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	Editor:- John Andrews 12 Reynolds Close Rugby CV21 4DD	Tel: 01788 562632 Mobile 07929263602 e-mail johnhandrews@tiscali.co.uk
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Editorial

Peter Hall got the dates mixed up for the next event in the Southern Coupe League.

The next SCL event is the Southern Gala on Saturday, August 20th Salisbury Plain not the Odiham event as stated in our results table and report published in the July Clarion
See the events adds for details.

Not a bad month for content and I have quite a few bits held over for the September edition. There is an update from the lads in Nova Scotia with a few pictures of their activities.

I report on a jungle foray to North Luffenham for the Birmingham Club's 'Brumfly' and also my visit to Airbus Industries at Filton, Bristol, to fly indoors in the old Brabazon Hanger.

I managed to purloin a really good article from tinternet on the relatively rare Mills 2.4, the only one I recall seeing was in the hands of Howard Boys many moons ago.

Nick Peppiatt continues with his next indoor article, they are a mine of information for novices and I suspect many experienced modellers also.

John O'Donnell writes his views on the way forward for Free Flight urging that we do not yet give up our traditional modus operandi other than where required for particular sites. It would be wise to have contingency plans but not to be put into operation until forced by circumstances.

John Thompson writes on yet another of his seemingly endless stock of power models, this month it appears to be a hybrid of his own based on two other designs.

Roy Tiller continues to dig into the MOVO range of Italian models and our secretary in his monthly report also goes Italian with a glider that makes me go weak at the knees at the thought of attempting to build one myself, I don't even like round wingtips.

I've kept Kathy Wingate's engine sales list in for another month so if you fancy any of the still vast array of motors please contact Kathy or myself to make arrangements.

Editor



"SORRY, SIR! HE FELL INTO THE SHRINKING DOPE."

Old Warden Vintage Stunt

Eric Hawthorn

Saturday 14 May 2016

The weather was best described as bright and breezy but flyable. With 5 entries we started the event at about 11 o'clock and completed the first round by 12 o'clock, which was immediately followed by taster stunt.

Taster stunt was completed by our long suffering judges at about 2 o'clock. When a half an hour break was taken.

At about 2:15pm we were told that flying had to stop at 2:25pm for half an hour by the trust. This now did not allow us to fly again until 3:00pm, extending our break time. The second round of vintage stunt began promptly and was completed by 3:50pm. A good smooth flight in both rounds gave the win to Mick Taylor closely followed by the improving Dave Underwood.

The only casualty of the contest was Dick Stepney who unfortunately crashed his Fox 59 powered Icarus.

Stunt contests are not possible without judges so a big thank you to our long suffering judges:

Mr Tony Field and Mr Brian Weatherhogg.



(Editor's archive picture: shows contest organiser Eric helping out at a previous meeting.)

Vintage Stunt Results

Competitor	Model	Rnd 1	Rnd 2	Final Score	Position
Mick Taylor	Ringmaster	548	561	1109	1
Dave Underwood	Jamison Special	442	492	934	2
Dave Cowburn	Blue Pants	306	367	673	3
Dick Stepney	Icarus	309	15	324	4
Trevor Tennant	Boxcar Chief	89	129	218	5

Eric Hawthorn

Nova Scotia Update

John O'Sullivan

Just an update on Free flight from Nova Scotia. Weather has not been friendly to Free Flight this spring and I've been mostly flying R/C electric sailplanes. However, today (26 June) we had a good Free Flight weather and made the most of it. John and Brian Richards and I enjoyed a great flying session at our military Airfield at Shearwater. Winds were light and variable but gusty, so we were limited to short motor runs and early DTs to avoid the scrubby bush on the flanks of the runways. Brian flew a very nice rubber model of undetermined origin (anyone got a clue?) John and I flew our E36 and Open Electric duration models.





Surprisingly, all models flew very well and maintained their trim from last season. At least a dozen flights were made with each model. John Richards had an E 36 Mutt and an open class APS Dynamo. He had some programming problems with his Mutt timer. I flew my E 36 Blizzard (plan available from Outerzone and NFFS Plan Services) and my Electric Executioner Open model.



John O'Sullivan



Extracts for Model Aircraft magazines 1959

Grand At-Traction

"The model world is in a state of flux, but we must solder on regardless." These stirring words, spoken by J. Bloggs Esq., at the All Plastic Rally of Great Britain, were not, alas, taken to heart by the powers that be in the world of power. With the vociferous engine unit holding the centre of the world stage, and the obsolescent model plane banished, quite appropriately, to the obscurity of the wings, it seems a pity that no World Championship is being held in its honour.

The oversight on the part of the engine lovers is understandable but quite inexcusable. They have been so engrossed in the whole fascinating business of producing, purveying, comparing and generally drooling over their noisy little darlings, that a minor detail like a flying event seemed quite remote and trivial. Then again, the prestige of the engine has so greatly increased that it seems almost an insult to put it to the demeaning task of towing a silly toy aeroplane about. Even so, they could have staged some sort of international show for their ingenious ironmongery.

By dropping the model plane masquerade completely; the engine lover could really come into his own.

A Model Engine Rally would be a winner from the start. Run on lines similar to the popular Traction Engine meetings, all sorts of intriguing contests and sideshows could be staged. Starting events, torque trials, dismantling races are but a few of the possible attractions for the expert, whilst, for the spectator, there would be a "Knock the Neighbours out of Bed" sideshow. "Try your hand at starting up this 10 c.c. racing engine, and see the neighbours jump out of bed." And, we must not overlook the most popular event of all, the acoustic range test, the prize going to the owner of the engine receiving the first public complaint. However, the choice of venue for such an event might create something of a problem. Outer Mongolia has its possibilities, but the Sahara oasis of El Deezil is the one most likely to meet the approval of the International Anti-Noise League.

A Ballet Shame

One of the most picturesque of the glider ballet movements, the enchanting, winch throwing arabesque, is to be banned. This news will come as a sad shock to all who take delight in the choreographic brilliance of the glider expert. Possibly the restriction on performance is a result of pressure from Equity, and, with the whole display limited to a mere backward prance it could be said, in the language of the ballet, that this *pas-de-deux* has had its *pomme-de-terre-friet*.

But not everyone regards the antics of the winch lugger with an artistic eye. There are the cynics who regard the winch throwing act as a bit of bravado to offset the whole fatuous business of running at full speed backwards. Then there are those timid souls who can look a ten pound, radio uncontrolled model full into its spiralling eye but who shy at the sight of the free flying winch. One correspondent refers to the acute discomfort of these roving reels whistling past his quivering ear. Were he, however, a glider enthusiast this, to him, would be the sweetest music in the world, as it is with all winch slinging fans everywhere—even in remote Stevenage, where a certain Mr Giggle is reputed to have written that beautiful old song: "I have heard the Mavis slinging—"

In spite of the severity of the new rule we can be sure that the line towers will sportingly toe the line. More than that, they will be falling over backwards in their determination to observe it.

Built Up Area

I wonder just how long we do-it-yourself modellers can resist the tide of over-the-counter automation. Already the threat of the all plastic, radio model hangs over our yet unbowed heads like a ready-made vulture, and, soon, the only building going on will be the blocks of flats on our last few flying fields. By then, the redden-bilt, self-trimming toy plane will be in the grubby grasp of every youthful paw in the country, and, with the coming of the toy maker's millennium, the home made model will just be a fatiguing memory of the slavish past.

The day will eventually dawn when some exploring archaeologist will dig up the relics of Balsa Age Man, and perhaps ponder on the possible uses of the rusted razor blade, the solidified tube of cement, and the little can of midnight oil— Meantime, we can take heart from the fact that the building board is being bashed with undiminished gusto. Tissue and balsa continue to be the chief form of flying field decoration, and, altogether, we can be proud of the heroic resistance that the home-made model is putting up in this plastic, poly'mania age.

Encouraging, too, is the behaviour of the present day, redden-bilt, five bob model. With a flight performance more reminiscent of the Stone Age rather than the Balsa Age, it creates havoc among the family picnicking parties. The diminutive, but headstrong, missile stubbornly thwarts all the stalwart efforts of wiseacre Dad and Uncle to get it airborne. This upsets Sonny no end. If dim Dad can't fly a silly toy plane he's not likely to be the first man to reach the moon after all. And as for useless Uncle, he even smashed the plastic rotor kite.

Still, the sonnies of the future may not be so disgruntled. With Dad safely tucked away on the moon, and Uncle somewhere in orbit, there'll be no one to spoil his fun with his press button, crash-proof, guaranteed to fly toy plane.



June 19th was the Birmingham club's 'BrumFly' and that Sunday morning saw Rachel and I off to North Luffenham on a decent flying day full of the joys of spring. Unfortunately when we arrived it was obvious that spring had sprung with a vengeance. The whole airfield was covered in that mythical trimming commodity 'Keil Kraft Long Grass'. It transpired that nesting skylarks were the reason. The grass was waist high and one hell of a job to walk through and very good for hiding models. I set up shop with my winding jig on the runway facing into wind and only my restraint was pegged into the field. I wound on the runway alongside the car. It's actually a comfortable way of doing it, may adopt as standard practice in future.



I assembled my upgraded experimental coupe, it has a larger wing with new lifting wing section and a double bladed folder.

The motors are 8 x 3/16th or 12 x 1/8th. I had re-jigged the model to climb right and glide left, something I have never done before but a previous quick outing to Warwick race course had shown that the trim was spot on without any packing. Not at all normal for me.



I put a few turns on for a quick test flight then 300 to see what the climb was like. I was very pleased with the climb as the model got quite high and the glide looked good. The model DT'd and this was when the problems of the day revealed themselves. I waded through the long grass with difficulty and, although the coupe had not gone far, I took quite a while to locate it in the grass, if you were not within 10ft or so you just could not see the smaller models. Trim was OK for me so I goes off to control to enter, I'd got it wrong again, no coupe comp so I entered mini-vintage instead and went back to base to start again.



I put my 'Pinochio' together and as the comp required a first flight by 12 O'clock and knowing recovery from a test flight might make me late I opted to just wind it and chuck it. I put the 'Pinochio' in reasonable air and it managed to record a max. Rachel decided to go round the peri-track for recovery and come back on line using a back bearing from the binoculars. This proved not to be a good idea, she could not locate the model in the long grass and after a couple of phone calls I decided that I would have to wade through the jungle down the line. It was tough going and when I eventually could

see Rachel I realised that she was well off line but whilst we were talking on our mobiles I could see another modeller waving my model about so all was well and Rachel retrieved the model and set off back to the bike whilst I retraced my steps. It was slow going for me with my ageing limbs and I was knackered when I got back to base.

It was now party time as the Birmingham club had laid on a well laden food and drinks table and, as an aid to my personal recovery, it was to hell with my diet and I tucked in to the feast.



During this lunch break it came to my attention that this was an experimental meeting and the requirement was for 4 flights to be made. The possibility of three more journeys through the jungle by myself and/or Rachel was not on and I was not going to be in my fetcher-mite's good books either. After a brief period of consultation it was agreed to chicken out and we dropped into our usual spectator mode.

The picture right taken by Simon Dixon our next door competitor, sums up the rest of our day nicely until presentation time.



The numerous prizes of the days competitions were awarded and finally the major prize winners of the day were presented with the much sort after 'Brumfly Bricks' made by the late Dave Greaves a master stone mason.

A few pictures taken before we nodded off.



Mini-Vintage was as popular as ever and above left we have Tony Rushby launching his 'Senator' for one of his three maximums. The experimental rules had made it a four flight contest and Tony, although with his three maxes and a chance of winning, decided enough was enough and he declined to make his fourth round flight as complete knackerisation had set in. Centre above we have Andrew Moorhouse setting, I believe, his 'Cloud Pin' on its merry way. Finally right is Ken Bates also flying a 'Senator' and he was making heavy weather through the long grass but I think good wife Noreen was doing the bulk of the recoveries.



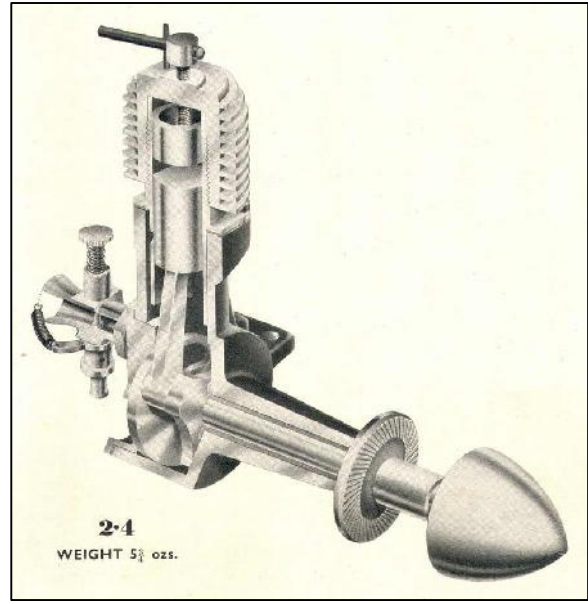
Above is Bill Dennis with Ken returning with Bill's P30. The P30 was another of the experimental events, P30 Payload. The models had to carry an additional 10gm of ballast.

I was speaking with Andrew Moorhouse who flew in the event and he made his first flight with his normal rubber motor, I think I timed it. Anyhow the model flew OK but the additional ballast restricted the height and he increased the rubber x section for further flights but I do not know how he fared from then on. An interesting experiment I would guess.

I expect the Power & E36 pylon models were more easily spotted in the long grass but the wade through the jungle applied to all and it was vital to establish an accurate line for recovery. There were a lot of weary modellers at the prize presentation. To cap it all from my point of view the pub was closed for repairs so no Sunday lunch afterwards.

It was a good flying day spoilt by the long grass & closed pub.

John Andrews



Name	Mills 2.4	Designer	Mills Bros.
Bore	0.500"	Stroke	0.750"
Type	Compression Ignition	Capacity	2.4cc (0.147 cuin)
Production run	1500-3000	Country of Origin	England
Photo by	Ron C	Year of manufacture	1948-51

Background

The Mills 2.4 was the third engine designed by *Mills Brothers (Model Engineers) Ltd* to enter production. Their first two engines, the [Mills 1.3](#) and the [Mills .75](#) were absolutely brilliant, so we have to say, in the time honoured way, two outa' three ain't bad. Not that the 2.4cc rear rotary valve "diesel" did not share the same high manufacturing standards, flexibility, and ease of operation of its older but smaller brothers; it did! What it lacked was the ability to compete with other engines in its class in terms of power to weight ratio, size, and overall performance. Perversely, the general perception of "...a nice enough engine, but..." that doomed Mills Bros last model engine to relative obscurity makes it a prize to engine collectors of today. You don't see a lot of them, but when you do, they are generally in remarkably good condition—supporting the view that they did not get a lot of use during the active period of their lives!

The engine was introduced quietly in late 1948. It was reviewed by [Sparey](#) for the *Aeromodeller* in May 1949 where it was headlined as the **Mills Mk III**. Although the title and another (highlighted) entry on the page call the engine the "Mk III", no company advertising I've been able to uncover uses this designation. This error is corrected in the edited reprint of the review that appears in the *Aeromodeller Annual* for 1949 where the engine is called the "MILLS DIESEL 2.4cc". Reading the May '49 review, one gets the strong impression that Mr Sparey could not find a lot to praise in the engine. So faced with two pages to fill, he fell back to saying nothing and spent almost the entire review discussing the lack of collaboration between engine reviewers and the modifications made recently to his "apparatus" following some correspondence. His figures and comments show that he was unable to get more than a shade under 11,000 rpm from the test sample.

A review in *Model Aeronautics* circa July 1949 gave no performance data at all, but was accompanied by this very nice American style air-brush cut-away illustration. The factory

instruction leaflet quotes 8,500 rpm on a 10x5 prop as producing 0.18 BHP and 32oz of thrust. This was the recommended free-flight prop. For control-line, props in the range 9x8 to 8x12 (!) were suggested.

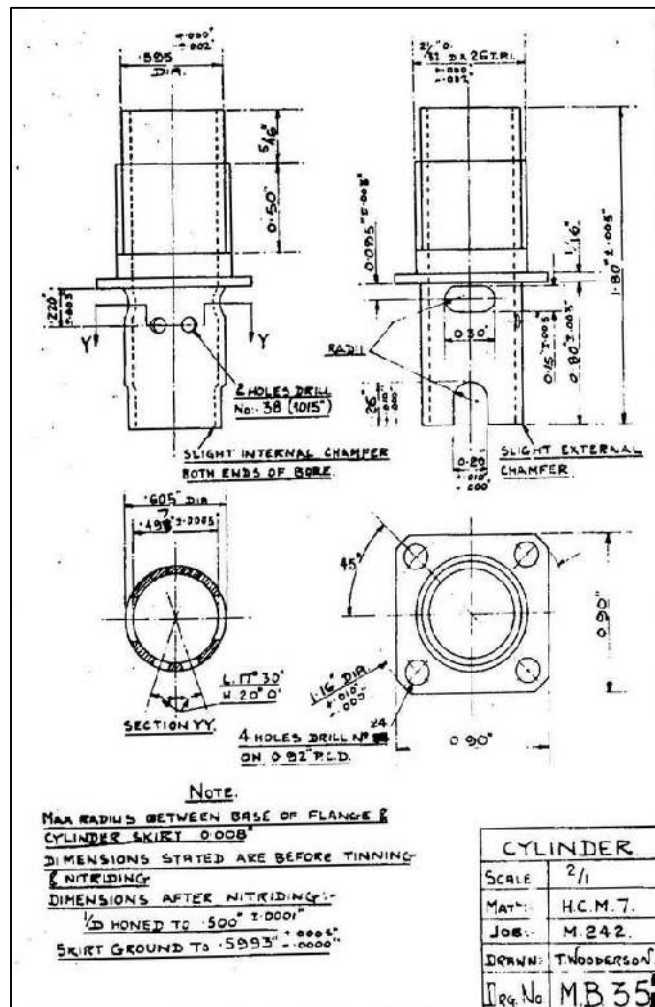
The last Mills promotion mentioning the 2.4 appeared in the *Aeromodeller* dated June, 1951. Estimates of the total production for the 2.4 vary. You can take your choice of about 1,500, or less than 3,000 units. Determination is complicated by the fact that engine serial numbers are not contiguous. References state that the first "few hundred" engines carried no serial numbers at all. Regardless, production was definitely way below the tens and tens of thousands for both of the other Mills Brothers engines.

Description

The 2.4 shows a strong family resemblance to the two smaller engines and apart from the rear-rotary induction, shares the same basic construction. The crankcase is pressure cast magnesium. The counter-balanced crankshaft runs in a phosphor-bronze bearing and carries a steel prop drive washer fitted on a taper. The hardened and ground steel piston runs in a hardened and ground steel liner which is retained by four 6BA screws and threaded for attachment of Mills' distinctive "bee-hive" shaped head turned from aluminium bar stock. The head came fitted with a compression-stop pin which most users promptly removed. Like the other Mills engines, this pin was intended to limit compression screw movement to a bit less than 360° after the running position had been established. While this was factory set, on the 2.4 the owner could reset it to suit a different fuel mix by unscrewing the "tommy-bar" and refitting it at 90° to the previous orientation. Altogether a bit of a pain, hence all those Mills engines with missing pins.

