NEW Clarion

SAM 1066 Newsletter

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Editorial

The end of the free-flight competition season seems to be approaching at one hell of a lick, and I feel as though I have missed half of it. Being ill and missing the FF Nats was not a good start, then a bad back kept me a virtual spectator at some comps, SAM1066 cancelled one event twice and now the weather washed out Odiham and I understand that Old Warden was something of a washout also. I was intending to go to OW with Martin Pike and the kids but family health caused him to abandon the visit and I opted out of the Sunday due to the weather forecast. The only saving grace for the weekend was a Saturday visit to Thorns for the first event of the South Birmingham Club's indoor winter season, report next issue. I did get to the Indoor Nationals at Datchet and had a good time there but, only having old models well past their sell by date, I was not competitive although I was lucky enough to get Silver in the Gyminnie Cricket, once again report next issue.

The Southern Coupe league is now two events from the close and Peter Hall reports on both the 7th and 8th rounds with Roy Vaughn on statistics with the league tables. Odiham having been cancelled throws a spanner in the works, unless the event can be re-scheduled.

Dick Twomey brings us up to date with his Mauritius Junior Aviators project. It's good to see so many apparently enthusiastic followers and modellers to be we would hope.

I report on my trimming day out, together with Colin Shepherd, at the BMFA National Flying Centre at Buckminster. It was our first visit to fly and we had a good day out with superb weather. There were no other takers which was a shame in such good FF conditions.

Our archivist Roy Tiller continues his research into the life and times of one Pete Fisher and 'Performance Kits', and there is more to come.

The Italian model contra-rotating twin engine in Rogers reports led me to seek the full size Piaggio PC7 on tinternet. The aircraft was aimed at the Schneider Trophy. I've reproduced one of the pictures and looking at the small hydrofoils I find it difficult to believe it could ever rise from the water.

Nick Peppiatt is back again with yet more Co2 motor info, the man is an absolute mine of information in this his 24th epistle.

I had an email from Ian Howlett pointing myself and Dick Twomey at some youtube videos posted by a John Woodfield. The videos are of a Leprechaun lookalike soaring on the cliff edges near Perranporth and they are very watchable. John also has videos of other models doing the same trick.

Finally the secretary's report by Roger Newman gives a detailed report on the Crookham Gala and is supported by a photographic record of some of the contestants.
Finishing off this issue Roger presents the usual three plans of the month, the final one being a simple indoor model befitting the onset of winter activities in the comfort of various sports halls across the country.

Editor

Southern Coupe league Rd.7 - Peter Hall

Southern Gala, Salisbury Plain August 18th 2018
Seventh Round Southern Coupe League

Looking back I could see the cars lined up on the horizon so I took a reverse bearing to check my line. I reckoned I must be about halfway; the grass was waist high. Nobody about, I could safely take a pee. Then I saw Ben Hobbs looking for his coupe. He'd not got a tracker so it was like looking for a needle in a haystack, more appropriately, like looking for a coupe in a hayfield. I had a scanner and a yagi which took me to an enclosure full of cows one of which was standing over my coupe eating the tailplane. I ran, the cows galloped, I waved and shouted, the cows bellowed. I crawled under the electric fence and confronted the snorting herd. On the return, I thought, who'd want to fly radio control, you don't get all this fun, all this challenge?

It was an unpleasantly chilly and grey overcast morning on airfield ridge. Nobody seemed in a hurry to get going. The southwest breeze gusting, and with a fine drizzle at times promised nothing but an early drop into death valley in front of us.

Six flew coupe:
Richard Fryer flying his very smart locked down model got two quick maxes but was down for 1.41 on his third flight;
Ted Tyson dropped his third and fifth;
Alan Brocklehurst maxed his first two but abandoned after his third clocked 1.30;
Martin Stagg did 1.0, 1.30, then a max. but then decided to enjoy his day instead;
Ben Hobbs must have lost his model in the hay because he recorded a single max;
P. Hall maxed out but was lucky on a couple of flights catching good air very late.

There are three rounds to go in the league, P. Hall has a comfortable lead but with only five events counting, not uncatchable. The next is Odiham, short grass and flat going.

Postscript:
After some finger trouble and V.I.T. glitches at the Southern Gala which ruined the burst on three flights, I thought it was time for another mistakes analysis, here are the results.

Taking Back Control:
We are all rational beings and conduct our lives accordingly. Our proposed actions and projects are subjected to cost/benefit scrutiny, we analyze our mistakes and identify remedies. Of course we do.
But our lives are very complex and unpredictable and uncomfortably large chunks escape our rational control.
This is why we sometimes vote in strange ways and why we seek solace in aeromodelling where reason is unchallenged by dogma, superstition and prejudice and the possibility of control seems always to be within reach. (With the exception of air - picking)
I am sure that, like me, you conduct regular analyses of the mistakes you inevitably make while flying, for there is nothing more upsetting than seeing your model bunt, loop, stall, wing over or dive into the ground during a competition. And I am sure, like me, you then take steps to avoid these errors to finally achieve the goal of faultless performance.
I identify five kinds of error; Rigging, Trim, Finger trouble, Systems Failure, Launch.

Looking back over the last seven years, I find I've done 161 competition coupe flights. I have suffered 20 Systems failures, 5 Finger troubles, 5 Trim problems, 4 bad Launches and 2 Rigging faults.
My really bad year was 2014 with 8 Systems failures. Eradicating systems failure was clearly indicated. I decided to convert some of my coupes to locked down mode. This was an error, a cost/benefit analysis would have shown that improving the systems was the way to go. And it was more fun.
So I'm now pursuing failures like a terrier after a rat.

I was busy busy at the Gala and only got one shot—
It's Phil Ball with his BMFA 50gram model. The prop slipped from his grasp as he was preparing to launch and as he grabbed it. he broke bit off.
Trevor Grey has found the bit and offers it to Phil who cyanosed it back on. Roy Vaughn looks doubtful. Phil then easily maxed and won the event but only he and Jim Paton flew!

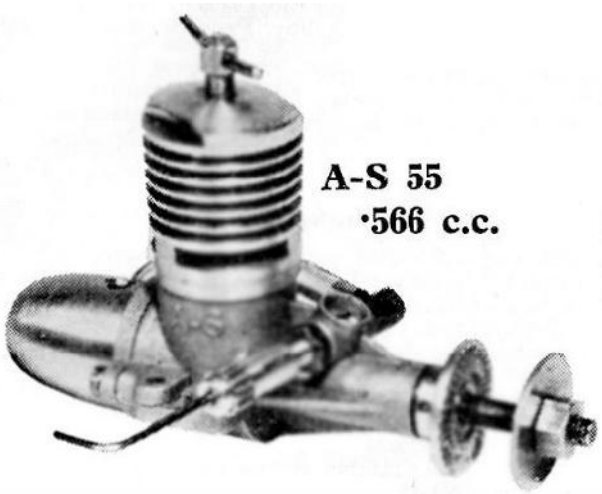
Southern Gala, Coupe Results					
	Entrant	Club	Maxes	Score	Time
1	P.Hall	Crookham	5	17	10.00
2	R.Fryer		4	13	9.41
3	E.Tyson	Crookham	3	11	8.21
4	A.Brocklehurst	B & W	2	9	5.30
5	M.Stagg	B & W	1	7	4.35
6	B.Hobbs	Oxford	1	6	2.00

Southern Coupe League Table after Rd.7 - Roy Vaughn

Southern Coupe League Table after 7 rounds													
	Entrant	Club	Coupe De Brum	First Area	London Gala	Sam 1066	Fifth Area	Dreaming Spires	Southern Gala	Odiham	Crookham Gala	Coupe Europa	Total
1	P. Hall	Crookham		11		15		13	17				56
2	R. Vaughn	Crookham	17	13				6					36
3	G. Manion	Birmingham	9		12		12						33
4	P. Ball	Grantham	13				17						30
5	W. Beales	Croydon	14	11									25
6	W. Dennis	Grantham	2	2				15					19
7	G. Foster	Grantham		17									17
=	M. Stagg	B&W					10		7				17
=	B. Hobbs	Oxford					4	7	6				17
10	A. Brocklehurst	B&W					7		9				16
11	D. Thomson	Croydon	7				1	7					15
=	J. Andrews	Timperley		4			11						15
13	R. Fryer								13				13
14	B. Whitehead		2	9									11
=	C. Redrup	Crookham				11							11
=	E. Tyson	Crookham							11				11
17	J. Paton	Crookham						10					10
18	P. Woodhouse	Morley		9									9
=	K. Taylor	E.Grinstead		9									9
=	E. Challis	Crookham					9						9
21	A. Moorhouse	Vikings	8										8
22	M. Marshall	Impington	5				1						6
23	R. Elliott	Croydon	4										4
24	T. Bailey	Biggles					3						3
=	M. McHugh	Peterborough		3									3
26	G. Ferrer	Timperley					2						2
27	P. Tribe	B&W											0
=	R. Willes	Epsom											0
=	S. Willis	Croydon											0

Roy Vaughn

Engine Analysis: A-S 55 .566cc - Aeromodeller Annual 1960-1



A-S 55
·566 c.c.

Manufacturers:
ALLBON-SAUNDERS LTD.,
Pembroke Works, Milton, Berks
Retail price: £2/15/6

Specification

Displacement: ·566 c.c. (·034 cu. in.)
Bore: ·350 in.
Stroke: ·356 in.
Bore/stroke ratio: ·98
Bare weight: 1½ ounces
Max. B.H.P.: ·0515 at 12,000 r.p.m.
Max. torque: 6 ounces-inches at 8,000 r.p.m.
Power rating: ·091 B.H.P. per c.c.
Power/weight ratio: ·034 B.H.P. per ounce

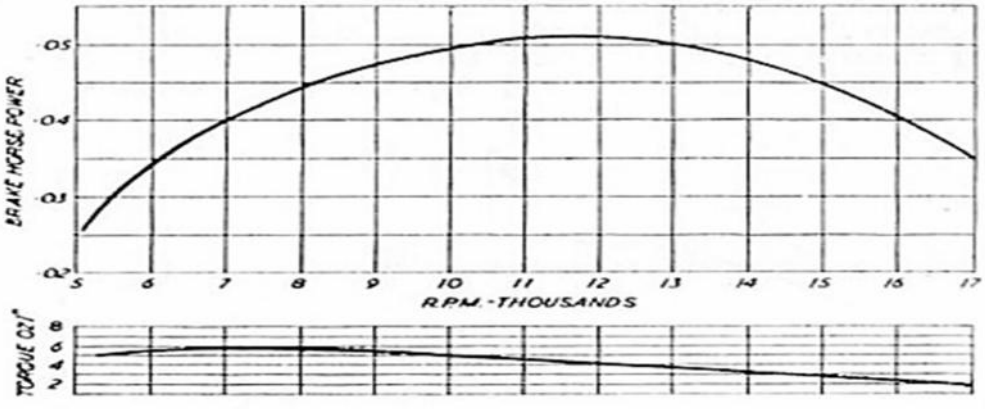
Material Specification

Cylinder: cast iron
Crankcase: light alloy pressure die casting
Piston and contra-piston: cast iron
Crankshaft: hardened nickel chrome steel
Connecting rod: light alloy forging RR56
Cylinder jacket: turned dural
Spraybar: dural (angled)
Crankcase back cover: light alloy die casting
Tank: aluminium turning
Propeller driver: turned dural with split brass collet

PROPELLER—R.P.M. FIGURES

Propeller dia. × pitch	*r.p.m.*
6 × 4 (Frog nylon)	12,500
7 × 4 (Frog nylon)	9,000
7 × 6 (Frog nylon)	8,000
8 × 4 (Frog nylon)	7,000
8 × 6 (Frog nylon)	5,200
5 × 6 (Frog nylon)	11,000
5¼ × 3½ (D-C nylon)	16,800
6 × 4 (D-C nylon)	14,500
8 × 4 (Trucut)	7,200
7 × 6 (Trucut)	6,500
7 × 3 (Trucut)	10,000
6 × 6 (Trucut)	8,800
6 × 4 (Trucut)	9,200
6 × 3 (Trucut)	11,500
7 × 4 (Stant)	8,900
6 × 4 (Stant)	10,500

Fuel used: Mercury No. 8
Manufacturers recommended propeller sizes:
Running in 7 × 4
Free flight 7 × 4 or 6 × 4
Control line 6 × 6 or 6 × 4
AEROMODELLER Plans Service Power Coding "C"



Mauritius Junior Aviators - Dick Twomey

In 2017 the AeSM Council launched a new section of the Aeronautical Society of Mauritius (AeSM }, the JUNIOR AVIATORS, for the benefit of Mauritian Secondary School students. There was an immediate and enthusiastic response and to date some 66 young people - girls and boys - have become members

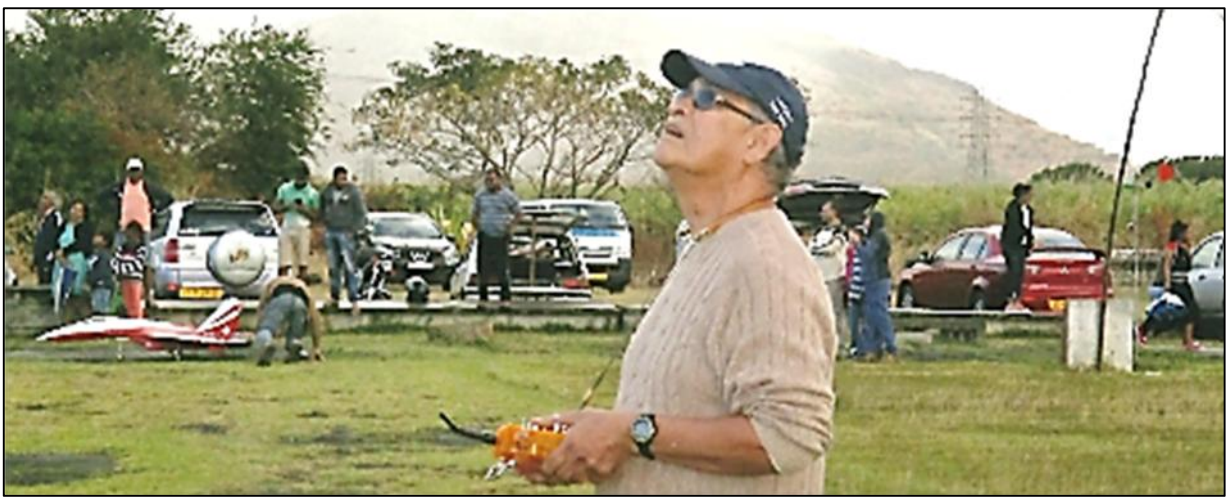
The society's objective is to stimulate an early interest in that branch of Physical Science known as Aeronautics/Astronautics and to lay a grounding of knowledge for those who wish to pursue a career in these disciplines - by arranging for its "Junior Aviators" to visit places and events of an aviation Interest during school holiday periods.

Following an introductory meeting in the Rajiv Gandhi Science Centre on 22nd July 2017, four such visits were arranged and have been keenly supported:

4th November 2017;	Mon Loisir airfield, home of Microlight aircraft and the Austral Skydivers
5th January 2018;	The Headquarters of the Maritime Air Squadron of the Coastguard and the Police Helicopter Unit,
11th April 2018;	The Department of Civil Aviation's ATC Area Control Centre.
21st July 2018;	St Martin field, for a demonstration of I/C and jet-engined model aircraft flying.

Update:

A short update on my Mauritian "Junior Aviators" (the Secondary School kids), the section of our aeronautical society that I enjoy the most. By now we have some 66 young enthusiasts, girls as well as boys, and we have been busy in recent school holidays letting them learn about aviation in all its aspects.



The latest expedition, made only a few weeks ago (21 July), has been to our local model flying field, nestling between a small mountain and a large sugar-cane field, and possessing a 100m into-wind hard runway.
The highlights were the flights of a kerosene-fuelled jet model which flashes past at up to 300 kph.- a real eye-opener flown by a Swiss modeller now enjoying his retirement with gusto in our paradise island.

Dick Twomey

Extracts from Aeromodeller May 1974 & August 1974

Gassed Up

The particular attraction the vintage model has for me is that there ain't much of it; you can almost knock one out during the T.V. adverts. But not all vintage models are so accommodating in this way. Take, for example, those huge pre-War gasses which will be performing elephantine feats at the coming Aerolympics; they call for production on the grand scale, apart from leaving the local model shop, and your pocket, in an extremely depleted state. And just to add to the complication, they are fitting the monsters with very un-vintage radio equipment. The reason for this, I suppose, is that the world has become a bit more crowded since those spacious days when the original monsters started beating up the rubber contests, and you need some means of keeping them from the cars and people that now crowd up every square yard of space.

Durable Duration

It's an odd thing, but the most active side of our hobby, contest-wise, is that antiquated, chuck-it-and-run curiosity known as free flight. Goodness knows how many years it has been going, but they were throwing up split cane model against bamboo model when the Wright Brothers were in knickerbockers.

Basically the contest formula remains as simple as it ever was: just clocking the time each model stays clear of the deck. And things haven't changed all that much. The modern Wakefield might be a little less portly around its midriff and sport a few more gadgets than Monsieur Fillon's 1937 winner, but the game's the same

Overhead Costs

Just now R/C helicopters are all the rage - and bad tempered ones at that, when the expensive things crash. I cannot say I am all that moved by them. Perhaps if someone came on the flying field with an all systems helicopter made out of scraps and oddments I might feel I was in the company of a fellow enthusiast, but I get a definite sense of alienation when the machine is a commercial package deal, and a feeling of amazement that anyone could whack out several hundred pounds on something as vulnerable as a model plane. It is the money that separates the (poorer) men from the toys, no doubt, but I like to think that, even if I had that sort of loot, I'd still cling to my shoestring methods.

The sad thing is that the flying field is becoming a less democratic place with the emergence of a moneyed elite. You cannot approach a five-hundred quid helicopter owner all matey equality. You either have to touch your forelock in deference or' walk humbly by. Displays of prestigious 'goodies' make for too much class distinction on the field -you get socially graded according to your equipment. Back in the old democratic days we all turned up at the flying field on our undistinguishable motor bikes to fly our undistinguishable models. These were the days before model planes, like Christmas, had become completely commercialised, and the chap with the highest status was the chap with the highest model. True, he often regarded himself as a bit above the sub-minute peasantry, but he at least owed his distinction to ability rather than sheer spending power.

Pylonius

A Day at Buckminster - John Andrews

The weather forecast for Monday the 20th August was well nigh perfect and Colin Shepherd and myself had been promising ourselves a visit to the BMFA flying site at Buckminster for some time, so off we went. Rachel & I arrived around 10am expecting to see Colin already performing, as he had started out long before we did. No signs of the Shepherds, I coughed up my £6 daily fee and, under Manny's guidance, we drove round the edge of the field to park up on the FF specially mown patch. The drift was from the south, which meant we were at the top end of the field near the control-line circles. It seems to me that prevailing Southerly to South Westerly winds are the most convenient for free-flighters at the site.

Colin arrived a little later, as I was assembling my 'Korda' for re-trimming since the noseblock re-build, his sat-nav in the shape of wife Pat had led him somewhat astray at the start of his journey by heading him in the opposite direction on the M6.

The trimming exercises did not start too well. I had botched a soldered joint on the 'Korda' noseblock which failed after the first 150turn test chuck, so that was the end of that. Colin put one of his power models up and a soggy short engine run allowed the model to dive in before the D/T went. Scratch the first power model.

Things then began to look up, I put an ex John Wingate P30 together and I had 4strands of 1/8th in it which seemed quite adequate for the model and I progressed up to 5 or 6 hundred turns which got the model reasonably well up to see the glide. Colin assembled a 'Gaucho' and, although not flown for a few years, it was bang on trim.

