

SPECIAL CLUB SURVEY ISSUE

MARCH 1967


Aero Modeller

INCORPORATING

MODEL AIRCRAFT

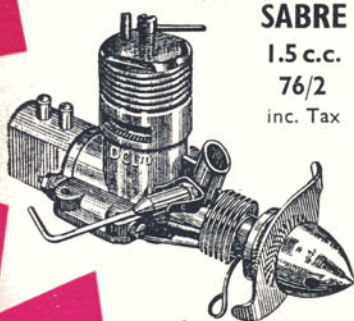
TWO SHILLINGS & SIXPENCE

USA & CANADA 60 CENTS

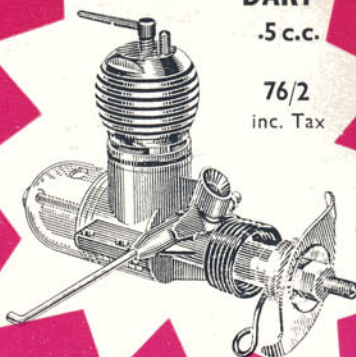
AN  **HOBBY MAGAZINE**



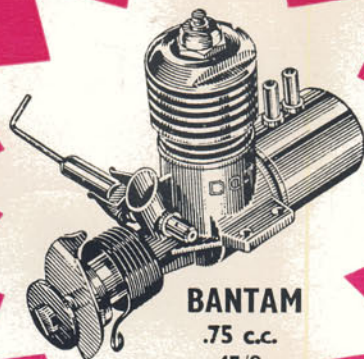
FIESELER STORCH FEATURES



SABRE
1.5 c.c.
76/2
inc. Tax



DART
.5 c.c.
76/2
inc. Tax



BANTAM
.75 c.c.
45/8
inc. Tax



MODEL DIESEL HANDBOOK

Free with every Quickstart diesel this invaluable handbook covers the handling, care and maintenance of model diesels. Prepared by experts, it is well illustrated and an invaluable aid to trouble free operation. Send 1/3d. (P.O. or stamps) for your copy —today!

QUICKSTART ACCESSORIES

- ★ CONTROL LINE HANDLE
- ★ SILENCERS
- ★ NYLON PROPELLERS
- ★ FULL RANGE OF SPARES
- ★ QUICKCLIP CONNECTOR
- ★ QUICKSTART GLOWPLUGS
- ★ E.G. 98 E.G. 99
- ★ E.G. 200

QUICKSTART

THE GREATEST RANGE OF SPORTS FLYERS' ENGINES

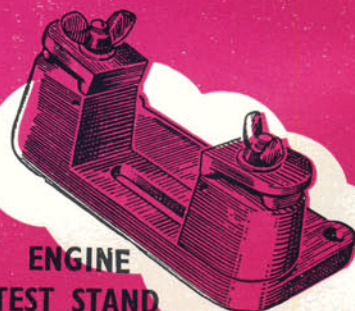
CALL IN AT YOUR MODEL SHOP TODAY

in case of difficulty write direct to:

DAVIES-CHARLTON LTD.
HILLS MEADOW, DOUGLAS, ISLE OF MAN

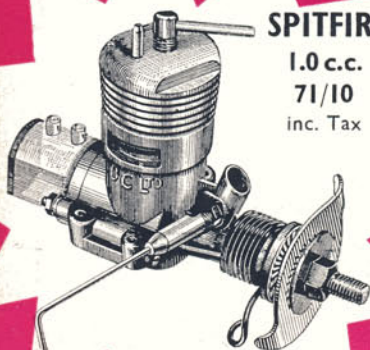
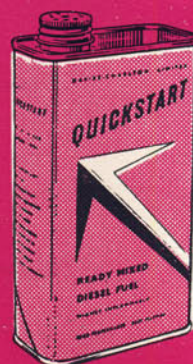
Marine Engines

DART, MERLIN, SPITFIRE, SABRE,
ALSO AVAILABLE AS A MARINE
ENGINE COMPLETE WITH FLY-
WHEEL AND WATER COOLED
HEAD

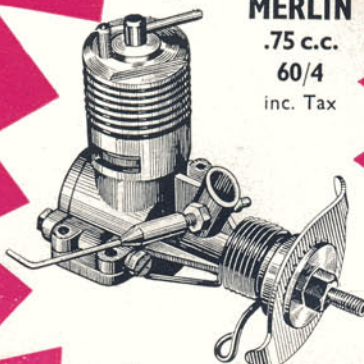


**ENGINE
TEST STAND**
14/10
inc. Tax

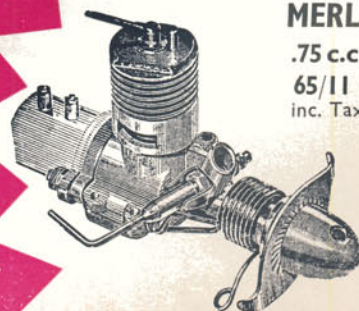
**DIESEL FUEL
and
GLOW FUEL**
1/2 pint 3/6



SPITFIRE
1.0 c.c.
71/10
inc. Tax



MERLIN
.75 c.c.
60/4
inc. Tax



**SUPER
MERLIN**
.75 c.c.
65/11
inc. Tax

PLEASE NOTE: ALL PRICES INCLUDE THE RECENT 10 PERCENT INCREASE ON PURCHASE TAX

Aero Modeller

INCORPORATING
MODEL AIRCRAFT

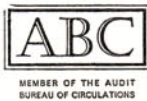
March 1967

VOLUME XXXII No 374

CONTENTS

HEARD AT THE HANGAR DOORS	123
"FIESELER STORCH"	124
CONTROL LINE NEWS	126
STRICTLY SIMPLE—Single channel escapements	128
ENGINE TEST—Ueda 45 R/C	130
GOLDEN WINGS CLUB	132
"TAUBE" Scale glider	133
WIND SPEED METER	134
CLUB LOCATION MAP	135
CLUB DIRECTORY	136
MODEL SPECIFICATIONS	138
RADIO CONTROL MANOEUVRES	143
HOW TO RUN A CLUB	144
CONTROL LINE MANOEUVRES	145
GOVERNING BODIES	146
BADGES AND TRANSFERS	148
WHAT TO DO AT THE CLUBROOM	149
TOPICAL TWISTS	151
ANTI-CRASH PROTECTION	152
BASIC AEROMODELLING—Scaling up plans	153
AIRCRAFT DESCRIBED—Fieseler Storch	155
FREE FLIGHT COMMENT—J. O'Donnell	158
CLUB AND CONTEST NEWS	159

AN  **HOBBY MAGAZINE**



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

This periodical is sold subject to the following conditions: that it shall not, without the written consent of the publishers, be lent, re-sold, hired-out or otherwise disposed of by way of the Trade except at the full retail price of 2/6d or 60 cents and that it shall not be lent, re-sold, hired-out or otherwise disposed of in a mutilated condition, or in any unauthorised cover by way of Trade; or affixed to or as part of any publication of advertising, literary or pictorial matter whatsoever.

Second class postage rates paid at New York, N.Y. Registered at the G.P.O. for transmission by Canadian Post. American enquiries regarding subscriptions, news stand sales and advertising should be sent to AEROMODELLER, Eastern News Distributors Inc., 155 West 15th Street, New York, N.Y. 10011. U.S.A. U.S.A. and Canada direct subscription rate \$5 including Index.

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

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

MODEL AERONAUTICAL PRESS LTD.

13-35 Bridge Street, Hemel Hempstead, Herts

Tel.: Hemel Hempstead 2501 (Mon.-Fri.)

Editorial Director

D. J. LAIDLAW-DICKSON

EDITOR

R. G. MOULTON

Assistant Editor

J. FRANKLIN

COMMENT

In an age of failing voluntary aid, it was most heartening to find no less than 61 present at the Scottish Aeromodellers' Association A.G.M. from a total membership of 230 and competitive voting for many of their senior posts on the committee. The Scots are canny by nature. They run their own affairs with a keen eye to costs and have realistically raised their S.A.A. senior membership fee by 400 per cent. More power to their elbows! Here's hoping they get the airfields and airstrips they are aiming for. Elsewhere the bickering of the blinkered isolationists can be heard south of the border. It would seem that all individual modelling classes are in the "minority". This great minority complex extends to some spokesmen wanting separated Nationals for free-flight, control-line and radio control. What on earth can they possibly be ashamed of? Envy of another category getting excessive publicity is understandable, but progressive self-extinction through failure to work with people of different interests is inexcusable.

cover

A freshly rebuilt Morane "Crique" emerges from a hangar at St. Cyr near Paris ready for delivery to a French Gliding Centre to be used as a tug aircraft. Reims Aviation converted MS 502 machines (alias Fieseler Storch) to the MS 505 with the Jacobs radial engine. Colours are standardised for all MS 505 aircraft, see also inside back cover and pages 153-7.

next month

The flying season will open with a bang as TWO free full size plans for free flight sportsters come with every April issue. Hoh Fang-chiun's Cicada is a 28½ in. sheet constructed design for the smallest engines and S. Pearson's Peril is a 24 in. fast flyer for .5 and up. Each can be R/C converted. News of the latest kits from the trade fairs, more control line news, the Curtiss Sparrowhawk as a scale subject (on the cover too!) and Peter Chinn's test of the Fuji .0995 and return of Latest Engine News (forced out this month), all in April issue, out on March 17th.

Whichever way you look at it...



A tin of Mercury No. 8 diesel fuel is the best you can buy. The sign on the back tells you it is blended exclusively with **CASTROL 'M'**

Distributed by: E. KEIL & Co. Ltd., Wickford, Essex

JUST LIKE THE REAL THING!

The magnificent VC10 is only one of many exciting, superbly detailed models you can make from Airfix Construction Kits. This true-to-life 1/144 scale model of the powerful jet liner, now in use with leading airlines, is made from a 74-part kit costing only 7/-. There are over 250 Airfix kits, covering 19 different series, from 2/3d. to 19/6d. So you can well afford to make all your models just like the real thing!



AIRFIX CONSTANT SCALE

CONSTRUCTION KITS

Just like the real thing!

From model and hobby shops, toy shops and F.W. Woolworth

STOP PRESS

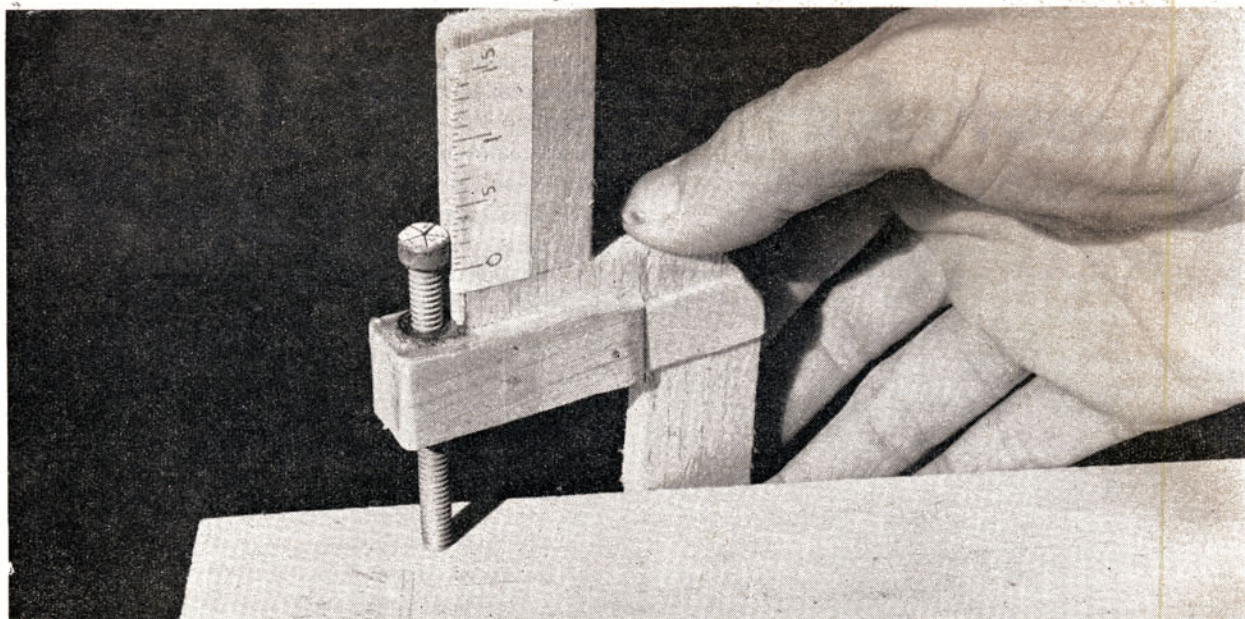
Mosquito and M.E. 262A

The third in the series of World War II Dogfight Doubles. Here are two of the most successful aircraft ever produced by Britain and Germany, complete



with transfer markings and double display unit. Add these to your collection for only 5/-

All that's new in modelling!
AIRFIX MAGAZINE 2/- MONTHLY
ASK FOR THE AIRFIX CATALOGUE



How to Save Yourself a Few £.£.£s'...

You would like a micrometer but cannot afford to buy one? Well, reduce the cost to nothing by making one from the scrap balsa left over from your last model; although if you have not got a $2\frac{1}{2}$ in. long $\frac{1}{4}$ in. BSW bolt and two matching nuts in your workshop you will have to buy those! This screw thread, with its twenty turns to the inch, is the working element—all the rest is made from balsa.

We are not claiming that our 'Balsa Mike' is exactly in the same class as a precision instrument costing several pounds, but you can read it quite accurately to the nearest **hundredth** of an inch, and interpolate **thousandths**. It's the sort of novelty item you make for fun, but it can be quite useful. It also shows how useful Balsa is for all sorts of 'making' jobs.

Where you can **really** save money with Balsa is by using the best Balsa to start with. The life of a valuable model—and, more particularly, the safety of costly radio control equipment—can depend on a few pennyworth of Balsa forming a main spar. Using only the best Balsa can be better than an insurance policy by preventing the 'accident' from happening at all. That is why you should always specify Solarbo when buying Balsa, to be sure of getting specially selected and graded material. The 'premium' is very modest, for Solarbo costs no more than most other balsa—yet it is the best you can buy, anywhere.

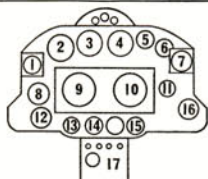
If you would like to make our 'Balsa Mike' (which was originally designed as a demonstration model for school use), we shall be glad to send you a FREE PLAN and building instructions. Mention 'Aeromodeller ad.' and enclose a foolscap size stamped addressed envelope.

Solarbo Balsa

SOLARBO LTD.,
COMMERCE WAY, LANCING, SUSSEX

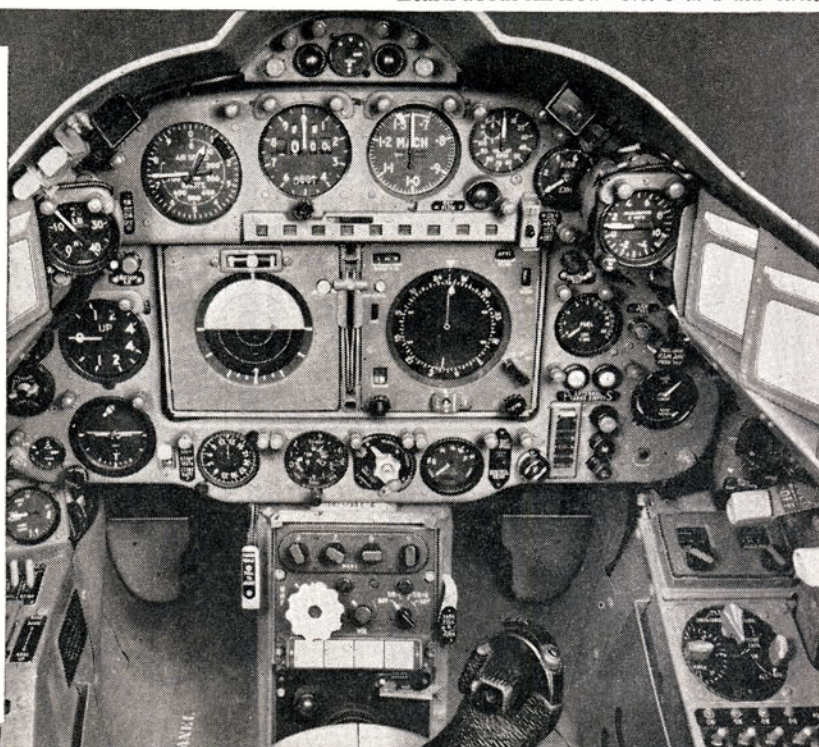
THE BEST YOU CAN BUY
ALWAYS ASK FOR IT BY NAME

KINDLY MENTION "AEROMODELLER" WHEN REPLYING TO ADVERTISEMENTS



1. Hydraulic Pressure Gauge
2. Air Speed Indicator
3. Altimeter
4. Machmeter
5. RPM gauge
6. JPT gauge
7. Accelerometer
8. Vertical Speed Indicator
9. Attitude Display
10. Navigation Display
11. Fuel Contents Gauge
12. Standby Artificial Horizon
13. Standby Directional Indicator
14. Standby Altimeter
15. Oxygen Contents Gauge
16. Fuel Trim Gauge
17. U.H.F. Radio Controller

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

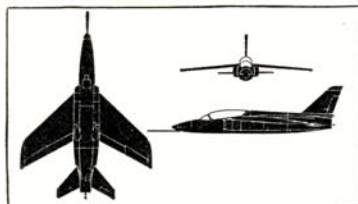


Pilot's-eye-view of the Gnat

—advanced jet trainer of the Royal Air Force



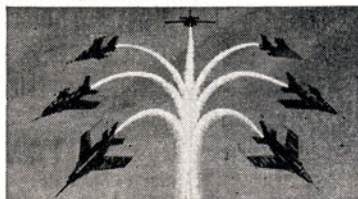
If you are training to be a pilot in the R.A.F., the Hawker Siddeley Gnat T.1 is the third aircraft you will fly. The Gnat is powered by a Bristol Siddeley Orpheus turbojet engine and is extremely manoeuvrable with a high rate of climb—40,000 feet in seven minutes.



All pilots do their initial training on the Chipmunk and Jet Provost. When you go on to the Gnat—after say 14-15 months—you know that you have been selected to fly fighters or bombers, rather than transports. After the Gnat you go to an operational conversion unit where you train on

the aircraft you will fly on your first Squadron—Lightnings, V-bombers, Phantoms, P1127's or F111K's.

You may have seen the Gnat flying. The R.A.F.'s aerobatic team for 1966, the Red Arrows, consisted of Gnats, flown in formation by some of the R.A.F.'s top pilots. They gave flying displays all over the country—in Europe and America—'showing the flag' for British aircraft, British aviation, and the R.A.F.



This could be your future. If you are interested in aeroplanes, and flying, and an adventurous life you ought to read the R.A.F. booklets. The form

is that you will need five 'O' levels including English language and mathematics to enter the R.A.F. at 17½, but you can take a test at 16 to see whether you are likely to be accepted. Even if you are younger than 16, don't hesitate to send in the coupon.

To Group Captain M. A. D'Arcy, R.A.F.,
Astral House (954JC1), London, WC1.
Please send me your free booklets.

NAME

ADDRESS

DATE OF BIRTH

The Royal Air Force

REP

GEMINI

self
assembly
pack



Much of the enjoyment in starting Radio Control is in the building of your own equipment; for this reason the popular Gemini Single Channel unit is now offered in a "Self-Assembly" form.

First time operation is ensured by the fact that all circuits are pre-wired and thoroughly tested before despatch. Write for further details to—

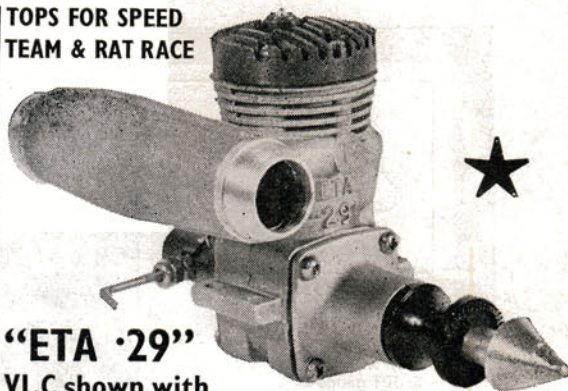
DERRITRON RADIO LTD., R.E.P. DIVISION
24 UPPER BROOK STREET, LONDON, W.1.

Name

Address

ETA ENGINES ARE THE BEST IN THE WORLD

TOPS FOR SPEED
TEAM & RAT RACE



"ETA .29"
VI.C shown with
extraction silencer fitted

Dear Sir,
Please find enclosed
a guarantee card for my recent-
ly purchased VIC—This is the eighth
ETA I have owned and as I have never ex-
perienced any faulty workmanship so far, there
seems little purpose in sending it.—P.B. Lancs.

Dear Sir,
I would like to tell
you how pleased I am
with one of your ETA 15
engines. I acquired it very
second hand, and it was ob-
vious that it had been mis-
treated by its previous owner.
However I have never had a mo-
ment's trouble from it. It was first
installed in a Team Racer and when I had
found the settings, it was the easiest,
starting, smoothest running motor I had
ever come across. Now although nearly worn
out, it still remains just as easy to operate.
When the time comes for me to buy a new 2.5cc
motor there won't be any prizes for guessing which
make I'll buy.—G.S. Derbys.

"ETA ELITE"

Single or twin
sided extraction
silencers
available

TOPS FOR
TEAM RACE



Elite	£7.0.0 plus £1.8.11 P T
ETA 29 MK. 6C	£6.9.6 plus £1.6.9 P T
Single Muffler System inc. Manifold and Blanking Plate	£1.12.8 plus 6/9 P T
Twin Muffler System inc. Manifold	£2.14.1 plus 11/2 P T
Muffler only	£1.2.9 plus 4/8 P T

**ETA INSTRUMENTS LTD., 289
HIGH STREET, WATFORD, HERTS.**

★ SPECIAL OFFER ★

ONLY FOR SCOTT CUSTOMERS

£20 CASH — £50 CASH — £10 CASH

FROM NOW UNTIL MARCH 31st WE ARE GIVING FREE SPECIAL VOUCHERS FOR EVERY £5 YOU SPEND WITH US. WE KEEP DUPLICATE VOUCHERS WHICH WILL BE PLACED IN A DRUM AND THE LUCKY WINNERS DRAWN BY RON MOULTON, EDITOR OF THE "AERO MODELLER", ON APRIL 6th, 1967. THIS COSTS YOU NOTHING, BUT YOU STAND A GOOD CHANCE TO WIN EXTRA CASH

★ SELECTED KITS ★

Sterling Stearman PT17 Bipe	98/0
C/L Kit for 19-35 s	97/0
'Amigo II' 79" Glider	175/0
'Foka' 102" Sailplane	132/0
'K-10' 79" Scale Glider	199/0
'Clou' 97" Sailplane	85/0
'Amateur' 44" R/C	142/0
Topflite 'Mustang' C/L	87/0
Topflite 'Warhawk' C/L	137/0
Topflite 'Nobler' C/L	175/0
'Zephyr' 73" Glider	70/0
'Tony Junior' C/L	70/0
'Navy Fighter' C/L	70/0
'Mini Robot' R/C	49/0
'Skyline' Scale 54"	125/0
'Mini Super' R/C	98/0
'Mini Concord' R/C	89/0
'Crusader' C/L Stunt	80/0
'Bergfalke' Glider	160/0
'Pascha' A/2 Glider	74/0
'Ali' 90" Glider	180/0
'Piper Triplane' 44"	99/0
'Bolkow Junior' 32"	79/0
Fairchild PT 19 45"	109/0

MANY MORE IN STOCK

★ SELECTED ENGINES ★

McCoy 35 6 cc. Glow	65/0
McCoy 29 5 cc. Glow	65/0
McCoy 40 7 cc. Glow	105/0
Super Tigre G15 Glow	205/0
AM 10 1 cc. Diesel	69/0
AM 15 1.5 cc. Diesel	76/0
DC Merlin .8 cc.	59/0
DC Dart .5 cc.	86/0
Webra Record 1.5 cc.	74/0
Webra Sport Glo 1.7 cc.	91/0
Eta Elite 2.5 cc.	168/0
Eta 29 VIC 5 cc. Glow	156/0
PAW 1.49 cc. Diesel	92/0
PAW 2.49 cc. Mk. 4	110/0
Merco 35 .6 cc. Glow	119/0
Cox Pee Wee .3 cc.	52/0
Cox Tee Dee .049	107/0
Frog 150 Mk III 1.5 cc.	65/0
OS Pet 1.6 cc. Glow	53/0
OS 15 Mk III 2.5 cc.	118/0
OS H35C 6 cc. Glow	177/0
ED 2.46 cc. Diesel	95/0
ME Heron 1 cc.	66/0
ME Snipe 1.5 cc.	73/0

STACKS MORE IN STOCK

PART EXCHANGE IS ONE OF OUR SPECIALITIES AND WE WILL QUOTE FOR YOUR EQUIPMENT BY RETURN

Our HP Terms are designed to help you

WE HAVE BEEN SERVING MODELLERS FOR 20 YEARS AND

THIS IS YOUR GUARANTEE OF A FAIR DEAL

Generous cash allowance for collectors' engines

★ SELECTED SECOND HAND ITEMS ★

Coronet Superhet Rx	200/0	Cox Pee Wee .3 cc.	30/0
Twin Triple Tx Rx and 2		Cox Golden Bee .8 cc.	35/0
Actuators, complete	280/0	Cox Tee Dee 15	65/0
Terrytone II Rx	70/0	Cox Special 15	95/0
Tommymtone Single Tx	70/0	Wen Mac .049 Glow	27/6
McGregor Xtal Tx	140/0	DC Dart .5 cc.	47/6
RCS Guidance Rx	95/0	Taifun Hobby 1 cc.	35/0
Climax Unimatic Servo	40/0	OS Max II 15 Glow	45/0
OS Pixie Rx	100/0	Veco 29 5 cc. Glow	75/0
Slim Jim Servo	70/0	Miles 5 cc. Diesel	70/0
Elmic Compact	50/0	Merco 35 Stunt	75/0
Rep Unipak Unit	120/0	K&B Torp 35 Stunt	70/0

FULL LIST FORWARDED FOR 3d. STAMP

ALL SECOND HAND ITEMS ARE FULLY GUARANTEED

★ R/C EQUIPMENT ★

Guidance System III	14 gns
OS Pixie Tx & Rx	£16 1/2
McGregor Xtal Tx with new	
Minimac II Rx, now	16 gns
Terrytone Mk. II Rx Kit	119/0
Tommymtone Tx Kit Mk II	90/0
C&S 'Honey Bee' Rx Kit	89/0
Kraft K3 VK Single Rx	99/0
Fleet Dual Propo Unit	£28 1/2
'Coronet' Superhet Rx	£13 1/2
Futaba Superhet Unit	£28
Futaba Cessna 210, complete	
with S/C R/C & Engine	£27
Rand LR-3 GG Servo	205/0
Slim Jim S/C Servo	95/0
Dynamite S/C Servo	89/0
Dynamo for Engine	83/0
Elmic Compact Actuator	67/0
Elmic Commander Act	59/0
Elmic Corporal Actuator	47/0
Elmic Conquest Actuator	35/0
All Elmic Actuators can be	
supplied complete with battery,	
boxes, harness and switches.	
Duramite Multi Servos	99/0
Enterprise Deac and 2v.	
Battery Charger	115/0

★ "POP" ACCESSORIES ★

Japanese Silk sq. yd.	7/6
All McCoy Silencers	27/6
All Merco Silencers	26/6
O.S. Pet Silencer	24/0
All O.S. Silencers	30/0
A.M. 10/15/25 Silencers	11/10
New X-Acto Battery Powered	
Hand Drill with Tools	48/9
Veco Heavy Duty Plugs	9/6
Veco Standard Plugs	5/6
Burlington Hobby Chest	103/0
"Sprayt" Foot Spray	15/0
McCoy Jet Assemblies	10/9
All other McCoy Spares	
Monokote per sheet	25/0
"Chicken" Finger Stall	3/0
"Tempo" Glider Winch	45/0
"S-Former" 24" x 12"	5/0
Veco Standard Ali Spinners:	
2" 11/0, 2 1/2" 14/0, 2 3/4" 16/0	
Engine Test Stand	14/0
Schuco Semi Scale Wheels:	
2 1/2" 7/6, 3" 10/9, 3 1/2" 14/0	
Enterprise Clunk Tanks: 1 oz.	
5/6, 2 oz. 6/0, 4 oz 8/0,	
8 oz. 10/0.	

Tornado Props in Stock

★ ROLAND SCOTT LTD. ★

147 Derby St., Bolton, Lancs.
Phone: BOLTON 27097

★ ALLEN SCOTT LTD. ★

54 Shudehill, Manchester 4
Phone: BLACKFRIARS 6924

Phone, write or call—the Service is the same for all

One day you could pilot tomorrow's airliners

You need to have 5 passes in G.C.E. subjects, 2 of which should be at 'A' level, including English Language, Mathematics and one of the following science subjects: Physics, Physics-with-Chemistry, Chemistry or General Science. Then, when you are 18, you could commence your course of training to be an airline pilot with BOAC or BEA.

Here is some information for Dad. The sponsors pay for the training, and grants are available from your local Education Authority. The initial training course lasts approximately 18 months.

This is a wonderful opportunity and is well worth thinking about. You could enjoy the challenging life of an airline pilot, a high salary and an excellent pension scheme to make it all worthwhile.

Start preparing for those vital G.C.E. subjects now.

For further details and advice please write to the Pilot Career Information Officer The College of Air Training, Hambie, Southampton.

➤ BOAC

BEA BEA





"STUNTER"

30" SPAN LIGHTWEIGHT C.L. STUNTER
FOR MOTORS 1 TO 1.49 C.C.

Full Schedule Modernistic Performer with Fighter-like Lines!

EXTENSIVE Pre-fabrication!
All Die-cut fuselage and tail-parts, Spindled coaming. Many pre-shaped parts. Plastic Spinner. Clear Cockpit Canopy. Pre-formed Undercarriage. Balloon Wheels. All hardware. Complete easy-to-follow pictorial diagrams and instruction sheet.

HIGH PERFORMANCE LIGHT-WEIGHT STUNTER CAPABLE OF EVERY STUNT IN THE BOOK!



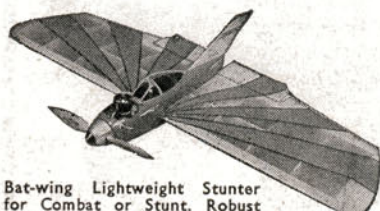
IDEAL FOR WEBRA "RECORD"
1.5 cc. or "SPORT-GLO" 1.7 cc.

KIT PRICE COMPLETE

Ideal for

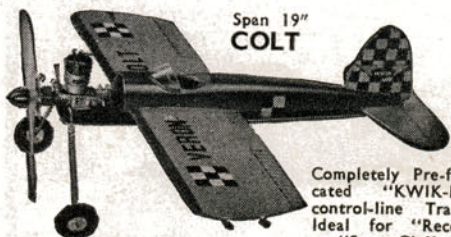
Webra Engines

Span 25"
BOMB-BAT



Bat-wing Lightweight Stunter for Combat or Stunt. Robust design for Combat Battling! Ideal for Webra "Record" 1.5 cc.

Price 29/11 inc. P.T.



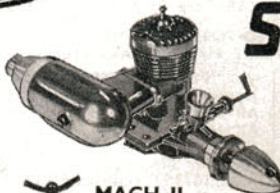
Span 19"
COLT

Completely Pre-fabricated "KWIK-FIX" control-line Trainer. Ideal for "Record" or "Sport-Glo", 1 to 1.7 cc.

Price 33/3 inc. P.T.

RANGE OF C.L. MODELS

Provost Trainer	12/8
Nipper	18/11
Bee-Bug	19/11
F.W.190	34/3
Spitfire	42/9
Combateer	36/7
Philibuster	36/7
Pinto	42/9



MACH II



Webra produce the most complete range of Continental motors. Standard, R/C & Marine Versions. Comprehensive spares list, Marine accessories always available. Send for FREE BOOKLET!

Now firmly established as the finest .1 cu. ins. Glow-motor in its class! 1.7 cc. Phosphor-bronze bearing. Neat, Compact, Light. A highly versatile motor.

Price 91/4 inc. P.T.

Silencer. An extra Accessory. Price 29/6 inc. P.T.

R/C Carburettor. Converts from C/L & F/F to R/C. Price 35/6 inc. P.T.

RECORD



Piccolo .8 cc.	78/11
Record 1.5 cc.	90/1
Record R/C	102/4
Winner 2.45 cc.	105/2
Winner R/C	117/9
Mach II 2.47 cc.	177/2
Mach II R/C	193/4
Bully II 3.44 cc.	149/3
Bully II R/C	166/3
Glo-Star 3.5 c.c.	149/3
Glo-Star R/C	166/3



Webra Prices do not include 10 per cent P.T. Surcharge

MODEL AIRCRAFT (B'MOUTH) LTD. NORWOOD PLACE • BOURNEMOUTH

DISTRIBUTORS IN U.S.A.: WESTEE HOBBY IMPORTS, 5808 West Chicago Avenue 51, Ill., U.S.A.
DISTRIBUTORS IN CANADA: ACADEMY PRODUCTS LTD., 106 Tycos Drive, Toronto 19.
DISTRIBUTORS IN AUSTRALIA: GEORGE PIZZET & SON LTD., 131-141 Johnston Street, Fitzroy N.6., Melbourne.



Heard at the HANGAR DOORS

Philatelists among our readers will appreciate the reproduction of a recent French issue, especially if they happen to have crossed the Channel by air ferry. The super streamlined Bristol Freighter without trace of undercarriage would have given us a few extra grey hairs if it had to land upon its belly!

QUOTE from "Asian and Indian Skyways"

"In place of the old-fashioned rubber strand motor, "Pink Lady" uses 2.55 cc. diesel engine."

. NO COMMENT!

QUESTIONNAIRE at the rear of this issue is your opportunity to tell us what you want to see in "Aero Modeller". Three years ago we obtained an excellent response to a similar request, but times have changed and so have fashions in model-making. Your opinions will help formulate the content of the magazine in future.

CLUB SURVEY in the centre pages is designed to be pulled out and folded to form a separate reference for all enthusiasts. Experience in contact with lonehand modellers clearly indicates a need for better exchange of practical help at the flying field and the list of clubs together with flying fields and meeting places should help bring together many otherwise detached groups.

NATS AT HULLAVINGTON!

Confirmed as we go to press, this information from the S.M.A.E. makes happy news, even for free-fighters who requested a bigger field. Alternatives were investigated but only one offered hope and that was owned by a manufacturing company and offered no local accommodation. So Hullavington it is, by kind permission of W/Cdr. Douch, and remembering the turn-out last year we look forward to seeing you there on May 28/29.

SPANISH POST INT'L

organised for teams of three, flying A/2 gliders in the usual five flight system is open to all clubs. Flights have to be made any day in March and entries sent with a photo of the team to Escuela Provincial De Aeronautica, calle Huertas 36, Madrid, Spain, before April 10.

ANOTHER FUEL constituent has been banned in the U.S.A. It is Hydrazine, a rocket fuel which when mixed with nitro methane forms hydrazinium salts of aci-nitromethane which is in the explosives category. Previously established ban concerned tetra nitromethane, a very dangerous chemical capable of serious physical damage.

NEW ZEALAND NATS were at Fielding over the New Year holiday and advance results show Paul Lagan of Christchurch first in A/2 Glider, F.A.I. Power, Wakefield, Chuck Glider, Class A Power and Combat, plus two thirds and two fourth places. Events were well supported too! We hope to produce an illustrated report soon.

RESIDENTS of Highbank Close, Welling, are raising a petition to ban radio model flying over Bexley Council ground in Kent. Noise and accident hazards are cited. Will nobody learn? Meanwhile the fight goes on to preserve flying areas adjacent to housing in other parts. Do you fly carefully—and with an adequate silencer?

1966 F.A.I. contest programme

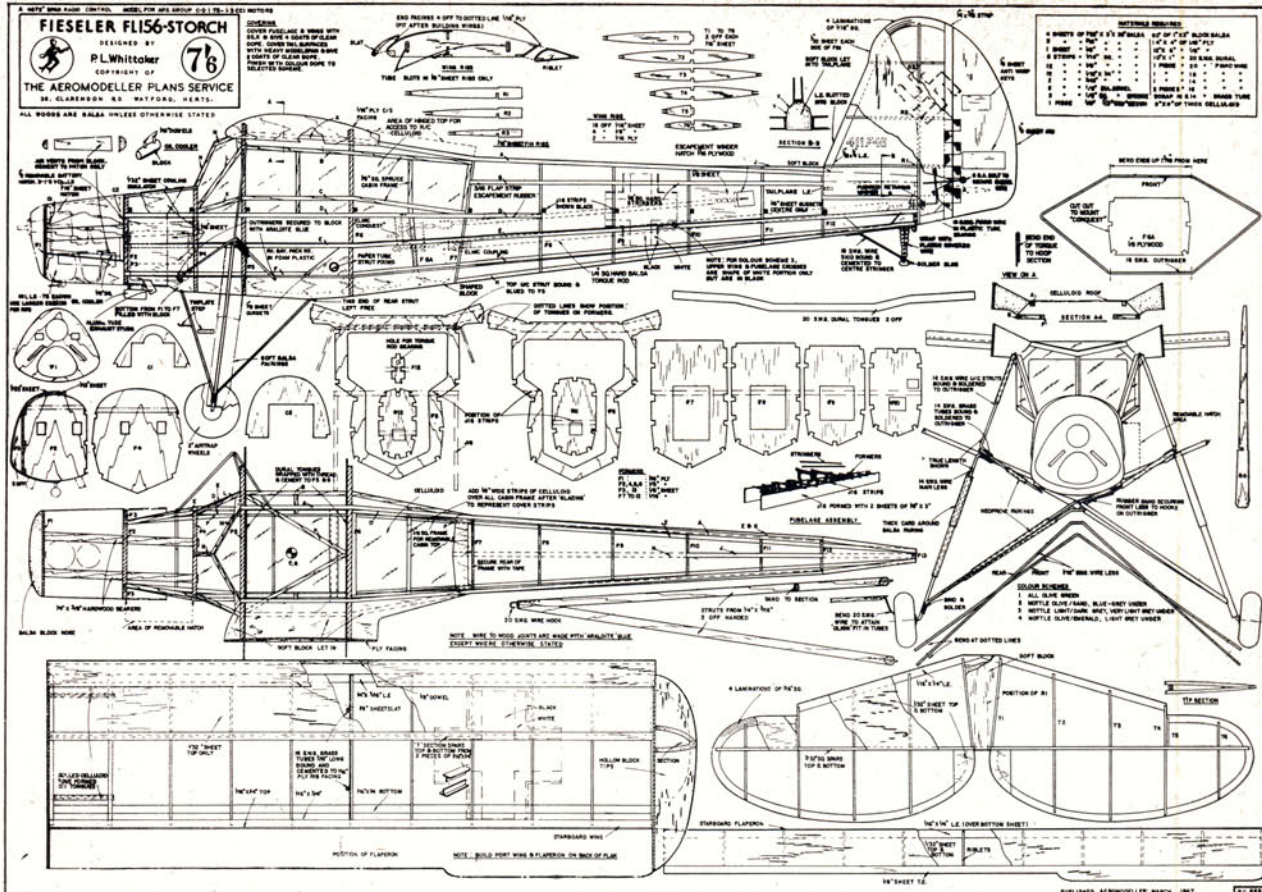
Approved International Events

- | | |
|-----------------------|--|
| February 26 | Free Flight; Coupe d'Hiver "MRA" Cup. Paris, France |
| February 26 | Free Flight; Rubber, Gliders, Power, Individual & Team. Helsinki, Finland. |
| April 1-2 | Free Flight; Rubber, Glider, Powered Glider "Garia Morato" Cup Grinen, Madrid, Spain. |
| April 15-16 | Free Flight; Rubber, Glider, Power. Zell-am-See, Austria. |
| April 30-May 1 | Free Flight; "Alex Houlberg" trophy gliders & Power assisted R/C Gliders. Belgium |
| May 14-15 | Free Flight; Rubber, Glider, Power, "Criterium du Nord" Radio Control-Multi, Maubeuge-Le Salmagne, France. |
| July 2 | Free Flight; Rubber, Glider, Power. |
| July 3 | Radio Control; Multi, Bled, Yugoslavia |
| July 5-6 | Control-line; Speed, Aerobatics, Team Racing, Combat |
| | Free Flight; Indoor "Inter-City" event. Vienna, Austria. |
| July 15-16 | Free Flight; Rubber Glider Power "Pierre Trebod" Cup. Mons-en-Chaussee, Peronne, France. |
| July 25-27 | Free Flight; A/2 Glider |
| | Control-line; Team Race, Varazdin, Yugoslavia |
| July 31-Aug. 6 | All categories 'USA Nationals'. Los Angeles, U.S.A. |
| August 12-13 | Control Line; Team Racing "Mecsek" Cup. Pecz, Hungary |
| August 12-13 | Free Flight; Hydro Rubber, Power, Split, Yugoslavia. |
| August 12-15 | Radio Control; Multi, Mono Power & Power assisted Mono glider. Kralwies, Austria. |
| August 15-30* | Slope Soaring; "European Cup". Verona, Italy. |
| August 25-28 | Control-line; All classes, Criterium of Aces, Belgium. |
| Sept. 9-10 | Control-line; Speed, Team Race, Stunt, Combat Bochum, W Germany. |
| Sept. 16-17 | Free-Flight; Rubber, Glider, Power, Neustadt-Alsen, W. Germany |
| Sept. 29 | Radio Control; Multi power, Mono Gliders. Lienz, Austria. |

WORLD CHAMPIONSHIPS

- | | |
|---------------------|--|
| June 21-26 | RADIO CONTROL MULTI. Ajaccio, Corsica. |
| August 14-19 | RUBBER, GLIDER, POWER. Sazena, Czechoslovakia. |

*Precise date unknown



FULL SIZE COPIES OF THIS 1/6th SCALE REPRODUCTION ARE AVAILABLE FROM AEROMODELLER PLANS SERVICE, PRICE 7/6d. PLUS 6d. POST. QUOTE PLAN FSP669 WHEN ORDERING.