The drawing shown here is an original factory print for the cylinder. Sadly, it does not mention the designer, but does credit the drawing to one T Wooderson. Of more interest is the dimensions and tolerances specified. For example, the bore was to be 0.497 ± 0.0005 " before nitriding (hardening) and grinding, after which it was to be $0.500" \pm 0.0001$ ". The skirt, which needs to be a close fit in the crankcase to prevent leakage between transfer and exhaust, was to be ground to 0.5993 ", plus 0.0005 ", minus 0.0000 "! These are fine tolerances for a mass produced model engine and a credit to Mills quality.

This view shows the venturi assembly and the boss it screws into on the cast magnesium backplate. The boss extends to the center in order to carry the screw that retains the rotary valve. The needle is of the "gramophone needle" type used on the other Mills engines. And in common with the other engines, the needle seats on a screwed-in fuel nipple which is fitted with a cut-off arm spring-biased to the "stop" position.



This indicates that the designers saw the engine being fitted to larger free-flight models. In fact, a Mills Bros advertisement suggests the Keil Kraft *Junior 60* as a suitable model. However the market for engines of this size in England at the time was moving towards control-line team-racing where a large, heavy 2.4 of rather ordinary performance was at a distinct disadvantage, so it quietly faded away.

The Patented Mills Transfer System

All the Mills Bros engines utilized the same, patented transfer design. This was described in a [Mills "Infomercial"](#) in this way:

In all Mills Diesels, the Air-Fuel mixture enters the combustion chamber in two separate streams. These streams impinge on one another and strike sharply against a flat wall machined in the piston crown. Any heavy droplets of fuel or oil are smashed up in the process and dispersed in the turbulence created. At the same time the charge is deflected upwards for good scavenging of the combustion chamber.

In my review of the [Mills MkI 1.3](#), I expressed some scepticism of this description and noted that this was one patent I'd like to read carefully. Well, it's said that you should always be careful of what you wish for. Late in 2006, I received an email from Mr Michael Harding, son of Mr Arnold Louis Harginge of Mills Bros Ltd and arguably, the real and actual designer of the Mills Mk I. Over the ensuing email exchange, Mike kindly offered to send his copy of the original patent to [Model Engine News](#) for safe keeping. This is possibly the last copy of the patent left on the planet and is now carefully preserved. As you will be able to read from the scans below, it echos the description printed above. I'd even go so far as to say that the accompanying diagram on page three, while somewhat stylized, is recognizably a Mills Mk I.

Mills Transfer Patent 612,224

2 MAR 1949
PATENT SPECIFICATION
612,224



Application Date: May 20, 1946. No. 15204/46.

Complete Specification Accepted: Nov. 10, 1948. No. 15204/46.

Index at acceptance:—Class 7 (ii), B2a (4a:13b:18).

COMPLETE SPECIFICATION

Improvements in or relating to Two-stroke Compression Ignition Engines of Small Capacity

I, ARNOLD LOUIS HARDINGE, a British subject, of 139, Sandy Lane South, Wallington, in the County of Surrey, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to two-stroke compression-ignition engines of small capacity not employing fuel injection systems, such as used for model aircraft, model boats, model motor vehicles, or for ordinary motor-cycles, lawn mowers, motor boats and the like.

Hitherto such two-stroke compression-ignition engines required a high degree of compression and could not be provided with efficient deflector plates on the piston because the air and fuel mixture was not sufficiently atomised to fire at low temperatures whilst the chilling effect of the deflector plate or plates was sufficient to prevent spontaneous ignition.

It has now been found that by causing two or more streams of a fuel-air mixture to converge and meet within the cylinder such an efficient atomisation of the mixture is obtained that an efficient deflector plate on the piston does not chill the mixture sufficiently to prevent combustion.

As a result a compression-ignition engine can be constructed of small dimensions, whilst having a high efficiency and a low compression ratio. By reason of the more complete atomisation of the fuel the engine is also easy to start.

According to the present invention a two-stroke compression-ignition internal combustion engine of small capacity comprising a cylinder, a crank case, a piston moving in said cylinder, inlet and exhaust ports in the cylinder, and a transfer port between the inlet ports and the crank case, said inlet ports converging inwardly so as to cause separate streams of an air-fuel mixture to impinge upon one another inside the cylinder, is characterised in that the cylinder fits into the crank case to which it is secured by a flange located intermediate the ends of the cylinder, the transfer port being formed between the crank case and the cylinder whilst registering ports for the intake of an air-fuel mixture are provided in the crank case and the cylinder.

On the piston is provided a deflector plate which, at the end of the stroke of the piston towards a crank shaft, faces the outlets from the passages.

The invention will now be described by way of example with reference to the accompanying drawing, wherein:—

Fig. 1 is a vertical section of a two-stroke compression-ignition engine.

Fig. 2 is a section on the line II-II of Fig. 1 to a larger scale.

As shown in the drawing a crank case 1 of a light metal, such as aluminium or an aluminium alloy, is preferably slightly tapered on the outside from the bottom upwards.

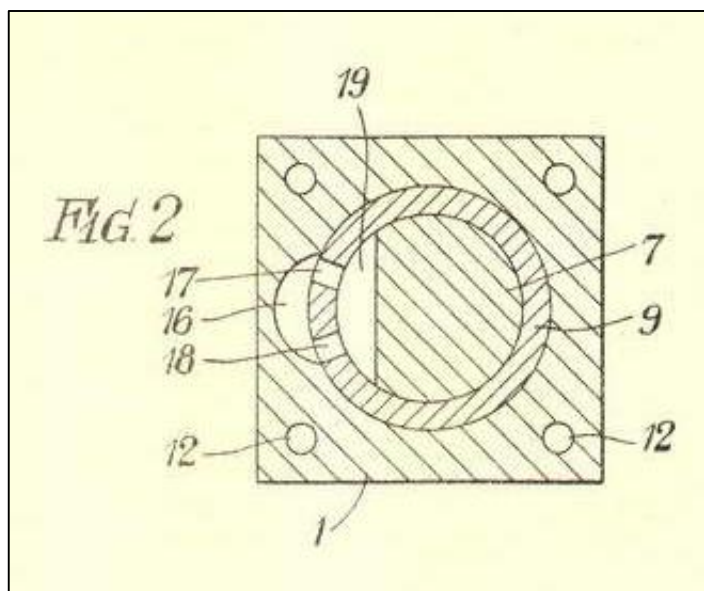
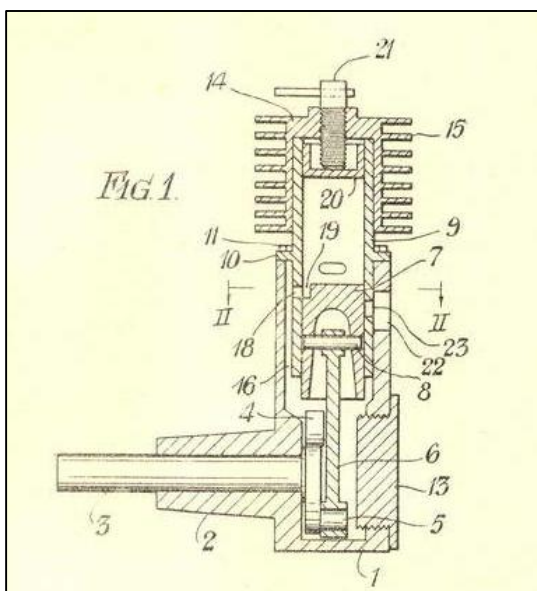
On one side the crank case 1 is provided with a projecting boss 2 through which passes a crank shaft 3. Inside the crank case 1 the shaft 3 carries a balanced crank 4 with a crank pin 5. The crank pin 5 engages one end of a connecting rod 6 of which the other end is connected to a piston 7 by a gudgeon pin 8.

The piston 7 moves in a steel cylinder 9 which fits into the crank case 1 to which it is secured by a rectangular flange 10 located intermediate the ends of the cylinder 9. The flange 10 is secured to the crank case 1 by bolts 11 which engage with the tapped holes 12.

For facilitating the mounting of the crank shaft 3 in the crank case 1 the latter is provided with an opening, in the face thereof opposite the boss 2, which is closed by a plug 13 fixedly secured in position, preferably by screwing.

The cylinder 9 is cooled by a cooling head 14, preferably of the same material as the crank case 1, provided with annular fins 15. The cooling head 14 is preferably provided with an internally screwed bore which screws on the outside of the cylinder 9.

2	612,224	
5	The air-fuel mixture from the crank case 1 passes from the latter through a passage 16, formed between the crank case 1 and the cylinder 9, which leads to two or more ports 17, 18, in the wall of the cylinder 9, which converge towards one another.	
10	The converging streams of the mixture impinge upon one another inside the cylinder 9 where the mixture is further guided by a deflector 19 on the piston 7.	
15	For the purpose of varying the compression ratio an adjustable plug 20 is fitted into the outer end of the cylinder 9, the plug being adjusted by a screw 21 passing through the cooling head 14. The plug 20 can be adjusted whilst the engine is in operation.	
20	The intake for an air-fuel mixture into the cylinder 9 takes place through registering ports 22, 23 in the crank case 1 and cylinder 9.	
25	By a compression-ignition engine as above described the air-fuel mixture is guided into the cylinder 9 by the ports 17, 18 and as the separate streams impinge against one another inside the cylinder the drops of fuel are atomised in the turbulence thus formed whereby the ignition qualities of the air-fuel mixture are improved at lower compression heat.	
30	Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—	
35	1. A two-stroke compression-ignition engine of small capacity comprising a cylinder, a crank case, a piston comprising a cylinder, inlet and exhaust ports in the cylinder, and a transfer port between the inlet ports and the crank case, said inlet ports converging inwardly so as to cause separate streams of an air-fuel mixture to	
45	impinge upon one another inside the cylinder, characterised in that the cylinder fits into the crank case to which it is secured by a flange located intermediate the ends of the cylinder, the transfer port being formed between the crank case and the cylinder whilst registering ports for the intake of an air-fuel mixture are provided in the crank case and the cylinder.	
50	2. An engine according to Claim 1, wherein the piston is provided with a deflector plate which, at the end of the stroke of the piston towards a crank shaft, faces the outlets from the converging passages.	
55	3. An engine according to Claim 1 or 2, wherein the crank case is connected to the converging passages or ports in the cylinder by a passage formed between the cylinder and the crank case.	
60	4. An engine according to any one of the preceding claims, wherein the cylinder is cooled by a cooling head having annular fins.	
65	5. An engine according to any one of the preceding claims wherein an adjustable plug is fitted into the outer end of the cylinder for the purpose of varying the compression ratio.	
70	6. An engine according to Claim 4, wherein the cooling head is screwed on the cylinder.	
75	7. An engine according to Claim 5, wherein the plug is adjusted by a screw passing through the cooling head.	
	8. A compression-ignition engine substantially as described with reference to the accompanying drawing.	
	Dated this 20th day of May, 1946.	
	THURSTON EDWARDS & CO.,	
	Chartered Patent Agents,	
	329, High Holborn, London, W.C. 1.	
	Agents for the Applicant.	



Mike also shared his memory of growing up in and around the Mills Bros factory. With his permission, **Model Engine News** is pleased to provide this unedited [account of A.L. Hardinge and Mills Bros \(Model Engineers\) Ltd.](#) As you will read, Mike's account runs counter to some "accepted wisdom". I will leave it to you, Dear Reader, to form your own conclusions. For myself, the fact that Mike was able and willing to pass on to me the patent, photographs, and Mills Bros advertising material provides compelling weight to his account.

Conclusion

The big Mills may not have been a big success during its short life, but it is still a handsome engine and sure *looks* like it should perform. But its long stroke to bore of 1.5:1 could not compete with the emerging high performance engines like the [ED Hunter](#) with S/B of 1.05:1 where the shorter stroke results in lower friction and inertia losses. Like Sparey, I've stretched to find good things to say about it, but I'm certainly not sorry to have one in the collection.

Letters to the Editor:

Jim Paton: Salisbury Plain

Sorry about lack of feedback on the forthcoming event at Salisbury Plain. I am very much looking forward to it. There is a dearth of events this month. I just wish there was another one this weekend or next. The meadow on Salisbury Plain is a great area for sports models. The co-op in Shrewton sells everything you need for a picnic cheap. Bring a chair and maybe a table.

Jim Paton,

Jim Paton: What to do when the weather is windy

After a day helping my son erect a shed I was a bit too tired for building. I was going to go to the vintage RC meeting at Cockleberrow Farm but it was a bit too windy for me. I have a few spare engines that haven't been run for a while. My Saito 40 four stroke and RCV 53 used to be in radio models. As I fly FF these days they are not used. So I gave them both a whizz with an electric starter and played with the throttle control to keep the revs down. I have owned a Cox TD 010 for about 20 years and have never run it. Encouraged by the ease of starting the enormous four strokes, I filled the integral tank. With only one variable to adjust I can see why the Americans didn't bother much with heavy diesels. With a prime through the Venturi it fired every time and no signs of a hydraulic lock. I just kept opening the needle valve by half a turn more till it continued to run. My fuel is donkey's years old but 30% Nitro. No burping, it just screamed smoothly at over 20,000 rpm for a seemingly endless time. By then my garage was full of fumes. I daren't open the door till it had stopped running because of the noise. What an amazing little motor! It's probably got as much power as some of my small replica Mills's, which weigh several times more. I just need to think of a suitable model for it now. The integral tank is opaque, so not much use for FF without a separate tank. I think a half size 1/2A might be the thing. Nothing too fragile I suppose. Yet another project awaits.

Jim Paton

Peter Hall: Maths Aeromodelling and Fish-Pie

At school I was never very good at maths. This was not entirely my fault. If you missed a lesson or even if your attention strayed during one, the thread was broken and subsequent operations were rendered inprecomsiblehen. But it didn't matter much because the consequences of not knowing, for instance, if a train traveling at fifty miles an hour passes another traveling at seventy miles an hour etc etc etc, had little effect on my daily life. Fortunately my career didn't need anything more demanding than my patchy 'O' level maths but my return to aeromodelling on retirement did. I could just about manage the foothills of aerodynamics led by invaluable guides such as Martyn Pressnell, Martin Simons, Reg Boor, Peter King and John Barker but unfortunately I have no head for the heights of Alan Brocklehurst. Never mind, I can manage such essentials as C.G. position for zero tailplane lift, tailplane and fin volumes and static margin of stability and for rubber models, prop and model speed. I know these are all approximate but they seem to work and are a great reassurance. Of course my maths has been generally useful in dealing with my extensive investment portfolio, and off-shore accounts, I'm sure you find the same and recently they enabled me to better understand an event that caused me a great deal of embarrassment a very long time ago, and as a demonstration of the power of even elementary maths I offer the following anecdote

Fish pie, so it must have been Friday. That day I was the fetcher and carrier and cleaner-upper for our table, so I must have been in the first form: that makes it 1946/47. From my place at the bottom of the table, the boys, seated in form order, ascended in age, size and grandeur to the sixth formers and the prefects at the top. The girls had separate tables. Sometimes for pudding we had bakewell tart and custard. The duty fetchers and carriers would collect the trays and jugs from the serving hatch. The tarts were already sliced, once lengthwise and five times across making twelve equal pieces. The prefects dished these out onto plates, added the custard and passed them down the table. Our prefect would take a knife and trim off about a sixth of each piece intended for the lower forms and pile these trimmings, this surplus value, onto his own and his crony's plate. No-one complained: this was my first and formative demonstration of capitalism at work.

We never had identifiable meat or fish in those austere post-war days: they were fragmented and eked out with large amounts of mashed potato to make shepherd's pie or fish pie. The shepherd's pie had gravy, but the fish pie was dry, tasteless and unpopular. At the end of the meal the discarded remnants littered the table. I wiped away at these with my cloth but they disintegrated into crumbs and then into countless tiny rolls with pointed ends. They wouldn't be swept along, they stuck to the table and just rolled a few times with each wipe. I can see them now nearly seventy years later. I wiped away until it became clear that the task was impossible. All the other tables had finished and the duty master, Mr Shuter, (physics and chemistry) stood waiting at the front of the platform, bell in hand, ready to say grace and dismiss us. The table was inspected and found unsatisfactory so I was set to work again. The whole school waited in silence as I wiped frantically in an agony of embarrassment until the futility was obvious. Why did no other table have the problem? Were we especially messy eaters? Was our fish pie unique in some way? Was it my wiping technique? It remains a mystery.

I can however, prove for my own satisfaction, that the task was indeed impossible in the time allowed. The tables seemed much bigger then, but were probably two standard six-footers pushed end to end. The area to be cleared would have been thirty-six square feet. I reckon the fish pie, call them micro-rolls, were, on average, no more than point zero seven of an inch in diameter and half an inch long. For each wipe the rolls appeared to make only three or four, say three and a half rolls, so the distance travelled would be point zero seven times three point five times three point one four two equals zero point seven seven inches. The distance from the centre to the edge of the table was eighteen inches so it would take eighteen divided by zero point seven seven equals twenty three point four wipes to clear one wiping cloth's width of micro rolls. The cloth was say, four inches wide so the area cleared would be four times eighteen equals seventy two square inches. Dividing this into the area of the table, five thousand one hundred and eighty four divided by seventy two equals seventy two cleaned areas each one taking twenty three point four wipes so the total number of wipes needed to clear the table would be one thousand six hundred and eighty five. The average wipe rate was, I would estimate, two per second so the total time required for the task would be total wipes divided by two equals eight hundred and forty two seconds or just over fourteen minutes. The time allowed would have been no more than five minutes, so the task was impossible. Quod erat demonstrandum.

Peter hall

YOU CAN CHROME PLATE PISTONS!

By C. O. ("Pop") WRIGHT, Topeka, Kansas

THE DIFFERENCE between a hot motor and a sick, hard starting and missing one may be only wear on the piston that an ordinary micrometer could not measure. Too loose a fit on the piston not only decreases compression above the piston, it weakens the crankcase compression, lessens the by-pass charge and makes needle valve adjustment erratic. An easy repair may be made by chromium plating the piston if it is a motor without rings.

Chromium is the ideal metal for piston plating as its coefficient of friction is low and it unites well with iron and steel. It will not come off. Chrome is not only as slick as banana peel, it is almost as hard as diamond. Chrome plating is not expensive and is not too difficult if you are willing to go at the job with sufficient deliberation and care and if you are willing to follow the simple directions given below without being too concerned as to the technical reasons why.

During the last eight years I have plated hundreds of pistons, usually with good success, that is with motors coming out hotter than when new. If the motor is of the sleeve piston type, that is without piston rings, and the piston is of cast iron or steel, it is a candidate for chrome plating. Aluminium and its alloys will not chrome plate without an undercoat of nickel or other metal, so for the average modeller, aluminium, brass and metals other than iron and steel are out. Among the motors which respond well to the chromium treatment may be listed: Torpedo, Forrester, Arden, Bantam, DeLong, O.K., including CO₂, Ohlsson, Cannon, old model Atwoods and Cyclones, Vivell, Madewell, and the new baby motors.

The directions given in this article were discovered the hard way. Before the war, I had a few pistons plated with success by a commercial plater. With the war, commercial plating was restricted because of the scarce metals and I was out of luck. At the same time new motors left the market. In desperation, I worked for the secret formula. Some six months of intermittent experimentation at length led to success. First, I turned to the books on the subject which I secured from engineering libraries at three universities. I soon discovered that much of the material, the chemical formulae and electrical data were "too far over in the book" for my comprehension. However, I picked up enough essentials to get going and I gathered a collection of volt and ammeters, thermometers and rheostats. I soon left these instruments behind as belonging to the scientific laboratory and not to a typical modeller's shop. I don't use any of these instruments now except a crude rheostat made from a spring taken from a common window shade roller. All the other rheostats burned up anyway.

