



your round Albert?

Biggles News 2010



just add a bit of left twist



*A wing
A prayer
& a Thermal*



*my sandwiches are
in here somewhere*



*right lads that's enough holiday
now lets get some winning flights in.*



*CURSE YOU
RED BARON!*



*line 4 timer arm 4
Check
line 5 timer arm 5
Check Mate*

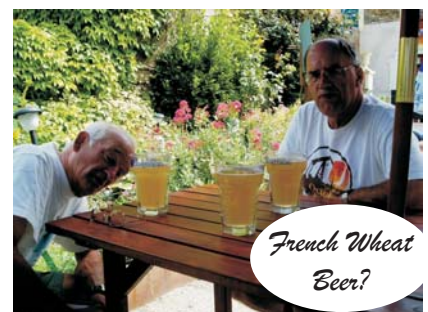


*'Retro 70s'
what's that?*

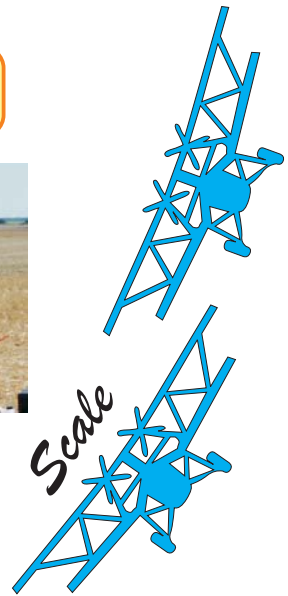
*next year I'll
bring the big one*



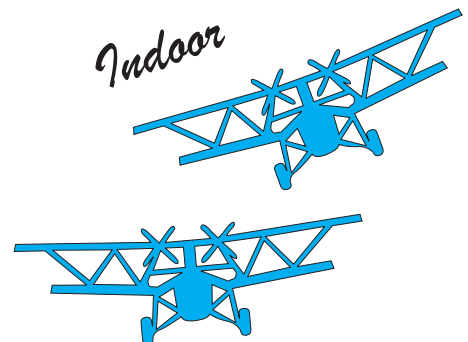
rugged up for the November Falcons Gala



*French Wheat
Beer?*



Indoor



Biggles - the Editorial

What a year 2009 was. I can remember all the good bits like; the amazing Nationals that showed Free Flight competition flying to be in rude good health, Andy Crisp's Oxford comp escaping the awful weather forecast yet again, Springhurst and Narrandera down under in Oz to start my year, but pride of place goes to Poitou where my 60th birthday coincided with F1C day hence a cask of good red at the Brit pole (see cover pic) followed by a rousing Happy Birthday at the official campsite which included being serenaded by the German F1A team - simply surreal! Being in Oz I missed the bad weather start of 2009 so all my comp flying was in good, if windy at times, conditions not that this helped my results which were the usual hotch-potch of excuses.

Most Biggles had a good year, some a very good year such as John Cooper's amazing Open Glider flyoff to win the Nationals. John has been suffering from back problems for a few years so after extensive medical advice he opted for major spinal surgery which was carried out on 4 December. He is now at home recovering and all our thoughts are with him for the New Year - given how good John's flying had been even with his back problems we're looking forward to seeing the reconditioned 'titanium' John on the flying fields for 2010. Even our ageless athlete Andy Crisp was bought down to earth in the Poitou F1A flyoff when he tore a thigh muscle. Unfortunately recovery has been a slow process limiting Andy to a bit of Discuss Launch Glider so we're hoping he'll be back to normal for when the 2010 season starts to pick up pace from March onwards.



It was good to meet up with Martyn Cowley a couple of times during 2009 when our Biggles Free Flight Team founder managed to mix business with pleasure to attend SAMS Euro Champs. I've included a couple of Martyn's 'fast build' CLG plans in the News; a building tip is to score across the wing at the dihedral breaks with a soft pencil, pin down the centre section and bend up the tips to the correct dihedral then run cyno along the 'fold' to set the dihedral. Built with cyno these simple models can be finished in minutes. Martyn reckons they are good for 40-50 seconds, mine haven't lived up to those times but I got a bit sidetracked by the ZingWings in 2009.



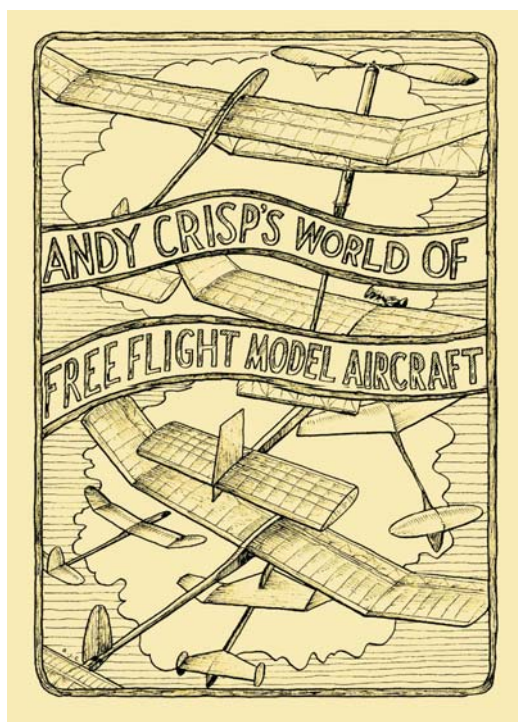
My thanks to all the Biggles whose efforts have made our News 2010 which I am bringing together while wintering in Brisbane as usual. For fellow Biggles battered down against the UK winter who think I might be idling my time away on Manly beach here are some pics showing two new F1As coming together, and thanks to Roger Heap sending me an early christmas present of a Nord2 plan 2010 should see me getting back to some moderately serious F1A flying plus a pair of new Nord's at the other end of the glider spectrum. Hopefully my new commitment will be self evident when I get to my first 2010 UK contest on 7 March - 2nd Area (Barkston for us) with F1A, HLG/CLG and Vintage Glider offering thirteen comp flights in a day.



Now it only remains for me to call the roll and wish you all the best for the 2010 flying season.

Biggles FFT Roll Call:-

David 'Broone' Brawn (all Glider), John Cooper (F1A/F1H, mini vintage), Brian Lavis (F1H, mini vintage), John Bailey (everything), Neil Cliff (elliptical planform rubber), Chris Strachen (everything quiet), Trevor Payne (very noisy power), Noel Parry (F1H/F1A), Chris Parry (retro F1H, HLG), Steve Brewer (HLG, DLG, CLG, F1H), Andy Crisp (everything), Mike Evatt (F1B/F1G), Geoff Kent (all rubber + electric), Roger Heap (F1H, vintage glider, CLG).



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2009 Retrospective by Roger Heap

Biggles League...

...I had to relocate the website during the year. By the end of the Southern Gala, John Cooper [F1H] and Colin Foster [F1J-1/2A] could not be overtaken. Well done to both! The only grumble was from Simon Dixon who I listed as 'Stuart' for a while!

'08/'09 on the bench...

...During the winter, I made a number of models including a vintage Nord. My F1H's used ply skin 'D' boxes and carbon tube booms. The 6mm tubes were to split and break much easier than I'd like, but are cheap and available. Wing weight was my big problem in '08, and though the '09 wings used less wood, at 100 grams finished, are still heavy. ...However, with Andy Crisp at Port Meadow, on a windless afternoon in February, the new stuff flew quite well.

Timers...

...My KSB's were all cleaned during the winter. Two seemed to run better dry, ..no problem I thought! A couple of months later, checking my flying kit, the same two needed a squirt of 3-in-1 to get them going. At the London Gala, another KSB seized up completely after a successful d/t! On the bench it resisted all tweaks until I relieved the bearings with a tiny drill, it's been fine since.

Covering...

...I tried out some light polyester. It was impossible to seal with dope and as a single layer is just not strong enough, suffering dents and punctures quite easily. Double covering is more durable, but I hardly see the point when 'normal' is so good. For heat shrinking, I once used [Pat's] smoothing iron but discovered our 2kw domestic hot air blower is far safer. It is easy to monitor, and my iridescent polythene tailplane covering, that so easily melted into holes, is no trouble at all!

Flying...

...I have failed to find much feeling for the F1H's this year, but the Nord has partly made up for that, with a rock steady performance, except for when I messed things up! The Nord tows so nicely for something so ugly!

...On Salisbury Plain at the London Gala, I grew blisters on one foot, had an allergic reaction to the grass pollen and gained a cold sore soon after! The Nord flew into the only post for miles, and stalled out of the sky for the last flight. [The d/t line would again give me trouble later in the year!] J.B. had some moments of panic when his camper van keys were lost. We'll know where to look next time! [Putting them in plain view on the bike rack is a good party trick!] The Maycom receiver and GPS had a stressless workout, without me really needing either!

...The Nationals was a good weekend for weather, drinking and flying, though Trevor's power model going AWOL, and Andy's 4 F1H maxes and one unfortunate snag spoiled the mood. [Trevor's model was recovered a few days later.] I couldn't pick good air in F1H, ..and the Nord fuselage snapped after a hard d/t on the runway...

...Oxford was a real treat for those few who turned up. The expected storms stayed away! The buttercups were to cause many towing tangles, and there were no glider fly-offs.

...The thought of Plugge points at the Fourth Area, scared the F1H flyers badly. No Biggle made it to the fly-off. Noel had a fly-away that was tracked down later in the week. I attempted to fly the Lulu Postal, but dropped the first flight.

...At the Anglian, I'd hoped the infamous hangar in the middle would be gone. Nope! However, I did manage to miss it and didn't have any models eaten by cows! The first day ended in rain, but I'd flown the [repaired] Nord and found it in reasonable trim. The second day started with a Barn Owl doing its thing in daylight! Early on, the drift swung out of the field and fell to nothing for a while. Rounds and start lines were abandoned and the breeze finally settled from the N.E. D.B. had a d/t fail and lost his F1A in strong lift. J.B. dropped a beacon in the grass, to be found under C.S.'s knee. Later he lost it properly when his rubber model failed to d/t. It was the winning flight and it was recovered from a tree with bits of model next day. B.L. won Mini Vintage, I was 2nd in V.Glider, J.B. 2nd in Glider! Quite a weekend.

...The Grantham GP was again run by Phil Ball on a Saturday. Calm enough to make circle towing difficult, I made it to two fly-offs. I also timed Trevor's first fly-off attempt an overrun. His second flight was just too late to count and was damaged after colliding with a hangar. No-one saw where Trevor's first one landed and it was lost for a couple of days!

...The Timperly [Sunday] was quite breezy, but otherwise fine and sunny. Mixed with the usual lulls and gusts, it was turbulent at times, with a number of flyers in trouble and some not bothering to fly at all! I towed in and broke a boom on an F1H. The Nord stayed in the car...