R/C or Free
Flight 1/12th Scale
by P. L. Whittaker

FIESELER STORCH

TEN years of excellent service to hundreds of flying scale enthusiasts confirm the pedigree of this one twelfth size design which we are now re-issuing with radio control conversion. As a free flight model it has few peers. The proportions are near perfect. Only the odd fuselage section offers any difficulty and this is soon solved by use of a simple jig for assembly. The Storch is easy to trim and fly, with characteristics very close to the full size. Gliding speed is slow and response to the rudder will be immediate thanks to the long fuselage which now embodies a simple self neutralising two position escapement. The size of the model permits it to

accept all known commercial single channel outfits. The novel fuselage is a former and stringer assembly. Start by pinning formers to temporary carriers and mount on the jig, spaced in line and at correct height. The dotted lines on the formers indicate where jig strips are held. Add hard balsa stringers and spruce cabin frame after cementing wing tongues to formers 5 and 6. These should be used to form the rolled tubes for the wings so that a good fit is obtained. Formers 7 to 12 must have areas cut away for radio installation, and harder balsa can be used to advantage forward of the centre of gravity. When the skeleton has become self supporting remove it from jig.

The undercarriage outriggers should now be bent into shape, bonded into position with Araldite or similar strong adhesives after "blocking in" the forward fuselage belly. The top u/c strut can now be formed and "Araldited" to F4. Bind and solder the intersection of the top strut with the outrigger and main leg tube on each side. *Note:* add oil cooler and exhausts *after* covering fuselage.

Paint cabin interior matt grey, glaze windows with stiff celluloid. Form window frame from 1/4 in. strip celluloid and cement into position, to cover the spruce frame. This secondary frame will be painted later and conceal any cement bonds, on the real machine the windows are joined externally with strips of doped fabric to seal the gaps!





Main oleo struts are formed in 14 s.w.g. wire and pivoted in the brass tube soldered onto lower rear outrigger strut as shown on plan. Thus the legs will move back and outward under landing shocks, supported by rubber bands round the undercarriage. This is a good point for abrupt landings!

Fin and elevator profiles are formed around cardboard formers cut to accurate shape. Some may prefer to have soft balsa "solid" surfaces if 1.5 cc. is used. Determine which of the tail shapes you wish to employ by studying the 1/72nd scale plan data.

Assemble mainplanes (minus slats and flaperons over the plan. Next cut 4 full ribs (including flaperon) in $\frac{1}{8}$ in. ply and cement to each end of the panel. The second wing panel can be built over the back of the plan after it has been wiped with an oily rag to render it translucent. Note that the tubes for the wing tongues must be firmly fixed. Add wing tip blocks and carve the root fairing. Then build the flaperons by cementing "riblets" direct to $\frac{1}{8}$ in. $\frac{1}{2}$ in. leading edge and $\frac{3}{8}$ in. sheet lower surface. Sand trailing edge and cement upper $\frac{3}{8}$ in. sheet in position. Slat is formed wet by wrapping around a broom handle and attached to $\frac{1}{2}$ in. dowel. L.E. Shape a section on the slat before fixing in place. The assembly is tissue covered. Cover the entire model with silk or nylon, well tautened with glider dope then attach slats and flaperons. Note the reflex T.E. position of flaperon which helps for stable flight performance.

Cut wing struts to length for dihedral of your choice ($1\frac{1}{2}$ in. at tips is sufficient with care in trimming). The struts are plugged into a paper tube across the cabin floor and drawn together by a rubber band, each plug being formed as a hook. Do not fix the tail assembly to the fuselage until after first glide tests.

Use the colour scheme of your choice over adequate clear dope and grain filling treatment and finish with fuel proofer. Before flight tests, fit all the internal R/C gear and check for balance.

Ensure that the C.G. is on mainspar and set the tail assembly to give a long flat glide, cement at the best position and make a flight on reduced power using an 8 x 4 in. plastic prop. Adjust engine offset as necessary to give very slight turn to starboard at low power.

A flight at full power should result in a short straight take-off, followed by a climbing turn to the left.

Rate of climb can be controlled by reducing, or increasing downthrust and it is possible to get a 50 in. take-off run (in still air) followed by a typical Storch-like steep climb.

One can imagine the possibilities with engine speed control. Development flying on the prototype was completed using only two bolts to retain the motor. At this stage the remaining holes were drilled in the bearers and bolts screwed home. This is a handy tip, worth using on any scale subject. All set! Right! Now who'll be the first to make a V/STOL spot landing?



At right and far left, two versions of the Storch made for radio control by Japanese modellers (note the 'OS' under the wingtip to advertise the engine). These ably illustrate the practical qualities of the subject for scale model flying. At top of the page is Peter Whittaker's original model from the plans, as designed for .5 to .8 cc. power and pure free flight. Modern radio control equipment has permitted easy modification to further extend the already long life of a very popular model. See other pages in this issue for colour data.



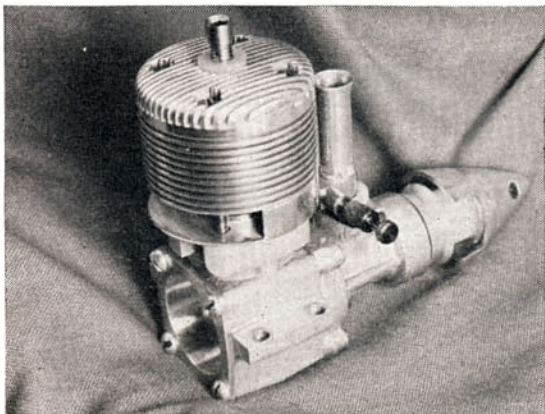
1966 F.A.I. team racer by Zolotoverch and Kobets from the U.S.S.R. Note the large canopy and square section pan, air-speed is reported as 100-105 m.p.h. with results of 4:11 and 9.01 in Lenin-grad, race conduct not reported! Dig that model box with two language nationality markings and by the shape of it built to house two racers in the smallest space.

Hints from the experts for those who want to have their models fly faster

Eta-Tigre

Dick Hall of Alabama, U.S.A. sends an interesting story of Eta and Super Tigre parts put together to make his Eta-Tigre. The crankcase casting and liner are Eta Elite and the front housing, propeller driver and collect from an old Super Tigre .15 with a bolt on front housing. The venturi is modified Cox T.D. .049 and T.D. needle valve. Parts made to fit the above together include an adaptor ring for S.T. housing and Eta case, crankshaft from Stainless steel, backplate, conrod from 7075 T6 aluminium, nylon venturi adaptor, longer piston to eliminate sub piston induction, shims to lift liner for correct timing with new piston, cylinder fins, exhaust collector. Aluminium cylinder head with integral $\frac{1}{8}$ in. dia. contra piston, nylon compression screw insert,

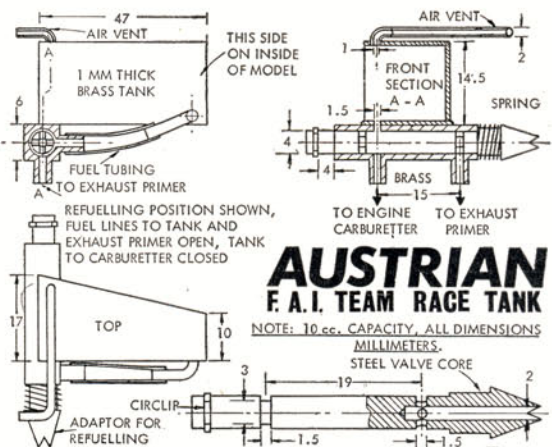
Hybrid Eta-Super Tigre by Dick Hall from the U.S.A. Performance is good with many new parts; note chimney stack venturi.



and Teflon end pads for gudgeon pin. The new fins are $1\frac{1}{4}$ in. dia. Dick is teaming up with Wayne Mobley who was in the U.S. team at Swindorby and to date the engine is comparable with Dick's others making 56 laps at 94 m.p.h. with a 10 c.c. tank.

Austrian Team Race Tank

The diagram for the Austrian tank as used at the World Champs on the Bugl designed H.P.15 engines (which have troubles and are not yet in production) is 10 c.c. and should be made smaller to fit the new 7 c.c. size limit. The two way valve is for filling the tank, and at the same time priming the engine by putting a few drops of fuel into the exhaust stack. For automatic filling the finger valve (from the U.S.S.R.) is ideal, this was shown in November *Aeromodeller* 1965.





Japanese speed models by Mihara & Sawada look well made and fly clockwise on mono line control. Models here are 1.5, F.A.I. and 5 cc. sizes. Picture by Rokuro Miyagi.



Carl Dodge (left) and Al Stegans pose with modified Rossi .60 speed model also flown clockwise on mono line, did 186.8 m.p.h. for U.S.A. record.

U.S.A. Record Smasher

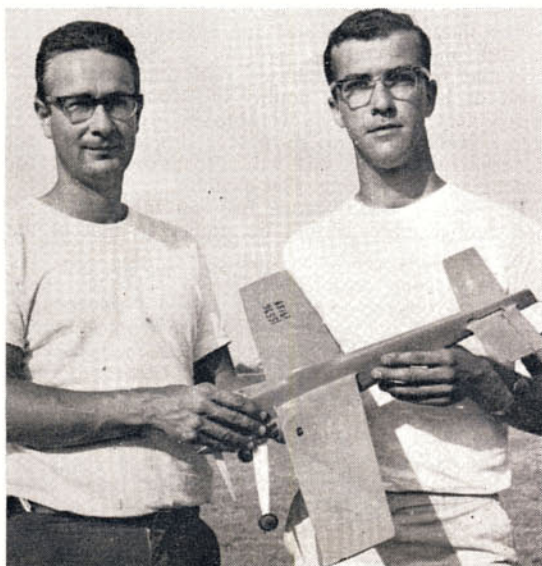
Take a glance at the Proto Speed model specifications for 5 c.c. engines shown in the Club Survey booklet under A.M.A. rules then you will realise just how impressive the record run of 148.9 m.p.h. set up by Tom Lauermann and Jim Delaney is. They start with a stock Super Tigre .29 (rear induction), change the ball races, chrome plate the backplate and make a new induction disc. The timing is retained as standard and the whole engine freed up so so that friction is at a minimum. With fuel including 75 per cent Nitromethane, 15 per cent Ucon Oil, and certain other undisclosed power ingredients and a home made $8\frac{1}{2}$ in. dia. propeller airspeed is 160-162 m.p.h. during the run. They hope for 150 m.p.h. average from the standing start and are experimenting with 'pipes'. They also held the A.M.A. speed record for 10 cc. engines with a Rossi .60 at 185.5 m.p.h. for a while then Al Stegans and Carl Dodge also with a Rossi increased it to 186.8 m.p.h., using a home made $9\frac{1}{2}$ in. x 12 in. propeller. All flown on Mono line of course.

News Brief

Dave Balch and Richard King are using even lower span and aspect ratio Oliver Tiger powered Trident F.A.I. racers this season . . . Kevin Lindsey says he is not flying this year, just supporting the other pipe users and hoping that Dick MacGladdery is back from the Persian Gulf in time for the Criterium trials . . . Criterium of Aces is in Belgium August 25th—28th, no other gen. yet . . . Dan Jones in the U.S.A. has turned 5:20 for 140 laps in rat race with rear intake K&B .40 . . . Latest F.A.I. rule amendments will be enforced at all rallies this year . . . Rolf Miebach in conjunction with other well known continental speed fliers is building enlarged tuned length pipe equipped Stuppies for the Super Tigre G.60 R V and 29 R V . . . Dan Jones' T.W.A.

Tom Lauermann (left) and Jim Delaney with U.S.A. record holding Proto Speedster, has Super Tigre .29 RV and does 162 m.p.h. They have also held 10 cc. speed record.

glow powered team racer with a Bill Wisniewski tuned length pipe has been test flown with a 7 c.c. tank, result 15 laps at 105 m.p.h., "needs sorting out—still more" is his comment . . . Builder of the model rule has been rather ignored by some C/L fliers we know of, new year's resolution for us "no hesitation in reporting suspects" . . . Only speed pans still being made are by Tatone in San Francisco . . . Future "Aeromodeller" Plans Service additions in C/L are: "Super Master", stunter by J. Gabris, "Jefe II" F.A.I. team racer by Stockton-Jehlik, and an F.A.I. team racer by Brian Turner. . . . Italian team race fuel at World Champs was, 28 per cent Oil, 15 per cent Ether, 57 per cent Paraffin plus 1.5 per cent Nitrite.



David Boddington
advises on a vital
piece of equipment

—Escapements

WHEN the Editor asked me to write an article on practical tips in relation to rubber driven escapements my first thought was that a few lines would be enough to cover that topic. However, on looking into the subject more closely I realise that there is quite a lot that one can write on the subject involving the installation, re-working and maintenance of escapements. Much of this is carried out as a matter of course by anyone experienced in S/C flying but to the newcomer to the sport the following hints may prove to be helpful. Many remarks and suggestions in this article refer to the Elmic "Conquest" escapement, the reason for this is simple, I use this type of escapement to the virtual exclusion of others. That is not to say there are no other good escapements on the market but the "Conquest" has the virtue of simplicity in design, operation and installation. I am not a lover of the compound escapement, it is slower in operation, more critical to voltage and winds on the rubber motor. When it is combined with a "kick up" elevator device and quick blip motor control contacts I am even less happy. The electrical "make and break" contacts on these escapements leave a lot to be desired, both mechanically and electrically. Providing one accepts that there may be an occasional missed command then there is no reason why this more sophisticated form of escapement control should not be used. Should you, however, be relying on elevator or motor control in a less naturally stable model, then I would suggest a more positive form of actuator is used.

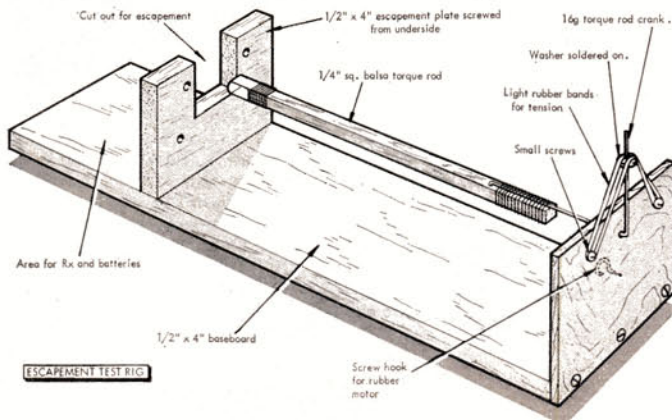
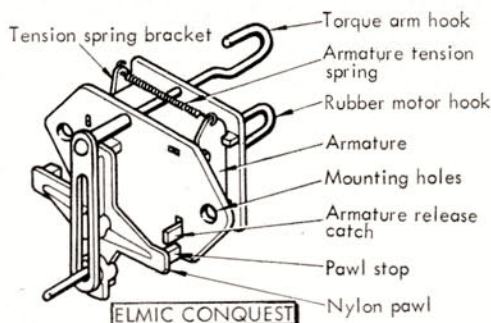
Few escapements are bench tested at the works before they are despatched and consequently, despite careful manufacturing control, a small proportion may reach the purchasers requiring some adjustment. It is, therefore, doubly important to give the escapement a thorough workout before installing it into a model. For this purpose a simple test rig can be constructed and this will also prove useful for practicing transmitting. (See sketch).

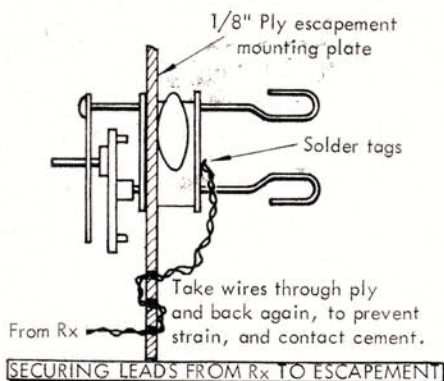
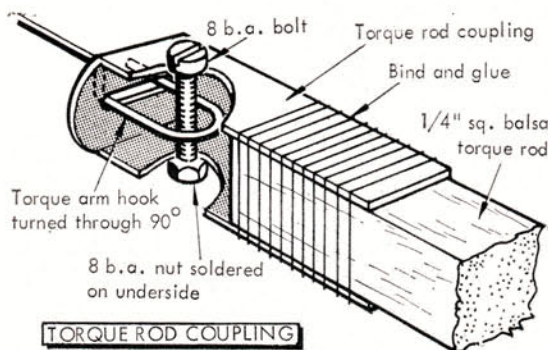
If possible, the distance between the escapement and rudder crank should be similar to that of the



Roy Bayle of Watford Wayfarers heaves off a clubmates "Gasser" single channel model.

model the equipment is to be installed in. Vary the tension of the rubber bands to the rudder crank and this will give you an indication of how much air pressure is required on the rudder of the model before "blow back" is likely to occur. You may be surprised how little tensioning the escapement will operate against—a sure indication that escapements are unsuitable for larger and fast models and also the need to use an aerodynamically balanced rudder in the medium size models. Use the test rig for experimenting with different lengths and widths of escapement rubber. Find out the maximum number of turns the rubber will take with the escapement still working and then the number of operations available before it is unwound to the stage where the escapement ceases working. Make a note of this, it will give you a good indication on the flying field of the number of turns required. Remember that it is torque we require from the rubber motor and not tension, the latter merely increases





the friction on the revolving pawl of the escapement. This is the reason we use a rubber motor length considerably in excess of the distance between the escapement and the winding hook. One condition our test rig will not simulate is of the equipment installed in a model with the engine running. Vibrations can cause some peculiar problems both with relay type receivers and escapements but by shaking and knocking the test rig with the equipment operating it should give a reasonable indication of any likely problems.

Fault finding

In cases where the escapement fails to work correctly, the following checks should be made:

- (1) With the transmitter and receiver switched on and the transmitter button held down (i.e. a signal held on) check the voltage at the connections on the escapement. Make sure this is up to the minimum recommended by the manufacturer (a good 'Conquest' will operate down to 2 volt and even as low as 1½ volt). If the voltage is correct and the escapement fails to pull in try reducing the spring tension by gently easing in the bracket retaining the spring. Adjust the tension until the armature pulls in when a signal is given but returns smartly when signalling is stopped. Should the armature still fail to pull in, even with adjustments to the spring tension, then the cause is probably a faulty winding in the escapement coil and the unit should be returned to the manufacturer. This is a very rare occurrence.
- (2) Perhaps the escapement will turn initially and then stick in one position. Check the nylon pawl stops for uneven finish. Remove any moulding 'flash' from the stops very carefully with a sharp knife or razor blade, do **not** round off the corners of the stops otherwise there is a danger of them slipping past the armature release catch. Check also that the release catch is free from burrs. There is little else that can go wrong on a simple sequential escapement but a smear of oil on bearings to moving parts and occasional cleaning will help to keep them operating smoothly.

Securely mount the escapement in the model on ¼ in. ply (minimum) preferably in the form of a slide in plate for easy access. The leads from the receiver to the escapement should be soundly secured to the ply escapement mounting plate to prevent the wire from breaking through vibration.

With Elmic escapements a special torque rod coupling is supplied and although this is an excellent way for easy decoupling and removal of the unit there is a risk that it can come apart accidentally. By turning the escapement torque arm through 90 deg. and resoldering, drilling through the coupler and soldering a nut on the underside this problem can be obviated. An 8 BA bolt through the coupler and between the torque arm hook will prevent the

torque rod from pulling off. (See sketch). The type of torque rod bearing at the tail end of the model is a matter of individual choice and suitability to the design. I have used, with equal success, 16 s.w.g. brass tube (about ¼ in. long), small eyelets, nose bushes from rubber models and sheet paxolin as rear bearings for the torque rod. The important point is that there must be absolutely no binding at this bearing and the longer this bearing is (i.e., with the brass tube) the more care is necessary in lining up the torque rod and bearing. Hinges to the rudder, too, should be as free in operation as possible; any form of friction on escapements linkages is wasting valuable power that we can ill afford to lose. A simple form of rudder yoke for adjustable rudder throw is shown in APS Plans. Do not forget to lubricate the rubber motor before installing and replace the motor when it shows signs of wear.

One final word on the pros and cons of sequential versus compound escapements. We were flying single channel models the other weekend in a wind of 15-18 knots. In conditions like this the only way to fly was to head the model upwind making small directional changes to keep the model on its correct path. A 180 deg. turn would be fatal with the model quickly disappearing downwind and irretrievable by radio. Even so, without any turns at all under power or on the glide the models were landing some 50-100 yards down wind of the launching point. With the sequential escapement used control was rapid and, with the model properly trimmed, the rudder movements required tended also to be sequential (i.e., left rudder, followed by right and then left again, etc.).

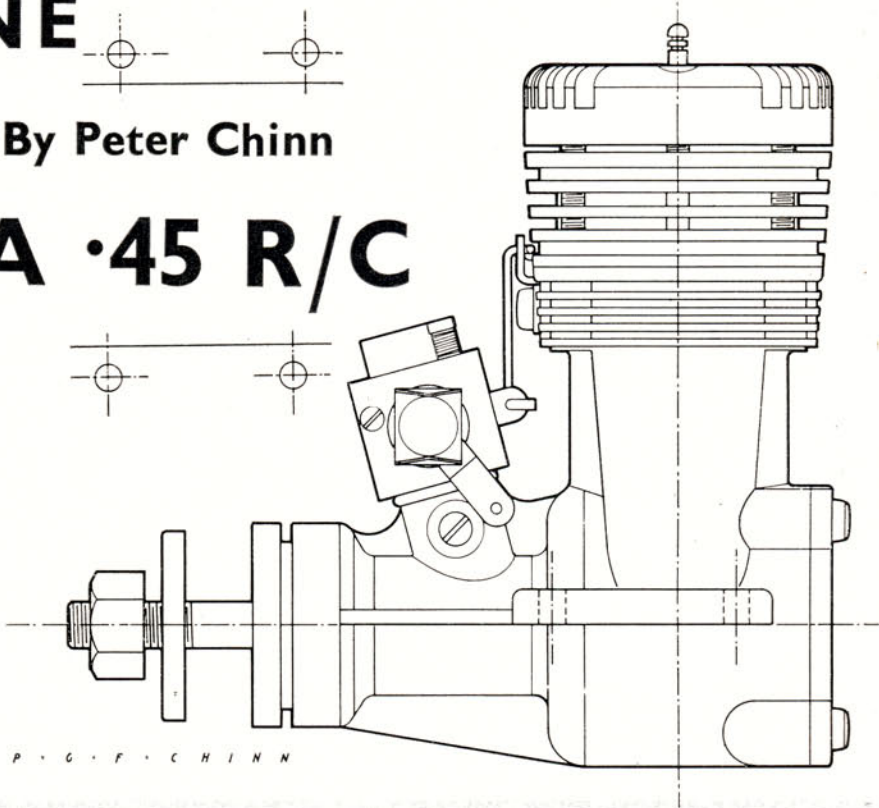
Let us assume now that a compound escapement had been fitted; for left rudder the transmitter button would have to be pressed, released and pressed again and held, all at the correct speed. Probably nine times out of ten this would be done correctly but on the tenth time, due to incorrect signalling, left rudder would be missed and right rudder obtained instead. In strong wind conditions this would inevitably mean the model turning off downwind before corrective action could be taken. Incidentally, when using a sequential escapement I rarely think in terms of left or right rudder but simply of a turn in the same, or in the opposite, direction as the previous turn. This is particularly useful on the landing approach when the model is flying towards you it saves re-orientating yourself in relation to the model. *Keep it Simple!*

ENGINE

TEST

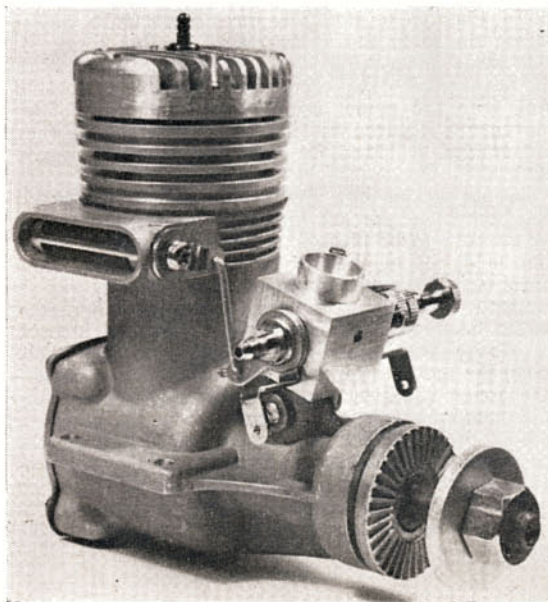
By Peter Chinn

UEDA 45 R/C



P · G · F · C · H · I · N · N

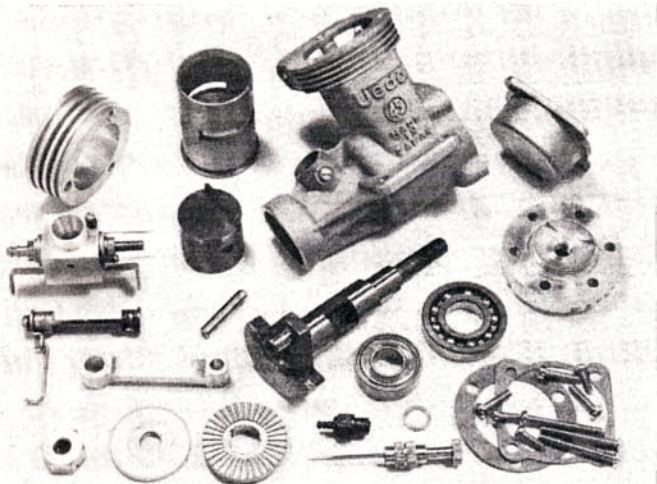
THE Ueda engine is a relatively new make and the 45 was the first model from this manufacturer to be marketed. Production began a little more than two years ago, since which time four examples of this engine have passed through our hands.



The Ueda 45 R/C was first announced in the Japanese model publications in 1963-64 and from illustrations looked very much like a Veco 45. In fact, when it appeared in a production version more than a year later, it was seen to differ a good deal from the Veco both in construction and outward appearance, although, in detail it still bore marked Veco influence. Over the next few months, several minor changes were made, including the addition of an air-bleed to the carburettor, replacement of the original bushed diecast conrod by a machined one, the use of a riveted-on crankshaft counterweight and the adoption of colour anodised cylinder fins. Later, the compression-ratio was increased also.

Our impression of the engine at this stage was that serious errors had crept into the design, presumably as a result of the manufacturer's lack of familiarity with model two-stroke engine design—a conclusion that seems to be borne out by subsequent experience with one or two other Ueda engines. In particular, the cylinder porting appeared to be decidedly off the beam. For example, the exhaust and transfer ports were timed to give needlessly long opening periods of 160 deg. and 140 deg. respectively, the piston crown dropping well below the level of the exhaust port lower edge in the process, and the transfer port was so wide as to extend beyond the ends of the piston baffle.

The effect of porting such as this would be (a) to release expanding gases before their energy had been fully utilized, (b) to cause an excessive loss of the fresh charge during the compression stroke and (c) to reduce the actual effective compression



Parts of the Ueda .45 R/C Engine features twin ball bearings, MoS₂ impregnated piston and riveted-on crankshaft counterweight.

ratio of the engine. All these are factors affecting the power output of the engine and, on test, the standard Ueda 45 R/C proved to be appreciably below the average in this respect.

Following initial tests, we communicated our findings to Jack Fisher of the Modelradio Co. who had, at that time, just begun to import the Ueda for sale in the U.K. Fortunately, it is possible to alter the port timing on the Ueda 45 by a fairly simple modification: i.e. lowering the cylinder liner. This is easily accomplished by machining the top of the finned cylinder jacket, to lower the seating that locates the cylinder liner flange, and then restoring the compression ratio by installing a suitable gasket or spacer between the raised ground rim of the flange and the cylinder-head. These were, in fact, the modifications carried out in evolving Modelradio's tuned version of the Ueda 45. Several engines were used in the experiment, starting with a drop of .020 in. in the liner location, progressing to .050 in. and with different thickness decompression gaskets. The final combination chosen was to lower the liner the full 50 thou., with a .050 in. thick decompression plate under the head. No increase in geometric compression-ratio was necessary, since, quite apart from a reduction in compression space depth of 0.6 mm. (.024 in.) already introduced by the manufacturer during 1966, the lowering of the top edge of the exhaust port automatically increased the effective compression-ratio.

In this form, the Ueda's port durations, as checked on the Modelradio-tuned version submitted for test, are reduced to a more reasonable 140 deg. (exhaust) and 124 deg. (transfer). Slight variations may be evident, however, between earlier and later models, both standard and modified. We found as much as 5 deg. difference in port timings due to slight variations in port dimensions, in piston height above the gudgeon-pin and in between-centres conrod length. With the attention that the manufacturer is now giving to the maintenance of closer dimensional tolerances, these variations should disappear.

Standard Model

Two points in the Ueda's favour emerged immediately we began testing this model. Firstly, it was very easy to start and, secondly, it required very little running-in. In contrast to most large lapped piston engines, it showed little or no tendency to overheat and slow up and for all practical purposes, was fully run-in well within the nominal 60 minutes total running time that we gave it before taking any test readings. A further one hour of running was accumulated in the process of making throttle adjustments and trying different plugs. Subsequent tests were made on the Ueda R/C type plug supplied, which seemed to suit the engine better than most.

On the debit side, the engine obviously lacked power throughout the r.p.m. range and, on anything larger than an 11 x 5 prop., ran rather unevenly. Dynamometer tests subsequently revealed a maximum torque of a little over 50 oz. in., (equivalent to a b.m.e.p. of only 43 lb./sq. in.) at 7,000 r.p.m., dropping rapidly to result in a maximum b.h.p. of under 0.44 b.h.p. at approximately 9,700 r.p.m. (Most .45 class R/C engines can be relied upon to deliver 0.60 b.h.p. or more at peaking speeds in the 11,000—12,000 r.p.m. bracket, under similar test conditions.)

Throttle control was reasonably good with idling down to a minimum of 2,500—2,600 r.p.m.

Modelradio Modified Version

As received from the Modelradio Co., this engine had previously acquired some running time and no running-in appeared to be necessary. It was, nevertheless, given a total of 30 minutes running before tests were undertaken.

No deterioration in the docile handling qualities of the standard model was detected in this tuned version, but the improvement in power output was quite remarkable. In terms of prop. r.p.m., the improvement was indicated by the following speeds (standard version speeds in brackets): 8,400 (7,400) on a 13 x 5½ Top-Flite, 9,200 (8,000) on a 12 x 6 Power-Prop, 10,300 (8,900) on an 11 x 6 Power-Prop, 11,450 (9,750) on an 11 x 5 Power-Prop and 12,800 (10,800) on an 11 x 3 Power-Prop.

Subsequent tests showed that maximum torque was up to 66 oz. in. at 8,500—9,000 r.p.m., while b.h.p. was increased by almost 56 per cent to 0.67 b.h.p. at 12,000 r.p.m. Minimum safe idling speed was rather higher and on an 11 x 6 prop., the best we could get was around 3,400 r.p.m. This was with the air-bleed fully open.

General Design and Construction

Basically, the Ueda 45 is orthodox in design, although it has one or two novel construction features. For example, the crankshaft has a normal half-inch diameter main journal and, in fact, runs in English size bearings, but has a separate soft steel counterweight attached to the crankweb with three countersunk rivets. The gas passage through the shaft is of large bore (0.366 in.) and is fed from a rectangular valve port timed to open at 38—40 deg. after BDC and to close, quite late, at 52—54 deg. ATDC.

The piston surface is impregnated with molybdenum-disulphide (to which the engine's good running-in characteristics may, presumably, be partly attributed) and does not have a relieved skirt section, although examples examined were relieved for varying depths and heights immediately below the crown. Piston skirt thicknesses varied between 0.6 mm. and 1.0 mm. The cylinder sleeve has quite thick walls; approximately 2.4 mm. Strictly speaking, the engine is not a "45", the calculated displacement from the maker's bore and stroke figures being 7.695 c.c. or nearly 0.47 cu. in. and slightly more if actual measured bore (.002—.004 in. over-size on examples examined) is taken into account.

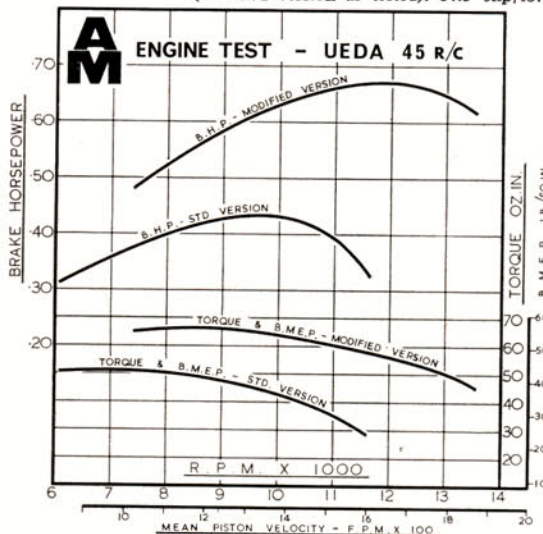
Continued on page 132

Fits and finishes were reasonably good in the three later model 45's examined, the exceptions being the connecting-rods, which tended to have asymmetric big ends, and the gudgeon-pin fit in the piston which was excessively sloppy in the modified engine. External machined alloy bar stock parts, such as the cylinder head and jacket and the carburettor body, were well finished and the overall appearance of the engine is quite attractive.

The manufacturer does not at present offer a silencer for the Ueda 45 and our tests were therefore carried out without a silencer fitted.

Both versions of the Ueda 45 R/C are quite economically priced, but, at only 20 shillings extra, the Modelradio modified version offers, in our opinion, by far the better value.

Power/Weight Ratio (standard version as tested): 55 bhp/lb. (modified version as tested): 84.5 bhp/lb.



Specific Output (standard version as tested): 56.5 bhp/litre (modified version as tested): 87.0 bhp/litre.

SPECIFICATION

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

Swept Volume: 7.695 c.c. (0.4696 cu. in.)

Bore: 21.6 mm. (0.8504 in.) **Stroke:** 21.0 mm. (0.8268 in.)

Stroke/Bore Ratio: 0.972:1

Weight: 12.7 oz. (bare—no silencer)

General Structural Data

Pressure diecast aluminium alloy crankcase/front housing unit containing one $\frac{1}{8} \times \frac{1}{4}$ in. rear and one $\frac{1}{8} \times \frac{1}{4}$ in. front, ball journal bearings. Case-hardened steel crankshaft with 12.7 mm. dia. main journal, 9.3 mm. bore gas passage and 6.3 mm. dia. hollow crankpin. Crankshaft counterbalanced by riveted-on counterweight, plus cutaway web flanks. Un-hardened steel cylinder-sleeve with machined finned cooling-jacket of aluminium alloy, colour-anodised gold. Machined aluminium alloy finned cylinder-head colour-anodised gold. Cast-iron lapped piston with flat crown, straight baffle and MoS₂ impregnated surface. Fully floating, 4.5 mm. dia hardened tubular gudgeon-pin with brass pads. Stamped and machined aluminium alloy connecting-rod, unbushed with oil hole at lower end. Pressure diecast aluminium alloy prop driver keyed to two flats on crankshaft. Machined aluminium alloy carburettor body with brass throttle barrel. Plated brass spraybar assembly. Brass semi-rotary type. Exhaust restrictor linked to carburettor throttle.

TEST CONDITIONS

Running time prior to test: See text.

Fuel used: 5 per cent nitromethane, 25 per cent Duckham's Racing Castor-Oil, 70 per cent I.C.I. methanol.

Glowplugs used: Maker's bar-type, medium reach, as supplied.

Air temperature: 56 deg. F. (first test).

61 deg. F. (second test).

Barometer: 29.9 in. Hg. (first test).

30.0 in. Hg. (second test).



Dear Sir,

I have been in your club for just over a year and this is my first letter to you.

My main interest is radio control and at the time this picture was taken (Unfortunately the picture was out of focus and not suitable for reproduction) my sister was holding the plane. It is an enlarged Schoolboy of 60in. span powered by an O.S. Max .15 engine. The fuselage is blue and white, with a blue tailplane and yellow wings. At first it had an O.S. Pixie receiver with escapements giving motor and rudder control. At the moment we are fitting it with a Futaba relay receiver to give Galloping Ghost control. Although I have a Futaba FT3A transmitter we made a new one for extra range when necessary.

Perth, Australia.

G. Ayres.

Dear Sir,

Can you tell me where my nearest model flying club is, their flying ground and how I can join the S.M.A.E.? Woodford, Essex.

T. Vince

The pull-out 32 page booklet in this issue contains all the above information and should answer all your queries.

★ ★ ★ ★ ★

Dear Sir,

I would like to congratulate you on your Cessna 172 plans, (72 in. wingspan by W. P. Holland). This is a large model yet of simple design which is easy to follow and build, and looks very nice when finished, as you can see by the enclosed photograph. Being free flight and powered by an Enya .19 with a 12 x 3 in. propeller as yet unflown under power, I have a feeling it is overpowered. Could you advise me on this problem, and what the flying characteristics of the model are. When I first got this motor I ran it on the bench, but when I put it in the plane (side mounted) I had the same trouble as J. E. Kessel (January, G.

Wings) I found that by tilting the model until the engine is upright it starts easily, then quickly tipping the model back on its side to keep the fuel running to the engine it continues to run. I hope this may be of some assistance to Mr. Kessel.

Northfleet, Kent.

