



Biggles News - 2014

Contributions by:-

Roger Heap

David Brawn

John Cooper

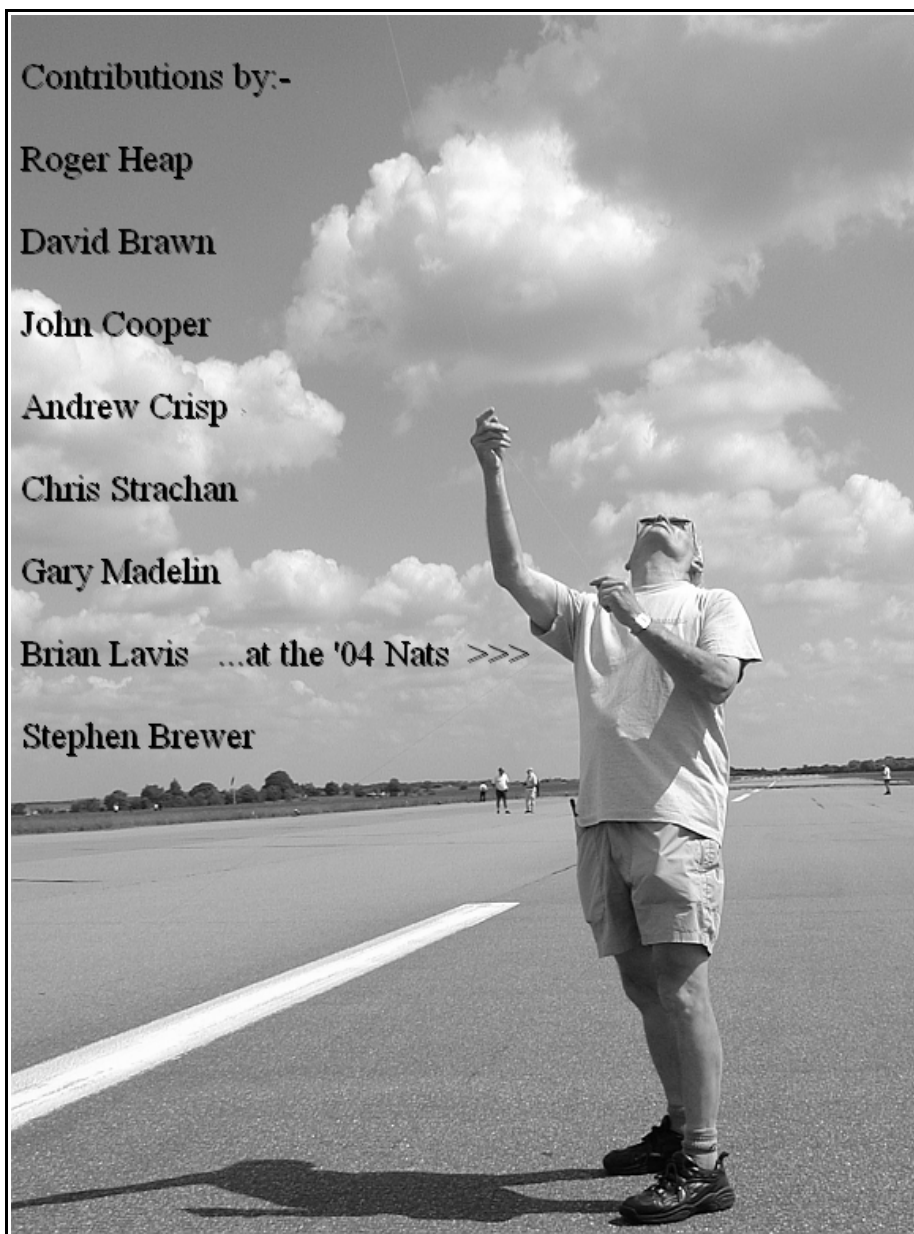
Andrew Crisp

Chris Strachan

Gary Madelin

Brian Lavis ...at the '04 Nats >>>

Stephen Brewer





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Roger Heap writes... Many thanks to everyone who made the newsletter possible.

The Biggles League

concluded with a close finish in glider where Gary Madelin won the trophy for the first time, just two points ahead of Chris Parry. In power, Mick Lester dominated, and with almost maximum points from five wins, keeps hold of the trophy for the fourth year. The Tynemouth Mini Rally was cancelled but the Brumfly made a welcome return. Area Events were included in the League for the first time and boosted entries a little. The League keeps the same rules for 2014, but due to BMFA competition rule changes, 1/2A power is now excluded. The results can not tell of mis-set d/t's, hawthorn trees, weather - good and bad, - and all the things that make this hobby such a delight! Let's hope 2014 is a fun one too.

F1H											F1J - 1/2A											
Position / Flyer	Biggles points	29 Mar Northern Gala	14 Apr 3rd Area	27-28 Apr London Gala	25-27 May "BMFA" Nationals	2 Jun "Oxford" Gala	7 July BRUMFLY	21 Jul Oulham	28 Jul Tynemouth Mini Rally	11 Aug 6th Area	7 Sept "Southern" Gala	20 Oct Midland Gala	Position / Flyer	Biggles points	27-28 Apr London\$ Gala\$	25-27 May BMFA Nationals\$	16 Jun 4th Area	7 July BRUMFLY	7 Sept "Southern" Gala\$	15th Sept 7th Area	20 Oct EMidland\$ Gala\$	
1	G Madelin	36	6	6	6	6	9	-	[3]	9		1	M Lester	42	[2]	9	9	9	6	9		
2	C Parry	34	[3]	[3]	9	6	[3]	[2]	4	-	9	[2]	2	P Watson	24	4	6	4	6	[3]	4	
3	D Cox	24	9					1	-	5	9		3	B Aslett	19	6	3			2	6	2
=3	B Lais	24		3	[2]	9	3	-	-	3	6		4	S Dixon	17	3	4			4	6	
5	R Heap	18	1	4		4	4	-	5	4			5	C Foster	12		6	2		4		
6	S Brewer	13	4		1	4			-	2	2		6	F Rushby	7		3	4				
7	A Gibbs	10			9				-	1			7	D Ginns	5		1	3				1
8	J Williams	9					6	3	-				=7	M Willis	5	2	2		1			
9	P Tribe	7		2		1			-	4			9	F Chilton	3	1					2	
=9	J Cooper	7			4				-		3		=9	S White	3						3	
11	A Crisp	6	6						-				=9	T Payne	3							3
=11	A Cameron	6					6	-					12	A Peters	1			1				
13	T White	4	4						-				=12	A Chilton	1						1	
14	M Gibbs	3			3				-													
15	D Etherton	2	2						-													
=15	J Northrop	2	2						-													
=15	G Manion	2				2			-													
=15	J Oulds	2					2		-													
=15	J Hook	2		1					-													
20	A Kelly	1	1						-													
=20	G Oulds	1							-	1												
- Tynemouth Mini Rally CANCELLED - Venues eligible for F1H Euro Challenge points marked *											Venues eligible for F1J Euro Challenge points marked \$.											
Church Fenon or Barkston Heath											\$Salisbury Plain\$											
Area Venues											\$Barkston Heath\$											
Salisbury Plain											Area Venues											
"Barkston Heath"											Barkston Heath											
Port Meadow - Oxford											\$Salisbury Plain\$ (Saturday)											
Barkston Heath											North Luffenham											
R.A.F. Odiham																						
Newcastle Town Moor																						
Area Venues																						

A Yagi story...

Sharing my Biotrack with Sam wasn't an ideal situation and a yagi antenna, to connect to my hand-held Maycom, seemed like a good idea. An old copy of 'The American Radio Relay League Antenna Book', (which cost two dollars in 1964!) was full of sound information, but mentioned that experiments would be required. Even with good freeware design programs, experiments were still needed!

Software...

The Yagi-Uda program was easy to use. The required (single) frequency is input and generates dimensions. That's all it does! An antenna made to suggested dimensions worked fine, but was abandoned after tests, when I found something better! Another program called EZNEC, is of professional quality, even in 'demo' version. I'd not pick it by choice, it was far too complex! The best, (for me,) was Yagicad. It has many input and output options, results can be saved, recalled, printed, and various charts can be generated. I played around with this program a lot. My final design is just three elements and is tuned to work best at Biotrack frequencies.

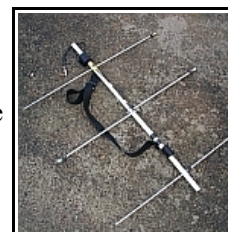


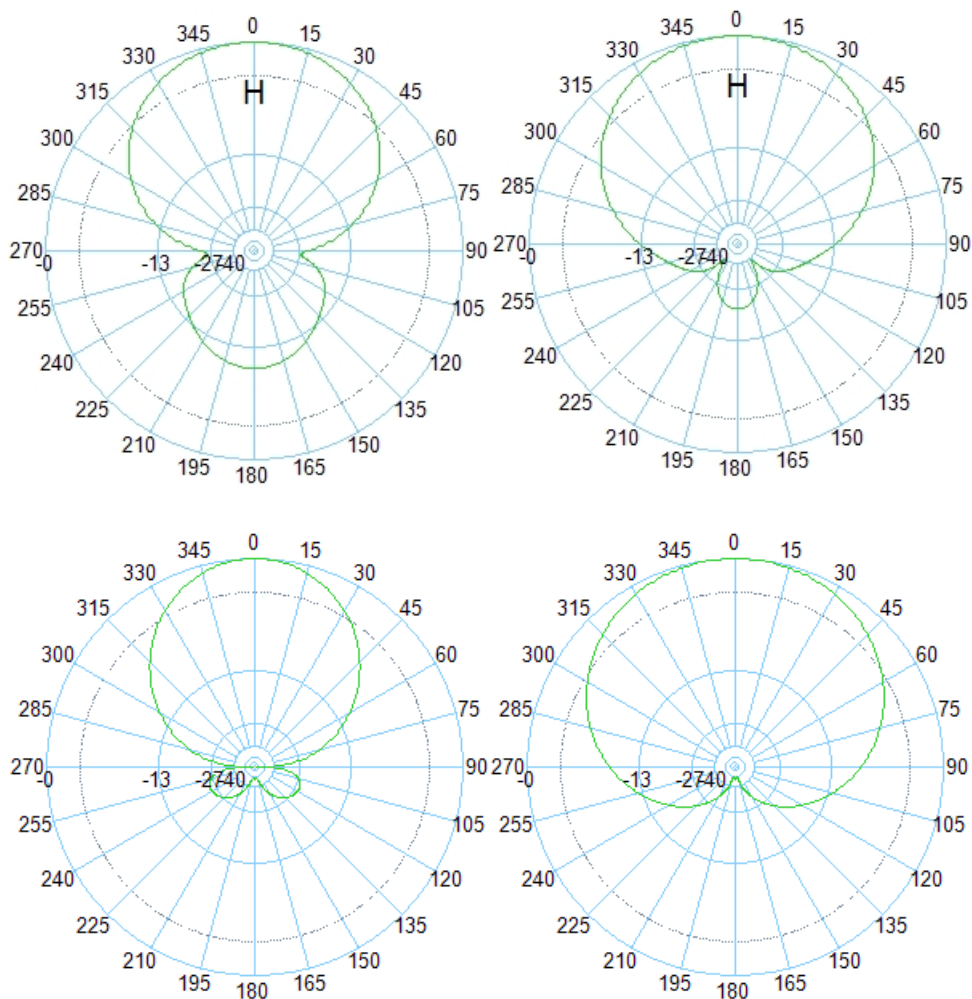
Chart analysis...

