AERO MODELLER

APRIL 1954

In this issue...

is ROHMA, Sid Miller's 60 in. span R/Control model pictured above. Two full-size scale plans—For Jetex, the MYSTERE specially featured in "Farnborough in your Clubroom" and a rubber driven MAX HOLSTE by George Woolls. Other articles include a powered SOPWITH TRIPLANE—CZECH ENGINES and MODELS—with GADGET REVIEW and other REGULAR FEATURES.

1'6

Digital Edition Magazines.

This issue magazine after the initial original scanning, has been digitally processing for better results and lower capacity Pdf file from me.

The plans and the articles that exist within, you can find published at full dimensions to build a model at the following websites.

All Plans and Articles can be found here:

Hlsat Blog Free Plans and Articles.

http://www.rcgroups.com/forums/member.php?u=107085

AeroFred Gallery Free Plans.

http://aerofred.com/index.php

Hip Pocket Aeronautics Gallery Free Plans.

http://www.hippocketaeronautics.com/hpa_plans/index.php

Diligence Work by Hlsat.

Inside Your Engine No. 5

The flow of parts and unit assemblies from our various machine shops eventually reach the Assembly Department, where final assembly is made. Here cleanliness is absolutely vital, and for this reason we use metal-topped benches which are easy to keep clean. Every part is thoroughly cleaned and oiled, and unit assemblies such as piston and liner are carefully checked before final assembly commences.

The pincers on the bench above may possibly cause misgivings, but are in fact rather special. The jaws have been specially ground to fit over the liner of the particular engine being assembled, for the purpose of tightening the liner into the crankcase. The liner is gripped at the top end *on the plain portion, always* with the contra piston in position, so as to avoid distortion of the cylinder barrel. So many aeromodellers grip the liner around the exhaust ports when tightening or unscrewing, with detrimental effects to the bore.

We do not advise aeromodellers to meddle with their engines unnecessarily. Remember every Davies Charlton motor is guaranteed, so should you feel a fault has escaped the eagle eye of our final inspection department, pack the engine securely and send with full details, not forgetting to quote the name of the dealer from whom you bought it. Providing the case is genuine we shall be pleased to check the motor, replace the part in question, and return the engine within a few days.

All Export Enquiries to:
DAVIES CHARLTON LTD.
Barnoldswick via Colne, Lancs.

Home Trade Distributors:
E. KEIL & CO. LTD.
195 Hackney Road, London, E.2

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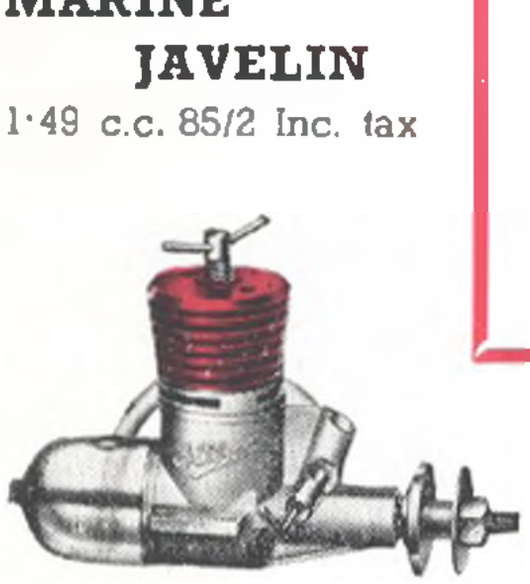
MARINE JAVELIN
1·49 c.c. 85/2 Inc. tax



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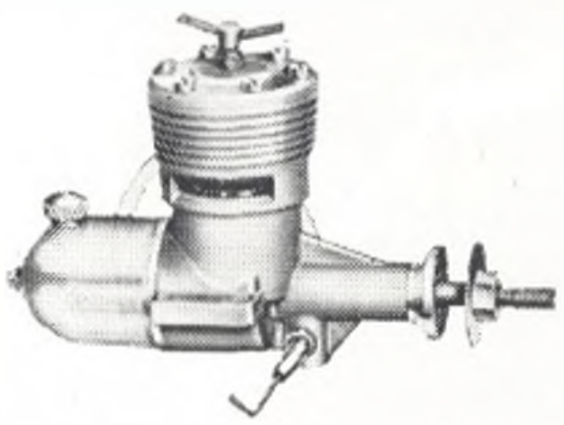

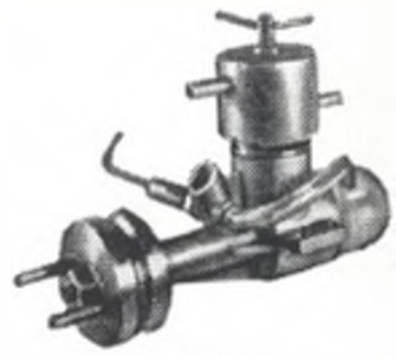

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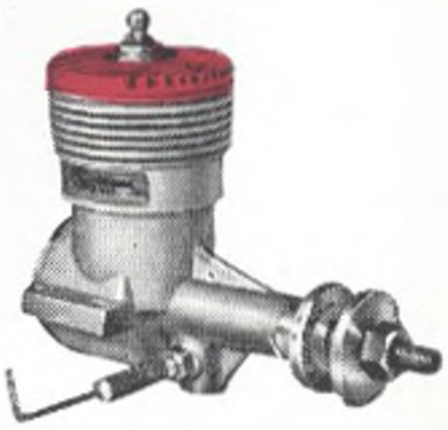

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At the time of insertion all others can be supplied ex-stock.

Amco B.B. 5	78/8 + 14/9
Amco P.B. 3.5	60/– + 11/3
Allbon Dart .5 c.c. II	54/– + 10/2
Allbon Spitfire	54/– + 10/2
Allbon Javelin	55/– + 10/2
D.C. 350	66/– + 12/5
E.D. .46 Hornet	45/– + 7/3
E.D. Bee I c.c.	47/6 + 7/3
E.D. 2.46 Racer	72/6 + 6/–
E.D. Mk. IV 3.46 c.c. Hunter	72/6 + 6/–
E.D. 1.46	52/6 + 4/6
E.D. Bee + Watercooled	64/3 + 12/–
E.D. 2.46 + Watercooled	98/6 + 10/9
E.D. 3.46 + Watercooled	98/6 + 10/9
Frog 250	60/– + 10/–
Frog 50	42/9 + 7/3
Frog 150	42/9 + 7/3
Mills P.75	50/– + 8/–
Mills S.75	55/– + 8/10
Mills 1.3	75/– + 12/–
Oliver Tiger 2.5 c.c.	108/4 + 21/8
Elfin 1.49 c.c.	47/6 + 8/8
Elfin 2.49 c.c.	56/– + 10/6
E.D. Miles Special 5 c.c.	140/– + 26/3
E.D. Miles Special 5 c.c. + Watercooled	168/– + 31/6
E.T.A. 29 III	119/6 + 22/5

IN STOCK AGAIN
FROG 500 PETROL ENGINE
72/9 + 12/3
Coil and Condenser 21/7 + 2/6

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* Wavemaster, 2—7 c.c.	60/– + 10/–
* Spraymaster, 1—3 c.c.	31/– + 5/–
* Adamcraft seaplane tender	45/– + 7/6
* Veron Police Launch 1—5 c.c.	36/– + 6/–
Veron Seagull	16/6 + 2/9
Electrotor for Seagull	8/6 + 1/5
Veron Dolphin	30/– + 5/2
Taycol Electric Motor for Dolphin	15/2 + 2/6

* Suitable for radio.
Flywheels, marine units, universal couplings, Water scoops, etc.

★ ACCESSORIES ★

Xacto Tools, Wheels (M.S. Kail Kraft, Veron, etc.). Balsa Wood, Brushes, Fuel Tubing, Fuel Tanks, Pilots, Cement, Jet Assemblies, Propellers, Plugs, Transfers, Celspray, Timers, Spinners, etc.
Send 3d stamp for complete lists.

OVERSEAS INFORMATION

We realise that if you are thousands of miles from your supplier you are anxious to know—(1) If your Order has been received, (2) When it is being despatched, (3) By what route it will be sent, (4) That it will be properly packed, and last but not least, that you will be informed of these facts by air-mail.

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BOOKS

Including those reviewed in Feb. issue.

Observers' Book of Aircraft	5/4
The Shape of the Aeroplane	13/2
The Aircraft of the World	25/10
A B C of Model Aircraft Construction	
Design for Aeromodellers	5/4
A B C Continental Aircraft	2/9
How to Make Model Aircraft	3/5
Radio Control of Model Aircraft	9/11
Simple Radio Control	5/4
Miniature Aero Motors	7/10
Keil Kraft Handbook	1/6
Aeromodeller Plans Cat.	9d.

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We can arrange Annual Subscriptions for any Aeronautical magazine in the World. The following are Rates for 12 months (Minimum).

Aeromodeller	21/–
Model Aircraft	20/–
Model Airplane News (U.S.A.)	25/–
Air Trails (U.S.A.)	80/–
Airpictorial	13/6
Interavia (Swiss)	50/–
Flight	61/–
Aeroplane	61/–
Flying Models (U.S.A.)	14/–
Canadian Aviation	14/–

★ FREE FLIGHT KITS ★

FROG			
Frog 45	45"	25/9 +	4/3
Cirrus	48"	14/3 +	2/3
Fox	40"	12/– +	2/–
Firefly	36"	14/3 +	2/3
Janus	44"	10/3 +	1/8
Powervan	48"	14/3 +	2/3
Zephyr	33"	8/7 +	1/5
Tarquin	35"	10/4 +	1/8
DOUGHTY			
Eliminator	48"	19/6	—
E.D.			
Radio Queen	84"	78/3 +	2/10
SKYLEADA			
Point Five	31"	7/9 +	1/3

KEILCRAFT			P.T.
Cessna 170	36"	18/6 +	3/1
Luscombe Silvaire	40"	18/6 +	3/1
Piper Super Cruiser	40"	18/6 +	3/1
Junior 60	60"	39/6 +	6/7
Southerner 60	60"	40/– +	6/8
Southerner Mite	32"	10/6 +	1/9
Slicker 50	50"	25/– +	4/2
Slicker	42"	17/6 +	2/11
Slicker Mite	32"	9/6 +	1/7
Outlaw	50"	22/6 +	3/9
Bandit	44"	18/6 +	3/1
Ladybird	41"	18/6 +	3/1
Pirate	34"	12/– +	2/–

★ JETEX ★

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	P.T.
Atom 35	8/– + 1/4
50 Outfit	10/11 + 1/10
50B Outfit with Augmeter Tube	10/11 + 1/10
200 Outfit	31/8 + 5/3
Jetmaster Outfit	24/– + 24/–
Scorpion Outfit with Augmenter Tube	39/– + 6/6

TAILORED KITS

Voodoo (50)	6/4 + 1/1
Hawker Hunter (J)	15/6 + 2/7
Supermarine Swift (J)	18/– + 3/–
Sparrow (35)	3/3 + 6d.
M7 Kit (50)	4/1 + 8d.
Swift (50)	4/1 + 8d.
Javelin (50)	4/1 + 8d.

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COMPLETE OUTFITS

	P.T.
E.D. Mk. IV Tuned Reed. 3 channels unit, including control box. Complete	400/– + 75/–
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*E.D. Boomerang	200/– + 39/6

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E.D. III and aerial	92/6 + 16/6
E.D. II and aerial	112/– + 21/–
E.D. IV control box and aerial	160/– + 30/–
E.C.C. 1061	70/– + 13/2

RECEIVERS

E.D. II	184/– + 34/6
E.D. III (Hivac)	69/6 + 13/–
E.D. IV	240/– + 45/–
E.C.C. 951A	70/– + 13/2
*E.D. Boomerang Receiver Pack (inc. escapement)	109/6 + 17/2
*E.D. Boomerang Receiving Set only	89/– + 16/–

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E.D. clockwork escapement	47/6 + 9/6
E.C.C. 202 Escapement	15/6 + 2/10
E.D. polarised relay	30/–
E.C.C. 5A relay	25/–
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E.D. Reed Unit (high or low frequency, state which)	60/–
Hivac Valve	15/– + 2/6
Hivac Valve Holder	1/3
Milliameter, 0.5 M/A	12/6
Milliameter, 0.50 M/A	14/6
E.D. IV Control Box	44/– + 8/3
E.D. Rudder Mechanism	48/– + 9/–

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SPECIALLY DESIGNED for JETEX POWER
11¼-INCH SPAN, PRE-FABRICATED AND PRE-DECORATED SCALE MODELS OF THREE FAMOUS PROTOTYPES

THUNDERJET

★ *THEY CAN BE ASSEMBLED IN 15 MINUTES*

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SEA-HAWK

They're so *simple* to build because the fully detailed "3 D" plan supplied with each kit illustrates every stage of construction . . . *In a few minutes you can have a first-rate flying model.*

THESE KITS ARE ONLY 2/4 EACH
Including P. Tax


Photo courtesy "Flight"

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IF YOU HAVEN'T MADE SOLIDS BEFORE—START NOW !

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Vickers 510	2/5	CUTLASS	2/5
SUPERMARINE 508	2/8	B.P. P.111	2/5
SEA-HAWK	2/8	ATTACKER	2/3
SWIFT 535	2/8	METEOR 8	4/1
MiG 15	3/2	CANBERRA B.I	6/5
La 17	3/2	D.H. COMET	6/5
DRAGONFLY	3/7	VALIANT	7/2
D.H. 110	4/1	JAVELIN	4/8

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11½" Span Rubber Driven Kits—"Pre-fabbed" and pre-decorated. In addition to those illustrated here, the range includes the CESSNA L.19, FIREFLY and FAIREY JUNIOR.

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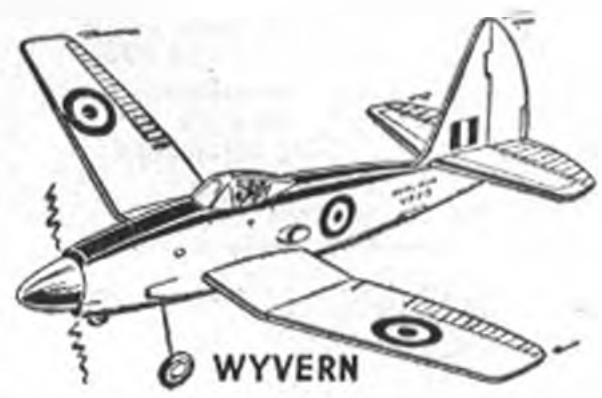
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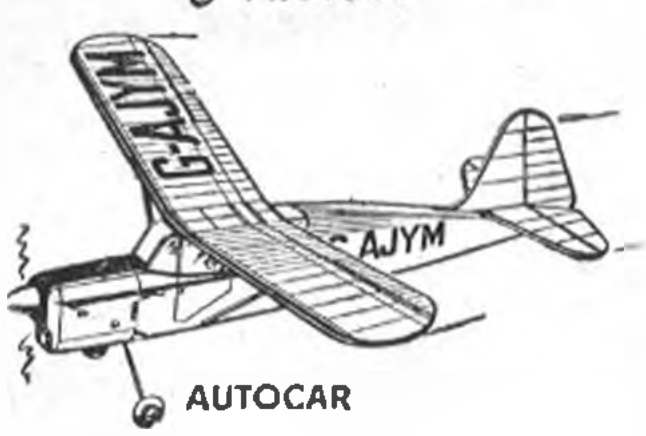

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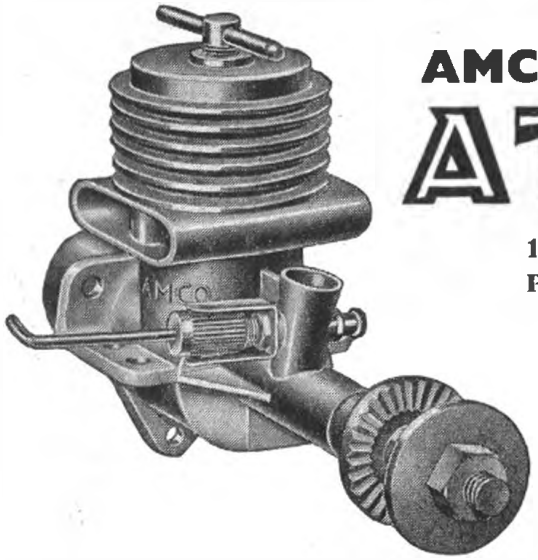

AMCO ATOM

1.5 cu. cms.—.09 cu. ins.
Price 50/- plus 9/4 P.T.

Rotary shaft induction—built-in exhaust stacks—new all-purpose mounting—positive needle valve adjustment—integral tank—spinner nut available extra if desired.

Exciting new AMCO products are glad news to modellers the world over. Perfection in design and performance, the 1.5 c.c. "Atom" diesel is built with watch-like precision, and offers years of faithful service at remarkably low cost. Limited numbers will be available in May, with full production deliveries commencing June, so place an immediate order with your local model shop and be first on the list!

Amco's "Avionic" is the acme of remote control equipment and will appear in Model Shops at the end of March. Absolutely the last word in radio control, it incorporates refinements the exacting modeller will appreciate, and in range and performance can be relied upon implicitly.

100% Reliability

DON'T FORGET . . .

the famous ball bearing
B.B. AMCO 3.5 c.c. at 78/8+14/9 P.T.
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P.B. AMCO 3.5 c.c. at 60/-+11/3 P.T.
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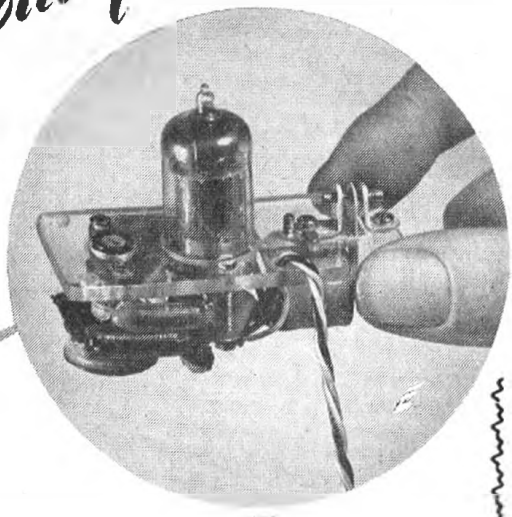
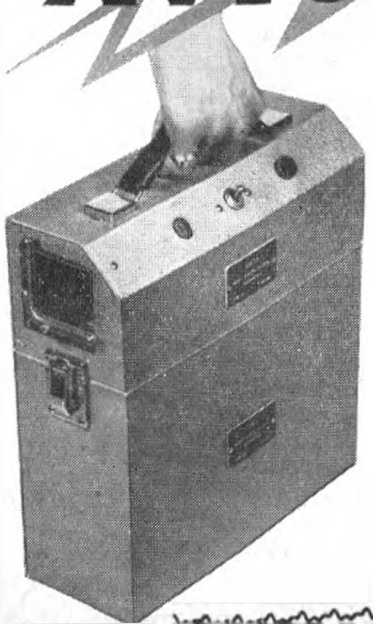


AMCO AVIONIC



REMOTE CONTROL

TRANSMITTER 112/- plus 21/1 P.T.

Contained in a stoutly built attache type case, this unit is in two basic parts. The upper portion contains the transmitter itself and plugs into the lower portion containing the power supply. Space for a modulater is provided and alternative power units to the normal dry batteries for car operation can be had if desired. Note the two way aerial connection whereby the set can be operated laid flat. A tuned aerial circuit gives increased ranged on 27 M/C's.

RECEIVER 65/- plus 12/- P.T.

Small in size and light in weight this single hard valve (1S4) receiver is quench operated with slug tuning. Sensitivity and range are excellent and the new relay design gives reliable performance at all times.

Contained in a damage and dustproof plastic case the set is complete with ancillary components such as wire, plug and socket.

Full details of "Avionic" remote control equipment can be had on request from:—

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(Recommended accessories—E.D. Racer or Webra "Winner", E.C.C. 951 A/RX or E.D. Mk.III :Radio Control).	
TIGER MOTH, Scale ...	28/6 + 4/9
STINSON L.105, Scale ...	29/6 + 4/9
SKYJEEP, Scale	28/6 + 4/9
MONOCOUPE 64, Scale	57/– + 9/6
MAGNA 38" F/F	11/3 + 1/7
NEW JUN. MONITOR ...	19/3 + 3/3

VERON

Control-line

Bee Bug	12/– + 2/–
Sea Fury	23/6 + 3/11
Minibuster	15/– + 2/6
Panther	25/– + 4/2

Gliders

Verosonic, 46"	10/6 + 1/9
Vortex, 66"	18/6 + 3/1

Rubber Powered

Sentinel, 34"	10/6 + 1/9
Hi Climber, 38"	25/– + 4/2

Free Flight Power

Sabre Ducted Fan ...	25/– + 4/2
Cardinal, 37"	14/6 + 2/5
Lavochkin, 37"	25/– + 4/2
Quicky Kits	3/– + 6d.

SKYLEADA

Point 5 F/F	17/0 + 1/3
Comet or Vulcan (Jetmaster)	7/– + 1/2
Jetex 50 Scale Series ...	3/– + 6d.
Curtiss Hawk C/L ...	15/6 + 3/7
Thunderbird C/L ...	14/– + 2/4

FROG

Racer Series, each ...	3/– + 4d.
Senior Series	3/11 + 7d.

PARAMOUNT

"Sunanvind" Record smashing world-famed sailplane ... 10/6

BARRY WHEELER

World-champion Eliminator kit ... 19/6

BATEMAN and VERON SOLIDS

KEILKRAFT

We carry full stocks of all K.K. Models which space prevents our listing here.

JETEX

All motors, fuels and accessories. Also suitable kits by Veron, K.K. Skyleada, etc.

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The wonder modelling sheet-metal, size 23"×28" per sheet 13/–
(Packing and posting 2/–)

JETEX

We carry full stocks of motors, fuels, accessories and kits.

JETEX OUTFITS	P.T.
No. 50	10/11 + 1/10
No. 50/B	10/11 + 1/10
ATOM 35	8/– + 1/4
SCORPION	39/– + 6/6
JETMASTER (100) ...	24/– + 4/–
100	22/5 + 3/9
200	31/8 + 5/3

(350 Discontinued)

ATOM FUEL, per carton	1/3½ + 3½d.
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All Charges, Wicks, etc., stocked.

Complete ranges of scale kits by Skyleada, Veron and Keil-Kraft.

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Burlington Tool Chest	84/–

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The "Am-Pull" marks the first serious departure for years in handles, and its advanced design is winning converts everywhere. Once you have experienced the extra degree of fine adjustment the "Am-Pull" offers, particularly in contest flight, you will never want to fly without it.

ARTHUR MULLETT'S "AM-PULL" C/L HANDEL 5/6 P. Tax 11d.

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Now available for immediate delivery in the following sizes:

2"	wheels, ¾ oz. ...	per pair	7/–
2½"	wheels, 1½ oz.	per pair	8/9
3½"	wheels, 2¾ oz.	per pair	10/6

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ENGINES

The biggest stocks in England

	P.T.
Allbon Dart. 5, Mk. II ...	54/– + 10/2
Allbon Mk. II Javelin ...	55/– + 10/4
Allbon Spitfire 1 c.c. ...	54/– + 10/2
E.D. Baby .46 c.c. ...	45/– + 7/3
Mills 0.75 c.c. with cut-out	55/– + 9/10
E.D. Bee 1 c.c.	47/6 + 7/3
E.D. Water-cooled Bee ...	67/6 + 8/9
Mills 1.3 c.c.	75/– + 12/6
E.D. 1.46 c.c.	52/6 + 4/6
E.D. Comp. 2 c.c. ...	57/6 + 4/3
E.D. 2.46 c.c. Racer ...	72/6 + 6/–
E.D. Hunter 3.46 c.c. ...	72/6 + 6/–
Elfin 1.48 c.c.	47/6 + 8/8
D.C. 350 3.5 c.c.	66/– + 12/5
D.C. 350 G.P.	66/– + 12/5
Amco 3.5 B.B.	78/8 + 14/9
Amco 3.5 P.B.	60/– + 11/3
ETA 29	119/6 + 22/6

All Frog as advertised.

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	P.T.
Mk. II Transmitter and Aerial	112/– + 21/–
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Mk. III Receiver complete	69/6 + 13/–
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Mk. IV Three Channel Receiver	240/– + 45/–
Mk. IV Tuned Reed, Three Channel Outfit, cplt....	£20/–/– + £3/15/–
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E.C.C.

1061 Transmitter	70/– + 13/2
951A Receiver...	70/– + 13/2
FENNERS PIKE SERVO UNIT	58/– + 10/–

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16 MEETING HOUSE LANE
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ESTABLISHED 1935

Incorporating "The Model Aeroplane Constructor"

AERO MODELLER

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Contents

Editorial and Advertisement Offices :
38, CLARENDON ROAD, WATFORD, HERTS. Tel.: 5445

DURATION, SCALE, OR WHAT?

WITHOUT wishing to fan the embers of an old controversy, we think it will be agreed that two extreme types of aeromodeller can be found in the so-called "scale" and "duration" enthusiasts. The former may be said to be constructors of true models, copying as they do—more or less exactly—full-size man-carrying aircraft in their looks (and usually their performance) on a reduced scale. The "duration" people on the other hand, really construct full-size aeroplanes to given specifications, usually to compete with others of the same class on the basis of time in the air. They make, in fact, *miniature* not *model* aircraft.

We mention this to clear the ground somewhat for a consideration of some of the trends in this fascinating hobby of ours. There will always be—thank goodness—those comics who fly the impossible or the bizarre, just to remind us that there are other fields to conquer than those visible at the end of our own particular path. These, together with the few serious model research workers, do the difficult thing because it is a challenge; they experiment and theorise and test with a freedom that is rarely found in either "scale" or "duration" type modellers. More often than not the results of their experiments remain unheard of by the majority of aeromodellers, chiefly because there does not exist a convenient method of collating and comparing their findings in the aerodynamic, propulsive and constructional fields. Moreover, such experiments are not encouraged by any form of competition for direct inventiveness, in the same way that duration is encouraged in competitions at the present time.

We would go so far as to suggest that the various types of competition for un-controlled flight influence the majority of aeromodellers, whether they compete or not, into the belief that duration—or a combination of scale appearance and duration—is the only criterion by which one should assess the merit of a model aeroplane. Granted it is a very convenient one; a mere stop-watch is all that is required to decide between good and bad!

Col. Bowden has for long urged a deliberate imitation of the flight appearance and characteristics of full-size man-carrying machines. While this has much to recommend it, we think he will agree that at best this is rather a second-hand process. We watch the products of the commercial industry in the air, and, if our own creations exhibit a reasonable resemblance to the former's flying behaviour, we are gratified—if not rewarded. To our mind, the comparatively small entry into such competitions indicates that this imitative idea is not very popular with most aeromodellers, who prefer to believe that they are original thinkers.

Contributor D. C. Smith enlarges on this subject in his stimulating article "The Next Step" on page 198 and proposes a new type of contest, that could, with a little perseverance, produce an event in which many varied types of model could compete on the same footing. We shall appreciate readers' comments on the ideas propounded, and trust that clubs will at least give them a tryout in the interests of still further widening the scope of our fascinating hobby.

Cover Picture . . . .

At Wardon Hills, near Luton, golfers and local residents no longer gape with awe at the precise antics of Sid Miller's orange and white radio controlled model. No matter what the weather, Sid is always to be found at the open site every Sunday, flying in his regular radio groove. No flyaways, no crashes, Rohma is one of the most reliable r/c models it has been our pleasure to watch, and thus we have particular pleasure in announcing its introduction to Aeromodeller Plans Service this month. See pages 180/181.

Heard at the Hangar Doors 5

Follow this modeller with the outsize in scale models through the ever open Hangar Doors, and catch up on all the latest gen on modelling and modellers the world over.

Another World Championship Here

England is host this year for another F.A.I. World Championship, but this time it is for the full-size glider boys. 37 single-seaters and 10 two-seaters have so far been entered by 20 nations, and the event takes place from July 20th to August 4th at the Derbyshire and Lancashire G.C. site near Great Hucklow, Derbyshire. The British team, victorious at the last Championships (Madrid, 1952) are hoping to fly one "Sky" and a two-seater K.1. (the Hugh Kendall "Crabpot") flown solo, in the single-seat class, and a T.42 in the two-seater category. The K.1 and T.42 by the way, are new designs and have yet to go through flight tests—sounds just like a model contest!

Contest News

Definite gen. on the big Northern S.M.A.E. meeting over August Bank Holiday is that it will be at Croft Airport (R.A.F. Neasham), six miles from Darlington. The 'drome should suit most, since it is roughly 190 miles from Glasgow, 220 from Belfast, and 250 from London. Surrounding country is excellent for recovery. As the date approaches, the box below (which will be found in Club News in future) will hold all up-to-the-minute gen.

Talking of Waterbeach reminds us that G/C A. H. Donaldson, popular Stationmaster there, has recently been appointed S.S.O. at 2 Group H.Q., 2nd T.A.F., which is permanently in Germany. Modellers who attended last year's Nationals will remember him with gratitude, for it was his interest and enthusiasm that contributed so largely to the tremendous success of that meeting.

We are, however, fortunate in that another model-conscious C.O., G/C B. A. Chacksfield, has been posted in to take over Waterbeach, and it is encouraging to hear that this officer welcomes the idea of the 1954 Nationals being held at this splendid site.

BRITISH NATIONALS

Where—At R.A.F. Station, Waterbeach, about 7 miles N.E. of Cambridge.

