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Aeromodeller

OCTOBER 1981

MAP MODEL DIVISION MAGAZINE

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EDITOR COLIN RATTRAY
Graphics LORNA CULLEN

Advertisement Director M. GRAY
Managing Director RON MOULTON

Comment

With two of the three 1981 World Championships decided and the remaining R C Aerobatic event about to take place in Acapulco as this issue is published, it is already evident that the high standards of F A I flying have stressed the organisational experience of host nations To decide F3B glider on only 4 rounds after travelling thousands of very expensive kilometres to California and to accumulate so many protests in the first hours of a free flight champs as at Burgos, are reflections on the administrations It is admirable that the cycle of locations should rotate and that World Championships should take place in new locations but the proviso must always be that the Host assures the rest of the world that experienced manpower is available *before* assent is given Having said that, one cannot quibble over the results, even though it appears to be the destiny of some of the best modellers to always have a Bridesmaid s position of 2nd place

At last Andras Meczner has broken his spell and taken an honourable 1st in Power after being never lower than 10th in ten years, but that's tough on Eugene Verbitski who has yet another 2nd (as in 75 as well as 3rd in 77 and 4th in 71) In Wakefeld L Doring comes to the fore with Alain Landeau the Bridesmaid for another W Ch 2nd, and compatriot Pierre Bes 3rd Hearts will go out to Andras Lepp for yet another repeat 2nd in A 2 glider, beaten by comparative newcomer Vidensek from Yugoslavia Next month Martyn Cowley will report in detail on the eventful Spanish meeting where China emerged strong in Wake and Power — the two classes where the U K light was dimmed by misfortune

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NEXT MONTH

We have a report by Martyn Cowley on the World Free Flight Championships plus a full feature on Vintage Day at Old Warden Vintage Corner will also be looking at some of the old timers including an interesting piece about Jack Frost' Scale drawings of the Deperdussin Ron Pollard s Gamage Cup winner drawings and also of course our free competition

ON THE COVER

The French control line stunt team at this year s European Control Line Championships held in Genk, Belgium Full report with photographs on page 506 Inset Ray Sibbald, new European Combat Champion We congratulate him and his pit crew, Dave Willis and Neil Gill, for their sterling effort

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Aeromodeller Magazine (ISSN 0001-9232) is published monthly by Model & Allied Publications Limited P O Box 35, Bridge Street, Hemel Hempstead Herts HP1 1EE, England Tel Hemel Hempstead (0442) 41221 Second class postage paid in the U S at Milwaukee, Wisconsin and at additional offices Distribution to North American hobby and craft shops by Kalmbach Publishing Company, Milwaukee Wisconsin Tel 414-272 2060 Distribution to news stand sales by Eastern News Distributors Inc , 111 Eighth Avenue, New York, N Y 1011, U S A Tel 212 255-5620 Distribution to museums and bookshops by Bill Dean Books Ltd , 166 41 Powells Cove Boulevard Whitestone, New York 11357, U S A Tel 212-767 832

Advertisement Offices: Model & Allied Publications Ltd , P.O Box 35, Bridge Street, Hemel Hempstead, Hertfordshire HP1 1EE Tel Hemel Hempstead 56117

Subscription Department, Remittances to Model & Allied Publications Ltd , P O Box 35, Bridge Street, Hemel Hempstead, Hertfordshire HP1 1EE (subscription queries Tel 0442 51740) **Direct subscription rate** £10 00 per annum, including index Overseas subscriptions £11 00 or $25 00

Change of address U.S. Postmaster. Send address changes to Model & Allied Publications Ltd , P O Box 35, Bridge Street Hemel Hempstead Hertfordshire HP1 1EE, United Kingdom

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

Aeromodeller is printed in Great Britain by Leicester Printers Ltd , The Church Gate Press P O Box 20, 99 Church Gate, Leicester LE1 9FR Mono Origination by Multiform Photosetting Ltd , Cardiff, for the Proprietors and Publishers, Model & Allied Publications Limited (a member of the Argus Press Group) Trade Sales by Argus Press Sales and Distribution Limited, 12-18 Paul Street, London EC2A 4JS

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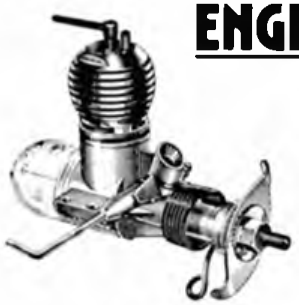

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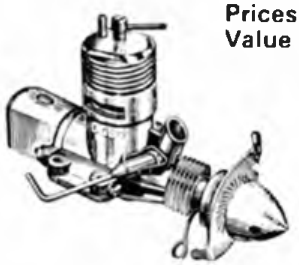

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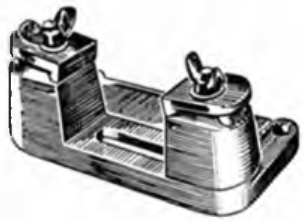

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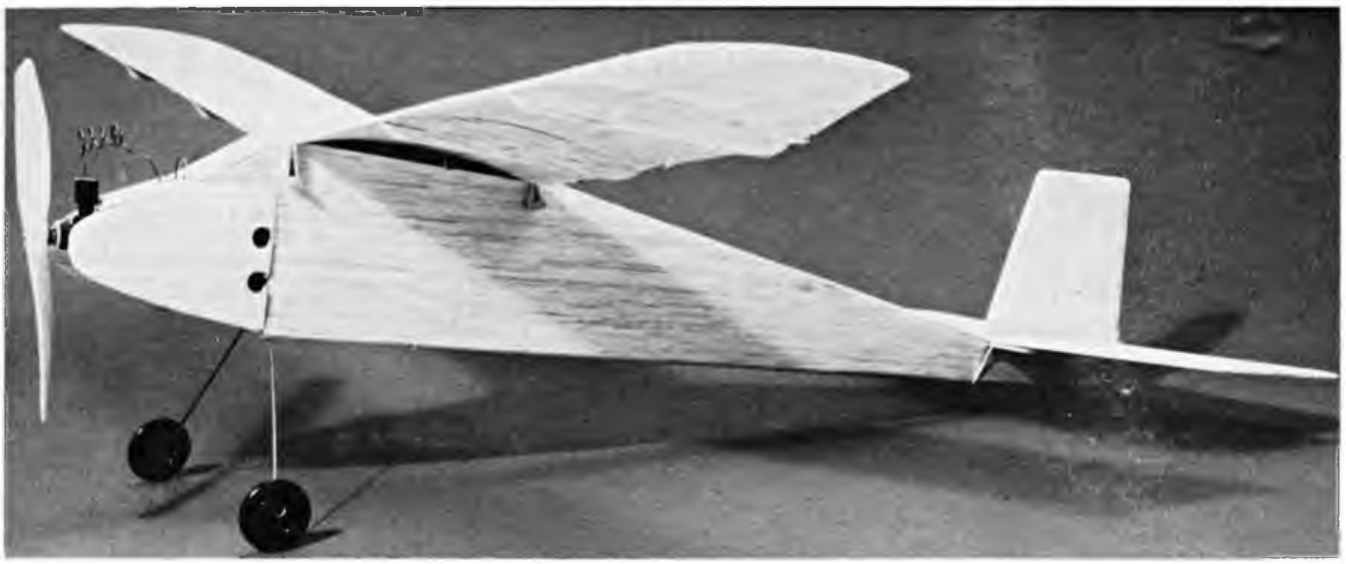
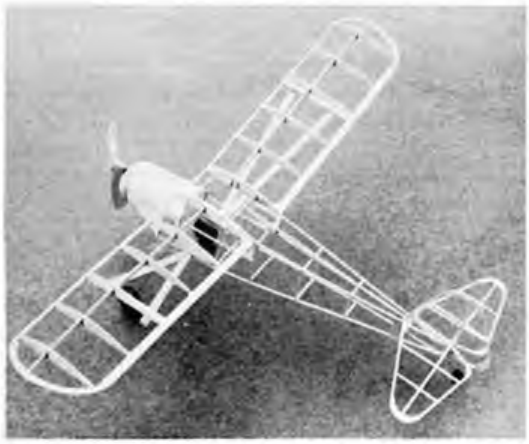


ALL SHEET?

or BUILT UP?



Quick and easy. That describes all-sheet balsa construction. *Very* quick, too, if you use one of the modern cyanoacrylate adhesives (use the thicker-gap filling type). And all-sheet construction is quite suitable for models up to about 24-inch span with very little weight penalty. That means all-sheet power models (rubber, CO_2 or glow engines) can perform really well. At the same time they are robust, and easily repaired if damaged.

Just a few points to bear in mind. Always use the *best* balsa, and choose the *lightest* sheet you can find. Select *quarter-grain* (Solarbo RIB STOCK) for the tail surfaces, and for flat wing panels (like the Piper). Cambered wings are best on models over 12 inches span — and here you need to select sheet which bends easily edge to edge. If you use external ribs — like the model in the heading photo — cut these from *quarter grain* again.

Most of the weight will be in the fuselage, so here choose really light sheet (not quarter-grain). If you don't your model will probably turn out tail-heavy and need ballast added to the nose. That's a double weight penalty! Weigh all the sheet in your stock on a letter balance to find out which is the lightest. Every little saving can help here.

As a general rule, the lighter the model the better it will fly. So that's the real reason for built-up, tissue covered construction. It reduces the amount of 'solid' material the model has to carry in flight. It is also more realistic for scale models of fabric covered aircraft — but that is another story. True scale airframe construction with close-spaced ribs is 'heavy' construction in a model designed primarily for *flying*. So in Peanut and similar sizes, wide (non-scale) rib spacing is the order of the day. The right approach is not to make any part of the airframe stronger, or heavier, than it need be.

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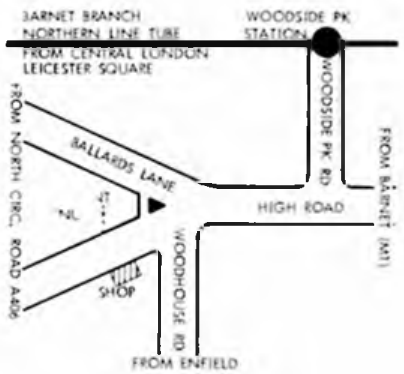

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Find the balance point MODEL COMPETITION

The great Aeromodeller Give away contest £250 of prizes must be won

This month twenty CO_2 motors must be won

Three Brown Junior Campus A-23 motors, Six Turbo-Tank 3000 units, and eleven standard Telco motors, all complete with charger unit.

RULES

1. The competition is FREE and open to all Aeromodeller readers.
2. The model has been erased from this picture. Use your skill and judgement to determine not just the position of the model in the picture, but its exact balance point.
3. The first twenty entries with the centre of a cross nearest the correct balance point will be judged the winners of this month's prizes. If you prefer not to cut the picture from this page a same-size facsimile (photostat) is acceptable.
4. Any number of entries may be made, but each entry must be accompanied by a separate entry coupon, clipped from the page. The coupon must be the original — photocopies are not accepted.
5. Only five crosses per entry.
6. Entries in this October edition competition close after first post on October 29th 1981. Results will appear in Aeromodeller December '81 edition.
7. The Editor's decision is in all cases absolutely final and no correspondence will be entered into nor responsibility accepted for late, mislaid or lost entries.
8. Employees of MAP Ltd. and their families are not eligible.

NEXT MONTH . . . another great contest for our readers

To Aeromodeller Magazine. Please accept my entry for your October 1981 "Find the Balance Point" competition. I understand the rules of the contest and accept the editor's decision as final.

Signed.....

MODEL COMPETITION, PO BOX 35, BRIDGE STREET, HEMEL HEMPSTEAD, HERTS HP1 1EE

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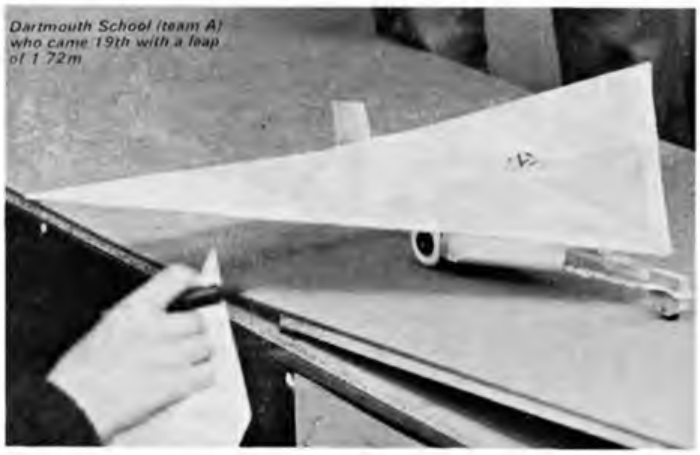
Entry Coupon

Aeromodeller 'Find the Balance Point Contest' Sept. '81

Queen Elizabeth School (team B) entry. Placed 11th with a leap of 2.44m.


Dartmouth School (team A) who came 19th with a leap of 1.72m

THE GREAT PING-PONG BALL LEAP

Last year Somerset schoolchildren of the 11-16 age group participated in what was then described as a 'bizarre' event, *'The Great Ping-Pong Ball V.T.O. Race'*, a competition, similar in style to the B.B.C.'s Great Egg Race.

This year, following the success of the 'V.T.O. Race' Somerset and Devon schoolchildren have been engaged upon the problems posed by *'The Great Ping-Pong Ball Leap'*. The problem was 'to build a vehicle to carry a ping-pong ball the furthest distance through the air after take-off from an inclined ramp'.

Every vehicle had to be 'powered' by stretched rubber and had to obtain its traction only by contact with the top surface of the ramp. Although the vehicles could start anywhere on the slope they had to be stationary before being released. Other rules stated that the surface of the slope must not be altered in any way by the vehicle and that all parts of the design must travel with the ping-pong ball. These rules are, in effect, a design brief for the pupils to work to. They direct pupils' activity and yet allow a variety of designs to emerge.

Teams from thirty five schools throughout Devon and Somerset assembled at Exeter University, School of Education, on 30th June for a day of testing. A maximum of four vehicles from each school was permitted and a total of seventy three vehicles were tested during the day. Each vehicle was tested three times the best leap of the three counting towards the competition.

There is no doubt that a lot of effort had been expended by pupils in producing their vehicles. In one case, the vehicle at the final was the tenth prototype built! This effort had produced a variety of designs ranging from 'flying pogo sticks' to those of a distinct aircraft shape. The wings of the latter varied in shape, size and their position on the fuselage. Different drive system were also evident. Wheels varied in size and often had 'tyres' of a material chosen for its good frictional properties.

As the tests proceeded excitement mounted, as first one machine and then another leapt the greatest distance yet recorded. Consequently the final round was one where each vehicle was 'wound up' to its maximum and nothing was spared in a last attempt to 'out leap' the other competitors. Throughout the contest there was fervent activity in the 'pits' where hurried modifications and 'tuning' were carried out with a watchful gaze on the performance of other vehicles.

The winning device resembled a self-propelled javelin and was built by A. Salvidge and S. Biddiscombe of Whitstone School, Shepton Mallet. For the winning leap of 7.96 metres they received the Westland Trophy for their school, £30 and a commemorative trophy each.

HILLINGDON HOUSE FARM

This long standing model flying site which borders the A40 and is adjacent to the Hillingdon Ski slope, near Northolt aerodrome, London, has been under dispute for some time due to noise.

More recently the National Air Traffic Services (a joint Civil Aviation Authority/Ministry of Defence organisation) has objected to its use due to the proximity of low flying full size helicopters.

The S.M.A.E. have put out an official statement, asking that all model flying (except control-line) should cease forthwith.

They also say how disappointed they are, that this most suitable site has to be given up after so many years, especially as there has been no reports of air traffic conflict. However, the London Borough of Hillingdon is currently drafting Bye-laws, which will offer other sites in the area to the effected classes of models. All this will take several months to gain approval and come into effect.

These same Bye-Laws will also make it illegal to use the Hillingdon Farm for all model flying other than control-line.

In view of the concern expressed by the National Air Traffic Services, the S.M.A.E. requests that all R/C and free flight flying should stop now rather than wait for the legal formalities to catch up.

SHUTTLEWORTH AIR PAGEANT

This the most comprehensive air show in the calendar of the Shuttleworth Collection will be held on the 27th September. As always it depends on the weather but with luck they will fly aeroplanes from most eras, such as the Boxkite of 1910 to the RAF's front line Jaguar of today. A sight that is rarely seen will be a fly past by two Spitfires, one owned by Shuttleworth and the other from Rolls Royce. There will also be flying, aircraft from the 1914-18 war period, plus an aerobatic display by a Rothman's Pitts and a Wallis autogyro. A display not to be missed and at the usual price of £6 per car, inclusive of all occupants, presents good value.

Letters

COMMENT

Dear Sir,

At last an editorial (August '81) that puts Aeromodelling into perspective, there must be a very large silent majority of fly-for-fun modellers who are content to sit back and let the competitive minded element monopolise your (our) magazine.

In the report on the Free Flight Nationals, in the 20 competitions held, 560 people actually flew and in the results the same names are repeated several times. This is the largest free flight event in the Aeromodelling year and assuming that only 50% of all the competition modellers were entered, 1000 people can't keep all the model shops that advertise in your magazine in business.

What has happened to events such as The All Britain and Northern Heights Rallies which were the great annual events for fly-for-fun modellers, free flight, control line and on a small scale, Radio, apart from the 3 annual events at Old Warden present day events seem to have been taken over by Radio.

During the past twelve months of teaching my son about the hobby, I have had more enjoyment by going back to basic modelling and having 4 fly aways with an Achilles in the past 2 weekends I now realise what I have been missing over the past few years.

Please therefore, can we have more articles like Alex Imries, plans like little Willie and are Scale Matters angled too much at the competition minded minority? Scale models are also ideal for fly-for-fun.

Luton, Beds. **Brian Welch**

Theoretical Reply

Dear Sir,

In the April 1981 issue, Dave Hipperson in his Free Flight Scene report discussed wing loading and its effect on glide performance and asked a number of questions.

I have tried to extract the questions and answer them. The answers are verbalised, which always makes them long-winded, but mathematical summary is included. (Available from editor on request).

Finally although well versed in the theory, I must stress that there is nothing that I can teach Dave about actually flying model aeroplanes!

Manchester **Reg Boor**

Glide Performance

Dave Hipperson seems to be asking five questions:

1. *What is the effect of wing loading on glide performance*
2. *What is the effect of turbulence on glide performance*
3. *Is there an ideal gliding weight*
4. *Why do two very different models have similar performance*
5. *In what way is drag a factor on performance*

There are two ways of changing the lift coefficient at which a model flies. One is by changing the c.g. position at constant tail setting and the other is by changing the tail setting at constant c.g. Having obtained a desired trim state by adjusting these quantities, we have fixed the lift coefficient at which the model flies and changing the weight by loading at the c.g. does not change the trim, the model naturally flies faster or slower to generate the lift required to support its weight.

Minimum sink rate, which incidentally also implies minimum power required for level flight, is obtained at a trim where lift (force or coefficient) raised to the power 3/2, divided by the drag (force or coefficient) is a maximum. "To the power 3/2" simply means the square root of the cube. This ideal trim point the modeller achieves by accurate observation of the time from height and careful adjustment of c.g. and tail setting. It is always near the stall, particularly for models.

Leaving the trim constant at the ideal point, sink rate is then proportional to the square root of the wing loading. Double the wing loading and the sink rate increases by a factor of root two, the model descends 41% faster than it did before. Halve the wing loading and the sink rate decreases a fraction of one over root two, the model descends at 71% of its original rate. Question 1 answered.

However, changing the weight (wing loading) not only changes the sink rate, it changes the forward speed of the model as well, by the same square root law. Now, in turbulent conditions, the model is subjected to changes in airflow, vertically, fore and aft and laterally. We shall discuss the vertical airflow changes first. These change the incidence of the wing (in particular) and so push the model away from ideal trim and possibly stall it on occasions. But the faster the model is flying, the smaller the disturbances in incidence due to the vertical gusts. So, although increasing the wing loading increases the sink rate, it also increases the flying speed, so reducing the turbulence incidence changes and the model is less disturbed from trim and isn't stalled as often.

Question 2 is now partly answered and perhaps question 3 also, in that presumably there is a best wing loading for a given model in given turbulence.

The effect of fore and aft gusts is small if the model drag coefficient is low. This completes the answer to question 2 and partly answers question 5.

Completing the answer to question 5 will answer question 4. It is possible to separate out the effects on glide performance of parasite drag, aspect ratio and wing loading when it can be seen that minimum sink rate can be kept constant (at different trimmed airspeeds) by an interplay of these parameters. The differences between say, a CO duration model and a HLG can be described by the three parameters and explains the similar glide performance observed.

WORLD CHAMPIONSHIPS RESULTS

F1A GLIDER

	Individual			Team	
1. A. Vidensek	Yu	1253	1. USSR		3406
2. A. Lepp	USSR	1231	2. Czech		3313
3. P. Lagan	NZ	1227	3. UK		3126
8. P. Williams	UK	1141			
20. T. Cordes	UK	1045			
37. A. Crisp	UK	940			

F1B WAKEFIELD

	Individual			Team	
1. L. Doring	EDR	1800	1. France		3724
2. A. Landeau	Fr	1690	2. China		3532
3. P. Bes	Fr	1626	3. Netherlands		3512
14. R. Miller	UK	1192	11. UK		3270
17. B. Spooner	UK	1183			
69. R. Pollard	UK	895			

F1C POWER

	Individual			Team	
1. A. Meczner	Hu	2002	1. USA		3724
2. A. Verbitski	USSR	1809	2. China		3689
3. Z. Wang	China	1786	3. USSR		3656
4. H. Morita	Ja	1675	4. UK		3625
5. K. Faux	UK	1673			
13. S. Screen	UK	1361			
43. R. Monks	UK	1106			

F3B THERMAL SOARING GLIDER

	Individual			Team	
1. D. Holley	USA	11360	1. W. Germany		33572
2. S. Bannister	UK	11283	2. USA		32613
3. W. Schaeffer	FDR	11274	3. S. Africa		32111
4. R. Decker	FDR	11264	4. Italy		30890
5. W. Vauth	FDR	11033	7. UK		30512
14. D. Dyer	UK	10570	**Full reports next month**		
38. D. Worral	UK	8659			

What's Happening?

For free flight venues see Free Flight Scene.

September 20
NORTH LONDON ALL SCALE DAY — Venue Baldock, Beds.

