

# FREE FLIGHT

## News

### CONTENTS

A New Approach to F1A Design	36	BMFA Northern Gala and Club Championships, Church Fenton, Apr 2	43
CIAM Plenary Meeting, April 15 to 17	39	BMFA Senior Championships	43
News from BMFA FF Tech Committee	41	MINI V F1H by CHRIS PARRY	43
Southern Cross Cup, Narrandera, Australia, March 29-31	41	BMFA FAI Day, March 28	43
AFFS Championships, Narrandera, Australia, April 2-4	41	BMFA Free Flight Forum Report	46
Kotuku Cup, Omarama, New Zealand, April 9-12	42	Crookham Combined Power, Middle Wallop, April 4	46
Omarama Cup, Omarama, New Zealand, April 15-18	42	Croydon Wakefield Day, Middle Wallop, April 4	46
BMFA 3rd Area Meeting, March 21	42	Midland venues for BMFA Area events	46

### FFn DIARY

April 30 Madziunai, Lithuania	Baltic Cup. F1A F1B F1C F1P F1Q. World Cup. Contact: Rolandas Mackus, t+370 687 26002, fax: +370 389 69181, email: rolandasmackus@vytrolma.lt www.balticcup.lt	May 23-27 Samara, Russia	Memorial Mikhail Knyazev of Belarus. F1A F1B F1C F1P. World Cup. Contact: Dzhamel Bekeyev, tel+7 927 7022071, fax: +7 846 9992874, email: bekeev@mail.ru
May 1-2 Madziunai, Lithuania	Estonian Free Flight Cup. F1A F1B F1C F1P F1Q. World Cup. Contact: Aavo Koppel, t+372 5048886, fax:+372 6979599 aavo.koppel@hotmail.com www.mudellend.ee	May 28-30 Tass, Hungary	26th Pusztas Cup. F1A F1B F1C F1Q World Cup, F1G, F1H. Contact: György Pinkert, t+36 66 464160, fx:+36 1221 4071 info@cavalloni.hu www.cavalloni.hu
May 1-2 Monte Sisemol - Gallio, Italy	2 F1E World Cup events. 1st: 5th Coppa Primavera, 2nd: 30th Coppa Sisemol. Contact: Luca Micheli, tel+39 328 327 5876, email: asw28@tele2.it	May 29-30 Barkston Heath	BMFA Salisbury Plain. See May 8-9.
May 8-9 Salisbury Plain	BMFA Trimming Weekend. See FFn 1002 Must call Peter Tribe on Friday before 01225 862748.	May 29-31 Barkston Heath	BMFA National Championships. BG (Thurston), BR (Model Aircraft), BP (Shelley), OE, Tailless (Lady Shelley), Women's BG/BR/BP (SAA), Junior BG/BR/BP (Frog Junior), CLG, F1A (Ronytube), F1B (Fred Boxall), F1C (Eddie Cosh), F1Q, Vintage R/P (Jubilee), Vintage Glider, SLOP (Peter Harris), HLG (Nats), P30, Novice Glider & Rubber (J) (junior kit glider & junior kit rubber), Bowden, F1H (BA), F1G (308), F1J/BMFA1/2A (Hales), Mini-Vintage, CO2 (Sparklets), E30. Classic R/P, Classic Glider. Plus overall category championships. Also Non Championship: FF Scale, Lulu/Golden Wings, and SAM events. Contact: Mike Woodhouse 01603 457754.
May 9 near Sheffield	BMFA 1st F1E (Team Selection). Contact: Ian Kaynes, 01252 512538.	June 5-6 near Sheffield	BMFA Salisbury Plain. See May 8-9
May 9 Middle Wallop	SAM 1066 Fun Fly and Trimming Day. Contact Mike Parker, tel 0118 948 1392 membership@sam1066.org	June 6 near Sheffield	BMFA 2nd F1E (Team Selection, SMC Trophy). Contact: Ian Kaynes, 01252 512538
May 14-16 Zrenjanin, Serbia	27th Srem Cup. F1A F1B F1C F1Q. World Cup event. Contact: Nikola Buncic, tel+381 63 252 064, fax: +381 22 321 240, email: aknovapazova@yahoo.com, web: http://www.aknovapazova.com	June 11-13 Pazardzik, Bulgaria	Sofia Cup. F1A F1B F1C F1P F1Q. World Cup event. Entry fee €30. Contact: Borislav Bardarov, Zona B5, bl 7A, Sofia, Bulgaria, tel+359 888 703 306, fax: +359 61 860 772, email: F1A@abv.bg, web: http://www.F1ABC.com
May 15-16 Liptovsky Mikulas, Slovakia	F1E World Cup events. 15th: Liptov Cup, 16th: Nosko Memorial Cup. Contact: Milan Valastiak, tel+421 908 530 339, fax: +421 48 6112668 mvalastiak@inmail.sk	June 13 Area Venues	BMFA 5th Area. CP Team (Keil/Plugge), F1B (Gutteridge), P30, Classic Glider (Plugge), Tailless(Plugge)
May 15-16 Salisbury Plain	Stonehenge Cup. F1A, F1B, F1C/P (Dick Johnson Memorial), F1Q. World Cup Event. Plus Provisional F1-UK A, B and C. Contact: Chris Chapman, 01963 220741		
May 22 Vsechov, Czech Republic	25th Jihocesky pohar. F1A F1B F1C. World Cup. Contact: Rostislav Kvasnicka, tel+420 608 059803, fax:+420 381 29 2017 email: r.kvasnicka@seznam.cz		
May 22-23	BMFA Salisbury Plain. See May 8-9.		

## A NEW APPROACH TO F1A DESIGN

By Ken Bauer. Extracts from an article in NFFS Digest with thanks. The full article will appear in next FFQ.

Around the summer of 2008 I began to think about how to take the next step in design and construction of F1A gliders. Flappers were coming on the scene and it was clear that the bar was being raised and something more than a conventional glider might be needed to compete at the highest levels. Just before this time Brian Eggleston had begun publishing a series of papers introducing some radical new F1A airfoil designs. His premise was that traditional airfoils are extremely high drag during the acceleration and launch of modern gliders and that it is possible to design a lower drag section with only a small sacrifice in glide performance. This approach greatly intrigued me and I was also impressed with the performance of a few of the models of some of the early pioneers of the BE airfoils. I decided that I wanted to experiment with some of these new fixed airfoils before jumping into the flapper world.

The next problem was how to approach the construction of new wings. In recent years all of my gliders have been assembled from pre-built Ukrainian parts and I briefly investigated having some custom parts built but I was not excited by the response I received. I was also not much interested in the traditional construction techniques. I began thinking that true airfoil accuracy could be important and it is something that gets neglected with the current D-box structures since the covering sag over the rear of the wing can significantly distort the profile. Why go to all the trouble of modelling and designing the next great airfoil if the rear two thirds of the wing will not accurately duplicate it?

It seemed that the best approach would be some type of solid moulded wings probably based on foam cores. Allard Van Wallene in the Netherlands has been leading the way for some time with this approach and has built what are reportedly some of the strongest F1A wings around. I began toying with the idea of actually doing all this work myself as it was becoming clear that it would be tough to get anyone else to do it and I really began to like the idea of having control over everything. I hesitated worrying that I did not have enough personal time to get this involved in building, but then realized that after an initial investment of learning time that I could actually produce model parts much faster than the traditional D-box techniques so I began to explore further. I knew that making foam core composite wings was not hard as all kinds of RC guys have been doing it for years, but I worried if I could really make them light enough for F1A. Most of Allard's wings used foam core composites only for the main centre panel and the tips were built up with the conventional D-box. I really wanted to go solid foam core for the entire wing, but would this be too heavy? To get the weight down I started considering using pre-preg carbon material with a refrigerator for storage, machined aluminium moulds, had thoughts of autoclaves, etc... This was looking very expensive and complicated but after further consultation with Allard and Matt and Gail Gewain I decided that all that stuff was not necessary. With some special methods to get the epoxy weight out of the wetted cloth one can make some very light structures using techniques very similar to RC glider wings.