Yes, the first thing to know is that it takes a lot of amps to chrome plate, though the voltage should only be from four and a half to six and the cells in your battery will largely determine that. A good hot automobile battery is ideal. Don't try to use dry cells for they are not powerful enough. Be careful how you use the battery from the family bus. I got in Dutch with the Missus one day when I exhausted the battery in both my car and hers when I was trying to learn how. The process uses about as much juice as the starter—a slight exaggeration, but not too far off.

However, the average piston with the outfit throwing well will generally plate to the correct thickness in three to five minutes.

The first thing, and the constant thing to remember is *cleanliness*! After the outfit is set up and the bath is heating you should start cleaning the piston, and the cylinder too as it is needed for testing. *The piston must be free of all oil, even the natural oil from your skin.* The bath must be kept free from an oil scum on the surface. You can pick oil off the bath with a piece of dry balsa wood.

Most motors that still run but have lost their peak will need only a three to five minute plate, others may need up to fifteen minutes. For each minute in the bath, with the plate at the bright stage, something like .0005 is deposited, so the books say. I plate for three minutes, try the piston in the cleaned cylinder for a fit and if necessary plate for two minutes more, etc. If too much chromium is deposited, it may be easily removed with no damage to the piston by immersing the piston in concentrated hydrochloric acid, HCl (Muriatic Acid at your tinsmith's). A slightly tight piston may be lapped in with jeweller's rouge, and you can bet that the cutting will be on the cylinder as the plate is harder than a file. Don't try to lap much as you may loosen the piston pin. Then, too, lapping with rouge is a slow process, like a cat eating a grindstone.

The skill, of course, is in getting the piston plated to the right snugness—not too tight or too loose. Deposit is greatest the first few minutes and the rate drops sharply after the first fifteen minutes.

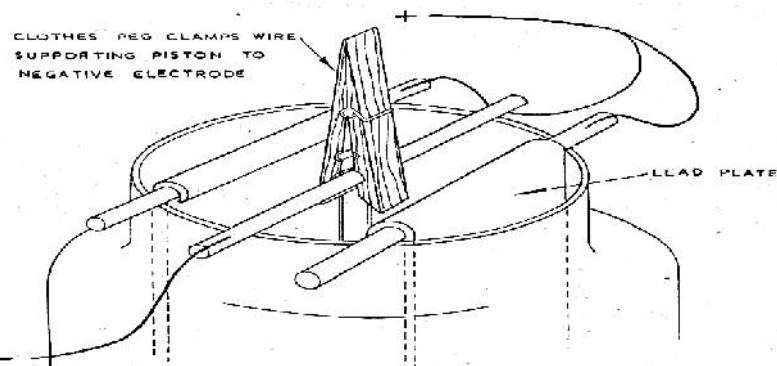
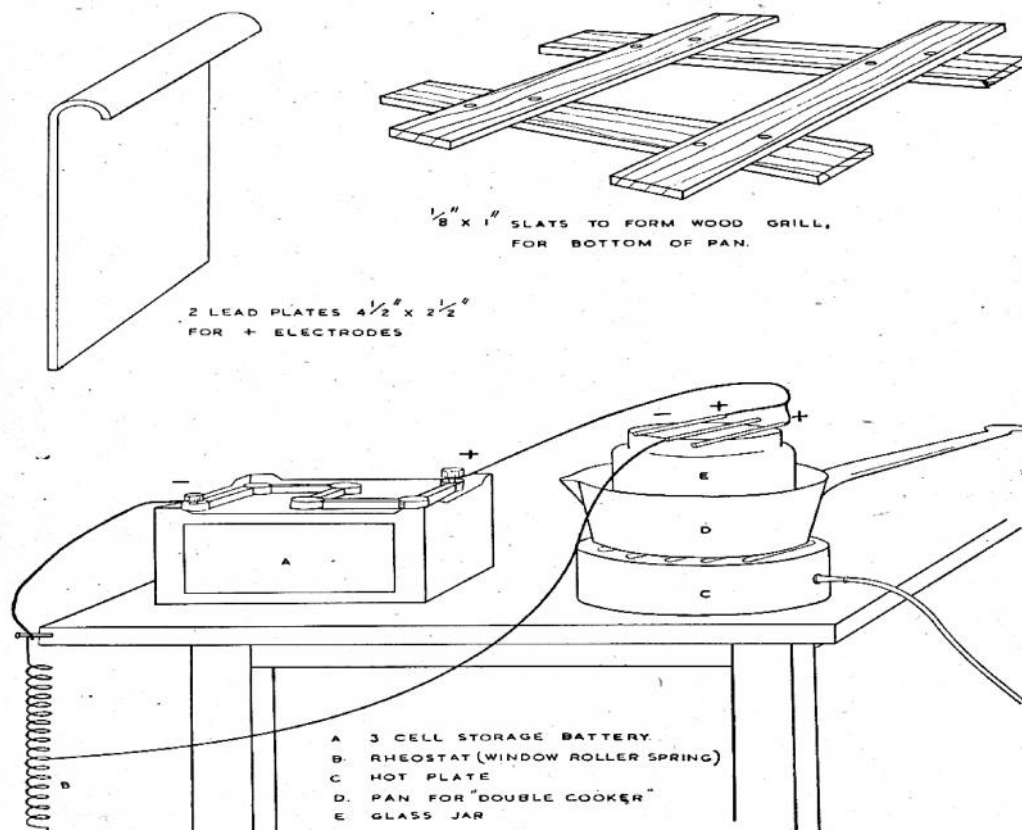
Crankshafts and other parts may be plated, too, but it is not practical to build up much wear. With the entire shaft in the bath, it will tend to plate the shaft tapered, with the heavy plate at the prop end, because of the diffused magnetic field at the crank throw of the shaft. (For you electrical wizards, the magnetic field is also strongest at the top and bottom edges of the piston. There is a slight "snow drift" at these points, but this is insignificant on a three to ten minute deposit.)

THE EQUIPMENT NEEDED IS MODEST

You will need, in addition to a well-charged standard automobile battery, the following inexpensive material:

1. One-quarter pound Chromium Trioxide Crystals (CrO₃).
2. One shy teaspoon of Sulphuric Acid (H₂SO₄).
3. One and a half quarts of distilled water.
4. Two lead plates for the positive electrodes 4½ in. × 2½ in. Convenient thickness.
5. Three busbars about ½ in. diameter, 6 in. long, made of convenient material. Old automobile gas tubing well polished with sandpaper will do.
6. Eight or ten feet of standard house wire. Number 10 or 12 will work well.
7. A steel spring from a discarded window roller shade for a crude rheostat.
8. Some spring clothes pins or simple snap clamps.
9. Six or seven inches of 1/16 steel wire for holding the piston.

10. A glass jar some six inches in diameter, quart and half capacity, with about a 4 in. opening. (I use a pound glass tobacco jar).
11. A hot plate and galvanised pan with wooden grill in bottom for a double boiler for heating the solution during the plating process. (I use the bottom half of an old waffle iron.)



PISTON HANGS AT CENTRE ON NEGATIVE ELECTRODES LEAD PLATES HANG AT EDGES ON POSITIVE ELECTRODES

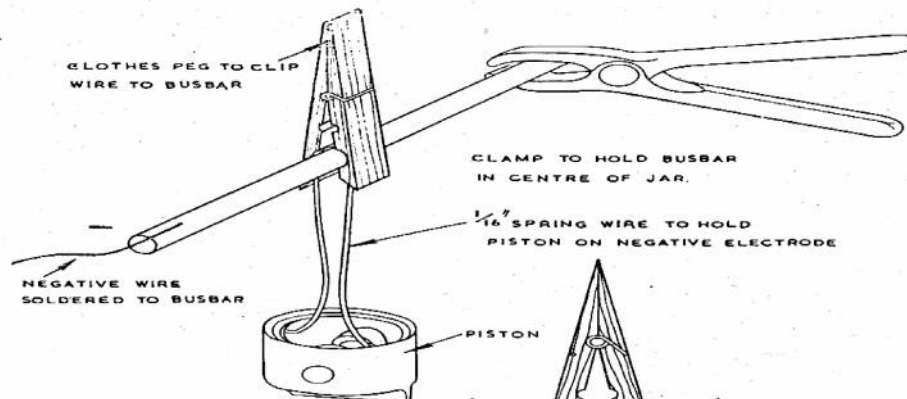
RIG THE OUTFIT THIS WAY

Mix the one fourth pound of CrO_3 crystals and the quart and a half of distilled water in the glass jar and add a shy teaspoon of Sulphuric Acid (H_2SO_4). Go easy on the acid! This is your plating solution and will plate hundreds of pistons. After using, cover carefully and save. The solution I am using now is over three years old. If you wish and if you can, you might purchase the solution all mixed from a commercial plater. He usually knows his business and often improves the bath and reclaims it with other ingredients which you need not know for they are not practical with small batches of electrolyte. Commercial platers usually zealously guard their "secrets," however, but if you have a friend in the business he can give you valuable tips.

Remember, the solution is a poison so wash off your hands and provide ventilation for the fumes which rise in the plating process. The fumes will irritate the nose and throat and give you a "cold." Don't breathe them. They are not dangerous as cyanide, but don't be careless with any kind of poison.

Place the jar in the double boiler with a wooden grill in the bottom and heat to a "coffee cup heat." Most books say 100 to 120 degrees Fahrenheit. Stir now and then with a glass rod and add distilled water to replace that which evaporates. The temperature is not too critical as the current is to be adjusted to the heat. In general, if the plating is too heavy, as described later, cut the heat down. If too light, raise the temperature of the bath. Use of the rheostat (window roller spring) accomplishes a similar result with variations of the electrical current.

Solder two of the busbars together with a Y connection, using heavy stranded wire, for the outside busbars that are to hold the lead plates for the positive connection. In most plating the positive electrode is the metal deposited. In chromium plating, the metal comes from the electrolyte and the plus electrode is inert. The piston is suspended on wire at the centre busbar electrode which is negative. There should be spring tension in the wire holding the piston to ensure a good electrical contact. Remember, outside lead plates positive, inside piston negative.



Either lead can be run through the window shade spring. Connect at one end to the busbar and the lead from the battery is placed in the coil at the proper location to give the necessary resistance for plating.

THE PISTON MUST BE CLEAN

Commercial platers apparently use acid cleaning followed by a "bright dip" solution made of several acids. I started with bright dip, but discarded it in favour of

mechanical cleaning which worked better and was less trouble. First scrape and sand the carbon off the piston head. Then run the piston and the cylinder (it must be free of oil for testing) through three baths of white (unleaded) gasoline. While the piston "soaks" a minute or two in the last bath, wash your hands clean with soap to remove all oil. Dry the piston on a clean rag. Give the piston a slight sanding with very fine sandpaper (250 to 400) to remove oxidation. Place on the spring wire, dust the sanding off with a clean rag and insert in the bath on the negative busbar.

JUDGING THE DEPOSIT

Start with too little rather than too much current. If plating is in process, bubbles will appear at the piston and fumes will rise. Lift the piston attached to the busbar to observe the plating. Lower or raise the current with the spring rheostat until the bubbling is just above the intermittent stage. As you become expert, the bubbles will indicate the nature of the deposit. The ideal is a mirror polish plate like you have on your car. Mildly frosty deposit is satisfactory also.

The stages of deposit from nothing to too much follow. The temperature of the bath and the strength of the electrical current decide the degree of deposit. Correct with the rheostat and if necessary change the heat.

STAGES OF DEPOSIT

1. No deposit. (Too little current, too low heat.)
2. Milky. (Exactly like milk on the piston. Raise current or temperature.)
3. Bright. (This is ideal.)
4. Frosty. (This is O.K. Cut current on next one.)
5. Treering. (Like hoar frost. Lower both heat and current and if absolutely necessary dilute electrolyte with distilled water.)
6. Burning. (Brown and black. Ease up on everything—and how.)

SOME SUGGESTIONS

On many motors it may be best to plate the top third of the piston heavier than the bottom part. Lower the piston some 3/8 inch in the bath and plate for, say, three minutes and then submerge the whole piston for the complete plating. Some motors, often Ohlsson's, have slightly warped piston skirts and it is unwise to plate these as heavily as the top of the piston.

If you plate for an extended period rotate the piston every few minutes to ensure uniform deposit. On short plates have the piston pin parallel to the busbars so as to plate slightly heavier at the sides where wear is greatest due to piston slap.

If after one plating and after piston is used, it may be necessary to re-plate, "cut" the old plate slightly with HCl acid the same as deposits may be removed.

Pistons may be safely plated without removing rods and piston pins if all oil is removed from the assembly.

Plating is fun and it really works. But remember, take it easy. The process is not for the "mad rushing" type, and remember that "Cleanliness is next to Godliness" when you chrome plate.

I thought I'd just send you a 'few lines' on the RDT and vintage transmitters I mentioned in my last scribblings. I thought about buying one of the Leo Bodnar or Aeris units, but it seemed just as easy and a bit cheaper to come up with my own design, and if one is into vintage Aeromodelling it seems appropriate to come up with an 'own brew' device in the good old garden shed tradition.

I wanted something small and unobtrusive that didn't reek of 'Full RC Transmitter' so I obtained a small project box from Maplins. Into this go the 'Orange' transmitter module, and the RDT trip circuit board (from Phil Green). This does nothing but trip the DT servo once the button is pressed. It also houses a battery and of course the two switches for on-off and RDT 'fire'. There is an LED on the top and obviously the on-off switch. When the unit is switched on there is a beep, and the LED glows green. Once you press the RDT button on the front, the LED turns to red, and then back to green shortly after so you know it's done its job.

I added an SMAE sticker to make it look a bit less plastic box! Although I think I failed there...

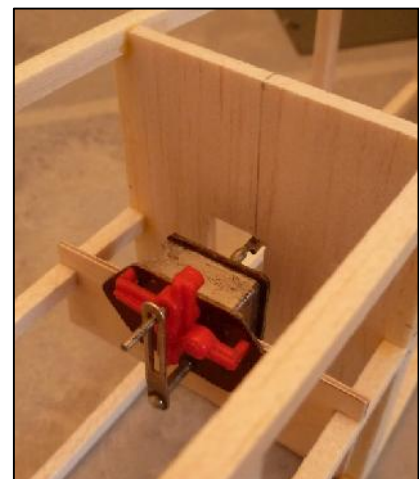
I do like the process of design and ergonomics, so I think I came up with a tidy set-up that is simple and discrete.



The airborne gear is just a 1/32 ply front plate the same size as a Tomy, (I used a Spencer Willis Tomy front plate as a template) with a cheap 'orange' receiver, an even cheaper servo, and a little single cell lipo stuck to the back. It does the job fine. One press and down she comes.

For radio assist models I have a Vintage Macgregor 'button' set from prehistoric times but in great condition. This is 27Mhz, and will operate the Elmic Conquest escapement in the Vic Smeed Chatterbox I'm

building. All genuine and fully working old school stuff. I will stay away from anywhere that CB's may be operating! I could convert it to Modern 2.4Ghz gear, but it seems a shame to rip out the lovely old electronics.



Some people install the old escapements like I have done but then operate them from a modern receiver! This is done by using a cheap 'channel switch' plugged between the receiver and the escapement.

I also have a slightly more Modern kit built 'Microtrol' radio Tx that I will be converting for a 1970's model kit I plan on building. I think it would be nice to have a model and age appropriate transmitter for every decade since radio control started, but knowing me I'll never get round to it. My ambitions outstrip my time and ability! Plus I'm a free flight bod at heart so I shan't get too carried away with radio.

An old transmitter case could of course hold the same gear I used in my little RDT unit, (with tons of room to spare) and be made to just operate an RDT. Some people have even crammed the gear into a tobacco tin!

So proving that it is possible to stand on the flight line and RDT a model without looking too 'radio' at all, which really is in keeping with what we're trying to do in these days of free flight in very limited space. There are lots of possibilities.

For models that use the old Pulse Proportional 'Adams Actuator' then I believe Phil Green also does a little circuit board to allow this to be operated from a modern 2.4Ghz proportional transmitter. At the moment these old Pulse actuators in working condition are ultra rare and very sought after.

Anyway, I've rambled on enough, I'll attach some pictures which should be self-explanatory. I will do you a proper write up for the Clarion if you like with more detail and I'll have to borrow Dad's Leica for some better pictures, my cheapy camera is on its way out I think. The kids must have had it...





Ed Bennett (CDMAC) ROG's his Wakefield at the trials at Digby in 1952.



Norman Marcus winds his Wakefield held by John Hall at the 1952 Wakefield trials at Digby..



John Gorham (Ipswich) ROG's his "Ghost" Wakefield at the trials at Digby in 1952.



**John Gorham (Ipswich) ROG's his "Ghost" Wakefield at the trials at Digby in 1952.
C S Rushbrooke at rear left.**



**Unknown modeller at the 1952 Wakefield trials at Digby.
C S Rushbrooke on left.**



**Unknown modeller (Henry Tubbs?) at 1952 Wakefield trials at Digby.
John Gorham in background extreme left.**



Having decided to enter the Indoor National Championships this year and never having ventured down to the Brabazon Hanger where the event will take place, I decided that Rachel and I should have a reconnoitre to scout out the place and see what the ceiling height was like to give myself some idea as to what rubber motors may be required for the champs.

I sent an email to Tony Hebb (tony_hebb@hotmail.com) asking to be added to the attendees list for the meeting on Wednesday 22nd June quoting my Name, car registration number and passengers name. This detail is necessary as security is tight and you are individually checked in through the security gate from the list of the day. There is only one gate we use and Tony provides details for entry.

As is the norm for us we travelled down on the Tuesday and stayed at the nearby Premier Inn. We had taken breakfast materials with us as it was required that we presented ourselves at the hanger at 8.45am and we did not know what breakfast service would be like next to the hotel. We arrived at the factory far too early as it turned out, the journey from the hotel had been uneventful and we were not held up by works traffic as we feared we might.

We entered the hanger via the Brabazon Trust museum entrance and passed through the exhibition area then into the smaller of the hangers and past a conglomeration of all sorts of bits and pieces of various aircraft to get to the main hanger.



Some of the exhibition area



A couple of items we passed on our way through

The main hanger is enormous and is not empty. There are several sections of an HS146 fuselage which are being worked on to turn into an exhibition piece.



I had a few flights with the models I had taken, above is the first one I flew which is a very old heavy Penny Plane but it still flies well and I got the motor right first time with a 6 minute flight well centered between the overhead crane tracks. I checked out my Gyminnie Crickets, the older one sporting a new prop replacing the old razor plane shavings one. The new prop was obviously too heavy so a new lighter one will be required for the nationals. All my flights were around the 6 minute mark but need to be better so its new models required.



Robin (Bob) Bailey was airing an aircraft to the American A6 specification. The model is destined to be the subject of the next initiative of the Indoor Technical Committee. I assume it will be a national competition as was the 35cm comp of the last two years. The competition is still in the committee stage but likely to be initiated shortly. I believe Bob was getting flight times around double figures so the aircraft is a step up from the 3gm 35cm model of the last initiative.