September 20
COTSWOLD RCS NATIONAL SUPER 60 RALLY *CONCOURS FLY FOR FUN, SUPER 60 RACE, GRANDE EN MASSE TAKE OFF, VINTAGE KEILKRAFT MODELS ALSO QUALIFY.* 27.35 UHF frequencies and free flight £1.50 per entry, £2.00 on the day. SAE Venue Cocklebury Farm, Aldsworth, Nr. Bibury, Glos. Contact D. Parish, Laurel Cottage, Randwick, Stroud, Glos. GL6 6HL.

September 20
T/S F3B SOARING LEAGUE Venue Maidstone SMAE MEMBERS ONLY Contact Geoff Dallimer 04626 78745

September 20
WOLVES 2nd FLY-IN (CONTROL LINE) *F2B • NOVICE & JUNIOR STUNT. CLASS II SCALE. CARRIER — SMAE OPEN & 40 PROFILE MINI GOODYEAR. SMAE RULES BUT NO AGE LIMIT. CLASS 'A' COMBAT (DIESEL) SLOW RAT RACE. SILENCERS ESSENTIAL ALL CLASSES EXCEPT MINI GOODYEAR.* Venue Lucas Aerospace Sports Field, Stafford Road, Wolverhampton (A449) Contact C. G. Shelly Wolverhampton 330387

September 20
SMAE LONDON AREA MEETING — *C/L SPEED ONLY.* Venue Old Army Parade Ground, Bicester. Contact Paul Eisner. Tel. Lea Valley 760849

September 27
ROMANWAY MFS — *VINTAGE & ELECTRIC FLY-IN (R/C ASSISTED) ALSO CONTROL LINE.* Venue SAE to G. Johnson, 37 Oxford Road, Kirtlington, Oxon.

September 27
C/L F2C Venue Elliotts. SMAE MEMBERS ONLY. Contact C/L Tech. Comm. Chairman.

September 27th
BATH MAC *F/F. O.P. O/R. O/G. ALL IN FAI. ALL IN MINOR CO. AND HLG. C/L FAI COMBAT. 'A' COMBAT. TEAM RACE FAI & 'A'.* POSSIBLY AEROBATICS. Venue Merrylield, Nr. Ilminster, Somerset. Contact E. Burles Tel. 331126

September 27
R/C FAI PYLON Venue Fulbeck. SMAE MEMBERS ONLY Contact Keith Hutson 0462 81270

October 4
AUTUMN KITE FESTIVAL. Old Warden, Beds.

October 4
R/C FAI AEROBATICS Venue Bulford Camp. SMAE MEMBERS ONLY. Contact Geoff Franklin 0533 548313

October 4
SMAE SOUTHERN GALA *F/F O.P. O/G. O/R. 'A'. CdH. A1. HLG & CO. C/L F2B and NOVICES. R/C SCALE STAND OFF AND STANDARD AEROBATIC.* Venue RAF Odiham, Hants. SMAE MEMBERS ONLY. Contact N. F. Coulin, 7 The Green Walk, Willingdon, Eastbourne, East Sussex.

October 4
ST. ALBANS THERMAL SOARING CONTEST, carried over from May 3rd. BARCS League event. Pre-entry £2.50 SAE and Frequencies to J. Powell, 7 Howland Garth, St. Albans, Herts. AL1 2NY.

October 11
R/C FLY FOR FUN SMAE MEMBERS ONLY. Contact Dick Hall 0705 593048

October 11
T/S F3B SOARING LEAGUE Venue Church Fenton. Contact Geoff Dallimer 04626 78745. SMAE MEMBERS ONLY.

October 11
SMAE NORTHERN GALA *F/F. OR. R/P. G/L. 'A'. FAI CL.B. R/C AEROBATICS* for SMAE Trophies. Plus other none SMAE events. SMAE ONLY. Venue Church Fenton. Contact .0904 76794

October 18
SCALE AUTUMN MEETING. R/C STAND OFF. C/L SUPER SCALE. SMAE MEMBERS ONLY. Venue RAF Upwood. Contact John Long.

October 18
ELLIOTT AUTUMN RALLY — *B TEAMRACE, GOODYEAR FAI TEAMRACE. 'A' COMBAT. SPEED. AEROBATICS.* Venue Marconi Avionics, Rochester, Kent. Contact Peter O'Neill. Tel. 732 57899

October 18
PETERBOROUGH MFC *'A' COMBAT.* Venue The Embarkment, Peterborough. Contact Neil Gill, 4 Beech Road, Glinton, Peterborough PE6 7LA. Tel. P'Boro (0733) 252645.

EVENTS

October 9-11
SCALEDOWN '81 EXHIBITION — 14 Categories including two for aeromodelling 'Flying' and Static. Venue Brian O'Malley Central Library and Arts Centre, Rotherham. Contact R. Milnes, 528 Retford Road, Woodhouse Mill, Sheffield S13 9WE.

EUROPEAN CONTROL-LINE CHAMPIONSHIPS

Genk, Belgium, 7th-11th July
Report by Jim Woodside

IN THIS REPORTERS opinion the contest site at Genk is the best in western Europe. Other venues have facilities which are individually better but no one offers four contest circles PLUS three tarmac training rings PLUS three grass combat rings. Adjacent to the model flying site is a light aircraft club whose bar facilities were open to all and most welcome it was in the generally hot conditions to have a beer or three in the shade. In short superb.

And of those other important aspects: accommodation and food? Again, these were fine. All competitors stayed in the hostel section of what I think was a boarding technical school. A little austere but spotlessly clean and comfortable enough. No modelling equipment was allowed into the accommodation but there were adequate working areas at a hangar on site. Contestants who needed to test equipment were fortunate to have the above mentioned practice areas and also the fact that there was no curfew hour. All meals were taken on site and were of a very good standard. A local hotel — The Oasis — provided all the food and catering staff. At all times there service was friendly and efficient.

Obviously good service like this does not happen without the overall organisation being well prepared, dedicated and thorough. In this respect Fons Beckers (Contest Director) must be warmly thanked along with his team. Nor must we overlook the considerable assistance lent by the Dutch in providing personnel and equipment for speed and team-race. Thanks to you all.

There must be *some* complaint? The one that springs to mind is that during an important protest on Saturday, it was found that a member of the FAI jury had already started his journey home! Whatever the reason, this is not acceptable — the competitors are entitled to a properly governed event. The FAI jury must be able to give judgment rooted in the Sporting Code regardless of emotion and popular feeling.

This apart my abiding recollection is one of a contest well run, outstanding performances, good weather and good companionship.

Oh! — the results. Yes — they got better, faster, trickier as we shall see.

The new Rossi 15 Mk III shown with the new pipe. The engine on the right is the 'normale' version for F2F.

Class F2A — Speed

Defending Champion: *P. Constant, France (also 1980 World Champion)*
Event Director: *Ron Brands.*

Ron and his team from Holland ran the event smoothly. They brought along the Utrecht light show which tells a competitor whether or not his flight is official (within the three minutes allowed and 10 laps in the pylon yoke) and gives a speed readout on an illuminated board.

Thirty-two fliers entered, with full teams from Switzerland, Hungary, Yugoslavia, Italy, Bulgaria, France and Russia. Notable absences were Emil Rumpel, Jurgen Lenzen from West Germany and regular Italian experts Dusi and Ricci.

Speed is quite a difficult event to follow for those not intimately involved. However the occasional high revving sound followed by cheers and hand clapping, showed that the competition was both close and fast. In fact the first six places changed hands regularly over the three rounds of the competition.

Round 1 — This was flown in the morning in conditions which in the U.K. would be described as hot. In the fourth flight Louis Bilat (Switz) took the lead using a Rumpel pipe on a model which has both the wing and tail inboard — entitled 'Insider' — 259.9 kph. Six flights later, Parramon (Spain) took over with a 263.7 flight. Late in the round Kajic of Yugoslavia split these two with a flight of 260.7. Hopefuls who did not score a time were Constant of France and Horvath of Italy.

Round 2 — Saw lone lady contestant Horvath put away a 260.7 to equal Kajic. Bilat managed an increase to 263.9 which gave him the lead at the end of Round 2 by 0.2 klm over Spain's Parramon. Mult of Hungary who has been successful in the last year with his very long wing model (1750mm), was still not in contention having only a 252 flight from round 1. Stranger still, Patrick Constant had not yet recorded a time and this was to continue to the end of the contest. It must be recognised though that rather than record an average time, Constant preferred to record no time at all. The effort of the last two years has burnt out either the equipment or the Gallic enthusiasm.

Round 3 — the last chance to make a mark. First to fly was our own Paul Eisner. Paul's equipment was very reliable and was one of the few fliers to record three times. He would be the first to admit though that his engines are just not competitive. Our other flyer Dick McGladdery, managed to improve his speed to 299.6 kph using his Rossi R.V. using his carb flapper, as described in this journal February 1980.

In his last flight, Mult found form with a 268.9, good enough for the lead. Ms. Horvath pulled out a 267.7 Kajic and Bilat were unable to counter and interest centred on Breitenbach winner Parramon. He did not falter with a superb 270.1 kph to take top honours. In all a close and interesting contest.

It would seem that the main problem for most contestants remains the availability of engines. To my knowledge Mult and Parramon are using Rossi cases which contain almost a complete set of new home-produced parts, cylinder-pistons included.

Several of the new 12mm shaft Rossi were seen but none of them featured in the contest as they seem reluctant to rev. Still it is early days and much sorting out remains to be done.

Parramon's winner featured a 1000mm wing, a single blade prop, centrifugal fuel switch, and in flight revs in the range 33-34,000 rpm. He admitted that his 'secret' is the design of his resonant tuned length pipe. No details of this are yet available. The pipe in his contest model was fully shrouded. This may be to control its temperature but is more likely to keep its design covered.

Maslenkin of the U.S.S.R. placed 20th with 245.1 kph.

Left. U.K. S... left to ri... MacGladdery and Smith helped... Right. Parramons model which had 3-4 m wing span. Note the shrouded pipe.

Above, Compostella's winning model 'Tango'. Billon placed 4th shown here with his reverse model 'Olympus'. Below, Peter Tindal's large semi-scale C.A.P. in orange and black, powered by a Merco 61.

F2B — Aerobatics

Defending champion: *G. Billon, France*
Defending nation: *France*
Judges: *Z. Liska – Chief* *Czech*
J. van Ommeron *Holland*
M. Harvey *G.B.*
W. Groth *Germany*
L. Gregori *Italy*
British Team: *Barry Robinson, Bill Draper, Pete Tindall.*

The weather is always a potent factor in stunt, its vagaries often being the cause of tales of woe. This year the weather conditions varied between flat calm and dead still. I exaggerate but only just but some fliers, Barry Robbinson amongst them, flew in air so still that one consecutive manoeuvre was disturbed by the 'dirty air' of the first shape! However the field of 46 fliers did have equable conditions.

Round 1 started at 9.00 am on Thursday with Arnitzboll of Denmark in the luckless position of first flight — his score being 2216. Fifth flier was Skrabaleth of Czechoslovakia, with his HP40 powered *Progress 81*. This features a system of 'Proportional' control which gives more movement near the extremities of the handle movement. Details have been promised so watch out for future editions. After the contest, several fliers flew Progress, including Compostella, and seemed impressed by its performance. The elevator travel is 60° total and the flaps 40° total. Skrabaleth's score was 2694 (6th).

Marc Lavalette flew a handsome new model called *'Panter'*. Wing and tail are from the *Olympus* using *Detroiter* construction methods. The fuselage follows the style common in the better known U.S. designs. Finished in white with red and blue trim, the MERCO 49 powered model flew very well — 2690 points.

Sbragia of Italy flew a new model called *Famos* — ST46 powered. He seems to have tamed his style since I last saw him fly in 1977. Then the speed of his model brought forth gasps of amazement. Flying now at about 5.2 secs a lap, his manoeuvres looked well shaped with softish corners — 2751 put him 3rd. The rest of the French, Italian and Czech teams established strong claims in the first round. It was pleasing to see Bill Draper in contention in 11th place. Pete Tindal had to wait all day as he drew the last place. He feels he fluffed it this round. The Merco 61 in his huge C.A.P. semi-scale model seemed to be running rather too slowly to develop enough power.

Round 2 saw Pete Tindall improve 217 points which gave him 17th place — tantalisingly close to the fly-off? Barry Robinson's model did not seem to suit such still air — the schedule seemed a little 'soft'. Barry did voice a preference to some breeze. Meanwhile Bill improved to 2739 with some crisp manoeuvres to stand 6th at the end of round 2. Only one flier improved enough to break into the top 15 as established in Round 1, Trudler of Israel took Dr. Egervary's place.

Fly-off

With Italy, France and Czechoslovakia each having three counting fliers in the last fifteen, the team prize looked interesting — Billon does not count in the team prize as defending champion.

Compostella certainly put his mark on the contest. All of his four flights scored over 2800. He used his faithful *TANGO 4* (A.P.S. Plan No. CL/1332) in white and red powered by a ST46. His pullouts were consistent in height. Also the round patterns were very well ordered — Sbragia and Rossi finished 2nd and 3rd to put the team prize beyond doubt. Billon had the misfortune to wreck his No. 1 model when a line connector broke. However Rampnoux of France looks like a man to watch. His pattern was strong in all departments needing only more confidence. Bill Draper finished 10th which he found encouraging. While his pattern was good, some of the squares rose a little at the bottom edge and the hourglass lost shape.

There seemed to be nothing startlingly new — after all stunt tends to progress by trends. If there was a trend, it seemed to be towards, by European standards, more elaborate paint jobs. Most fliers acknowledge that a crisp design and smart finish help in the presentation. It also seems to me that some fuselage shapes such as Stilleto/Genisis types emphasise squareness, regardless of the quality of the manoeuvre. Large engines have long been accepted. While the ST46 was the most popular engine, the MERCO 49 is becoming popular again. Whilst heavy, it delivers good, smooth power to pull large models through the pattern.

The most attractive model? Claus Maikis' new *'Mood Indigo'* (A.P.S. Plan No. CL/1422) looked good but for me the model of the Czech flier Cani looked best — just my opinion though. Young Dutchman Janssen had a fine model with many clever features including removable wings.

The judging was not, to my knowledge, criticised which makes a pleasant change. (Liska's long experience of criteriums spreads back through 30 years! Ed). The standard of flying also seems to have improved especially in the middle orders with the scores being closely bunched.

Finally congratulations to the Italians for their clean sweep.

F2C — Teamrace

Defending champions: *Visser-Buys, Holland*
Defending nation: *Holland*
Jury *Bob Horwood, Chief.* *G.B.*
Pietro Fontana *Italy*
Rob Metkemeijer *Holland*
Circle Marshall: *Theo Pijls*
British Team: *Smith Brown*
Langworth Broadhead
Wilson Gardiner
Entry: *43 teams.*

For devotees of team race the time before the contest begins is as interesting as the contest itself. During this period a stopwatch is essential equipment. As each team appears to perform its period of official practice, these watches are snapped on to record the time taken to fly ten laps — 1 km. By this shorthand, teams are graded into probables, possibles and no-hopers. Wiser observers know that race tactics and fate will play a part in the genuine races but nonetheless join in the fun. This year the bunch were circulating in the range 19.5 — 20.0 seconds for ten laps, which represents an airspeed of 112 — 116 mph. The contest looked set to be quick with a predicted race of 3 minutes 40 secs being the *slowest* qualifying time to reach to nine who would fight out the semi-finals.

At last years World Championships the Russian teams had been eclipsed but now they were here again and interest was high. When Barkov Suraev were timed at 17.8 seconds (125 mph), Onoufrienko Chapavolov 19.0 seconds (118 mph) and Kramarenko Kouznetsov at 18.0 seconds (124 mph) there was much depression amongst the buffs — where did they get such horse power! However as noted earlier, airspeed alone does not win races and the Soviet team lacked the solid race experience which many of their rivals have in abundance. If, like the shortcomings in engines and airframes, this is rectified by the '82 Championships, in Sweden 1982 looks to be a vintage year.

Round 1: in the first race the jury showed that they were taking a firm grip and only Fisher Stranlak completed the course in 3.46. Heat 3 was keenly anticipated for Kramarenko Kouznetsov's flying wing with massive spinner and single bladed prop. Everything went to plan except that for some reason the Russian engine stopped at about lap 80 needing an extra stop. Despite this, the time was 3.38!

In the next race our own Dick Wilson found that his normal flying style led to an early disqualification but Geschwendtner/Mav with super stops put away a 3.35 with the B.G., which now

Close up of Barkov's model who was placed 4th in F2C. Below, The new Soviet team of Kramarenko and Kouznetsov.

Metkemeyer above and Flores extreme right look well pleased with their victory. Centre the Rossi / Rossi team who were placed 2nd.

has the cooling fins machined direct onto the liner.

Langworth / Broadhead in the next race could not capture their normal domestic airspeed although in all other respects they were efficient — 3:53.7 was their time. Much hard work before round two yielded only an improvement to 3:50.

Race 7 saw Onoufrienko using his reserve model to record 3:49 while in the next race Barkov Souraev went off cold, warmed to his high airspeed but then was unable to restart the engine at 58 laps and finally recorded a much below potential 3:51.

Race 9 saw new team Rossi return a 3:44 which was the beginning of their run-up to an eventual 2nd place.

Heat 11 had Visser / Buys drawn against Smith / Brown. While the airspeed was similar, Colin Brown's immaculate pit work won the day in 3:37.9 as against 3:42.3, which in the end gave the Dutch the slowest time into the semis.

Near the end of the round Metkemeijer Flores appeared, having complained of trouble in setting the engine in practice. The FMV has had crankshaft problems and it appears that the new AAC liners with integral fins can produce more power than the crankpin can take. It goes blue sooner (usually) or later. A new stronger crankcase is now planned. However the engine behaved and while sounding light running, returned the fastest heat of 3:31.1 despite some combat like capers with the Swiss team's lines.

Round 2. Those who fluffed the 1st round are looking for the 'big one' and those standing at 6th — 9th place hoping they would hold in.

This time Barkov made no mistake and despite yet another slow stop, came home in 3:32.7. While Langworth Broadhead were looking for a good race, Rossi Rossi came home in a secure 3:37. Certainly the Cipolla engine has plenty of power and must be considered seriously by the fraternity.

Dick Wilson, nervous of another disqualification, could manage only a 4:02. Visser Buys and Smith Brown were drawn together again (2000:1 chance) and the race ended up a solo race for the British — 3:36 for the U.K. team.

In the tenth race Bengstear Bollin (Sweden) using the B.B.F. engine (see Peter Chinn's column August 1980) turned in a 3:43.4. This style of crankcase which has long lugs which

Final Results F2D Combat

	No.	Name		Points
1.	162	Sibbald R.	G.Britain	300
2.	156	Edslev U.	Denmark	198
3.	160	Ougen T.	France	280
4.	186	Willmar P.	Germany	22
5.	168	Koch A.	Holland	346
6.	163	Tribe P.	Great Britain	264

Final Results F2C Team Race

	No.	Name	Round 1	Round 1	Round 2	Semi 1	Semi 2	Final	Engine
1	118	Metkemeyer / Flores	Holland	3.31.1	3.50.3	3.49.1	3.35.7	7.11.4	FMV
2	124	Rossi / Rossi	Italy	3.44.1	3.37.3	3.29.5	Disqualified	7.15.0	Cipolla
3	120	Visser / Buys	Holland	3.42.3	Disqualified	3.41.6	3.44.8	7.52.9	FMV
4	134	Barkov / Souraev	USSR	3.52.0	3.32.7	Disqualified	3.57.3	O.D.	
5	107	Geschwendtner / Mau	Denmark	3.35.4	3.43.4	3.49.6	4.31.8	B.G.	
6	116	Smith / Brown	G.Britaian	3.37.8	3.36.0	3.53.0	3.42.2	Nelson	

Final Results F2B Aerobatics

	No.	Name		Round 1	Round 2	Round 3	Round 4	Total	Engine
1.	083	Compostella L.	Italy	2843	2833	2836	2817	5679	ST46
2.	085	Sbragia G.	Italy	2751	2851	2784	2727	5635	ST46
3.	084	Rossi S.	Italy	2774	2830	2777	2768	5607	ST46
4.	069	Billon G.	Cham	2715	2776	2774	2795	5571	Merco 49
5.	062	Skrabalek J.	CSS	2694	2795	2680	2682	5477	HP40
6.	072	Rampnoux P.	France	2586	2813	2618	2658	5471	ST46

Final Results F2A Speed

	No.	Name		Round 1	Round 2	Round 3	Best Speed
1.	022	Parramon L.	Spain	263.7		270.1	270.1
2.	017	Mult J.	Hungary	252.9		268.9	268.9
3.	019	Horvath J.	Italy		260.7	267.7	267.7
4.	016	Szegedi S.	Hungary		259.9	265.7	265.7
5.	033	Kajic I.	Youg.	260.7	262.8	264.7	264.7
6.	024	Bilat L.	Swi.	259.9	263.9		263.9

NATIONAL TEAM RESULTS

F2A	*Score*	F2B		F2C		F2D	
1. Hungarian	794.3	1. Italy	16 921	1. U.S.S.R.	11 00.9	1. Great Britain	6 points
2. Yugoslavia	769.0	2. C.S.S.R.	16 404	2. Italty	11 03.0	2. Denmark	12 points
3. U.S.S.R.	761.6	3. France	16 266	3. Holland	11 19.4	3. France	12 points
4. Italy	759.9	4. Great Britain	15 443	4. Great Britain	11.27.7	4. West Germany	13 points
5. Bulgaria	689.1	5. West Germany	15 172	5. Denmark	12.06.1	5. Italty	14 points
6. Switzerland	517.8	6. Belgium	15 004	6. West Germany	12.27.1	Holland	14 points
						Spain	14 points
						Sweden	14 points

serve as the engine mount when screwed direct to the fuselage, seems to be the trend of the next generation of T.R. motors.

Hard luck team must be Fischer Straniak who missed a catch, glided a lap and still recorded 3:47.3 with their Cipolla powered model. Still — that's racing.

Semi Finals — before the semis began the jury addressed the pilots and ordered cool heads, allowed line crossing for 3 laps but no double overtaking of models which were separated by a reasonable (¼ — ⅓ lap) distance. The racing stayed keen but controlled.

1st Round: saw Rossi Rossi in the lead with a 3:29.5 which they established in a two-up re-run after Barkov-Souraev had to be disqualified for launching as Metkemeijer was landing. This was a regrettable decision as I thought Barkov had assumed the Dutch had already landed. Visser Buys had a 3:41.6 which was to be good enough and the rest were between 3:47 — 3:51.

