

# FREE FLIGHT

## news





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### FFn DIARY

March 1 Area Venues	BMFA 2nd Area. F1H, P30 (Plugge), F1J (Plugge), BMFA 1/2A, CE (Plugge), HLG-CLG.	April 11-12 Oberkotzau, Germany	11 <sup>th</sup> : World Cup Oberkotzau, 12 <sup>th</sup> : 4th Föhrberg Cup. F1E. World Cup events. Contact: Peter Kuttler, tel: +49 160 945 164 69 / +49 928 66 187, email: <a href="mailto:peter.kuttler@web.de">peter.kuttler@web.de</a>
March 5 Säkylän Pyhhäjärvä, Finland	Swedish Moose Cup. F1A F1B F1C F1P F1Q. World Cup event. Contact: Per Findahl, tel: +46-223 22957, email: <a href="mailto:per.findahl@gmail.com">per.findahl@gmail.com</a> web: <a href="http://norbergsfk.se/swedishcup">http://norbergsfk.se/swedishcup</a>	April 11-12 Salonta, Romania	Harghita Cup. F1A F1B F1C F1P F1Q F1H. World Cup event. Contact: Kiss Istvan, tel: +40 7 45 16 1435, email: <a href="mailto:ktamara@netter.ro">ktamara@netter.ro</a> web: <a href="http://www.frmd.ro">http://www.frmd.ro</a>
March 7-8 Säkylä, Pori, Finland	Bear Cup. F1A F1B F1C F1Q. World Cup event. Contact: Kim Henriksson, tel: +358 44 7688 370, email: <a href="mailto:kim.henriksson@vahanen.com">kim.henriksson@vahanen.com</a> web: <a href="http://lennokkipojat.fi/">http://lennokkipojat.fi/</a>	April 14-18 Nalchik, Russia	Naloev Cup. F1A F1B F1C F1P. World Cup event. Contact: Nikolay Naloev, tel: +7 928 084 44 79, email: <a href="mailto:naloev@mail.ru">naloev@mail.ru</a>
March 7-8 Vyskov, Czech Rep.	Winter Cup I and II. F1E. World Cup event. Contact: Vojtech Zima, tel: +420 604 589 792, email: <a href="mailto:voziteam@seznam.cz">voziteam@seznam.cz</a>	April 17-21 Narrandera, NSW, Australia	Australian Free Flight Championships. F1A F1B F1C. World Cup event. Contact: Vin Morgan, tel: +61 3 9387 2531, email: <a href="mailto:vin.morgan@utas.edu.au">vin.morgan@utas.edu.au</a>
March 14 Gjovik, Norway	Holiday on Ice. F1A F1B F1C F1Q. World Cup event. Contact: Tor Bortne, tel: +47 920 95 329, email: <a href="mailto:tobortne@bbnett.no">tobortne@bbnett.no</a> web: <a href="http://www.frifluktvegar.no">http://www.frifluktvegar.no</a>	April 18 Lucenec, Slovakia	Jumbo Cup. F1A F1B F1C F1H. World Cup event. Contact: Stefan Hubert, tel: +421 905 145 107 / +421 47 432 82 06, email: <a href="mailto:gabika1988@hotmail.com">gabika1988@hotmail.com</a> email2: <a href="mailto:dana.domokova@lucenec.sk">dana.domokova@lucenec.sk</a>
March 22 Area Venues	BMFA 3rd Area.Vintage G (Plugge), C/R (Gamage), F1C (Halfax/Plugge), F1Q, HLG-CLG (Plugge).	April 18-19 Salisbury Plain	BMFA London Gala. 18th: C/G, C/R, C/P, C/E, P30, CO2. 19th: F1H, F1G, F1J, BMFA1/2A, Mini Vintage, E30, HLG-CLG. Contact: Trevor Grey 01892 539221.
March 28 - April 2 Slanic Prahova, Romania	FAI European Indoor Championship Seniors and Juniors.	April 23-24 West Wyalong, NSW, Australia	Southern Cross cup. F1A F1B F1C. World Cup event. Contact: Tahn Stowe, tel: +61 296 646198, email: <a href="mailto:stowes@ozemail.com.au">stowes@ozemail.com.au</a>
April 3 (Good Friday) North Luffenham	BMFA Northern Gala. C/G (CMA), C/R (Caton), B/P (Hamley), C/E, SLOP (Falcons), F1H, P30, BMFA ½A, Mini-Vintage, HLG-CLG. Contact: G.Warburton 0113 2852947	April 25 Ceminac, Croatia	17th Kup Slavonije i Baranje. F1A F1B F1C. World Cup event. Contact: Vinko, tel: +385 31 203 245/+385 31 571 700 e: <a href="mailto:vinko.tomljanovic@gmail.com">vinko.tomljanovic@gmail.com</a> web: <a href="http://www.aeromodelarstvo.net">http://www.aeromodelarstvo.net</a>
April 10-11 Orim, Israel	Passover Open. F1A F1B F1C F1P F1Q F1G F1H. World Cup event. Contact: Aviad Levy, tel: +972 3 517 50 38, fax: +972 3 517 72 80, email: <a href="mailto:office@aeroclub.org.il">office@aeroclub.org.il</a> web: <a href="http://www.aeroclub.org.il">http://www.aeroclub.org.il</a>	April 26 Near Melton Mowbray	BMFA 1st F1E event (Team selection). Contact: Ian Kaynes 01252 512538 or 0794 185 2144

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**Compiled and produced by Ian Kaynes, Paul Masterman and Michael Warren**

### C-03, F1G BY ALAN BROCKLEHURST

My first Coupe d'Hiver model (C-01) was built in 1976 as a test for my Opt-Prop design method (published in the Tenth NFFS Sympo, 1977). However, a lack of spare time forced a break from serious F/F in the eighties and nineties, although I continued to dabble, occasionally flying my Tailless-II rubber model and continued to use the Opt-Prop theory to refine the propeller design. This experience taught me how to bias the Opt-Prop input variables of torque, diameter, revs/sec and climb-speed to produce a good propeller, while letting the computer predict the blade angle and chord according to a desired optimum circulation distribution and Low Re aerofoil CL-capability.

When I retired in 2011, I recall telling folks that my 'new' (Bob White inspired) Coupe wing was about 10 years old – only to find from my notes that it had been built in 1992! Unfortunately, the wing had acquired a warp, so I decided to put it on one side and start again from scratch. Once C-03 was completed and trimmed, I took another look at my 'new' Coupe wing, and it has now been stiffened with external carbon cap strips and flies almost as well as C-03. The reserve model also benefits from a lighter version of the latest Opt-Prop.

In contrast, C-03, was designed and completed in a couple of months in the late spring/ early summer of 2012. This model has now had over 80 flights in UK competitions, with 3 firsts, 4 seconds, 3 thirds and 3 fourth places since mid 2012 and topped the Southern Coupe League in 2014.

#### Model Design

Clearly, the wing for C-03 needed to be less prone to warping than C-01 and 2, but I was reluctant to increase the thickness chord ratio from 7% (since at these very low Reynolds numbers thinner is usually better). I was also reluctant, at this stage, to change to carbon construction as my experience in using it for very light weight structures is limited and, anyway, I like building with balsa and tissue! Also, I rather liked the idea of using an egg-box construction (a Chris Chapman influence). This was a small step from the intricacies of my tailless model and I suspect it provides some natural surface turbulence as well as a nice stiff wing.

What else could I learn from the master? Well, my previous models had a chord of 100mm (4") in an attempt to push up the aspect ratio, while Chris's Coupe plan (B&W Newsletter, 1998) showed a 4.5" chord. Of course, there must be an optimum value, but finding it could take some time! I therefore compromised on 4.25" (108mm) for this model, as that would increase the physical wing thickness slightly. The

span was left the same as for C-02 (43.25" projected), a little greater than Chris's model.

I decided to retain the wing aerofoil, AB503507G, from Coupe C0-2. For one thing I felt happy with it, and at that time didn't really want to stop to design another. The aerofoil is based on the modified NACA 4-digit formulation as given in Abbot and von Doenhoff's well known book. The ordinates were originally computed on the old 'BBC Micro', but this is one of the programs that has now progressed to my Linux computer. This aerofoil has a relatively generous leading edge radius and the maximum thickness is fairly well forward at 25% chord. The maximum camber is 5%, located at 35% chord, so there's not too much rear loading. The aerofoil formulation allows me to tweak the trailing edge angle and also facilitates a practical trailing edge thickness, hence the suffix 'G' to denote the type of thickness distribution which I deemed suitable for a Coupe wing. The rib shapes are illustrated in Figure 1.