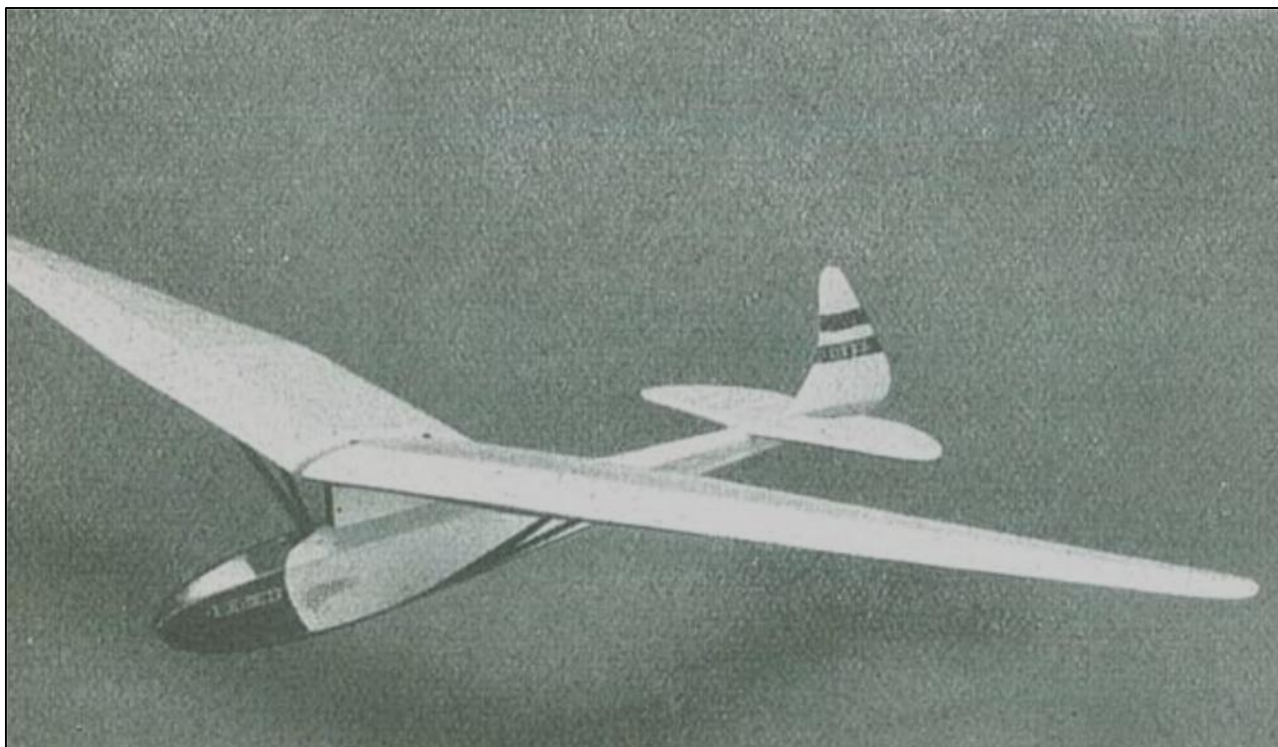
John Andrews

Report No. 67. MOVO, Milan, Italy, continued.

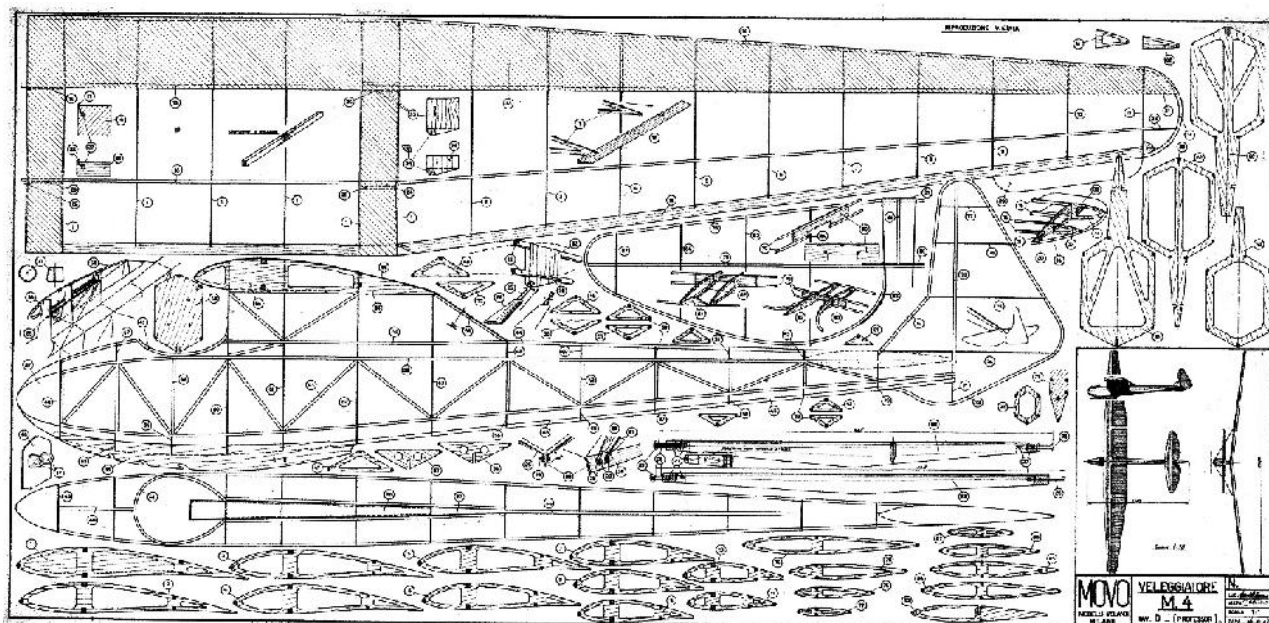
Last month we looked at some rubber duration models from the MOVO catalogue of 1938.

Now, from the same source, two gliders and two rubber scale models.

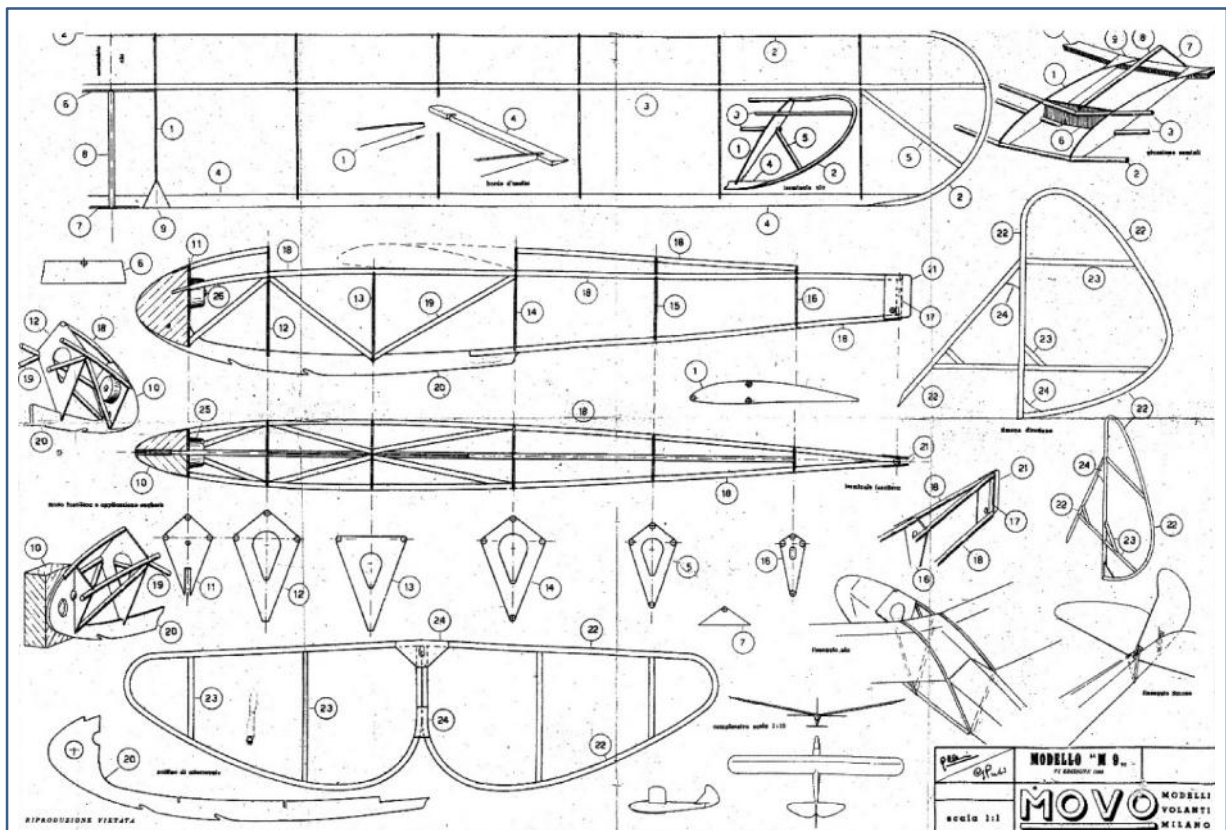
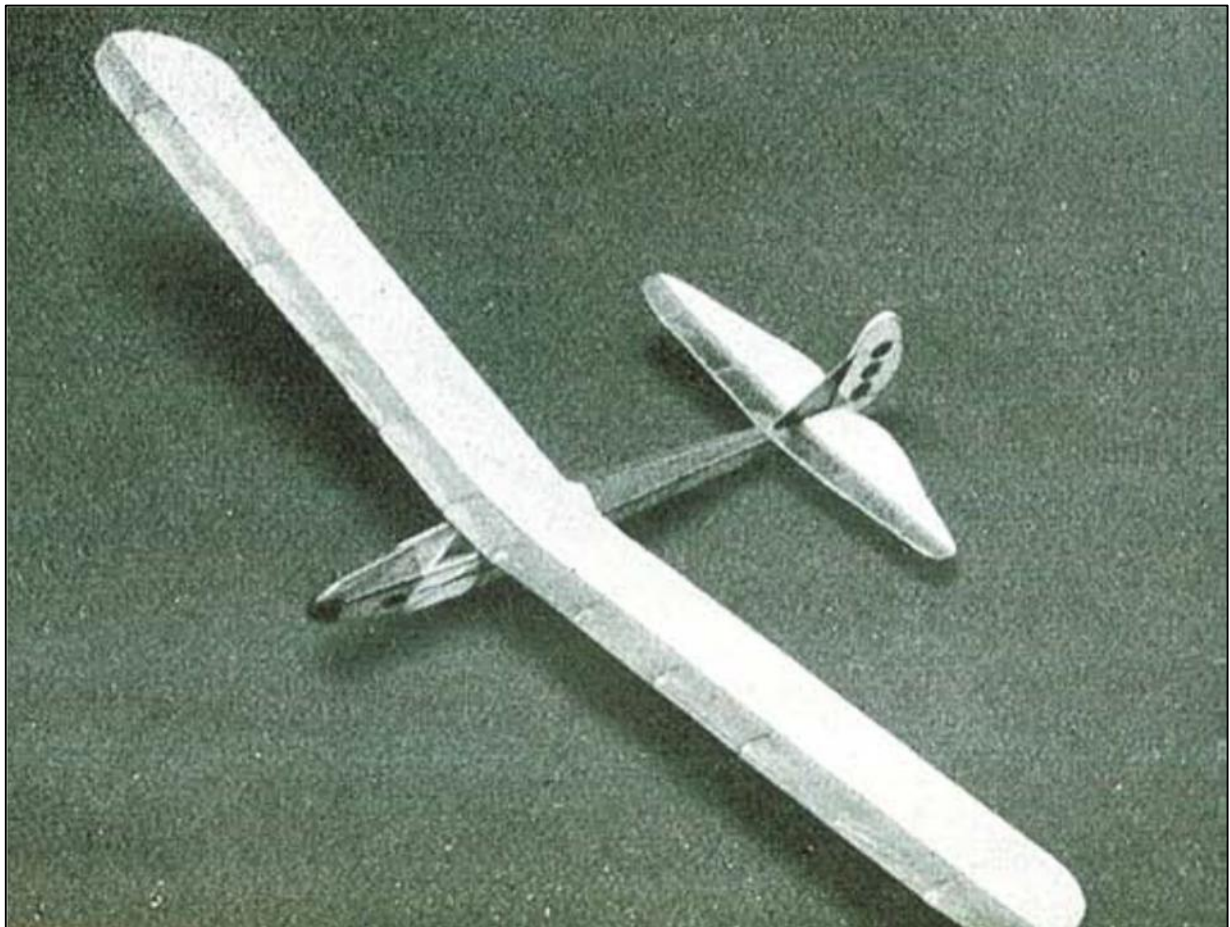
Firstly the MOVO M4 Professor, a glider of about 8ft wingspan and semi-scale appearance. The photo is from the 1938 catalogue.

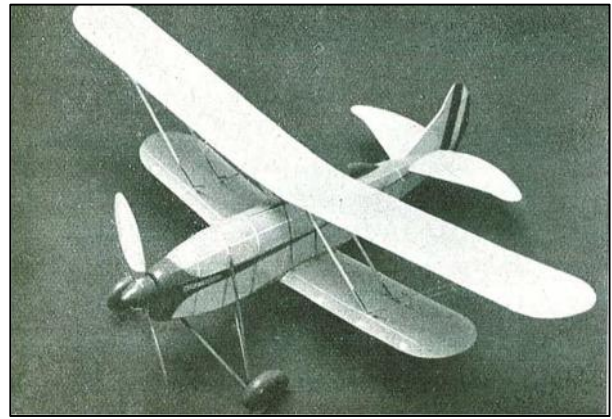
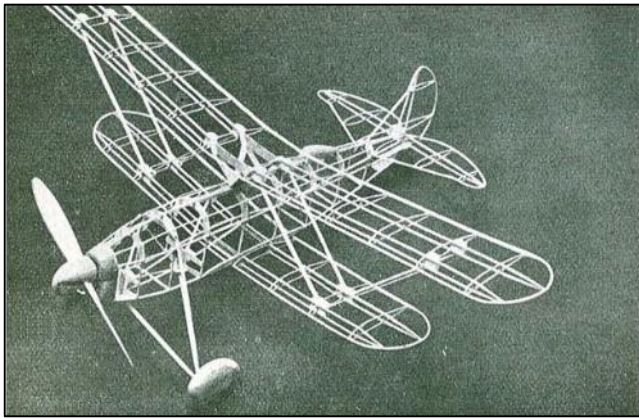


In the case of the plan we have 12 (yes twelve) files of scans of plans of various dates, versions etc. Shown here is the clearest of these various plan versions which is dated 1946.



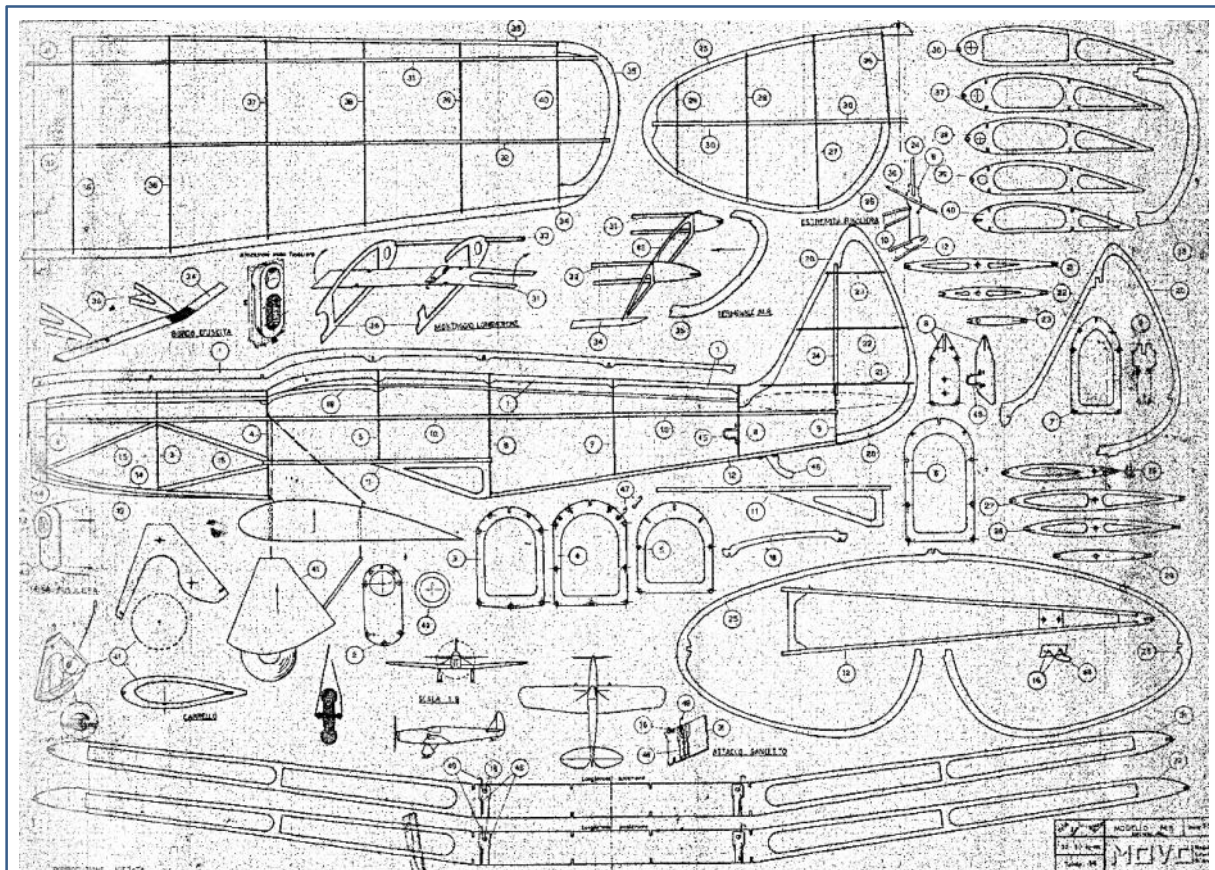
The next glider is the M9 of 41inch wingspan, again the picture from the 1938 catalogue but the plan is the version V1 of 1956.





Kit M10, a 39" wingspan biplane rubber scale model, represents the Fiat CR32 fighter the prototype of which was built in 1933 and the production aircraft were used in the Spanish Civil War and in the early days of WW2.

The plan M11 is a 34inch wingspan rubber scale model of the BREDA 39.



Wikipedia took me on a merry chase when looking for more information on BREDA 39. Firstly up came an "offensive type grenade" (please show me an inoffensive type grenade). Next I found a 20mm Ack Ack gun. Finally, up came the BREDA 39 Italian low wing monoplane of 1932 used by the Italian Air Ministry to fly a circuit of the Mediterranean starting and finishing at Turin.