2nd Round: Smith Brown came very close with a 3:42.2 but the luckless Soviet teams could still not get it on with Kramarenko disqualified for launching in a manner which impeded Smith Brown. The Danes seemed to have no engines left but Metkemeijer Flores put in a 3:35.7 taking full advantage of two warnings.

During process it was found that the reserve Rossi Rossi model did not have a marked engine — which merits a disqualification from the whole contest. In a flurry of protest and counter-protest between the U.K. and Italy, it was admitted that the processors could not verify that *all* engines had been marked and so the Italians were re-instated.

The Final: what the fraternity most wanted, after the disappointments of recent years, was a final which was close, fast and more than anything else, went full distance with all teams. And we got just that, between Italy Denmark and Holland.

All three teams were away within the same lap and were all closely matched. The Rossi model had *every* stop with *one* flick. Flores' stops were a little slower but Bert's experience allowed him, while not able to overtake, to build up those odd ½ laps, which in the end made the difference.

Visser's model needed a compression adjustment and could not match the others' speed in the later stages. The Dutch took the final by 3.6 seconds, the young Italians (18 years and 19 years old) took everyone's admiration and support. A classic race with all the ingredients we like.

F2D — Combat

Defending champion: *Vernon Hunt, U.K.*
Defending nation: *United Kingdom.*
Jury: *Richard Evans, Chief* *G.B.*
Karl Kosmalla *Germany*
M. Van Geytenbeck *Holland*
British Team: *Ray Sibbald*
Pete Tribe
Mike Whillance
Vernon Hunt - Defending Champion

Combat is about aggression and so it is entirely unsurprising that there are always plenty of

Extreme right, The British winning team, with Uffe Edslev who came 2nd. Left to right, Dave Willis and Neil Gill (pitmen) Ray Sibbald (European champion) and Uffe Edslev. Pete Tribe with Gill left and Willis right.

Right: World Champion Parochenko holds court with the Spanish and Danish fliers. Neil Gill releases Tribes model.

arguments, protests and sometimes outstandingly entertaining bouts of flying.

The quality of streamers at this contest were sub-standard in that they tended to break-off at the knot even when a cut was taken near the free end. At one point British team managers Rudd and King, stopped the contest altogether while the quality of the streamers was settled(?) The FAI jury supported the protest regarding the low quality of the streamers but they then did not order the round re-flown with new better streamers! A neat side-step.

The rules regarding the running of Combat heats are still needlessly complex and the sooner simpler rules are formulated, the better or the event will choke itself. As it was there were only 34 entrants.

The fliers were pleased to see that World Champion Dorochenko was present, as the winner was thus going to be a very worthy champion. The message of the Russian master has not taken long to filter down. Very light motors are useful in keeping manoeuvres tight. The Danes in particular had G 20s which looked almost unrecognisable for having had so much metal removed. Also the models are really striving for minimum weight such as maximum removal of foam or skeletal balsa structures.

In **Round 1** Pete Tribe and Ray Sibbald went through easily with Mike Whillance having a bye. However Vernon Hunt went out to Loet Wakkerman by 4 cuts to 1 and was fated to

Happy looking Jim Carollan assists in the line check.

survive only one more round.

In **Round 2** Titov of the USSR showed the usefulness of high speed and manoeuvrability when he defeated Koch of Holland. However the Russian was disqualified for leaving his lines over Koch's spare lines. The FAI jury allowed a re-fly, which surprised the crowd but to popular support Koch won the re-fly.

In the last sixteen, World Champion Dorochenko was defeated by the MVVS diesel powered models of Willmer of Germany, although the fact that the Russian had both models destroyed was an important factor! Larssen against Ougen was an enjoyable bout of close following. Ray Sibbald's defeat of Anderson by 3 cuts to 2 was much helped by the great pit-work of Neil Gill and Dave Willis.

With Tribe and Sibbald into the last eight, the chances of retaining the team prize were beginning to look good with the Danes as the main threat.

In the end Pete Tribe went out but it was to be Ray Sibbald's day. I still think he cannot believe he is European Champion.

Uffe Edslev's model was more manoeuvrable than Ray's Boomerang but very much weaker. With one cut-all in the final, Ray managed to win by being able to re-launch after a mid-air collision and so saved valuable ground time. Sibbald 300 points to 198.

So the UK managed to retain both the individual and team honours. Well done.

Technical details of the various classes will follow in later editions, so keep a look out for the Aeromodeller.

Titov's model, small area and minimum construction.

Bedfordshire Trio! The three Club Cadets mentioned have already been mentioned in this column, all model have now flown and are good performers. Left to right Tony Penhall, John Kemp and Peter Fisher.

Vintage Corner

BY ALEX IMRIE

SAM 35 Speaks

Members received another bumper issue when Number 10 (July/August) came through their letterboxes recently. Dimensioned plans for Stewart Rouse's 1932 glider and its rubber driven tug adorn the covers, and the give-away full size plan this time is for the 12 inch span Megow's SE 5 Pursuit. 'Vector', who loaned this plan gives an amusing account of the original model that he made from it during WW2.

Editor Ben Buckle explains why SAM has lost the use of Biggleswade Common as a flying site until further notice, he also reminds members about safe flying practices and suggests that a free flight director at flying meetings would be a step in the right direction. I heartily endorse this view, and well remember a few years ago being hit three times by models during one afternoon at Cranfield while in the car parking area. The most serious of these concerned Andy Anderson's *'Scram'*. The crankshaft punching a clean 'bullet' hole in the sheet steel body of my Volkswagen, (beside which I was sitting!), needless to say this did not do Andy's Brown Junior any good either.

Not all unorthodox vintage models were blessed with good flight performance, but the A. R. Bertill Twin Boom originally described in Air Trials December 1943 was said to be an exception. Les Hog is seen here at Old Warden with his Ohlsson 60 spark ignition powered version.

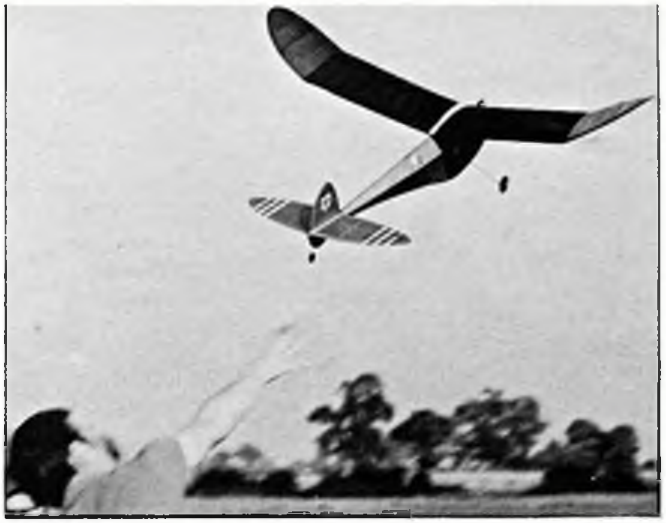
A large part of the contents is devoted to engines. There is a survey of what percentage bonus (in R/C Old Timer parlance) engines should receive. Rare diesels that cross Geoff Clarke's path are commented on in his lively counter talk. He also dispenses snippets of information, like the colour scheme for Bill White's 1944 streamline model, and tells of the difficulty of getting consistent full power from the Brown Junior on this model by venturi effect within the rearward facing air intake causing air starvation at high rpm. Geoff asks about the knurled knob adjacent to the carburettor on the original Frog 1.75 petrol engine illustration. This was a plug to facilitate cleaning the jet, and although also shown on the FROG general arrangement drawings, this was probably not fitted to production engines. Does any reader have a Frog 1.75 petrol engine with this fitting?

Dick Hardwick provides his impressions of SAM at the Nationals, notes on the Magnum 15cc four stroke engine, thoughts

Left, a nice study of aeromodelling as it used to be! Terry Camps lets his lightweight Kanga Dragonfly loose at Old Warden. This pre-war rubber design was sold by Kanga Aero Models of Birmingham.

Right, Geoff Hardwick with his Miss Exchange Club, a handsome Ben Shereshaw design of 48 inches span from Flying Aces, November 1938.

John Baldwin, this time with Maurice Schoenbrun's Rocketeer which was described in Air Trails November 1939. Model appears to be powered by one of the new generation ignition shunnes, the Remco 29.



The late John Haggart gives his Bill Engelhardt designed So-Long a powerful help into the Old Warden sky. This model was proxy flown with success in the eighth US SAM Champs by MAP's Ron Moulton, in 1974.

on enlarging working drawings and Xerox inaccuracies, reduced price balsa, etc. etc. All this and more is illustrated with vintage items ranging from Gamages 1910 ready-to-fly models to specifications/advertisements for the Brooks Skyrocket high-wing model, 18cc Comet, Synchro Ace and Special 9cc petrol engines . . . at the risk of repeating myself, this news sheet is a *MUST* for anyone interested in the vintage scene.

To buy or not to buy

In common with most things, the price of old engines has risen greatly over the last few years, and once a certain price has been paid for a particular engine, this seems to become the norm for that type regardless of condition. This means that high prices are now being asked for damaged, worn-out engines sometimes with parts missing. Most modellers aspire to making a real old timer fitted with an example of the original type of petrol engine that was fitted to the prototype, but be warned, that unless one is lucky, acquiring an old engine capable of reliable operation can be fraught with difficulties. This state of affairs has been brought about by a number of vintage engine dealer 'experts' who are always ready to descend on the unsuspecting enthusiast looking for an 'old mill'.

After the initial shock of hearing the asking price, which usually seems pretty high for a broken old clunker, missing parts like contact breaker and needle valve, the prospective buyer is told that a part exchange might be arranged for some of his engines. It is now that he learns with alarm, that his own engines, many of them possibly vintage diesels, are worth next to nothing! If he hesitates at this point, he might suddenly find himself relieved of most of his own engines (and cash) and learn that he has become the owner of a useless piece of ancient machinery, for which he will almost certainly have the greatest difficulty finding the missing parts.

These 'experts' are not the knowledgeable engine men that they purport to be, but are usually sadly lacking in 'know how' about the older type of engine, in particular those with spark ignition. They are usually just unaware that the engine they are trying to sell bears little resemblance to the name on its label. Although some excuse can be made for ignorance, unfortunately, sometimes the deception is intentional and sad to relate, some buyers of vintage petrol engines are currently being taken for expensive rides.

This is a good place to mention that one of the Sam members recently had over 40 vintage engines stolen from his workshop, there is little doubt that these engines will eventually be offered for sale, you are asked to be doubly cautious if you are shown a number of 'gems' that seem to be going for a song . . . smell a rat . . . remember that you might be receiving stolen property.

With all this tale of woe, it would seem that it is impossible to find a vintage petrol engine in running condition for a reasonable price. This is of course not so, and there are also reliable sources for such material. My advice to enthusiasts seeking such engines is to get the advice of other vintage enthusiasts before they part with money or exchange engines. Try and learn something about the engine that you want to obtain by studying magazine advertisements, or better still examine a known example. In this way you will familiarise yourself with the appearance of the various parts of the engine, and in knowing what to expect you will be less likely to be caught out. Remember that there are sharks around who will pass you a highly-priced pup if they can . . . so *beware!*

Free Flight Radio

A Sam member who wishes to remain anonymous has submitted the following

John Baldwin with Bird Wing design by George Evalenko. This model uses a Grant G-8 aerofoil and was described in Air Age Gas Models, reprints of which are still available.

The 44 inch span Scorpion is popular with vintage builders. This Keil Kraft design is largely based on Scotty Murray's Answer of 1939/40 Sid King is shown holding his Mills diesel powered version.

Left, Terry King gets his TD Coupe away at Biggleswade, while in the background Don Knight in engrossed in pre-flight adjustments. Pat Mardell's OS 60 powered Vulcan making a low pass at Biggleswade.

thoughts on the subject:

"Calling all 27MHz flyers! Don't, repeat DON'T throw away your gear just because of Citizens Band interference. Help is at hand in the form of a new vintage class called free-flight radio.

It is beautifully simple and this is how it works. You have just one servo, with idler lines extending forward and rearward. One throw of the servo chops the motor, the other operating a tip-up tail dethermaliser if the model looks like heading off into the blue. (Dethermaliser? It's just a trip device by which the tailplane pops up about 45 degrees bringing the model down safely in a mushed super-stall).

So with this basic set-up you get the best of both worlds — true free flight with spot-on control of duration. In a contest, highest time would win, with disqualification for anyone landing outside the field. What a test of nerves! Free-flight radio is catching on like mad in the States and surely must do so here.

And, delight of delights, CB or other interference can only stop the motor or activate the DT before you would have done so yourself! But, you say, what if the DT operates while the motor is still running? My experience is that the model just goes into a megastall wallow and comes down alive and well.

While still on radio (or should it be 'wireless control' in this column?) there is one question in particular which keeps cropping up. The answer to it is: Yes, practically every vintage power model will take to R/C like a duck to water.

Two channel (rudder and elevator) is ideal, with rudder not less than 40 per cent of the total fin area to control the glide properly. Old-timers, being large and fairly light, soar like birds on the glide, given enough altitude to catch the big risers. The exhilaration of thermalling in this way is one of the joys of modern old-timing. What wouldn't the pre-war pioneers have given for our radio gear!"

For further thoughts on radio-controlling vintage free-flight power models I recommend readers to digest Peter Russell's 'Straight and Level' in November 1980 *RCM&E*.

Lost and found!

Lost on Chobham Common June 21st, a red Spectre powered by Mills 1.3 diesel, fitted with a 2-channel Futaba radio. The model was reported found to the Concorde Model Shop. But unfortunately no address or phone number was given. Would the finder please phone the owner, Tony Hogan on 01-2893431.

We have also received the following letter from a John D. Coates which is self explanatory.

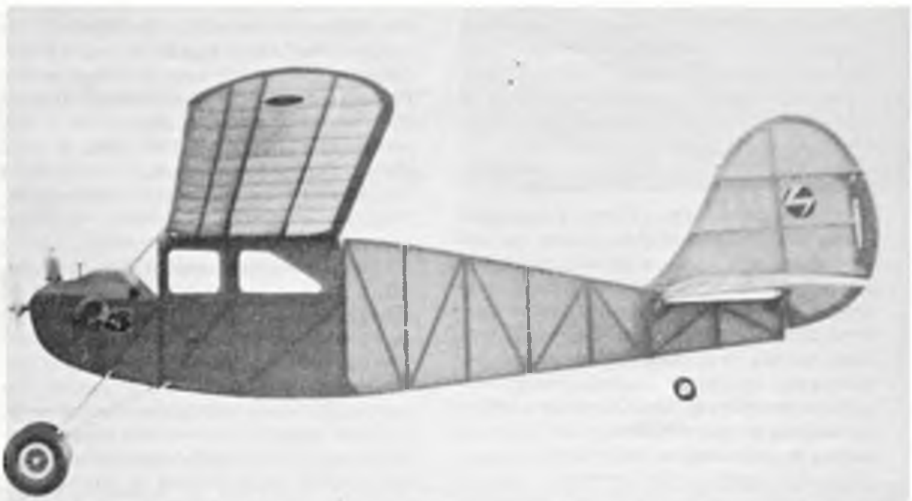
Chobham gives back its dead! Come in, Number 72, your time is up!

I recently got from a slightly unscrupulous mate of mine in Sheffield, a plane that he found on Chobham Common in 1978. Having thanked him for rescuing it from the pop festival camp fire (those were the good old days) and educated him on the finer techniques of aeromodelling, I now have this demon device for return to its owner, complete and original, if a little cobwebbed.

It is a 40in span low-winged vintage free-flighter with 'ACE SPORTS' on the side, together with the number '72'.

Any previous owner can fill in the finer details on *Worcester (0905) 830818*.

NEVER forget the name and address label even on your chuck glider.



J. C. Models Jenny built by Peter Fisher, flying at Biggleswade earlier this year on the power of a 3.5cc BMP diesel.

Derek Welch with his fine Cement Mixer, showing the rear-mounted engine, a glow-plugged Arden 099.

Book Reviews

de Havilland, the Golden Years (1919-1939) published by Flight International (IPC Transport Press) 224 pages 214 × 298mm £4.25.

Richard Riding, editor of Aeroplane Monthly, son of a famous aeromodeller and a practising modeller himself, would be embarrassed if we said this was his compilation of everything a scale modeller would need if he wanted to make a DH subject. Yet that is what it is, and for the past months this extremely useful reprint of classic pages out of 'Aeroplane' and 'Flight' has already served us well. It should be even better known, hence our inclusion of this late review and reminder. Where else can one hope to locate 3 views, structural sketches, photos and such erudite descriptions of those wonderful products out of Stag Lane and Hatfield? From the de H.II, an improbable scale selection, to the DH95 (subtle change of abbreviation came in the earlier days) Flamingo, the modeller has 37 delights to study, several of them with descriptions out of each of the competing journals. DH wasn't just Tiger Moth (Mono or Biplane), it was a source of shapes that were as diverse as the DH52 glider made (and broken) at the Itford trials, to the elegant DH88 Comet and DH90 Dragonfly. It is full of delightful expressions such as 'Centre sectionitis' to describe interference drag, and 'Curious buzzes in the Queen Bee's tongue' to describe interference in the Radio controlling of converted Tiger Moths, and goes on to include C. G. Gray's biting analysis that in 1935 the cost of running Farnborough amounted to over £7 million, with only a Queen Bee to show for it! Ah De Havilland! What a story to enjoy — and with adverts of the same period included, what excellent value — can we hope for similar on the Miles family group?

Gossamer Odyssey, published by Houghton Mifflin (USA) Michael Joseph (UK) 298 pages 160 × 238mm hardbound.

Morton Grosser has documented the whole saga of the Gossamer Condor and Albatross team and as a modeller has a style that can only come through direct participation. Morton was one of the Albatros team and as a modeller has a strong fellow-feeling for all the trials and tribulations involved under Paul MacCready's leadership in the winning of the two Kremer prizes. He catalogues the background, leads the reader through early attempts at Man Powered Flight and reveals the compulsion which inspired MacCready first to become a US record holder in 6 aeromodelling classes, then at 15 the Jr. National Champion, and at 16 + 1 month, a qualified Piper Cub pilot. In post war years Paul took to Sailplanes, rebuilt a vintage Buhl Bull Pup, got his Golden C, won the US Gliding Champs 3 times, then the World Champs by 1953. Though academically qualified, Paul did not enter the aviation industry, being more interested in the environment and our natural resources. As Morton Grosser relates in this biography, we learn how Paul's life has been the centre point for innumerable associations with characters who have been almost inevitably drawn into his successful web of achievement. There have been extraordinary coincidences and an exceptionally strong influence through family and relations through marriage. It is a side that has not been told before, and it accounts in part for the way in which the MacCready influence initially attracted the best of brains and ability to create the Gossamer machines.

Not that it was all a bed of roses. Grosser reveals dissent, arrogance, single mindedness of purpose and a degree of selfishness that is the hallmark of most genii. Make no mistake, MacCready is all of that, and Morton Grosser paints a brilliant word picture of how these qualities led to the prize money. Grosser was on Gris-Nez beach to welcome Bryan Allen's historic arrival in the Albatross. He had the enterprise to forecast success and crossed the Channel twelve hours before the flight, when even the most knowledgeable of the team were unsure of the venture. He has encapsulated the saga which has been compared with that of the Wright brothers, in a full story which aeromodellers will eagerly devour for surely this was the very epitome of modelling?

1934 Jr Aeronautics Yearbook, Published by Frank Zaic, Northbridge, California, 192 pages 10 × 212mm.

Frank Zaic shouldn't need an introduction. He was the original world travelling international scribe and remains unmatched for his descriptive powers, acquisition of truly original concepts and gifted draughtsmanship. His Yearbooks have been the inspiration for thousands and his personality has influenced so many individuals in their attitudes and life pattern. When we last stayed overnight with Frank and Carmen, Frank was just into that awful phase of retirement. For so active a personality, this was a traumatic experience. The Yearbook story (which is told in this volume) was not a happy one. Whilst Frank's books had blessed a core of modelling enthusiasts, they had been no more than that — and the financial aspect was not what it ought to have been. Frank's reward was a Paul Tissandier Diploma from the FAI and as he says *"The World became a friendly place for me"*. In spite of the commercial hazards, Frank confessed to us a strong desire to pull out all the artwork, typesetting and documents he had stored for up to 45 years. It was an 'if only' situation. He had gems of memorabilia. The question was — how many want to share such joys? Should he risk himself in retirement?

Now it's all here — in a compendium that has already made the Old Timers drool and those younger modellers who have established SAM stare in wonder as they browse through pages of incredible interest. Where else could one find a 1934 catalogue? 1936 records. The beginnings of Microfilm. Airfoils. Early Wakefield contest details. The very first copies of 'Model Aeronautics'. Classic designs redrawn in Frank's own inimitable Patent Draughting style.

As this is written, we are just recovering from a severe bout of nostalgia at the Aeromodeller Vintage Day, Old Warden, and as we flip the pages, what do we find but a drawing of that Jasco Flamingo which flew so slowly and shakily to win our award, only to discover that it was designed by Roger Hammer, the lad who went on to Hollywood 'fame'! And further in — two picture pages, with photos of British personalities, who, by joining us at Old Warden, span from 1936 to 1981. This is treasure. If you value your library, this is a priority purchase. Keep at it Frank!