We were a little happier when we settle down for the picnic lunch.

I ate a chilli turkey sandwich and a Baby Bell, then Rachel produced a complete carrot cake which was divided into four and we scoffed the lot.

Repast over I assembled an ex John Wingate 'Cherokee' which happened to be in the box I had taken with me. I was unsure what motor was required but, not having any pretensioned ones in my rubber case, I was forced to fit a 10strand x 3/16th x 28gm mini-vintage motor and fit a rubber band noseblock retainer. This motor was too poweful but after an initial spin in and a bit of side thrust I got it high enough to see the glide which was a bit stally. I quit then noting in my flight log to increase tailplane incidence and make up an 8 x 3/16th x 28gm pretensioned motor for future use.

Colin went nostalgic, putting his O/D A2 'Womble' together. He won the Nationals A2 with this model way back in the mists of time and a few open glider comps to boot. He is preparing plans for the 'Outerzone' Web Site, so if gliders are your thing this one looks an easy build and is a peach. 'Womble' towed up easily despite the very light breeze and the glide looked superb.

Colin hooks up the line & D/T

Pat ready for the off

We had a good day out but sad to report only one other Free-Flighter was present, and he left as we arrived. There was one R/C glider man across the field on the radio patch and he disappeared early in the afternoon.

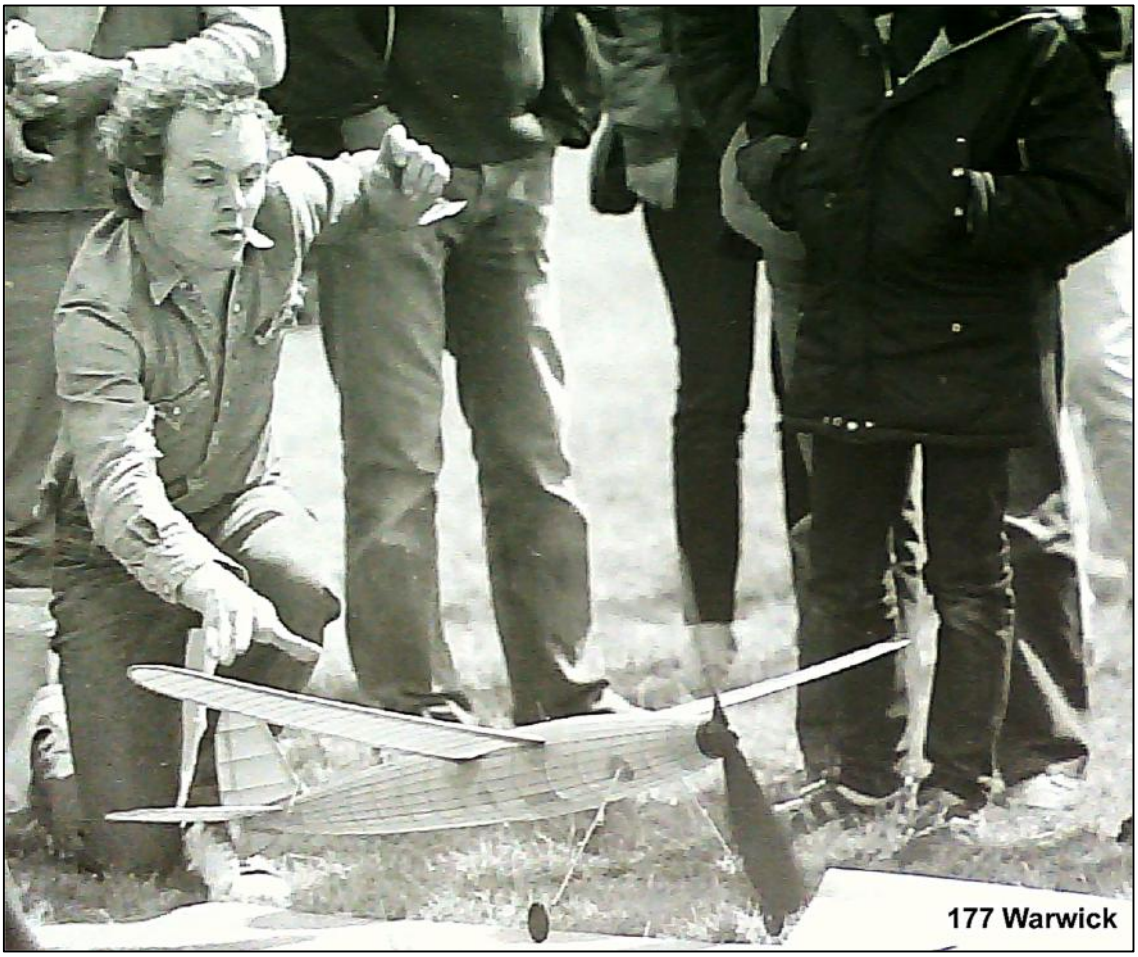
I expected more on a perfect flying day.

John Andrews

Beverley Snook (Royal Aero Club Chairman), Vic Dubery(SAM35) and Norman Couling (FSMAE)
Inspect Vic's 'Judge 1936 Wakefield' at Odiham in the 1980's

Phil Siddall ROG's his Leishner Wakefield at Warwick in 1984.

Ed Bennett (CDMAC) with his Wakefield model at Fairlop in the late 40's/early 50's



Pete Brown ROG's his 1938 Copland Wakefield into 2nd place in 8oz class at Warwick in 1984.

G.Spencer ROG's his "Contestor" Wakefield at Warwick in 1984. 10th in 8oz class.

Ted Hopgood (SAM35) ROG's his '36 Copland's Wakefield at Warwick in 1984. 3rd in 4oz class.

Keith Miller Archive

GLIDE TRIM

HOWEVER much may be written on the theory of glide performance the only practical way of achieving the best possible glide remains the purely practical method of *trimming*. And even here both the type of glide trim required and individual assessment of the trim can vary considerably.

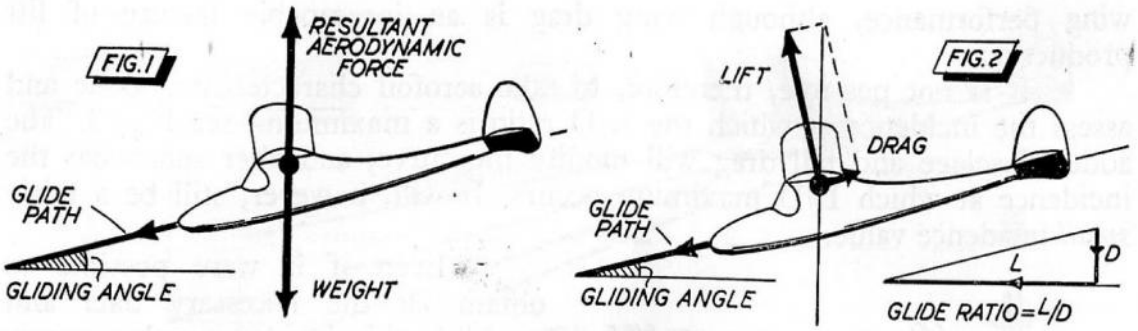
The difference between a contest model trimmed out for the best possible glide performance and the same design—or even the same model—not so well-trimmed can be remarkable. In both cases the flight pattern may appear good but, to quote from actual experience, a subtle difference in trim can increase time of descent (and thus overall flight duration from a given height) from 47·5 seconds per 100 feet of height to a matter of 25 seconds per 100 feet—roughly doubling the sinking speed. This with apparently good trim in the second case, not obvious under-elevation with the model gliding steep and fast. And the difference in the two trims may not be much more than $\frac{1}{32}$ in. packing under the trailing edge of the tailplane.

Without experience and an "eye" for trimming, it can be difficult to estimate when trim is "spot on". The main difficulty is that it is necessary, mentally, to dissociate one's self from a fixed observation point on the ground and "fly" with the model. Just observing a model from a point on the ground introduces optical illusion. The flight seems different headed into wind, compared with downwind. It is only different, in *fact*, if the wind is gusty. In a steady wind the model is flying in a mass of air which, to all intents and purposes is *still* air as far as the model is concerned. The fact that this whole mass of air is moving in a certain direction has no effect at all on the performance. To the ground observer, however, the model appears to fly slower "upwind" and speed up "downwind".

If there is any appreciable wind, however, it is unlikely that the air mass *will* be moving steadily. Friction between the air mass and the ground will tend to make the lowest layers slow up, with the next layer rolling over it. Changes in ground contour will also produce further deflections of the steady air stream. Below a certain height, therefore, the air may well tend to be turbulent with individual patches of air accelerating—to produce "gusts"—or decelerating—to produce momentary "lulls".

These gusts and lulls *will* affect glide performance because the model is no longer flying in a mass of still air, although their effect will normally appear exaggerated to the ground observer. If the model turns "upwind" at the same time as a gust occurs it will normally tend to soar (although to the model, of course, there is no difference between "upwind" and "downwind", only the effect of sudden changes in local wind velocity affecting its airspeed or momentarily affecting its flight attitude). Similary, if the gust occurs just after turning "downwind" (as defined by the ground observer) it will momentarily lose airspeed and probably go into a shallow dive to correct.

A lull, on the other hand, will tend to produce a stall on either course, which because of the *groundspeed* the model has to start with, will appear like a "soaring" stall to the ground observer on an "upwind" course but a dive on the "downwind" course (as the model puts its nose down to pick up speed to recover). The momentary loss of speed in the second case is hidden by the increase in groundspeed turning "downwind".



This simplified description—and there are obvious variations—explains the need for appreciating *what is happening to the model* rather than simply observing what the model is doing as the essence of good trimming technique. It also underlines the truth of the basic recommendation that trimming should always be done in calm air, so that one can be sure that variations in flight pattern are caused by trim rather than gusts. Contrary to some opinions, this calm air trim should then hold good in *any* weather. If the model goes out of trim in high winds—*e.g.*, starts stalling badly—this is more likely to be a design limitation in that there is insufficient reserve of automatic stability for rough weather flying, or some other factor such as flexing surfaces is upsetting the original trim. There are certain exceptions to this rule where a change of trim to a faster, flatter glide may be beneficial under particular circumstances, but not normally where maximum *duration* is the main aim.

Now trim, however established (*e.g.*, with ballast weight, adjusting wing or tailplane rigging incidence, or shifting wing position) merely aims at establishing a balance of forces so that the model is in equilibrium—which means, in effect, that the wing is flying at a specific and constant angle of attack. In the case of a glider, or any aircraft gliding with power off, only two forces are involved—the resultant aerodynamic force generated and the weight—Fig. 1. With this balance of forces the wing has a certain incidence or angle of attack relative to the flight path, which remains constant unless the force balance is disturbed by some external condition (or some inherent instability which means that the original balance established cannot be maintained). The fact that the tailplane may also have an angle of attack (positive or negative) is merely incidental to establishing the balance or trim.

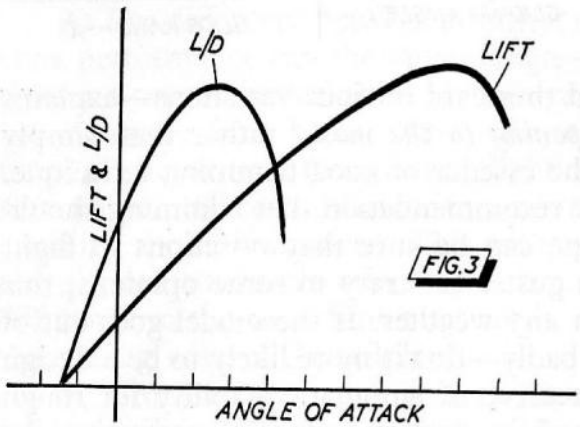
Although Fig. 1 is a true diagram of forces, it does not tell us very much. In other words, although the wing-fuselage-tail combination generates a single resultant aerodynamic force in fact, unless we split this into separate "lift" and "drag" forces such a diagram is not going to help very much. Hence Fig. 2 is the established method of plotting the force balance where the resultant aerodynamic force is split into two components—lift vertical to the flight path and drag parallel to it.

A simple rule of geometry now establishes that the *gliding angle* is directly related to the ratio Lift/Drag. Rather than refer to angles, in fact, it is more usual to specify glide ratio, which is then equal to Lift/Drag directly.

For the flattest gliding angle (highest glide ratio) it is thus obviously necessary to adjust the trim so that the Lift/Drag (L/D) ratio is a maximum. Ignoring the fact that the tail may contribute a certain amount of lift (also the fuselage, although this is generally negligible), the Lift force is taken as being contributed by the wings. But the Drag arises from a combination of wing, fuselage and tail drag. The latter two components, in fact, simply detract from

wing performance, although wing drag is an inescapable feature of lift production.

It is not possible, therefore, to take aerofoil characteristics alone and assess the incidence at which the L/D ratio is a maximum—see Fig. 3. The added fuselage and tail drag will modify the curve, and alter somewhat the incidence at which L/D maximum occurs. It will, however, still be a fairly *small* incidence value.



Even if it were possible to obtain all the necessary data and establish this incidence value accurately it would still not help much for trimming since we have no means of establishing *what the actual angle of attack of the wings is in flight*. In full-size gliders, of course, it can be related to a definite airspeed and trim adjusted to give this flying speed. But understanding the principle involved will help in establishing trim on practical lines.

The main point to appreciate is that with the trim giving *flattest glide* the operative wing incidence will be quite small, and thus the model will have to fly relatively fast to generate the required lift. With such a trim the model will cover the greatest distance from a given height, but its sinking speed may be quite high because of its relatively high flying speed.

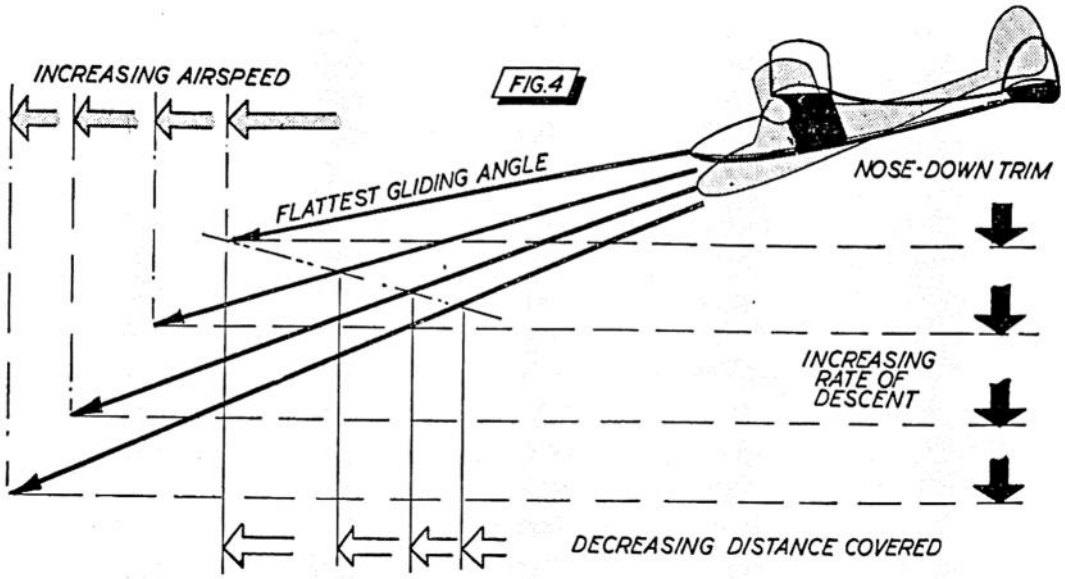
It will not, of course, be the *fastest* gliding speed. If we further adjust the trim to decrease the operating incidence of the wing still further (*e.g.*, with more nose weight, packing up the wing trailing edge or tailplane leading edge), the glide angle will progressively steepen and flying speed increase—and so also will the distance covered from a given height, with sinking speed increasing rapidly. At some arbitrary point the flight path becomes a "dive" rather than a "glide". Such a range of trim is normally outside model requirements, except for radio control flying.

Taking the trim the other way by increasing the operating angle of attack of the wings (by removing weight from the nose, packing up the trailing edge of the tailplane or the leading edge of the wing), we again get a steepening of the *glide angle*, but this time accompanied by a *decrease* in flying speed, and, most significant of all, *a decrease in sinking speed*. This is obviously the region for "duration" trim to give maximum time of descent from a given height.

The important thing to appreciate here is that the *gliding angle* is no guide at all to good "duration" trim. Sinking speed goes on *decreasing* as the actual gliding angle becomes steeper and the model flies slower, virtually right up to the stalling point. We trim in this region on *flying speed*, then, rather than on the appearance of the glide.

In point of fact trim for minimum sinking speed will occur on nearly all conventional aircraft at an angle of attack just a little below the stall or, theoretically, at the incidence where the ratio Lift 1·5/Drag is a maximum. The quantity $C_L^{1.5}/C_D$ is known as the "power factor" (where C_L is the lift coefficient and C_D the overall drag coefficient) and is derived, simply, like this:

The "aerodynamic power" for propelling a glider along its flight path is



derived from the component of the Lift force forwards and parallel to the flight path, this "power" force balancing the resistance.

The power required to keep the model in motion is equal to drag × velocity. Now drag is inversely proportional to L/D and velocity is inversely proportional to $\sqrt{C_L}$ (or C_{LS}).

Hence power varies inversely as $\frac{C_L}{C_D} \times C_{LS}^{1.5}$ or $\frac{C_L^{1.5}}{C_D}$

Thus the higher the power factor the lower the forward component of the lift force required and the greater the vertical lift.

Again there is no practical method of calculating and fixing the angle of attack at which the power factor is a maximum on a model, so we have simply to work on the known fact that it occurs a matter of a degree or so just before the stalling angle. Hence for maximum "duration" glide performance the model is invariably trimmed out just on the point of stalling—*i.e.*, at virtually its lowest flying speed. This may virtually halve the sinking speed compared with *flattest gliding angle* trim, although the glide may not *appear* so good because of the lower forward speed and the steeper gliding angle.

Finally, to summarise these main points under specific headings.

Towline Gliders

Without exception, these should be trimmed for *minimum sinking speed* since maximum duration from height is the principal aim. A practical method of achieving this trim is to go on increasing elevation, a little at a time, until the model is definitely stalling. Then add turn adjustment until the stall is just ironed out. This should be optimum trim, the "turn out of a stall" condition also being excellent for meeting gusts.

An important point is that glide trim adjustments should be made *off tow-launched flights* from a minimum height of about 50 ft. Hand-launched tests can only establish glide trim roughly, and a model trimmed near the limit of stalling may, in fact, actually stall gently on approaching within twenty feet or so of the ground. If trimmed initially near ground level it may, in actual fact, be underelevated when tow launched from a height.

Slope-soaring Hand and-launched Gliders

While minimum sinking speed would appear desirable, a faster flying speed may be necessary for satisfactory penetration. With a "floating", near-

stall trim, too, a model is more likely to turn off to one side in a gust. Trimming for flattest gliding angle can often give more satisfactory results here, but much depends on the directional and longitudinal stability of the design as well as the conditions under which it is being flown.

Rubber Models

A right-hand circling climb is the general rule followed by a right-hand circling glide (freewheeling or feathering propellers) or a left-hand glide with folding propellers (to minimise the effect of trim shift). In all cases trimming for minimum sinking speed is essential which is why (like gliders) a turn on the glide is highly desirable, except for really calm weather.

Power Duration

Minimum sinking speed is the desirable trim, which represents a considerable difference in trim between "power on" and "power off" flight. Hence particular attention must be paid to the transition so that no height is lost in a stall or other unwanted manoeuvre. Again a circling glide is desirable.