...The Southern Gala was dry but too windy for me. The slim chance that Chris P. could get enough F1H points to worry J.C. for the Biggles Trophy, evaporated when only two took part. So, John Cooper wins it back for '09! Colin Foster also secured the F1J-1/2A trophy win with a second place behind Simon Dixon.

...The 5th Area at Barkston Heath had me timing Gary Peck in the F1A fly-off for some 25 minutes I lost it in the air, but on the way down. Gary recovered it full of earwigs, a few days later.

...Midland Gala at North Luffenham was quite breezy at times and I split another boom on my best F1H. There were some excellent thermals, but again, no-one made the F1H fly-off. The Nord found a couple of thermals, but I failed to check the tailplane was fully down and had one flight stall down. Steve Brewer got his first F1H point!

...Team Glider started cold and calm at the 6th Area at Barkston Heath. Though dry all day, it gusted up later. Again, I found thermal detection tricky with the repaired F1H and watched J.C. make it look easy. The Nord was going well, but I had a slack d/t line on the second flight to stall down again.

...The Falcons started chilly, but calm and mostly dry. There were thermals about, but again, they were scarce and deceptive!

...**Local to me**, I was invited to fly on a full-size glider field by a member who thought it a good idea to 'educate' some of his flying pals. One or two admitted to model flying in their youth, but there wasn't much enthusiasm. The breeze was right onto a line of trees, but I was happy to have some towing practice. If I get there again, I hope to get a better reception.

Flying problems...

...One of my F1H's has a circulatory problem. Set circling right, it also does some to the left! After balancing the wings and fixing some sweep back, it's no better! Any ideas accepted!

Radio tracking...

I'm pleased with the Maycom receiver. The batteries have lasted well, even after some lazy afternoons listening to the Stansted air-traffic. After hearing voices around 'my' frequencies [173.9xx MHz.,] and hearing interference on other frequencies, I listed what might also be on 'our' airwaves. It looks a bit crowded!

141 to 144 - BBC/Government Agencies/USAF/Soviet Space Communication

144 to 146 - Amateur Radio

146 to 153 - Government Agencies/Police PMR

153 to 153.5 - Paging/Digital Mobile/Air Call/Inter City Pagers

153.5 to 156 - MoD, Emergency and Medical

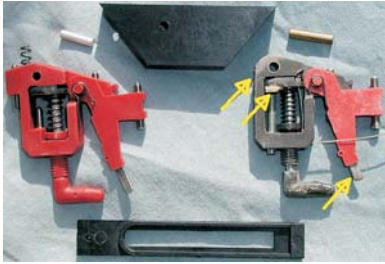
156 to 163 - Maritime Band/PMR Repeaters

163 to 173 - Data Networks/St. Johns Ambulance/Scout Association/PMR/Emergency and Medical/Clearway Skips/Couriers/Government Agencies/Telecom/O.S./ICL/National Trust/RAC etc.

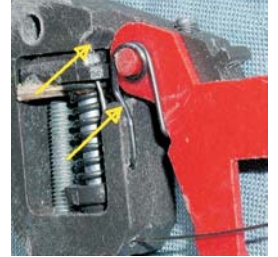
173 to 175 - Alarms & Paging/Telemetry & Garage Doors/Deaf Aids & Cordless Microphones/Theatre Radio etc.

Broadband Wi-Fi transmissions are everywhere too!

Tow hooks...



The pictures show Woodhouse Czech. 'plastic' tow-hooks. Over time, they have had detail changes, but I modify them as well and have arrowed some points of interest. A new one comes complete with an alloy shaft, a plastic yoke, a guide plate and a spring, non of which I use! My changes seen here include sawing off the front stop adjuster and adding packing under the shaft top-end plate. [Because the screw was too short!] I reduce the latch length to release from the hook after a pull of just 1mm and then adjust the spring pressure to release at a pull of six or seven pounds. Because I discard the yoke, the latch assembly could work loose. The close-up shows a groove to capture the re-bent latch spring and keep the arm in place. I make more clearance above



the end of the rudder line and use a longer shaft, right through both fuselage sides. Initially, I minimise zoom movement and make final alterations to it and the circle tow and glide screws, on the flying site.

More Classes or Fewer, Separate or Combined?

I have been involved with the FFTC for several years now and one of the recurring issues is whether we should drop the low-entry classes, keep them or combine them with others.

The overview of the statistics for entry numbers over many years shows that we have had a fairly constant total number of entries each year, together with a large increase in the number of classes flown. The result of this is that the most popular classes have fewer entries than they used to have (but not all that many fewer) and they are accompanied by a long tail of low-entry classes. I will not report the figures here but you can find them in Phil Ball's paper "A Brief Look at Contest Entries over the Last 20 Years" presented at the Free Flight Forum last year (2008).

A number of people take the view that we should run fewer events at our major meetings. They maintain that running a large number of events dilutes the competition and reduces the status of the most popular events. The basis for this seems to be along the lines of "the more people I fly against then the more satisfaction I can obtain from any success". There is clearly some logic in this argument but the conclusion that we should drop the less popular classes and by doing so get more competitors into the popular ones, does not necessarily follow.

Here I must declare a vested interest in that I fly in CO2, tailless and E30, all of which are low number classes. If you simply remove these classes from the calendar I doubt whether you will see a corresponding rise in the entries for the popular classes. Two reasons for this: firstly many of the people who fly the minor classes fly in the main ones as well so no difference; secondly you will discourage a number of people who will simply fly less or go and seek their 'pet' classes outside the BMFA calendar.

More important to my mind than any possibility of upping the status of meetings and classes is that in seeking to do so we risk forgetting what it is that attracts some of us to the hobby. For some it is clearly a competitive urge, the desire to develop the models for increased performance and the thrill of being part of major (sometimes International) competitions. However, for some others, the simple satisfaction of creating and flying the models they have enjoyed for years, and of competing with them in the company of others, is the main driving force. For these people winning is a nice bonus but not the first objective. The limited numbers who are prepared to apply the time, effort and expense needed to reach the top levels of international competition shows how wide the gap between these two approaches has become.



There is a historical perspective that might suggest that in the UK we made a fundamental mistake in the 50's and 60's when we continued with our domestic scene and multiple classes rather than opting for FAI events only. However, that is water under the bridge and we are now where we are and need to do our best to preserve the UK hobby.

One further argument for event reduction should be mentioned and that is the contention that running a large number of classes on one day overloads the CD. I just don't accept that 4 or 5 more sheets on the results table makes a significant difference.

There is a solution that might be the best of both worlds and that is combining classes. Opinions are strongly divided on this one, I believe that it has a place if handled with care but is not a panacea by any means.

The problem is firstly to establish sufficiently close levels of performance between the different classes that are to be combined and secondly to ensure that all these classes also achieve their performance in similar styles. You also need stability in the performance of each of the combined classes to ensure that one of them is not going to suddenly make a performance leap and leave the others behind.

Combined rubber classes are the easiest to set up as restricting rubber weight is easily managed and effective. Balancing BMFA Open, Vintage and Classic by using 50, 75 and 100 gm of rubber has been very successful. All three types have different strengths and suitability for differing weather conditions and although 50 gm BMFA models are clearly the highest performers the Classic and Vintage models will make the fly-off and are always in with a chance.

Combined power classes have been a surprise. At first sight it should be easy to balance performance simply by altering motor runs but when people have managed to move within a class to larger more powerful motors and master the trimming consequences more rapidly than had been anticipated the balance can be upset. Also the classes are very different into their technology and the users of full-blown FAI or full-function BMFA models seem to be unhappy when a SLOP model on twice their motor run and a swap-meet motor achieves similar performance. On this point it is also interesting that we have seen very few F1B's flying in combined rubber, perhaps for similar reasons.

Combined glider should be achievable by varying line lengths and this seems to be fairly satisfactory, albeit with the difficulty of deciding just what to do about balancing the benefits of circle towing. Perhaps reconciling the difference between on-tow versus on-ground thermal spotting is just a question of choice and we shouldn't worry about it too much!

These three major combined classes seem to be successful but they all need continual adjustment of performance of individual component classes if they are to be kept in balance.

The other type of combined class is often proposed for low entry classes that are either very new or long standing. These proposals often suggest the combining of fundamentally dissimilar classes. The most obvious example has been electric combined with IC power. Still air performances are very similar (as shown by fly-off based competition results) but the style of delivery is very different. Long runs and instant start on electrics, versus short runs and more difficult engine handling on IC have led to some sense of unfairness. It is hard to see how electric could have been introduced without a combined stage in its early history but my own belief is that the sooner all electric classes stand alone the better.

Some other options which are sometimes suggested include F1G (Coupe) with P30, CO2 with E30 and HLG with CLG (now done). My feeling is that all of these are dangerous and risk damaging both classes rather than achieving a net gain. Also they are classes where many of the current competitors fly both types so they will, in truth, be forced out of one or the other. Will they then go and fly one of the more popular events instead and so provide cannon-fodder for the fame-seekers? I doubt it.

I suppose I have argued myself into expressing my own views. They might be summarised as "leave us alone please, we like flying our curious addictions and there are quite a few of us. Please continue to cater for us."

Chris Strachan 23/11/09

Editors Note:-

Combining classes has provoked a volume of discussion and while Chris states that 'HLG with CLG (now done)' there have been a number of complaints about the handling of HLG/DLG/CLG classes for the 2010 contest season. I am one of the 'number' of fliers objecting to the London Gala dropping the CLG contest so that instead of HLG on one day and CLG on the other day we now have only one HLG/CLG contest in place of the two we had previously.

Reading back through Chris' article it seems that he supports the concept of two contests on two days so why have FFTC deleted one contest? Objections to this reduction of HLG/DLG/CLG contests to your appropriate FFTC member - oh that's Chris!

BigDin

John Bailey has stepped in again, third consecutive year, to organise BigDin - the 2010 Biggles Club Lunch.

John has provisionally booked The White Hart at Flitton for 21st February, 12.30 for 1PM. This is the same venue as last year so just look up the 2009 destination in your TomTom.

Everyone interested in attending should contact John by phone or email and he will send out menus. John needs to know numbers in advance so everyone please let John know your intentions by 16 January 2010.

Narrandera 2010

For my third year in a row I'll be heading south in the company of Brisbane Free Flight Society for Narrandera 2010; specifically the Southern Cross Cup 29-31 March and the AFFS Champs 2-4 April - unfortunately missing the Club Champs at Northern Gala but my 3,000kms Narrandera trip has become quite a fixture on my calendar.