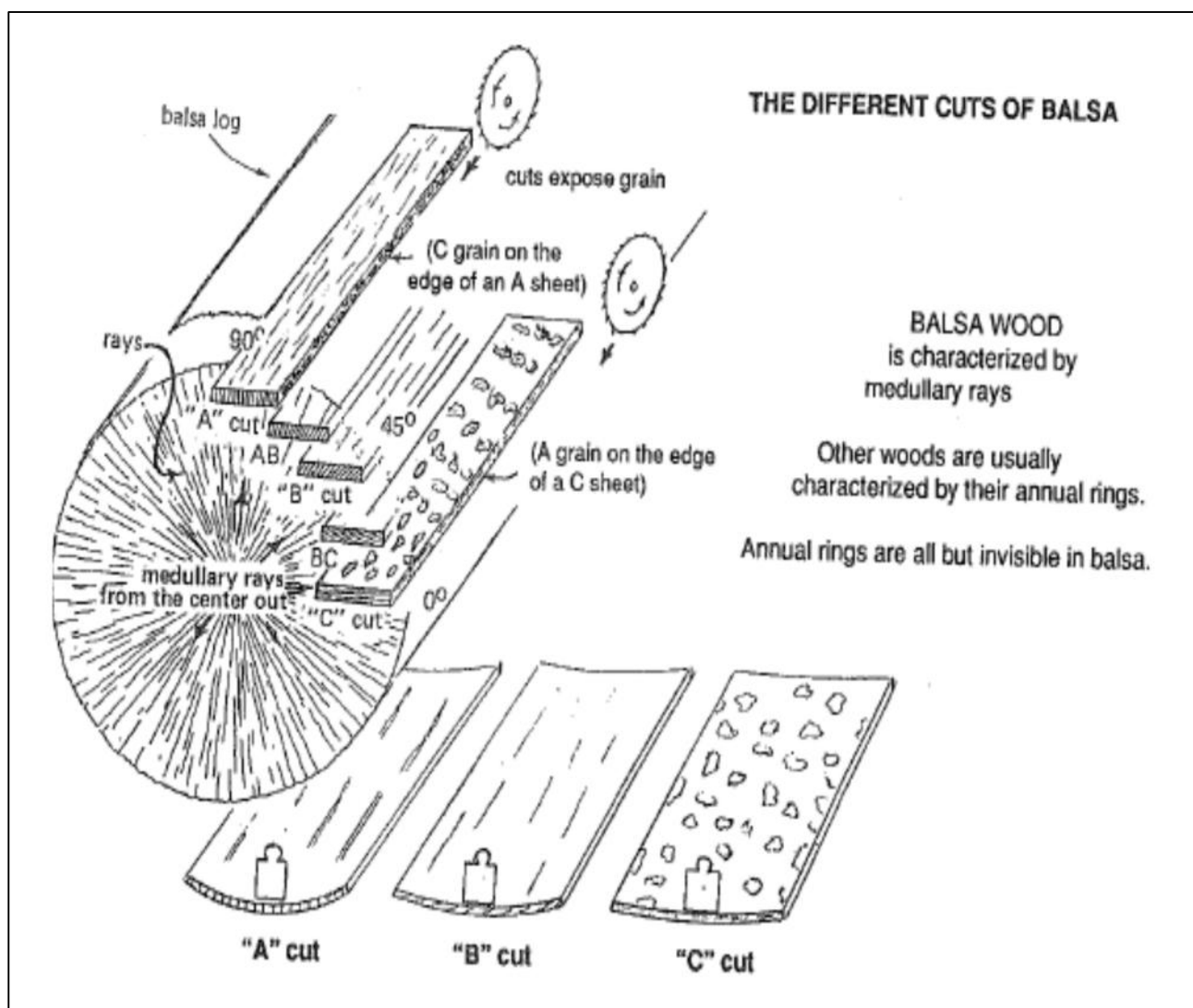
Plans for all the above models available by e-mail.

From: Roy Tiller, tel 01202 511309, email roy.tiller@ntlworld.com

Roy Tiller

Balsa wood cuts

Before proceeding with the relatively straightforward construction of the flying surfaces of the Peanut Scale Nesmith Cougar, I thought it would be worthwhile to have a quick résumé on the influence of the cut of a piece of balsa.



The drawing, above, from Lew Gitlow's book 'Indoor Flying Models' indicates that the cut of a balsa sheet can be identified by both the appearance of the sheet and the direction of the medullary (radial) rays that appear on the end grain.

The closer the wood is to the 'C' cut the stiffer it is for a given density. I have also copied the grain analysis from the old Micro-X Products Indoor Model Supplies catalogue, which describes the appearance and uses of the cuts for traditional indoor purposes.

It is worthwhile examining the available wood and deciding in which orientation the stiffer properties of required. In the case of the Cougar kit, much of the 1/16" sq stripwood appeared to have been cut from 'A' (or possibly 'C') grain sheet. I tried to ensure that the grain orientation of the fuselage longerons was similar and that spacers were positioned with the stiffer 'C' grain parallel to the building board, to better resist the distortions caused by the shrinkage of the covering.

MICRO-X INDOOR WOOD GRAIN ANALYSIS

A GRAIN

Characteristics: Very easy to bend across the grain or lengthwise. Actually the most flexible wood per weight.

Uses: Mainly for spars where sharp bends are necessary like wing tips, stabs, rudders, prop outlines. Not for rolling bodies.

BA GRAIN

Characteristics: A little more resistance to bending than A Grain. Also stiffer across the grain. Looks much like A Grain except for stronger grain lines.

Uses: Good spar stock. Stiffer wing tips. Cannot bend quite as sharp as A Grain. Thin sizes make good stiff prop outlines, rudders, stabs. Not for rolling bodies. BA Grain is slightly stronger per weight than A Grain.

B GRAIN

Characteristics: A mottled appearance. Sometimes unattractive looking but very stiff wood for its weight, and is actually much stiffer per weight than A Grain. Good all-around wood.

Uses: Makes good straight spars. Very stiff. Excellent for wing center section spars. Can be used for ribs; good prop outlines. Not for rolling bodies as well as BC or C.

BC GRAIN

Characteristics: A very mottled appearance. Much stiffer across grain than A or BA and also a little stiffer lengthwise.

Uses: Very good for rolling bodies. Excellent for ribs. Does not lend itself to spars as it tends to get wavy after a time.

C GRAIN

Characteristics: Looks like mother-of-pearl chips running crosswise in it. Is very stiff both across the grain and lengthwise too.

Uses: Very good for rolling bodies. Excellent for wing ribs and prop ribs. Not good for spars.

NOTES TO REMEMBER:

BA Grain is used as A Grain.

BC Grain is used as C Grain.

B Grain, in a pinch, can be used as A or C Grain.

We hope this little resume of wood grains will help you to understand indoor wood selection and enable you to build stronger, lighter models. Several decades of wood-cutting experience has made it possible for Micro-X to bring you the finest, highest strength-to-weight indoor wood available today.

Flying surface construction

As already stated, these are straightforward, but it is worthwhile paying attention to the direction of the grain of the stripwood, as discussed in the previous section. For instance, the trailing edge is only 1/16" sq. It is well supported fore and aft by the scale rib spacing and it needs to be stiffest at right angles to the wing surfaces. 'C' grain wood is generally the best choice for trailing edges. Fig 1 shows the construction of the wing panels. Ensure that the ribs are the same length where the le and te are parallel by stacking them together with a piece of 1/16 in sq in the spar slot and sanding. Also, check that the ribs are at right angles to the board either by eye, or by the use of a suitable 90° template cut from 1/32 in ply. In this photo the main spar has not yet been glued to the ribs - it is just resting in the slots to check alignment.

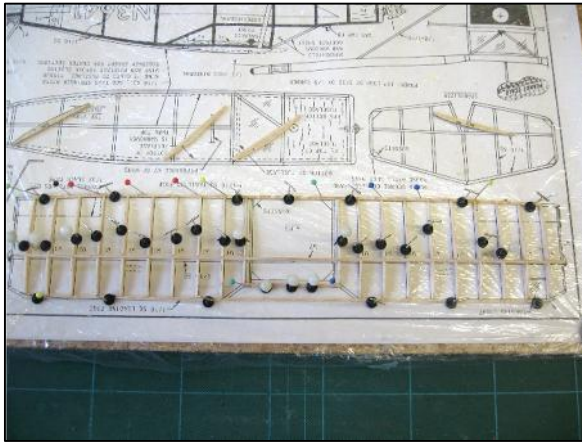


Fig 1 Wing construction – main panels

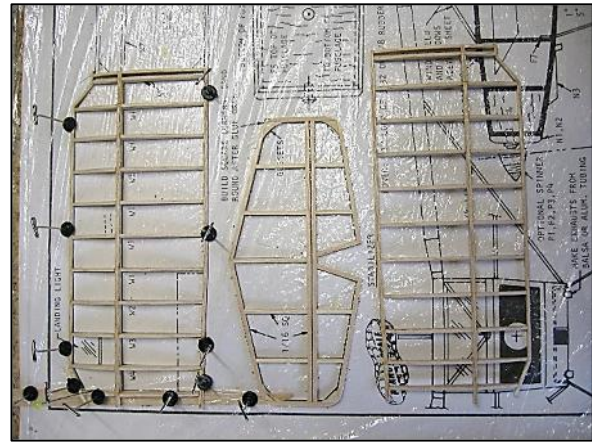


Fig 2 Construction of port wing panel tip. Stab frame and starboard wing panel also shown.



Fig 3 Addition of false rib to wing tip, to be cut away after covering.

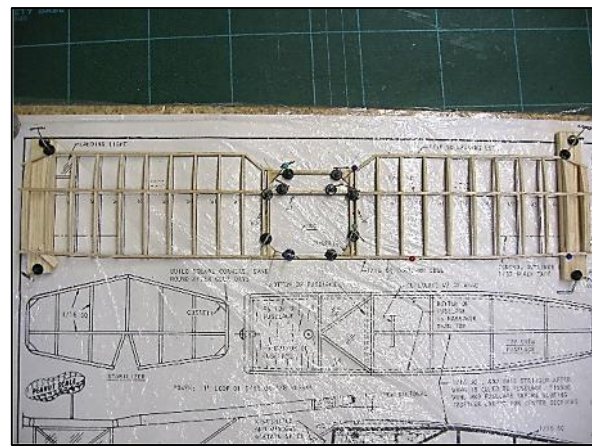


Fig 4 Construction of wing centre section

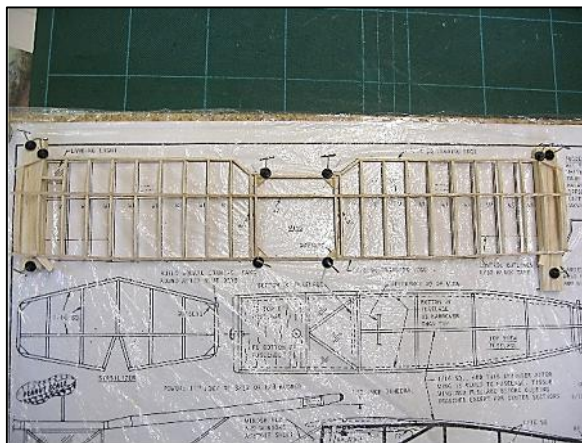


Fig 5 Building in washout.

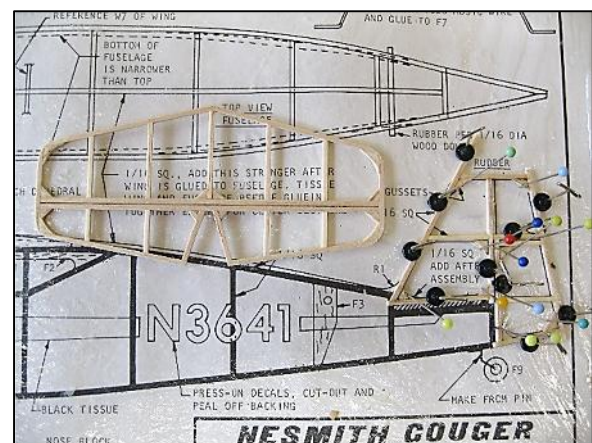


Fig 6 Fin and rudder under construction, with stab frame.

The Cougar has somewhat Hörner-like wing tips and the tip rib needs packing up with some 1/20" thick sheet whilst the upturned leading and trailing edge tip pieces are added (Fig 2).

I have also added some false extra tip ribs of 3/32" sheet to help prevent distortions and wrinkles caused by the shrinkage of the covering, Fig 3. They will be cut away once covering is complete.

Note the use of hair clips to hold these ribs in place whilst the glue is setting. I find these clips quite useless for my beard, but excellent for gently holding balsa parts in position.

If necessary they can easily be bent to shape to suit.

The separate wing panels can now be well sanded, including shaping the le and te before joining together with the wing centre section.

The wing tips are packed up with $\frac{1}{4}$ " sheet whilst the le, te, spar member and gussets are glued in position, Fig 4. I thought that the $\frac{1}{2}$ " dihedral shown on the plan is somewhat excessive.

Washout can now be built in. This is a high winger, so it should fly to the right (I plan to get round to flight trimming in a later article, but it shows that you need to think about these things during construction) so $1/8$ " washout has been built into the port wing and $1/16$ " into the starboard. This was achieved by packing the wing tips appropriately, spraying the frame with warm water and leaving overnight, Fig 5.

The final picture, Fig 6, shows the stabiliser frame and the fin and rudder under construction. The tips are built square with gussets, and sanded round after removal from the board. I added extra gussets to take the 15 amp fuse wire hinge wires for the adjustable elevator and rudder. These tiny gussets were placed in position by being held on at the tip of a sharp pin or scalpel blade.

By the way, if you require a flexible hinge material for control surfaces an excellent source is the storage medium of a 3.5in floppy disc. This is glued into suitable slots cut into the balsa frame with a scalpel.



Keil Kraft Junior Flying Scale Piper Super Cruiser converted to three channel radio.
Control surfaces are hinged with narrow strips of flexible material cut from a 3.5in floppy disk.

Every year at about this time the FFTC asks for suggestions and ideas for possible rule and procedural changes.

This looks democratic but is not so in practice. At the end of this process the FFTC can present unexpected (and possibly drastic) decisions. Their origin is rarely mentioned.

At the present time F/F is subject to a number of problems mostly involving concern that the 'Authorities' might impose legislation that would curtail our activities.

This has led to a number of meetings introducing a 'Fly in the field' requirement. Others have tried various ways to reduce performance.

Personally I think we are going about matters in the wrong way. Restrictions may well be imposed on us - but we should not burden ourselves in advance with regulations based on rumours, fears and guesswork. It may be thought that such anticipation would help in negotiations with 'outside bodies'. I am afraid that it will guarantee what we would like to avoid.

I would like to see the BMFA (not the FFTC) fight long and hard to obtain a minimum of interference with all of model flying.

Until the outcome is formally decided I can see no need to change our ways on a wholesale basis. Particular venues may well need local rules that would be inappropriate elsewhere.

Meanwhile it would be prudent to devise Contingency Plan(s) so as to know what to do IF and only IF required.

If shorter flights do become necessary then we really should have suitable specifications. Indeed some have been tried.

Such should apply for both the contest flights AND the flyoff.

FFTC ideas of 'half rules' for JUST the flyoff are worse than pointless. It involves having special models (or trim) for the flyoff. Why shorten the flyoff period? Who will this suit?

I note with dismay the suggestion that FAI models and contests should have special consideration.

Outside bodies do not care whether our models meet International specifications - why should they? Noise, safety and trespass are their concerns. Teams and practice are irrelevant to them.

To sum up.

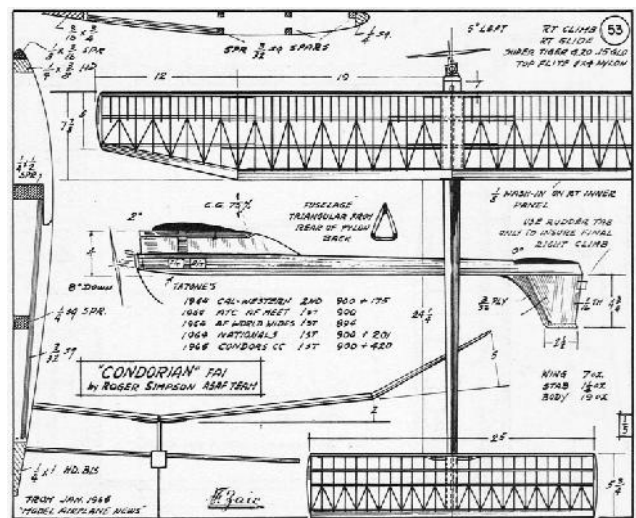
Fight and hope for the best.

Prepare for the worse but 'don't jump the gun'.

Consider new specifications to match low maxs.

Don't make FAI a privileged class.

The layout as developed by Doug and Dick Cherney, came from a development by George Albright from Sal Taibi's "Spacer". Not often that a direct line can be traced. Later in 1965 Roger Simpson used a roughly similar layout with his "Condorian" with much success.



The layout was developed to handle the increased power outputs of the *Glow* engines in the late 50 and early 60's, with a "locked up "model. This line of thinking was overtaken with the automation of VIT and AR, which transformed power flying.

The unifying factor with these models was the large 10 degrees downthrust and 4/5 degrees left thrust, low pylons, underslung fin and forward 65% CG (this is a main difference to the Ramrod which had 80 % CG and large tail). Notable also was the relatively short moment arm and smaller 28% or so tailplane area. This allowed a larger wing area under FAI rules, nowadays of course these areas with function models go as low as 12 %.

Bob Stalick gave a thorough run down of George Albright's developments with his "High Society" in the NFFS Digest of Jan/Feb 2011. Well worth while subscribing to the NFFS Email Digest at very modest cost - Support FF! Just pump in NFFS in your search engine.

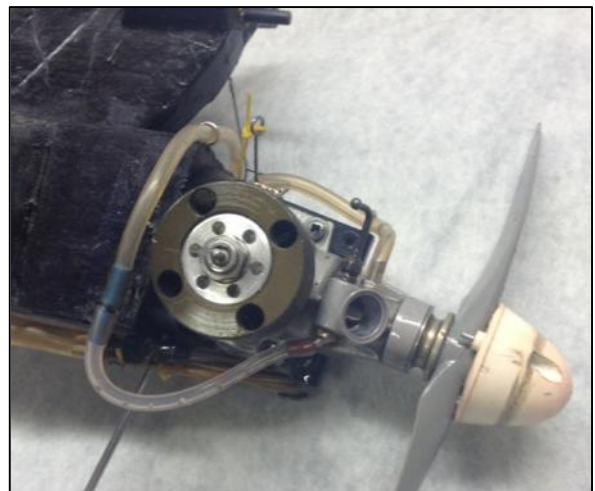
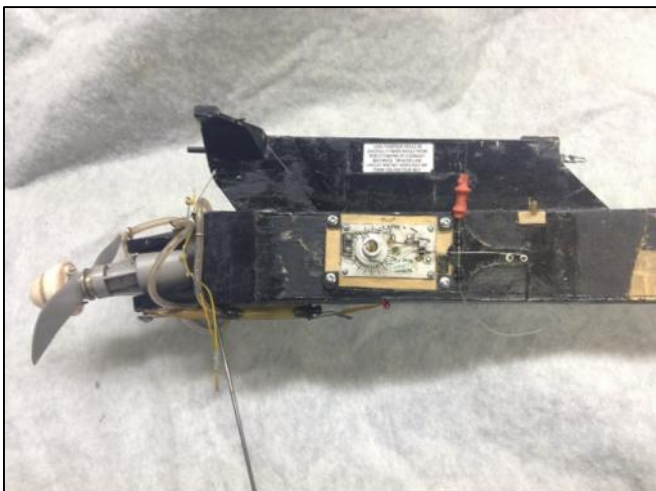
I built this model some years ago to the layout for my own satisfaction, but my construction is a little different to fit my tastes.