Free Flight Power (Sports)

A trim mid-way between flattest glide and minimum sinking speed is a good compromise. This gives a good glide approach angle without excessive flying speed. There are no set rules here, but bear in mind that the nearer the model is trimmed to minimum sinking speed the more "nose up" the approach and the lower the speed to be lost in "rolling" on the ground.

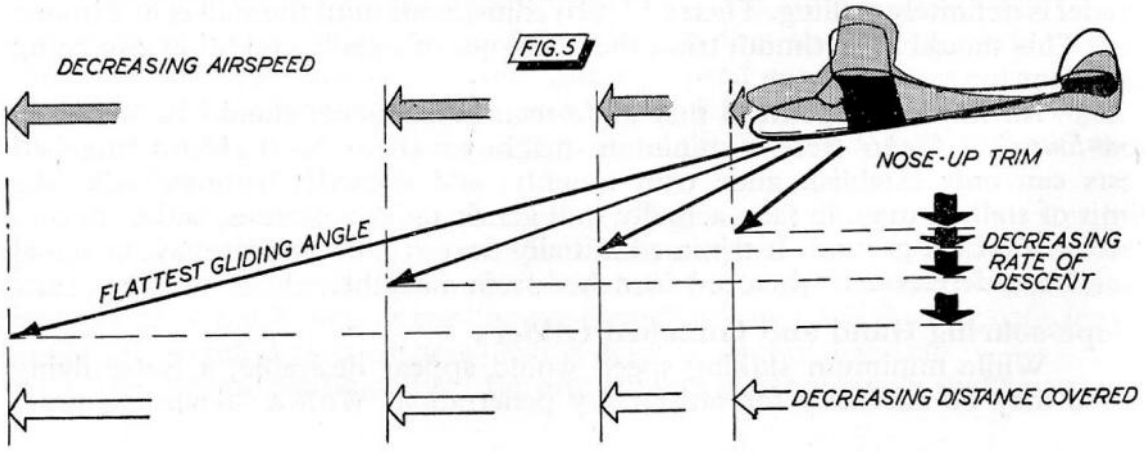
Radio Control

Neutral glide trim is generally established near the flattest gliding angle trim for good penetration and a fast approach. Trimming near the stall produces too much "float" and the approach becomes more difficult to judge. Points to bear in mind when elevator control is available are:

(*i*) If the neutral trim corresponds to a slow, floating glide, using down elevator to lose height and descend more quickly may, in fact, carry the model well past the intended land spot because the *gliding angle* is flattened out.

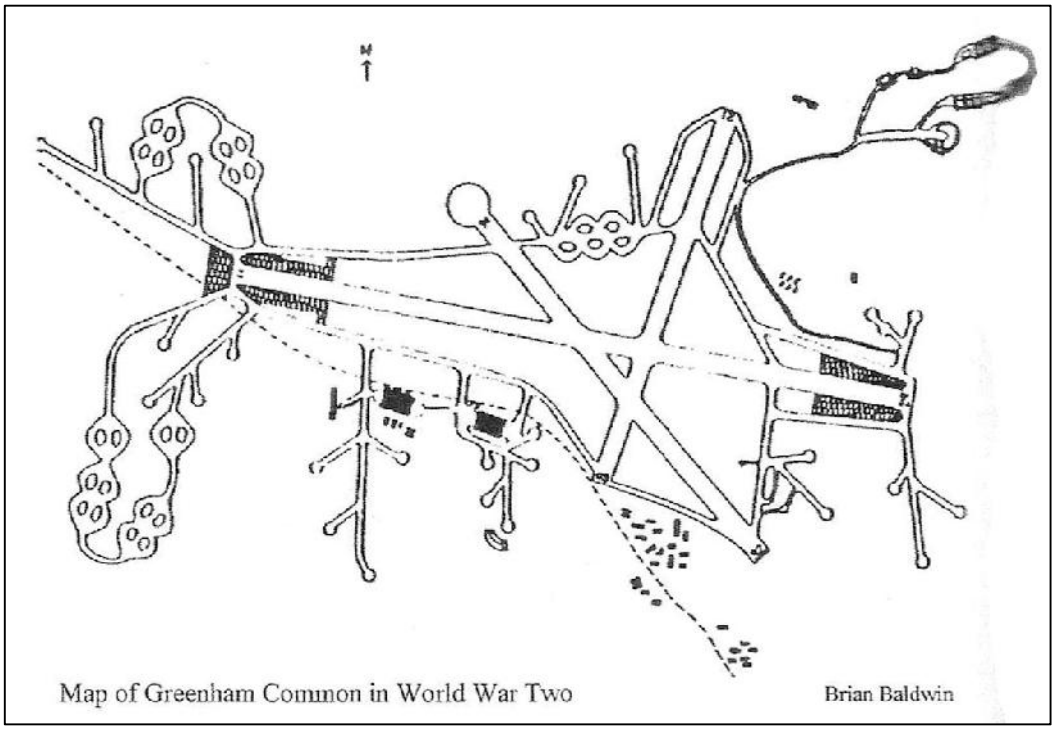
(*ii*) With a slight "diving" glide trim (past the flattest glide trim), up elevator may again increase the distance covered from a given height by bringing into flattest glide trim; or drastically reduce the distance covered on the glide into wind if trimmed nearer the stall point.

(*iii*) With neutral glide trim corresponding to flattest gliding angle, applying a little more "down" to increase the speed of approach will decrease the distance covered from that height.



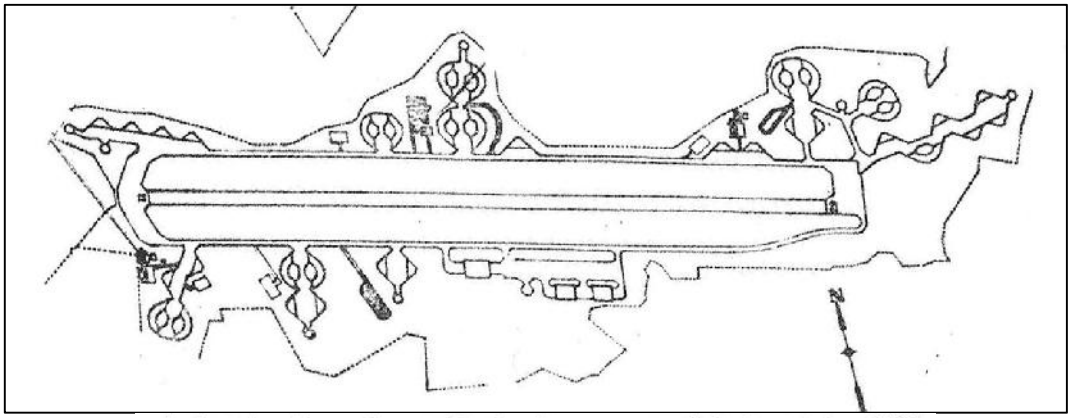
Greenham Common 60yrs ago - Vic Thomas

Much of the following is from memory and so please bear with me and feel free to let me have corrections or further details as you remember them.
The story begins at Newbury Grammar School, about 1944, where the original "gang" used to meet during breaks. We had a common interest in aviation which, in those days, was an exciting mystery. The Americans had moved into Greenham, in 1942 and as lads we would spend hours looking over the fence at Dacotas, Waco gliders and a few Horsas, or they might have been Hengists or something similar. Elliots of Newbury (an ex furniture factory) were into aircraft manufacture, at one point I remember going to Greenham to watch their gliders being put through their paces.



Greenham was constructed as a typical multi runway airfield (plan above) to cope with varying wind directions, with a peri track, dispersal areas and admin/technical buildings. The Newbury to Basingstoke road ran through the area which was a normal public highway. There were a few crossing points where traffic was halted to allow planes to cross. Of course there was very little traffic anyway in the war, me on my bicycle.
My first memory is standing by the road fence, a bit of wire on posts, watching an American assembling a Waco which had been shipped in, in glider boxes. As an aside, these boxes made wonderful sheds if you had the space to install one. Don't forget this was wartime and this sort of resource was much valued. The gliders came in fairly big "bits", two wings and tail feathers, I don't remember the fuz but it was probably in two halves. Other boxes contained various odds and ends, wiring etc.
I was about 9 or 10 at time, having cycled about three miles to Greenham, on my own. Anyway, this American saw me there and shouted "Hey, kid, want to come in?" I was over the fence in a flash and had the Dakota cockpit explained, magic, but it shows the difference between then and now, my host would probably be arrested these days.
Greenham became much busier as time passed where it became a main staging post for D day. As I remember it, the sky was full of Dakotas towing gliders, presumably training crews for the big day.

Eventually the Americans left at the end of the war and Greenham reverted briefly to its original role as a public common. The runways were broken up at crossing points to prevent racing, it was said, but large areas of paving remained. I suppose that it was about this time in 1945/6 that our school group began flying our models at Greenham and Newbury Model Flying Club was formed. It comprised a number of older boys, men with interests in model aviation, and our group. All very informal, we met in "the band room" in the town, although I never saw the band. Our use of Greenham, before it became a major Cold War base, was never questioned although at times there was a fairly large group of us, of course the area was miles away from housing and NIMBY had not been heard of!



A plan taken from a base guide showing runway and site layout circa 1954

The aeromodelling aspect was very low key, with everyone making models from scratch, usually from Aeromodeller plans. There was a huntin' shootin' & fishin' shop in Newbury which stocked basic materials at the end of the war. Money was scarce, I now realise how much my parents must have sacrificed to keep me in school. I made several Mike Farthing lightweight gliders, they cost about 10p in materials and would just fly away.

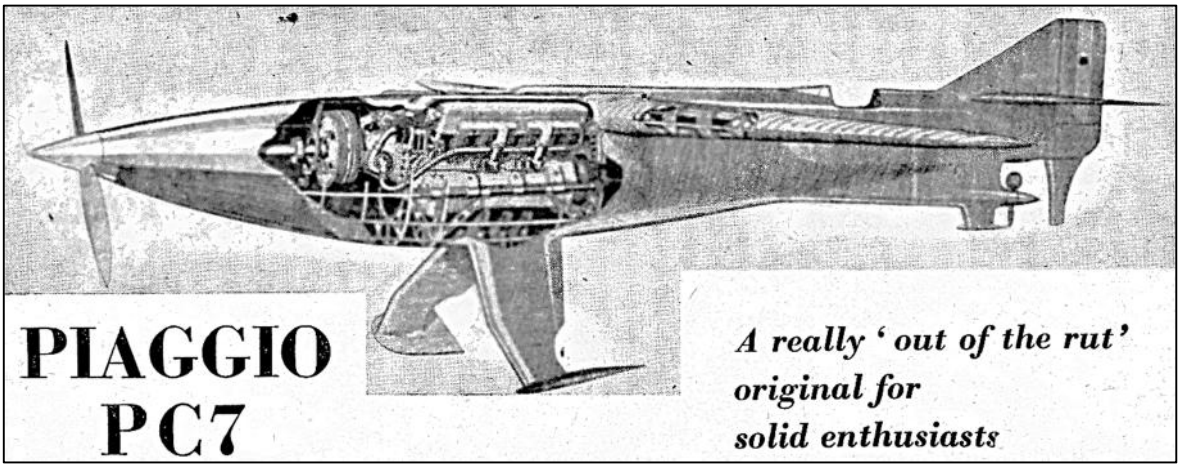
As we were ex Grammar School everyone had a surname and so I remember very few Christian names. One of the older boys was Bob Brown, now sadly departed, who became well known in the vintage world, there was Charlie Allen, who again became quite well known, he designed the Jimp with which he won the Coronation Cup at the Northern Heights Gala. He went to America to a university but I have long since lost touch. I found my Jimp in the loft this morning. Other names I recall were Robinson, Tillbrook, the Wakeford brothers, Stan Ford, one of the men. All proper aeromodellers, their models were gliders, or IC, all free flight. Another of the men was Charlie New who was an owner of a substantial animal feed business in the town. He used to give us a great many laughs as he had very early RC models which were powered with 10cc motors. He would spend hours tuning the radio, start the engine, let it go, no signal, dash to the car and drive off downwind towards Thatcham. Never seen again until the following week. Stan Ford had a car and the older boys became owners of motor cycles, HRDs, the predecessor of Vincent, the rest of us had bicycles. A brief aside about the elder Wakeford, by this time he and Bob Brown were working at Miles Aircraft in Reading. Anyway, he bought a Dyna jet engine with all the starting paraphernalia and installed it in an O/D FF model! It was a sort of cabin model with the cabin serving as the petrol tank. On this occasion it started with an enormous noise and he let it go, it roared up to about 100 feet and described a beautiful arc to crash in a ball of flame, the petrol. What was that about third party insurance!

I could go on but I have probably bored the pants off everyone anyway. Happy days!.

If anyone is interested in more of the history of Greenham I can recommend
"In Defence of Freedom, a history of Greenham Common" by JJ Sayers.

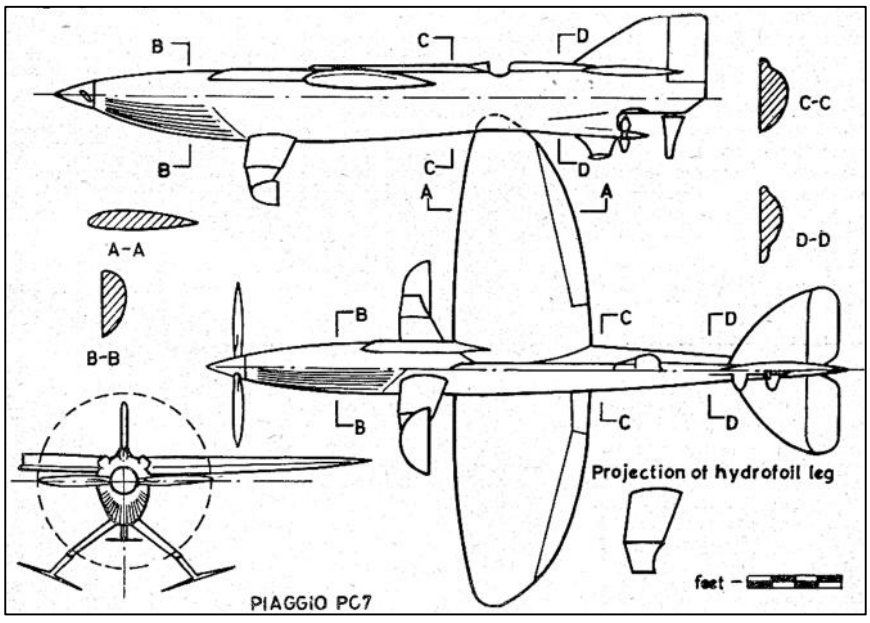
Vic Thomas

Piaggio PC7 - Model Aircraft Feb. 1960



The Piaggio PC7 was a unique single seater monoplane racing hydroplane, designed by Piaggio for the Italian Regia Aeronautica, as a possible entrant for the Schneider Trophy race. One of the many original features was the "undercarriage" which consisted of twin fixed hydrofoils, one mounted at the lower end of each main leg, and a third planing surface was mounted on a small strut under the rear of the fuselage. When at rest on the water the fuselage became a hull, almost three-quarters of it (up to the wing under-side) being submerged—rather like the experimental Convair Sea Dart.

The theory of operation was that upon starting the engine, the clutch to the sea propeller, under the tail, was engaged and as forward speed increased, the machine rose out of the water on its hydrofoils. As soon as the machine was planing the airscrew drive was to be engaged, by means of a proportionate clutch, enabling the aircraft to achieve flying speed. Its maximum (estimated) speed was of 373 m.p.h. with a landing speed of 103 m.p.h., span was 22 ft., length 29 ft.



Though the machine never actually flew, it floated several times across Lake Garda piloted by De Molin of Schneider Trophy fame.

The project was finally abandoned as Piaggio were unable to deliver the completed and tested plane to the Regia Aeronautica in time for the Schneider Trophy.

It should be recalled that a very similar project, the Bristol X2, designed by Sir Dennistoun Burnley, had already been planned in England as early as 1912, and that a prototype had been built. This project was also abandoned before completion of conclusive tests.

Model Aircraft Feb 1960

Coupes at Crookham Gala - Peter Hall

Crookham Gala: Round Eight Southern Coupe League
Salisbury Plain September 2nd 2018

Chris Redrup flying a vintage Etienvre

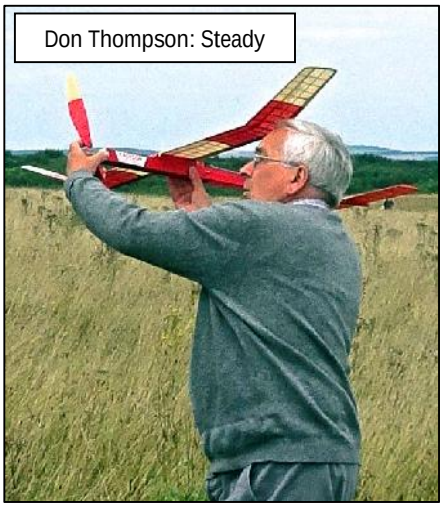
Eleven flew in the coupe event and Chris Redrup won flying a vintage Etienvre. These days eleven is good for a multi - event gala. This year, London Gala had one entrant, the SAM event had two, Oxford and the Southern had six apiece. The two Areas had ten and eleven and Grande Coupe de Birmingham had ten but I don't count these because the latter is a one class event and the Areas draw on the whole country for support. The weather helped - it was benign with a high overcast and a 8 - 10 m.p.h. breeze. But what really made the difference was that only three flights were required instead of the usual five, this enabled five competitors to fly two classes. Five lengthy retrieves for one event, six, if you fly off, on Salisbury Plain through hip - high grass is a real deterrent to octogenarian legs. Four flew off and all launched together as a promising lull came through. Chris Redrup's Etienvre out-climbed the rest and seemed to get the best of the air. Peter Hall lost the burst with a wild swoop but then settled down to take second place. Ted Tyson and Gavin Manion, third and fourth got no assistance at all from the air.

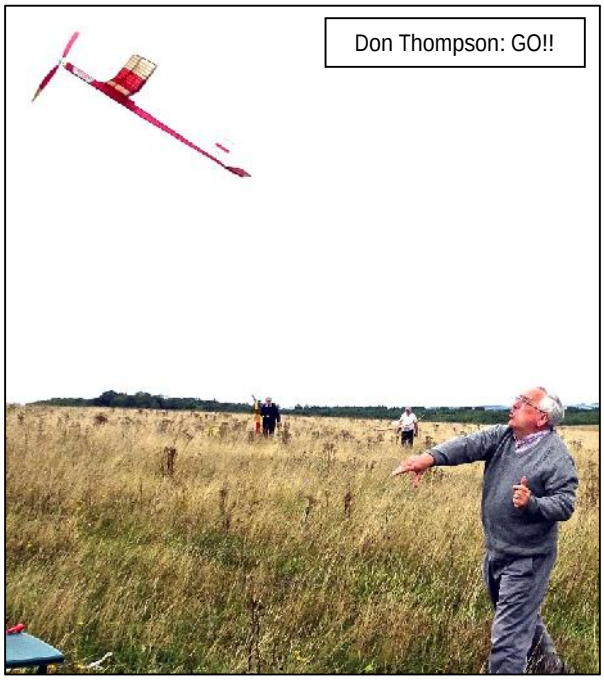
It's 10 am, Gavin Manion winds his vintage coupe and fits the prop. There's a piercing scream as the clutch fails and the prop. disintegrates. He rigs his modern coupe and launches into a boomer. Ten minutes later he reckons it's down and sets off for a very long retrieve. Six drop their first flights. We're stationed just below the crest of the airfield ridge and it is deceptively calm. There's very little temperature variation and as the day goes on the air seems, like the high cloud above, smooth and untroubled. Four drop their second flights and three their third. The trick is to get enough height to overcome death valley and get a bit of ridge lift from the other side. Fast climbing models are therefore advantaged and the four who max. out have these. Chris Redrup's Etienvre demonstrates this well, A very fast steep climb overcoming the disadvantage of a short run (about 35 secs ?)