Narrandera 2010 promises to be a bumper year as the Chinese are bringing a 9 man team including 3 in F1B, 3 in F1C one in F1A plus a manager and a translator. Another name attending is Mike Roberts the current F1C Americas Cup winner. Add in the usual long distance travellers Alan Jack, Brian Van Nest, Henning and Tom, plus the Kiwis and not forgetting the 'local' talent and it promises to be a Narrandera to remember.

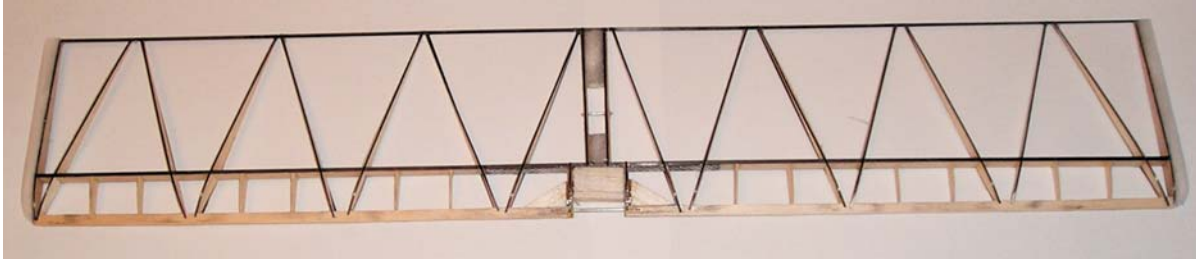
2010 has the New Zealand World Cup events so most of the flyers will be heading on to the Kotuku Cup 9-12 April and Omarama Cup 15-18 April making for a solid month of top line FAI competition. Unfortunately earning a living gets in the way of me getting to NZ; thinks, must change that for 2012.

David Brawn

F1A Tailplane Construction - John Cooper

When I started with bunting F1As, I simply took my old balsa tailplanes and modified them to take the centre bay bunt fittings. They weighed around 10 gms and were only moderately stiff (hence they warped!). Around 5 years ago I started looking at how the likes of Stamov and M&K made tailplanes, realised they were better, and started using their techniques. I now have tailplanes in the 7 to 8 gm range, which are far stiffer than before. As a rule of thumb, each gram on the back of an F1A needs about 4 to 5 gms of nose weight to counterbalance it hence a 3gm lighter tail means a 15 to 20gm lighter model or allows you to fit an extra servo! Of course, this construction technique isn't restricted to F1A tails and I now plan to use it on all suitable models e.g. F1G wings.

The photo shows the layout, with a key factor in its rigidity being that the capstrips are full LE to TE lengths, run over the spar. A crucial factor is the gap along the TE between ribs. For the sizes below about 60mm is the max, any more and the TE resembles a roller coaster after shrinking the mylar.



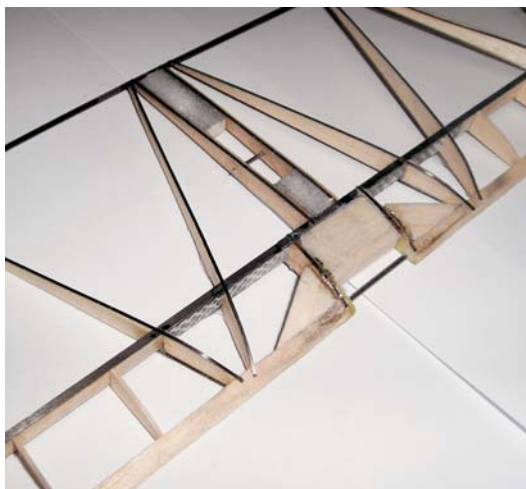
Having recently bought some decent scales (from eBay) I decided to see where the weight went, with a view to making further savings in the future. The weights quoted are all in gms, with dimensions in mms and are for a typical 4 sq dm F1A tail.

TE 1.5 x 0.5 carbon	0.7
Spars 2 x 1.5 x 0.3 carbon	0.8
Spar web 1.5 x 5.5 balsa	0.8
Ribs 0.8 balsa	1.0
LE 4.0 x 4.0 balsa	0.3
Cap strips 1.0 x 0.1 carbon	0.5
Total	4.1
Total assembled	4.6 i.e. the glue (cyano) is 0.5
+ bunt wires, pivot and arm	5.5
+ gussets and tip blocks	5.9
+ balsloc for covering	6.4
+ mylar covering	7.5

The areas where weight can easily be saved are:-

- 1) the spars you can get away with 1.5 x 0.1 capstrip material, this is fine provided that the glue joint between the spars and web is 100% OK. If the glue joint fails, then the spar buckles,
- 2) the 2 metal pins for the LE pivot and to take the bunt arm. I use wire; others use hollow hypo syringe needles which are only a fraction of the wt. However, these can buckle on a heavy landing.

As you can see, I probably use more wood (and foam) gussets and filling at the centre than most, but this seems to help in rough landings.



The construction technique is to make up the spar (carbon + balsa) and add full length tip ribs. Then tape the lower surface cap strips to the board. Put minute drops of cyano on the capstrips where the spar, LE and TE will go and place each in position in turn. Remove tape that was holding capstrips on board. Cut ribs to length and cyano in place. Carefully sand down top surface. Cyano top capstrips in place. Remove from board and finish as usual. All top capstrips MUST be added whilst structure is flat on board (otherwise you will have a propeller!)

Who needs new models?

In late 1994 I built a new F1A (my 2nd bunter). It was totally home made, with a fair bit of carbon, but still lots of balsa. It had a home made hook, a Polish F1B timer and home made bunt components. I'd guess at a total cost of under £50. I was convinced it was going to win me the 1995 World Champs I've had that thought several times! On this occasion my excuse for not winning was being taken to hospital to have my appendix removed about a week pre the Champs. The model is still in existence, having probably had more flying than anything else I've built. It's been re-covered twice and had an M&K timer and hook added in 2002. Apart from minor changes after the new hook and timer were added, I've never needed to change the trim It's now saved for rough weather and this year has won the K&MAA Trophy, the Northern Gala and the Southern Gala. For UK rough weather flying it does make you wonder if we've got our priorities and models right?

John Cooper

Boxing Smart - Lightweight Model Boxes

Transporting two F1A gliders between UK and Oz I had opted for a model box designed to withstand baggage handling, given to me by Javier Abad, inside a Golf hard shell case. Only problem was the model box alone weighed in at six kilos, add in the golf shell plus models and I didn't have any of my 20 kilo Quantas allowance left for clothing. If I was to avoid the 'Bare Brit' image I'd have to get a lighter model box.

Like many of us I suffer some damage from flying but most of my repairs come from 'accidents' in my modelling room; snipping piano wire often resulting in punctured flying surfaces as the spare end flies across the room, dropped Swann Morton another hole, etc, etc. If I just had a set of lightweight boxes to hold each model I could save a lot of 'accidental' damage as well as making it easier to pack the car for flying days.

Meeting Gavin Manion at the Moncontor/Poitou International (2008) in France he showed us his lightweight box made from 'estate agent' signboard. Mere grams in weight here was the answer to simple, stylish model boxes constructed in minutes.

Gavin had bought his 8 by 4 sheet of corrugated plastic sign sheet from a local sign maker for £15 + VAT.

A quick web search led me to Sign Wholesale who stock 'corrugated plastic' in 3, 4, 5 and 6mm thicknesses at a reasonable price so long as your order is over £100. 'In for a Penny, In for a Pound' I ordered 36 sheets of 1230 by 1000mm 4mm sheet; with 4mm you can have it in colours Blue, Red, Yellow, Green, Black (not my choice) as well as White. So add in a roll of 50mm Silver Duck Power Tape (£5.49 from Screwfix, just a 400 metres stroll from my UK house) a sharp knife and a metre straight edge and I was ready to start manufacture of model boxes - first one for my Odenmanns Vint Glider.



First choose a Colour



Biggles FFT Yellow



one 'Sliced' finger

Construction is simplicity itself compared to making wooden boxes. I work out the size I need for the Odenman's, that fin fixed on the tail making the box bigger than usual, lay out a sheet of corrugated plastic to mark out the base, sides and ends using a fine felt tip marker pen. Quick work with a sharp knife and the straight edge gives me the box cut out plus a sliced finger!

I had thought to mark along the fold lines with a blunt edge and fold; but this just doesn't work with 'corrugated plastic', so all the pieces are cut to size trying to remember the 'extra' 4mm widths for overlapping pieces. With my pack of bits on the garden table I start construction with the 50mm Silver Power Duck tape. The trick here is to put the tape on only one edge, then using three arms and a leg hold the plastic into position and press the tape onto the second edge; practice makes perfect! If you want to make doubly sure then tape the inner joins as well.



Kit of Bits

Hey Presto, an open box; except that an open box is just that so for the lid I measure out the plastic again allowing 5mm oversize and a 30mm lip; three sides only. Repeat the box process and I have a lid but I would like it hinged. Duck Tape comes in again as the hinge.

Tip here is to place the lid on the box before sticking the duck tape along the outer hinge line. Then open the lid and add a second line of duck tape on the inner side of the hinge, run a finger nail along the hinge line to stick the two layers of duck tape together at the hinge. End result a stylish box weighing mere grams.



first tape on end piece



Lid Hinge on inner side

Its waterproof, doesn't need painting, can be made in minutes to fit any model - who needs those old fashioned 'woody wood' boxes?

To help identify my newly boxed model collection I'm mixing and matching lids and boxes - CO2 White Box Blue Lid, Oz Box Biggles Yellow Box Red Lid, etc.



Finished Box with Lid

If you might want to increase rigidity try duck taping some carbon fibre tent poles into the long edge corners; John Andrews simply runs his glue gun along the inner corners.

Also dividers to stop fuselages vibrating against wings and tails can be simply cut and duck taped into place.

Just a word of warning these boxes are light so when you take them out on the flying field they can easily blow away in the wind! And if it does blow away it would be a good idea if you had labelled your boxes with a wide felt tip marker!



Supplies from www.signwholesale.co.uk - ordered Monday by credit card, delivered Thursday 13.30 by courier (excellent service but when unpacked one sheet had Stanley knife slashes all over it!), and www.screwfix.com but as they are just round the corner from my UK house I always shop personally, good for quality Cyno adhesives as well!

Latest box is my miniature ZingWings box all of 46cms by 11cms by 10cms which holds six models, two handles, six catapults, spare TanII and orhtodontic 1/2 inch bands - that's 'free-flight in your pocket'.

Mike's Musings 2009

After spending quite some time this year flying in and reporting on competitions various, I felt it time to pen a few thoughts on trends and developments.



Manoni's big F1Gs

Starting with F1G.