When—Whitsun week-end, June 5th, 6th, and 7th; official opening at 12 noon on the Saturday.

How—By train or bus from Cambridge, details later.

Who—S.M.A.E. matters—G. Foden, 27 Highfield Road, Chelmsford, Essex.
Administration—M. D. Gates, 90 Whitehill Road, Cambridge.
Accommodation—R. O. Emmony, 33 Newmarket Road, Cambridge.
Contest matters—P. Firman, 37 Earl Street, Cambridge.
Programmes, etc.—M. B. Reynolds, 18 Milford Street, Cambridge.
Publicity—P. J. Hoskison, 4 Hale Street, Cambridge.

Make sure you write to the right person, and please enclose a S.A.E.

Watch this box for further gen.

F.A.I. Surprises for 1954

As the outcome of a Conference held at Frankfort last November, the international body has called off all restrictions relative to fuselage cross-sections, and the field is free from hereon. Gliders had tended that way for some time (a la Oscar Czepa's "Toothpick"), and many power jobs virtually made the engine pod cope with such requirements. With the Wakefield model, the necessity to have the rubber motor fully enclosed will probably answer the purpose of retaining anything other than the "stickiest" look about our favourite type of machine, so designers have one less factor to worry about, and processors will be only too glad to cut out at least one item for mensuration.

Motor run in power contests is now reduced to 15 sec., with British contests held on a 3-flight, 4 min. maximum basis, but international events to a 5-flight, 3 min. max. requirement. (The British rules were fixed following a postal ballot which resulted in an overwhelming vote for a return to 3-flight contests, and in view of the comparative ease with which many modellers are reaching 3 min. with the 1954 "handicaps," the 4 min. maximum should prevent unwieldy numbers for a fly-off.)

Glider towline is reduced to 50 metres (164 ft.) though the 100 metre line may still be used for Merit Certificate attempts.

Tabled for discussion, and in the hopes that practical experience will be gained, are the following proposals for international class Team Racing:

Maximum engine capacity	2.5 c.c.
Maximum tank capacity	10 c.c.
Minimum total area	8 sq. decimetres
Line length	13.27 m.
Course	120 laps equal 10 kms.

Many views will obviously be put forward to the F.A.I. before such regulations are made absolute.

Reader Service

The bulk of our large daily correspondence with readers is concerned with technical queries, advice for beginners and selection of A.P.S. plans. Occasionally we have the odd pat-on-the-back and sometimes the odd brickbat. But a recent reader service, undertaken on behalf of a Polish aeromodeller, had a remarkable result, in that it renewed an acquaintance after fourteen years of separation.

The letter arrived written in Polish, with it was a covering note—"Would we please find Mr. Wojda, the builder of the magnificent 'Spitfire' and P.Z.L. 37 scale controline models, and wartime fighter pilot?" Mr. Wojda's models have each been the subject of special "AEROMODELLER" features and so we had no difficulty in passing on the Polish letter. As it turned out, the writer was the very man who had taught Mr. Wojda how to fly in 1936. For the past fourteen years they had lost contact with one another, and, thanks to an Australian, who sent his copies of "AEROMODELLER" to Poland, the reader was able to use our address for forwarding his enquiry.

Which just goes to show how the A/M gets around—from Britain to Australia and back to Poland, is more than 20,000 miles in transit.

"Unrestricted"

The use of the word 'Unrestricted' in connection with insurance requirements has led to a certain amount of confusion, and definitely to a misunderstanding on the part of some readers. It should be clearly understood therefore that the term as applied to S.M.A.E. or other insurances merely indicates that cover is provided on any flying ground, and not—repeat NOT—an indication that individuals can fly their models indiscriminately or without due care for the comfort of others.

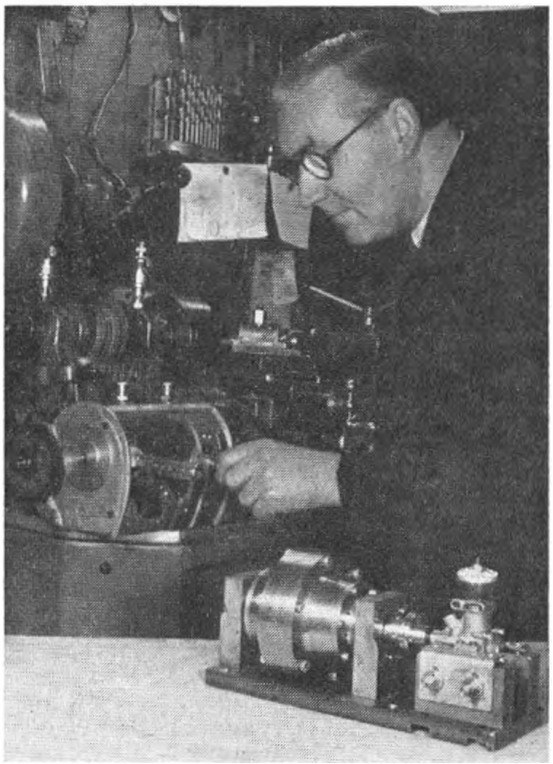
Formerly the S.M.A.E. policy was restricted to use on "recognised flying grounds," though this qualification was never properly explained or understood. Under the new policy, members are adequately covered at any venue, and the policy has been further amplified to include all the requirements of the various Ministries and local authorities relative to the proper indemnity of such groups.

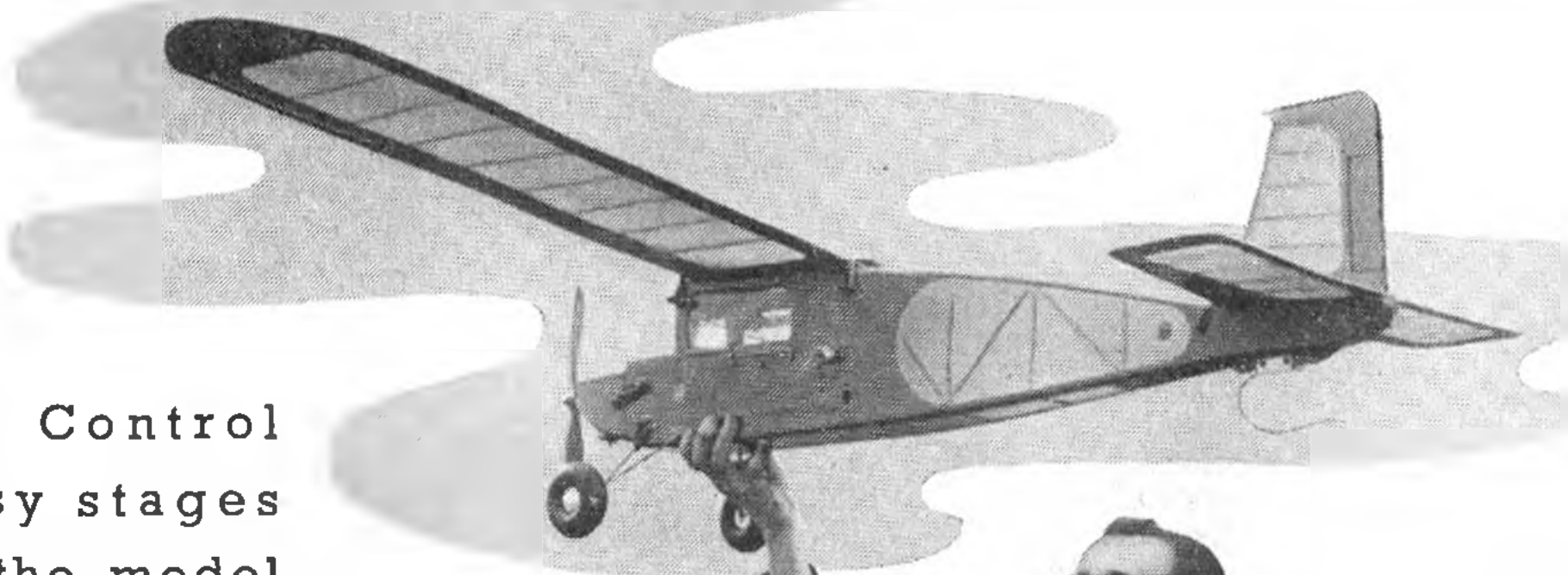
Membership of the S.M.A.E. is going ahead by leaps and bounds, and we refer any reader who has not yet joined the National body to pay particular attention to the announcement and membership form on page 214.

Big News in Engine Testing

Readers anxiously enquiring as to absence of popular "Engine Analysis" with its test figures and power curves, at the moment temporarily replaced by "Engine Review," will be pleased to know that new test equipment we have had under preparation for several months is nearing completion. We have conducted considerable research into ways and means of obtaining accurate torque readings other than by the method used to date, which utilises a balance arm. Readers will remember that in our last issue. Ron Warring detailed this method of testing, which, although comparative, cannot be 100 per cent. accurate with the smaller motor.

Consultation with the country's leading experts on test equipment, disclosed the fact that equipment capable of dealing *accurately* with small engines was as yet unheard of, and it was obvious that we would have to pioneer if the project was to go ahead. Fortunately, we were willingly given experienced advice by these experts, with the result that the "AEROMODELLER" Eddy Current Dynamometer" is nearing completion. Ron Warring, our test expert, enlisted the aid of a skilled engineer, Mr. E. G. Hook, for the actual construction of the equipment, which has been made to the extremely fine limits necessary for precision testing of the kind envisaged. Providing no unexpected snags arise, we hope to conduct the first tests with this rig very shortly, for publication in our next issue, and will be giving at the same time, a full description of the dynamometer. Just to whet your appetites meantime, we show Mr. Hook with the partially completed equipment in the foreground





Radio Control
in easy stages
. . . . the model

Rohma

64" SPAN · FOR 3.5 c.c. · EASY TO BUILD · SUITS ANY RADIO RECEIVER

by S. Miller

42-year-old finishing expert in Vauxhall Motors . . . 11 years a valued member of Luton and D.M.A.S. . . . has wife and son as keen assistants.

TWO years continuous flying through all weathers has proved the "Rohma" as a tough sport radio model of the first order. Rough landings in ploughed fields have been taken in its stride and a spiral dive into hard earth under full power did not incur even as much as a tear in the tissue covering. In the only contest entered, the Northern Heights Gala Spot landing Competition, it placed a good third under fairly windy and poor conditions.

Using a 3·5 c.c. engine, it is fast, though lightly loaded (13 oz. sq./ft.) and will penetrate any moderately strong wind. Though fast, it is not in the "guided missile" class, and is perfectly safe to fly even for a beginner in Radio Control. It can be put in any position even near the deck with excellent recovery, especially if one assists by keying the transmitter at the right time.

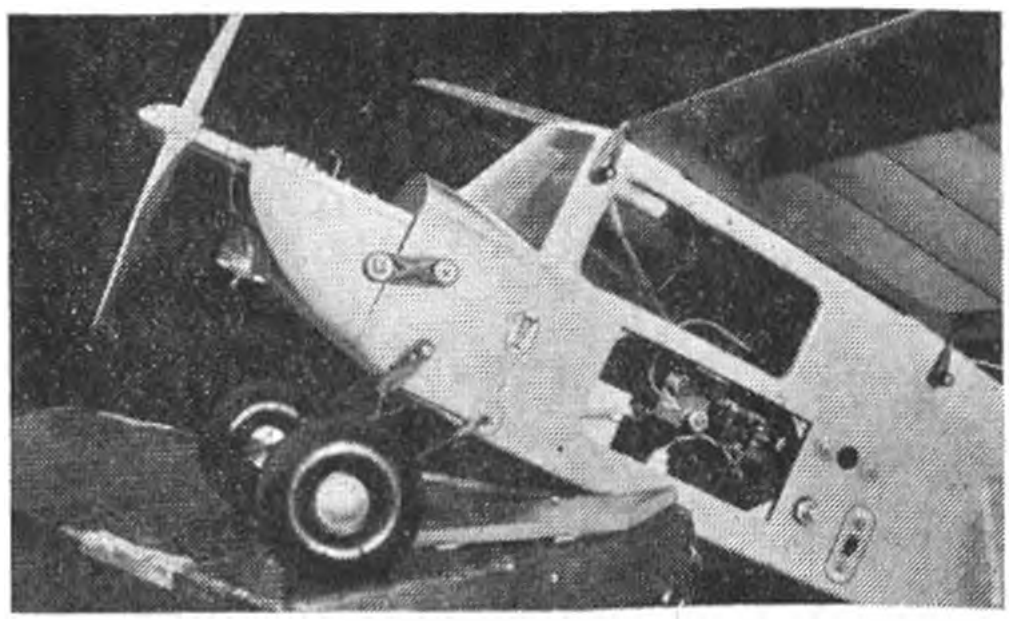
As a cyclist, Sid Miller had to consider the convenience of packing, so the model was constructed in units. Every part fits easily into a box 42 in. × 9 in. × 9 in. including meter, fuel, repair requirements and all the other odds and ends.

The radio used is the famous "AEROMODELLER No. 1 receiver," which has proven itself under all conditions. This is an excellent job, being simple, cheap, easy to construct and operate, stable, and with plenty of range, very economical to run. For the benefit of the radio beginner, to whom "Rohma" is especially suited, stage by stage details of receiver construction will be described in a series of fully illustrated articles beginning next month. This enables the modeller to get started on the model *now*, so that it will be ready to accommodate the radio when this is finished, thus making a logical approach for the many modellers who are searching for the right kind of introduction to R/C.

Construction is quite straightforward and full building instructions are included with each full-size A.P.S. plan. This should *not* be your *first* model, in any case, as some degree of practical experience is called for in the general assembly. As with all of Sid Miller's models, wing slots are employed to full advantage, and much of the smooth performance of "Rohma" through turns, and loops, can be attributed to this Miller "trademark."

Docile to trim, "Rohma" can be adjusted to suit all wind conditions by simple addition of pack under the wing trailing edge. Up to $\frac{1}{8}$ in. can be used for extremely windy days, proving just how easy it is to fly.

Needless to say, it will take any of the commercial receivers within the commodious radio compartment, so for the many who prefer to use a "ready-made" there's nothing to prevent them having "Rohma" ready for an Easter outing. Another thought too, for the sport flying enthusiast using 3·5 engines and whose whims have not so far been fully catered for in A.P.S., "Rohma" represents the kind of sport model than can be built *now* for general free-flight to await radio installation at some future date.



"Rohma" breaks down into a set of easily transportable components. Engine pod retained by rubber bands is crashproof and sheeted fuselage forward portion protects the radio. A/M receiver is easily accessible . . . Watch next month for Sid's step by step approach to building this receiver for your "Rohma."

A 64" SPAN RADIO CONTROL MODEL.

ROHMA.

DESIGNED BY

S.A. MILLER. 6/-

THE AEROMODELLER PLANS SERVICE

38. CLARENDON RD. WATFORD. HERTS.

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED.

COVER MODEL WITH HEAVYWEIGHT TISSUE. GIVE 3 COATS FULL STRENGTH SUPER DOPE (THICK) ON WING & FUSELAGE PANELS. 2 THIN COATS ON SHEETED PARTS FOLLOWED BY 2 COATS OF COLOUR

AVOID WARPS AT ALL COSTS.

FIT RADIO AS INDICATED, ESPECIALLY BATTERIES AS VERTICAL POSITION OF C.G. IS IMPORTANT IN RELATION TO THRUST LINE.

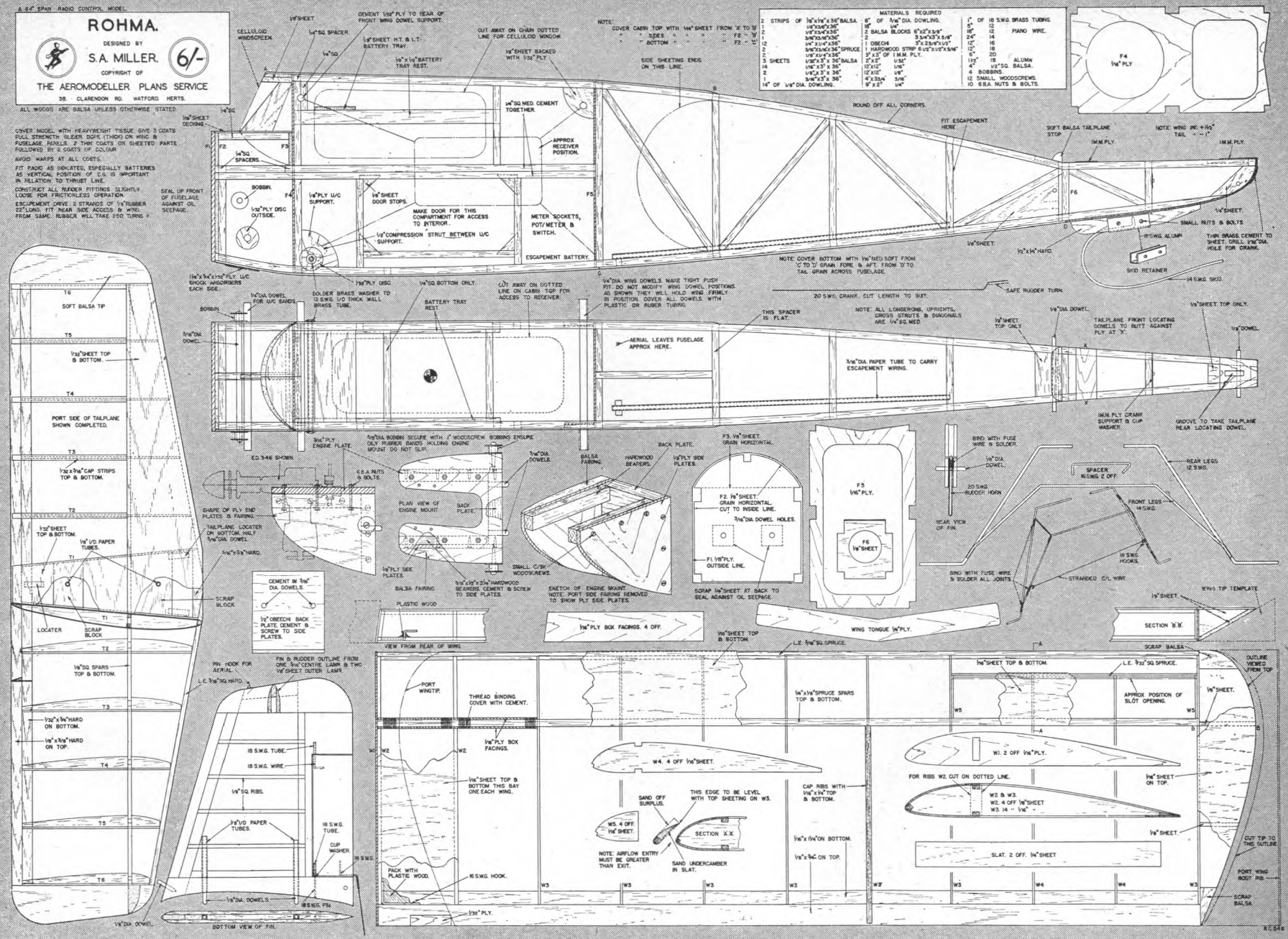
CONSTRUCT ALL RUDDER FITTINGS SLIGHTLY LOOSE FOR FRICTIONLESS OPERATION.

ESCAPEMENT DRIVE: 2 STRANDS OF ⅛" RUBBER 22" LONG. FIT NEAR SIDE ACCESS (& WIND). FROM SAME RUBBER WILL TAKE 250 TURNS +.

SEAL UP FRONT OF FUSELAGE AGAINST OIL SEEPAGE.

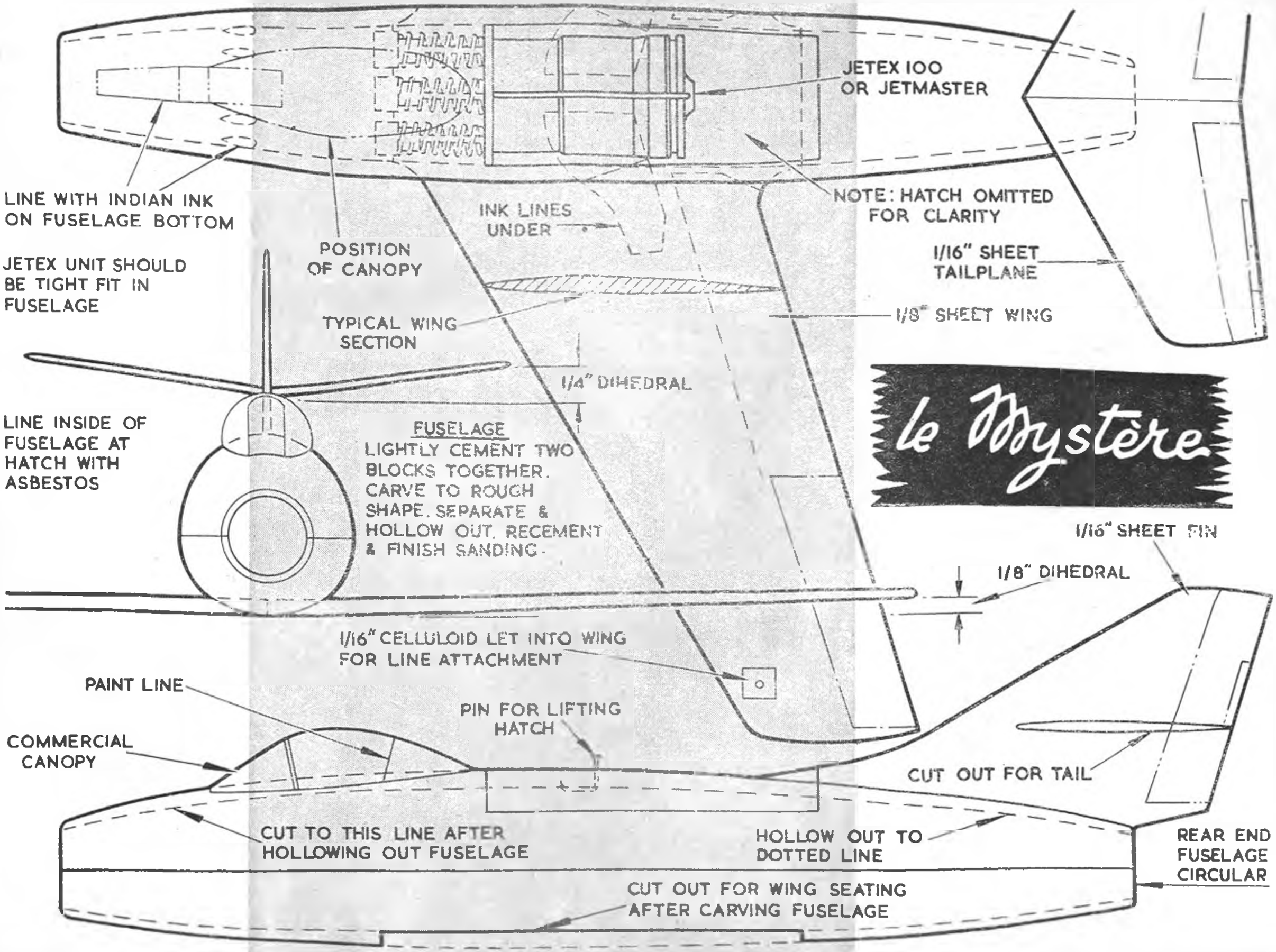
MATERIALS REQUIRED

2	STRIPS OF ⅛"x⅛"x36" BALSA.	8"	OF ⅛"x⅛" DIA. DOWLING.	1"	OF 18 S.W.G. BRASS TUBING.
1	⅛"x3"x9"x36"	18"	" ⅛"	12	"
2	⅛"x3"x7"x36"	2	BALSA BLOCKS 6"x2"x⅜"	18"	" PIANO WIRE.
2	⅜"x3"x3"x36"	2	" 3 ¼"x3"x ⅝"	24"	"
12	¼"x1"x4"x36"	1	OBECHI " 3"x 2 ⅜"x⅜"x12"	12"	"
2	⅜"x3"x4"x36" SPRUCE	1	HARDWOOD STRIP 6"x2"x1/2"x5/16"	12"	"
2	⅛"x1"x4"x36"	3"	x3" OF 1 M.M. PLY.	6"	"
3 SHEETS	⅛"x3"x 5" x 36" BALSA	2"	x2" " ⅛"	192"	" 18 " ALUMN
14	⅛"x 1" x 36"	12"	x12" " ⅛"	4"	" ⅛"SQ. BALSA.
2	⅛"x 2 ⅜" x 36"	12"	x12" " ⅛"	4	BOBBINS
1	⅜"x 3"x 36"	4"	x 3 ⅜" " ⅜"	12	SMALL WOODSCREWS.
14"	OF ⅛" DIA. DOWLING.	9"	x 2" " ¼"	10	6 B.A. NUTS & BOLTS



R.C. 546

le Mystère


JETEX 100
OR JETMASTER
LINE WITH INDIAN INK
ON FUSELAGE BOTTOM
INK LINES
UNDER
NOTE: HATCH OMITTED
FOR CLARITY
POSITION
OF CANOPY
1/16" SHEET
TAILPLANE
JETEX UNIT SHOULD
BE TIGHT FIT IN
FUSELAGE
TYPICAL WING
SECTION
1/8" SHEET WING
1/4" DIHEDRAL
LINE INSIDE OF
FUSELAGE AT
HATCH WITH
ASBESTOS
FUSELAGE
LIGHTLY CEMENT TWO
BLOCKS TOGETHER.
CARVE TO ROUGH
SHAPE. SEPARATE &
HOLLOW OUT. RECEMENT
& FINISH SANDING.
1/16" SHEET FIN
1/8" DIHEDRAL
1/16" CELLULOID LET INTO WING
FOR LINE ATTACHMENT
PAINT LINE
PIN FOR LIFTING
HATCH
COMMERCIAL
CANOPY
CUT OUT FOR TAIL
CUT TO THIS LINE AFTER
HOLLOWING OUT FUSELAGE
HOLLOW OUT TO
DOTTED LINE
REAR END OF
FUSELAGE IS
CIRCULAR
CUT OUT FOR WING SEATING
AFTER CARVING FUSELAGE

April, 1954

FARNBOROUGH

.....in your clubroom

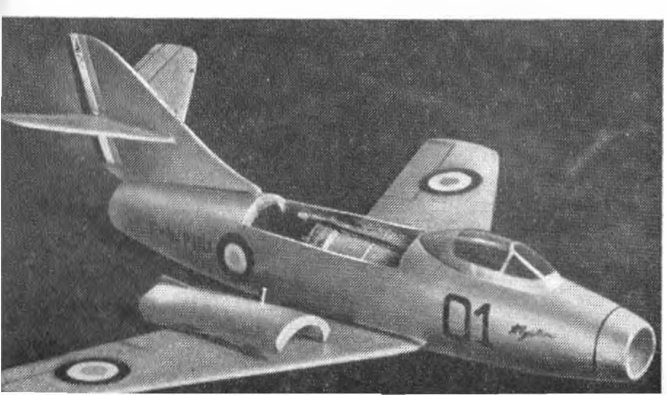
All the thrills of the famous annual air display can be reproduced with fast Jetex scale models. .....states W. TINKER

SCALE models have always been a fascinating branch of aeromodelling, and never more so than at present. Weather conditions often play havoc with a scale modeller's hopes, but really there is no need for these enthusiasts to be grounded.

Miniature models of the modern jets can be built and flown successfully with every detail correct, which should appeal to even the most ardent "solids" fan. Scale areas, intakes, cockpits and a wealth of external details such as guns, bombs, rockets, tanks, pilot heads and so on may be incorporated in a flying model of 1/72 scale—and still do scale supersonic speeds!! To prove the point, the author has a D.H. Venom, powered by a Jetex 50, constructed from a "solid" kit.

The majority of models so far built have used the 50 unit or the Jetmaster, but now, the new 35 should prove attractive, and just recently, two experimental models with the 350's have been doing the rounds. However, in the beginning, scale models seemed to be right out of the picture. Experience showed that the motors took an intense dislike to being cooped up in a cowling aft ofthe orifice. It was obvious that only very few scale jobs could be built with any hope of success, as the reduction in thrust was so serious.

Thus was the general opinion until it was proved wrong. Incidentally, many of the dodges and gadgets introduced for improving scale flight originated from Epsom club-member David Bolt. Dave, unfortunately, is deaf and dumb, but he has a mind for detail and has certainly shown the way quite a number of times. Naturally, when his model flew fast and level, considerable interest centred around it. Apart from the cunning construction, the only radical change in design was the inclusion of a small air duct in the bottom of the fuselage, leading to the orifice end (see sketch overleaf). It would appear that the Jetex units must have air around the orifice if they are to produce maximum thrust. As the units are simply a tight push fit into the fuselage, without any mounting clip, scale nose intakes are virtually useless, because there is insufficient clearance between the unit and the fuselage walls to allow the free passage of air to the orifice. Where the choice of design includes bifurcated intakes, it is possible to lead air directly to the unit, and it is in cases like this that the extra belly duct can be discarded.