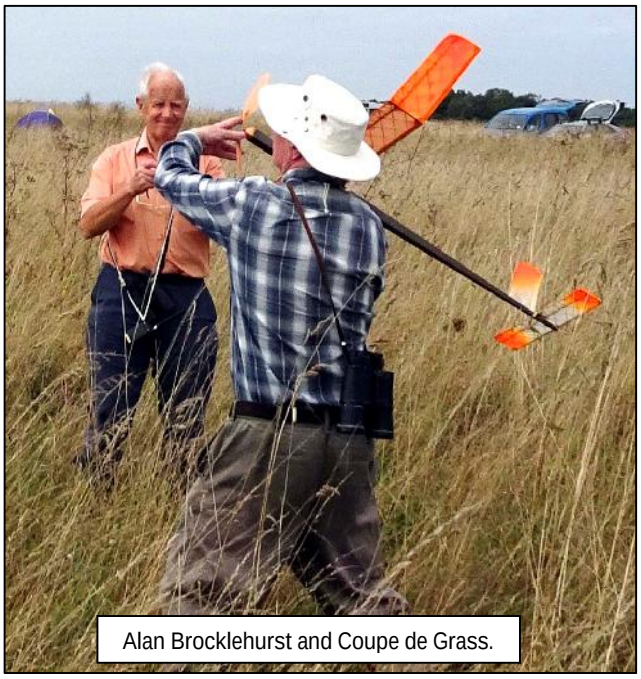
Gavin Manion launches with Jim Paton on the watch

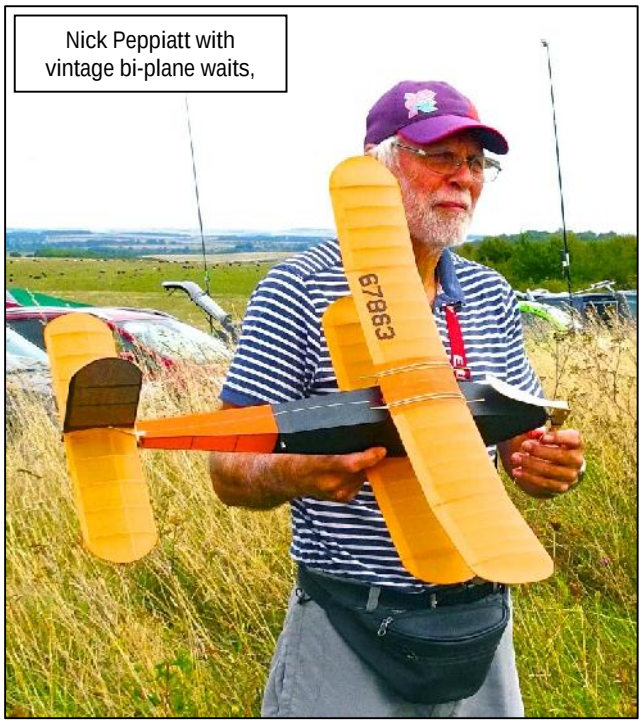
Picture Parade:


Don Thompson: Ready

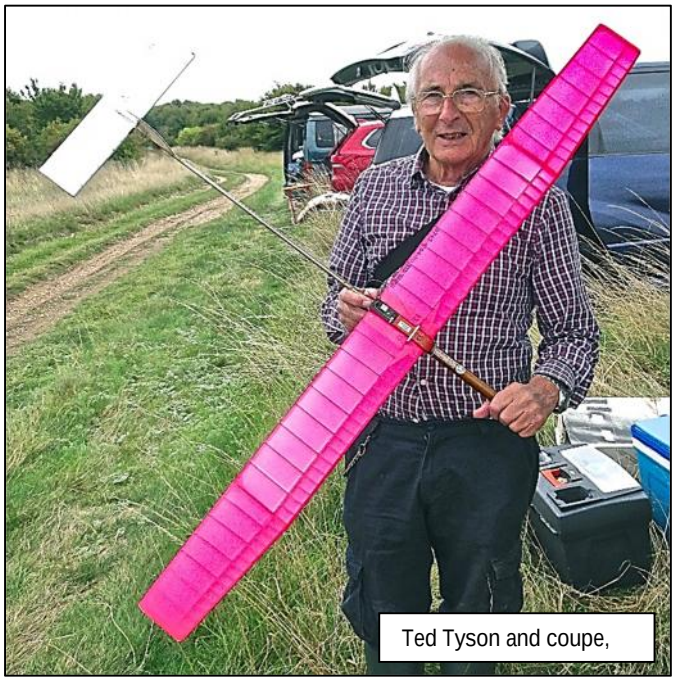

Don Thompson: Steady


Don Thompson: GO!!

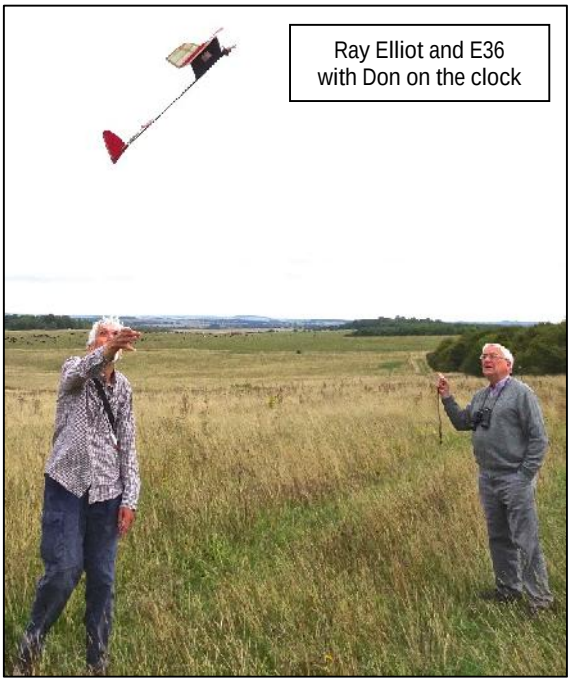

Alan Brocklehurst and Coupe de Grass.


Nick Peppiatt with vintage bi-plane waits,


Then Up & Away



Ted Tyson and coupe,



Ray Elliot and E36
with Don on the clock

Prize - giving at 5.30 p.m. after fly - offs followed the contemporary trend, eschewing dissolute wine in favour of furtive white envelopes.
Nevertheless, all seemed very content with the day.
Thanks to C.D. Roger Newman and Crookham chairman Chris Redrup.

Crookham Coupe Results, Southern Coupe League Rd.8

Crookham Gala						
	Entrant	**Club**	**Maxes**	**Score**	**Time**	**Flyoff**
1	C.Redrup	Crookham	3	**15**	6.00	4.02
2	P.Hall	Crookham	3	**12**	6.00	3.15
3	E.Tyson	Crookham	3	**11**	6.00	2.16
4	G.Manion	Birmingham	3	**10**	6.00	2.07
5	E.Challis	Crookham	2	**8**	5.43	
6	D.Thomson	Croydon	2	**7**	5.32	
7	A.Brocklehurst	B&W	2	**6**	5.28	
8	R.Elliott	Croydon	0	**3**	4.37	
9	A.Crisp	Biggles	1	**3**	4.34	
10	M.Stagg	B&W	0	**1**	2.39	
11	B.Hobbs	Oxford	0	**0**	2.21	

There are two rounds to go in this year's league - Odiham on September 23rd. and Coupe Europa on the 30th. That's a total of ten events this year, but only five count in the final reckoning.

Peter Hall

Southern Coupe League Table after Rd.8 - Roy Vaughn

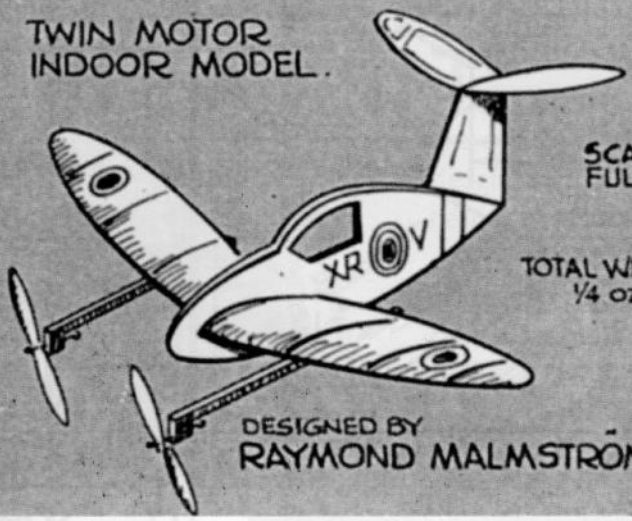
Southern Coupe League Table after Round 8													
	Entrant	Club	Coupe De Brum	First Area	London Gala	Sam 1066	Fifth Area	Dreaming Spires	Southern Gala	Crookham Gala	Odiham	Coupe Europa	Total
1	P. Hall	Crookham		11		15		13	17	12			68
2	G. Manion	Birmingham	9		12		12			10			43
3	R. Vaughn	Crookham	17	13				6					36
4	P. Ball	Grantham	13				17						30
5	C. Redrup	Crookham				11				15			26
6	W. Beales	Croydon	14	11									25
7	D. Thomson	Croydon	7				1	7		7			22
=	A. Brocklehurst	B&W					7		9	6			22
=	E. Tyson	Crookham							11	11			22
10	W. Dennis	MFFG	2	2				15					19
11	M. Stagg	B&W					10		7	1			18
12	G. Foster	Grantham		17									17
=	E. Challis	Crookham					9			8			17
=	B. Hobbs	Oxford					4	7	6				17
15	J. Andrews	Timperley		4			11						15
16	R. Fryer								13				13
17	B. Whitehead		2	9									11
18	J. Paton	Crookham						10					10
19	P. Woodhouse	Morley		9									9
=	K. Taylor	E.Grinstead		9									9
21	A. Moorhouse	Vikings	8										8
22	R. Elliott	Croydon	4							3			7
23	M. Marshall	Impington	5				1						6
24	T. Bailey	Biggles					3						3
=	M. McHugh	Peterborough		3									3
=	A. Crisp	Biggles								3			3
27	G. Ferrer	Timperley					2						2
28	P. Tribe	B&W											0
=	R. Willes	Epsom											0
=	S. Willis	Croydon											0

Roy Vaughn

The Avenger - Ray Malmstrom

The AVENGER

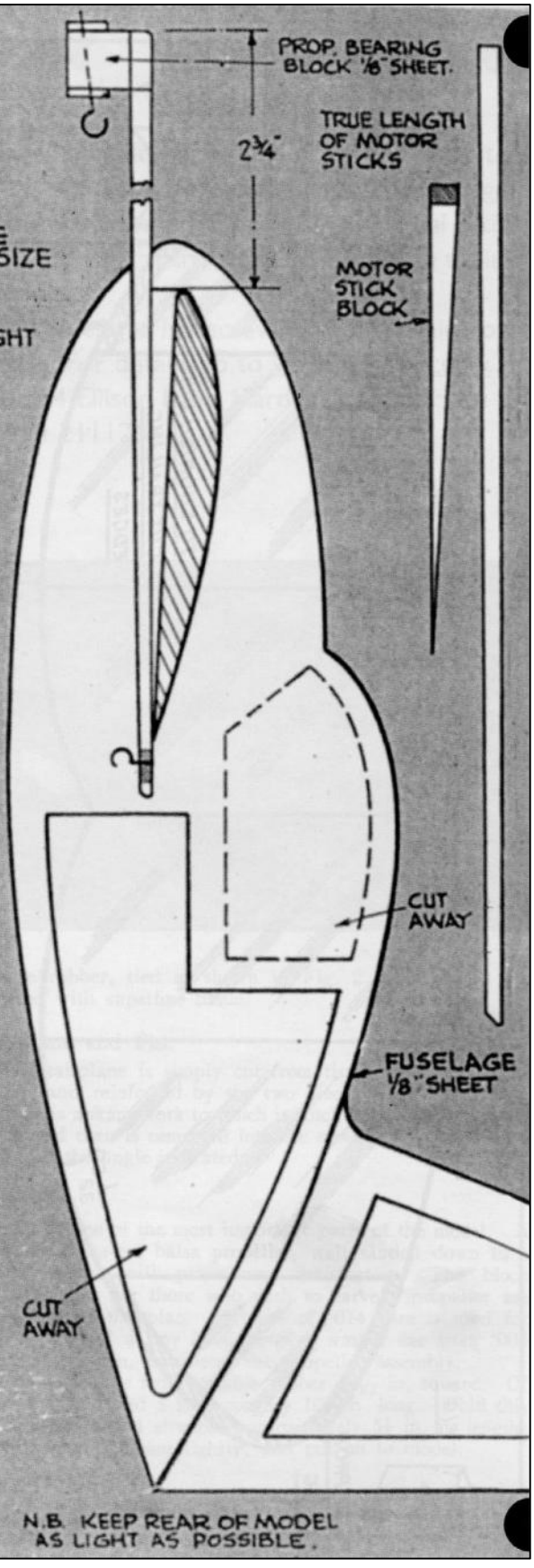
TWIN MOTOR INDOOR MODEL.



SCALE FULL SIZE

TOTAL WEIGHT ¼ oz.

DESIGNED BY RAYMOND MALMSTROM



Fuselage.

The fuselage shape is drawn on ⅛ in. sheet balsa and sanded to the sections indicated. The cockpit and rear of the fuselage are cut away, the former being covered with cellophane, and the latter with two pieces of thin notepaper.

Wings.

These are quite straightforward, the plan furnishing all details. The blocks shown at A on the plan, are cemented under rib No. 2. Cement completed wings to fuselage at correct dihedral angle and give one coat of banana oil No. 2.

Motor Sticks.

Shape from hard ⅛ in. square balsa. Small wire hooks are bound to the rear of each and cemented. To these sticks the propeller bearing blocks, suitably drilled (noting downthrust angle), are cemented, and secured by two thicknesses of tissue. A brake is fitted to the starboard motor, details at B on the plan. The motor sticks are then cemented to the blocks under each wing.

Tail Plane and Fin.

These are from 1/32 in. and 1/16 in. sheet, covered with tissue on one side only. Leave the tissue unstretched.

Propellers.

Dimensions for the propeller blocks are given on the plan. One must be a left-hand and the other a right-hand propeller. These must be the same pitch, and as near the same weight as possible. A simple free-wheel may be fitted. Without this refinement, as it were, the glide suffers accordingly.

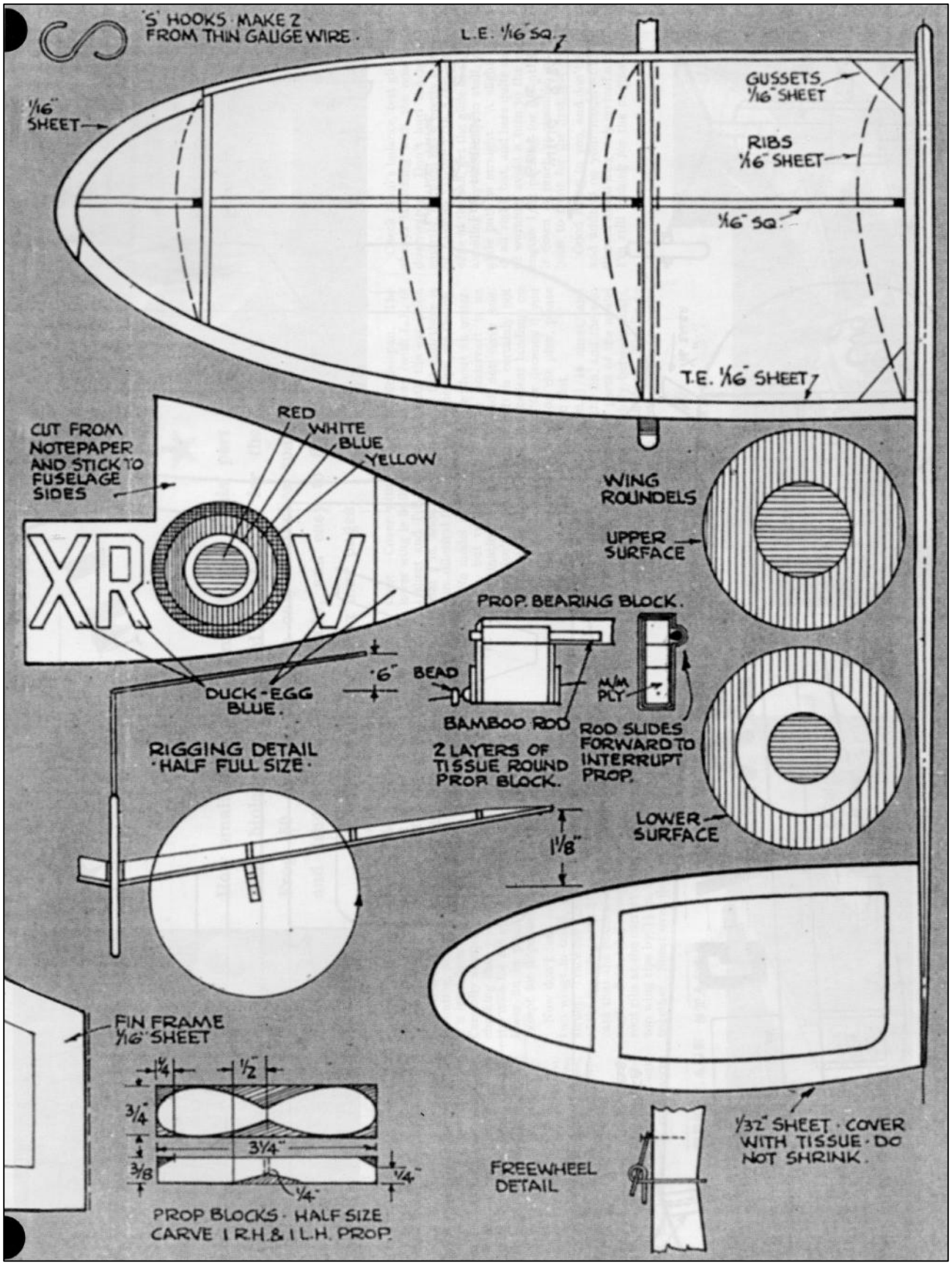
Power.

Excellent motors can be made from ⅛ in. by 1/32 in. strip, which has been cut carefully down the centre. Loops are then made approximately 9 in. long (one loop to each motor).

Flying.

Wind from the rear by means of the little " S " hooks shown at Fig. C. The starboard motor is arrested by the brake until the port is wound. Launching is a matter of practice. One hand prevents the two propellers from turning, and the model is thrust gently forward with the other.

The Avenger with both motors in action presents a pleasing picture in the air, and may be relied upon to enliven any indoor meeting.



Ray Malmstrom

From the book
'Ray Malmstrom, 60 Years of IVCMAC'
(supplied by Chris Strachan)

Sneyd Indoors - John Andrews

The winter indoor season is upon us. I was at the Walsall club's first indoor meeting on Saturday 9th.September in the Sneyd sports hall, Bloxwich.

The heading pictures show organizer Alan Price, back to camera, chatting to Graham Bryant whilst Alans wife on the door seems to be possibly studying form in the Sporting Life. Further along that wall Mike Brown and his companion are studying Mike's ½ scale Keil Kraft 'Gipsy'.

I was only in spectator mode as I had been suffering with a bad back and did not want to aggravate my recovery by flying, as the Indoor Nationals was the following weekend.