Charts below, have a green line that only indicates relative signal strength. As you might expect, signal is best pointing the antenna at the transmitter, - the green line is at the outside edge of the chart, - showing maximum sensitivity. As the antenna is pointed away, the green line moves in towards the centre, indicating that the signal is reducing. The first two charts have patterns that are not good for tracking, - their 'tails' could be confusing! The last two charts are for my own design, the left one shows horizontal orientation, the right side vertical. Both show 'dimples' at the back, where signal is strongly rejected through about a 10 degree segment. This is useful for tracking at close range. Horizontal orientation has two more 'dimples', at 90 and 270 degrees, where no signal is detected at the side.





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Field tests...

Without special test equipment, I had to confirm software predictions with field tests. I pinned the transmitter to my shed and went off to a distant spot to compare the new yagi/Maycom and trusty Biotrack for range. Thankfully, all was well! Weak signal was received between narrow limits that broadened as signal strength improved. Closer, and with strong signal, - and accompanied by strange looks from the local dog walkers, - I could reverse the antenna and continue tracking by the lack of signal in the 'dimples'. The Yagi-Uda antenna couldn't do this, confirming my chart predictions (*not shown*). Eventually, when really strong signals were overwhelming my receiver, I mis-tuned the receiver a little and could easily track down to less than 30yds. *Attenuation*, a feature built into some receivers, to block or dissipate signal, might have been useful, - and though I did tests with a simple in-line attenuator, - further work needs to be done. (*Note the software author's notes, later on.*)

*Using the familiar, uncomplicated, 'stubby' antenna with body shielding technique, is already a thoroughly tested and successful search method at close range and is probably more convenient!

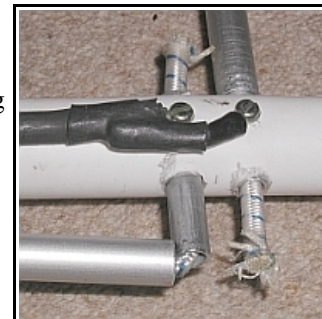
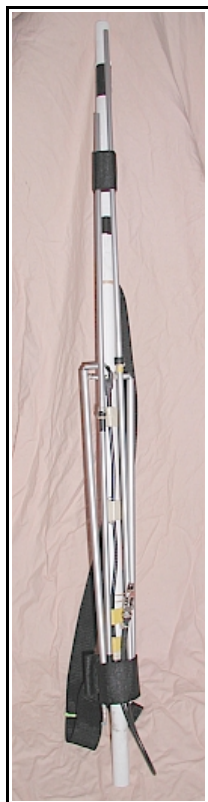




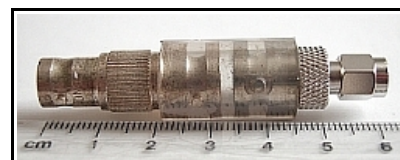
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Antenna construction and dimensions...

My antenna was made from 22mm plastic pipe, using two 8mm diameter aluminium tubes and one of 10mm. Coaxial cable and connectors came from Maplin. I already had elastic cord, self-tapping screws, Velcro, electrical tape, a luggage strap, string, etc. A series of 8mm holes were drilled in a 1 metre length of plastic pipe, at +200mm, +513mm, +527mm, and 730mm from one end. This gave me a 200mm hand grip at the reflector end. Element lengths were - reflector 880mm and director 750mm, both in 8mm tube. The active elements were two 10mm tubes, approx. 415mm long that were slipped over 50mm 8mm stubs. (Active element lengths were measured from the locating screws out to the end.) Care was taken to get the elements square to the boom and lined up with each other. Self-tapping screws lock the stubs to the boom, fix the coaxial connections, and secure the inner ends of the elastic cords. The cords stretch and have a knot made in the outer end! The one piece director and reflector slip right through the boom, friction holding them in place (so far!). I lashed a strap to the boom to carry the antenna and used Velcro to fix the elements against the boom for transport.



Attenuator... [...not recommended - yet, - maybe never!] (To fit my Maycom,) I used a BNC F/BNC F coupler and a BNC F socket/SMA plug, almost joined together in a short piece of 3/8th" bore plastic tube. I slipped a 1mm plastic disk between the couplers to maintain an accurate gap.



Additional notes...

Aluminium tube quality can be variable, but Wickes's was ok.

Before needing to find a model in a 'lost' situation, it is important to learn how the antenna works with the receiver. Familiarity will save lots of time, effort, and frustration in a real situation. I have made no notes about using squelch control, - I tend not to use it, but that's just me! There is nothing to be gained by not deploying all three elements. The yagi is quite sensitive to weak signal, - and unfortunately, will pick up reflections from fences, gates, vehicles, electric cables and buildings. I

asked about electrical matching and add some interesting notes from the Yagicad author on antenna characteristics...

"There is an inherent loss in a miss-match but usually for direction finding work that is not a problem, quite the opposite in fact, getting a direction when very close to the transmitter is the more common problem with the signal often getting directly into the receiver rather than via the antenna. A miss-match can make it easier for the coax connecting the antenna to the receiver to pick-up the signal, i.e. Act like an antenna itself and distort the directional pattern of the yagi. But again this is really only a problem under very strong signal cases/very close in, and at least in your case no one has deliberately or maliciously hidden the transmitter from you.

The only remaining problem is not so much about miss-match as it is about balance, and how you go about connecting the nominally electrically balanced antenna to the inherently unbalanced transmission line to the receiver. Again this is probably not a major concern in your case, but if it was, you would see it as the antenna systematically pointing to one side or the other of the target. A small amount of imbalance would lead to this offset being small, a bad imbalance may lead to errors of some 30-40 degrees. Worst case this error would depend on where you were holding the antenna. Anyway the simplest way for you to deal with this, if it is a problem, would be to ensure the length of coax. between your antenna and the receiver is as short as possible, and/or alternately slip a couple of ferrite tubes (similar to the ferrite clip on sleeves used for interference suppression) over the coax as close as possible to where it joins the driven element and this should minimise the effects."

End bit...

My new yagi antenna is quite versatile - it's already been used to prod a model out of the top of a small blackthorn! (Not the hawthorns mentioned in other notes!) The yagi picks up signal far better than a simple dipole and this one can track down to within a few yards of the transmitter. It is fairly portable, light, cheap and quite robust, though I can't see a way to prevent the coax from flexing and eventually failing. Inevitable comparisons are to be made between the excellent Biotrack system and my home-made yagi/Maycom and they both perform well. The Biotrack receiver is very sensitive, has useful controls and a good meter, but I suspect my home-made antenna would have greater range if used with a better receiver than my Maycom.

Roger Heap

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The Model Martyn Left Behind ...by David Brawn

It must have been a decade ago on a bright summer's morning that I decided to stroll down to Maplins Northampton store in St James. Rounding the end of an aisle I was met by a "Broone" as I came face to face with Martyn Cowley, who I thought was in California. Martyn was visiting his parents so we met up for lunch the next day at the Fox & Hounds in Harlestone village.

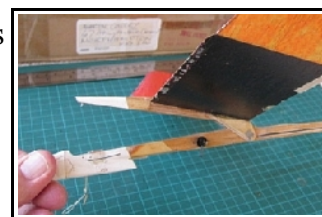


It was a long lunch as the three of us (Ros, myself and Martyn) had a lot of catching up to do. A couple of hours later we are back in the car park where Martyn picks a large postal packet out of his car – "This is what you should get into." - he says opening the packet to bring out a CLG and clips the wing into place. "Every flight is like your best ever chuck glider flight, sixty to ninety seconds every time." Martyn

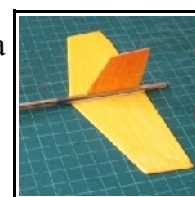


went on to explain how his next CLG would be a tubular fuselage with tracker aerial inside for easier Lost Hills retrieving.

Fast forward a decade to 2013 and our sad loss of Martyn to heart attack and I am helping Martyn's parents, or trying to advise what might be done with the shed full of aeromodelling gear at his parents house. On my second visit William takes me up into their large loft where there is another mass of Martyn's gear. On top of a large turquoise model box sits a large postal packet, the same one Martyn showed us in the Fox & Hounds car park; inside is that same model, apparently untouched apart from Martyn adding some chrome tape to the wing LE and tail boom. I asked William and he agreed to me taking the packet with model as a keep sake, so here it is and while a decade might have passed it still looks as if it should be competitive against modern competition.