Finally I took the plunge starting with Allard's advice to order a DVD set titled "Vacuum Bagging Made Easy" featuring Phil Barnes who is one of the best at producing RC glider wings. In 6 hours of video Phil shows every detail of the building process from cutting the foam to inserting spars to wetting the material, painting the moulds, vacuum bagging, etc... I highly recommend this to anyone interested and it is available here: <http://home.paonline.com/hayman/video.htm>. I then bought most of the materials from CST and began experimenting

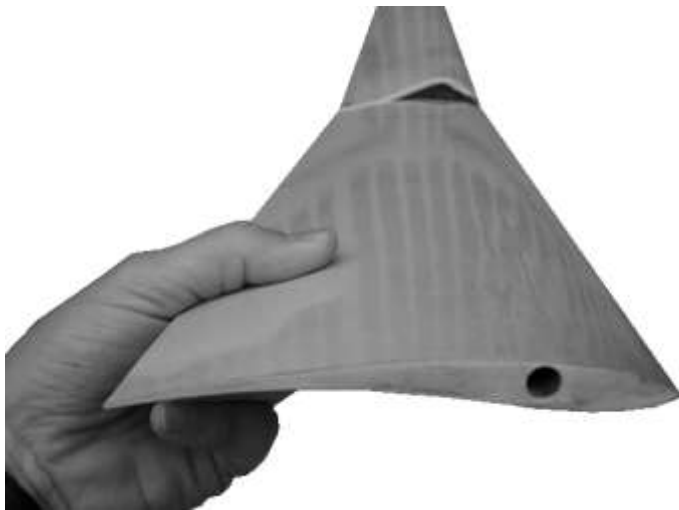
based on Phil's techniques. During the 2008 holidays I moulded a bunch of 16" test panels based on the BE9050 airfoil. The lightest available carbon cloth is 2 oz/square yard which seemed a bit too heavy for light structures like wing tips so I immediately started playing with some lighter stuff. I tried some 0.7 oz glass cloth and compared it with some 0.5 oz carbon tissue that I had purchased to experiment with. The panel with the carbon tissue seemed slightly stiffer and I found the material very easy to work with so I focused my efforts on that. I also tried various makes and colours of paint to cover up the black carbon and weighed a bunch of paint samples to find the spray can that gives the best coverage/weight ratio.

The method I arrived at starts with Dow Hi-Load 60 or Hi-Load 40 blue foam which have 60 and 40 psi compression strength. This is virtually the same stuff as spyder foam which is 60 psi. Density is in the range of 2 to 2.5 pcf with the Hi-Load 40 being the lightest. The amazing thing about this foam is that it has a vertical cell structure because the sheets are designed to lay flat for construction insulation so the strength is focused in the vertical direction to prevent the sheet from compressing. This is like having a sheet of end cut balsa where the grain is not along the length of the sheet as normal, but rather from the top to the bottom side as would be desired to make a web between spars. When this high strength web is combined with a thin composite shell the result is a stressed skin structure which is very strong and light. The Dow foams come in 8 x 2 foot sheets 2 inches thick and can be purchased at Home Depot type stores in cold climates but are hard to find in California. Rene Limburger discovered a foam distributor in Burbank where I travel to pick up the stuff I need. I've played around with ordinary white beaded foam which is only half the weight at about 1 pcf, but its compression strength is almost nothing at 6 psi and I have not had much luck with it. (*Ed: Dow does not distribute Hi-Load in the UK Dow but their Floormate 200 is similar in density and compressive strength but without so much vertical structure. Available from Sheffield Insulation*)

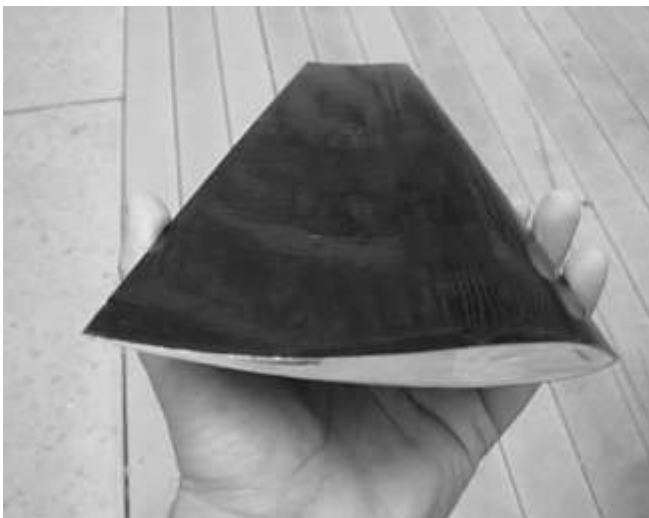
I use a "feather cutter" type rig to hot wire cut the cores and don't see any need for expensive CNC foam machines. I use 0.018 braided steel cable from old control line combat lines for the hot wire. After some experiments and some bad cores I found that 2 amps of DC current provides the right temperature for nice cuts. My biggest problem was getting a nice cut around the small radius of the leading edge of the wing where the wire would tend to hang up or hesitate causing an ugly low spot of excess melting. I solved this by making the templates oversize at the LE and not cutting the very small radius and by making sure the templates are extremely smooth. I make the templates from some laminate material purchased from CST, cut on a band saw and then sanded smooth. The final LE shape is obtained by sanding off the small corner of excess material which is very quick as the foam sands easily.



Foam core cut to accept spar



*View of wing root*



*View of under-surface of wing*

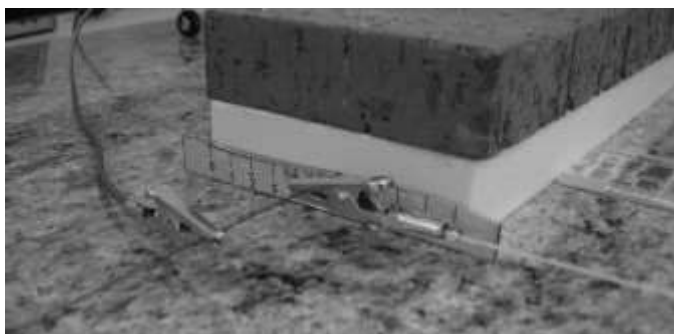
The foam core is prepared by lightly sanding, adding a strip of material around the LE, and adding some carbon strips over the top and bottom to create spars as needed. For F1A main panels I completely cut out a section of the core the width of the spar and glue everything back together with the full depth spar inserted. Hard mylar drafting film either .014 or .010" thick is used as the female part of the mould in conjunction with the female foam pieces left over from the core cutting procedure. The mylars are cut slightly larger than the panel size, waxed as a mould release and then painted if colour is desired. I tape the top and bottom mylars together at the LE with about 1/8" space between and lay them waxed side up on a bench. One piece of carbon tissue or other cloth is then cut to size and laid over the mylars and secured to the bench with tape at the corners. The epoxy is then mixed and spread over the tissue using an old credit card as a squeegee until all the tissue is wetted out. Then the most important step is to remove as much excess epoxy as possible to get the weight down. I lay paper towels or toilet paper over the layup and compress everything very hard using a roller tool meant for applying wallpaper. I do this process twice forcing the epoxy to soak into the paper towels until I can't get any more. I then grab the core and add some epoxy to the fabric around the LE, remove the mylar layup from the bench and fold the layup around the LE of the core. A few pieces of tape are used to secure the floppy mylars around the core and this sandwich is then placed inside some breather

material and into the vacuum bag. This assembly is then placed between the two female foam pieces from the core cut and everything is placed on a flat bench and weighed down with bricks on top. The vacuum pump is started and after a final check to make sure everything is lined up flat I place a foam heater box made from an old string of Christmas lights over the whole thing to speed up the epoxy curing. After about 10 hours at 100 deg F the whole thing is taken apart and a new part emerges. The most exciting part of the whole process is peeling off the hard mylar sheets revealing a shiny finished panel, especially neat when paint was applied to the mylars and now is part of the new wing. Some final sanding is needed for the excess material around the LE and I always trim back the trailing edge to get the exact chord after cutting the initial core about 1/8" oversize.

So happy that my new building technique was showing promise I started to build some new models. The first was a 32" span tip launch glider using the BE9050 templates I had made for a F1H glider. The heavy undercamber of this airfoil was pretty radical for a TLG but the airfoil is also designed for low drag at high speeds as the first third of the section looks virtually symmetrical so I thought I would give it a go. This first wing was pretty heavy at 40g mainly because I used way too much paint, but the 80g glider flew very well when I first tried it at the 2009 SWR at Eloy, AZ. When thinking of a DT timer for this glider I realized that there was really no need for a timer at all if I simply installed one of my RDT units. This turned out to make the glider more fun and easy to fly than ever and when witnessed at the SWR started an entire trend of using RDT for small gliders.

Next in my plan of developing this new building process was a F1H glider. I had most of the parts coming together and had a stab built but had not gotten to the final wing details yet. Things had slowed a bit because during this process I had earned a spot on the US F1A team and so was committed to getting my present fleet of F1As in order for the upcoming world champs in July. During the Spring of 2009 the preparations were looking good so I was thinking about continuing the building experiments. At this point I decided to skip over the F1H program and roll the dice on a high performance long F1A model since one only gets so many opportunities to fly in a WC. On the chance that perhaps I would be fortunate enough to make it into the flyoff rounds I might as well put all my resources into making something that might compete against the new flappers. With only months before the WC this seemed like a pretty crazy idea, but with all my other models ready I didn't have much to lose so I decided to go for it.