P. A. Bennett

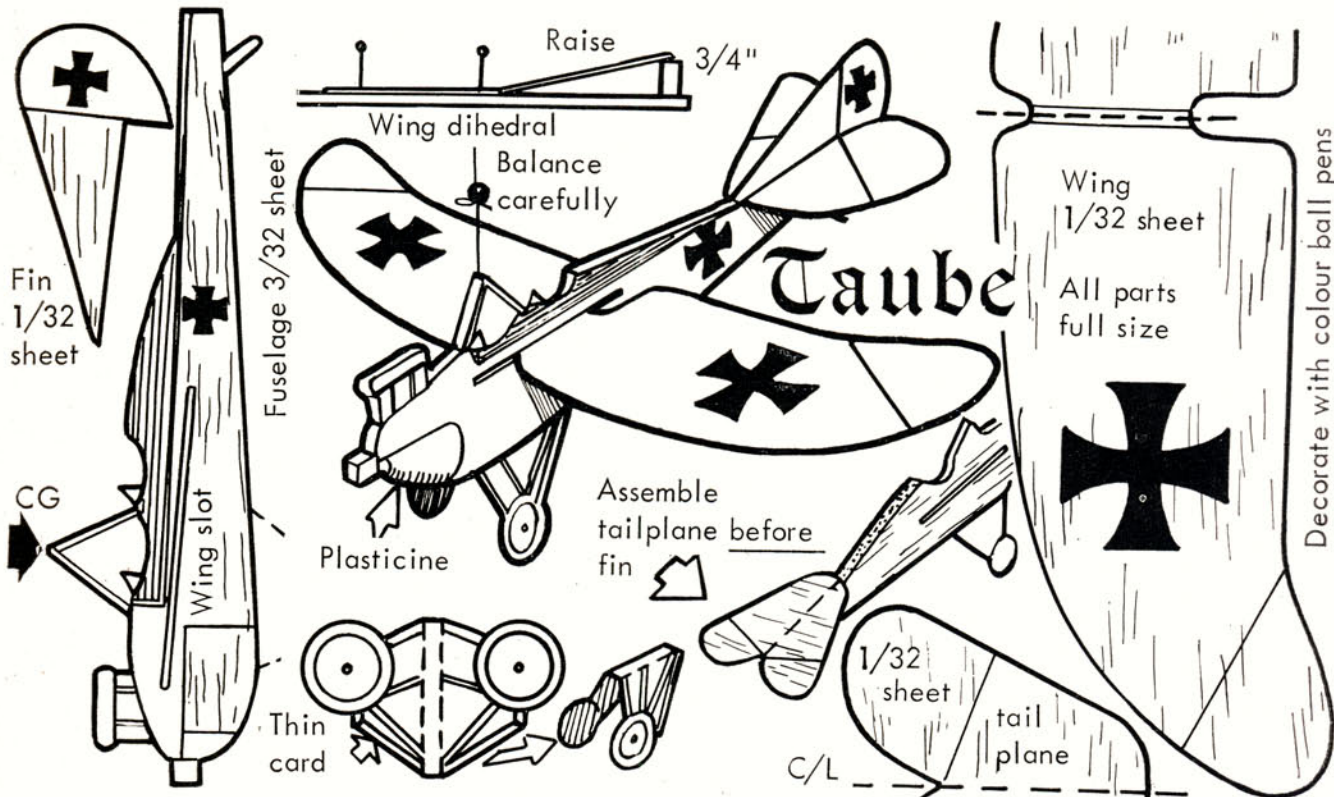
Thanks for your advice, I am sure Mr. Kessel will find it useful. The original Cessna by Peter Holland was an extremely stable flier and started life with an Elfin 2.5 cc. and then an Amco 3.5 cc., the Amco giving that little extra power. The Enya .19 is an ideal modern choice for this model and the propeller size is just right too.



P. A. Bennett's APS plan Cessna 172 is powered by an Enya .19 with 12 x 3 propeller, looks well made and finished.

SPECIAL PRIVILEGE OFFER exclusive to Golden Wingmen

2d. in the 1/- Rebate coupon for Golden Wings Membership No.....



Decorate with colour ball pens

Dear Sir,

I have the same problem as lots of other Aeromodellers, that is a lack of suitable flying sites. We have several local parks and I wonder if I can fly my models in these. I fly free flight sports models and sometimes a control line model. Also, do I have to have insurance cover or is this only for contest flying? Bolton, Lancs. P. Smith

Flying in Parks and Recreation grounds is difficult to advise on. Each local authority is allowed to propose its own bye-laws and as a general guide it is fair to say that if there is no notice banning or restricting model flying and the keeper allows it, things are all right. For a further check your father could write to the Town Clerk who will advise on the exact situation. True you do not need insurance for sports flying except where the authorities ask for it, but let me assure you it is better to have it. Think of the terrible results if you injured a person very badly, he could sue you for an awful lot of money to compensate for his injuries. This possibility can be removed by using one of the many excellent model flying insurance schemes available. Insurance is not just a waste of money it offers protection for yourself.

★ ★ ★ ★ ★

Dear Sir

I have recently used Polyurethane paint for the first time, and am very disappointed with the results. The model in question a 1/4A team of my own design was doped with Titanine dope then sealed with sanding sealer. I rubbed all this down to a smooth finish and after removing all the dust painted it with the polyurethane. It looked fine until it had

all dried then the finish started to crack all over the model, I rubbed it down straightaway and applied more paint and this time it was all right. Can you tell me what went wrong with the first application and why it all "crazed" on me? Garforth, Yorks. E. Richards

The reason is quite simple. When dope is applied to a model it starts to dry at once, the drying is in fact all the solvents in the paint evaporating off leaving the 'paint' behind. When the model looks and feels dry, the paint itself is still wet below the surface, i.e., all the solvents have not yet gone, this usually takes a few days. So you applied the Polyurethane paint too soon, not giving the dope enough time to dry out, hence the crazing as it forces its way through the polyurethane.

• **Full size all Sheet**
• **Scale Glider**
• **by R. Malmstrom** •

The German Taube monoplanes must have been the World's most inappropriately named aeroplane. 'Taube' is German for Dove and Early Rumpler Taubes dropped bombs on Paris in 1914. Some Doves! However, names apart the Rumpler Taube was a good flying machine and this midget model built from odd pieces of sheet balsa inherits the fine flying characteristics of its big brother. We have to thank Ray Malmstrom for this charming little indoor flier, the plans are full size.

Dear John Bridge,

I am between 10 & 16 years of age and would like to become a member of the "Golden Wings Club". With this application I enclose postal order (International Money Order) for 2/6d. to cover cost of the enamel club badge, two coloured transfers and membership card.

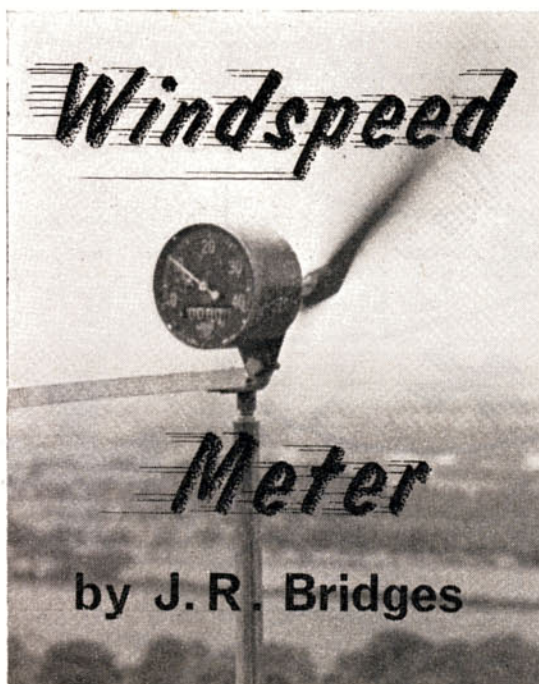
NAME IN FULL

ADDRESS

YEAR OF BIRTH.....SCHOOL.....

NAME OF ANY OTHER CLUB OR CLUBS TO WHICH I BELONG (if any)

SEND TO:- GOLDEN WINGS CLUB, AEROMODELLER, 13-35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS.



THIS meter was made a couple of years ago and has proved most useful, particularly for R/C slope soaring and single channel power flying, making it possible to trim for the prevailing conditions from previous experience.

As can be seen from the photos, it is basically a cycle speedometer mounted on a vane and driven by a windmill.

High on the downs in slope soaring country John Bridges' Wind Speed Meter whirls away to indicate a 10 m.p.h. wind, ideal for soaring.

The author was very lucky when he made the prototype, for he had not worked out the pitch that would be required to give the correct reading, but merely mounted an old Wakefield propeller on the input shaft and took the device out into the garden. It seemed to read about right so it was taken to the local airport where, with the help of the Met. men, it was found accurate enough for all practical purposes.

This old prop. which has been stuck up in the attic for years, is 18 in. dia., and 56 in. pitch! and turns about 300 r.p.m. in a 70 m.p.h. wind.

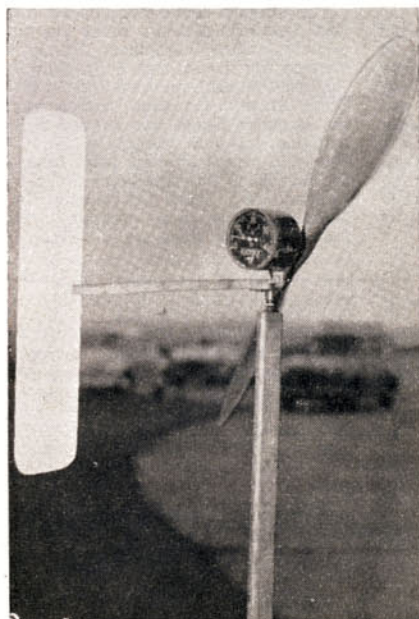
In this case, calibration was not needed, but a simple way to do this would be to make a variable pitch unit (Preset) by making the two blades separate and clamping them to a hub unit.

If you can't gain the assistance of a helpful Met. office, adjust it from a moving car. It is best to mount the unit on a pole so that it is clear of the car boundary layer, and make runs at various speeds on a very calm day checking against the car speedometer. If there is any breeze at all, make runs at the same car speed in the opposite direction and take the average of the two readings on the windspeed meter.

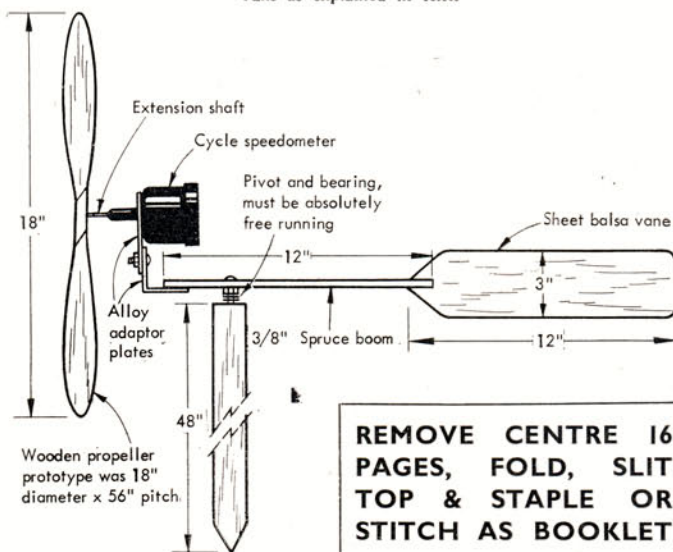
This type of meter has the advantage of being able to read very low wind speeds, and of course, it shows the wind direction as well.

Although it was designed for use by aero-modellers, keen interest was shown by a couple of members of the local model yacht racing club when demonstrated to them.

The fitting of the propeller onto the speedometer input shaft can be quite simple as the bearings built into the unit are quite adequate to support an extension shaft. If you have very few facilities, a $\frac{1}{8}$ in. dowel with the end squared off to a tight fit will do, provided it is kept short and the 'prop.' is balanced.



Simple construction based on a cycle speedometer and balsa vane gives reliable results providing the propeller can be matched exactly to the speedometer for true results. These can be checked by car runs as explained in text.



**REMOVE CENTRE 16
PAGES, FOLD, SLIT
TOP & STAPLE OR
STITCH AS BOOKLET**

AEROMODELLER CLUB DIRECTORY

where? when? how large? Facts and helpful figures for all enthusiasts

This map of the British Isles indicates the concentration of model flying clubs in geographical location

Total Number of Clubs	235
S.M.A.E. Clubs	171
Radio Control only Clubs	21
Clubs with use of an Airfield	59
Total Club Membership	6,066
Juniors—16 and under	1,240
Intermediate—16 to 21	1,282
Seniors—21 and over	3,544
Individuals in S.M.A.E. Clubs	4,530

Club Locations

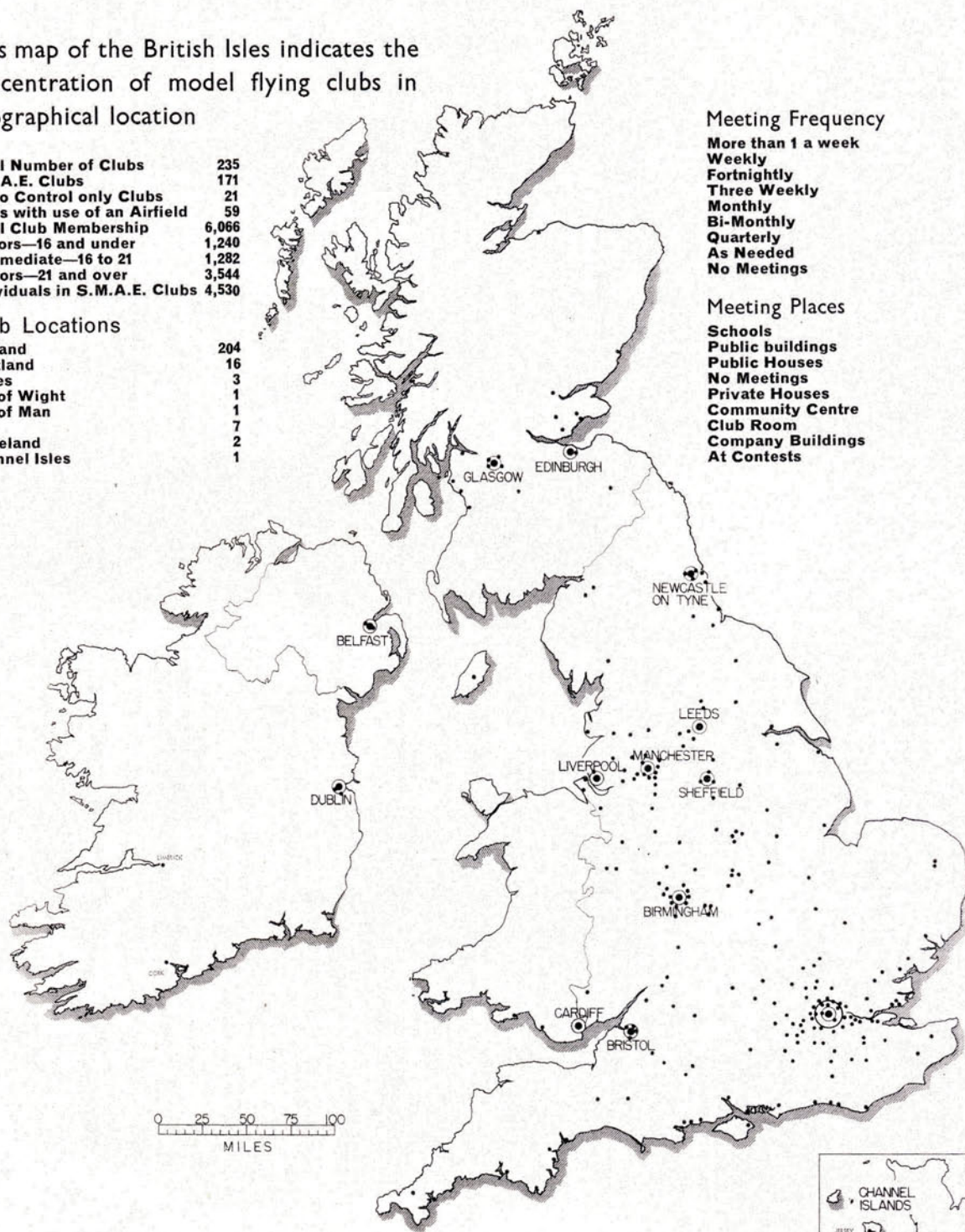
England	204
Scotland	16
Wales	3
Isle of Wight	1
Isle of Man	1
Eire	7
N. Ireland	2
Channel Isles	1

Meeting Frequency

More than 1 a week	11
Weekly	76
Fortnightly	39
Three Weekly	7
Monthly	42
Bi-Monthly	6
Quarterly	3
As Needed	17
No Meetings	34

Meeting Places

Schools	51
Public buildings	36
Public Houses	34
No Meetings	34
Private Houses	29
Community Centre	17
Club Room	15
Company Buildings	15
At Contests	4



GLOUCESTERSHIRE

- Aces M.A.C.** (7) S.M.A.E.
(1) S. Harvey, 62 Toronto Road, Horfield, Bristol 7.
(2) Bristol Aeroplane Tech. College
(4) Filton Aerodrome.
- Bristol, Bulldogs M.A.C.** (37) S.M.A.E.
(1) C. R. Foot, 3 Queenshill Crescent, Downend, Bristol.
(2) B.A.C. Filton Bristol.
- (4) Filton Aerodrome.
- Bristol & West M.A.C.** (11) S.M.A.E.
(1) R. J. Cummins, 14 Beech Leaze, Alveston, Nr. Bristol.
(2) None
(3) As required
- Cheltenham M.A.C.** (33) S.M.A.E.
(1) T. J. Allen, Hayden Court Hotel, Gloucester Road, Cheltenham.
(2) Northlands Youth Centre
(4) Racecourse Car Park (C/L) and Cleve Hill Common.
- Cirencester & District M.A.C.** (15) S.M.A.E.
(1) D. Hicks, 61 Shepherds Way, Cirencester, Glos.
(2) —
(3) A.G.M. Flying field meetings.
- Cotswold Radio Control Soc.** (45) S.M.A.E.
(1) R. F. Street, 121 Ryelands Road, Stonehouse, Glos.
(2) The Forge, Dursley, Glos.
(4) Aston Down Airfield, Nr. Stroums Moreton Avenue Airfield.
- Skylark M.F.C.** (9)
(1) J. S. Burr, 51 Knights Way, Newent, Glos.
(2) Staverton Airport (when available)
(4) Staverton Airport (C/L) only, Common South Bristol M.A.C. (40) S.M.A.E.
(1) J. B. Mayes, 17 Northville Road, Northville, Bristol 7.
(2) St. Mary Redcliffe Church Hall
(4) Tytherington, Glos. Ashton Vale and Area Venues.

HAMPSHIRE

- Basingstoke Model Aero** (26) S.M.A.E.
(1) A. G. Stokes, 51 Hillary Road, Basingstoke, Hants.
(2) Air Raid Shelter, Hackwood Road, Basingstoke.
(4) Basingstoke Common.
- Bournemouth M.A.S.** (27) S.M.A.E.
(1) H. F. Weller, 17 Stillmore Road, West Howe, Bournemouth, Hants.
(2) Ringwood Grammar School
(4) Beaulieu Aerodrome, Parley Common, Redhill Park and Meyrick Park.
- Christchurch & District M.F.C.** (21)
(1) D. K. James, 9 Southbourne, Overcliff Drive, Bournemouth, Hants.
(2) Stanpit Village Hall
(3) Fortnightly
- Fleet & District M.A.C.** (14) S.M.A.E.
(1) J. Spencer, 96 Beaufort Road, Church Crookham, Aldershot, Hants.
(2) None
(3) Most week-ends
- Lee Bees** (60) S.M.A.E.
(1) C. D. Munden, 7 Beechcroft Rd., Gosport, Hants.
(2) Gosport Community Assoc.
(4) H.M.S. Daedalus, Lee on Solent.
- Southampton M.A.C.** (34) S.M.A.E.
(1) P. A. Waxman, 22 Westwood Rd., Southampton.
(2) Common Changing Rooms, Southampton.

- (4) Southampton Common. (C/L and Chuck Glider)
Beaulieu Aerodrome.
West Hants Aeromodellers Association (5) S.M.A.E.
(1) P. Mullinger, 59 Dorchester Road, Oakdale, Poole.
(2) 59 Dorchester Road.
(4) Mexrick Park Bournemouth (C/L).
Beaulieu Aerodrome, Hants.

HERTFORDSHIRE

- Apsley M.F.C.** (20) S.M.A.E.
(1) E. Gillhespy, 5 Middenlights Hill, Hemel Hempstead, Herts.
(2) None
(3) As needed
- Delta (Hatfield) M.A.C.** (22) S.M.A.E.
(1) D. J. Fairbank, 2 Sandpit Road, Welwyn Garden City.
(2) Hatfield Youth Centre
(4) Symonside Farm, Hatfield.
- Eastcote R/C Club** (26) S.M.A.E.
(1) J. Langridge, 49 West Valley Road, Hemel Hempstead.
(2) Ravenscroft Tennis Club Room, Eastcote
(3) Monthly
- R.A.F. Bovingdon, R.A.F. Duxford.**
Letchworth M.A.S. (20) S.M.A.E.
(1) K. Bywaters, 9 Mons Avenue, Baldock, Herts.
(2) Wilbury Hills Farm, Letchworth
(4) Wilbury Hills Farm.
- Potters Bar M.F.C.** (11)
(1) T. Spencer, 49 Windmoor Avenue, Potters Bar, Herts.
(2) 2 Field View Road, Potters Bar.
(4) King George V. Playing Fields, Mutton Lane, Potters Bar.
- St. Albans M.A.C.** (40) S.M.A.E.
(1) G. M. Hannah, 3 Tudor Road, Wheathampstead, Herts.
(2) 96a Victoria Street, St. Albans.
(4) Nomansland Common, Wheathampstead.
- Stevenage M.F.C.** (29) S.M.A.E.
(1) D. Jessop, 90 Chellis Way, Stevenage, Herts.
(2) Stevenage Swimming Pool Clubroom
(3) First and Third Wed. each month
- R.A.F. Henlow R/C & F/F. Pegston Hills Slope**
Soaring Baldock, R/C, Stevenage, Shephall Park, Ferrier Field R/C.
- Watford (Wayfarers) M.A.C.** (52) S.M.A.E.
(1) A. Beckham, 30 The Pelhams, Garston, Herts.
(2) A.T.C. Hut, High Street, Bushey.
(4) Croxley Moor.

HUNTINGDON

- Hunts M.A.C.** (22) S.M.A.E.
(1) D.R.G. Wood, South View, Pideley Road, Somersham.
(2) Huntingdon Youth Centre
(4) Club Room Location and Graveley Airfield.

KENT

- Ashford M.A.C.** (28)
(1) B. Hammond, 39 Forge Field, Bethersden, Nr. Ashford, Kent.
(2) Blacksmiths Arms, Willesborough, Ashford.
(4) Kingsnorth Fields, Ashford, Kent. on field.
- Canterbury Pilgrims M.F.C.** (64) S.M.A.E.
(1) A. G. Trice, 1 Sunray Avenue, Whitstable, Kent.
(2) 26 Burgate, Canterbury, Kent (3) Mondays at Clubroom, Sunday on field
- Cosmo Aeromodellers Club** (31)
(1) D. Walker, Hurst Place, Bexley, Kent.
(2) Hurst Place, Hurst Road, Bexley, Kent.
(4) Danson Park, Bexley Heath (3) Weekly

CORNWALL

- Cornwall Technical College M.C.** (12)
(1) C. C. Badger, 'September' Trewirgill Hill, Redruth.
(2) Cornwall Technical College
(4) College grounds and local farm.

CUMBERLAND

- Carlisle & District M.A.C.** (16) S.M.A.E.
(1) E. Quinn, 25 Wansfell Ave., Morton, Carlisle.
(2) Morton Community Centre
(4) Kirkbridge Airfield, Kirkbride.
- Irthing Valley M.A.C.** (17) S.M.A.E.
(1) T. P. McGuinness, 3 Home Cottages, Gilsland, Nr. Carlisle.
(2) None
(4) Farm Nr. Walton.

DERBYSHIRE

- Chesterfield Skyliners M.A.C.** (24) S.M.A.E.
(1) A. J. Morley, 19 Larch Way, Brockwell, Chesterfield.
(2) St. James Hall.
(4) Gorsey Knoll, Langan Lane, Chesterfield.
- Heanor M.A.C.** (14) S.M.A.E.
(1) D. R. Melrose, 5 Glebe Ave., Ripley.
(2) Horse and Jockey Inn, Ripley
(4) 3 Local Fields on the A.610 between Ripley and Ambergate and Codnor Miners Welfare.

DEVON

- Ashburton and Buckfastleigh County Sec. School.** (34)
(1) L. D. Hill, 71 Twickenham Road, Newtake, Newton Abbot.
(2) School.
(4) School playing fields.
- Exmouth and District M.A.C.** (6) S.M.A.E.
(1) D. G. Baudet, 80 Moorfield Road, Withycombe, Exmouth.
(2) Exmouth R.F.C. Club Room.
(4) Woodbury Common.
- Plymouth M.F.C.** (6) S.M.A.E.
(1) B. Walton, 8 Gleneagle Road, Mannaeade, Plymouth.
(2) Noah's Ark, City Centre.
- Torbay M.A.C.** (12) S.M.A.E.
(1) D. Anning, 32 St. Annes Road, Babbacombe, Torquay.
(2) 17 Cedar Court Road, Torquay.
(4) Farm at Berry Pomroy, nr. Totnes, Woodbury Common, Heathfield, nr. Newton Abbot.

CO. DURHAM

- Sunderland & District** (24) S.M.A.E.
(1) R. R. Hepple, 7 Thornley Road, Wheatley Hill.
(2) East End Community Centre.
(4) F/F. R/C Town Moor, Newcastle, C/L Ferryboat Lane Playing Fields.
- Teesside M.F.C.** (10) S.M.A.E.
(1) T. B. Chambers, 17 Westmorland Grove, Norton, Stockton on Tees.
(2) None.
(4) Old Thornaby Aerodrome. Chariton Bank in Cleveland for Slope Soaring.
- Tynemouth M.A.C.** (13) S.M.A.E.
(1) 8 Beacon Street, Low-Fell, Gateshead 9.
(2) Various.
(4) R.A.F. Ouston Nr. Newcastle and Linksall Sec. Mod. School (T/R Circle).
- West Hartlepool M.F.C.** (7) S.M.A.E.
(1) L. N. Nicholson, 188 Wynard Road, West Hartlepool, Co. Durham. (3) approx. once a week.
(2) 188 Wynard Road, West Hartlepool.
(4) Numerous Slopes.

- Newton Aycliffe M.F.C.** (20)
(1) K. A. Roe, 39 Stephenson Way, Newton Aycliffe, Co. Durham.
(2) More Lane Pavilion
(3) Sunday evenings
(4) Bradbury Carra.

ESSEX

- Anglia M.F.C.** (10) S.M.A.E.
(1) D. H. Stapleton, 46 Duke Street, Chelmsford.
(2) White Bear, Galleywood
(4) Baddow Meads.
- Colchester M.A.C.** (22) S.M.A.E.
(1) D. Sargent, 17 Old Heath Road, Colchester, Essex.
(2) Co-op Social Club, Trinity Street, Colchester.
(4) Middle Wick, Mersea Road, Colchester.
- Debdenairs M.F.C.** (3)
(1) A. Clark, 77 The Drive, Loughton, Essex.
(2) Debden Community Ass., Loughton Hall.
(3) Friday nights
- Essex M.F.C.** (20) S.M.A.E.
(1) R. Haisman, 163 Ramuz Drive, Westcliff on Sea, Essex.
(2) Members houses
(4) Chobham Common, Leigh Marshes (Radio only).
- Harlow M.F.C.** (18+) S.M.A.E.
(1) A. Hawkins, 182 Church Leys, Harlow, Essex.
(2) Linton Common, Harlow Common.
- Havering M.C.** (49)
(1) H. W. Fraser, 138 Parkside Avenue, Romford, Essex.
(2) Sutton Road, School, Hornchurch
(4) Stubbs Youth Camp site, Bedfords Park, North Romford (C/L)
- Hornchurch M.A.C.** (8) S.M.A.E.
(1) A. R. Wells, 26 Nemes Way, Hornchurch, Essex.
(2) None.
(4) Upminster Common.
- Mid Essex Modellers.** (25) S.M.A.E.
(1) P. A. Yates, 15 Tenterfield, Great Dunmow, Essex.
(2) Foake's Hall, Dunmow.
(4) Fields at Banstead and GR. Easton Aerodrome, RAF Debden special events.
- Southend Radio Control M.F.C.** (28) S.M.A.E.
(1) R. R. Vardy, 1026 London Road, Leigh on Sea, Essex.
(2) Crooked Billet, High Street, Old Leigh.
(4) Leigh Flats.
- Southend & Area M.F.C. (C/L only)** (17) S.M.A.E.
(1) L. J. Heinrich, 49 Juniper Road, Leigh on Sea, Essex.
(2) 49 Juniper Road
(4) Leigh Recreation Ground, Leigh Marshes, Leigh on Sea.
- Witham M.A.C.** (12) S.M.A.E.
(1) J. A. Bradford, 13 Elm Rise, Witham, Essex.
(2) 13 Elm Rise
(4) Witham Recreation Ground.

Club Directory

CODE

Wizbang M.A.C. Name of Club

- (24) Total membership
S.M.A.E. (Affiliated Body)
(1) Club Secretary
(2) Meeting place
(3) Frequency of meetings
(4) Flying ground(s)

Remember!

The Club that flies together — stays together

Club Directory

Listed in County Alphabetical order

BEDFORDSHIRE

- Luton & District M.A. Society** (54) S.M.A.E.
(1) E. W. Clark, 26 Heywood Drive, Luton, Beds.
(2) Cubden St. Luton (3) Fortnightly
(4) Henlow, Stockwood, Warden Hills

- Abingdon & District M.F.C.** (18)
(1) P. Wigley, 68 Appleford Drive, Abingdon
(2) St. Johns Ambulance Station (3) Weekly
(4) Port Meadow, Oxford. Culham Meadow (Culham)

BERKSHIRE

- Imperial College M.A.C.** (35)
(1) I. W. Kaynes, 11 Parkside Road, Sunningdale
(2) Imperial College Union (3) Fortnightly
(4) I.C.U. Sports Ground, Simpson Lane, Harlington, and Chobham Common
Maidenhead Model Makers (28) S.M.A.E.
(1) H. E. James, 15 Penyston Road, Maidenhead
(2) Burberry Hall (3) Every Friday
(4) F/F Chobham Common; C/L & Small Sport F/F N.T. Land Pinkneys Green
Sperry M.A.C. (23) S.M.A.E.
(1) E. A. Strutt, 14 Oakwood Road, Bracknell
(2) Sperry Canteen (3) Every Friday
(4) C/L Nine Mile Ride, Bracknell F/F & R/C Chobham Common
Wellington College M.F.C. (12)
(1) H. Gratton, Pictown, Wellington College, Crowthorne. (3) Once a month
(2) Wellington College
(4) Wellington College Playing Fields.

BUCKINGHAMSHIRE

- Airtech** (14) S.M.A.E.
(1) T. D. Smith, 80 Belgrave Road, Aylesbury.
(2) Airtech Ltd., Haddenham.
(4) Private Airfield, Airtech Ltd., Haddenham.
Buckaneers Model Club
(1) D. Giles, "Derron" Station Road, Bow Brickhill, Blechley. (3) Third Tuesday each month.
(2) General Office, Cattle Market, Blechley.
(4) Bow Brickhill, Sherington & Finmere, Playing Field at Blechley.
High Wycombe (65) S.M.A.E.
(1) R. J. Edmonds, 16 Telford Way, High Wycombe. (3) 2nd. Wed.
(2) "Friend at Hand", West Wycombe Road, High Wycombe. each month.
(4) Three near High Wycombe none suitable for F/F

CAMBRIDGESHIRE

- Impington Village College M.A.C.** (20) S.M.A.E.
(1) R. G. Newling, 59 Oxford Road, Cambridge. (3) Weekly
(2) Impington Village College (art room). Fridays
(4) Impington Village College Playing Fields or Waterbeach Aerodrome.

CHESHIRE

- Ashton M.A.C.** (27) S.M.A.E.
(1) J. Chadwick, 133 Mottram Road, Stalybridge, Cheshire, (3) Weekly
(2) Wharfe Street, Duninfield, Cheshire. Fridays.
(4) Richmond Street Playing Fields, Ashton.
Cheadle & D.M.A.S. (6)
(1) 144 Albany Road, Lymm. (3) Occasionally at Con-
(2) None tests.
(4) Tatton Park & Chorlton Meadows (Rubber and Glider only)

- Chester M.F.C.** (52)
(1) C. R. Filtness, 26 Raymond Street, Chester. (3) Thursdays
(2) Temperance Hall weekly.
(4) Church House Farm, Thornton-Le-Moors, Nr. Chester.
Congleton M.A.C. (44) S.M.A.E.
(1) J. Cooke, 9 Mill Street, Congleton (3) Fortnightly
(2) Lion and Bell Inn
(4) Bent Farm, Astbury, Nr. Congleton.

- Heswall Model A.C.** (34) S.M.A.E.
(1) J. B. Sambrook, "Rocozanne" 3 Hadlow Lane, Willaston, Wirral. (3) Third Satur-
(2) Milner Rooms, Heswall. urday each
(4) C/L Gayton Playing Fields FF Lever Causeway. month.
(5) Slope Soaring Clwyd Vale.

- Lancashire Aero Radio Control** (27) S.M.A.E.
(1) J. Butterworth, 18 Highcroft, Gee Cross, Hyde. (3) Thursdays
(2) Heaton Moor Conservative Club. once a
(4) None month.
Macclesfield M.A.S. (6) S.M.A.E.
(1) S.B. Lawton, 53 Blakelaw Road, Macclesfield, Cheshire.

- (2) None (3) When
(4) Congleton Road, Macclesfield. required.
Nantwich & District Aeromodellers (9) S.M.A.E.
(1) I. Brandon, 31 London Road, Nantwich. (3) Fortnightly
(2) The Gables Marsh Lane, Nantwich
(4) Barony Park, Nantwich, Press Heath, Nr. Whitchurch, Shropshire.
Stockport & District M.A.C. (38)
(1) K. Shaw, 17 Denebrow, Haughton Green, Denton, Lancs. (3) Weekly
(2) Woodbank Community Centre. Thursdays
(4) Lower Meadows, Woodbank Memorial Park, Stockport.

- Timperley & District M.F.C.** (16) S.M.A.E.
(1) 54 Kenilworth Drive, Hazel Grove. (3) Weekly
(2) St. Albans Church Hall, Broadheath.
(4) Rycroft Farm, Ashley, Cheshire.
Wallasey (18) S.M.A.E.
(1) J. Hannay, 105 Rigby Drive, Wirral
(2) Port Lighthouse Boys Club. (3) Monthly
(4) Local Farm.

- Wilmslow M.A.S.** (20) S.M.A.E.
(1) S. R. Viney, 3 Princess Road, Wilmslow, Cheshire. (3) Fortnightly
(2) 24 Nursery Lane, Wilmslow
(3) The Carrs, Wilmslow; Lindow Common, Wilmslow.

- Elliott M.E.C.** (68) S.M.A.E.
(1) Elliott Bros. (London) Ltd., Airport Works, Rochester, Kent.
(2) Airport Works Canteen (3) Monthly
(4) C/L at Airport Works. R/C Site at Chatham

- Gravesend A.C.** (22)
(1) M. Lovett, 3 Alexandra Cottages, Higham, Rochester, Kent. (3) Weekly
(2) "Stork at Rest", Gravesend
(4) Gravesend, Cooling Castle, Higham Marshes.

- Maidstone M.F.C.** (32) S.M.A.E.
(1) D. Chappell, "Newlyn", 32 Station Rd., Ditton, Nr. Maidstone (3) Monthly
(4) Detling Aerodrome 1st Tuesday

- North Kent Nomads** (66) S.M.A.E.
(1) A. W. Service, 92 Wilmot Road, Dartford (3) Monthly
(2) Club room, The Travellers Home
(4) Dartford Heath, Long Reach, Joyce Green Farm, Temple Hill, Dartford Slope Soaring Wrotham Ridge

- The Redhill School M.C.** (10)
(1) P. Morrison, Redhill School, East Sutton, Nr. Maidstone, Kent (3) Fortnightly
(2) Classroom
(4) School grounds

- Sevenoaks & D. M.A.C.**
(1) I. R. Firth-Scott, Castley, Hawley Corner, Westerham Hill, Kent. (3) Bi monthly
(2) Various in district
(4) Pilgrims Way

- Tunbridge Wells M.A.C.** (25) S.M.A.E.
(1) M. B. Ashby, 1 Brookside, Cranbrook, Kent. (3) First Monday of
(2) "Cross keys" Public House the Month
(4) One at Leigh Nr. Tonbridge for R/C free flight. Sports Ground, Nr. Tonbridge. (C/L)

LANCASHIRE

- Blackburn & District M.F.C.** (28) S.M.A.E.
(1) E. Arnold, 25 Tork Terrace, Fenis-Cowles, Nr. Black- (3) Monthly
(2) Altham St. Methodist Church
(4) Pleasington Play fields, Blackburn
British Aircraft Corp. M.A.C. (25) S.M.A.E.
(1) G. Stott, 11 Fairnape Road, Lytham, Lancs. (3) Infrequent
(2) Warton Aerodrome
(4) Warton Aerodrome
East Lancs. M.A.C. (26) S.M.A.E.
(1) K. Standing, 107 Lowhouse Lane, Burnley, Lancs. (3) None
(2) None
(4) Cowling Moor

- Fylde Radio Controlled Model Soc.** (40)
(1) D. S. F. Ridgway, 41 Clarendon Road, St. Annes on Sea, (3) 1st and 3rd Wed. of the Month
(2) Y.M.C.A. St. Albans Road, St. Annes
(4) Great Eccleston, Nr. Blackpool Reservoir Field

- Liverpool & District M.A.S.** (54) S.M.A.E.
(1) A. G. Swallow, 34 Newlyn Ave., Maghull, Lancs. (3) Fortnightly
(2) Y.M.C.A. Mount Pleasant
(4) Woodvale Aerodrome Burscough Aerodrome

- Leigh M.A.C.** (8) S.M.A.E.
(1) R. Yates, 1 Ribble Grove, Leigh, Lancs. (3) None
(2) None
(4) R.A.F. Burtonwood

- Leyland M.A.C.** (15) S.M.A.E.
(1) D. Barber, 11 Grange Road, Leyland, Lancs. (3) Twice weekly
(2) None
(4) Pony Club Jumping ground

- Horwich & District M.A.C.** (32) S.M.A.E.
(1) K. Parsons, 6 Darley Street, Horwich, Nr. Bolton, Lancs. (3) None
(2) None at present
(4) Hawker Siddeley Playing fields at Lostock (Sundays only) R/C, Slope Soaring on Rivington Moor

Club Directory

CODE

Wizbang M.A.C. Name of Club

- (24) Total membership
S.M.A.E. (Affiliated body)
(1) Club Secretary
(2) Meeting place
(3) Frequency of meetings
(4) Flying ground(s)

Oldham & District M.A.C. (12) S.M.A.E.

- (1) J. Shaw, 4 Kingston Avenue, Chadderton, Oldham, Lancs.
(2) St. James Liberal Club

- Sharston M.A.C.** (30) S.M.A.E.
(1) K. A. Morrissey, 3 Harburn Walk, Woodhouse Park, Wythenshawe, Manchester (3) Friday evenings and Sunday morning
(2) Sharston Hall
(4) Sharston Hall grounds

- Urmston & District M.A.C.** (52)
(1) K. W. Hulme, 15 Royn Ave., Flixton, Nr. Manchester (3) Fridays in the winter
(2) Local Evening Institute
(4) Rear of Urmston Meadows

- Warrington Model Club** (40) S.M.A.E.
(1) R. Worthington, 8 Crawley Road, Clucheth, Warrington (3) Weekly
(2) The Plough Inn
(4) Padgate Camp Site

- Whitefield M.A.C.** (57) S.M.A.E.
(1) J. Parrott, 2 Jackson Street, Whitefield, Manchester (3) Weekly during term
(2) Victoria Lane Primary School
(4) Littleton Road Playing Fields, and Drinkwell Park

- Wigan M.A.C.** (31) S.M.A.E.
(1) D. Yates, 10 Beverley Road, Marsh Green, Wigan, Lancs. (3) Weekly
(2) Woodford St. Youth Club
(4) "Christopher Park" (Tech. sports field)

LEICESTERSHIRE

- Hinkley & District M.A.C.** (18) S.M.A.E.
(1) D. Nixon, Home Farm Cottages, Stanford-le-Soar, Loughborough
(2) Hinkley Grammar School
(4) Burbage Common

- Leicester Area R/C Soc.** (59) S.M.A.E.
(1) T. Isom, 11 Elsworthly Walk, Braunstone Firth, Ets, Leicester (3) approx. every 3 Months
(2) None
(4) Bitteswell and Foxton (Lubbenham)

- Leicester M.A.C.** (63)
(1) A. Pickering, 6 Carey Road, Huncote, Leics. (3) Weekly
(2) None
(4) Shanton Hall Farm

- Leicestershire Slope Soaring Soc.** (13) limit of 15
(1) J. A. Castle, 67 Sandford Road, Syston, Leicester. (3) —
(2) —
(4) —

- Market Harborough M.A.C.**
(1) S. Baker, 15 Nelson Street, Market Harborough, Leics. (3) Weekly Sept. to March
(2) Fairfield Road
(3) Dingley Shanton

ACCIDENTS JUST DON'T HAPPEN — they are caused by carelessness

LINCOLNSHIRE

- Boston & District M.A.C.** (21) Weekly
(1) A. W. Britchford, 80 King Street, Boston, Lincs.
(2) Mayflower Sports Club
(4) Mayflower Sports Club Field
Grantham & District M.A.S. (41) S.M.A.E.
(1) C. R. Clements, 6 Sidney Street, Grantham, Lincs. (3) Last Thursday each month
(2) Over Mr. Arbons Sports Shop
(4) Barkston Heath, R.A.F., Spittlegate, R.A.F. Aerodrome
North Lincs. M.A.S. (8) S.M.A.E.
(1) R. L. Goddard, 11 High Street, Cleethorpes, Lincs. (3) Every Sunday weather permitting
(2) None
(4) R.A.F. Mabley, Keston Airfield (disused)
Lincoln Aeromodellers. (38) S.M.A.E.
(1) K. J. Harris, 21 Burns Lane, Market Warsop, Mansfield, Notts.
(2) Black Swan Hotel, Lincoln (3) Fridays fortnightly
(4) Wigsley, R.A.F. Swinderby for R/C
Scunthorpe M.A.C. (37) S.M.A.E.
(1) C. W. Gray, 15 Tensing Road, Ashby, Scunthorpe, Lincs. (3) Fortnightly
(2) Frodingham Library
(4) Corner of A 18 and Brumby Wood Lane, (C/L only)

LONDON

- Blackheath M.F.C.** (25) S.M.A.E.
(1) P. Garbards, 78 Firhill Road, Bellingham, Catford, S.E.6.
(2) Forest Hill, S.E.23.
(4) Chobham Common, Epsom Downs, Avery Hill Park, Eltham
Brixton D.F.C. (10) S.M.A.E.
(1) I. Rofley, 4 Glynde Street, Brockley, S.E.4.
(2) Brixton School
(4) Hayes C/L Circuit
Bromley R/C M.A.C. (25) S.M.A.E.
(1) D. Bryant, 7 Darfield Road, Brockley, S.E.4. (3) A.G.M. only at Public House
(2) None
(4) Private field Nr. Brands Hatch
Chingford M.F.C. (28) S.M.A.E.
(1) C. Aldridge, 16 Woodland Road, Chingford, E.4.
(2) Wellington Ave. Youth Centre
(4) Chingford Plain
Finchley & D.M.A.C. (28)
(1) L. H. Langston, 6 Woodside Lane, Finchley, N.12.
(2) Summerside Jnr. School, N.12 (3) Tuesday evenings
(4) Glebelands, Scratch Woods
Northern Heights M.F.C. (7) S.M.A.E.
(1) J. Wright, 48 Eloan Road, Wood Green, N.22.
(2) Y.M.C.A. Crouch End
(4) No Club Flying Field
North London Soc. M.E. (25) S.M.A.E.
(1) R. Yates, 2 Lollup Street, Paddington, W.10 (3) Monthly
(2) Varnes (we use member dwellings)
(4) Graveley, Nr. Cambridge
Richmond & District (Gremilins) M.A.C. (22) S.M.A.E.
(1) P. A. Langley, 7 Shottfield Avenue, London, S.W.14. (3) Weekly Fridays
(2) The Sun Inn, Parkshot Richmond or 47B Lower Mortlake Road, Richmond
(4) Chobham Common, Old Deer Park, Richmond
Sidcup & Eltham Aeromodelling Club (14) S.M.A.E.
(1) P. H. T. Noble, 32 Nottinham Road, Nottinham, S.E.9. (3) Weekly Wednesdays
(2) Greenacres J.M. School
(4) Eltham

Wanstead Warhawks A.C. (58) S.M.A.E.