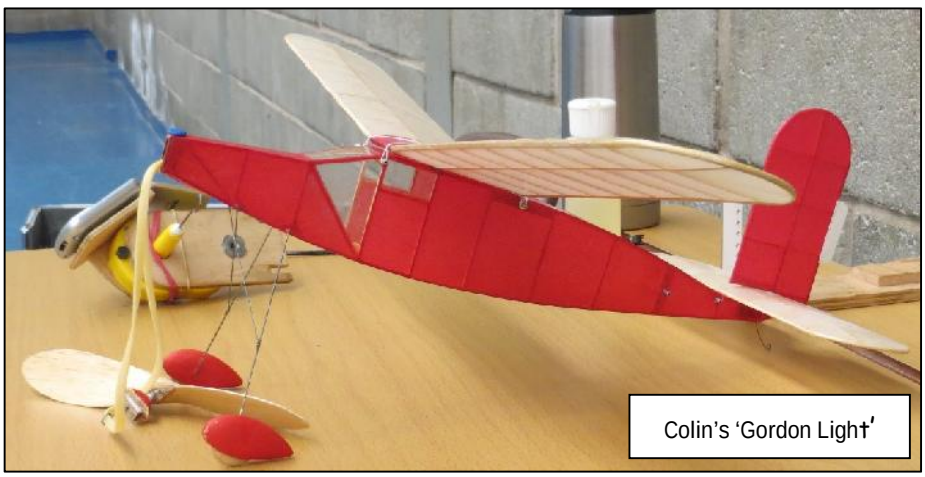
I just sat all afternoon alongside Colin Shepherd and took my pictures from there, it's amazing what the zoom can achieve on the little compact cameras.

Colin was also flying a ½ scale 'Gipsy' and it was performing really well as it usually does. Taking off from the deck and topping out just short of the lights.

He also flew a his ½ scale version of the 'Gordon Light' 4oz Wakefield.

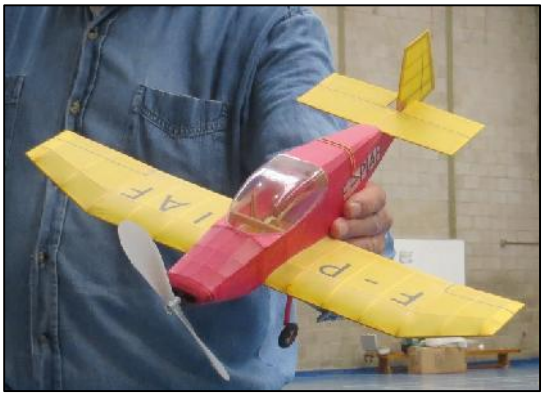
It took a little more trimming than the 'Gipsy as he over-powered it initially by mistake. But finally after a motor breakage he fitted a little thinner rubber and it was soon on song.

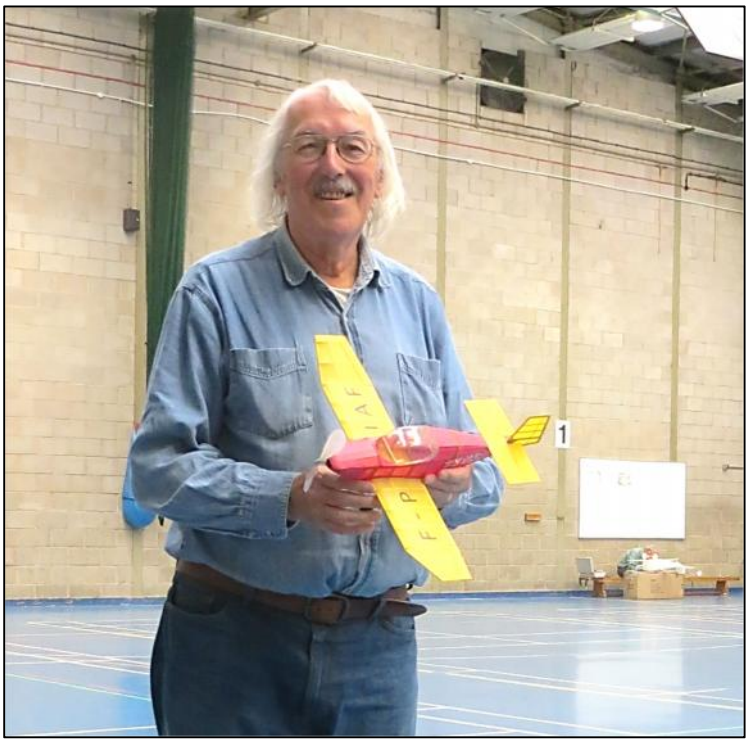
Colin fine tunes the 'Gipsy'



Colin's 'Gordon Light'

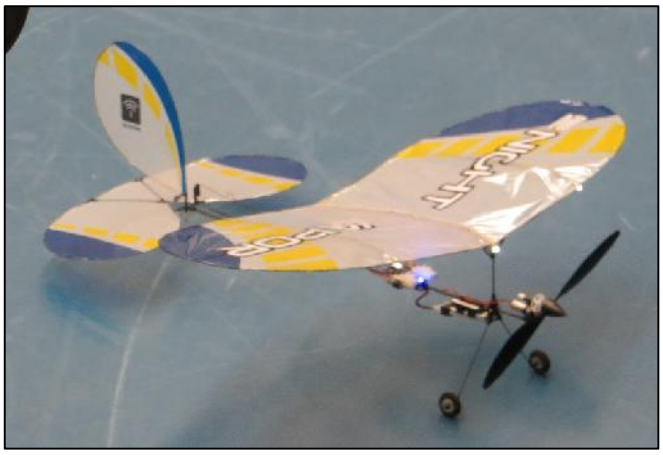
Graham Bryant was trimming a 'Jodel' and the model was not being cooperative, stalling about all over the place. It looked a little tail heavy from where I was sitting.





I do not recall seeing a completely successful flight with the 'Jodel' but he was also flying Gyminnie Crickets which were going well. The very tight turn on one of them looking as though it was trimmed for flight in a telephone kiosk.

Graham Smith was in attendance trimming the latest of his large polystyrene scale models. I was a little too far away to get a decent picture and I was also unable to catch a picture of any of his fly-bys. In the radio slot Colin flew the inevitable 'Night Vapour', which seems to be the weapon of choice in the midland area. The Thompson group were not present in their usual numbers, there being just one of the group flying the only real lightweight indoor model.



A relaxed afternoon for me and my back.

John Andrews

Report No. 92. Performance Kits, continued.

Last month's report brought us to the Sunbird radio controlled stunt biplane issued as a deluxe kit in 1973. Next, in complete contrast came a pair of H.L. gliders, the "Pippa, all sheet boxed chuck glider" and the "Para, all sheet boxed gull-wing chuck glider" No picture of either of these has been found and they are only known to us from a list issued by Performance Kits in 1987. This list gives the date of the two kits as 1975 but also notes that there were no plans, so presumably the kits contained ready shaped parts and just assembly instructions. We might well assume that details of these two models are lost forever unless somebody has a kit or a built model from which drawings could be prepared.

- Specially designed for the Telco or other CO_2 engines.
- Tight 'flat' turns in flight.
- Can be converted to rubber power.
- Die-cut wing ribs. All materials are the finest available.
- Full size detailed plan. Separate instructions

Price: £3.40

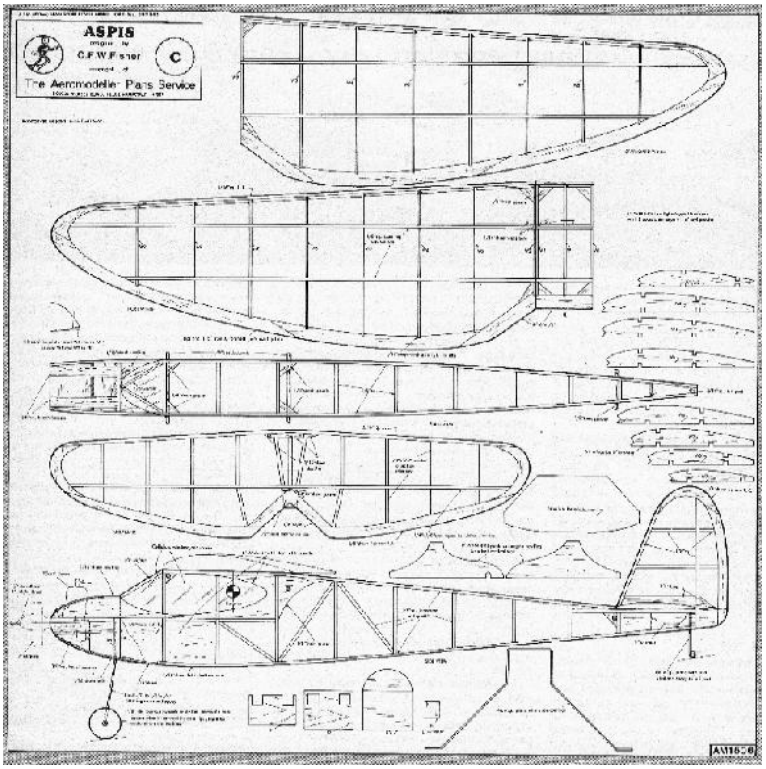
The Performance Kits advertisement in Aeromodeller June 1977 offered the new "Oclet", a 26" wingspan parasol model for the Telco CO2 power unit. The kit was priced at £3.40 and in the same advertisement the Telco CO2 engine was offered at a price of £8.45. Derick Scott has the "Oclet" plan in his list.

Pete Fisher's book on model aero engines was published in 1977 by Model and Allied Publications, Argos Books Ltd i.e our dear old Aeromodeller mag. The book's contents include chapters on Compressed Air, Petrol, Slag, Diesel, Multi-Cylinder, CO2, Pulse Jet, Jetex, and Glow Plug Engines, also Electric Motors. The subjects of Propellers, Fuels, Timers, Tanks, Plugs, Operating, Cleaning, Overhauls and Restoration are all covered. Pictures of about 250 engines are included, unfortunately some of these are rather small, up to 9 off on an A5 page.

Next in 1982 came the second change of address, this time from Bedford across the sea to Woodland Towers, Onchan, Isle of Man. This move seems to have coincided with the end of marketing of kits by Performance Kits. We have a Performance Kits list dated April 1987, which has a bracketed sub heading "History and Plan Listing" and the note "Plans for most of the ancient kits listed are available for a standard charge of £5.00 inc. post."

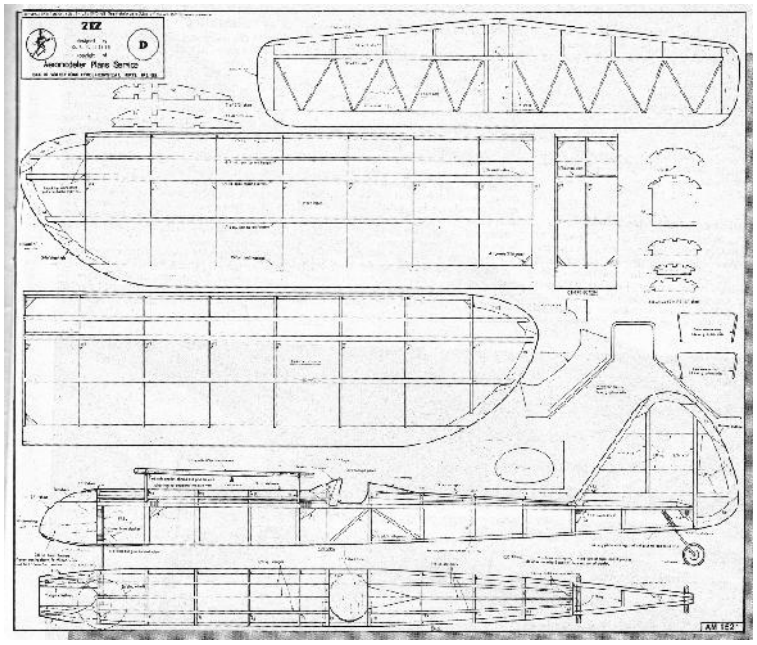
That was not the end of Pete Fisher designs, several more appearing in the Aeromodeller over the 80's and 90's, and we will look at these in order to complete the look at his published designs.

The "Aspis" a 36" cabin power model was published in Aeromodeller February 1986, plan and excerpt from the accompanying article shown here. Plan available from Outerzone.



Design and development

The 'Aspis' is the 319th model built by the designer. It is intended for use with a 'Dart' 0.5cc diesel, as per the prototypes, or any other small diesel or glow-plug engine of 0.3-0.8cc. Construction is straightforward and traditional; but incorporates an unusual and efficient elliptical type wing plan form; which greatly enhances the overall character of the design. The swept back leading edge helps to provide extra lateral stability without the excess dihedral, sometimes used on small free flight models.



Next came the oddly named "Ziz". This 50" wingspan power model for free flight (convertible to radio control) was featured in Aeromodeller in August 1986.

In addition to the full size plans at £2.50 AM offered parts patterns on self-adhesive paper for an additional £1.10.

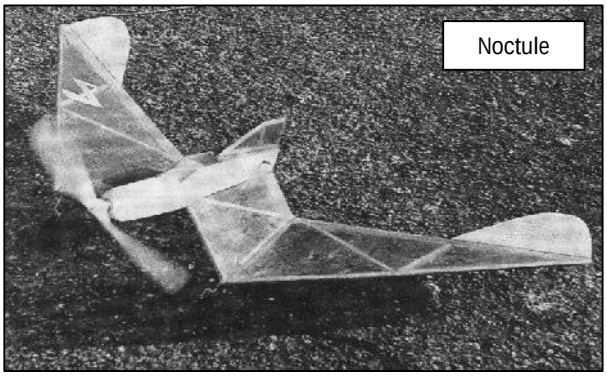
Plan and part article shown here.

No known source for the plan but the reduced plan in AM should enlarge OK for building.

The mice can hardly be seen in the AM picture!

By the way, Peter's original is equipped with a couple of rather special pilots. Perhaps we'd better let him explain:

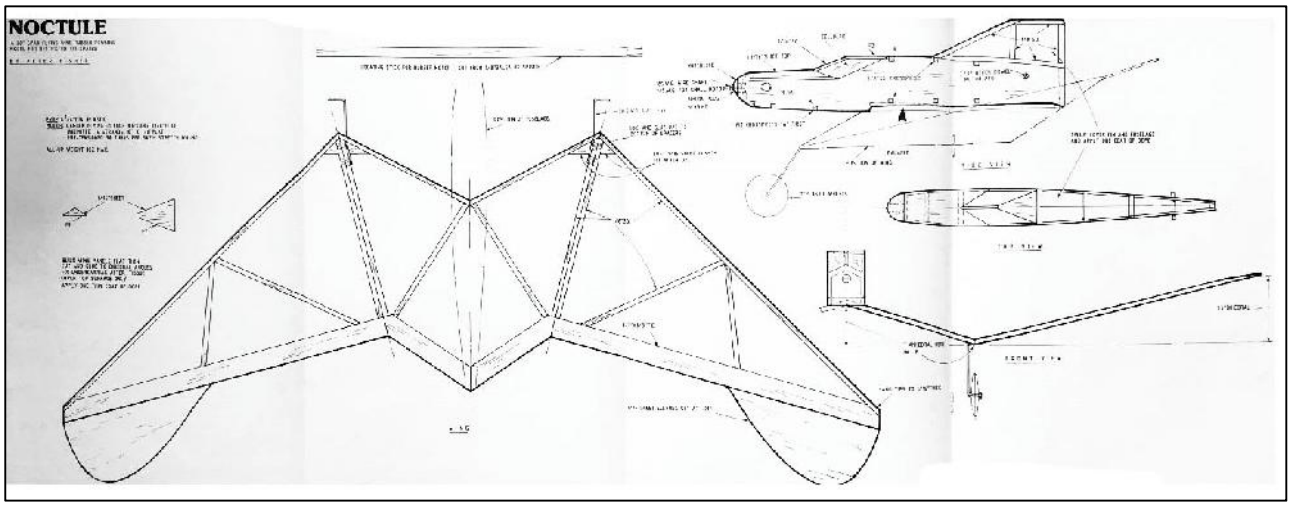
'The miniature mice pilots are both ladies and are 1" in overall length, excluding their tails. They are both fully dressed for Old Warden Air Displays, and one has goggles.



They were made for me by Mrs Bader, who at one time ran a small model and craft shop in Wellingborough. Usually she made only very superior, large scale (about 10 times full size), fully dressed mice. The pilots in the Ziz have always done an excellent job of piloting this machine!'

The Mrs Bader referred to is, of course, the wife of Group Captain Sir Douglas Bader. We regret that we cannot offer plans of her handiwork – but the Ziz is here, with Peter's instructions below. To further speed you on your way to the flying field, we are able to offer full size component pattern sheets on self-adhesive paper ready to stick onto the balsa, thus to avoid the chore of marking out. These are available for £1.10 inclusive of postage. Quote number PAM 1521 when ordering.

Aeromodeler March 1983 had a fold out full size plan of the "Noctule" a 20" wingspan bat like rubber powered tailless model for small field flying. Photograph of the plan and pictures below. Plan available from Derick Scott.



Wind 'er up and let go! Peter launches the prototype for another flit round the camellia at Woodland Towers.

More on the Pete Fisher story next month.

You may be aware that my email address was hacked. My experts have done their work and I am assured that all is now OK.

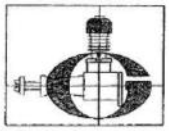
My contact details remain as below.

Contact- Roy Tiller,
tel 01202 511309,
email roy.tiller@ntlworld.com

Roy Tiller

Indoor isn't for everyone Pt.24 - Nick Peppiatt

The Gasparin motors (continued)



GASPARIN CO_2 MOTORS

PODSKALI 96, 251 01 RICANY U PRAHY, CZECH REPUBLIC
☎ 00420-323-603088, fax: 00420-323-605798, e-mail: sgasparin@iol.cz, www.gasparin.cz

The smallest model motors in the world

CO_2 motors by Gasparin

These CO_2 powered motors are characterized by small dimensions and slight weight at a sufficient output for small model drive. Said motors find no competition especially in the field of propulsion of tiny indoor models.

The smallest Gasparin CO_2 powered motors are manufactured as a result of 30 years development. The motor G6 having working volume of 6 mm^3 was registered in the Guinness book of records in 1989 as the smallest world motor. Nevertheless this registration has already been outstripped by newer G5, G3 and G1S, G2,6 and G0,7 motors. The G0,7s the world's smallest ever serially produced piston motor.

The CO_2 Gasparin motors enable the modelers to build smallest power models in a wide range of types and features. New more cylinders motors are the new challenge for modellers.