After studying Brian Eggleston's papers it seemed clear to me that his new thick airfoils would give the greatest advantage when used on a very high aspect ratio wing. His estimated total flight duration numbers derived from both bunt altitude analysis and glide performance calculations increased directly with aspect ratio. A very long wing with one of these new airfoils would in theory have similar performance to a flapper. At 9% thick these airfoils seem to go against conventional wisdom, however the extra thickness would be a great structural advantage and should allow a very long wing to be strong enough to work well, something that might not be possible with a 6% section even with composite technology. So the approach was set – the BE airfoil would provide the low drag to obtain a high launch which fact was already well established by other modellers, a high aspect ratio would win back the glide performance of the BE airfoil as compared with conventional thin sections, and the extra thickness of the airfoil combined with foam core composite techniques would make it all strong enough.



Wire cutting in progress – wire on template clips on wire for the line pulling wire to the right and power supply cable on left

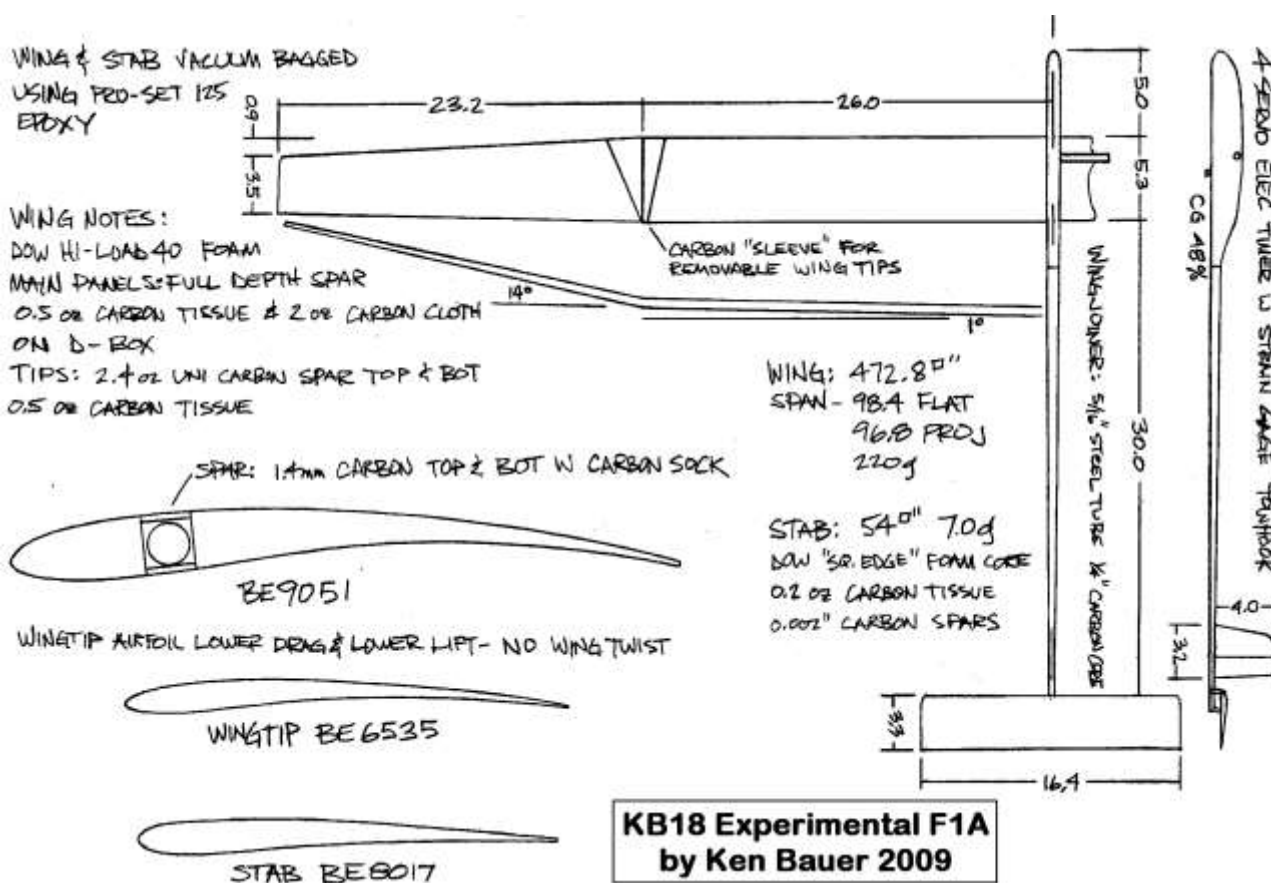


Assembly inside vacuum bag under weights. Wire cutting guide pulleys on bench in foreground

I quickly drew up plans for a model with 98" flat span which was dubbed KB18. I checked with Brian Eggleston and decided to use his latest creation, the BE9051 for the main panels and the tips would taper from this to a 6% BE6535 at the very tips. As I did with my TLG I would not design any twist or washout into the wingtips but would rely on the change in airfoil shape instead, which according to Brian was equivalent to 3 degrees of washout. This was actually the same approach I used on my old wood F1As back in the 80s as it always seemed silly to take a highly undercambered high lift section and then use extreme washout as this just creates extra drag.

Because of the short time left on the calendar I called on my Danish friends Henning and Jes Nyhegn to make some spars to my specifications. They use a method with a carbon sock over rohacell for the core/web which is then sandwiched between the pulltruded carbon top and bottom spars and then everything is placed in a mould to cure. The spars arrived and were a bit on the heavy side because the main panel spars were not tapered but rather a constant cross section for simplicity. To achieve reasonable weight I elected to use the spars for the main panels only and just go with unidirectional carbon on the top and bottom surfaces of the tips for strength. The main panels were cut from Hi-Load 60 and I used Hi-Load 40 for the tips. I moulded all the wing panels using the 0.5 oz carbon tissue and just enough paint to try and cover up the black. The main panels weighed about 75g each with the tips about 29g each so my initial wing weight was about 208g which I was happy with but the wing tips were not attached yet. (Ken developed a carbon sleeve to allow the wing tips to plug on since a 98" wing would not fit his model box).

The model came together and was ready for first flights in June. Other details included a stab with a new BE8017 airfoil from Brian moulded from Hi-Load 40 with cutouts in the rear section covered with standard quarter mil mylar which ended up weighing about 7g. I didn't want to use a solid steel wing wire because of the weight so I decided to try a 5/16" (8mm) diameter steel tube with a solid carbon 1/4" pulltruded core



epoxied inside. I used a purchased nose pod and tailboom and installed my typical 4 servo electronic timer system using one servo for stab, one for rudder, one for wing wiggler and one for the dual strain gage electronic towhook and of course included a RDT receiver. I put the CG at the standard 52% and the towhook the typical 18mm ahead of this point. On top of all the electronics it still needed another 41g of lead in the nose and the whole model ended up at 436g, or 26g overweight. Not as good as hoped but pretty reasonable for my first composite model and some say this is no issue at all for a long wing model.

*Ken then described his initial experiences flying the model.*

With about 8 days to go before leaving for the WC in mid July I was again flying the model but struggling to get it to tow straight when I figured out that my plug in wingtip system was not strong enough and the tips were moving too much. I also had realized by this time that my wings were not stiff enough and were twisting under launch loads causing the towing irregularities. At this point half of me was saying to just put it all away and focus on the WC as this whole thing is nothing but a big distraction and it is not smart to even think about flying an experimental unproven model at the WC. But the other half was telling me that I have a second set of spars already built and there is still time to mould a newer much stiffer set of main panels with better tip joiners which might solve most of my problems. The second half won.

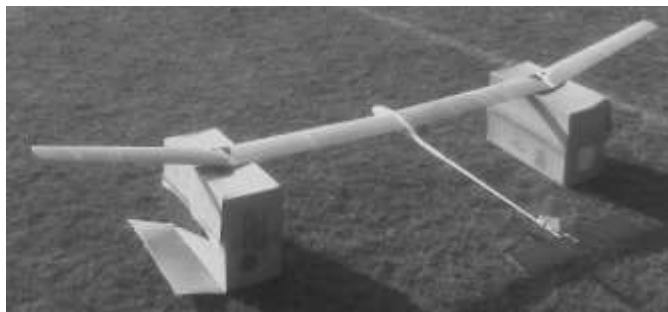
So I went into action on the new main panels. This time I used Hi-Load 40 and no paint to save some weight and instead put the weight into laying 2 oz carbon cloth on the bias over the first third of the wing chord to act as a D-box and stiffen the wing. The same 0.5 oz carbon tissue was used over the rest of the wing although I added a bit of uni carbon on the bottom of the TE. I pulled out so much epoxy trying to save weight that there were some blemishes in the finish, but about 3 days later I had some new main panels that were much stiffer than the previous version and were the same weight. The redesigned tip joiners were much stronger although heavier than before.