This class still generates considerable interest worldwide and one can understand why. The specification is minimal, being only concerned with airframe weight and so allowing greater diversity of approach and design. This means that traditional wood and tissue craft can compete on level terms with the high tech machinery. Or can they?

Various calculations lead one to the conclusion that the optimum wing should be circa 15.5 sqdm with an aspect ratio of 13 and a

wing span of 1300mm. It is difficult to reconcile these dimensions with a large model but an area of around 13sq.dm seems about right. Is 13 the magic number?

It has been stated by Hipperson and others that an F1G is not a miniature F1B but in reality a small open rubber model. Perhaps they forgot to tell that to the Russians and the Ukrainians! The Italian larger model style as exemplified by Zeri and Manoni, often flown with long motor runs, is better suited to calm conditions.

A year or so ago Helmut Werfl was the man to beat. This year it is Jean-Luc Bodin, closely followed by Michel Picol. These and others are all flying models close to the suggested optimum wing dimensions and they are mini F1Bs.



Jean-Luc Bodin is the man to beat

F1A is seemingly becoming dominated by bought models equipped with electronic timers and often radio DT. Here, unlike the other classes, the average age of the competitors is falling as are the number of entrants. The models are slowly becoming more refined with the front runners all developing flappers to squeeze that last few centimetres out of their prodigious bunt launches. Of note here are Aringer, Findahl, Stamov and Koglot.



Victor Stamov taking F1A flapper to new heights



Alex Andruikov 6 panel F1B 'electronic'

F1B development seems to be rather static as the present time. Six panel wings are becoming more common and so are electronic timers and 1/16th rubber motors. Whereas with F1A the electronic timer offers the necessary precision for high speed bunt launches the same accuracy is not needed for F1B. The use of electronics does of course facilitate the use of fashionable radio DT but is it really worth an extra £200 per model? A well trimmed Andruikov is still hard to beat as shown by Mike Woolner's recent successes.



Mike Woolner flies to Win

The power class F1C continues to see a fall in competitor numbers and stagnation in development, although a few more are experimenting with folders. This route does appear to offer some performance increase but in fact loses out on reliability. Italy's Franco Gradi is of note here.



Andreas Lindner making F1Q come of age

Will Electric power F1Q ever come of age? Well perhaps it now has. At the last World Cup event of 2009 Eurofly at Bern Switzerland the class started to reveal its true potential with the likes of Germans Assmuss and Lindner leading the way large models powerful brushless motors LiPo batteries and stunning climbs from short motor runs.



Franco Gradi's F1C folder (Trev's is bigger!)

Mike Evatt November 2009



The following notes were intended to be included in last years newsletter but unfortunately did not make it on time. I will update by saying that three of the models have been finished but sadly I did not get to the indoor nationals this year.

Now that I am equipped with two Pilatus Porters I went along to the Autumn Scale meeting at Digby. The rules allow more than one entry in a class so long as you use a different model. An experimental rule change for this meeting was judging for flying only, no static scoring. This rather played into my hands as, in my opinion, there is no better flying model. The result was I tied for first place with myself. (It was hard work recovering the model between flights though)

My Kit Scale Experience in 2008.

My interest in aeromodelling extends to scale models. To prove the point I have at least six unfinished models in my workshop. It always seems very difficult to finish them off. The prop, U/C, cabin and other details always give me trouble. However, there was one model that did get finished. This is a Micro-X Pilatus Porter, the kit bought in Orlando about five years ago. Construction was started in Motel rooms in Florida and continued in New Zealand. I even managed a little work in a hotel room in Singapore before completing the model at home.

When I saw the Scale Indoor Nats. advertised I realised this model could be a contender in the Kit Scale class. Unfortunately I was unable to locate the original image I had used for the colour scheme and the next best was rather poor. Anyway, off I went to Nottingham and what a day! Perhaps the best organised contest I have ever been to, quite nervracking at times and more stressful than flying F1C. Waiting for your name to come to the top of the list, walking out into that vast, lonely space to release the model and then glancing up to see the row of faces looking down from the balcony.

One of my objectives for next year is to get one place higher, I have no complaints about the 2008 result, the winners model was much better presented than mine. (See "Mike's Flying Scale Pages", for photos and report on the meeting)

I don't know who thought of the Kit Scale class but it was an excellent idea. It gives anyone from other disciplines a chance of success and is an ideal introduction to indoor scale, which, after all, is a specialist event.

Basic rules, 10 sec. qualifying flight

Documentation, copy of kit plan and picture of full size aircraft modelled.

Not difficult and a great selection of subjects. (See rule book for full details)

My tip would be a model 20-22" span, leave the peanuts until later and get a good picture before you start.

See you in the hall,

John Bailey.



Club Champs History.

The first Club Champs was in 1974 and was won by St. Albans. Some time previously there had been an Area Champs.

By winning in 2008 I thought Biggles had broken their own record for successive wins, but not so. Recent success has only equalled the winning run of five wins between 1975 and 1979. It must be admitted that many years have produced a poor competition. Why the lack of interest I don't know. There must be at least half a dozen clubs who could field a competitive team. You don't even need three, Russell won it on his own one year!

Club winners are,

Biggles 11, Birmingham 7.5, Grantham 3.5, Falcons 3, East Grinstead 2, Freebirds 1, St. Albans 1, Timperley 1, Bristol & West 1.

In 2002 Birmingham and Grantham tied.

The above information is taken from the trophy. Apparently there was no event in the years '89, '90, '95, '97 and 2001.

So, in order to break our own record we need to win in 2010. This will not be an easy task as the event will be held at the Northern Gala where it is likely we will have strong opposition. Recently we have relied very heavily on John C. and Trevor who both have a remarkable record over the last six years. In fact we should have won the trophy in 2004 when Trevor and John won their events, but we had no one to fly rubber. I would like to claim it's always the third man who could be considered the most important. I think John had that honour last time. A poor performance by his standards, probably due to not reporting for training the previous evening. Rubber has shown a rise in interest, but we are rather exposed in power, always having to rely on one man.

We look forward to a good turnout at the Northern Gala.

John Bailey.

Note from your Editor:-

2010 Club Champs are being held as part of the Northern Gala on Good Friday 2nd April 2010. Time to get another **Biggles FFT** name on the Club Champs Trophy.



'Profs' Giant 40 Folder Project

Trevor Payne's record in free-flight aeromodelling is an open book, read that as an 'Open Power' book as Prof has dedicated his free-flight to the pursuit of ultimate powered performance ably demonstrated by his latest **'40 Folder Project'** which possibly promises performance that will far surpass even his own current level of excellence. Prof's Carbon-40-Folder-Bunter project would seem extreme even to a dedicated follower of performance enhancement but it is a logical development in line with Trevor's search for ultimate performance - engine powered of course, but first let's dive back into a bit of history.

Back in the 60s when I joined Northampton MAC, Trevor already had the Prof nickname from his engine expertise and power free flight development. At a time when John West was cleaning up with his modified Dixielander Prof, still a teenager then, was developing his Peregrination series of open power models - fully geodetic construction, TD15 on pressure with flood off, fuse DT and no gadgets with a four and half minutes still air time off 10 seconds run. You could see where the Prof name came from as he showed part built Peregrination models at club nights, his test of wing lightness and strength was to be able to hold an uncovered 60 inch wing horizontal by the tip (try it with your own models), while he was building large power models that weighed in at 12.5-14 ounces compared to the average power models some ounces heavier.

Prof's first big win was the 1966 White Cup in an area centralised event where we flew at RAF Henlow - three three minute maxes plus 4.21 flyoff. I remember it like yesterday because the day Prof received the results service, he rushed round to our house to show the results sheet with him top of a substantial Open Power entry; lower down the results there was D Brawn Northampton 1st in Frog Junior making the event easy to remember.



Peregrinations grew into Eta 29 size, then into 40 size open power models with the 80 inch wingspan Forte and 84 inch wingspan Plus Forte designs flying against the likes of Russell Peers and Julian Hopper; Forte plans were published by Aeromodeller. All of these balsa, spruce and tissue construction but all was shortly to change. Prof is an avid follower of Formula 1, both the racing and technology, and in 95 racing car construction was changing from aluminium honeycomb to carbon fibre. At the Northern Gala Prof was taken by the potential of a new open power design using carbon fibre construction by a certain Ray Monks. Seeing the change in technology, Prof was an early adopter of carbon fibre, recognising that stiffer structures made for faster climbs and better glides.

With the new technology came thinner sections, higher aspect ratio, higher climbs and better glide - Prof is now reknowned for his huge glide circle, having bunted off at incredible height. We fly on some pretty big airfields

but when timing for Prof I find it difficult to think of a flight that has landed on the airfield, last weekend at Barkston was a classic November cold contest with Prof reeling off an 8 minute plus flyoff to win the Falcons Grantham Open Power contest in really cold conditions; my thermistor registered a maximum of 10.8C during the day.

Prof's modern models are fully documented in the Free Flight Syposium report of 2005/6, complete with precision line drawings bt Bob Wells.

Here is an aeromodeller at the top of his game so why go further?

'40 Folder' planform



wing 'unfolding'



wing in glide position





3 folded panels make semi-symmetrical section



wing folded position

Prof doesn't need any extra performance, he's already seen off his Open Power contemporaries, but he's always up for a challenge so he pushed the boundaries even further. A streamlined folder would give a higher climb. Streamlined folded wings could conceal a heavily undercambered high lift aerofoil. To overcome the drag of the folded wings an inner panel sheath will form the folded wings into a semi-symmetrical low drag wing section.

The prediction (guesstimate) is that present end of power velocity of 50-60 mph could become 80mph, unfolded the highly undercambered high

lift wings should substantially reduce the 'rate of sink'.

If it all works then those 8 minute flyoffs could become 12 minute dead air fly offs!



5 function seelig atop the pylon

Development has been a long thought out affair with Prof finally settling on a 'test bed' model with the specs of:-

Wing - two piece six panel with total span of 2.35 metres, 1st panel 50cms, first folding panel 50cms, folding tip panel 32.5cms.
 - root chord 21 cms, 1st break 20cms, 2nd break 16cms, tip chord 12.5cms.
 - section Yablonski F1A section.

Tail - standard tail 58cms span, 12.5cms chord.

Moment Arm wing TE to Tail LE 116cms.

Power K&B40 (>2bhp) for test model turning a 10 by 4 Taipan on straight fuel, gradually (if successful) progressing to 9.5 by 4.5 APC prop running on 30% nitro helicopter synthetic oil fuel. If successful I think we can expect to see a Nelson 40 (<3bhp) in the final version.

Bladder pressure tank. 5 function Seelig timer atop the pylon with lines tubed to engine, wing fold mechanism and fin/tail region.