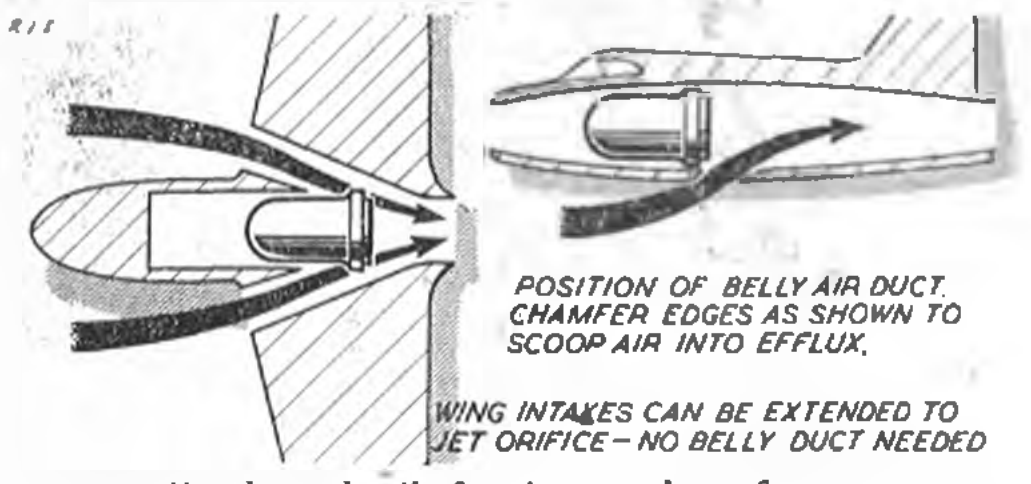


Multi's, R.O.G. ? ?

Should the designer not be interested in obtaining the fastest speed from his model then a scale should be chosen to allow ample room in the fuselage for the unit and the passage of air around it. This is specially recommended for the bigger units (350 and 200) for high speeds with heavy models produce large forces for the line to hold. No advantage in speed is gained by the more powerful units due to the proportionate increase in air-frame size. Multi-engined aircraft may be attempted with every success, but some difficulty may arise in completely cowling the motors in a model sufficiently small to give a fair turn of speed.

The fitting of undercarriages to 50-powered models for R.O.G. work is not such a good idea. The length of take-off may be small but so are motor durations and R.O.G. flights will be very short. A better proposition is offered by the larger units and fully-sprung undercarriages maybe incorporated. No one yet has produced a retracting u/c so here is a chance for someone to shine.

Full-size drawing and photos of the Marcel Dassault 452 Mystere fighter are for Jetex 100 or Jetmaster. Top recorded speed of this model by J. Darnell is 55 m.p.h. with a "100." "Daily contests for speed are to be held at the 1954 "M.E." exhibition, where models of this type can be flown by entrants in a special cage.



Air duct detail for improved performance

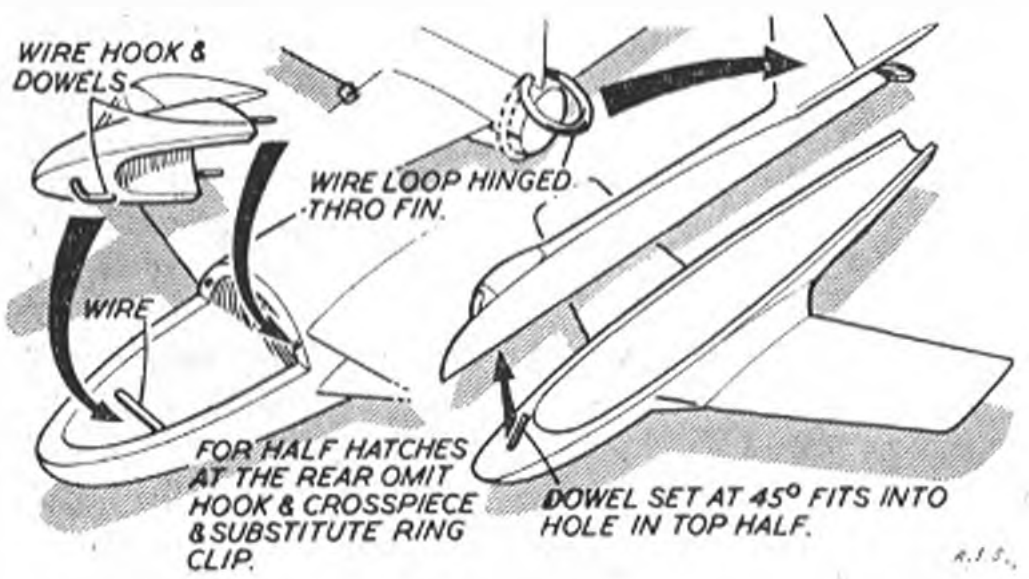
Where hand-launching is preferred, a small strip of celluloid cemented to the underside of the fuselage will avoid wear and tear when the model is flown over hard surfaces.

Obviously some means of facilitating easy access to the unit is necessary. Present trend favours the two-part fuselage common to c/l speed models or a removable hatch in the centre or extreme ends. With the two-part fuselage some positive means of holding the halves together must be employed to insure that the motor does not force its way out at high speeds. Another consideration to be borne in mind is that once the flight is over, the unit must be removed quickly or the paint-work will blister with the heat. An advantage with the small hatch is that it allows at least half the motor to be jammed into the fuselage proper, so that even if the hatch falls off in the flight the motor will remain with the aircraft. The sketches below show several current designs for fixing hatches.

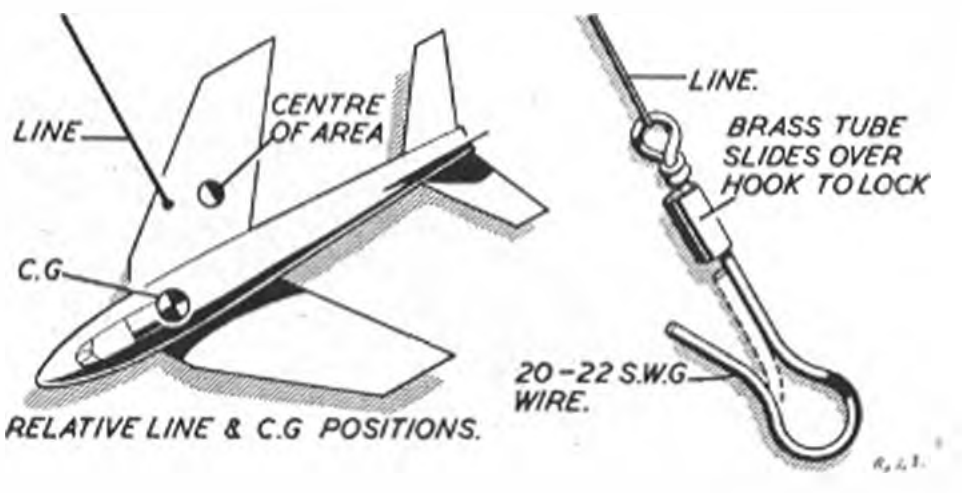
The policy of making the units a push fit into the fuselage has caused some concern over the possibility of burning any wood in close contact with the motor. With the 50 units, balsa will gradually char until a layer of carbon covers the area of contact. Once this stage is reached it would appear that little or no further deterioration occurs. The larger motors may cause deep charring and here a hardwood fuselage shows a greater resistance than balsa. Alternatively, a thin layer of tinfoil cemented to balsa has been found very effective. Asbestos paper has a great tendency to rub off easily. With the larger motors, as already suggested, the mounting clip should be used with an air gap which should prevent burning. A layer of tinfoil will obviate any doubts here.

The motor position in scale models usually means a long length of fuselage behind the jet orifice. The exhaust from the motor seems to have little effect on bare wood but if in doubt tinfoil again should be used. However, the fuse can do more than ignite the unit unless precautions are taken. Anyone who uses a Jetex motor knows that the fuse burns particularly violently, and the easiest way to prevent a model from bursting into flames is to isolate the fuse completely with the aid of a thin metal tube, which is removed as soon as the unit fires. Where the normal short fuse is used, the tube will serve as a useful guide to a cigarette or any other means of ignition, but an extended fuse will necessitate the tube being about ½ inch longer than the distance from the unit to the rear of the fuselage, to keep matches and sparks clear of the cellulose finish. Another similar method is to incorporate a tube of tinfoil in the fuselage during construction. This could also be used as a venturi but in any case it is advisable to extend it slightly beyond the fuselage to lessen the fire risk.

This fire hazard is very real and models have caught fire through insufficient protection from the fuse. A soda syphon can be very useful in cases of emergency!



Split fuselage arrangements or easy access



Line attachment position for medium speed design

Centre of gravity position will vary with every model, but as a general rule it should be well forward, say 25% from the L.E. at the root. Ballast the nose or move the unit forward if necessary. The line position should be to the rear of C.G. but must not be behind the centre of area. In other words, arrange more wing area behind the line position than in front, and arrange the C.G. in front of the line position. A model which is flying nose up may be corrected by moving the line attachment point further back, but once the maximum rearward travel has been reached, weight must be added to the nose. Before taking any of these drastic measures it might be advisable to check incidences. 0°—1° positive on wings and 0°—2° negative on tailplanes are the limits if high speeds are desired.

Lines are usually attached to the wing tips, or, in the case of swept wings, near the L.E. Balsa wings should be strengthened at this point with celluloid or ply inset. Ply, hardwood or plastic wings are tough enough without further strengthening, but plastics should be regularly inspected for wear. Tip attachments are universal for medium speed layouts—fuselage attachment points are necessary for most low-wing designs. Lines should be fixed along or above the thrust line.

The Author's Saab J-29 has a Jetmaster to replace the full-size De Havilland Ghost engine, and is capable of speeds up to 75 m.ph. A.P.S. 1/72nd scale plans for Swift Hunter, Vampire, trainer are suitable for "35" or "50" units . . . . why not try a Vulcan for real scale flight?

Single strand, 33 gauge control line wire is probably best for the line, with 22 gauge hooks at both ends. All joints should be soldered, and all hooks should have some form of locking device. The centre pole should be a solid structure, with a low-friction swivel, and should be screwed or well weighted to the floor. As soon as a line becomes kinked or badly bent it should be discarded. Kinked lines have an unhappy tendency to break suddenly, with disastrous results for the model! Six to nine feet radius lines and an eighteen inch pole should easily be accommodated by most clubrooms and the low pole means that any runaway aircraft will only strike less vulnerable parts.

Line Tests for Ultra High Speeds

A recent series of constructional failures at high speeds (100 m.p.h.) have resulted in some calculations being made on centripetal force at these speeds. At 120 m.p.h. this force equal to 136 times the weight of the model! It is not surprising, then, that wings and line fixings have been failing. The breaking strain of 33 g. wire shows that at 120 m.p.h. on a 7 ft. radius, about 3 ozs. is maximum weight permissible for a single-strand line.

It is recommended, in these cases, that lines should be attached to the unit rather than the airframe, and that all high speed aircraft be subjected to a line pull test. For example a 1 oz. model must take a strain of say 9 lb.: 3 oz. models, a strain of 26 lb., etc.

Draughts have less effect on these models than on rubber R.T.P., so top windows may be left open to provide ventilation. Fumes collect quickly in a closed room and, from experience, visibility and oxygen content decrease rapidly!

Speeds are much more readily calculated if a few minutes is spent in preparing a speed graph for the particular line length in use. A fairly accurate graph can be drawn using the formula:

$$\frac{K.D.N.}{t} = \text{Speed in M.P.H.}$$

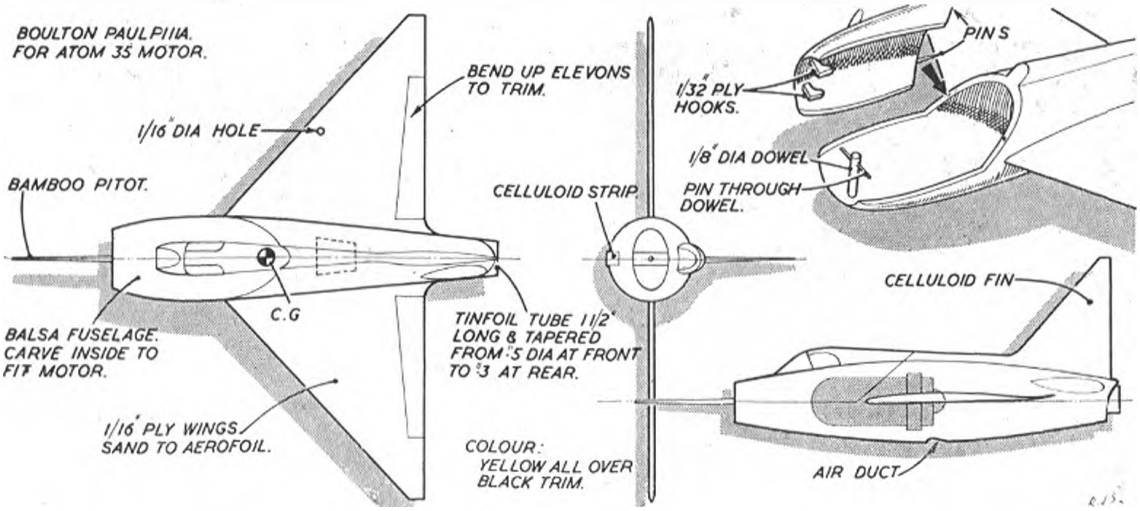
Where K is a constant 2.142 (*Not* π) †
D is the diameter of the circle in feet
N is the number of laps over which the model is timed
t is the time in seconds to complete N laps.

By standardising the line length and the number of laps to be timed for all club meetings, the graph will do duty indefinitely.

Visual timekeeping is quite practical up to speeds around the 70–80 m.p.h. mark, but above this accurate timing is very doubtful. Mechanical timers have been found unreliable at the higher speeds and the only solution appears to lie in an electronic device. Such a device has been designed but the cost is rather high and clubs may not be willing or able to afford the expense.

All that is needed now is that a few of your club members get down, for a couple of evenings, with their scraps box, a few half-used jars of dope and the jet unit from that battered free-flight job and you, too, can organize a Farnborough show!

† *Conversion factor used in place of π gives a general formula for any flight circle and/or number of laps, converts f.p.s. to m.p.h. . . . Ed.*



Heading: Bulawayo club ready for local Speedway display before 12,000 spectators. Here: Peter Lim and Mr. Eber with twin E.D. 246 Invader built from APS. plans. Bottom: G. Busek, "running-in" 45 c.c. engine for c/l scale!

World News

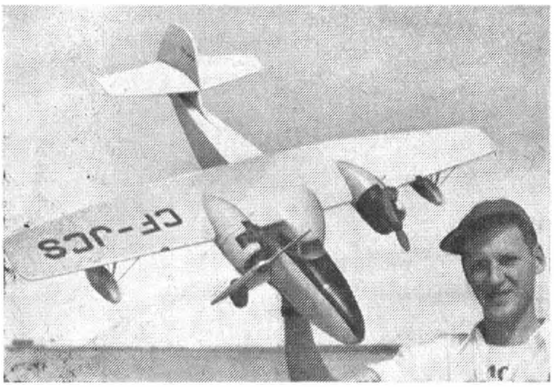
THE MONTHLY DIGEST OF WORLD-WIDE MODEL MATTERS

IN **Denmark,** preparations for the A/2 final contest have already begun, and first eliminators to select the Danish team took place on February 21st. Another elim. comes on April 4th for team selection. No drastic design changes are expected among Danish A/2's, except that the famous Hansen layout, as used by brothers Borge and Hans as well as Fritz Neumann, all past team members from the Copenhagen club, will be the same as last year, but with slimmer fuselages with, quote "very small cross section." 'Aurikel,' the World Championship holder, can now be purchased as a Danish kit design as well as Fritz Neumann's successful "Fidusia" A/1 design.

Details of the marathon eliminator held at the 8-day **Argentine** contest for Wakefield team selection come from Pop Royle, who won the event with a total of 44 min. 42 sec. out of a possible 45 min. This was a fifteen flight eliminator of 3-min. maximum flights, for *new rule models*. Two flights were allowed from 7 o'clock till dusk each evening, with the last and fifteenth flight on the eighth day. Being a British subject, like Bob Leishman who won the power eliminator, Pop cannot go to the U.S.A. finals, though his neighbour, Cesar Altamirano, heads the list of Argentinians. Reward for Pop's top place was a fully clothed ducking in an appropriate pool . . . and acceptance of his design which may possibly be standard equipment for the Argentine team.

In **Australia** the K. and B. 15 glowplug 2·5 c.c. engine took first place in class A team racing at the Nats., and a K. and B. 19 recorded 126·7 m.p.h. to win class A speed for Jack Finneran. Otherwise, Cobbers and Kiwi's, we still await pics. and results of your new year national events. The open Australian Championships, held at Sydney by the M.F.C. of Australia, was stricken by bad free-flight weather, notable c/l flight being 150 m.p.h. plus by Irwin Frost with his McCoy 60 High Compression speedster. 160 m.p.h. is said to be a possibility before long, a prospect which could put Australia in the International F.A.I. records listing.

Apologies to the lady who designed the Polish Champion A/2 (p. 153 March issue), who we referred to as Miss, and is in fact, Mrs. Lucette Degler. Correction comes from **Czechoslovakia,**



Above: 45 in. Grumman Goose with two McCoy 19s by Ron Powell of Edmonton. Nacelles are spaced wider than scale for prop clearance. Right: Bob McCall has seaplane Harvard for flying off snow slush: cold, wet, but good fun!

where the recent hard spell of severe weather affected the first A/2 and power eliminators. 108 clubs were represented on a frozen field in a temperature of minus 25° Centigrade (13° Fahrenheit), and over 30 modellers succumbed to the big freeze. A stiff wind reduced times far below normal level, which western Europeans will be interested to note is: 2:25–2:30 off 50-metre line. These eliminators are for the "Championship of Eight States" to take place in the U.S.S.R. in August.

America Discovers the Diesel

The two quotes below are significant comment on the latest engine products in the United States:—

. . . from *The Flypaper*, Bristol, Pennsylvania—

"Herkimer Tool and Model Works announces another new OK Cub diesel. This one has a displacement of ·049 (·83 c.c.), weighs 1·5 oz. including tank, and features-an exclusive shock-absorbing pad and pulsating contra piston making it the '*first practical long-life diesel*,"—according to the manufacturer.

McCoy Products Co. also announces a companion to its popular ·049 diesel, the McCoy '9' diesel. Selling at $7·95, it has a displacement of ·098 (just over 1·5 c.c.), and weighs 3 oz. McCoy also promises *other* popular-size diesels in the near future."

. . . from *Hobby Hi-Lights*, Toronto, Canada:—

About the new U.S. diesels . . ."WHY do they rely on a rubber ring for a compression seal in the contra piston? This ring wears fairly rapidly and has to be replaced at regular intervals. The contra pistons in the English diesels are, without exception, fitted accurately enough so that such methods are unnecessary . . . Why deliberately limit these otherwise fine products by employing practices which are, at best, of questionable merit?"

The text then went on to relate how Canadian owners of U.S. diesels could take advantage of a well-known British reboring establishment, which is regularly advertised in the "AEROMODELLER" and would fit a "proper contra" at reasonable cost!

D. K. K. Lee launches his Lavochkin at the Kuala Lumpur flying ground, watched by T. S. Shippam, another of the many modellers in this remote corner of the world. Bottom: Bunzo Yanagimachi from Sapporo, Japan, piles on the turns. Shall we have a Jap. Wakefield team this year?

A 54" SPAN FLYING SCALE MODEL FOR SMALL DIESELS

SOPWITH TRIPLANE

1½" TO 1'

DESIGNED BY

V. KING

COPYRIGHT OF

THE AEROMODELLER PLANS SERVICE

38. CLARENDON RD. WATFORD HERTS.

6/-

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED

SMALL HOOK ON WING MOUNT UNDER L.E.(SIDE VIEW)

HOOK ON BOTTOM OF TOP WING AT FRONT SPAR

CABANE STRUT WIRE

LANDING WIRE

CEMENT SMALL BLOCK TO STRUT AFTER ASSEMBLY TO STOP MOVEMENT OF MIDDLE WING

FLYING WIRE

NOTE 1/4" DIHEDRAL AT TIPS ON ALL WINGS

SECURE FLYING WIRE TO HOOK LET IN FUSELAGE JIN IN FRONT OF L.E. OF BOTTOM WING

½ DOWEL

HOOK ON TOP OF BOTTOM WING AT FRONT SPAR

BALSA BREECH

VICKERS MACHINE GUN

USE BLACK SHIRRING THREAD FOR ALL RIGGING

LOWER WING BOX

HOLES IN LONGERONS TO TAKE CABANE STRUTS

⅛" PLY ENGINE MOUNTS GLUED & SCREWED TO COWLING NOTE BUILT-IN RIGHT-THRUST

REAR LEG

FRONT LEG

16 S.W.G. UNDERCART ACTUAL SIZE

NOTE PACKING PIECES OF ⅛" SHEET FITTED BETWEEN SIDE STRINGERS AT UPRIGHTS X, Y & Z

MILLS 75 SHOWN

UPPER HALF OF COWLING IS DETACHABLE

CARVE COWLING FROM MEDIUM BALSA BLOCK

BAMBOO PEGS

GLUE BOTTOM HALF OF COWLING TO FUSELAGE

PERSPECTIVE OF COWLING & MOTOR MOUNT

WING STRUT 2 OFF ⅛" PLY

SCOPE ON DOTTED LINES

WHEEL CONE THIN CARD 2 OFF

WHEEL CENTRE ⅛" PLY 2 OFF

BUSH

WHEEL CONE

SMALL WIRE HOOK

SOLDER SPACING PIECES HERE (SEE SKETCH)

FILL WITH ⅛" SHEET & BIND WITH SILK

DUMMY GENERATOR FITTED TO R.H. STRUT ONLY

16 S.W.G. CABANE STRUTS

ALUM. PROP

PIN

TONGUE

POSITION OF DUMMY MACHINE GUN

NOTE EXTENSION TO COMPRESSION SCREW

FILL IN FIRST BAY OF BASIC BOX WITH ⅛" SHEET

CELLULOID WINDSCREEN

COWLING MADE FROM ROUND BISCUIT BOX

MAKE ONE R.H. ONE L.H. TONGUE 18 S.W.G.

PERSPECTIVE OF TONGUE

SIDE

PLAN

BIND & SOLDER TO CABANE STRUTS

20 S.W.G. SPACERS

BIND & SOLDER

BIND UNDERCART TO SPACERS

PERSPECTIVE OF WING PLATFORM

16 S.W.G. AXLE

PERSPECTIVE OF UNDERCART

F#1 OUTLINE FROM ⅛" SHEET

⅛" SQ. BIND BRASS TUBES TO FIN POST

BIND 20 S.W.G. HINGE PINS TO RUDDER POST

BIND & CEMENT

SOLDER

⅛" X 3/16" 20 S.W.G. PENDULUM

⅛" X ⅛" STRINGERS

LONGERONS 3/16" SQ.

⅛" SHEET FILL IN

¼" L. SPACERS & CROSS MEMBERS ⅛" SQ.

TAPER FILLING

TAILSKID

BIND TO CROSS MEMBERS

TAILSKID ACTUAL SIZE 18 S.W.G. WIRE

⅛" SHEET

⅛" PLY BOX

⅛" PLY INSET TO TAKE ⅛" DIA PEG ON WING

SPLICE

BIND WITH SILK

PUSH CABANE STRUTS THRU TOP LONGERONS & BIND TO ⅛" SQ. DIAGONALS

⅛" SHEET FLOP HINGED WITH SILK

¼" X 3½" SPRUCE

HOLLOW OUT TO THIS DOTTED LINE

¼" SHEET RINGS

SOLDER

WHEEL CENTRE

BIND WITH SHIRRING ELASTIC THREAD

HOLE

⅛" SHEET WING

WING RIBS

W1 - 3 OFF ⅛" SHEET ALL GUSSETS

W2 - 54 " ⅛" SHEET

W3 - 6 " ⅛" PLY

W4 - 2 " ⅛" SHEET

W1 W2 W3 W4

B1 1 OFF ⅛" PLY

B2 2 OFF ⅛" PLY DIHEDRAL BRACES

⅛" X ⅛" L.E.

⅛" X ⅛" SPRUCE SPAR

⅛" X ⅛" T.E.

⅛" X ⅛" TIP

T1 T2 T2 T2

T1 FLAT 1 OFF ⅛" SHEET

T2 6 OFF ⅛" SHEET

THIN WIRE HOOK BOUND TO BOTTOM OF STRUT

1MM PLY FLUSH WITH BOTTOM

SLOT FOR STRUT END

⅛" X ⅛" SPRUCE SPAR

⅛" X ⅛" T.E.

⅛" SHEET, TOP & BOTTOM

CUT TISSUE AWAY FROM THIS GAP AFTER COVERING, TO TAKE STRUT

ALL GUSSETS ⅛" SHEET

PLY RIB

BUILD BOX UP FROM ⅛" PLY AND WELL WITH TISSUE

⅛" SHEET

⅛" PLY SEATING

SLOT TONGUE TO TAKE SPAR

⅛" PLY STRUT SEATING SEE SKETCH OF LEFT

THIN WIRE HOOK BOUND TO STRUT

SLOT FOR STRUT END

CEMENT FILLETS

⅛" DIA BAMBOO

⅛" PLY RIB

BAMBOO LOCATING PEGS (SEE SKETCH)

ENGINE MOUNTS ⅛" PLY

PINS

F1 1 OFF. ⅛" PLY. 1 " ⅛" SHEET. 2 " ⅛" PLY.

RUBBER BANDS

COWLING CARVE FROM 1½" THICK BLOCK BALSA

F3 ⅛" PLY 1 OFF

F4 F5 F6 F7 F8

F4 - F8 ⅛" SHEET 1 OFF EACH

SMALL WIRE HOOK TO TAKE RUBBER BAND & RIGGING WIRE

RUBBER BAND GOING THRU SLOT IN MIDDLE WING TO TOP WING HOOK

PERSPECTIVE SHOWING STRUT SEATING DETAIL ON LOWER WINGS

S1 S2 S3

SIDE STRINGERS 2 OFF EACH ⅛" SHEET

PUBLISHED AEROMODELLER APRIL 1956. PIC 445

VIC KING'S
perfect scale

Sopwith Triplane

THE charm of the biplane needs no emphasis—add a wing and make it a triplane—the result is sheer fascination.

Vic King's Sopwith Triplane augments the A.P.S. stable which already includes the 40 in. Pup and 42 in. Camel. This is a sound reliable scale design, with pendulum rudder for auto stability and is a veteran of many flights using one of the older type Amco ·87 diesels. Advised power is around ·75 c.c. and since the area of the three wings tots up to no less than 417 square inches, the loading is reduced to a favourable 4·1 oz/sq. ft.

The full-size Triplane arrived at a time when the German Air Force on the Western Front was being re-inforced by the early types of Albatross single seaters, which were so vastly superior to the F.E.2.'s, B.E's and Sopwith One-and-a-half Strutter's, etc., in service at that time in the R.F.C.

In the hands of a pilot who understood the vices and virtues of the machine it was a potent weapon. It had an extremely good rate of climb and it was exceedingly manoeuvrable at heights up to and above 17,000 feet. One of the most famous Squadrons to be equipped with this type of machine was Naval Squadron No. 8, commanded by the famous Canadian Ace of over 60 victories, Captain Ray Collishaw. The original model is finished in the latter Squadron colours.

Model detail

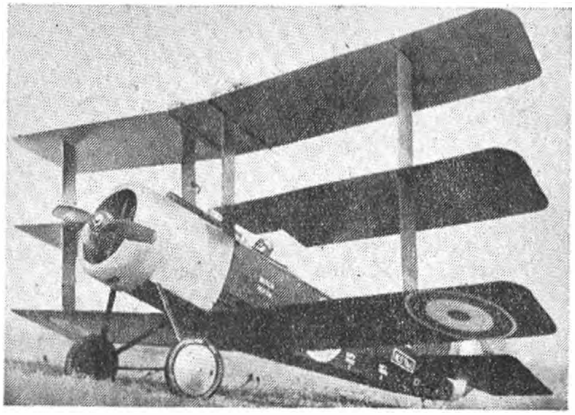
Since this is a scale model for the reasonably experienced modeller, constructional details do not require full description although the following points should be kept in mind.

Care should be taken to select only the hardest wood for the longerons. Ensure that the wire wing supports are well bound in. The wire tongues should be soldered carefully and accurately in place, and bent to the dihedral angle *after* soldering.

Use good hard stock for all the wing spars. Do not forget to put the small hooks in to take the flying wires and wing strut tensioners. Check the incidences for the middle and bottom wings relative to the top longeron, as this is parallel to the datum. Make sure that the wing tip struts are a good fit in their slots. When fitting the pendulum rudder, check that the amount of movement is greater to the right than to the left.

Dope the fuselage well around the fire wall before covering and use a good grain filler on the cowling. The model may be coloured in the normal khaki and pale cream of the period with a black or polished alloy cowling. Alternatively, it may be done in the R.N.A.S. No. 8 Squadron colours of black fuselage, wings and tail surfaces, with a silver cowling, decking and wheel hubs. U/C legs, wing struts, and fuselage struts should be stained mahogany and varnished. Add pilot and gun detail.

The glide of this model is extremely good and superior to many "sport" models. Try to get a very gentle left turn. When this has been obtained power flights may be attempted, with the engine at half maximum revs. Avoid a right turn. This model has a slow flying speed but a deceptively fast rate of climb, just like the full-size aircraft



All W.W.1 'plane fans will readily acknowledge the accuracy of Vic King's faithful interpretation of the "Tripe." Plan opposite is a one-fifth reduction of the full-size drawing, now available, price 6/- post free, from Aeromodeller Plans Service.