- (1) D. Platt, 17 Tyrwhitt Road, London, S.E.4. (3) Weekly
(2) Highlands Road School, Ilford
(4) Wanstead Flats—Fairlop Recreation Ground
West Essex Aeromodellers (13) S.M.A.E.
(1) K. F. Marsh, 69 Bressesey Grove, South Woodford, E.18. (3) 1st and 3rd Wed. each month
(2) Cuckfield Field
(4) Nr. Deben, Essex
Woolwich & D.M.A.C. (21) S.M.A.E.
(1) G. Hindley, 126 Kincashy Gardens, Charlton, S.E.7. (3) Tuesdays and Thursday
(2) Bloomfield Lower School
(4) Playground C/L North Kent Nomads, Dartford

MIDDLESEX

- Feltham & D.M.A.C.** (43) S.M.A.E.
(1) A. G. Dell, 8 York Way, Hampton Road West, Hanworth, Middx. (3) Weekly
(2) Cardinal Road School, Feltham, Middx.
(4) Hayes Circuit, Cranford Park, Hanworth Air Park
Hayes & District M.A.C. (28) S.M.A.E.
(1) J. Marshall, 43 Keith Road, Hayes, Middx. (3) Fortnightly during winter
(2) Townfield School Hayes (winter only) Weekly during the summer
(4) C/L Charville Lane, Hayes and Cranford Park, Chobham, Common
Hillingdon Radio Control Society (60) S.M.A.E.
(1) W. Soper, 31 Wilsmere Drive, Northolt, Middx. (3) Monthly
(2) "Adam & Eve", Uxbridge Rd., Hayes
(4) Hillingdon Borough Council Flying Field, Charville Lane, off Pole Hill Rd., Hillingdon
Northwood M.A.C. (45) S.M.A.E.
(1) M. Morris, 74 Masfield Avenue, Stanmore, Middx. (3) Fortnightly
(2) Youth Centre, Nr. Northwood Underground Station
(4) Ruislip Common for C/L, Croxley Moor for F/F
Uxbridge & District M.A.C. (14) S.M.A.E.
(1) A. Shelvet, 5a Station Parade, Denham, Uxbridge, Middx. (3) Twice weekly
(2) Ickenham Youth Club
(4) Denham Rec: Cheapside Lane, Denham
Wembley Park R/C Club (10) S.M.A.E.
(1) Wembley Park Model Shop, 12 The Broadway, Preston Road, Wembley Park
(2) Wembley Park Model Shop
(4) Private

NORTHAMPTONSHIRE

- Northampton M.A.C.** (43) S.M.A.E.
(1) J. Harris, 100 Bush Hill, Northampton (3) Weekly
(2) Kingsthorpe Community Centre
(4) Holdenby (F/F & R/C) Midsummer Meadow (C/L)
Peterborough M.F.C. (40) S.M.A.E.
(1) J. E. Fairchild, 71 Lawn Ave., Peterborough (3) Weekly
(2) Bishops Road
(4) River Embankment (C/L only) Small at Castor for R/C and F/F
Wellingborough M.A.C. (20) S.M.A.E.
(1) J. Parkinson, 85 Highfield Road, Rushden, Northants (3) Monthly
(2) 65 Broad Green, Wellingborough
(4) Ditchford Lane

NORTHUMBERLAND

- 1027 Jarrow M.A.C.** (8) S.M.A.E.
(1) R. C. Stokes, 7 Grasmere Road, Whickham, Newcastle upon Tyne (3) Fortnightly
(2) A. T. Hut, Jarrow
(4) Hebburn Tech. College (CL) Monkton Lane, Hebburn C/L Newcastle, Town Moor F.F.

OTHER INTERESTING SPECIFICATIONS. (Free Flight)

- "MOTOR GLIDER" (W. GERMANY)**
AREA: Identical to International A/2 Glider.
WEIGHT: 14½ ozs.
POWER: 1 cc. maximum (20 seconds maximum engine run).
FLIGHTS: 5 rounds each of 3 minutes maximum duration.
"A/1 GLIDER" (SCANDINAVIAN ORIGIN)
AREA: 279 sq. ins. maximum projected surface area.
WEIGHT: 5.08 ozs minimum.
TOWLINE: 164 ft. inextensible line.
FLIGHTS: 5 rounds each of 2 or 3 minutes maximum duration.
"COUPE D'HIVER" (FRANCE)
AREA: Unrestricted.
WEIGHT: 2.81 ozs maximum lubricated rubber weight.
FUSELAGE: 3.1 sq. ins. minimum cross-section.
FLIGHTS: 3 rounds each of 2 minutes maximum duration. Models should rise off ground.
"CHUCK GLIDER" (U.S.A.)
AREA: Not less than 30 sq. ins., not more than 130 sq. ins. total supporting surface area.
WEIGHT: Unrestricted.
FLIGHTS: 6 of which best three are totalled. (S.M.A.E. rules allow 3 flights of 90 seconds maximum duration).
"CARRIER" (U.S.A.)
AREA: Unrestricted except for maximum wing span of 44 ins.
WEIGHT: 4 lbs. maximum.
POWER: Class I up to 6.5 cc., II over 6.5 cc. and Jet.
FLIGHTS: From 44 ft. x 8 ft. curved deck for 17 laps (60 ft. radius) of high speed plus 7 laps of slow plus arrested landing on deck within 8 minutes.
"PROTO SPEED" (U.S.A.)
AREA: (½A) 45 sq. ins. minimum. (B) 125 sq. ins. minimum wing area.
WEIGHT: Unrestricted up to 4 lbs.
POWER: (½A) up to 0.8 cc. (B) 5 cc. (½A) engines can only be stock production).
FUSELAGE: (½A) 12 ins. minimum. (B) unrestricted. Each with cockpit canopy.
WING SPAN: (½A) 18 ins. minimum or 12 ins. biplane. (B) 24 ins. minimum or 16 ins. biplane.
UNDERCARRIAGE: (½A) Fixed 2 wheel. (B) Fixed or retractable.
FLIGHTS: (½A) 10 laps 42 ft. radius. (B) 14 laps 60 ft. radius from standing start.
"ENDURANCE" (U.S.A.)
AREA: Unrestricted.
WEIGHT: 4 lbs maximum flying weight including fuel.
POWER: 3.25 cc. minimum, 6 cc. maximum.
FLIGHT: Duration from unassisted take-off to touch down on flight radius 52 ft. 6 ins. minimum, 70 ft. maximum.

RULES

The specifications in this booklet are only part of the rules and regulations governing model flying. They should not be taken as being any more than a basic guide for advice and comparison. For full details of British regulations, one should refer to the **Society of Model Aeronautical Engineers Rule Book**, issue 1967. This is circulated to all full members of the S.M.A.E. from the office at 10A Electric Avenue, Brixton, London S.W.9. For the **International regulations**, one should refer to the **Sporting Code Section 4—Aeromodels**, last issue 1963 with amendments and supplements. This is also available through the S.M.A.E. office. Copies, complete with all supplements, are 7s. 6d. plus 6d. postage.

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (continued)

TYPES: (FREE FLIGHT)

UNRESTRICTED CLASSES

- GLIDER:** (Only general restrictions apply concerning maximum area and weight).
- POWER:** (Only general restrictions apply concerning maximum area, weight and engine capacity).
- RUBBER:** (Only general restrictions apply concerning maximum area and weight).

SPECIAL CLASSES

PAYLOAD

- SIZE:** Unrestricted.
- POWER:** Up to 0.82 cc. for 5 oz. ballast, up to 1 cc. for 6 oz. ballast.
- BALLAST:** 4 oz. in dummy pilot to special specification plus cargo of 1 or 2 oz.
- N.B.** All flights must rise off ground.

TAILLESS

- SIZE:** Unrestricted.
- POWER:** Glider, Rubber or up to 10 cc. (Engine run 15 seconds).

FLIGHTS IN THESE CLASSES ARE OF 3 MINUTES MAXIMUM IN 3 ROUNDS

ROUND-THE-POLE

- SIZE:** Unrestricted except that Speed models shall have wing span at least 60% of length and not weigh more than 8 ozs.
- POLE HEIGHT:** Class A—36 ins. Class B—72 ins. Speed 18 ins.
- LINE LENGTH:** Class A—72 ins. Class B—144 ins. Speed 66 ins.

FLYING SCALE

(ABSTRACT OF REQUIREMENTS)

Proof of Scale

- (a) Proof of Scale is the responsibility of the Contestant.

To be eligible for Fidelity to Scale points the following documentation must be submitted to the Judges

- (a) An accurate Scale 3 view drawing of the full scale aeroplane.
- (b) A declaration concerning the sources of information used in preparation of the model.
- (c) If the drawings presented do not give the basic aircraft dimension (wing and stabiliser span, length, wing chord, tailplane chord, etc.) these dimensions must be supplied from an additional authoritative source.
- (d) At least (3) photos or printed reproductions of full scale aeroplane, including at least one of the actual subject aircraft being modelled.

Judging for Fidelity to Scale and Craftsmanship

	Fidelity to Scale	Craftsmanship
(1) Fuselage	K=4	K=3
(2) Wing or equivalent	K=4	K=3
(3) Tail surfaces or equivalent (empenage)	K=5	K=3
(4) Landing gear	K=4	K=3
(5) Engine, cowling propeller	K=3	K=3
(6) Cockpit or cabin detail	K=3	K=3
(7) Finish, colour and markings	K=3	K=3
(8) Special ingenuity—interior		K=3
(9) Special ingenuity—exterior		K=2

Flight Manoeuvres

A "K-factor" system permits all types of model subject to compete with reasonable equity. Points are awarded for such specialities as retractable undercarriages, multiple engines, working flaps. lights and manoeuvres in the air.

- Novocastria M.A.S.** (25) S.M.A.E.
- (1) S. Peart, North Farm House, Throckley, Newcastle upon Tyne, 5. (3) 2nd and 4th Friday each month
- (2) Manors Station, Newcastle upon Tyne 1
- (4) Newcastle Town Moor
- Prudhoe M.A.C.** (12)
- (1) I. Moffatt, 27 West Road, Prudhoe on Tyne (3) At members homes
- (2) None
- (4) Prudhoe and Munkton Hospital Farm

NORFOLK

- North Norfolk Aeromodellers** (14)
- (1) A.A.C. Jordan, The School House, Colby, Norwich, NOR. 47Y (3) 3rd Friday each Month
- (2) The White Lion, Holt
- (4) Oulton Airfield, Snoring Airfield, Kelling Heath
- Norwich M.A.C.** (47) S.M.A.E.
- (1) M. J. Woodhouse, 33 William Street, Norwich, Norfolk, Nor 79G (3) Fortnightly
- (2) Civil Service Sports Assoc.
- (4) R.A.F. Horsham, Bridgeham Neath, Thorpe Recreation Ground

NOTTINGHAMSHIRE

- Long Eaton & District M.A.C.** (30)
- (1) P. T. Siddal, 12 Hilldale Road, Long Eaton, Notts (3) Weekly
- (2) Derby Road, Long Eaton
- (4) Kegworth (F/F. and C/L) Long Eaton, West Park (C/L)
- Newark M.A.C.** (35) S.M.A.E.
- (1) P. Anderson 47-49 Balderton-gate, Newark, Notts. (3) Fortnightly
- (2) Barnbygate, Newark
- (4) Wigley Airfield
- Nottingham M.A.C.** (21) S.M.A.E.
- (1) B. Parkinson, 14 Kenilworth Road, Beeston, Nottingham (3) Weekly
- (2) 196 Heathcote Street, Nottingham
- (4) Playing field along University Boulevard Nottingham
- Nottingham R/C Soc.** (12)
- (1) D. Bolton, 406 Loughborough Road, West Bridgford, Nottingham (3) about 2 per year
- (2) None
- (4) Field, Nr. Radcliff on Trent, Notts.
- Workshop Aeromodellers** (12) S.M.A.E.
- (1) P. G. Russell, 58, Newcastle Ave. Workshop Notts. (3) Weekends
- (4) Gamston Airfield

OXFORDSHIRE

- Oxford & District of Model and Experimental Engineers** (13)
- (1) D. Vaughan, 94 St. Clements Oxford (3) Wed., Fri. and Sun.
- (2) Station Approach, Botley Road, Oxford
- (4) Port Meadow, Oxford

RUTLAND

- Melton & District M.C.** (18) S.M.A.E.
- (1) D. J. Hunt "Awali" 19 Ashwell Road, Whissendine Rutland (3) Weekly
- (2) Kirby Youth Centre, Dalby Road, Melton Mowbray
- (4) Saltby Aerodrome

SHROPSHIRE

- Priory M.A.C.** (22) S.M.A.E.
- (1) M. R. Oliver c/o Pulley Hall, Lower Pulley Lane, Bayston Hill, Shrewsbury (3) Weekly during term
- (2) Priory School Woodwork Hut
- (4) Priory School Yard and Playing field
- Shrewsbury & District R/C M.A.C.** (16) S.M.A.E.
- (1) R. Prime, 12 Combermere Drive, Mount Pleasant, Shrewsbury (3) Monthly
- (2) "Admiral Benbow" Ryton XI Towns Salop
- (4) R.A.F. Sleep, Nr. Wem. Shrewsbury, Salop

SOMERSET

- Ilminster & District R/C Club** (25) S.M.A.E.

- (1) D. J. Bailey, Dakota Broadway, Nr. Ilminster, Somerset (3) Monthly
- (2) Dakota Broadway, Nr. Ilminster
- (4) R.A.F. Merryfield, Ilton, Nr. Ilminster
- Westland Apprentice A.C.** (20)
- (1) I. Pilbeam, Thorne House, Thorne Coffin, Yeovil (3) Weekly
- (2) Westlands Sport Club
- (4) Westland Airfield

STAFFORDSHIRE

- Abbotsholme M.S.** (20)
- (1) A. H. Orme, Abbotsholme School, Rochester, Uttoxeter Staffs. (3) Weekly
- (2) Abbotsholme
- (4) School Playing Fields
- Bilston M.A.C.** (20) S.M.A.E.
- (1) M. Scott, 58 George Street, Ettingshall, Wolverhampton, Staffs. (3) Tues, Wed., Fri.
- (2) Priestfield Church, Ettingshall
- (4) East Park, Wolverhampton, Highgate Common
- Cannock Outlaws** (26) S.M.A.E.
- (1) M. Davis, 70 Pye Green Road, Cannock, Staffs. (3) Weekly Wednesdays
- (2) Blake School, Belt Road, Pye Green
- (4) Hednesford Hill, Cannock Park, Cannock Chase.
- Potters M.A.C. (Spitfires)** (80) S.M.A.E.
- (1) E. Clutton, 92 Newlands St., Shelton, Stoke on Trent.
- (2) P. Taylor, 36 Northwood Lane, Clayton, Newcastle, Staffs. (3) Weekly
- (4) Clayton Community Centre
- (4) Meir Airfield, Stoke on Trent, Clubhouse Field.
- G. Wall "Glenborne"**, Potters Lane, Polesworth, Tamworth, Staffs. (30)
- (2) Old Stone Cross, Tamworth (3) Weekly
- (4) Tamworth Castle grounds C/L only.
- Dunstable Lane, Bonehill.**
- Walsall M.A.C.** (25) S.M.A.E.
- (1) C. A. Petty, 49 Heather Rd, St. Barr, Birmingham 22A:
- (2) Walsall Youth Centre, Littleton St (3) Friday
- (4) Sutton Park & Fradley Aerodrome, Lichfield.
- Wolves M.A.C.** (25) S.M.A.E.
- (1) W. A. Hatfield, 563 Stafford Road, Wolverhampton, (3) Weekly
- (2) Community Centre Fordhouses
- (4) Various by arrangement.

SUFFOLK

- Ipswich R/C M.C.** (12)
- (1) J. O'Donnell, 48/50 Grimwade Street, Ipswich, Suffolk. (3) Quarterly
- (2) Martlesham
- (4) Martlesham, Nr. Ipswich.

SURREY

- Croydon & District M.A.C.**—(24) S.M.A.E.
- (1) K. G. Smith, 40 Clarks Avenue, Worcester Park, Surrey. (3) Weekly
- (2) Red Lion, Cheam
- (4) Chobham.
- Esher & District M.F.C.** (56) S.M.A.E.
- (1) F. Mertens, 7 Elm Drive, Sunbury on Thames, Surrey (3) Weekly Wednesdays
- (2) Esher Youth Centre
- (4) Fair Oaks Aerodrome, Epsom Downs, Chobham Common.
- Godalming & D.M.F.C.** (19) S.M.A.E.
- (1) C. S. West, 72 Furze Lane, Farncombe, Surrey.
- (2) Wilfred Noyce Youth Centre (3) Weekly, Fridays.
- (4) Milford Common, Hinkley Common, Chobham Common, C/L at clubroom field, Farnham
- (1) M. P. Hayter, Heather View Cottages, Shortfield Common, Frensham, Farnham, Surrey. (3)
- (2) None
- (4) Farnham Park C/L, Frensham Common F/F.
- Hawker Model Club** (20)
- (1) R. J. Steers, 3 Willow Court, Cambridge Road, Kingston upon Thames. (3) Mons. & Weds.
- (2) Hawker Athletic and Social Club.
- (4) Dunsfold Aerodrome.

- Leatherhead M.F.C.** (11) S.M.A.E.
(1) S. V. Tucker, "Fairways" The Warren, Ashted, Surrey. (3) 2nd and 4th
- The Scout Hut,** (3) Friday each month
- Fetcham Grove Sports Ground C/L,** (3) —
Epsom Downs for F/F
- Park M. A. League** (12) S.M.A.E.
(1) A. J. P. Briggs, 89 Marbles Way, Tadworth, Surrey.
- Defoe Institute, Broadwater Road,** (3) Fridays during term
- School field during summer, Epsom Downs.**
- Sevenoaks & District M.F.C.** (30) S.M.A.E.
(1) Mrs. C. M. Addison, "Dunedin", 13 Gladeside, Shirley, Croydon
- Branstead Village Hall** (3) Weekly
- Pilgrims Farm, Titsey, Westerham.**
- Surbiton District M.A.C.** (10) S.M.A.E.
(1) P. R. Buskell, 42 Lower Wood Road, Claygate.
- None** (3) —
- Chobham Common, Surrey and Epsom Downs**
- Surrey R.C.C.** (22) S.M.A.E.
(1) G. A. Kemp, 12 Woodside Crescent, Smallfield, Nr. Horley.
- Lingfield Institute, Lingfield, Surrey,** (3) Monthly during winter months
- Smallfield.**
- Whyteleafe Area M.F.C.** (20) S.M.A.E.
(1) G. W. Brown, 83 Godstone Road, Caterham, Surrey. (3) Weekly
- School Room, Caterham on the Hill**
- Field off Caterham by-Pass and R.A.F. Kenley.**
- Woking and District M.A.C.** (38) S.M.A.E.
(1) G. Wilson, 11 Hammond Road, Horsell, Woking. (3) Weekly
- Woking Youth Centre Park School**
- Horsell Common**
- SUSSEX**
- Bald Eagles M.A.C.** (52) S.M.A.E.
(1) J. Clarke, 6 Avery Close, Mile Oak, Portslade. (3) Weekly
- Lancing Youth Centre, Irene Ave., Lancing**
- Adur Recreation Ground, Shoreham C/L only.**
- Brighton & District M.A.C.** (23) S.M.A.E.
(1) J. West, 12 Northfield Way, Brighton 6, Sussex.
- None** (3) Weekly
- Goodwood Airfield, Chichester; Ashdown Forest, Crowborough.**
- Chichester & District** (51) S.M.A.E.
(1) N. A. Thair, 9 Deeside Avenue, Fishbourne, Chichester. (3) Monthly
- The Fleece Inn, East St., Chichester**
- Goodwood Motor Racing Circuit.**
- Crawley District M.A.C.** (38) S.M.A.E.
(1) P. Westlock, 34 Curzon Avenue, Horsham, Sussex.
- Hazelwick School Crawley** (3) Weekly
- School Playing Field and Ashdown Forest.**
- Eastbourne M.F.C.** (27) S.M.A.E.
(1) T. Lambert, 1 Central Avenue, Polegate, Sussex. (3) Weekly during winter, 1st Wednesday in the month during summer.
- East Grinstead M.F.C.** (24)
(1) L. Fuzzard, The Stone House, Felcourt, East Grinstead, Sussex. (3) Every Monday
- E. Grinstead Grammar School**
- Nr. Horne.**
- Sussex R.F.C.** (15) S.M.A.E.
(1) R. P. Brown, 22 Millicroft Avenue, Southwick, Brighton.
- Cricketers Hotel, Southwick** (3) Monthly
- Mill Hill, Shoreham.**

WARWICKSHIRE

- Blackheath & Halesowen M.A.C.** (10) S.M.A.E.
(1) 11 Church Street, Blackheath, Nr. Birmingham. (3) Weekly during School term.
- Long Lane, Blackheath**
- Halesowen, Hagley Causeway.**

- Birmingham M.A.C.** (12) S.M.A.E.
(1) R. Monks, 232 Westwood Road, Sutton Coldfield, Warwick.
- None** (3) When necessary
- Sutton Park, Sutton Coldfield, Warwick Race Course.**
- Coventry & District M.A.C.** (11) S.M.A.E.
(1) B. Clay, 1 Copland Place, Tile Hill, South Coventry. (3) Monthly
- Bell Green Community Centre.**
- None** (3) —
- Leamington Vulture M.A.C.** (6) S.M.A.E.
(1) J. A. Carpenter Esq., 96 Tachbrook Street, Leamington Spa. (3) Monthly
- 14 Beauchamp Avenue, Leamington Spa.**
- Victoria Park.**
- Nuneaton Aeromodellers** (32) S.M.A.E.
(1) A. Payne, 8 Trafford Drive, Nuneaton, Warwick. (3) Weekly
- Caldicote Parish Hall, Caldicot.**
- Burbage Common, Bramcote.**
- Small Heath M.A.C. & M.R.C.** (17) S.M.A.E.
(1) R. W. Downes, 3/84 Oldfield Road, B'ham 12.
- Golden Hillock Rd. Schools.** (3) Twice a week
- Sports field in B'ham C/L.**
- Shropshire Slope Soaring**
- South Birmingham M.F.C.** (22) S.M.A.E.
(1) R. D. Jones, 3 Nimmins Close, West Heath, Birmingham
- Turves Green Girls School** (3) Weekly
- Cofton Park C/L.**
- Sutton Coldfield R/C A.C.M.** (33)
- L. J. Jackson, 98 Stanhope Road, Swadincote, Nr. Burton on Trent.** (3) Monthly
- "Fox and Hounds", Shenstone, Nr. Lichfield.**
- Frackleigh, Nr. Lichfield.**
- Tudor Falcons M.A.C.** (25)
- J. Beacon, 21 Queenswood Road, Four Oaks, Sutton Coldfield** (3) Monthly
- Sutton Coldfield**
- Sutton Park**
- West Coventry** (4) S.M.A.E.
(1) L. E. Moore, 23 Hemsworth Drive, Bulkington, Nuneaton
- Axe and Compass** (3) Bi-monthly
- None**

WESTMORLAND

- Kendal M.A.C.** (7)
(1) P. H. Bowsher, 23 Crescent Green, Kendal, Westmorland. (3) —
- (3) —
- Millnthorpe Sands.**

WILTSHIRE

- Boscombe Down M.A.C.** (29) S.M.A.E.
(1) K. G. Reith, Spts. Mess., Boscombe Down, Amesbury, Wilts.
- A. & A.E.E. Boscombe Down.** (3) Monthly
- Boscombe Down Airfield; Everleigh Dropping Zone; Larkhill Ranges.** (8) S.M.A.E.
- Larkhill R.C.M.C.** (8) S.M.A.E.
(1) J. Bagley, 1 Gardener Road, Larkhill and E. Johnson, The Pharmacy, Packway, Larkhill.
- Building 53, Horne Barracks.** (3) When required
- Knighdon Down, Netheravon in members' homes.**
- Airfield, The Verdette, Larkhill Ranges.**
- Swindon M.A.C.** (54) S.M.A.E.
(1) R. H. Smith, 10 Dunster Close, Swindon, Wilts.
- Rear of Bell Hotel, Swindon** (3) as required.
- Arnhem Camp, Watchfield, Nr. Shrivenham, Berks**
- Royal Air Force, Lyneham** (46) S.M.A.E.
(1) Sgt. A. Boonham, Spts. Mess., R.A.F. Lyneham, Nr. Swindon, Wilts. (3) Twice weekly
- On Camp**
- Lyneham—C/L only. R.A.F. Hullavington, F.F.**
- Warminster M.A.C.** (7) S.M.A.E.
(1) A. H. Sims, 17 Rock Lane, Boreham Road, Warminster, Wilts. (3) Weekly
- None**
- Keovil Airfield, Nr. Trowbridge, Wilts.**
- Warminster & Frome M.A.C.** (2)
- G. G. Daniel, 27 Sturford Lane, Corsley, Nr. Warminster.** (3) Monthly
- None**
- Frome Area**

SOCIETY OF MODEL AERONAUTICAL ENGINEERS Model Specifications

TYPES: (CONTROL-LINE) ½ A TEAM RACE

SIZE: 90 sq. ins. min. total projected area.

FUSELAGE: 3 in. x 1.5 in. at cockpit.

TANK: 6 cc. max. capacity.

WHEEL(S): 1 in. dia.—½ in. for wear.

POWER: 1.5 cc. max. engine capacity.

LINE LENGTH: 46 ft. 8 in. (2 x .010 in. dia.)

PULL TEST: 20 x weight of model.

A TEAM RACE

All specifications identical to International Class.

B TEAM RACE

SIZE: 133 sq. ins. min. total projected area.

FUSELAGE: 4 in. x 2 in. at cockpit.

TANK: 30 cc. max. capacity.

WHEEL(S): 1 in. dia.—½ in. for wear.

POWER: 2.51-5 cc. engines.

PULL TEST: 20 x weight of model.

LINE LENGTH: 60 ft. (2 x 0.0124 in. dia.)

A COMBAT

All specifications identical to International Class.

B COMBAT

SIZE: Unrestricted except by area loading regulations.

POWER: 2.51-6.55 cc. capacity.

LINE LENGTH: 60 ft. ± 3 in.

PULL TEST: None.

SPEED

CLASS 1 **POWER:** 1.5 cc. **LINE LENGTH:** 47 ft. 5½ in. (No set dia.)

CLASS 2 **POWER:** 1.51 cc.-2.5 cc. **LINE LENGTH:** 52 ft. 2½ in. (No set dia.)

CLASS 3

All specifications as International Class.

CLASS 4 **POWER:** 2.51 cc.-5 cc. **LINE LENGTH:** 58 ft. ½ in. (No set dia.)

CLASS 5 **POWER:** 5.01 cc.-10 cc. **LINE LENGTH:** 65 ft. 3¼ in. (No set dia.)

FUEL: Unrestricted except the use of Tetranitromethane or Dioxan is banned.

30 times model weight sustained for 10 seconds.

RECOMMENDED MINIMUM DIAMETERS OF CONTROL LINES

Class 1—Monoline .0108 (32 s.w.g.)—Two lines .0076 (36 s.w.g.)

Class 2—Monoline .0137 (29 s.w.g.)—Two lines .010 (33 s.w.g.)

Class 4—Monoline .0148 (28 s.w.g.)—Two lines .0108 (32 s.w.g.)

Class 5—Monoline .020 (25 s.w.g.)—Two lines .0148 (28 s.w.g.)

AEROBATICS

All specifications identical to International Class.

RAT RACE

SIZE: Unrestricted except by area loading regulations.

POWER: 6.55 cc. maximum.

LINE LENGTH: 60 ft. 2 x 0.0148 in. dia. (28 s.w.g.)

PULL TEST: None but safety inspection.

Are
YOU
Licensed?

Just in case newcomers to Radio Control are not aware of it—you need a license for operating remote control equipment. No tests, just fill in a form and pay £1 for five years' cover. Application form and full particulars from Radio Branch, Radio & Accommodation Dept., G.P.O. Headquarters, London, E.C.1.

INTERNATIONAL MODEL SPECIFICATIONS

General

SIZE: Not more than 2,325 sq. ins. projected area.
WEIGHT: Not more than 11.023 lbs. except multi-engined scale C/L (15.452 lbs.)
LOADING: Free Flight; between 3.95 oz./sq. ft. and 16.38 oz./sq. ft.
 Control Line: between 3.95 oz./sq. ft. and 32.76 oz./sq. ft.
 Scale C/L: between 3.95 oz./sq. ft. and 49.12 oz./sq. ft.
 Radio control: between 3.95 oz./sq. ft. and 24.51 oz./sq. ft.
 Scale R/C: between 3.95 oz./sq. ft. and 32.76 oz./sq. ft.
POWER: Internal combustion engine(s) used must not exceed 10 cc.
 Multi-engined Control Line scale models may total up to 20 cc.
 Jets should not weigh more than 2.2 lbs. or less than 1.1 lbs.
LAUNCHING: By hand or rise off ground according to contest. Gliders by means of an inextensible tow-line 164 ft. long, carrying a 39 sq ins. pennant.
IDENTIFICATION: All models carry the competitor's licence or membership number with the National registration letters/numbers.

TYPES: (FREE FLIGHT) A/2 GLIDER
SIZE: 496-527 sq. ins. total projected area.
WEIGHT: 14.46 oz. minimum.
WAKEFIELD
SIZE: 263.5 to 294.5 sq. ins. total projected area.
WEIGHT: 8.11 oz. minimum with motor.
POWER: 40 grms rubber, lubricated weight (maximum).
F.A.I. POWER
SIZE: Unrestricted except by area loading regulations.
WEIGHT: 10.58 oz. per cc. minimum.
LOADING: 6.55 oz./sq. ft. to 16.38 oz./sq. ft.
POWER: 2.5 cc. maximum engine capacity, 10 seconds max. run from release.
FLIGHTS FOR ABOVE ARE OF 3 MINUTES MAXIMUM DURATION IN 5 ROUNDS

INDOOR
SIZE: Unrestricted except by 25 9/16 ins. max. wingspan.
WEIGHT & LOADING: Unrestricted.
POWER: Rubber drive only.
FLIGHTS: 6 launches, better 2 count.
 N.B. For record purposes this category is divided by ceiling heights:—Cat I up to 26 ft. Cat II up to 49 ft., Cat III up to 98 ft., Cat IV over 98 ft.

TYPES: (CONTROL-LINE) AEROBATICS
SIZE: WEIGHT: LOADING: POWER etc. as above, under General.
LINE LENGTH: Between 49.2 ft. and 70.5 ft.
PULL TEST: 15 x weight of model up to 40.4 lbs maximum.

SPEED
SIZE: WEIGHT: AREA LOADING: as under General.
AREA: 31 sq. ins. per cc. engine capacity.
POWER: 2.5 cc. maximum.
FUEL: 80/20 or 75/25 methanol/castor oil or any 'diesel' formula for compression ignition.
LINE LENGTH: 15.92 m. (52 ft. 2 1/2 in.) 2 x 0.0098 in. or 1 x 0.016 in.
PULL TEST: 20 x weight of model.

TEAM RACE
SIZE: 186 sq. ins. minimum total projected area.
WEIGHT: 24.69 oz. maximum.
FUSELAGE: 4 x 2 in. at cockpit (min. cross-section area 6.045 sq. ins.).
TANK: 7 cc. maximum capacity.
WHEELS: 1 in. minimum dia.
POWER: 2.5 cc. maximum engine capacity.
LINE LENGTH: 52 ft. 2 1/2 in. (2 x 0.0118 in.).
PULL TEST: 20 x weight of model.

COMBAT
SIZE: Unrestricted except by area loading regulations.
POWER: 2.5 cc. maximum engine capacity.
LINE LENGTH: 52 ft. 2 1/2 in.

WORCESTERSHIRE

Evesham and District M.A.C. (24) S.M.A.E.
 (1) D. Grove, 121 King Road, Evesham, Worcs.
 (2) Trumpet Inn
 (3) Third Thurs.—each month.
 (4) Saintbury Grounds Farm; C/L at Offenham.
Redditch Radio C.S.
 (1) D. Hardman, 82 Mason Road, Redditch, Worcs.
 (2) None
 (3) Not fixed
 (4) Watery Lane, Redditch
Wordsley M.A.C. (10)
 (1) G. Stocke, 5 Kingswinford Road, Holly Hall, Dudley, Worcs.
 (2) Wordsley Community Centre (3) Weekly
 (4) King George V Park C/L. Local Common for F/F.

YORKSHIRE

Baildon M.F.C. (20) S.M.A.E.
 (1) D. Curtis, 27 Hastings Avenue, Marshfields, Bradford 5. (3) Fortnightly
 (2) British Legion, Hunslet Road, Leeds.
 (4) Baildon Moor
Blackburn Aircraft M.F.C. (28) S.M.A.E.
 (1) J. M. Harrison, 15 Derwent Avenue, North Ferriby, Yorks. (3) Weekly
 (2) Prescott Ave., Brough, Yorks.
 (4) Brough Airfield and Yorkshire Wolds.
Dewsbury & District M.A.C. (20)
 (1) R. Benson, 5 Edge Lane, Thornhill, Dewsbury.
 (2) Not allocated as yet (3) —
 (4) Dewsbury Feast Ground
Halifax M.F.C. (20) S.M.A.E.
 (1) N. Stewart, 10 Beresford Road, Buttershaw Lane, Bradford, E. (3) 1st Wed every month.
 (2) Committee Room No. 2, Spring Hall.
 (4) Saville Park, Halifax
Harrogate & District M.C. (20)
 (1) H. D. Tappin, 83 Briggate Knarborough, Yorks.
 (2) Westmorland Street, Harrogate.
 (4) Open Moorland on Leighley Road. (3) Weekly
Hessle & District M.F.C. (15) S.M.A.E.
 (1) R. Bell, 74 Danes Drive, Hessle, E. Yorks. (3) Weekly
 (2) Rear 2 Southgate, Hessle.
 (4) Livingstone Road Recreation Ground, Hessle.
Huddersfield & D.M.A.C. (11) S.M.A.E.
 (1) J. Woodhouse, 26 Standiforth Road, Dalton, Huddersfield. (3) Weekly
 (2) Lockwood Mechanics Institute
 (4) Crossland Edge, Nr. Huddersfield.
North Sheffield M.A.C. (21) S.M.A.E.
 (1) P. Carr, 15 Gould Street, Wakley, Sheffield 6. (3) 2nd and 4th Wed in the Month
 (2) New Inn, Carbrooke Street.
 (4) Several in Local Parks roped off by Council.
Sheffield Aeronautical Radio Control Soc. (35) S.M.A.E.
 (1) Mr. C. Slater, 3 Oakdell, Holesdale, Dronfield, Sheffield. (3) Fortnightly
 (2) Robin Hood Hotel, Millhouse.
 (4) Gamston Aerodrome, Nr. Worskop (Sundays excepted); Dyes Lane, Norton, Sheffield (Thursdays and Sundays)
Sheffield S.A. (36)
 (1) 57 Rowan Tree Dell, Totley, Sheffield
 (2) Central Technical School (3) 2nd & 4th Fridays
 (4) Ringinglow Moor
Thirsk and District M.A.C. (10) S.M.A.E.
 (1) H. Knowlson, 18 Church Street, Topcliffe, Thirsk, Yorks. (3) —
 (2) None
 (4) Northern Area S.M.A.E. Competition venues.
Wath M.A.C. (43) S.M.A.E.
 (1) R. S. Murrell, 34 Park Road, Swinton, Nr. Mexborough—(3) Weekly
 (2) Mechanics Inst., Wath
 (4) Recreation Road, Wath
Wharfedale & District Aeromodellers (29) S.M.A.E.
 (1) L. Davy, 14 Lansdowne Close, Baildon, Yorks. (3) Monthly
 (2) The Grange, Buley in Wharfedale
 (4) R.A.F. Marsden Moore (weekdays); R.A.F. Rufforth (weekends).

Club Directory

CODE

Wizbang M.A.C. Name of club
 (24) Total membership
 S.M.A.E. (Affiliated Body)
 (1) Club Secretary
 (2) Meeting place
 (3) Frequency of meetings
 (4) Flying ground(s)

York M.A.S. (23) S.M.A.E.
 (1) D. G. White, 24 Surtees Street, Burton Stone Lane, York. (3) —
 (2) None
 (4) R.A.F. Elvington

ISLE OF MAN

Manxmen M.A.C. (2)
 (1) W. S. Cowell, Early Vegg, West Baldwyn, Braddon, I.O.M. (3) As required
 (2) As above
 (4) Farmland as above.

ISLE OF WIGHT

Skyryders M.A.C. (32) —
 (1) G. F. Osborne, 13 Surrey Street, Ryde, I.O.W. (3) 4-5 nights per week, Sunday Flying.
 (2) Puckpool Park, Nr. Ryde
 (4) Small brook Heath, Pleasure Gardens, Nr. Ryde

EIRE

Blanchardstown M.F.C. (12) M.A.C.I.
 (1) T. Jojoe, 453 Carnlow Rd., Cabra, West Dublin 7, Eire. (3) Weekends
 (2) Meet on flying field
 (3) Cruiceth, Blanchardstown
Cork M.A.C. (42) M.A.C.I.
 (1) J. F. McNally, Marieville, Bendemeer Park, Magazine Road, Cork. (3) Weekly
 (2) The Orchard Bar, Ballinlough Road
 (4) Grass C/L Circle at Blackrock Cork Airport.
Leinster M.F.C. (10) S.M.A.E.
 (1) C. Carroll, 32 Mount Carmel Road, Goatstown, Dublin 14, Eire (3) Fortnightly
 (2) None
 (4) Casement Airfield, Co. Dublin; St. Morgan, Co. Dublin.
Limerick M.F.C. (25) M.A.C.I.
 (1) M. Griffin, 31 McDonagh Avenue, Janesboro, Limerick. (3) Monthly
 (2) Cecil Hotel
 (4) Ballycummin, Castle Mongret.
North Dublin A.C. (10) M.A.C.I.
 (1) P. Brennan, 39A Castle Avenue, Clontarf, Dublin 3. (3) When necessary
 (2) As above
 (4) Casement Airfield, Baldonnel, Co. Dublin.
Phoenix Aeromodelling Club (26) M.A.C.I.
 (1) J. T. Jackson, 115 Brandon Road, Drimnagh, Dublin 12, Eire. (3) Fortnightly
 (2) No. 1 Dame Court
 (4) Baldonnel Control Line and R/C; Phoenix Park, Curragh Plains F/F.
Shankill M.F.C. (9) M.A.C.I.
 (1) T. Shortt, 6 Newcourt Villas, Vevay Road, Bray, Co. Wicklow, Eire. (3) —
 (2) Ballymahow, Bray, Co. Wicklow.