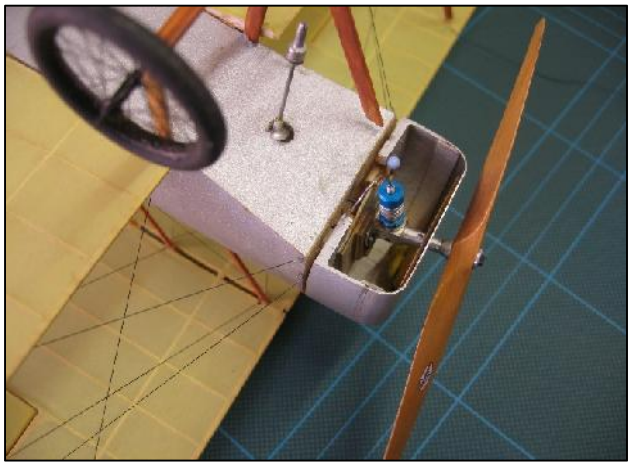
Basic data of motors in production:

Product					Suitable for models	
Type	Bore [mm]	Stroke [mm]	Stroke volume [mm^3]	Weight [g]	Wingspan [mm]	Weight [g]
G2,6	1.60	1.3	2.614	1.0	120 – 240	2.0 – 4.5
G3	1.55	1.7	3.20	2.4	160 – 200	3 – 4
G5	2.00	1.7	5.34	2.9	160 – 200	3 – 5
G10	2.50	2.0	9.82	4.4	200 – 330	4 – 8
G10T	2.50	2.0	2 x 9.82	4.8	200 – 400	8 – 16
G28	2.85	4.5	28.70	7.1	330 – 450	8 – 25
G28BB	2.85	4.5	28.70	6.7	330 – 450	8 – 25
G28T	2.85	4.5	2 x 28.70	13.0	330 – 500	16 – 35
G43	3.50	4.5	43.27	7.1	small CO2 RC models	
G43T	3.50	4.5	2 x 43.27		small CO2 RC models	
G43TS	3.50	4.5	3 x 43.27		small CO2 RC models	
G43F	3.50	4.5	5 x 43.27		small CO2 RC models	
G43S	3.50	4.5	7 x 43.27		small CO2 RC models	
G160	7.00	4.2	161.63	18.5	650 – 800	60 – 100
G300BBRV	7.00	8.0	307.87	38.0	650 – 800	120 – 140
G24N	3.175	3.0	9 x 23.75	27.3	9-cylinder radial	
G24NN	3.175	3.0	18 x 23.75	53.0	18-cylinder 2 x radial	
G24NR	3.175	3.0	9 x 23.75	34.5	9-cylinder rotary	
G24FR	3.175	3.0	5 x 23.75	33.8	5-cylinder rotary	
G24SR	3.175	3.0	7 x 23.75	38.8	7-cylinder rotary	
G63N	4.00	5.0	9 x 62.80	60.0	9-cylinder radial	
G63BX	4.00	5.0	4 x 62.80	41.0	4-cylinder boxer	
G63F4	4.00	5.0	4 x 62.80	41.0	4-cylinder flat	
G63L4	4.00	5.0	4 x 62.80	41.0	4-cylinder inline	
G63L6	4.00	5.0	6 x 62.80	65.0	6-cylinder inline	
G63V8	4.00	5.0	8 x 62.80	80.0	8-cylinder in V 90°	
G63V12	4.00	5.0	12 x 62.80	108	12-cylinder in V 90°	

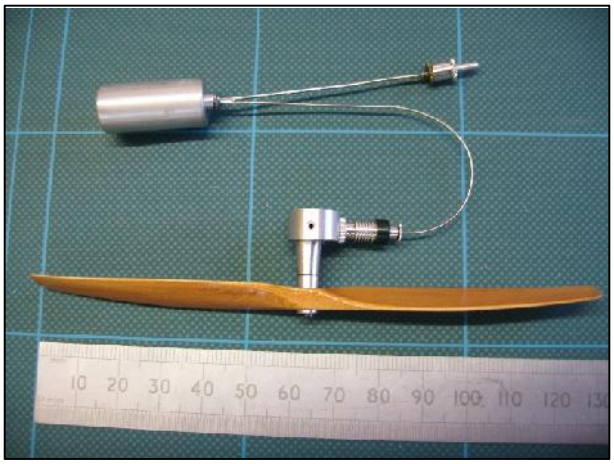
The entire offer with the technical description of products is on my web site www.gasparin.cz.

Motor list supplied with Gasparin G28As stated in IIFE 23, the G-Mot series (GM) were the higher production volume motors produced in a separate factory. The range of the lower production volume Gasparin or G motors was quite extraordinary as the later catalogue sheet, above, shows, with many multi-cylinder and radio-control versions. This was supplied with a G28 motor and must date from around 2002/3 as according to the website www.gasparin.cz the G2,6 was developed in 2002.

The list does not include, the earlier GM63BB and the G24, of which I have a little experience.



G24 fitted to Peanut scale Bristol Scout.
Note that the filler is plumbed to the bottom of the tank.

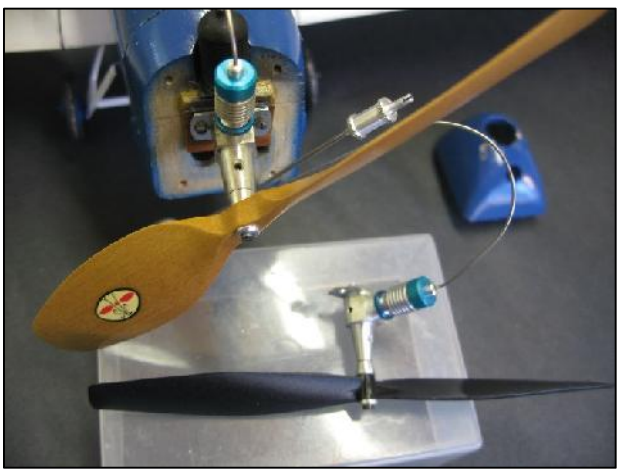


Later G28 motor,
with the gas filler and feed to the top of the tank.

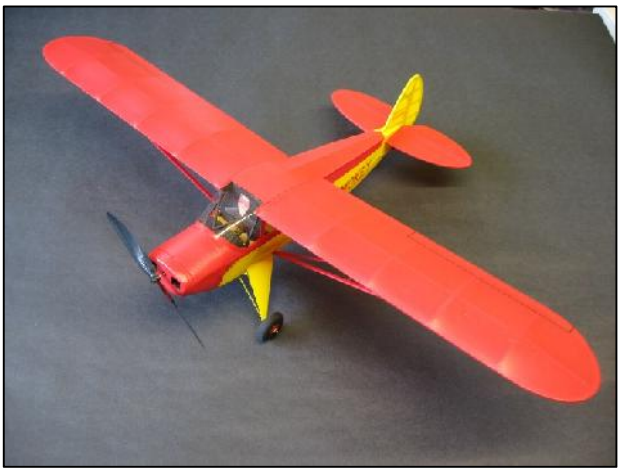
The G series motors were generally supplied with a signed and dated certificate giving the serial number, and, as can be seen from the photos, a nice matching wooden propeller. The G24 has a distinct family resemblance to its larger brothers the GM 63 and GM 120. The December 1993 edition of AeroModeller carried a favourable review of the G24 by Klaus Hammerschidt in the Engines Old & New column, comparing it to the very similar sized Brown A-23. I fitted a G24 to a Nowlen Aero Peanut scale Bristol Scout A, which I had found very difficult to trim for rubber power. Its flight behaviour was much improved after fitting the CO_2 motor, but the model eventually became extensively damaged after hitting a wall at height in the Alumwell Sports Hall and tumbling to the ground.

The GM63BB was another earlier Gasparin motor and was a modified GM 63 with ball races supporting the crankshaft, presumably with the GM designation because some of the parts were sourced from the G-Mot factory. I acquired one in the early 1990s, which was fitted to my Gloucestershire Gannet, which had won the AeroModeller Trophy at the 1988 Model Engineer Exhibition, in place of the originally fitted Telco. The spacing of the mounting holes on the GM 63 is the same as the Telco.

Sadly, I have no experience of either the Gasparin multi-cylinder motors or those developed with speed control for RC flying, and I would certainly be interested to hear from any reader who has. The section in Tony Brookes book 'CO_2 Powered Model Aircraft' on the complications of setting up multi-cylinder motors makes interesting reading.



Gloucestershire Gannet,
as shown on AeroModeller cover below,
with GM63BB fitted.
Standard GM 63 also shown for comparison



What CO_2 motors are up against?
18" wingspan KK Super Cruiser for 3 channel RC
powered by 6mm coreless electric motor.
Capable of ten minute flights with 100mAh battery.
All up weight 27.5g.

The Black Sheep Squadron website www.blacksheepsquadron.com indicates that Gasparin closed CO_2 motor production in August 2003, but this date must be questionable as there is an entry on the Gasparin website for G160 motor variations for February 2006.
Anyway, in his later years Stefan Gasparin turned to small outrunner electric motors and other components for RC.
It has to be said that, whilst electrics do not exude the charm of CO_2 motors, they are much more consistent, reliable, far less temperature dependent and, using lipo batteries, can give a far longer flight duration.

Gloucestershire Gannet as originally fitted with a Telco.


Statue of Charles Stewart Rolls in Agincourt Square, Monmouth

Charles Stewart Rolls

With reference to my Outdoor Adventures last month, did you guess whose statue it was, holding the Wright Flyer model?
The statue is in Agincourt Square in Monmouth and celebrates Rolls' life including his non-stop double crossing of the English Channel on the 2nd June 1910.
Unfortunately, he was killed in an air-crash shortly after.

I recently came across a fragment of his Wright Flyer, built under licence by Shorts, in a display case in the new Flight Shed at Brooklands Museum.

Of course, his name lives on as the Rolls in the Rolls-Royce marque. This has particular significance for me, as I started my engineering career almost exactly 50 years ago as a graduate trainee in the Aero-Engine Division of Rolls-Royce in Derby.

More on CO_2 next time.

Nick Peppiatt

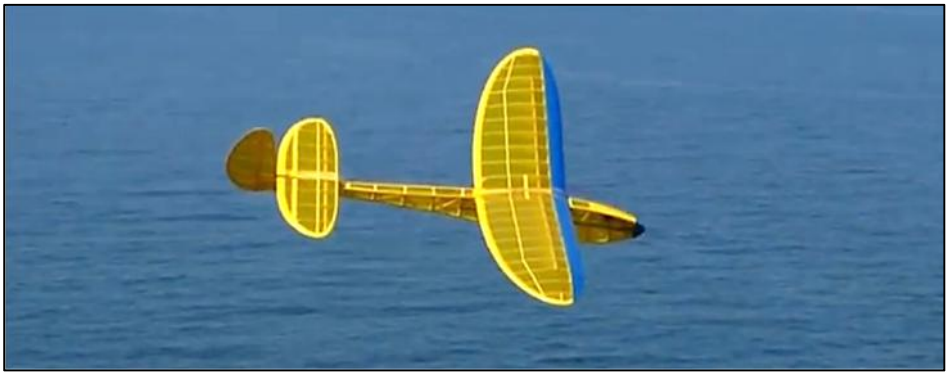
Leprechaun over Perranporth - Ian Howlett

I thought readers and Dick Twomey might well be interested in some slope soaring videos of a lookalike Leprechaun posted on youtube by John Woodfield.
John writes that he downloaded an Outerzone plan of the 'Lep', used the same wing planform and sections and fuselage shape. He also notes that the all up flying weight is just under 1.5kgs which feels very light indeed to me.
It is wonderful that Dick's 'Leprechaun' continues to inspire.

https://www.youtube.com/watch?v=btIqDRlHo5A
https://www.youtube.com/watch?v=F_tqsMNZvCE
https://www.youtube.com/watch?v=ai1u-J-2h5Y

(Editor: here are a few stills taken from my computer screen just to wet your appetite.)

(As you can see, the model differs from Dick's original Leprechaun design in certain aspects) (and as built must be considerably lighter I would imagine.)



Ian Howlett

Secretary's Notes for October 2018 - Roger Newman

At last, a day that delivered excellent weather. The occasion – the annual Crookham Gala on Salisbury Plain, where some 25 or so attended & enjoyed a really good flying day. After a bit of indecision where the forecast & on the ground conditions were at odds, we relocated from the plateau to the southern edge of the area, adjacent to the airstrip. It was the correct thing to do – ending the day with unlimited fly-offs.

Crookham Gala Results:

BMFA Power: 1st - John Hook (Dixielander) 7 min 1 sec; 2nd - Roy Vaughn (O/D) 5 mins 58 secs.
Roy started with a perfect flight but things deteriorated progressively as the transition from power resulted in a stall on his 2nd & 3rd flights. Words of wisdom were sought from all but to no avail. John was flying one of late Chairman's projectiles & won the Dixielander Trophy.

Combined Vintage / Classic Glider:
1st - David Cox (Archangel) 5 min 35 secs; 2nd - Dave Etherington (Inch Worm) 4 min 26 secs;
3rd - Andy Crisp (Caprice) 1 min 40 sec.
A battle between the two Davids, with a reduced max of 2 mins resulted in a win for David Cox. Andy Crisp made a latish entry for a single flight, then possibly ran out of legs.

E36 Electric:
1st - Peter Watson ((O/D) 6 min (+ 5 min 8 secs); 2nd - Chris Redrup (O/D) 6 min (+ 2 min 8 sec);
3rd - Jim Paton (Eureka) 6 min (+ 1 min); 4th - Ray Elliott (Sort of Satellite) 5 min 9 sec.
Conditions were fine for a 7 sec motor run as evidenced by the results. Peter had a magnificent fly-off flight from his 5 sec run to outperform the others.

Mini-Vintage (Combined):
1st - Dave Etherton (Nord) 6 min (+ 3 min 14 sec); 2nd - Tony Shepherd (Le Timide) 6 min (+ 2 min 32 sec);
3rd - Martin Stagg (DynaMite) 6 min (+ 2 min 28 sec); 4th - Jim Paton (Buckeridge) 5 min 51 sec;
5th - David Cox (Fugitive) 5 min 21 sec; 6th - Nick Peppiatt (Hoppity) 5 min 10 sec.
Interesting result with a glider, a rubber model & a power model in the fly-off. Dave prevailed. Our Chairman came in 2nd with a very commendable fly-off. Nick Peppiatt flew his Hoppity bi-plane to achieve a very good time.

Combined F1G / Vintage Coupe:
1st - Chris Redrup (Etienvre) 6 min (+ 4 min 2 sec); 2nd - Peter Hall (F1G O/D) 6 min (+ 3 min 15 sec);
3rd - Ted Tyson (F1G O/D) 6 min (+ 2 min 16 sec); 4th - Gavin Manion (F1G O/D) 6 min (+ 2 min 7 sec);
5th - Ted Challis (F1G O/D) 5 min 43 sec; 6th - Don Thomson (F1G O/D) 5 min 32 sec;
7th - Alan Brocklehurst (F1G O/D) 5 min 28 sec; 8th - Ray Elliott (Etienvre) 4 min 37 sec;
9th - Andy Crisp (PAM) 4 min 34 sec; 10th - Martin Stagg (F1G O/D) 2 min 39 sec;
11th - Ben Hobbs (F1G O/D) 2 min 21 sec.
Old overcoming new – to quote Gavin Manion "what have we learnt in the past 60 years?" Chris's Etienvre had a quite tight spiral climb in the fly-off & certainly out performed its modern compatriots. Gavin had exhausted his quota of good fortune by doing over 9 mins on his first flight, ending up some two miles away – couldn't repeat it for the fly-off tho.
Peter flew in his usual inimitable manner, maxing put but failing to conquer Chris's vintage coupe in the fly-off.

Crookham Picture Parade


Early Customers


Martin Dilly at the ready

Allan Brocklehurst under tension

Gavin Manion sets up another max

A happy Ray Elliott

All eyes on a coupe

Cheery Chairman

Winning Dixielander

Southern Area Odiham Gala

Yet another bad weather event – cancelled at fairly short notice due to forecast heavy rain & high winds. For me, total frustration as I was on holiday just before it was due to be held but fortunately Peter Carter was able to contact all that intended to come – for which I am very grateful to him.

A subsequent conversation with the DIO indicates that the licence can be carried forward to a new date given the co-operation of RAF Odiham, who have kindly indicated they are open to

see what is possible & would look favourably on alternative dates. Peter & I have been invited to attend the next Airfield Users meeting on 1st October, where these will be discussed. Apologies to all concerned but I don't want to give up on Odiham yet.

Ramblings

Postscript to cars

Another short dialogue with Dick Twomey jarred my memory sufficiently to add a postscript to my note on cars last month. Whilst still an impoverished apprentice, we (me & my now wife) saved up £5 to buy a decrepit pre-war Austin 7 saloon, with the intention of both of us learning to drive. This at the tender age of 19 – anyway, we slaved away through the summer of 1959 restoring bits where we could & ending up removing the engine to get it re-bored & the crankshaft reground – which we did for something like £33. Everything was re-assembled over one weekend & the car was complete – except that we didn't put any oil in the engine as we had no money left. Disaster – future Father-in-law saw it during the following week & thought "that looks ok, I'll have a quick drive" The inevitable happened & it all seized up. Shortly after that, we lost heart & had it removed to the local scrap yard! We still couldn't drive. Three years later, now married we had migrated to North Yorkshire (the winter of '61/'62). A Hillman Minx was purchased for the princely sum of £10 – steering column gear change, 3 gears & front bench seat. A friend (who could drive) was roped in to provide knowledge & guidance. All went reasonably well until it was decided that I should drive it to work – work at that time was at RAF Fylingdales on the Yorkshire Moors. Unfortunately the wrong day was chosen as it proceeded to snow heavily & we had to abandon the car midway between Thornton le Dale & Fylingdales, hitching a lift to work & intending to collect the car the following day. When we got back, a snow plough had kindly pushed it into the ditch, so that was the end of that. I had to wait a further three years before acquiring an Austin Cambridge Estate, having passed my test after 6 lessons in a Ford Anglia.

Not ours but same model. Ours was rather more tatty!

Hillman Minx of long ago (again not ours)

Electric Orion – finished at last (except for the motor cowl) & now awaiting a trimming session.

That engine

Well – a little more. Gianni has been in touch with the now owner & has been told that in fact what I reported last month was incorrect – apologies! Apparently the engine was inspired by the MC72 & its AS6 engine, resulting in 4 engineering graduates at Turin University pooling their brains/resources to create both a model & the engine of the MC72 – sometime around the late '60s & early '70s. Each one had various tasks, engine, air-frame etc. It seems that quite a bit of progress was made in terms of the engine completion – hence the engine, but the model was never finished. The graduates went their own ways on completion of their courses & the engine ended up forgotten in a draw to be later discovered on the death of the owner. From there it went into an engine auction & was purchased by Gianni's friend. Has it ever been run? Don't know.

Government consultation on drones

You may have read about the Government consultation document on drones that finished during September. The BMFA encouraged responses from its members as the draft legislation is not particularly modeller friendly for anything over 250 grams, thus potentially posing problems for our RC colleagues. However, from our perspective, models of 250 grams & under are totally free of restrictions thus giving us considerable scope for flying a variety of classes without having to worry about whether we can or cannot do so. Of course, we still have to recognise that some model classes will potentially be affected by this weight rule – A2 gliders, open power models & large sport power models for example. There is an item under AOB in the AGM agenda, where members can listen to our thoughts & be free to contribute their own – see below.

2018 AGM

Continuing our tradition of holding our AGM at the Museum of Army Flying, we (your Committee) still believe it is important to retain our links with the Museum whilst retaining an optimistic view that one day we may be able to get back on to the field. We need a minimum of 10 members to attend under the rules set out in our constitution, so please make the effort if you are relatively local.

This year, we are advised by the Museum that they will be closing at the end of October for a six month program of renovation & refurbishment, aided by a Lottery Fund Grant. So for this year, we will pull forward the AGM to the 28th October & continue to hold it at the Museum.

Annual General Meeting SAM1066
Museum of Army Flying - Conference Room - Middle Wallop
October 28th 2018 at 14.00 hrs

1. Welcome to members old and new for the season 2018/19
2. Apologies for absences
3. Chairman's report
4. Secretary's report
5. Membership secretary's report
6. Treasurer's report and accounts
7. Report on the David Baker Heritage Library, Roger Newman
8. Election of Officers
    a) Chairman
    b) Secretary
    c) Treasurer
    d) Membership Secretary
    e) Committee Members
9. Annual subscriptions for 2019
10. Any other business
    a) Salisbury Plain activities
    b) Update on the status of Middle Wallop availability
    c) Review of SAM 1066 Classes relative to proposed Drone Regulation
    d) Suggestions for 2019 competition program.