Gadget Review

TISSUE sag is an omnipresent problem for all flying models, and we have recorded innumerable ways and means to obviate this "scalloped" effect in wing or tail covering. Most beneficial in this respect is the use of leading edge sheeting. Close spaced ribs, or riblets, are another way, whilst multi-spar construction is adopted by many in spite of disrupting the curved aerofoil camber into a series of flats between spars. For the lightweight model, use of extra structure to maintain the aerofoil section is not possible, so reader S. Kemp of Streatham suggests his successful system in **A**. Cut Heavyweight Modelspan into strips ⅜-in. or ½-in. wide, according to wing size. Now "cover" with five or so strips on the top surface, and three on the underside, being careful to keep this ratio, otherwise elliptical dihedral will result. Dope to tighten, and fuel proof so that when covered over with lightweight tissue and doped, the strips cannot slacken. The additional strength of this system is considerable, and at the same time a perfectly smooth wing surface is maintained between ribs. The same idea could also have applications for streamlined fuselages . . . why not try it on the structure of your next model?

Now that the tip-up tail dethermaliser has become standard practice for all contest models of note, a few improvements on the basic idea do not come amiss. In **B** by R. G. Miles of the Belfairs club, we have a hinged glider tail with very positive action. Bound *in situ* on the tailplane leading edge is a single 16-gauge "prong" which is so arranged to plug into a corresponding tube in the fuselage. When tip-up occurs, the tail cannot wobble or slide on its seating, nor is it allowed the opportunity to fly off with gay abandon such as was witnessed in one case at the 1953 Wakefield contest. Also dealing with tails, this time for glider auto rudders, is **C** from J. Waldron of Henley. It avoids that trial and error business which comes along when the auto-rudder thread or wire is being set for length and accurate tab setting. Simply a short piece of 20-gauge wire, fitted into the rudder operating line, and bent to take up slack or add extra length as the case may be.

D hails from Holland, where W. M. Schlosser obtained this bright idea when sitting in his dentist's chair enjoying that pleasant process of being entertained by a delightful hypodermic needle . . . Ugh! He noticed (only the brave keep their eyes open in such times of stress) that the dentist used capsules of novocaine and adrenaline which had attractive little rubber stoppers. These are by no means limited to anaesthetic capsules, and can be found on other similar containers with some variety in shape and diameter. Applied to gliders they make excellent stoppers for ballast boxes, and with a hole drilled through the centre they both shock absorb and streamline needle valve extrusions.

Tanks, tanks, tanks, we receive a steady average of two tank ideas per one other gadget idea, and the strange fact is that so few of them are original. In **E** Mr. Hunter of Fleetwood gives us what is virtually a "timer/tank" made from the glass container of a Drummer Dye. Assembly is obvious, and the adjustment is carried out by simply shifting the cork position up or down in the phial.

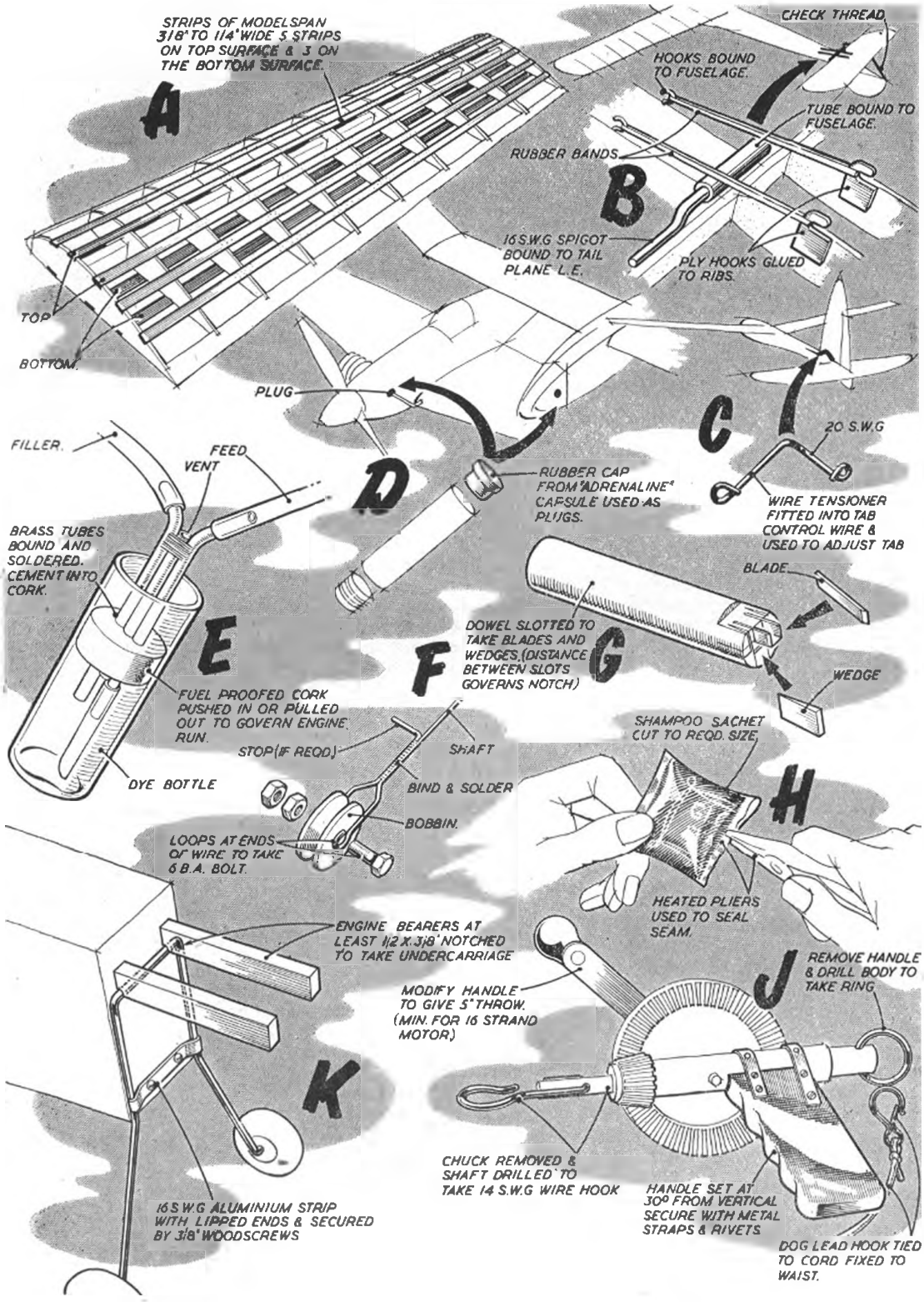
Bobbin shafts always have been a source of difficulty for the average modeller. How often that last bend on a 16-gauge shaft has snapped, bent in the wrong place, or developed into an unwelcome radius, has happened to us, we would not like to remember! In **F**, A/c 1 Chambers, of R.A.F. Station, Greatworth, shows us a bolted method which is easy to make and prevents that annoying habit of bobbins that creep round the shaft.

Another constructional difficulty that can now be solved by **G** is a notching device for ribs or bulkheads in up to ⅛-in. sheet. Take a short length of ½-in. dowel, make six cuts to a depth of ¾-in. in one end, and insert three sections of sharp razor blade in the appropriate slots to form a "U." Wedges in the other slots ensure that the notching is constant, and, of course, the blades are easily replaced by breaking up more razor blades. These thin strips are broken off, says Guy Morse Brown of Tenby, by putting a blade between the jaws of a vice and forcing the projecting portion of blade with a piece of wood until it snaps cleanly across.

The "Gloria" shampoo sachet suggested in this feature last year for a good transparent fuel tank is becoming popular, but for small engines it is rather large, especially for free flight. Reader Ken Smith of Notts shows in **H** how it is possible to cut one of these plastic containers to any required size. Just snip across the sachet and then heat up a pair of pliers in the gas ring. The warm pliers will then crimp the open side and seal the tank permanently. Leaks can be checked by filling with water and squeezing, whilst blocking off the outlet hole. A touch with the warm pliers cures any leak.

J comes from our regular contributor to this series, George Woolls of Bristol, who likes to be comfortable when piling on the turns on his rubber models. First, a safety factor in the form of a dog lead hook to clip on the normal handle end of the drill and fasten around the waist. Then, an additional winding handle with extra length for better leverage. Finally, a handle set at 30° to the shaft and tightly bolted as near to the gear centre as possible. Result is that the small of the back takes the pull of a taut motor, the steadying hand is at a natural and comfortable angle, and the added leverage alleviates the strain of those last few turns which require so much effort.

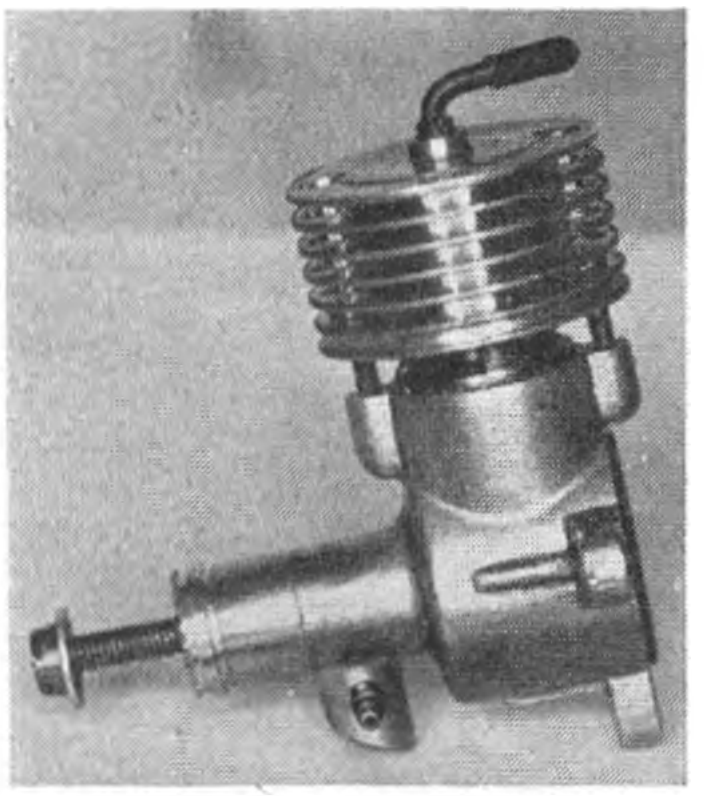
Last, but by no means least, there's an ultra simple undercarriage mounting which calls for an alloy strip and two ¾-in. woodscrews, shown in **K**. Particularly useful for the sport flying model where simplicity and easy construction are essentials, this scheme by F. Adcock of Toton, Notts, also allows for the undercarriage to be detachable for transport.


STRIPS OF MODELSPAN 3/8" TO 1/4" WIDE 5 STRIPS ON TOP SURFACE & 3 ON THE BOTTOM SURFACE.
A
TOP
BOTTOM.
CHECK THREAD
HOOKS BOUND TO FUSELAGE.
TUBE BOUND TO FUSELAGE.
RUBBER BANDS
B
16 S.W.G SPIGOT BOUND TO TAIL PLANE L.E.
PLY HOOKS GLUED TO RIBS.
PLUG
C
20 S.W.G
WIRE TENSIONER FITTED INTO TAB CONTROL WIRE & USED TO ADJUST TAB
D
RUBBER CAP FROM "ADRENALINE" CAPSULE USED AS PLUGS.
FILLER.
FEED
VENT
BRASS TUBES BOUND AND SOLDERED. CEMENT INTO CORK.
E
FUEL PROOFED CORK PUSHED IN OR PULLED OUT TO GOVERN ENGINE RUN.
DYE BOTTLE
BLADE
DOWEL SLOTTED TO TAKE BLADES AND WEDGES. (DISTANCE BETWEEN SLOTS GOVERNS NOTCH)
F
G
WEDGE
STOP (IF REQD.)
SHAFT
BIND & SOLDER
BOBBIN.
LOOPS AT ENDS OF WIRE TO TAKE 6 B.A. BOLT.
SHAMPOO SACHET CUT TO REQD. SIZE
H
HEATED PLIERS USED TO SEAL SEAM.
ENGINE BEARERS AT LEAST 1/2 X 3/8" NOTCHED TO TAKE UNDERCARRIAGE
MODIFY HANDLE TO GIVE 5" THROW. (MIN. FOR 16 STRAND MOTOR)
J
REMOVE HANDLE & DRILL BODY TO TAKE RING
K
CHUCK REMOVED & SHAFT DRILLED TO TAKE 14 S.W.G WIRE HOOK
HANDLE SET AT 30° FROM VERTICAL SECURE WITH METAL STRAPS & RIVETS.
16 S.W.G ALUMINIUM STRIP WITH LIPPED ENDS & SECURED BY 3/8" WOODSCREWS
DOG LEAD HOOK TIED TO CORD FIXED TO WAIST.

THE CZECHOSLOVAKIAN

A.M.A. 2.5

by ANT. MACHACEK



Reviewed by Ron Warring

PROBABLY the best overall description of the Czechoslovakian AMA 2.5, is that it is a functional engine. That is, mechanical design considerations appear to have taken preference over appearance, layout, etc. Its large overall size with huge parallel finned head is reminiscent of earlier British and American designs when reliable performance was the main criterion and such additional features as compact design, attractive appearance, light weight, and so on, had yet to appear as additional selling points.

This is perfectly understandable, since there is virtually no competitive trade in aeromodelling equipment in this Soviet satellite state; and import of such items is strictly prohibited. Despite this, the leading question undoubtedly is—how does this standard Czech International class motor compare with the rest of the world's motors?

No extensive performance tests were undertaken with the specimen AMA 2.5 received. The motor was run in for a reasonable period, during which time its response and flexibility as regards the controls was established; and some r.p.m. figures then obtained, using a number of standard propeller sizes. Summarising these results, it appears that the AMA 2.5 is not an ultra-high speed motor, but develops good torque at moderate speeds and appears to be happiest operating at around 10,000 r.p.m. Its performance up to 10,000 r.p.m. appears comparable with most other modern diesels.

The AMA 2.5 is certainly a noisy engine, which makes it appear that it is running faster than it really is. It is quite easy to start and reasonably non-sensitive to the controls. Starting, however, is not as consistent as one normally expects from a modern 2.5 c.c. diesel.

The non-sensitive needle valve was a rather surprising feature. The AMA does not use the normal spray bar assembly. Fuel feed and needle valve housing terminate on opposite sides of the intake and the needle valve seats in the opening in the fuel feed fitting—like a majority of early British mixture control designs. Unlike these early designs, however, neither separate fitting finishes flush with the bore of the intake so that the actual position of the metering orifice (i.e., fuel pipe opening as controlled by the needle valve), is about one-third across the diameter of the intake. The engine would run with the needle valve open anywhere between two and six turns without any very great effect on the resulting r.p.m. The intake itself is faced vertically downward and thus awkwardly placed for finger choking with the engine mounted upright.

Compression is controlled by a sensibly long lever with a non-slip plastic sleeve on the end (quite a neat touch, this). Unfortunately, once the engine has warmed up during running, further adjustment of compression takes considerable effort. The deep finned head also gets extremely hot, casting some doubts as to their efficiency as "coolers." The whole cylinder casing is, in fact, a massive affair, weighing over ¾ oz.

The needle valve control is most awkwardly placed and somewhat crude in construction. It is much too near the propeller disc and would certainly pay for being angled back.

The steel cylinder is of somewhat unusual shape, expanding in a conical taper into a flange at the level where the cylinder rests on top of the crankcase unit. Three large exhaust ports (equivalent to 360° porting) are slotted into the cylinder wall just above the flange, and three transfer ports are slotted into the wall just below the flange. With the cylinder in place, the transfer ports clear the inside of the cylinder base (integral with the crankcase casting) by virtue of a lip formed on the top of this base. The inside of the crankcase casting is machined out to produce this effect. The cylinder itself is clamped in place by two large screws between the light alloy head and the crankcase casting, with a tinfoil or lead foil gasket between the cylinder and crankcase unit.

The crankcase casting is another massive affair with provision for radial mounting given by three thick lugs integral with the main casting and level with the back. The addition of the backplate means that the lugs will not actually seat flush with the

firewall when the engine is bolted in place, seemingly making the use of spacing washers between each lug and the firewall obligatory. Otherwise, severe bending loads will be imposed on the crankcase lugs if the mounting bolts are tightened right up. Another awkward feature is that any height of firewall more than $\frac{1}{8}$ in. above the line of the top mounting bolts will interfere with the cylinder rear hold-down screw housing. Not an engine you can just bolt in place to any model straight away, in other words.

The steel piston is of conventional construction with one side of the skirt cut away to clear the solid disc crank web. The top of the piston is conical, matching the contour of the contra-piston. The contra-piston is of light alloy which, with its greater coefficient of expansion, would account for its tendency to seize, making adjustment difficult when hot.

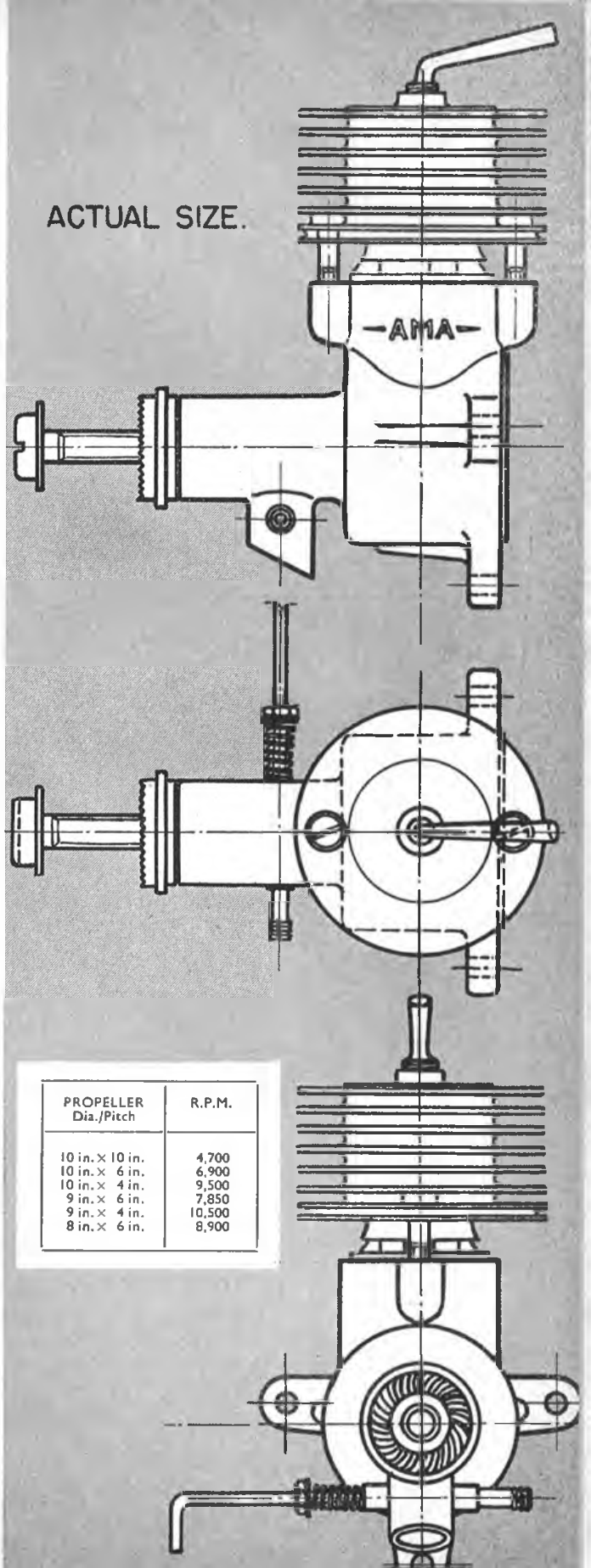
The crankshaft terminates just forward of the crankcase bearing. A light alloy backplate presses onto the end taper on the shaft and the propeller shaft is formed by a stout screw screwing into the crankshaft itself. A satisfactory enough arrangement, except for the fact that the propeller shaft "bottoms" before tightening on any propeller hub thinner than about 7 in. pitch.

Piston and cylinder are an extremely close fit. Despite a good period of running in, considerable slowing through tightness was still apparent. Provided the bore is truly concentric and the piston truly round, this would remedy itself by longer running in and, no doubt, give a long lasting, consistent engine. A majority of customers outside of Czechoslovakia, however, seldom bother with even a minimum running-in period with a new motor and would probably dismiss the AMA 2.5 as a brute on this score.

The designers recommend a $7\frac{1}{2}$ in. diameter, $6\frac{1}{4}$ in. pitch propeller—presumably for both free flight and control line work. With this size of prop, maximum r.p.m. is quoted at 10,300, with standard fuels. As far as we are aware, nitrated fuels are virtually unknown—or at least unobtainable—in Czechoslovakia. It would appear that Mercury No. 8 fuel would give about this figure with a properly run-in motor. (Mercury No. 8 is a plain paraffin-castor-ether mixture with the addition of 2.5 per cent amyl nitrate.)

Other dimensions, as quoted by the manufacturers, are bore 14 mm., stroke 16 mm. and displacement 2.47 c.c. Bare weight is $4\frac{3}{4}$ oz.

Our summary: not a particularly interesting engine to handle, for it looks clumsy and has a number of detail faults (such as inaccessible carburettor, etc., seizing contra-piston, non-flush mount) which are not offset by any remarkable performance characteristics. Its appearance would be against it selling in this country and it does seem quite unnecessarily bulky. Nevertheless, it appears to have performance capabilities in keeping with the modern standards required from 2.5 c.c. motors, allied to very robust construction.



PROPELLER Dia./Pitch	R.P.M.
10 in. × 10 in.	4,700
10 in. × 6 in.	6,900
10 in. × 4 in.	9,500
9 in. × 6 in.	7,850
9 in. × 4 in.	10,500
8 in. × 6 in.	8,900

FULL - SIZE PLAN OF THE MONTH . . .

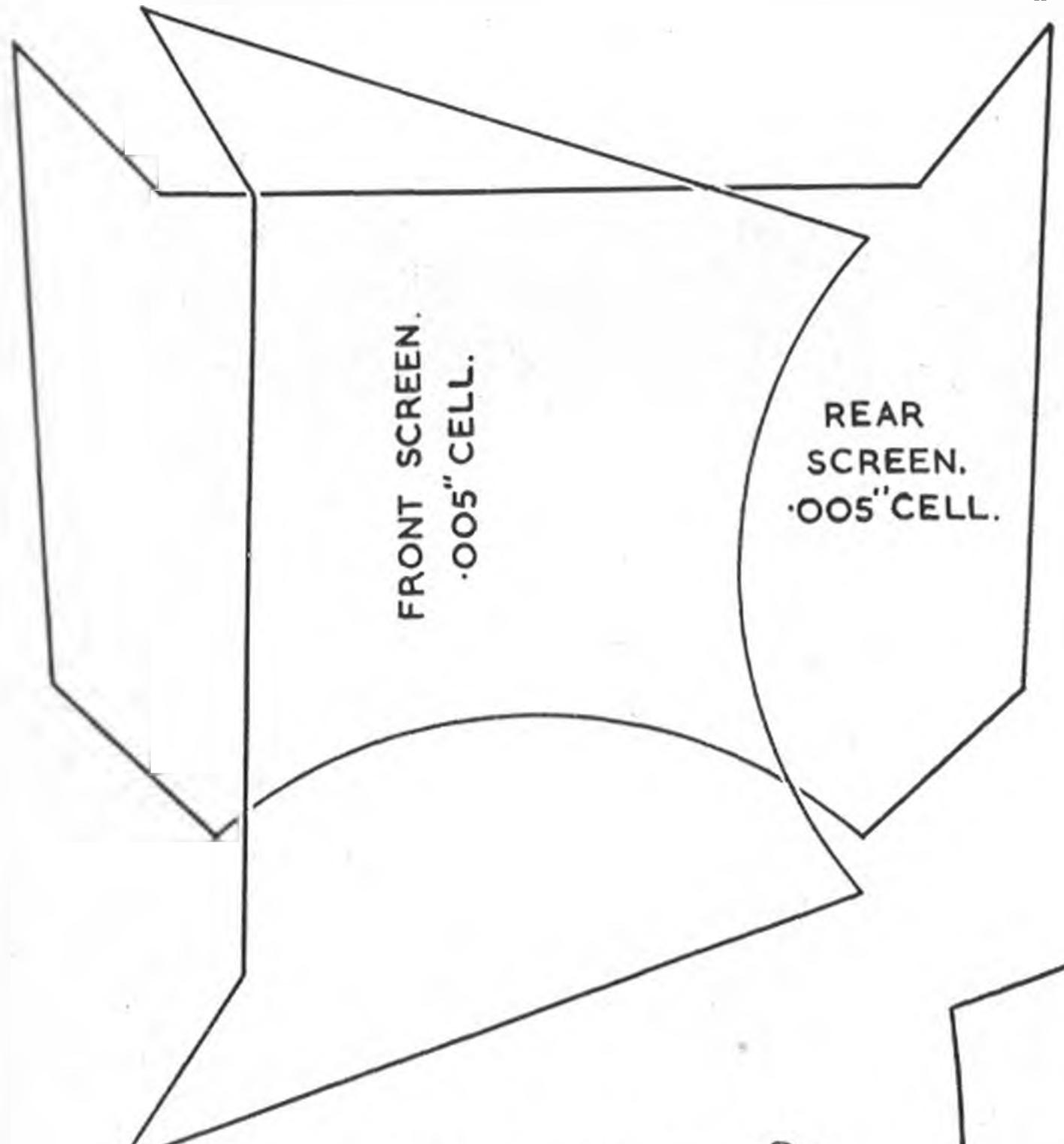
MAX HOLSTE could easily have been thinking of Aeromodellers when he designed his M.H. 152 for he gave it proportions almost ideally suited to a, flying scale model. The ample tail area needs no increase, and the twin fins are not blanketed by the wide fuselage and so are fully effective.

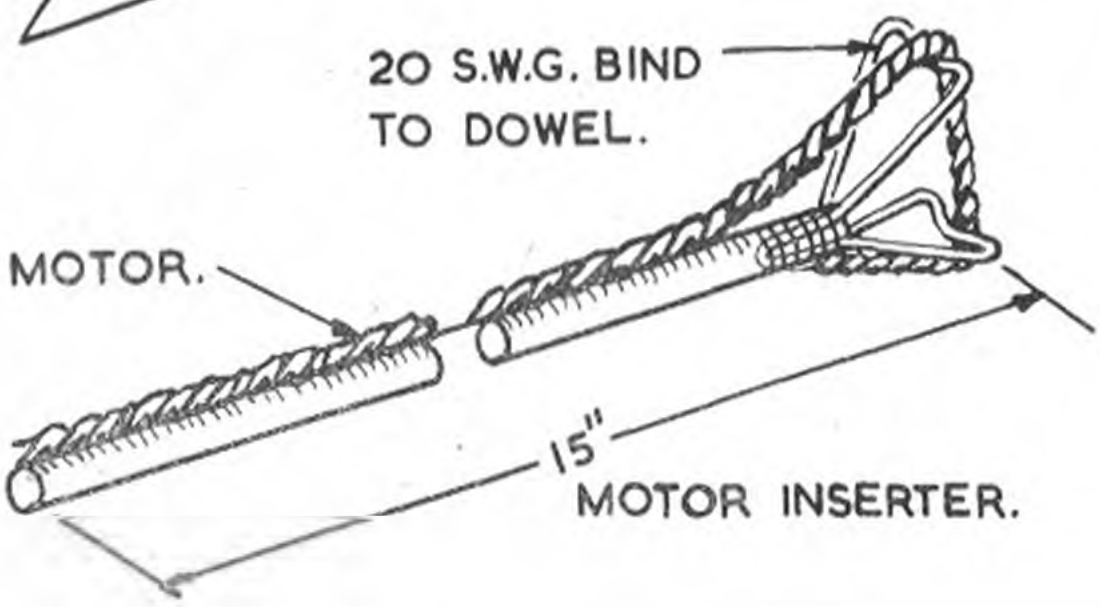
Two versions of the model were built. The first used a 7¼ in. dia. KeilKraft plastic prop driven direct from the motor, and deviated from scale due to a necessarily longer undercarriage, slightly increased fins, and quite a bit of dihedral. The extremely good performance of this prototype encouraged the writer to build a second version utilising a "Frog" Gearbox to enable the use of a small dia. propeller, and therefore, true scale undercarriage and fins.

Tests showed that the flight, too, was more realistic and stability was of a very high order.

Consistent flights of over one minute are easily obtainable from both versions and the direct drive version, has, on occasion, recorded 2 : 45. Perhaps, then, it is not facetious to suggest that you put your name and address inside the fuselage so that it can be seen through the cabin windows.