'TMMLB' exhibits some neat design touches within its apparently simple design. The removable wing pivots on a 3mm alli tube while at its front end it keyed with a wire spigot into a tube. Tip wing DT is powered by a 30swg wire torsion spring to give positive DT action. Tip taper on the wing actually starts before the dihedral break. Combining Martyn's legendary attention to detail and building skill has produced a CLG model that I think will live up to that '60-90 seconds every flight' statement. After Martyn got back to California he emailed me two simple CLG designs which he reckoned were good for 40-60 seconds flights when trimmed; 'Micro Cat' and 'Scout' were included in Biggles News 2010 – note the 2002 date on the plan.



These simple models were designed for 'Fast' cyno assembly. Instead of breaking the wing and rejoining the tips for the dihedral, Martyn's advice is to score across the dihedral joint using a ruler and ball point pen, then bend the inner panel and tip to the dihedral angle and pin down, complete the joint by running cyno along the bend; it works and is very quick.

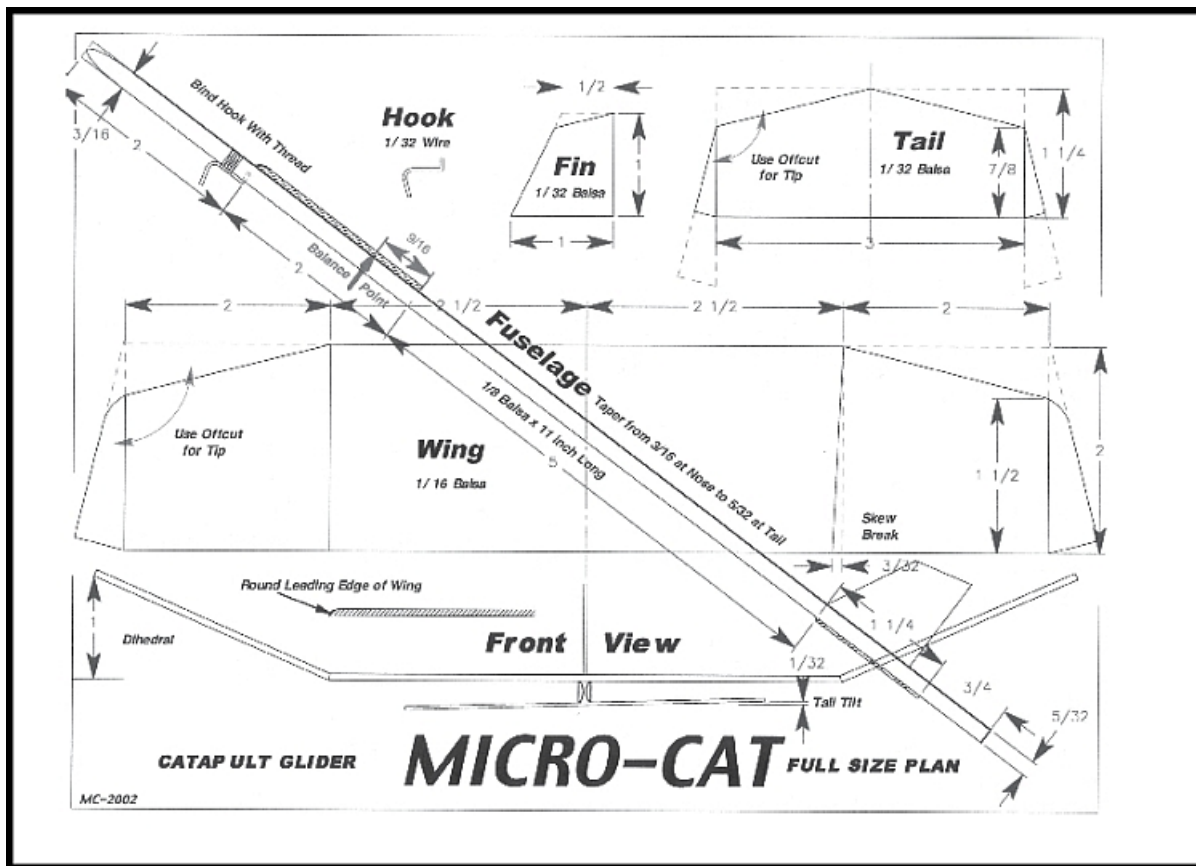
...David 'Broone' Brawn

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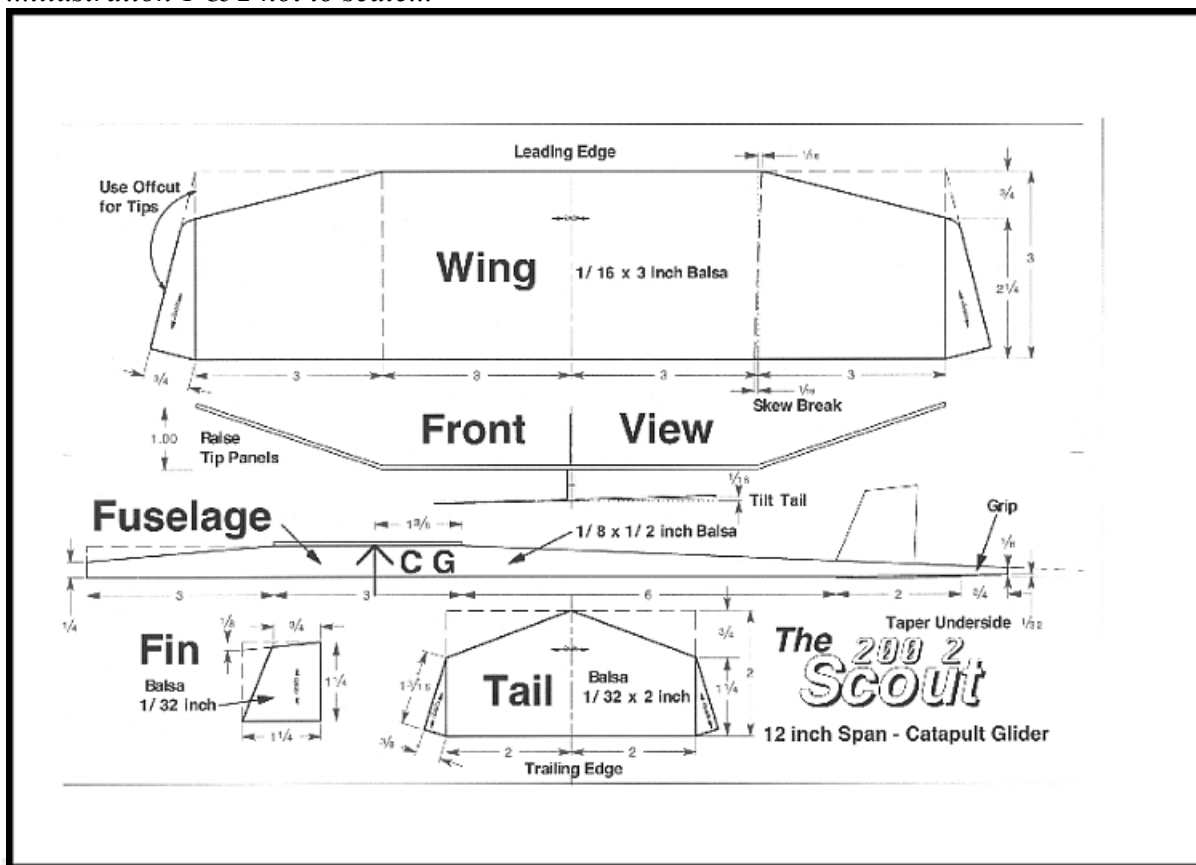




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...illustration 1 & 2 not to scale...





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Newsletter 2014 ...by John Cooper

Low Drag Aerofoil (LDA) model set-up.

Attempts over the last 2+ years to trim LDA gliders have forced me to re-consider how I set up my gliders and has made me realise that I'd 'forgotten' many of the basic rules that we followed when I started A2 flying (the early 70's). As many current glider flyers will have grown up without needing to know these rules (modern circle tow systems remove/hide the problems) I thought it might be worth reviewing what happens with glider wings.

All comments below assume right hand circling.

My early A2 flying was with straight tow models. The norm was to set them up with flat centre panels (or VERY minor wash-in on the RHS panel), about 1/8" washout on the RHS tip and 3/16 to 1/4" washout on the LHS tip. Setting the model up with a straight rudder for tow invariably resulted in a model that hung to the right on tow. The 'solution' was to have slight left rudder for tow. A good starting point for setting up a new model was to have about 5degrees left rudder for tow and 5degrees right rudder for glide. Conveniently these settings meant that the rear of the rudder (when viewed from above) roughly lined up with the edge of the then standard narrow Ronytube rod.

This trim worked well in calmish weather, but could give problems in wind, with the model veering to the right. I seem to remember many debates as to the relative effects of lift and drag with varying speed when using this set-up.

Things moved on until nearly all my models had wing wigglers by about 2004 (firstly mechanical, then electronic). My default setting was to have the 2 wings virtually level for straight tow and with as much RH wash-in as the system would allow for circle tow. The glide setting would be very similar to straight tow for dead air models, but with a minor amount of RHS wash-in for thermal models (to get the model to stall into its circle when disturbed). All 3 settings (straight, circle and glide) could be adjusted independently to give the optimum trim.

Having no differential wing incidence for straight tow meant that the rudder could be set exactly straight for tow – this eliminated (OK – reduced) the problems of towing in wind.

The downside of this trim with a modern bunting model is that you need to get the model pointing straight towards you as you begin the run-up i.e. if it's pointing to the left or right as you start your run-up, the model continues off to that side and usually over bunts, with a disastrous height loss. This isn't usually a problem in the UK, as the wind speed is normally enough that you can handle the model carefully as it comes around the circle, get it lined up towards you and the wind then helps accelerate it. Occasional problems do occur when towing in very thermally conditions, but the thermal usually hides the problem quite well!

With LDAs however, you need a far higher launch speed and some consistency over it. My LDAs were initially set-up as above i.e. both wings flat on tow and glide and a straight rudder for tow. Having now spent many hours trimming 3 different LDA gliders with this set-up, I'm now confident that I can get it right when the wind is in the 5 to 10mph range. However, trying to fly them in flat calm with this set-up is a disaster, particularly when on a rough surface (that prevents running) such as Salisbury Plain or the ploughed fields at Poitou. Despite setting the models up with





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as much up elevator as possible, the tow hook as far back as possible and my best athletic sprint (OK, perhaps not so athletic!) I've simply not found it possible to launch hard or fast enough to get a decent launch. What usually happens is that the model runs out of speed just after it comes off the line and does a bad stall – LDAs are not forgiving of such treatment and I've needed to have the RDT unit close to hand when trimming! It was time to watch how others do it, particularly those whose age and physique appears similar to mine! Also time to get hold of their programmes and see how the models are set-up.