You have to admire Prof's dedication to the pursuit of Open Power, really that should be OPEN POWER in noisy capitals. I already refer to his present series of open models as 'Earth Tremblers' and I'm expectantly looking forward to being amazed by the Prof's latest project - truly Biggles Spirit!

David Brawn

In this pizniss is much risico - Stephen Brewer

A couple of years ago I discovered the remains of the first HLG I ever built tucked away in the loft. The model was built as a school project when I was about 11 or 12 years old making the model over 21 years old. Although not a great flyer it was lost to my first ever thermal encounter, being returned a few days later after being found in the top of a tree. With such fond memories I decided the model deserved more than being relegated to a cold corner of the loft and that it could possibly be put to use as rough weather or spare contest model admittedly after some renovations and repairs.



Chris (1st F1H) and Steve (1st CLG)
at Tynemouth Mini Rally

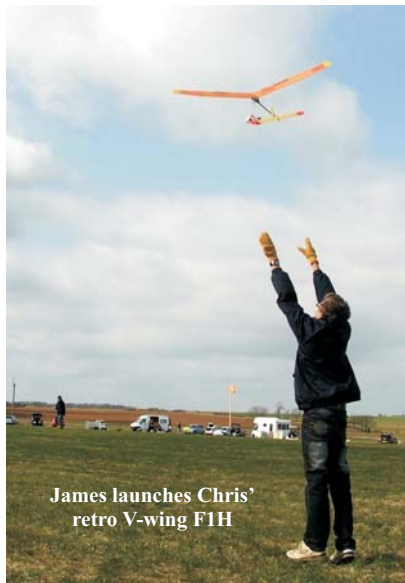
I had my reservations about the project's success and soon discovered that trimming a model originally designed for my meagre 11 year old strength was not going to be easy. A huge tail and stacks of incidence meant anything more than a gentle lob resulted in a huge loop that couldn't be rectified no matter how much I warped the tail. Eventually the model got broken after a heavy landing but I wasn't going to give up that easily and decided that a new model could be made using the original flying surfaces on a new fuselage. If all went to plan maybe it might be of use as a large CLG. As the redesign progressed I decided that not only was a new fuselage needed but the tail surfaces could also be reduced in size and the moment arm lengthened. A new layout based around the original wing was drawn up loosely following the 1/3rd 2/3rd theory of HLG design. The result is what I believe to be a good-looking glider with relatively high A/R ratio wing of 20"x3". The fuselage uses a glass boom that was given to me by Brian Lavis and the model was finished off with a simple nose drag flap DT operated by a button timer mounted in the wing. In effect the model has been transformed into a totally different design and one that goes against current "accepted" CLG practice. It's heavy at over 30g, has a large high A/R wing and a thick section. Some may also notice the odd dihedral system with long shallow inner panels and short steep

tips. This was a result of my fathers faded memory at the original models design stage and something that I was therefore stuck with. The original model was loosely based on his HLGs from the mid 50's but we had no drawings to work from nor were we in contact with any other HLG flyers at the time to ask for advice.....so it's not what I would choose to use on a newly designed glider.



Risico and modern CLG
for comparison

My reservations about the model were totally unfounded and initial calm weather trimming looked promising. The long moment arm provides a very straight climb needing little incidence for transition and the only adjustments required were a small piece of 1/32" packing inserted under the tailplane t/e (last 3/8" left unglued) and a small wash-in gurney flap just inside the left dihedral break. The long wing and shallow dihedral mean the model doesn't roll much so launching attitude can be critical. Before trimming was complete I was forced to use the model at the Tynemouth Mini Rally after my No.1 model was damaged in the windy conditions after one comp flight. Despite the turbulence and wind the model did enough to win and since then has gone on to place third in the wind at the Southern Gala and win at the Midland Gala. It would therefore seem that the (little) effort involved in creating the model was worthwhile.



James launches Chris'
retro V-wing F1H

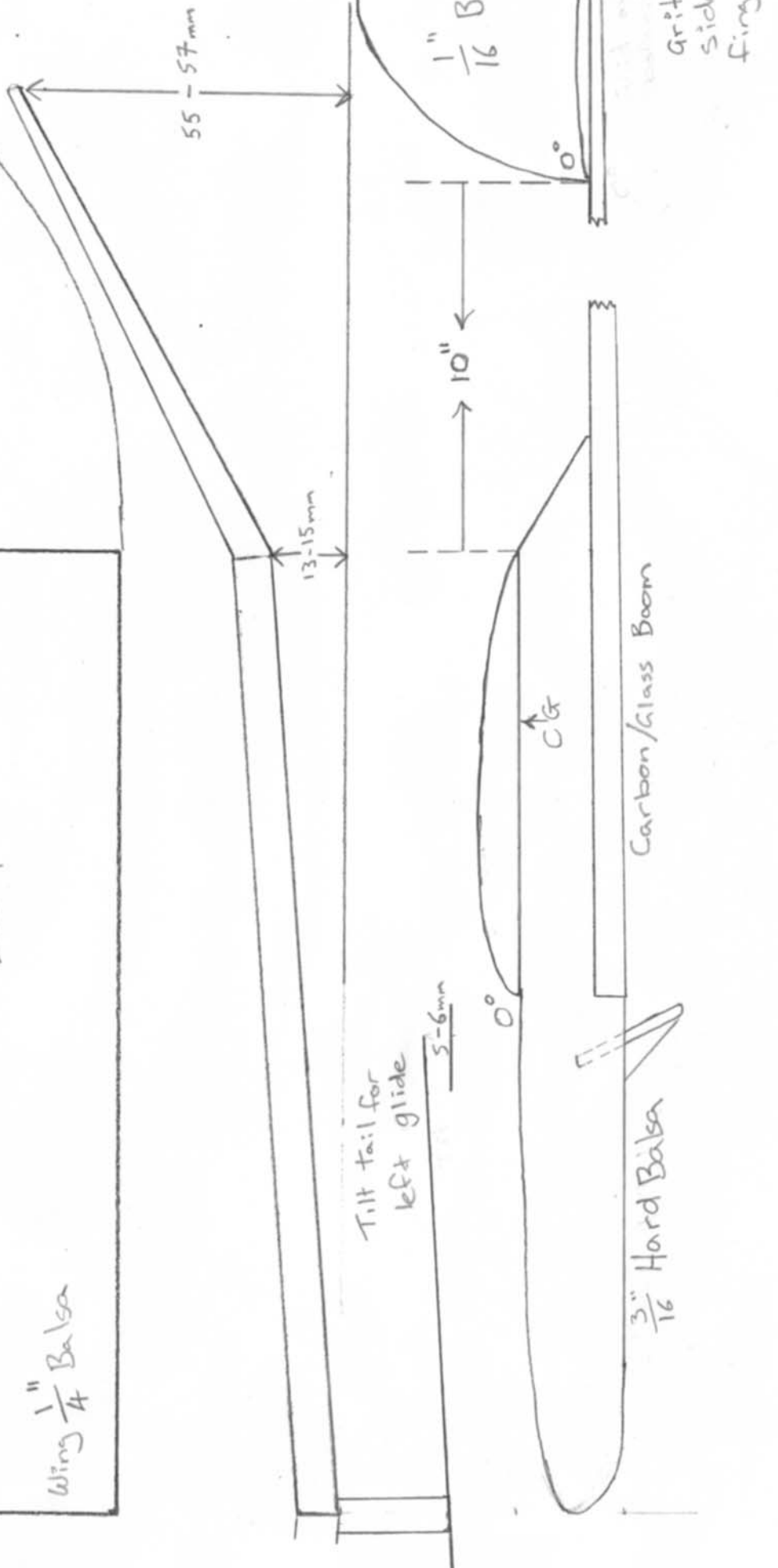
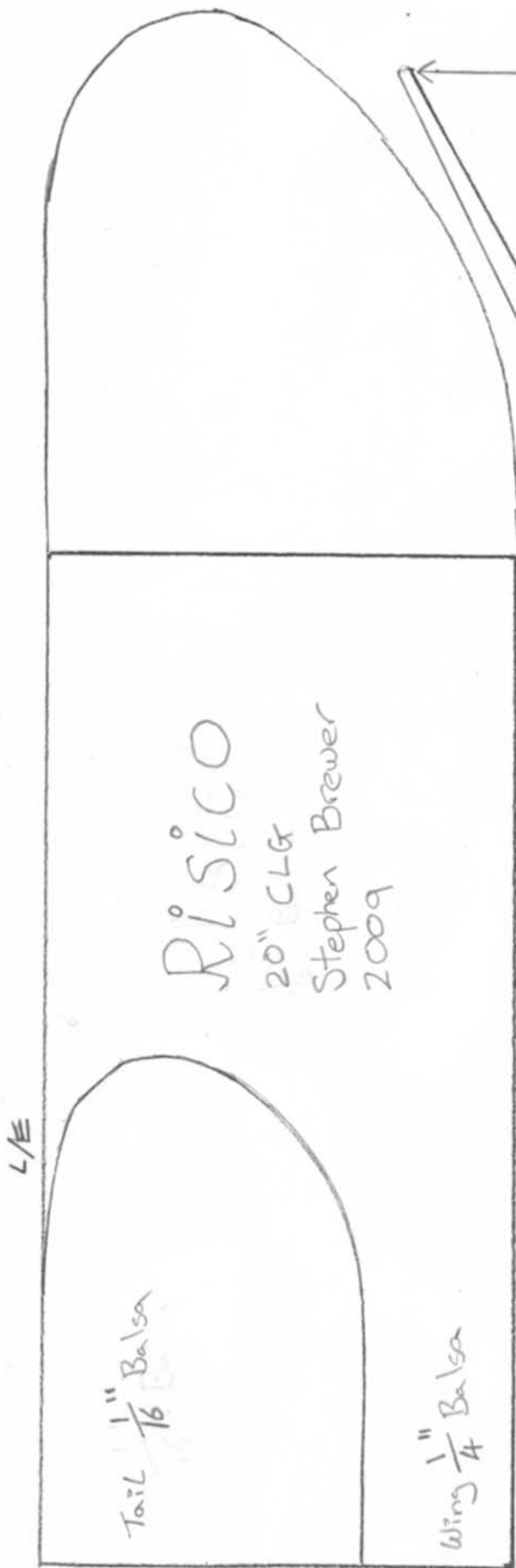
almost anything can be made to fly. It's therefore worth having a look to see if you have an old HLG stored in a dusty corner, it might be just the thing for those windy comps when you don't fancy flying anything else.