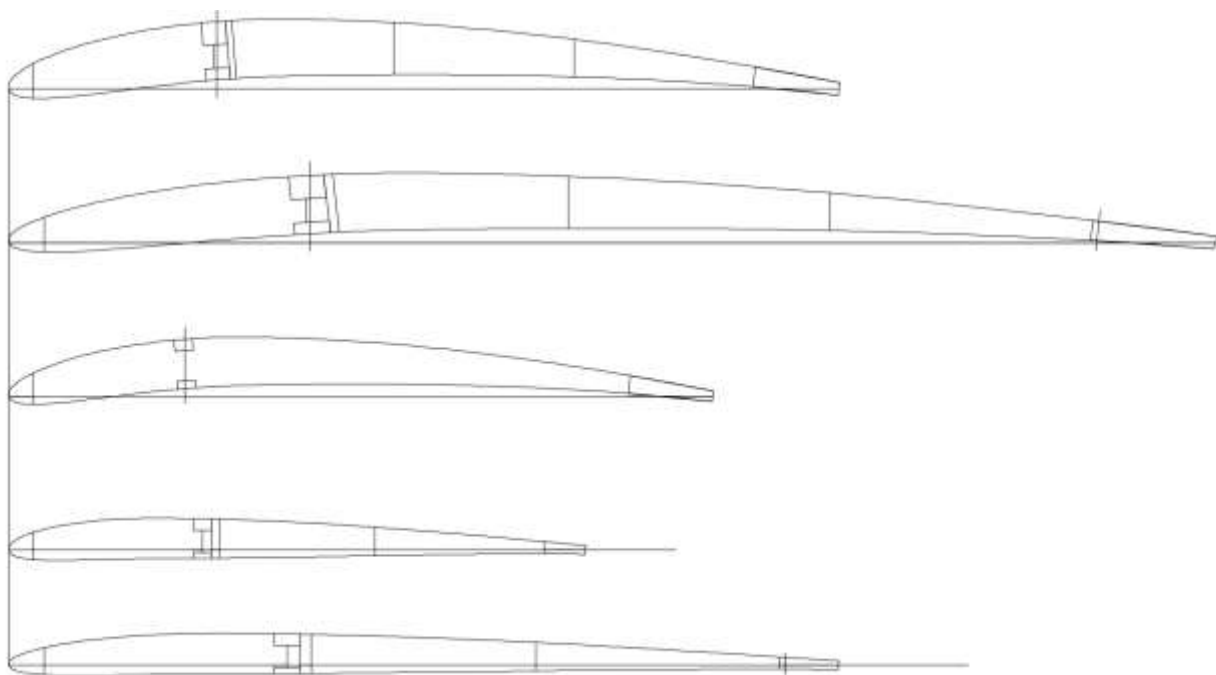


Figure 1 Wing and Tail Ribs (straight and diagonal, approx full-scale)

With Chris as my mentor, the wing was designed with no warps on the main panels, and nominally 1mm washout on both tips (perhaps slightly more on the port tip to just encourage the left glide turn). Right side thrust is used to control the climb against a little left rudder. The dihedral is fairly generous, or so it has been suggested to me, but this helps to keep the model nice and stable in the climb.

The tip shape used for the wing (and prop) were influenced by Kuchemann and I also think Hoerner would have approved. My policy is to curve the leading edge to avoid isobars bunching up in the forward tip corner and also keep the outer tip and trailing edge straight to allow the tip vortex to roll-up cleanly and as far outboard as possible. The laminated wing tip is also fairly robust.

The fuselage was based on what I had planned 20 years ago, again strongly influenced by Chris, and in fact I had an old built up tail boom which has now been extended and modified for C-02, while that for C-03 was designed with CAD (Rhino 3D solid modeling/CAD software) and built from scratch and is a bit lighter and slightly longer. I did consider a Kevlar tube and carbon boom, but had concerns about weight (and cost) and I also rather like the idea of a square nose – perhaps not the most elegant and not the lowest drag, but at least you can easily add packing. The back-end has proved adequately stiff and

seems plenty strong enough. Anyway, although I may refine the fuselage in the future, I have to say that I have been most satisfied with this model (OK, so it is a bit over-weight - perhaps I built it a bit too strong!). See Table 1 for weights of the main components.

The tail size was increased relative to my previous Coupes on the grounds that I may have been influenced by the smaller tails of Coupes with VIT in an earlier design survey. Since this particular model was not going to use VIT, wigglers, auto-rudders or the like, I decided that I could afford to build a slightly more generous tail and also place it further aft to increase the damping in pitch. It would be interesting to dig deeper into various aspects of FIG aerodynamics. I wonder, would a 6-degrees of freedom climb trajectory calculation prove an over-riding need for gadgets, or might the simple approach be shown to be almost as effective for Coupe? For the moment I will continue to enjoy the simplicity and focus on finding the lift!

The tail aerofoil is again one of my own (AB202507G), with what I think is about the right amount of camber (essentially flat bottom with a bit of 'Philip's entry') to minimise drag. Again I like the egg-box construction for its stiffness and 'secret' aerodynamic properties. I could save weight on the tail, but I find that's not too critical for a Coupe.

I had 'fun' with determining the fuselage design, and finally opted for a slightly shorter nose and a tailboom longer than planned to place the cg at 68% chord.

In contrast, since I saved weight on the new prop for Coupe C-02, this 'recently completed' model has a longer than expected nose but still adequate tail arm. Hopefully this aspect of the design will settle down as I progress and it will be interesting to compare the the behaviour of these two models which, together with some theory, might shed some light on various aspects of static and dynamic stability and trim.

The pylon is constructed from 1/32" sheet and its size is just sufficient to house a Tommy timer (I would like get to up-to-date and go electronic on the next model). Second time around, to complete C-02, I changed the forward and aft facing wooden wing dowels for 2mm carbon tubes.

**Table 1 Weights of my current FIGs**

Model	Wing	Fuselage	Tail	Prop	Motor	Bobbin & hook	Total Wt (grms)
<b>C-03</b>	25.1	25.6	4.5	20.8	10.0	1.9	<b>87.9</b>
<i>C-02</i>	25.6	33.0*	5.6	16.9	10.0	1.9	93.0

*\*due to use of harder wood and various modifications!*

### Propeller Design

It was nice to pick up the old Opt-Prop design method again, and even nicer that the final product has worked well! However, at present the Opt-Prop theory itself remains unchanged. Over the years, it has been ported from a Programmable HP Desktop Calculator to a BBC Micro and then to an Acorn A5000 (with Arm processor and BBC Basic V) in the mid-to-late-eighties and early nineties. In the near future, I intend port it to Fortran or C++ and run it under the latest Debian Linux and no doubt I will refine it a bit in the process. However, since both BBC Micro and A5000 are still up and running, I took the easy route this time around and simply ran the 25 year old code with some new input parameters.

For expediency, I quickly estimated the input data for Opt-Prop and, in particular, the torque that a modern-day Coupe/FIG motor would generate. I found one scaled torque curve from an article by Peter King, and eventually discovered some measured data in an article by Paul Rossiter (in the April and July 2011 issues FFQ) which roughly confirmed my best guess

for the 'knee' of the curve. I had an idea of the diameter that I wanted to try (much bigger than I used in 1976) and so went through several iterations, keeping an eye on the chord. I also wanted a long-ish motor run, so having acquired a feel for the number of turns available, I could estimate the average rev/sec (as always, adding 10% to be representative of the design point). I also did a few sums to estimate the climb speed (and then err'd on the generous side, pending further analysis). Opt-Prop did the rest!

The resulting prop has a diameter of 490 mm (19.29") and a nominal P/D=1.282. The Opt-Prop pitch distribution is compared to a helical distribution in Figure 2.

The aerofoils for the propeller were carefully chosen to have sufficient camber to provide a good L/D ratio at moderate CL (for Opt-Prop the operating CL is chosen to be what I think is achievable at the appropriate low Reynolds numbers and also satisfy the need for a smooth distribution to achieve the desired optimal loading). Bearing in mind the low Reynolds numbers involved (Re=32,300 at 75%R) the thickness/chord ratio was kept to a minimum, but sufficient to provide adequate strength and stiffness. Again the modified NACA 4-digit formulation was used to provide a series of aerofoils to meet these requirements. The propeller aerofoils are given in Table 2, the pitch distribution is shown in Figure 2 and the variation in thickness and camber along the blade are shown in Figure 3.

**Table 2 Propeller Aerofoil Parameters**

r/R	f/c	xf	t/c	Aerofoil
0.30	0.055	0.35	.150	AB553515B
0.50	0.045	0.35	.080	AB453508B
0.75	0.035	0.35	.063	AB353563B
0.95	0.030	0.35	.070	AB303507B

Since I wanted to try a relatively large prop diameter an out-rigger prop style was chosen, with the fold hinge at 22.5%R (or 51.1mm), to keep the blades ahead of the leading edge of the wing when the prop was folded (when the pylon was finally positioned on the fuselage to achieve the correct cg location, the nose length came out a little shorter than intended, so I was lucky that there was still sufficient clearance!).

There are some interesting trade-offs that arise from the choice of prop fold location. An outrigger blade may suffer a slight reduction in propeller efficiency due to the large root cut-out, although this can be mitigated a little by extending the blade inboard of the hinge. Against this, there is a possible benefit through a reduction in interference drag in the glide. Again, all this can be quantified later when time permits, but I have been pleased with the performance of this propeller design and will retain this configuration for the next model.

For the second (C-02) model, the root of the blade was thinned down a little to save weight and was re-drafted in Rhino before carving. This produced a blade better suited to the new out-rigger prop configuration. This revision and use of thinner ply doublers resulted in the final propeller assembly weight being reduced from 20.7grms to 16.9 grms (hence C-02 also has a longer nose).