*Ken flew the model in Croatia but did not get it to the performance and consistency he wanted to fly it in competition. Flying since then has shown still air time very similar to his Stamov long model with KB18 having a higher launch but slightly higher sink rate.*

In conclusion I was very happy that my first try at building a composite F1A glider yielded a machine with performance about equal with my best Stamov long model. As expected for the new BE airfoil the glide was not quite as good but the extra launch height compensated giving about the same flight time. Moving forward launch improvement is needed to get closer to the 90 meters that should be possible and at that point the extra launch height benefit would be greater than the loss in the glide. Then a following step would be even longer wings would put the performance in flapper range. The wings still need to be stiffer both in bending and twisting to enable higher launches. The next version will use a tapered spar in the main panels and the weight saved will go into full 2 oz carbon cloth covering and the tips will use more carbon as well. The removable wing tip system is too heavy and I'm thinking about a lightweight removable tiplet about 6" long to solve the model box problem and create 6 panel wings. A solid carbon wing rod may be tried as well to reduce the bending of the steel/carbon version. I'm also experimenting with a new technique recommended by Allard where virtually weightless "Somers film", about the same as indoor micro-lite is used in the mould between the mylars and the carbon cloth and stays on the wing to provide the outer finish. The idea is that even less epoxy is needed in the layout because the epoxy no longer needs to fill all the holes between the fabric and the mylar mould in creating the surface finish. Experiments so far look good as I have moulded a solid foam F1A stab using a lighter

Dow Square edge foam (25 psi) and achieved a 7g weight without the cutouts. I also moulded a wing for a 32" indoor TLG using this method with a flying weight of 40g.

I'm totally converted to foam core composite techniques for model building and I'm convinced they can be made light and strong enough for almost any type of FF model. It has enabled a person like me with very little building time to do things that I never thought I could do. I am not limited to store bought F1A wings anymore and the thrill of experimenting and searching for new paths to higher performance is for me one of the things that I most love about free flight.



## CIAM PLENARY MEETING, APRIL 15 TO 17

Report by Ian Kaynes

The annual meeting of CIAM (the Aeromodelling Commission of the FAI) was held in Lausanne in the Olympic Museum.

A CIAM Bureau meeting was held on April 15. On that morning news came that flights from the UK were being affected by the Iceland volcanic ash, which then became a total stop of all flights and resulted in Trevor Grey and Mike Colling not being able to travel to Lausanne.

The technical meetings and some Plenary business was conducted on April 16th, including the FF Technical meeting (FFTM) which I chaired as chairman of the Free Flight Subcommittee (FFSC). The Plenary meeting (at which the binding decisions are made according to the votes of national delegates) was on April 17th.

The FFTM was attended by:

Richard Barlow	Canada
George Batiuk	USA
Cenny Breeman	Belgium
Martin Dilly	New Zealand
Cesare Gianni	Italy
Ivan Horejsi	Czech Republic
Daniel Iele	Argentina
Wilhelm Kamp	Austria
Ian Kaynes	UK
Andras Ree	Hungary
Jari Valo	Finland
Gerhard Wobbeking	Germany
Mihail Zanciu	Romania

Specific free flight items from the meeting are described here, including the comments and votes in the FFTM and the final decisions by the Plenary meeting. This year votes taken by the FFSC in advance of the FFTM, both votes being reported as advisory information for Plenary. All the changes which were agreed will be effective from January 1 2011.

### Contest sanction fees

These are the fees which are paid to register an event on the CIAM calendar. As described in FFn last month, these fees are currently €270 for a World Championship, €170 for a continental championship, €85 for open internationals (including World Cup events) and €35 for national events or international series. The report by the CIAM Treasurer (Andras Ree) proposed a significantly modified range of fees: €500 for



a World Championship, €300 for a continental championship, €70 for open internationals (including World Cup events) and €40 for national events or international series. This brings a closer similarity of the ratio of the registration fee to the entry (so that a World Champs with an entry fee €250 can pay the sanction fee from 2 entry fees, whereas an open international with a typical entry fee of €30 pays the sanction fee with only just over 2 entry fees).

Since free flight has quite a number of championships the change itself does nothing to reduce the relative contribution to the CIAM budget of free flight compared to other disciplines. However, the lower fee should encourage more open internationals in other classes.

### General proposals

A proposal from France to remove a restriction which prevents World Cups being organised for non-championship events was approved.

### FF Organisational changes

The Bureau had proposed to add free flight power classes to the list of events for which motors must be marked when processing models for championships. This requirement had been voted out at the 1987 Plenary meeting. However, the model processing certificates include FF in the list of events for which marking is required and the proposal was to bring the sporting code into line with that! Free Flight was agreed to be excluded and the specification certificates will be changed when reprinted.

The following detail changes were all approved by Plenary:

In para 3.1.12 (F1A launching) and 3.H.12 (F1H launching) add the words jumping allowed.

3.J.11 (F1J Launching) Extend wording of b) to state "Each competitor must start **and regulate the** motor and launch the model himself."

Various FFSC proposals for small revisions to organisers guides were approved, including scoreboard being of an adequate size, showing maxes in red, recording the exact times recorded on the watches if there has been a problem, and adding advice that "Timekeepers should stand up for timing before obstacles or persons might obstruct the view of low flying models." Also, in the definition of starting positions, it will now be clarified that a defending junior champion who is too old to defend his title as a junior and is flying in the senior championships has an individual starting position.

The Plenary rejected a French proposal not to allow spectators upwind or downwind of the F1C starting line. The FFTM recommended that organisers enforce the existing limits on spectators.

### Indoor

France had proposed adding an instruction to the steering rule such that when a rod is used for steering it has to be held vertical. This was rejected at FFTM on the grounds that the intent of the rule is covered by the limits on the intent of steering. France withdrew the proposal from the Plenary meeting. In commenting on the French proposal the UK had put forward other changes to the steering rules, but these were not considered since they concerned a different aspect of the steering rule.

### F1Q

Germany had proposed not allowing changes of camber in the 3.Q.1. definition and adding to specification 3.Q.2 a statement that variable area not allowed. These changes were accepted, modified so that both appear in 3.Q.1 definition to read:

Model aircraft which is powered by (an) electric motor(s) and in which lift is generated by aerodynamic forces acting on surfaces remaining fixed in flight, except for changes of camber or incidence. Models with variable area (e.g. folding wings) are not permitted.

Other F1Q clarifications were passed for the number of models is 4, the standard flight time is 3 minutes, and when flyoffs continue after having the motor run reduced to 5 sec then further flyoffs will be flown with max time increasing in steps (and continued 5 sec run).

The major F1Q consideration was the proposal from Germany to limit the battery weight as a percentage of model weight.

Ivan Horejsi gave a presentation on electric power, with the conclusions that a battery weight limit lead to single charge being used in one flight and consequent recharge time. Ivan proposed a limit on motor weight as a fraction of model weight combined with a voltage limit, but saying that the better long term solution would be energy limiter. Such a device would allow a specific amount of energy to be used for a flight and, like a rubber motor, could be used to give a short fast climb or a slow longer climb. The FFTM decided that the energy limiter should be investigated by the FFSC during the year. Germany withdrew their proposal and the current rules remain for the present.

### New classes proposed by UK

The UK had proposed new model specification for lower technology models to be flown alongside existing F1A B C models in competitions. Reactions to the idea included

- it would be very difficult to balance performance between classes by trading technology against line length, rudder, or engine run. It was said, for example, that the F1T proposal would have more performance than F1B.
- it would be confusing to have different line lengths and engine runs in the same competition.
- young people are attracted to technology like electronic timers and restricting functions makes models harder to trim and fly.
- the FAI should cover only international competition at the highest level and nations are free to use restricted models in national events.
- there are few places to fly current models and performance should be reduced.

Points such as the last one led in to a discussion of longer terms views for free flight. There was concern about the lack of newcomers in free flight, not enough to offset the loss due to aging flyers dropping out. Suggestions included that CIAM should be more active in promoting beginner programmes, but it was also acknowledged that such ideas depended on significant work at the local level.

Returning to the UK proposal, the consensus of the meeting that any possibility of such an idea would lie in the direction of having restricted technology models as a sub-category of existing F1A B C (same line, rubber and run). These could then be identified in a special class result and also included in the general results – rather in the manner of the listing of juniors in separate results and also included in the main results. This was referred to the subcommittee for consideration during the year.