The best technique was seen to be the arced tow – in effect the flyer gets the model low on the line and starts running when the model is still only 2/3 to 3/4 of the way around the circle. The flyer is therefore running into wind as the model is pointing crosswind. This gives a LOT more model speed and pull on the line. The model then performs a very open arc, still at considerable speed, until it's in the right position to pull the line end down and release. It's almost the equivalent of whipping a control line model to get more speed.

A very easy solution, but how do you get the model to go along with this plan! I'd tried tweaking the trim on my models (altering rudder and wing wiggler, but not by too much) but to no effect. Finally I got a Victor Stamov programme and saw how he did it. Rudder was as I expected it, as was the wing wiggler setting for both circle tow and glide. However, the wing wiggler setting for straight tow was nowhere near what I use – it was set roughly mid way between glide and circle tow – the equivalent of towing with the right wing at 1/32" more incidence than the left wing. The rudder was straight, hence the model always hangs right on tow and if pulled hard from a straight tow it overbunts to the right. If however you start pulling when it's at the bottom of the circuit and pointing left, then the result is a very hard pulling and fast tow, arcing from left to right. Released at the correct moment it then rockets upwards.

Both of my current LDAs now have this trim and are looking promising, flying in near to flat calm at Barkston a few weeks ago gave good pull outs at considerably above line height. 10 days trimming at Lost Hills in February should enable me to perfect the trim?

OK – so that's sorted the LDAs, but can this technique be applied to other gliders? I'm particularly interested in classic or vintage models, particularly now that the Nats overall glider championships includes classic glider (time to build a Caprice). These models usually have a one piece wing and can regularly be seen throwing away the advantage of their 75 or 100 metre line length by stalling badly off the top. One reason (in my view) that Colin Foster is so successful in these classes is that he usually gets a good, stall free, launch.

Clearly wing wigglers are out!! and trying to carry out fine trimming on the field by altering the warps is not very practicable. Also, of course, the wings on such models aren't usually strong enough to permit a really fast launch. However it's perfectly legitimate to 'twist' the wing slightly by careful use of packing between the wing mount and the wing. This, combined with a very slight amount of left rudder on tow should enable a gently arced tow, with a positive turn off the top into the glide – the aim being to maintain height, rather than a massive height gain. I think that I'll need to study the rules to see how much I can beef up the main spar before I build my Caprice!





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2014 flying thoughts.

I'm off to Lost Hills in February and am planning to take 9 models (7 x A and 2 x H) and hope to return with them all fully trimmed. There will be 3 x A and 1 x H that are already trimmed and should be ready to go if the weather prevents any trimming pre the first contest.

There will also be an ex Martyn Cowley long A and an H (both produced by Victor Stamov). The models are probably 2002 vintage but have been unflown since early 2004. They are in far better condition in respect of holes, scrapes and dents etc. than most of my models are after even just one season – one of the advantages of having Lost Hills as your local site! Both models required minor work after 9 years in storage, but the few flights made with them so far suggest that they have remained near to correct trim.

Lastly, there will be 2 LDAs with me – as above! I'm hoping that 10 days at Lost Hills will get these models fully trimmed.

Nothing to do with gliders, but I'd like to get back into Cd'H – will 2014 give me the time?

3D Printers – possible Free Flight Uses?

I've been giving some thought to the uses of 3D printers for FF gadgets/components recently. I guess that (like most people?), I'd not really appreciated what these could do until the furore about the working handgun hit the news during the year. At that point I had a quick look at the price of the printers, read a few articles about their capabilities then things went on a back-burner as I needed to prepare for the World Champs in France.

Thoughts were awakened again a couple of weeks ago when there was a science programme on TV that showed some small components being produced (I can't remember what they were!) they were about 50mm square and 10mm thick, with multiple interlinked components, all produced in a single operation. A few further checks has shown that the price of the printers has dropped by about 1/3 over the summer. Possible uses that spring to mind are servo mounts and pulleys, tail mounts, rear bunt wheels and arms, rudder arms, timer mounting boxes etc.

Ok – that's the end of my thoughts – I've written this in the hope that it will provoke a response from somebody who has a far better knowledge of the subject than me, or somebody who has already started experimenting – any takers?

...John Cooper

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FOR BIGGLES NEWS ~ A CONTRIBUTION by A-CRISP

Each year I send an earth-shattering plan of a model to Biggles News. However, this year I realised that my performances and approach were hardly earth-shattering compared with the all-round excellence that I saw in the World Champs in France on the Biggles summer excursion (thank you, Dave!)

So instead..... here are one or two "hints and tips" that have worked well for me over the years.

If you fly on a place with serious runways, like Barkston, then you need something to protect your precious tow-hook, especially on a hard D/T landing.

a) shows a 16 S.W.G device cunningly bent so that it is embedded in the nose block, glued to the underside of the fuselage, and embedded again just in front of the tow-hook. Note the angle on the last bend. This stops the wire being forced into the fuselage on a hard landing. The wire is faired into

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the underside with "old fashioned" Araldite.

b is an easier option for those less adept at wire bending. This could be combined with

c which is 2 cheese-headed screws which are screwed into the nose block. As well as their skid duty they act as a bit of nose weight, and if they are black they look quite unobtrusive.

Incidentally, if you look around the fields and streets after November 5th you might find some used rocket sticks of the large kind. Approximately 1 cm square, they can be cleaned up and incorporated in the front of the fuselage pod. You can fix skids or screw "straight tow-hooks" into them.

d shows a cunning idea for protecting small underfinis. Sand balsa to section (note grain direction at approx 45°). Get a sharp, clean pin and carefully force up into the grain. Remove and cut the pin(s) to about 1/2". Put a tiny drop of cyano in the hole and push the pin home. Repeat with

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another pin, if desired.

e shows re-enforcement for a "complete" underfm, as on Caprice or Inchworm. Sand fm to suitable streamlined section. Take a metal straight-edge and run, say, an $\frac{1}{8}$ " wide screwdriver down it into the soft balsa of the fm. This should produce a shallow recess. Cut a piece of thin carbon to size, eg. rib capping strip material. Cyano in the groove. Put thin polythene over work, and hold in place with your fingers. Repeat on other side of the fm ~ slightly behind if the balsa is less than $\frac{1}{8}$ ".

f Auto rudder horns. N.B always have the horn situated on the hinge line, NOT on the T.E. of the rudder, as is sometimes seen.

Don't have the spring/band side of the horn longer than the line side. Always have the spring/band side SHORTER, then less effort is required to centralise the rudder to the towing position.

g Cheap and nasty capstrips. I hate using carbon, but like the concept of modern

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techniques with old style materials.

Tape an A4 sized piece of clean plastic to a board. Cut Salzer tissue (or Polyspan) to about 6" square. You will need 3 pieces. Dope the first layer to the plastic. Leave to harden for a few minutes, then repeat with the other two layers. N.B. all the "grain" on the tissue goes the same way. When firm, peel away from the plastic and hang up to dry. DON'T iron, but press between boards etc. to flatten. Cut to strips, down the grain, the width of the ribs in the structure (1/16"?) and glue on with UHU Hart balsa cement.

You could try Salzer/brown paper/Salzer laminations which might be stronger. People could be tricked into thinking that you had some brown carbon!

h/ some modellers still use wooden (i.e. not carbon or f/glass rods) for their H.L.G./Catapult glider fuselages. Here are some proven ideas which stiffen up and strengthen the basic balsa wood concept.

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- 5 The first shows a hard $\frac{1}{8}$ " sheet profile. Sand to a taper on both sides towards the tail end. Glue onto each side $\frac{1}{64}$ " (.4mm) ply, with the outside grain running the length of the fuselage. I use Wickes External P.V.A glue. It has a good "grab" and dries hard. Let dry overnight under pressure, then clean up with wet'n dry paper.

The second has a profile cut from $\frac{1}{16}$ " (1.5mm) spruce. Glue $\frac{3}{32}$ " hard balsa to either side. Weight down to dry straight overnight. Remove from board and sand either side to a taper at rear, starting aft of the wing. You can sand almost down to the spruce at the fin position. Round edges apart from where wing and tail sit.

This tapering in plan-form is very important, as a light backend puts less stress on the body just behind the wing.

The third idea is good if your design has a straight top or bottom to the fuselage. Depending on the size, use $\frac{3}{16}$ " or $\frac{1}{4}$ " square

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6 spruce. Glue to the appropriate hard balsa and again let dry overnight - under weights to keep straight. Now, using coarse sandpaper, taper both sides towards the back end. Work alternately on either side, and try not to induce a set. A bent fuselage makes trimming difficult. Sand to a tear-drop or oval cross-section apart from where the wing and tail will sit.

As Frank Zanic used to say - use your usual fine finish!