Interestingly, the old wood-screw stop seems to be reasonably consistent in stopping the blades with the hub horizontal and, like on Chris's models, the blades simply float in the airstream about their hinge. The simple wire hub is also quite light. The only minor problem here is that the stop should ideally be adjusted for different length motors, although as long as they are not too dissimilar you can get away with it. I have recently found it useful to switch between 3/16" and slightly 'thick' 3/32" motors to give either a longer run or a faster climb, according to conditions, and change the hook length rather than adjusting the wood-screw stop.

Opt-Prop Pitch Distribution for Coupe No3 Prop

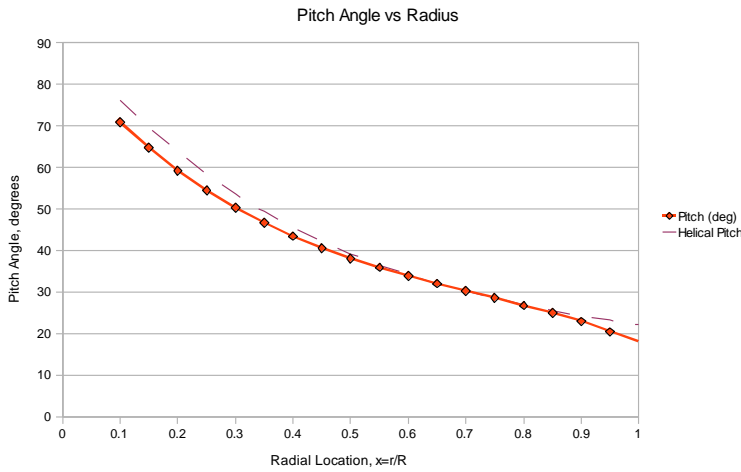


Figure 2

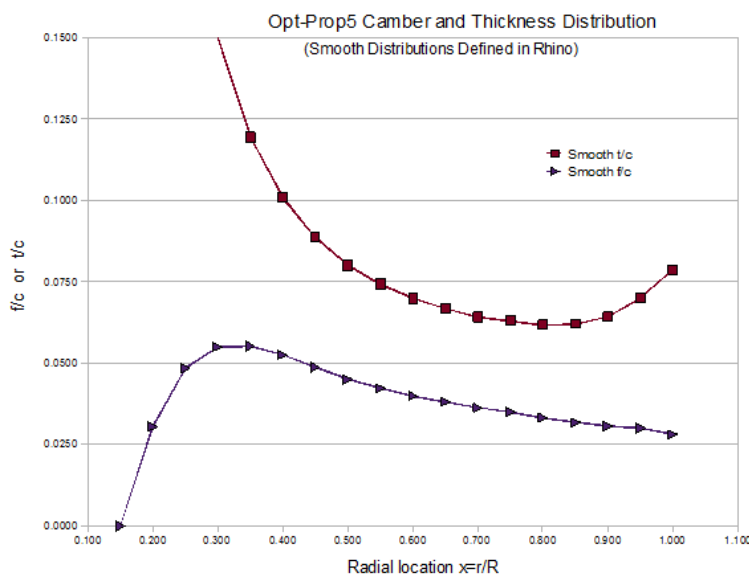
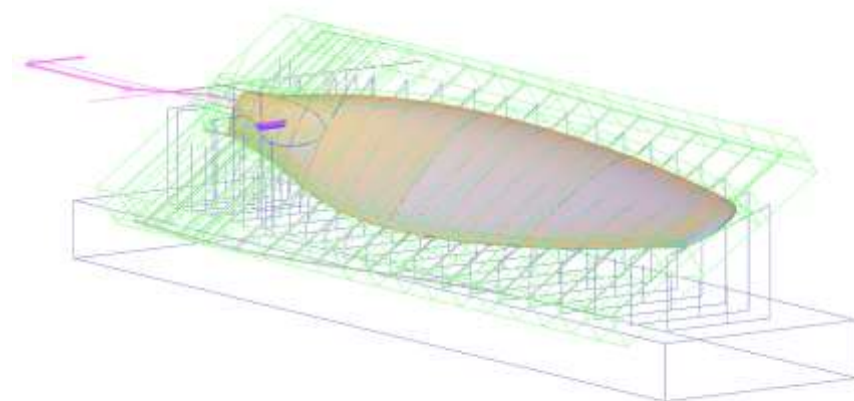


Figure 3

In the longer term, I would like to carry out some torque measurements and also a climb analysis, in order to pin-down some of the variables (in the ideal world I would have done this by now in time for designing C-04, which is currently nearing completion).

The Opt-Prop was drawn in Rhino prior to cutting wood for C-03. Later, the inboard region was re-drawn to clean it up and



so reduce the weight of the prop for C-02. This process may not be the quickest method of making a prop, but it is certainly accurate. In fact, using 3D CAD really makes you think about the geometry and, hopefully, get everything right, hence 'what was built' and 'what is being flown' should be 'what was designed'. I used Rhino to generate the lower-surface prop-blade 'triangle' templates for the jig, and also true planform and edge templates for the 1/2" sheet block. The blades were then carved, using the printed paper templates (shown below) glued to the block, and checked against the jig, with additional templates and digital calliper measurements being used to assure the upper surface of the blade. The wire hub was also drawn in CAD, and the jig includes facilities for drilling holes in the blade for the wire-and-tube blade fold hinges. The prop aerofoil and pitch templates are shown below. Table 3 lists the pitch angles and chord distribution(s) of the Opt-Prop for C-03/C-02.

r/R	r (mm)	Pitch (deg)	Chord (mm)
0.10	24.50	70.90	(root at 0.125R)
0.15	36.75	64.80	9.188/11.230
0.20	49.00	59.30	14.738/16.829
0.25	61.25	54.50	21.750/22.427
<b>0.30</b>	<b>73.50</b>	<b>50.30</b>	<b>28.026</b>
0.35	85.75	46.70	32.936
0.40	98.00	43.50	36.960
0.45	110.25	40.70	39.956
<b>0.50</b>	<b>122.50</b>	<b>38.20</b>	<b>41.985</b>
0.55	134.75	36.00	43.130
0.60	147.00	33.90	43.489
0.65	159.25	32.10	43.150
0.70	171.50	30.30	42.180
<b>0.75</b>	<b>183.75</b>	<b>28.60</b>	<b>40.597</b>
0.80	196.00	26.80	38.369
0.85	208.25	25.00	35.414
0.90	220.50	23.00	31.619
<b>0.95</b>	<b>232.75</b>	<b>20.50</b>	<b>26.864</b>
1.00	245.00	18.09	(21.962)

Table 3 Coupe Opt-Prop Pitch Angles and Chord Distribution

It also occurred to me that, if I checked the actual motor run against the design aim, the two figures should agree (thanks must go to Chris Chapman, Brian Silcocks and Martin Stagg, and all the others who have timed for me, for their patience in timing the motor run as well as many of my competition flights). The graph in Figure 4, shows runtime versus turns, albeit with some (not unexpected) scatter, and as expected the points cluster near the design point of 55 seconds. I have noticed that the turns run-off quicker if I inadvertently launch the model to the right of the wind which encourages what Chris calls 'the Coupe-swoop'! Launching straight into wind, or even a little to the left of wind seems to give a more reliable 55-56 seconds on 430 turns. Note the

shorter runtime with 16 strands of 'thick' 3/32", and the one-point from the early days of trying the 'thicker' 1/8". The points in Figure 4 represent only those flights for which the motor runs were timed and recorded up to 2013.

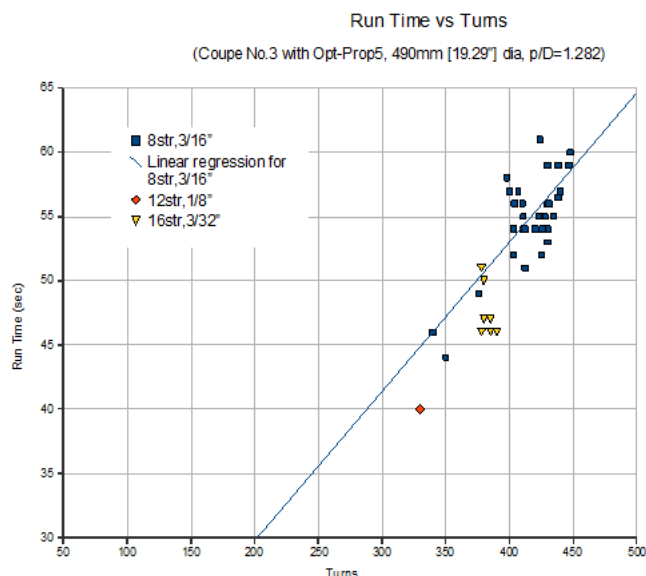


Figure 4

In conclusion, it has been really nice to get back into the swing of building and flying F/F. I have to say that this has been one of the best models that I ever built and the experience has certainly spurred me on to build more F1Gs in the future. The model has been flown in all weathers and has proved itself in competitions. The aim now is to get the weight down and enhance the performance a little more, and who knows, I may try some of the more modern structural approaches and certainly some electronics are being considered. However, C-04 has a similar egg-box wing with just a little bit more span and, of course, I couldn't resist making a slight tweak to the aerofoil.