Fuselage and Undercarriage. Commence by cutting out and assembling the formers, noticing that Nos. 1 and 3 are laminated from two layers of $\frac{1}{16}$ in. sheet, grains crossing. Bend the undercarriage legs to required shape (7¼ in. or 5 in. prop) and sew and cement into position. Note! Do *not* solder the crossed wires together, or the very effective torsion bar springing





MAX HOLSTE MH 152

by **G. Woolls**

will be lost. Cement the 24 s.w.g. wire Wing Strut Anchors in position between the u/cart wires and the former. Cut out the fuselage sides from *soft* $\frac{1}{16}$ in. sheet and assemble the basic frames (side and cabin) directly on the plan. Cover the cabin side windows with .005 in. thick celluloid add wing mount ribs, and rear dowel reinforcement. Mark the position of the formers. Assembly is commenced by cementing Formers 3 and 4 in position between the sides and the spacers between the centre section. While drying, frequently check for squareness, and when set, add the .005 in. thick celluloid cabin roof. Now add the remaining formers, dampening the fronts of the side sheets on their out sides to facilitate the rather sharp bend and twist required. Fit the $\frac{1}{8}$ in. hard gussets against the inner ends of the undercart legs. Use ample cement here. Now cement the slip of paper with your name and address inside the fuselage between formers 3 and 4. Fit the rounded $\frac{1}{32}$ in.sheet cowling and coamings, first checking their shape and size by means of paper patterns. The curving of these will be assisted by damping their outer and doping their inner faces. Four separate pieces are used on the bottom between 1 and 2, 2 and 4, 4 and 5, and 6 rearward. The "corners are rounded" between 5 and 6 by means of two soft blocks, in order to provide access to the interior if required, by removing a portion of tissue. Face former 1 with .020 in. celluloid. Sand all over with very fine flour or garnett paper and cover with thin white tissue, water shrink, and then give a light coat of clear dope, followed by thin coloured dope. Finally add the remaining cabin glazing, wheels, and lastly, leg fairings which are *not* cemented to the fuselage.

Wings. These are straight forward but note that the false rib carrying the strut mounting should be of fairly hard $\frac{1}{16}$ in. balsa.

Wing Struts. These are formed of 24 s.w.g. wire, one end passing forward into thin aluminium strut mount on wing, while the other hooks (in rearward direction) on to the strut anchor on the fuselage. When length has been adjusted to give desired dihedral streamline with .005 in. celluloid.

Tail Unit. Cut the stabiliser and fins from soft straight grained $\frac{1}{16}$ in. sheet. Send the fins to streamline section and the stabiliser to a flat bottomed airfoil. Do not tissue cover.

Props and Nose Assemblies. The geared version uses a "Frog Interceptor" gear-box which costs about 1s. 6d., at the model shop. The shaft is lengthened by the addition of a suitable length of 16 s.w.g. wire, which is connected by means of a sweated sleeve of 16 s.w.g. brass tube. The box is attached to the rear of the nose black by means of a piece of '005 in. celluloid which fits closely around the body of the gearbox and is firmly cemented to the nose block. Location of the nose block on the fuselage is improved by means of a $\frac{3}{16}$ in. hard balsa block cut to suitable shape. The $\frac{5}{8}$ in. $\times$ $\frac{1}{4}$ in. $\times$ $\frac{5}{8}$ in. balsa prop wblock is carved left-handed, and driven by a "Wiggler" wound from 24 s.w.g. wire on a 17 s.w.g. mandrell. This may be screwed onto the shaft one way but will lock when twisted backwards, so the direction of winding the coil is important. The shaft is supported in the front by a disc of .020 in. celluloid drilled to suit.

The Rubber motor is made up in the usual way, and the end passed around the double hook Insertor. Pass down the fuselage push the rear dowel through both fuselage and rubber, and then withdraw the Insertor.

Winding the geared version necessitates the removal of the motor from the prop hook and winding the rubber direct. Hence the left hand prop—you don't have to remember to wind backwards!!

True to scale in every detail except the airscrew, George Woolls little 25 in. span version of the all-purpose French light aircraft is a beautiful flier. Version here has a Frog Interceptor gearbox for scale prop diameter and ufc. Plan gives alternative detail for straight drive with standard 7¼ in. plastic Keil Kraft airscrew.

FULL-SIZE PLANS OVERLEAF

.020" CELLULOID

1 1/2" DIHEDRAL – 7 1/4" PROP.

3/4" DIHEDRAL – 5" PROP.

24 S.W.G. WIRE.

1/16" SQ.

WING MOUNT RIB 3/32" SHEET

1/16" SHEET

1/32" SHEET

1/16" X 3/32"

LINE OF CABIN WINDOW
.005" CELLULOID

OIL COOLER
5/16" DOWEL &
3/32" SHEET

1/8" GUSSET

BIND & CEMENT
DON'T SOLDER

1" DIA. BALLOON WHEELS

.005" CELLULOID FAIRING
AS WING STRUTS. DO NOT
CEMENT TO FUSELAGE

1/32" SHEET

STEP-BENT PIN

FUSELAGE SIDE
1/16" SOFT SHEET

1/32" SHEET

1/16" SHEET

1/8" SQ. MED.

2-1/16" SQ. MED.

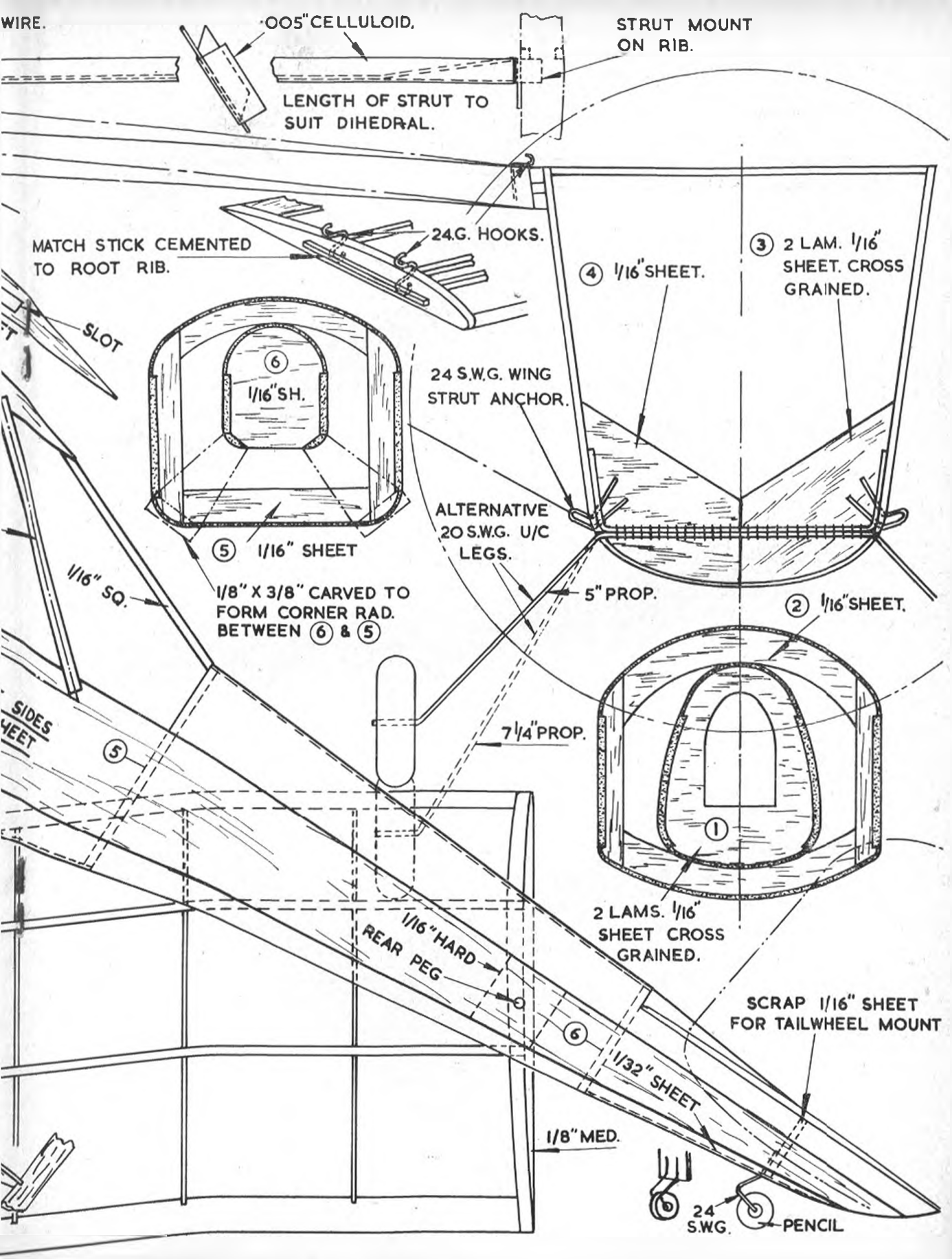
1/16" SQ. TOP ONLY

RIBS 1/32"

1/4" X 1/16" MED.

THIN ALUM.
STRUT MOUNT
PRESSED ONTO
RIB. CEMENT
WELL

1/16"
HARD


WIRE.
·005" CELLULOID.
STRUT MOUNT ON RIB.
LENGTH OF STRUT TO SUIT DIHEDRAL.
24 G. HOOKS.
MATCH STICK CEMENTED TO ROOT RIB.
SLOT
⑥ 1/16" SH.
⑤ 1/16" SHEET
1/16" SQ.
1/8" X 3/8" CARVED TO FORM CORNER RAD. BETWEEN ⑥ & ⑤
24 S.W.G. WING STRUT ANCHOR.
④ 1/16" SHEET.
③ 2 LAM. 1/16" SHEET. CROSS GRAINED.
ALTERNATIVE 20 S.W.G. U/C LEGS.
5" PROP.
7 1/4" PROP.
② 1/16" SHEET.
① 2 LAMS. 1/16" SHEET CROSS GRAINED.
SIDES HEET
⑤
1/16" HARD REAR PEG
⑥ 1/32" SHEET
SCRAP 1/16" SHEET FOR TAILWHEEL MOUNT
1/8" MED.
24 S.W.G.
PENCIL

A new approach

THE NEXT STEP?

suggested by D. C. Smith

Our contributor, designer of the A.P.S. Nordic Glider "Ursa," was for some years a member of that famous club, the Loughborough College M.A.C. and now works as a draughtsman for the De Havilland Aircraft Co.

I HAVE felt for some time that our present competition system is gradually tying itself in knots, with increasing duration fighting against progressively cramping rules. This article is the outcome of these thoughts, and is not brought about by repeated failure in competitions!

Duration fans fight a continual battle with scale modellers, and somewhere in between come the supporters of the Bowden type of contest, where a premium is put upon a fairly rigid flight pattern. The pay-load idea, furthermore, is basically a duration competition, rendered a trifle more difficult by the model having to hoist around the atmosphere a body of defined dimensions and weight. It is rather like a hundred yards race where the runners are lined up thirty yards behind the starting line, but it does suggest—if only by its very name—the idea that the efficiency of a miniature aeroplane could be the criterion by which it is judged.

This efficiency idea is again hinted at by the change in the Wakefield rules. No longer may the machine be held aloft by sheer brute force; we are told we must get as long a time as possible out of a bare 2·8 oz. of rubber. Here however, although propulsive efficiency may rise, structural efficiency is not encouraged, with the result that stagnation or even retrogression in this field may occur. (*We do not wholly agree with this forecast, being of the opinion that lessons learnt in the former specification relative to weight/strength structures can be very usefully applied to the new specification.*—ED.)

What alternatives are there? If we consider the history of the aircraft industry, we note that their products have passed the period when only the good ones actually flew, to the stage where they are economical to a degree which is beginning to seriously rival other forms of transport. This means it is becoming increasingly cheaper to transport passengers or freight from A to B, and this in spite of the increasing speed of the process. This rise in efficiency is a direct result of reducing the weight and drag of an aircraft in relation to the weight of its cargo, or, expressed another way, the ratio of payload to the all-up weight has increased. Surely this suggests that an approach to the problem of competing on an even basis without design stagnation might be made on these lines.

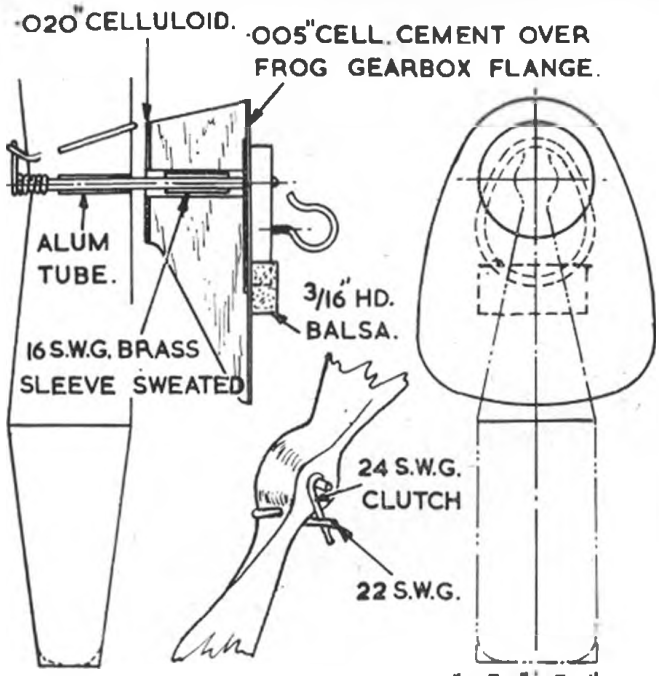
Let us consider the specification which an airline operator or private owner might set the aircraft designer, and adapt the rules of the game to suit miniature aircraft. The designer is asked to provide, say, an aircraft carrying 60 passengers for 2,500 miles at 500 m.p.h. as economically as possible. If the stage length is what they say it is, then clearly they are not concerned with much more or much less, and in fact such an aircraft would be useless for economical operations between London and Manchester for example.

Now, to ask a small aircraft to cover a certain distance at a certain speed is to invite interference from too many uncontrollable variables, such as wind and convection currents, and the difficulty of measuring the speed without complicated apparatus or organisation is considerable. However, since our hypothetical aircraft would remain airborne for exactly five hours, let us define our duration precisely, allowing a reasonable margin to cover the vagaries of the elements; and if we define the size and weight of the payload, the relative efficiency of a model is at once determined by comparing its all-up weight with that of other models to the same specification.

We have thus obtained a means of placing the emphasis on efficiency and originality of the designer, as opposed to emphasising sheer duration limited by the effect, however small, of such rules as minimum wing loading or capacity or weight of power unit. Now, I am not prepared to say this basis is necessarily a better form of comparison; it is at least more comparable with full-size practice, and should not its merits and otherwise be tested before acceptance or rejection?

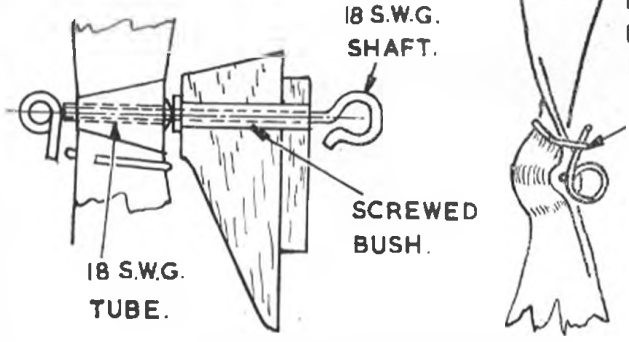
Therefore, may I suggest the following specification: The model to carry a payload of any multiple of one ounce, and be capable of three consecutive flights of between 45 and 90 sec., rise off ground. All-up weight (including fuel, if any) to be measured to the nearest 1/50 of an ounce. This will enable any aircraft, microfilm, helicopter, or radio-controlled machine (radio if used, is not payload) or what you will, to be directly compared by means of its ratio of payload/all-up weight, the highest ratio winning.

If you think that winning a competition of this nature is easy; or, not being competition minded, you would like to test your skill as a designer; or you want to demonstrate that this form of competition will not work; try it out by constructing an aircraft and sending in the weights. If this suggestion merely starts you talking, it will have achieved something. At any rate, I've tried to suggest that the hobby of aeromodelling is not a static thing; it must lead somewhere, and if that is the case, what is the next step?



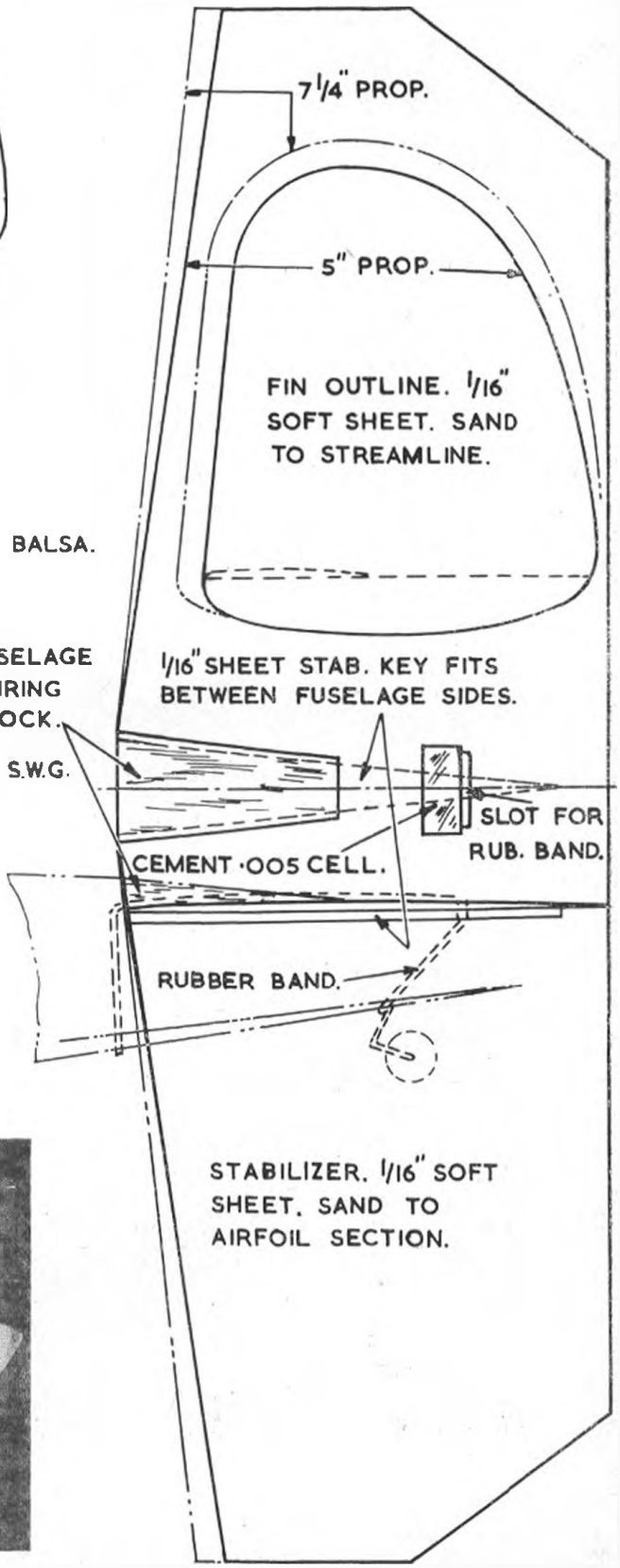
PROP. 5" X 5/8" X 5/8" HD. BALSA.
CARVE LEFT HAND.

ALTERNATIVE 7 1/4" K.K. PROP.

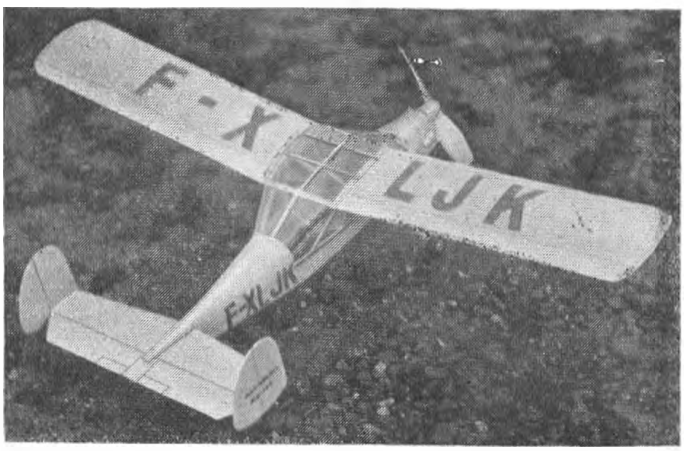


6 STRANDS OF 1/8" X 1/30" X 16"

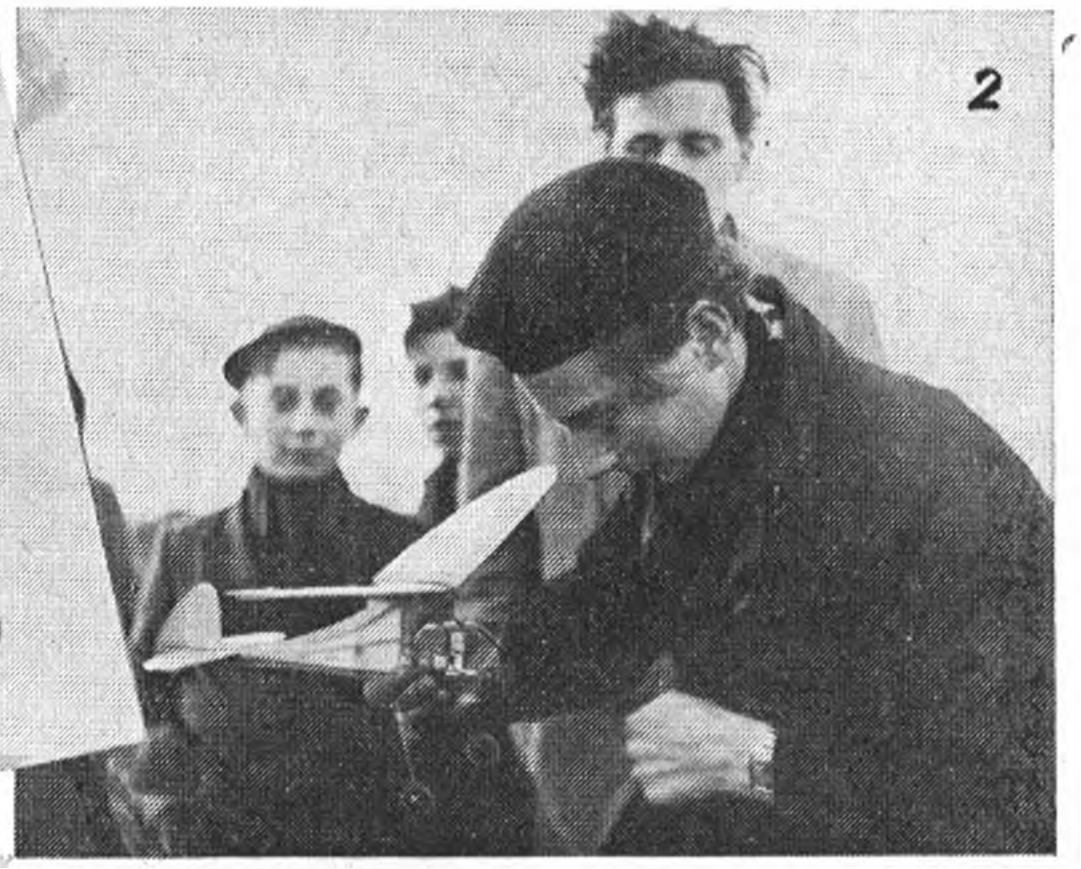
POWER.
4 STRANDS OF 1/4" X 1/24" X 16"



MAX HOLSTE MH-152 : nose and tail detail



1



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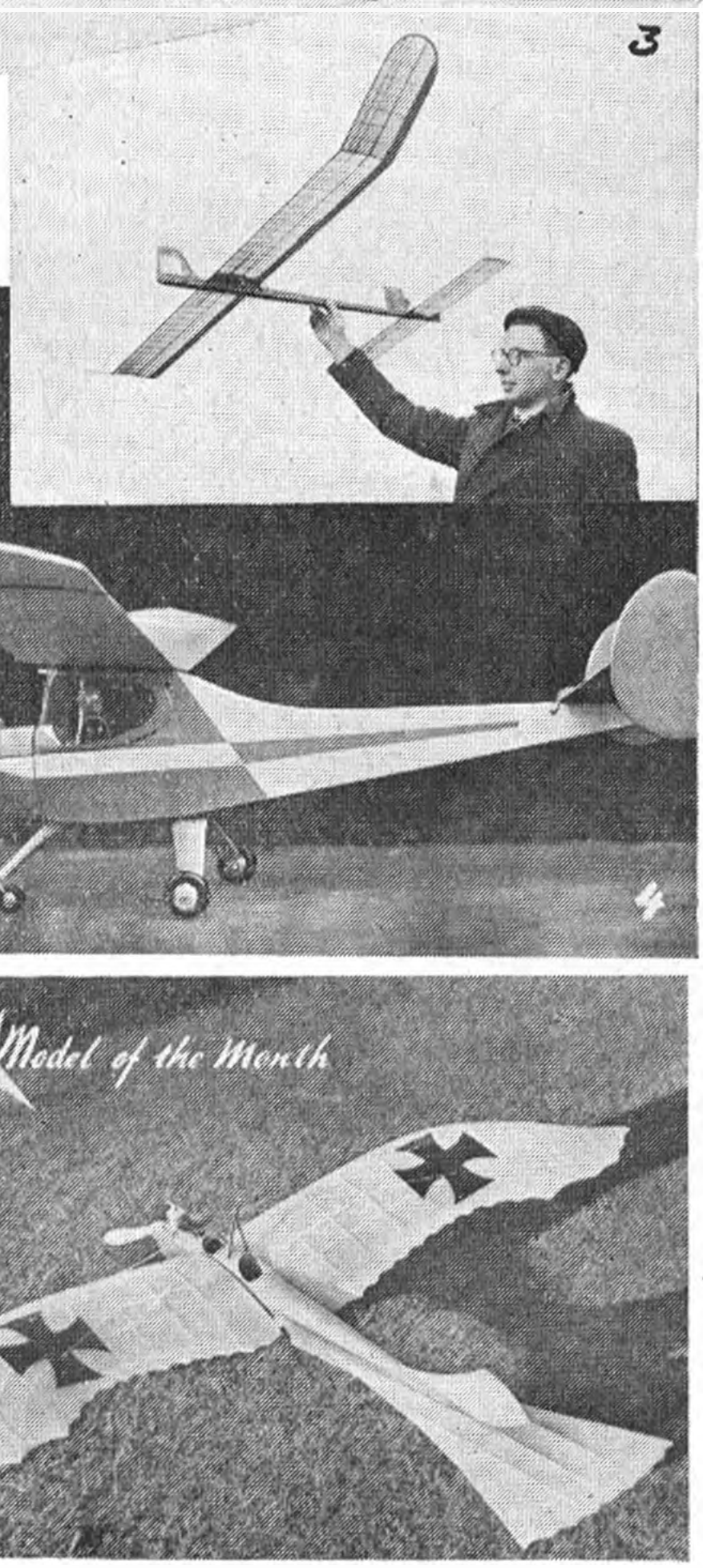


3

4

Model News

BARELY two weeks passed by after publication of the December issue before we spotted the first of hundreds of "Seraphs" and "Luton Minors" built from the free full-size plans given away that month. Now, the photographs are beginning to pour in, and whilst we cannot promise to publish more than one each of these popular designs, we select the excellent portrait 1 as a good example of the many "Minors" now gracing the flying fields. Built by J. Steadman of Pensarn in North Wales, this one has a Mills ·75 as advised and is already a veteran of many realistic flights. Colouring is red tissue with yellow fin and white cowling, whilst 3 in. airwheels are fitted to take care of take-offs and landings in short grass. A pilot with a table-tennis ball for a head, occupies the cockpit.

How small can a power model be? That is a question soon to be answered when the Allbon Bambi eventually gets into circulation. For the moment we have an indication of what to expect in 2 where a Woodside clubster has just started his 0·1 c.c. diesel, a hand-made job, in what looks like a Dave Hilliard design—the "Dwarf."

The constantly changing shape of contest gliders will take on a new trend for 1954 when designers take advantage of the no-cross-section rules. In fact we understand that aluminium tube is selling like wildfire. One point, not always

appreciated by modellers when they dispense with the conventional fuselage and use a simple "stick," is that the close relationship of wing and tow-hook, plus the lack of side area, or keel surface, gives tow-line instability. The O'Donnell brothers have given this matter a lot of thought, and John's answer is the forward fin as on his new model in **3**. This is a lightweight, although of Nordic area, and is being trimmed ready for the "open" contests.

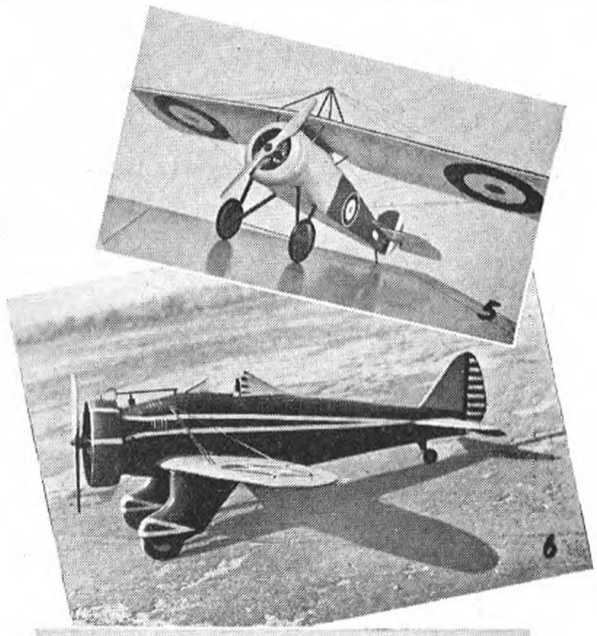
John Crank of Flixton, Nr. Manchester, submits the profile of his APS Wyvern in **1**, which, he reports . . . "for general sport flying, its performance is excellent." An E.D. ·46 Baby diesel is the power unit, and this same engine is also used for the choice of "Model of the Month," honours for which go overseas to G. H. Berry of Vancouver B.C. Canada. This is a scale Rumpler Taube, the famous old-timer that looked like a bird even if it didn't always fly like one. There have been many "scale" interpretations of this much scalloped aeroplane, and Mr. Berry has chosen a plan by American Ted Enticknap which certainly conforms with the data we have. Like the real thing, the model has a very light wing loading, total weight being 8¼ oz.