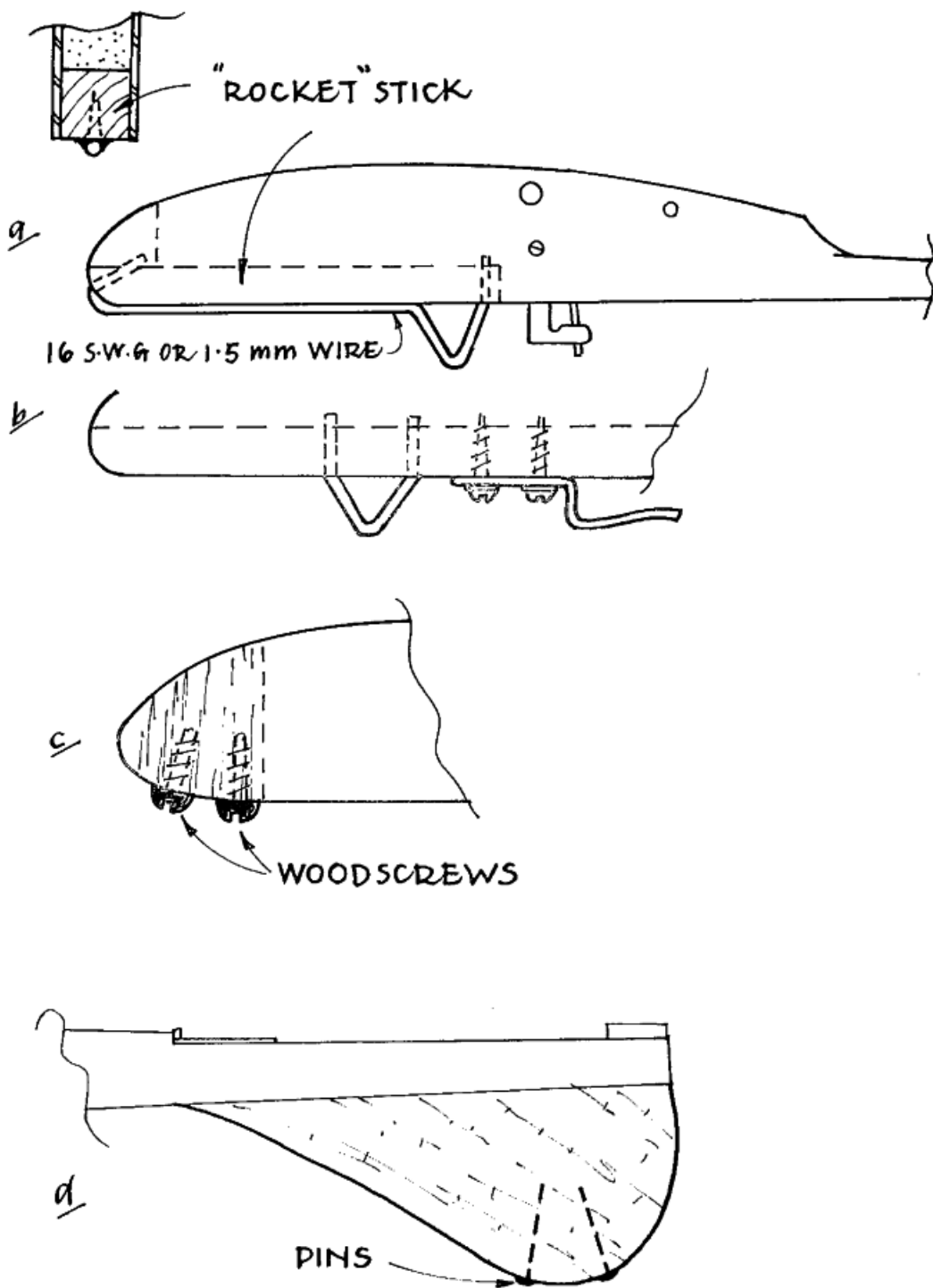
Cheers

Andrew Grief

31.12.13

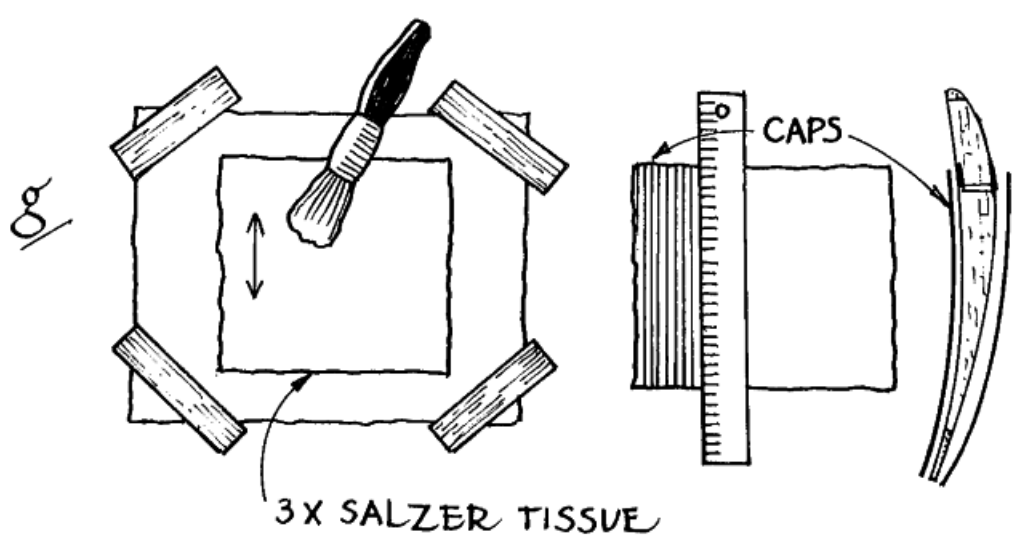
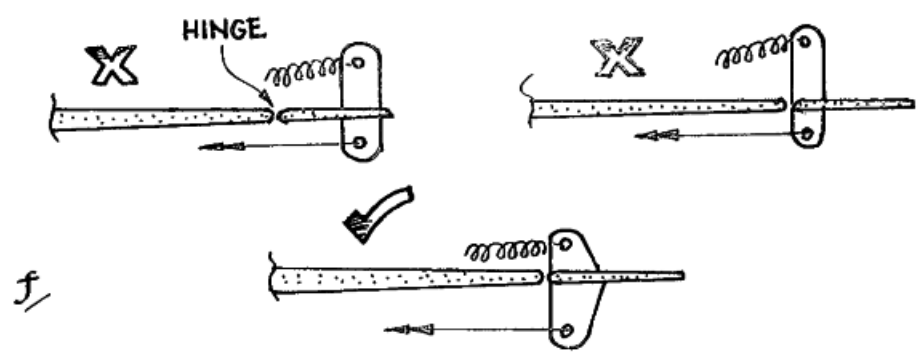
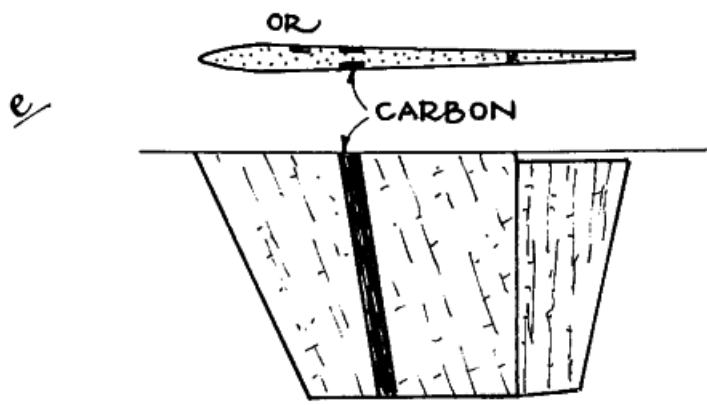


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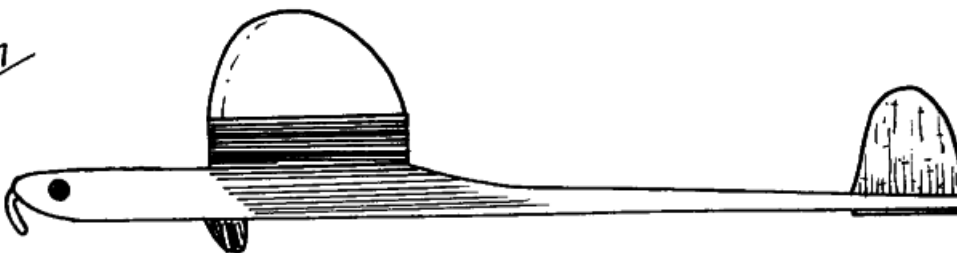
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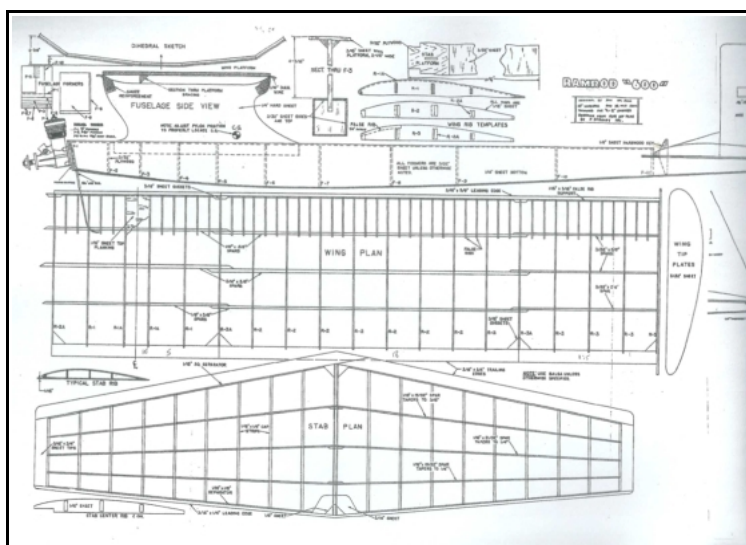


RAMROD - All good fun ...by Chris Strachan

Long ago and far away (mid to late 1950s and in Devon) I used to fly power models. You can see from the picture that not only was I young and happy with cows, but I also was not afraid of short-coupled models with fins on the tailplane!



When in late 2010 I got interested in BMFA electric (following some time with E30s) it was an opportunity to fly some of the designs I had always fancied but had not got around to. One of these was Ron St Jean's Ramrod, the other was an interest in high thrust-line models – but that is another story.



So I started with some research into Ramrod history and looked for a plan. It turned out that Mike Woodhouse enterprises has a plan for a 600 Ramrod which is actually a re-draw based on the Berkeley kit produced around 1958, so I started with that.

The next stage was to decide the size to build and the motor to use. The size came from some experience with the first BMFA electric I built which was a Matsuda Zero from the BMJR kit. I decided that I needed to make the Ramrod a bit bigger and I opted for 325

sq. in. wing area (Ramrods seem always to be defined by wing area). So it was off to the copy shop to scale the 600 plan to 325. I scaled the design down with no modification other than making wood sizes a sensible compromise around the scaled sizes that came out. The result was pleasing but it took two motor size changes before I arrived at one that made it go decently: well enough to win the Caton at the 2011 Southern Gala in the days when we still flew Electric as part of Combined Power.