## NEWS FROM BMFA FF TECH COMMITTEE

The FFTC met at the Leicester office on January 28 and February 18. All correspondence re this news to the FFTC Secretary: Chris Strachan 56 Way Lane, Waterbeach, Cambridge, CB25 9NQ. E-mail: [chris.strachan@btinternet.com](mailto:chris.strachan@btinternet.com)

### Barkston

The use of Barkston Heath has been agreed for the 2015 Free Flight Nationals. However, the overall situation regarding model flying there remains unchanged.

### BMFA Contest Rules – General Regulations and Rules

The latest version of the General Regulations and Rules is now available. This version, issued January 2015 supersedes the 12 February 2014 issue. It is available free of charge on request from the BMFA Office.

### Season Ticket

A reminder that this year the season ticket cost is £40. The season ticket covers entry for all events on the FFTC Calendar except the Nationals. For clarity, it includes entry for the Stonehenge Cup, Equinox Cups and the Team Selection events. You will still have to pre-enter these events. Area Centralised Site Access fees, where applicable, are not covered by the season ticket.

To purchase a season ticket for 2015 please contact John Carter by email at [carterbuild@yahoo.co.uk](mailto:carterbuild@yahoo.co.uk) or in writing to 45 Grindley Lane, Meir Heath, Stoke on Trent, Staffs ST3 7LN.

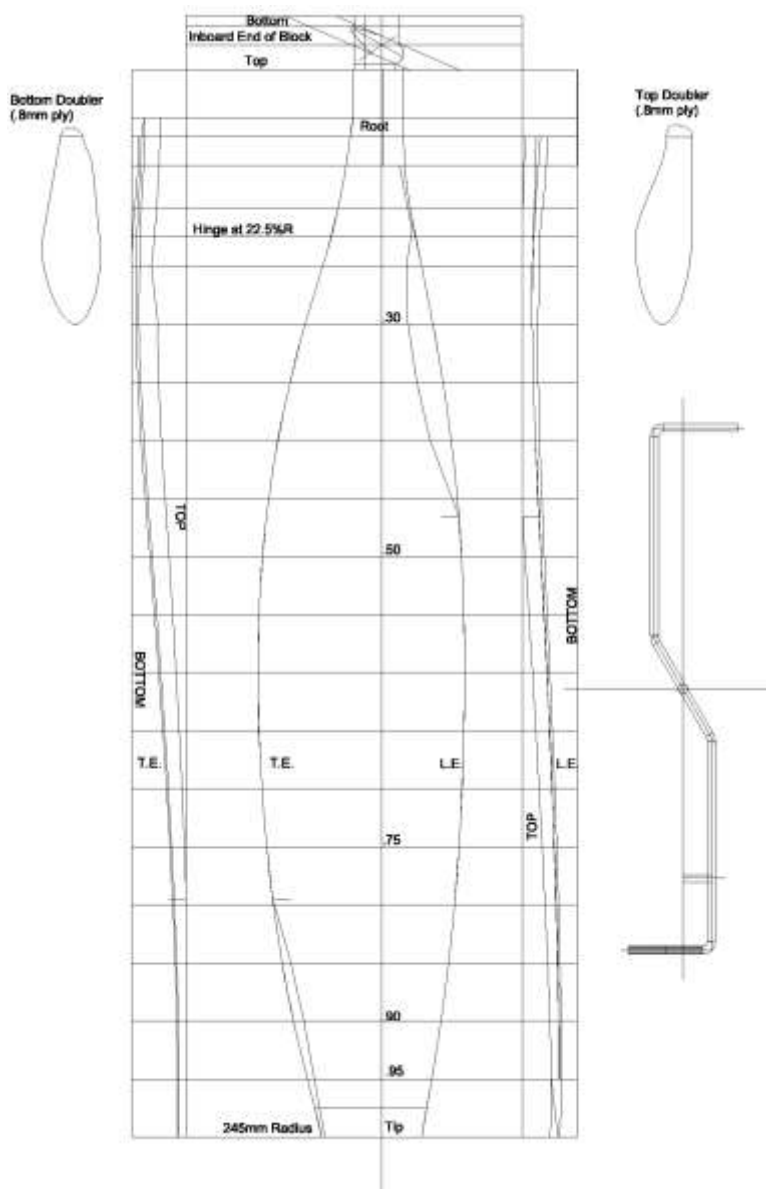


Figure 5 Propeller Blade on Pitch Jig (as drawn in Rhino)

### BMFA Free Flight Contest Rules – Outdoor and Indoor

The latest versions of the contest rule book is now available. This version, effective from January 2015 supersedes the January 2014 issue. To obtain a printed copy contact the BMFA Office, cost is £3.00. Alternatively, it will be available to download from the BMFA Website in the near future if you wish to print it at home.

### Flying Sites Database

The BMFA office holds a spreadsheet containing entries for all known airfields in the UK. It may be useful if you want to investigate potential flying sites near to where you live. To request a copy of the spreadsheet please send an email to David Phipps via [admin@bmfa.org](mailto:admin@bmfa.org). David will email you back the spreadsheet.

### Contest Calendar

The East Anglian Gala at Sculthorpe has had to be moved back one week to August 1-2. P30 has been added to the events on August 1. Please note that Championships Points will not be awarded for this P30 event.

The latest Contest Calendar is now available on the website <https://bmfa.org/Contests-Events/Contest-and-Event-Calendar>

## Salisbury Plain Permits

Please note that due to changes in military requirements for the use of Salisbury Plain Area 8 the issue of permits for general trimming on weekends throughout 2015 has now been withdrawn. Consequently these permits have now ceased to be valid and must be returned to Trevor Grey at 21 Claremont Road, Tunbridge Wells, Kent, TN1 1SY. You must write your BMFA No. on the permit. The fee paid will be returned by the BMFA Leicester Office.

For the remainder of 2015 Salisbury Plain Area 8 will be available for the following contest dates: March 1, March 22, April 18-19, May 9-10, June 7, June 28, July 12, August 22, September 13, September 26-27, October 3-4, October 18.

As with previous use these dates will be confirmed by e-mail on the Friday prior by 11am.

Those wishing to fly in the above contests, or use the site for general trimming on these dates, may do so by payment of a 5.00 fee per day and under the direction of the contest organiser. No other use of Salisbury Plain Area 8 is permitted.

## Stonehenge Cup

Due to updated military activity on Salisbury Plain, the date of the Stonehenge Cup has been amended. It will now be combined with the Equinox Cup. They will be two separate one day events to 5 rounds similar to the 2014 schedule.