NORTHERN IRELAND

- Belfast M.F.C.** (34) M.A.C.I.
(1) N. Taylor, 88 Richardson Street, Belfast 6.
(2) Scoopy-do Cafe
(3) Monthly
(4) R.N.A.Y. Airfield, Sydenham, C/L;
Star Bog Larne F.F.
Ulster M.A.C. (60) M.A.C.I.
(1) T. Galway, 34 Riddens Park, Castlereagh, Belfast 5.
(2) None
(3) A.G.M.'s only
(4) Nutts Corner Airfield, Co. Antrim; Newtownards Airfield, Co. Down; Aghadowry Airfield, Londonderry.

SCOTLAND

- Aberdeen Aeromodellers M.F.C.** (30)
(1) A. Kennedy, 32 Osborne Place, Aberdeen
(2) Raimhill Community Centre, (3) Fortnightly
Aberdeen.
(4) Dyce Airport, Seaton Park, Aberdeen, (C/L only).
Border M.F.C. (18)
(1) J. Scott, "Westerlea", West High Street, Earlsferry, Berwickshire. (3) Bi-monthly
(2) Galashiels
(3) Chatterhall Airfield.
Dunfermline M.A.C. (14)
(1) A. D. Groom, 38 Park Road, Rosyth, Fife.
(2) 2 Macgregors Buildings. (3) Weekly
(4) Pitreavie Playing Fields.
East Renfrewshire Aeromodellers (11) S.M.A.E.
(1) I. G. Carson, 174 Eastwoodmains Road, Clarkston, Glasgow. (3) None
(2) None
(4) Shared with Glasgow Hornets
Esk Valley (22)
(1) W. Paton, 23 Esk Place, Dalkeith, Midlothian
(2) 114 High Street, Dalkeith (3) Thursdays
(4) Musselburgh Common Ground and Niddrie Playing Fields.
Firth of Clyde Aeromodeller (11)
(1) 27 Rodney Road, Gourock, (3) Casually by mutual arrangement
Renfrewshire.
(2) None
(4) Loch Thorn (F/F and Radio) I.B.M. Factory

- Forres M.A.C.** (14)
(1) A. Buchanan, 20 Anderson Crescent, Forres.
(2) 12 Anderson Crescent (3) Weekly
(4) Roysvale Park, Grant Park, Mosset Park, R.A.F. Kinross.
Glasgow Hornets M.A. (43)
(1) I. Carson, 174 Eastwoodmains Road, Clarkston, Glasgow. (3) Approx 3 per annum.
(2) None
(4) Braidbar Farm, Giffnock, Glasgow; Car Park, East Kilbride; Fenwick Moors.
Glasgow M.A.C. & Renfrewshire (60)
(1) V. McKenna, 60 Rylands Rd., Penilee, Glasgow, S.W.2 (3) Weekly
(2) Foxbar Community Centre

- (4) Rootes Pressing Recreation Ground, Robertson Park, Gleniffer Braes, Bellahouston, Lynn Parks
Glenrothes A.C. (21)
(1) B. Russell, 17 Falcon Drive, Glenrothes, Fife.
(2) 48 High Street, Markinch, Fife
(4) Glenrothes Park, Carleton Park, Fairland Hill, Balgonie Colliery.
Irvine R/C M.A.C. (19)
(1) T. L. Robinson, 32 Cairn Cres., Cambusdown, Alloway. (3) Monthly
(2) 48 East Road, Irvine
(4) Gales, Nr. Irvine.
Kirkcaldy M.A.C. (22)
(1) 137 Duncarn Drive, Templehall, Kirkcaldy, Fife. (3) First Friday of month
(2) Junction Road, Kirkcaldy (3) month
(4) Beveridge Park, Ravenscraig Park, Chapel Lever.
Lanark A.C. (12)
(1) J. McDowall, M.A., Headmaster, School House, New Lanark, Lanark. (3) 2nd & 4th Wed.
(2) As above
(4) Lanark Race Course, last Saturday each month.
Larkhill Orbiters M.A.C. (12)
(1) W. A. Fleming, Gleneden, Bothwell, Glasgow.
(2) Bothwell, East Kilbride; Stratharen, Larkhill.
Perth M.A.C. (20)
(1) A. Lewis, 2 Goshen Road, Scone, Perth.
(2) Inveralmond Farm, South Inch, Errol Airfield.
Saltcoats Ardrossan Stevenson M.A.C. (16)
(1) H. J. Donachie, 45 Sharpill Road, Saltcoats, Ayrshire. (3) Sundays
(2) Auchenharvie Playing Fields, Stevenson.

WALES

- Neath M.A.C.** (5) S.M.A.E.
(1) J. Bailey, 53 Cook Rees Au Neath, S. Wales
(2) None (3) Infrequent
(4) Clyne Common, Swansea, Cefn Bryn Common, Swansea.
Richard Thomas & Baldwins (23) S.M.A.E.
M.E.U.
(1) F. O. Probert, 20 Heathfield Close, Garnlydan, Ebbw Vale, Mon. (3) Mondays and
(2) West End Hut, Hilltop, Wednesdays
Ebbw Vale.
(4) R.T.B. Welfare Field, Hilltop, Llangyadira Moors.
South Wales R/C Soc. (47) S.M.A.E.
(1) P. T. Waters, 29 Suffolk Place, Porthcawl, Glam. (3) Monthly
(2) Y.M.C.A., Queen Street Railway Station.
(4) Llandow Airport, Alongside Motor Circuit.

CHANNEL ISLANDS

- Jersey M.A.C.** (21) S.M.A.E.
(1) F. Gills, Breezy Hill, Quennevais Drive, St. Brelade, Jersey, C.I. (3) Every other
(2) "Cosy Corner" St. Helier. Tuesday
(4) Less Landes (Old Shooting Range), St. Owen.

U.S.A. DEFINITIONS FOR CLASSIFICATION OF "SINGLE", "INTERMEDIATE" AND "MULTI"

CLASS I

Planes controlled about the Yaw axis, by Rudder Control only. No auxiliary aerodynamic controls are permitted (flaps, spoilers, etc.); no auxiliary non-flight controls are permitted (brakes, steerable wheels, etc.) Trim of the Rudder Control is permissible only if obtainable with the basic actuator used for Rudder control—no additional servos, actuators or devices are permitted. Rudder control permissible by any means—selective positioning, proportional, etc.

CLASS II

Planes controlled about the Yaw and Pitch axes, by Rudder and Elevator control only. Rudder and elevator control permissible by any means, simultaneously, independently or otherwise. Auxiliary non-flight controls (brakes, steerable wheels, etc.) are permitted without limitation or restriction. Auxiliary aerodynamic controls (flaps, spoilers, etc.) are not permitted.

CLASS III

Planes controlled about the Yaw and Pitch and Roll axes; by Rudder, Elevator and Aileron controls, with no limitations or restrictions on primary aerodynamic controls, auxiliary aerodynamic controls or auxiliary non-flight controls.

U.S. GOODYEAR PYLON RACING

- SIZE:** Projected wing area not less than 450 sq. ins.
WEIGHT: Between 4½ lbs. and 6½ lbs.
FUSELAGE: Scale proportions with 7 in. deep 3½ in. wide cockpit, cowed engine.
ENGINE: 0.40 cu. ins. (6 cc.)
TANK: Minimum 4 oz. (112 cc.)
SPINNER: 1½ in. Min. dia. **WHEELS:** 2½ in. Min. dia.

A suggestion for club activity

RULES FOR A SINGLE CHANNEL SPOT LANDING LEAGUE TO BE RUN ON A HOME AND AWAY BASIS BETWEEN CLUBS Any type of R/C model may be used

Scoring

- One penalty point for every foot away from the landing spot, up to 150 ft. maximum.
- One penalty point for every second under or over nominated time, maximum time points 150.
- First point of contact to count for scoring.
- Timing to commence when the model is released in the case of powered, and when the model leaves the line, in the case of the glider.
- All models should make a 180 deg. turn round a pylon 100 yds up wind of take-off area. The distance of the pylon may be adjusted depending on weather conditions. Penalty for missing this, 30 points.
- Maximum flight time 5 minutes.
- Minimum flight time 2 minutes.
- If the duration should be outside time allowed, it will score the maximum time penalty points of 150.
- Once the motor has been throttled, it must not be opened up again, penalty for opening up motor, maximum time and distance points. The motor need not be completely stopped for landing.
- All competitors will be allowed two attempts at each flight.
- Teams**
A team will consist of four members and one reserve. Each team will be allowed 8 flights. No competitor will make more than 2 flights.
One member from each Club will act as judges.
The Home team to provide one measure, two stop watches, one upwind pylon and a landing spot.

BE CAREFUL WITH MODEL ENGINE FUEL!

Do not breathe vapour or swallow liquid fuel. Keep fuel cans tightly capped at all times. Remember that all fuels are inflammable.

The correct First Aid action for any fluid splashed into the eye is worth remembering.

- Immediately irrigate the eye with large quantities of tepid water even for oily fluids.
- Cover the eye with a pad.
- Go and see the Doctor or Hospital Casualty Dept. Luckily most of the chemicals used in dopes and fuels are irritants rather than poisons and while they might give a very sore eye, are unlikely to do permanent damage.

Modellers should also be careful of

using these substances in an unventilated place as with a high concentration there is:—

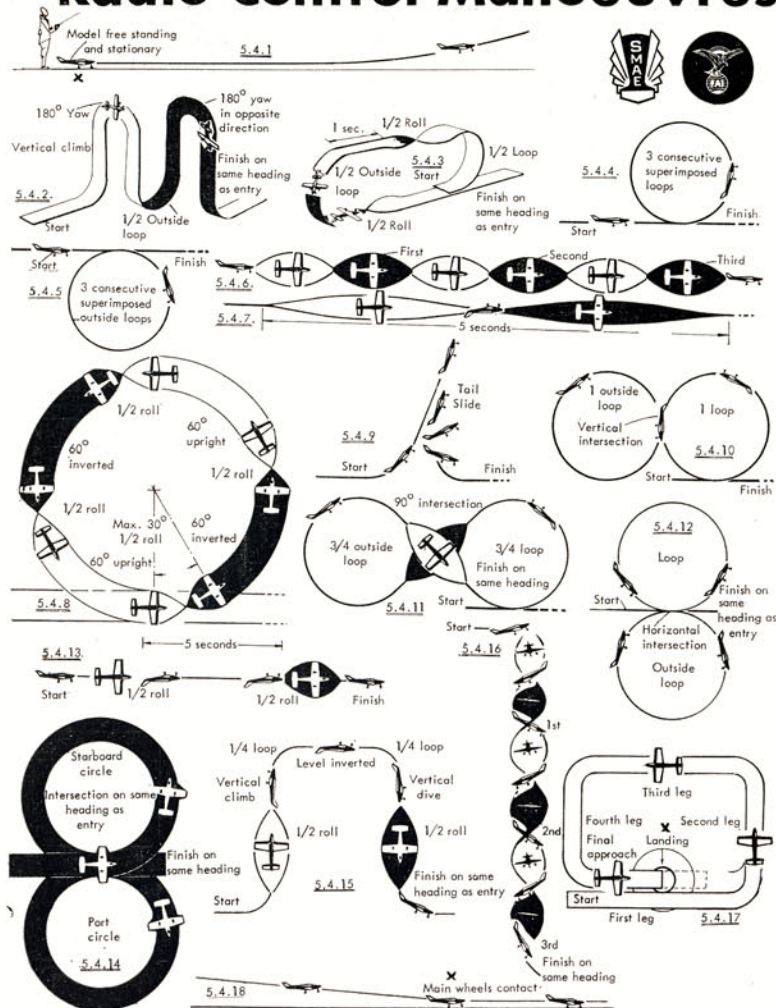
(a) a high fire risk—and a spark of static from a nylon shirt would be enough to cause an explosion.

(b) poisonous effects—Amyl nitrate is particularly dangerous and one breath of concentrated vapour could cause loss of consciousness.

When mixing fuels always do it in the open air at least in the garage with the doors open.

Similarly when doping a model in a small workroom always have a window open.

Official diagrams for National & International Radio Control Manoeuvres



Newsletters

Regular readers of *Aeromodeller* will know that many of the larger clubs (and some of those with only a few members) issue regular newsletters including model designs articles on model techniques as well as activity reports and notices of contests.

Exchange of these newsletters is a most beneficial arrangement for all in the club movement, but it must be remembered that postal costs at least ought to be borne by all recipients. Here are some of the leading British Newsletters which we at *Aeromodeller* find very informative, beginning with the National organisation newsletters:—

"Model Flying" by S.M.A.E., 10a Electric Avenue, Brixton, London S.W.9.

"S.A.A." by K. J. Johnston, 113 Kinarvie Road, Glasgow S.W.3.

"M.A.C.I." by G. Dickson, 80 Howth Road, Clontarf, Dublin 3.

"Seadog", 7 The Green Walk, Willingdon, Eastbourne, Sussex.

"Message" by P. H. Branigan, 36 Windsor Road, Formby, Liverpool.

"Northern Area Newsletter" R. Firth, 30 Struan Road, Sheffield 7.

"Buckaneers", C. Browning, 126 Shenley Road, Bletchley, Bucks.

"Liverpool" A. G. Swallow, 34 Newlyn Avenue, Maghill.

"Turbulator" by Crawley M.A.C., R. Flain, 6 Covert Close, Northgate, Crawley.

"Glasgow Hornets". I. G. Carson, 174 Eastwoodmains Road, Clarkston, Glasgow.

Overseas clubs also have newsletters and are usually very interested in having an exchange arrangement. It is often an education to see how one's opposite number in a foreign country follows his hobby with avid enthusiasm and has his activities described in detail in the club circular.

Insurance for the lone-hand sports flyer



Model Aeronautical Press Ltd. is able to offer regular readers a £50,000 third party accident insurance policy for a premium of 2/6d. We have been concerned for a long time that although the governing bodies of the model aircraft and model boat hobbies have offered members adequate cover, such cover has not been readily available to the lone hand without considerable trouble and the negotiation of a personal policy. What has happened so often has been that our lone hands have just not bothered and have flown quietly on their own private little airfield by arrangement, perhaps, with a local farmer and everything has been lovely until the accident happened! It does not need a great deal of imagination to realise what could be the result of an accident befalling some uninsured person who might find that their savings for years to come were mortgaged in advance to meet some heavy court claim.

With our scheme, which offers exactly the same cover that the Air Ministry require for use of their airfields, every regular reader of a Model Aeronautical Press magazine who need not belong to any club or have any affiliations can cover himself adequately for 2/6d. a year plus a promise to take the magazine of his choice each month.

The scheme is not in any way intended to compete with the S.M.A.E. or R.A.F.M.A.A. or S.A.A. membership terms. It provides nothing but insurance for those unable to take advantage of joining one of the National Organisations.

APPLICATION FORMS ARE PRINTED IN ALL M.A.P. MAGAZINES



Luton & DMFC show how to put on an exhibition.

How to RUN a CLUB

By H. S. Fletcher
and J. Marsh (Leicester)

THE organisation of a model aero club must be considered on the same basis as a business. Many clubs rise only to disappear due to lack of purpose and method. The aeromodeler who wishes to become a member is a customer and you cannot afford to turn customers away! Hence the club must be prepared to accept all types of modellers if it is to operate as a successful club. It must be recognised that for every member who is prepared to give a hand with the club organisation, at least six members will join merely for what they can get out of it—but these are the people who, while they are attracted only by what the club has to offer, will help by their subscriptions, to increase the scope of the club. The scope of a club is controlled by its size and much more can be done by a coherent group of 30 or 40 members than three or four splinter groups.

What should a club offer to attract modellers into its ranks? First and foremost, it must provide a flying site. A lone hand usually has little difficulty in finding somewhere to fly, but to obtain written permission from an owner or lessee for a site for the use of a group is very much more difficult. In addition to the flying ground, members will expect some or all of the following (not in order of priority):—

1. Clubroom.
2. Competitive events with prizes and trophies.
3. Social events.
4. Circular news sheets.
5. Equipment—use of stop-watches, etc.
6. Insurance cover.
7. Copies of club rules and information on how the club functions.
8. Extras such as transfers, badges, ties, etc.

The broad principles of the objects and operation must be incorporated in a set of rules or constitution. Primary ground to be covered will be a statement which gives the following listed items:—

1. The objects of the club—should be worded to include all of the above services in general terms.
2. Categories of members and subscriptions payable.
3. A list of officers and method of election.
4. Provision for an approximate date of the A.G.M.
5. Provision for election of Committee members and regular Committee Meetings.
6. A fixed date for the start of the financial year.
7. Provision of some form of budget to decide subscription rates and income.

About Aerobatics

Each Competitor has to fly a fixed pattern of manoeuvres, illustrated details of which are seen on the page opposite.

As the manoeuvres are of varying difficulty, the judges mark each figure to a maximum of ten points, and their mark is subsequently multiplied by a factor which is in accordance with that difficulty. Thus a simple figure may have a factor of only two whereas a really difficult one a factor of ten, implying it is five times as difficult to execute.

Judging is based entirely on the quality of the manoeuvre, and smoothness of control together with accuracy are taken into consideration throughout every separate figure.

When the judges' cards are handed in, the Recorder supervises the calculation of the separate results, and eventually they find their way to the score board for all to see, together with the final result.

Each competitor makes three flights during the contest, the best two scores being added together to obtain his final marking.

Name	Model
Club	A
S.M.A.E. No.	B
	C

JUDGE

1

SOCIETY OF MODEL AERONAUTICAL ENGINEERS	AEROBATICS		
	Coefficient	FLIGHT SCORE	
		1 ATT: out of 10	2 ATT: out of 10
POINTS			
Release within 3 minutes			
1 TAKE OFF within one minute	1×		
2 TAKE OFF	2×		
3 REVERSE WINGOVERS	8×		
4 CONSECUTIVE INSIDE LOOPS (3 required)	1×		
	2×		
	3×		
5 INVERTED FLIGHT (2 laps)	2×		
6 CONSECUTIVE OUTSIDE LOOPS (3 required)	1×		
	2×		
	3×		
7 CONSECUTIVE INSIDE SQUARE LOOPS (2 required)	5×		
	7×		
8 CONSECUTIVE OUTSIDE SQUARE LOOPS (2 required)	5×		
	7×		
9 CONSECUTIVE INSIDE TRIANGULAR LOOPS (2 required)	6×		
	8×		
10 HORIZONTAL EIGHTS (2 required)	3×		
	4×		
11 SQUARE HORIZONTAL EIGHTS (2 required)	8×		
	10×		
12 VERTICAL EIGHTS (2 required)	4×		
	6×		
13 HOURGLASS	10×		
14 OVERHEAD EIGHTS (2 required)	4×		
	6×		
15 FOUR LEAF CLOVER	8×		
16 LANDING	5×		
OUT OF 1310		INITIALS	TOTAL

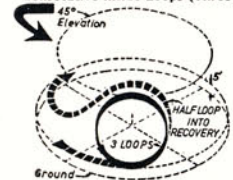
Official diagrams for Control-line aerobatics



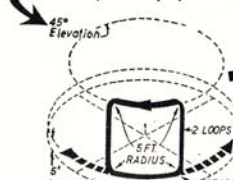
THE AEROBATIC MANOEUVRES

All flights follow same pattern

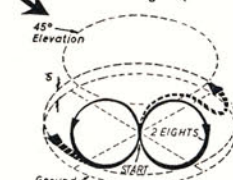
Consecutive Inside Loops (Three Required).



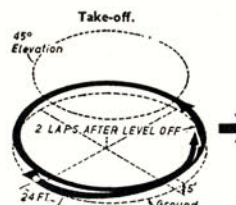
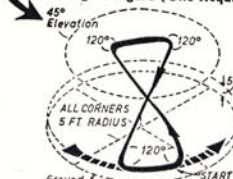
Consecutive Inside Square Loops (Two Required).



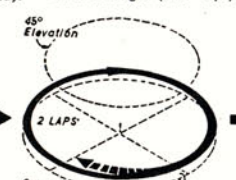
Horizontal Eights (Two Required).



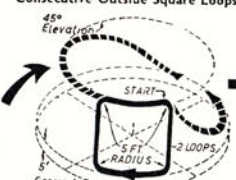
Hourglass Figure (One Required).



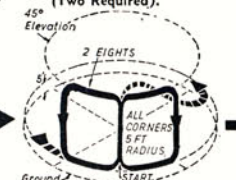
Inverted Flight (Two Laps).



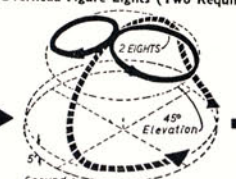
Consecutive Outside Square Loops



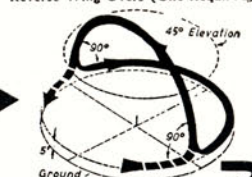
Square Horizontal Eights (Two Required).



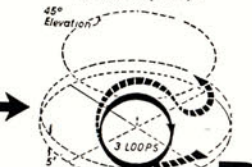
Overhead Figure Eights (Two Required).



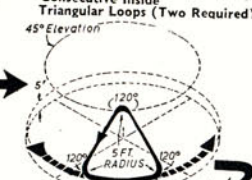
Reverse Wing Overs (One Required).



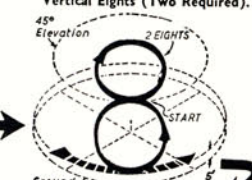
Consecutive Outside Loops (Three Required).



Consecutive Inside Triangular Loops (Two Required).



Vertical Eights (Two Required).



Four Leaf Clover (One Required).



Objects

Initially it may be thought sufficient to state the objects as "the promotion and encouragement of building and flying model aircraft", but it will later be necessary to include other named objects which are conducive to the attainment of further ends. These can include the promotion or joint promotion of meetings, contests and exhibitions.

Members Categories and Finance

The greater part of the club will be a subscription paying body. The President and Vice-President are normally honorary members, but may of course, be voluntary donors. The club should also make provision for appointment of honorary members, membership being given as a token of appreciation for services rendered.

The matter of subscription rates is perhaps the most difficult of all to settle, the amount of money required to run the club depending purely on the scope of operations intended the way the membership increases. First it is obvious that the junior members will require a lower rate than the seniors and it may be necessary to fix senior subscriptions at a level which adequately subsidises the juniors. Second, a most important factor affecting the subscription rate is the policy of the club with regard to affiliation to the S.M.A.E.

Experience has shown that a senior subscription of between 15s. and £1.0.0. per annum is acceptable to most modellers and will produce an income large enough to provide a satisfactory range of services and still allow a slow but steady increase in the bank balance. Junior subscriptions should be about half of the senior rates and it may be a good idea to have some form of easy payments scheme. Avoid saddling the treasurer with the job of collecting 3d per week from everybody.

It is recommended that all subscriptions should become due on one date, preferably somewhere near the start of the summer competition season, a period of about a month being allowed as grace for renewal of subscriptions. To encourage members to be prompt with their subscriptions it is a good plan to allow renewal at a reduced rate during this month of grace, after which renewal is only allowed at the standard rate.

Changes in subscription rates may be required from time to time and obviously must be agreed by a general meeting. The rules of the club should be arranged so that it is not possible for a member to rise at such a meeting and propose a change without the prior agreement and sanction of the committee. At least once a year the Treasurer should try to assess the total of known major items of expenditure for the next twelve months and check that the anticipated income will be sufficient to meet the requirements. Any rising or falling of membership should be taken into account in this calculation, which although necessarily rough, may be sufficient, especially if a loss was shown in the balance sheet for the previous year to alert the Committee to the need for a rise in subscriptions.

The Annual General Meeting

The A.G.M. is the most important business meeting of the club and should be attended by every member worth his salt. Fourteen days notice of the meeting should be given to every member together with an Agenda and list of nominees for officers and committee men. It should also be possible to send out a copy of the balance sheet at the same time. The Agenda will normally be as follows:—

1. Minutes of previous A.G.M.
2. Reports of Officers including presentation of the accounts and balance sheets.
3. Election of Officers.
4. Any other business.

After the reading and acceptance of the minutes the executive officers make brief reports on the year's working and a general summary of the financial position is given by the Treasurer. Copies of the balance sheet and accounts, a typical specimen being included with this article, should be available for any member who wishes to refer to one. After answering any matters arising and the subsequent acceptance of the reports the new officers are elected by ballot.

The only items of any other business which should be discussed are those which have been submitted to the Secretary in writing and duly circulated with the notice of the meeting. Only major items of policy should be dealt with in this way and it is not fair to members who do not attend if items are discussed which have not been notified, hence any member who wishes to introduce further items should be firmly ruled out of order.

The Financial Year

About two months before the A.G.M. the accounts for the year should be closed and a complete check of all stock, equipment, and assets taken. From this the balance sheet is drawn up and presented to the Auditors for checking.

Actual accounts for Leicester M.A.C.

to be used as an example for auditing
cash transactions of any well organised
model aircraft club

Stock account

PURCHASES		Past Year	Previous Year	SALES		Past Year	Previous Year
		£ s. d.	£ s. d.			£ s. d.	£ s. d.
Value of Stock at October 1st	7 7 6	16 4 4	Sale of Transfers (new type)	1 12 3	1 13 4		
Purchase of Badges	27 18 0	—	" " (old type)	1 11 8	5 10 0		
" Transfers	6 3 5	—	" Badges	15 3 0	10 6		
" Address Labels	1 0 0	1 0 0	" Address Labels	16 2	2 5 0		
S.M.A.E. Transfers	—	3 0	" Club Ties	1 5 0	2 0		
Profit on Stock	6 1 0	1 0	S.M.A.E. Badge	—	—		
			Value of Stock as on Sept. 30th, 1961:				
			Club Badges	12 15 0	2 0 2		
			" Transfers (old)	1 4	6 11		
			" Transfers (new)	9 19 0	8 0		
			Reg. Nos.	6 11	14 5		
			S.M.A.E. Badges	8 0	3 0		
			Address Labels	1 18 7	3 15 0		
			S.M.A.E. Transfers	3 0			
			Club Ties	2 10 0			
				28 1 10	7 7 6		
				£48 9 11	£17 8 4		



**Royal
Air
Force**

The Royal Air Force Model Aircraft Association is exclusively for serving personnel and operates on a similar basis to the S.M.A.E. Eight of the R.A.F. Commands in the United Kingdom are represented on an executive committee, the President of which is Air Vice-Marshal M. K. D. Porter, C.B., C.B.E., R.A.F. The Chairman is Group Capt. I. J. de la Plaine. In July 1966 there were R.A.F.M.A.A. model clubs at the following R.A.F. Stations:—

Bomber Command	Fighter Command	Coastal Command
Cottesmore	Ballykelly	St. Mawgan
Farnborough	Wattisham	
Honington		
Linton-on-Ouse		
Lydd		
Marham		
Wittering		
Transport Command	Maintenance Command	Flying Training
Colerne	Boscombe Down	Acklington
Fulham	Faldingworth	Bassingbourne
Leigh	St. Leonards	Cranwell
Lydd	Stafford	Gatton
Uxbridge	Swanton Morley	Linton-on-Ouse
West Rayham		Oakington
		Valley

Technical Training Command

Cranford
Heathrow
Inworth
Locking
Newtown
St. Athan
St. Incha
Uxbridge
Warton

Overseas

Bruggen
Enschede
Ganderkesee
Gallenderen
H.Q. Unit Germany

Gutersloh
Kindermark
Kindermark
Kindermark
Kindermark

Secretary:—Flight Lieutenant J. Knight, R.A.F. Stradishall, Newmarket, Suffolk.

Film Shows

There are many sources of 16 mm films for hire or loan to Clubs, mostly concerning Travel, Motor Sport and a few describing Aviation. Addresses to whom application should be made for catalogues are:—

Rank Film Library 1, Antress Road, Perivale, Greenford, Middx.

U.S. Air Force, Government Buildings, Lime Grove, Eastcote, Ruislip, Middx.

Central Film Library, Government Buildings, Bromyard Avenue, Acton, London W.3.

Castrol, Castrol House, Marylebone Road, London N.W.1.

Petroleum Film Bureau, 29 New Bond Street, London W.1.

Plus the public relations departments of most International Airlines and the Aircraft Manufacturing Companies who can very often loan films of special aviation interest.

SAFETY POINTS

- A) Beware of lines on poles or pylons—keep clear.
- B) Look before you launch.
- C) Never launch a flying model towards anyone.
- D) Make sure your model is fit for the air before launching.
- E) Keep young children away from running engines.
- F) Fly well above head level—if you must show your R/C skill.
- G) Warn others when you are making an R/C landing.
- H) Never use damaged airframes.
- I) Employ a snuffer tube for fuse type dethermalisers.
- J) Keep clear of control-line circles especially during team racing or combat.



Ireland

The **Model Aeronautics Council of Ireland**, Founded in 1936, is a corporate member of the Irish Aviation Club and is delegated as the Governing Body for model aviation in Ireland. The President is H. Dagg, the Chairman J. J. Carroll and the Hon. Secretary is P. Bedell, 24 Dollymount Avenue, Clontarf, Dublin 3. Total membership averages 225 and registration fees are 10/- for Seniors, 5/- for Juniors. Approximately 10% of the membership are juniors. Council meetings take place monthly at members' houses in rotation. A news-sheet is issued regularly and insurance is provided for members.



Scotland

The **Scottish Aeromodellers Association** organises contest, exhibitions and displays. Membership through an associated club costs 2/6d. (Jrs. up to 16, 10/- Srs.) and for the unattached modeller the charge is 5/-. Each fee includes an insurance premium. These modest charges are supplemented by 5/- for a years supply of "Scottish Aeromodelling". Total membership is 230 and 17 Clubs belong to the Association. The Hon. Secy. is K. J. Johnston, 113 Kinnaird Road, Glasgow, S.W.3.

extract from the AIR NAVIGATION ORDER, 1960

Imperilling safety of any person or property

38. A person shall not wilfully or negligently cause or permit an aircraft to endanger any person or property.

Balloons, kites and airships

58. (1) Within the United Kingdom

- a captive balloon or kite shall not be flown at a height of more than 200 feet above the ground level;
- a captive balloon shall not be flown within 3 miles of an aerodrome
- a balloon exceeding 6 feet in any linear dimension at any stage of its flight, including any basket or other equipment attached to the balloon shall not be flown in controlled airspace.
- a kite shall not be flown within three miles of an aerodrome.
- an airship shall not be moored, without the permission in writing of the Minister and in accordance with any conditions subject to which that permission may be granted.

Small aircraft

81. The provisions of this Order, other than Articles 38 and 58 thereof, shall not apply to:
(c) any other aircraft weighing not more than 11lb. without its fuel. . . **In other words, if it's heavier than 11 lbs. (without fuel) it's an aeroplane.**

Revenue account

	EXPENDITURE		INCOME		Revenue account	
	Past Year	Previous Year	Past Year	Previous Year	Past Year	Previous Year
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Printing and Stationery	9 2 4	12 1 9	.. ..	.. ..	52 7 6	83 7 6
Postage	17 6 0	13 19 8	.. ..	.. ..	31 0 0	2 13 0
Insurance and Legal Fees	20 15 0	8 9 0	.. ..	.. ..	.. ..	1 10 0
Competition Prizes	9 13 9	8 17 0	.. ..	.. ..	.. ..	10 7 0
Bank Charges	.. ..	14 0	.. ..	.. ..	.. ..	1 0 0
Room Hire	.. ..	2 15 0	.. ..	.. ..	.. ..	19 2 3
Badges, etc. for New Members	12 1 5	6 1 0	.. ..	.. ..	.. ..	4 18 3
Engraving Cups	1 5 6	17 0	.. ..	.. ..	.. ..	.. ..
Repair	8 6	.. ..	.. ..	.. ..	.. ..	.. ..
Depreciation of Equipment	9 1 0	9 10 0	.. ..	.. ..	.. ..	.. ..
Loss on Annual Dinner	1 16 9	10 0 4	.. ..	.. ..	.. ..	.. ..
Loss on Social	8 6	7 9 9	.. ..	.. ..	.. ..	.. ..
Loss on Car Rally	.. ..	2 0	.. ..	.. ..	.. ..	.. ..
Loss on Model Rally	.. ..	3 6 10	.. ..	.. ..	.. ..	.. ..
Sundry Expenses	5 4 7	10 0	.. ..	.. ..	.. ..	.. ..
Excess Income over Expenditure	37 16 7	16 8 2	.. ..	.. ..	.. ..	.. ..
	£126 19 5	£93 19 6			£126 19 5	£93 19 6

Balance Sheet

	LIABILITIES		ASSETS		Balance Sheet	
	Past Year	Previous Year	Past Year	Previous Year	Past Year	Previous Year
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Balance from previous year	219 18 6	203 10 4	.. ..	.. ..	83 9 10	85 10 0
Brought forward	.. ..	.. ..	.. ..	.. ..	12 10 2	7 7 6
	.. ..	.. ..	.. ..	.. ..	1 0 0	62 5 1
	.. ..	.. ..	.. ..	.. ..	9 10 0	62 16 4
	.. ..	.. ..	.. ..	.. ..	.. ..	1 9 7
Plus Excess Income over Expenditure	37 16 7	16 8 2	.. ..	.. ..	.. ..	.. ..
	£257 15 1	£219 18 6	.. ..	.. ..	£275 15 1	£219 18 6

Giving the Club an Identification

Badges

Most clubs like to have their own distinctive emblem to identify the members and also the models. They are usually created by the more artistically inclined members; but the creation of a club badge can be a most useful activity in the early days of forming the committee and getting the individuals to "think together". Have a badge design contest. Get members to submit designs in colour, remembering that simplicity and restricted use of colour is economic. Have the non competing members make their decision—then if this does not suit the majority, throw the vote open to the club.

The Badge maker will quote for provision of artwork, and a die, and will estimate for the quantity required. It is normal for a charge to be made for part of the die cost and the die remains at the badge makers. This means they can draw it from stores to prepare any extra badges that may be wanted in future.

Quotations vary according to the standard of manufacture and of course the extent of the order. The Badge maker can make three different kinds of fitting, brooch, plain pin or button hole (Lapel). The brooch type is generally preferred. Here are a few recommended Companies we suggest as experienced model aircraft club badge makers:—

Caxton Name Plate Mfg. Co. Ltd., Kew Green, Richmond, Surrey.
Sir D. George Collins & Co. 123, Newgate Street, London E.C.1.
Morton T. Clover, Ltd., 29 Victoria Street, Birmingham 1.
The Davis Badge Co. Ltd., 126-128 Burdett Road, London E.3.
Thomas Fattorini Ltd., Regent Street Works, Birmingham 1.
J. R. Gaunt & Son Ltd., Warstone Parade Works, Birmingham 18.
Ludlow & Co. Ltd., 30 Durham Road, London N.7.
Charles Neal & Son 378 High Road, East Finchley N.2.
Alfred Roden & Sons Ltd., 19-20, Hand Court, High Holborn, London W.C.1.
Vaughtons Ltd., Gothic Works, Livery Street, Birmingham 3.

Transfers

British modellers are very Transfer (decal) conscious. Waterslide transfers are very cheap for their purpose, easily applied and have in many cases "saved" a lost model by identifying the club for the finder.

Manufacturers usually prepare the special artwork from quite rough designs and here again, the competitive element among the club members can be used to define the design. It is wise to incorporate the full name of the club, preferably including the name of the town.

Waterslide transfers are often supplied in pairs and it is possible to have left and right "winged" emblems—a point worth remembering. Here are a few Manufacturers' addresses which can be recommended for good service to Model Clubs.

Phillips Transfer and Rubber Stamps Ltd., 30 The Broadway, Woodford Green, Essex.
Alan T. Barrat Ltd., 87 Napier Street, Deptford, London S.E.8.
Eagle Transfers Ltd., Hermes Road, Lichfield, Staffs.
London Transfer Manufacturing Co. Ltd., 266-272, Kirkdale, Sydenham S.E.26.

The administrative organisations



Society of Model Aeronautical Engineers Ltd.,
10A Electric Avenue, Brixton, London, S.W.9.

The S.M.A.E. is appointed by the Royal Aero Club as the Governing Body for Aero-modelling in Great Britain, and can claim its origins back to the beginning of the century. Many of the British pioneers of aviation were founder members. The President is Air Vice-Marshall B. A. Chacksfield, C.B., O.B.E., A.F.R.Ae.S., R.A.F., and his Royal Highness the Duke of Edinburgh is the Patron.

Contest programme

Every year contests are arranged for the Society's impressive collection of 60 trophies, the highlight being the two-day British National Championships, held during the Spring Bank Holidays and attended by an average of 5,000 enthusiasts each year. The S.M.A.E. promotes International modelling by holding Trials to select British Teams to compete in World Championship contests and has organised several World Championships in this country, attracting entries from some 30-40 nations.

Insured membership

As well as organising contests, the Society helps its members by providing £50,000 third party insurance cover, and representatives are continually in negotiation with Local Authorities to obtain or retain flying sites for members.

The contest minded should have *Full Membership* through an affiliated club or *Country Membership* for lone hands. Both Full and Country members receive the regular news sheet 'MODEL FLYING' and a copy of the Contest Rule Book. In addition to the Trophies, awards of Gold, Silver and Bronze badge plaques are given to the first three places, and in certain events, cash prizes.

Sports modellers, who are not interested in contests, can become *Associates* of the Society, for insurance cover, and access to airfields and the benefits of S.M.A.E. organised events.

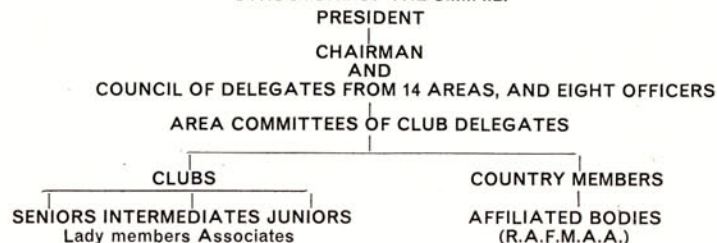
Newcomers to the hobby are advised to join the local club, as the interchange of information and experience between the club members cannot fail to improve the enjoyment and quality of one's modelling.

The annual fees are:—

FULL MEMBERS OF AFFILIATED CLUBS AND COUNTRY MEMBERS
Juniors (up to 16) 12/6d. Intermediates (16-21) 20/-. Seniors (over 21) 40/-.
Lady members 12/6d. Associates 12/6d. (all ages).

The membership year of the Society runs from April 1st to March 31st. New members joining before 31st September in any year pay full fee, and half fee if joining between 1st October and 31st March.

STRUCTURE OF THE S.M.A.E.



The SMAE is in turn responsible to the Royal Aero Club and the Federation Aeronautique Internationale.

The Minute Book which is kept by the Secretary contains the written records of the business of the Club—At each meeting he must make a note of those present. He must also keep a record in the Minute Book of all resolutions and amendments with the names of the proposers and seconders. A Resolution or an amendment must be proposed by a member, seconded by another member and put to the vote by the Chairman. In actual practice where there is a proposal followed by an amendment the amendment is always voted upon first. It then becomes binding if a majority of members vote for it, but should it be lost the proposal is voted upon to decide the point at issue.

Many clubs keep a diary or log book in which are entered the activities of the Club; its meetings, competitions, visits to other clubs and the names of visitors from other clubs—the history of the Club in fact. If it is written with a touch of humour it makes good reading especially for the newly joined members. The value of such a book as an historical log of activities is considerable.

The Treasurer is the keeper of the Club's purse. He is responsible on the one hand for seeing that money goes into the purse, and on the other hand that only that money goes out which is for services rendered and goods ordered upon the authority of the Committee. He should help in drafting the Club's budget, guide the Committee on financial matters, and present regular statements of accounts to the Committee. In order to be able to do so he will need:

- (a) A book in which members' weekly, monthly or yearly subscriptions are recorded.
- (b) A book for recording competition entry fees.
- (c) A cash book to which the weekly or monthly totals of (a) and (b) can be transferred together with other items of income and expenditure.
- (d) A record should be kept of donations or gifts to the prize fund in cash or kind.