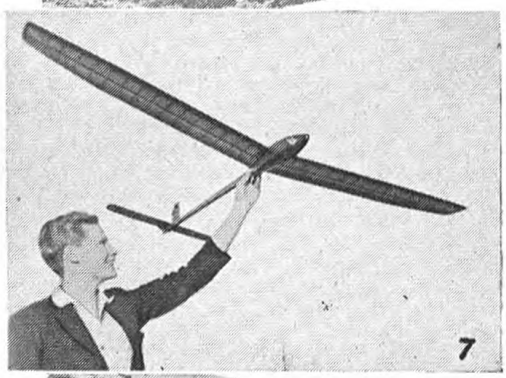
Fully detailed, with scale rib spacing, correct spars and pendulum controls coupled to elevators and rudders, the parasol wing scale model in **5** is a Sopwith Swallow by Ray Booth. Interesting part of this job is the cowling, which is only ·05 in. thick and was made with dry laminations of news-print paper over a block form. Ray is now converted to this scheme, and states that balsa cowlings are a thing of the past as far as he is concerned. Those who contemplate Vic King's Tripe on P.188 might find this a useful tip; the excellent finish possible is obvious in the photo.

A much larger scale model, measuring 48 in. against the Sopwith's 28 in., is Ken Hale's Boeing P.26 control-liner in **6**. Entirely sheet covered with the exception of the control surfaces, the P.26 *was* a heavyweight of 4½ lb. with a Bunch Contestor engine, flown on 70 ft. lines. We understand that a slight mishap has disfigured its pristine appearance since the photograph was taken.

More glider news in **7**, where Bruce Rowe, the up and coming rubber model exponent of the St. Albans club is holding his A/2 aloft. Following current trends, it has a long tail moment, high aspect ratio wings, small tail and short nose. Flown through the close of last season, it performs well off the 164 ft. line and looks as though it will do well in the 1954 season.

More than ten months of spare time effort is displayed in the hands of builder Roy Knight (Winchester) in **8**. Made from the APS plans for a rubber driven 40 in. De. H. Mosquito, Mr. Knight has developed the design for two E.D. Bee's and control-line flying. The fuselage and engine nacelles have been strengthened by planking, and the wings covered with sheet balsa. Interior detail in the cockpit adds realism to this creditable effort which will doubtless inspire many another modeller to have a go at this novel conversion.





Radio Control notes

conducted by Howard Boys

A LETTER has been received from Mr. Eric Pritchard of Finchley which most admirably expresses what must be in many peoples mind concerning radio controlled aircraft. An answer to this letter gives scope for so much information that is undoubtedly of general interest, that the letter and answers are given below.

Dear Sir,

1. *In the February issue I see in R/C Notes Mr. Boys has just got around to three-channel operation. No doubt this may appeal to a very limited few but do you really think this is the answer? Just for a moment consider what it entails—a 3 valve receiver at least, if you buy, £15, if you make £5 for the receiver plus £3 for the reed unit, 30s. each for the three relays, and three actuators at 22s. 6d. each. An engine say £4, plus airframe and batteries, and you have got everything from £15 to £30 up in the air.*

2. *It is a brave and wealthy man who will try this to-day in typical English weather.*

3. *With three channels you can have three flip-flop controls, and I have yet to see a successful flip-flop elevator as it is either too big or too small; if you have one proportional unit you are left with only one reed to operate a second control.*

4. *Radio Control has been going on now for over six years and has always stood still except for the Continental types with their pneumatic actuators and teams of twelve machines trimmed for different conditions.*

5. *If you look in "FLIGHT" you will see that radio guided target planes have gone on a pace. While I admit they are catapult launched and parachute recovered the radio side is most interesting as they can dive, loop, roll, and have a second stick control for pupil pilot instruction (see FLIGHT). I believe we have a Radio Control Society in this country, although no one would believe it as they seem to be like the doormouse in perpetual sleep. Cannot they, or Mr. Boys find out how these marvels are worked and tell us so that we have some basis on which to think of future development.*

6. *The big trouble at the moment with radio is that if six people all want to work either boats or planes on the same day and at the same place they have to form a queue, yet the Metropolitan Police can pick up any one of forty mobile motor-cycle police individually on one wave-length using only a six volt battery for power at the receiver end. So let us have less of the continual same circuits for, after all, so far as single channel sets are concerned, you can buy a ready tuned transmitter unit for 59s. and a set for 83s. tha ;no amateur can copy for size and performance. The initial outlay for single channel operation is in reach of most who could afford to fly it, but it is not the answer. Let us find out how they "lock on" these radio controlled target planes to free them from interference so that only a coded signal will operate them and then perhaps we can see the best of radio control in several machines airborne together and possibly in formation flying.*

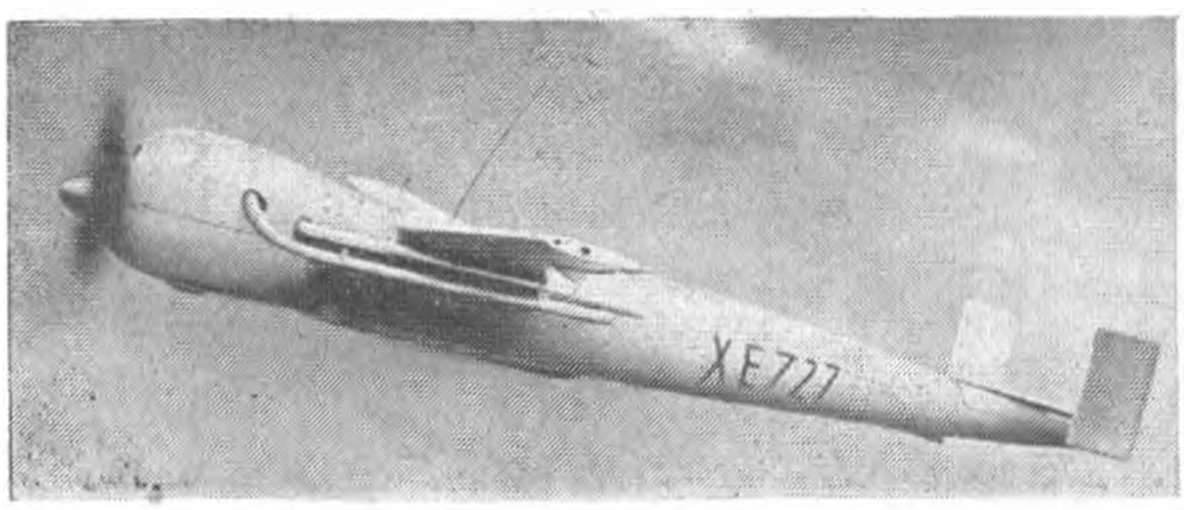
Comments are numbered to correspond with the paragraphs.

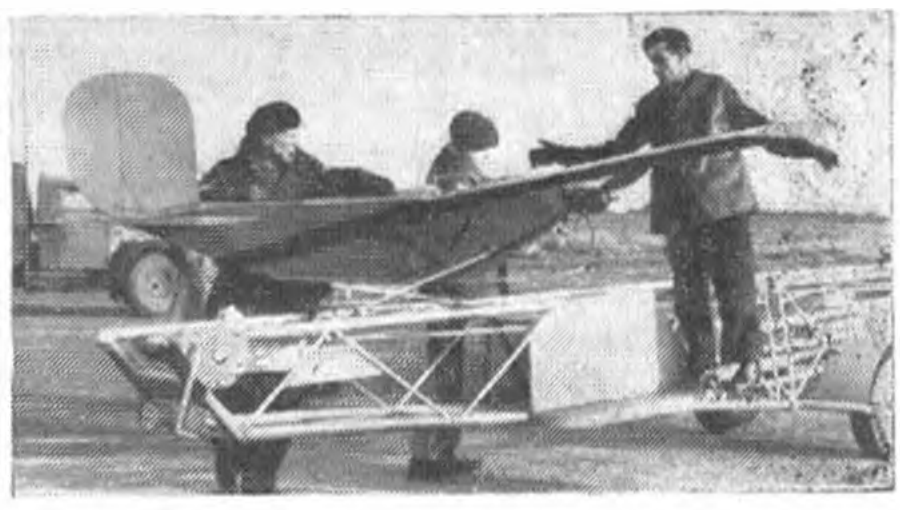
1. Is the reed unit the answer? The Editor's heading paragraph to the February Notes started: "There is no doubt that tuned reeds are the most practical and economic answer to the problem of multiple control operation, at least as far as the immediate future is concerned." With some knowledge of the radio equipment used for target planes, this statement seems even more true. It is possible that something better will be developed later. As to cost, it is beleived that Messrs. E.D. are very pleased with sales of their three reed equipments, and anyway they would not be likely to be developing a six reed outfit if they did not think there would be a reasonable sale for it. If an enthusiast wants to make his own outfit he would probably make his own reed unit and actuators, and use ex-gov. valves for transmitter and receiver, unless he used the XFG1 valve. If Mr. Lindsay can get such a receiver to work, other people can. The writer has had a home-made reed unit working at close range with a weak transmitter, with the reed unit in place of the relay in an Aeromodeller Baby receiver. It has not yet been possible to test the range with a more powerful transmitter. Relays are a difficulty, but these are required with any radio system for multiple controls, and it is possible to make such things with patience and a little mechanical skill.

2. People do not fly these expensive models in typical English weather. See also answer 4.

3. Flip-flop control for the elevator is not likely to give the most desirable results, and it might be better to make the elevator progressive with the rudder flip-flop. (Mr. Pritchard really means progressive when he says proportional.) Reed units are not very suitable for proportional control, and this

Left: The 12 ft. span, 1,000 c.c. Vincent Picador powered high speed M.L. Pilotless radio-controlled target aircraft, and Right: the Auster B3 on a launching ramp. This is a British version of the American 0Q3 and is a much lighter aircraft than the M.L. Span is 12 ft. 3 in., speed, 120 m.p.h. and normal operating height, 500 ft.





is the main reason H. B. has not bothered much about them, but it seems very few people bother about proportional control.

4. The lack of progress in this country is probably due mainly to the typical contest weather; effort has been concentrated on making models wthat ill fly reasonably well in such weather. Last summer the weather was kinder, and this may have had something to do with the recent increase in interest in multiple control. The most outstanding of the Continental types were M. Wastable with his six reed receiver. (For six reed two 3-reed units can be used, with of course six relays.)

5. The International Radio Controlled Models Society in this country is by no means asleep. The organiser of last year's Radio Show wrote and thanked them for the demonstration they gave and said that the interest created was second only to the television studio! Although a number of members are interested in aircraft, most activity appears to take place with boats and land vehicles, due partly to less restriction on weight and partly because these can be demonstrated in a small area. Let us leave the remainder of this paragraph until later.

6. Radio controlled models cannot be compared with the mobile police since to every receiver there is a man to interpret the signal received. Many amateurs can and do build radio equipment that compares very favourably in size and performance with professional.

To fly more than one machine at a time means some form of discrimination between the signals transmitted. There are two ways of doing this with audio frequencies, and radio frequences. The radio frequencies allowed for model control at present are not sufficient for the purpose, except that a model could be accommodated in the 464 to 465 Mc/s band with another in the 27 Mc/s band. A difficulty here is the weight of the 464 Mc/s equipment, though Mr. G. Honest Redlich has used such equipment on nice days. All existing means use audio frequences, and there are slightly different ways of doing this. The lightest and cheapest way is to use tuned reeds, though they can only be used one at a time. One Frenchman has managed to get 15 controls seperated out this wây, and these could be shared out among any number of models up to 15, though it would be rather a tedious job. There is no doubt that if two people got together and produced two dissimilar reed units they could each have a plane in the air at the same time.

Radio-Controlled Target Planes

It is very natural to think that a plane is made to be shot at will have simple and cheap equipment, but this is far from the case. Details are not available for the Auster B3 because the radio is of American origin, but there is another machine the M. L. Aviation Ltd., U.120 D. In the radio equipment for this, the transmitter radiates five fixed tones, two at a time being required to operate one control.

Those were the days

"Damage" Days

Apparently the Gamage Cup contest of 1930 received the kind of weather we have come to expect from this season opener, for the event had to be postponed for a month following a complete washout on the day appointed. S.M.A.E. members (at that time competing against its own members in other groups!) took first three places, flying twin-pusher machines. R. N. Bullock made a best-of-three flight score of 105 seconds, with D. A. Paveley (97.2 secs), and I. Wilkinson (66 secs.) as runners up. Other well-known modellers taking part were J. E. Pelly-Fry, Tony Willis, Charley Burchell, and Willis Pere and Mere.

The Pilcher Cup event of the same year resulted in a win for T. H. Newell (1928 Wakefield Cup winner), best flight 76 secs., followed by R. N. Bullock, 74 secs., and A. T. Willis 68.6 secs. D. A. Paveley, who had been busy with a large spar model all day, raised the hand-launched record to 110.6 secs., and the r.o.g. figure to 111.2 secs. The machine featured an "airscrew fitted with an automatic disengaging device whereby the airscrew ran free on the expiration of the rubber driving force." First mention of the common free-wheel!

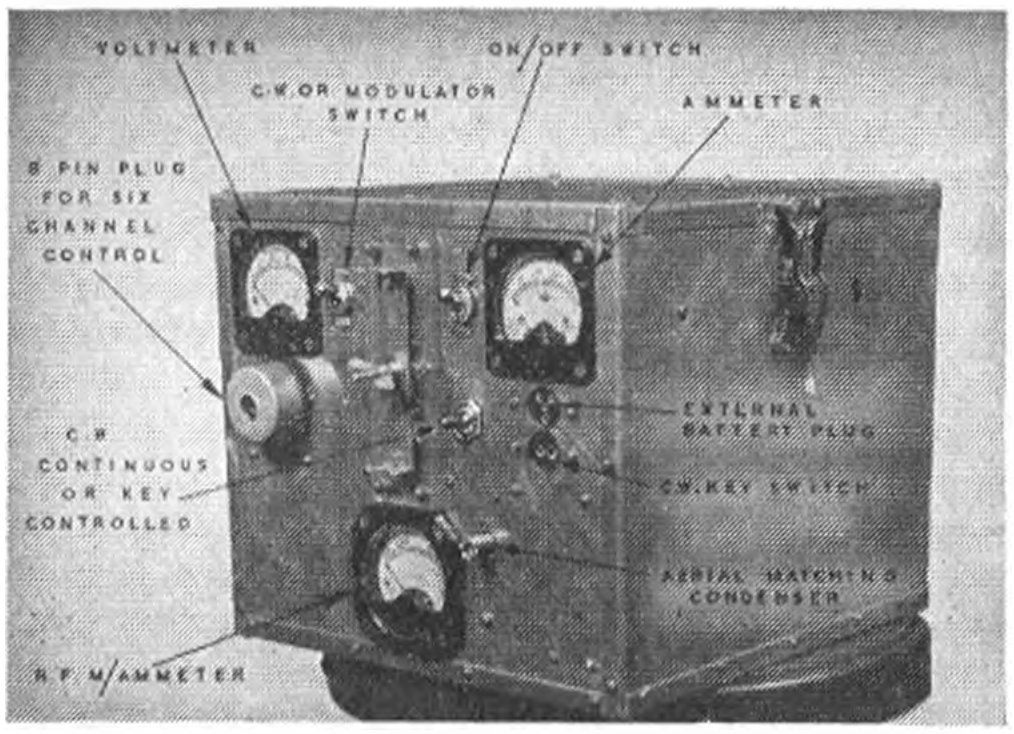
During the competition the Graf Zeppelin was sighted approaching in the company of several aeroplanes. She was a splendid spectacle when she passed quite close to Wimbledon Common, and interest was intense. Even the Comp. Sec. forgot his post and was lost to sight, until awakened by shouts for the continuation of the work in hand!!!

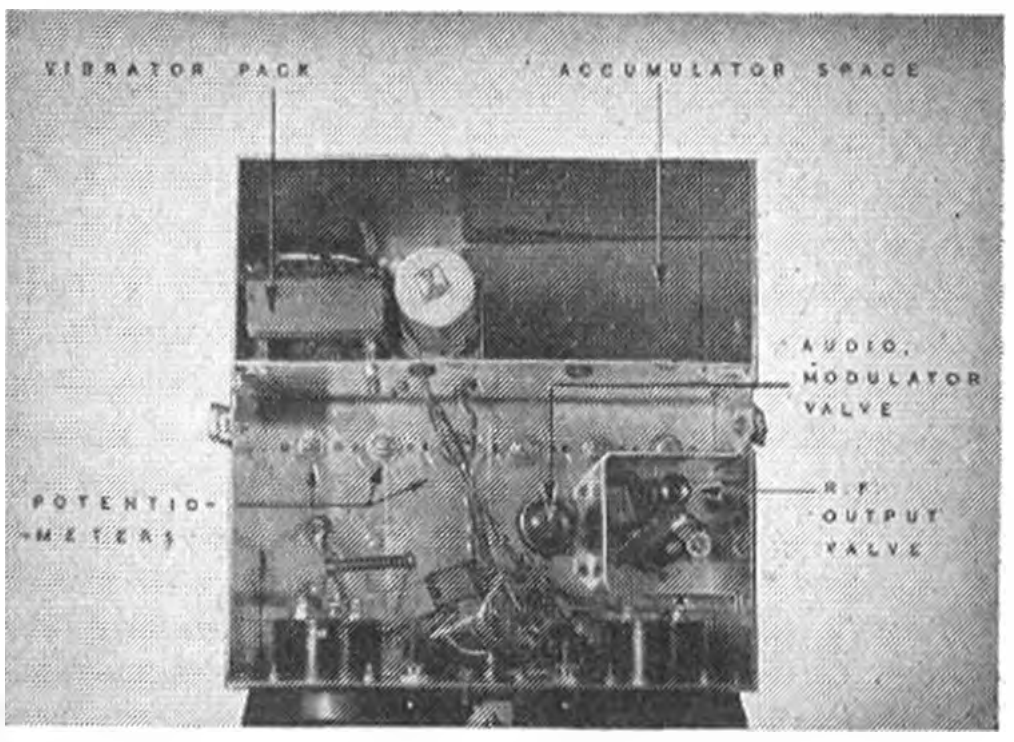
International Affairs

(Extracts from the June 1930 S.M.A.E. Journal.) "We have three entries from America, one from Canada, and one from Holland for the Wakefield Cup contest. It was hoped that entries would have materialised from Italy and Germany but they have not been received up to now. The British Team consists of the maximum number of six entries, and a better Team to defend the Cup could hardly have been chosen. They are R. N. Bullock (last year's winner), D. A. Paveley (2nd in 1929), T. H. Newell (3rd in 1929 and record holder), W. J. Plater (5th last year and captain of the team), J. E. Pelly-Fry (4th last year, and to whom durations of 90 seconds are not unknown), and A. M. Willis, who recently broke the r.o.g. fuselage duration record with a magnificent flight of 97.8 secs."

Ehrhardt Wins for U.S.A.

In conditions which should have favoured the English team, Joe Ehrhardt pulled out a best flight of 155 seconds to win the Wakefield Cup for America on the 19th July, 1930. W. J. Plater, who finished second, made a first round flight of 84 seconds to lead the field in the initial round, next best being Ehrhardt with 63.6 secs. However, succeeding rounds saw the British representatives run into take-off and other troubles, and the American lad was not obliged to fly in the third round as his time was not bettered.





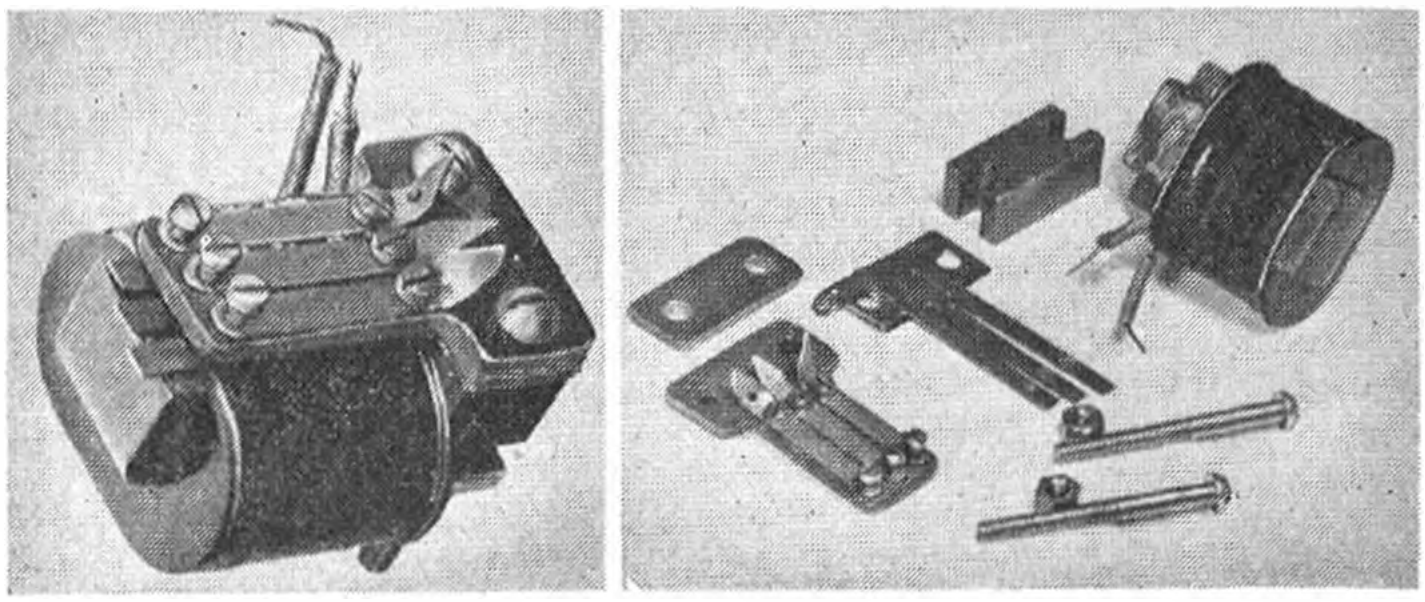
The Bill Verney Tx, vertical view from above (right) reveals internal arrangements.

The receiver is a superhet with about ten valves before the audio tuned circuits, there being five of these, each followed by a relay. Since these are keyed two at a time for each control, it is possible to have ten controls. It seems unlikely that radio control modellers will want to know more about that equipment.

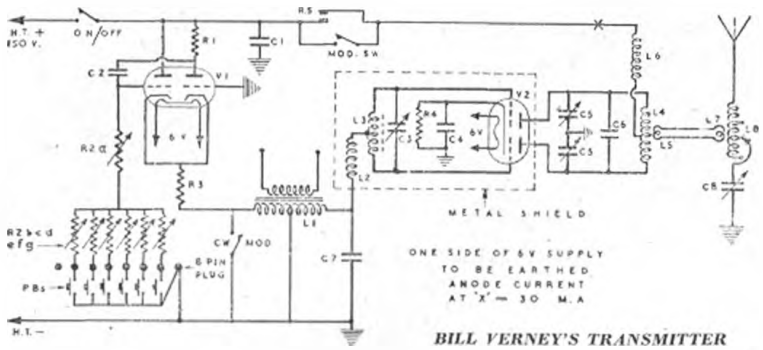
Let us now quote a few extracts from a letter from Mr. H. Cuckson of Surrey, who has successfully produced a six reed radio controlled model aeroplane"..."My experience with radio control dates back to 1947 when I constructed an all purpose transmitter which would fulfill all receiver needs....at the same time I was experimenting with multi-channel sets, using filters, tuned circuits, damped oscillators, and phase shift circuits as discriminators, and they all showed great promise with one drawback—they were far too big for any model plane I had ever seen....During my researches I had ignored reed, but an American article by Mr. E. L. Rockwood in 1949 interested me.....A little later I discussed the matter with Mr. G. Honest-Redlich when he was experimenting with a three channel set....I am grateful for his encouragement....My first reed unit was not a howling success but the second exceeded my expectations....The types of transmitter used now are truly portable and are small enough to be held in the hand whilst being operated. R. F. power output is in the region of ½ watt which gives ample range with a three-valve receiver."

There is not much space left for describing radio gear for home construction but we have afew details of Bill Verney's transmitter. This is the Sinfield transmitter described in January 1953 with the addition of variable grid resistors and push buttons to suit six reed receivers. It also has a Judd type aerial tuning circuit described in June 1951. The R.F. output is about ten times that of a commercial receiver with which it has been compared. Here are the component values.

V1, 6 SN7: **V2,** 6J6. or ECC 91: **C1,** 2 mfd paper: **C2,** .001 mfd mica: **C3,** 3-30 pf Phillips trimmer: **C4,** ·1 mfd: **C5,** 50+50 pf miniature twin gang: **C6,** 10 pf mica: **C7,** ·002 mfd: **C8,** 100 pf variable: **R1,** 50,000 ohms 1 watt: **R2,** a, b, c, d, e, f, g, 100,000 ohms variable: **R3,** 1,000 ohms ½ watt: **R4,** 250 ohms 1 watt: **Rs,** Relay switch for carrier wave working. **Mod. sw.** switched on for modulation working. **L1,** push-pull output transformer: **L2,** and **L6,** 34 swg. enamelled wire close wound on a ¼ in. diameter former 1 in. long. **L3,** 11 turns 22 swg. tinned copper on ½ in. Aladdin former with dust iron core, stretched to ¾ in. long tapped at the centre. **L4,** 14 turns 20 swg. tinned copper, ⅝ in. diameter former: winding spaced to 1½ in. long, centre tapped, **L5,** 2 turns 20 swg. PVC covered, round L4. **L7,** similar to L5 but round L8. **L8,** 9 turns 18 swg. enamelled, close wound on ¾ in. diameter former, tapped at 3 and 6 turns. A seven-core cable has been used with an eight-pin plug so that the push buttons could be held in the hand, but



Home made reed unit made on the lines suggested in RJC Notes. Coil is a rewound bobbin from Sigma (SCR 522) Relay, 47 s.w.g. wire, resistance 8,000 ohms. Magnet from scrap ex-gov. headphone. Core from scrap transformer laminations. REEDS from scrap watch spring scrounged from repairer. Silver contacts cut from scrap relay contacts and soldered to reeds and screws.



BILL VERNEY'S TRANSMITTER

A/M READER SERVICE

A list of seventeen advised sources of supply for ex-government radio surplus, with particular emphasis on the speciality of each shop, is available on receipt of S.A.E. from R/C List, AEROMODELLER, 38, Clarendon Road, Watford.

this caused interference with the aerial. A dummy plug is fitted to short one of the push button connections to earth for carrier wave working. There is a built-in vibrapack made from an ex-government type 21 pack, and a space is provided for a six volt motor-cycle accumulator.

Errata

Doug. Bolton writes to correct a circuit error in his vibrator pack article (January issue). One side of the Transformer secondary is shown connected to the negative line, this should be removed of course, as all constructors with knowledge of radio will appreciate.

Frank Sinfield points out that in his circuit, Fig. 7, p. 146, March issue, the link shown in the figure from the negative 6v. input directly below the ·01 mfd. to the ·5 mfd. below, does not exist and its inclusion will give no +6v. output and probably burn out the chokes.

Straight from the board

Let's peep over the shoulders of Britain's leading aeromodellers and see what changes they are making in their models for the 1954 *contests.*

Up to Pendleton first, where on **Hugh O'Donnell's** board a new type of A/2 is on its way. Stick fuselage to take advantage of the cross-section abandonment, ultra short nose, 20% tailplane, and,—to keep keel surface and add space between wing and towhook,—a sheet pylon wing mount. Keel surface is important for towline stability say both O'D brothers, and John's approach (see p.200) has forward fin, an idea independently put to us by P. A. Valentine of N. Wales for slope soaring. O'D suggestion for better tow with new style stick fuselages is to extend the towhook. Hugh's Wakefields will be basically as '53 "Maxies" with sheet fuselage, 20 in. two-blade folder, wing taper, spinner nose and at most, ½ oz. ballast. **John O'Donnell,** now in English Electric Co.'s Stress Office, has two '54 Wakes airborne and third on its way; one has feutherer, the other is a toughie with folder. Last year's Wakes are reserved for open contests.

Now south to Thames Ditton to the uncrowned king of power, **Pete Buskell.** "Slick Stick," now in its third season has new thick fin (also advocated by **John Lamble**) of symmetrical section, sheeted and forward of tail area, only slightly larger than before. C.G. shifts back to 70%; incidence down to 2½°; turbulators go on wing; his E.D. 2.46's now giving 1,000 r.p.m. more. Pete tells us that the same '53 models are receiving these mods.; but if he makes the Trials this year (is he kidding?) he will have a special homebuilt powerplant to out-turn a Torpedo 15.

At the R.A.E. Apps.' Hostel, **Tony Brooks** had advance gen on the '54 rule changes via Japan from Germany but understood they were for '55! Tony's A/2 will be as last season (p.409, July '53 issue) but a pod and boom job with longer tail moment is coming. Most of Tony's time goes into Wakes, with 46 in. fuselages, 23 in. × 26 in. two-blade folders and extra weight absorbed in prop and finish. Has a 300 sq. in. open entry with 54 in. fuselage and 24 in. prop, plus an E.D. 246 F.A.I. power entry with 430 sq. in. wing, and fin behind 45% tail.