### Discus Launch

Recent discussions in the FFSC had concerned the possibility of discus launch being used for some FAI classes. If this could be developed for F1B or F1E it could give a significant increase in performance and is likely to need a different layout model, making existing models obsolete. A couple of members considered that there should be no limitation but the others supported a ban. Although not on the agenda, this subject was also discussed in FFTM and a similar conclusion resulted – a clear majority in favour of a ban. This shows any potential discus developers that there is likely to be a future ban.

The suggested format was that a ban could be made by adding to the free flight definition: "Unless specifically stated in the rules for a class, free flight models must be launched with at least one hand holding the fuselage of the model" and a statement in F1N to say that F1N was exempt.

## Trophies and medals

As usual there was a presentation of medals to the winners and diploma to the top three places in each World Cup event. This year the only free flight recipient present in Lausanne was Maurizio Tomazzoni.

## Awards

The nominations with free flight interest were Sergey Makarov and Peter Watson put forward for Andrei Tupolev Medal for winning World and National Championships in the same year. Plenary voting gave the award to Sergey Makarov.

## Championships

The 2012 Championships were awarded at this meeting.

*Junior World Championships F1A F1B F1P:* Bids were from Bulgaria and Slovenia and the voting gave the event to Slovenia by 23 votes against 12. Slovenia noted that this was the first FAI Championships awarded to their country – they should have said World Championships, since last year they had been awarded the 2011 Junior European Championships. This means that we have another case of an untried venue and organiser being used for two years in succession.

The location will be near Sentjernej, stated to be the site used for the Krka Cup. Dates will be July 10 to 17th. The provisional programme shows competition flying of F1A and F1B followed by a reserve day then F1P and then another reserve day with prize giving in the evening and departure the following day. Entry fees are quoted as €250 for competitors, €180 for team managers, and €40 for supporters.

*World Indoor Championships F1D Senior and Junior.* There had been bids for this event from Romania and Serbia. In a deal before the vote, Romania withdrew its bid for F1D in exchange for Serbia withdrawing its bid for the F1E European Championships. This then gave the event to Serbia, the same site in Belgrade that has been used for recent championships. However, the CIAM President inserted a condition on accepting the offer from Serbia – by May 10th they should complete payment of outstanding debts to control line teams. Five teams are still owed money as a result of Serbia cancelling two of the four classes at the CL championships last year. If the payments are not made, the championships will go to Romania as the only other offer. Andras Ree told the meeting that if the indoor championship was taken away from Serbia this would impact another class which was not involved in the basic dispute. However, the condition remains.

*European Championship F1E Senior and Junior.* As just noted, Serbia withdrew an offer for this event and so it was awarded to Romania. To be held at the usual site in Turda and will probably be changed to be in late August instead of the originally suggested mid-September dates.

*European Championship F1A F1B F1C.* There were bids from Romania, Slovenia and Italy. Serbia had also submitted a bid but withdrew this. Presentations were made by each country. Italy described their bid, highlighting that they would give free entry for juniors and that they wanted the event to boost free flight interest in Italy. Romania would hold it at Salonta, the site being used for the 2010 Junior Championships. Slovenia put forward the same information as for the Junior World Champs bid. This time there were questions about the adequacy of the field. Slovenia said that it could be improved by closing regional roads and clearing undergrowth, then Jari Valo asked if they would be shutting down the power lines. Romania noted that Slovenia had not shown any picture of the field in their presentation. A rather disappointing aspect was that these criticisms had not surfaced during voting on the Junior event. Not surprisingly, Slovenia was eliminated in the first stage of voting with only 2 votes, then in the next round Italy won with 22 votes against 10 for Romania. The event will take place at Capannori near Lucca in Tuscany. Dates are given as August 19 to 26. Entry fees will be €250 for competitors (juniors free), €150 for team managers, €40 for supporters.

## NEWS FROM BMFA FF TECH COMMITTEE

### Call for Team Manager and Assistant for 2011

The 2011 free flight World Championships will be held during April in Argentina and this early date makes it essential that the Team manager and Assistant Team Manager are appointed no later than the end of July 2010. These are key roles which the British team depend on to ensure their trip runs smoothly and they have the best possible opportunity for success. If you have experience of major championships and the expertise to manage a team and help them to success the FFTC would very much like to hear from you.

If you need any information help or advice on the requirements contact the current Manager Mike Woodhouse who will be pleased help.

Please send details of your experience to FFTC Secretary Chris Strachan at: 56 Way Lane, Waterbeach, Cambridge, CB25 9NQ or E Mail: [chris.strachan@btinternet.com](mailto:chris.strachan@btinternet.com)

No later than 30 June 2010

## SOUTHERN CROSS CUP, NARRANDERA, AUSTRALIA, MARCH 29-31

### F1A 16 flew

1	P Mitchell	AUS	1260	+305
2	B van Nest	USA	1260	+272
3	P Lagan	NZL	1260	+263
4	C King	NZL	1260	+232
5	A Koerbin	NZL	1260	+32
6	R Wallace	NZL	1242	
7	V Morgan	AUS	1232	
8	R Jack	GBR	1176	

### F1B 15 flew

1	Z Hongjun	CHN	1260	+412
2	W Yunsheng	CHN	1260	+409
3	D Kunjiang	CHN	1260	+339
4	T Bond	AUS	1260	+266
5	G Pope	AUS	1256	
6	T Burfein	AUS	1227	
7	V Morgan	AUS	1223	
8	R Blackam	AUS	1222	

### F1C 7 flew

1	Z Jiongyu	CHN	1260	+371
2	A Jack	GBR	1260	+338
3	T Bond	AUS	1260	+232
4	R Summersby	AUS	1257	

## AFFS CHAMPIONSHIPS, NARRANDERA, AUSTRALIA, APRIL 2-4

### F1A 15 flew

1	R Jack	GBR	1260	
2	P Mitchell	AUS	1239	
3	C King	NZL	1237	
4	B Van Nest	USA	1232	
5	M Campbell	AUS	1187	
6	N Murray	AUS	1182	
7	T Burfein	AUS	1172	
8	R Wallace	NZL	1165	

### F1B 18 flew

1	W Yunsheng	CHN	1260	+302
2	T Bond	AUS	1260	+277
3	T Burfein	AUS	1260	+180
4	D Kunjiang	CHN	1258	
5	P Rossiter	AUS	1247	
6	P Seifert (J)	GER	1212	
7	N Murray	AUS	1202	
8	V Morgan	AUS	1194	
9	P Lagan	NZL	1186	

### F1B-Junior 2 flew

1	P Seifert	GER	1212	
---	-----------	-----	------	--

**F1C 7 flew**

1	J Zou	CHN	1260
2	A Jack	GBR	1199
3	J Bailey	GBR	1169
4	B East	AUS	497

**KOTUKU CUP, OMARAMA, NEW ZEALAND, APRIL 9-12****F1A 19 flew**

1	B Van Nest	USA	1110
2	N Nikolov	BUL	1063
3	A Koerbin	NZL	1033
4	N Murray	AUS	1024
4	A Jack	GBR	1024
6	C King	NZL	992
7	P Mitchell	AUS	988
8	T Stowe	AUS	982
9	O Tennenhaus	ISR	975
10	V Morgan	AUS	966

**F1A-Junior 1 flew**

1	M Groenewegen	NZL	668
---	---------------	-----	-----

**F1B 16 flew**

1	W Jones	AUS	1290	+358
2	R Morrell	USA	1290	+351
3	D Ackery	NZL	1290	+327
4	V Morgan	AUS	1286	
5	T Bond	AUS	1255	
6	P Rossiter	AUS	1248	
7	L Vincent	NZL	1228	
8	B McGarvey	NZL	1192	

**F1C 6 flew**

1	R Summersby	AUS	1290	+577
2	M Roberts	USA	1290	+249
3	T Bond	AUS	1273	

**F1G 5 flew**

1	D Jones	NZL	600	+206
2	B Jones	AUS	600	+166
3	P Squires	NZL	598	

**F1J 5 flew**

1	M Roberts	USA	600	+279
2	C Crowley	AUS	600	+215 +127
3	A Jack	GBR	600	+215 +0

**F1H 7 flew**

1	B Van Nest	USA	600	+160
2	P Mitchell	AUS	600	+53
3	D Ackery	NZL	518	

**OMARAMA CUP, OMARAMA, NEW ZEALAND, APRIL 15-18****F1A 16 flew**

1	P Mitchell	AUS	1290	+279
2	O Tennenhaus	ISR	1290	+113
3	N Nikolov	BUL	1276	
4	C King	NZL	1275	
5	R Wallace	NZL	1257	
6	T Stowe	AUS	1203	
7	N Murray	AUS	1193	
8	A Koerbin	NZL	1184	
8	S Cox	NZL	1184	