SCALE MATTERS

Ing Koutny's American 'Grey Ghost' racer is both Peanut and 1/20 scale. Very interesting subject obviously flies well.

by Alan Callaghan

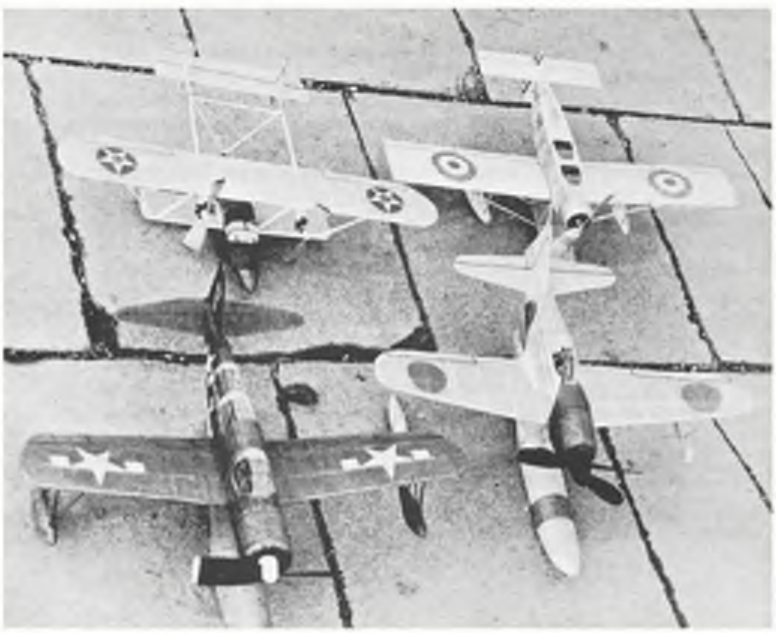
News from Czechoslovakia

Once again Scale Matters is pleased to receive another batch of photographs and reports dealing with Scale flying coming from Ing. Lubomir Koutny of Brno. This time Lubomir has provided a little more background to the development of the Scale model in this country and it seems that greatest interest began to stir approximately fifteen years ago when the first competitions were held in the capital. A dozen or so flyers attended and these formed the basis of a widespread 'grapevine', each member of which then adopted the role of teacher to their own area with the intention of attracting younger flyers to the fold. In 1968 interest really blossomed with the advent of the 1/20 scale formula judged to a set of rules drafted by Lubomir and three other friends, and by which time each tutor had an enthusiastic group under his charge. Some 'teams' or clubs consist of as many as twenty juniors and one is run by Zdenek Roska whose brother Jiri has been winner of an Olympic ski-jump title and now coaches the national team. Events specifically for WWI aircraft were first held at Trnava during 1969 and being combined with family holidays they proved to be very popular. One team from Prague were specialists in rocket and space models and therefore, were not too well versed in the art of flying rubber models, but nevertheless had built some very accurate and neat subjects that were much admired by others.

Until 1977 Ing. Koutny organised many of the scale meetings himself but in 1978 a number of role changes were adopted with which he and several others did not agree and some flyers changed their interest to other areas such as Wakefield models. Peanut models first made their mark in 1975 in Prague and later in Bratislava with indoor meetings then becoming as popular as outdoor flying. Once per year access is available to a 38 metre high hall in Brno, but usually meetings are held in school sports halls or even swimming pools which led to the advent of the seaplane interests. Although many of the junior flyers are introduced to modelling through school projects, they then tend to move on to fly with the well known modellers in their area. Many of the best flyers are those who have gone on to study at technical college where they acquire more thorough knowledge of structures and materials. Flyers much prefer to belong to a local group or club rather than build and fly by themselves and there is quite a competitive atmosphere between local clubs.

In 1981 there has been an air of change as the first events are being held for CO_2 models. The most common engine is the large home-produced Modela CO_2 unit which has a capacity of 0.27cc and is claimed to be able to power a model up to 900mm (approx. 36 inch) span. This motor has been available in the UK for some time and although it is a quite powerful item, my own sample, out of the box, was very reluctant to run for more than twenty-five seconds or thereabouts which is rather too short for a typical good CO_2 flight. Many of the Czech models that have previously been featured in Aeromodeller as rubber models have now been converted to these CO_2 motors, the 1/20 scale system having produced many subjects of proportions well suited to the motors.

One is always tempted to assume, perhaps quite wrongly, that information for the scale enthusiast may not be as plentiful in Czechoslovakia as it is for ourselves, but as each yearly report comes in, I am always impressed by the originality of choice of subject typified by many builders. This year's batch, apart from those illustrated, also includes a Peanut Breguet 14H seaplane by Paul Stranik; a WWI Zeppelin-Lindan floatplane (similar to a Hansa-Brandenburg); a very attractive Rogozarsky parasol-winged floatplane; a Japanese Oskar WWII fighter; a very unusual Czech Bete Be-51 low-winger with 'trousered' undercarriage; and from G.B. an Auster, a Firecracker CO1N aircraft, as well as a couple of Blackburn Airedales one of which



Left: an interesting batch of Peanut Hydroplanes, courtesy of the Koutny family, includes a Sikorsky S-38, Vought Kingfisher, Rex with contra rotating props and a French Besson.

Paul Stranik's Macchi Castoldi is not such a good flyer on rubber power. Good potential as a CO_2.

holds the junior Peanut duration record of 84 seconds. They've discovered the Lacey, too!

World War 1 Aeroplanes: 'Scale Special'

This is the title of a splendid paperback book, approximately A4 size, produced by an American society of the same name which is jointly run by Leonard E. Opdycke from New York and Wally Batter from Ontario, Canada. Their magazine, dealing mainly with fullsize aircraft restoration and replica builders, is published five times yearly but it is well aware of its value to modellers and this 'Scale Special' is strongly biased in this direction. It contains in 66 pages, a wealth of detail on instruments, seats, wheels, cockpit ancillaries, national insignia, lozenge camouflage, fullsize covering practice, and much more. Also included is a long list of back issues of the magazine which may just include that information you have been searching for on some obscure WWI type although forthcoming issues are scheduled to feature the more familiar Fokker DV1, DV11, and Curtiss JN-4 Jenny series.

The organisation is based on voluntary contributions but sets a very high standard of publication if this 'special' is anything to go by. To non-subscribers, this issue costs 5 US dollars direct from World War I aeroplanes, 15 Crescent Road, Poughkeepsie, New York, USA 12601, and represents very good value for money.

Why Not Card?

Inspired by Chris Pinchbeck's article in the February issue of Aeromodeller on the use of other-than-traditional building materials, Geoff Spriggs decided to have a try at the 'alternative' scale model and has sent in details of his C/L 'Fairy Snow FW190D' built almost entirely from cardboard with some small balsa reinforcements here and there. Spanning approximately 1000mm (39ins) the model is powered by a .19 glow motor and was obviously built for a bit of fun flying only. All of the card parts were pre-soaked in a mixture of 4:1 polyurethane varnish and white spirit before construction, and assembly was carried out using white PVA glue. Construction was very quick and easy according to Geoff and the grade of cardboard is known as 'C' flute, which has 44 flutes per foot. Used for the bulk packaging of goods such as boxes of washing powder, the material is easily obtained from a friendly supermarket. As shown in the photo Geoff's model weighs 350 grams (12½ oz) without the engine — which is very reasonable indeed. Lacking a fixed undercarriage, the model uses a dolly for take-off and a certain amount of lead was required in the tail to get the C.G. in the correct position. Having seen the model fully finished, I can vouch for the fact that it is indeed possible to build very lightly using this technique, although one must not expect to be able to achieve a super realistic finish comparable with a more conventionally-built subject. Models such as this, which do not have any kind of backbone or keel as there would be in a more normal balsa structure, should always have the engine wired up to the bellcrank pivot from the safety point of view, especially if more than one is flown in a circle as during display flying for example. Should a mid-air disaster occur, either deliberately or accidentally, the motor is then restrained from whizzing off on its own if the nose section departs it's proper location during the 'action'. As already mentioned, Geoff's 190D does not have a fixed undercarriage and uses a dolly for take-off, but due to the light weight even hand-launching should be quite easy. It would be interesting to see any other subjects modelled in the same way although one will be restricted to those not having any compound curves in the design.

Flying at the CLAPA Championships Scale Event, Geoff Spriggs' Savoia-Marchetti S73 proves that if your multi engined CL model is properly trimmed for flight, you can fly it on the single outboard engine!

Campus A-23

Just received at the time of completing this column was an example of this Peanut sized CO_2 motor now in production by Bill Brown in the USA. If you thought the standard Brown CO_2 motor was small, this new one will really open your eyes! Measuring only 16mm from the centreline of the crankshaft to top of cylinder head and weighing less than five grams complete with tank and propeller, yet another new dimension is opened up in the flying of *very* small scale models, and I hope to give more information on its application in the next column. In the meantime you may be interested enough to make enquiries direct to Brown Junior Motors, Inc. P.O. Box 77, Pine Grove Mills, Pa.16868, USA, or to the Modellers Den, 2 Lower Borough Wall, Bath, who are the main importers of Peck-Polymers products, who also distribute the entire range of Brown Motors including the impressive twin.

This Focke-Wulf FW190D by Geoff Spriggs is built from cardboard and powered by a .19 glow motor. See text for details.

Right: Mick Staples cleans his new Miles M2 Cirrus powered Hawk after a flight. OS 20 powered, the model is 44ins span, features a specially built concealed silencer and is painted pale grey green with brown lettering as authenticated by Don Brown - Miles' company historian.

'WIGAN 70'

Small field rubber powered competitions model complementary to the glider published last month

Designed by Russell Peers and described by Lawrence Gray

Fuselage

This consists of a rolled balsa tube (the 'motor' tube). The tube is rolled from the very soft 1/16in balsa sheet, using a piece of 1in diameter (or thereabouts) dowel as a former. Start by cutting the sheet to length and doping tissue onto one side. When dry, soak the tissue covered sheet in hot water, then wrap it round the former and hold in place by wrapping with bandage (do not glue or cut to size yet).

Leave until the wood has dried out, then remove the bandage and cut the sheet to width to fit exactly round the former (e.g. 3 1/8in for a 1in diameter former). Wax the former to stop the glue sticking to it! Then replace the sheet, glue along the edge with P.V.A. and bandage up again. If necessary, re-soak the sheet first. When dry, remove the tube from the former and add the ply 'inner' tubes at the front and back. These are made from 1/16in (1mm) plywood, 1/32in plywood is better if available) and are moulded in a similar way to the motor tube, i.e. grain of outer laminations runs longitudinally.

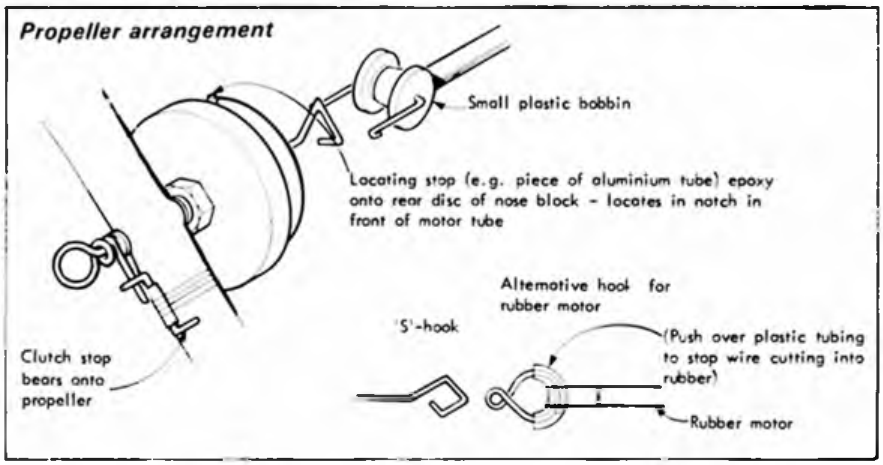
Cover the outside of the motor tube with lightweight tissue and then add the wing mount (from 1/16in medium sheet) as shown on the plan. Note the grain directions. Make the fin and sub-fin by glueing together two laminations of medium 1/16in sheet and cutting to shape. Add the tailplane mount and D.T. system as shown. Where parts are glued onto the motor tube, use an epoxy glue. Cover the fin and sub-fin with tissue and then add the trim tab to the fin. The wing mount and tail mount only need a couple of coats of dope. Finally, cut the holes for the motor peg at the rear of the fuselage.

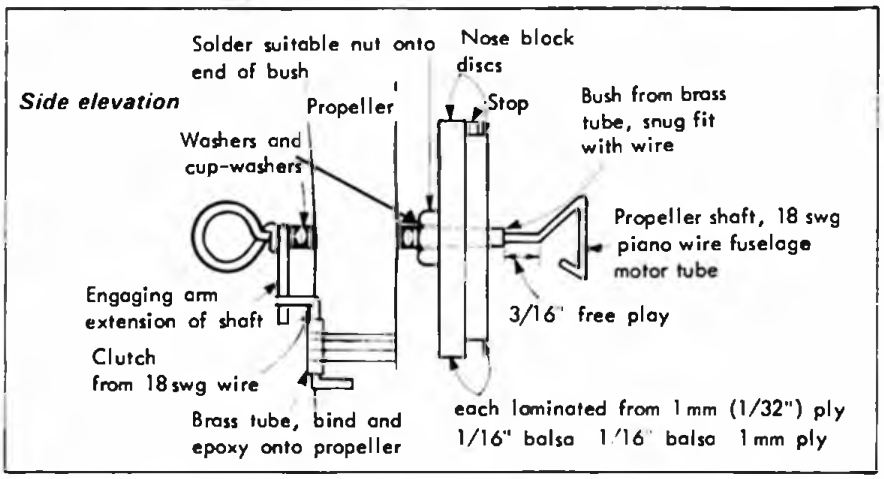
Nose block and propeller assembly

The propeller is a plastic unit, the original model used a 12in diameter, however, 8 or 10in diameters are also suitable. Fitted to the propeller is a free-wheel clutch. This means that when the rubber motor has fully unwound and ceases to turn the propeller, it can free wheel, which creates less drag to inhibit the glide. The sketches will explain most of the construction and operational details. Note when under power and free-wheeling, the propeller rotates in an anti-clockwise direction, when viewed from the front.

Start by making the nose-block from the laminations of plywood and 1/16in balsa shown. Make sure it fits snugly in the motor tube. Drill the centre of the nose block and fit the thin brass tube bush. The shaft is bent from 18 s.w.g. piano wire. First, bend the loop for the rubber motor bobbin (or S-hook, whichever you choose) and insert the shaft into the nose block.

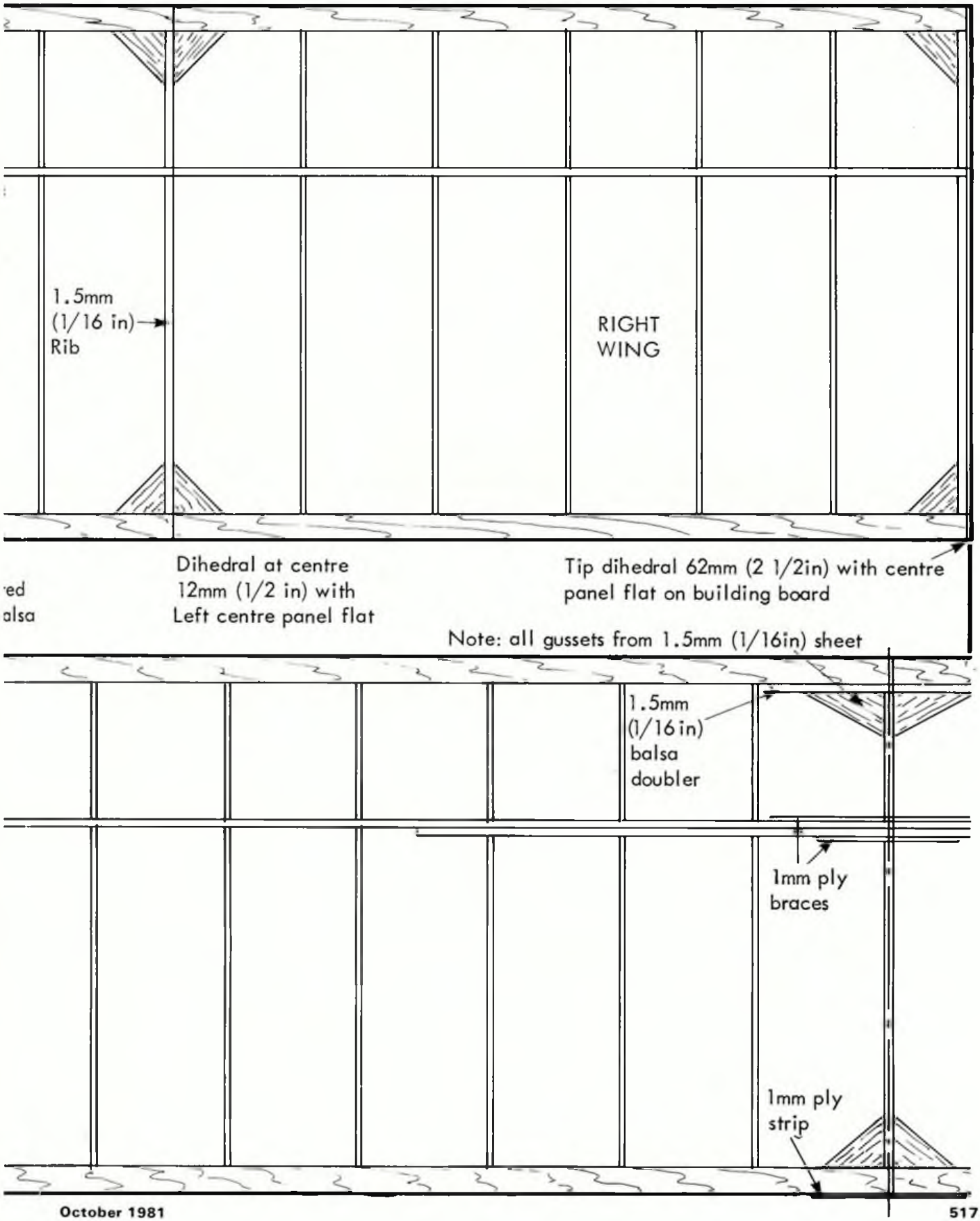
Add washers and cup-washers, and then the propeller as shown. Bend over the end of the shaft as shown (note the 'free play'). Then add the clutch onto the propeller, the brass tube is bound and epoxied on. Make sure that the clutch will engage properly. Give the nose block several coats of dope and put a few drops of oil on the shaft. Note that some propellers are moulded with a small step at the hub. This is intended as a free-wheel clutch, but is not suitable and should be removed before use of the propeller in this assembly.