A glimpse of the maestro **Ted Evans'** masterpiece (p.72, February) aroused great interest, and Ted now tells us that test flying has commenced. Total weight came to 232 grammes with 79 plus lubricant on rubber, which is 14 strands. Streamlining and u/c that retracts on take-off give reduced drag for power, and better sinking speed. Ted states that with half the power of a '53 Wake, the new-rulers would appear to be capable of half the duration. Presumably basing this on performance of the new model, Ted expects no more than an *honest* 3 mins (or less) from the '54 designs.

At Beckenham, **Ron Warring** plans to concentrate on Wakes; has a new approach with L.E. flap as on Short S.B.5. to effectively reduce the inboard wing incidence and delay the stall in this region. On T.E., 1 inch wide flaps droop to ⅜ in. in three independent sections for glide trim. **John Gorham's** improved Ghost Mk. IV remains conventional, has slimmer fuselage, larger pylon, big two-blade folder with auto rudder to compensate folded trim and clever "V" section 28g Dural u/c that folds flush on bottom longeron (these are ¼ in. × 1/16 in.). Prop is a work of watchmaker's art, has pitch adjustment, special stop arrangement and uses 14 strands Pirelli. In power, John sticks to 1.49 with an Elfin that turns 11,400 static on an 8 in. × 4 in., has new type fuselage structure but otherwise like a larger "Lil' Aud." **Pete Wyatt** is doubling up on the same design.

Still on power, **George Fuller,** Barnet resident, drops ¼ in. wing chord and puts up Zoot Suit span to 60 in. for higher aspect ratio. Lower pylon may result in Stomper type fuselage, while 246 engine will replace 1.8. Incidentally George had good reason to use 1.8 c.c. last year, it requires same loading, area's, etc., as an A/2. In Carshalton, **Peter Cameron** is going big with no less than 670 sq. in. on 246 "Super Shazam" which replaces his much smaller '53 team design.

AEROMUDDLING

- *Narrator . . . W. Turley*
- *Sketches . . . by "Russ"*

IT all started on the day my brother-in-law brought home a scale "HORSA" glider kit. Until then I had been immune from the Aeromodelling "Bug," but—I was soon bitten, and so started a phase of trouble which has lasted right through my modelling career.

Yes, it has been just one thing after another over the last four years, the first grey hair in my head being the direct result of building and flying a rubber-powered scale model.

The Model Shop Proprietor tried in vain to turn me from this project but no—I had to have something that "looked like a plane." Needless to say, it looked the part, but as for flying . . . . . KERRUNCH! ! . . . . and that was that.

By the time I acquired my next kit (an S.E.5, a rubber job) I had quite a collection of dopes, lubricants, etc., all stored in the same box. The plane looked fine, but I soon found that doping the tissue with rubber lubricant just doesn't pay, and learned not to store said lubricant in an empty dope jar. After re-covering and finishing the plane I was once again shown that scale models are not for beginners and began to listen to the Model Shop Prop.

On his advice, a selection of simple rubber jobs came and went until I had enough experience to tackle power models.

"Oh yes—you *can't* go wrong with power"—"The constant thrust of the engine solves all problems"—and the road to success lies ahead—sometimes. Well, my engine ran perfectly in the shop, but when I got it home—I can still see the marks of wear and tear on my fingers.

The plane was a stormer. Dead easy to build — nice looking — good flyer. Pity I didn't fit a timer. — Ah well, we live and learn. Was my name on the plane? — Was it heck! So off to the shop for another kit and engine.

This time I didn't forget my lesson. A good timer was fitted and adjusted to the usual contest limits and the plane sent on its way. This kit proved to be as good as the first and proudly I watched the plane climb away on its first full power flight. Did I remember to set the timer? Yes—after the engine had been running for nearly a minute and the model just a speck in the sky. But I had remembered the address label and the plane was returned in due course.

The same story was repeated with gliders. All my efforts had dethermalisers, but did I remember to set the timer or light the fuse?—not until I saw the job in the throes of a thermal.

However, through all the trials and tribulations perseverence won the day, and I progressed to the Radio Control stage.

Now, if ever there was a medium for Aeromuddling Radio Control is it. Whereas before, there had

been just timers, trim packing, D/T's, and one or two other things to worry about, R/C brought a whole host of mistakes to trap the unwary. Needless to say, I managed everything at least once.

My receiver was home built. "Dead simple" said the instructions.—"Everything made easy."—"All parts readily obtainable from your local radio shop." What a hope!! All I found was—"never use that size in radio, old man"—"the wattage is too small," etc., etc. However I managed to overcome this difficulty and at long last the set was operating.

Now the fun really started. I went through the whole bag of tricks from leaving the transmitter switched on to forgetting to wind the actuator. I remember one time when there was no joy at all. Valuable time was spent frantically checking the receiver, batteries, actuator, etc., but—no joy. It was only when I went to switch off the TX that I found the cause of the trouble—never switched on!

My first attempt at a home built transmitter proved interesting. The table was littered with a "hook-up" of the TX, batteries, etc., and the receiver likewise. We were all ready to start tuning. How I wish I had never switched on. Two TX valves took 130 odd volts across the filaments (what

fireworks) and the XFG1 was humming away merrily with heaven knows how many milliamps passing through—I'd forgotten the potentiometer. Moral—always mark the H/T and L/T leads.

Control line flying baffled me completely. Five circuits and there is yours truly—flat on my back. I've tried not looking at the trees going in my opposite direction but it doesn't help. Now I watch my efforts from outside the circle!

What is the best method of bending $\frac{1}{16}$ in. birch around wing tips? "Steam it" you say? "Soak it in hot water?"—don't believe it. That's text book stuff. Put it in the fire and use block balsa instead. It's cheaper and keeps your blood pressure down. It's always that last bend that beats you. I know—that "crack" is a familiar sound to me.

I have found that soldering is quite simple—when you watch the other chap. Just clean the work, clean the iron, apply iron and solder together to the job and there it is—all over everything but the joint.

But the highlights of my career have, I believe, been in making undercarts. The plan says it is simple—just shove it in the vice and bend it to shape. Result—one leg in front of the other. Twist it the other way then—still one leg in front of the other. After a session of leg twisting I usually—(1) snap the thing in two, or (2) decide that it is near enough and fit it to the model.

In the latter case, it is only when the plane is finished I decide that the U/C looks hopeless and try to even things up with more twisting. Result—new fuselage to build.

Any trouble with balsa cement?—No?—lucky chap. Of course, I suppose you remembered to put the pin back in the hole in the nozzle after use. Ah! the joyful hours I have spent battling with a tube that wouldn't squirt. Then, out of sheer awkwardness it lets the lot go in one glorious stream, soaking everything. Even better, the squirt comes from the wrong end of the tube and leaves you with 9d. worth of cement in your hand.

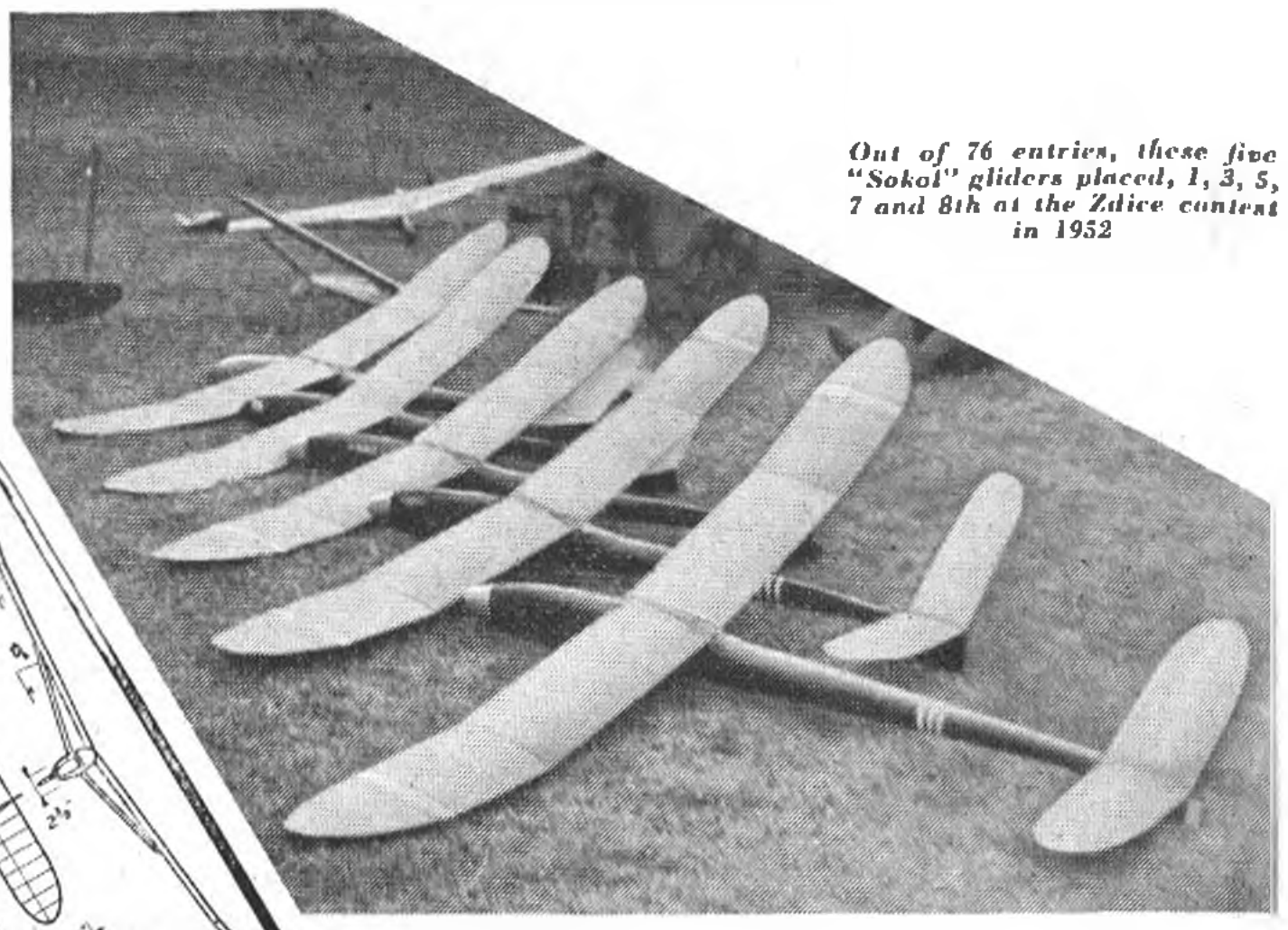
Talking of cement brings to mind dry joints.

That moment when you lift the part from building board minus several spacers which have never been stuck to the frame—how well I know it!!

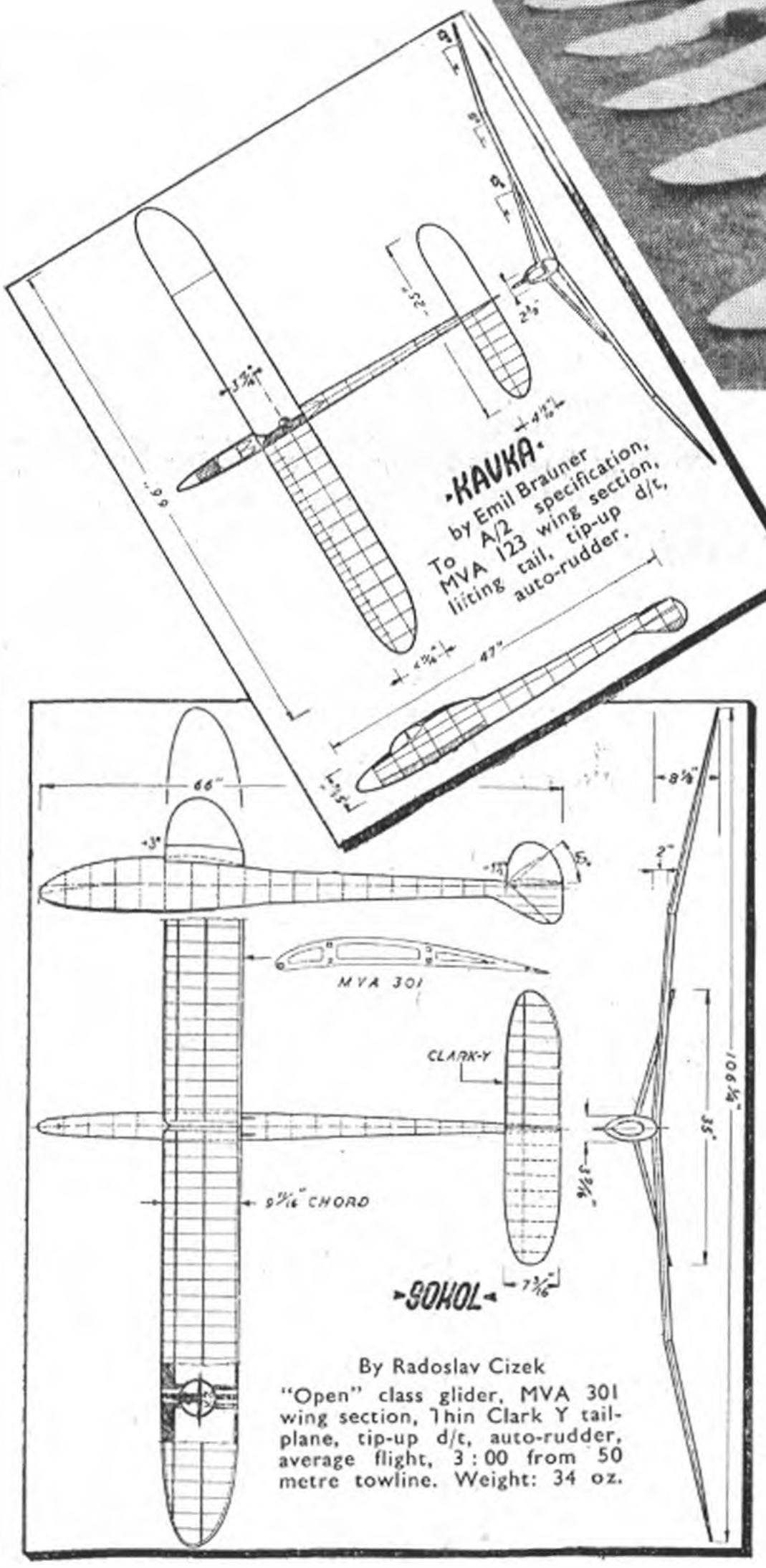
But the bug has bitten hard, and although I swear that the current job is the last, I still come back for more.

Well, I'll just see how that wing is going on that I doped last night—I think I pinned it it down—or did I?

Czech models

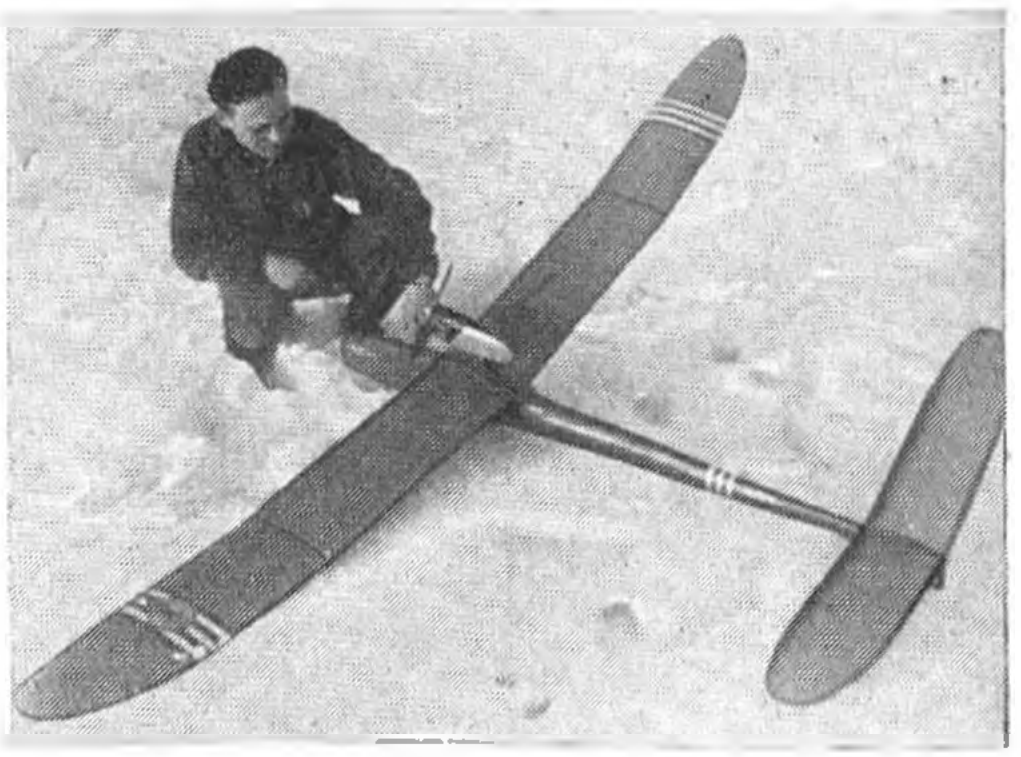


Out of 76 entries, these five "Sokol" gliders placed, 1, 3, 5, 7 and 8th at the Zdice contest in 1952



HARDWOOD construction prevails in Czechoslovakia, where there is a large modelling movement, but this is no handicap on originality and quality of design as these illustrations will indicate. Major interest in gliders is quite probably brought about by general economy, and this type of model is most popular. Leading designer is Radoslav Cizek, whose instruction and designs influence the general trend to the Vee-tail characteristic with shallow dihedral and underfin. A number of his models have been adopted for mass construction by clubs, with the result that they figure prominently in all contest results which usually vary in the number of entries from 75 to 150.

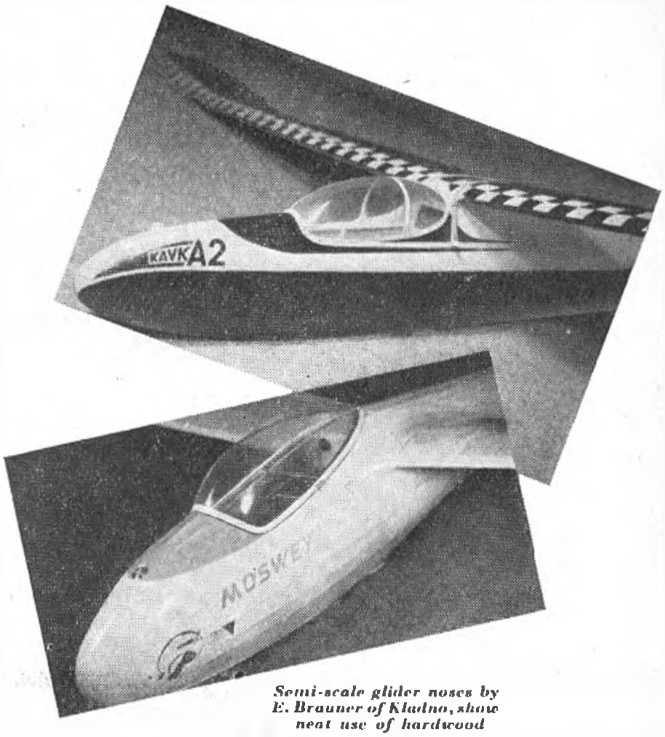
Although functional in layout, the Czech A/2 gliders have a distinct air of realism about them, as typified by E. Brauner's "Kavka" (Jackdaw) with its moulded cockpit canopy and semi-scale internal structure. Performance is of high order, the contest average being 2 : 30 off 164 ft. line, a figure which



F. Dvorak, one of the top fliers in Czechoslovakia, admires R. Cizeck's winter conversion of the Sokol for powered sport flying. Average duration is 8 mins. including a 1 : 20 motor run with 2.5 c.c. diesel

many a British modeller would like to be able to claim from his less beautiful A/2. Among the larger gliders, "Zehrovice" and "Sokol," each a Cizek design, can claim an enormous number of contest successes. Average times off 164 ft. line are 2 : 50 and 3 minutes respectively, and this of course, in good flying conditions which generally prevail in this part of Europe.

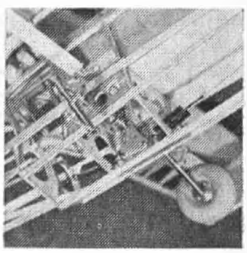
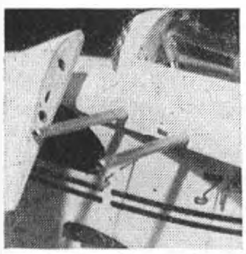
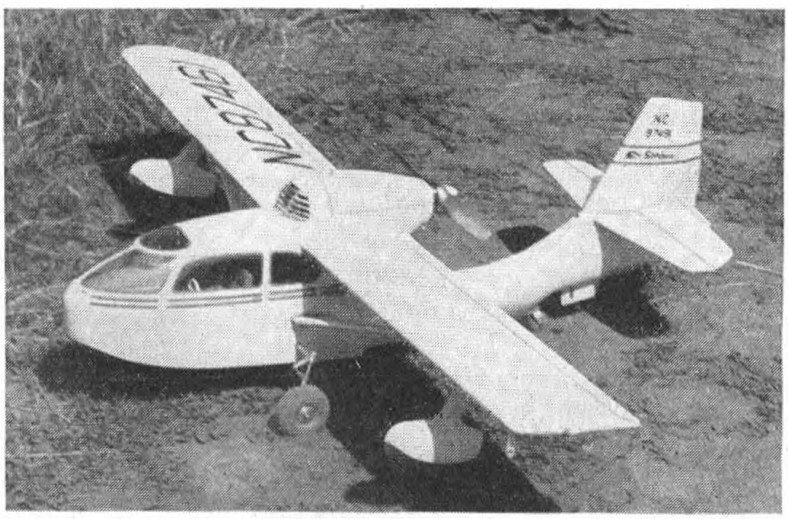
There is also a strong interest in control-line scale models, for which contests are organized throughout the year, and take place in winter over frozen ice. Again, the clever workmanship of Emil Brauner excels, as can be appreciated by study of the close-up detail and general photograph of his 1/12th scale Republic Sea Bee. This is a true amphibian, capable of flights off land or water, and equipped with an undercarriage that retracts at the will of the pilot, and comes down again for the landing. Much of the construction of this intriguing model is in moulded acetate, so that the shock mounted wing tip floats are no more than hollow shells for perfect buoyancy. The cabin is fully fitted with dummy controls and upholstery, and the whole model dismantles for easy transport.

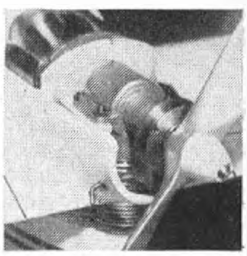


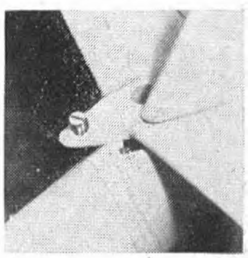
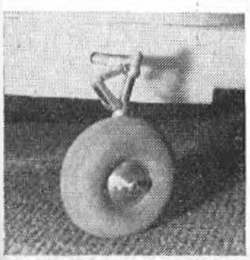
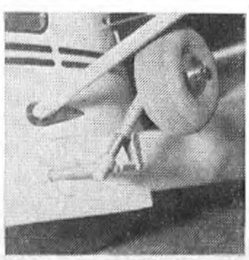
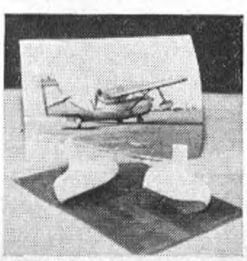
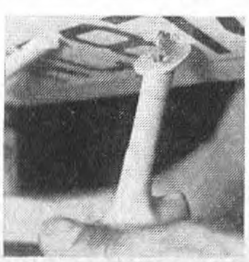
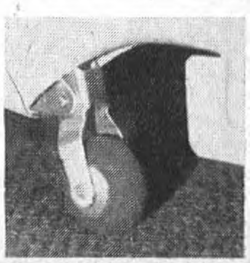
Semi-scale glider noses by E. Brauner of Kladno, show neat use of hardwood







Aircraft described No. 61
the . . . . . .

Bébé JODEL

by G. A. CULL

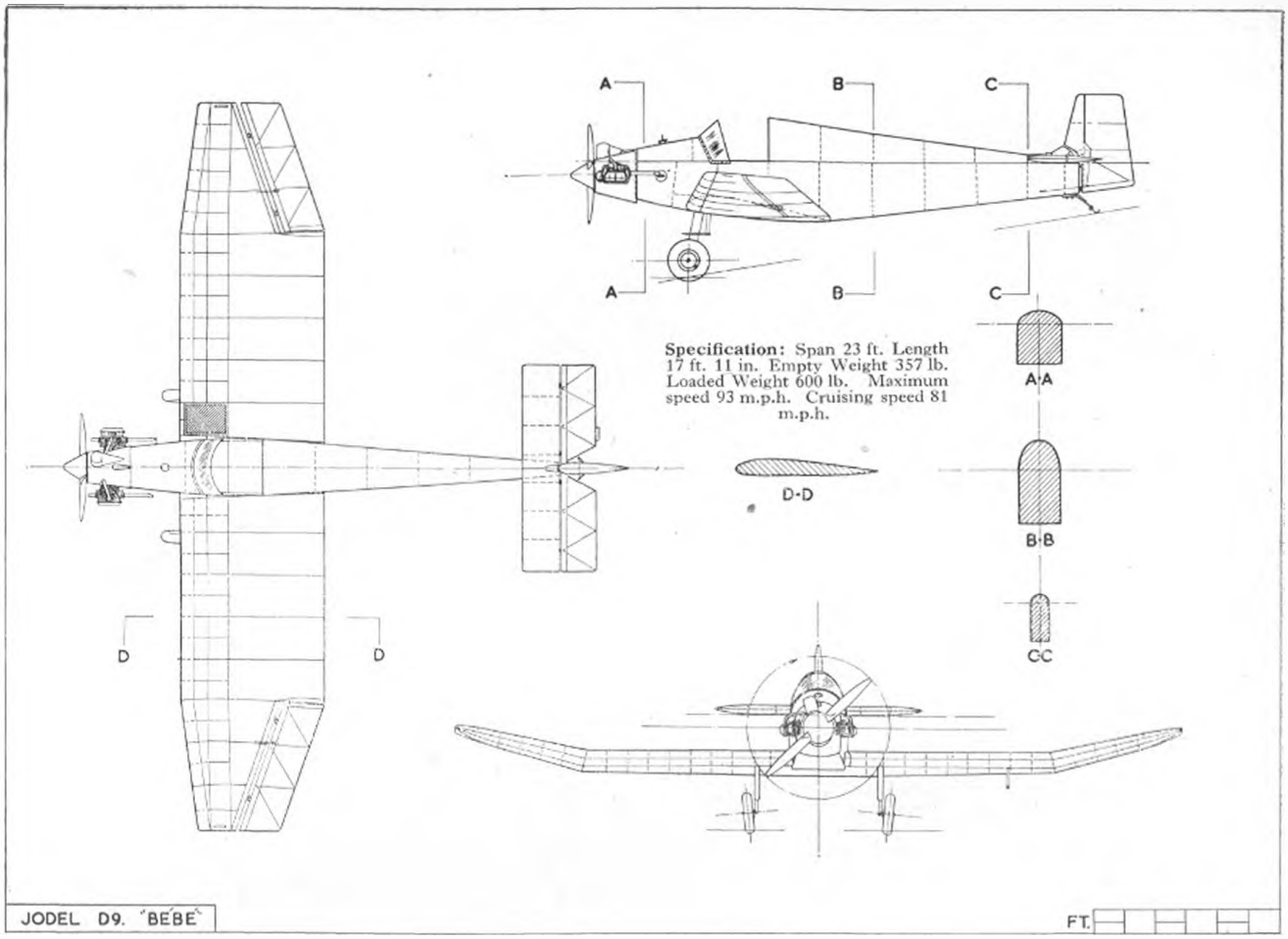
Georges Crucifix dons his parachute while standing on the wing of the Bebe Jodel built by himself.

IT is a sad fact that most would-be flying enthusiasts cannot afford the great expense of flying conventional light aircraft, but the remedy holding most promise has always been in the field of ultra-light aircraft. The nearest that flying ever reached to the "man in the street" ideal was in the brief career of the famous Flying Flea and, ever since, cautious regulations have made ultra-light progress hard-going. However, it is fitting that the homeland of Henri Mignet, the Flea's creator, should be the heart of today's activity in the inexpensive-aeroplane world, and France is this beyond doubt. Since the end of the War a number of successful low-powered designs have been produced in France and most of these have been for amateur construction. The enthusiasm of the designers has been matched by that of the builders who come from all walks of life, and it so happens that the majority have no other connection with the aircraft industry.

