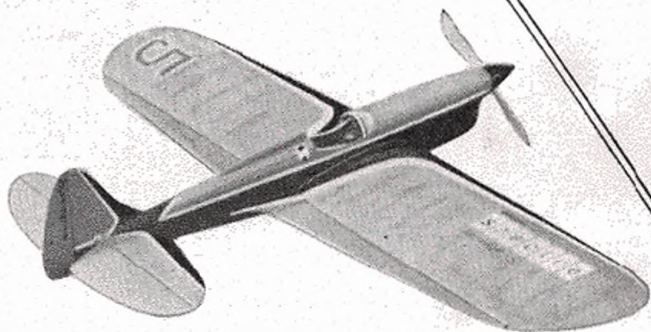
Combat design of considerable strength. Easy and quick to build. A fully aerobatic model that is great fun to fly. For 2.5 to 3.5 c.c. engines.

Wingspan 32". 27/11

## **SPECTRE**

Outstanding stunt model featuring combined wing flap and elevator control. Wing ribs, formers, etc., die-cut in highest quality balsa. For 2.5 to 3.5 c.c. engines.

Wingspan 41". 41/9



**DEMON**

Class A team racer to the new S.M.A.E. specification. Kit contains die-cut parts. For engines up to 2.5 c.c. Wingspan 30".

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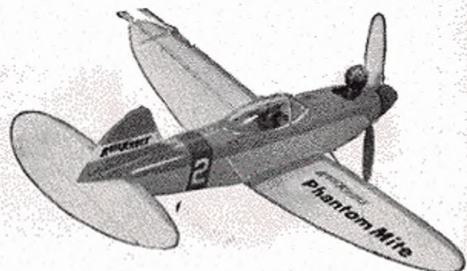


**MARQUIS**

A very fine looking stunt model with attractive semi-scale lines, featuring tricycle undercarriage and extra large cockpit. For 1 to 1.5 c.c. engines.

Wingspan 30".

36/10



**PHANTOM MITE**

The Phantom Mite is just about the toughest model available to the newcomer to control line flying. Features all sheet construction with wings, tailplane, fin and fuselage sides ready cut to shape. For .5 to .8 c.c. motors.

Wingspan 16".

16/3

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# **KEILKRAFT**

## FOR TOP PERFORMANCE