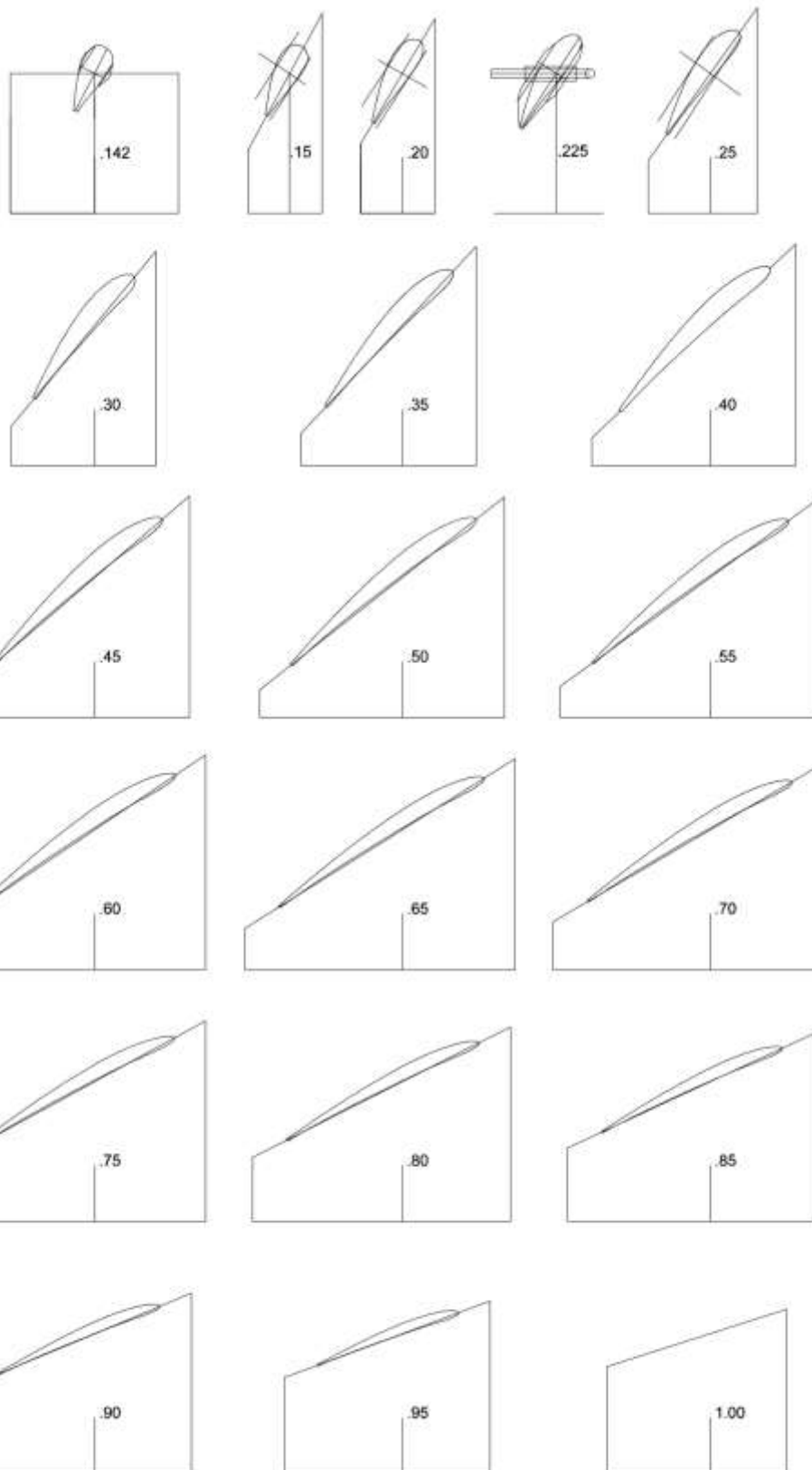
Stonehenge Cup Saturday Sep 26

Equinox Cup Sunday Sep 27.

The venue remains unchanged.

## Note from an Area Contest Secretary

It helps if you can have the right money available for your Area event entries (or get a season ticket).



**C-03 Prop blade sections**

## SOUTHERN COUPE LEAGUE

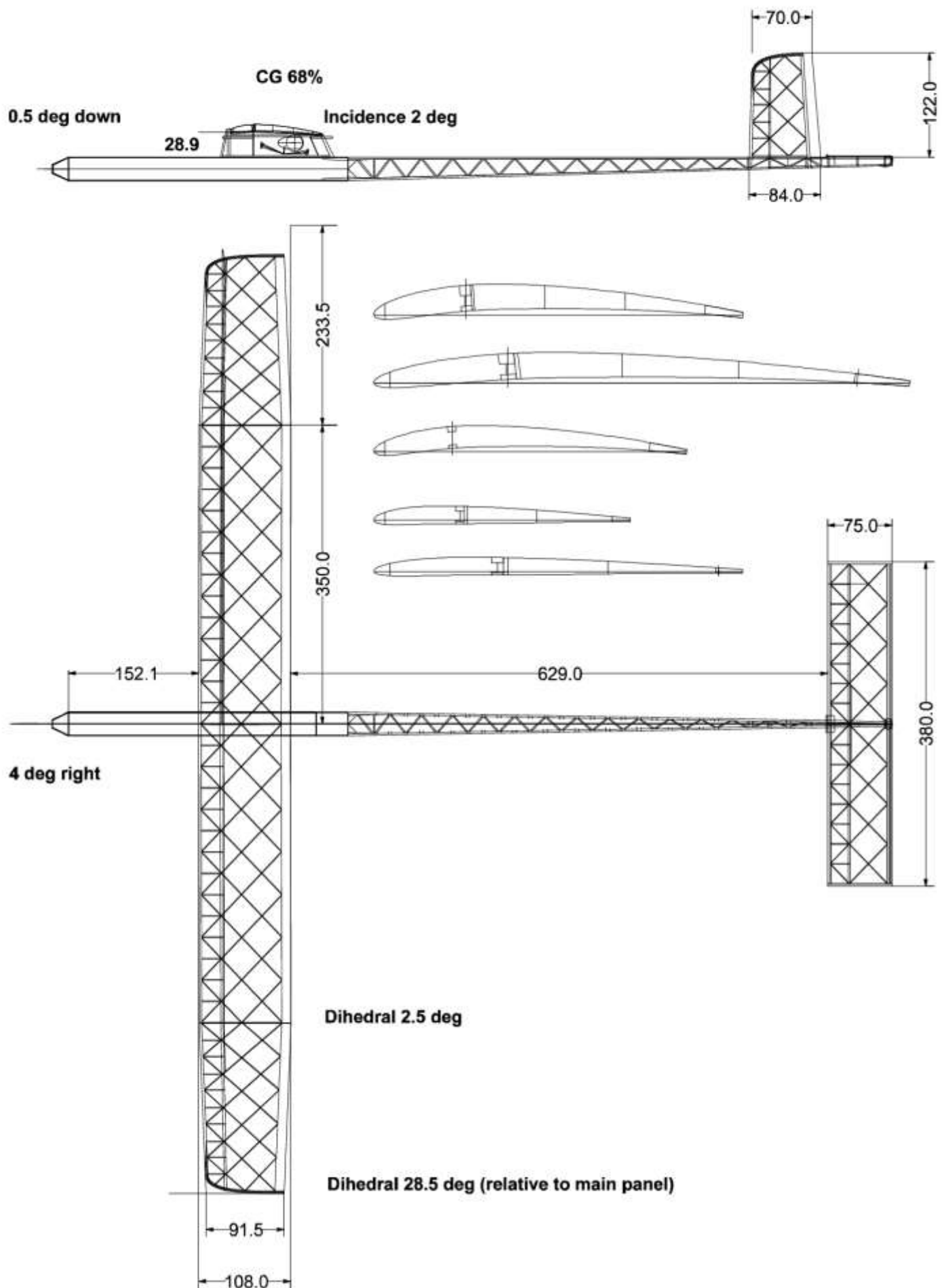
*Round One - BMFA First Area Meeting Feb 8, at Ashdown Forest, Beaulieu, and Merryfield. From Peter Hall*

The last league event was Coupe Europa, September 28th. 2014. Over four months ago. That's one third of a year, one two hundred and fortieth of a lifetime. Surely in this long fallow period all manner of innovations in coupe design and practice must have been incubated? No?... No. Surely all the venues for the First Area would be crowded with eager coupe fliers determined to get the new season off to a good start?

No?...No. Only ten flew, two at Ashdown Forest, one at Beaulieu but seven, thank goodness, at Merryfield. No one at Salisbury Plain because it had been reported that access was difficult so it was abandoned in favour of Beaulieu. Not one of the ten maxed out and only five completed the five rounds, all of these at Merryfield. The weather must have been dreadful? No?...No. The least favourable conditions were at Ashdown, the most at Merryfield but all perfectly flyable, nothing more than a northish breeze in the morning and in the afternoon, almost perfect.



# C-03 *by Alan Brocklehurst*



So what went wrong then? Perhaps the long period of absence and the lack of practice was disabling rather than productive? Did the electrifying performance of E36 and the cosy reassurance of mini vintage tempt some away? Yes. Did the Plugge Points advantage in going for 2x3 round events rather than 1x5 tempt some away? Yes. Coupes are clearly disadvantaged in these circumstances. The remedy is obvious.

If I sound grumpy it's because I missed the event and all those league points going for a song. Martin Stagg just topped Dave Greaves to take first place and lead the league, Alan Brocklehurst, last year's league winner was third. The next round is at the London Gala Sunday April 19 on Salisbury Plain. Spring will restore us, the plain will be accessible, the sun will shine, the winds abate, the crowds will come, won't they?

		maxes	score
1	M Stagg	Bristol & West	3 15
2	D Greaves	Bristol & West	3 12
3	A Brocklehurst	Bristol & West	2 10
4	D Neil	Bristol & West	1 8
5	C Chapman	Bristol & West	0 6
6	P Seeley	Bristol & West	0 5
7	N Allen	East Grinstead	1 5
8	D Thomson	Croydon	0 3
9	K Taylor	East Grinstead	1 3
10	T Winter	CVA	0 1

## BMFA 1ST AREA MEETING, FEBRUARY 8

Area	Weather
Scotland	10 to 15 dry
Midland	10 to 15 sunny
East Anglia	10 to 12 sunny
South	5 to 10.5 at F/O
South East	sunny 10 to 15 reducing later

### F1A SMAE Cup 15 flew

1	J Williams	Birmingham	12.30	+4.48
2	P Ball	Grantham	12.30	+4.08
3	P Tribe	Bristol & West	12.30	+2.38
4	J Carter	Grantham	12.24	
5	P Rovensky	Bristol & West	12.00	
6	S Darmon	Birmingham	11.41	
7	J Pennington	Bristol & West	11.37	

### F1G 19 flew

1	I Davitt	Morley	10.00	+5.20
2	G Mannion	Birmingham	9.41	
3	B Whitehead	Grantham	9.39	
4	W Dennis	Grantham	9.33	
5	G Ferrer	Timperley	9.29	
6	M Stagg	Bristol & West	9.23	
7	D Greaves	Bristol & West	9.18	
8	S Willis	Croydon	9.10	
9	A Brocklehurst	Bristol & West	8.40	