Of all the single and two-seat designs built at home, the Jodel D.9 Bébé has so far been the most popular, over 100 now providing their owners with real flying at minimum cost. This machine is a product of Avions Jodel, a small virile company deriving its name from Monsieurs E. Joly and J. Delmontez who designed their Bébé and made the maiden flight in January 1948. They have since produced the D.112, a more powerful version of the D.9 with side-by-side seating. The Bébé is built in the company's works at Beaune, but excellent plans are available at £5 per set and ready-made parts may be bought by amateur constructors not wishing to start from scratch. The Bebé Jodels, as the D.9's are better known, are powered by a variety of engines (even the veteran A.B.C. Scorpion!) but most examples have the adapted German Volkswagen car engine. This is a flat-four air-cooled unit of 26 h.p., but it appears to be more powerful than this by our standards. Throughout, the accent is simplicity, and the careful thought that has gone into the design is evident from the ease with which the airframe goes together to make a sturdy little aeroplane. Most obvious of all its interesting features is the wing's acute tip-dihedral with flat centre panel which incorporates washout. This layout allows a wing-to-fuselage pick-up that "can't go wrong," the wing locating straight up into a cut-out in the fuselage which also fixes incidence. An incidental advantage of the tip dihedral is that it minimises risk of a wingtip "digging in" on landing in gusty weather. The pilot's seat is formed by the top of the spar and a rearwards extension from it, and the cockpit features a starting device by which the engine can be pulled over by hand until it fires.

Whit Monday 1953 was a day when British enthusiasts felt no small degree of envy, for two Jodel D.9's flew from France to the W.J.A.C. Rally at White Waltham. Here it was fully realised what little gems these machines were and they seemed smaller but much more lively than other comparable types present. Flown by Messrs. A. Rubichon and G. Crucifix, who had themselves built their mounts, these were the first amateur-built machines from abroad to land here since the war. In an aerobatic show by F-PBXU, the D.9's sensitivity of control

Left, is another visiting Bebe, also the work of its pilot, Andre Rubichon, seen here in the cockpit. Both these machines have curved metal spinners instead of a standard conical plywood type.



Specification: Span 23 ft. Length 17 ft. 11 in. Empty Weight 357 lb. Loaded Weight 600 lb. Maximum speed 93 m.p.h. Cruising speed 81 m.p.h.

JODEL D9. 'BEBE'

FT.

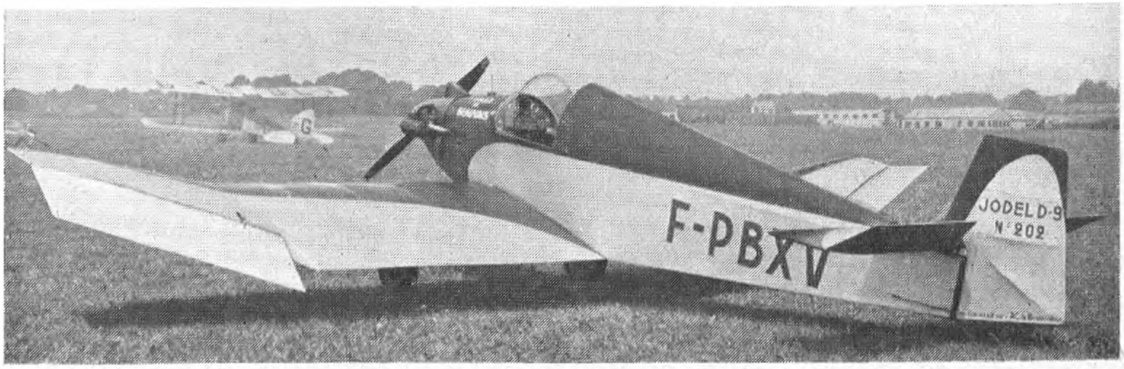
was put to good effect in showing that everything could be done on a Volkswagen engine.

By virtue of the simple all-wood construction, the Bebé Jodel characterises that section of full-size aviation which is most akin to aeromodelling. Although it is not, at present, permissible to build replicas in this country because of M.C.A. rulings, it is possible that French designs will eventually become available for amateur construction here, when aeromodellers will have quite an advantage.

1/72nd 'J' type reprints of the above drawing and 1/36th 'K' type die-line prints are available price 6d. and 1/- respectively from AEROMODELLER PLANS SERVICE.

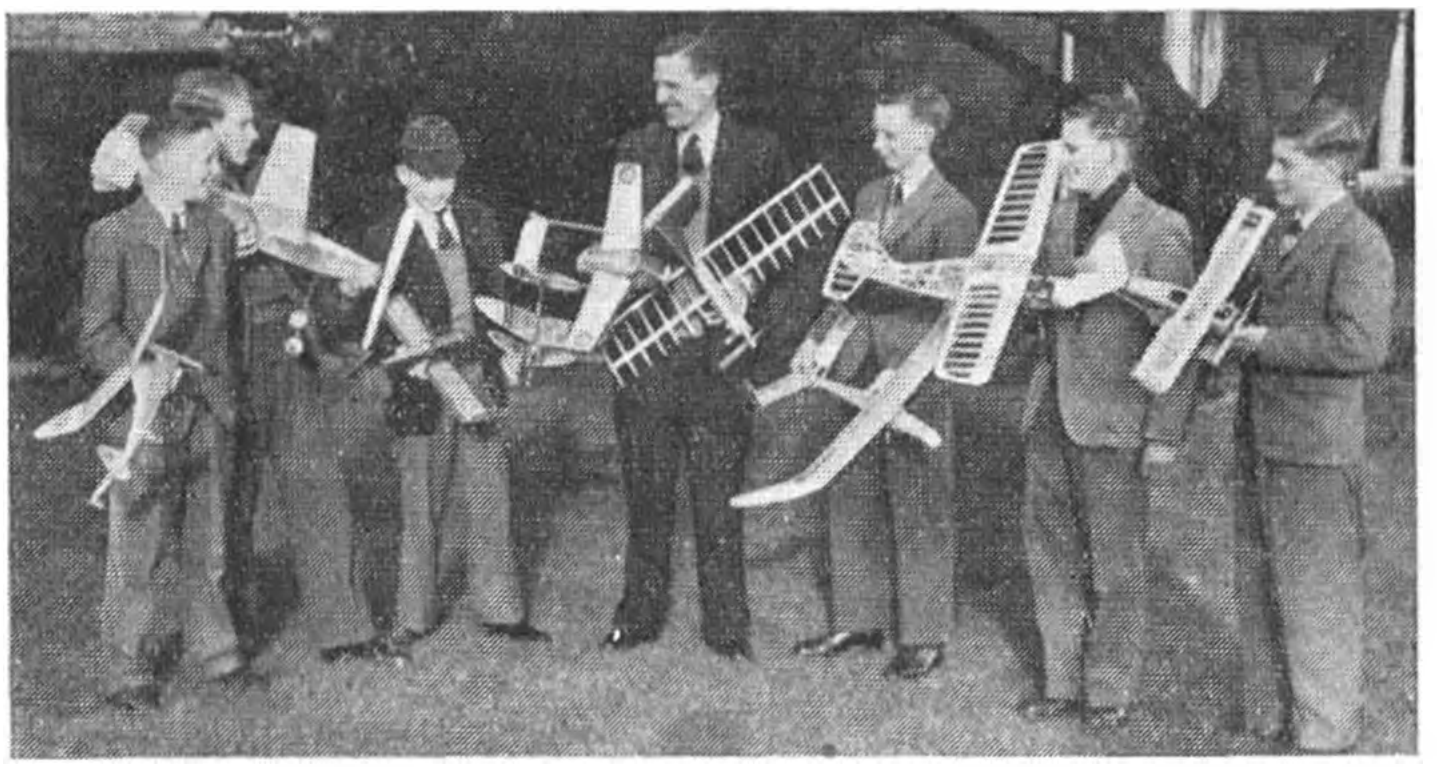
Construction: All wood. Fuselage is built up conventionally with four 15 mm. square longerons and 7 × 15 mm. runners. Whole uncovered with ply, mostly 2 mm. thick. Wing has one box spar consisting of four tapered booms covered with ply, and does not taper in width from tip to tip. This spar is unusual in that its 7/8 in. width is greater than its depth, and may be regarded as a torsion box augmented by the ply-covered leading-edge. There is a handhold in both wingtips. Wing ribs are of normal lattice construction and the whole wing is fabric covered. Ailerons are plain and of wide chord. Hinge gap is sealed upper-to-lower surfaces with fabric. Tailplane is ply covered and elevator is fabric covered. There is no fin, but sheet aluminium elevator control horn faring has small side area. Rudder has ply covered leading edge, rest is fabric covered. For Volkswagen engine front bulkhead is vertical, but slopes backwards for other engines. Telescopic undercarriage legs have rubber compression blocks. 25 litre petrol tank slung under nose decking and gives gravity feed.

Colour: The two machines seen in this country had the same scheme. All surfaces mainly silver: fuselage has red nose and decking, wing has red leading edge with edge of red extending in curved line from front edge of spar at tip to trailing edge at root. Leading edge of tailplane and L.E. and tip of rudder are red. Registration letters F-PBXU and F-PBXV in red and on fuselage sides only. "Jodel D.9" and number in red on rudder. Small letters "Construit par AC du Beauvaisis" in black script at bottom of rudder. 'XU has varnished propeller with a bear crest painted on cowling and name "NICHIKA" in white block letters adjacent. 'XV has "VILLE DE BEAUVAIS" in white block letters on cowling and black prop with yellow tips. Both have red spinners and wheel hubs.



The first letter of this Jodel D.9's registration denotes France while the second letter, P, identifies 'BXV as amateur-built. Factory built specimens have F-B . . . registrations

CLUB NEWS



Some of the members of the newly formed Ilfracombe & D.M.C., who apparently believe in having a go at all the full-size designs featured in the "Aeromodeller!"

WE were struck, the other day, by the words used by Mr. J. Knowles, a director of James Rogerson Ltd., at the prize giving ceremony of the Reading Solid Model Society. Mr. Knowles said " . . . in this age of machinery and mass production it is evident that in a very short period of time . . . . the only real craftsmen of the manual nature will be the model builders, for they are now the largest single body having a definite pride in their work . . . To the modeller there can be no financial gain but only the pleasure of constructing works of art" . . . . You know, that's quite a thought, and one of the strongest "selling" points for this hobby of ours. Well worth using in your own club publicity, in fact.

Northern Area

The sixth Northern Models Exhibition will be held at the Corn Exchange, Hanging Ditch, Manchester, March the 26th–28th, so if you hope to enter a model, get in touch *now* with E. Axon, 5 Winstanley Road, Sale, (Sale 4939). We'd like to have warned you earlier but notification to us only just made this issue anyway.

Sherburn-in-Elmet will again be the site of the Y.E.N. meeting, scheduled this year for September 5th. Events will include open rubber, power, and glider, concours, chuck glider, A and B racing, and combat. No R/C this time.

Fifty **LEEDS M.F.C.** members and friends tucked in at the club's Annual Dinner on February 4th, and other indoor activities have included R.T.P. stuff by members Tubbs, Baines, and Chippendale. Outdoor flying has been on the slow side so far this year.

A. Collinson's F.A.I. design has "caught on" in the **BRADFORD M.A.C.** and something like six of these jobs will soon be following Torp 15s. J. Pannett's Torp gave a demonstration of what could be meant by "unrestricted power" when, running in, it sheared its mounting and shot off up the garden. The tank refused to accompany it, so duration and damage were slight.

Unusual system among **WORKSOP AERO-MODELLERS** is for all comp. jobs to be built to standard club designs and constructed and owned by several people. (Can't help wondering if this is strictly legal in some cases?) Class B racers, based on the old *Fast Cat* A design, look like being the club forte this year. Latest Jetex 50 speed records in the club are: free-lance, J. Parkinson, 66: Scale, P. Russell's Mc. 1101, 63.

Midland Area

A new club, **HALESOWEN D.M.A.C.,** meet at the local Youth Club at 7.30 each Wednesday, and are always glad to see new members. See "New Club" list.

Last year's public shows by **SOUTH BIRMINGHAM M.F.C.** will probably be repeated this season, but experience has taught the committee that consultation is necessary to ensure allocation of an adequate space and useful siting of P.A. equipment etc Junior rep. K. Burton has designed a simple team racer which several juniors are building; it features interchangeable engine-mounts so that any motor can be quickly fitted, a pointer which is helpful for public displays when similar power outputs are desirable.

OUTLAWS (CANNOCK) M.A.C. show a slight decrease in membership although the standard of flying is rising. A2 record now stands at 9 : 00 and open rubber at 10 : 15. Stalwart member Brian Harper is lost to the fold since acquiring a fiancee, G. Burton now works at Farnborough and Geoff Linford is at present wearing a nice khaki uniform. A "savings club" has been opened for members to pay in contributions against future coach trips, etc.

South Western Area

Activity for 1954 contests is occupying **ILMINSTER D.M.A.C.** members, and amongst the models "on the way" are two *Quickies*, two *Eliminators*, an *Iota*, and a *Tadpole*. Thanks to the kindness of the Headmaster, the Ilminster Grammar School's gymnasium is now available for R.T.P. flying, etc. Many club members are at "B" certificate standard with power and glider, and nearly everyone has an "A" in one or more types.

A live wire new club, the **ILFRACOMBE D.M.C.** is now extending modelling's scope in Devon. Started by a keen police officer, all schools, etc., were circularised and membership now stands at 35. A local church padre provided a room, all sorts of people chipped in with chairs, tables, tools, and heating, etc.—well done indeed. Chivenor Aerodrome is available for flying and inter-club events are already being planned. P. C. Langridge started performances off well when his *Paageboy*, on an 8 sec. run, glided down till at about 50 ft. it struck a gentle riser. After a few minutes the retrievers returned for bicycles, and eventually, having followed the job for six miles and kept it in sight for 1hr. 45 mins., picked it up from a safe landing in a field of sheep.

East Anglian Area

The new S.M.A.E. fees have enabled **NORWICH M.A.C.** to re-adjust subscription rates, although with the clubroom newly painted and with a new fireplace and red leather seats, one might have thought an increase

understandable! A Christmas raffle was remarkable for (a) raising £20 and (b) junior C. Sparrow's walking chirpily up to an Air Commodore on the flying field and flogging him two tickets! Interest is general in the club, and some welcome publicity was forthcoming when a reporter and a photographer from the local paper attended a meeting and were so interested that they *asked* if they could come to more.

Flying sparks at the **CAMBRIDGE M.A.C.**, A.G.M. have resulted in a "no proxy" rule for club comps. and a review of the internal points system which, apparently, has not in the past encouraged specialisation. At least all the time sparks fly interest is high! Further evidence of this was the effort put into—and the huge success of—the club's Annual Dinner. Sunday, August 8th should be set aside by T.R. fans for the Cambridge T.R. Rally, by the way.

Southern Area

Another club to adopt the "AEROMODELLER" 1 c.c. payload class for a "home "contest is **BOURNEMOUTH M.A.S.**; a needle match should materialise from the all-F/F challenge issued by this club to neighbouring West Hants.

A new radio event has arisen from the presentation of a trophy to the Southern Area through **WEST HANTS A.A.** by the Army Signals Research and Development Establishment, Somerford. Open to anyone, any type of R/C sailplane or glider may be used, and the comp. comprises two parts, an out and return course flight, and a duration flight from a 100 m. line. Interested parties drop a S.A.E. to H. E. Wheatley, 5 Alum Chine Road, Westbourne, Bournemouth. Event is scheduled for July 4th, venue to be decided.

Winners in the **READING S.M.S.** open non-flying model contest mentioned in our opening remarks were: Championship Cup and 1st prize, over 17's, D.H. *Comet* by D. L. Page of London; 1st Prize, 11–17, Vickers *Valiant* by R. D. Stone of Redlands School; 1st Prize, up to 11, Messerschmidt *Me.* 109*F* by P. J. George of Reading School. Prizes were awarded down to sixth place in each class, and some beautiful jobs were entered.

North Eastern Area

A threat to the local flying ground has caused the **TYNEMOUTH M.A.C.** to burst into print, with some resultant good publicity. Looks as though the site is safe too. The club finally managed to fly off the last of last year's outstanding comps., open rubber, which was won by R. Pollard. Combat flying, with an eye on future displays, is now interesting members.

Coming round after a stagnation period is the **SEAHAM D.M.C.** Welcomed home from the Forces are J. Henry and W. Hume, and activity is growing fast. With the accent on C/L, particularly team racers, permission was sought to use some derelict tennis courts. The Council insisted on a demonstration, after which the O.K. was given, much to the club's gratification.

South Midland Area

A standard **HENLEY M.C.** club F/F design is appearing in various sizes, the heavy guns of this club now being trained on F.A.I. power stuff. The same basic design can be seen at 170 sq. in., 1.5 powered, as well as 350 and 430 sq. in. using 2.5 and even one 3.5 for power. The boys are convinced that high prop. speed is the key to altitude, and are carrying out engine test programmes for info. on this.

CONTEST CALENDAR

March 28th	**S.M.A.E. Cup.** 2nd A2 Elim. **Farrow Shield.** Team Rubber. **Women's Cup.** Unr. Glider/Rubber. **Jetex Cup.** Jetex.	Area.
April 4th	A, A, B Team Race Meet	Dartford, Kent.
April 25th	**Weston Cup.** 2nd Wakefield Elim. **Astral Trophy.** 2nd Power Elim.	Area.

North Western Area

August 15th is the tentative date for **HYDE M.A.C's** rally at Barton Airport. Radio interest is high in the club, despite the writing-off of one member's model when it pranged into a frozen manure heap. (h-m—perhaps "high" was an unfortunate choice of word?!) R. Wilson is all set for a height record attempt . . . .

Good R.T.P. flying and a well laid out stand produced a large increase in membership for **BLACKPOOL AND FYLDE M.A.S.** during a local Hobbies Exhibition. A. Kimber's R.T.P. flying brought cheers from the crowd more than once, and an electric *Tipsy Junior* plugged steadily round all week. Especially popular, though unintentional, was he fiery demise of C. Davey's Jetex 50 *Attacker*.

Previous experience taught **WHITEFIELD M.A.C.** members that gliders were easiest to handle in a scramble. J. O.'D, packed in 9 : 41 against second placer D. Willars' 4 : 52 for a comfortable win in the club's recent scramble when *every* entry flew glider!

A successful 1953 encourages **WAVERTREE M.F.C.** to bigger and better things in '54. Team racing and A2 gliders are the club's forte. Another modeller off to Canada is Sid Rymill, who will be missed by the club.

50% flying scale is the present description of **WALLASEY M.A.C.,** but a new innovation of mixed contests plus handicaps will, it is hoped, boost the standard of contest flying. Membership remains steady at 40.

South Eastern Area

The "Battle of Hove" is still on, and the **SOUTHERN CROSS M.A.C.** having reached an impasse with the Home Office, the S.M.A.E. have entered the arena. As the news-sheet states, if Hove Corporation, with 170 acres of open spaces, can impose this ban despite correct protest by the club, the outlook is bleak indeed.

News of a move is that team-race fans **SIDCUP M.A.C.** have now joined the London Area, a sensible step in view of their geographic situation.

Western Area

An all-comers R.T.P. lappage contest run by **BRISTOL AND WEST M.A.C.** was won with 48 laps by Junior M. Churchill's Jetex 50 speed job. Another junior, M. White, flew a rubber job to first place in a novelty event which should be called "R.T.P. Roulette." The circle is marked into eight numbered segments and where you land is your score for that round; all models start from the same spot. You know, this scheme has possibilities—"Faites vos jeux, mesdames, messieurs" and all that!! G. Woolls again won the rubber cup at the W. A. Winter Rally at Lulsgate, followed by K. Richards' 36 in. lightweight with a 20 in. single blade folder!

London Area

Re-affiliation of the **CRYSTAL PALACE M.A.C.** is one result of the new S.M.A.E. rates, and this club has had such an influx of juniors that a 16-year-old age limit has been imposed, which seems rather a pity. Modelling interest covers all types, and new quarters with improved

facilities have given a fillip to indoor activities. New members, especially seniors, are invited to the fortnightly Monday meetings; details from J. Baggett, 57 Taylors Lane, Sydenham.

SURBITON D.M.F.C., faced with increased rent, are tossing up whether to do without premises or look for new ones. A speedy recovery is wished for Jeff Hancock, in dock with a nasty throat operation, and Sid Smeed, who has to have a damaged finger butchered. (Couldn't be that engine Sid was hoping to get last time we saw him?) Power jobs are the primary interest, *Slick Stick* being favourite.

Thirty **GRAYS D.M.A.C.** members enjoy the use of three flying fields, one of which was throughly combed when an inspection induced by the sight of B. Rowland's team racer's prop turning over after the motor had cut showed that the glow plug had fallen out! (Phew!) Another bod—one with too many arms by the sound of it—succeeded in knocking the fin off his *Spartan* while launching. Subsequent flights were stable, though.

With interest veering towards contest stuff, models are "pouring off" **FULHAM M.A.C.** building boards. Most unorthodox is junior J. Odoe's "Annual" inspired canard delta team racer, but *Stompers*, *Eliminators*, and *Paageboys* are among the more conventional stuff.

Second issue of the new series **NORTHERN HEIGHTS M.F.C.** "News" indicates that the mag. is off on the right foot and contains much interesting gen. We particularly liked a clear little summary of "Spiral stability and the C.G." by Bob Copland.

REGENTS PARK M.F.C. have taken the *Seraph* to their bosoms and good results are being obtained with several of these jobs. Indoors, Jetex 50 speed on a 5 ft. line is officially up to 83 m.p.h. and unofficially past the three-figure mark. Ideas on timing at this speed are sought by the club—any offers?

Scotland

Plaint from **WICK M.A.C.** is that the *Vultan* takes so much dope! The club is now 32 strong and has a busy season planned with combat and T.R. challenging F/F for popularity.

Snow showers lulled **MONTROSE M.A.C.** members into omitting the D.T's in their January glider comp. Top two models were consequently lost. Winner C. G. Campbell (6 : 29) fell into gorse in an endeavour to prevent his model doing so, and is still picking spikes out. The club dinner was thoroughly enjoyed by twenty-two diners, and an inter-club glider comp. with the Neumunster (Germany) club is coming off soon.

Fifty four laps at 70 with a reed-valve E.D. 2 : 46 was good enough performance to put **S.A.S. AUCHENHARVIE M.A.C.** in first place in a challenge match with **GLASGOW BARNSTORMERS** in February. The latter were faster in the air but slower on the ground.

PRESTWICK M.A.C. fliers are doing 2 : 15 with A2's and 2 : 00 with Wakes under frosty conditions, and are spoiling for inter-club comps. Challengers please contact B. Harris, 24 Moor Road, Heathfield, Prestwick.

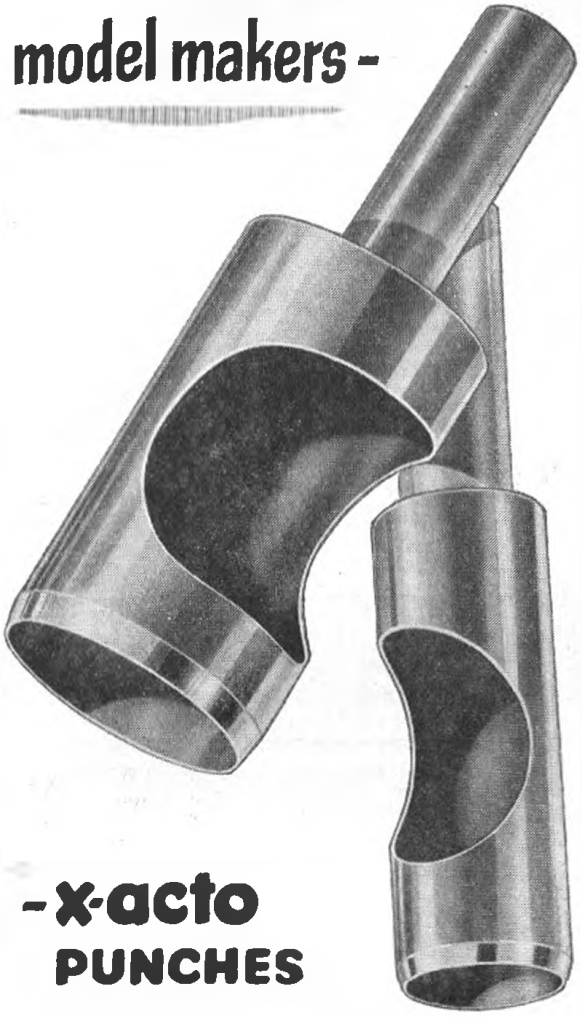
Ireland

Displays each Monday at Butlins Camp are again laid on by **DROGHEDA M.F.C.** Club funds are in a fair state and at the A.G.M. it was decided to purchase a transmitter and radio gear for club use, as well as pay for a club radio job to be used for demonstrations.

SHANKILL M.F.C. is preparing a big C/L do on

Continued on page 223.

NEWS for all model makers -



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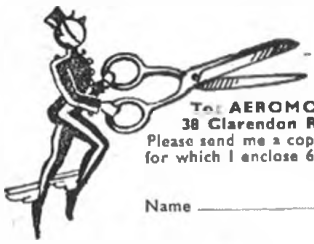

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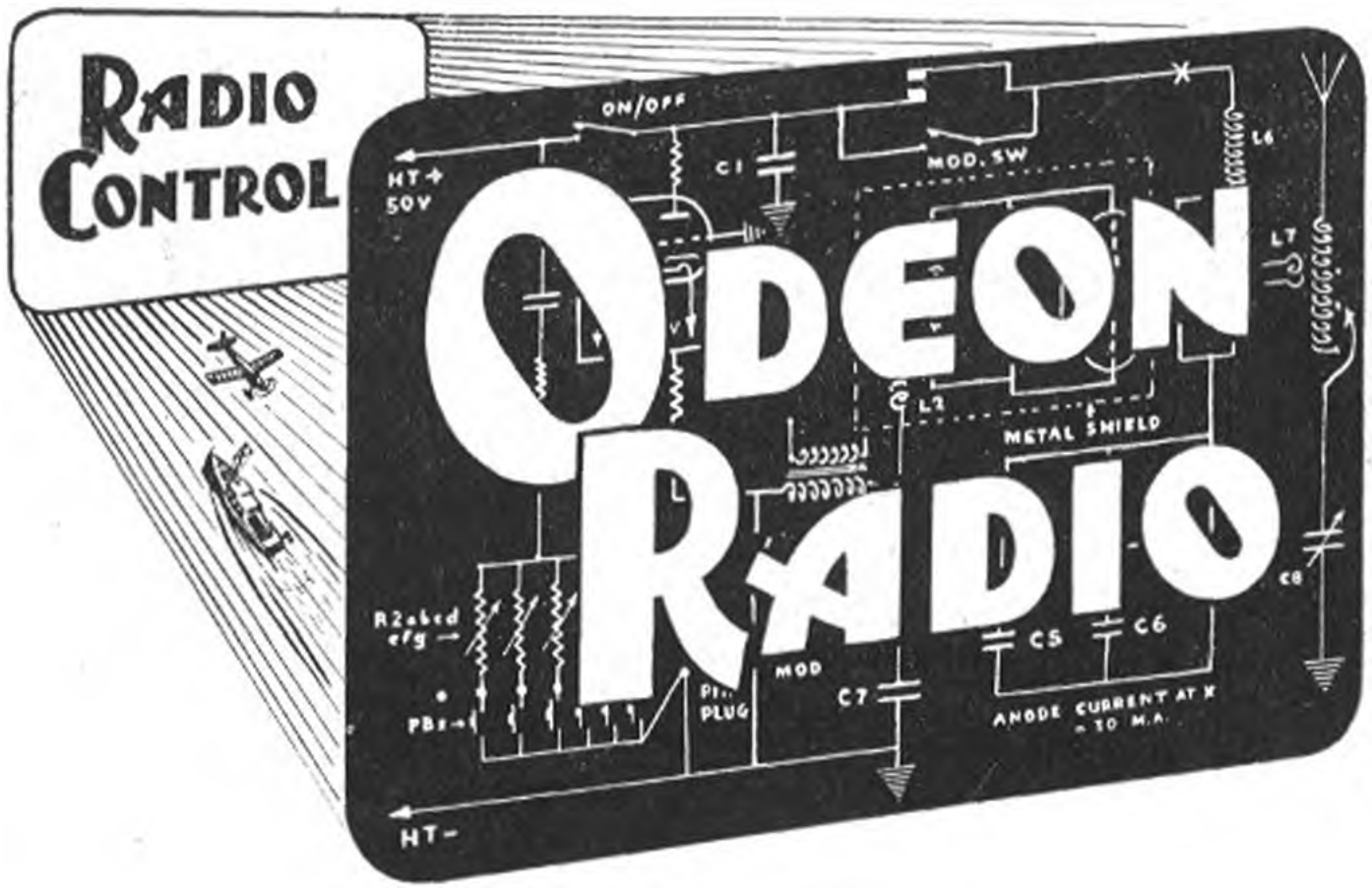

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CLUB NEWS *Continued*

Easter Monday, at Bray, with T.R. as the main item, Engines and cash are among the prizes, and a great deal of work is going into the organisation. Apart from C/L. main interest in this club is in R/C.

This month's pen-pal seekers are W. E. Burgiss of Robersonville, N.C., U.S.A. who is 31, father of two, and likes small F/F; will swap goods, etc. Also three lads around the 14–16 mark, W. Hubner, 28–41 42 St. L.I.C.3. N.Y., U.S.A., D. Oster, 7610, Carter Avenue, St. Louis 15, Missouri, U.S.A. and J. Hughes, 328c, 19 St., New York 3, N.Y., U.S.A.

It's a long time since we had a tall story, but we vouch for this one. A West Herts member, during the cold snap decided to see how long a line he could use on his *Corsair*. With about 200m. the model achieved a dizzy height, from which it sank back on to the field at breakneck speed. Puzzled, the owner picked it up to find that the whole of the upper surface of the wing was thickly crusted with hoar frost! Brrr!! Roll on the summer

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