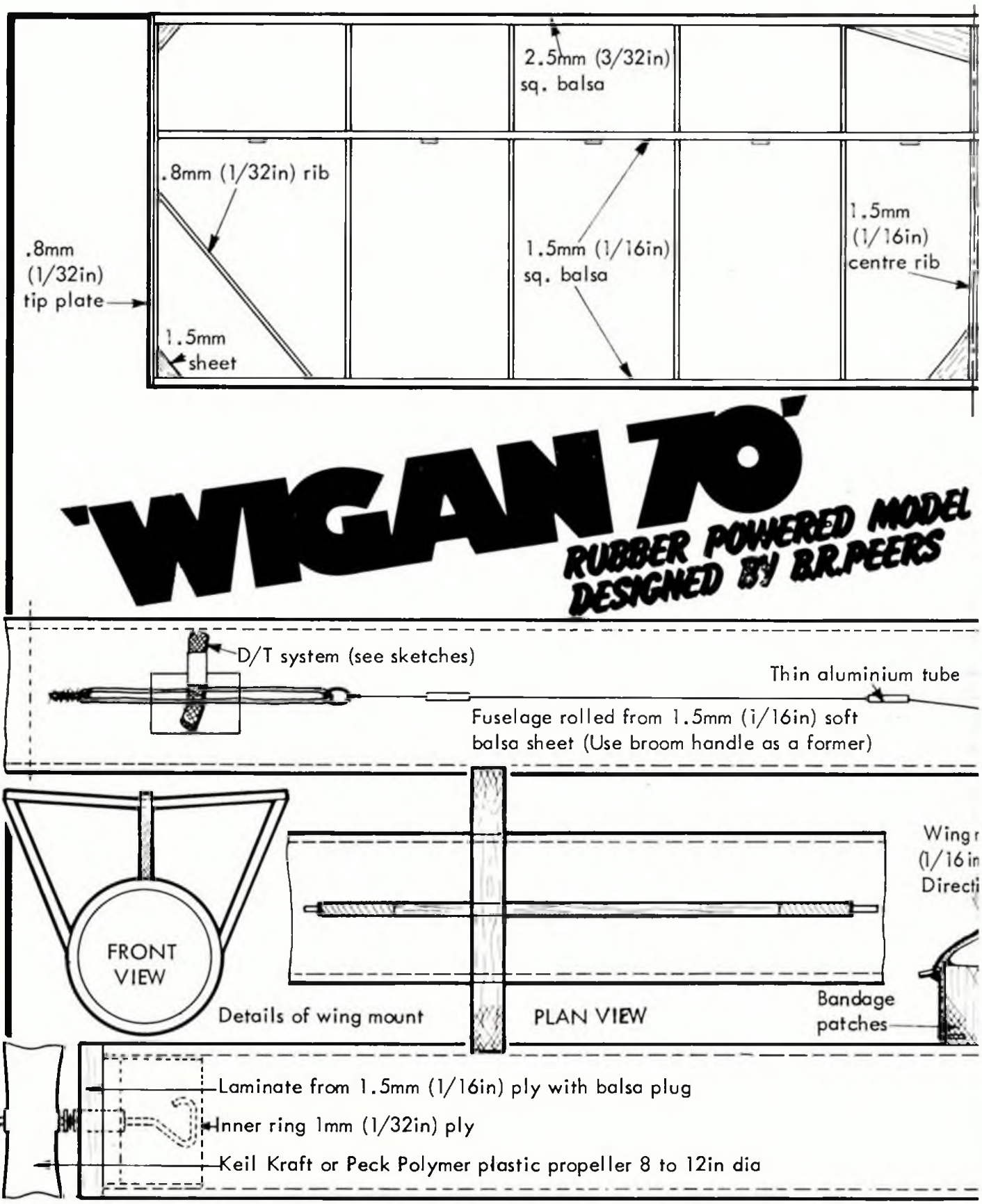


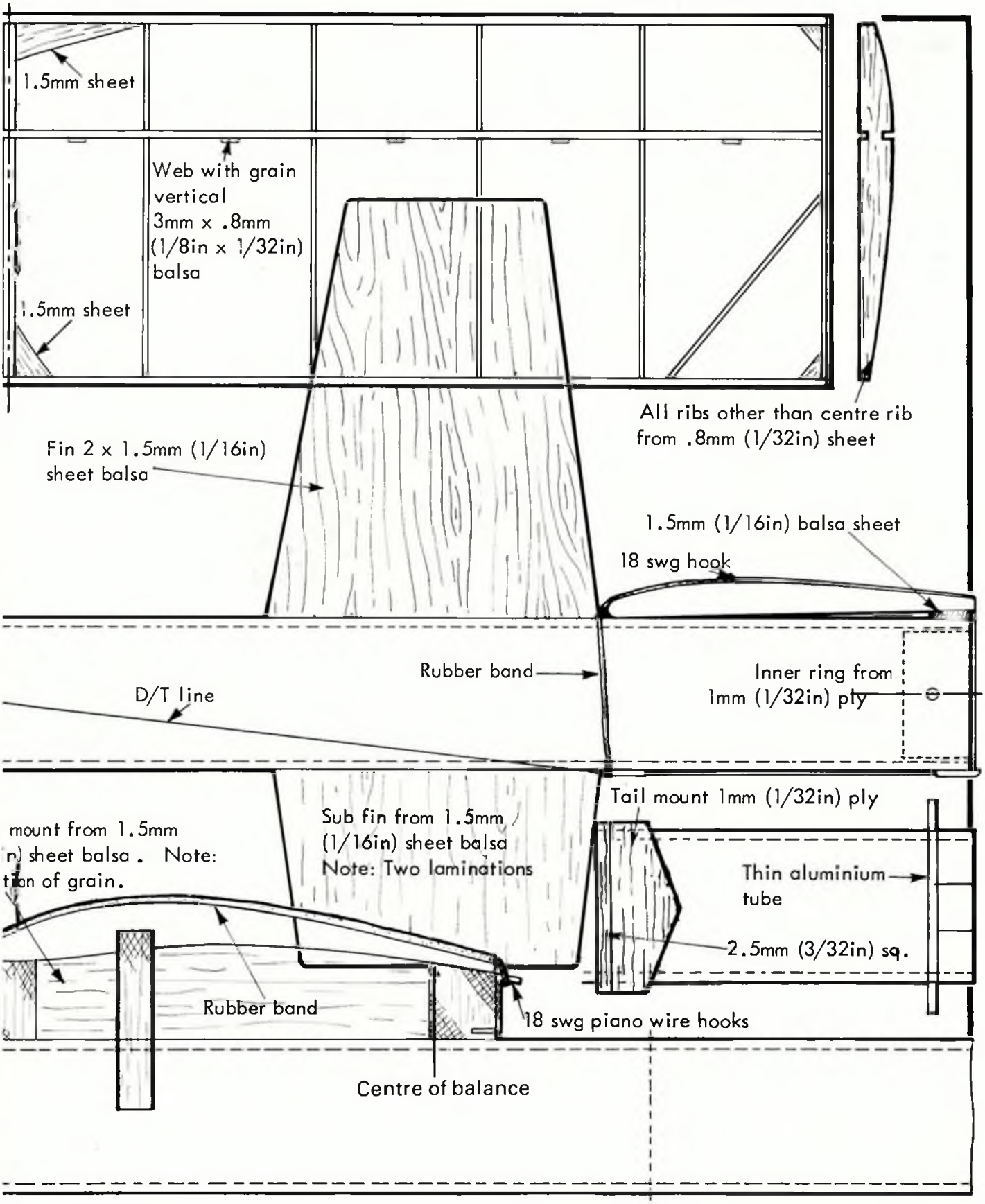


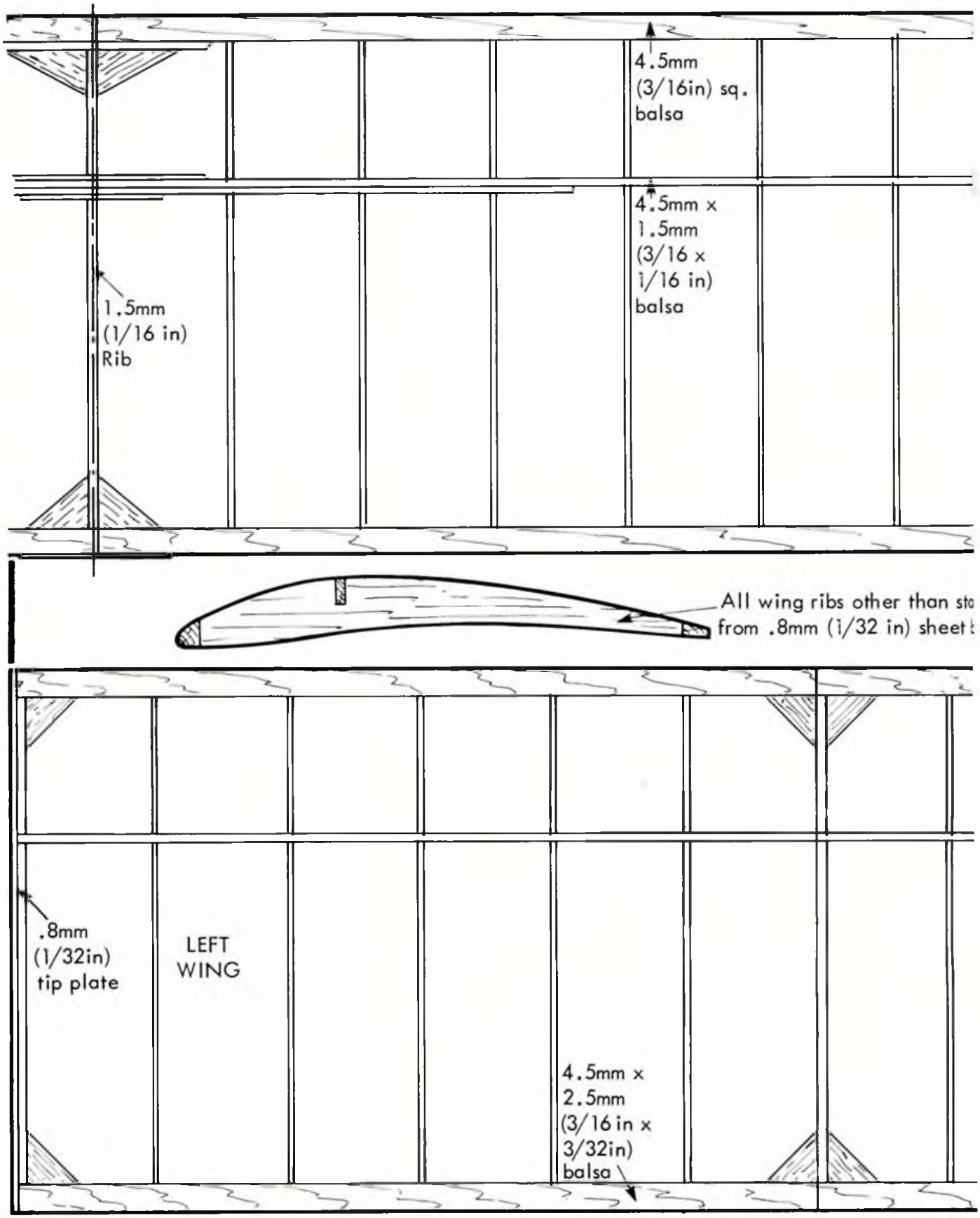
Motor

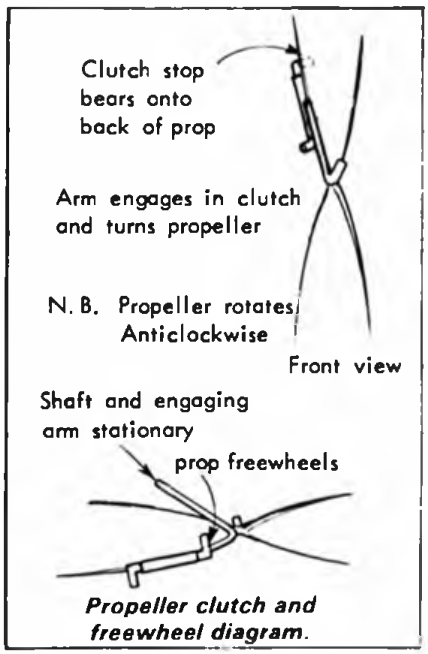
The rubber motor consists of about 10ft of flat rubber strip (1/32in × 1/4in.) made into four strands. Rubber is brown in colour and you should not use white 'Aerolastic' as this has insufficient power. Buy enough rubber to make 4-5 motors. Each motor consists of about 5/8 to 3/4oz of rubber strip and this must be lubricated by rubbing in castor oil or a mixture of soft soap and glycerine. Make the length up into a loop by tying a knot and then tying the two ends together with a reef knot. Double over the loop to produce four strands. By doubling over small rubber bands at each end of the motor strands, smaller loops result, through which the bobbins, or S-hooks, can be placed (see sketch).











Propeller clutch and freewheel diagram.

Winding

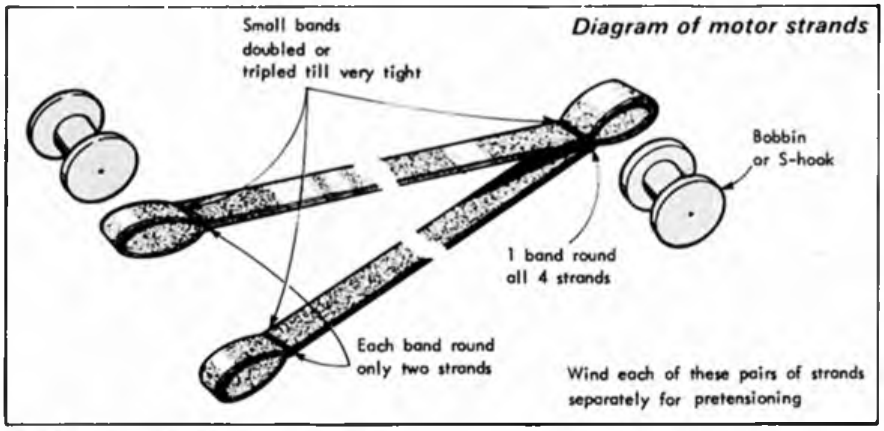
The motor will take around 1,000 turns when fully wound, and hand winding by simply turning the propeller would be very tedious. Instead, a small hand-drill should be modified by adding a wire hook (onto which the motor will hook) to the chuck. To make sure that this cannot pull out (which could be dangerous for the person holding the model), it will be necessary to remove the chuck and bend over the end of the wire behind the jaws. Note that where the number of turns on the motor is given, it is the actual number of turns and so allowance must be made for gear ratio on the drill (typically 3:1). Also make sure that the motor is wound clockwise, to unwind and turn the propeller anticlockwise. (The motors need 'running in' before use. This is most easily done by stretching them to five or six times the normal length and holding like that for 4-5 mins.

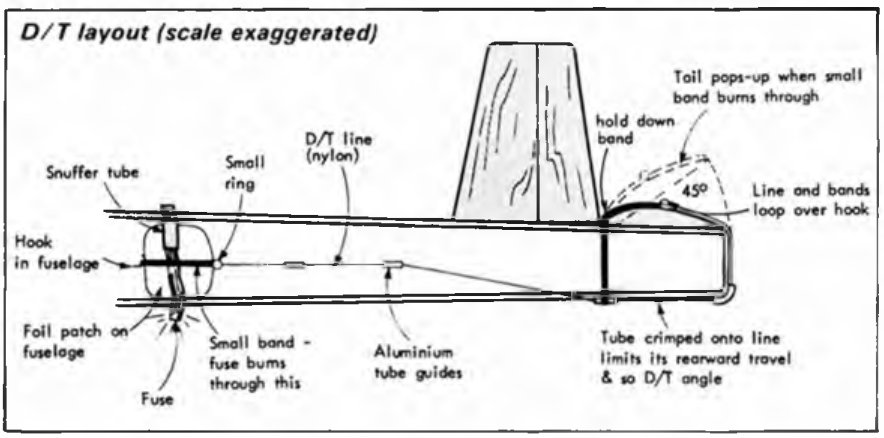
The motor will be longer than the motor tube when made up. To stop the noseblock falling out when the motor is unwound, the motor has to be 'pretensioned'. Put a piece of piano wire through the bobbin or S-hook so it can be held by a helper. Then take two of the motor strands and wind on 140-150 turns, make sure the other two strands don't dangle on the ground. Walk backwards a couple of steps during this so that the motor is stretched. Detach these two strands and hold them taut and repeat with the other strands. Replace the first two strands and wind on a few turns to the whole motor. Remove the motor from the winder and it should knot up as the two sets of strands intertwine. This should be repeated with all motors before use. Motors should, however, be untwisted for storage.

Flying

Before flying, check the C.G. position (⅛in in front of the wing T.E.). For an 8 or 10 inch propeller, the wing mount might need to be in a different position. Check this by strapping on the wing with bands to the fuselage in the correct position, before glueing on the wing mount.

The wing and tailplane are held onto the fuselage with small bands, as shown; there is no need for D.T during preliminary trimming flights. Insert a pretensioned rubber motor into the fuselage and pass the rear motor peg (thin aluminium tube) through the bobbin or S-hook. Pass a piece of piano wire through the peg, to make it easier for the helper to hold. Remove this





wire before flying! Have the helper hold the model by the fuselage, at the front and by the rear peg, so that it is horizontal in front of him, and the wing is perpendicular to the ground. Connect the free end of the motor to the winder.

To wind the motor, it will be necessary to stretch it while winding by slowly walking backwards while winding, and walking in again slowly when about 60% of the turns have been wound on. The motor is stretched to about 4-5 times its normal length for full turns (1,000+) and less for less turns. When wound, detach from the winder and add the noseblock assembly to the front bobbin or S-hook. (Make sure the free-wheel clutch engages and don't let it pull back into the fuselage). Make sure the noseblock locating stop is correctly in position in the notch in the fuselage, hold the propeller to stop it unwinding at this point.

Start with flights of about 200 turns, to observe the glide. Launch the model into wind, at an upward angle of about 20°. Make sure that the model is not banked over to the right on launch or it will spin in. To launch, hold the model by the motor tube with the right hand, and hold the propeller in the left hand — release the propeller slightly before the model.

The motor run will probably last for about 10-20 secs., however these flights are only to correct the glide trim. The model should be trimmed to fly right hand circles. Diving and stalling are adjusted as with the glider and the turn adjusted using the trim tab (see sketch). Next, concentrate on the climb. This is adjusted by changing the thrust line of the propeller by glueing packing (e.g. 1mm thick plywood) onto the fuselage behind the noseblock. The climb pattern should again be right-hand circles; an open upward spiral. If the model tends to loop, add down thrust and if it spirals sharply to the right, add left thrust (this is what the original model required).

If the climb is O.K. with 200 turns, then try 300 turns and so on, until full turns (probably 1,000 or more) are reached. With full turns, climbs of several hundred feet should be possible. The climb is important as, due to the large propeller, the glide is inhibited slightly. Use of a smaller propeller would spoil the glide less, e.g. 8in or 10in diameter and you might like to try this. However, the climb is likely to be less impressive as with a 12in prop.

For normal flying, use the D.T as shown; again, launching the model into a thermal will give better flights, however, very impressive flights can be obtained in virtually still air, i.e. around the 2 minute mark.

Care of the rubber — store each motor separately in a plastic bag, and keep them in a tin in a cool place. Make sure that they are always well lubricated and that they do not get dirt on them, as this will cut the rubber. If a strand does break, it can simply be repaired with a reef knot. Try and avoid using the same motor for consecutive flights (except for trimming) as the rubber may need some time to regain full power potential after a flight.

The local playing fields should be suitable as a flying site, though beware of dogs and small children. If you use farm fields, then check with the farmer first.

If you feel you would like to know more then no doubt your local club will be only too pleased to help you. For advice on this, you should contact the S.M.A.E. (Society of Model Aeronautical Engineers), the official body governing model flying in Britain. You should contact the General Secretary, Mr. Roy Nudds, Kimberley House, Vaughan Way, Leicester, tel. Leicester 58500.

09 Motor Hang Glider

A novel almost ready to fly kit from Kyosho. This all metal structured model is designed for 2 or 3 channel radio and .09-.11 motors.

Review by Colin Rattray

In this realistic flying shot, you can clearly see the wing warp effect. Below, engine bearer framework and throttle servo mounting plate, used for three channel radio

BEING A RATHER oldfashioned type of modeller, used to building my models from scratch, the almost ready to fly kit has not had such a great appeal. Nevertheless on opening this Kyosho kit my enthusiasm was immediately aroused and I couldn't wait to get started.

Apart from the unusual design which incorporates warping wing elevon control, the model is made entirely from metal tube. The span is 1,620mm and it is designed for an ENYA .09 or .11 (any other beam mount engine of the equivalent power can be fitted) and two or three channel radio.

Opening the box reveals a partly assembled fuselage frame, pilot in which the radio is housed, a very well made up rip stock nylon wing, various rods/nuts and bolts, a pusher 7 × 5in propeller, engine muffler, tank and mounting bolts. In fact, the only additional items required are the engine and two or three channel radio gear. I used the recommended Enya .09 motor and Futaba two channel radio.

Don't be misled by the previous remarks there is still plenty of interesting construction work to do. I spent one evening and a whole day building my model. Follow the instructions as described in the well illustrated book, and make sure each stage is working correctly, especially the wing warp system.

Fuselage

Install the engine ensuring to lock all the nuts shown in the instructions with Cyano or Loctite glue. I used Loctite Lock Nut Compound on all the nuts and bolts, this allows them to be unscrewed if adjustment becomes necessary. Next mount the servo mixer on to the keel bar. I had to open up the holes in the keel bar a little, to align them to accept the mixer bush. File the end of the bush until it is just proud of the keel bar, so when tightened the mixer moves freely without too much slop. Mount the servos, but leave the mounting bracket loose at this stage, as the final position is best found after fitting the pilot and checking the c.g. position. The undercarriage presents no problems, use Cyano to fix the rubber pipe wheel retainers.

Right, wheel mounting. I glued the P clips to the tube of the fuselage with Cyano, as they tend to move with a hard landing. Left, the wing centre mounting. Below left, the components of the kit straight out of the box. The servo mixer can be seen below. This gives up and down and aileron control via the two push pull rods.

I did fly the model with an old Elfin 1.49cc diesel engine, but it was rather under powered.

Pilot

Care should be taken in trimming the arms, head and trunk to ensure they have a good tight fit when assembled. Cut a slot in the back of the pilot to accept the servo plugs and receiver aerial. The receiver switch is fitted to the pilot's leg. Having ensured everything fits OK, dismantle and paint the pilot. I used Humbrol spray enamel for the helmet, body, boots and gloves and artist acrylic for the face, followed by a coat of clear polyurethane to fuel proof.

Wing

Assemble all of the main spar components as instructed, but do *not* tighten the stopper collets too much. I found it is best to lightly lock the collets at 90° to each other, to avoid distorting the spar and retain a free fit in the bearings. When finally aligned and assembled to the cross bar, and with free movement in the bearings, run Cyano glue around each collet to ensure a permanent fixture to the wing spar. Note; it may be necessary to alleviate the bearing holes to obtain a completely free action of the wing controls.

Although dimensions are given for cutting out the slots in the wing for the cross bar installation brackets, it is far better to assemble the spar into the wing pocket and mark the slot position directly from the bracket. To complete the wing, cut to length each plastic wing stay, using a dab of Cyano to retain in each pocket. Don't forget the aerofoil wire stay into the centre pocket. It is also worthwhile running a drop of Cyano along the leading edge centre chord stitching of the wing, as this is under a considerable stress when assembled.

Radio Installation

Before assembling the wing to the fuselage, install receiver, switch and batteries into the pilot and bolt to the fuselage. Note, use washers either side of the fixing bolts that pass through the pilot and nuts to retain the bolts in place.

Now assemble the wing to the fuselage and check that the balance position is correct. Adjustments to the balance can be made by moving the pilot and servos fore and aft. When the correct position is found, lock pilot and servo mounts in place. Ensure that the wing is still free in its bearings, they can tighten at this stage if the middle bearings are locked out of line. Switch on the transmitter and receiver and set all trims to neutral. Switch off, view the wing from each tip and align parallel with the keel bar. Adjust the servo pushrods to fit and connect to servos and wing (it may be necessary to cut them down in length) and check that the wings are in line with each other. That's about it, you should be ready for take off!

Flying

The weather was perfect and the model looked super, although rather unusual in appearance. My local flying field is rather small and has very long grass, so it had to be a hand launch. I must say it did cross my mind that the pusher prop might give me a bite as I let go, but I had no problems. The first flight was rather under powered with a rich running motor, full up was required and the model gently settled 50 yards away, with engine still bubbling away. I simply picked it up and retuned the motor and off she went, looking great with bright yellow wings and pilot apparently in full control. This model is very different to fly than a conventional model.

The climb is slow and requires a fair amount of aileron movement in the early stages of the flight, until a good flying speed is reached. At this stage care must be taken to avoid a tip stall; gentle turns are the order of the day until sufficient height and experience is gained. On one other occasion I fed in too much down elevator which resulted in a sudden inverted loop, although this could have been due to two C.B. operators who later shot me down with their chatter.

With an 09 motor it takes skill to achieve a lot of height as if too much up is put in, the model tends to descend gently, but this all adds to the fun. I, for one, still prefer to have a gentle flying machine that requires a little nursing, but if you want a bit more umph a .15 motor will give it. Altogether a most enjoyable experience and a model that I shall always enjoy flying. The kit is distributed by Ripmax and at £49.95 represents in my opinion excellent value.

Right; wings folded for transportation; if the wing spars are removed the model takes up very little room.

MODIFICATION

As we go to press; Kyosho issue these recommendations to improve flight control.

Remove parts 32, 35 and 48 from each main spar (29). Cut 6mm off each main spar and refit parts 32, 35 and 48, redrilling as needed. Reassemble and arrange sail with a 30mm droop at trailing edge semi-span position when controls are neutral.

The leads from the Futaba servos were just long enough to reach the receiver in the pilot's lower half.

Free Flight Scene

DAVE HIPPERSON REPORTS

Western Area Rally
Merryfield 19/7/81

Merryfield isn't a large 'drome and what is available is an awkward shape. Those with no prior knowledge with the downwind layout, experienced considerable trouble retreiving in the moderate westerly that blew at an angle to the runway virtually all day. This must have been a contributory factor in the numerous first flight losses. As the day wore on fliers grew conversant with the village and its assorted houses, ditches, hedges and occasional field and had somewhat more success.

Combined Mini winner Ken Smith lost his Nats Topping A1 on its first flight late morning spending until nearly 5pm before giving up the search. He returned determined and posted four more maxes in beautifully judged light thermals that neither took the model dangerously high not far off the drome. Second place left his flights late too and also benefitted from the slower drift in low level thermals. This was Russell Peers who very nearly made a perfect score with his Coupe — a relatively new class for him — flying a nice pattern and only finding really poor air on the last flight.

Combined FA1 was won by Dave Greaves using a Wakefield and only four out of the five flights he had available — three of these being maxes. Further pointing towards the general decline in interest in Open Power nowadays Stafford Screen needed only two flights — both maxes — to win this class comfortably! Open Glider and Rubber however were to be decided by flyoffs. Glider had two qualifiers Carter and May and was run off soon after the close at 6 pm with a drift still around 12 mph although rather warm as it had been all day. Both waited well into the period and May away first looked to be in good air but it petered out. This left Carter further downwind knowing he had only to beat a flight of less than 2 minutes. His straight tow and immediate release was in helpful air from the word go. This improved steadily and the model was eventually clocked off way up at over 10 minutes.