### Combined Power 11 flew 6 F/O, 8 full scores

1	T Payne	Biggles	7.30	+7.57
2	S Barnes	Morley	7.30	+5.51
3	S Dixon	Birmingham	7.30	+5.35
4	A Chilton	Crookham	7.30	+4.42
5	R Vaughan	Crookham	7.30	+3.56

### Mini Vintage 29 flew

1	A Shepherd	Crookham	6.00	+6.28
2	P Ball	Grantham	6.00	+5.10
3	P Seeley	Bristol & West	6.00	+4.04
4	C Foster	Morley	6.00	+3.38
5	T Winter	CVA	6.00	+3.32
6	D Taylor	Grantham	6.00	+2.18
7	N Allen	East Grinstead	6.00	+2.17
8	M Stagg	Bristol & West	6.00	+2.01
9	S Willis	Croydon	6.00	+1.35
10	R Taylor	East Grinstead	6.00	+0.57
11	F Rushby	CLEEMAC	6.00	
12	T Bailey	Grantham	5.48	

### E36 15 flew

1	T Grey	Crookham	6.00	+3.35
2	C Redrup	Crookham	6.00	+1.28
3	C Strachan	Biggles	6.00	+1.03
4	D Davitt	Morley	5.57	
5	R Elliott	Croydon	5.54	
6	R Marking	CVA	5.37	
7	D Hambley	Scotia	5.33	

### Plugge

		1st Area		
		FIG	MV	E36
1	Bristol & West	142	169	74
2	Grantham	173	180	
3	Crookham		152	193
4	Morley	100	124	120
5	Croydon	74	82	86
6	CVA		131	67
7	East Grinstead	26	148	
8	Biggles		55	87
9	Vikings	42	62	
10	Birmingham	95	7	
11	Scotia		28	60
12	Timperley	86		
13	CLEEMAC		66	
14	Impington	47		
15	MFCC			33

## THE FABULOUS FEBRUARY – LOST HILLS

By Chris Edge

For once the advert lived up to the reality with the contests flown by your scribe being well attended, with excellent weather, and tight results. I couldn't get out for the Kiwi Cup and so missed the only rain of the contest period but on arrival I was met by clear skies with increasing temperatures and light winds for most of the day; perfect conditions very much like last year's Stonehenge/Equinox Cups in fact.

The North American Cup was flown on the Tuesday and we had one line move to avoid the new almond trees. By the end of the last round the wind had increased and in a poor direction so flyoffs were delayed until the following morning. It was cold at 7am but times showed the performance of the winning models to be over 7 minutes for A and B and 10 for C. In the case of the latter, Babenko's (UKR) new models now have the wing running through the centre of the fuselage which has necessitated a move to the British two-handed launch technique – his climbs were some of the best I've seen in years. B's have pretty much stagnated from what I could glean, although talk of rubber batches in hushed voices continues apace. In A you need a SBT (Slink Black Thingy) a monster launch and a flasher to be in with any chance of place – my old long model was 3 minutes down. Amazingly Findahl (SWE) and Parker (USA) got the same score and flew off again, Per's SBT beating Jim's M&K long LDA after a slight left launch from Jim saw a lower glide height. His models were interesting in that they used discrete vortex generators (0.4mm self-adhesive medical tape, about 1.5mm square) placed at a 'magic angle' to the LE at the usual turbulator's position. Similar ideas have been used by others for many years, particularly Ken Bauer, but this was an easy application method – certainly something to try.

Two days of perfect trimming weather followed – it was almost too good with flying until after sun set and grins all around as models got sorted and times compared. Particularly impressive was a larger than normal group of Israelis who seemed to fly continuously all day, every day.

Friday and Saturday saw the MaxMen events for A, then B&C. On both days the first three rounds were still with little lift and positioning was important to max. The large number of competitors in A did result in line crosses and one of these broke Koglot's (SLO) favoured rounds model with the



replacement turning very tight and missing the max – he thought the wiggler was set incorrectly for glide. We moved for the flyoffs with the first being to 7 minutes with 19 making the time, mainly using thermal models. As it cooled before sunset the SBT's came out in force, a number of which were Gorsky flappers, and towing started. Danier (CAN) was off first and at a good height; Findahl launched later but arguably the finest launch at the end was from Galor (ISR) – straight up and with the audience (Sid and Doris Brit) gasping as it kept on cruising to an unfeasible height before a perfect bunt. I didn't see Bezak's (SVK) flight but he was well ahead – or was he? There was a strong rumour that Danier's experienced timekeepers had scores 1 minute apart which is hard to believe with a LED equipped model. Certainly had altimeter, or better still, on-board video been allowed for timing data then there would have been no argument – surely time for CIAM to make this an option?

B&C day was very similar and the resultant flyoffs, over 60% in B and all but two in C, were impressive but for different reasons. Taking C first (although flown 2<sup>nd</sup>) it was a case of the blind leading the blind as most of the participants flew in the worst air seen for many years with times that were 1/3 of the still air time being recorded. Valo (FIN) was one of these but his straight up, slightly rolling Babenko model flew away from the worst horror to get 3<sup>rd</sup>. The top two held back and in the case of Truppe (AUT) was encouraged to wait until the last minute; his Verbitski flapper's engine sounded very fast as it arched slightly left to a good height and perfect transition. For two minutes it came down but slowly pickup up better air on each subsequent circle to achieve the required 7 minute max.

The line for B flyers stretched out in front of us as the FO started – a few minutes later the crack of broken motors started, and continued! The air was stable and waves of models set off, some to heights in excess of 100m. A very popular flyer who reached this stage was Schwartzback (DEN) who was both elated and nervous of his first contest in over 40 years. Right at the end of the round Acterberg (USA) flew his distinctive and beautifully constructed high aspect ratio model and I was surprised to see he didn't make the max. Of the nine who did, the last flyoff saw the top three launch close together with Andriukov (USA) just making it.

The final day, Sunday, saw Minis and Q flown on yet another perfect day. The new MaxMen CD, Bill Booth, sensibly reverted back to a normal 5x2min for the Mini contest (rather than a first flight to the ground) that set up a nice series of flyoffs in the late cooling air. Both G and H needed 3 to conclude things, with impressive long flights from Jensen (USA) and Findahl to win. But where was J you may ask? When I first when to the MaxMen in '97 there were maybe 30 J flyers in the flyoff, now we had two short-runners FIPs, neither of which maxed out, as a token entry – very sad to see. A better contest would have been E-36/F1S which is clearly making in-roads in the US and elsewhere.

Two years ago in FFN 1303 I wrote of the problems the new orchards could bring but I'm glad to report that relations with farmers are good and that additional land adjoining the field can be used with the support of Holloway Gypsum. Wind directions didn't take models over the 46 or the oil production field this time but CDs need to be aware of the dangers of those directions.

I also wrote about the expense of ultimate performance models, primarily in A, that could reduce numbers and I note proposals for simplified models now being tabled to CIAM, albeit to derision by many. Clearly the numbers of local entrants has reduced significantly over the years and I expect the debate to continue without any consensus and a continuing decline in numbers. Despite these issues the 2015 MaxMen was a showcase of the joys of free flight and long may it continue. And if only Denny's could employ an efficient staff without a

2 hour wait for food then the Fab February might just be the best event in the world.

### F1Q notes (IK)

This year there was an F1Q event at each of the three competitions. The Kiwi Cup had Dick Ivers as the only person with a full score when the event was stopped after round 5 because of the rain and mud. This was to be the only full score in Q for the week (but Bernie Crowe could not attend this year after having had surgery). Matt Gewain topped the North American Cup after dropping one flight. I came second despite a flight of 30 sec when my reliable model dived in after the end of the run as a result of systems malfunction. Then at the Maxmen there were two other cases of models diving in (Dave Lacy and Aram Sclosberg), Shmulik Sitton winning with 6 maxes and the least time dropped on the other flight.

This was the first F1Q event under the reduced energy rules. The last two events had been dominated by air picking while the Kiwi Cup had probably indicated that performance is such that the 3 minute max is more marginal now. My old model was doubly handicapped by the 20% energy reduction and also the reduction of maximum weight used for energy calculation from 550g to 500g. By contrast, last year it was handicapped by the engine run limit of 20 sec (energy allowance would have given 26 sec run) so the overall difference was small. Models lighter than 500g did not appear to be significantly less potent with the reduced energy. I trimmed out a new low-power model with a 34 sec run during the week and it maxed easily in still air, then flown at the Maxmen with a single drop in the dead air of round 2 (which round also caught out Gary Madelin in F1H).