The success means I'm considering building a new version using an improved dihedral system and better quality wood and the fact that the model whistles on the way up proves that there is room for reducing drag. Maybe an 18" version with a 3/16th wing weighing around 20g would be the way to go but would the model lose its current qualities? It would be an interesting experiment to disprove the current way of thinking!!!

Some may ask what the title of this article has to do with a CLG? Being a James Bond fan I had just finished reading Ian Fleming's short story Risico, the opening line of which is the title of this piece. I considered using components from a 20+ year old school project as the basis for a modern contest CLG to be a risky business. It does however show that



Roger Heap is also
a V-wing exponent



"SPIN DOCTOR" & RECENT DISCUS H.L.G DEVELOPMENTS - A-J-CRISP

Such "development" as I have done over the last couple of years has been on discus launched gliders. SPIN DOCTOR presented here is a result of some of these findings.

Here are some points, in no particular order, as they used to say on film billings.

a/ The wing needs to be STRONG to withstand forces in rotation, especially in a strong wind. I insert carbon tows or sheet Kevlar (FIA D-box offcuts) top and bottom at the dihedral joints, then cyano a 25mm strip of light glass cloth around the joint. Surprisingly there is a powerful downward force on the outside wing as you rotate.

I think 40" is about the maximum wingspan which can cope with all balsa construction. Beyond that, foam cores, carbon/Kevlar skinning and carbon manisparts are required.

b/ Spin Doctor uses a "stepped" wing section (à la Pete Buskell). This was because I wanted

to try out the iMa, and because I hadn't any $3/8"$ sheet which was suitable at the time. So $1/4" + 1/16"$ gives the step. Performance does not appear to suffer, and the glide is very stable in high winds, like the 'og Southern Gull.

c/ Don't stint the dihedral. When I first started on this discus business I thought that flattish dihedral would give less right turning tendency on launch. I was wrong! Low dihedral makes a good pull-out near impossible, and is very sensitive to turning-in on the glide, what with the large rudder area needed on these models.

d/ We all owe a debt to Mark Bennis for his trimming system which makes discus HLGs with out gadgets possible. The V tail is skewed, left tip back a little, to give right turn on the glide. For a similar reason the fin is cambered, right side flat. Although tail dihedral is wanted, tail tilt is not. Its effectiveness as a turning force increases as the model slows down, thus spoiling the latter stages of the flight. Do not be surprised at

the amount of incidence difference required for a good pull out from climb to glide. Around 3° is a good starting point. If you have pull out problems, add weight to the nose & increase the decalage to restore the glide.

e. I use a piece of carbon tube for the throw peg - $1\frac{1}{2}$ " long, $\frac{1}{8}$ " dia. Plug the ends with balsa to reduce drag. Cyano into the wing at about 60% chord. Reinforce with Kevlar sheet "washers".

f. The best way to practice discus throwing is to lob stones of a suitable weight into the sea. You may have to make do with the Nene or Thames if you live in Northampton or Oxford. Complete rotation with a little run up gets the model highest. In a wind half a turn from a standing start is more convenient.

g. Broadly speaking, less effort is required to throw a big discus job high than a regular H.L.G. to the same altitude. Just the ticket for us old guys. Let's see more of you having a go. It's not that difficult!

A. J. C.

0 to 60 in a Season - My ZingWing Year

Modellers put a lot of thought and effort into their free-flight creations so its with some embarrassment that I step into the CLG box with a £2 toy, purchased from John and Pauline at Flitehook, confident that you will need to have pulled out all the stops with your carbon fibre, specially selected balsa, best tan rubber et al to be able to beat my 'toy'.

So how did a simple toy come to threaten the establishment of Bill Collier, Pete Tolhurst, Steve Brewer, Andy Crisp, Phil Ball, Mark Benns, Mick Page and a few others?

In Dec08/Jan09 it wasn't like this as I was the joke of Springhurst (Oz Nats) to come last by a long way with average flights of just 4 seconds. Springhurst was a disaster making me look at just where it had all gone wrong. Back in Brisbane I was pinging 20 second flights on Oxford Street park in Bulimba, followed by up to 30 seconds on the Jack Esplen Oval (Morningside Aussie Rules Club), but these were occasional flights.

My problems in getting good flights were:-

- inconsistent 'Flip Out' of the catapult, about one in four was reasonable, the rest either opening the wings early or plummeting to earth with the wings folded.

- on a good 'Flip Out' I would still get erratic glide actions, dropping a wing, spiralling down out of lift.

When it worked , it worked very well (30+ seconds) but most of the time I was struggling with 6-14 second flights, hardly the stuff of legends.

Tif (the designer) builds the ZingWings in a little US mountain retreat where after stamping out the wings, joining them with glass fibre reinforced gaffer tape, he packs them in plastic bags with a stick and three rubber bands. They are intended as flying novelties rather than M&K CLGs. I knew that when the ZingWing worked it worked very well but the inconsistencies meant that to get a contest result I would need to trust in having a lucky day!

I sat down with the problems in the 'Hanger' (my giant modelling room under the house Ros rents in Brisbane) to ponder the solution. On the positive side was the great altitude the ZingWing would catapult to, easily higher than any UK or Oz CLGs, its tiny profile when folded meant it was like catapulting an arrow upwards.

Inconsistent 'Flip Out'

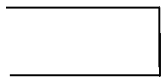
The rubber bands with a ZingWing are 'stationery/postman' bands, all lumpy and subject to inconsistent stretch. If you want good consistent stretch bands you have to go professional so I invested in some Mike Woodhouse Orthodontic Bands, the difference is amazing; at Narrandera (Oz Easter) a young Brett Townsend (Albert Fathers' grandson) discovered that a half inch orthodontic band tripled across the ZingWing hooks was the gear. We didn't quite place but we were pinging off 40 metre launches with perfect 'Flip Out'.



Inconsistent Glide after Flip Out

ZingWings are stamped out of depron sheet, and it shows up in the inconsistent glide you get straight out of the packet. No self-respecting free-flyer would put out a model with a leading edge like this. The cutting of the wings leaves hard edges that show up as a LE which will flip up or down on the slightest disturbance; you might get away with this in calm weather but any disturbance can lead a standard ZingWing into a short aerobic flight!

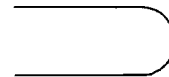
Fortunately the hard edges from cutting that spoil the aerofoil can be easily removed by a bit of diplomatic sanding to give a rounded leading edge. Just a couple of minutes with sandpaper and you can have a section that works. The result is consistent glide even in windy weather.



Production LE
as planned



Leading Edge as delivered
imperfections caused by production



Rounding off the LE to produce a steady transition
from +ve to -ve angle

Decent Rubber Power

Tif includes a stick and a big rubber band for the catapult. Just like power models go for the best, well my best is some Tan 2 donated by Geoff Kent and John Cooper. It stretches tremendously, breaks occasionally, but gives great 'lift off'. Just go for power, use some good rubber not that stuff given away after its been wound beyond its elastic limit!

Having gone from a 4.5 second average flight time at Springhurst (January 09) I arrived at Andy's Oxford Comp to record consistent 30 second flights on the dead saturday evening comp coming third behind Pete Tolhurst and Steve Brewer - so no disgrace there!. On Sunday after flying Vint and Classic Glider I started my CLG flights about twenty minutes before the comp closed. with a clutch of Biggles timing. It is cold, overcast and dark as I declare 'Any flight below 50 seconds is an attempt'. Wait a minute, that feels good, stretch the Tan 2 to the limit, and ping into the sky. John Coopers timing, Brian Lavis encouraging, Steve Brewer wondering as my ZingWing sails away after a perfect launch, Andy came out of his control tent to see what the commotion is all about. as my ZingWing glides down short of the river for 58 seconds!

I made fourth at Oxford, against strong competition that had used the best part of the day. It was similar at the Timperley Gala on North Luffenham where I had 20 minutes to get in five flights to come third behind Pete Tolhurst and Steve Brewer, my first national placing with a ZingWing.

So for just £2.00 you've got a competition model that with a minor mod or two can compete with the best models and flyers in CLG; just form an orderly queue at the Flitehook emporium and five minutes later you can be joining us pinging away in the flight box.



My approach to BMFA rubber Thermistor 11 by Neil Cliff

General Thoughts.

My first successful Open Rubber model was designed in 1958 and when I came back into aeromodelling I based my later models on it, 100-gram rubber and airframe weight, 12 strands of 1/4 rubber and 24*24 Bilgri propeller. It featured diagonal longeron construction and geodetic surfaces. I called it Thermistor because hopefully it would be a heat sensitive device. This was years before anyone started to think of using these devices to detect thermals: I got there first!

The model had a problem; it was too good for a 2:30 "rounds" model but not good enough for fly-offs. Nevertheless my son and I had some success with it over the years, but due to other commitments I somewhat neglected Open Rubber, especially since it was obvious that you needed to build a large "bag of rubber" model specially for fly-offs.

For this reason alone I personally welcomed the BMFA Rubber Class, although I sympathised with the large model fraternity because of their undoubted expertise and skill.

However what to build? One approach is to build what is an overgrown Coupe or P30 and these have been very successful in the hands of Chris Strachan and John O' Donnell. Others have very successfully adopted Eddie Black's URCHIN approach or their personal variations of it such as Phil Ball.

I have always inclined to "get it up there quick" models not always without spills, but they are more exciting to fly, - and rewarding when they do! I therefore decided to adopt a 1964 Wakefield approach with 28 strands of 6 mm, matching this with my favourite propeller, a slightly larger diameter Doring.



Propeller and Rubber

I don't think Doring has been fully appreciated; the Espada was a very clever model, which won two World championships and was 4th in another. The propeller was designed on MIL principles as set out by Theodorsen. My nose assembly is aluminium, a larger version of my Coupe nose assembly, and is not much heavier than wooden ones.

Wing

The wing design is about 20 years old, geodetic but has a sheeted LE. It has a flat dihedral centre section and tubular carbon spar. It seems to me that an awful lot has been written about aerofoil sections but frankly the wing section after building often bears no resemblance to the theoretical shape, due to tissue sag, badly carved leading edges etc. A geodetic wing is especially notorious for this. I think some of the success of FAI models is down to accurate D box wing sections. I have therefore adopted sheeted leading edges for my models including the tailplane.

Tailplane

This design again is basically 20 years old but smaller, and features a moulded balsa D-box.

Fin

This is plain construction with tubular carbon spar.

Fuselage

This started out as a diagonal longeron construction using 4.5mm by 1.5mm longerons and an internal

rod jig with traveller to keep the spacers aligned. Spaces were 3mm by 1.5mm. However laziness now dictates I use 3mm sq longerons and 1.5 by 3 mms spacers. The sides are built flat inside an external jig outline.