I selected a ball raced Big Mig 15 Nelson head on pressure, this I used with an 7x4 apc giving around 22k on high nitro. Trimming was a bit different, it must be launched very steeply or vertically, otherwise the downthrust pulls the model into level flight, which will frighten the life out of you. Not to be recommended.

The model will climb initially for say 4 seconds and then will go into a regular spiral - it will hold this climb for at least 25 seconds or more, I will not tell you how I found out this - with excellent transition into quite a good glide, limited by being a flat bottomed aerofoil.

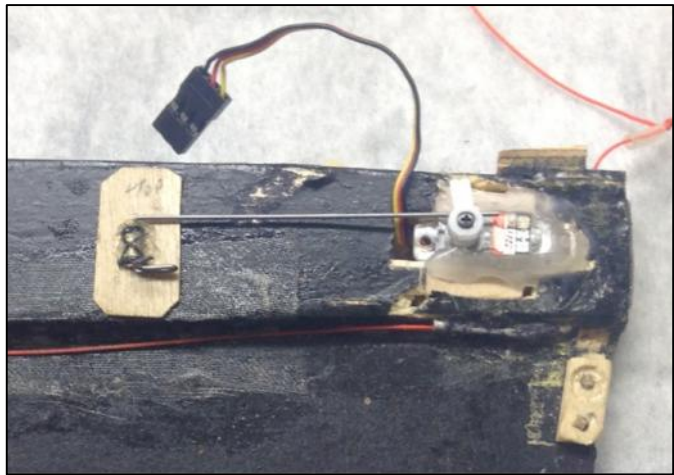
I had some crashes and near ones along the way as I experimented with this very different setup for me. But how else can you succeed with power models without crashing from time to time?



Recently I found that Big Mig's are actually more powerful at even higher revs, so I utilised an apc 7x3, with a completely open venturi (ie no venturi in the crankcase), which then turns at some 27 k, right on the safety limit recommended by apc manufacturing. Possibly around 0.8 bhp. The model needed no adjustment to the trim and will reach in the order of 900/1000 feet in 10 to 11 seconds.



Altogether, although unusual it is a very sound model. Go on try it.



Radio DT somewhat boded in at the rear

Model Weights:

Wing - 149gms; Tail - 24gms; Fuselage etc. - 356gms;

Total weight all up; **529gms** (18.4 ounces in old money).

Model Set-up:

Wing - 3.5 deg; Tail - 1.1 deg; no major warps,
2 degrees tip washout each side.

Downthrust - 10 deg; Left sidethrust - 4/5 deg; CG - 65 %.
(very difficult to measure all of this but of no real importance, get it to fly)

I have used this layout on my E36 models in an attempt, with limited span and using a small tailplane, to reduce drag. It works well and is worth a look at for those that wish to experiment.

John Thompson

Salisbury Plain meeting: 7th August

Being even more boring than last month, here is a repeat of the planned comp schedule & associated notes. No excuses for not having a model or models ready!

Other than confirmation of the Portaloo, there has been no feedback from anywhere about our planned meeting on Salisbury Plain, no news is good news? Reiterating what was said last month for the benefit of a possible visit by sports flyers - make the effort & see what you think. The area is very large but once off the plateau - which itself is large, there is a fair amount of "up & down" terrain, hence the sensible use of shortish motor runs & judicious use of dt devices would benefit those who don't have the energy or inclination for energetic retrieves.

Scheduled Comps

Power: - E 36

Rubber: - Combined 4oz/8oz Wakefield; Combined Vintage/Modern Coupe; Under 25"
Glider: - Over 50" Vintage/Classic; Bungee 36"; Vintage / Classic CLG / HLG.

Sports Models:

Power/Glider/Rubber/Jetex/Electric unlimited

Arrivals from 9.00am onwards, comps start at 10.00am, comps end at 16.30pm, dt fly offs 16.45pm with prize giving at 17.30pm. This to give encouragement to those who like a relaxed contest! Off site by 6.00pm - however, if sports flyers wish to stay beyond 6.00pm they will have to make their own arrangements with alternative SP red card holders.

The use of RDT/conventional DT for sports models is not mandatory but is highly recommended wherever practical. Although the site area is large, we do not want to risk excursions out of it.

No Radio Assist: I have had a few calls to ask if RC assist can be flown. Regrettably the answer is "No" as the licence is for free flight only.

All persons who fly must have BMFA membership & there will be a charge of £6.00 per flier to cover the cost of the MoD licence fee & hire of a portaloo (mandatory requirement for organised meetings on SP). Access is from the B390 Shrewton to Chitterne road - approx 2.5 miles west of Shrewton. The off road route will be signposted and the flying area is determined on the day by wind direction.

Note: As with all MoD sites, the Authorities can invoke cancellation at short notice. If this should happen, we will try to get a bulletin published on the SAM 1066 website so be sure to check before you travel.

DBHL / Flying Minutes plan

Request for plans of late have been few & far between.

However, the odd one does arrive with a story behind the request.

For example Mike Bateman got in touch to request a copy of the Flying Minutes Wakefield plan, after being put in touch with me by Jerry Litschi in the USA
 (Jerry had previously made a DBHL request for other old Wakefields)
 (see a magnificent version of a Flying Minutes by Richard Thompson in the photo below).

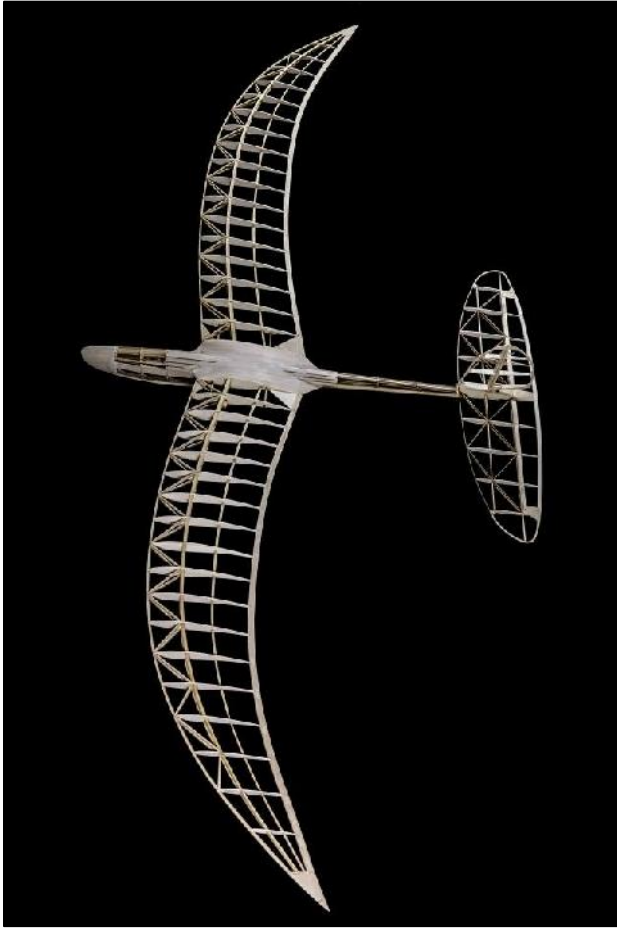
Mike's grandfather apparently made a model in 1946 & Mike is to attempt a restoration job on what is left of it.



Flying Minutes Restoration job

Latest Aquilone from Italy

For reasons best known to Pino Carbinì, I get an electronic copy & a paper copy of this journal - for which I am most grateful as the content is always interesting. This month, for example, had some notes on a model that the Italian contingent flew at Middle Wallop in the early days of their visits - a beautiful crescent wing glider entitled F.D.15. If my memory is correct. I recall two of these flying at the same meeting. One can only marvel at such a model & the skill of the guys who made them. The picture shows a reconstruction by Stefano Saccani.



The F.D.15.

Slicker Mite & electrickery

Finished & test flown relatively successfully at Beaulieu. Relative only in that I need more flight time, but things look promising & the Dens Model timer works a treat. More in the world of things electric - the Electric Burd has been good - up until the last flight of the day! Somehow, I must have offset the tail as after several fine flights, the model peeled off to the right & the backend parted company with the rest of the fuselage on contact with the ground! Now repaired & ready for another excursion.

I seem to recall mentioning the possible build of Vic Smeed's Hussy in a previous NC. Still on the cards but may be overtaken by an electric Junior 45 - plan published in a recent Aeromodeller & a full size plan kindly provided to me by Dennis Underwood - free flight of course! Would go well with it's big brother equipped with an ED Comp Special.

Old Warden

A visit was made to the recent July scale day (Saturday) at Old Warden. It's many years since I last visited. This time John Hook & Dennis Underwood came for a day out. A good time was had by all, tho' none of us took any models to fly - rather we went to "socialise". There didn't seem to be as many trade stands as my last visit & certainly I didn't come across anyone selling from the boot of a car, also unlike the last visit. However, Belair were there & both Dennis & I succumbed to temptation! He with a Bantam & a Matador, me with an Inch Worm & a 48" Spook. I need more kits like a hole in the head! Still it's a few more winter evenings now committed.

This meeting was the first (I understand) where a flight line for free flight was set up, together with limitations on model size/engine capacity. Most of the models were small rubber sport & duration, some very nice scale rubber, a sprinkling of small power models - all of which were interspersed with a fair amount of radio assist Tomboys cavorting around the sky.

A Xanadu was spotted flying - this is a past total failure for me, so that was nice to see.

Then a separate radio area for larger radio models, including a couple of jets. All said & done, a good day out with of course the Museum to be savoured, but it will be a few more years before another visit as it's over a 300 mile round trip.



Ambitious rubber scale



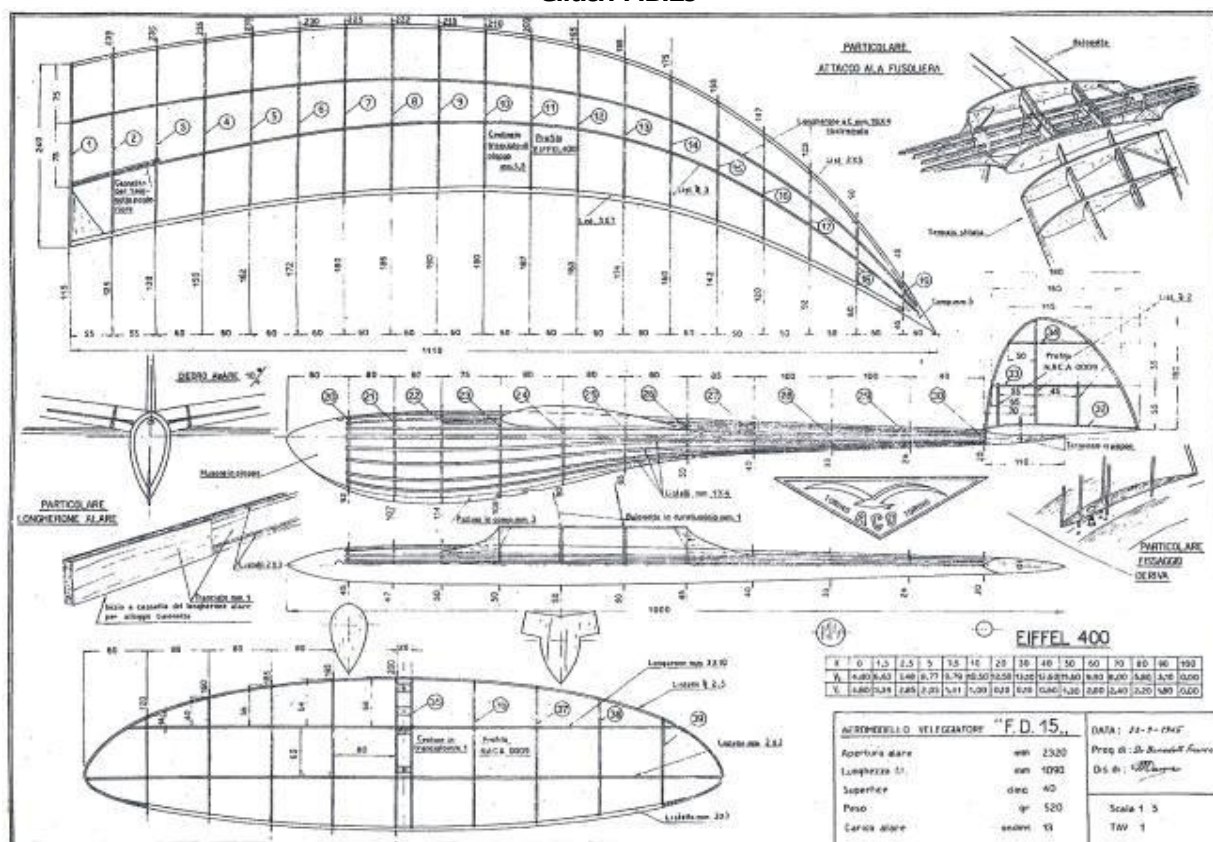
Xanadu

Acquired models & conversion thereof!

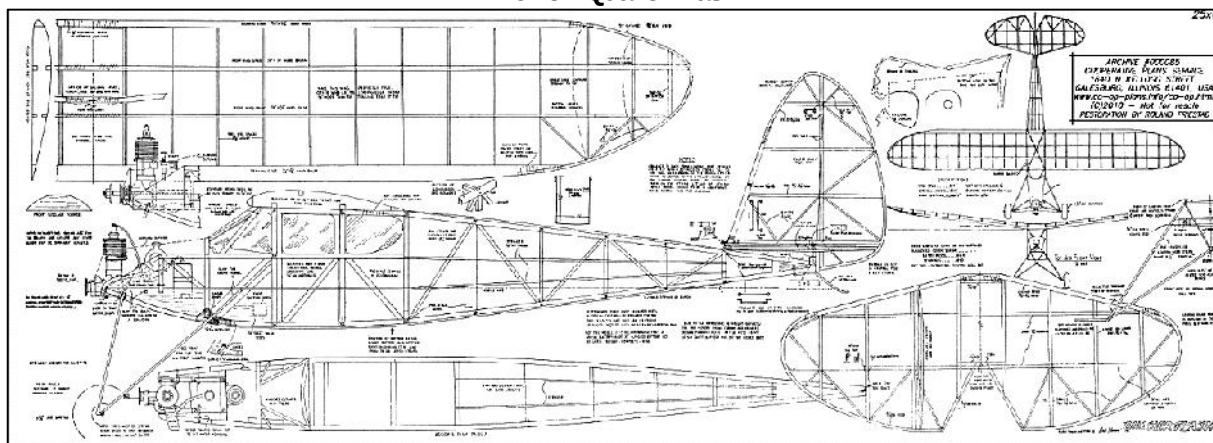
Recently Pete Shelton & I helped clear the loft of an old & well respected member of Lee Bees Club. It took several trips with my Previa filled to the brim to do so. Amongst the many models, quite a lot of which were full function RC, were a few that were worth "rescuing" rather than trying to dispose of them. These included a Quaker Flash, a Brooklyn Dodger, a Calypso Major & a Caprice. The former two were rudder & elevator RC but are both in the process of being "converted" back to free flight. The Quaker Flash is ready to go with an ED Racer & the Brooklyn Dodger will have an O & R 19 on board, but it needs a bit more repair/restoration work. The latter two will eventually see the air equipped with home made RDT, the Caprice replacing one that was lost off a bungee with the immortal words - "it's only a short line & a test flight, so I won't light the fuse!". All this activity reinforces my comment above about acquiring more kits! Proceeds of the rescue effort go to the Parkinsons Charity.

Proceeds of the rescue effort go to the Parkinsons Charity.

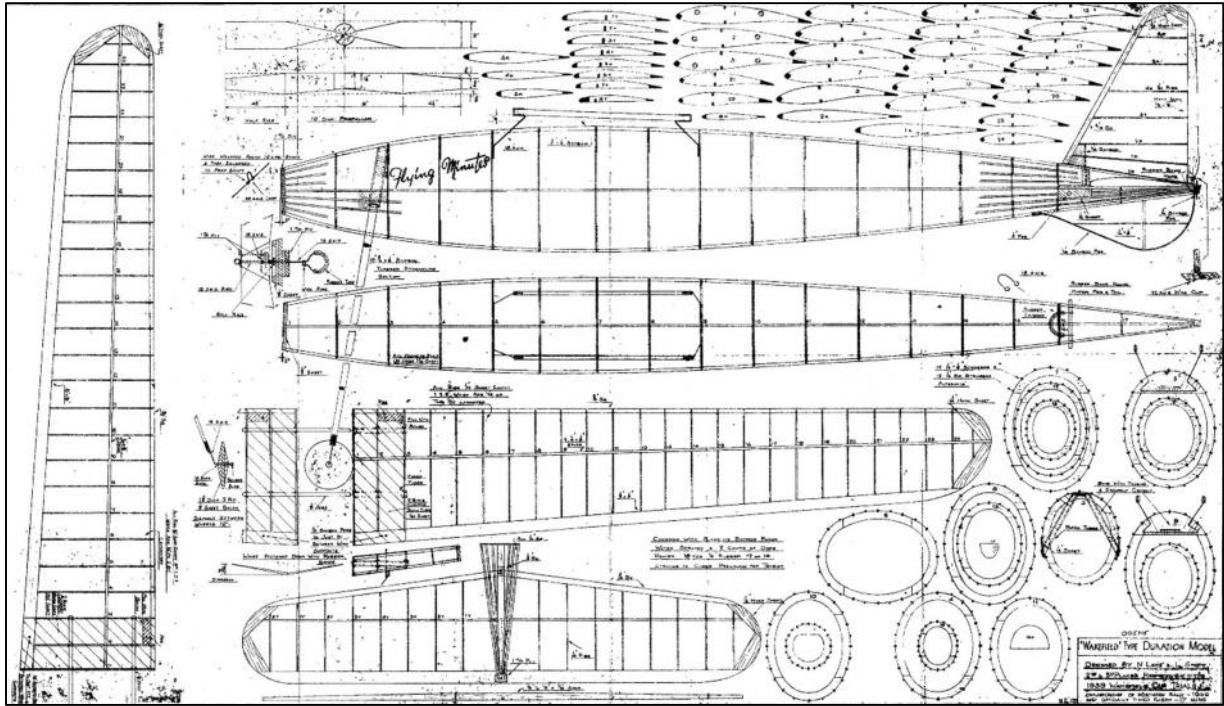
Plans for month: All "why nots" this month!