The drift was now conveniently down the length of the 'drome for the first time all day but the Rubber flyoff, that included four of the qualifiers from last weeks fun and games at Everleigh, seemed to coincide with the nastiest air and strongest drift of the day although it was certainly not cold. Davies had lost a model the previous week and another earlier in the day leaving him with only a brand new airframe that had never been flown under power. It was perhaps a foolhardy moment to risk this when his Wake, which had been demonstrating its excellent climb earlier, flown tactically might have been more use. The open model looped in spectacularly and seriously mangled itself. Peers was next away in a huge hole that had the model down on the ground for less than three! Chapman who followed closely climbed well in slightly better air but was down in less than five minutes. The last to fly — John Carter — had been busying himself with his long glider flight and was undoubtedly winding before his glider landed. He blew a motor and time was tight when eventually he was ready to launch. Knowing what he had to beat this time he set a fuse and the model contacted good if turbulent air. A little later with howls from timekeepers and supporters — particularly the one that had suggested the DT — it DT'd early! Fortunately it was high enough to make it anyway and cap the day for John with two wins to make ammends for a very lost Rubber model earlier.

RESULTS

Open Glider

1. J. Carter	Falcons	9.00 + 10.07
2. G. May	B&W	9.00 + 1.57
3. J. Scrivens	Cheltenham	8.55 (top jun.)

Open Rubber

1. J. Carter	Falcons	9.00 + 4.46
2. C. Chapman	B&W	9.00 + 4.42
3. R. Peers	Falcons	9.00 + 2.29
4. P. Davies	B&W	9.00 + 0.05

Right: Norman Marcus with four bladed folder model just prior to winning flyoff flight at Club Champs. Left: Russell Peers waits for lift; 2nd in Combined Mini at Wester Area Rally.

Left: double event winner at Western Area Rally, John Carter, took Open Rubber and Glider flyoff, here returning from last qualifying flight. Above: Paul Davis launches promising Wakefield to 3rd place in Combined FAI.

Open Power

1. S. Screen	Birmingham	6.00
2. N. Bridges	Cheltenham	5.53
3. P. Harris	Birmingham	5.20

Combined FAI

1. D. Greaves	B&W	10.35
2. A. J. Tipper	Lee Bees	9.52
3. P. Davies	B&W	9.20

Combined Mini

1. K. Smith	Croydon	10.00
2. R. Peers	Falcons	9.55
3. D. Allman	Nantwich	9.03

Club Champs, Everleigh July 12th

Pete Harris has done this before — remember his double power win at the '79 Nats on Everleigh. Something about the conditions here must suit him. He was the real star of the Club Champs where he won it for Birmingham almost single handed. The day had begun with a dead calm as low cloud and some drizzle lifted to give a morning of magnificent flying weather. Even when the breeze picked up at lunch time it was only to give the hard pressed glider flyers a chance, as towing over the Everleigh terrain in a dead calm was no joke. It was encouraging to see a substantial entry in all events, including power, with some fliers attempting all three events in the search of points. Essentially a Club event but with individual awards as well, and without the complication of having to nominate teams in advance, the results are decided simply upon the highest flyer from each club in each event. Run like this it seemed to encourage individual entries and club spirit but not, as is so often the case, at the expense of standards. They are good rules and this year all top four clubs fielded a 'double class' celebrity.

Much was decided by the fly-offs and since the wind direction had been unco-operative since lunch time it was necessary to move control for the deciding flights. The organisation in the form of Dave Stapleton and Alan Jack took this decision boldly and chose the perfect place to relocate allowing a panoramic view of nearly two miles of open plain. The flights were underway at 6.45 in the slightly unconventional order of Rubber, Power and Glider, hence the nine rubber qualifiers had lift to contend with. During their 15 minute period, the lift was good at the beginning where Marcus and Davies got away and useful at the end, but those that flew in the middle suffered comparatively poor flights. Winner Norman

The Davitt duo - Dennis and Ian - 1st and 3rd in Coupe d'Hiver flyoff.

Marcus flew his four bladed prop model which although looking a little unhappy for the first 60 secs or so stalling and taking a long time to recover it clearly flew into something very strong after that. Over twelve minutes later it had timekeepers staring into the distant sky eyes watering and reluctantly clocking off with the model still at a collosal altitude. It was to be enough but not before Peers, Lee and Hipperson had all broken 10 minutes. Despite the 10 mph breeze these later flights were recovered on the site albeit 2 miles away — not so Norman's, he and his model were missing at nightfall.

Power had a five way fly-off with all but one of the times sticking around the 5 minute region in relatively unhelpful air, but from good patterns in most cases. Pete Harris however found something useful with his 40 model to take a clear win with nearly 8 minutes.

By the time the Glider fly-off was underway the six qualifiers had very cool air in which to two. Dave Greaves came in on the line and damaged the model and Gilmore and Warren opted to go down the hill so that they could make use of the shorter grass on which to circle tow. However it was those that flew from the top that made the best times as the drift was just sufficient to allow them the height advantage without sucking them down the slope. John Cooper towed for the entire period and launched 3 seconds before the hooter blew for a respectable 2.17 but it was Pete Harris who topped them all again with an excellent 2.34 and this from a man that doesn't fly glider that often!

left: June holds husband John O'Donnell's A1 - dropped a minute and placed 3rd. Below left: Steve Fielding with compact CO_2 duration. Full score and then 2nd place in flyoff. Below: Steve Philpott with both his CO_2 models after just pipping Fielding to 2nd place in flyoff.

Tabulating and calculating the winning club totals might seem easy in the quiet indoors but with interested parties breathing down your neck its one heck of a job. It was completed quickly and the top three were it appeared the same as the current top three in the Plugge list and in the same order! However to spoil the perfect balance of things it was discovered subsequently that John Carters glider total had been missed and this added to the impressive total already amassed in Power and Rubber by Russell Peers moved Falcons up to equal 2nd place.

RESULTS

Open Glider 37 flew

1.	P. Harris	Birmingham	9.00 + 2.34
2.	J. Cooper	Biggles	9.00 + 2.17
3.	C. Sharman	Cheltenham	9.00 + 2.16
4.	M. Warren	Richmond	9.00 + 2.06
5.	M. Gilmore	Grantham	9.00 + 2.03
6.	D. Greaves	B&W	9.00

Open Rubber 22 flew

1.	N. Marcus	Croydon	9.00 + 12.12
2.	R. Peers	Falcons	9.00 + 11.17
3.	N. Lee	East Grindstead	9.00 + 10.52
4	D. Hipperson	Croydon	9.00 + 10.14
5.	P. Davies	B&W	9.00 + 8.12
6.	C. Chapman	B&W	9.00 + 7.00
7.	P. Ball	Grantham	9.00 + 6.47
8.	J. Carter	Falcons	9.00 + 5.49
9.	J. Cooper	Biggles	9.00 + 3.55

Open Power 18 flew

1.	P. Harris	Birmingham	9.00 + 7.42
2.	S. Screen	Birmingham	9.00 + 5.47
3.	T. Payne	Biggles	9.00 + 5.39
4.	A. Crisp	Biggles	9.00 + 5.00
5.	R. Peers	Falcons	9.00 + 4.12

Club Results 15 clubs

1.	Birmingham	Harris, Gibbs, Harris	257 pts
2.	Biggles	Cooper, Cooper, Payne	246 pts
2.	Falcons	Carter, Peers, Peers	246 pts
4.	Grantham	Gilmore, Ball, Gilmore	211 pts

SMAE 2nd Summer Mini Driffield 2/8/81

Blazing sun from an almost cloudless sky coupled with a firm 15 mph westerly should have been a receipt for lost models. Surprisingly this was not so, despite the occasional twister that raised dust and sometimes hay high into the sky, powerful lift was surprisingly infrequent. What prevailed for the first half of the day at least were conditions that made picking thermals from the ground delightfully easy and most that came were not dangerously strong. By lunchtime flyoffs in at least one class looked likely and then a change came with some abruptness. The wind that had by this time slackened considerably died away to nothing and a similar strength from exactly the opposite direction took its place. Locals to the drome said that wind change around this time was not uncommon but none had seen it so sudden. Actually the 'moment' was a calm spell of some 10 minutes that caught a number of fliers

Left: John Fletcher prepares winning ½A. Right: Roger Baggot 4th ½A Power.

just about to release. High above Pete Harris 1/2A model circled clearly in lift but the calm was so complete on the ground no one dared risk it for some minutes. Eventually a CO_2 model broke the spell and climbing well from release showed the good air extended right down to the ground. Most who launched maxed and flew straight out of the drome! Ian Davitt was unlucky with his Coupe clearly in this good air and away on its fourth flight suffering a completely blown motor half way up on the climb. Needless to say this catapulted the nose assembly out to the fuselage in spectacular fashion and left the very out of balance remains to descend in floppy stalls and tail slides.

He and others still had important flights to make after the wind change. Control was relocated at the opposite end of the drome after a short wait to double check that this wasn't a passing thermal fooling us. The new conditions were less easy to read but no windier and for those that had been suffering with heat and flies refreshingly a little cooler. By now there were over a dozen entries in virtually every class and by the end of the day at least ten had flown in most.

John Fletcher emerged top in 1/2A but not without some trouble with at least one premature engine cut that left a fuselage in many pieces. His 10 minutes was the only full score here despite Alan Jacks consistently high climb with his distinctive black and yellow model. A few seconds pared of his third flight left him just short. Fletcher was busy in HLG too with 4.15 total from an incomplete series of flights due to the loss of both his DT less models. Maurice Gilmore won with little short of a full score.

Brian Kenny dropped two flights in A1 and still topped the pack although things could have been very different had Beal with four maxes up not run out of time at the end of the day and failed to make his fifth flight. CO_2 followed its usual pattern of not really getting going until late in the day but both Philpott and Fielding impressed immediately with good running motors and consistent climbing models. There was so much confusion over just how many maxes Steve Philpott had done that Fielding was packed away before he found out he had to flyoff.

Events ended at 6 pm and flyoffs were from 6.15 when lift and sink was still very much about. CO_2 turned out to be an anti climax with both men making below their usual times presumably contacting a mutual piece of bad air — only one second deciding the win for Philpott.

Coupe d'Hiver was more satisfactory with four contenders. Two of the Davitts — a family fast becoming to Coupe what the Smiths are to Open Power — and non family members Hipperson and Peers as the other two qualifiers. Russel flew too early in dreadful air for little over a minute. The other three waited more than 10 minutes and it was Dennis Davitt who showed the way by picking the air and then out climbing Hipperson by a good 30 feet. This height differential was maintained through the glide as both models sank slowly in good air for 4 and 3 minutes respectively. This gave Dennis a win over Hipperson this year at last.

It was a little disappointing to then find the SMAE plaques had not arrived in time. Contest director Dave Goodwin took this 'on the chin' bravely by continuing with a prizegiving and handshakes for the winners. A lesser man might have just packed up and crept off home. A good day.

Results

A1

1.	B. Kenny	Vulcans	9.10
2.	S. Philpott	Whitefield	9.05
3.	J. O. Donnell	Whitefield	9.00

Coupe d'Hiver

1.	D. Davitt	Leeds	10.00 + 3.54
2.	D. Hipperson	Croydon	10.00 + 2.59
3.	I. Davitt	Leeds	10 + 1.19
4.	R. Peers	Falcons	10.00 + 1.12

1/2A Power

1.	J. Fletcher	St. Albans	10.00
2.	A. Jack	Tynemouth	9.52
3.	P. Harris	Birmingham	9.50

CO

1.	S. Philpott	Whitefield	10.00 + 1.52
2.	S. Fielding	Morley	10.00 + 1.51
3.	D. Hipperson	Croydon	8.33

HLG

1.	M. Gilmore	Grantham	4.41
2.	J. Fletcher	St. Albans	4.15
3.	P. Ball	Grantham	3.00

September 20
Midland Area Rally. Barkston Heath. O/P, O/G, O/R, Combined Mini, HLG, CO_2 and Vintage duration. Contact G. Ferer. 0533-886519.

September 20
Indoor CO_2 and HLG final events. Cardington. (SMAE Event).

September 27
6th Area Event. Area Venues. 1/2A power, A2 for SMAE Cup and Team Open Rubber for Farrow Shield. (SMAE Event).

September 27
Bath MAC. O/P, O/G, O/R, All in FAI, Mini, CO_2 and HLG. Also usual Area events available. Contact E. Burles. Bath 331126.

October 4
Southern Gala. Odiham. O/G for Thurston Trophy, O/R for Flight Cup, O/P for Short Cup, 1/2A power for Quickstart Trophy, CO_2 for Sparklet Trophy. A1, Coupe D'Hiver and HLG (SMAE Event).

October 11
Northern Gala. Church Fenton. O/R for Caton Trophy, O/G and O/P plus other non-SMAE events. Contact 0904 76794. (SMAE Event).

October 11th
Indoor Spectacular Milton Keynes 1981. Venue: Middleton Hall, Milton Keynes (in shopping centre). Contact: Bob Bailey. Tel. Stevenage 723642.

October 18
The Open Rubber Trophy. Hemswell. O/R only in rounds start 10am plus Champagne Fly-off later. Details from D. Hipperson. 35 Anthony Road, Boreham Wood, Herts. Enclose and SAE.

October 18
Northern Area FAI Meeting. Church Fenton. F1A, F1B and F1C. Two flights before 1pm. Contact 0653 2580.

October 25
Witchford FAI and Mini Meeting. F1A, F1B and F1C plus A1, 1/2A and Coupe D'Hiver. Details from M. Dilly, 20 Links Road, West Wickham, Kent. Enclose SAE.

November 8
Anglia MFC Wakefield Contest. (a) Models to 1953 Wakefield rules including freelance designs. (b) Published 'Vintage' Wakefields to pre-1951 rules, (c) models to current F1B rules. Venue: RAF Watton. Contact: Bob Wells. Tel. Hornchurch 40859.

November 22
Mini Class Contest *Cd'H, A/1, ½A Power, CO_2 Duration.* SMAE rules to apply. Good prizes will be presented at the close of the event. Venue: RAF Watton. Contact: Chris Blanch. Tel. 92-740431.

FLYING HIGH

With Ian Barrett

WINGS, tail-surfaces and fuselages have all been discussed separately in previous notes. Now we can bring them all together, recognising that certain basic rules must be obeyed.

As the fuselage needs to head through the air like an arrow for minimum drag, it follows that the tail surfaces, which act much like the flights of an arrow, should therefore be mounted parallel to the fuselage centreline. Adjustments might have to be made later at the flight trimming stage, but first mount the tailplane at 0° incidence. When looked at from the head-on position, the tail surfaces must also be square to the fuselage and to each other. Tailplane tilt is a trimming device used on advanced models.

To provide lift, the wings must pass through the air at a small positive angle, the angle of attack. Assuming that the fuselage centre-line is parallel to the airflow, then the wings are mounted on the fuselage so that the leading edge is slightly higher than the trailing edge. The angle thus formed between wings and fuselage is the angle of incidence, and varies with the type of aerofoil being used. This angle is usually between two and four degrees, so choose the mid range figure of three degrees if you are unsure which to use. Fine adjustment will come at the flight trimming stage.

The distance between wings and tail, the moment arm, will have been decided when planning the wing and tail areas, and on this length will have been based the nose length. Total fuselage length will probably finish up a little less than the wing span.

As you now have the basic dimensions of your new model, you can begin to give it some form. If you become a prolific producer of own-design models, you will generate a style of your own; many of our well-known modellers produce easily identified designs, because of some particular 'trade mark'. Mark several thumbnail sketches of what you wish to build, and when satisfied, draw out a three-view sketch. This can most easily be done on squared graph paper, letting each small square represent one unit of area (Square inches or square centimetres). Your scale drawing of your proposed model might finish up no more than 100mm (4in.) across the wings, but will be large enough to show the major structural components.

At this stage, check that stock balsa sizes can be used conveniently, reducing the size of spars, etc. where they exceed standard balsa lengths.

Your three-view drawing can be used to ascertain the position of the centre of gravity. This is determined using the areas of the flying surfaces and the moment arm. Should your design employ tapered or elliptical wings and tail, then your graph paper will enable you to count the square units enclosed in the planform, and reach a close estimate of the area. Rectangular wings are easy to calculate, being the span times the chord. The moment arm is the distance between the quarter chord lines of wing and tailplane. With this information, put the figures into the following formula, determined empirically many years ago:

$$\text{C.G. distance measured from wing leading edge} = \left(\frac{\text{Wing chord}}{7}\right) + \left(\frac{3 \times \text{Tailplane Area} \times \text{Moment Length}}{8 \times \text{Wing Area}}\right)$$

Note that all the dimensions used must be in the same units; do not mix inches, millimetres, feet, etc.

Calculating the centre of gravity position in this way will position it about one third of the wing chord back from the leading edge. The practical limits for sports models is between one quarter and a half of the wing chord, measuring from the leading edge.

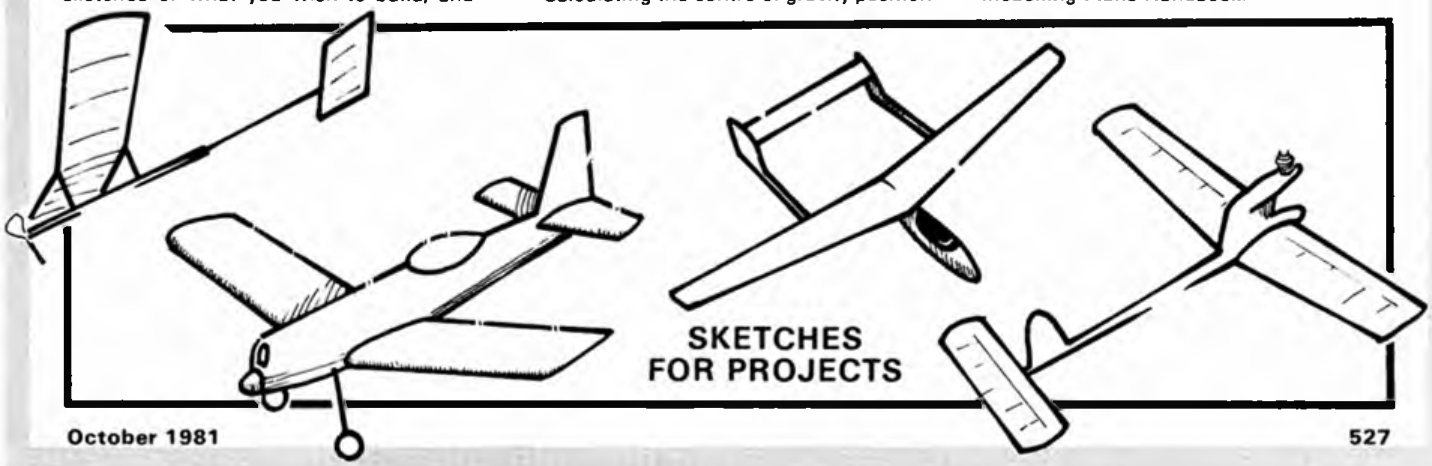
Another way of checking the sums is a method I have been using for years, and is very instructive. Using your three-view scale drawing as a full size plan, make a paper glider version! Accurate folding is required to ensure that the wings and tail are at the correct angle. Stiff notepaper is best, with PVA adhesive holding it all together. Add a little modelling clay or pins to the nose until the model balances at the calculated position. Now try flying it; trimming is simply a matter of bending the paper surfaces. Incidentally, a little curvature in the wing chord (camber) improves performance and increases the stiffness.

Paper models not only allow you to check the balance point, but also give you a better impression of what the full-size model will look like. Your intended design of decoration can also be tried out, by using felt-tip pens to colour the paper. These small flyers can also show up serious design flaws — one small version of a radio glider I was designing would not respond readily to aileron deflection, and I put this down to their tiny size on the paper model. However, the completed slope soarer, twelve times larger, exhibited exactly the same characteristics.

If you are satisfied with your design, it can now be transferred into a full size plan. Some ability in technical drawing is useful but not essential. If you are stuck for large sheets of paper to draw on, try scrounging an old roll of wallpaper, and draw on the back of that.

A full size plan is only necessary if repeat models are to be built from it. For many of my models, I draw the component parts directly onto the wood, using my small scale outline as a guide. This saves considerable time, and allows modifications to be made as building progresses. Only if other people will be building from my design do I bother to draw a proper plan.

Well, there we are; just a few thoughts on the essentials of designing your own models. Why not have a go? Perhaps your name may someday figure in the Aeromodelling Plans Handbook.



SKETCHES FOR PROJECTS

BRITISH COMBAT INTERNATIONAL '81 DYTCHLEYS

Edwards and Van Mourik fighting it out. Edwards beat Van de Bossche in the semi final and Van Mourik came second in the final.

July 4-5

REPORT BY JOHN JAMES
'PHOTOS BY ERNIE BURLES

British Combat International 1981 July 4th and 5th

The first British Combat International for many years was held in what at first seemed to be most unusual conditions. The setting was Dytchleys, a country manor, now belonging to Queen Mary College, London, and the contest was flown in the front garden! Accommodation was in the college bedrooms, or there was an area set aside for camping if people preferred. All the good for the weekend was provided by the college which meant no cooking, and, more important, no washing up. The weather was quite good all weekend, which comes as a great surprise considering all the rain recently, so the conditions were right for a good competition.

Unfortunately, mainly due to a clash of dates with a competition in Germany, there were only 4 foreign entries. One of these determined fliers, Tom van Mourik, came from Holland on his own by public transport and hitch-hiking, with two bags of models under one arm, model box and toothbrush under the other, and then proceed to take second place. One wonders why other fliers were not prepared to make a similar effort. However, most of the British contingent were in attendance to bring the total entry up to 28.

And so to the flying. Most people arrived with fairly conventional models apart from some members of the COSMO club who had followed the lead set by Pete Tribe and produced some American style 'boom' models. Their models however, were much smaller than his, but still appeared quite fast and stable, although the tails seemed rather fragile as a careless landing frequently resulted in a snapped elevator.

The first round and losers round produced some very scrappy flying with a lot of pilots looking a bit on the rusty side. Pete Tribe did however manage the highest score of the competition in his first round bout with four cuts and no ground time. The major surprise of the day was Mike Whillance, one of our European team members going out in the losers round. The continentals all escaped unscathed which meant at least they did not have a wasted journey.

As a complete contrast, flying on the second day was of a very high standard with at least half a dozen of the fliers left in looking potential winners. A particularly good bout was that between Jarrett and Bartram, both quite young fliers, who put some of the more experienced competitors' to shame by the skill and cleanliness of their flying. Jarrett eventually won after

Left: Belgian team consisting of Ronny Van de Maele, Pieter Roelandt and Bart Van de Bossche.