Since then I have built two more Ramrods, a 200 for E36 and a 500, which I built this winter and has been trimmed but not yet flown in anger.





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Trimming: Trimming has been interesting as Ron St Jean in his early articles used to fly the model with right climb and left glide. After much puzzling and talking to people who said that George French used to fly his Ramrods right/right, I opted for that but was still not clear about offsets and warps. I knew about wash-in and tail tilt from my early days but all the writing from the States in the late 50s that I could find made no mention of wing warps so I pressed on without.

As I continued I came to the conclusion that for right/right a small amount of right wing wash-in is essential and that is what I now use. I do not use any side thrust but stick to the original 10° of downthrust. The downthrust was originally part of St Jean's response to the US requirement at the time for ROG and allowed vertical launch. I have stayed with it and hand-launch vertically which rapidly pulls into a spiral climb to the right after the first 50 feet or so. However, it is essential that you always launch vertically as a low angle launch can lead to a nasty accident! I have only done it once, with the E36 version, and got away with a snapped pylon but a bigger and heavier version would entirely self-destruct on impact.

I have not given any information here on the motors, timers, etc. that I use but if anyone is interested I am happy to tell them what they are.

The history of trimming for the Ramrod and many other American models of the late 1950's is interesting and I have found some articles by searching on the web and on EBay, but would still like to find more. The right climb left glide pattern seems odd to us with a background of right/right against wash-in. I have recently found a later article by Ron St Jean which explains that the idea was to have a fuselage side area and pylon layout which gave a strong enough right tendency to require left rudder and wash-in on the right inner panel. The model would stall off the top but the rudder and wash-in would take it round to the left as the speed built up after the nose dropped and hence into the glide. It sounds very dodgy to me and I wonder how often it resulted in a left spiral dive back down to the ground! I have also found a reference in which he says that although this worked well he did end up flying right/right against wash-in! I am still not entirely happy with the motor cut on my Ramrods. Sometimes they come off the top perfectly but on other occasions the pattern tends to go vertical at the top of the climb and result in a stall. They pull out quickly to the right but it wastes some height and is not as elegant as I would like. Of course an auto-rudder would solve the problem but I do not want to give in to such fiendish mechanical devices – even though the timers I now use have such a facility.

Any advice from the many Biggles power flyers would be happily received but please bear in mind that the electric motor is a different beast compared to an IC engine and tends to increase its output throughout the run which can be a bit tricky in getting a nice even spiral.

Future: This electric flying has been such fun that I am tempted to build an IC powered Ramrod. A 750 would be Classic legal and I have recently acquired a Fox 35 Blackhead Contest Special. Now that would be fun – and you are only young once!

Chris

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Living with the small ones ...by Gary Madelin (..honorary Biggle..)

[They used to be called A/1 gliders, now known as F1h]

Back in the sixties, when schools had after-school model clubs, many an evening was spent flying anything and everything on the school playing fields. Control line was safer than free flight as they didn't fly away or get stuck in trees, but I remember losing an Ebenezer tri-plane with a Cox pee-wee, by mistake with a full glow fuel tank, and getting various gliders like a KK Dolphin and a Mercury Grebe out of high trees. No health and safety issues in those days. Love of gliders took over, my favourite one at the time was a KK Invader, with lovely elliptical twin tail fins, as I recall. Then came along very elementary single channel radio control, and I was probably one of the first on the slopes in '67 with a "galloping ghost" Veron Impala, but I digress. Modelling kept it's fascination throughout my teens [I was an avid Aeromodeller Golden Wings member] and joined the SMAE in 1966, for the sole reason that [according to chums in the school club] you got £5,000 if you chopped your finger off in a glow motor propeller!

The school library always had the latest issue of Aeromodeller on the stand, and one day I spotted the Strolling Bone A/1 design by Dave White. I think it was a free plan, if so, I nicked it and attempted to build one, and even got my Dad to take me to Chobham Common to watch the experts flying in the London district club rallies that used to take place there most Sundays. I remember seeing Martin Dilly, who I thought was famous, as his picture was often in the Aeromodeller, I think mostly with his Cue Dot design.

On leaving school, I started work, and building planes was replaced with scooters and girl friends, but some time towards the end of 1969, I was in Guildford one lunchtime [day release at Guildford Technical College] and on the news-stand was the Aeromodeller mag with a picture of Elton Drew on the front cover holding his Lively Lady which that summer had won for him the World A/2 Championships. That for me was the catalyst to get back into some flying, and I linked up again with the Chobham set of Pete Stewart, Geoff Smith and Fred Chilton, in the early Crookham days.

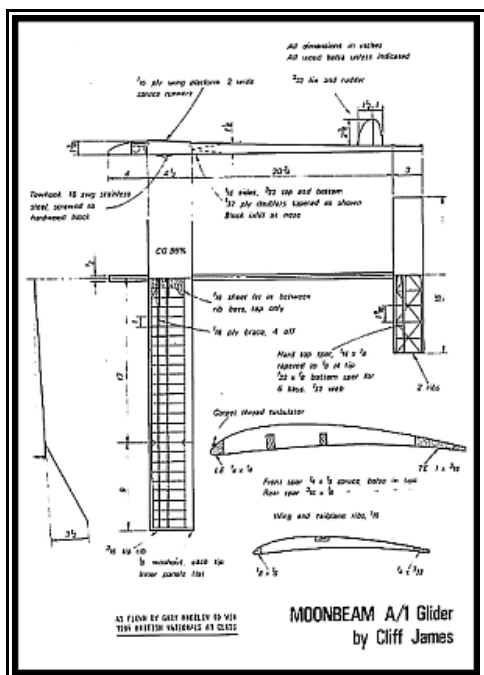
The summer of the next year saw production of my first serious competition model, an A/1 derived from the Strolling Bone, but with refinements. It flew really well, and was trimmed using short d/t's with its KSB timer on the local sports field [the same field I use to this day for calm evening trimming with electronic bunters]. I passed my driving test in the August of 1970, and henceforth, with Dad's blessing borrowed a spare car to get to Chobham. I entered my first contest there shortly after, the Hayes Gala I think, and came 2nd to a bloke called Phil Ireland from Southampton who maxed out. I was hooked, not only on the A/1, but decided with Pete Stewart to get into making some A/2's as well, and the following Spring with an Elton Drew / Brian Bow multi spar A/2 design got a 2nd place in the KMAA – the first A/2 contest I flew in.

I digress again, as this story is about A/1's. The first one flew well enough to make another, this time I tapered the tips which made it look nicer, although it was still a one piece wing with tip dihedral. Chobham in those days had the M3 being built right through it, and for many months before it was opened, one could use the road base formation of the carriageways to aid towing – far easier than dodging the gorse bushes! Roll on a year or so, and Cliff James from the Hayes Club



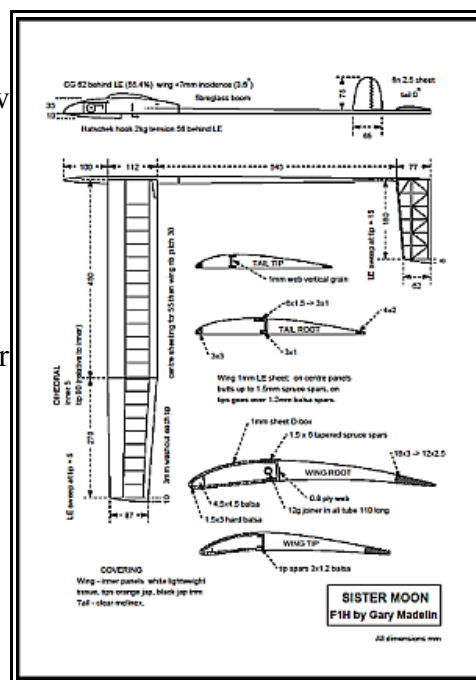


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became my good A/1 buddy and remained so for many years. He had designed a lovely simple model called a “Moonbeam” with a thick section using two strong spruce spars on the bottom surface and with 1/16 ply centre section dihedral braces. The key most spectacular thing about this model was its ability to straight tow on the line for ages, very stable, and with a good glide in free flight. I had to have one! In fact, over time I had about five of them between 1973 and the mid 80’s. I have dug out the original drawings from FFn, which were published in 1973, and again in 1984, with a nice post note to say “as used by Gary Madelin to win the 1984 British Nationals” In fact, I lost count of the number of contest places Cliff and I had over the years, but there were loads. However, there was more to do than fly the small ones, and A/2’s started to gain interest again for me, and the fun of entering the Trials and getting team places in 1986, 87, 89 and 91. But in all this time A/1 development continued. My A/2 design at the time was called “Soft Machine” and was pretty successful. The Moonbeams were getting dated, so I designed an up to date

version which looked just like a scaled down A/2. I called it “Sister Moon” as to be fair it was a follow on from the great Cliff James design. It was an instant success, very docile, towed very competently in reasonable winds, and was of course, as dictated by the times, a circle tow zoom model. It would easily exceed the “two minute max” in calm evening air, and maxed out and won its first competition at Barkston Heath, but was sadly lost in the woods behind the control tower on the fifth flight. These were the days before trackers....☹.....and the rotted remains may still be there! So, #2 and #3 followed on, winning loads of domestic events as well as some in the Netherlands, Hungary and the Moncontour events in France. #4 was probably the first A/1 bunter in the world, built in 1991, but suffered from a wing not strong enough to withstand the launches, so was scrapped. #5 followed, and I continued to fly them on and off including at my first visit to Lost Hills in 1996, until 2001, when I pensioned them off. Happily both #3 and #5 have been resurrected and are now with Sam Heap to have some fun with.