The fuselage is covered with lightweight Esaki silk! Now there's retro for you! I find the best way to apply silk is to put a thick coat of dope on the longerons, apply the silk VERY DAMP pulling as tight as possible, and use acetone or thinners to stick onto the doped longerons.



Others use thinned PVA, meniscus doping methods etc but whatever method you adopt always put silk on DAMP and pull as tight and wrinkle free as you can, before doping. It is very strong and weatherproof.

Trimming

CG position is about 70%. The model normally takes about 500- 600 turns and needs 5 secs VIT if you go over the 600. Fin is straight no tab, and tail tilt is used to get right glide turn. RH panel is washed in slightly and the model uses right and down thrust.

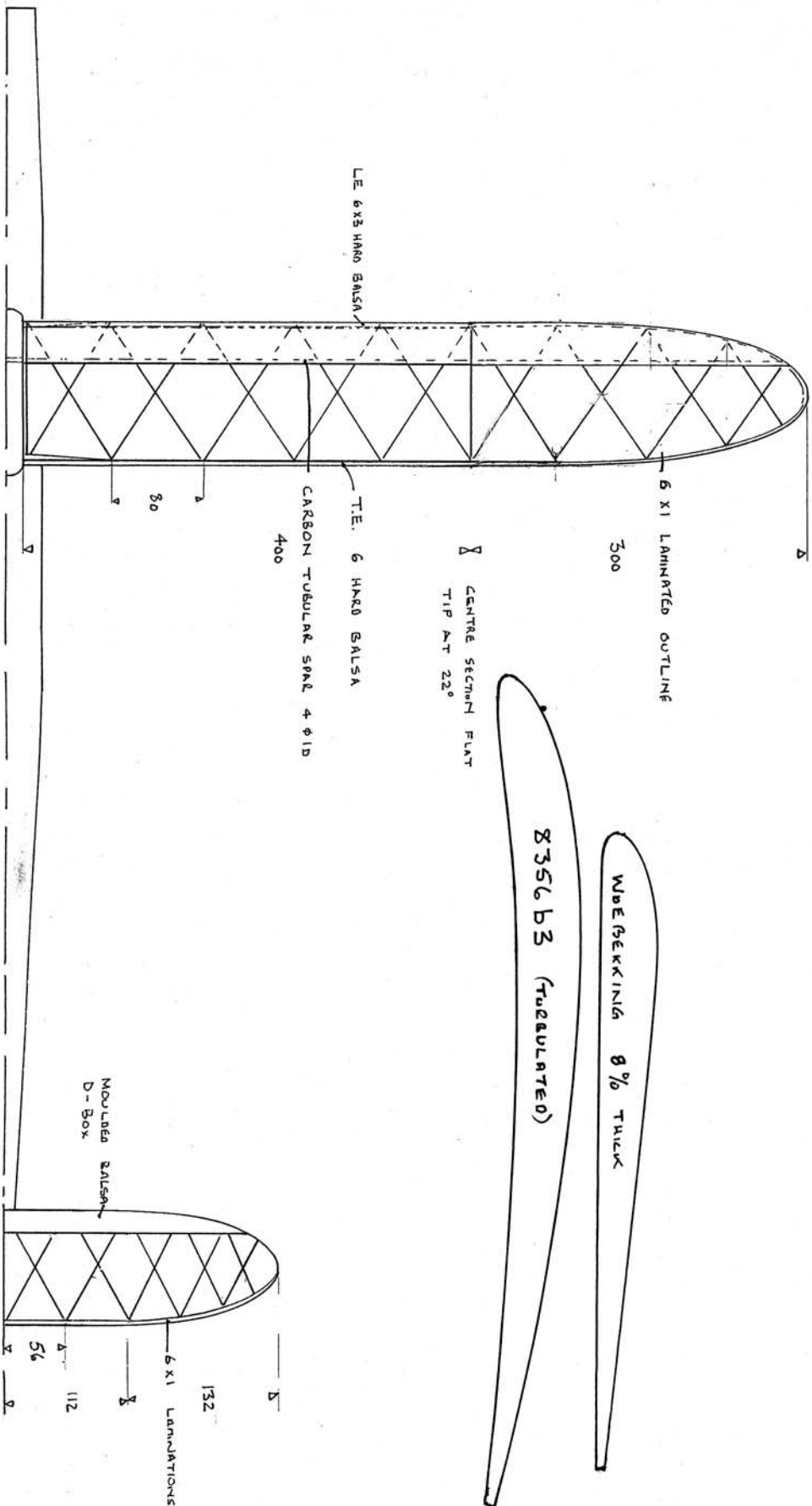
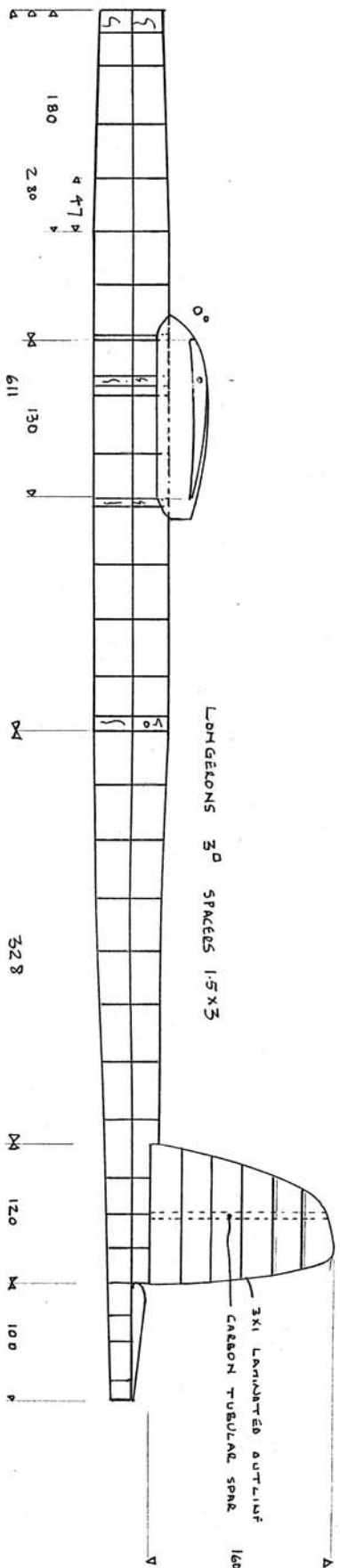


Weight

This is unashamedly a heavy model, the airframe including prop assembly and Tomy timer being 100grams plus. However the total weight at about 150grams is well under 1964 Wakefield weight and the surface area is of course larger.

Photos

Photos show No. 10, which is virtually the same, apart from the tailplane and diagonal longeron fuselage.



GPS Assisted Off-Field Free Flight Recovery

We've come a long way from my start in free flight in the early 60s when binoculars were an expensive luxury and we simply headed off downwind hopefully. Nearly fifty years on retrieval has become electronically driven with Biggles in the forefront of 'off-field' retrieving; largely thanks to Brian's large magnetic roof aerial along with our enthusiastic team technique. At the risk of teaching you to suck eggs here is the basic approach of the Biggles retrieval team.

Equipment:-



1 Marine sighting binoculars and/or traditional compass. 2 Pym Ruyter transmitter beacons plus receiver plus magnetic roof aerial. 3 GPS unit (Garmin 60 shown) and magnetic roof aerial. 4 Stopwatch and Dick Smith windspeed meter. 5 Mapping, conventional and digital - see below.

How we do it.

We don't always go by the book, and in Biggles I'm the worst culprit, but here is how we should do it!

Pre-Flight check that the retrieval beacon is working and has sufficient range. Test using the receiver with no aerial. Any glitches change beacon or battery, or both.

On the Flight-Line timekeeper with marine bins and stopwatch plus Ruyter receiver switched on and receiving. Someone check the windspeed. Switch on gps and after satellite acquisition record a waypoint at the launch point.

If the competition flight comes down on the field we stand down the 'emergency services' but if we are in a fly away situation then this is what we should do:-

Keep timing the model with binoculars until it goes out of sight, note the compass direction and time on the watch but keep timing.

For the Ruyter receiver continue timing until the signal is lost and note the time.

Write down the times and compass direction, the back of your flight scorecard is a useful place, and start the discussion of 'Was it still going up when you last saw it, or was it coming down?'

On the back of your flight scorecard work out the time OOS as a distance; seconds times windspeed in metres per second, to give the nearest possibility of recovery X kilometres.

Then the time until loss of signal is translated into distance Y kilometres.

On the gps go to the waypoints record, select the launch point waypoint and then the 'project a waypoint' function. Input the compass reading from the binoculars along with X distance to create a waypoint at the closest recovery point.

Repeat with the loss of signal Y distance to create another waypoint, and then create a third waypoint on the same projection but further out to represent the limit of the potential search.

The Retrieve

Off field retrieval is rather popular with some Biggles as whichever direction we head off from Luffenham or Barkston Heath we are heading towards a classic English country pub, though we make it a rule to only visit such hostelries after a successful retrieve.

On the gps we activate the 'Go To' function between the launch point waypoint and most distant waypoint to give straight track on the gps along the line of flight. Then turn off the gps 'Track Record Auto' function so that we concentrate on the line of flight track, the gps cursor showing our position on the 'Map Screen' compared to line of flight.

Into the car, put gps magnetic aerial on car roof and plug into gps (enhanced reception), and drive off to the start of our search line; the nearest road access to the waypoint at X kilometres.

When we get to the nearest road access out comes Brian's high gain magnetic roof aerial with its BNC lead connected to the Ruyter receiver and check for signals. Now it is a case of steadily driving the roads that cross or approximate to the line of flight shown on the gps.

When we get a signal, which we usually do, we stop and replace the roof aerial with a yagi to get a directional fix. Out of the car we head off along the line of maximum signal and hey presto model found.

Well that is how it normally works, as when we retrieved Brian's errant F1H at Moncontor 2009.

Narrowing the Search Area

Most people simply head out along the line of flight without much idea of at what distance their model might have landed. Calculating the most probable landing area can increase your chances of a quick successful retrieve by concentrating your efforts on the area of highest probability. Here is an example from Barkston Heath.

6th Area Centralised at Barkston Heath. Team Glider event. David Brawn's second flight with Odenmanns vintage A2, timer John Cooper.

I wasn't exactly confident of my polish DT timer and three minutes into light lift I knew it was duff. John lost the model at six minutes in binoculars on a bearing of 63 degrees in a windspeed estimated (forgot the meter!) at 10-15mph, with the model descending at approx (through binoculars) three times tree height.