Right: Neil Gill and Tom Van Mourik after the final.

Left; Tony Jenner who was the highest placed junior. Above; Dave Harrison with his new model. Below; Dave Willis and Dave Harrison pitting for Pete Tribe.

persuading Bartram to fly his model into the ground on a couple of occasions. Mark Jarrett was unfortunately outflown in the quarter finals by Pete Tribe. Neil Gill was also quickly disposing of the opposition and beat Dave Harrison four cuts to one to obtain his semi-final place. The other two semi-finalists were Edwards who beat Van den Bossche and Van Mourik who beat D. Willis.

The semi-final betweent Gill and Tribe was probably the fastest and closest of the weekend with both fliers determined to get a place in the final. The eventual score was three cuts each but unfortunately, Tribe's engine cut halfway through the bout and so he lost on groundtime. Van Mourik also dismissed Edwards to obtain his place in the final. The flyoff for third place was won by Tribe after Edwards was disqualified. His model was cut off its lines and in his haste to recover it, he forgot to put on a crash helmet.

The final was a fast and furious affair, but after a very unfortunate incident occurred halfway through, had to be reflown. Neil Gill had crashed and the pit crew were in the process of getting the spare model in the air when Tom van Mourik's model cam off its lines and flew straight into one of his Pitmen, Ronnie van de Maele, knocking him down and cutting his arms quite badly. His crash helmet saved his head from any serious injury. Neil Gill's pitcrew very sportingly did not attempt to launch the spare model and gain any advantage from the accident. Ronny was taken to the local hospital from which he later returned with two bandaged arms and a rather pale face.

The refly of the final was equally fast and after four minutes of hectic flying, Neil Gill emerged the winner of the international. Unfortunately for everyone else, Neil who is sponsored by the Model Spot in Peterborough, had seen the trophy the previous day and decided it was going to be his anyway, the flying was merely a formality!

A huge amount of work was put into the contest by the four organisers, Paul Vallins, Chris Snitter, Pete Jayes and Mick Hember, and they were rewarded by a very successful meeting, despite the lack of continentals. They had managed to obtain plenty of sponsors who included Ripmax Models, Tigre Engines, Michaels Models, Rojair Ltd., FX Models, Taylor Plugs, Irvine Engines, Solarfilm, Aircraft, Henry J. Nicholls and the Aeromodeller.

The proceedings were however somewhat marred by a few policy decisions. In an attempt to obtain unbiased scores, people were used who had never seen Combat before which, together with an odd choice of streamer colours, resulted in some suspect scoring on the first day. Some of the rule interpretations were also rather unusual. Fortunately the problem seemed to have resolved itself by day two. On the plus side, the prizes and facilities were excellent and should attract more competitors next year.

penny plane

TUPPENCE COLOURED
by Peter Miller

THE DISAPPEARANCE of coloured Modelspan was one of the saddest blows to aeromodellers in recent years. With no choice white becomes rather monotonous, colouring with dope or enamel adds weight, defeats the object of this lightweight covering material. The solution to the problem has been staring me in the face for two or three years, but it was not until I was covering my new Vintage model that I realised it.

The company that I work for is concerned with flavourings for foods among many other products. One of these products is a food colouring for such things as cakes. These colours are water based and can be washed away with water and are sold in 1 ounce bottles under the Bush Boake Allen label but I am sure any similar product would be virtually the same. The colour range consists of red, blue, green, lemon yellow, egg yellow, orange and brown.

I tried two techniques on my vintage model. The first was to tip a one ounce bottle of red into about 2½ pints of water, in which the tissue was completely soaked and then squeezed out as much as possible, before being doped to the framework and nose blocks in the normal way. Once it had dried, it was doped in the normal way and is almost impossible to tell from normal coloured tissue. Secondly, as I had already covered the flying surfaces with white tissue, I sponged the rudder with the dyed water using a scrap of foam plastic; the results were almost as good, but there is a risk of uneven colouring on larger areas.

Dope and thinners do not make the colours run and even seem to fix it; I found that the colour was very hard to remove from my hands. The dye will not take on pre-doped areas.

I have not had time to experiment with the dyes but there are several obvious possibilities. Peanut scale models could be sprayed with an airbrush, even camouflage would be possible with no measurable increase in weight. Colours can be mixed to produce shades that no tissue paper ever had; bare frames could be dyed, doped and then covered with either white tissue or another colour. For example red wood covered with yellow tissue would give a yellow model with the framework in orange; the possibilities are endless ... your wife could even use it for colouring cakes, if they are light enough you could try flying them.

INDOOR CO_2

Dave Hipperson describes the construction of his winning model

Ian Davitt's tissue covered design. Although it flew well at Cardington on May 17th 1981, it hit the girders through lack of turn on the glide.

NOW THAT PROPRIETARY CO_2 units — particularly the Telco — are more consistent in their performance and handling and outdoor CO_2 duration is gathering support, some of you may well be interested in trying the delights of indoor flying. This is not intended to be an introduction to conventional indoor — EZB would be a better path to take — but it is a way of sampling indoor flying without the need to invest in any more wood and equipment than you use already. The design here is built very much in outdoor fashion but with very much smaller wood dimensions. That is to say that no jigs are used and leading and trailing edge spars are — dare I admit it — pinned to the board during construction! The fuselage is soft straight grained 1/32" rolled around either a billiard cue or an A2 fuselage blank if you have one handy. The seam is stuck with cyano.

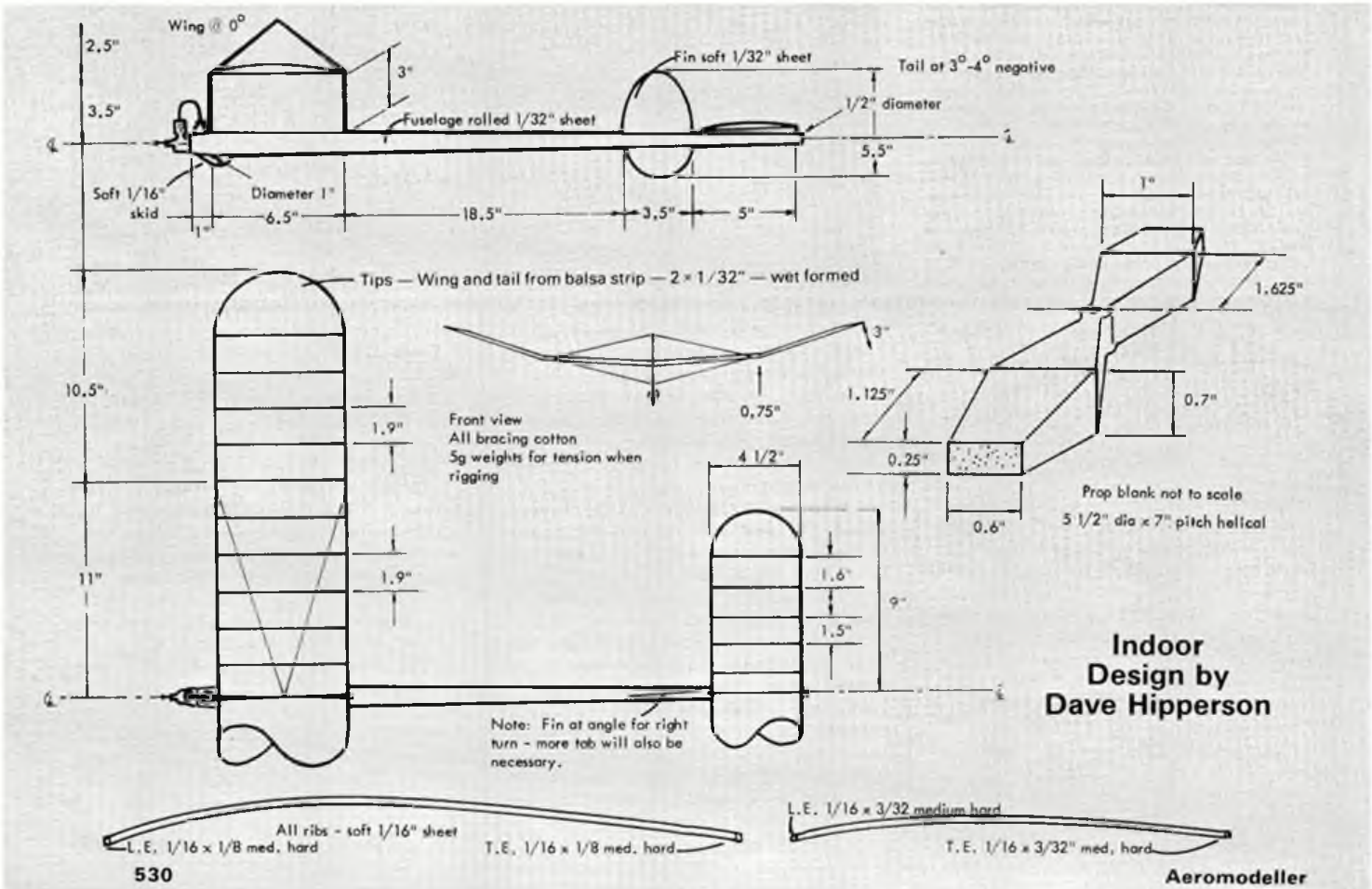
Air frame

Unlike a rubber model a CO_2 airframe has to absorb reciprocating vibration from the engine and I found some improvement on the original designs when I increased the wing post size from 1/16" (1.5mm) to very hard 3/32" (2.5mm) and hence reduce the amount the wing 'flapped about' on the climb. These posts taper off to less than 1/16 (1.5mm) at the top of the bracing triangle above the wing. Tail posts are 1/16"" (1.5mm) and this unit should be built stiff enough to withstand flight loads without bracing — weight finished 1 gram to give you a guide. If it twists when it encounters turbulence it can be nasty!

Covering

Wing and tail surfaces are covered with ¼ thou. silver mylar bought from Ian Dowsett and although fractionally heavier than condenser paper is considerably preferable aerodynamically, particularly if applied smoothly as it is completely air tight. I stick it on with cow gum (available at stationers) thinned with lighter fuel. There are other more specialised adhesives such as 'Grab' but I have found that they tend to do the job a little too well and the mylar is impossible to get off the structure again if it goes in the wrong place. Cow gum allows a couple of 'tries' or at least a little movement before it dries. Of course whatever you use covering should be done by offering up the glued structure to the mylar laid out on the table rather than trying to man-handle the mylar which would be virtually impossible.

This way the tail can be covered in one piece (the mylar is 6" wide) and wing in a number of pieces laid on chordwise — hence the slightly strange rib spacing. So as not to be handling the complete wing at the covering stage I complete the tip joints but leave the center dihedral until I have covered tips (3 pieces) and outer ends of inner panels (one piece each). The final centre section is then covered after the centre joint has been made. Wing post tubes are formed by wrapping damp glue impregnated model-span tissue around piano wire of the appropriate diameter — 4" of tube can be made at a time quite easily. Posts are push fitted into the fuselage and the covered wing can be glued (cyano) into the cabane and the cotton thread bracing completed from the top down keeping it nice and tight and the wing flat.



Propeller

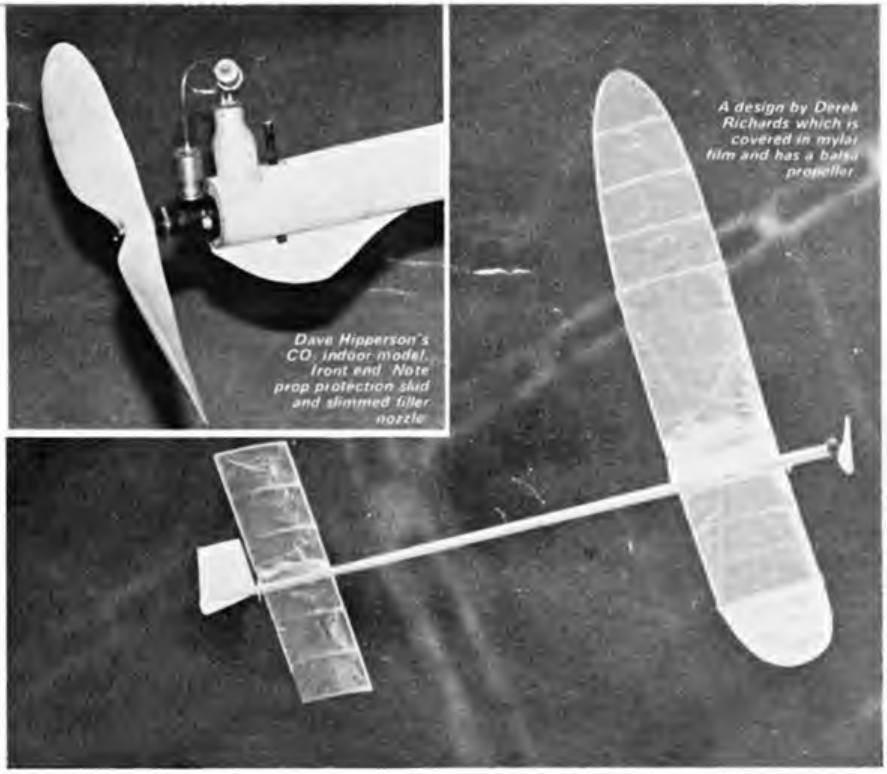
The prop is carved balsa 5½ × 7" and virtually doubles an indoor models performance compared to the standard yellow plastic one. Larger commercial plastic props are also an improvement but not as good as this small balsa one, so the blank is included in the drawing. It should be weighted with ¾g of lead in each tip, this is also a very convenient way of balancing it. Carve it from hard close grained wood and keep the section thick and the blades a little undercambered. Weight with tip lead approx. 2 grams.

With engine, tank and prop in the position shown, the CG will come out at about 60% as long as you have a nice light fuselage and the entire model should weigh 1 oz (28g) or less. This forward CG position certainly gives a steady and non critical trim but it may be beneficial to experiment with moving it a little further back as decalage is really rather excessive and might be wasteful.

It should be noted that this model has been designed for conventional tank engine assemblies. It may be that it could be improved with a Turbo Tank unit but there will be a considerable weight penalty and the CG position may become even more of a problem.

With a reasonable motor running off through the balsa prop for about 3 mins, flights of 5 minutes should be possible straight away in Cardington and with a good motor then you will be in the 7 minute region on a good day. (Still haven't decided what a good day is at Cardington as temperature, air density and humidity affect aerodynamics and the motor more than somewhat). For lower ceiling sites CO_2 contests would be quite practical as it is relatively easy to adjust these motors until the model hardly climbs at all. At such a setting the run will be probably 4 mins or so but remember a slower run will tend to allow the power turn to open up.

At the last meeting at Cardington most models seemed to be trimmed for quite a tight power turn 30' (diameter) and similar on the glide with motors running between 1500 and 2000 rpm something like half the speed we use outdoors.

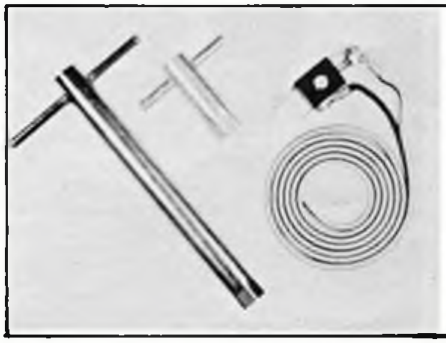


Dave Hipperson's CO₂ indoor model, front end. Note prop protection skid and slimmed filler nozzle

A design by Derek Richards which is covered in mylar film and has a balsa propeller

SHOP TALK

The latest in products for the modelling scene



MICRO MOLD ACCESSORIES

Micro Pack (radio packing) is a tube of foam rubber. Cut to a length to suit batteries and receivers, it makes a neat and vibration proof job of any R/C installation. Price 45p.

The ½A Positive hold glow clip and lead is suitable for all of the Cox range of motors, and engines with similar heads. Price £1.29.

Two useful items are the short and long reach thin wall plug spanners. Short L.P.64 Price 50p. Long L.P.65 Price 67p.

Pressure fuel feed can be obtained by fitting a nipple I-P62 to a silencer. It has a 4BA thread and costs 46p.

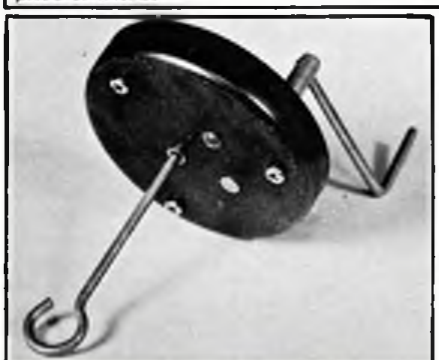
BROWN A-23 CO_2 ENGINE

It is hard to believe (until you actually see it run) that it would be possible to make such a small motor. The sample motor supplied to us by Sam's was bought by one of our staff before we had even given it a test run. There is no doubt this little motor will be in the fore-front of indoor flying this season. Price £22.95 not including the charger.

Sam's Model Shop, St. Albans, specialise in a wide selection of hard-to-get aeromodelling items, including most requirements for the free flight modeller. Special items of interest are: Pirelli rubber sold in packs of 20ft by .020" or .035" thick by 3/32nd, 7/64th, 1/8th, 3/16th and 1/4. Hanks of 80m × 6mm are also available.

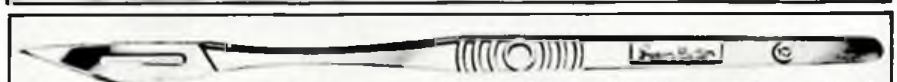
KEEPING TOOLS TIDY

A most useful addition to any workshop is the 'Rawplug Handy Tool Rack'. It is designed for wall mounting and provides space for over fifty hand tools. The rack is made from steel and finished in stove enamelled paint, size 36in × 4in × 4in fixing screws and Rawplugs are included in the price of £4.99.



MICRO X 16-1 RUBBER WINDER

Although not beautifully constructed this 16-1 winder is quite adequate for winding medium size rubber motors. Price £3.73.



NEW CRAFT BLADE

The new C10 craft blade now being produced by Swann-Morton Limited is based on their well-known scalpel blades. The shape of the blade makes it very rigid which is good for cutting intricate shapes out of balsa. A number 5 Swann Morton handle is recommended for constant straight cuts, and a number 3 handle for a more positive grip. Obtainable at most suppliers and model shops.

TUF STUF FROM HERMETITE

Tuf Stuf is a double bonded epoxy putty designed for repairing cracks in metal and alloys. The material is in the form of two strips. To use, equal amounts of the material are broken off and kneaded in the heands until a unform colour is obtained. This can then be moulded into the areas to be repaired or formed into individual shapes. The material is workable for up to two hours and is steel hard within twenty four hours. When set it can be drilled, tapped, machined or polished, making it suitable for small components that would otherwise have to be cast. Obtainable at most D.I.Y. shops, price 95p per 50g pack.

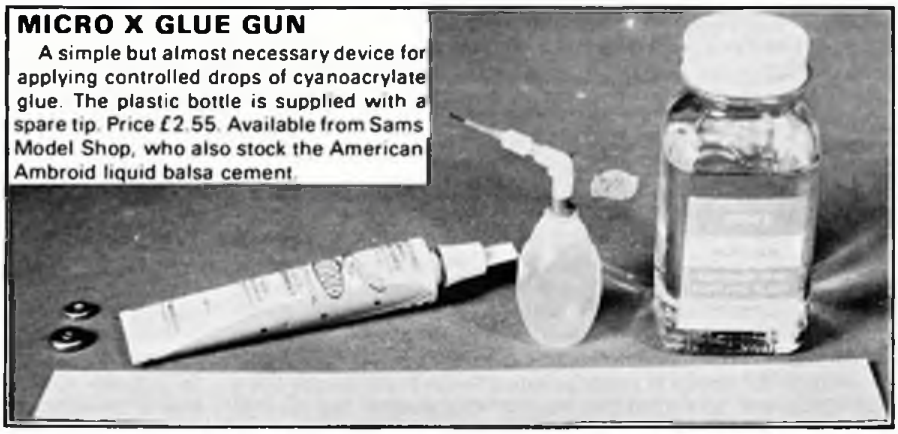
MINIATURE HANDTOOLS

This 'Easi-Grip' set of tools consists of miniatures carbon steel side cutters, fine-nosed stainless steel tweezer-pliers and a serrated stainless steel scissor/shear for cutting fine wires etc.

The cost of each tool is £3.75 or £10.00 for the set of three. Prices include VAT and post and packing. Available direct from Tele Production Tools Ltd., Stiron House, Electric Avenue, Westcliffe-on-Sea, Essex SS0 9NW.

MICRO X GLUE GUN

A simple but almost necessary device for applying controlled drops of cyanoacrylate glue. The plastic bottle is supplied with a spare tip. Price £2.55. Available from Sams Model Shop, who also stock the American Ambroid liquid balsa cement.



NEW RESIN PRODUCTS

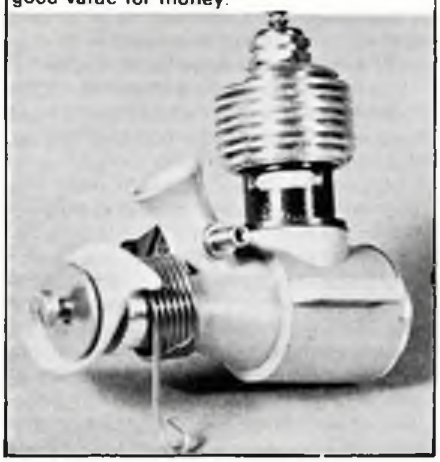
Plastic Padding Ltd., are now distributing a resin that is activated by their normal plastic padding hardener. It is sold in 125 ml, 250 ml and 550 ml cans. The prices are £1.10, £1.72 and £2.66 respectively + VAT.

450 gram glass fibre mat is also available at 85p.

WASP .049

Here is the latest 1981 version of the original Wasp glow motor, now being produced by Davies Charlton, Hills Meadow, Douglas, Isle of Man.

The two samples we had of this sports .049 motor were certainly easy to start. The finish is far superior to the earlier series motors and comes complete with plug, spring starter, and a length of fuel pipe. At £7.13 plus VAT it presents very good value for money.



Club News...