At the end of the nineties, I had been impressed with the models being used by Brian van Nest and Mike McKeever in the USA. These were “real” bunters, with carbon and Kevlar structures and easily out performed my models. Apparently they got all the bits, indeed probably all the models, from Victor Stamov in Ukraine. I had to have one of these. At the time the bunt mechanism was driven by a scrolled mechanical timer and even though perhaps rudimentary compared with current developments, the performance, and height gain was impressive. John Williams soon got his hands on one, and my order to Victor followed shortly afterwards. The “flat pack” of parts arrived and I





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set about putting it all together and covering it, but in truth, all the difficult parts were already made, so with the BOM challenge very much in every day debate at the time, I only risked flying it abroad and all but gave up doing anything in the UK. In the Summer of 2001, John Williams helped me set it up, and it had its first flights in Sacramento, California that October. It was called “Halfbreed” – after a Keef Hartley album, and became known as #6. I flew it regularly in France and California over subsequent years. In 2004 another one followed, #7 again a mechanical one, and again never used in the UK. Then in 2007, the BOM rules were disbanded, so I gingerly made some appearances at home, winning the Southern Gala with a max-out that year, and this became the catalyst for renewed interest in the class we call now call F1h, year on year ever since!

Around this time, many folk were moving towards electronic gadgetry, and John Cooper was perhaps the foremost protagonist in the UK F1h circles [no pun intended!] So at least I could decide firsthand the way to go. I ordered from Victor #8, my first electronic bunter in 2009, but it took a year to really get to grips with it, understand how it all worked and most importantly, how to fly it. So much so, that the 2010 Nationals fly-off was won by #6 the old mechanical model that d/t'd at 5 minutes from a nice height barely half way down the 'drome. By now though, #8 is pretty familiar to most folk, it's the one with yellow tips - not recommended as a colour scheme when searching for it in a field of buttercups! It's just the most satisfying thing to fly, I have to say – I even love just going trimming with short d/t on the local field and watch the launch pattern and height gain, quite impressive!

So, what of the future? Well, in the box are models #9 and #10, both [now fully trimmed] single servo bunters. These are recognised as the pink one, #9, and the green and scarlet one, #10. Both have contributed to success in 2013, including overseas in Lost Hills, Norway and Italy last year plus again winning the Southern Gala in the UK. But nothing as yet like the pedigree of the yellow one ☺.

Going forward, with the very sad passing of friend, mentor and manufacturer, Victor Stamov, I am having to reassess, along with Brian Lavis, what to do for new stock. Having said that, with trackers [and we've had some stories to tell from last year, mainly involving hawthorn trees!] the models hopefully don't get lost any more and are strong enough to handle as much rough and tumble that one can throw at them, so we'll have to see.

So, in summary, what are the highlights of my life with the small ones? I propose a few fab memories, in no particular order, and not all involving winning, but the models have helped over the years in a fair share of that!

- First time I used a tracker. It was in Moncontour about 1996. There were three of us going for the 5 minute fly-off, I flew early in the slot got a massive piece of lift and after d/t'ing and a couple of Mylar flashes we lost sight of it. The feeling I got, that first time of driving about 3km down wind, climbing onto a hay stack and hearing a signal from the sunflowers will never be forgotten.
- The 2010 Nationals fly-off against Roger and Andy. I had damaged a tendon, and could barely hobble, but managed just to get through the day. The drift was light, so was the air but the model was just spot on trim, a lovely evening finale.
- Getting to the six minute fly-off round in Sacramento, USA in 2003, flying off against McKeever and Van Nest, both using “new” electronic stuff, and me hitching a ride on the back of Norm Smiths retrieval bike circling under the models. I came 3rd, but it didn't matter, the memories of that balmy evening will always be there.
- The famous fly-off at Andy's Oxford gala last summer that was too high for its own good,





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flew over the river and got disqualified! Step forward Brian ☹.

- Flying in sub-zero temperatures on a snow covered frozen lake in Norway. True still air model performance or what?
- Catching my model one Nationals fly-off as it d/t'd after the six minute extent of the old KSB timer, one field off the drome. The score of 7 mins + was good enough for third, but John Bailey beat us all ☺.
- The hawthorn tree sagas!!
- Having Martyn Cowley helping me to get the absolute ultimate best still air time out of #10 early one morning at Lost Hills last year, and retrieving every flight on his motor bike for me. He wouldn't give up until it was repeatedly turning in flights of over 4:20!
- Solo trimming sessions in the calm half hour before dusk at Salisbury plain, when even the skylarks are quiet. Sometimes I have been flying as the solitary person there, and the only sound at 120 seconds with the model overhead, is the electronic timer bleeping and the "clunk" of the tail plane as the d/t goes. Amazing....
- The infamous Midsummer Night events in Holland, which always featured A/1 as a prominent class, and always seemed to end with a dawn fly-off ☺.
- Seeing the interest grow across Europe in the shape of the Euro F1h Challenge [HEC] and participating in that seriously last year [and will again in 2014].

And finally, I suppose it has to be said, winning the 2013 Biggles League, although Chris really deserved to win it on pure effort and determination. Hope he regains it next year, but there will be plenty of competition from within and outside the ranks of Biggles members!

Cheers all,

Gary M.



<<< ...Sister Moon #5 at its last contest, Sacramento Oct. 2001

...#8 - 'the yellow one' - Odiham Spring Gala, 2013 >>>



Postscript - Plans for 'Moonbeam A1' by Cliff James and 'Sister Moon F1H' by Gary Madelin, are available from the [Biggles League web site, 'links' page.](#)

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Biggles News 2014 ...by Brian Lavis

I don't really have anything worth writing this year. It has never stopped me in the past so here goes.

Flying

What do I remember of the year's flying? As usual, not much.

France

The World Champs in France really stands out. It was the first I'd attended and organization & flying were both exceptional. It seems ridiculous to have a flight line with 40 poles – a total of ¼ mile – but there it was. On more than one occasion, because of wind change, the line had to be moved by 90deg between rounds. It was completed in a few minutes with no disturbance. Congratulations to Miriam & her team.

Also memorable from France was everyday having to carry model boxes up the tight spiral staircase at Le Chapeau Rouge – thank goodness I had only F1H models hence a short box (to match my wind).

Then there was the disappearing wedding – one moment the village of St Jean de Loup was completely blocked with vehicles, wedding attendees & spectators. A minute later when we found an alternative way to our hotel – everybody had vanished leaving an almost deserted village.

One most unfortunate thing was that one second dropped by JC because they were late cutting the crops.

There was another for the same reason – they had to call off the World Cup F1A, B & C comps because of threatening words from the farmers who hadn't been able to complete the harvest.

I had very little competition success. In fact I remember winning just one comp – Andy's Oxford rally & that was due to the on-the-field-fly-off requirement. I devised the cunning plan of wrapping the towline round my legs so that the model released at half height in poor air to do just 53 secs and stay on the field. Unfortunately for Gary Madelin he made the mistake of making a perfect release into good air. Despite an early DT he finished over the river.

That reminds me that both Gary & I spent quite a bit of the year up hawthorn trees. The scratches hardly show now & blood counts have recovered.

My flying continues to deteriorate. I think I am improving with my bunting F1Hs then I break a model & have to start again. It does keep things interesting and infuriating.

Mini-vintage, P30s and other classes didn't get much of a look-in.

New Models

There have been no new models despite an attempt to buy another F1H from the Ukraine. Strange but everybody else seems to want my money at the moment.

I'm pottering around now concocting a bunting F1H mostly from bits I already have. The pod was made as I described last year, the towhook is a modified Isaenko style (see below) that I bought from Mike Woodhouse perhaps 15 years ago and the rear pulley is one (of two) I bought from Whobby 10 years ago. This pulley requires that the servo drops the line to DT – the full



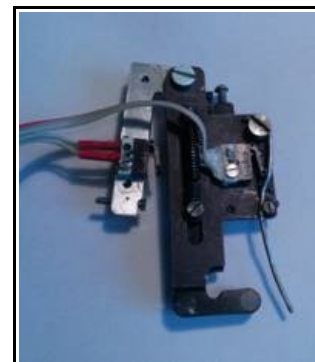


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inconvenience of which I won't discover till I try flying it. I had several sets of bought D-box shells so determined to make wings better & lighter than my usual. Without the joiner the wings came out to 96 gm – this is at least 10 gm heavier than anything I had ever built before. Where did I go wrong? Back to the board!

Modifications to hook

The height of hook was reduced to fit F1H pod by sawing off the top & re-drilling pivot. A mounting plate made to pivot hook & screw through from fuselage. Mechanical switches fitted for forward & unlatch functions. There's no reason why you shouldn't use reed switches. Reduce unlatch tension to suit. This hook comes with a bottom plate which I used but it would have been better to extend the latch arm upwards to do away with plate & have adjustment for glide & tow at the top.



Gadgets

RDT – is this my first year with it? I feel lost without it now. It makes flying on Lodge Farm possible.

I've made no new electronic bits but seem to have spent an awful lot of time fitting connectors onto wires (much of the time grovelling on the floor to see look for the pinging bits).



Winding rig – I have made a new in-back-of-car winding jig. Of course I haven't used it yet. A jig needs to be tailored to the car & there is nothing special about mine. One component which might be of interest to others is the method of anchoring the jig to the tailgate latch. This is a shackle bought from a local hardware store and probably at most boat chandlers (don't they make candles?).

Drinking

All in all it has been a very sober year. Isn't age a terrible thing – knees going, eyesight deteriorating & drink capacity shrunk. I won't comment on anything else. The Nationals had its Wetherspoons moment with the sad lady. France saw remarkably little beer drunk though enough to surprise the Chapeau Rouge management (even though Ken has stayed there before). Red wine made up for it.

Next Year

Try to compete more. Build a light pair of F1H wings. Give a Ukrainian some money. Join GDMAS again to use Barkston on the few occasions I will manage. Check whether it is worth joining club on North Luffenham too?

Fly classes other than F1H.

Enjoy myself (as I did this year)..

Brian Lavis

PS Andy – I still have your certificate & bottle of Isla Negra for third place in HLG/CLG at the Southern Gala!