## KIWI WORLD CUP, LOST HILLS, USA, FEBRUARY 7-8

### F1A 52 flew 29 full scores

1	I Bezak	SVK	930	+452
2	R Koglot	SLO	930	+426
3	P Findahl	SWE	930	+415
4	L Malila	SUI	930	+396
5	E Pecenkovic	BIH	930	+387
6	J Danier	CAN	930	+377
7	A Balassiano	ISR	930	+363
8	R Lesko	CRO	930	+351
9	M McKeever	USA	930	+315
10	C Bachmann	SUI	930	+314
11	F Aberlenc	FRA	930	+295
12	K Bauer	USA	930	+291
13	B Van Nest	USA	930	+285
14	P Rasmussen	DEN	930	+284
15	J Abad	ESP	930	+283
16	N Shitrit	ISR	930	+280
17	A Koerbin	NZL	930	+240
17	G Ulm	USA	930	+240
19	P Mitchell	AUS	930	+236
20	B Bardarov	BUL	930	+233
21	P Brocks	USA	930	+232
22	S Limor	ISR	930	+230
23	A Kidron (J)	ISR	930	+225
24	M Campbell	AUS	930	+216

### F1A-Junior 3 flew 2 full scores

1	A Kidron	ISR	930	+225
2	G Yair	ISR	930	+125

### F1B-Junior 3 flew 2 full scores

1	S Malkhasyan	USA	960	+328
2	J Pivonka	USA	960	+279

### F1C 7 flew

1	A Vyazov	RUS	960	+600
2	R Summersby	AUS	960	+556
3	R Truppe	AUT	960	+506
4	A Jack	GBR	901	

**F1B 42 flew 27 full scores**

1	E Gorban	UKR	960	+417
2	D Larsen	NOR	960	+389
3	M Woolner	GBR	960	+382
4	T Vaccarro	USA	960	+381
5	T Mathews	CAN	960	+379
6	O Shabat	ISR	960	+378
7	A Schlosberg	USA	960	+373
8	A Andriukov	USA	960	+365
9	R Peers	GBR	960	+361
10	S Stefanchuk	UKR	960	+356
11	C Jones	USA	960	+349
12	G Hagay	ISR	960	+345
13	F Gnass	CAN	960	+341
13	B Jensen	USA	960	+341
15	V Morgan	AUS	960	+339
16	B Booth	USA	960	+337
17	T Fibish	ISR	960	+334
18	S Malkhasyan (J)	USA	960	+328
19	W Ghio	USA	960	+325

**F1Q 7 flew**

1	D Ivers	USA	900
2	J Murphy	USA	899
3	I Kaynes	GBR	866
4	D Lacey	USA	863

**F1G 21 flew 8 full scores**

1	O Shabat	ISR	600	+180	+240
2	T O'Dell	USA	600	+180	+174
3	B Jensen	USA	600	+180	+173
4	T Mathews	CAN	600	+180	+157
5	E Gorban	UKR	600	+180	+141
6	A Baruch	ISR	600	+180	+121
7	L Horak	CAN	600	+129	
8	D Chevenard	FRA	600	+19	

**F1H 16 flew**

1	P Findahl	SWE	600	+180	+240	+345
2	P Mitchell	AUS	600	+180	+240	+228
3	O Shechter (J)	ISR	600	+180	+240	+190
4	A Studnik	ISR	600	+180	+240	+177
5	B Van Nest	USA	600	+180	+210	
6	S Sitton	ISR	600	+180	+204	
7	S Limor	ISR	600	+96		
8	R Wallace	NZL	600	+78		
9	B Lavis	GBR	596			

**NORTH AMERICAN CUP, LOST HILLS, USA, FEBRUARY 10****F1A 54 flew**

1	R Koglot	SLO	1290	+468	
2	P Findahl	SWE	1290	+419	+377
3	J Parker	USA	1290	+419	+337
4	L Malila	SUI	1290	+417	
5	I Bezak	SVK	1290	+407	
6	J Nyhegn	DEN	1290	+391	
7	S Rumpp	GER	1290	+375	
8	B Van Nest	USA	1290	+353	
9	J Valo	FIN	1290	+351	
10	A Studnik	ISR	1290	+344	
11	M McKeever	USA	1290	+333	
12	A Balassiano	ISR	1290	+306	
13	E Pecenkovic	BIH	1290	+288	
14	C Edge	GBR	1290	+286	
15	F Wilkenins	GER	1290	+274	
16	P Brocks	USA	1290	+210	
17	F Aberlenc	FRA	1290	+183	
18	D Andrist	SUI	1290	+8	
19	I Fradkin	USA	1290		
19	D Zink	USA	1290		
21	S Jensen	DEN	1286		
22	M Campbell	AUS	1262		
23	E Jensen	DEN	1258		
24	J Abad	ESP	1256		

**F1A-Junior 3 flew**

1	G Yair	ISR	1214
2	A Kidron	ISR	1077

**F1B 47 flew 30 full scores**

1	A Andriukov	USA	1320	+443
2	M Siefert	GER	1320	+385
3	R Peers	GBR	1320	+383
4	E Gorban	UKR	1320	+378
5	B Jensen	USA	1320	+359
6	S Stefanchuk	UKR	1320	+354
7	H Broberg	SWE	1320	+349
8	B Guest	CAN	1320	+343
9	B Eimar	SWE	1320	+341
10	G Batiuk	USA	1320	+338
10	I Vivchar	UKR	1320	+338
12	T Vaccaro	USA	1320	+333
13	B Jr.	USA	1320	+326
14	M Woolner	GBR	1320	+323
15	W Ghio	USA	1320	+318
16	M Schroedter	USA	1320	+313
17	R Felix	USA	1320	+298
17	M Nishizawa	JPN	1320	+298
17	V Morgan	AUS	1320	+298
20	P Ruyter	NED	1320	+297
21	G Mark	ISR	1320	+292
22	L Horak	CAN	1320	+278
23	O Shabat	ISR	1320	+266
24	M Nakata	JPN	1320	+262

**F1B-Junior 1 flew**

1	S Malkhasyan	USA	1275
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**F1C 14 flew**

1	A Babenko	UKR	1320	+600
2	E Verbitsky	UKR	1320	+472
3	R Mcburnett	USA	1320	+383
4	G Morris	USA	1320	+373
5	T Malkhasyan (J)	USA	1320	
6	R Truppe	AUT	1315	
7	A Vyazov	RUS	1305	

**F1Q 5 flew**

1	M Gewain	USA	1241
2	I Kaynes	GBR	1032
3	S Sitton	ISR	847

**F1P-Junior 1 flew**

1	S Malkhasyan	USA	124
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**MAXMEN INTERNATIONAL, LOST HILLS, USA, FEBRUARY 13-15****F1A 57 flew**

1	I Bezak	SVK	1290	+420	+481
2	J Danier	CAN	1290	+420	+436
3	E Galor	ISR	1290	+420	+404
4	J Nyhegn	DEN	1290	+420	+399
5	A Studnick	ISR	1290	+420	+364
6	P Findahl	SWE	1290	+420	+361
7	A Balassiano	ISR	1290	+420	+344
8	J Parker	USA	1290	+420	+337
9	S Rumpp	GER	1290	+420	+319
10	E Pecenkovic	BIH	1290	+420	+301
11	S Limor	ISR	1290	+420	+296
12	J Abad	ESP	1290	+420	+282
13	S Limberger	GER	1290	+420	+249
14	M McKeever	USA	1290	+420	+244
15	B Bardarov	BUL	1290	+420	+237
16	P Barron	USA	1290	+420	+231
17	A Kidron (J)	ISR	1290	+420	+215
18	G Yair (J)	ISR	1290	+420	+202
19	C Andrist	SUI	1290	+420	+174
20	A Persson	SWE	1290	+358	
21	J Cooper	GBR	1290	+303	
22	K Bauer	USA	1290	+233	
23	O Shechter (J)	ISR	1290	+29	
24	E Jensen	DEN	1284		

**F1A-Junior 3 flew 3 full scores**

1	A Kidron	ISR	1290	+420	+215
2	G Yair	ISR	1290	+420	+202

**F1B 49 flew 30 full scores**

1	A Andriukov	USA	1320	+420	+428
2	I Vivchar	UKR	1320	+420	+411
3	B Jensen	USA	1320	+420	+360
4	M Nakata	JPN	1320	+420	+356
5	M Nishizawa	JPN	1320	+420	+343
6	W Ghio	USA	1320	+420	+341
7	L Horak	CAN	1320	+420	+338
8	T Vaccarro	USA	1320	+420	+334
9	C Jones	USA	1320	+420	+327
10	G Mark	ISR	1320	+406	
10	M Schroedter	USA	1320	+406	
12	B Eimar	SWE	1320	+400	
13	M Achterberg	USA	1320	+397	
14	R Kawai	JPN	1320	+380	
15	G Simon	USA	1320	+362	
15	S Malkhasyan (J)	USA	1320	+362	
17	A Schlosberg	USA	1320	+358	
18	R Siefert	GER	1320	+352	
19	G Batiuk	USA	1320	+346	
20	G Hagay	ISR	1320	+339	
21	R Morrell	NZL	1320	+337	
22	O Shabat	ISR	1320	+310	
23	T Christensen	SWE	1320	+306	
24	D Larsen	NOR	1320	+298	

**F1B-Junior 1 flew**

1	S Malkhasyan	USA	1320	+362
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**F1C 18 flew 14 full scores**

1	R Truppe	AUT	1320	+420
2	C Stiles	USA	1320	+335
3	J Valo	FIN	1320	+297
4	J Ellington	USA	1320	+280
5	A Vyazov	RUS	1320	+265
6	A Babenko	UKR	1320	+255
7	D Chesson	USA	1320	+232
8	E Verbitsky	UKR	1320	+225
9	M Roberts	USA	1320	+218