IN QUITE A LENGTHY letter, Mr. A. E. Sweetland, P.R.O., of the **Crawley & D.M.A.C.,** asks whether the club newsletter, 'The Turbulator', was of any value to us considering the lapse of time that must ensue between the preparation of the newsletter and the appearance of any items or information culled from it in these columns. Admittedly the time lapse, which can be considerable, does not make for topicality, but immediacy, even in our urgent age, is not everything. A club is a continuing entity, and there is more to club life than who won the latest trophy. Hopefully, the more continuous themes find their way into the newsletter where we can pick them out together with anything of interest to other clubs and the general reader: so please do not be shy about sending in your newsletters. Although we may help in giving the club a little publicity, Crawley appears to have been doing quite nicely in the local papers, improving the public image no end. By way of an accolade one of the papers is to do a photo feature on the club, timed to coincide with its 21st Birthday. Meantime the club continues its very active life, organising a BARCS Thermal Soaring event in June at Bewbush. The entry was a fabulous 78, of whom all but one flew, calling for the utmost in organising skill. Picking the one fine day of the year helped, though, and members and visitors — from all over the South — had a most enjoyable day, with fat prizes, including money, at the end. The club is giving support to the Year of the Disabled, not merely to treat them to flying displays but to help them to actively participate in the hobby. Here, of course, the type of model must be matched to the particular handicap, always bearing in mind that the handicapped person cannot duck or sidestep on those hairy occasions which occur on the best organised flying field.

We go way up North for our next newsletter, from the **Timperley & D.M.F.C.,** giving plenty of detailed coverage of the club's wide ranging interests. On the Radio side the 'Build Bigger' bug is biting away merrily, but it is models of modest proportions, we trust, which are delighting the summer crowds during the display season in which the club is actively involved. That firm club favourite, Thermal Soaring, is very much in evidence with a Friday Night League and a BARCS event scheduled for August. But despite the lure of controlled flying the club still retains a strong Free Flight interest, which I suspect is due in no small measure to the enthusiasm and guidance of veteran flyer, Brian Faulkner. His name features at the top of the lists in two contests held at Tufton Park. One was for P.30 Rubber and the other for Open Rubber. The usual wintry winds prevailed. Away from home the free flighters put in a strong representation at the Northern Area Vintage Competition at Church Fenton. Chris Hawke did two easy maxes with his 1936 Copland Slabsider (that I would have liked to have seen) but dipped on his third flight. Bill Newton fared better flying his 'Timers Nightmare', powered by an Arden 099 glow into third place. A 'Percy' rubber and a 'Trail Sportster' were also seen in action. Vintage flying is very strong up North, of course, and is now spreading elsewhere. Mention of Copland, though, reminds me of his contemporary, Chasteneauf, who produced the most elegant of all the streamlined Wakefields. Oddly enough no vintage fan seems to have taken it up.

The newsletter of the **Enfield M.F.C.,** is taken up with the R/C Glider Contest held at Enfield Playing Fields. A calm start indicated bungee rather than leg buckling tow launching. Nine members entered, making for an active days flying to the 6 min. max., 50 point Spot Landing bonus, rules. Winner was John Beer, who also reported the event and provided his old green jacket to mark the Spot. (Why not a windcheater?)

But it is landscaping down on the Moor, according to the Watford Wayfarers M.A.C., newsletter. Extensions to the take off patch is taking its toll of molehill and ringwort, out thrusting into the natural environment, Heathrow fashion. Appropriate to a model club a Flymo is doing all the trimming. No end to ambition, though, for the club is on the look out for a really big mower — one with all the grass collecting gubbins etc. But it was at a demo in the Fire Station car park where the tarmac provided real take off and landing luxury. Even the smoothest grass patch to a model is like a full size plane taking off in a field of potatoes. What's new in the club meeting scene is the video film. This is a real break through for the home movie enthusiast — no projector or screen required — just plug into the telly.

Forthcoming from the **Anglia M.F.C.,** the usual neat and informative magazine, 'High Flyin'. Reference given to arrangements for the Club Gala which has since occured, and of which we have some information. It had the exceptional good luck to coincide with the first calm, warm Sunday for many a long month. Thus the events on the wide acres of the farm flying field were flown in most pleasant circumstances, and with all the families turning up an agreeable social atmosphere was engendered around the barbecue area. The Sleek Streek competition gave the youngsters plenty to occupy them, with the dads offering advice on the finer points of trimming and the mums supplying the oohs and the aahs. Altogether the day, which carried on into the late evening on a chat and fly basis, was a notable success, crowned by the prizegiving, which was more than lavish with the table simply groaning under the weight of splendid trophies, huge plaques and a range of goodies. The Coupe event saw a welcome resurgence of the old free flight spirit. It was won by Derek Neil, whom together with his protege son, Graham, have done much to put the club name back on the map. Graham has done particularly well, winning the Frog Junior Trophy at the Nationals and placing high in the Coupe D'Hiver event. He also did extremely well at a recent Indoor meeting at Cardington, putting up an EZB time of some 15 minutes and taking away many valuable prizes.

The editorial of the **Long Eaton M.A.C.,** newsletter 'Informer' styles itself the 'Think Tank', and very graciously acknowledges its treatment in these columns. At the time we expressed alarm at the ploughing up of the club field, half of which had already got its dirt topping, and the other half in imminent danger. It is now a question of finding a suitable alternative. Not so easy these days when farmers find crops more profitable than pasture land. In common with most newsletter editors the 'Think Tank' bemoans the lack of material forthcoming from members, but in the July issue they were in receipt of a useful article on C/L wire fixing, to counter those off the handle flyaways. But it was the other article I found intriguing. Tony Topps account of the purchase and refurbishing of an old Auster. I was amused by the story of the ergomanic lady wing coverer who put British industry to shame with a long, unflagging stint at a record pace. The rebuilt plane was successfully flown in June.

From Barry Wade comes the well presented and highly informative East Anglian News. There seems to be quite a number of clubs scattered throughout this not over populated area of Britian; 25 in the latest count including newcomers **Ipswich Civil Service M.A.C.,** and **South Essex M.A.S.** who fly on an island in the Thames Estuary, tides permitting. Total affiliated membership is

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around 780. Judging by the small turn outs at the free flight meetings at Watton it is safe to presume that the majority of the Area members are Radio flyers. Understandably, then, there is concern to keep the newly acquired and jealously guarded 35 MHz band clear of encroaching CB addicts. Fortunately East Anglia is not highly urbanised, and is less likely to suffer from the Hooray Henries on the main highways than most. We also learn that the F.A.I., is at last waking up to the need for noise control, rather belatedly as far as the U.K., is concerned, since we have long been reduced to a state of utter hush — well almost, but the International body might well be thinking of de-screaming the up to now sacrosanct power duration models.

One of the progressive East Anglian radio clubs is the appropriately sounding **Ipswich R/C Model Club.** Their newsletter is a pukka print job with excellent photogravure. Some fetching looking models to be seen, and some equally fetching M/S's flying them. If this is sex equality we want none of that old chauvinism on our airfields. From the Chairman's report we gather that the club has a nice line in flying field; one of the three being particularly good, with first class take off facilities. Question: if they are holding a Helicopter fly-in at Watton, why is it banned to F.A.I. Power models? The newsletter includes a quite clever alphabetical rhyme on the trials of model flying — good quality witty verse is very much at a premium these days since they stopped teaching English at school.

Barkston Heath being the club field, it was expected that the **Grantham & D.A.S.,** would turn out in force for the Nationals. Even so, there are not many clubs who can field up to 16 free flight contest flyers. All had to contend with the wayward and windy weather, but at least had the satisfaction of Phil Ball lifting the Open Rubber trophy. Busiest member, though, was Mike Coomes in his capacity as F/F Competition Secretary. In the newsletter he gives a blow by blow (that wind again) account of his very hectic weekend, made more hectic by combining his official duties with entry in three of the competitions. Vintage again claims its fair share of space in the magazine. Vintage usually means models of 20 years old and over, but some more historically minded enthusiasts go strictly for the pre-war stuff, particularly the big gassies. Only snag is that to the Americans pre-war is pre-1942, whereas to us it is pre 1939.

Wanted for the newsletter of the **Leicester M.A.C.,** — a snappy title. Offered so far is the inevitable 'Fly Paper' which is a bit of old Johnny jokiness since the younger generation have no idea what a fly paper is. And a Mr. Toyne, who after writing a long and serious letter to the Editor on the subject, has come up with the execrable 'Tale Planes'. Obviously he was just Toyne with the idea. All I can say is that if you are thinking of a title for your newsletter, go up market rather than be ensnared into some horrible pun which appears more

This months winner is Hayden Sykes who comes from Wakefield. Runners up were "The C.B. detector van is in your district", A. Barratt from Blackpool Lancs. "Rotate" Andrew Bilnness of Worthing, Sussex. "Look mate! Pick somebody else's roof to land on" (Although we did like your eigth caption, but felt it was a little unfair to Radio Modeller) Dave Day, Watford, Herts. "This isn't the Ark Royal mate" N. French, Hitchin, Herts. The photograph is of the Solar Challenger tail under load tests.

appalling with each issue. Another item in the newsletter concerns modelling holidays. The little holiday haven advertised has got everything the R/C Glider enthusiast could wish for, a large workshop, slopes to the fore and open soaring ground to the rear. Everything, except the wife saying yes. Points on safety given in another item, particularly relating to public infested areas. I must say it has never occured to me that a fully stretched bungee can be a danger, but obviously is. A must for all power flyers is a full check out of systems before flying.

The **South Bristol M.A.C.,** newsletter looks hopefully towards the next flying season which, in the absence on an open air one due to the appalling weather, is that of Indoor flying around October. The club is well prepared for the calm, dry delights to come, for a new hall has been found as an alternative to Hope Chapel, and a full programme of almost weekly events has been arranged. Look out for details of the Scale Invitation Evening at Grange Sports Hall on Saturday evening January 23rd. In addition to the very active free flight section for which the club is noted, there is also a strong C/L following, much involved in all the noteworthy contests going, flying Team Race at Warmley, appearing at the Old Warden Scale Day with Dornier 215 and Hawker Sea Fury models, and, not to be overlooked, a second place by junior Chris Anstey in Profile Scale at the Croydon All Scale Day. Thermal Soaring also gets its share of attention, with members involved in a series of club contests throughout the season.

'Flying In-formation', the newsletter of the **Northampton M.A.C.,** now has its own Foreign Correspondent. Mike Minty is sending in reports revealing the best and worst of flying in 'Foreign' parts. Taking one of his first reports on the Australian model scene, he quotes Sydney as a nice example of how things differ across half the world's surface. Needless to say the climate out there is a lot kinder to models and, come to that, to the flyers themselves. But the cost of the goodies is high, which has a lot to do with the remoteness of Australia. The remoteness, too, means that dopes and paints are not readily obtainable. On the particular flying site mentioned you just have to keep an eye out in the morning for snakes and bush fires when the sun comes up.

Stuart Tucker, Hon. Sec. and Treasurer of the **Leatherhead M.F.C.,** has sent along a copy of the club newsletter, Summer 1981. It covers the Club A.G.M., but discusses at length the club flying field situation. Effingham Common, usable for power flying on Saturday afternoons only from 12 to 6, is still extremely sensitive. Complaints of noise and danger are still forthcoming, but it is a maverick, quite unconnected with the club, who is responsible for a lot of the aggro by destroying the peace of the Sabbath. The other site, off Randals Road is of a curious boomerang shape and a dicey place to fly on. The enjoyment of flying is further diminished by a wire fence arrangement to inhibit the enjoyment of the stallions with the fillies.

This is the age of achievement. Unless you are an achiever you are a nothing. Understandably, much interest is centred on the S.M.A.E., achievement certificates, and the **Loughborough M.F.C.,** is no exception. Not that much interest was engendered last year but it is hoped that this year will be not so much the year of the non flying rooster but that of highly flyable Silver and Gold Wings. For those of less ambition a small field Wigan 70 type contest was staged. All very enjoyable, with one minute maxes and no sign of nervous strain.

Club histories are all the rage these days, with those who are long in the tooth and longer in memory reaching nostagically back to the wind and fly origins of their clubs. The most detailed reminiscence to date is to be found in the **Wharfedale & D.A.C.,** newsletter, where there is a year by year account, starting way back in the whacky fifties. Even tank sizes over the years are not overlooked. They could even make a musical of it. 'Oliver' perhaps. Happily, models are circulating just as merrily today, though at a much giddier rate.

Missing this month in the Journal of the Banbridge Aeromodelling Club is the crazy cartoonist, thus the issue has lost some of its frisson. Wrong. He managed to get in one page which I overlooked. There is a joke going on about a flying vet, presumably one who flies models rather one who helicopts in to treat your pet rabbit. Perhaps he could do something useful to those stallions in the field mentioned earlier.

Clubman

TOPICAL TWISTS

by Pylonius
illustrated by Sherry

LIFE HEREAFTER

Looking through the radio mags' one is filled with foreboding at the growth of the model missile industry. From almost every page huge ballistic craft loom threateningly at us — each one capable of interdicting a whole airfield concession, whilst an all out strike could destroy the aeromodelling movement many times over. There is hardly an airfield that is not targeted by one of these monstrous craft, and we must be thankful that their deployment is held in check by a balance of terror — the owners being dead scared of getting the fearful things airborne, enjoying sufficient prestige just by the threat of their existence. However news of a squadron of ½ scale Phantoms being tested in a remote desert led to a full scale alert. Nothing more was heard of this formidable sortie, although the impact of a heavy object had measured .6 on the Richter scale.

But a radio mag writer has recently warned that there must be no complacency amongst missile builders, for the ultimate in ultimates of ballistic craft has yet to be built. Whatever progress has been made in the application of chain saw motors and motor cycle engines, the jump jet model still eludes us. The stumbling block is the complexity of the turbo jet engine, not lending itself too well to miniaturisation, so that you have only the crude, ear blasting pulse motor — O.K. if you're a V1 Scale fan — and the tubby-for-some ducted fan. However, when perfected this ultimate in missile craft will not require an airfield to operate from, but is potent enough to lead to the resignation of a whole local council and even questions asked in Parliament.

Just how soon this heavy missile programme will lead to the demise of aeromodelling as we know it is largely beside the point, for aeromodelling will still continue to thrive long after the model movement is dead and buried under a mountain of plastic foam and twitching electronics, for even when the last flying field is abandoned the great commercial apparatus will not merely remain intact but go from strength to strength with still greater volumes of glossier yet kits and gleaming equipment disappearing into that limbo that lies somewhere in the great model shop beyond. Glowing eulogies on the worthiness of the goodies will continue to be written and more and more ingenious model engines designed for the delectation of collectors only.

Perhaps once a year a model will be actually flown, an olde A Frame Pusher maybe, in memory of a noble hobby that once was.

SUBLIME TO THE RIDICULOUS

We live in a somewhat inverted world. We are being constantly told that this is the age of the train when any fool can see that it is very much the age of the motor car. But if we modellers are said to be living in any sort of age it is surely the age of the CO_2 motor, so help us; a device rapidly expanding in scope and size, and now poised to take over the formidable world of radio control. Now, this is something of an inversion, too, since originally the CO_2 motor was a bit of yuk technology which, if it did get off the ground, was to a height of but a faltering few feet. True it did fizz around a bit over in the States where they had buoyant, calm air and ½ ounce airframes, unlike our vigorous horizontal and downward draughts and, in those robust times, bulk timber type airframes. Generally, the new fangled device fortified the confidence modellers still had in the old rubber motor.

Between the premature debut of the CO_2 engine and its present apotheosis we had the golden age of the 'deezil', a piece of technology that was a miracle of its time. Everything about the deezil was a wonder to behold. All that popping energy from such a miniscule piece of metal, which, without wire or other attachments, was the nearest thing yet to perpetual motion. And the aromas of those early fuel brews must surely have come straight from paradise, however offensive to wifely creatures nurtured on Channel No. 5 and similar noxious affluents. How, too, those sportly little sportsters flew in that age of innocence! It was hard to say whether the model was there for the benefit of the deezil or the other way around, but it was fun on the crowded airfields while it lasted.

I cannot say that the CO_2 motor is likely to inspire the same sort of devotion but if it gives the small model a further lease of life it cannot be all that bad, although for optimum performance you need a doctorate in thermodynamics, or to get one operating at all, come to that.

"Did you hear that one, Charlie, he wants to know where he can fly it".

BEAUTY AND THE BEAST!

'Judge not and be not judged', it says somewhere. An axiom not to be taken lightly if we think of the plight of football referees, tennis umpires, and particularly those with the uneviable task of making judgements on the comparative excellence of model aircraft. Another saying is that 'beauty is in the eye of the beholder', so that when, at a model event, an evaluation is made between the merits of a well turned wheel spat and a snazzy piece of wing decor, much will depend whether the judge is a handicrafts master or a modern art enthusiast.

Seemingly, though, when it comes to Peanut contests small is not necessarily beautiful for, in spite of a criteria holding what seems to be a fair balance between flightiness and frightfulness, the highly buoyant ugly duckling appears to be getting the edge over the swooning swan. Curious craft, not unlike garage extensions in appearance, have been after nudging their way to victory all too often of late in the Peanut stakes. In some cases it is doubtful if the prototype oddity ever flew — and if so why? Possibly it only appeared at the flying meetings as a dubious alternative to the usual arrangement of poles and sackcloth.

You cannot really blame the judges for being on the side of the angular angels rather than the beautiful groundlings for, after all, model flying is what model flying is all about, otherwise we can all join the plastic kit clubs. So when you see the chap with a model looking like a garden shed for a dolls house taking the prize at the Peanut event don't be too critical of the judges.

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Mon Sat 9 30 6 00
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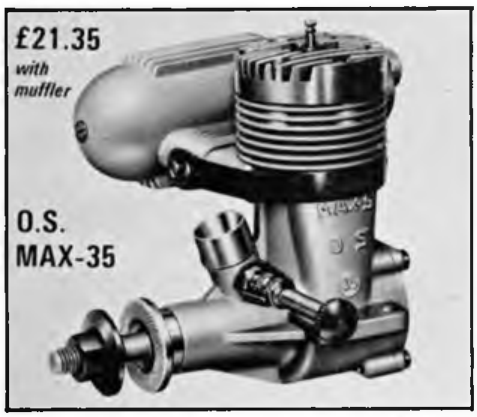

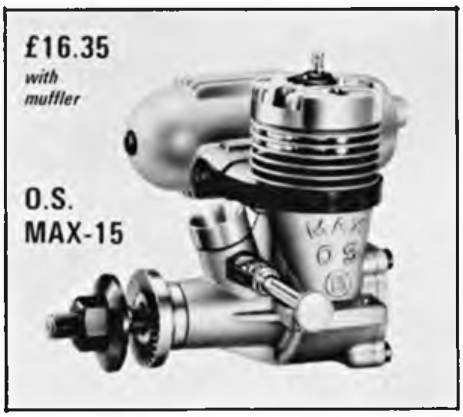

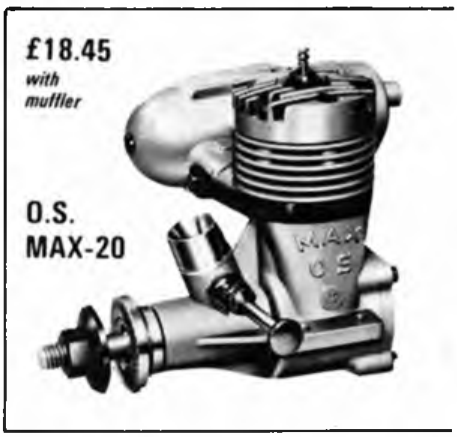

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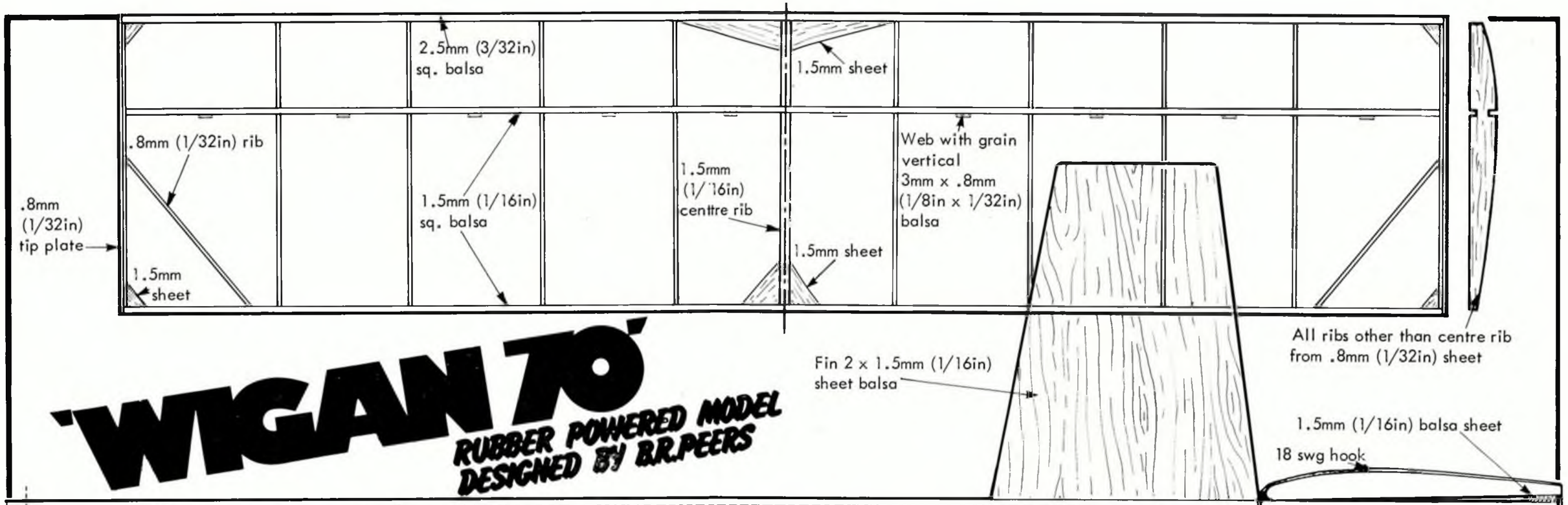

4.5mm
(3/16in) sq.
balsa

4.5mm x
1.5mm
(3/16 x
1/16 in)
balsa

1.5mm
(1/16 in)
Rib

1.5mm
(1/16 in)
Rib

RIGHT
WING

All wing ribs other than stated
from .8mm (1/32 in) sheetbalsa

Dihedral at centre
12mm (1/2 in) with
Left centre panel flat

Tip dihedral 62mm (2 1/2in) with centre
panel flat on building board

Note: all gussets from 1.5mm (1/16in) sheet

1.5mm
(1/16 in)
balsa
doubler

1mm ply
braces

.8mm
(1/32in)
tip plate

LEFT
WING

4.5mm x
2.5mm
(3/16 in x
3/32in)
balsa

1mm ply
strip