Any nominations for Committee positions and details of any other business to be discussed should be received by the Chairman at least 14 days prior to the meeting.
Tony can be contacted on tonyshepherd50@hotmail.com

NOTES:
When nominating committee members the following should be taken into consideration:

SAM 1066 is an Internet based club and therefore it is essential that all of the committee members have:

- Access to internet via a broadband connection.
- The use of the necessary hardware and software to enable the club to function efficiently.

Currently the club does not own or provide such facilities necessitating that committee members provide their own. However expenses for consumables such as paper and inkjet cartridges etc. are refunded.

The following members of the present committee will be seeking re-election for 2018/2019:

- Tony Shepherd (Chairman)
- Ed Bennett (Treasurer)
- Roger Newman (Secretary)
- Mike Parker (Membership Secretary)
- John Andrews (Editor – New Clarion)

Latest from BMFA Council Meeting 8th Sept

A brief synopsis of what transpired.

2018 Membership is down by approx 1000 on 2017, resulting in loss of income of some £20K. This together with cost of increased insurance claims will lead to a proposal at the AGM to increase the annual Senior Membership rate by £4 to £38.

The membership system is going electronic i.e. on-line & membership cards "will no longer be issued but downloaded as a PDF file" – personally I find this hard to believe as it assumes that everyone has or has access to a PC & a printer?

The National Centre is currently operating at just about breakeven but with a reduced investment next year.

Charitable status is being explored for both the National Centre & BMFA.

A proposal has been tabled (presumably with the Gov.) effectively to request that model flying continues "as is" with respect to the CAA & thus avoiding onerous conditions that may be imposed by pending drone legislation.

The safety review passes to the Area Council, in anticipation of improved communication with clubs on the impact of insurance claims.

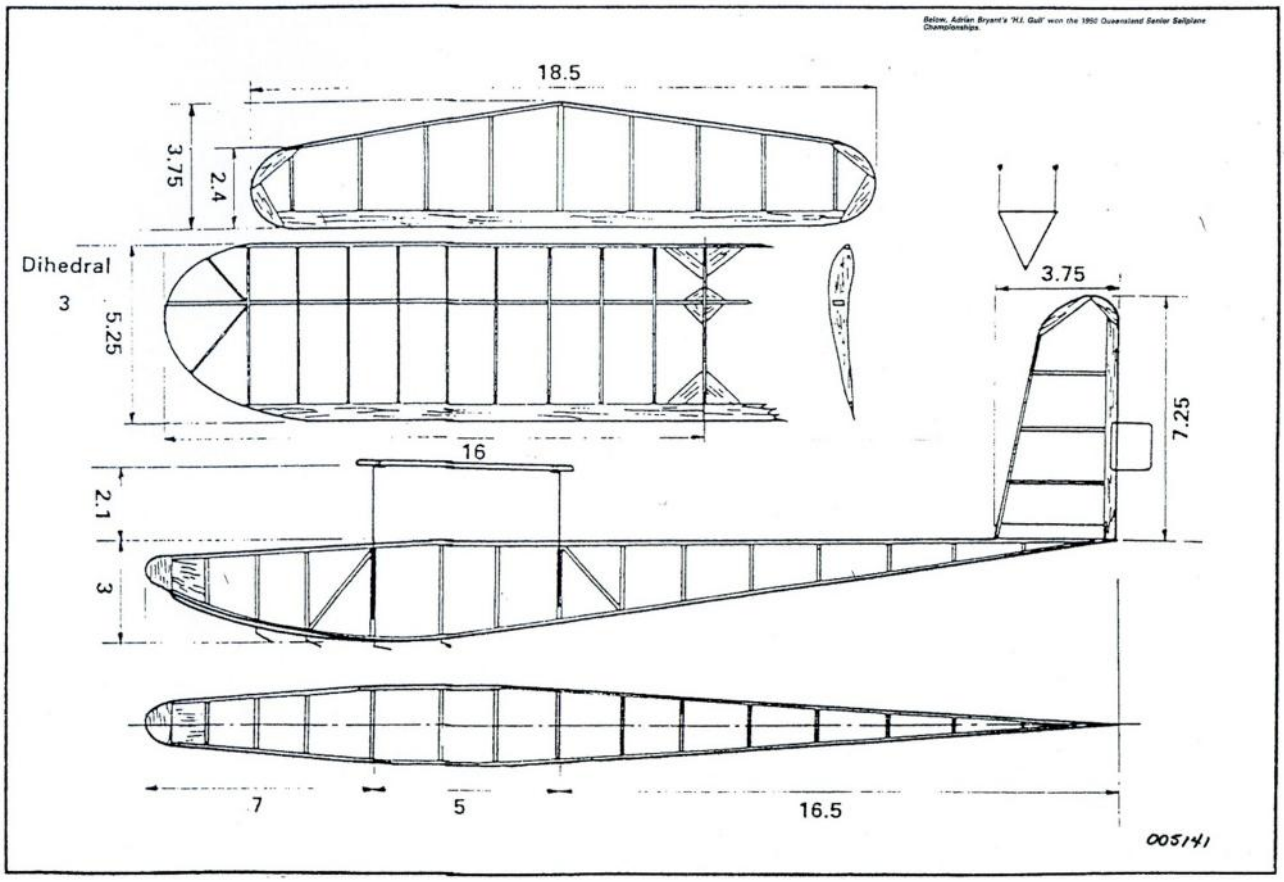
For anyone wishing to attend, the **BMFA AGM** will be held on Saturday 17th Nov, at the:
Jurys Inn Hinckley Island Hotel,
Hinckley, LE10 3JA
commencing at 1.30pm with registration from 10.00am.

Roger Newman

Plans for the Month - Roger Newman

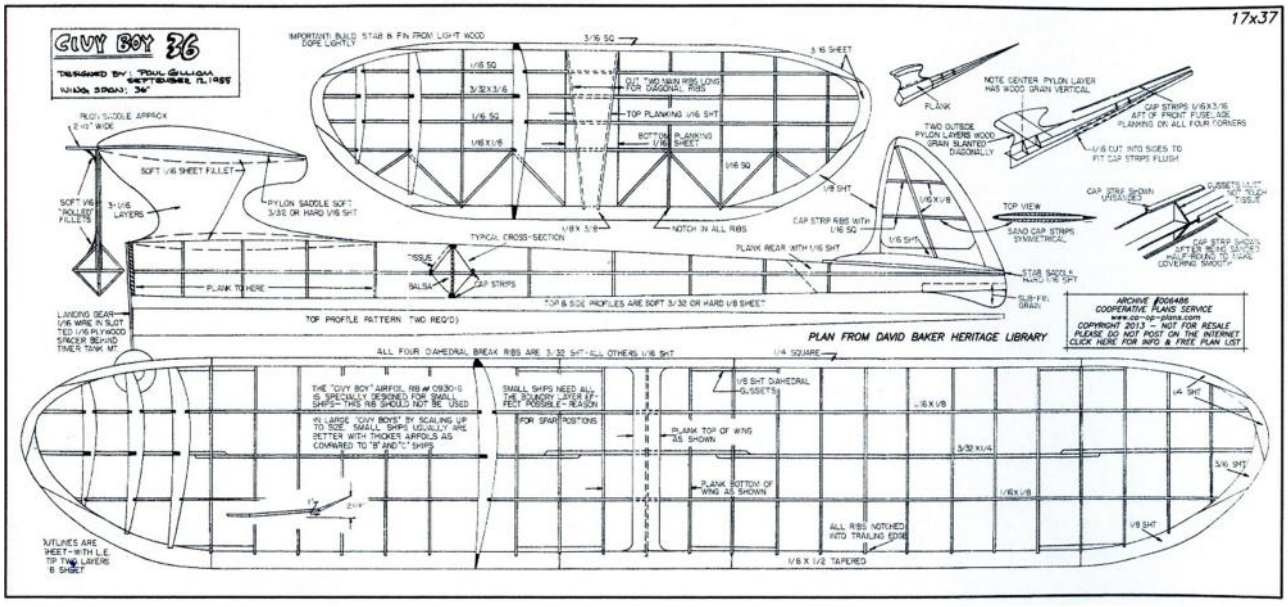
Glider:

H.I.Gull - 1950 Lightweight from Australia ideal for Hi-Start



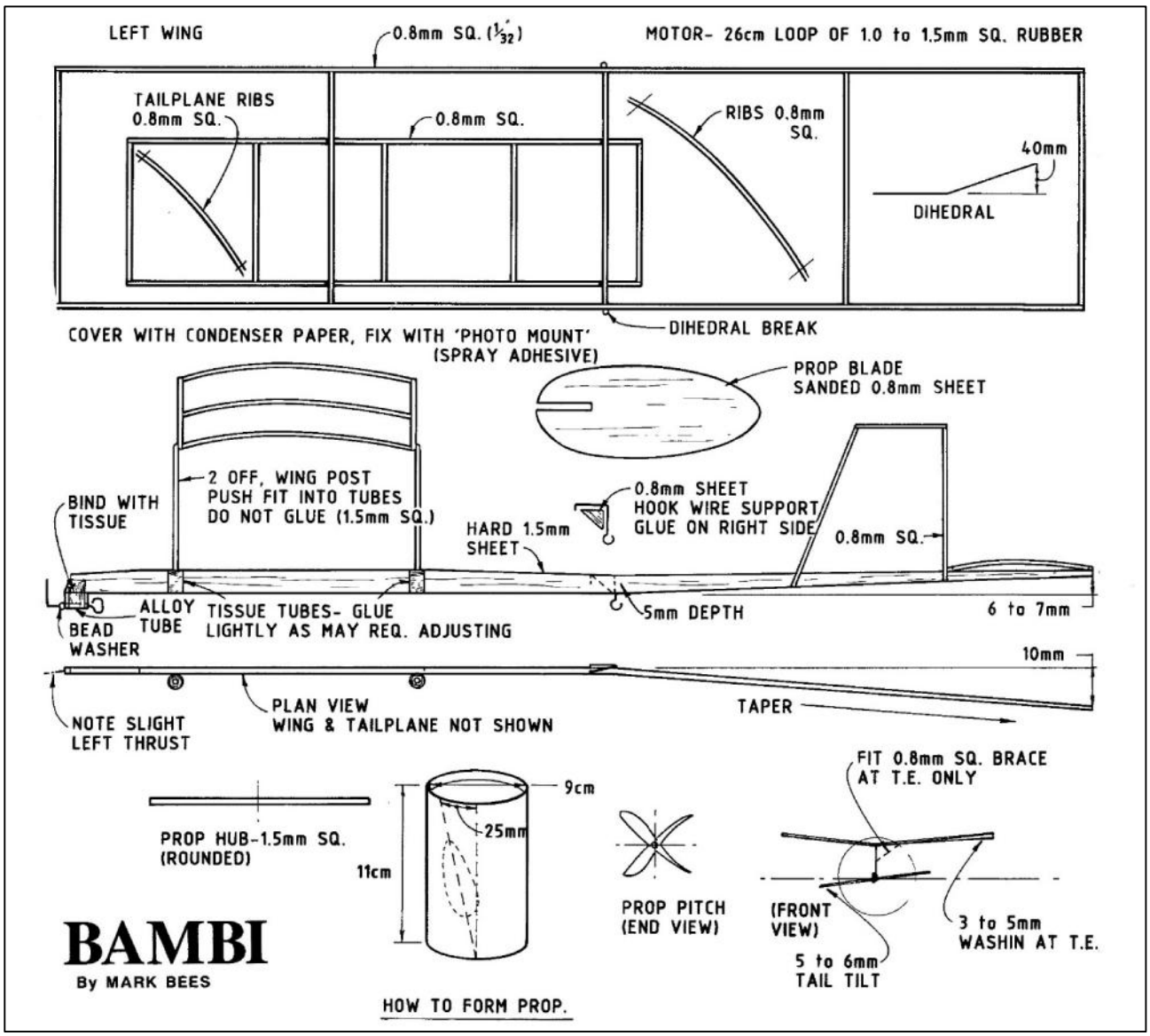
Power:

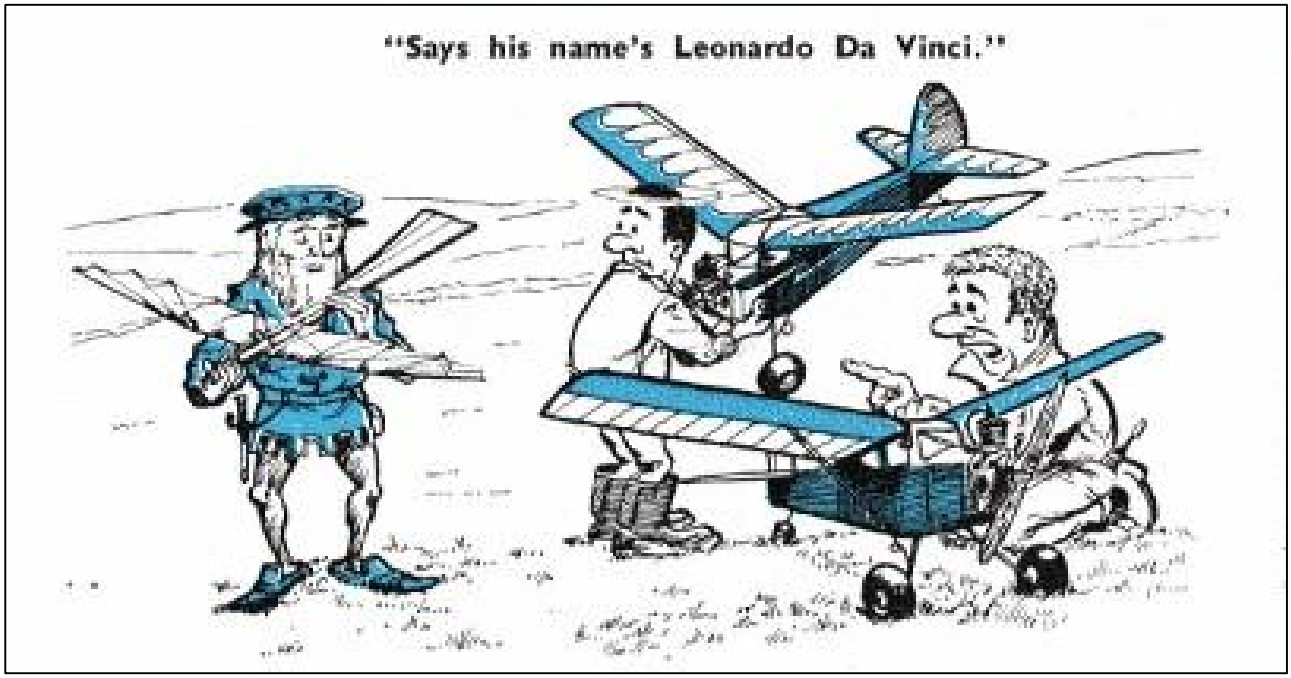
Civy Boy 36 - cut down version of renowned performer from the 1950's



Rubber:

Bambi - Start of Indoor season





The 2018 Free Flight Forum.

try it – you might like it.

The thirty-fourth BMFA Free-Flight Forum will open at 10 a.m. on Nov. 18th, the day after the AGM, at the Hinckley Island Hotel, A5 Watling Street, Hinckley, LE10 3JA. We have once more gathered a wide range of speakers covering numerous free-flight topics and all are welcome, even those not yet been bitten by the free-flight bug.

Dave Phipps - Drone Legislation and Free Flight;
Simon Dixon - Classic 1/2A Models;
Stuart Darmon -International Flying Post BoM;
Phil Ball - F1G Development;
Mike Woodhouse – The Management of Models;
Mike Smith - Trimming the Sopwith Snipe;
Stuart Lodge - A Review of Contemporary FAI Space Modelling;
Alan Brocklehurst – Flat Plates, Cambered Plates and Coupe Aerofoils;
Stuart Darmon – Developments in Carbon Wing Construction;
Mike Woodhouse – GPS versus Radio Trackers;
Gavin Manion & Stuart Darmon – Buckminster – We've Got It; How Can We Use It?

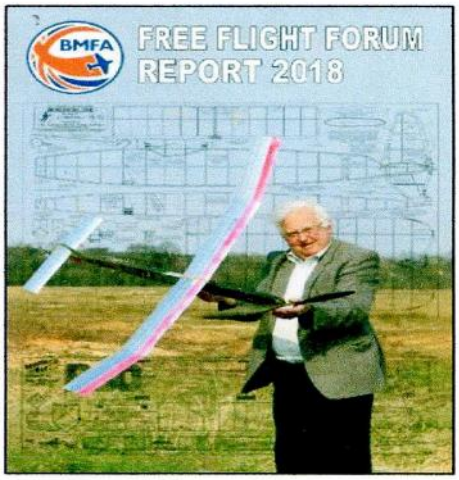
Lunch will be available and the finish will be at around 5 p.m. The cost for the session will be just £10, with proceeds going towards the expenses of the teams that represent us at World and European F/F Championships. Pre-booking will ensure that you get a seat, so send your cheque, payable to 'BMFA F/F Team Support', to the BMFA office at 31, St. Andrews Road, Leicester LE2 8RE.

The New 2018 Free Flight Forum Report

For thirty-four years these Reports have included papers covering the widest possible range of free-flight topics. Have a look at what this year's Report covers and order yours now.

F1D Prop Selection for Slanic 2017 European Championships - Tony Hebb; The Power Egg - John Emmett; Use and Abuse of GPS Model Trackers - Chris Edge; Designing for BMFA Scale Competitions - Andy Sephton; Generating Youngsters' Interest in Aeromodelling - John Jacomb; Experience with Making Carbon/Foam "Moulded" Wings - Alan Jack;A Rubber Stranding Device - Russell Peers; Small Field Flying - John Ashmole; A Last Hurrah for the Outsize Open Glider - Stuart Darmon; All in a Day's Retrieving - Mike Woolner; Why FAI? - Stuart Darmon; A Simplified Description of Electric Drives for Free Flight Models - Alan Jack

UK price is £10 including postage; to Europe it's £14 and everywhere else £16. 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).



Be the envy of your friends, get yours now.

Copies are available from :
Martin Dilly
20, Links Road,
West Wickham,
Kent,
BR4 OQW

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

Salisbury Plain Area 8. 2018.

Area 8, Salisbury Plain is available for Free Flight use every Saturday/Sunday, plus 3 Bank Holiday Mondays from January to December. This is always subject to confirmation the preceding Friday morning. An annual permit is available for sport flying/trimming, and is issued by the BMFA Office. Apply through donna@bmfa.org or by phone/letter. The conditions of use, code of conduct, and undertaking remain the same as in 2017. The annual permit fee has increased slightly to £18.

The permit is for sport flying/trimming only. Anyone entering a contest will be required to pay a 'field access fee' of £5/day, whether they have an annual permit or not. The exceptions to this are those BMFA Centralised contests, plus the Stonehenge/Equinox Cups, for which the contest entry fee, or if applicable, a BMFA Free Flight Season Ticket, also covers the 'field access fee'.