**F1A-Junior 1 flew**

1	M Groenewegen	NZL	754
---	---------------	-----	-----

**F1B 13 flew**

1	P Rossiter	AUS	1290	+270
2	T Bond	AUS	1290	+194
3	W Jones	AUS	1290	+146
4	V Morgan	AUS	1290	+134
5	L Vincent	NZL	1254	
6	L Morgan	AUS	1244	
7	P Lagan	NZL	1232	

**F1C 3 flew**

1	A Jack	GBR	1274
2	M Roberts	USA	1225

**Mini Combined 8 flew**

1	A Jack	GBR	563
2	R Summersby	AUS	538
3	M Campbell	AUS	429

**2010 Free Flight Trans Tasman**

New Zealand		Australia	
Craig King	F1A 1275	Phil Mitchell	F1A 1290
Rob Wallace	F1A 1257	Tahn Stowe	F1A 1203
Antony Koerbin	F1A 1184	Bill Jones	F1B 1290
Paul Lagan	F1B 1232	Paul Rossiter	F1B 1290
David Ackery	F1B 1220	Terry Bond	F1B 1290
Paul Squires	F1B 1230	Colin Crowley	F1C 1090
	7398		7453

**BMFA 3ND AREA MEETING, MARCH 21**

Area	Weather
Northern	No venue
Scotland	Cold 18 mph
North East	Sunny 15 mph
North West	8-10 mph rain at f/o
Midland	Sunny 5-10mph
East Anglia	No venue
South East	Light and variable
South West	Mixed/breezy
Southern	5-10 mph cold
London	

**Combined Glider 26 flew**

1	B Baines	Grantham	7.30	+5.19
2	B Bow	Bristol & West	7.30	+3.56
3	C Foster	Morley	7.30	+3.35
4	J Carter	Grantham	7.30	+3.31
5	K Taylor	E Grinstead	7.30	+3.12
6	D Brawn	Biggles	7.30	+2.22
7	G Peck	Cleemac	7.30	+1.47
8	D Oldfield	Vikings	7.30	+1.28
9	D Hambly	Scotia	7.23	
10	A Cameron	Crawley	7.11	

**Mini Vintage 54 flew 20 full scores, 17 F/O**

1	R Pollard	Tynemouth	6.00	+5.29
2	P Ball	Grantham	6.00	+4.31
3	S White	Bristol & West	6.00	+4.27
4	P Hall	Crookham	6.00	+3.56
5	G Manion	Birmingham	6.00	+3.48
6	D Taylor	Grantham	6.00	+3.42
7	J Cooper	Biggles	6.00	+3.41
8	S Willis	Croydon	6.00	+3.36
9	R Elliott	Croydon	6.00	+3.26
10	A Shepherd	Crookham	6.00	+3.12
11	F Rushby	Cleemac	6.00	+3.10
12	J Foster	Morley	6.00	+2.58
13	D Beales	Croydon	6.00	+2.45
13	A Price	Walsall	6.00	+2.45
15	C Chapman	Bristol & West	6.00	+2.36
16	J Watson	CVA	6.00	+2.11
17	C Strachan	Biggles	6.00	+1.38

**F1B Weston 17 flew**

1	R Peers	Grantham	12.30	+4.34
2	P Brown	Grantham	12.30	+3.30
3	D Neil	Bristol & West	12.23	
4	M Richardson	E Grinstead	12.19	
5	N Cliff	Biggles	12.06	
6	D Greaves	Bristol & West	12.00	
7	B Spooner	Grantham	11.44	

**F1J/ 1/2A 9 flew, 3 F/O**

1	R Baggott	Birmingham	10.00	+2.41
2	S Dixon	Birmingham	10.00	+2.10
3	S Screen	Birmingham	10.00	+1.52



**P30 35 flew**

1	D Taylor	Grantham	6.00	+2.45
1	C Strachan	Biggles	6.00	+2.45
3	R Marking	CVA	6.00	+2.43
4	S Darmon	Birmingham	6.00	+2.31
5	G Manion	Birmingham	6.00	+2.28
6	J Foster	Morley	6.00	+1.36
7	P Owens	NWFFG	6.00	+1.31
8	S Willis	Croydon	5.59	
9	D Davitt	Morley	5.50	
10	G Peck	Cleemac	5.46	
11	P Seeley	Bristol & West	5.44	
12	T Rushby	Cleemac	5.39	

**Plugge**

Fugge		3rd Area event			
		MV	P30	F1B	total
1	Bristol & West	170	125	159	1448
2	Grantham	188	160	194	1172
3	Biggles	158	169	76	1098
4	Birmingham	145	180	59	871
5	Crookham	177	9	47	831
6	Croydon	172	137		734
7	Morley	147	163		651
8	CVA	134	145	12	592

**BMFA NORTHERN GALA AND CLUB CHAMPIONSHIPS, CHURCH FENTON, APR 2****Combined Glider (C.M.A) -3x2.30, 12 flew**

1	R Mosley	Morley	7.30	+3.05
2	R Sabey	Scotia	7.30	+1.58
3	J Cooper	Biggles	7.25	
4	J Carter	Grantham	7.21	
5	C Strachan	Biggles	6.36	
5	C Parry	Biggles	6.36	

**Combined Rubber (Caton) 3x 2.30 9 flew, 7 F/O**

1	P Ball	Grantham	7.30	+7.14
2	J Cooper	Biggles	7.30	+5.00
3	G Ferer	Timperley	7.30	+4.04
4	J Foster	Morley	7.30	+4.03

**Combined Power (Hamley) 3x2.30 12 flew**

1	S Barnes	Morley	7.30	+5.34
2	R Wykes	Timperley	7.30	+4.30
3	A Brown	Novos	7.30	+4.02
4	P Woodhouse	Morley	7.30	+3.06
5	T Payne	Biggles	7.30	

**Slow Open Power 3x2.30 7 flew, 3 F/O**

1	S Barnes	Morley	7.30	+4.58
2	M Quinn	Novos	7.30	+3.13
3	D Clarkson	Timperley	7.30	+2.50

**F1H 5x 2.00 4 flew**

1	J Cooper	Biggles	9.24	
2	C Parry	Biggles	8.22	

**F1J/1/2A 5x 2.00 3 flew**

1	P Woodhouse	Morley	10.00	
2	C Foster	Morley	2.47	

**P30 3x2.00 5 flew**

1	C Strachan	Biggles	5.56	
2	D Barber	Colne	5.18	
3	G Peck	Cleemac	4.33	

**Mini Vintage 3x2.00 9 flew**

1	C Foster	Morley	6.00	+1.23
2	M Sanderson	Cleemac	6.00	
2	F Rushby	Cleemac	6.00	
4	K Bates	Cleemac	5.30	

**E30/CO2 3x2.00 2 flew**

1	T Grey	Crookham	10.00	+5.03
2	C Strachan	Biggles	10.00	+3.08

**HLG + CLG 7x1.00 3 flew**

1	P Ball	Grantham	5.43	
2	G Percival	Grantham	3.09	

**Club Championships**

Class Championships		CG	CR	CP	Total
1	Morley	100	67	100	267
2	Biggles	83	89	67	239
3	Grantham	75	100	17	192
4	Scotia	92	44	50	186
5	Timperley		78	92	170
6	Novocastrians			83	83

**BMFA SENIOR CHAMPIONSHIPS**

		Area 1	Area 2	Area 3	NG	Total
1	C Foster	10	9	4	11	34
2	P Ball	6	6	6	12	30
3	S Barnes	3	6		18	27
4	D Taylor	6	6	8.5		20.5
5	A Shepherd	15	3			18
6	D Neal	9	3	4		16
6	C Strachan	1		7.5	7.5	16
8	P Brown		9	6		15
9	G Ferrer	4	6		4	14

**MINI V F1H BY CHRIS PARRY**

During the winter of 1980-81 Noel Parry drew up a scaled down version of his V-wing F1A for the F1H rules. Chris, Noel's son, had already been campaigning the F1A very successfully including winning the British Nationals. When Mini V appeared for the 1981 season it was regarded as a beginners A1 with its simple construction, but Chris showed that it was also a top competition model with a string of contest successes despite its simplicity.

In 1986 Chris gave up free flight. When he returned to Biggles FFT nineteen years later the old Mini V was dragged out of storage, holes in the tissue were patched and Chris was back in business repeating his successes of two decades earlier.

Dihedral is 4.25" at each tip, Covering is heavyweight tissue on wing, lightweight on the tail. For a stronger wing the balsa spar can be replaced by sprucemaking 3 1/8" square spruce spars. The original is right hand glide with 1/8" washout on left panel – optional as not all models have the washout.