The work of the Competition Secretary is one of very great importance when once a Club has been established, and competitive events can be properly organised. He is responsible for the finding and decisions of the Committee and on all competition matters. He must:

- (a) Keep all members informed regarding competitions.
- (b) Keep the Press Secretary informed on all matters.
- (c) Arrange for all essential equipment to be on the ground or in the hall for the competitions.
- (d) Keep an accurate record of entries and results, and see that National results are sent promptly to the centralised body.
- (e) Provide the Secretary with a copy of all such results for inclusion in the Minutes of the Club.
- (f) Be the custodian of all competition equipment, such as stop watches, arm bands, ropes, stakes, windsock, and similar gear.
- (g) Collect all competition fees and hand them over to the Treasurer or Secretary-Treasurer, recovering a receipt for all such fees, and payments.

The job is an interesting one in every way, especially when Competitions are being arranged and held. After all, Competitions form one of the major functions of all Clubs, and they must be run efficiently and proper records must be kept so that the results may be referred to at all times.

The appointment of Press Secretary should also be made early in the formation of a new Club. His duties include:

- (a) Informing the Editors of local newspapers of the work and activities of the Club.
- (b) Supplying local newspapers with reports of the activities of the Club and its members, and, in cases where it is necessary inviting the Editors to send a representative to report the meetings and Competitions which are open to the public. It is sometimes advisable also to invite a newspaper Photographer.
- (c) See that a copy of your report is also sent to Clubman of "Aeromodeller", and, when occasion warrants, photographs of any outstanding events of interest.
- (d) Keep the General Secretary of the S.M.A.E. and the Press & Public Relations Officer informed of the Club's activities by sending copies of all information issued to the local and Aeromodelling Press.
- (e) Link up with the S.M.A.E.'s Press and Public Relations Officer who will pass on news of the Club's work to the local and national newspapers.

It should always be remembered by the Press Secretary that publicity is good not only for the Club itself and its members, but for the Movement as a whole. Therefore, anything that looks like news and is of interest to the public should be passed to the Press at once.



Outlaws Model Aircraft Club of the Walsall area display a variety of models in the School classroom meeting place.

WHAT to do at the CLUBROOM?

Club activities have to be tailored to suit the club room and only those with the use of a large hall or school are in a position to indulge in indoor free flight. Mostly club meetings are full of modellers chatting about models and rightly so, but things go much better with some varied activities. However, don't overdo it with activities every week or the appeal wears off and there's not enough time for the usual modelling gossip.

Film shows are a natural for the winter and with the sources shown in this little booklet you need never to be without a film. For most of these you need your own projector and projectionist and they come in all sizes 8mm, 16mm with and without sound and there are even 35mm model films. Projectors can usually be hired from a local photographic shop to use yourself. If you are not capable of using a camera *don't try*, ask the shop to help you on this point as projector repairs are very expensive. Summer brings the long evenings and generally this is the off season for films due to the light. Talks by well-known modellers outside your club are good attendance gatherers and easy to arrange providing you reimburse the speaker for his expenses.

Other indoor activities are numerous—one of the best is a model quiz with all the questions and answers taken from modelling magazines published in the previous 12 months. Questions must have simple yes or no answers and limit them to about 30 or it becomes a bore. Swap papers around then stand by for the brightest member to emerge. Another idea in which all can participate is a chuck glider contest. The club should supply

the wood pre cut, $\frac{1}{16}$ in. sq. x 6 in. long for the fuselage, 6 in. x $\frac{1}{16}$ in. of $\frac{1}{16}$ in. sheet for wings and 2 in. x $\frac{1}{16}$ in. of $\frac{1}{16}$ in. sheet for the tail. You need some Plasticine for nose weights and a stop watch for timing the flights. Give all contestants 30 minutes for construction and trimming of the model then fly three rounds, all scores counting to determine the winner. Although each member starts with the same materials nearly every model will be different and it's an idea to sketch a typical model with moment arm dimensions on a notice board for guidance of juniors.

Round the pole flying is also good fun, rubber speed models tax the building and trimming to the utmost whilst speed models with little Cox .010s or Pee Wees really move. Limit the engine size to .020 cu. in. as the .049s are too powerful and the damage caused by one of these models coming off the line at high speed in a club room could be serious!

Flying scale rubber models make ideal airframes for .010 "Powered" flying scale and the detail can be really loaded on them as weight is relatively unimportant. Jetex speed models are also practicable and simple aluminium wings can be clipped straight on to the engine case.

Engine starting contests are good fun providing the sticking plasters are handy! Its best to choose a stubborn old diesel as this saves battery trouble, once again a stop watch will be needed to take an accurate record.

Jumble sales and organised swapping of modelling gear you don't use brings lots of hidden items to light and many odds and ends worthless to some are invaluable to others, it's also a good idea to set an upper limit to the values of any one sale, giving the juniors an equal chance. If you have enough contacts and facilities an outside public admission jumble sale can also bring large amounts of cash in the club funds.

Open nights where models are displayed, refreshments served and parents and other local model clubs invited along, go down well and these meetings are again invaluable to help convince the attending parents that their son belongs to a well organised group. It's usually a good idea to invite the local press along as they can use the parent and son or daughter angle.

Some sort of **Club Championship** is also a good thing, there being many systems to organise. Firstly a Contest Championship where members are given three points for a first, two for a second, and one for a third in National contests, so at the end of the season the Senior and Junior Champion are chosen by the respective highest scores. Alternatively the results can be based on inter club contests or points awarded by the committee for each model constructed taking into consideration whether it's a plan, kit or own design model. Another prize that will not go amiss is one for the most promising junior member, awarded on his years progress and skill in relation to age.

Club Dinner

Many clubs have a Dinner or Dinner and Dance each year and these are easy to organise if you don't try and overdo it. If yours is a small club with a high percentage of juniors a "closed shop", club members only Dinner at a local restaurant will be the best proposition, more of a meal and chat. The next stage if you have quite a few adult members is to hold an open Dinner and Dance inviting friends, other local clubs and guest speakers. This requires quite a lot of organisation to keep matters in hand and it's advisable to know someone who has organised one before. Basic points that must be observed are:— Book the hall or restaurant well in advance, in some cases they are booked up to a year prior to the date needed. Engage a dance band, usually the restaurant or hall will know a local band which they can recommend. Invite the guest speakers and let them know that you want them to speak at least two weeks in advance, giving them a brief summary of the club history. Get tickets printed by a local jobbing printer and send out invitation forms for local clubs to complete, asking for names of each individual attending, as these will be needed for the table plan and place settings. If the company is right, things will go well from then on, with the usual raffles and spot prizes creating an occasional "competition" of a social nature.

Outdoor Club Meetings

Many clubs only meet on the flying field during the summer season and then it is to fly for fun. Not all competitions are cut throat "Win or Die" efforts and such things as Radio Control spot landing, Control Line $\frac{1}{4}$ A Combat, Balloon Bursting with cheap balloons supported on sticks of $\frac{1}{8}$ in. sq. balsa placed in various positions around the circle are good fun. One-model contests are good fun raisers, usually a simple glider or rubber model kit with a week allowed to build it and no modifications allowed to improve performance.

This gives the juniors an idea of competing with the seniors and they can learn quite a lot by seeing how others work and flying compares with their own modelling efforts.

How to ORGANISE a club for AEROMODELLERS

THERE are two ways of starting a Club, and one should give careful consideration to the method thought to be best in consultation with your fellow enthusiasts.

One way is to arrange a public meeting, and through the local newspaper and by letter, invite anyone to attend who is interested in the formation of a Model Aircraft Club. Have a notice placed in the local Model Shop and write to 'Clubman' at Aeromodeller about your intentions.

If it is decided to adopt this plan it would be advisable to secure a well known citizen to act as chairman of the meeting, and to secure an able speaker to talk about the value of the hobby as a splendid way of occupying leisure time. The Society of Model Aeronautical Engineers should be approached if you find any difficulty in securing a speaker able to talk authoritatively on the subject.

After the introduction, and open discussion the Chairman should propose that a Model Aircraft Club be formed, and he should put the motion to the vote of those attending the meeting. If it is carried, a provisional committee should at once be formed.

The second way is much simpler, and leads to the same end. The originators of the idea to form a club should decide to regard themselves as the provisional committee, and leave the public announcement of the venture until a later date when headquarters have been found, and the Club formed.

Whichever way is adopted, the first step for the newly-formed Committee is to elect the following officers:

- (a) **A Secretary and Treasurer** (the two offices can be combined in the early stages).
- (b) **A Chairman** (preferably a senior).
- (c) **A Competition Secretary.**
- (d) **A Press Secretary.**

These officers will naturally be selected with an eye to their individual capabilities, and the amount of work they will put into the Club movement for the benefit of its members.

Duties of the Officers

The **Chairman** should be a person respected by all members—one who is able to control all General and Committee meetings with tact, and be able to offer sound advice and suggestions, be firm in a pleasant manner, and insist that members keep to the business on the Agenda during discussion. He should not be too loquacious, but endeavour to discover what others are thinking by asking leading questions judiciously. Chairmen are leaders, and as such should be respected.

The duties and responsibilities of the **Secretary** are most important. Not only is he to be the servant of the Club faithfully carrying out the instructions he receives from the Committee or the Club assembled in General meeting, but he must be able to give an unobtrusive lead whenever such a lead is necessary and lacking. He must be a man of ideas and yet not seek to impose them too forcefully upon the Committee or Club Members.

He will receive the bulk of the correspondence, and must strike the happy medium by answering letters on his own initiative and not bringing to the Committee trifling matters which are properly within the sphere of his own authority. He should be prompt with his replies. *To neglect to answer correspondence promptly is bad manners; it creates a bad impression, and one that can seldom be removed no matter how sincere the apologies.*

The secretary is also responsible for sending out notices calling meetings of Members. This is best and most economically done by combining a calling notice with the Agenda, which should contain the headings of the business to be conducted.

TOPICAL TWISTS

by 'Pylonius': illustrated by 'Sherry'



"In the Comp.?" "No, he only flies for fun."

Commons Talk

In a wrangle over the mass movement of model man, and the inertia of same, a writer in an Area News sheet has made a number of turgid comments on the democratic method, or rather the lack of it, in our model affairs. All very laudable and high minded, no doubt, but in my anarchical, anti-authority opinion there is nothing more lethal to model flying than those political ideals that embrace the greatest good for the greatest number.

What is considered the greatest good in our mass thinking age is to give the greatest number swift motorway access over that haunt of the despised lesser number, Chobham Common. And this is typical. When the poor old modeller, with his low grade priority rating, gets embroiled in politics he finishes up minus a flying field, but with grudging permission to use the Council Putting Green on every second Thursday in the month, or something equally preposterous. Whereas in his traditional role of non-political opportunist he has done pretty well for himself. After all, he wasn't granted the use of Chobham Common out of any egalitarian, democratic right, but because under feudal law, the poor had to have somewhere to forage. Had his use of the common been anything of a political issue, as it has become now that the greatest number want to carve it up, he wouldn't have got so much as a wing tip over the Clump.

Much the same goes for the disused airfield. Until it engages the interest of the local political factions the modeller is left to fly over it in peace, but just as soon as the sandpit/housing estate wrangle gets under way in all its democratic glory no one is going to listen to a small voice saying, "What about my flying field?"

Club life is another case in point. Some of the biggest club flops I have known have been the most democratic. The club may consist, as many do, of two regular freeflyers and oodles of members, mostly juniors, who have hazy ambitions of one day producing a Combat model. The two flyers never get a chance of getting on the Committee, and soon find themselves in disfavour with the other members for hogging all the flying time. The hogging of flying time is considered by the non-flyers to be a very undemocratic activity, and the culprits are censured for failing to give support and guidance to the Combat minded juniors. After this sort of harrowing experience the two model flyers opt out of the political system, and set up independent shop under a suitable protest title such as "Outlaws" or "Rebels" in order to pursue their eccentric interests undisturbed.

If this upsets the democratic visitors to the next A.G.M., my apologies to you both.

Paper Tiger

By way of swinging into the space age, an American magazine is running a competition for the best paper glider. This follows the discovery that the elongated configuration of the Concord jet is suspiciously like that of the timeless paper dart that has been the favourite classroom missile for many generations. Even in Victorian times the swishing of these sleek, futuristic craft over the blackboard was only outdone by the swishing of the cane over the aeronauting culprits. In fact, many a classroom flyer found difficulty in making a three-point touch down after putting up a new gaslamp breaking record.

Looking back, it does seem a bit odd that the early aeronauts should go fooling around with those clumsy box-like contraptions, when the answer to the age of flight was there, at hand, on paper. But we must not forget that they were very sporting characters in those days and anyone climbing into a delta-shaped creation in back to front cap and goggles would probably have been accused of cheating.

Tail Twisters

T.V. watchers who imagine that there is only one model flyer and aircraft peddler in the country would be wrong to imagine that the Mr. Piggott in question is also a champion jockey.

I was beguiled into building a plastic kit over Christmas, thus becoming one of the new style Christmas Revellers.

Seems if you want to go in for public displays you require a big build-up—preferably on 38-18-36 lines.

"They don't build model planes like they used to"



SHOCK ABSORBING ENGINE BEARERS

(K.K. Mini Super size illustrated)

Seal rubber buffer blocks in place with strip balsa cover (not shown). Allow 1/16 in. clearance for compression expansion.

1/8" thick hardwood strips to make slide boxes on both formers.

1/4" of movement

1/2" sq. bearers

1/8" Dural engine mounting plate

Forward stop in nose

Cleat plates

F1

16 s.w.g. Duralumin side plates cut with fret saw, cemented cabin uprights.

Hard pencil eraser rubber pads 3/4" x 1/2"

Duralumin backing strip fits into side plate slots.

Duplicate on former B

Note F2 is cut away for clarity

F2

Serrate here for binding

Fret out for lightness and ply inserts

Feet to key in 1/16" plywood

Basic structure shows one engine bearer in the compressed position before the rubber blocks, backing strip and engine mounting plate are added.

Defeating the 'Crash Menace'

By G. W. Barrat

NO matter how carefully made and flown, many a powered model aircraft will inevitably suffer damage during its life. Here's a useful means of preserving your handicraft in the unhappy event of a single-point spinner landing on its nose.

Three basic issues emerge in the matter of damage prevention.

- (1) Nose-impact can be damped by shock-absorbers.
- (2) All-balsa construction tends to be frail; front fuselage areas must be strengthened with hardwood yet with minimum weight.
- (3) Prudent use of duralumin or hiduminium can be employed at vital points of stress.

After seeing an infuriated modeller jump on the remains of his fuselage, the author decided on research to make all this crashing a thing of the past. He did so under the stern eye and prejudiced sarcasms of several experienced modellers, because the aim was to make the nose of the plane "retract". The sarcasms vanished when the model was deliberately

dropped on its nose as a test: it actually bounced upward—undamaged!

The device used is simplicity itself. It was initially tested in a *Keil Kraft 'Mini Super'*, with the full approval of the kit manufacturers. The engine bearers are in contact with $\frac{1}{4}$ in. x $\frac{1}{2}$ in. blocks of hard rubber (thick "Venus" rubber proved best), housed in small pockets at the rear. Make the rubber blocks of generous length, to maintain pressure against the engine bearers.

Any movement is made at friction fit, thus damping any vibration. The strong buffer-pressure returns this movement—complete with engine and engine-plate, as a whole unit.

Friction fits are easy to obtain with just a little extra care. Assemble the engine-bearers in the normal way—even a shade loose in the plywood formers—and all the friction required results from strips of $\frac{1}{8}$ in. x $\frac{1}{2}$ in. hardwood (birch) glued above and below slots on both sides of the plywood

formers, then fill in the side faces.

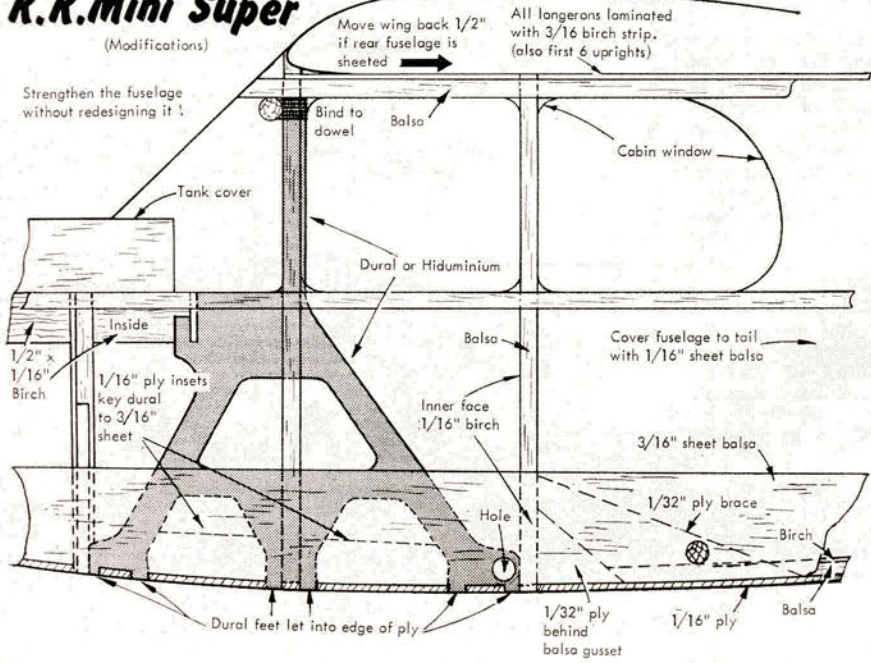
Before making the small boxes holding the rubber consider the dural side-plates which not only strengthen the structure, but help form an anchorage for the buffers. The $\frac{1}{8}$ in. (16 s.w.g.) dural plates can be cut with a fretsaw, taking care to leave the long upright portions of sufficient length to reach that vulnerable spot—the cabin uprights. Any slight bend must be made here with moderate heat, as dural will snap if bent while cold. Note, small $\frac{1}{8}$ in. wide slot for a dural cross-member, this anchors the small boxes leaving $\frac{1}{8}$ in. for expansion in the boxes which are finally enclosed by a strip of balsa on top.

Continued on page 154

K.K. Mini Super

(Modifications)

Strengthen the fuselage without redesigning it!



BASIC AEROMODELLING

PART NINE—Drafting

EVERY aeromodeller sooner or later has the need to prepare full size working drawings from a reduced scale plan appearing in a journal or a publication like *Aeromodeller Annual*. This is the sort of job which is not difficult, nor need it take a lot of time, provided you go about it in a practical manner. All that is required is an accurate enough full size plan for working from, not an elaborately drawn and fully detailed job—and there are a lot of short cuts which can be taken.

First, a few words about tools and materials. For drawing any plans accurately a drawing board of suitable size, a T-square and a large 30-60 degree set square represents minimum equipment — plus dividers, an accurate ruler, compasses and pencils. That is about all. You may think it worthwhile to acquire sets of draughtsman's curves, but these are of strictly limited value, except for drawing fancy fin shapes and the like. For drawing fuselage curves ordinary strip wood is better than curves, and generally far more accurate since the whole curve can be drawn in one go. Plotting aerofoil sections is a rather different matter and here an inexpensive draughtsman's curve of a suitable size and shape can be invaluable.

What to draw on is largely a matter of personal preference. For cheapness, ordinary white shelf paper which is sold in rolls is quite satisfactory. Standard tracing paper is better since this is more durable and also has a surface which is partially resistant to parts sticking to it when used as a building plan. You can buy suitable tracing paper in single sheets in fairly large sizes, although if you are contemplating a fair amount of plan drawing, buying a complete roll is far more economical. This is normally 20 in., 30 in. and 40 in. wide and you can, of course cut off individual pieces to any length required.

For the ordinary drawing work an HB pencil is as good as anything; with a 2B or softer pencil for any freehand work in fairing-in curves or drawing fin outlines, etc. This can easily be rubbed out, if necessary to correct, without fully erasing underlying guide lines etc., drawn in the harder HB pencil.

The size—or at least the length—of paper should be as large as your drawing board can accommodate; and the drawing board must obviously be as long as the largest single part to be drawn—usually the fuselage since wings are generally drawn as separate halves and built that way.

Assuming that you are preparing a full size drawing as a working plan, think before you start as to the best layout. This depends on your normal order of building. Draw the parts you normally built first at the top of the plan and the others in order beneath. This will be most convenient for building from since you will not have to stretch over parts already laid down when building. Thus if you normally build in the order fuselage, wings, tailplane and fin, lay out the parts on the plan in that order from top to bottom—Fig. 39.

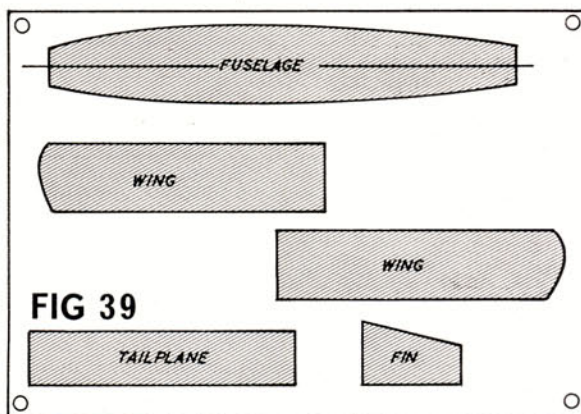


FIG 39

Every drawing needs a starting point which in nearly every plan is a reference or datum line. In the case of a fuselage this is usually a nominal centre line. If the reduced scale reproduction does not have a centre line, you will have to draw one in.

It does not have to be a true centre line and could equally well be a top or bottom fuselage line in the case of a substantially straight-line fuselage shape.

In the case of wings, the leading edge is usually a suitable datum line, unless the outline is curved. In that case the wing will have to be given a nominal centre line, like a fuselage; or if the mainspar is straight from tip to tip, use that as a datum line. Tailplanes are treated the same way as wings, but if the leading edge is tapered then the trailing edge will probably be the best datum line.

With these basic datum lines it is then possible to make a starting layout, allowing adequate space between the different parts based on scaled up dimensions for fuselage depth, wing chord, etc., or working to actual dimensions if given on the plan. The starting layout will then look like Fig. 40.

There are several methods of scaling up, but one golden rule applies in all cases—*always use every full size dimension marked on the reduced scale plan*. They are there for a purpose and a properly drawn reduced scale plan will show actual measurements for all critical dimensions. Quite a number of reduced scale plans, however, are reproduced from

Continued on page 154

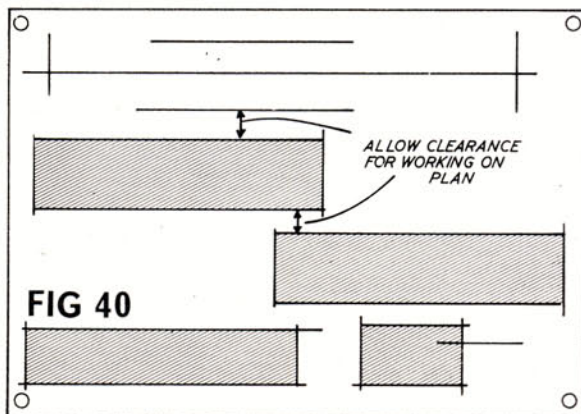
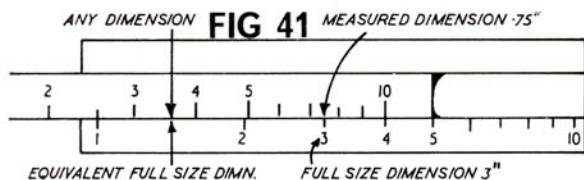


FIG 40

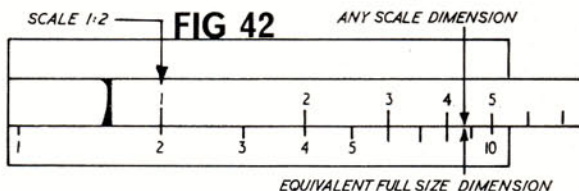


actual full size plans reduced in size photographically and, being prepared initially as full size plans, do not include any dimensions. In this case only one or two leading dimensions may be known, such as the span, but this may be a nominal dimension only, not necessarily exact. Then one has to work to the known scale of reduction which may be anything from 1/3rd to 1/12th full size; or in some cases even smaller. In other cases the scale of reduction is not quoted, which means that it has to be found before scaling up can be attempted.

Establishing the scale is not always easy unless definite dimensions are given. Then it is merely a matter of calculating the ratio of the actual size measured off the reduced scale plan to the quoted dimension—but even this has its snags. It is not easy to measure a small distance on a reduced scale plan *accurately*, except with dividers. It then needs a very accurate and closely calibrated scale or ruler to translate the divider measurement into an actual measurement figure for calculation.

A twelve inch ruler (scale) graduated in inches and fiftieths of an inch is best for really accurate work. It is then readily possible to read off measurements taken off the reduced scale plan with finely pointed dividers to one hundredth of an inch. Employed with a slide rule, translating reduced plan dimensions into full size dimensions is then quick and easy, once the scale has been established. Simply set the slide rule so that a "measured" dimension comes against a "known" dimension, as in Fig. 41, when further "conversions" can be read off directly. If the value required comes off the scale, this merely involved shifting the sliding scale so that the "10" comes opposite the original "0" position.

This technique is simpler, faster and more accurate than using standard "scale" rules and thoroughly to be recommended. It is even simpler for setting up to a known scale, for this only involves setting the "1" (or "10") on the slide against scale ratio—Fig. 42.



A more direct method is to use proportional dividers—Fig 43. These enable a scale dimension to be transferred to the full size drawing as a full size dimension, once the dividers have been set to the correct scale ratio. Although apparently simpler and faster, this method is not always so accurate, though.

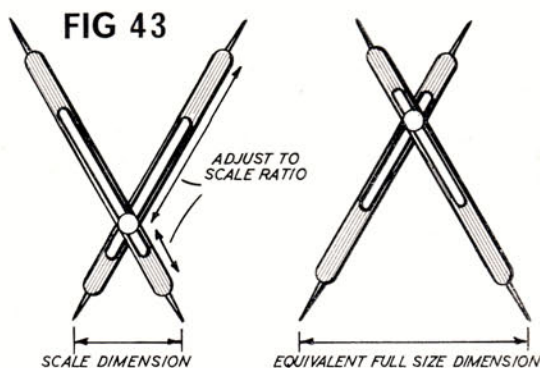
Useful tips worth remembering are:

(i) The wing chord dimension tip rise or dihedral, or the span dimension to a dihedral break on a polyhedral wing, are likely to be simple numbers (on British and American plans) and so are the best dimensions to take to establish a scale and also act as a check on layout dimensions.

(ii) In checking or establishing the scale ratio, use the largest possible known dimension as this reduces the effect of measurement error (i.e., makes your calculation of scale ratio more accurate).

(iii) If in doubt, make several check calculations to establish scale ratio and see that they agree.

(iv) Even if the scale is quoted, check the actual ratio as reproduced as well. The reduction may not be *exactly* to the scale quoted. (To be continued)



Defeating the Crash Menace (continued)

Use a $\frac{1}{8}$ in. thick dural engine-plate as this takes a bigger shock without damage than Paxolin fibre and mount on $\frac{1}{2}$ in. sq. engine bearers (thicker with this device than normally used). Place $\frac{1}{8}$ in. dural cleat plates under the bolt-heads. Large models could usefully employ bearers up to $\frac{1}{2}$ in. sq.

Other hints for added strength

A fuselage must be rigid and shock proof to avoid calamity. The author's strengthening system is to cement $\frac{1}{8}$ in. sheet birch or spruce to the inside of the balsa longerons. The strength is made tenfold greater, and long lengths are easily cemented for cutting into uprights when the longerons are complete.

Keep the uprights (with reinforcement) inside; bringing the birch portion down the inside of the pre-cut piece (P1) on the Mini Super plan. This stops the balsa splitting lengthwise. Make the first six bays of

the fuselage of this reinforced balsa; all the rest can be as the plan specifies. The author used $\frac{1}{8}$ in. x $\frac{1}{8}$ in. for the top and bottom spacers, making a small gap to fit the birch portions of P1 and thus lock them in place.

Considerable attention should be paid to gussets near the wing trailing-edge. Strengthen inside and lengthways with a heavy gusset where a wrench from strong rubber-bands can make a wing-anchorage crumple under pressure when 'hitting the deck'. Face some of these gussets with thin plywood. Note also that the dowel-hole for wheel attachment is taken *through* the dural side plate; also reinforce the other dowel gussets with a plywood facing. Box-in the whole structure with $\frac{1}{8}$ in. sheet balsa: this 'boxing' imparting great rigidity.

Nature and tall trees will undo the wildest dreams of aeromodellers, so the beginner is recommended to try his hand at this construction which will stand considerable mishandling.



AIRCRAFT DESCRIBED No. 160

Fieseler Storch

drawn by Bjorn Karlstrom

THREE DECADES of service is something of a record in the aviation world and the "Storch" is among the few distinguished designs that qualify for this valued claim. Years ahead of its time when first prepared to a Reichsluftfahrtministerium (R.L.M.) contract for a reconnaissance aircraft in 1935, the Fi 156 is still remarkable for its S.T.O.L. (short take off and landing) characteristics.

But it will be for its wartime service that the Storch is best remembered. Fabulous exploits such as the rescue of Mussolini from his mountain-top prison, and Hanna Reitsch's landings amid the ruined streets of Berlin to contact the Fuhrer, are the most famous. The Storch has the distinction too of having served in earnest with each of the opposing forces. Highly regarded, the capture of an intact machine during the North



Postwar R.A.E. Storch VP 546 at Radlett (Air Britain Photo).

African desert campaign was followed by immediate impression, the crosses becoming superimposed by roundels or stars. One such sandy camouflaged Storch was repainted all yellow as the transport for Air Vice Marshal Harry Broadhurst. Overpainted with invasion stripes it carried many V.I.P.'s including Winston Churchill before coming to a disastrous end when landed on a hangar at Evere, Brussels. The Argus engine had cut prematurely and but for the fact that the roof had collapsed in a fire, the landing might have been successful. As it was, the robust frame protected the fighter Group Commander who stepped unhurt from the pile of tubing!

Soon after the war, two Swiss Storchs, A-96 and A-97, gained fame in a rescue operation when they ferried twelve Dakota crash survivors from the Wetterhorn glacier on Nov. 19th, 1946. There were seven Storch types in Switzerland, others being A-98, 99, 100 and 102 plus the Czech made HB-IKA. Some had been impressed after surrender, but HB-ARU, first registered in Sept. '39, was a purchase and became the military A-96 in 1950. HB-IKA also has an interesting history in that it was a Mraz "Cap" No. 741 first registered in Jan '48 and owned for two years by Swissair. From 1950 to 1956 it was owned by the chocolate makers Lindt and Sprüngli A.G., then sold as D-

EKUS to Germany, still retaining the "Trumpf" advertisement slogan which was also under the starboard wing (see inside back cover). Another unusually marked German machine is D-EKLA, also obtained from another wartime neutral source. It was originally supplied to Sweden in '45 and became Sw. A.F. Nr 3824. It was last known to be a glider tug at Munich, all white with black bird-feather tip decorations.

Twenty-two Storchs were surrendered in Sweden during the war and one of them is the subject of the drawing. It landed at Kabusa on April 4th, '45, was overhauled at CVM and became 3826, serving as an S 14B. Sweden purchased twenty Storchs, the first two in 1938, six more were delivered in 1940 as S 14As

Left: Prototype in 1936 (I.W.M. photo GER 271W).



Austrian (ex-Sweden) all-green Cropspraying conversion GER 271W).

and twelve ordered in 1941 arrived in 1943 complete with desert camouflage! These were Fi 156 Ca-3 (Tropical) types which became the S 14B and they were all armed.

Originally produced by Fieseler, manufacture was diverted to Morane-Saulnier in France and Mraz in Czechoslovakia. At what stage the elliptical elevator with associated slat underneath was discarded for the angular shape seen on most late production models we cannot determine. Next major change was to re-engine the French version, now called the Morane MS 500 "Crique" to accept the Renault 6Q, as the MS 501. In later years the Salmson 9 ABC radial was used extensively for the MS 502, and in 1965 Rheims Aviation produced the MS 505 with Jacobs R-755 7 cyl radials. This has progressively increased power from the original 240 h.p. to 300 h.p. and introduced a constant speed metal prop.

A feature of the design is the full span leading edge slat, and the large flap on a relatively big wing with low loading. It is this which offers a flight speed range of 32 to 110 m.p.h. To cope with the angle and high rate of descent a stalky undercarriage with long travel struts offers an incongruous appearance if practical in purpose. Crew of three were seated behind one another in the narrow rear fuselage with a 'shoulder' or shelf area made transparent for downward observation. 2,700 of the variants were produced and it is a great tribute to its designer Gerhard Fieseler that it should have outlived so many

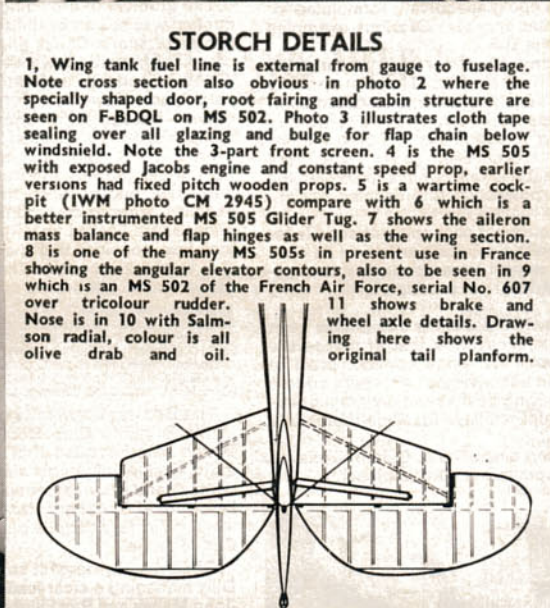
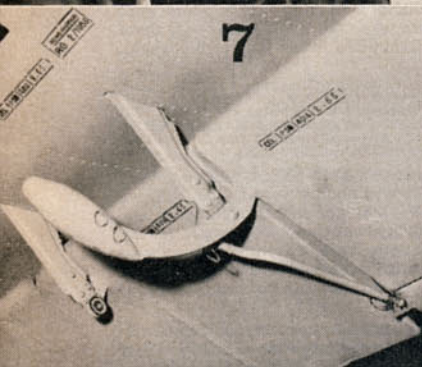
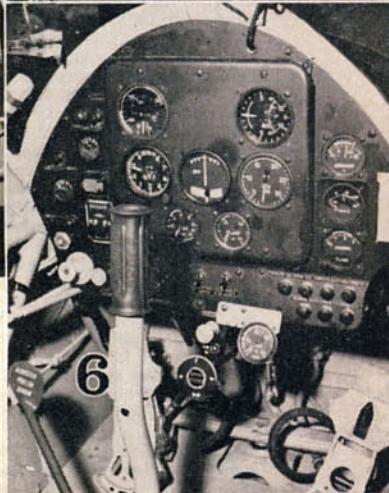
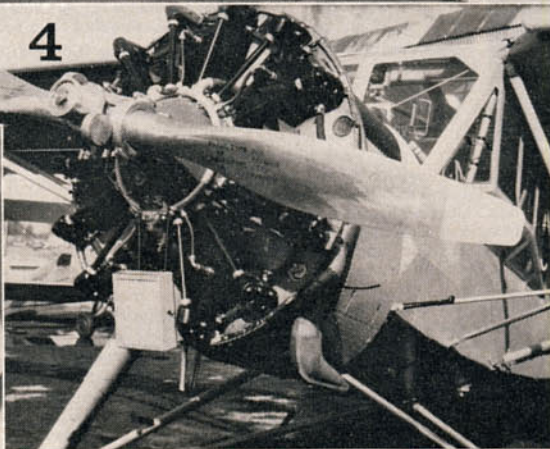
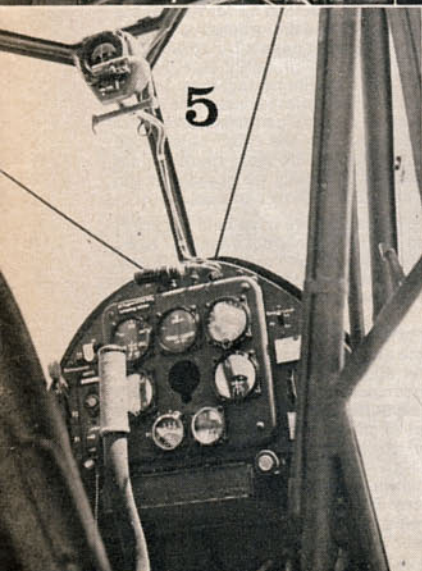
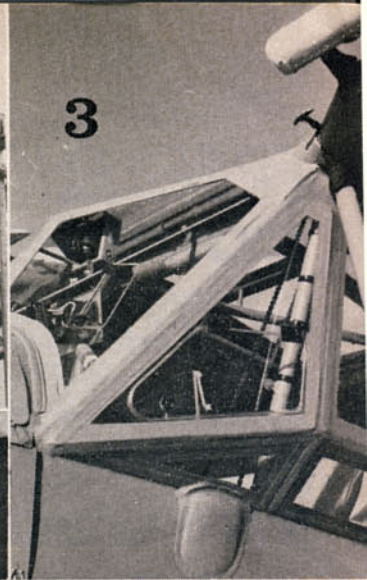
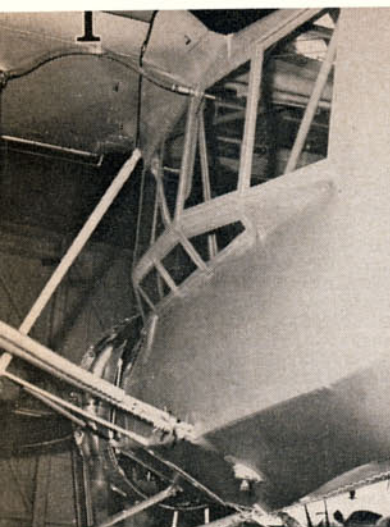


Ex VD+TD, Air Ministry 99 captured aircraft (I.W.M. photo MH 4913). Left is another, in sand camouflage seen in Egypt (I.W.M. photo CM 2950)

other more glamorous yet less useful machines of the old "Army Co-operation" (nowadays F.A.C.) category.

The collaboration of Air Britain specialists P. H. Butler, Les Sarjeant and Karl Ries (Germany) and P. M. Lambermont (France) is gratefully acknowledged.





STORCH DETAILS

1, Wing tank fuel line is external from gauge to fuselage. Note cross section also obvious in photo 2 where the specially shaped door, root fairing and cabin structure are seen on F-BDQL on MS 502. Photo 3 illustrates cloth tape sealing over all glazing and bulge for flap chain below windshield. Note the 3-part front screen. 4 is the MS 505 with exposed Jacobs engine and constant speed prop, earlier versions had fixed pitch wooden props. 5 is a wartime cockpit (IWM photo CM 2945) compare with 6 which is a better instrumented MS 505 Glider Tug. 7 shows the aileron mass balance and flap hinges as well as the wing section. 8 is one of the many MS 505s in present use in France showing the angular elevator contours, also to be seen in 9 which is an MS 502 of the French Air Force, serial No. 607 over tricolour rudder. 11 shows brake and wheel axle details. Drawing here shows the original tail planform.

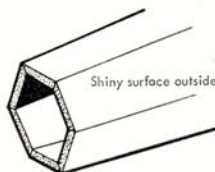
F-BDH
MS 505
No. 607

N 607

FREE FLIGHT comment

by
J. O'Donnell

Left: Mike Reeves' A/1 is launched in the gale at Timperley December Rally. Below is D. Culpin's cane boom structure, see photo of model at bottom of page.



Last month's comments on epoxy resins were hardly comprehensive so perhaps I had better continue. Their use in repair work is of most value in "impossible" situations where normal reinforcing (necessary with balsa-cemented joints) is impractical on space or accessibility grounds. The most common example from personal experience is that of a twisted and split pylon on a power model.

With the right materials and/or heat such repairs can even be field propositions—but I would only try them in dire emergency at a contest. (The 1966 Nationals came into this category!)

The use of glass-fibre resin (polyester) for repairwork has been described by other writers in the past—but is very similar in its applications and properties. In general excess hardener is commonly recommended to promote rapid setting under field conditions. This technique can have undesirable effects on the final properties of the resin. An epoxy specifically formulated for rapid setting is probably a better approach. Various examples are commercially available in the U.S.A.

More easily obtained are various motor-car body preparations recommended for do-it-yourself repair work. These are usually polyesters with suitable fillers added so the freshly mixed components yield a putty rather than a liquid. These can be very handy for filling gaps, removing scrape marks or worse, and for making fillets and the like. I've even seen glider noseblocks made from this material! At least it is one application where the main defect (weight!) of both polyesters and epoxies doesn't matter.

One final application that should not pass unmentioned is for surface finishes. This really needs a separate article on its own. Perhaps I might even write it when I have conducted the systematic trials necessary to evaluate rival products!