***Glider:* F.D.15**

Power: Quaker Flash



Rubber: Flying Minutes



Roger Newman

Engines for Sale

Kathy Wingate

1	Make	Size	cc	Type	Condition	Comments	Value	No	Store
2	Allbon Dart	0.5	cc		*fair+fuel tank		£55	6	M
3									
4	BEE	0.5	cc		in bx		£70	2	N
5									
6	Cameron	0.23	cu	spark ig	new	no sil	£80	18	T
7	Cox	0.049			fair		£10	11	Q
8	COX	0.49	cc	2 stroke	poor	incomplete	£5	20	U
9	Cox .75		cc		SOLD				
10	Cox .75 (.049)				v.good		£20	2	Q
11	DC 1.5				v.good		£30	3	Q
12	DC Dart	0.5			*good		£60	3	M
13									
14	DC Sabre	1.5			v.good		£25	10	Q
15									
16	ED comp special	2	cc	diesel	v good	no sil	£55	12	T
17	Ed Race	2.5	cc		v.good		£50	8	Q
18									
19	EDB	1	cc	Diesel				6	U
20	EDB	2	cc	2 stroke	excellent	with cutout	£35	24	U
21	Elfin australia	1.49		diesel	new in bx		£60	14	R
22	Enya	0.06	cu		non runner		£35	8	M
23	Enya							1	N
24	Enya				*new in bx+sil		£50		P
25	Enya				new in bx		£120		P

26	Enya				new in bx		£120		P
27	Enya				v.good in bx+sil		£35		P
28	Enya	0.35	cu	2 stroke	*fair	no sil	£20	13	T
29	Enya	0.35	cu	2 stroke	*fair	no sil	£15	15	T
30	Enya	0.35	cu	2 stroke	*fair	silencer	£20	16	T
31	ENYA	0.6				silencer	£10	18	U
32	ENYA	0.45	cu	2 stroke	*excel			26	U
33	ENYA	0.35	cub	parts	empty			7	Y
34	Enya 11	0.45	cu	2 stroke	good	no silencer	£25	1	T
35	Enya 15				excel -silencer		£25	7	S
36									
37	Enya 19-5				new in bx		£30	10	L
38									
39	Enya 40				excel		£80	2	R
40	Enya 40 s.sport				new in bx+sil		£50	1	O
41	Enya 40X				good in bx		£25	12	C
42	Enya 45				good		£25	12	R
43									
44	Enya 60-4c			stroke	new in bx		£125	2	K
45	Enya 60-4c			4stroke	new in bx		£125	1	K
46	Enya 80X	0.8	cu	2 stroke	new	no silencer	£50	2	T
47									
48	Enya silencers				good		£25	11	O
49	ENYA 55	0.4	cu	2 stroke	excellent	no sil-prop	£35	14	U

50	Enya S540			excel	silencer	£50	13	R
51	Enya super sport	0.25	cu	2 stroke	including silencer	new		1 U
52								
53	Enya super sport	0.6	cu	2 stroke	60-3 BTV	NIB	£60	4 X
54								
55	Enya super sport	0.3	cu	2 stroke	very good		£35	2 Y
56	Enya super sport	0.45	cu	2 stroke		NIB	£50	3 Y
57	Enya super sport	0.4	cu	2 stroke	very good		£40	4 Y
58	Enya super sport	0.35	cu	2 stroke	35V BBT	NIB	£40	5 Y
59	Enya super sport	0.4	cu	2 stroke		NIB	£50	1 Y
60	Enya V	0.35	cu	2 stroke	fair	no sil	£15	14 T
61	Enya V1				new in bx		£30	9 L
62	Enya15 mk4 tv				new in bx		£35	4 N
63	Enya80x n.valve	0.8	cu	2 stroke	for 40/45	*sil fair X2	£5 each	3 T
64	ETA	5	cc	diesel	good	no sil	£125	11 T
65	ETA	5	cc	Diesel	fair but old		£120	3 U
66	Exhaust silencer				for 60 Enya	NIB	£12	3 X
67	Frog 1.75				v.good		£110	4 Q
68	Frog 100				good mounted		£60	15 R
69								
70	IRVINE MILLS	0.75	cc	Diesel	in use		£60	3 V
71	Irvine20 sport 11			diesel	new in bx+sil		£80	10 O
72								
73	KB .28r/c Sportster				new in bx		£40	5 O
74	KB Sportster r/c	0.45			new in bx		£40	1 L
75								
76	McCoy	0.75		glow	new		£40	9 N
77	ME Heron	1	cc	diesel			£30	8 N
78	ME Heron		1 cc		v.good		£45	6 Q
79	ME SABRE	1.5	cc	Diesel	good		£20	19 U
80	Merco	0.35	cu	2 stroke	poor	silencer	£15	4 T
81								
82								
83								
84								
85								
86	Mills	0.75			v.good original		£60	2 M
87	Mills	0.75			fair		£45	4 M
88	Mills	0.75			good condition		£50	7 M
89								
90	MILLS original	0.75	cc	diesel	very good			10 U
91								
92	MP Jet 2.5	2.5			new in bx		£75	4 O
93	OS FS-60				*good in bx		£75	P
94	OS max				v.good in bx+sil		£35	P
95	OS Max	0.5	cu	2 stroke	*poor		£15	11 T
96	OS max	0.15	cu	2 stroke	very good	no silencer	£35	5 U
97	OS Max	0.25	cu	2 stroke	*fair	silencer	£15	13 U
98	OS Max	0.35	cu	2 stroke	*fair	silencer	£25	16 U

148	Super Tigre				v.good in bx		£50		P
149	Super Tigre				in bx				
150	Super Tigre .29K				new in bx+sil		£40	2	L
151	Super Tigre 34				*good		£25	6	R
152	Super Tigre 51				good	no sil	£15	1	R
153	Super Tigre 60				v.good in bx		£40	4	R
154	Super Tigre 529				excel in bx		£35	3	O
155	Super Tigre 561				excel in bx		£50	3	L
156	Taifun Hobby				v.good		£45	7	N
157	Thun Tigre GP-07				new in bx		£40	8	O
158	THUNDER TIGER	0.15	cub			NIB	£40	15	V
159	Torpedo 35						£15	5	N
160	uper Tigre S34				excel in bx		£30	2	O
161									
162	WEBRA	1.7	cc	2 stroke	excellent			9	U
163	Webra 1.5	0.09	cu		no valve excel		£30	3	N
164	Webra 1.5				v.good*		£25	9	Q

99	OS Max	0.5	cu	2 stroke	poor	no silencer		17	U
100	OS max 10				v.good +silencer*		£25	5	S
101	OS max 15FP				excel in bx		£30	6	O
102	OS max 40R/C				v.good in bx		£25		P
103									
104	OS max FP	0.4	cu	2 stroke	*very good		£35	15	U
105	OS max FP	0.4	cu	glow	v good	silencer	£30	9	Y
106	OS max FP	0.35	cu	2 stroke	good condition	NIB	£40	1	Z
107									
108	OS Max FP40				excel in bx		£30	7	O
109	OS max FP40				excel		£35	5	R
110	OS Max H	0.6	cu	2 stroke	poor	no sil	£20	6	T
111	OS max SF40				excel	silencer	£40	7	R
112	OS maxFP	0.1	cu	2 stroke		NIB	£35	4	Z
113	OS maxFP	0.2	cu	2 stroke		NIB	£35	5	Z
114	OS maxFP	0.15	cu	2 stroke	very good		£30	6	Z
115	OS maxFP	0.25	cu	2 stroke	*fairly good		£35	7	Z
116	OS maxFS	0.25	cu	4 stroke	in use			11	Z
117	OS maxFX	0.46	cu	2 stroke		NIB	£75	2	Z
118	OS maxLA	0.4	cu	2 stroke		NIB	£40	8	Z
119									
120	OS surpass FS-26			4stroke	excel in bx		£100	5	K
121									
122	PAW	1.49	cc	diesel	good	no sil	£15	7	T
123	PAW	2.5 1.9	cc	2 stroke	excellent		£25	22	U
124	PAW	0.8	cc	Diesel	excellent	on pod		25	U
125									
126									
127	PAW	1.5	cc	Diesel	good		£35	4	W
128	PAW				parts RC Throttle		£20	5	W
129									
130									
131	PAW 06 BB			diesel	v.good in bx		£30	7	Q
132									
133									
134									
135									
136	PAW Mk 1 BB	0.049		diesel	new in bx r/c		£40	7	L
137	paw Throtls x3 r/c				good		£25	10	T
138	PR					silencer	£5	21	U
139									
140									
141	Silen Enya 60 prob						£8	11	R
142	Silencer P&R						£3	10	R
143	Silencer small						£10	12	U
144	Stentor 6				not for sale			3	R
145	SUPER TIGER	0.29	cu	2 stroke	very good			2	U
146	SUPER TIGER	0.6	cu	2 stroke	excellent	silencer	£40	23	U
147									

Editors Note: These engines are the collection of the late John Wingate

Enquiries for purchase may be made to:

Kathy Wingate email: john_wingate@sky.com

or Editor email: johnhandrews@tiscali.co.uk

Delivery method to be agreed and if posted, at cost.

Kathy Wingate

L'AQUILONE SAM 2001
TOMBOY RALLY INTERNATIONAL POSTAL CONTEST
 01/06/2016 to 31/05/2017

We wish to present this competition to all the lovers of this nice model with the only aim of having fun in a postal contest which is organized to provide some fun flying together or at the same time as are all postal contests. The Tomboy Rally wants to prove the performance of this model alongwith the ability of the builder and pilot, without reaching the peak agonism of usual contests and only wishing to fly the model having fun in a relaxed manner. After having carried out some tests we have decided to admit the use of i.c. engines and electric motors trying to reduce the gap between them.

Model

The 36" or 44" wing span (as per plan Aeromodeller) and 48" (as per Boddington plan or 36" scaledup) models are admitted; Models may be fitted with floats as per plan (scaled-up for 48" version); no minimum weight; reinforcement or lightening of the structure with respect of the basic outline of the original model are admitted; materials to be used are those found on the plan; plastic covering in place of tissue, silk or other is admitted. More than one person can use same model;

Same model can flight in L.G. or float version; Lone fliers can self-launch and time

Engine/motors

I.c. engines and electric motors are admitted within the following limits:

36"-44" WINGSPAN

I.C. Engines:

Any engine with 1 cc. maximum displacement; Fuel tank : 3 cc. R/C carburettor is admitted.

Electric Motors:

Any electric motor is admitted with direct drive

The engine cannot be stopped and started again: the motor must run continually without interruptions till the end of the battery charge or competitor's decision; no folding prop is admitted; if a folding prop is fitted the blades must be held open with a rubber band;

Battery: 450 Mah 2 cell LiPo - separate battery pack for Rx is allowed

48" WINGSPAN

I.C. Engines:

Any engine with 2, 5 cc. maximum displacement; Fuel tank : 6 cc. R/C carburettor is admitted.

Electric Motors:

Any electric motor is admitted with direct drive

The engine cannot be stopped and started again: the motor must run continually without interruptions till the end of the battery charge or competitor's decision; no folding prop is admitted; if a folding prop is fitted the blades must be held open with a rubber band;

Battery: 500 Mah 3 cell LiPo - separate battery pack for Rx is allowed

Flights and results

Each competitor may fly as many flights as wished during the admitted period but only the best flight will be considered for the final result. Hand launches are admitted. The flight time start when the model is released or takes off. The flight time ends when the model lands or hits a fixed obstacle. In case the model flies out of sight, the timekeeper will time for 10 seconds after losing sight of the model. Timing will continue if model is seen again or stopped after 10" deducting this time from the total time of the flight.

Awards :

A diploma for all competitors and prizes for the first three in each version rank.

Special prize for best flight in float version.

Results

Results, address, photos and technical specification about model must be forwarded to the Organization within the 15th June 2017 to Curzio Santoni (cusanton@tin.it) or to Gianfranco Lusso (gfl@orange.fr). Many pleasant flights and happy landings to ALL !!!!

SPECIAL PRIZE VIC SMEED

SAM 2001 have scheduled an extra Diploma that will be awarded to the best flight in Tomboy floatplane version (36", 44" or 48") taking off from water. The Editor will send to the winner a Diploma signed By SAM 2001 President and a bottle of special Italian Wine to drink to Vic Smeed!

Good ROW and flight

SPECIAL PRIZE DAVID BAKER

We have scheduled a special prize for the three best flights obtained with 36" Tomboy F/F. Only engines diesel max 0.75 c.c. shall be used. The other rules are the same for 36" or 44" wingspan type. It is possible to use an R/C Tomboy, however, being this a free-flight contest, the time must be stopped when transmitter is used, since the aircraft model should fly freely from any control from the ground.

Good thermals

Southern Coupe League

Fixtures 2016

Southern Gala	Saturday	Aug. 20 th	Salisbury Plain
Odiham	Sunday	Sept. 3rd	Odiham
Crookham Gala	Sunday	Sept. 18th	Salisbury Plain
Coupe Europa	Sunday	Oct. 2nd	Salisbury Pain

Contact Peter Hall: email; phall789@btinternet.com

TIMPERLEY FREE FLIGHT GALA

Sunday 14th August 2016

at MOD North Luffenham.

10am-5.30pm

Contests for Comb-Rubber, Comb-Glider,
Comb-Power (no electric) Comb-HLG/CLG,
Mini-Vintage. All to BMFA rules.

F/F Sport flyers welcome. Airfield charge.

BMFA membership required.

Contact---Gerry Ferer, Tel: 0161.928.4955,

Email: gferer@hotmail.com

Southern Area BMFA Rally

RAF Odiham Saturday September 3rd 2016

It is confirmed that the meeting is booked
the risk assessment has been approved
the Licence etc. is applied for

Further info: John Thompson,

email: johnd.thompson@btinternet.com

The Crookham 50th Anniversary Gala

Sunday 18 September

on Salisbury Plain

Classes will be:

Combined F1G and Vintage Coupe d'Hiver,
(with a prize for highest placed vintage model)

George Fuller power for the George Fuller Trophy,
(8secs run, 2 minute max)

E36 & F1H/A1 glider

The aim will be to contain all flights on the field and the contest will be organised accordingly. Contest will be run in rounds with the first round between contest start at 1000 and 1200. The max for all classes will be 2 minutes unless the weather dictates less. The number of rounds will be decided on the day, dependent on the weather, with a minimum of three. DT flyoffs will be used if necessary.

Contact Roy Vaughan:

Email: - roy.vaughn@btinternet.com,

or Tel: - 01344 779071

Coupe Europa **Sunday 2nd October 2016** **Salisbury Plain Area 8**

F1G and Vintage Coupe D'Hiver.
Flitehook Trophy for F1G teams.

Contest starts 10.am. F1G will be in rounds.

Contact Ray Elliott

Email: - ray.elliott8@btinternet.com.

Tel: - 44 (0) 20 8997 7745

Oxford MFC Scalefest 2016

Sunday 2nd October

(Note New Date!)

Port Meadow

BMFA Power, Rubber, CO2/Electric (Need Dox)

BMFA Outdoor Kit Scale, Rapier/Jetex Profile,

Rapier/Jetex Authentic Scale (No EDF, Smokers Only).

Glider: - 10.00 Start.

BMFA Power: - 1.30 Start.

BMFA insurance required.

Info: 01865 873876 07833 775794.

Full details on www.oxfordmodelflyingclub.org.uk

La Grande Coupe de Birmingham **(Part Trois)**

Sunday December 4th

at MOD North Luffenham

Qualifying event for "Euro Challenge F1G"
 2016/2017 (provisional)
 starting at 10:00am

F1G for the Aeromodeller Trophy

Two rounds between 10:00 & 12:00
 then 3 rounds to timetable; finish at 14:45

Pre '58 Vintage Coupe
for the Bernard Boutillier Trophy

3 flights (no rounds) start 10:00, finish at 14:45

Special prize

Bottle of fizz for the best aggregate score in both events

Entry Fee £10 covers both events

Maxes as determined by conditions on the day
 Fly-offs (Not DT!)

Prize giving and hot drinks/nibbles in the Golf Club
 (hot food available for purchase at the club bar)

For further information contact:

Gavin Manion at gavin.manion84@gmail.com

tel 01543 422509

or Stuart Darmon at stuardarmonf1a@yahoo.com

tel 01858 882057

FLITEHOOK

Indoor Free Flight Meetings

West Totton Centre,
Hazel Farm Road,
Totton, Southampton.
SO40 8WU

Café on Site

Flyers **£6**, Spectators **£2**

Sundays 10.00a.m. to 4.00p.m.

2016

2nd Oct - 6th Nov - 4th Dec

&

Tuesday 27th Dec

10.00a.m. to 3.00p.m

2017

Sunday - 8th Jan 9.00a.m. to 1.00p.m.

Sundays 10.00am to 4.00pm

12th Feb - 12th Mar - 9th April 2017

Contact Flitehook: Tel. No. 02380 861541

E-mail flitehook@talktalk.net

Bloxwich Indoor Flyers

Free Flight & lightweight RC

Sneyd Community School

Vernon Way, Sneyd Lane,

Bloxwich, WS3 2PA

Saturdays 2pm until 5pm

Flyers - £8 Spectators £2

Sept 3rd - Oct 1st - Nov 5th - Dec 3rd

Contact:- Allan Price: Tel: 01922 701530

e-mail: montrose32@btinternet.com

BMFA South West

Indoor Flying

Cornwall Vintage Aeromodellers
at
Saints Health and Fitness Ctr.
St Austell Rugby Club
Tregorrick Park, St Austell
Cornwall, PL26 7AG

Sundays 1200 to 1600

2016

Sep 25th - Oct 23rd - Nov 20th - Dec 11th

2017

Jan 22nd - Feb 19th - Mar 19th

Mainly free flight
some micro R/C (fixed wing & helicopters)

Admission: Flyers **£7** Spectators **£1**

Contacts:

Cornwall - David Powis on 01579 362951

dave.powis@hotmail.com

Devon - Roger Bellamy on 01752 257826

randmbellamy@gmail.com

Indoor Flying with the South Birmingham MAC

Mainly Free Flight

Thorns Leisure Centre.

Stockwell Ave.