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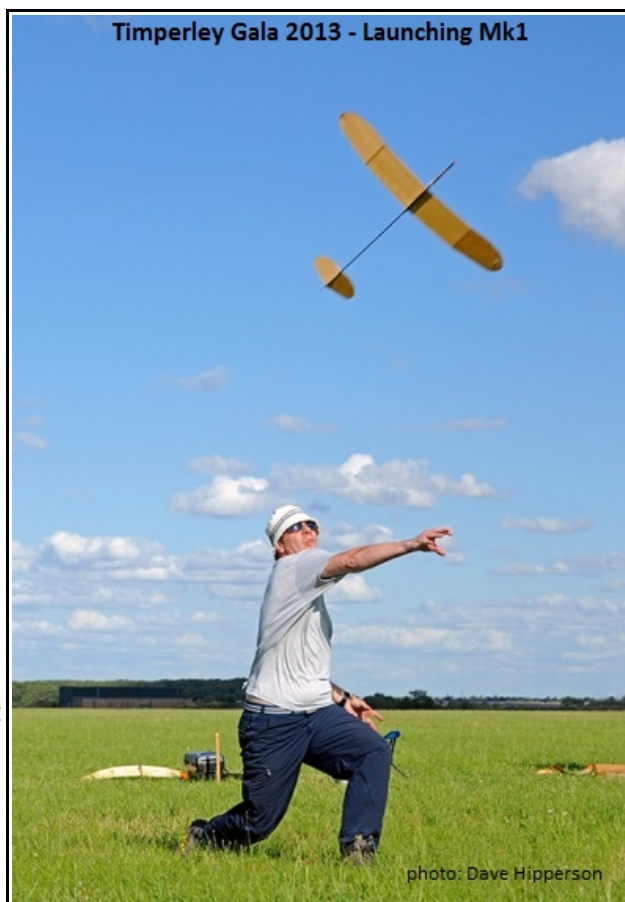
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Disco Volante 30" Discus Launched Glider – by Stephen Brewer

Disco Volante has been developed (rather slowly) over a period of 7 years. It has only existed in 2 new build versions but each model has been substantially rebuilt at some point meaning the true number of variants is really closer to 4. Disco Volante is a simple model drawing on basic HLG construction methods and wood sizes. I chose to design a model slightly smaller than the norm opting for a wing of 30"span and 4 1/16" chord. The reason for this was to allow me to use my existing stock of 1/4" wood and hopefully build lighter models that would generate lower forces during discus launch and require less reinforcement.

Early experiments used a cruciform tail but the large fin area made for poor transition and I never achieved good results. It wasn't until information about the gadget free models of Mark Benns appeared that I switched to the now common Y tail configuration with instant improvements.

The designs are loose developments of my last javelin gliders which in turn used Mick Page Butterfly wings with traditional (flat) tailplanes. Reverting to Y tails on my DLG's mean that the design has started to creep back towards the Butterfly. I opted to stick with 4 panel wings rather than the more common 5 or 6 of modern trend for simplicity at the building stage and to minimise the risk of inaccuracy through sanding numerous dihedral breaks. Y tails are set at 120deg "V" and the tailplane is skewed to encourage right glide turn. Wash-out is carved into both wing tips with slightly more in the left hand tip. Other flyers have built DLG's with no washout but I'm a creature of habit and always carve more into the wing on the outside of the glide turn. Both models use tip up wing DT's although this wasn't the case for mk2 originally. Specific details are outlined below.



Mk1 started life with a cruciform tail before switching to the Y tail shown on the plan. The moment arm is relatively short at 12.5" between wing trailing edge and tail leading edge primarily because of boom lengths I had in stock. The boom is a pultruded Len Surtees "Lenny tube" of 4mm outer diameter which tapers very slightly. This type of boom is incredibly stiff for it's diameter but longer lengths may lack torsional rigidity. To compensate for the short moment arm the tail has a deep chord and large under fin. Originally the fuselage was made of hard balsa but after numerous failures on launch I rebuilt it from lengths of 5mm square spruce. The original model weighed 62g but the heavier spruce fuselage has taken this to 68g. A small length of 4mm pultruded carbon is used for a launch peg through the left wing tip.

Mk1 has quite a bouncy glide and will thermal in the weakest of lift but I think ultimate performance suffers due to the short tail moment. Poor air picking often results in flights around 40s which has often dropped me down the order in a contest.



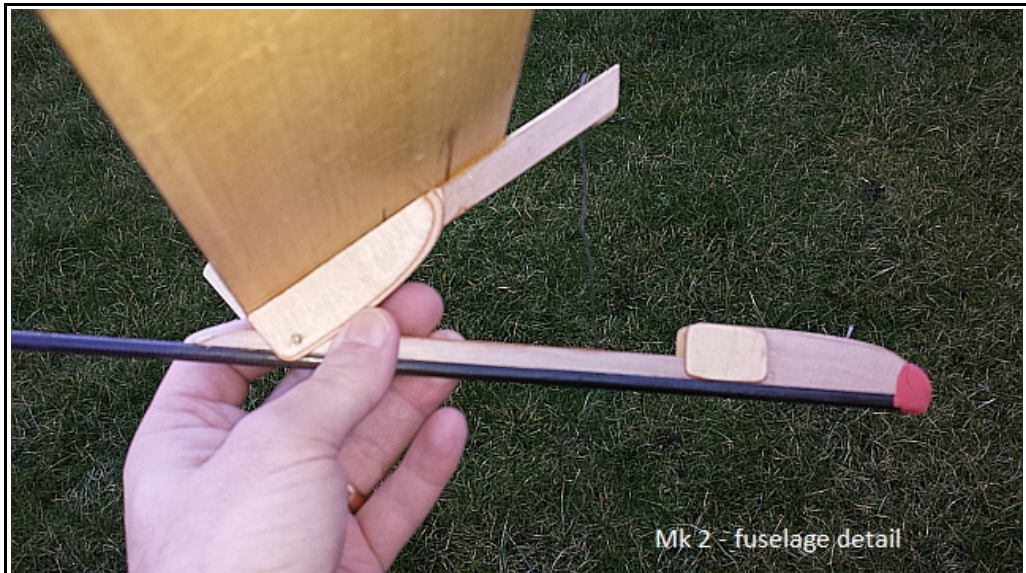


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Mk2

The second version follows the same pattern as Mk1 but has some alterations to address fuselage strength and ultimately performance. A longer tail moment of 15" ($\frac{1}{2}$ span) between wing T/E and tail L/E was used along with a slightly narrower chord tailplane and a shorter nose. The boom used is a Stan Buddenbhom DLG type which would also prove quite useful on an F1H. Numerous failures on launch and when DT'ing onto runways forced me to rethink Mk2's construction. Initially this model was built with a rigid fuselage (mistake no1) to make the model stand up to launch forces and as a result used a dropping weight DT (mistake no2). I dropped the carbon launch peg used on Mk1 and instead used coarse wet and dry paper on the upper and lower surfaces of the left wing tip. 1.5 degrees of wing incidence was built into the wing mount/pod but when trimming this was found to be insufficient. The rigid fuselage prevented adding packing under the wing so trimming was only achieved through the use of small modelling clay gurney flaps. Once trimmed height gain at launch was astounding with an equally good glide. Regular evening still air flights in excess of 65s were achieved but the model had to be thrown very hard for consistent results with often knife edge transitions. After going well in an area comp at Barkston with 4 straight maxes the model suffered a DT failure. I frustratingly followed for the full width of the airfield with the model circling directly above at

about launch height before it eventually started to climb and vanished into the distance in the rough direction of Barkston Village. Surprisingly I got a phone call a week later after the model had been found in a tree about 20m short of the A1 at Gonerby Moor. The model was retrieved with no damage but was then



rarely used as I couldn't trust the DT on thermally days. Eventually I decided to rebuild the model on a new fuselage with tipping wing DT but retaining all dimensions. The new fuselage still had 1.5deg of incidence but allows for incidence adjustment with some additional packing. The fuselage was also increased in depth to cater for the boom running all the way to the nose and to allow the DT hinge to pass through the pod rather than the boom itself. The fuselage was built from hard balsa but faced with 1/64" ply. The DT hinges are rather beefy 1/16" ply. The model (now over engineered) had increased in weight from around 65g to 75g but this time proved much easier to trim once a launch technique was arrived at. The fin area is the same as Mk1 which on the lengthened boom tends to straighten the launch if a conscious effort to throw left isn't used. The increased weight means that still air time is slightly down but the improved consistency outweighs this loss.





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Unfortunately HLG is only flown as an individual class at the Nationals meaning that it is often more competitive to fly a CLG in combined contests. The models therefore don't get used as often as they should and this also explains why I haven't built more. Go to a comp on a blustery day though and the larger DLG will often come into it's own. Despite their infrequent use the models have performed well with Mk2 placing 2nd at the 2012 Nats having dropped only 18s over two flights and only being beaten by Mark Benns' full score. A relatively flat period during the middle of the day being my downfall. Mk1 was also used to place 2nd at the 2013 Timperly Gala at North Luffenham. Again my impatience meant unhelpful air on two flights handed the trophy to a more consistent Mick Page.

Mk1 seems to have reached a plateau in performance but I think Mk 2 still has more to give after its recent rebuild in early 2013. I think that reducing fin size may reduce the tendency to straighten up from bad launch again improving consistency. Mk3 is as yet un-built but has been on the drawing board for some time. The general layout will remain but the boom length will sit 1/2 way between mk1 and mk2 retaining the same tail surfaces as Mk2.



A note on trimming and launching:

I don't think disc gliders are hard to trim, my approach is to think of them in the same way as a traditional javelin

glider but in reverse i.e. a right hander will launch left and glide right. The main difference being that more incidence is required than a traditional javelin glider. I found that learning the launching technique was the hardest part of the process but once timing is mastered the model speeds away on natural left arc. To improve consistency I sight a spot over my left shoulder and then throw at that spot. Mk 1 is launched from a standing twisting launch with good safe results. I find the launch peg occasionally causes hooked launches resulting in flat left turns into a stall. Mk2's sand paper grip seems to allow for a more natural release and I have been able to use a "running" launch with a 360deg. pirouette to greater height. I find that sighting a "target" is a must for good results if this technique is used.

As for the name, the Disco Volante is the yacht owned by Emilio Largo, the villain in the James Bond novel Thunderball. It translates from Italian to "Flying Saucer".

Postscript - Disco Volante 30" Mk1 & 2 plan is available from the [Biggles League](#) web site.

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