The application of other "new" materials is sometimes seen in f/f. The most obvious and successful is that of glass-fibre fishing rods for A/2 fuselages. This is now common practice even if some enthusiasts remain unconvinced! At least a source of supply is now advertised, leaving cost as the only real drawback. Personally I feel that an unbreakable fuselage represents money well spent!

Recently alternatives have been seen. Derek Culpin displayed built-up hollow cane tapered boom as in photograph below. The

boom was hexagonal in section, comprising 6 segments of cane, shiny side out, glued together. The segments were in short lengths, to eliminate the "knobbles" on any cane or bamboo, with joints well staggered. Need I say that this was produced by a professional fishing-rod maker? Compared with glass-fibre it was slightly heavier, but appreciably cheaper. Those who dislike "fancy" adhesives can use balsa cement quite satisfactorily for attaching components to the cane rod.

Russ Seley wrote from San Diego, U.S.A. to recommend the use of Eason Target Arrow shafts for fuselages (as on his "Gooneybird" A/2 featured in 3-view form in several publications.) These shafts are very light—0.60ozs. for 34" length and $\frac{1}{8}$ " o.d.—and very strong. At this size and weight they could well be useful for A/1 size models. Whether an English equivalent is obtainable I have yet to find out.

Polystyrene (or other) foam has been little used for f/f—although sheet covered foam fuselages have been described in the American magazines. The only practical f/f application I've seen so far has been for wing tips. Certainly sheet covered foam core flying surfaces are not as practical as for R/C where weight is of considerably less importance and where the volume to surface ratio is very different. The wing panels I tried with this construction came out far too heavy—primarily due to the amount of P.V.A. required to stick the items together. In any case I am not at all convinced that smooth surfaces are desirable for f/f. Normal built-up tissue covered construction seems to lose nothing performance-wise to the best of sheeted equivalents—whilst flight characteristics are more reproducible from one model to its successor. Certainly we operate in the region where either laminar or turbulent flow can occur.

A couple of club organised contests have been held in recent weeks. The **Timperley** club ran an invitational meet (for N.W. Area clubs) on 18th December 1966. Their "winter only" flying ground is farmland with plenty of space for recovery. This was just as well as the contest day was extremely windy, even if bright most of the day.

The problem of providing prizes for several events at a small contest was solved by the sole award being a trophy for the best two-event score. Chuck glider aggregates were doubled, and in prevailing conditions were to prove decisive.

Both attendance and entries suffered from the weather. Most participants flew their worst or oldest models. Whilst this is natural enough it is often an unsatisfactory approach—as demonstrated by a rather high casualty rate. The individual events were topped by Congleton members John Boon (glider), Roland Lea (power) and Russel Pears (rubber)—the first two in particular successfully risking good models. The trophy, however, went to co-organiser Jim Radcliffe by dint of a good glider score backed up with top place in chuck glider. If scores look low, consider that the handful of good flights made went O.O.S. at 2-2½ minutes. There was only one flyaway—my open rubber model (recovered substantially intact later in the week).

Timperley Inter-Club Rally 18 Dec. 1966

Glider 1. J. Boon (Congleton) 5:02. 2. J. Radcliffe (Timperley) 4:17. 3. M. Reeves (Lee Bees) 3:47. **Power** 1. R. Lea (Congleton) 5:26. 2. A. Moss (Whitefield) 2:44. 3. J. O'Donnell (Whitefield) 0:41. **Rubber** 1. R. Pears (Congleton) 4:40. 2. J. O'Donnell (Whitefield) 2:23. 3. W. Pritchard (Spitfires) 1:21. **Chuck Glider** 1. J. Radcliffe (Timperley) 1:49. 2. D. Allman (Congleton) 1:39. 3. A. Allman (Congleton) 1:22. **Gala Champ.** J. Radcliffe 7:55=4:17+2 (IL49).

The **Boxing Day Rally** tradition at Chobham was continued by the Brighton Club. Details and photos were sent in by Dave Welch who reported that weather conditions were cold but quite flyable—although visibility was indifferent early in the contest, and lift was conspicuous by its absence. Entries were hardly up to Chobham standards, especially in power. This was won by Vic Jays despite pull-out troubles on his usual (and old) Cox 15 model.

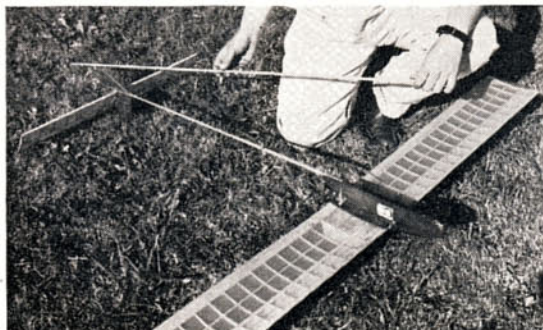
Glider had the largest entry (and only two maxs.), with Martin Dilly managing a clear lead over clubmate Pete Jellis. In rubber John Mabey and Ray Elliot maxed out, with the former losing his model on the third flight. He insisted on Ray flying off and only conceded defeat when winding commenced!

Brighton Boxing Day Rally 26th December 1966

Glider 1. M. Dilly (Croydon) 7:01. 2. P. Jellis (Croydon) 6:23. 3. C. Foss (Brighton) 6:10. **Power** 1. V. Jays (Surbiton) 6:37. 2. K. Smith (Croydon) 6:20. 3. Kenward (Woking) 3:32. **Rubber** 1. R. Elliot (Lee Bees) 9:00+model. 2. J. R. Mabey (Lee Bees) 9:00+lost. 3. J. North (Croydon) 8:53.

Dave Welch also contributed details of the New Zealand teams for the f/f World Champs. It will be seen that two fliers were both busy and successful!

Power	1. P. Lagan	Wakefield	1. P. Lagan	A/2	1. P. Lagan
	2. R. Bain		2. B. Roots		2. N. Hewitson
	3. B. Roots		3. R. Magill		3. A. Leong





Another in our series of Committee pics showing the modellers who run the hobby for YOU. This is the North Western Area Committee: Left to right: J. O'Donnell (Treasurer), S. Savini (Vice-Chairman), D. Allmann (Delegate), K. McClave (Chairman), P. Brannigan (PRO), G. Stott (Competition Secretary) and T. Toolan (Secretary).

CLUB and CONTEST NEWS

Keeping Members informed

It is surprising how easily club members forget what is lined up for the next couple of months of club activity. Market Harborough M.A.C. produce a very full duplicated calendar of events as do Finchley M.A.C. these helping to keep club interest up and a guide for the new members who can see just what sort of entertainment the club they are about to join can offer them. If more clubs had this system, the movement could only grow stronger with such things as film shows, talks by leading modellers and indoor contests, a list of several film loan sources can be found in the Club Survey booklet presented in the centre of this issue.

Bald Eagles go Slope Soaring

Bald Eagles M.A.C. welcomed in the New Year with a slope soaring rally on January 1st to blow away the cobwebs for those who had over-indulged the night before, several local freelance fliers put in an appearance. The main attraction was a 12 ft. span job from Jerry Hansen and Ron Bray, but the force 6 winds made launching this monster impossible. Smaller models made out quite well and there were plenty of spectators.

Cheltenham M.A.C.

This club is enjoying good attendances at club meetings on Tuesday evenings and rubber powered scale models are the thing. Little control line flying is taking place but the free flight men have been pretty active and the club Power/Rubber contest was won by P. Rushers model proxy flown by T. Allen who placed second with his own model, both Coupe d'Hiver type models, the only other entry was G. Lynn with a sport rubber model.

Club with official backing

The Park Model Aircraft League was reformed last year with A. Briggs as the only remaining member of the original club. The club is actually a class within the Inner London Educational Authority with Mr. Briggs as the main instructor, but not all class members belong to the group, outside members can attend classes as visitors but no building is allowed for them. The class is open to the 14-21 year age group, the school fees are very reasonable and the club fees pay their S.M.A.E. membership. Most members start without any knowledge of model aircraft so it really is a case of going right from the bottom and progressing gradually. It's nice to see such a valuable subject getting official sanction.

Cosmo News

With a membership of 38 Cosmo A.C. are in good shape these days with high club meeting attendance, and a good flying field turnout at Danson Park. Main interest at the moment is F.A.I. team racing and their big difficulty has been making an efficient manifold silencer system to fit inside the fuselage, but this has now been resolved.

Change of Name

Gee Dee M.A.C. from Nottingham have changed their name to line up with their geographical location. They are now titled thus: Nottingham M.A.C., and meet every Friday for a chat and get together. Contact Mr. B. Parkinson, 14 Kenilworth Road, Beeston, Notts for further details.

Croydon Wins

Croydon members have been doing quite well recently, with five of the top seven places at the trials going to their members. After being second for two consecutive years the glider class was not flown in the L.D.I.C.C. and members G. Cornell, P. Jellis, and D. Hipperson won convincingly with a lead of three minutes with one flight in hand. Bob Bailey lost his all conquering 84 minute rubber model at the Devon Rally, after his convincing first places at Odiham and Wellesbourne Mountford. Gordon Cornell obtained his first success in open rubber, with 7.19 for second place behind Bob. Croydon will be running three galas this year, details of which are in Contest Calendar. Any prospective new members should contact G. Cornell, 86, Poplar Crescent, West Ewell, Surrey.

BYE-LAWS HELP MODEL FLYING

St. Albans M.A.C. have been represented by two committee members at local Council Meetings and as a result the ban on power flying on Nomans land Common at weekends and after 7 pm has been lifted. However the following restrictions now apply. 1, Glider and Rubber models—no restrictions. 2, Free Flight power & Control Line only allowed Mondays & Tuesdays 10 am-7 pm. Wednesdays, Thursdays & Fridays 10 am-9 pm. 3, Radio Control Weekdays 10 am-7 pm Saturday and Sunday 10 am-1 pm. The above regulations are the result of complaints by local residents about noise, so all modellers are asked to keep their engines well silenced, as the regulations are due for review in September, 1967.

Pen Pals Wanted

Lindsay Green age 16, of 15 Reservoir Road, Waipukurau, Hawkins Bay, New Zealand, would like to correspond with another aeromodeller on all model engines and model flying subjects. I. Cruse of 9 Connifer Street, Shepparton, Victoria, Australia wants a pen pal interested in F.A.I. team race or combat, also F.A.I. J. H. Major, of Ravens Wood, 7 Hall Drive, Oadby, Leics., would like to write to a 12 year old glider enthusiast, at present he flies a Contest Kits "Empress". Bohivoj Trmac of Tisnov, RA 928, Czechoslovakia, would like to exchange M.V.V.S. plans engines and propellers for radio control sets and also to exchange modelling magazines. Spare parts are available for the engines.

Inter Club Combat

Three well known combat flying clubs decided to have a reasonably friendly combat session on December 18th. These were the Outlaws, Long Eaton and Heanor, with a total of 16 entries and many more helping to run the show. The all Heanor final resulted in first place going to V. Hunt. Second place was taken by P. Ledger and it's hoped that several more events can be run on these lines.

IRVINE M.A.C.

During the past year the club has improved its facilities with the use of a large field by the sea belonging to the local army camp, also they have a club house at 43 East Road, Irvine and redecoration is under way. Meetings are monthly and equipment used by members is varied including R.C.S., Single, Competition 10, F & M 10, Flight Link, Citizen Ship A.P., home built Digitrio and several, variants on this system. Several slope soaring sites have been located and interest is growing.

KENT INTEREST WANTED

Maidstone M.F.C. were formed in 1966 and are still in need of members, both juniors and seniors. At present the membership is 32 with the main interest leaning towards single and multi channel radio control. The club have organised several meetings and present competitions include a team event for the Rippax Cup. Non flying activities include talks on R/C, aerodynamics, electronics and film shows. Club meetings are held on the first Tuesday of every month at Armstrong Hall, Maidstone at 7.30. Contact the secretary Mr. D. Chappell, Newlyn, 32 Station Road, Ditton, Nr. Maidstone, Kent.

CONTEST CALENDAR

February 19	Western Area Winter Gala. R.A.F. Wroughton, Wilts. Combined F.A.I., Combined Vintage, A/1, Coupe d'Hiver.
March 5	Croydon Winter Gala. Chobham Common, Surrey. A/1, Chuck Glider, 1/4 A Power, Coupe d'Hiver, Combined Vintage, Starts 10 a.m.
March 26 & 27	North Western Area Two Day Meeting. R.A.F. Tern Hill, Nr. Market Drayton, Salop. Sunday Events. L/C Combat, F.A.I. T/R, Open Rubber and Power, F.A.I. (A/2) Glider, F.A.I. Multi R/C Monday Events, C/L Stunt, Multi R/C, 1/4 A T/R, Combat (continued) F.A.I. Rubber and Power, Open Glider, R/C Free Style. (S.M.A.E.) Area Centralised events on 26th can be "doubled" by pre-declaration plus extra S.M.A.E. fee of 2/6d. All Pre-entries (2/6d. per event) by March 17th to S. Stoll, 11 Fairshape Rd. Lytham, Lancs. (payable to S.M.A.E. N.W. Council) Entry to Airfield—2/6d. Camping and Car Parking Free.
April 23	Wanstead Control Line Rally, Hayes Circuit, F.A.I. and 1/4 A Team Race, A Combat. Pre-entry 2/6. to R. Ives, 5 Highams Station Avenue, Chingford, London, E.4.
April 23	Devon Free Flight Rally. Woodbury Common, Open R/G/P and Chuck Glider.
April 30	Airtech Free Flight Gala. Haddenham, Bucks. Open R/G/P and Chuck Glider. Airtech Shield for Rubber. Starts 10 a.m., 2/6 entry, insurance required.
April 30	Rolls Royce R/C Pylon Race. Thurlston Field, Nr. Derby. Single Channel, Goodyear and Open Event. Rules from D. R. Foskett, 28 Fenton Road, Mickleover, Derby.
April 30	Finchley Control Line Gala. Glebelands, Summers Lane, N.12. Senior Stunt and Junior (18 years maximum). A & B Combat.
May 14	Richmond Gala. Chobham Common, Surrey. Open R/G/P Power 30 secs. engine run taken ad-lib over three rounds. Two Models only in rubber.
June 11	Wanstead Control Line Rally, Hayes Circuit, F.A.I. and 1/4 A Team Race, A Combat. Pre-entry 2/6. to R. Ives, 5 Highams Station Avenue, Chingford, London, E.4.
July 2	Bristol Radio Control Rally. R.A.F. Colerne.
July 2	Croydon Gala. Chobham Common, Surrey. Open R/G/P, starts 10 a.m.
July 2	Finchley Control Line Rally. Glebelands, Summers Lane, N.12. A & B Combat, 1/4 A Combat and Rat Race.
August 27	Torbay Free Flight Rally. Woodbury Common. Open R/G/P and Chuck Glider.
September 10	South Coast Gala. R.A.F. Tangmore, F/F, R/C, C/L.
September 17	South Midland Gala. Cranfield, Beds.
October 1	Wanstead Control Line Rally, Hayes Circuit. 1/4 A, F.A.I. Team Race and A Combat. Pre-entry 2/6 to: R. Ives, 5 Highams Station Avenue, Chingford, London, E.4.
October 8	Croydon F.A.I. Gala. Chobham Common, Surrey. R/G/P in rounds, models processed, starts 10 a.m.
October 8	Northern Area. R.A.F. Topcliffe. Vintage Trophy, Tony Pannel Trophy (Open Power), Coupe d'Hiver, A/1 Glider.
October 22	Northern Area F.A.I. Meeting. R.A.F. Topcliffe.
November 5	Richmond Gala. Chobham Common. A/1, 1/4 A Power, Coupe d'Hiver, Combined F.A.I., Chuck Glider.

Harrogate want Juniors

The club has both an aircraft and marine section, which consists of 25 members, radio control being the predominant interest. Their A.G.M. went well with last years committee being re-elected. The club flying field is about a mile square of moor on the B.6161 between Beckwithshaw and Leathley, map reference on the Ordnance Survey Map Number 96 is 250510 (look for Lanshaw Farm), rather rough in places it is very private and has a metalised road across it. The nature of the surface limits it to such types as high-wingers, *Uproar*, *Super 60*, *Smog Hog*, *G-String*, etc. R/C gear varies from proportional to single channel home made gear, and they swear by the Cotswold Rx in those parts. R/C slope soaring has its fans and the local terrain is ideal for this, several sites being investigated. There is plenty of room for the F/F fliers and control line models have been seen but not in action. Any local juniors who need a helping hand should go to the flying site or contact: P. M. McAlooy, 64 Ash Road, Harrogate, Yorks.

PROVISIONAL S.M.A.E. 1967 CONTEST PROGRAMME

March 26th	(*) KMAA (FAI Glider) AT AREA Frog Senior (Open Power) VENUES
	(o) (Open Rubber)
April 15/16th	(cl) Control Line (r) Radio Control Trials
April 16th	(*) Halifax Trophy (FAI Power) AT AREA Gamage Cup VENUES
	(o) (Open Rubber) (o) (Open Glider) (o) (Coupe d'Hiver)
April 23rd	(r) Also Radio at a Southerly Venue Indoor
April 29/30th	2nd Free R.A.F. Flight Trials ODIHAM
May 28/29th	Nationals and Area Championships Events as 1966 R.A.F. HULLAVINGTON

Revolutionary New!

TOP FLITE

MONOKOTE

■ The covering with the built-in finish ■

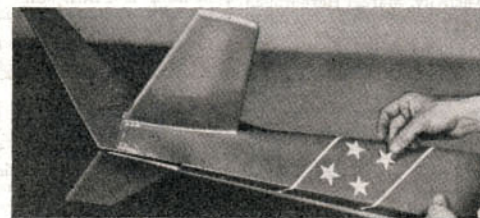
BROUGHT TO YOU BY 'RIPMAX'
NOW AVAILABLE

IN THREE NEW VIVID COLOURS

★ GLOSTER GREEN ★ COSMIC GOLD

★ INSIGNIA BLUE PLUS SIX OTHERS:—

RED . WHITE . BLACK . YELLOW . ORANGE . SILVER



COVER &
FINISH IN
ONE GO!
COLOUR
SCHEMES..
ADD TRIM
IT'S EASY!

The greatest advance in covering and finishing technique in model building history! 'MONOKOTE' enables ANY-ONE to produce a PROFESSIONAL STANDARD finish—quickly and easily... first time—and every time!—

Replaces all other coverings

CUT TIME BY ELIMINATING

DOPING ... SANDING ... SEALING ... POLISHING !

- ★ EASY—no tricky technique, it's EASY to use!
- ★ FAST—cuts model finishing time to few hours!
- ★ LIGHT—half the weight of nylon and dopes!
- ★ TOUGH—resistant to punctures, tears, crashes!
- ★ ECONOMICAL—costs less than usual schemes!
- ★ FUEL PROOF—even against 'high-nitro' fuels!
- ★ ODOURLESS—no 'dope' smells or fumes!
- ★ FOOLPROOF—even when carelessly applied, heat removes wrinkles and shrinks covering drum taut!
- ★ FOR TRIM TOO—just cut out your own trim designs and press in place!
- ★ FUEL PROOF ★ FADEPROOF ★ STAIN PROOF
- ★ LONG LASTING ★ MOISTURE PROOF

in sheets 36" x 26"

price 25/- per sheet

AT YOUR LOCAL MODEL SHOP!

In case of difficulty write RIPMAX, 80 Highgate Road, London NW 5

RipMax

bring you the
BEST from

AMERICA

CARL GOLDBERG MODELS

Shoestring!

Most Beautiful R/C
Ever Kitted!



Shoestring Goodyear
Racer . . . 197/6
other R/C kits include:
Jnr. Falcon 37" 54/6
Falcon 56. 56" 131/6
Snr. Falcon 69" 252/0
Jnr. Skylark 39" 65/0
Skylark 56" 56" 153/6
*single or twin-engine!



R/C

ALL THESE SUPER KITS ARE FULLY PREFABRICATED!

Taurus £17.19.6 Tauri £11.19.6
Schoolmaster 39" sp (ill'd) 71/6
Schoolboy 38/6 Rascal 32/6
Schoolgirl (32" sp biplane) 65/0
Roarin' 20 32/6 Cessna 43/6



CONTROL LINE • STUNT

Nobler 19-35's 137/6 Nobler Jnr. 77/6
U.S. Nats and World Champ winners!
Peacemaker de luxe stunt . . . 87/6
Flite Streak Combat .15-35's . . . 55/0
Flite Streak Jnr. for .09-25's . . . 38/6



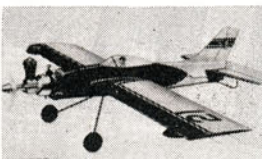
C/L MODELS:-

L'il Wizard 21" sp stunt trainer 27/6
Swordsman 18" sp profile stunt 21/6
Shoestring stunt for .19-.09's 54/6
Jnr Satan Combat 09's up . . 27/6
L'il Satan 19" span Combat . . 16/6

Sterling

Other Sterling Kits include:-

Wizard 54" sp semi-scale
biplane £7.2.6
Mambo Special 52" R/C £7.2.6
L'il Roughneck 22" R/C £2.3.6
King Cobra 70" semi-scale
R/C £16.9.6
Denight Special Pylon
R/C £10.19.6



SPITFIRE 64" span . . . £16.9.6
Superbly authentic all-action model
for multi-channel radio. Plans also
show control line conversion.



MUSTANG 66" span . . . £16.6.9
Absolutely complete prefab kit for
'multi' radio or control line. Over
160 hardware parts! Wonderful value!



FAIRCHILD PT-19 45" span £5.9.6
For radio, sports Free Flight or Control
Line! Prefab kit includes metal cowl,
all hardware, super detail plans, etc.

SEE THEM AT YOUR LOCAL MODEL SHOP!

distributed by:- RIPMAX LTD., 80 HIGHGATE RD., LONDON, N.W.5



HENRY HINODE SAYS—

Convert your Single Channel Tx. Rx. to Galloping Ghost or buy the Hinode G.G. Outfit complete with Tx., Rx., Servo.

With the mighty Rand LR3 G.G. Servo to hand, the Hinode Transmitter was adapted in our workshop to operate in conjunction with the Rand Servo. The result: A FULLY TRANSISTORISED PULSE UNIT.

If you have a Single Channel Tone Outfit not being used, for a few extra dollars you can have G.G. with the Rand Servo.

Send for details and prices of conversion advising your particular Transmitter and Receiver.

HINODE SINGLE CHANNEL PROPORTIONAL EQUIPMENT
SUPERHET TRANSMITTER, RECEIVER, SERVO etc. **\$177.10 (£A88.11.0)**
HINODE 6 CHANNEL SUPERHET SET, TRANSMITTER & RECEIVER **\$150.00**
HINODE 10 CHANNEL SUPERHET TRANSMITTER, RECEIVER **\$211.25**
HINODE DIXIE RECEIVER TRANSMITTER ONLY **\$45.95 ON 27 MGS.**
HINODE DIXIE RECEIVER TRANSMITTER ONLY **\$52.35 ON 40 MGS.**
HINODE HS50 SERVOS SINGLE CHANNEL ONLY **\$12.35 EACH**
HINODE HS200 MULTI SUPERHET SERVOS ONLY **\$30.90 EACH TRIM & S/N**

ALSO IN STOCK HINODE RUDDER HORNS, CLUNK TANKS 1 oz., 2 oz., 4 oz.
PUSH ROD ADJUSTORS, TRIM BARS, SINGLE CHANNEL RADIO KITS,
MULTI KITS, AND A HOST OF OTHER GOODIES, BUT NOT ENOUGH
SPACE IN THIS AD TO MENTION THEM ALL.

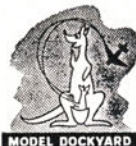
TRADE ENQUIRIES INVITED, SO WHY NOT WRITE
FOR OUR NEW PRICE LIST 20 CENTS EACH.
OUR RADIO SERVICE AND PRICES ARE THE BEST IN AUSTRALIA

FROM

TRADE
ENQUIRIES
INVITED

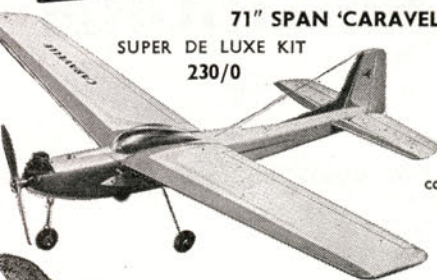
THE MODEL DOCKYARD PTY. LTD.

216 SWANSTON STREET MELBOURNE C.1. AUSTRALIA



KINDLY MENTION "AEROMODELLER" WHEN REPLYING TO ADVERTISEMENTS

Graupner **SUPER KITS** ★



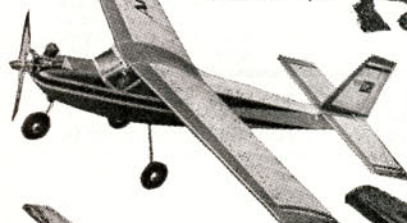
SUPER DE LUXE KIT
230/0



CONSUL ... 117/6



AMATEUR ... 85/-
44" span for .8-1.5 cc. engines. Superb prefab kit. Ideal for R/C.



FOKA SAILPLANE 175/-

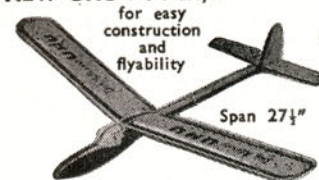
Giant 102" span for free flight or R/C

This SUPER KIT includes FINISHED MOULDED FUSELAGE in high strength plastic; other parts extensively prefabricated.

SCHLEICHER K-10 (scale) ... 132/6
79" span. MOULDED PLASTIC FUSELAGE
HS-19 CLOU SAILPLANE ... 199/6
75" (slope soaring) or 97" wing

NEW UHU ... 21/6

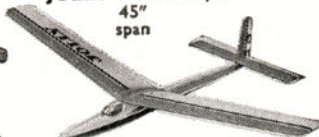
for easy construction and flyability



Span 27½"

JOLLY AI ... 42/6

45" span



Simple contest model

FLORIDE (55" span version) 172/6

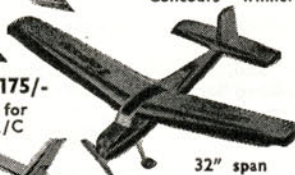
41" span for .09 to .15 engines and single channel or up to 6 channel lightweight multi R/C. Super kit contains FINISHED MOULDED WINGS, FUSELAGE, TAIL IN TOUGHENED FOAM PLASTIC, all hardware, wire parts, wheels, etc.



Span 44"

TRIPACER ... 99/6

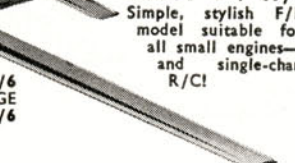
Beautifully detailed F/F or R/C model for engines up to 1.5 cc. Makes a potential 'Concours' winner!



32" span

TOPSY ... 39/6

Simple, stylish F/F model suitable for all small engines—and single-channel R/C!



★ **AT YOUR MODEL SHOP**

U.K. DISTRIBUTORS

RipMax
MODELS & ACCESSORIES

WHOLESALE DISTRIBUTORS

other Graupner Agents include—

U.S.A.: POLKS MODEL HOBBIES,
314 Fifth Avenue,
New York, N.Y.

CANADA: C. BOOK & CO.,
25 Wingham Avenue,
Toronto 19, Ont.

N. ZEALAND: BURTON BRAILS福德
261 Willis Street,
Wellington, N.Z.

AUSTRALIA: PAUL GROSMANN
164 Tintern Road,
Jahfield N.S.W.

S. AFRICA: PHIL DE BRUYN
25 Pritchard Street,
Johannesburg.

HONG KONG: RADAR CO. LTD.,
2 Observatory Road,
Kowloon H.K.

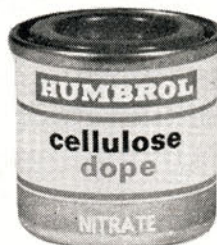
80 HIGHGATE RD, LONDON, N.W.5

The home of.. **HUMBROL** **DOPE**



Compare HUMBROL
*Brushability *Gloss
*Durability *Opacity
*Flexibility

HUMBROL NITRATE CELLULOSE DOPE



The latest Humbrol Nitrate Cellulose Dope is the product of experience, research, development and strict laboratory control. Now available in the new 10d. ½ oz. tinlet and in 2 oz., ¼ pint and ½ pint tins.

HUMBROL

HULL YORKSHIRE

KINDLY MENTION "AEROMODELLER" WHEN REPLYING TO ADVERTISEMENTS



MODEL SHOPS AT YOUR SERVICE



BARKINGSIDE Tel.: 01-500-2007
PAGE'S OF BARKINGSIDE LTD
 M.E.T.A.
 19 BROADWAY MARKET, BARKINGSIDE
 ILFORD, ESSEX
 Why go to town?
 We can supply all your needs
 at Ilford's largest Model Shop

BOURNEMOUTH Parkstone 3981
WESTBOURNE MODEL SUPPLIES
 2 Grand Cinema Buildings,
 Poole Road, Bournemouth West
 The shop that meets a modeller's needs
 — so why not visit us when in
 Bournemouth.

FARNBOROUGH Phone: 43086
MODELS & HOBBIES
 216 FARNBOROUGH ROAD, HANTS
 Aircraft, Boats, Engines, Radio
 Control, servos and all accessories.
AGENTS FOR ALL LEADING MAKES
 Prompt Mail Order Service

BEXLEYHEATH Tel.: Danson Park 2055
REMCON
 FOR ALL MAKES OF RADIO EQUIPMENT
 AND MODELLERS' SUNDRIES
 Our Speciality:
 Do-it-yourself Superhet Equipment
 ★ Advice from practical modellers ★
 Write: Dept. M.S.D. 4a Broadway
 Bexleyheath, Kent

CARDIFF Tel.: 29065
BUD MORGAN
 The Model Aircraft Specialist
 For KeilKraft, Mercury, Veron, Ripmax
 MacGregor R/C, R.E.P. Radio Control.
 Revell, Airfix, Frog, Monogram
 A.P.S. Handbook 2/-, inc postage. Send
 S.A.E., stamped please for assorted lists.
 22 & 22A CASTLE ARCADE, CARDIFF

GUILDFORD Tel.: Guildford 2274
PASCALLS MODEL SHOP
 E. PASCALL (GUILDFORD) LTD.
 Opposite Astor Cinema
 105 WOODBRIDGE ROAD, GUILDFORD
 Stockists of all leading makes of model
 kits and accessories.
 Mail Order Service. M.E.T.A. Dealer

BIRMINGHAM VICtoria 4917
BOB'S MODELS
 520 COVENTRY ROAD,
 SMALL HEATH, BIRMINGHAM 10
 Model Aircraft Centre of the Midlands.
 All the best in British and American
 Products.
 We offer you help and advice backed
 by 20 years' experience.

CHICHESTER Tel.: 83592
**PLANET MODELS
& HANDICRAFTS**
 108 THE HORNET, CHICHESTER, SUSSEX
 Aircraft and Boat Kits. All Accessories
 Balsa Wood, Engines, Fuels, Finishes, etc.
 Model Railways & Racing Cars
 Personal Service Mail Orders.

HEMEL HEMPSTEAD
 Tel.: Hemel Hempstead 53691
TAYLOR & McKENNA
 (Hemel) LTD.
 203 MARLOWES
 HEMEL HEMPSTEAD, HERTS
 For Model Boats, Aircraft, Railways,
 Racing Cars and Accessories.

BIRMINGHAM Tel.: NOR 5569
THE MODEL MECCA
 204 WITTON ROAD,
 BIRMINGHAM 6
 Aircraft, Boats, Trains, etc. B'ham's
 Telecont Radio agents. "Gena" Fibre
 Glass Hulls.

DONCASTER Tel.: 2524
B. CUTTRISS & SONS
 MODELS AND HANDICRAFTS
 40 DUKE STREET
 Call and see our Shop

HEMEL HEMPSTEAD
 Tel.: 2501-2
**AEROMODELLER
PLANS SERVICE**
 13-35 BRIDGE STREET
 Open Monday to Friday
 Send 2/- for our illustrated PLANS
 HANDBOOK of thousands of models

BLACKPOOL Tel.: 24695
MODEL CRAFT
 24a DEANS_GATE,
 BLACKPOOL
 Agents: Skol-Kits, Keilcraft, Revell,
 Monogram, Taplin, Jena, E.D.,
 Thimble-drome, McCoy.

EXETER Tel.: 76935
EXETER RADIO CONTROL
 35 SOUTH STREET, EXETER
 Kits and Accessories:
 Kell, Veron, Skol, Goldberg, Sterling,
 Graupner, Dubre
 Radio by MacGregor, Citizenship, F. & M.
 Benner, R.E.P., O.S., Minित्रon, etc.
 PHONE OR CALL
 (Mail Order by ret. C.O.D. with pleasure)

KENT Tel.: RAY 0818
AVICRAFT LTD.
 6 CHATTERTON ROAD, BROMLEY
 I sell as much modelling gear as I can
 afford to stock. Radio Control, Boats,
 Planes. Good selection of wood and
 accessories.
 Whatever you want in the way of gear
 for Aircrafts sake, send your orders here.

BOLTON Tel.: 27097
ROLAND SCOTT LTD.
 Mail Order Specialists
 The obvious shop for all your modelling
 requirements The showroom of the North
 Phone your order ANYTIME
 147 DERBY STREET

FAREHAM Tel.: 4136
G. M. H. BUNCE & CO. LTD.
 206 WEST STREET, FAREHAM
 Aircraft, boats, engines, radio control.
 Engineers/woodworkers tools & machinery.

KENT Tel.: Dartford 24155
MODERN MODELS LTD.
 49/51 LOWFIELD STREET
 DARTFORD, KENT
 For all that's best in Model Aircraft and
 Boats, including Radio Control
 American Kits and Accessories a speciality

KINDLY MENTION "AEROMODELLER" WHEN REPLYING TO ADVERTISEMENTS

KIDDERMINSTER

MODEL MART

2 Comberton Road (opp. Railway Station)
We are Aeromodelling enthusiasts, and wish to help you with your requirements.
MAIL ORDER SERVICE
Headquarters Kidderminster District F.C.

LEEDS

Tel.: 27891

THE MODEL SHOP 38 MERRION STREET (Nr. Tower Cinema)

Model aircraft—boats—cars—railways, all makes engines. Every accessory, R/C equipment. Same day postal service.

LINCOLN

Tel.: 27088

THE MODEL MAKERS MECCA

13 CLASKETGATE
(Next door to Theatre Royal)
Large stocks of all Plastic and Flying Kits, Engines & Accessories. Scalextric Roadways. Triang and Lone Star electric railways.

LINCOLN

Tel.: 25907

MODEL CENTRE 24 NEWLAND

THE ENTHUSIAST'S SHOP
Big Stocks of Kits, Engines, Balsa, Accessories, R/C Gear etc.
MAIL ORDER

LONDON

Tel.: GUL 1818

AERO NAUTICAL MODELS

39 PARKWAY, CAMDEN TOWN, N.W.1
Aircraft Engine Tuning and Specialist Exhaust Systems made to requirements. R/C equipment. Sterling, Goldberg, Graupner, Veron, Aerokits, etc.
LONDON'S LEADING BOAT CENTRE

LONDON

Tel.: Woolwich 2820

SIDNEY ROSS & CO. LTD.

9-13 POWIS STREET
WOOLWICH, S.E.18
For all OS Engines, spares, and R/C Mail Order

LONDON

Tel.: North 4272

HENRY J. NICHOLLS & SON LTD.

308 HOLLOWAY ROAD, N.7
We stock only the best for AEROMODELLERS
Specialists in Radio Control

LONDON

ISLeworth 0473

RADIO CONTROL SUPPLIES

581 LONDON ROAD
ISLEWORTH, MIDDX
Mail Order Specialists
Largest stockists of Radio Equipment, Engines and Accessories in the country

LONDON

Tel.: HOP 3482

MODEL AIRCRAFT SUPPLIES LTD.

29 OLD KENT ROAD, S.E.1
Business Hours:
Monday to Friday, 10 a.m. to 7 p.m.
Saturday, 9 a.m. to 6 p.m.
Closed all day Thursday
Postal Service

LONDON

Tel.: Brixton 5422

L. H. W. WYATT BROS. LTD. 260 BRIXTON ROAD LONDON, S.W.9

Stockists all leading makes of Plastic and Balsa Kits. Also "Tri-ang" and Scalextric

LONDON

EDMonton 3719

TELERADIO EDMONTON

Huge stocks of parts for radio control.
Send S.A.E. for Kit list.

3257 FORE STREET, N.9. (Nr. Angel)

LONDON

Tel.: WELbeck 8835

W. & H. (MODELS) LTD.

14 NEW CAVENDISH STREET, W.1
(Five minutes from Oxford Circus)
LEADING WEST-END STOCKIST OF ALL QUALITY MODEL AIRCRAFT KITS
BOATS, RAILWAYS. MAIL ORDER

LONDON

Tel.: MIL 2877

H. A. BLUNT & SONS LTD.

MILL HILL CIRCUS, LONDON, N.W.7

Complete range of model aircraft, engines and accessories, boats, cars and railways

LONDON

Tel.: TID 6292

D. BRYANT

MODEL SUPPLIES
328 BROCKLEY ROAD, S.E.4
For Futaba R/C equipment and all other leading makes, Keil, Veron, Frog, Airfix, etc. Expert advice on scale problems, easy parking

LONDON

Tel.: Lee Green 2637

LEWISHAM MODEL CENTRE

45 LEE HIGH ROAD, LEWISHAM, S.E.13
Everything for the Modeller, Aircraft, Boats, Radio Control, Railways, Cars
Spares and Repairs our speciality
Mail Order a pleasure

LONDON

GRA 2471

A. G. HERMITE (MODEL SUPPLIES)

633 BARKING ROAD, WEST HAM, E.13
Aircraft—Boat—Car—Plastic Kits & R/C
Saturdays 9 a.m. to 6 p.m.
Postal Service

LUTON

Tel.: 7858

AEROMODELS (LUTON)

20 GORDON STREET
LUTON, BEDS

Model Aircraft, Cars, Railways and Boats for the beginner and expert

MAIDENHEAD

Tel.: 21769

E. WALTON 61 KING STREET

Wide range of Modelling Kits and Accessories
Engines and R/C Equipment
Railways, etc.
Established 1932

MAIDSTONE

Tel.: 51719

J. F. CARTER & SONS LTD. (THE MODEL SHOP)

19-23 UPPER STONE STREET,
MAIDSTONE, KENT
Complete range of modelling equipment and accessories, including R/C.
MAIL ORDER

MANCHESTER

ALLEN SCOTT

54 SHUDEHILL,
MANCHESTER 4
Mail Order Specialists
The obvious shop for all your modelling requirements. Manchester's newest model shop.

MANCHESTER

Tel.:
BLA 3972

THE MODEL SHOP

13 BOOTLE STREET
MANCHESTER 2
THE UP-TO-DATE SHOP WITH THE COMPREHENSIVE STOCK
Mail Orders by Return

NEWARK

Tel.: 5851

NEWARK MODEL CENTRE

(Peter Anderson)
47-49 BALDERTONGATE, NEWARK
For the best range of Model Goods offered by an Active Modeller who is interested in your problems. Come to Newark. Mail Order, Trade-in, Straight Purchase of Unwanted Items.

NEWCASTLE

Established 1924

THE MODEL SHOP (NEWCASTLE UPON TYNE) LTD.