**Major Contest Successes:-**

British Nats (British Airways Trophy) winner 1986 & 2008  
Southern Gala (Ripmax Trophy) winner 1982, 1983 & 2009  
Northern Gala winner twice in the 1980s and in 2008  
Tynemouth Gala winner 2008 & 2009  
Brumfly 2007 winner  
Biggles F1H League winner in 2008, runner up in 2009.

If you are looking for a simple, quick to build, glider that has a top contest pedigree then Mini V should be on your 'To Do' list. Despite the development of circle tow, bunt systems and electronics the straight tow Mini V continues to rack up contest success in F1H and Brit Glider for Chris Parry.

Full size plan of Mini V is available as a pdf file (122kb email attachment) from David Brawn: [ask.discovery@ntlworld.com](mailto:ask.discovery@ntlworld.com)

**BMFA FAI DAY, MARCH 28**

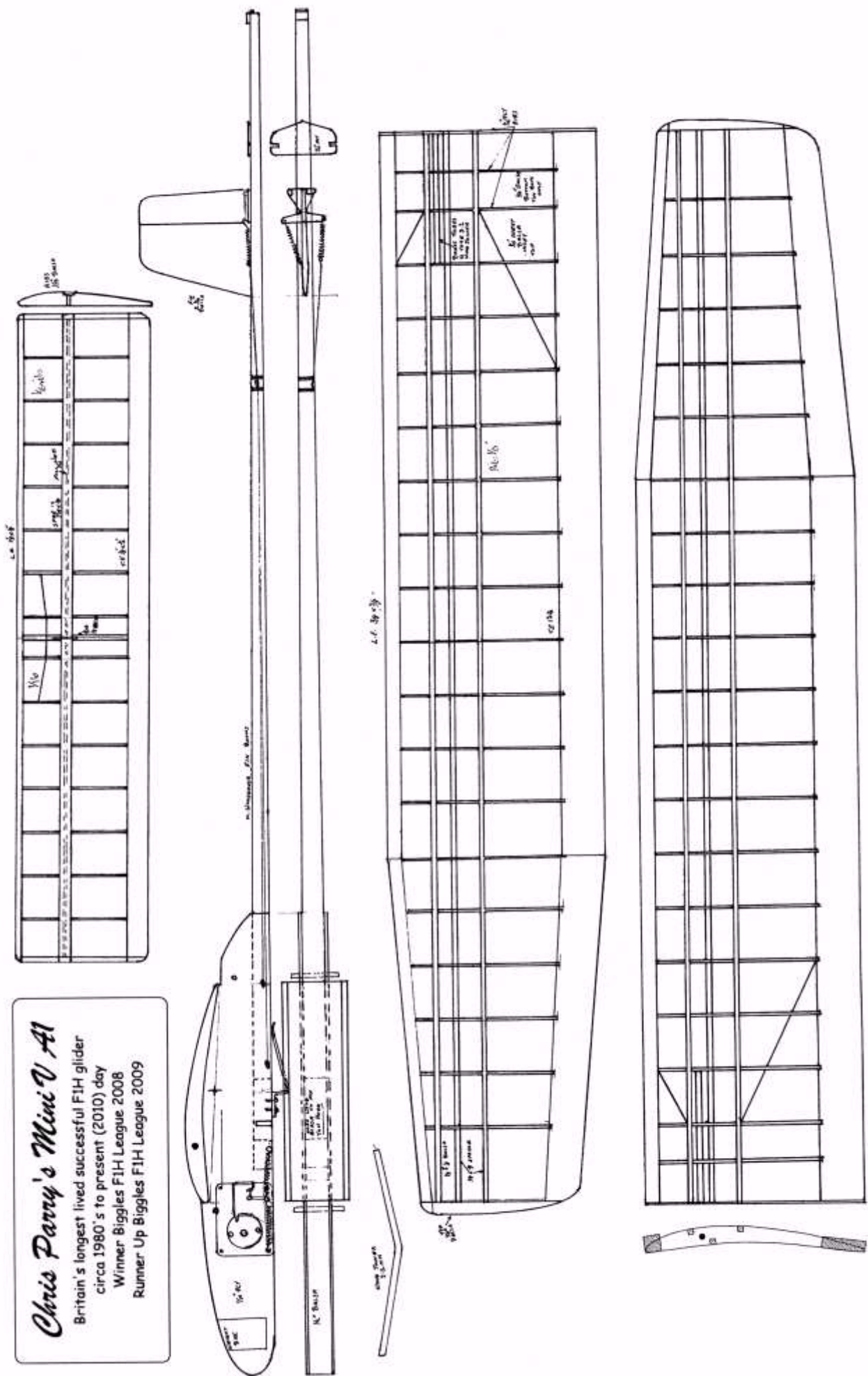
Report by Michael Warren and Ian Kaynes

Forty of the faithful attended this day-long discussion and planning session, funded by the BMFA's training and excellence budget, and held at The Gliding Centre at Husbands Bosworth, not far from Junction 20 of the M1.

After a brief welcome and introduction from Chairman **Mike Woodhouse**, **Ian Kaynes** put the day in its FAI perspective by describing the history and operation of the FAI, its aeromodelling organisation CIAM, and the free flight subcommittee and competition structure.

Chris Parry's Mini V A1

Britain's longest lived successful F1H glider  
circa 1980's to present (2010) day  
Winner Biggles F1H League 2008  
Runner Up Biggles F1H League 2009



Next, **Trevor Grey** looked at FAI in the context of the pros and cons of the technical side. Evidence seems to suggest that the dramatic technical developments of the last few years are simultaneously admired (not least in the abstract by those who don't compete) but are undoubtedly putting potential competitors off. So what do we do? Perhaps keep it as it is but at the same time provide something else alongside it, something that is more accessible?

Grey suggested that the ideal would be to find a technology that is less extreme than that being used by the current world leaders but could generate the same level of performance. It's fair to say that the audience was not convinced that this was possible. A world-class flyer could reasonably expect to get into a world championship fly-off on most days with a relatively low-tech model, but, it was suggested, could never expect to win if they had to compete with the models and expertise of those like Andruikov or Findahl.

The age-old question of how the British teams should be selected for world and European championship was discussed by **Phil Ball**. The key to this was recent figures which make it clear that more people are flying in FAI events as a whole than now fly in the trials. (Which perhaps hinted at the key question, one that wasn't really covered in any depth, of how many people even want to go to the world championships these days? Maybe the travel, uncertainties about food, weather and accommodation, family responsibilities, intimidating technical developments and of course our ageing and unavoidably tiring competitors, is putting more people off with every year that passes?) Ways of addressing this might include selecting teams on performance from within a range of relevant UK contests throughout the year (perhaps even including Poitou as well?) or by committee. The pros and cons of these approaches were considered, with Ball making the point that we need a team that is on form to maximise any chance of success.

**John Carter** reviewed the current situation, revisiting the question of whether our teams are at world championships primarily for individual or team success. He also noted, amongst other things, that the cost of running the three trials meetings that are currently held is difficult to justify given the number of competitors taking part.

After a brief coffee break, **Mike Woodhouse** reviewed the functions of team management. In summary, there is the logistics – getting the team and their equipment to and from the event – and the contest itself, the flyers and their models, which includes post-selection/pre-contest preparation and training. It is a significant and complex management task. Woodhouse also made it clear that he will not be available for next year's event in Argentina – which is being held early in 2011, so the UK management team needs to be appointed in the very near future. He also pointed out that travelling supporters used to be important in providing team back-up, not least with retrieving, but now there are very few of them.

Martin Dilly drew attention to his NFFS Symposium paper on team management, published in the 2003 edition.

**Per Findahl** gave an interesting talk on a local Swedish project to encourage free flight amongst juniors and with the longer-term aims of having a full team of competitors from the club for a future junior world championships, and of spreading the initiative across Sweden.

The kids start when they are 12 to 14 years old, with catapult gliders. They concentrate on the flying rather than the building, though they build their own models, and they are encouraged simply to have fun. Those who are particularly interested can be helped, including at first financially, with trips to contests and equipment that they can borrow. If they move on to F1As, again there are models that they can borrow.

The overall aim is of course to get more flyers and that the kids should have fun, but Findahl acknowledged that to retain just one flyer every year from those who have taken part is an

achievement. He also mentioned that control line is having similar problems and has a comparable programme of development which is showing some signs of success.

After a somewhat carbohydrate-heavy lunch, we reconvened for a second contribution from **Per Findahl** and, with no disrespect to the other speakers, it's probably fair to say that this was the outstanding talk of the day, and the one that changed many people's views on how to approach contest flying if your aim is, without any question, to succeed.