**F1Q 6 flew**

1	S Sitton	ISR	1240
2	I Kaynes	GBR	1217
3	J Murphy	USA	1214

**F1P-Junior 1 flew**

1	S Malkhasyan	USA	1315
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**F1G 15 flew, 11 full scores**

1	B Jensen	USA	600	+180	+300	+356
2	T O'Dell	USA	600	+180	+300	+300
3	S Stefanchuk	UKR	600	+180	+300	+298
4	P Brocks	USA	600	+180	+300	+291
5	G Hagay	ISR	600	+180	+300	+279
6	A Baruch	ISR	600	+180	+300	+256
7	O Shabat	ISR	600	+180	+236	
8	E Gorban	UKR	600	+180	+178	
9	B Guest	CAN	600	+180	+133	

**F1H 18 flew, 10 full scores**

1	P Findahl	SWE	600	+180	+300	+233
2	A Balassiano	ISR	600	+180	+300	+223
3	A Studnik	ISR	600	+180	+300	+167
4	S Sitton	ISR	600	+180	+300	+151
5	B Van Nest	USA	600	+180	+278	
6	J Parker	USA	600	+180	+205	
7	C Edge	GBR	600	+180	+174	
8	P Mitchell	AUS	600	+180	+137	
9	R Wallace	NZL	600	+180		

**F1J 2 flew**

1	R Secor	USA	579
2	G Schneider	USA	573

**F1E AT LOST HILLS**

By Ian Kaynes

There was further increase in the number of international F1E flyers at Lost Hills this year: Didier Chevenard again from France and newcomers Paul Seren, the Andrists, and Eugeny Gorban. Eugeny was flying F1E for the first time using a model which was duplicate of one he had built for Jean Luc Drapeau.

There were two periods of good soaring conditions on the hill, but these were before the first competition started and after the second one finished! The Kiwi Cup was delayed until the north west wind had dropped, the line was set up on the west side of the hill but the gentle drift shifted and the line was moved to the other side of the hill before any flights had been made, and the max was increased from 2 to 3 minutes. The first round was typical Lost Hills gliding down into the pit and Christian Andrist posted the only max. The wind increased for the other rounds blowing across one part or another upwind part of the hill before reaching the easterly slope launch position, resulting in severe turbulence. The 3 minute max was maintained, although the longest flight times were around 2 minutes in



Paul Seren launching from the edge of the hill

Malcolm Campbell photo. For Malcolm's many good photos from Lost Hills see <https://www.flickr.com/photos/motor-racing-photography/sets/72157650929326815/>

Two days later the California Cup had traditional Lost Hills weather: calm, sunny and with thermals somewhere out in the pit. After some discussion Brian van Nest set a maximum of 150 seconds which proved to be a very sensible decision and gave a good closely fought competition. After dropping the first round Gorban flew four maxes, often choosing to launch when there was lift at the starting line (like he would with F1B). Sometimes this had the effect of the model soon dropping rapidly when it had flown through the lift, but it was then saved by a marvellous glide low down in the pit. He finished second, just 1% behind Peter Brocks who won the trophy again – he has held it every year except the first when it had been won by Ken Bauer.

**Kiwi Cup, February 9 10 flew**

1	P Seren	GER	311.97
2	P Brocks	USA	296.69
3	E Gorban	UKR	286.81
4	C Andrist	SUI	283.33
5	I Kaynes	GBR	227.04

**F1E-Junior 1 flew**

1	T Davis	USA	156.30
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**California Cup, February 12 9 flew**

1	P Brocks	USA	682.66
2	E Gorban	UKR	681.33
3	D Andrist	SUI	676.00
4	I Kaynes	GBR	648.00
5	F Terzian	USA	612.01

## CORRESPONDENCE

*From Andrew Crisp*

The rather sweeping proposals for change in model specification and mode of competition procedure, both from this country and elsewhere, put forward in December 2014 FFn certainly deserve and provoke comment.

Several factors arise. What are we (the FF movement) trying to achieve? Are we trying to prop up and eke out the involvement of an aging group of free flight participants? Are we trying to attract, and hopefully embrace, modellers from outside our, and let's admit it, very specialised discipline, i.e. international FF at the highest level? Are we, by making changes to a well-established set of model specifications, hoping to appeal to a wider base, e.g. those in this country who fly BMFA open and vintage events? And lastly, by reducing performance potential, by whatever means, are we really going to find lots more places to fly on?

Let's talk about the age thing. Several years ago I used to travel to competitions with the late Stafford Screen. In his typical dour delivery, he opined that five years was all we could expect from FF as we knew it. Well, it has lasted longer than that, but have the majority of US got 5 active years left? Will we be running around with a towline for seven rounds at 80? I doubt it.

Attracting those from other areas – the majority of the “old school” have the basic skills but can't come to terms with shelling out more than £1000 for a top-line F1A or B. As for F1C, don't go there! The “old school” want the simple life – hence the popularity of Mini Vintage and the like where you get a good performance by simple means. To this group, a tracker or radio DT is a major consideration and an uncertain step forward.

Of course, as we all know, advanced technology, in all its manifestations, appeals to the young. But it's one thing having the kit, and another thing using it. Free flight competitions are more than owning models with vast potentials. Having the glamorous stuff is all very fine, but a day at a typical contest, facing up to the weather, ploughing through mud and so on, has more to do with the ramblers than sitting in a cosy room fiddling with your mobile 'phone.

Actually, there is a simple answer to finding more places on which to fly. Bite the bullet and put radio control in our models! “Sacrilege” cry the diehards. But if you look at a modern F1A glider it has more gizmos stuffed in its little pod than you'd think possible – radio DT, programmed functions, servos to operate them, tracker, beeper. I'm sure one could go on and on.

Do away with much of this and allow left and right rudder and down elevator (for penetration). The model is “normal free flight” for the tow, rubber motor and power climb. No RC commands allowed. The model can be “steered” on the glide, and must land on the flying field in a designated area – say a 100m square. Any flight landing outside the “box” scores zero, or it could be an attempt.

Think of the fields you could use, but there could be a noise problem with F1C motors!

One final matter. Nowhere in the proposals do I see anything about the prevention of thermal detection, be it by electronic or mechanical means.

Now we are lead to believe there are models in F1A B C that can achieve, unassisted, twice the normal three minute maximum. So why, particularly in B and C, do flyers wait for ages hoping for that right piece of air to launch into? I'll tell you why. The thermal is king and the downdraught is the devil! Lift, or at least not down, is perhaps 50% of the cause of achieving a good flight at any level, be it at a major champs or club gala.

So why not try to ban thermal detecting apparatus. “Impossible to police”, they all cry. Well, rubber motor heaters were banned a while back, and there does not appear to be any blatant cheating on that score – likewise in power with nitro, where straight fuels are specified.

“Flapping” models on the glide is a difficult one. If it meant a disqualified flight one could deliberately “flap” the opposition. I think this topic is best left to contest organisers with strong binoculars!

## BIGGLES LEAGUE

The provisional list of events for 2015 is:

### F1H

March 1	Area 2
April 3	Northern Gala
April 19	London Gala
May 25	Nationals
June 21	Oxford
June 28	Area 5
July 18	Southern Area
TBC	Brumfly
August 22	Southern Gala
October 24	Midland Gala

### F1J

March 1	Area 2
April 19	London Gala
May 25	Nationals
June 28	Area 5
TBC	Brumfly
August 22	Southern Gala
September 27	Equinox Cup day
October 24	Midland Gala

For full details and updates see

<http://www.bigglesleague.hightsociety.org/results.html>

## F1J EURO CHALLENGE

Simon Dixon reports that the events counting towards this year's F1J Euro Challenge have been finalised:

April 19	London Gala
May 25	British Nationals
TBC	Brumfly date
August 1-2	Beauvoir, France
August 6	Moncontour, France
August 22	Southern Gala
September 27	Equinox Cup
October 24	Midland Gala

Full details can be found at the website  
<http://f1jeurochallenge.jimdo.com/>

## INTERNATIONAL COMPETITION NEWS

Harghita Cup in Romania has moved one week to April 11-12.

The Herend Cup in Hungary has moved from March to June 20-21.

## NOTICEBOARD

FOR SALE FROM DENNIS DAVITT: Modellers Bandsaw £50; Optical Tacho with new 9v battery £15. Both items ex John Godden and both in good condition. Contact Dennis Davitt on 0113 2675433.

FOR SALE FROM TONY ROGERS: 4 models on sale valued £200 but with my discount they are only £60 each. Engines in the models are diesel or glow. Also gliders £50 each. Please phone Tony on 01793 722859 for all information.

## FAI RULE CHANGES

A reminder about the rule changes which became effective in January 2015:

In the timing rules it is now defined that times are taken to the nearest second in place of the previous rounding down of times to the nearest whole seconds below. The mean time from the 2 timekeepers is calculated and the resulting time then rounded to the nearest second. The rule can be found at paragraph B.13.6 in Volume ABR of the CIAM Sporting Code, which may be downloaded from [www.fai.org/ciam-documents](http://www.fai.org/ciam-documents) (scan down the list to Sporting Code).