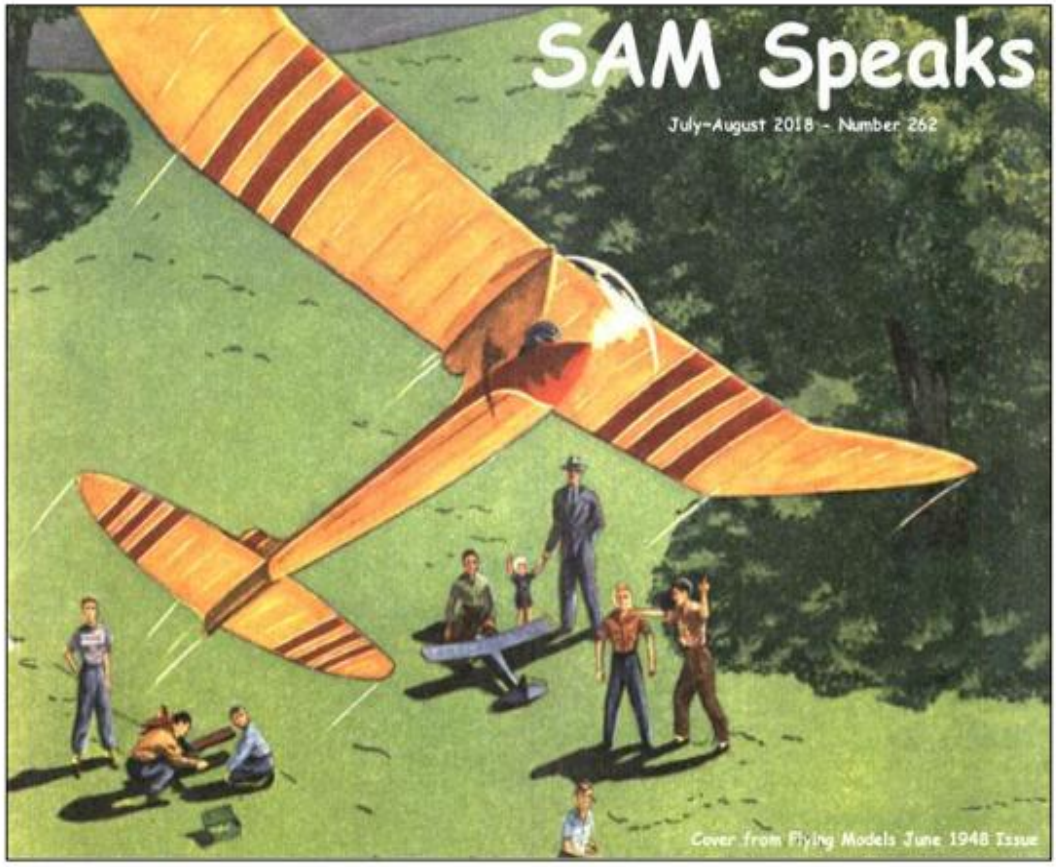
Anyone not having a permit can enter organised contests, or sports fly/trim on contest days, on payment of the appropriate fee.

This apparently cumbersome fee structure is considered to be the fairest way to raise the necessary income to cover the cost of the annual licence to use the Area.

SAM Speaks USA.

This bi monthly emagazine can be obtained from the Society of Antique Modellers. Web site http://www.antiquemodeler.org/ for the modest cost of $30 pa.

Quite a few UK people already belong, but a few more might help our Parent Body!



F1G and Vintage Coupe Contests 2017-18

Compiled by Gavin Manion

Date	Venue	F1G	Vint	Organiser	Comments
3rd Dec 2017	North Luffenham	✓*+	✓	gavin.manion84@gmail.com	Grande Coupe de Brum. F1G for A/M Trophy, Vintage for Vintage Plate
17th Dec	BMFA Buckminster	✓		mark.benns@btinternet.com	Experimental trial of this venue, check before as may be cancelled if windy
18th Feb 2018	Area Venues	✓*		BMFA areas	1st Area. F1G (Plugge)
28/29th April	Salisbury Plain	✓*		BMFA - TBC	London Area Gala, F1G on Sunday 29th
28th May	Barkston Heath	✓		BMFA	FF Nationals. F1G Mon 28th for 308 trophy
17th June	Salisbury Plain	✓	✓	SAM 1066	Combined Vintage and F1G
24th June	Area Venues	✓*		BMFA areas	5th Area
1st July	Oxford Portmeadow	✓*		laurencemarks64@googlemail.com Andy Crisp 01865 553800	F1G
15th July	Salisbury Plain		✓	SAM 1066	
18th Aug	Salisbury Plain	✓*		BMFA - TBC	Southern Gala
2nd Sept	Salisbury Plain	✓*	✓	Crookham	Crookham Gala Combined Vintage and F1G?
9th or23rd Sept	RAF Odiham	✓*		TBC	TBC
30th Sept	Salisbury Plain	✓*+	✓	Croydon	Coupe Europa. Vintage for the AAA trophy, Team F1G for the FliteHook Trophy
27th Oct	North Luffenham	✓		BMFA	Midland Area Gala

*Qualifying event Southern Coupe League. + Qualifying event Eurochallenge F1G 2017/18
All five Vintage events for SAM1066 Trophy, 1st – 3points, 2nd – 2pts, 3rd – 1pt; no points for last place!

L'AQUILONE SAM 2001

TOMBOY RALLY INTERNATIONAL POSTAL CONTEST 01/06/2018 - 31/05/2019

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 along with 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 " scaled up) 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.&. or float version;
- Lone fliers can self launch and time

Engine/motors

I.C. engines are admitted within the following limits: **36"-44" wingspan:** _Any engine 1 cc. max, 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 used the blades must be held open with a rubber band;
freely assembled admitted batteries:
-450 Man 2 cell LiPo; separated batteries pack for Rx alimentation 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 freely assembled admitted batteries: -500 Mah 3 cell LiPo separated batteries pack for Rx alimentation is allowed

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 used the blades must be held open with a rubber band;

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 2018 to Curzio Santoni (cusanton@tin.it) or to Sianf ranco 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
The 2012 was the 5th edition of SAM 2001 Tomboy Rally and 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

SAM 35
FREE FLIGHT CALENDAR, 2018

(Events are open to all insured BMFA members)
(and some invited overseas members of SAM 35.)

Postal Contests:

25th Mar to 20th May Under 25" Vintage Rubber + award for best Achilles*

16th Sept to 27th Oct Lulu and Friends - Class A Lulu, conventionally towed.
Class B Lulu Hi-Start
Class C Open Hi-Start

Area Postals

(at any Area venue on dates as listed, or at any Gala or Rally excluding the Nationals in between those dates with approval of the local CD.)

4th Mar (2nd Area) or
25th Mar (3rd Area) or
30th Mar (Northern Gala) — The "March Wynde" for Lightweight Rubber. plus award for the best "Non-Senator."

20th May (4th Area) or
24th June (5th Area) — "Summerglide" for Vintage and Classic Glider. Plus award or Best Lulu

16 Sept (7th Area) or
14th Oct (8th Area): — The "Autumn Trophy" for P30.

At the Free Flight Nationals:

27th May Sunday: Vintage Wakefield 4oz./8oz. (combined, with class awards.)
Lulu Duration

28th May Monday: 36" Hi-Start Glider and Under 25" Vintage Rubber
(with separate award for best Achilles.*)
Low wing/Biplane Cabin Precision (hand launch, classes for Rubber and IC.*)

At Old Warden:

13th May Sunday: Small Models Day:
Frog Senior Duration: Class A: High Wing, Class B: Low Wing/Biplane*
K.K.Elf Duration.

22nd July Sunday: Scale Duration Day: Concours award.
Masefield Trophy for Rubber Scale.
Earl Stahl Scale: Class A: High Wing, Class B: Low Wing/Biplane

23rd Sept Sunday: Precision Day:
Rubber Bowden: Class A: High Wing Cabin, Class B: Low Wing/Biplane Cabin

At Buckminster:

(dates of contests to be confirmed: please check SAM 35 website)
7th July Saturday: Ajax/Achilles, 36" Hi-Start Glider, Open Hi-Start*
All-In Precision, Cloud Tramp,
Hi-Start Shootout, (evening event. Time & date to be decided.)

NB * award may be dependant upon number of entries in class.
All towlines 50 metres. Maxes for Area Postals 120 sec. (20 sec attempt)
Maxes for postals 90 sec. (15 sec attempt.)
Please check for alterations/updates. Rules for most events and explanation of "Area Postals" on SAM 35 website.
Enter Postals/Area Postals via John Ashmole, 164 High Road, Weston Spalding Lincs PE12 6JU. £3 per class.
Or £3.50 by PayPal to editor@peterboroughmfc.org
Extra categories under consideration for future events: Classic A/1 Glider, Vintage Coup d'Hiver.
NB: Further events may be added. Visit SAM 35 website and check FF Updates.

La Grande Coupe de Birmingham (part cinq)

Sunday December 2nd 2018

at MOD North Luffenham
starting at 10:00

Qualifying event for the "Euro Challenge F1G" 2018/2019 (provisional)

F1G for the Aeromodeller Trophy

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

Top placed "Classic" coupe (1/1/60 – 31/12/69) will be awarded a bottle and a GPB Cartoon print.

<>

Pre '58 Vintage Coupe

for the Vintage Plate
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

Fly-offs (Not DT!) and maxes as determined by conditions on the day
Prize giving and hot drinks/nibbles in the Golf Club on the flying site
(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 stuartdarmonf1a@yahoo.com - tel 01858 882057

R/C Events at Wallop

Aug 4th/5th - Sep 8th/9th - Oct 6th/7th

We will be sharing the airfield with other disciplines

Radio Frequency will be 2.4 gig only , no exceptions

The event is a SAM 35 sponsored,
so look towards R/C Vintage type aircraft
Plus C/L, with several circles

Entry to airfield is £5, (which goes direct to the museum)
Plus, for all flyers and helpers, SAM 35 fee of £5 per day

Event co-ordinator, Bill Longley
Tel - 01258 488833 email - tasuma@btconnect.com

DIG OUT THAT DIXIELANDER & PUT A SIMPLE RADIO IN IT

Impington Village College - Cambridge

Indoor flying on 4th November 2018 9 am to 5 pm

We will be using the large (100 x 50 x 28 ft) sports hall at the College. The only restrictions are, no radio models in the main hall and no internal combustion engines, jets or catapults anywhere.
Also Round the Pole (4.5 metre lines) and small electric helicopter and fixed wing flying (X twin or Vapour type) in a separate hall (radio or infra-red).

SAMS MODELS will be in attendance to supply all your needs on the day.

Competitions:

There will be two, low key free flight (and one car!) competitions:

- **A Peanut** event using a simplification of the usual international rules,
  Maximum size of model either 13" span or 9" length excluding propeller
  A GA drawing, photograph or any other proof that the actual aircraft existed.
  A single judge for all entrants to award up to 30 scale points and up to 90 "difficulty bonus points", the purpose being to encourage those flying models of difficult and adventurous prototypes
  Any number of flights with a 10 second bonus for ROG.
  Total of best two flights plus scale and bonus points to decide final score
- The usual duration event for **Bostonian** models. There was a healthy increase in Bostonian numbers at our last two meetings so let's have even more this time. Any design to the Bostonian formula (If you are unclear about the Bostonian formula rules ring or email the contact below). Minimum airframe weight 14 gm and all flights to be ROG. Total score from best 3 flights
- For both competitions get your flights timed and reported to control. As many attempts as you like. Awards in each event for overall winner and best junior (under 18). Bostonians to be weighed. No builder of the model requirement in any competition. Build one for your wife (or husband), child or grandchild who just has to wind and launch
- We will also feature the **Racing Car event** as usual. This is a fun event for rubber powered cars. We vary the distance to be covered, number of heats etc depending on the entrants on the day! Ring or email below for any further information and for plans of suitable vehicles.

Exhibition

We would like models of all types in the exhibition and models other than aeroplanes are more than welcome. Bring whatever you like but please bring something (don't be shy) as this is a feature much enjoyed by our visitors - both flyers and spectators. It is also a good way of showing our kind of modelling to the public.

Seminar

The seminar will be given by Peter Smart and his subject will be his experience of eccentric indoor scale models and solving the problems they present!

RTP and Small Radio

David and Will Beavor will be bringing their equipment, using 4605 connectors at the model, available from The RTP Hut (www.thertphut.co.uk). .As usual RTP will share the second hall with small R/C helicopters and fixed wing models.

Refreshments

Hot drinks and snacks will be available from the Sports Centre

Web Site

Have a look at our website at **www.impmac.co.uk** for more details of club activities

Cost of admission: Indoor Flyers - **Adults £6.00,** under 18s **£1.50**, Spectators and Chatters - **£3.00**

***Directions to Impington Village College*: Post code CB24 9LX**

Leave A14 at the first junction East of M11 J14, signed Cambridge B1049. At the roundabout take B1049 to North signed Cottenham, Histon. In ¾ km at 2nd lights turn right into New Road. Pass hospital entrance on right. Village College is next on right (two entrances, 1/3 and 2/3 km). Entrance to be used and car park will be signed.

Contact:- Chris Strachan Tel no: 01223 860498 Email: chris.strachan@btinternet.com

INDOOR F/F MEETINGS

Waltham Chase Aeromodellers, in association with South Hants Indoor Flyers, are pleased to announce the continuation of the Indoor F/F Meetings held at the Main Hall at:

Wickham Community Centre, Mill Lane, Wickham, Hants PO17 5AL

These meetings will be held on the following dates:
Meetings will run from 7.00 p.m. to 10.00 p.m. on Tuesdays in the Main Hall

2018

2nd Oct - 6th Nov - 4th Dec

2019

8th Jan - 5th Feb - 5th Mar - 2nd Apl
7th May - 4th Jun - 2nd Jul

The hall is particularly suitable for indoor free flight models of all types, with a ceiling free of obstructions.
Tables and chairs will be available in the hall, the organisers are always grateful for assistance with moving furniture. A hot drinks machine is available on site.

Admission to the meetings will be **£5** for Senior fliers, **£1** for Junior fliers and **£1** for spectators, whilst accompanied children will be admitted free.

Fliers will be required to show proof of insurance.

No R/C models may be flown at these events.

Flitehook, who carry a large stock of indoor models and accessories, will attend many of the meetings.

Waltham Chase Aeromodellers welcome all indoor F/F fliers to these events.

For further details please contact:

Alan Wallington, "Wrenbeck", Bull Lane, Waltham Chase, Southampton, Hants.
(Tel. 01489 895157) (e-mail: alan@wcaero.co.uk)

or see our web site: www.wcaero.co.uk

FLITEHOOK

Indoor Free Flight Meetings

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

Café on Site

Flyers £8
Juniors & Spectators Free
Flyers must be BMFA Members

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

2018

9th Sep - 14th Oct - 11th Nov - 9th Dec - 30th Dec

2019

13thJan - 10th Feb - 10th Mar - 14th Apr

Contact: Tel. 02380 861541 E-mail flitehook@talktalk.net

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

2018

May 5th - Sep 22nd - Oct 20th – Nov 17th – Dec 15th

Admission - Flyers £6 - 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 cosh43@hotmail.com

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
2018 dates

Sep 8th - Oct 6th - Nov 3rd - Dec 1st

Contact:- Allan Price: Tel: 01922 701530
e-mail: montrose32@btinternet.com

BMFA South West Area

Indoor Flying

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

Flying from 1200hrs to 1600hrs on Sundays

2018

23rd Sept. - 21st Oct. - 18th Nov. - 16th Dec.

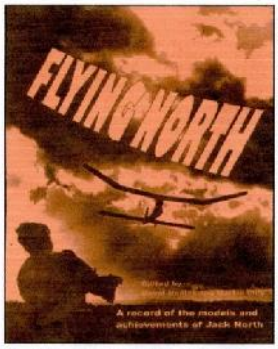
2019

13th Jan. - 10th Feb. - 17th March

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

Admission: - Flyers £10 - Spectators £1

Phone: David Powis on 01579 362951
Email: dave_powis@hotmail.com

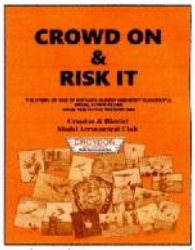


Flying North is a 163 page book covering the model flying career of Jack North, and including 23 previously un-published plans of his aircraft. Access to Jack's drawings and notes dating back to 1938 means that there are a number of designs in the book likely to be tempting to the nostalgia-minded.

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

CROWD ON & RISK IT



This is the story of one of Britain's oldest and most successful model flying clubs, Croydon & District MAC, from 1936 onwards. The club contributed much to aviation, both model and full-size, and the late Keith Miller compiled its history till around 1960. Now, this up-dated 73 page version of the club's history, copiously illustrated with many previously unpublished photos, takes the Croydon saga up to the present. Contributions by past and present members vividly capture the atmosphere of the heyday of free-flight, with almost weekly contests at Chobham or Bassingbourn.

53 designs by Croydon members have been published in the model press and 24 of its members have represented Great Britain in World and European Championship teams. Several have gone on to notable careers in aerospace. Crowd On & Risk It covers all this and more.

Just £8 by PayPal or cheque.

Contact Martin Dilly (martindilly20@gmail.com), phone/fax 020 8777 5533 or write to 20, Links Road, West Wickham, Kent BR4 0QW for your copy.

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

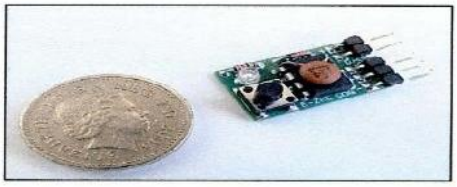
- motor run duration:-adjustable 1 to 30 seconds, set in 1 second increments
- d/t duration:-adjustable 10 seconds to 5 minutes, set in 10 second increments
- motor power:-adjustable at all times from zero to full throttle (by potentiometer)
- push button immediately stops the motor at any point during 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

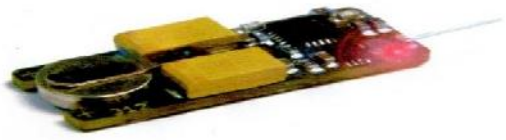
E-Zee Timers have been designed and are manufactured in the UK
Exclusively available from

Dens Model Supplies

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

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

Provisional Events Calendar 2018

With competitions for Vintage and/or Classic models

February 18th	Sunday	BMFA 1st Area Competitions
March 4th	Sunday	BMFA 2nd Area Competitions
March 25th	Sunday	BMFA 3rd Area Competitions
March 31st	Saturday	Northern Gala, Barkston
April 2nd	Monday	~~**SAM1066 Meeting, Salisbury Plain (Croydon Wakefield Day)**~~ **Cancelled**
April 28/29th	Sat/Sunday	London Gala & Space, Salisbury Plain
May 20th	Sunday	BMFA 4th Area Competitions
May 26th	Saturday	BMFA Free-flight Nats, Barkston
May 27th	Sunday	BMFA Free-flight Nats, Barkston
May 28th	Monday	BMFA Free-flight Nats, Barkston
June 17th	Sunday	**SAM1066 Meeting, Salisbury Plain**
June 24th	Sunday	BMFA 5th Area Competitions
July 8th	Sunday	BMFA 6th Area Competitions
July 15th	Sunday	**SAM1066 Meeting, Salisbury Plain**
July 21st/22nd	Saturday/Sunday	East Anglian Gala, Sculthorpe
July 28th	Saturday	~~**SAM1066 Meeting, Salisbury Plain (Croydon Wakefield Day)**~~ **Cancelled**
August 4th	**Saturday**	Timperley Gala, North Luffenham
August 18th	**Saturday**	Southern Gala, Salisbury Plain
September 2nd	Sunday	Crookham Gala, Salisbury Plain
September 16th	Sunday	BMFA 7th Area Competitions
September 23rd	Sunday	Southern Area Gala, Odiham
September 30th	Sunday	**SAM1066 Meeting**, Salisbury Plain (Croydon Coupe & Wakefield Day)
October 14th	Sunday	BMFA 8th Area Competitions
October 27th	Saturday	Midland Gala, Barkston
December 2nd	Sunday	Grande Coupe de Brum, Luffenham

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 Salisbury Plain 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
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/pictures 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*