Back in the mid-'90s Findahl suffered for a while from what the Swedes describe as 'burnt-out disease' (perhaps what we call chronic fatigue syndrome?) and while he was ill he spent some of the time thinking about how he could get better results, make better use of his training time, get an overview of what he was doing – 'stepping outside' the hour-to-hour considerations – and choosing the right levels of training and competition flying.

From this starting point, he identified four elements within the task – models and equipment, flying and tactics, the flyer's physical condition and his or her mental state. Findahl sees all four of these as equally important. People might buy the best models in the world but without addressing all four factors, it will be a waste of money. They might be lucky once or twice, but no more.

The next stage was to start creating his 'mind map'. Think in terms of a single large sheet of paper, with the overall target (in this case, to be as successful as possible in F1A events) summarised in the centre. From this mid-point lines radiate as if on a dart board, each leading to a factor that has to be considered – clothes, shoes, models, batteries, food, health, etc etc etc. Each of these, in turn, is further broken down into more detail. If I counted correctly, for example, there were 11 different variables within 'control of the model on the line and successful launch' and 12 for thermal detection. The purpose of this approach is to provide a single picture of all the component parts of success, to provide a living document that can grow as necessary, and to allow the flyer to identify and concentrate on specific elements that may need attention. More details of this will be available in due course, and will make fascinating reading.

Findahl emphasised the importance of mental preparation (*'Sometimes when I don't succeed that's been the problem area.'*) and also noted that some people need less of it than others. He discussed physical preparation and his programme of practice. It's interesting that he, like many others outside the UK, talks in terms of 'training', with the implied emphasis on the flying, whereas here we tend to say 'trimming', which, perhaps, still suggests the need to get the models right rather than, having done that, to maximise our skills in using them.

(It's also worth noting that some years ago, the American F1A flyer Jim Wilson used a similar approach to the one outlined by Findahl, though with less detail. His article was published in Model Aviation in November 1980, and extracts were included in the paper on team preparation in the 1992 Free Flight Forum report, which also includes a brief reading list.)

After that, it was time to return to UK team selection with **John Cooper**. He started by asking how many FAI contests there were in the UK. Answers ranged from 0 to 8, John said there was one and other events were FAI models flown in open events. To improve interest and numbers he proposed one autumn selection contest with two classes one day and one class the other day, mandatory for flyers to help for the other classes. John offered to CD the non-glider day.

**Peter Williams** talked about F1A flying in the UK. Comparing 2009 to 1970, numbers flying in the trials had dropped from 100 to 13 while at the Nationals the open glider and F1A entries had fallen less, going from just over 100 to about 40. This suggested that people were still interested in glider but not in flying in the Champs. The models may be considered too

expensive – but only if bought ready built and models now last a long time and are very consistent. Recent UK teams have been evenly mixed between built and purchased models. Being too old is not a reason when you see that Peter Allnutt placed 15th in the 2009 World Champs at age 77. Circle towing is less strenuous than straight towing, particularly with increased incidence on tow.

F1Q was the subject of a talk by **Trevor Grey**. Practical electric is now a reality – cheap and simple but does need fresh thinking and new equipment. Many approaches are possible (F1B, SLOP and F1C style) and you can buy, design your own or convert a model.

**Steve Philpott** spoke about F1E, starting from his interest in F1A in the early eighties including making the team in 1983, the year of British team gold, and also 1984 Euro Champs and British team silver. He lost interest after the builder of the model rule was dropped and turned to F1E where model structure is less important – carbon or balsa – and made team places in 1986 and 1990. Steve is now more interested in F1Aas he can see self-built models beating bought ones, although technology should be limited such as flappers.

The current 3-trials selection method was supported by **Stuart Darmon**. It reduced the element of luck compared to a single trials. Dwindling numbers is a problem in many activities, not just aeromodelling and we should not spoil it for ourselves. Stuart understood the aim of the restricted technology classes but doubted that parity of performance could be achieved between the two types of models, except by frequent rule changes. An alternative was to have restricted classes to the same rules flown in the comps. Rules should limit technology such as no moving horizontal surfaces on gliders, no VP on rubber, no variable camber or area on any models.

**Martin Dilly** said there should be more people flying models that gave them a chance of a team place. An alternative approach was to require one person in each team to fly restricted technology models (otherwise to the same rules as the main class). Better promotion is needed, how do other European countries have active junior programmes?

Various points raised during the **discussion** that ended the day:-

One topic was the difficulty of finding people to act as CD. If there is no CD an event will not be run. If everyone in the room ran one event then that should be enough for five years.

Current trails use up airfield days. Salisbury Plain is too tough for trials, there should be 2 trials on airfields. Trials are very different from the Champs where other team members are available to help retrieve models. But it was noted that not all team members may be able to, with a team of 9 geriatrics who would retrieve? Motor bikes for retrieving should be allowed – FFTC reply OK if they are street legal. Electric mountain bikes are one option.

We need the resolve to mentor juniors as described by Per.

So ended an interesting day, credit to FFTC for setting it up.

## BMFA FREE FLIGHT FORUM REPORT

The new 2010 BMFA Free-Flight Forum Report has now been published. In the usual confusing nomenclature this is actually the report on the Forum held in November 2009. That was the Forum reported 5 months ago in December FFN (despite pressure from the organizers not to report it) and as usual the Forum Report is about 90 pages longer than the report in FFN.

There are written versions of the papers presented at the Forum plus articles about flying F1A by Per Findahl and testing Coupe motors by Peter Hall. The major other addition is a 2009 Models of the Year section, featuring F1C by Peter Watson, Long Flapper F1A by Makarov and Kochkarov, Fokker E-111 rubber scale by Andy Hewitt, Electric by Trevor Grey, Geared P30 by Phil Ball, Flying Pencil vintage by Alan King, CLG by Bill Colledge, SLOP by Martin Sibson.

Prices including postage are: UK £10.00, Europe £12.00, elsewhere £14.00. Cheques should be payable to 'BMFA F/F Team Support Fund', in pounds sterling only, and drawn on a bank with a branch in the UK; you may also order by credit card. Contact Martin Dilly, 20, Links Road, West Wickham, Kent, BR4 0QW or fax 020 8777 5533 or e-mail to martindilly@compuserve.com

## CROOKHAM COMBINED POWER, MIDDLE WALLOP, APRIL 4

The whole Easter Middle Wallop weekend was marred by cold and windy weather. Very many fewer people turned up compared to previous years, Weather, price of petrol, age who knows why.

In the power event ½ BMFA motor runs were utilised, together with a 2 min max, helping to keep the models on the drome. Only 4 entries with Open Electric models taking the first three places. Come on there must be some folk who use IC engines?

The notable factor on this day, which manifested itself also the day before (notwithstanding that the wind was in a different direction) was the turbulence in the middle of the field. Models that had been gliding smoothly would suddenly just dive vertically or at a very steep angle straight down to the deck. The scale of this happening had not been observed before at M Wallop. Some one though did point out that the thermal seeking Buzzards frequently seen, did not suffer from this problem without intent!

1	T Shepherd	5.06
2	T Grey	4.59
3	P Tolhurst	4.20

## CROYDON WAKEFIELD DAY, MIDDLE WALLOP, APRIL 4

Report by Martin Dilly

The good news was that it didn't rain at Middle Wallop on Easter Monday; the bad news was that it was windy, which kept entries very low, six in each of the Vintage classes and just one, Geoff Stringer, in F1B. A two minute max. was set and this proved appropriate, with a single two-man fly-off needed to decide the Vintage 4 ounce class.

Despite the low entries and partly thanks to some support from the BMFA's London Area committee, the usual wine and Flitehook vouchers went to all the top placers. The Croydon club organisers are considering running the contest on a stand-alone day in April next year, as it may be that three consecutive days of model flying on a Bank Holiday weekend are too much for some with family commitments.

### Vintage 4 ounce – Fairlop Cup (6 entries)

1	C Strachan	6:00 + 3:04	1937 Copland
2	J Minshull	6:00 + 2:03	1937 Copland
3	D Beales	3:31	Judge

### Vintage 8 ounce – Ted Evans Trophy (6 entries)

1	S Willis	6:00	Horry
2	P Michel	5:54	Horry
3	M Marshall	5:08	Korda

## MIDLAND VENUES FOR BMFA AREA EVENTS

From Peter Watson:

5th Area	June 13	N Luffenham	C.D. John Cooper/ Biggles Club.
6th Area	Aug 8	Barkston Heath	I shall be on holiday, so someone is required to take overall responsibility, +C.D.
7th Area	Sept 19	Barkston Heath	C.D required.
8th Area	Oct 17	Barkston Heath	C.D. required.

Please note that the RAF have informed the BMFA that a runway light was damaged on March 21(3rd Area Centralised). the actual damage is not the main issue, but the fact that it was not reported is the real concern.