Off Thorns Road - Quarry Bank - West Midlands - DY5 2NU
Saturdays 1pm until 4pm

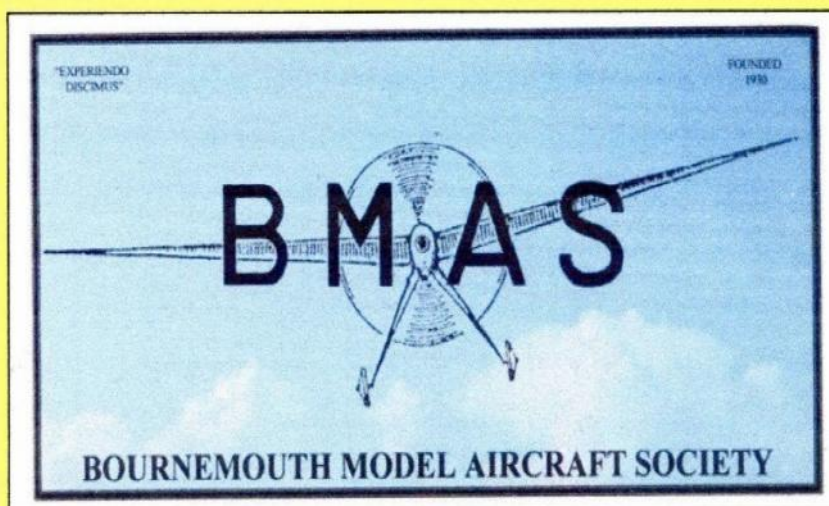
Sept 10th - Oct 15th - Nov 19th - Dec 17th

Admission - Flyers £5.50 - Spectators £2.00

Ultra-light R/C models may be flown for the first 15mins of each hour
(quad copters or heavy fast flying models not accepted)

For further information phone Colin Shepherd 0121 5506132

or e-mail colin@colinwilliam.wanadoo.co.uk



INDOOR MODEL FLYING 2016

ALL TUESDAYS

**26TH JANUARY, 23RD FEBRUARY, 22ND MARCH,
26TH APRIL, 24TH MAY, 28TH JUNE,
26TH JULY, 23RD AUGUST, 27TH SEPTEMBER,
25TH OCTOBER, 22ND NOVEMBER.**

7pm to 10pm

ALLENDALE CENTRE

HANHAM RD. WIMBORNE BH21 1AS

FREE CAR PARKING IN PUBLIC CAR PARK IN ALLENDALE RD

FREE FLIGHT ONLY

COMPETITIONS incl GYMINNIE CRICKET LEAGUE

ALL FLYERS MUST HAVE BMFA INSURANCE

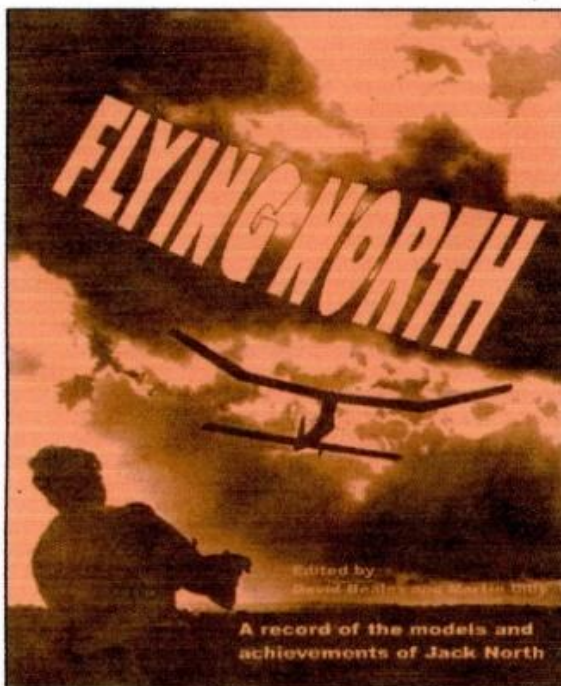
FLITEHOOK NORMALLY IN ATTENDANCE

Adult Flyers £5

Spectators £1.50

CONTACTS: John Taylor Tel. No. 01202 232206

Aubrey Bugden e-mail bugden863@btinternet.com



Flying North is a 163 page book covering the model flying career of Jack North, and including 23 previously un-published plans of his aircraft. Access to Jack's drawings and notes dating back to 1938 means that there are a number of designs in the book likely to be tempting to the nostalgia-minded.

Contact: Martin Dilly on
020 8777 5533 or write to:
20, Links road,
West Wickham,
Kent BR4 0QW or e-mail:
martindilly20@gmail.com

The price in the UK is £18; airmail to Europe £20 or to anywhere else £22. Cheques should be payable to BMFA F/F

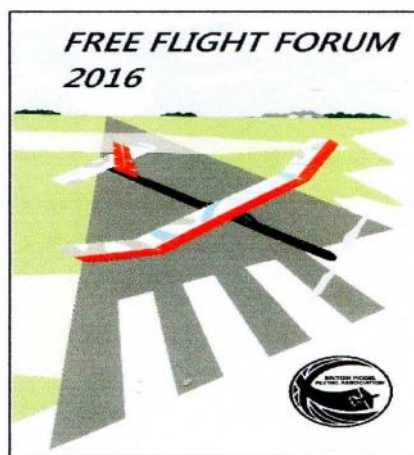
Team Support Fund, in pounds sterling only, and drawn off a bank with a branch in the UK, you may also order by credit card, all proceeds help to fund the expenses of those representing Great Britain at World and European FF Championships

THE 2016 FREE FLIGHT FORUM REPORT

HOT OFF THE PRESS

The new 2016 BMFA Free-Flight Forum Report, the thirty-second, has just been published. Each year we try to provide a mix of information on as wide a range as possible of free-flight, and the following contents list shows what this year's Report covers.

- Indoor Scale Free Flight Gliders - Andy Sephton;
- Juniors in Free Flight - Mark Gibbs;
- Carbon Fibre for Aeromodellers - Mick Lester;
- Making & Testing F1B Rubber Motors - Peter Brown;
- Computations at Low Reynolds Number and a New Aerofoil for F1G (Coupe) Models - Alan Brocklehurst;
- Carbon Fibre Covered Prop Blades from Simple Tooling - Phil Ball;
- Weather Forecasts - How Good Are They and How to Interpret Them - Mark Gibbs;
- Capitalising on Low Drag Aerofoils and All That - Alan Brocklehurst;
- Basic Propeller Theory - Andy Sephton;
- Methanol to Lithium - Peter Watson;
- Dave Greaves 1942-2016 - An Appreciation, + plans and features on Adam Beales's Nats winning Open Rubber model,
- Ray Elliott's E-36 Satellite,
- Mark Benns's F1D indoor model and
- Trevor Grey's E-36.



The **UK price is £12.00** including postage;
to **Europe it's £15** and **everywhere else £17**.

Sales of the Forum Reports help to defray the heavy expenses of those representing Great Britain at World and European Free-Flight Championships. Cheques should be payable to 'BMFA F/F Team Support Fund' in pounds sterling, drawn on a bank with a UK branch; you may also order by credit card, which is a lot easier (and cheaper).

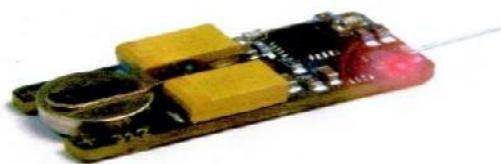
Copies are available from :

Martin Dilly
20, Links Road,
West Wickham,
Kent,
BR4 0QW

or by phone or fax to: (44) + (0)20-8777-5533, or by e-mail to martindilly20@gmail.com
(NB new e-mail address)

BUGS

Free Flight Model Tracker



£50.00 - each including 6 batteries

Ready to use radio tracker

Suitable for most handheld receivers

Powered by one 312 ZincAir hearing aid battery

27mm long, 11mm wide, 5mm thick 3 grams
including battery

Run time around 10 days

Red LED flashes when transmitting

Available in any frequency from 140MHz to 980MHz

Supplied in protective heatshrink

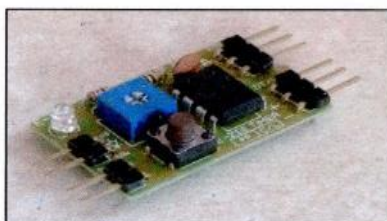
Very quick delivery, often next day

On sale at

http://www.leobodnar.com/shop/index.php?products_id=217

or contact Peter Brown 07871 459291 for options

E-Zee Timers



E-ZEE FF Combined Electric Motor Power and Servo Operated DT Timer Type EFF 1

Cost £15.00 + p & p

This timer controls electric motor power and run-time (via an ESC) and after a further delay drives a D/T servo to terminate the flight. The motor power is set by a single turn potentiometer and the motor run and D/T periods are set by

a simple push button / LED interface

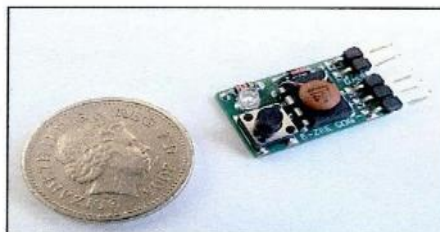
- motor run duration:-adjustable 1 to 30 seconds, set in 1 second increments
- d/t duration:-adjustable 10 seconds to 5 minutes, set in 10 second increments
- motor power:-adjustable at all times from zero to full throttle (by potentiometer)
- push button immediately stops the motor at any point during the flight profile
- duration settings are saved in memory a single button push serves to repeat a flight.

Length 30mm Width 20mm Height 11mm Weight 5gm

For installations where the timer is inaccessible remote pushbuttons and LED's are available

Servo operated DT Timer only Type SDG 1 Cost £12 + p & p

This timer was originally developed for use with 36 inch hi start classic gliders, but will be of interest to all sports free flight flyers not requiring electric motor control. The timer drives a D/T servo to terminate the flight, the D/T periods being set by a simple push button / LED interface. Driven by a small 30mAH battery and using a 2 gram servo the avionics can be used as nose ballast so there is no overall weight gain



- d/t duration:-adjustable 10 seconds to 5 minutes, set in 10 second increments
- push button immediately cancels the flight at any time
- duration settings are saved in memory a single button push serves to repeat a flight.

Length 22mm Width 13mm Height 11mm Weight 2gm

Timers are supplied with a comprehensive instruction manual and users guide

*E-Zee Timers have been designed and are manufactured in the UK
Exclusively available from*

Dens Model Supplies

*On Line shop at www.densmodelsupplies.co.uk
Or phone Den on 01983 294182 for traditional service*

Michael Woodhouse

mike@freeflightsupplies.co.uk & <http://www.freeflightsupplies.co.uk>

Plans of models designed by Geoff Lefever

47.	OTTAIR 80gram Wakefield flown in the 1956 Championships	£5.00
48.	FEVAIR 50gram Wakefield flown in the 1958 Championships	£5.00
49.	1963 Wakefield Team place 1965	£5.00
50.	1967 Wakefield first of the "long" models	£5.00
51.	ALTAIR 1955 A/2 team qualifying glider	£5.00
52.	MANTIS A 9 foot span vintage glider	£5.00
53.	OPEN RUBBER MODEL Mid 1960's model, a simplified Wakefield	£5.00

MSP PLANS PRESENTS

Vintage, Classic, Sport and other Duration Designs

MSP PLANS drawn by Martyn Pressnell, offer a collection of model aircraft designs selected for their aesthetic qualities or unique origins. 'Popular Plans' are stocked, the more complex 'Collectors Plans' are printed to order including Historic Notes. All drawings are AO size, some as twin plans.

The list below includes Vintage Models generally pre 1951 and Classic Models 1951 to 1961.

Photos of most models can be seen on my website - www.msp-plans.blogspot.com

POPULAR PLANS • £7.00 EACH INCLUDING UK POSTAGE, FOLDED FOR POSTING

MICK FARTHING 1942	The 40 in span Lightweight Contest rubber model with a diamond fuselage.
MICK FARTHING'S THE PAPER BAG'	Mick Farthing's last lightweight rubber model of 1946.
RAFF V 1947	Designed by Norman Marcus who was National Champion in 1946.
ODENUAN'S 1950 NORDIC A2	Swedish Championship glider, placed second in the first World International in 1950.
SENATOR 1950	RUBBER Designed by Albert Hatfull and kitted in 1950. Twin plan with ACE
ACE 1950 RUBBER	Designed by Bill Dean and kitted in 1950. Twin plan with SENATOR .
ENGLISH VIKING 1953 A2 GUDER	Designed by Bill Farrance twice winner of the SAM Radislav Rybach trophy.
CRESTA	A 38 in wingspan low-wing design for small diesel or electric motor installation.
FRED BOXALL'S 1956 OPEN RUBBER MODEL	Twin plan with Boxall's SEAPLANE .
FRED BOXALL'S SEAPLANE (1965)	Twin plan with the 1956 OPEN RUBBER MODEL .
LAST RESORT 1956 CLASSIC RUBBER	Open Rubber Model designed by Jim Baguley, Twin plan with FIRST RESORT .
FIRST RESORT 2006	by Martyn Pressnell for the BMFA Rubber Class. Twin plan with LAST RESORT .
WINDING BOYII 1956	by Urtan Wannop, 38 in span, Twin plan with McGILLIVRAY'S LIGHTWEIGHT .
JACKMcGILLIVRAY'S LIGHTWEIGHT 1958	36 in. span lightweight rubber model Twin plan with WINDING BOYII .
CAPRICE 1959 GLIDER	The renowned lightweight glider of 51 in span. Twin plan with GAUCHO .
GAUCHO1960	power duration model for 1.5 cc engines. Designed in 1959 Twin plan with CAPRICE .
VAKUSHNA1959 A2	Designed by Brian Dowling this glider won the 1960 Richer Cup

COLLECTOR'S PLANS - £10.00 EACH FOLDED OR ROLLED, WITH HISTORICAL NOTES

JUDGE 1945 WAKEFIELD	by Bert Judge to the 1945 rules as a direct descendant of his 1936 Wakefield Cup winner,
HERMES MAJOR	A 150% enlargement to 61% in span, of the 1949 HALFAX HERMES
FRANK LOATES' 1949 WAKEFIELD	Canadian Wakefield 5 th in the World Championships at Cranfield, England, in 1949.
BORJE BORJESSON'S 1949 WAKEFIELD	Swedish Wakefield 6 th in the World Championships at Cranfield, in 1949.
GHOST WAKEFIELD 1951	John Gorham's 1951 Wakefield, a successful rubber model from the early 1950's.
RON WARRING'S 1952 WAKEFIELD	The geared geodetic model, developed by Ron Warring for twin motors,
ODEN TRAIN Mk I 11960	George French's Night Train which pioneered the use of VIT systems in the UK

MSP PLANS PRESENTS NEW PLANS

AVENGER 1952	HI-START GLIDERS 2013 - 36 in span
CAPRICE 1959	John Gorham's classic A2
VINTAGE A2 1950	Neville Willis' classic lightweight glider
	Odenman's.
SATU 1950	HI-START GLIDERS 2014 - 36 in span
PETREL 1964	J Bennett's vintage A2
MAD'S DREAM 1959	Frog's beginner's kit glider
	Brian Dowling's classic A2.

To order plans for UK delivery please write with cheque (£ sterling) made payable to
Martyn Pressnell, 1 Vitre Gardens, Lymington, Hants, SO41 SNA.

For overseas delivery of Popular Plans send local bank notes equivalent to £10.00.

Enquiries: please write or email martyn.pressnell@btinternet.com

Check my website : www.msp-plans.blogspot.com

This identifies the collection of plans that I have produced for aeromodellers together with the rules for the Bournemouth Club Classic Rubber class. There is also a sample of the publications produced over the years with 'Rubber Motors - Maximum Turns' as the current offering.

I hope you find this a useful website which will be updated with more information from time to time.

Martyn Pressnell

DBHL Plan Service

The rules for obtaining plans.

If you want a copy of any plan from our library, please read the following:

As from 31st July 2011 only digital files of plans from the DBHL will be available. It is up to the recipient of such files to get them printed, as my local Copy Shop has closed & at present there is no alternative source for me to get plans printed at an economic rate.

The process for obtaining a digital file of a plan is:

Email request to rogerknewman@yahoo.com,
quoting Plan Name & I.D. number (1st & 2nd Cols respectively in the list).

If the plan has already been digitised, the requester will receive an email with an attachment of the plan in a digital format that can be printed at a local Copy Shop. The easiest ways to do this is either to download the plan from your PC to a memory stick & take the memory stick to your copy shop (but check with them first that they can handle digital files!), or – if your copy shop accepts emails, send them an email with the attachment, asking them to print the attachment. Scaling is automatic.

If the plan has not yet been digitised, a scan of the paper plan has to be done but this could take up to two weeks, sometimes longer if a clean-up is necessary. Once I have received the digitised file back, the requester will receive an email with an attachment of the plan.

This service is provided at no charge.

You are reminded that many more plans are available through our cooperative venture with partners in the USA, New Zealand & Slovakia. The combined list of these plans can be accessed via www.co-op-plans.com. Any plans requested via the Coop incur a small charge – see the web site for details. Exactly the same principle applies in that only digital files of **plans are available**.

VINTAGE COUPE PLANS.

Ed Bennett regrets that he is no longer able to supply hard copies of Coupe D'Hiver plans. These plans are to be digitized for downloading as data to purchasers' computers.

Further information will be advised in due course.

Provisional Events Calendar 2016

With competitions for Vintage and/or Classic models

February 14 th	Sunday	BMFA 1 st Area Competitions
March 6 th	Sunday	BMFA 2 nd Area Competitions
March 25 th	Friday	Northern Gala, North Luffenham
March 27 th	Sunday	Middle Wallop, CANCELLED
March 28 th	Monday	Middle Wallop, CANCELLED
April 10 th	Sunday	BMFA 3 rd Area Competitions
April 23 rd	Saturday	Middle Wallop, CANCELLED
April 24 th	Sunday	Middle Wallop, CANCELLED
April 23/24 th	Sat/Sunday	London Gala & Space, Salisbury Plain
May 15 th	Sunday	BMFA 4 th Area Competitions
May 28 th	Saturday	BMFA Free-flight Nats, Barkston
May 29 th	Sunday	BMFA Free-flight Nats, Barkston
May 30 th	Monday	BMFA Free-flight Nats, Barkston
June 4 th	Saturday	Middle Wallop, CANCELLED
June 5 th	Sunday	Middle Wallop, CANCELLED
June 25 th	Sunday	BMFA 5 th Area Competitions
July 24 th	Sunday	BMFA 6 th Area Competitions
July 30 th /31 st	Saturday/Sunday	East Anglian Gala, Sculthorpe
August 7 th	Sunday	SAM1066 Meeting , on Area 8 Salisbury Plain
August 14 th	Sunday	Timperley Gala, North Luffenham
August 20 th	Saturday	Southern Gala, Salisbury Plain
September 11 th	Sunday	BMFA 7 th Area Competitions
October 16 th	Sunday	BMFA 8 th Area Competitions
October 29 th	Saturday	Midland Gala, North Luffenham
November 20 th	Sunday	Middle Wallop, CANCELLED

Please check before travelling to any of these events.

Access to MOD property can be withdrawn at very short notice!

For up-to-date details of SAM 1066 events at Middle Wallop check the Website -

www.SAM1066.org

For up-to-date details of all BMFA Free Flight events check the websites

www.freeflightuk.org or www.BMFA.org

For up-to-date details of SAM 35 events refer to SAM SPEAKS or check the website

www.SAM35.org

Useful Websites

SAM 1066	-	www.sam1066.org
Flitehook, John & Pauline	-	www.flitehook.net
Mike Woodhouse	-	www.freeflightsupplies.co.uk
GAD	-	www.greenairdesigns.com
BMFA Free Flight Technical Committee	-	www.freeflightUK.org
BMFA	-	www.BMFA.org
BMFA Southern Area	-	www.southerarea.hamshire.org.uk
SAM 35	-	www.sam35.org
MSP Plans	-	www.msp-plans.blogspot.com
X-List Plans	-	www.xlistplans.demon.co.uk
National Free Flight Society (USA)	-	www.freeflight.org
Ray Alban	-	www.vintagemodelairplane.com
David Lloyd-Jones	-	www.magazinesandbooks.co.uk
Belair Kits	-	www.belairkits.com
Wessex Aeromodellers	-	www.wessexaml.co.uk
US SAM website	-	www.antiquemodeler.org
Peterborough MFC	-	www.peterboroughmfc.org
Outerzone -free plans	-	www.outerzone.co.uk
Vintage Radio Control	-	http://www.norcim-rc.club
The National Free Flight Society-		www.freeflight.org
Model Flying New Zealand	-	http://www.modelflyingnz.org

Are You Getting Yours? - Membership Secretary

As most of you know, we send out an email each month letting you know about the posting of the latest edition of the *New Clarion* on the website.

Invariably, a few emails get bounced back, so if you're suddenly not hearing from us, could it be you've changed your email address and not told us?

To get back on track, email membership@sam1066.org to let us know your new cyber address (snailmail address too, if that's changed as well).

P.S.

I always need articles/letters/anecdotes to keep the New Clarion going, please pen at least one piece. I can handle any media down to hand written if that's where you're at. Pictures can be jpeg or photo's or scans of photos. I just want your input. Members really are interested in your experiences even though you may think them insignificant.

**If I fail to use any of your submissions it will be due to an oversight,
please feel free to advise and/or chastise**

Your editor John Andrews