Biggles at the Nationals



what a Nationals 2009 we had! After so many bad weather Nationals we thought we were in a Biblical Egyptian era as suddenly it all came good on the late May Bank Holiday. So good after the early season trash weather that after two days of perfect flying, and everybody trying to fly everything possible, it was a clutch of body weary souls arriving back at our Houblon HQ - Phil Ball even falling asleep during the main course (heard, and told of, but not seen by me), Pete & Kath Watson still out retrieving after the second flyoff round, a harassed Trevor Grey arriving late (having lost to Pete), FFTC embroiled in questionable timekeeping (non-BMFA family members I'm given to understand) so a no-show there. Those who arrived made the most of the dinner and good ales but everyone was looking forward to an early night leaving a few hardy Biggles to mop up the event - which is why we are headquartered at the Houblon!

For 2010 I've decided to go back to the original script of Biggles FFT plus invited guests as we revert to the original sit down Sunday Dinner followed by a mind teasing quiz, summer ales, and engaging company. Details still have to be finalised with Hazel but the plan is:-

- 20.30 for 21.00 (or as early as you like) Early Doors Ales followed by
- 21.00 Roast Dinner of Beef or Chicken with all the trimmings in the Houblon style followed by Biggles Desert of Treacle Sponge Pudding with Custard

After Dinner a mind teasing Quiz that might bear some resemblance to Free Flight Competition Aeromodelling

We'll only have use of the Houblon restaurant for seating so we'll be limited to about 26 people in total, basically just over one guest for every Biggle. I expect we'll be paying about £10-12.00 a head for the meal, for 2010 pre-paid after the problems of 2009. With the limited numbers invited guests will need to book through Biggles members who will pass the booking on to me - be early!

See you there on the 30th David 'Broone' Brawn

Something Very Unusual from the Isle of Wight

At free-flight competition the talk is of how well a model flies, but visit the SAMS Euro Champs and despite the competitions you'll frequently hear the question 'Does it fly?'. Vintage attracts both flyers and builders, plus being free-flight it is packed with quirky characters. On Glider day I parked at the end of the increasing line of cars along the peri track to be immediately rewarded by the arrival of John White and his wife alongside me, their Renault 5 dwarfed by a massive



plywood model box; big enough for them to have rowed it over from the Isle of Wight.

I normally see John at Andy's Oxford comp flying his 'low altitude' large coupes so we exchange greetings and banter while John fusses about unbungeeing the giant box. This takes some time so I sit down with a coffee to see what will emerge from the leviathan box. Knowing John's rubber model designs I was expecting something unusual to emerge from



all the packing but even I was struck dumb as the biggest fuselage I have seen was eventually wrestled out into the open - not that it looked like any fuselage I had ever seen before, its prodigious size making it look like part of a catamaran. What I take to be a polyhedral wing turns out to be the tailplane followed, with quite some huffing and puffing, by some enormous

wing panels.

'Backward Boy' was built by John in 1949 with the intention of competing against the giant Sunspot, Thermalist, Leprechaun gliders of the day. While everybody else had the nose at the front and the tail at the other end John decided on a tail/nose first policy to produce this gigantic canard glider. I don't recall seeing Backward Boy in any magazines of the period so assume it had a short flying career before being mothballed; John restoring and recovering the huge model ready for the SAMS Champs.

John was pleased as punch to have some photographic interest from me but even in the light breeze it was a battle between man and machine to pose for the camera, in a stronger wind I'd put my money on the model getting its own way!

I didn't see Backward Boy fly, possibly the exertions of unpacking and assembling were enough for one day. Certainly a project that size needs some thinking about before getting the towline out - or as Biggles might paraphrase it from 'Last of the Summer Wine' "You'd need a lot of ale to tackle something like that. Can we afford the ale?"

David Brawn

NUMBERS FLYING IN BMFA CONTESTS YEAR COMPARISONS

CLASS	YEAR											
	1988		1998		2006		2007		2008		2009	
	Flyers	Av.ge	Flyers	Av.ge	Flyers	Av.ge	Flyers	Av.ge	Flyers	Av.ge	Flyers	Av.ge
Combined Rubber							87	29	128	42	124	41
Mini Vintage			111	18	120	20	211	23	146	16	210	24
Combined Glider							80	22	55	14	71	24
Classic Rubber							35	18	9	4	21	21
Combined Power							55	18	54	14	56	19
Combined Clasic									4	4	35	18
F1A	201	33	135	22	121	20	74	15	105	15	118	17
Bmfa Glider/OG	292	32	193	24	126	18	70	23	40	13	70	17
P30			14	14	40	10	38	7	32	6	84	17
BMFA Rubber/OR	231	26	157	19	162	23	60	20	44	12	62	16
F1H	101	25	104	15	86	14	93	16	96	13	102	15
Vintage	60	20	86	28	38	12	29	10	38	13	60	15
Classic Glider							21	10	21	10	31	15
SLOP	53	18	77	11			62	12	59	10	92	15
Classic Power							4	4	8	4	14	14
HLG/CAT							7	7	12	12	24	12
F1G	110	27	148	21	79	13	88	12	69	10	79	12
F1B	144	24	108	18	62	10	64	11	74	10	75	11
Vintage Glider					8	8	14	7	12	6	21	10
F1J/1/2A	71	17	50	7	42	7	45	6	54	9	66	9
Tailless	9	9	14	7	16	8	16	5	14	5	15	8
BMFA Power/OP	138	15	78	9	141	17	40	13	23	11	30	7
Catapult Glider					41	8	39	8	40	8	36	7
F1C/F1Q									21	5	31	7
HLG	39	13	64	13	37	7	25	6	28	5	24	6
E30			38	9	21	5	28	6	26	5	31	5
CO2	10	537	9	23	5	8	2	9	2		19	4
F1C	69	11	43	7	40	6	30	5	16	5	10	3
Open Electric					14	3	13	4	10	3	10	3
F1E					15	5			3	3	3	3
Vintage Rubber							8	8	8	8		
Vintage Power							2	2	2	2		
F1Q					3	3	2	2				
YEAR TOTAL	1528		1457		1235		1348		1260		1624	
YEAR AVERAGE]		22		15		12		12		11		14
ENTRIES/CLASS]												
No of CLASSES		14		17		22		30		32		30

Apparently a well known Publication stated that Free Flight is dead; obviously it didn't know what it was talking about because 2009 has been a bumper year for BMFA Free Flight contests.

Total contest participation was 28% up on 2008 and also higher than 1988 and 1998 for good measure, true the good weather seemed to co-incide with contest days including the Nationals which was the best for many years. The attached chart details total number of contestants flying in each class along with the average number of flyers per contest, the 2009 results have then been sorted into order by popularity.

Looking at these at these results it is obvious that the Combined Rubber, Glider and Power events are more popular than the British only versions and this is the reason for changing to the Combined format in 2010.

Combined Rubber averaged 41 flyers per contest and along with Mini Vintage and Combined Power were at the top end of the popularity stakes, the top 14 Classes averaged more than 15 flyers per contest but at the bottom end 11 classes could not muster a double figure average.

Total Contestants flying in BMFA Contests 2009=1624 2008=1260 2007=1348 2006=1235 1998=1457 1988=1528

This analysis is a continuation of the piece I wrote for the 2008 Free Flight Forum, I know they say you can prove anything with Statistics but I believe 2009 was a great year for British Free Flight and I think these results prove we still have a strong contestant base.

Regards Phil Ball - BMFA Free Flight Technical Committee (FFTC)

Editors Note - I've had a good year flying and everyone I've talked to seems to agree that its been a classic year for UK free flight even though there was some banter at the Nationals about 'When was the last good flying day?'. Phil's 'official figures' are just part of the story as in UK we have an active Club Gala and SAMS scene in addition to the FFTC contests. Phil's statistics could be open to query, take out Trevor Grey's electric entries and Chris Strachen's CO2 entries and these classes look moribund in the mire. But the good news is more people flying in contests. I see this as being due to Gala organisers such as Andy Crisp (Oxford), Phil Ball (Grantham), Russel Peers (Falcons) amongst the club contest organisers, but also to the bold approach taken by the FFTC in recent years in providing classes that are popular; their new approach of the Combined classes is encouraging us also rans to enjoy a days competition flying, which is reflected in the contest entries - remember we veterans take a year or so to build models for the new classes so the rule changes take a second season to show fruit.

We've had a great 2009 in UK and can look forward to another great year in 2010 though who had the idea of a January contest - very short, possibly very cold day; that should be popular!

David Brawn

WING TIPS REVISITED by Neil Cliff

In the good old days, when "Aeromodeller" was full of long theoretical and apparently learned articles by Warring, Temple and other erudite gentlemen, a design had to be aerodynamically perfect before you built it or it was non-u or naff.

I took these articles to heart, and built wings with elliptical wingtips, although I could never prove they were any better than square ones, -but at least they looked nicer!

However, when I joined Biggles, it was pointed out unkindly (but correctly) by a member who shall remain nameless, but who knows his timpanis from his kettles, that applying full size practice to models was very dubious and that any advantage vortex wise was probably more than offset by efficiency losses due to very low Reynolds number at the tips. Other disadvantages of high aspect ratio elliptical tips, such as building problems and flutter were also mentioned.

Anecdotally, it was also pointed out that designer R G Mitchell, when asked what was the best improvement he carried out to his Spitfire, said that it was to saw off the elliptical tips!



As you can see from my other contribution to this august journal, I still retain (blunt) elliptical tips on my open rubber model for old times sake, but like everyone else I have adopted swept back tips for F1G and F1B



Quite a few articles have appeared (see References 1,2,3) on wingtips, and application of full size theory especially Horner (Hoener?) tips to models. Most of these have not been very positive, the general conclusions being that the swept back tip is as good as we'll get.

However I now note that some F1C's use 6-panel wings, sometimes with the tip panel quite small and very highly dihedralled.

My interest in wing tips was rekindled when I saw a BBC programme (Ref.4) about the A380 and how it was supposedly able to meet the 80 metres wingspan limit by using vortex control tips. There was a fair bit of the usual hype and flannel in the programme but it

included interesting footage of eagle wings in flight and, most important, a demonstration of vortex reduction on a model size wing in a wind tunnel.

The wingspan of the wind tunnel model was about the same as our models, and by using a smoke producing wand at the tips, it was demonstrated quite convincingly, at least to me, that there might be something here which needed investigating, hence my experimental vortex reducer on an F1B wingtip!

I have not yet done any test flights on this since I have spent the past 6 months moving, so I don't know how it will perform but we shall see!

References.

1. Tips on tips Hermann Andresen NFFS No.37 .
2. Tip Topics John Barker FFF 1999
3. Model Aircraft Aerodynamics Simmonds 1999
4. BBC Programme Richard Hammond's Engineering Connections 15 February 2009