18 BLENHEIM STREET
NEWCASTLE UPON TYNE, ENGLAND
Pioneers of modelling
with 34 years' experience
Our Expert Staff are at your Service

NORTH CHEAM

Tel.: Derwent 6495

THE LITTLE ARTIST 505 LONDON ROAD NORTH CHEAM, SURREY

Complete range of Leading Kits, Engines and accessories
The new Futaba radio, and MacGregor, of course
Comprehensive stock of Plastics

NOTTINGHAM Tel.: 50273**GEE DEE LIMITED**40 GOOSE GATE
NOTTINGHAMEverything for the aeromodeller at
Nottingham's leading shop**ST. ALBANS** Tel.: 50717**BOLD & BURROWS LTD.**12-22 VERULAM ROAD
ST. ALBANS, HERTS**WOLVERHAMPTON** Tel.: 26709**MODELS & HOBBIES**BELL STREET, MANDERS CENTRE
WOLVERHAMPTONEXPERTS COME TO US
VISIT US AS WELL
WE HAVE ALL THE BEST IN MODELLING**OLDHAM** Tel.: MAIn 8812**A.B.C. ELECTRONICS
(OLDHAM) LTD.**
(RADIO ENGINEERS)
83 LEES ROADAll R/C components available for valve
or transistor Tx/Rx. Deacs — Graupner
— Metz — Schuco — Sterling — and all
the others. Mail Order, S.A.E. for lists**STOCKPORT** Tel.: STO 5478**THE MODEL SHOP**280 WELLINGTON ROAD SOUTH
(BRAMHALL LANE CORNER)Aircraft, Boats, R/C Equipment, Engines,
Railways, Car/Racing, Plastic Kits
Postal Service**WORKSOP** Tel.: 2855**MODEL CENTRE**

RYTON STREET

Main agencies for all Kits, Engines and
Radio Control equipment
Mail Order Service**OXFORD** Tel.: 42407**HOWES MODEL SHOP**9-10 BROAD STREET
Largest stock in the Midlands
Model Aircraft—Railways—Cars
Boats—Radio Control
Run by Modellers for Modellers
MAIL ORDERS BY RETURN**SUTTON** Tel.: Vigilant 8292**E. L. S. MODEL SUPPLIES**

272 HIGH STREET, SUTTON, SURREY

SURREY'S HOBBY CENTRE
BY RETURN POSTAL SERVICE

Complete stock of all M.A. requirements

AUSTRALIA Tel.: MF 3918**CENTRAL AIRCRAFT
CO. PTY.**

5 PRINCESS WALK, MELBOURNE, C.1

Australia's Main Distributor for:
AEROMODELLER — MODEL BOATS
and their Plans Service**READING** Tel.: 51558**MODEL SUPPLIES**1 HOSIER STREET, ST. MARY'S BUTTS
READING, BERKSFOR CHEERFUL SERVICE WITH
MODEL AIRCRAFT AND BOATS
KITS AND ACCESSORIES**TENTERDEN** Tel.: Ten 3326**TELEGEN SERVICES**

4 EAST CROSS, TENTERDEN, KENT

All leading makes of kits, engines and
accessories

Call, write or phone

AUSTRALIA Tel.: MA 3603
MF 1973**HEARNS HOBBIES**303 FLINDERS STREET and
5 COLLINS STREET, MELBOURNEOur 1965 world buying tour brings the
tops in all aeromodelling equipment to
our shelves. We fly what we sell. All
O.S. gear in stock. Your business is our
pleasure. Mail Order service a speciality**READING** Tel.: 50074**G. SLEEP, LTD.,**22/24 KINGS ROAD, READING
For over 30 years we have had one of
the largest Model Stocks in the
South of England**TUNBRIDGE WELLS** Tel.: 22078**MAYKIT LTD.**

56 GROSVENOR ROAD

AIRCRAFT—BOAT—CAR—R/C KITS
Radio Control and Actuators—Engines
CALL, PHONE OR MAIL ORDER**CANADA****NORTH YORK
HOBBIES**1910 AVENUE ROAD
TORONTO 12, ONTARIO

Planes, Trains, Boats, Racing Cars, etc.

ROMFORD Tel.: ROM 44508**HOME & HOBBY STORES**144 NORTH ST., ROMFORD, ESSEX
Goldberg — Graupner — Mail Order —
Keil — Veron — Frog — Top Flite —
MacGregor — A.P.S.

Late Closing Fridays 7 p.m.

WAKEFIELD Tel.: 71459**THE MODEL SHOP
(WAKEFIELD) LTD.**

10 MARYGATE, WAKEFIELD

The all round model shop run by
all round modellers

Mail order a pleasure

HONG KONG Tel.: 636507**RADAR CO. LTD.**2 OBSERVATORY ROAD
TSMISHATSUI, KOWLOONThe most complete stock of aeromodelling
and hobby supplies in the Far East. Agents
for Veron, Frog, Solarbo, and Sole Agents
for Graupner, O.S., and Min-X engines and
radio control equipment
Prompt mail order service**SHEFFIELD** Tel.: 26149**SHEFFIELD ELECTRICAL
& MODEL ENGINEERS**

248 SHAESMOR, SHEFFIELD 3

THE REAL MODELLER'S SHOP for
RADIO CONTROL — AIRCRAFT —
BOATS — RAILWAYS — CANOES —
DINGHYS & SAILING GEAR**WALSALL** Tel.: 23382**S. H. GRAINGER & CO**CALDMORE MODELS
108 CALDMORE ROADEverything for the Modeller
Aircraft - Railways - Boats - Electric Cars.
Repairs - Rebores - Overhauls - Spares -
Radio Control - Part Exchanges**HONG KONG****P.H.L. MODEL CO.**(Model Builders & Engineers)
40 ELECTRIC ROAD, CAUSEWAY BAYThe largest stockists of Hobby Supplies in
Hong Kong. Sole Agents for KeilKraft,
Aerokits, A.M., Merco, DeBoit and
Ambroid Agents for Ohissun-Rice, Cox
Thimble-Drome, and other brands**STAFFORD** 'Phone: 3420**JOHN W. BAGNALL LTD.**

M.E.T.A.

18 SALTER STREET, STAFFORD

Comprehensive stock of Kits, Engines,
Radio Control Equipment, Spares, etc.
Established 1936**WELWYN****H. A. BLUNT
& SONS LTD.**

38 FRETHERNE ROAD

WELWYN GARDEN CITY, HERTS

Complete range of model aircraft, engines
and accessories, boats, cars and railways**SINGAPORE****BALBIR & CO.**111 NORTH BRIDGE ROAD
SINGAPORE 3Leading stockists of Model Aircraft
requirements in Singapore and Malaya

KINDLY MENTION "AEROMODELLER" WHEN REPLYING TO ADVERTISEMENTS

CLASSIFIED ADVERTISEMENTS

PRESS DATE for April issue, 1967, February 20th 1967.
Private Minimum 18 words 6/- and 4d. per extra word.
Trade Minimum 18 words 12/- and 8d. per extra word. Display box rate £2.10.0 per single column inch.
Box Numbers to count as six words when costing.
Box replies to be sent care of Advertising Department, 13-35 Bridge Street, Hemel Hempstead, Herts, England. Copy received after first post on February 20th will be held over until the next issue. Unless cancelled in writing before 15th of following month.

GLIDING

Gliding holiday courses with the Lakes Club. One week £17.17.0d. Fully inclusive. For brochure apply—D. H. Millett, 27 Scotforth Road, Lancaster. G.

GLIDING HOLIDAYS IN CAMBRIDGE

Gliding holidays at Cambridge for beginners and others.

Training in best aircraft by qualified instructors. Instruction given in thermal soaring, aerobatics, instrument and cloud flying. Inexpensive.

Details:
Course Secretary,
54 Brampton Road, Cambridge

WANT TO FLY? GET AIRBORNE THIS SUMMER HOW?

A GLIDING HOLIDAY COURSE WITH THE KENT GLIDING CLUB

For beginners and others.
One week or more. April to Mid-October. Professional Instructors.
Full board and accommodation on site. Modern Residential Clubhouse.
Licensed Bar.
Excellent Thermal and Ridge Soaring in beautiful open countryside.
We welcome your inquiries.
For full details, send S.A.E. to:

**KENT GLIDING CLUB
CHALLOCK, ASHFORD, KENT**

EJ

CORNISH GLIDING CLUB, PERRANPORTH CORNWALL

GLIDING COURSES in modern fleet of aircraft from March 27th—B.G.A. Categorized instructors—fine soaring—lovely cliff top airfield—ideal for a different family holiday.
Details with pleasure from—

**D. N. BOLTON, SPINDLE COTTAGE
TRISPEN TRURO**

E1

HOW ABOUT GETTING AIRBORNE YOURSELF?

Then why not try a GLIDING HOLIDAY

at Britain's Finest Soaring Site.
Send for illustrated brochure to: Miss Janet Hilton,
MIDLAND GLIDING CLUB LTD.
104 Copthorne Road, Shrewsbury, Salop.

GIG EIFFLAENDER REBORING SERVICE

CHESTER ROAD, MACCLESFIELD

REBORES, DIESEL ENGINES 23/6 c.w.o. GLOW-PLUG ENGINES 35/- c.w.o. C.O.D. SERVICE (pay the postman, UK only) 5/6 extra. Customers abroad please add postage to cost. All work guaranteed for one month from the time you receive the engine. ENQUIRIES, SPARES, etc., please send stamped envelope or reply coupon.

FOR SALE

Transmite Servos self neutralising £5—Trim £4. K. F. Marsh, 69 Bressy Grove, South Woodford, E.18. WANTED 2611. G.

Concord ready to fly all Linkages DuBro wheels £14 with Merco .49 £22 test flown only. 3 De Bolt Retractor Gears new £7 each or £20 the 3. American R/C plans; Spitfire, Hurricane, Beachcomber, Interceptor. Astro Hog, F.9, Fairfield, 10/- each. Box No. 801. G.

R/C Kit Bargains Sterling. P.63. £10. Perridge. £9. Thor £5. Heros Flies Fieseler Storch Scale £5. V. K. Cherokee. £8. Merco 61 11 £10 unrun. Super Tigre 40 R/C £8, new. Box No. 800. G.

O.S. Max 15R/C £4. 5s., Cox Babe-Bee & Silencer 35s., O.S. Compound & Motor Escapements £3, all V.G.C.; Rodnight, 420, Woodham Lane, Woodham, Weybridge, Surrey. Byfleet 42377. G.

Crusader (Brooks) unflown. New Merco. 61. Tool box stand. All complete (less Radio/Actuators) damaged H.S. Clou. Padded travelling box. Why buy kits? The lot £50 or offer. Dean, Dana Cottage, Scarborough Close, Cheam, Surrey. G.

Bargain! Selling un, RCS 10 Tx Rx Superhet, Servos, new O.S. 60 installed in Veron Concord, covered in Monokote. Hardly flown. Also professionally made Taurus L/W unflown a masterpiece. This with every conceivable extra, from Deacs & Charger to Tools. Over £160 worth of equipment yours for only £100. Phone MOL 2440, London.

Shoulder wing Navigator fitted Merco 49, Telecont 10 Channel receiver and transmitter. Bellomont servos. Radio as new £80. S. Trump, 102 Great Cullings, Rush Green, Romford, Essex. G.

Cox Medalion 15 with throttle, as new, worth £9. £4.10s. Mitchell 17 Cedarhurst Drive, Eltham, S.E.9. ELT 8264. G.

McCoY 19 unrun, 45/-, 55 Model Aircraft, from 1956, 9d. each, 35/- lot. Wanted, Aeromodellers prior to 1958. S.A.E. Taylor, Dental Centre, R.A.F. Gaydon, Warwick. G.

Collectors Item. GHQ. Aero Spark Engine. Complete and in excellent condition. Offers to: John E. Hannah, 2142 East 29th Avenue, Vancouver 12, British Columbia, Canada. G.

Sterling Spitfire 64" span beautifully made, almost finished, with O.S. Max 35 R.C. bargain £12. Falcon 56" complete with new O.S. Max 19 R.C. £8. Phone Nottingham 264923. G.

AM10, AM25, McCoY 35, for sale. All well cared for and good runners. Offers to S. Collins, 15 Cliff Gardens, Scunthorpe, Lincs. G.

New unused 10 Channel Metz Mecatron Tx Type 195/1 with Multi Channel Rx and 5 Motorised Dual Directional Servo Units. £110. Wallace, 28 Giffords Croft, Lichfield. G.

Cox Medalion 0.9 R/C: Cox 0.49 R/C: H-Ray R/C Kit: All new. Jetex 200: JR Falcon Pee Wee 0.49, Elmic Compound: Vernon, Mint Robot, Elmic Compound, 4.8 D r/c. Merlin 2.37 R/C. 3. Mk 1 Tx and 1 Rx: A.M. Princess C/L PAW 1.49 new (all models in Flying Trim): Pross: Mags: etc., All offers: Mr. D. Timmis, 20 Wakefield Road, Normanton, Yorkshire. Caller's welcome. G.

Selling up, Eta Elite and Mk 111 & Racers and Silencers. Also Oliver Tiger & Silencer. Offers to Box 798. G.

Bargain, unflown Macgregor S/Ch, Carrier Wave Rx, Tx, Aerial, home made case. £5.10.0d. Bishop, 10 Heathfield Road Petersfield, Hants. G.

For Sale, A.M. Plans "Rohma", McCoY 29, compact escapement and wiring harness, unflown. £15 o.n.o. Buyer collects. Parrot, 1 Glastonbury Close, Bletchley, Bucks. G.

R.C.S. Transmitter, Receiver Single Channel. Elmic and Rising Escapements Switch and Harness. £9. P.A. W 1.49 motor £3. Phone Evenings Redhill 66416. G.H.I.

R.C.S. Guidance System Mk 11 brand new £7, Firebird with Enya 15 nylon covered flown only once £4, ADVance 3397 after 6 pm. G.

For Sale—1 brand new un-run O.S.H. 35C, first offer over £7 secures. Needham, 33 Gorran Avenue, Rowner, Gosport Hants. G.

Going Multi must sell. Frog 150 15/-, McCoY 19 (Silenced) 40/-, E.D. Racer R/C (Silenced) 35/-, Racing McCoY 60 35/-, E.D. Auto Pilot, Tx, Rx, and Servo, works perfectly but requires new component for Rx 85/-, —A. W. Farrow, 21 Willmott Road, Southend, Essex. G.

For Sale—Merco 29 R/C. Just run in 90/-, Box No. 799. G.

Selling up £20 worth of Engines, spares, and equipment. Send S.A.E. for details or phone TOT 2003 evenings. G.

EXCHANGE

Exchange. Electric Locomotives, rolling stock for engine 1.5 c.c. upwards. G. Sadler, 3 Meadow Avenue, Peak Dale, Buxton, Derbyshire. G.

TRADE

AEROMODELLERS. Prevent that flyaway by installing an Acada Fuel shut-off or Dethermaliser Timer at 27/- each post free from Michael Smith, 1 Station Road, Kimberley, Wymondham, Norfolk. G.

ROSSI 60, 10 c.c. chromed £19.15.0. Rossi 60 chromed R/C £23; Speed pan and spinner, 6 grades glow plugs, speed props. Rossi, Via Pace 13, Brescia, Italy. T/C

Paint Transfers. Numbers, Letters 1/4 in. to 5 1/2 in., various colours. Samples and list. Transletters Ltd., 219B, High Street, Orpington. E/J

METALSKIN

The revolutionary self-adhesive metal covering for plastic model aircraft. New from the U.S.A. This easy-to-use material is the ultimate in scale metal effect—makes your models really live! One sheet size 15" x 10" covers three fighters and costs only 4/6d. including postage, packing and instructions.

Send to sole U.K. distributor
Gordon Stevens, 18 Hillford Place,
Earlswood, Surrey

SINGLE CHANNEL

Always in stock the Fabulous 'R.C.S. Guidance System', the best and fastest selling single channel tone outfit in the world. Highest power Tx. Smallest Rx. with 1 amp. transistor output. Excellent wiring harness and battery box. Just fit batteries and go! . . . Mk. II 13 gns. Mk. III 14 gns. Accessory outfit ready wired and using the reliable 'Compact' escapement which gives you selective right and left rudder, fast/slow motor, and up or down elevator every time . . . only £4.10.0. 'Corporal' motor control accessory outfit £3.

S.A.E. brings free 'An Introduction to Radio Control' Now being demonstrated or dispatched post free by

RADIO CONTROL SUPPLIES
581 LONDON ROAD, ISLEWORTH, MIDD X.
ISL 0473
52 LONDON ROAD, LEICESTER
LEIC. 21935

SPINAFLO SILENCERS

42/6d. to 62/6d.
Largest range of Silencers in the world
over 75 types

These bright anodised units are a rewarding investment for all discerning modellers. Fuel economy and model cleanliness are but two of many side benefits. Made to fit any sidestack engine. Mini .09 to .15. Standard for .19 to .35 Super for .49 to .61

Latest Additions: Enya 60 T/V E.D. 248
All complete with mounting strap, adaptor block machined to close limits and colour anodised rotary flow diffuser

D.A.C. COMPONENTS
Albion Rd., Horsham, Sx., Eng.
All leading kits and engines in stock.

Model Airplane News Plans Service Latest Addition

M.A.N. 63A

L'i Champ—Single channel R/C high wing trainer model trike U/C easy to build .049 (.8 c.c.), span 36 ins., an ideal first radio model.

MYSTERE—Large advanced control line stunter with faired in cabin for 40-49 (6.5 c.c.-8 c.c.) engines, simple structure, trike U/C, 60 in. wingspan.

Limited Stock, order while they last

For a full list of M.A.N. plans send 4d. stamped addressed envelope. All plans are priced 7/6d. plus 6d. postage from Aeromodeler Plans Service, 13-35 Bridge Street, Hemel Hempstead, Herts.

"WORLD'S LEADING HOBBY HOUSE"

IMPORT-EXPORT

IMPORT: Manufacturers please send catalogues and samples with quotations for best U.S. representation in all 50 states.

EXPORT: Over 350 U.S. ranges from one source. One invoice! One Shipment. Best export discounts. Largest stock of all hobby goods in our own warehouse.

POLKS MODEL CRAFT HOBBIES INC

314 Fifth Avenue, New York N.Y. 1001

Cables: POLKSMOD Telex: 22-4955

Send \$25.00, U.S. Funds, for 750 page catalogue "Hobby Buyers' Bible". Refundable from first order of \$500.00 or more.

RADIO CONTROL EQUIPMENT

Britain's largest manufacturers and pioneers of transistorised equipment and proportional control. S.A.E. for details of the world's best single channel tone guidance system. Over 3,500 in current use throughout the world, quantity produced and fully guaranteed for best range and quality at only 14 gns.

Complete 6 and 10 channel Multi Reed outfits with or without Servo Packs, from £34.

Digital two, three, four and five channel Proportional equipment from £90.

Take advantage of direct sales with large savings in cost. All equipment undergoes extensive final checks and inspections including field testing before despatch with full guarantee. Prompt after sales service always available from factory or agents.

Main Agents: RADIO CONTROL SUPPLIES
581 LONDON ROAD, ISLEWORTH, MIDDX. Tel. ISL 0473

RADIO CONTROL SUPPLIES
52a LONDON ROAD, LEICESTER Tel.: Leicester 21935

Manufacturers: Radio Control Specialists Ltd.,
National Works, Bath Road, Hounslow, Middx.

S. H. GRAINGER & CO.

the Midlands' leading model shop

★ MAIN AGENTS

FOR ALL LEADING MAKES

★ KITS ★ ENGINES ★ SPARES ★ REPAIRS
 ★ RADIO CONTROL EQUIPMENT ★

MAIL ORDER • PART EXCHANGE

NO DEPOSIT HIRE PURCHASE

ENGINES	R/C EQUIPMENT	Wing Kits	KITS
A.M., Cox, D.C. Enya, Eta, Fox, Frog, Fuji, Merco, M.E., McCoy, O.S., P.A.W., Super Tigre, Gannet 15 c.c., Webra	Citizenship Futaba F. & M. Flight Link Grundig MacGregor Model Electric O.S. Orbit Raven Remcon	Polystyrene Wings Monokote Second Hand R/C equipment As Available Any type of Transistor Equipment taken in Part Exchange	Aerokits DeBolt Enterprise Frog Goldberg Keil Kraft Mercury Marinecraft Schuco Sterling Topflite Veco Veron
SERVO Bonner Citizenship Climax Elmic Futaba Graupner Model Electric O.S. R.M.K.		ACCESSORIES Nylon, Mylar Hinges, CamLoc Fasteners, Williams WW1 Wheels, Williams Pilots, Xtals, Aerials, Plugs & Sockets, Kwik Links, Trim Bars, Dubro Wheels, Veco Wheels, Fireball Plugs, Relays, Transistors, Mac-Packs.	

CALDMORE MODELS

108 CALDMORE ROAD—WALSALL—STAFFS
Tel. 23382

**LET
H.M.G.
DO THE JOB
WITH
YOU**

H.M.G.



Whatever you're modelling, there's an H.M.G. product to give the job solid construction and a superb finish—and it's so much easier with H.M.G!

- * POLYSTYRENE CEMENT
- * CLEAR SHRINKING & COLOURED DOPES
- * ONE PACK FUEL-PROOF DOPE
- * ALL PURPOSE CLEAR ADHESIVE

Look for the new, eye-catching H.M.G. packs at your local model shops today!

H. MARCEL GUEST LTD

Riverside Works, Collyhurst Road,
 Manchester, 10. Tel: COL 2644/1536

As used, proved and tested, by the leading A/2 glider Aces in this country.

HOLLOW FIBRE GLASS BLANKS

for fuselage booms etc. Virtually indestructible, rigid, yet flexible under impact. Minimum air drag and weight, no true Contest Flier should be without them.

Specification:

3' 6" lengths $\frac{1}{2}$ " - $\frac{1}{4}$ " taper

Weight under 1½ ozs.

Price:

3' 6" lengths 18/6d. each, plus U.K. packing and postage. (Up to 6 blanks 7/9d.)

Separate quotes for despatch and packing of Bulk and Overseas Orders.

We regret that keen demand for these popular rods means a slight delay in delivery.

Sole Distributors: THE ROD BOX,
 11 Upper Brook Street,
 Winchester, Hampshire,
 England.
 Telephone: Winchester 61561

BOOKS

American A/C Y/Books 1925, 27, 28, 29, 31, 33, Volumes 3 to 7 A/C of The Fighting Powers. Ace of Black Cross, Udet. Complete Book of Aviation. Offers to C. Page, 190 Telford Avenue, Stevenage, Herts.

G.

American Magazine, Year's Subscription. "Model Airplane News" 46/6d. "Air Progress" 57/2. Full catalogue free. Willen Ltd., (Dept. 1.) 61a, Broadway, London E.15.

T/C

SAILPLANE & GLIDING—THE magazine for all gliding enthusiasts. Published alternate months. Send 4/- for current copy or £14.0d. for a year's sub to British Gliding Association, Artillery Mansion, 75, Victoria Street, London, W.1.

T/C

The new monthly **AMERICAN MODELER** magazine incorporating **GRID LEAKS**/Radio Control, World, offers the latest in full scale, free flight, control line, radio control and scale plans and articles. For the best in U.S. aero-modelling send \$1 (7/6d. International Money Order) for airmailed current copy. American Modeler, 1012 Fourteenth Street, N.W. Washington, D.C. 20005, U.S.A.

T/C

SPECIAL OFFER

Advertising Pencils, Superb Ball-Pens, Combs, Brushes, etc. Raise funds quickly, easily. Details—Northern Novelties, Bradford, 2.

VACANCY

Experienced assistant wanted for Model Shop, 5 day week. Apply Jones Bros., 56 Turnham Green Terrace, Chiswick, W.4. CHI 0688.

T/C

WANTED

5 c.c. Dart and A-S 55 motors for my models. L. Davis, 2450 La Roma Drive, Rancho Cordova, California. 95670.

G.

Early British or Continental Engines all types. Write stating make, condition, price. Ivor F. Stowe, Box 11, Doonside, N.S.W.

G.

A.S. 55 Diesel. Details of condition and price wanted to L. Matthew, 48 Edenfield Road, Rochdale, Lancs. G

Wanted: discarded airframes damaged or complete also used engines. State full details and price to Box No. 802.

G.

WANTED BY COLLECTOR

Petrol (spark ignition) engines, Early Diesels, Twin or Multi engines, CO-2 or Airdriven engines and other unusual engines. Will pay cash or swap for American model items. All offers considered.

Harry English, 3021 Oakridge Dr., Bethany, Oklahoma, U.S.A.

£50,000 INSURANCE !

We are able to offer a £50,000 third party insurance to our readers! This magnificent scheme which covers modelling activities within Great Britain, Northern Ireland, Channel Islands and the Isle of Man, has been negotiated with a leading insurance Company to provide exactly the cover which the Air Ministry requires when its airfields are used for model flying. It is also sufficiently embracing to cover all other forms of model activity, and so should be completely acceptable to Local Authorities.

All that is necessary for you to do to obtain the benefits of this magnificent cover is to complete the forms at the bottom of this announcement, sending the first part to us together with your remittance of 2/6d. which covers you for one year, and handing the second part to your usual magazine supplier. Whether or not you already have an order in hand for the regular supply of your magazine, this form should still be handed in and your dealer will adjust his requirements according to whether you are a new customer or merely continuing your old arrangement.

This insurance is the prudent thing for every modeller to take out. By joining M.A.P. 'Modellers' Accident Protection you come into the world's **BIGGEST MODEL CLUB**. For your initial subscription you obtain a lapel badge for identification and transfers to put on your model.

Complete your form and send off at once. We will send you back your membership card, lapel badge and waterslide transfers immediately. Insurance period commences immediately. Renewals will normally be made from nearest quarter day, and renewal reminder notices duly sent.

Model Aeronautical Press Limited

13/35 Bridge Street,
Hemel Hempstead, Herts.

M.A.P. INSURANCE MEMBERSHIP FORM

PART I TO BE HANDED TO NEWSAGENT

To
Please *reserve/deliver one copy of *AEROMODELLER/MODEL BOATS/MODEL CARS/RADIO CONTROL MODELS & ELECTRONICS/MODEL ENGINEER/MODEL RAILWAY NEWS commencing with the issue. (*Delete as applicable.)

Name

Address

PART II of the Form should be completed and sent to us at the address above together with your remittance of 2/6d. PART I should be handed to your usual supplier, either newsagent, model shop, bookseller or wherever you normally expect to get your magazine.

PART II TO BE SENT TO M.A.P. LTD.

Name (in full)

Address

..... Date

I enclose herewith postal order value 2/6d. for membership of M.A.P. £50,000 insurance scheme. This sum, I understand, includes two transfers and a lapel badge, and is conditional upon my ordering.

* AEROMODELLER * MODEL BOATS * MODEL CARS * RADIO CONTROL MODELS & ELECTRONICS * MODEL ENGINEER * MODEL RAILWAY NEWS (*Delete those not applicable.)

I have today instructed my newsagent
to deliver me the magazine until further notice.

★ RADIO CONTROL SUPPLIES ★

Largest stockists in the country, everything is here.
Guaranteed the fastest Mail Order

Advice by experts—Radio Service Centres.
Part Exchange — Equipment purchased — H.P. facilities.
Overseas orders a speciality. Main agents for R.C.S. Equipment, and suppliers of:
Proportional — Reeds — Single Channel — Servos — Actuators.
R/C Motors, R/C Accessories, R/C Kits, ready built planes.
S.A.E. for lists and advice — (Please state type of equipment).
call or write:

581 LONDON ROAD, ISLEWORTH, MIDD. Tel. ISL 0473
(Opposite Fire Station—open every weekday).

52a LONDON ROAD, LEICESTER Tel.: Leicester 21935
(Next to Railway Station—closed Mondays).
BOTH SHOPS OPEN UNTIL 8.30 p.m. FRIDAY

EVERYTHING FOR THE AEROMODELLER NEW R/C SYSTEM

Send S.A.E. for leaflet of new, exciting R/C Modular Super-Het System with separate add-on units.

NEW! Frog MUSTFIRE, 67 in. span for Multi R/C. £12.10.0
FOKA R/C Glider 102 in. span with preformed body. £8.15.0

MOTORS—Send for our list of 100 types—SAE, please
AIRCRAFT KITS by Keil, Veron, Frog, Graupner, Mercury, etc.
LISTS — S.A.E.

Accessories, fuels, paints, transfers, balsa, obechi, plywood, etc.
All regular kits, motors and accessories in stock

JONES BROS. OF CHISWICK

56-62 TURNHAM GREEN TERRACE, CHISWICK, W.4
Phone 994-0858 (Prefix 01 for out of town calls)

(1 min. from Turnham Green Station) Established 1911
HOURS: Mon., Tues., Wed. and Sat., 9 a.m.—6 p.m.;
Fri., 9 a.m.—7 p.m. Closed all day Thursday



'Joy-Plane' BALSA CEMENT

New and improved quality. Very quick and hard setting. Penetrates deeply, and is heat resisting and fuel proof. In tubes.
8d.; 1/2d.; 1/10d.

(Recommended retail selling prices)

Made by Modellers for Modellers

is the registered trade mark of **TURNBRIDGES LTD., LONDON, S.W.17**
manufacturers of quality products for **STICKING, STAINING, POLISHING, PAINTING**



KINDLY MENTION "AEROMODELLER" WHEN REPLYING TO ADVERTISEMENTS

—CUT HERE—

A/M

No postage stamp
necessary
if posted in
Great Britain
or Northern Ireland

BUSINESS REPLY ENVELOPE
Licence No. WDB 42

Model Aeronautical Press Ltd.
13/35 Bridge Street,
Hemel Hempstead, Herts.

TUCK INTO OPPOSITE FOLD, PRESS FLAT & POST

—FIRST FOLD—

MODEL AERONAUTICAL PRESS LTD.



HOBBY MAGAZINE

READER
SURVEY
MARCH
1967

In common with our other Hobby Magazines we are inviting readers to help us in shaping our future policy by completing and returning this form. No postage is necessary in Great Britain and Northern Ireland, elsewhere you must pay; since so many of our regular readers do reside abroad we hope that they will play their part in full. Replies must be returned to reach us by April 30th, when the Survey lists are closed.

On this side of the page are items of common interest to all our magazines. Answers will be of special help to intending advertisers and will also assist us in future presentation of articles. Name and address is valuable since this helps determine areas covered by the survey. Most of the other questions explain themselves. On the other side are questions dealing with the particular hobby you follow. Thank you in advance for your help which will assist in shaping our policy for a long time to come.

NAME

ADDRESS

FACTS ABOUT YOURSELF

What is your age?

What is your occupation? Please tick as applicable

At school ☐ At University/College ☐ Technical ☐
Clerical ☐ Civil Service ☐ Manual ☐ Forces ☐
Professional ☐ Executive Managerial ☐ Retired ☐
Other occupation not listed

BUYING HABITS

Do you buy your modelling needs from

Model Shop by personal call ☐
By mail order ☐
By both ☐

Do you buy your model magazine from

Model Shop ☐ Casually ☐
Newsagent ☐ Regularly ☐
By subscription ☐

How many people normally read your copy?

GENERAL

Do you belong to a model club or other group organisation?

Yes No

Is your's a family modelling unit (i.e. Father/Son, Husband/Wife)

Yes No

How many years have you followed this hobby?

Have you power tools/lathe or other machine tools?

Yes No

If not, have you occasional access to such tools?

Yes No

HOW DO YOU TRAVEL

In order to follow your hobby (attend meetings, visit exhibitions etc.) how do you travel? Car ☐ Motorcycle moped ☐
Bicycle ☐ Walk ☐ Public transport ☐ No fixed method ☐

OTHER HOBBIES

No other hobby ☐

Do you take any other hobby magazines? Yes No

If so, names please

WHAT IS YOUR NEXT FAVOURITE HOBBY?

What other hobby have you? (e.g. gardening, fishing, sport, etc.)

—CUT HERE—

—FOLD 2—

Postage
will be
paid by
licensee

—FOLD 3—

QUESTIONNAIRE

GENERAL FEATURES

Number or tick the top 6 in order of interest

- | | |
|--|--|
| <input type="checkbox"/> Hangar Doors | <input type="checkbox"/> Club News |
| <input type="checkbox"/> Commentary | <input type="checkbox"/> Book Reviews |
| <input type="checkbox"/> Scale Commentary | <input type="checkbox"/> Trade Notes |
| <input type="checkbox"/> Engine Test | <input type="checkbox"/> Readers Letters |
| <input type="checkbox"/> Strictly Simple (R/C) | <input type="checkbox"/> Latest Engine News |
| <input type="checkbox"/> Championship Reports | <input type="checkbox"/> Gadget Review |
| <input type="checkbox"/> Rally Reports | <input type="checkbox"/> Contest Designs |
| <input type="checkbox"/> A.P.S. designs | <input type="checkbox"/> Scale aircraft drawings |
| <input type="checkbox"/> Actual Size Plans | <input type="checkbox"/> Cartoons |
| <input type="checkbox"/> Aircraft markings | <input type="checkbox"/> Topical Twists |
| <input type="checkbox"/> Free Flight Comment | |

SPECIAL FEATURES

Tick your top six subjects

- | | | |
|--|--|--|
| <input type="checkbox"/> Design Theory | <input type="checkbox"/> Slope Soaring | <input type="checkbox"/> Speed |
| <input type="checkbox"/> Structures | <input type="checkbox"/> Indoor | <input type="checkbox"/> Overseas News |
| <input type="checkbox"/> Engines | <input type="checkbox"/> Combat | <input type="checkbox"/> Radio Control |
| <input type="checkbox"/> Rubber | <input type="checkbox"/> C/L Aerobatics | <input type="checkbox"/> Plastics |
| <input type="checkbox"/> Glider | <input type="checkbox"/> Team Racing | |
| <input type="checkbox"/> Scale | <input type="checkbox"/> For Beginners | |
| <input type="checkbox"/> Unorthodox | <input type="checkbox"/> Magnet Steering | |

Name subject you consider should be covered

LIKES AND DISLIKES

Name the article(s) which interested you most in recent years.

those you liked least

What coverage do you think we have neglected?

MODEL TYPES

What are your interests? Tick those you make

- | | |
|---|--|
| <input type="checkbox"/> Glider | <input type="checkbox"/> Rubber |
| <input type="checkbox"/> Power F/F | <input type="checkbox"/> Indoor |
| <input type="checkbox"/> Aerobatic C/L | <input type="checkbox"/> Speed C/L |
| <input type="checkbox"/> Team Race C/L | <input type="checkbox"/> Combat C/L |
| <input type="checkbox"/> Scale C/L | <input type="checkbox"/> Scale F/F |
| <input type="checkbox"/> Radio (Single) | <input type="checkbox"/> Radio (Multi) |
| <input type="checkbox"/> Unorthodox | <input type="checkbox"/> Jetex |
| <input type="checkbox"/> Plastics | <input type="checkbox"/> Slope Soaring |

SCALE DRAWINGS

Your favourite full-size aircraft are:—

1.
2.
3.

AEROMODELLER PLANS SERVICE

Your favourite type of AEROMODELLER PLANS are:—

1.
2.
3.

ESPECIALLY FOR BEGINNERS

Tick features which will help you most

- | | |
|--|--|
| <input type="checkbox"/> Theory | <input type="checkbox"/> Materials |
| <input type="checkbox"/> Construction | <input type="checkbox"/> Finishing |
| <input type="checkbox"/> Detail design | <input type="checkbox"/> Flight Trimming |

Name particular modelling aspects which give you difficulties

FREE PLANS

State your preference for model types in our free plan series

What, in 25 words or less, would be the biggest single improvement you would like to see in AEROMODELLER?

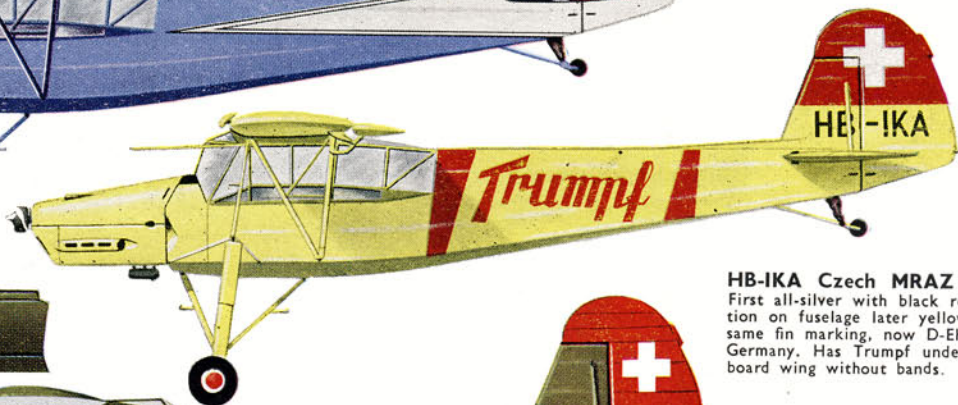
Please complete and fold as overleaf: No Postage required in Great Britain.

FIESELER Fi 156 STORCH

SIX VARIANTS FOR THE NEW AIRFIX 1/72nd KIT

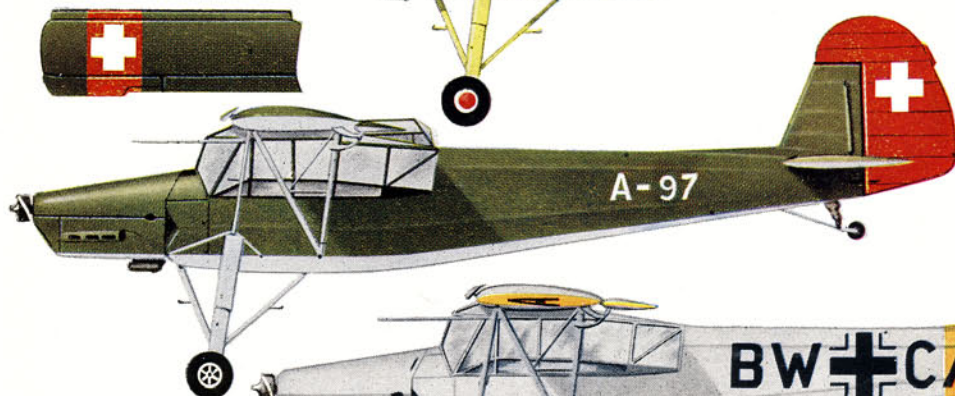
DRAWN BY WALTER WRIGHT

F-BJQD rebuilt **MS 502** by Rheims Aviation as **MS 505** with Jacobs engine. All same colour scheme (see cover) with vermillion tips and slats, used as glider tugs.



HB-IKA Czech **MRAZ CAP**

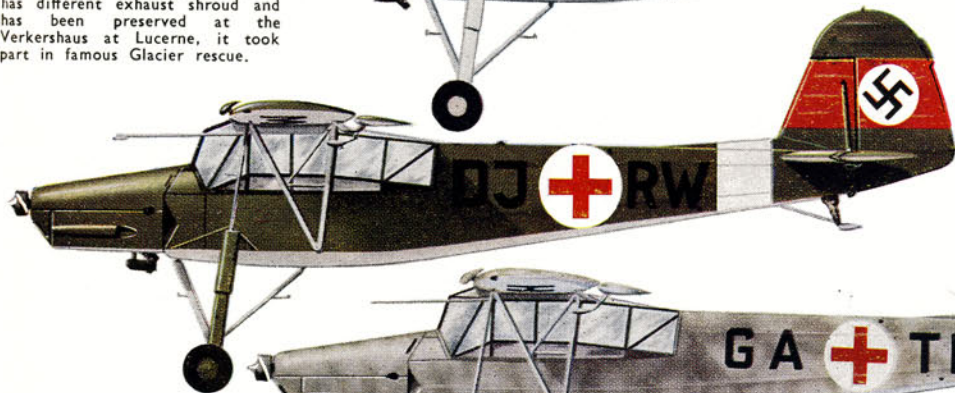
First all-silver with black registration on fuselage later yellow with same fin marking, now D-EKUS in Germany. Has Trumpf under star-board wing without bands.



A-97 Swiss Military version has different exhaust shroud and has been preserved at the Verkershaus at Lucerne, it took part in famous Glacier rescue.



BW + CA Luftwaffe aircraft in winter campaign all white upper surfaces and blue undersides (see wings below left) Fin marking is for a Heeresgruppe as seen 1942/3 at Wjasma.



DJ + RW 156D Luftwaffe aircraft seen in southern Italy for ambulance work has white fuselage band and unusual pre-war style vertical tail markings also elevator slat.



GA + TH 156D-1 Luftwaffe ambulance aircraft on Russian Front has slatted elevator, see wing details below. Ski undercarriage fitted for snow operations.



START OFF RIGHT ...

with this ideal

KEILKRAFT

combination



KEILKRAFT MINI SUPER

Wingspan 48".
For 1.5 to 2.5 cc.
engines.
Single channel or
intermediate R/C

£4. 18. 0

Single Channel
Transmitter and
Relay Receiver

KeilKraft's popular radio control model. A real pleasure to build and fly. Kit contents include—all parts pre-cut, metal clunk tank, preformed

undercarriage, three sponge rubber wheels, pre-shaped leading edge section, full size plan and building and flying instructions.

O.S.

PIXIE

FEATURING

- Guaranteed out-of-sight range.
- Guaranteed Temperature Stability.
- Transmitter & Receiver both operate off 9 volts.
- Transmitter has centre loaded aerial and is crystal controlled.
- Receiver has nylon case, weighs 1½ ozs. and includes a relay.
- Receiver is suppressed for electric Servo use.



£16.15.0

**Outstanding all transistor design
with a mighty performance!**

MAXIMUM POWER
COMPLETE FLEXIBILITY
FAULTLESS IDLING
LIGHT WEIGHT

R/C ENGINES



O.S. MAX 15 R/C £7.11.2

O.S. MAX 19 R/C £7.19.5

O.S. FOR
PRECISION
ENGINEERING
AT ITS
BEST

● The advanced radio control modeller cannot do better than choose O.S. SUPERHET equipment on 6, 10, or 12 channels. It is used by experts all over the world.
KEILKRAFT are sole U.K. distributors for O.S. equipment.